

GREENCARE

Karlskrona Primary Care Centre



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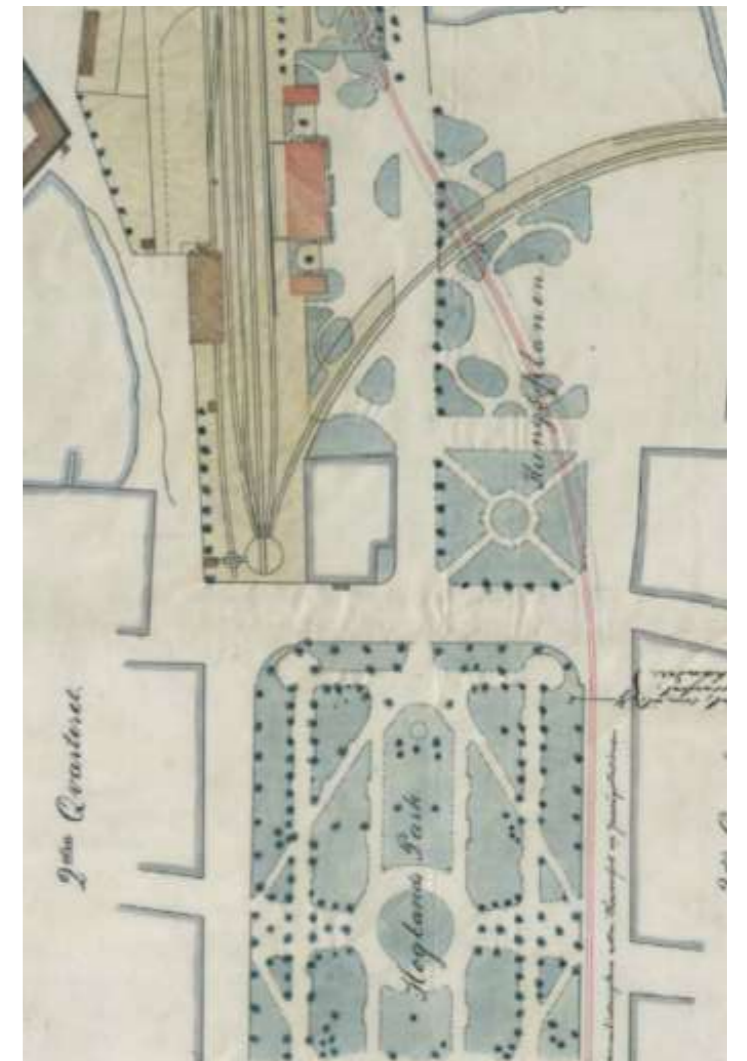
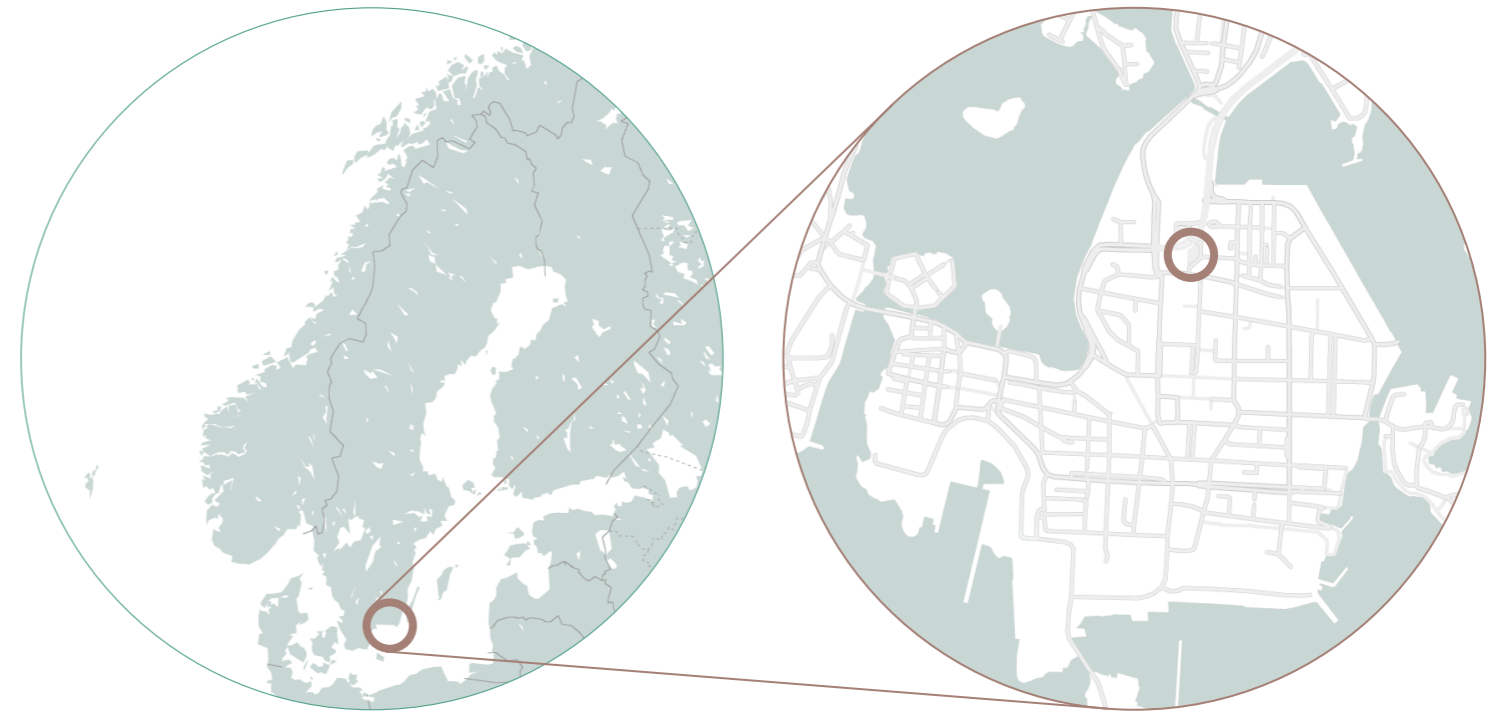
INTRODUCTION

In the historical heart of Karlskrona, a new Primary Care Centre is proposed to be developed. This Primary Care Centre will house different departments such as medical care, women's care, child care, dental care, and rehabilitation care. The client, Region Blekinge, envisions a Primary Care Centre which is attractive, health-promoting, and sustainable. While expressing a request for a building that challenges the traditional viewing of a Primary Care Centre and its way of operation.

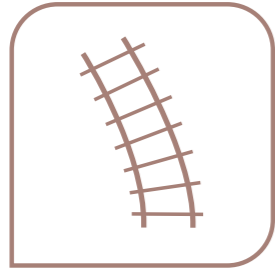
The proposed site for this new Primary Care Centre is Kungsplan, located in the north part of Trössö, Karlskrona. The site is surrounded by several historical buildings from different eras. The most dominant building of these is Fribergshuset which currently can be seen from a large part of the city. Further, traces of a railway that used to go from the docks in the south towards the inlands still exist of which one segment is on the proposed site.

Over the years, Kungsplan has been changed several times but one thing has always stayed the same. Kungsplan has always acted as an entrance to the city, whether it be a garden as can be seen in the map from 1886 or as currently, a bus station. Thus, it is important that the new Primary Care Centre strengthen the entrance to the city.

Kungsplan and Karlskrona, in general, has been declared a UNESCO World Heritage Site due to its naval history and its well-kept baroque city structure. This demands that the architectural language of the building will be chosen with care and the building will add and strengthen the values of the baroque city plan.



DESIGN STRATEGIES



RESPECT THE HISTORICAL CONTEXT

The proposed building shall respect the historical buildings and other elements of interest in the surroundings and co-exist with them. For example Fribergskahuset and the railway.



LONGER OPENING HOURS

A Primary Care Centre that is inclusive to all people in society shall have longer opening hours into the evenings. This will distribute the patient load throughout the day and at the same time enable the building space to be streamlined.



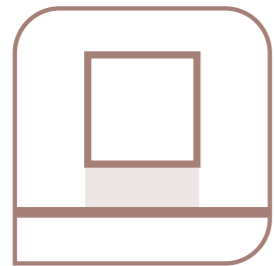
USE OF RENEWABLE RESOURCES

The goal is to use as much as possible of natural resources as construction material. Thus timber is the optimal choice of the main construction material in Sweden. This is beneficial for ecological and social sustainability where exposed timber has been proven to be good for mental well-being and indirectly promotes a better lifestyle.



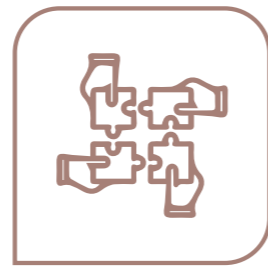
DIGITALIZATION

In the future, more people will be part of the digital era. By having self-service stations and digital queues, less physical spaces will be needed. Further, by having the possibility for remote consultations, the staff can help patients from the office spaces. Thereby these spaces can become multi-purpose which in turn leads to a higher degree of utilization rate.



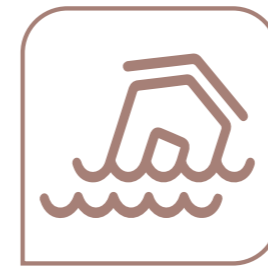
OPEN AND TRANSPARENT BUILDING

A Primary Care Centre shall promote inviting and safe spaces. This can be achieved by having an open and transparent building with meeting spaces opened during all the hours of the day. New public programs are to be added to achieve this strategy.



SHARED SPACES

The main goal is to promote social sustainability with a focus upon co-operation by either having spaces that can be shared between units or between staff and the public. With shared spaces, the building can be activated during all hours of the day with rooms used by staff during the day and by the public during the night.



SOFT BOUNDARIES TO COMBAT FLOODING

By integrating the topography challenges into the public spaces with landscaping the surrounding area of the building, flooding of Kungsplan can be minimized.



FROM PUBLIC TO PRIVATE SPACES

A gradient transition from public to private spaces within the building. This promotes a step by step flow where patients only go so far into the building as they need to and not more. A positive by-product is that the usage of space will be streamlined.

SITE ANALYSIS



THE SITE

The site on which the building can be built is visible with the checkbox. The site is located next to the entry road of the city in the northern part of Trossö. This indicated that the proposed building will give the first impression of Karlskrona Architecture for a visitor.



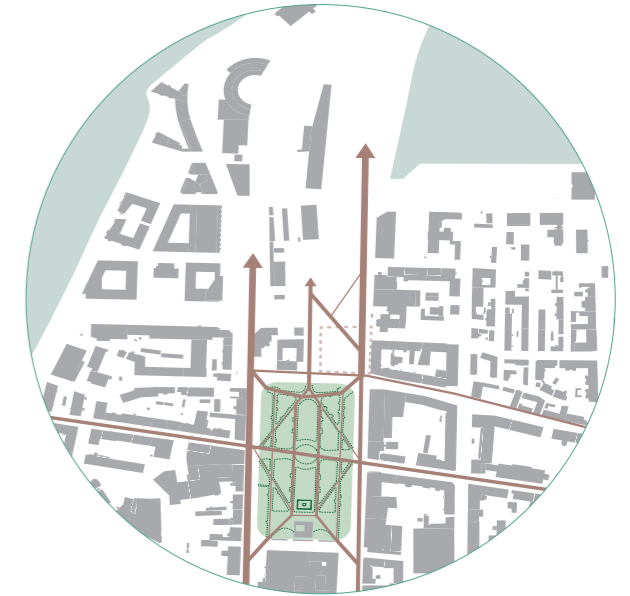
AXIS

Throughout the building, there are several axes that can be drawn. The axis east of the site is the largest axis in the city. The building should **emphasize the main axis** which runs throughout the city and activate it.



