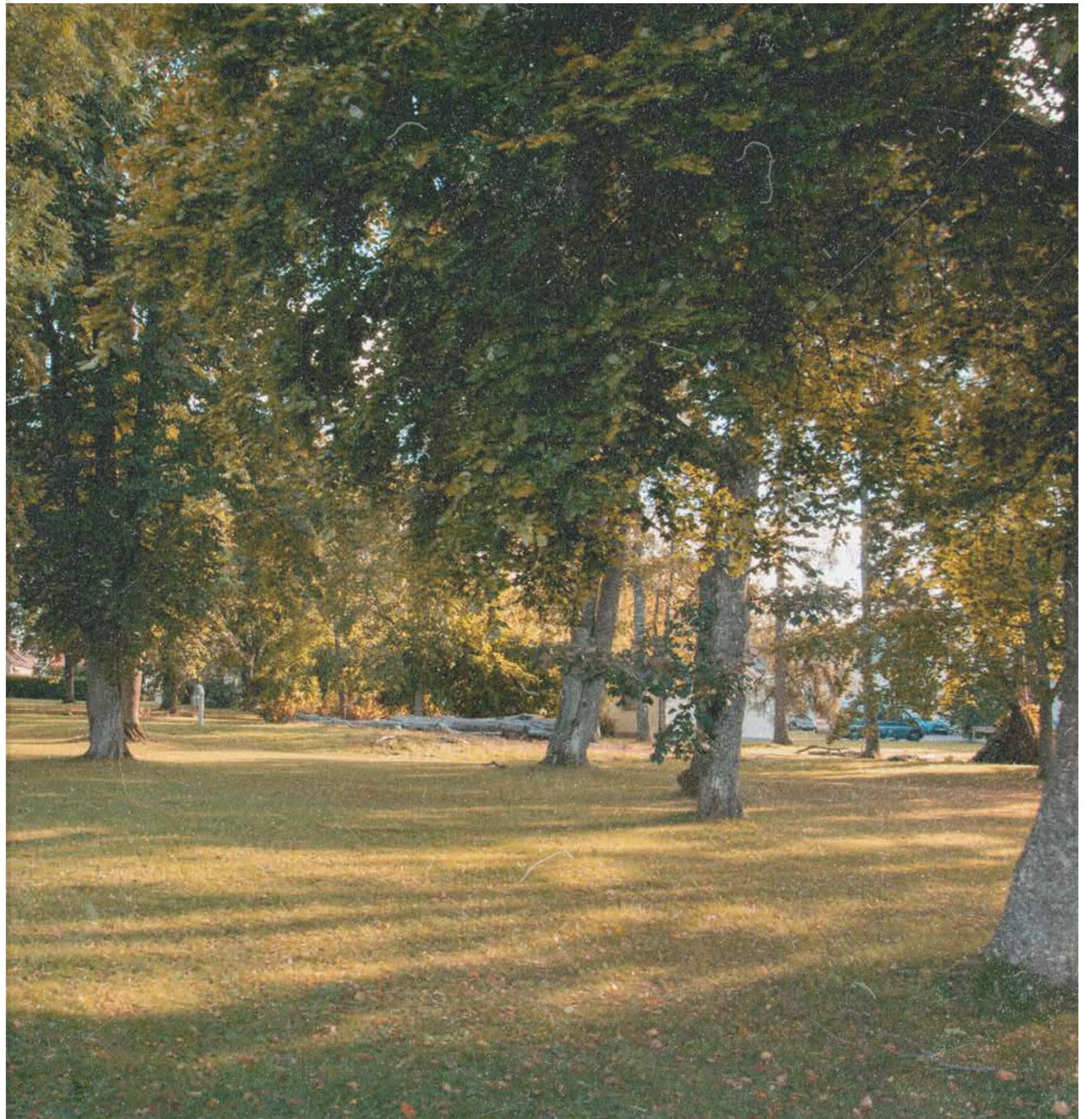


2023 01 10

A Sense of Relief

A PROPOSAL FOR THE NEW PRIMARY CARE
CENTER IN VADSTENA, SWEDEN

ARK263 | Group 6A | Linnéa Schultz



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INTRODUCTION



THE TASK

Currently situated in an older building, not suited to modern standards, the Primary Care Center of Vadstena will move into a new development in the near future. The proposed site is currently occupied by an older building, internally connected to a neighbouring structure beyond the plot limits. Thereby, the task has been to design a proposal for the new Primary Care Center on site and the two existing buildings, on-site and just outside.

The brief of about 3000 m² gross area includes a primary care unit, specialist outpatient clinics, dental care and a child and family health centre. The task has also included presenting a space for a possible extension of an inpatient care unit. The inpatient care unit will be outlined in the site plan but not detailed further. Today, the Primary Care Centre has almost 160 patient visits per day and about 37 daily staff, including nurses, doctors, and dentists.

The project will contribute to developing the healthcare system towards “good quality, local health care”, which means modern, equitable, accessible, and effective healthcare, focusing on primary care. Additionally, the project has very high sustainability ambitions, and the design focuses on circularity, reuse, and resource efficiency.



SITE & CONTEXT

VADSTENA MUNICIPALITY

Vadstena municipality is in the county of Östergötaland, in the Southeast of Sweden. As of 2021, the number of inhabitants in Vadstena municipality was just over 7 500. Vadstena has a large senior population, with a third of the residents above 65 years old.

BIRGITTA HOSPITAL AREA

The site is in the old Birgitta Hospital Area, a significant part of Vadstena's long history as a centre for healthcare in the county, dating as far back as the 15th century. The Birgitta Hospital Area is an expansive Pavillion-style Hospital complex constructed between 1947 and 1961. Since the mid-1900s, many buildings have changed use leaving the current primary care centre as the last one still operating as a healthcare facility.

The surrounding buildings include many of the same architectural characteristics. These include; placement along an orthogonal grid, rotated 3 degrees west, gable and hip roofs at an angle of about 30 degrees and use of bricks as the predominant facade material.

The two buildings included in the brief are part of the cultural heritage of Vadstena. The plan is to demolish the building on site as it's not suited to meet the high standards a new, future-proof healthcare facility requires. The other, facing Birgitta Square, Lekbrodern 3, is protected for its cultural heritage and will be preserved.

Additionally, the site includes Birgitta square, currently utilized by the preschool. The quad lacks a program and features associated with a square as a meeting point. Its connection to the surroundings is unclear.



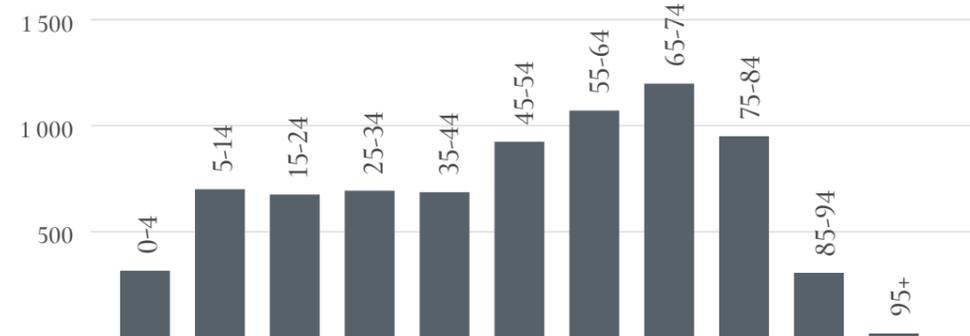
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MAPS

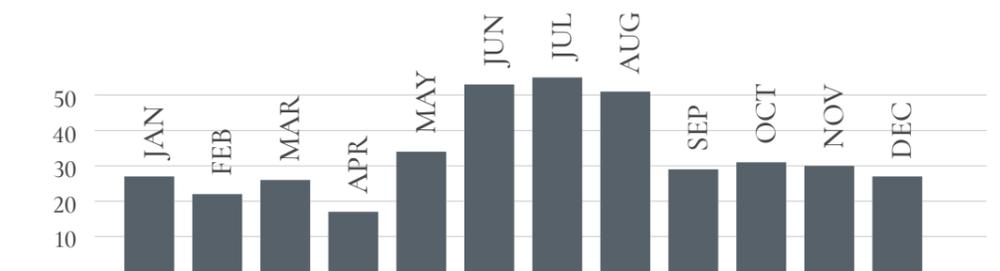


DIAGRAMS



AGE DISTRIBUTION

The biggest age group in Vadstena in 2021 was 65-74¹. The diagram clearly show a dispersion of ages toward the greater end, with the number of children aged 0-4 equal to those above the age of 85.



PERCIPITATION (MM)

In Vadstena it rains on average, almost every other day year round². During the summer months, June to August, the percipitation is quite great with levels exceeding 50 mm.

ISSUES OF CONCERN

1. LACK OF STAFF

As of 2022, two-thirds of regions in Sweden are experiencing a high demand for healthcare workers that is not satisfied by the current workforce³. An inadequacy that, according to a report by the Social Welfare Board³, is caused by a lack of educated personnel, competition between employers, staff retiring and an increased absence of staff due to physical and mental illness.

2. STRESSED PATIENTS & STAFF

According to the Public Health Authority⁴, one out of seven people in Sweden are stressed. The issue affects patients and staff equally. Not to mention the possibility of increased stress regarding our health that causes people to seek medical attention or previous experiences from encounters with the healthcare system.

3. LARGE SENIOR POPULATION

There is a large senior population in Vadstena. Although we should the act of growing old, old age comes with its own set of issues. One of the biggest challenges the healthcare system faces today is the care of the elderly with multiple diagnoses caught between different caregivers⁵.

4. PATIENT INTEGRITY

At the current primary care centre in Vadstena, staff has expressed concern about possible breaches of patient integrity as words travel between rooms through the ventilation system. Another issue of patient integrity concerns the visit and stigma around meeting with certain healthcare providers.

5. POSSIBLE CONTAMINATION

Within the healthcare system, infections must be contained and not accidentally spread. Making the logistics and flow of goods and staff quite important.

6. UNUSED SPACES

The characteristics of a healthcare building, with strict rules for disinfection and speciality equipment, make renting out spaces when the centre is closed close to impossible. Additionally, the great variety of rooms and equipment necessary can result in empty spaces for long periods, costing a lot of extra money.

DESIGN STRATEGIES

EBD & HEALTH PROMOTION



1 HEALTHY INDOOR CLIMATE

A third of workers report that ventilation affects their productivity, and research has found that noise levels and daylight impact our well-being and productivity. However, a good flow of air and temperature regulation can prevent the spread of diseases and increase the longevity of a building⁶⁷.