THE BAROQUE CITYPLAN

A traditional baroque city plan with its organic grid is clearly visible. The building should **match the existing baroque city plan** in terms of exterior boundary and placement of the building.



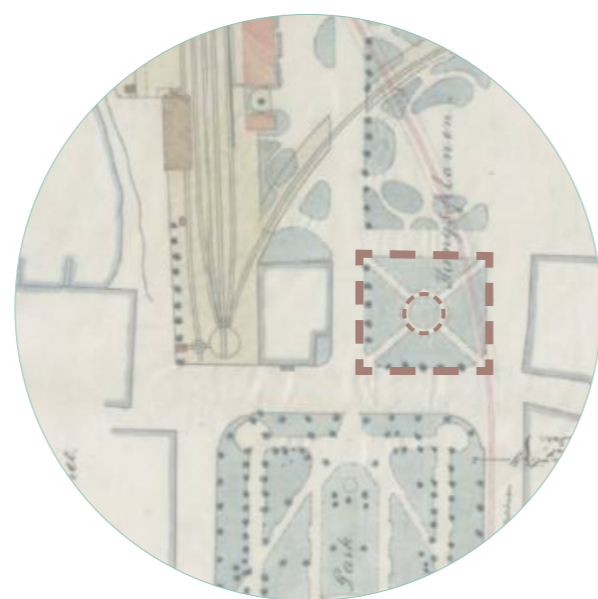
PEDESTRIAN FLOW

Hoglands park provides several paths to assist the flows to and from Central Station towards the core of the city. The building should emphasize the main axis with the **concentration of pedestrian flows**. Further, the building should activate the other sides as well.



VIEWPOINTS & RELATION TO SURROUNDING

From the site, it is possible to identify historical elements such as Fribergskahuset, Hoglands Park, the Bathhouse, and the Central Station. The building facade should not be a foreigner on the site but rather **co-exist and take advantage of the views the site provides**.



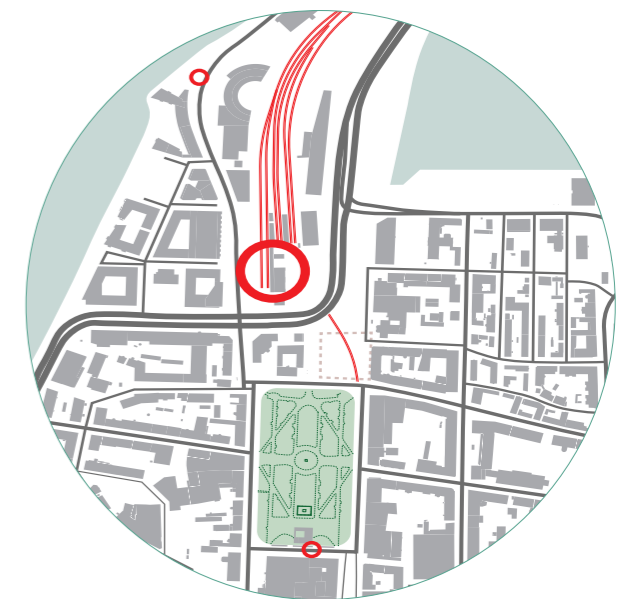
HISTORY OF KUNGSPLAN

A map from 1886 of Kungsplan shows a public green park on the building site. A park with orthogonal boundaries and round shapes within. The building should give **rebirth to the public park** and be influenced by the orthogonal boundaries and the round shapes within.



THE VISIBILITY OF FRIBERGSKAHUSET

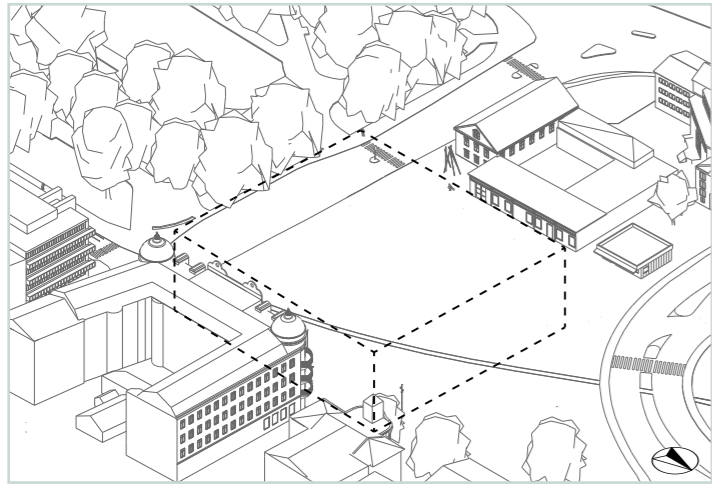
Fribergiska is a building with over 100 years of history and it has been a key building for the silhouette of Karlskrona. The building should **not disturb the views of Fribergskahuset towards the city**.



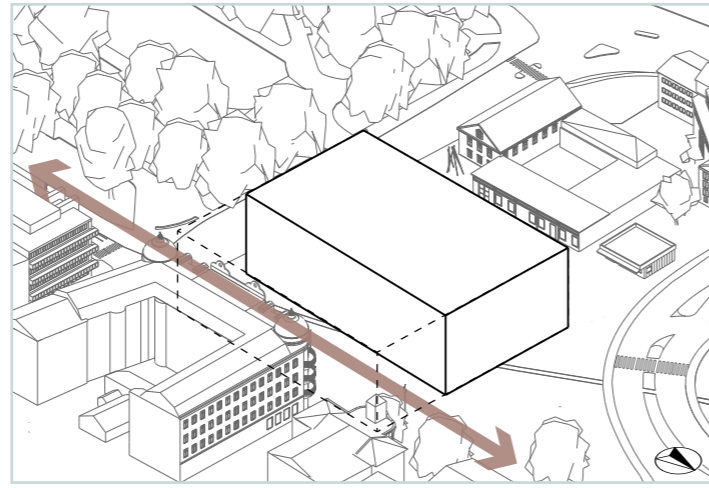
INFRASTRUCTURE

Towards the north and the south, the site is exposed to high traffic. An old railway goes through the building site which is of historical importance. The building should **relate to the historical rails** that go through the building site and take care of the busy road towards the north.

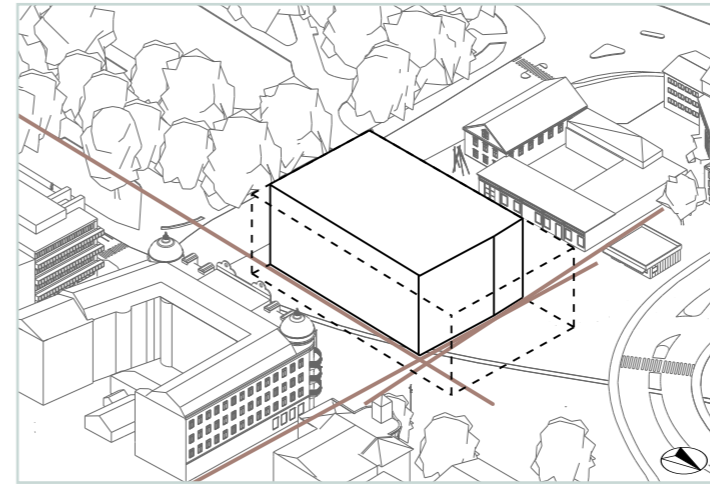
VOLUMETRIC MASSING



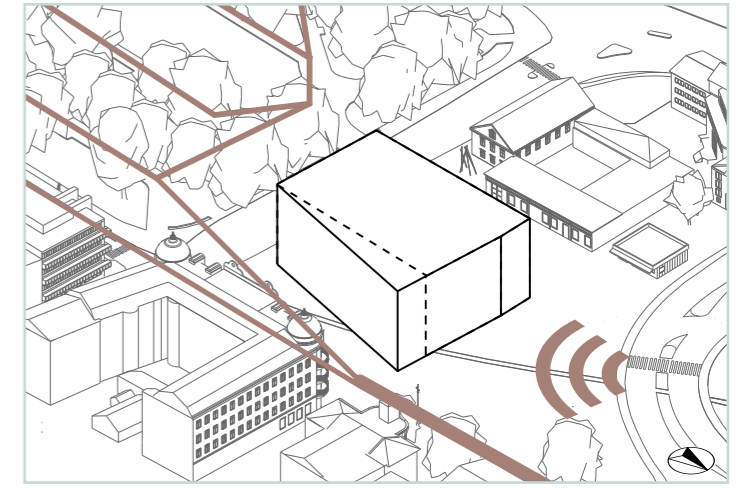
Mapping out the maximum volume for the plot as a starting point.



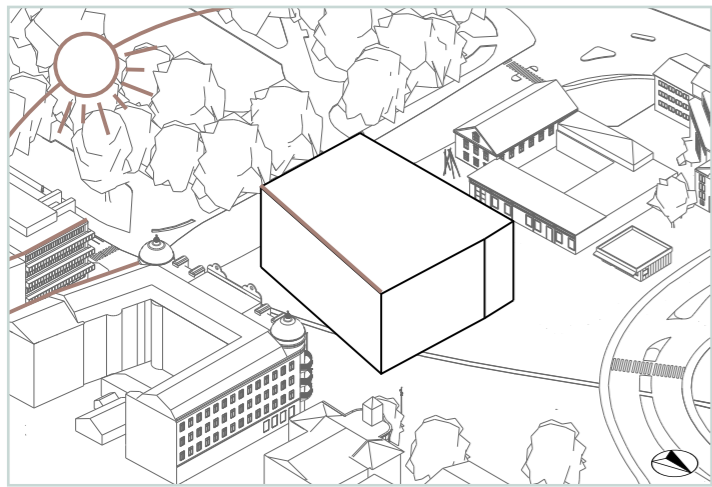
Reducing the footprint so that the main axis of the city is clearly visible and emphasized.



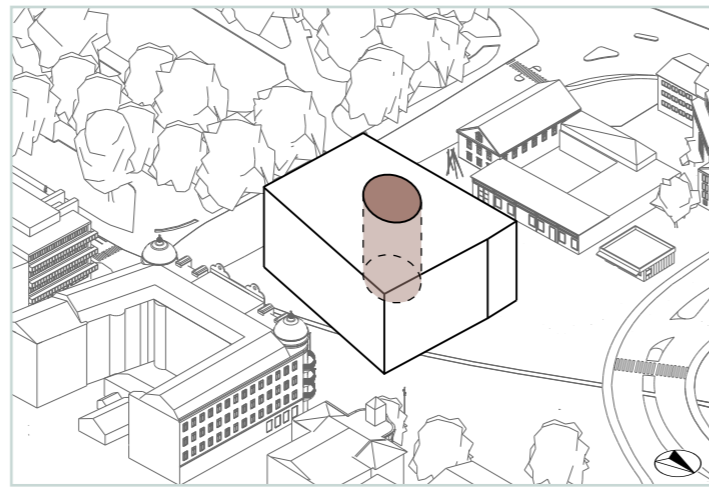
Further, change the footprint to match the baroque city plan.



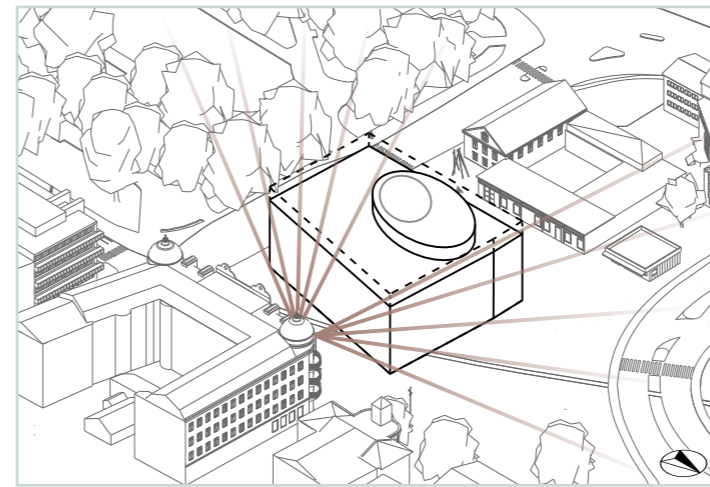
The facade towards the main axis is angled to concentrate the scattered pedestrian flows from the park to a streamlined flow. This also gives a sheltered and intimate meeting space away from the main infrastructure to the north.



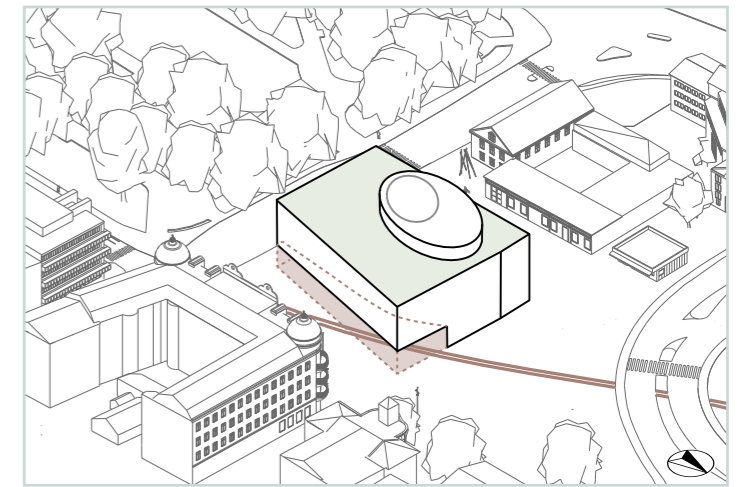
Further, the angle indicates an openness toward Hoglands Park similar to the neighboring buildings around the park. This gives respect to one of the few green spaces of the city and at the same time maximizes the daylight into the building.



Implement a circular atrium to let daylight reach the darkest part of the building. The shape of the atrium reflects upon the historical garden that used to be on this particular part of Kungsplan in 1886.



To respect the sightlines of Fribergskahuset towards the city, the majority of the upper part of the building is lowered and opened up.



Relating to the history of Karlskrona by carving out the ground floor to align with the old rails that go through the city. And on the rooftop, giving rebirth to the public garden of Kungsplan from 1886 with public spaces.

CONCEPT OF GREENCARE

This is the proposal. It is a celebration of the city of Karlskrona. By reinventing the site through reintroducing old forgotten aspects of the site's history in a new and exciting way. This is a building that will be recognized and enjoyed by all. This is GreenCare primary care center.

The name Green Care comes from the building's environmental focus. The main aspects behind this focus have been the use of wood as a structural element and facade material, but also the compact form to make the building easy to heat. But the name also strongly connects to the building's relation to nature, by the placement of a public park on the fourth floor as well as a large amount of greenery placed on the site.

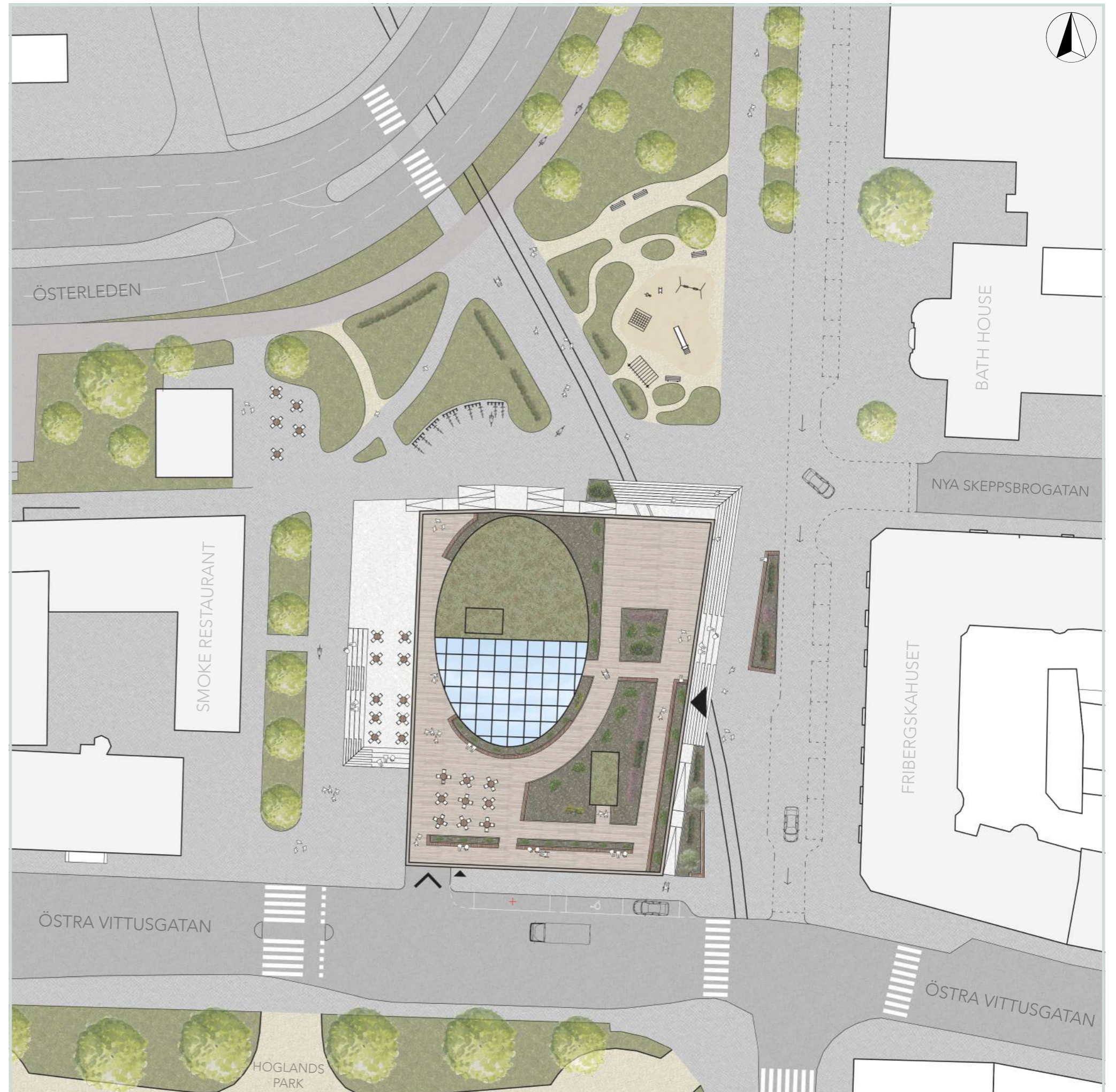
THE SITE PLAN

In the site plan, the reused elements (as previously mentioned) of the map from 1886 can be seen further and in more detail. The roof garden, the shape of the atrium, the railroad, and the playground all can be distinguished. But these are not the only aspects of the site that have been reused, as many trees as possible that can be saved from the site today will be, and the same goes for the cobblestone currently on the site.

An important part of the site has been the dividing of flows to make every side of the building active. This has been done by placing activities such as outside seating for the cafe and an outside gym towards the west and the main entrance towards the east. While the north is being activated by the flow to the railway station and the playground and the southern part has a strong connection to the park through the angle of the facade towards Fribergiska.

Another aspect of the site plan has been to protect from the road, this has been done by creating a buffer of greenery. By doing this safety and calmness is provided to the site.

SITE PLAN
1:500 (A3)