1 2 CONNECTION TO NATURE

Nature is proven to decrease the recovery time and as a stress relief in the everyday lives of patients and staff⁷. The connection can be physical or visual to have a positive effect.



3 INTERGENERATIONAL MEETINGS

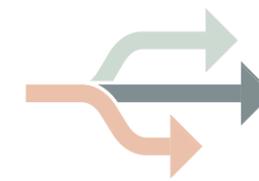
There is documentation on the physical and mental benefits of activities between children and the elderly. The design is made with this in mind, creating spaces for the elderly and children to utilize together.

BRIEF & LOGISTICS



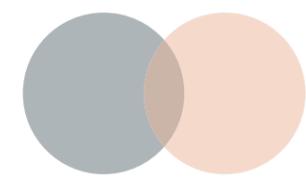
4 5 EASY NAVIGATION

A central waiting area with access from multiple directions and easy access to the units will allow for easy navigation for patients and staff.



5 SEPARATED FLOWS

External flows will be separated to prevent injuries, spread of infections and to ensure easy navigation of the building. Internally staff and patients are divided through a two-corridor system.



6 CO-USE OF SPACES

By merging spaces of similar kind and separating areas by function, spatial needs decrease. For example, separating the spaces for examination of patients and administrative work.

ISSUES OF CONCERN

7. ARCHITECTURAL INTEGRITY OF THE AREA

The site of Vadstena, especially the Birgitta Hospital Area, has a long history and many historical buildings that have impacted the area architecturally.

8. FUNCTIONALITY OF EXISTING BUILDING

As previously mentioned, the building on site has been determined not to fit the functionality of a modern primary care centre. However, we should consider the functionality and possible use of the materials in the new building.

9. BIRGITTA SQUARE AS A BARRIER

Today, Birgitta Square is an outdoor space for the preschool in Lekbrodern 3. The square was previously a waypoint on the main axis through the hospital area but has slowly lost its significance.

10. ENVIRONMENTAL IMPACT

The impact of a building, for example, materials and energy systems, on the environment is considerable and must be assessed. But the effect of the environment on the building and the site must also be regarded in the design.

11. INCREASE IN E-HEALTH

An increased number of healthcare visits are taking place over the internet. But with a large senior population and the possibility of people not having access to the internet from home, this change can widen the barriers for people to access healthcare.

12. FUNCTIONALITY OVER TIME

Technological advancements and discoveries within the healthcare system will impact the spatial needs of the primary care centre. It is made evident by the move of the previous primary care centre from the older hospital buildings to a new one.

DESIGN STRATEGIES

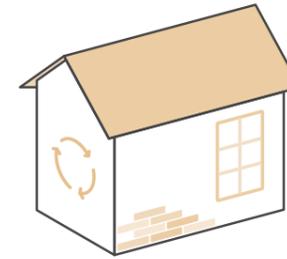
SITE & CONTEXT



7

RESPECT FOR HISTORICAL BUILDINGS

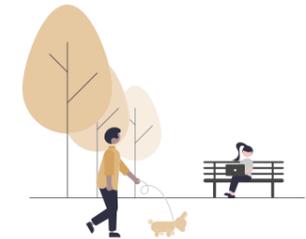
Most buildings in the area are placed along a grid, have a hipped roof at about 30 degrees, and have a facade of bricks. Thereby, the new primary care centre will mostly follow the same principles as a way to respect the context.



8 10

REUSE OF BUILDING MATERIALS

As part of Lekbrodern 3 is demolished, the design of the new primary care centre will reuse part of the old building. Examples include; the bricks as part of a display wall in the entrance hall, the roof tiles as a guard separating plants in the sensory garden, and the reusing of glass in a terrazzo floor.

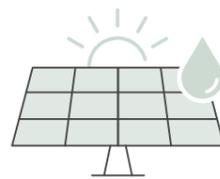


9

INVITE THE PUBLIC

The Birgitta square will reopen to the public and connect to the café and music school in Lekbrodern 3. Other ways to invite the public will be through the different gardens and paths in and outside the buildings.

SUSTAINABILITY & FUTURE PROOFING



10

UTILIZATION OF NATURE

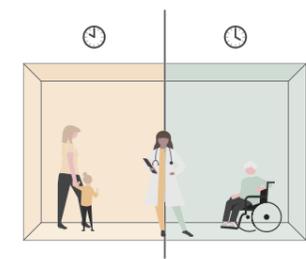
The optimal placement of solar panels commands the positioning of the buildings along the west-east axis to maximize roof area towards the south. The rainwater, which is quite significant in Vadstena, will be collected in ponds on-site to improve soundscape and views.



11

DIGITAL ROOMS

To counteract the possible barriers caused by the increased number of healthcare providers moving online. There will be spaces for the public to access these services and enable them to upload metrics from their digital devices and check, for example blood pressure on their own.



12

FLEXIBLE AND MULTI-FUNCTIONAL SPACES

A big part of the work done by healthcare professionals is admin, and some units have a low number of patients. Thereby, the design is organized in a way to separate and makes spaces more general for use by different professionals.

CONCEPT

The overarching idea behind "A Sense of Relief" is to improve the public health through sensory experiences. Research has shown that engaging in activities engaging our sense can decrease our stress levels⁸. An issue that an increased number of people seek help for and could, in some cases, be prevented.

PATIENTS

The intent is to allow the patients to engage in sensory experiences before, during and after their visit to the primary care centre.

As you approach the building, you pass by an area of vegetation and rainwater ponds, producing a collection of calming melodies. From the water flow downstream to the bigger pond in the sensory garden, the birds chirp from the trees and insects look for food. The various musicians, the bird, the butterfly or the leaves also act as part of the visual stimuli. In the warmer months, the trees provide shade, and water evaporation from the ponds cools the air.

In the central waiting area, there are options for people to wait in different sections depending on their preferences. Maybe you like to listen to the people around you, or you'd rather sit in a quiet space with a book, either way, there are options for both. Additional features in the waiting area include the recycled bricks from the demolished building on site; a bumpy and textural experience along one of the walls.

The views from the waiting area were carefully considered in the design. As you walk to see the doctor or nurse, there's always a window at the end to bring in light and views of the surrounding nature.

After the visit, there is always the option to take a walk through the sensory garden, where the different paths make it easy for people to choose how many and what sensory experiences they would like to have.

Additionally, as evidence has shown nature reduces recovery time, the possible extension of the primary care centre is placed with views over greenery.

STAFF

There is a general need for more healthcare professionals, and though the design of the spaces cannot solve the crisis, it can impact the individuals torn between multiple workplaces. Increased flow efficiency and an improved indoor climate can benefit the workers and make their work more efficient. Not to mention how the visual and physical connection to nature can reduce stress levels.

FAMILIES & SENIORS

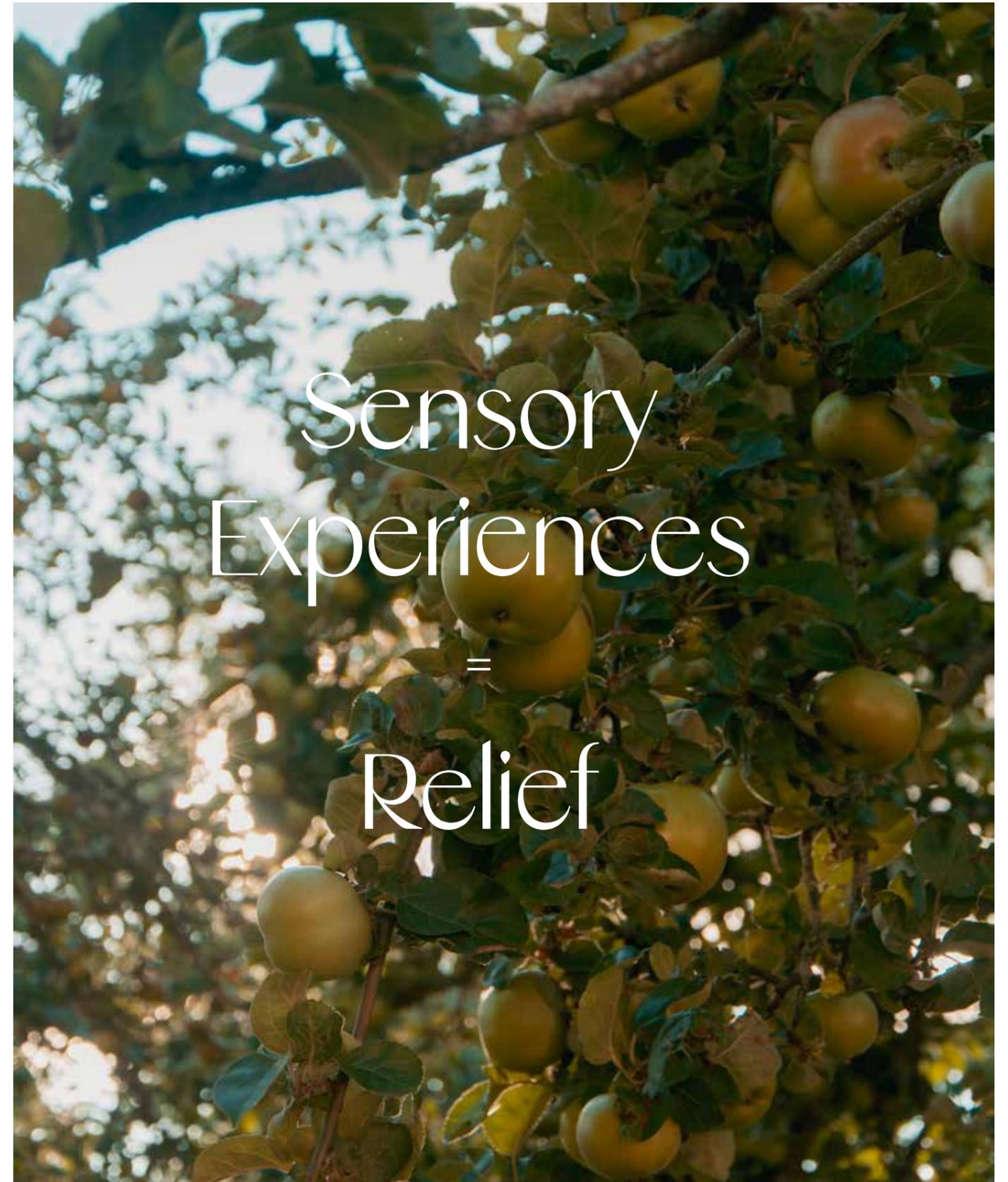
With a large senior population in the area there's a need to focus on the seniors and make a specific space for them within the primary care centre. In collaboration with the unit for children and families, both age groups will have a close connection to the sensory garden and junglegym where there will be plenty of sounds, smells, textures and sights to experience.