ELEVATIONS

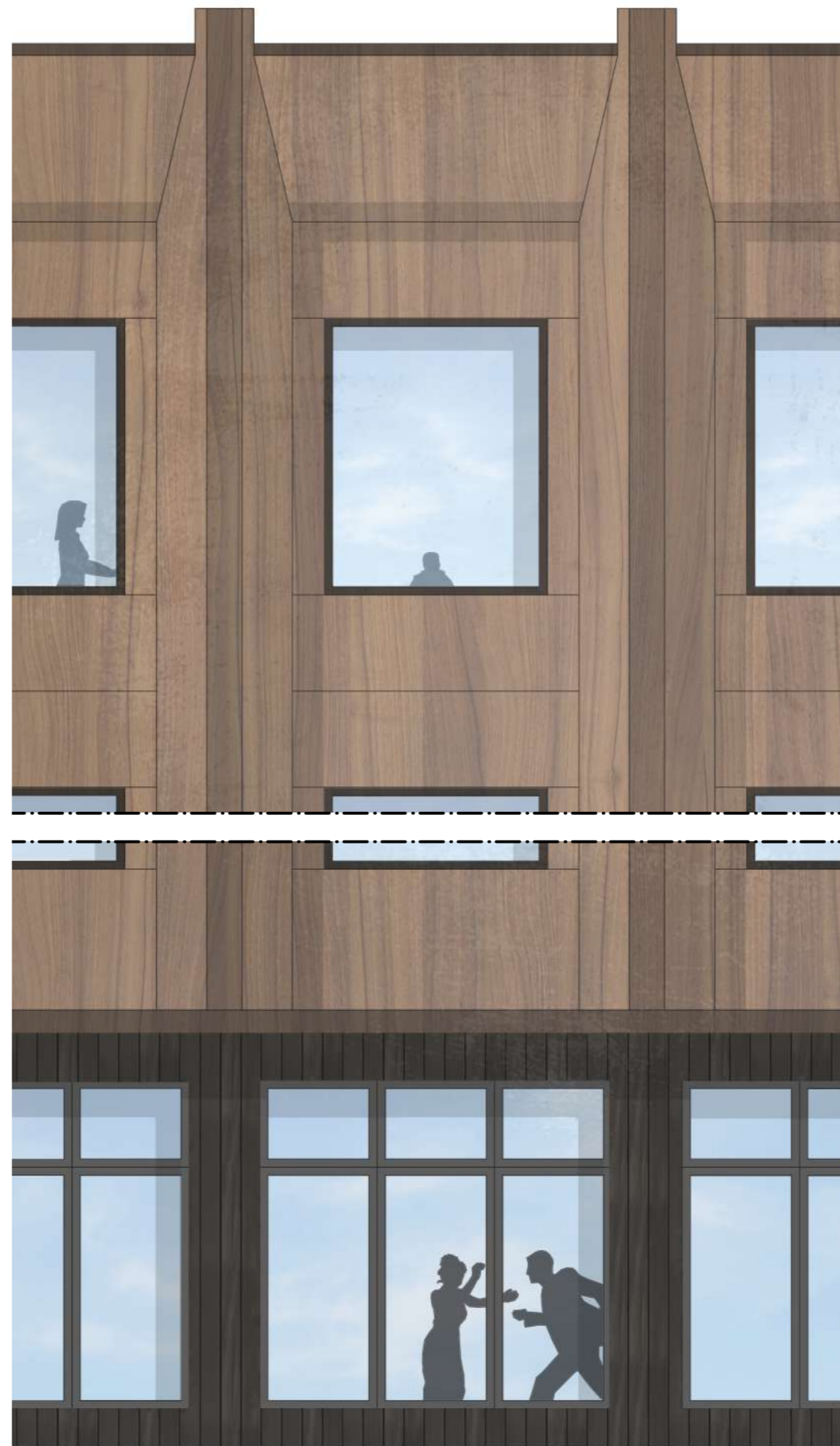
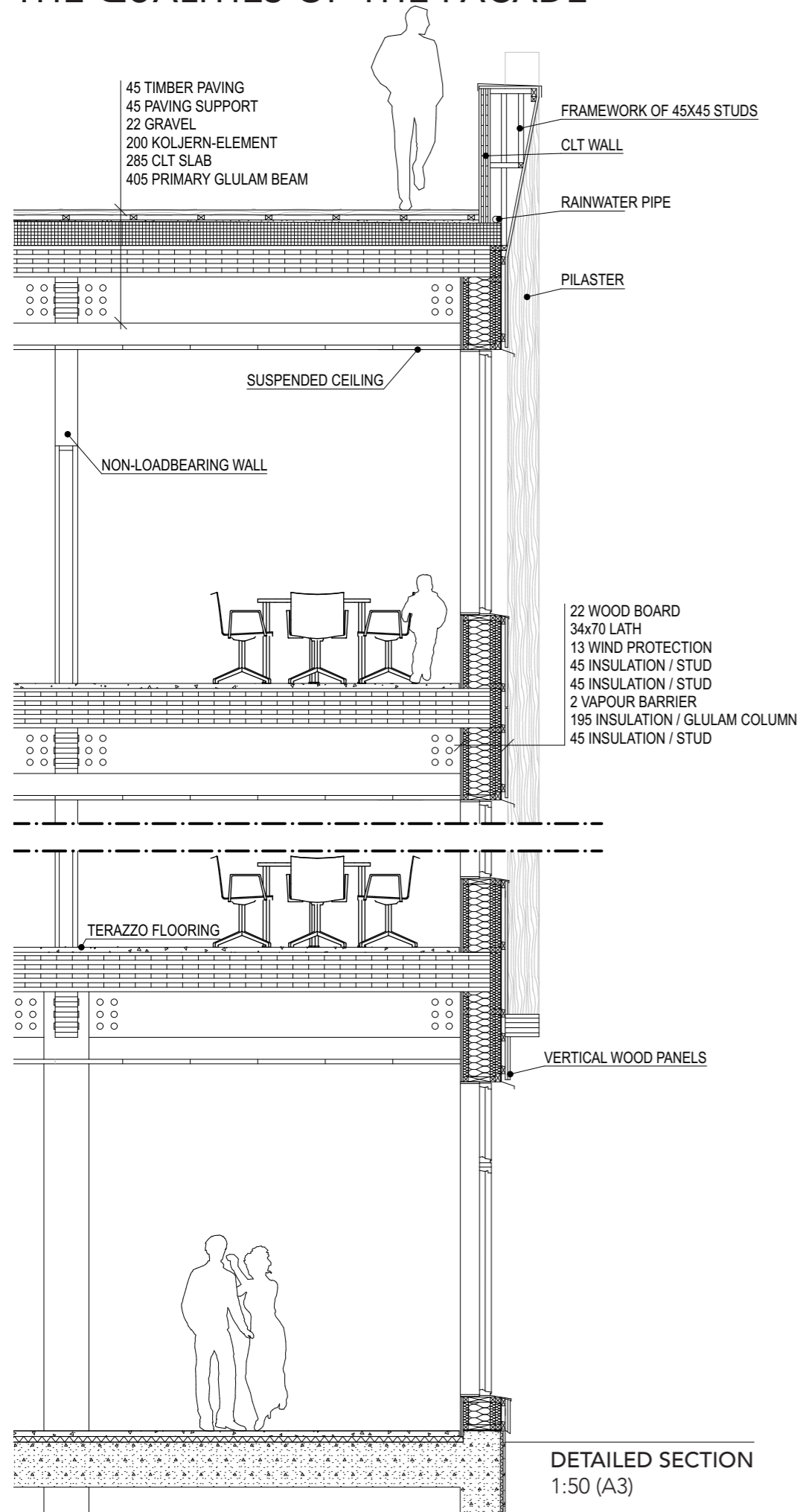


ELEVATION TOWARDS EAST
1:250 (A3)



ELEVATION TOWARDS NORTH
1:250 (A3)

THE QUALITIES OF THE FACADE

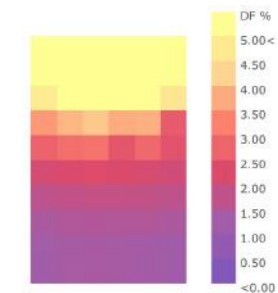


CO-EXISTENCE WITH THE SURROUNDING

The facade has been an important part of taking care of the heritage of the site. Through placing pilasters in a strict grid, giving the notion of importance and structure, the building complements the rich ornamental facade of Fribergshuset while creating a unique impression through the use of wood. The first floor has a darker treated facade to relate to the restaurant Smoke (towards the west) while also distinguishing the difference between the more public ground floor in relation to the more secluded Primary Care Centre on the second and third floor.

A PASSIVE PRIMARY CARE CENTRE

GreenCare has a goal to become an energy effective building as much as possible. To achieve this, the building is compact in the form and not fully transparent in the facade design. The exterior walls provide a good insulating capability. With insulation within the wall but also within the extruding pilasters. The roof terrace is using KOLJERN elements which are 70% reused glass fibres and is a vapour- and water-tight material with good insulation properties. All this combined, an energy efficiency of satisfactory can be achieved.



PARAMETRIC ANALYSIS OF DAYLIGHT

Energy efficiency and daylight does often not go hand in hand. Further, extrusion in the facades can also impact daylight. Therefore a daylight analysis with parametric analysis was conducted with different dimensions of the unique pilasters and window sizes in the examination rooms to find the most optimal sizing while maintaining good energy efficiency to lower heating and cooling needs.

HEALTH PROMOTIVE DESIGN

The vision of this proposal is to create a health promotive Primary Care Centre in accordance with the vision of the client and the city.

GreenCare is a medical building and medicine is a field that is based upon facts. Thus in this proposal, design choices have had its basis upon research and numbers.

LONGER OPENING HOURS

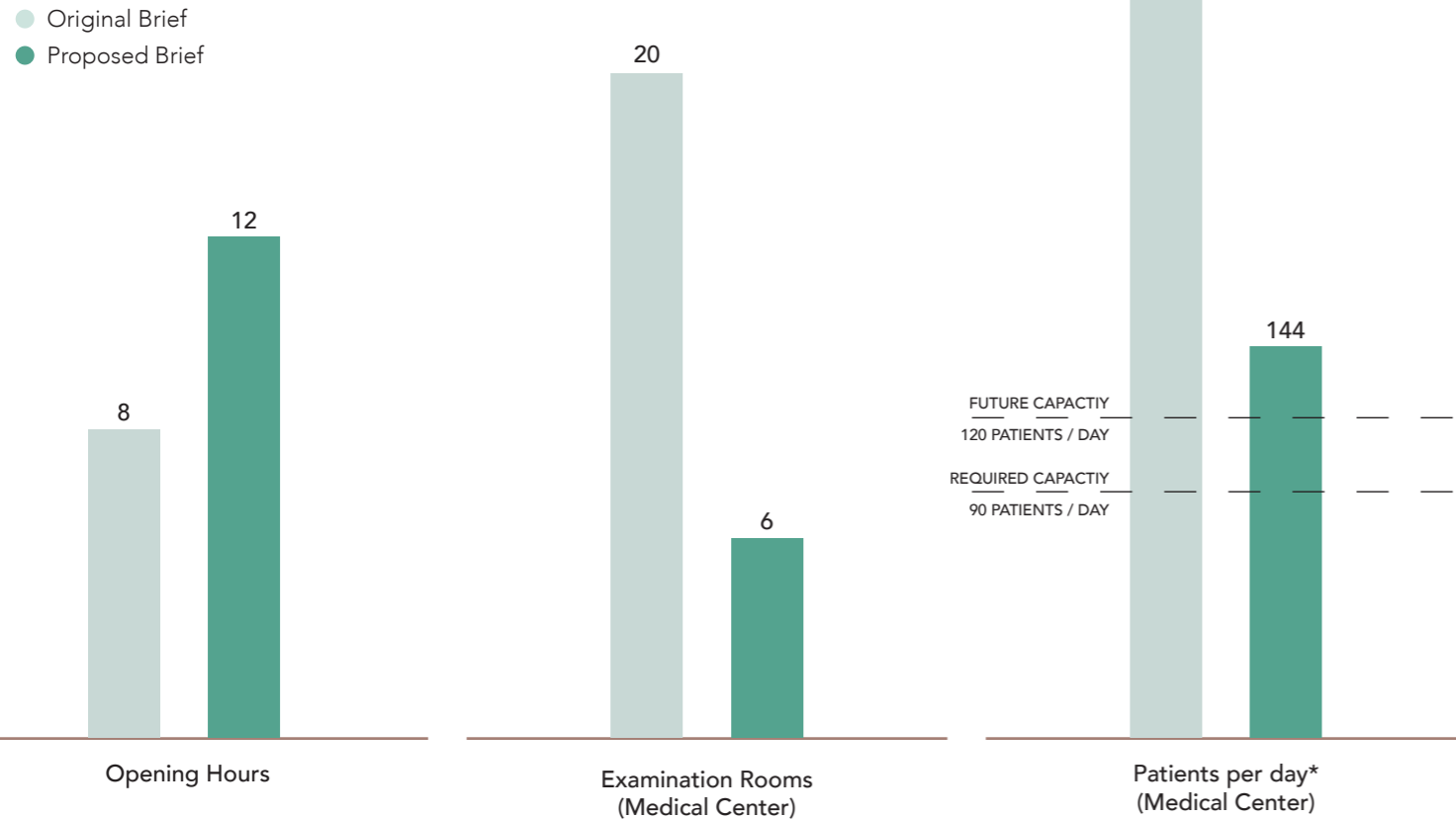
A traditional Primary Care Centre is usually only active during daytime and thus not being fulfilled to its fullest potential. In GreenCare, the centre will have longer opening hours from the traditional 8 hours a day to 12 hours a day.

By having longer opening hours, it will be encouraging to those members of society who before did not have time to visit a Primary Care Centre during the day due for example lack of time or not being able to take time off from work due to financial reasons.

Another benefit of having longer opening hours is that this will also give a higher utilization rate of the

building and optimization of building space with less required rooms. In the graph, it is calculated with statistics from the current Primary Care in Karlskrona that with 33% longer opening hours and 70% less examination rooms, it is possible to reach well above the requested patient capacity that has been given from the client.

Having longer opening hours can cause discomfort for staff. Therefore it is proposed that the Primary Care is to be operated in two shifts. This will not just have benefits with health promotion for the staff but also for the optimisation of building space with less required office spaces.



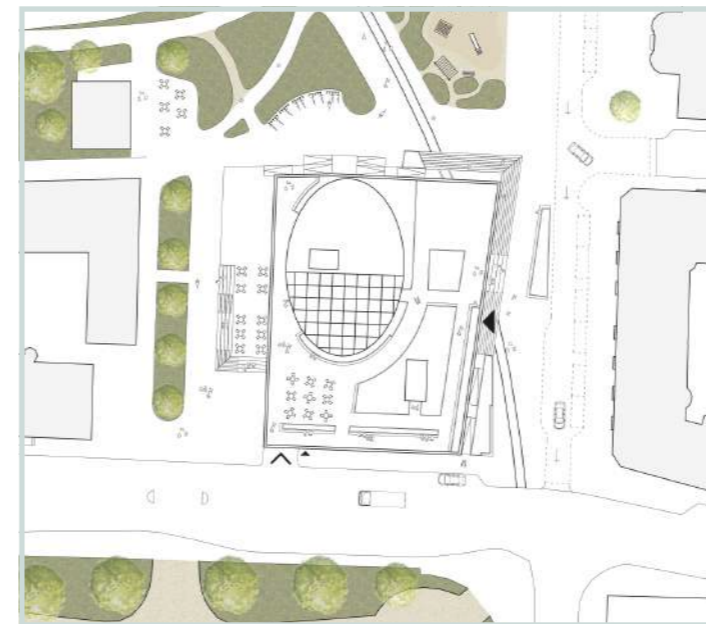
* Based upon 2 patients per hour and full utilization of all examination rooms



THE EXAMINATION ROOMS

In GreenCare, the most important aspect is to have patient-centric care. According to the report "Lokaler för öppenvård", one of the main goals to achieve this is to give patients a feeling of calmness and promote patients to collaborate in decision-making regarding their own health with the medical staff.

In a Primary Care Centre, the examination room is where the key interaction between staff and patient occurs. That is why a closer look at the examination room is needed. Traditionally, the way this room is furnished, is with a large desk where the doctor usually sits and the while the patient sits either on the other side of the desk or next to it. This gives a sense of hierarchy and that is what this proposal wants to reform. The removal of the desk and instead replacing it with a table indicates a dialogue on the same level between doctor and patient which shows the patient that the doctor is "one of them". This will promote a collaboration and thus give better health care to the patient.



THE BENEFITS OF GREENS

As previously mentioned GreenCare uses as much natural resources as possible while implementing greenery and nature through and around the building. However this is not just based upon having an ecological sustainable building. According to the report "Evidensbas för vårdens arkitektur", evidence shows that the presence of nature relieves stress. Thus one of the goals for GreenCare has been to establish a sense of calmness as soon as you reach the proximity of the building, with visible greenery from the main directions of arriving to the site. When later reaching the interior of GreenCare, the patients will be greeted by even more greenery in the form of a green atrium with sightlines towards the outdoor greenery on each floor.

SUSTAINABILITY PROMOTIVE DESIGN

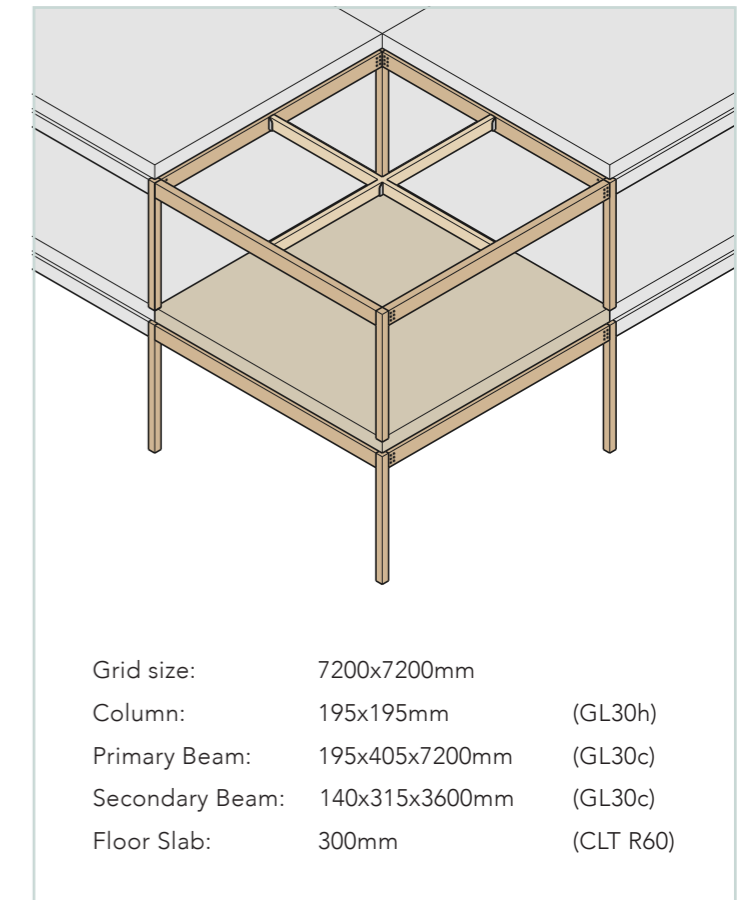
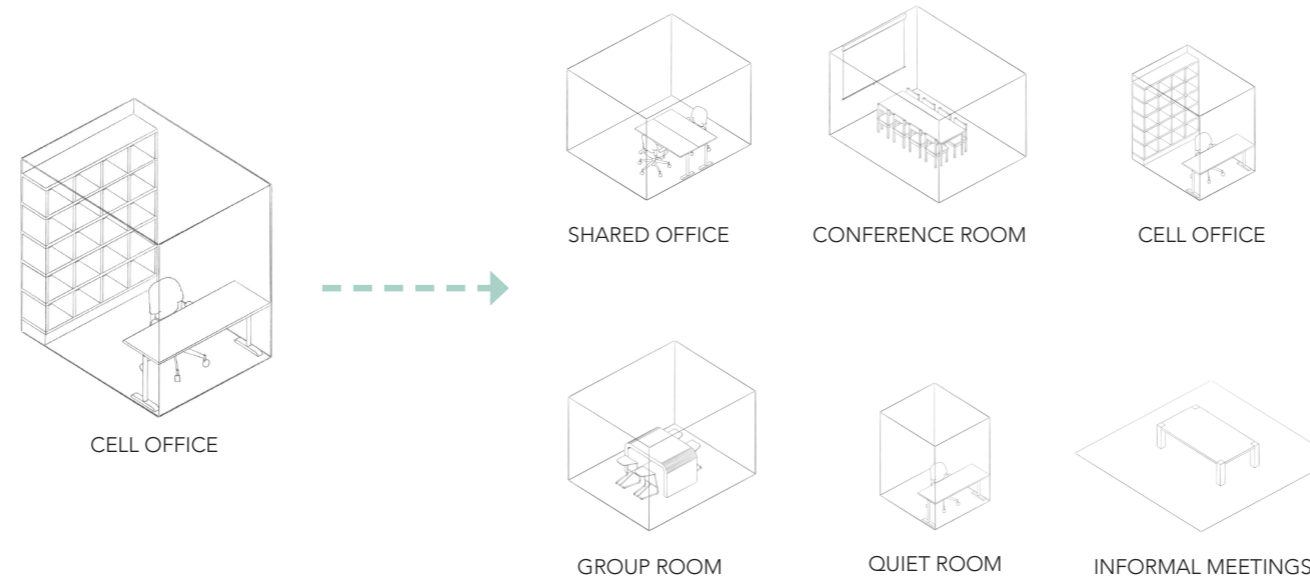
SHARED STAFF SPACE

The subject of administrative spaces in healthcare has in the later years become a frequent discussion point. Studies show that utilisation rates of administrative spaces in a healthcare facility are quite low and the need for more effective spaces is in demand.

GreenCare proposes shared offices spaces of minimum two staff members in each room. If a situation occurs where working in the office room is not appropriate for that particular task, it is possible to use one of the complementary spaces within the building such as the quiet rooms, group rooms, conference rooms and informal gathering spaces.

The report "Administrativa arbetsplatser" indicated that activity based administrative places where a wide variety of functions are facilitated are the optimal for a higher utilisation rate.

By having activity based rooms as a complement that is available for all staff in the building, a sense of co-operation is established between units. They may not work together but the mere presence of other units during lunch and "fika" can break the traditional boundaries between units.



SHARED WAITING SPACE

GreenCare is a Primary Care Centre that will be built in the epicentre of the digital era. Thus, there will be no need for waiting areas designated to each unit. Instead, thanks to digitalization with a digital queue system and self check-in, it is possible to streamline all of the waiting spaces and receptions toward the heart of the building, the atrium.

By having a shared waiting area, a sense of anonymity for the patient is established. This is further enhanced by not having clear unit names written throughout the building, instead each patient will be assigned a letter when checking in, either by the centralised reception or self service stations (entrance hall). This letter will correspond to a section of the building where the medical staff can come and collect the patient. This also comes into use, if for some reason, one unit needs to temporarily use another unit's examination rooms.



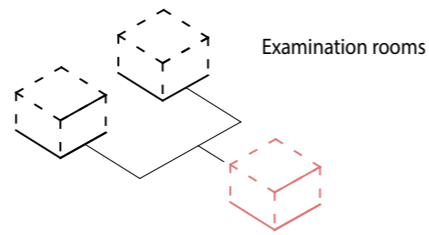
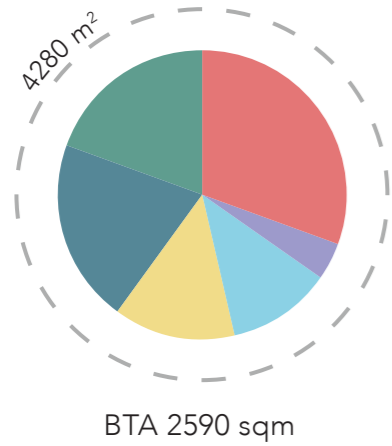
GRID STRUCTURE FOR THE FUTURE

GreenCare is a Primary Care Centre that is built for change. Due to its compact form, it is essential for the generality of the building to have as few columns as possible on each floor. The general grid of the building is 7,2m x 7,2m with a sub-grid within 3,6m x 3,6m. The reason for choosing this size is not only to have less columns but to follow the CC 60cm measurement which is the industry standard of building materials in Sweden. This will create less material waste in general.

GreenCare is a compact building. By adding structural cores of solid CLT around vertical flows and technical areas, the distance between the core and exterior walls falls within the grid limits. Thus, the need of columns within will be minimal. This can be seen in the floorplans later in this report. By having minimal columns, a complete renovation of this building is possible without major intervention.

BRIEF AND LOGISTICS

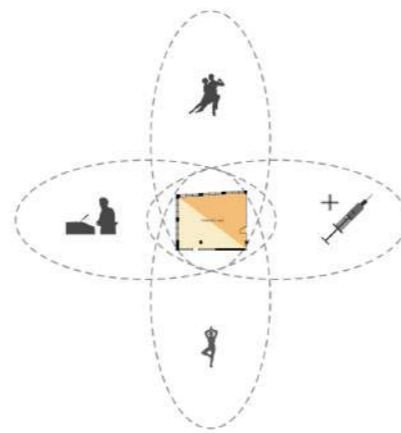
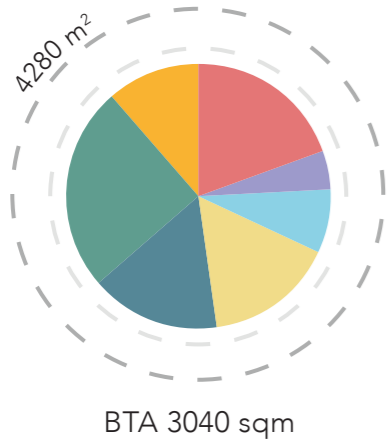
Original Brief



Through the extensive analysis of the needs for rooms have been able to be divided by half.