PUBLIC

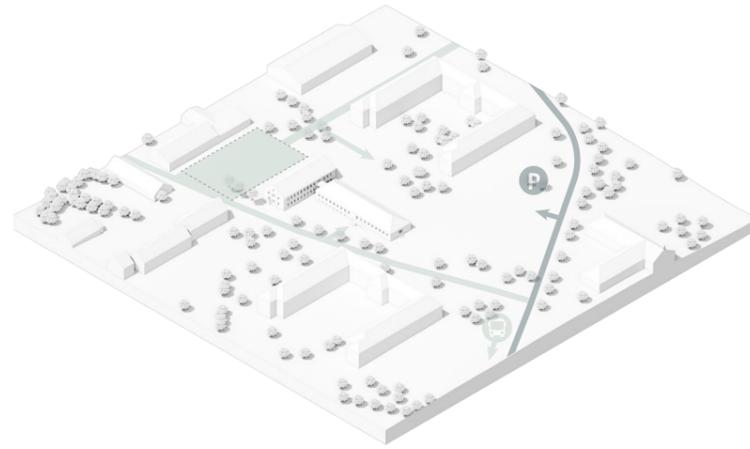
The intention of the sensory garden was for it to be accessible for the staff and patients but also for the public. To ensure easy navigation and access, the sensory garden is parallel to the path connecting the hospital area to the city centre, with multiple entrance points.

The outdoor space is, as previously mentioned, separated by its different characteristics and functions. Toward the east and the highest point on site will be the ponds collecting the rainwater before moving downstream to the bigger pond in the sensory garden. The stream of water follows along the more strict but still green and active green strip that connects the two areas and the playground in the south on its way to Birgitta Square.

Finally, the primary care centre is equipped with spaces for remote nurses to have a fixed place of work between visits and digital rooms for patients to access the right kind of care for them with a little less hassle.

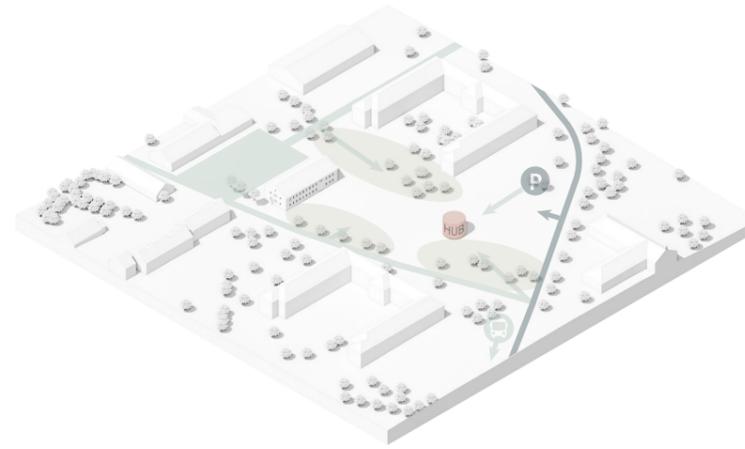


Sensory Experiences = Relief



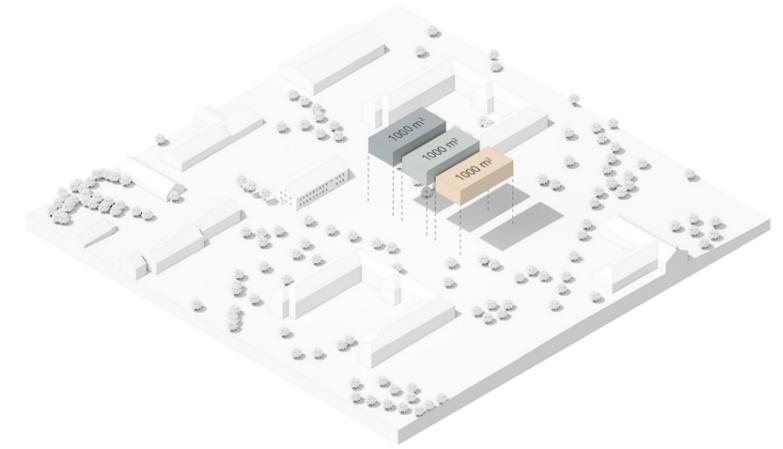
CURRENT SITUATION

Main flows are along the green path chiefly for pedestrians and cyclists connecting the area to the city centre and along the blue street that is the main entrance for cars into the area.



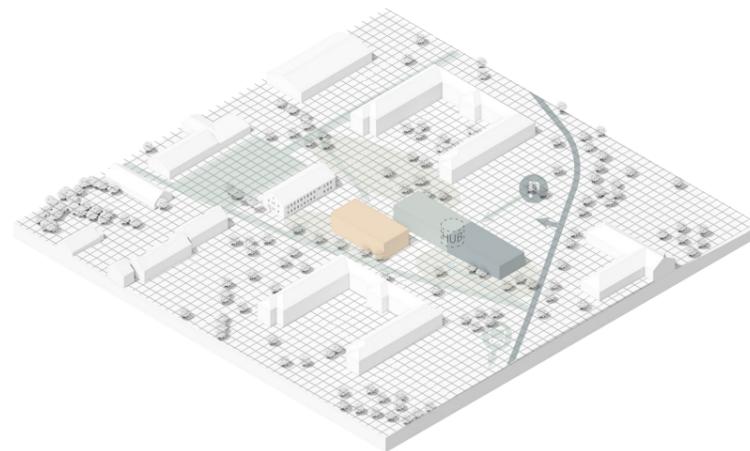
NEW FLOWS

The new function of the site as a primary care centre will introduce new flows of people from the bus stop in addition to the flows that will result from the opening of Birgitta square to the public and the introduction of a new café.



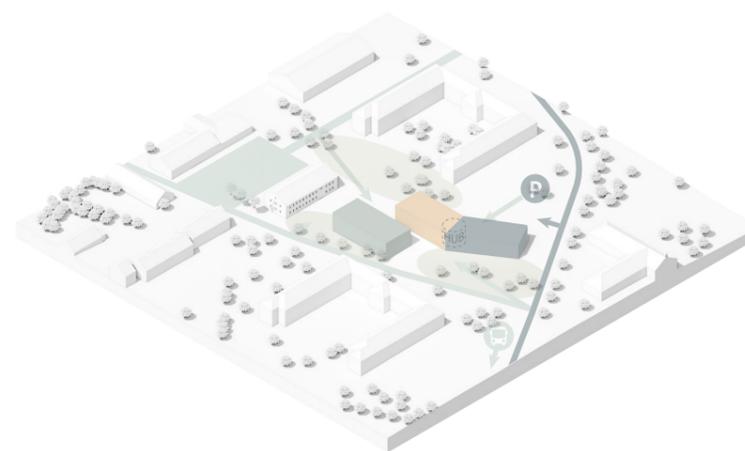
ADDED VOLUMES

The size expressed in the brief is of 3000 m² + an additional 500 m² extension (not shown here), each volume illustrates a surface area of 500 m², which in volumes of two levels equals 1000 m².



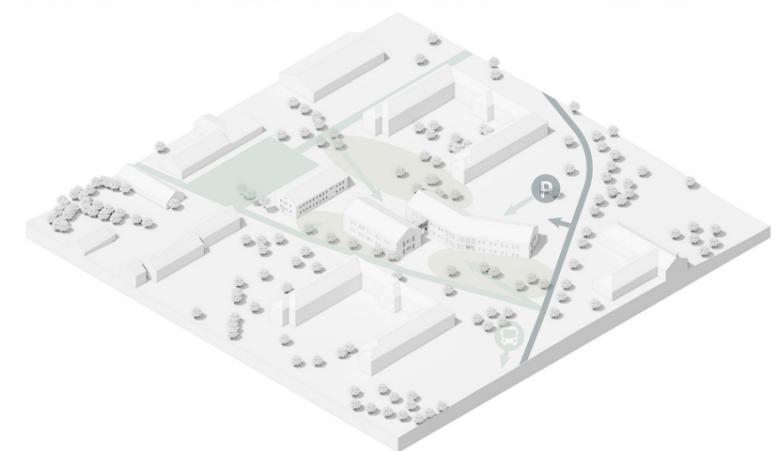
ORTHOGONAL PLACEMENT

The placement of the volumes is along the grid in the area. Due to the historical context and to provide a large surface area towards the south for solar panels. The spaces are split into two volumes to connect the green areas on site and make a green path through the area.



ROTATION OF VOLUMES

The larger volume is sliced and rotated 30 degrees to open up the green area toward the south-east and define the space in front of the building and will be the first encounter of the centre for people coming from the bus stop or by car.



ROOFING

With respect to the surrounding buildings, the new primary care centre is complete with a hipped roof at similar angles as those around it. An angle which is also beneficial for the installation of solar panels.

BRIEF

INTENTIONS

SPACE OPTIMIZATION

The administrative and patient care part of examination rooms can be separated to reduce the spatial needs. This separation facilitate the replacement of some examination rooms by offices, reducing the need for special equipment and square metres.

SPACE FOR THE ELDERLY

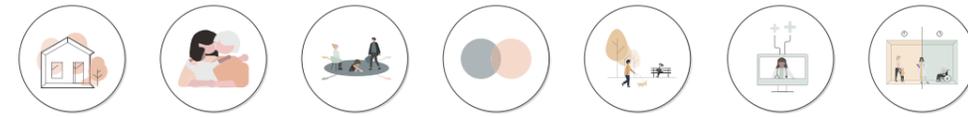
The senior population of Vadstena is presented with a separate space to meet different professionals regarding all issues. By combining the new senior- and family centre, there is a reduced spatial need and facilitation of meetings between generations.

BROADER RANGE OF CARE

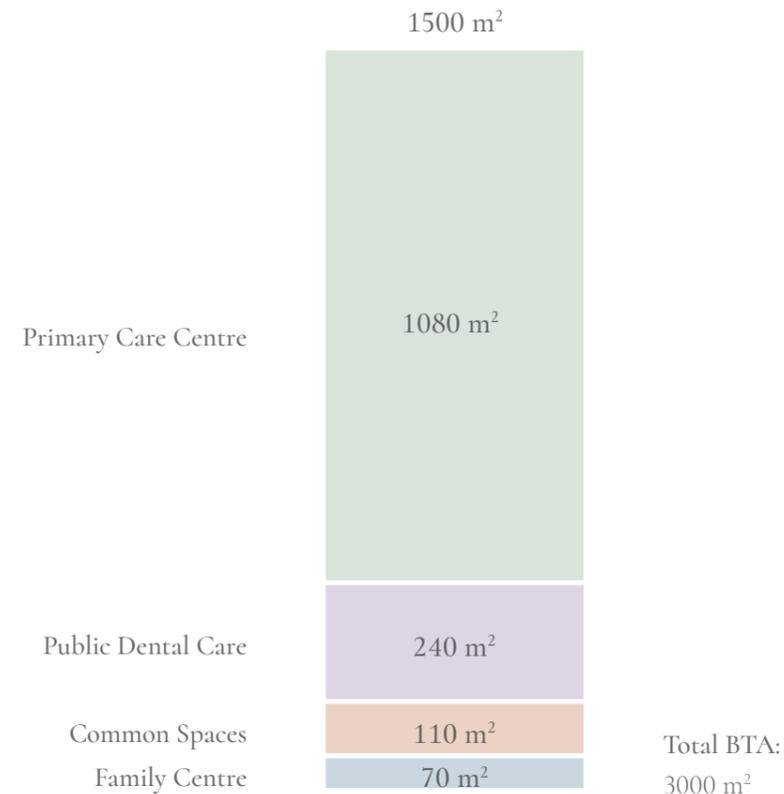
As society changes, so do our care. An increased number of healthcare visits are happening online. A shift that the design of new healthcare facilities must reflect. Other issues include a growing elderly population and the possibility of people needing access to care in their homes. In response, the new healthcare facility includes spaces for remote nurses between home visits.

INVITE THE PUBLIC

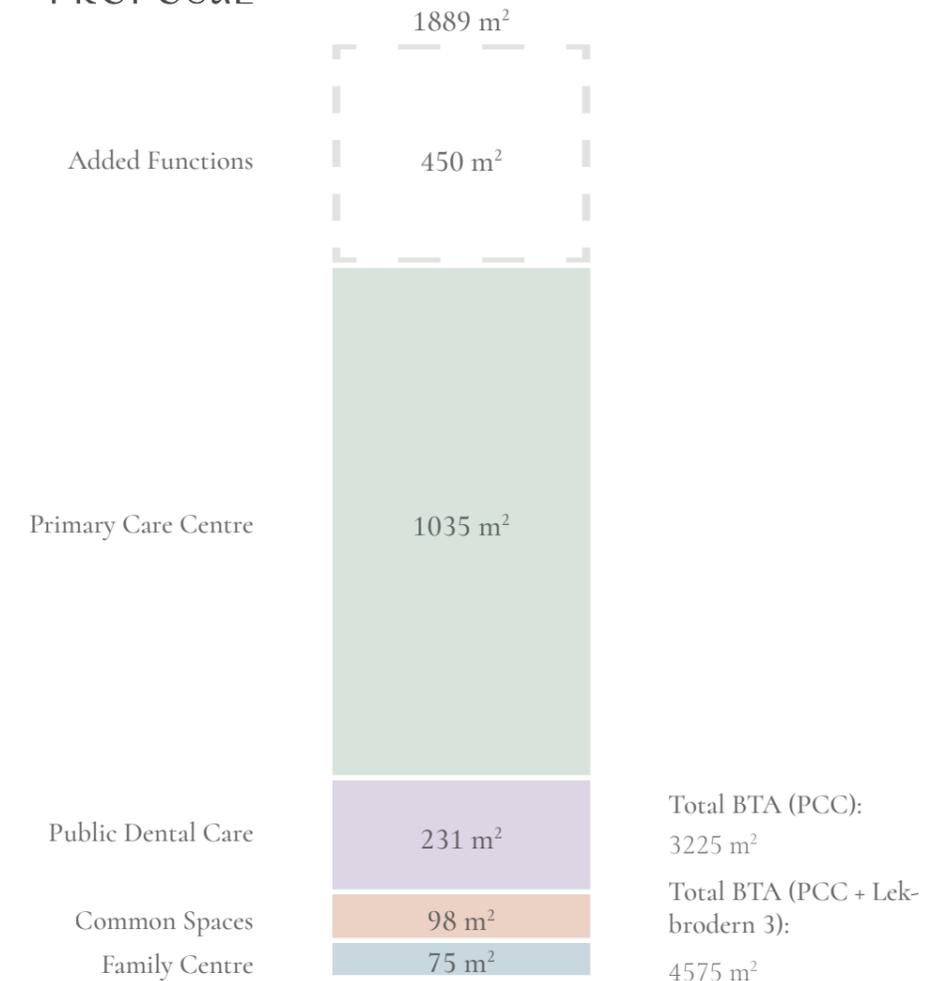
With the renovation and reorganizing of Lekbrodern 3 and Birgitta Square, there's an aim to invite the public into the new café. In addition to making the music school more accessible and visible in the city.



ORIGINAL BRIEF



PROPOSAL



PRIMARY CARE

	Brief	Difference	Proposal
Staff	133 m²	-19 m²	114 m²
Childcare / BVC	97 m²	-1 m²	96 m²
Lab	55,5 m²	+6,5 m²	62 m²
Reception / Waiting	71 m²	+30 m²	101 m²
Emergency / Triage	67 m²	+8 m²	75 m²
Administration	109 m²	-5 m²	104 m²
Psychosocial Reception	50 m²	-8 m²	42 m²
Nurses	123 m²	-55 m²	68 m²
Doctors	275 m²	+32 m²	307 m²
Support Functions	72 m²	0 m²	72 m²
Total	1080 m²	-45 m²	1035 m²

BRIEF / LOGISTICS

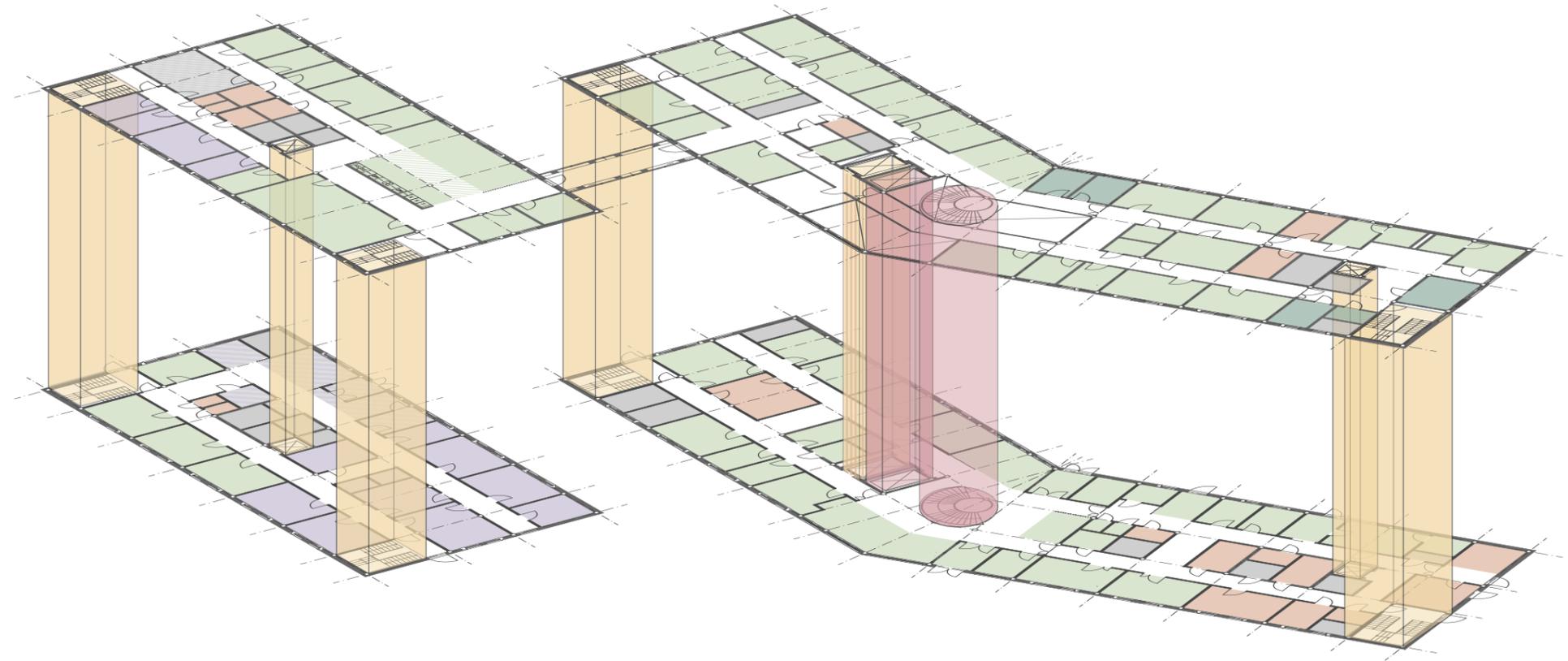
Displayed here are the vertical connections between the two floors of the new primary care centre.

SMALL BUILDING

In the small building (to the left) there are two staircases and one elevator for it to function independently of the large building if need be. The vertical connections in the small building are for staff only.

LARGE BUILDING

In this building, are the only two connections between the floors for patients located. They can move between floors via the main staircase or the two elevators beside it. One of the elevators in the big hall is double-sided to allow staff and goods to move between the two doctors' units without having to walk to the staff-only elevator in the small building or the east wing.