Challenged Brief

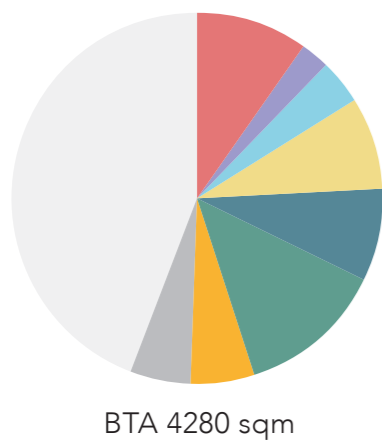
- Reduction of examination rooms
- Reduction of office rooms
- + Addition of new programs



The conference rooms and the gymnastic hall are efficient areas. Meaning they can be rented and used for other activities than healthcare during evenings.

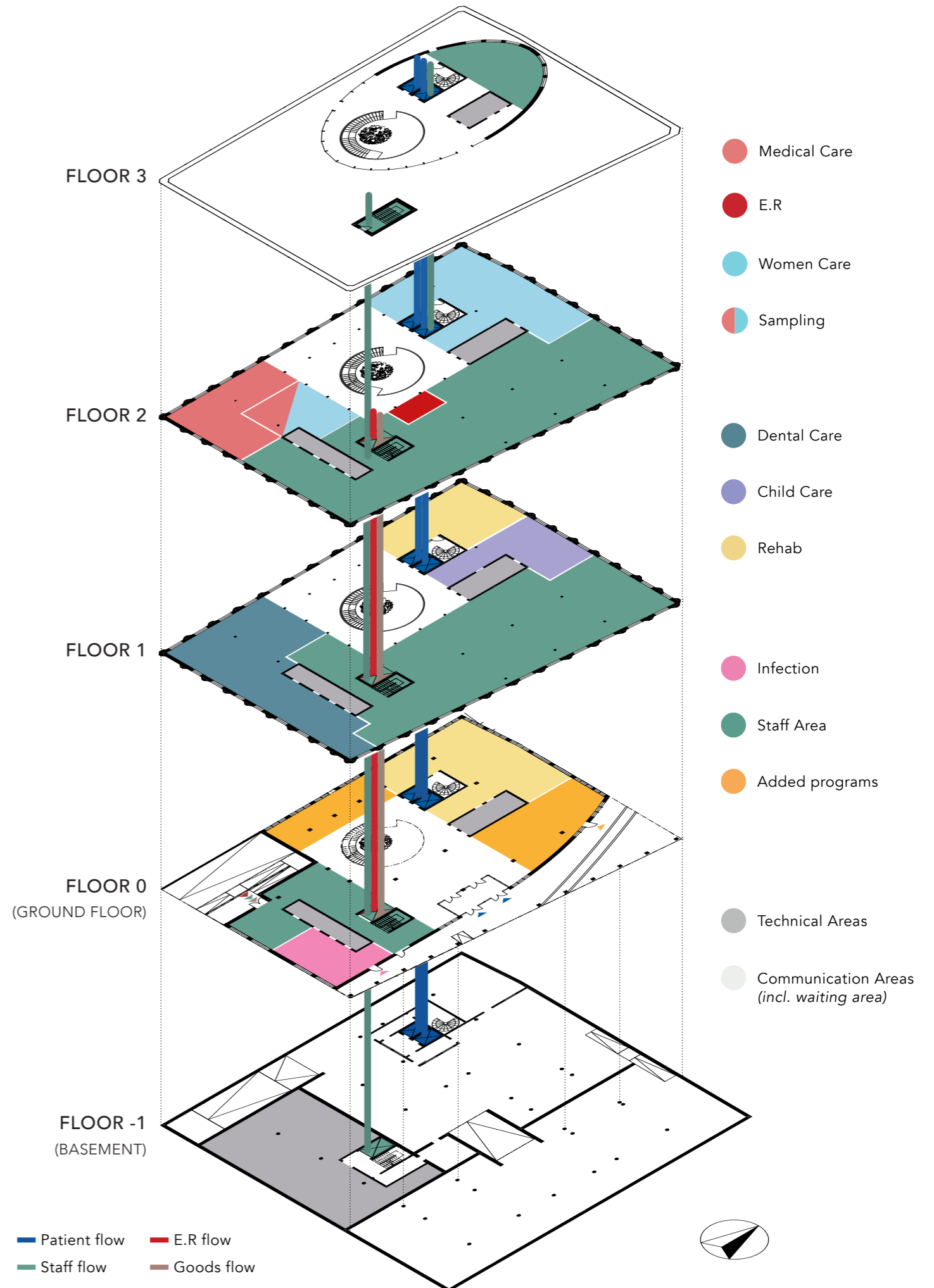
Proposed Brief

- + Addition of Technical and Communication areas



FLAWS BETWEEN THE FLOORS

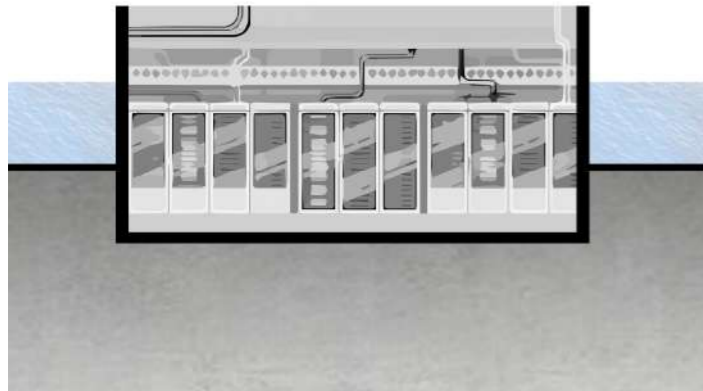
The vertical flow of the building is concentrated to two flows, one for the public and one for the staff. The public flow can easily be divided into two parts in case of building wide separation in case of future pandemic.



BASEMENT FLOOR

The building has a basement made out of concrete to ensure that the building won't be compromised by the possibility of flooding on the site. However, to ensure as low of a carbon footprint as possible the rest of the building is constructed by CLT slabs and Glulam beams and columns. The basement has a grid of 7.2 meters in general, built on piles in the ground to anchor with the bedrock below, which is needed as Karlskrona is built on mud and clay.

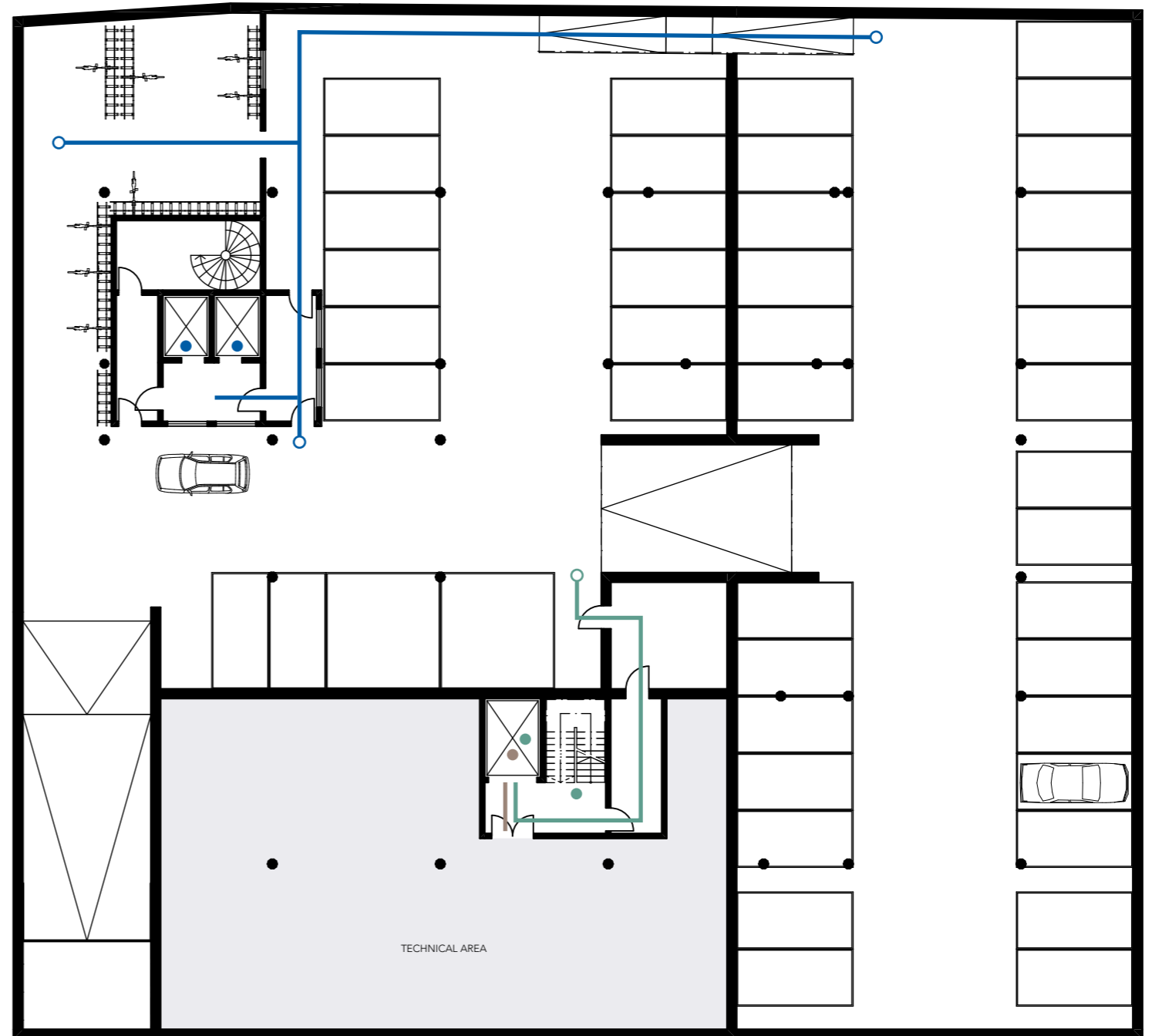
As the whole building footprint has been risen due to flooding regulations the ground disturbance is left to a minimum. But the basement had to be expanded towards east to fulfill the relocation of the parking slots west of the building site, which resulted in it having to be at a lower level with a height difference of 1 meter between the two levels. This makes for more complexity in the building construction process but minimizes costs and material while being better for the environment.



All technical areas are placed in the basement to maximise the one place to maximize survival during possible flooding. To further help in this aspect we have placed three doors as a barrier from the rest of the basement. To improve flexibility the grid has a large span, so if the need for bicycle parking or more storage, in case of a department expansion, car parking can easily be converted.