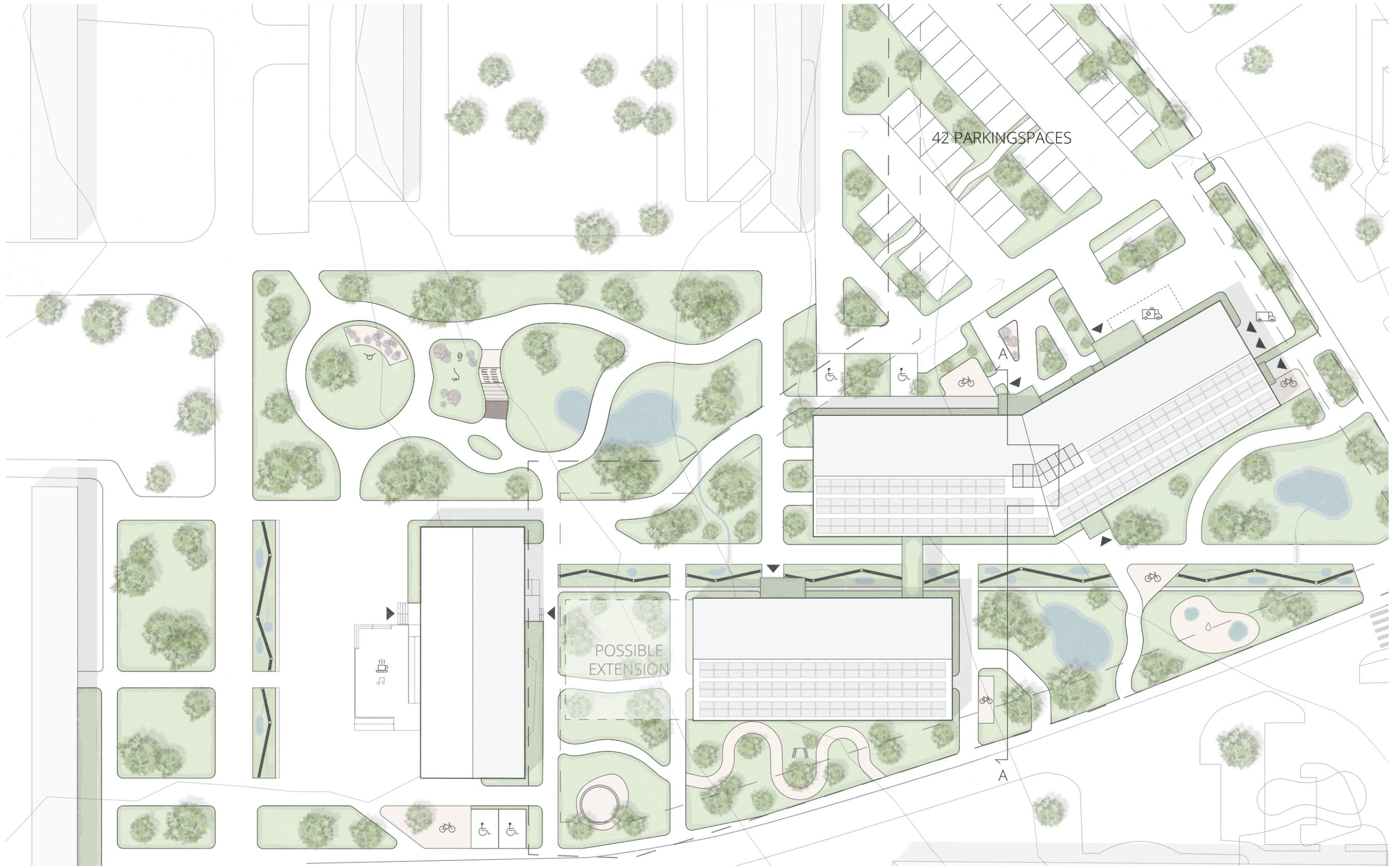


LEGEND

 Primary Care	 Technical
 Dental	 Added Functions
 Common	
 Patients	 Emergency
 Staff	 Goods



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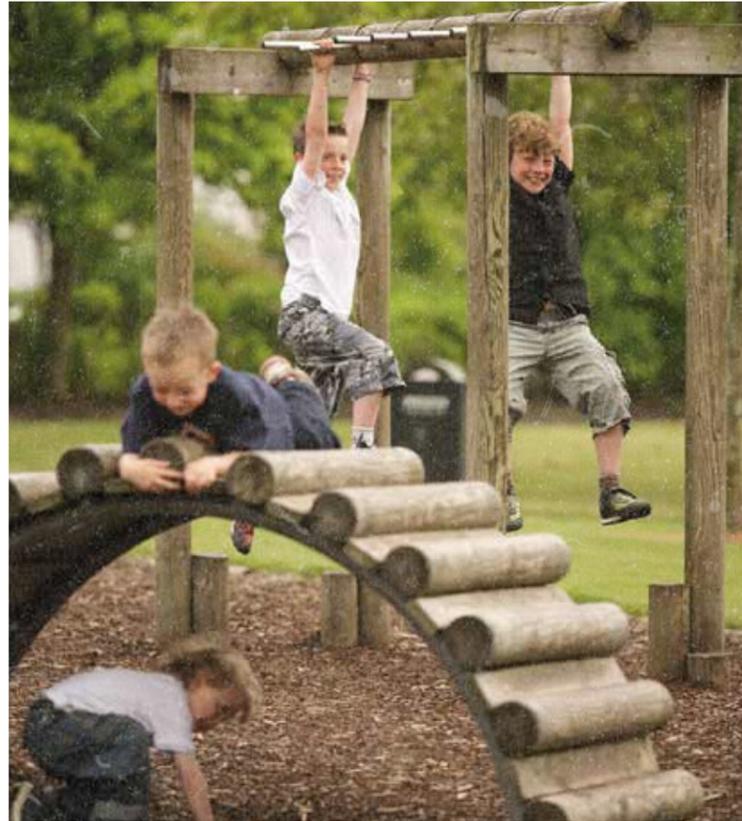




SENSORY GARDEN



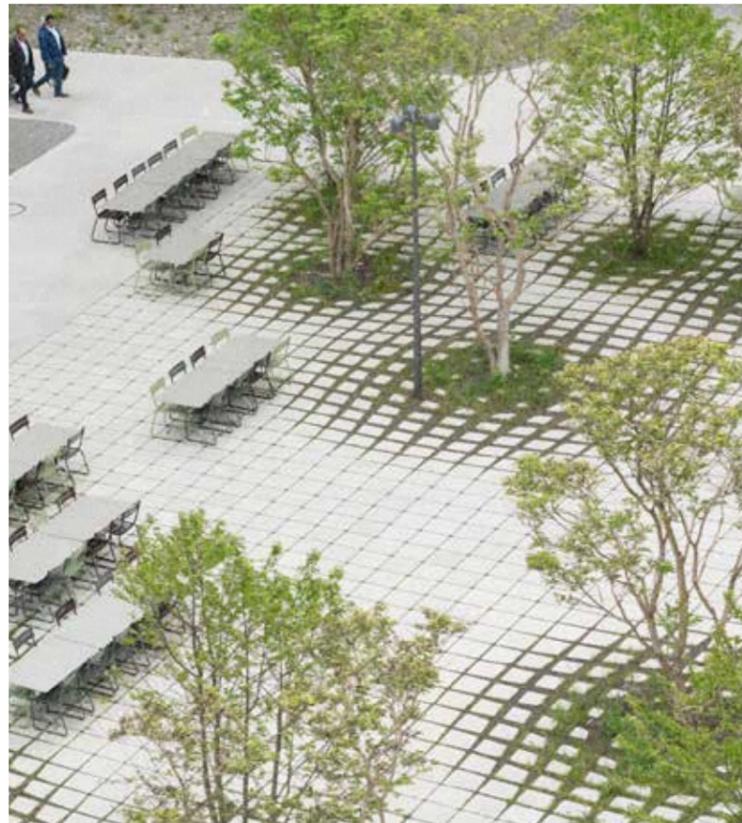
PLAYGROUND



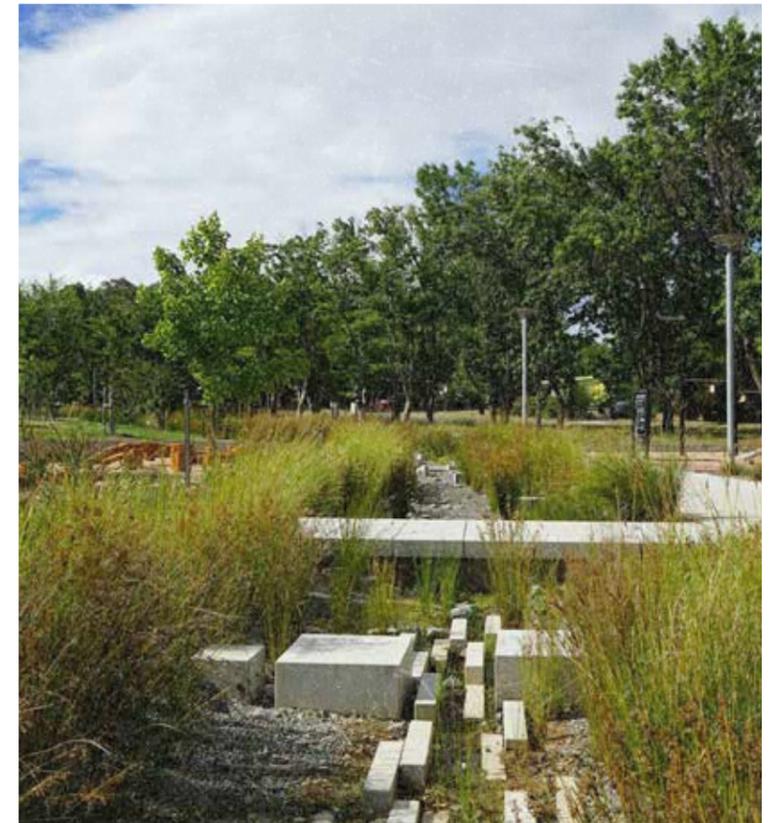
GREEN STRIP



BIRGITTA SQUARE



BUFFER ZONE



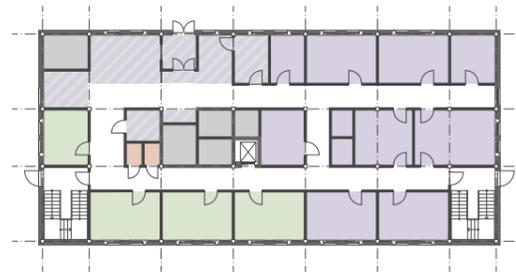
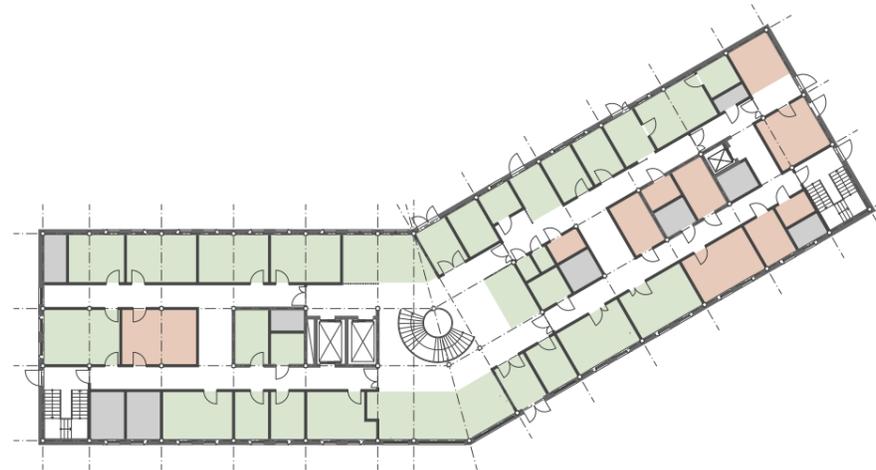




LEGENDS

1. Windcatcher
2. Reception
3. Back-Office
4. Waiting Area
5. WC / RWC
6. Wheelchair / Stroller Storage
7. Examination Room
8. Office / Communication Room
9. Sampling
10. Analysis
11. Disinfection
12. Copy Room
13. Storage
14. Cleaning
15. Recycling
16. Unpacking
17. Security
18. Technical - Dental
19. Electricity
20. Ventilation
21. IT
22. Tele
23. Water / Heating / Sewage

- | | |
|--|---|
| Primary Care | Common |
| Dental | Technical |
-
- | | |
|--|---|
| Patients | Emergency |
| Staff | Goods |



LAYOUT

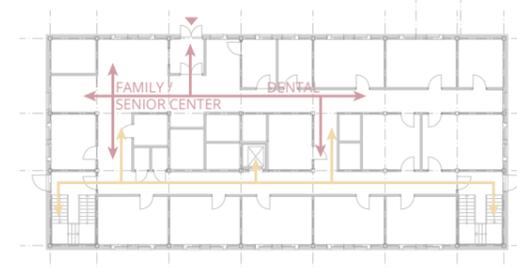
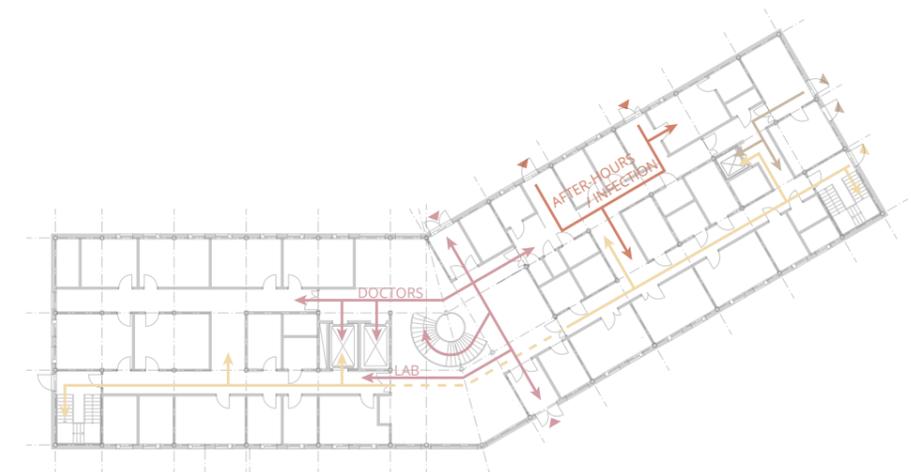
The general idea for the layout of the ground floor was the placement of common functions involving cleaning staff and goods toward the road in the east. In addition to placing the patient-centred functions; lab, examination room and possibly after-hour clinic, around the central waiting area. One room that negates this idea is the disinfection room in the west, which is placed close to the operating room (to the left of it).

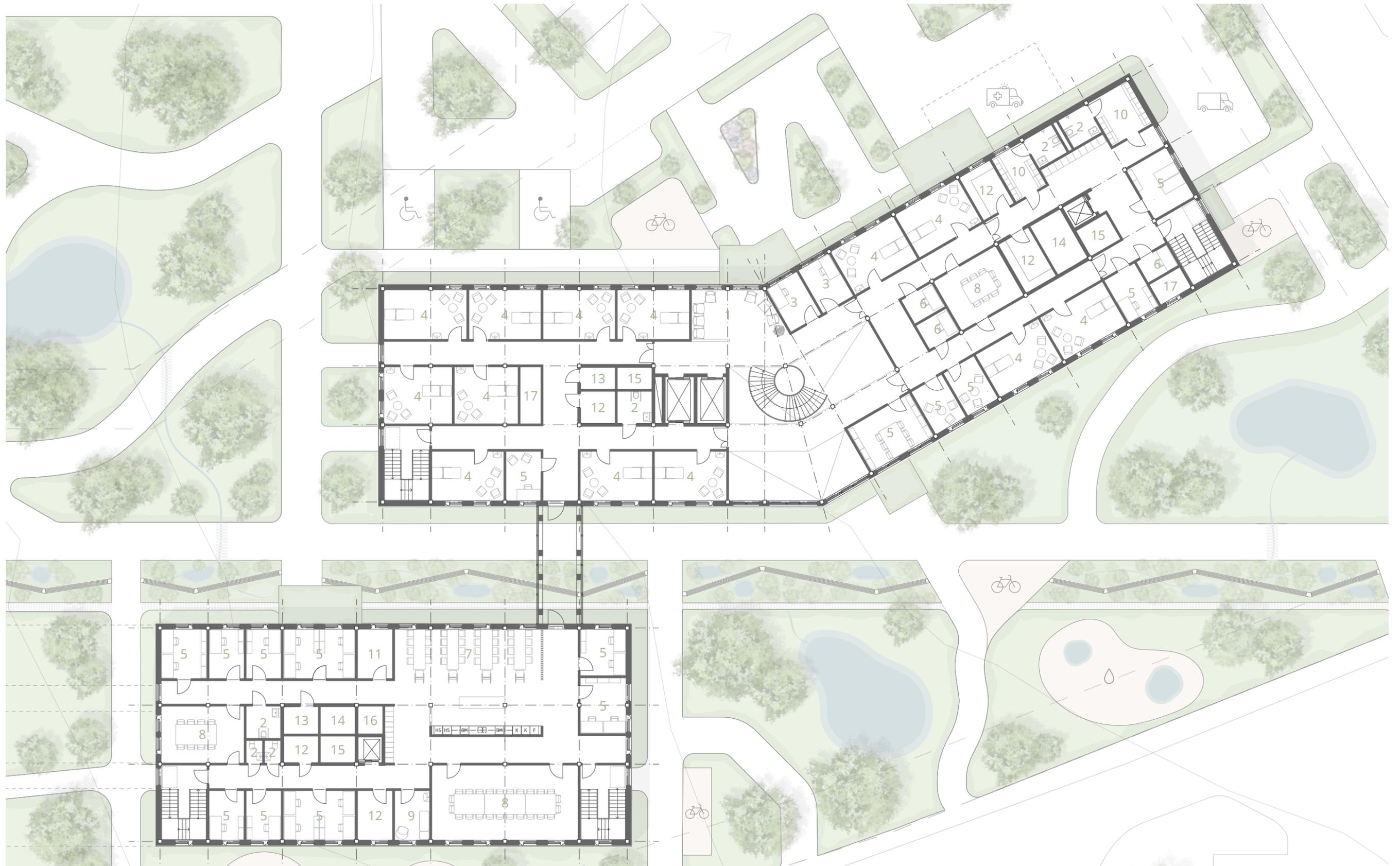
In the smaller building, the family / senior centre is placed toward the west as there will be a flow of people between the centre and the activity rooms in Lekbrodern 3. The location is also very close to the playground, likely be used by many children before and after visits.

FLOWS

On the ground floor, there is a combination of different flows.

- Goods are moved in and out of the building toward the east. In an area with a separate elevator for staff and goods to seamlessly move goods between floors and onwards.
- Staff enter from the same side with direct access to the second floor and the changing rooms but can also move along the southern corridor to the emergency / after-hours clinic or further to the doctors' unit and lab on the ground floor.
- Emergency and infectious patients are also located in this wing to keep them isolated and enable easy access for the ambulance to come and go.
- Patients enter through the main hall and can move to the unit they want or walk through and toward the family / senior centre and public dental care.







SCALE 1:500

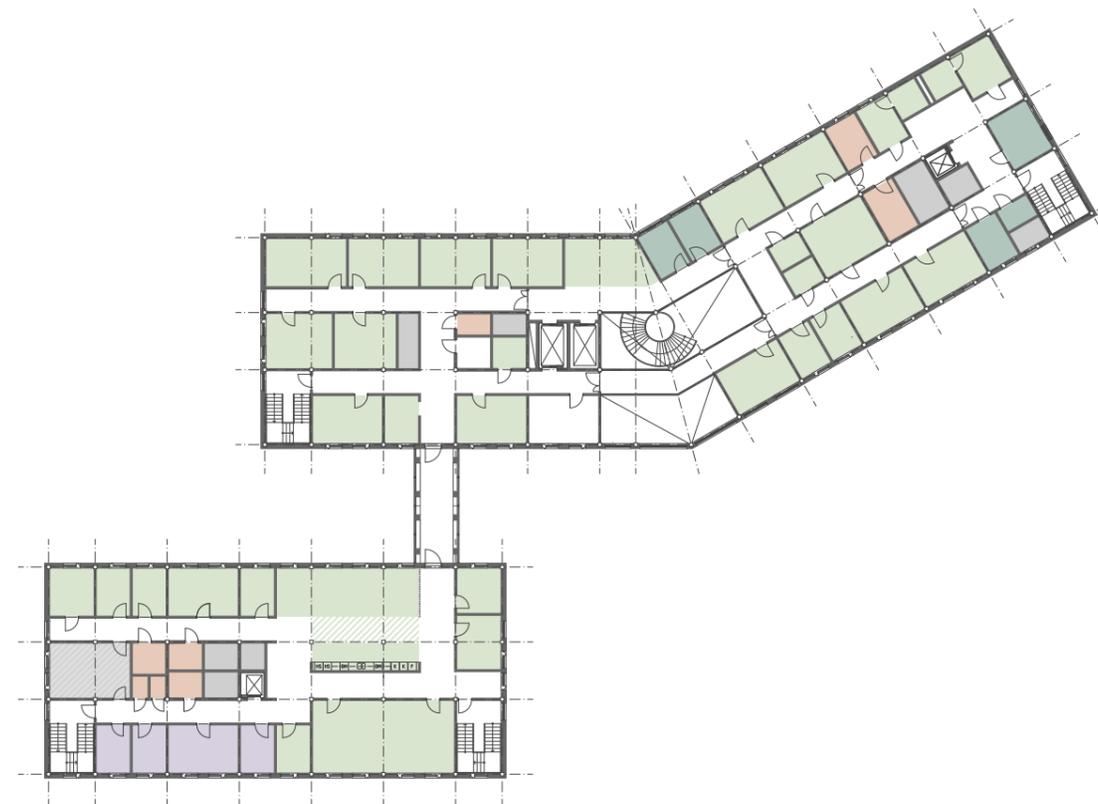


LEGENDS

1. Waiting Area
2. WC / RWC
3. Digital Room
4. Examination Room
5. Office / Communication Room
6. Focus Room
7. Staff Kitchen
8. Conference Room
9. Resting Room
10. Changing Room
11. Copy Room
12. Storage
13. Cleaning
14. Electricity
15. Ventilation
16. IT
17. Tele
18. Water / Sewage / Heating