A-A ▼

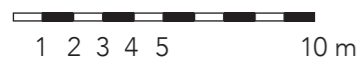
FLOORPLAN - FLOOR -1
1:250 (A3)



In the garage: 68
Above ground: 25
Total: 93



In the garage: 45
Above ground: 21
Total: 66



GROUND FLOOR

The ground floor has a distinct and visible main entrance from both north and south through the arcade in the east. The railway has been of great importance in the shape of the ground floor, where as you can see the first floor's eastern wall has been angled the same way as the tracks towards the railway station. The rails themselves have been moved up to the building level and are being complemented by LED lighting to help guide people while highlighting the rich history of the site during the days, as well as nights.

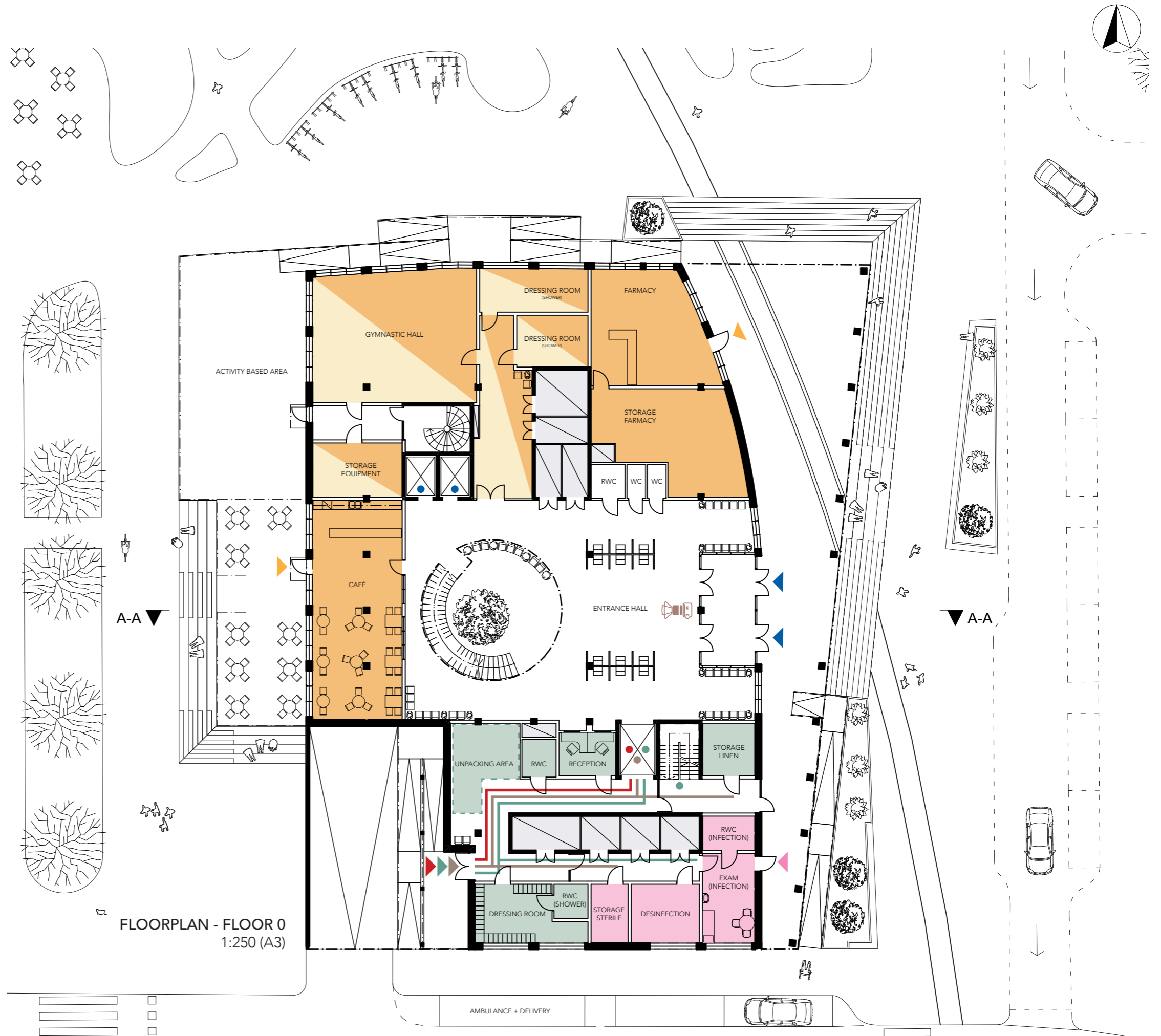
When you move through the large glass facade at the entrance you are met by a hall brightened by the atrium in the middle of the building. Here the self check in stations are placed as well as large waiting spaces.



To need medicine after a visit to a primary care facility is often a necessity. In the process of designing this project, it was discovered that the northern parts of the city lacks a pharmacy. Therefore a new program consisting of a pharmacy was added in the north of the ground floor of the building.

Another aspect of the ground floor is the gymnastics hall, which is mainly to be used by the Rehabilitation care. However, to make this space more effective, these spaces are rentable for the public when not in use by the Rehabilitation care. This space could be used as a yoga studio or a facility to train dance for example. In direct relation to this area an outdoor activity (gym) based area has been placed to be used by the Rehab department or the community as a way to promote health in the city.

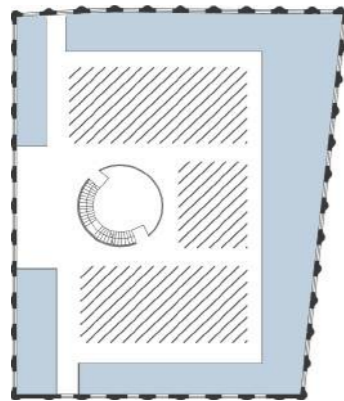
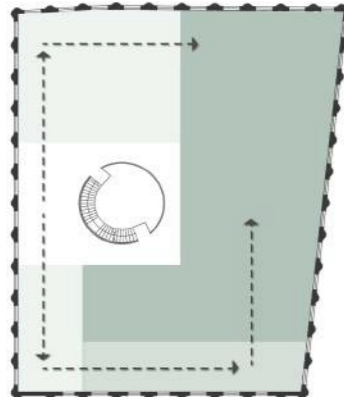
The infection department has been separated from the medical care unit to further separate more contagious patients from the rest. Therefore the department has been placed away from the outside public flows while also being fitted with an isolated entrance (separate from the main one).



FLOOR 1

The first floor of GreenCare consists of a dental care and rehabilitation care together with a common shared staff area.

The floorplans have been designed from certain strategies, one of which is something that is called "from the public to private". It means that as a patient, you only move so far into the building as need be. For example in the dental department, If you are here for a regular checkup, you will be able to access the examination room in close proximity to the atrium. However if you are in need of a more serious treatment, you will have to go further into the building. This will provide a better work environment for the staff as well as to prevent contagious diseases from spreading.

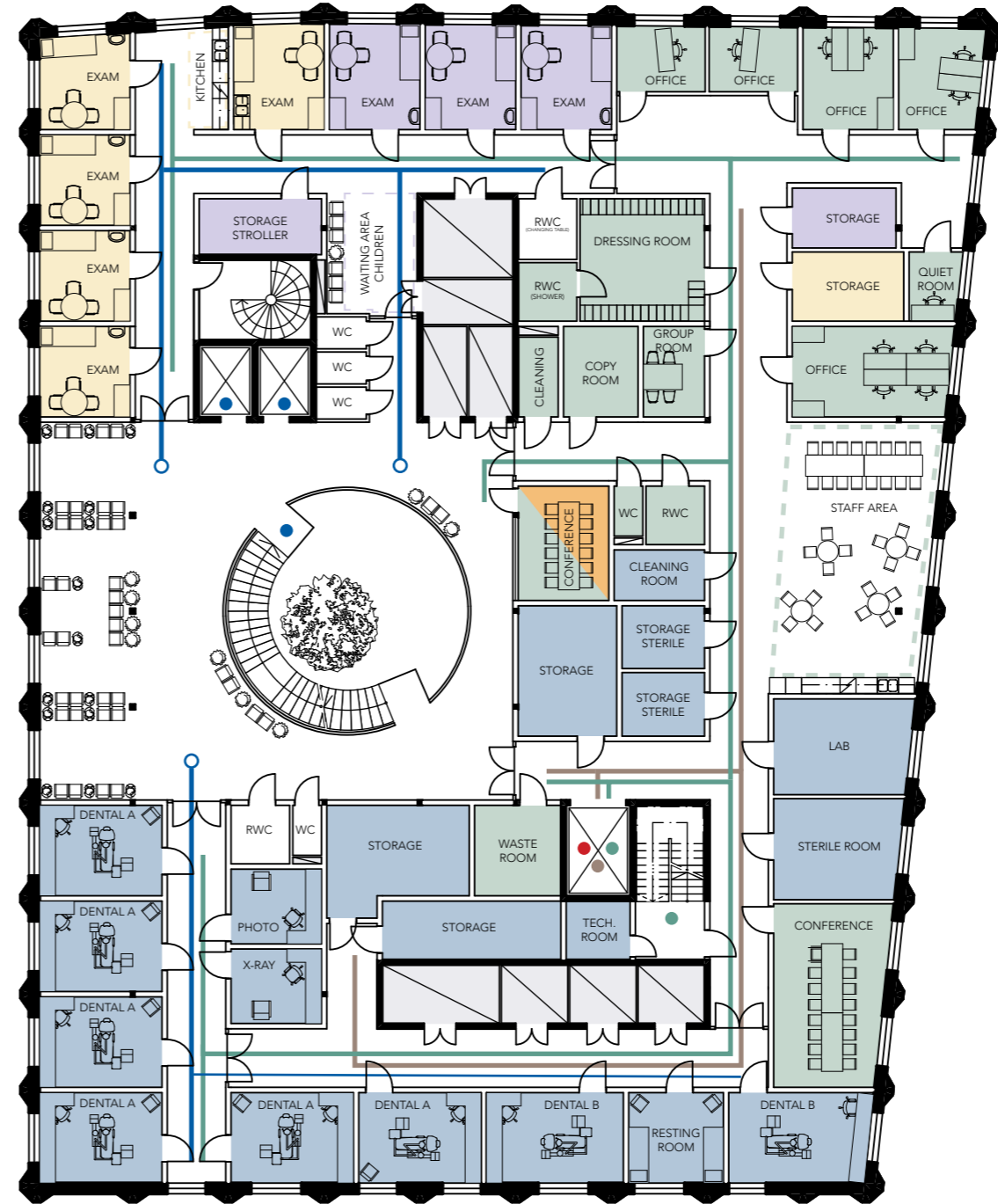


The second strategy is that the building has been taking advantage of the fact that it has no backsides, by placing all the rooms that can benefit from daylight along the facades, for example, the examination rooms and office spaces.