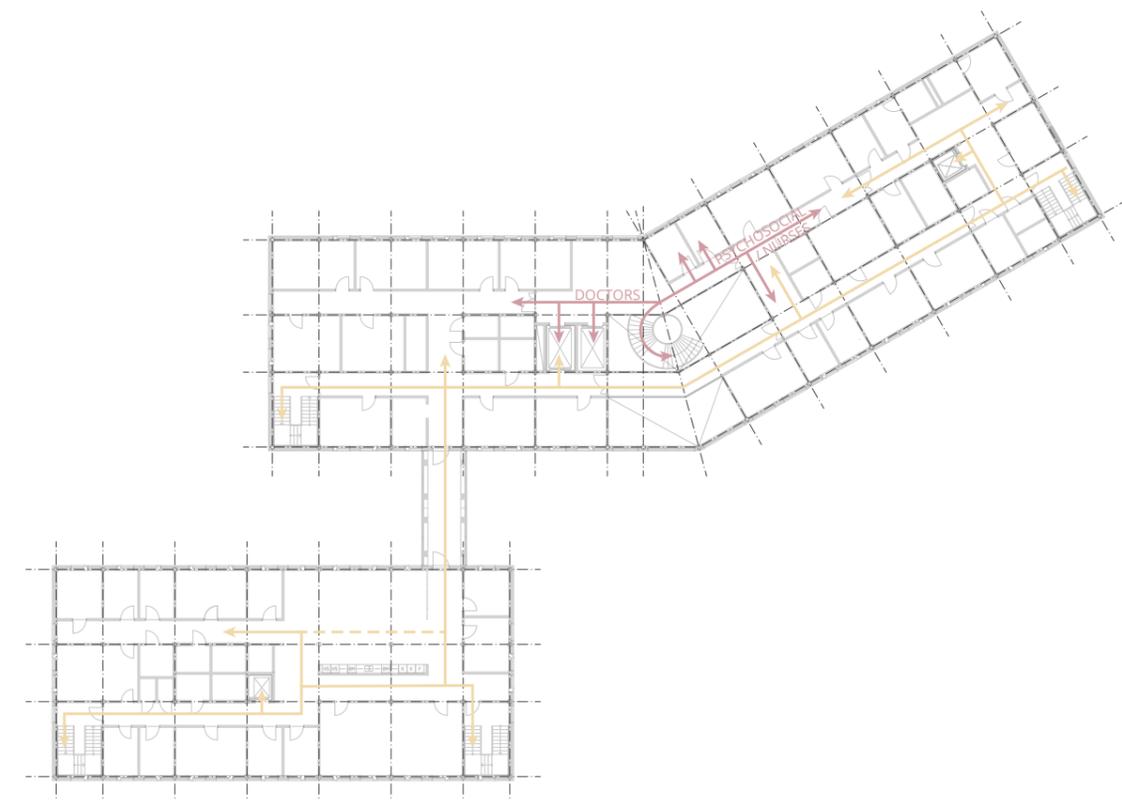
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|---|--|
| Primary Care | Technical |
| Dental | Added Functions |
| Common | |

- | | |
|---|--|
| Patients | Staff |
|---|--|



FLows

On the first floor, the general idea was to separate the staff and patient flows. The main corridor for patients is toward the north, and staff in the south, with exceptions for the east wing and the small building where staff occupy the whole width of the volume.



LAYOUT

The layout of the large building is quite similar on both floors, with common and staff functions placed in the east, interspersed with offices for remote nurses in the east and digital rooms for the public in connection to the waiting area.

The first floor of the small building is assigned to staff. As you enter from the large structure you come right into the staff kitchen and dining room with views toward the large conference room. From here you can reach common office spaces in the east and northwest or the offices for dental care in the southwest.

LEKBRODERN 3

GROUND FLOOR

At the northern end of the building, there will be an office and two activity rooms for the family centre to occupy during the day. The rooms will be available for rent in the evenings and on weekends.

In the south, a new café will move in, collaborating with the family centre and music school. Outside, there will be an area for performances and dining in the warmer months.

FIRST FLOOR

On the first floor, the spaces will remain the same as they are today for the music school, classrooms of different sizes and offices for teachers to make lesson plans etc.

LEGEND

- 1. Air-lock
- 2. Wheelchair / Stroller Storage
- 3. RWC / WC
- 4. Office
- 5. Activity Room / Classroom
- 6. Kitchen
- 7. Dishroom
- 8. Dining Room
- 9. Cleaning

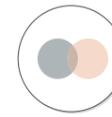


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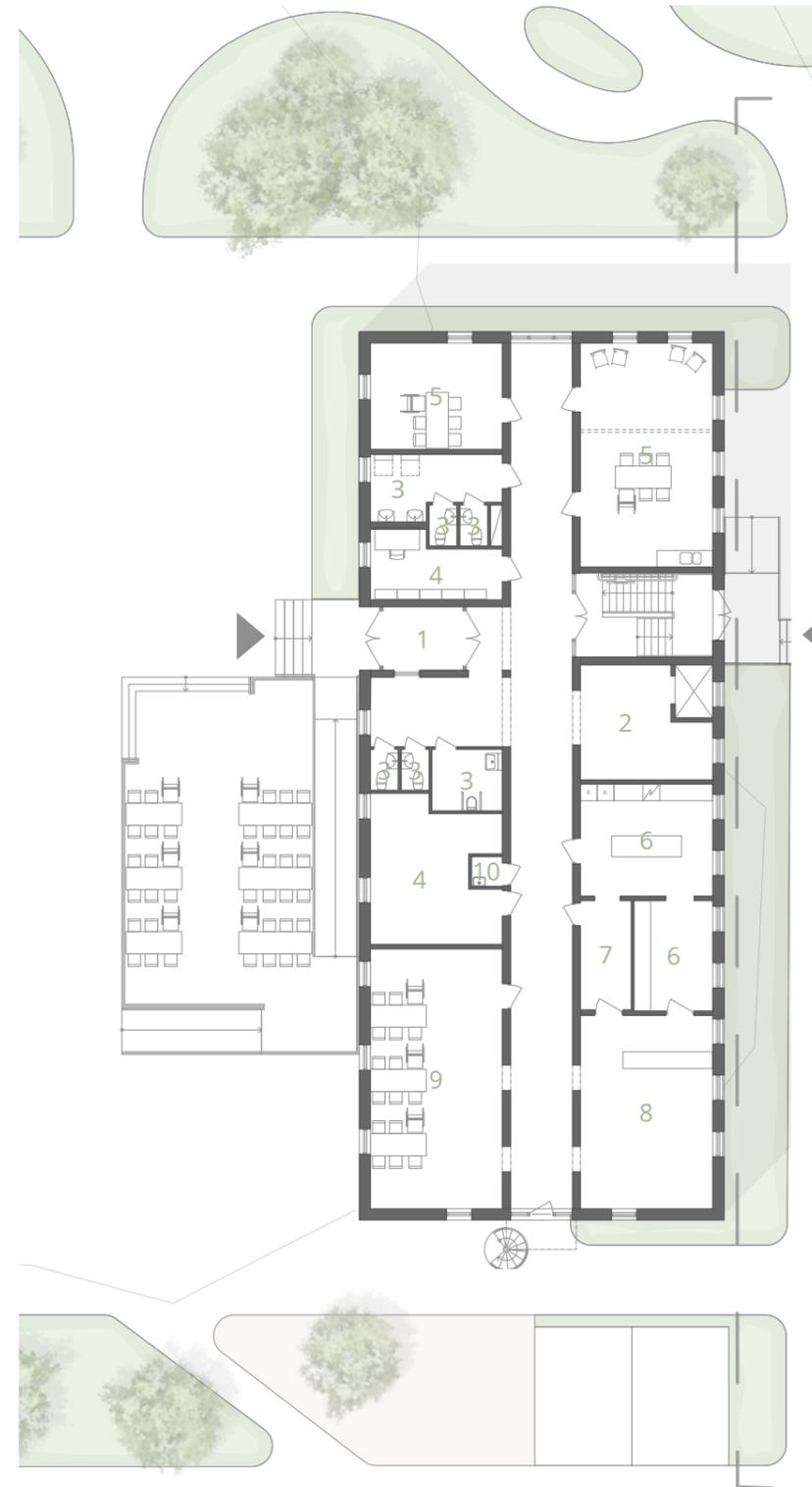


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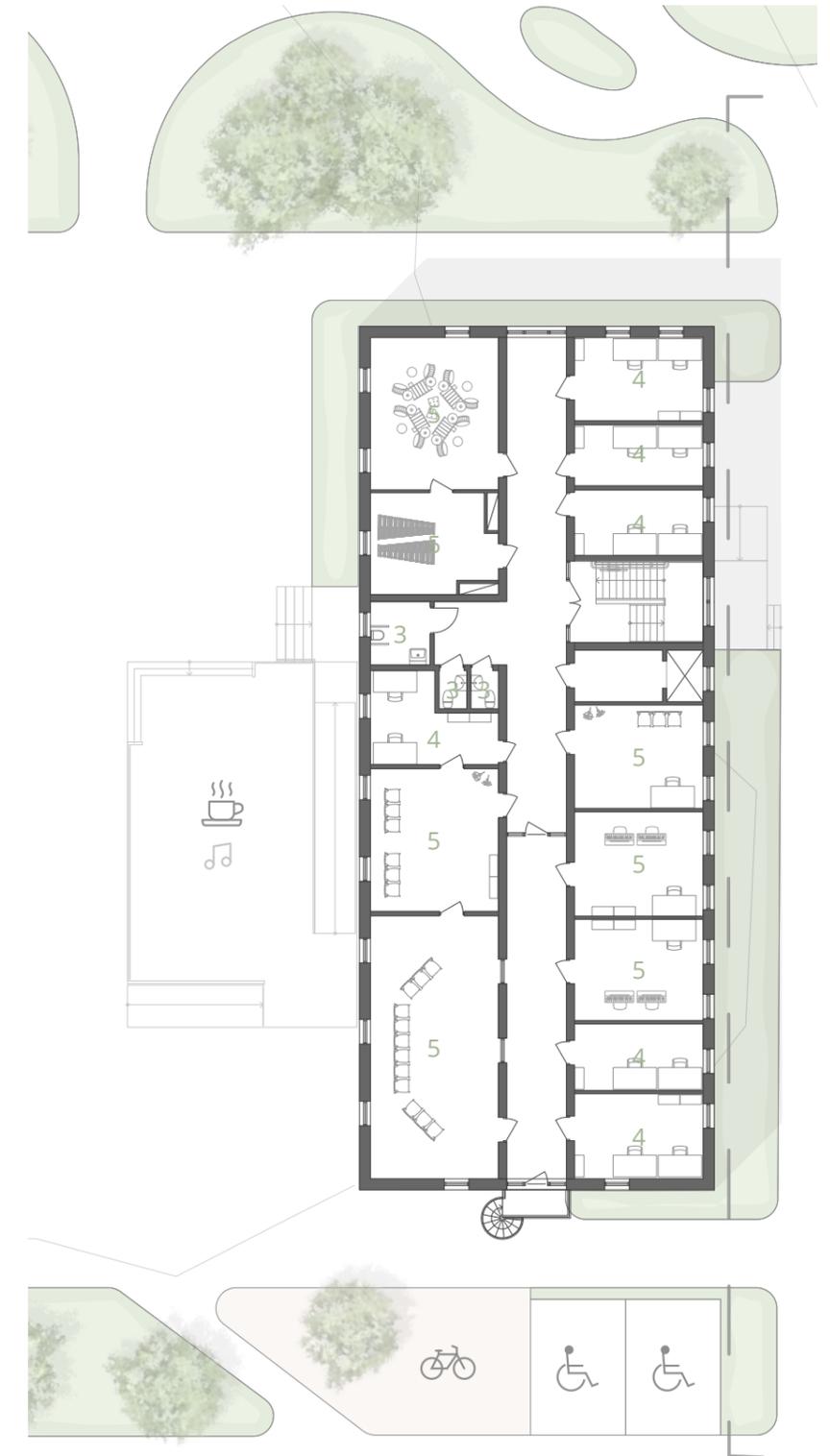
FLOORPLANS



GROUND FLOOR



FIRST FLOOR





EXTERIOR



INTERIOR



WINDOWSILL

ROOF TILES



SECTION

THE CENTRAL WAITING AREA

One part of the design strategies included to reduce the space needs for different units through co-use, including merging a majority of waiting areas into one. By doing this, the integrity of the patients will be intact as they are not separated into spaces for specific healthcare professionals and will just be called when it's their turn.

Additionally, the large space can reduce stress and spread of diseases as it allows people to spread out in different areas with different characteristics based on their preferences. From here, people are able to view the outside on either side of the building, the greenery and cars if they are waiting for a ride.

SECTION

MAIN BUILDING



MOODBOARD

Recycled Brick

RECEPTION



STAIRCASE



MATERIALS



Recycled Glass



SCALE 1:250

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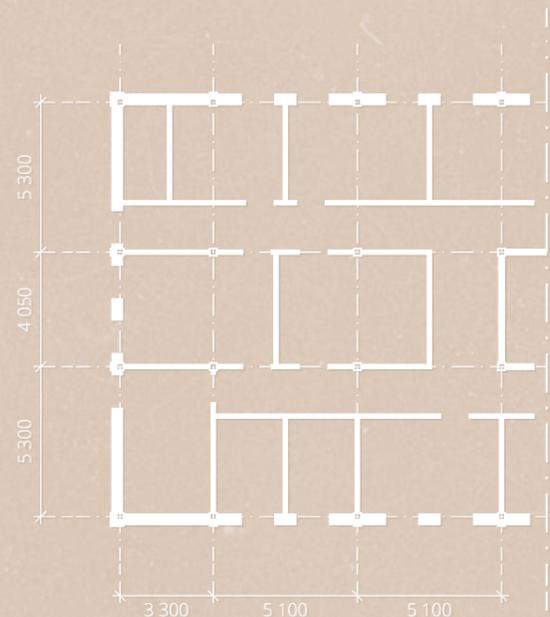
FACADE

THE STRUCTURE

The facade of both buildings follows the same rational grid as the load-bearing structure on the inside. The grid follows a spacing of 5,1 meters along the long edge, with exceptions for the end pieces. The outer sections are smaller (3,3 meters) to fit the staircases and articulate the gables.

The division of the facade using vertical columns made of bricks enhances the verticality of the building. Within each section, there are two fixed windows equipped with a ventilation hatch for automatic or manual ventilation of the rooms. The exception to this rule is the edges and the central waiting area. In the waiting area, the size of the windows is increased to emphasise the entrance as well as the connection between the inside and outside.

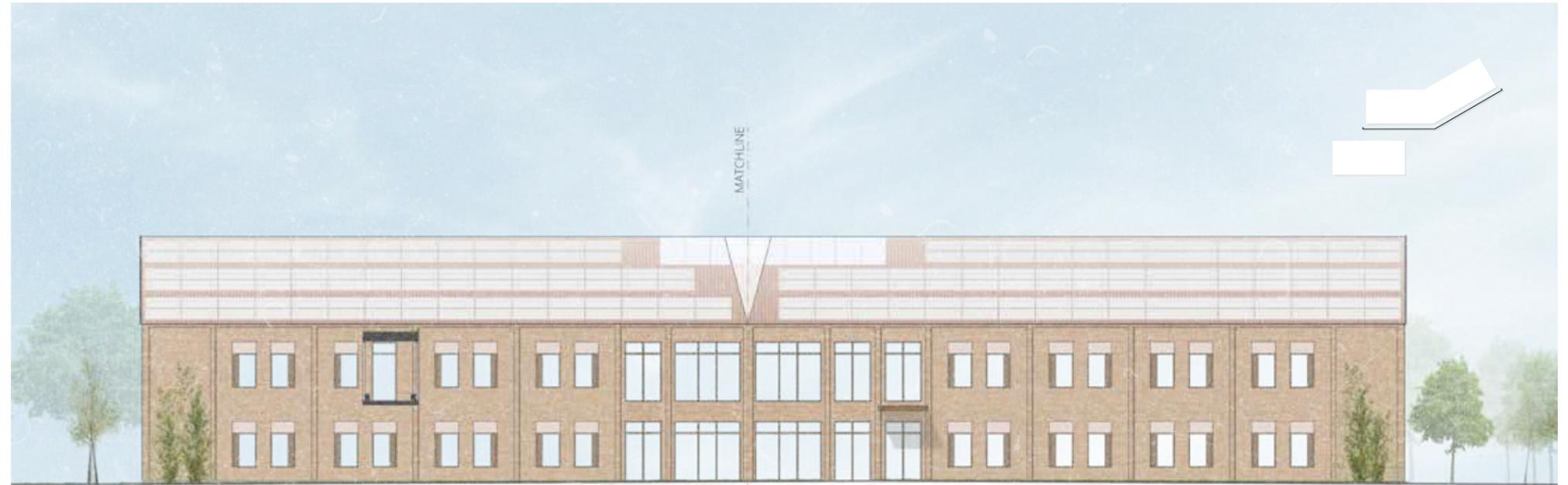
GRID / LOAD-BEARING STRUCTURE



SCALE 1:250

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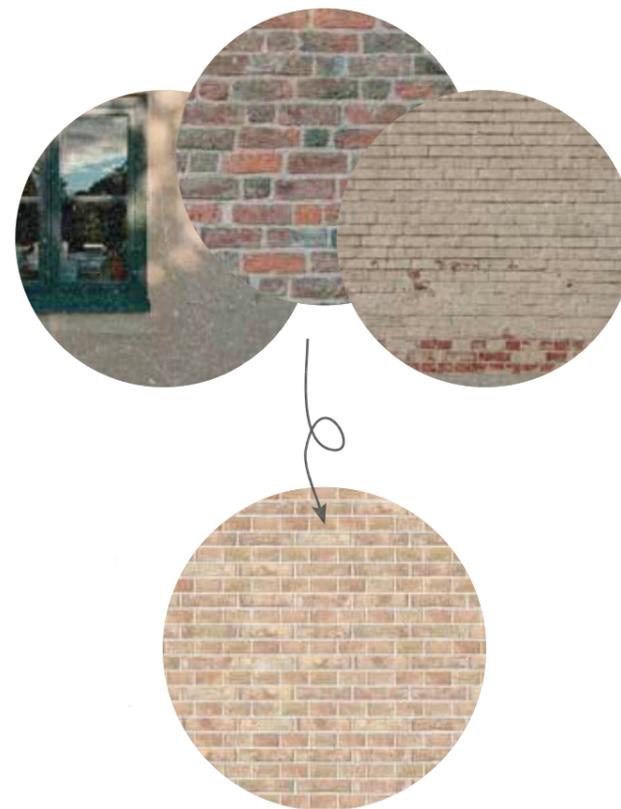
SOUTH ELEVATION MAIN BUILDING



MATERIALS

BRICKS

Based on the context of the Vadstena Hospital Area and a majority of the surrounding buildings, from that time and onward, utilizing brick as a main facade material so will the new primary care centre. To give the new buildings their own identity the type and masonry of the surrounding buildings was considered. Many of the surrounding dwellings use a red, handmade brick, occasionally covered by a light, yellow plaster. To interlink the old with the new, the new buildings will be clad with yellow/red handmade bricks and a light grey joint compound.



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A PART OF VADSTENAS CULTURAL HERITAGE





The End

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