A-A ▼

▼ A-A

FLOORPLAN - FLOOR 1
1:250 (A3)



FLOOR 2



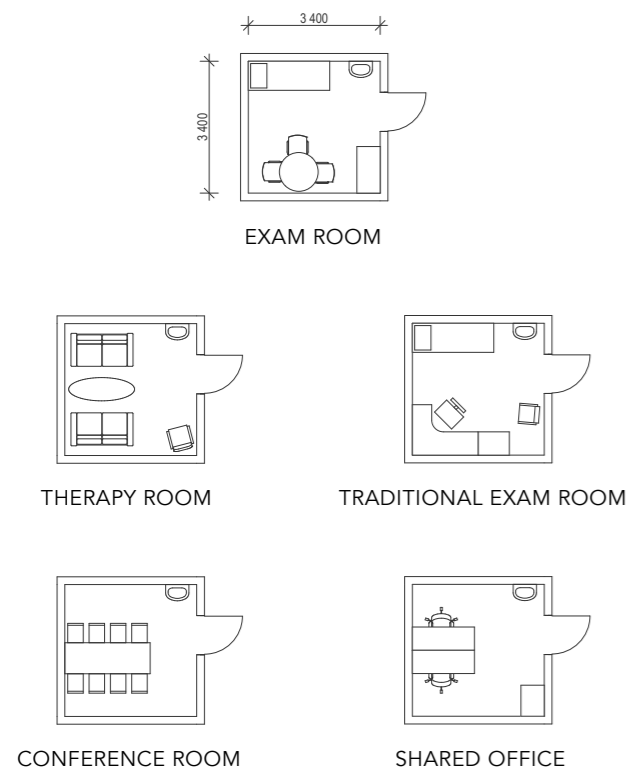
Floor 2 facilitates medical care, child care and women care. Due to similarities in both of the departments, a possibility for space efficiency with a shared sampling unit and therapy rooms as well as shared staff oriented spaces was the natural choice.

Flexibility of spaces

Majority of the Primary Care Centre consist of either examination rooms or offices. Within each unit, the examination rooms are sized differently depending on the unit. This creates a dilemma in regards to flexibility.

To address this, GreenCare has taken use of the subgrid of 3,6m x 3,6m by using this dimension to create a typical room for examination and office. This room can have multiple functions depending on the needs of the Primary Care Centre. With a inner dimension of 3,4m x 3,4m, the room can be an examination room, therapy room, group room, conference room, office for up to 2 people, resting room and more.

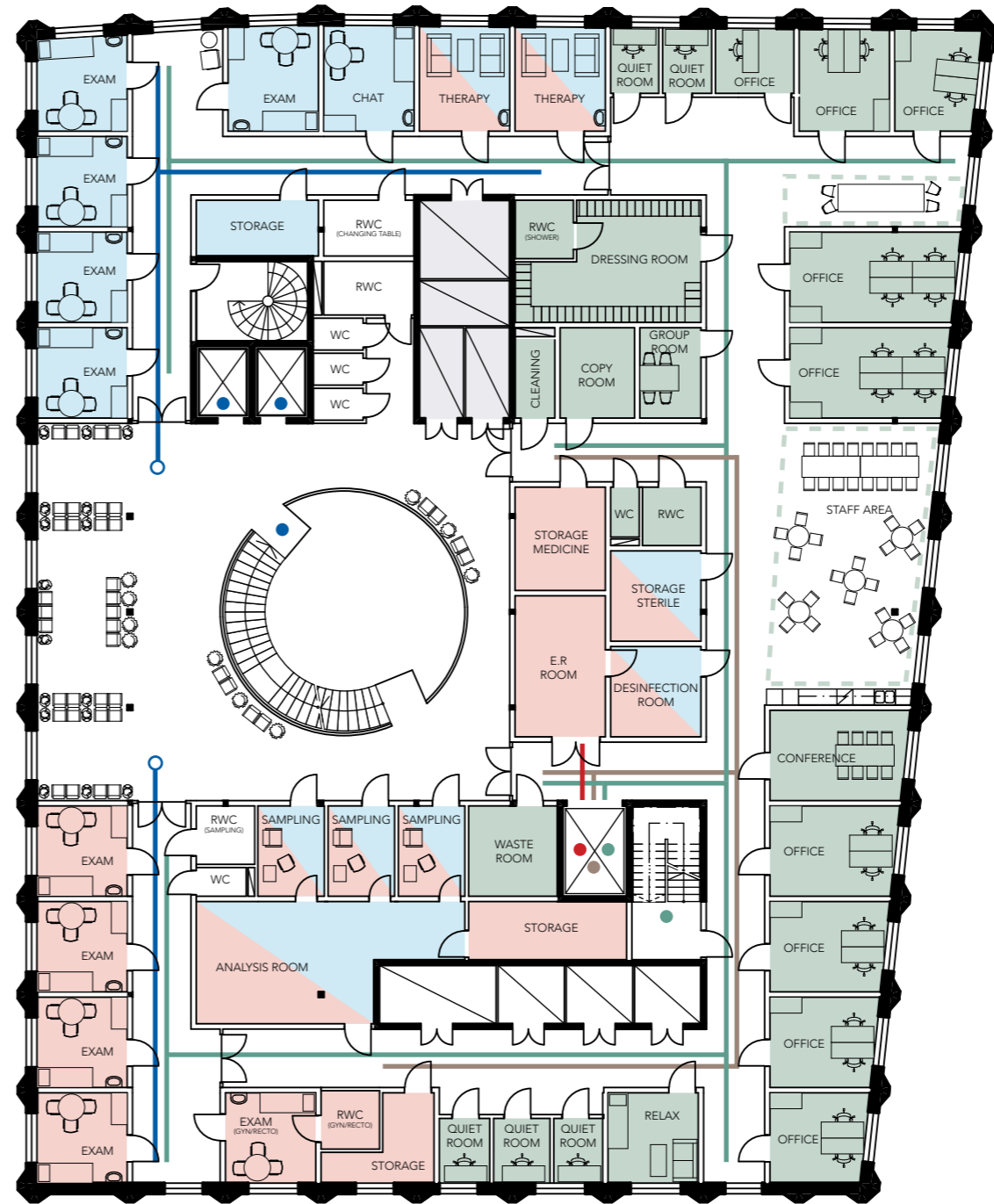
To clarify, this is a general typical room that shows the minimum possible rooms that can be built. However due to the angle of GreenCare towards the east, adjustment in regards to depth is needed.



A-A ▼

▼ A-A

FLOORPLAN - FLOOR 2
1:250 (A3)



FLOOR 3

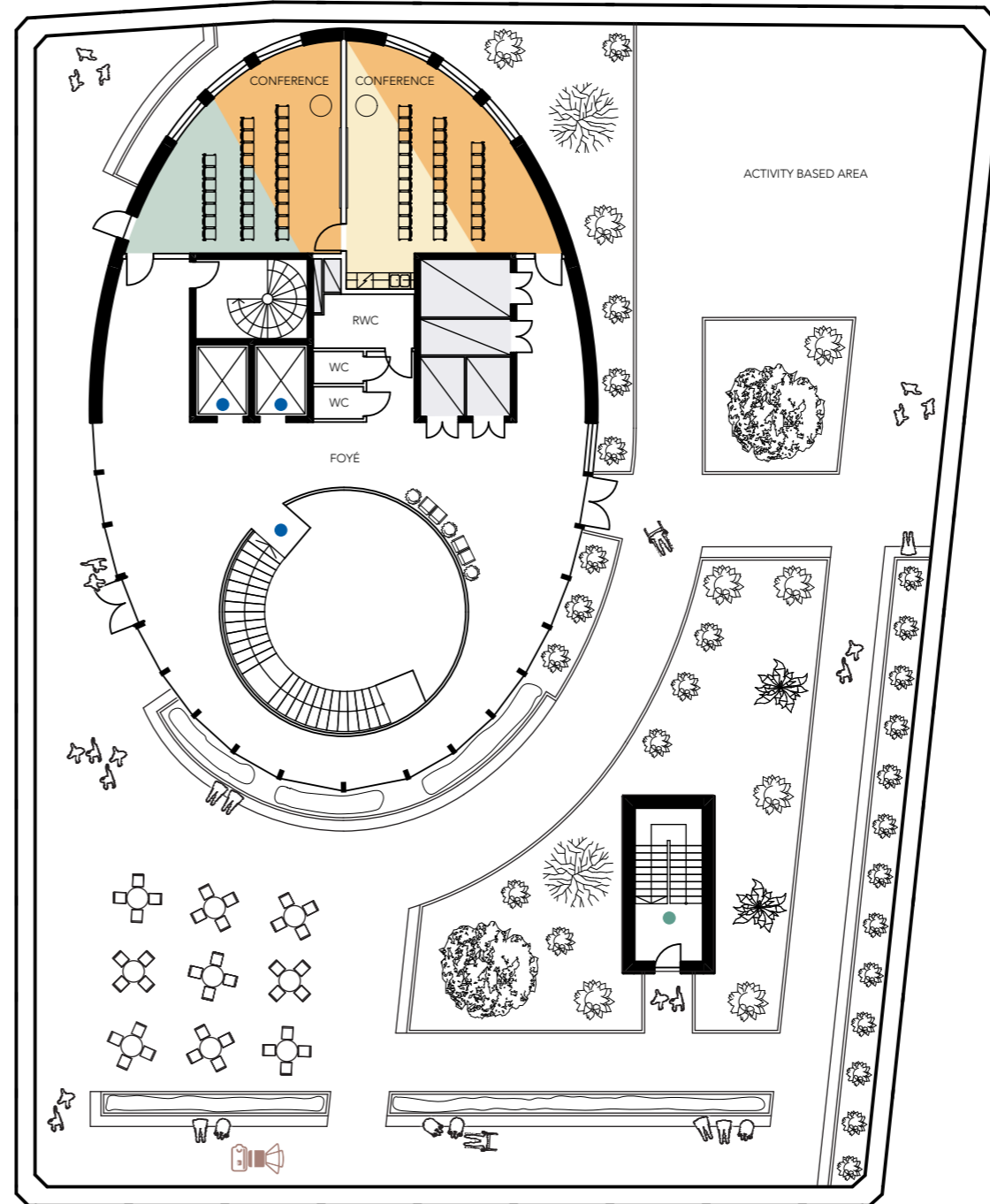


The top floor is the building's tribute to the past. When you arrive on the fourth floor you are welcomed by a glassed foye to maximize the amount of sun to brighten up the darkest part of the building through the atrium, as well as to give a stronger connection to the park outside. The foye will mainly support the connection to the two conference rooms that are placed towards the north. These rooms are, like the gymnastic hall rentable, when not used by the primary care.



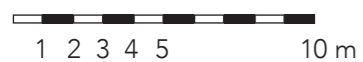
The rest of the top floor is allocated to take advantage of the generous southern sun by the placement of a terrace. This is a place where you as a patient can come up for some quality sun time while waiting for your appointment. Or as a place to enjoy your lunch as a member of the staff. Green areas in the form of plant beds have been added. These areas have been adapted to make a connection towards the Hoglands Park and to connect back to the 1886 park standing where the site is today.

A-A ▼



▼ A-A

FLOORPLAN - FLOOR 3
1:250 (A3)



SECTION

ROLE OF THE ATRIUM

In the section the atrium role becomes apparent with it being the beating heart of the building. A connection point throughout the building from a visitors point of view is really important for the building. In direct connection to the atrium one can see that all the waiting spaces are placed to provide a nice and bright environment to wait in.

RELATION OF GREENCARE

The relation towards the surroundings also becomes apparent. Towards Friberggska Huset the building creates a natural meeting space while opening up to the park in the south. To further enhance the public flows are mainly directed to this space. While the side towards the restaurant Smoke becomes a rest place, more secluded.

FLOODING

Because of the risk of flooding there has been a lot of focus on the site design for it to be able to handle the water in a good way. To the west in the section is one of the implemented solutions that can be seen as a rainwater collector which is draining water by collecting it in the ground.



SECTION A-A
1:250 (A3)



*"A landmark for Karlskrona by day,
as well as by night"*



GREENCARE

Karlskrona Primary Care Centre