



BIRGITTAS  
VÅRDcentral

# Birgittas Vårdcentral

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# Introduction

## I. Task & Vision



The site proposed by the community of Vadstena for a new primary care center is characterized by historical aspects such as the long tradition of healthcare facilities, topographical by several areas with different characteristics, sociological by an aging community and architecturally through clear vernacular buildings and features, present to this day.

By adding a timber top-up and extension to the existing building we believe to have accomplished a sensible and simultaneously ecologic, economic and social worthwhile transformation. Vernacular elements such as the existing brick facades, roof type and general proportions are emphasized by clearly contrasting with the light post & beam addition. The addition draws inspiration from its surroundings and interprets it for a new expression.

Apart from physical changes we propose a holistic approach to healthcare that works health promoting rather than treatment focused. Apart from ecologic and economic aspects, we also included the social standpoint. By empowering the citizens to take care of all facets of their health, the facility will aid in taking strain off of the healthcare system and facilitate the change towards a more sustainable and efficient health promoting system.

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# Site Analysis

## I. Task & Vision



### The Site

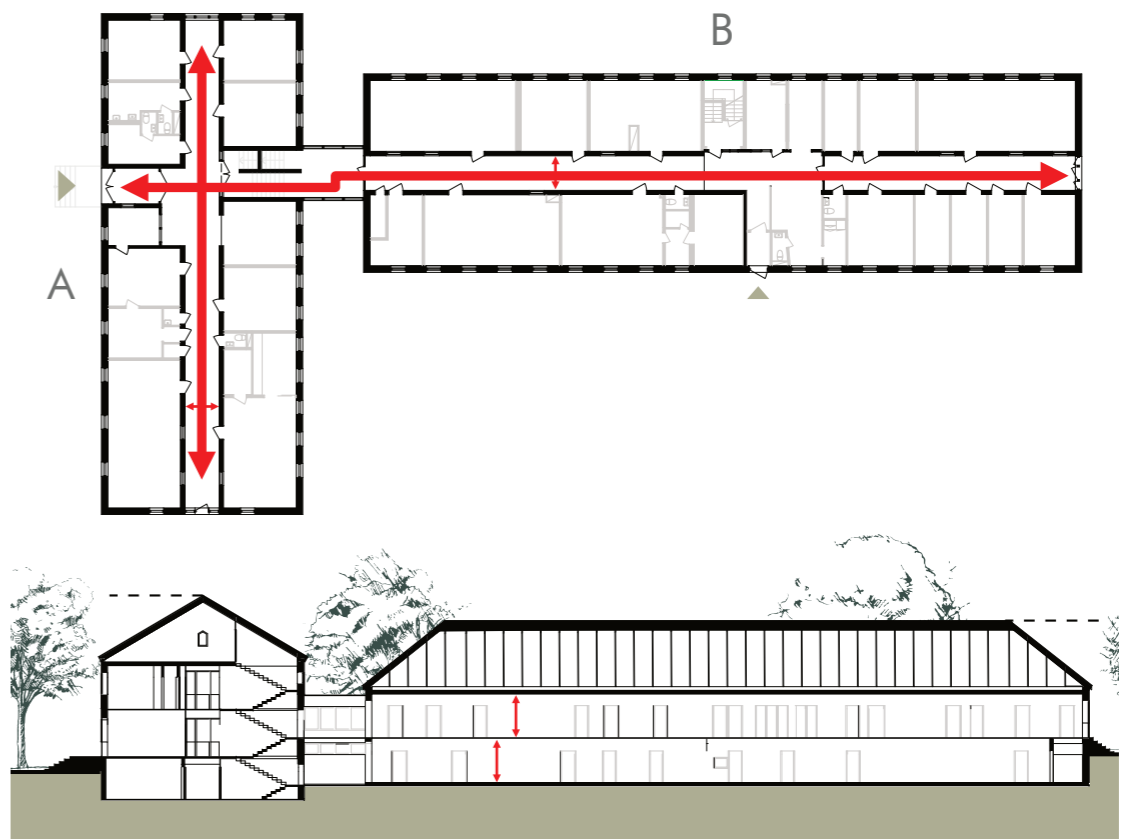
Vadstena's architectural heritage is an important aspect in this project as it is a very strong identity-forming characteristic of the city. Although only built 67 years ago, the buildings are part of Vadstena's history. They signify not only Vadstena's healthcare history but also contribute to an identity-forming development.

The plot and its surroundings are characterized by green, wide, slightly sloping landscape without any spaces for refuge or privacy.

### The Buildings

The given site contains two buildings from 1956 that are part of our proposal. Adapting the existing structures allows us to preserve resources and the stored gray energy. Their simple, yet robust layout is easily adaptable for its new purpose.

By reusing the existing structures the basement can be kept and no new foundation has to be created. According to the regulation plan no basements may be added to new developments. Preserving the basement will also facilitate the distribution of the program.



### Strengths

- Main Entrance towards Brigitta Square
- Simple layout
- Historic building
- Wide corridors (2,2 m)

### Weaknesses

- Long corridors
- Strict window grid
- Uninsulated facade/windows
- Different elevation between buildings/ground floor elevated
- Low ceiling (~2,7 m)

### Opportunities

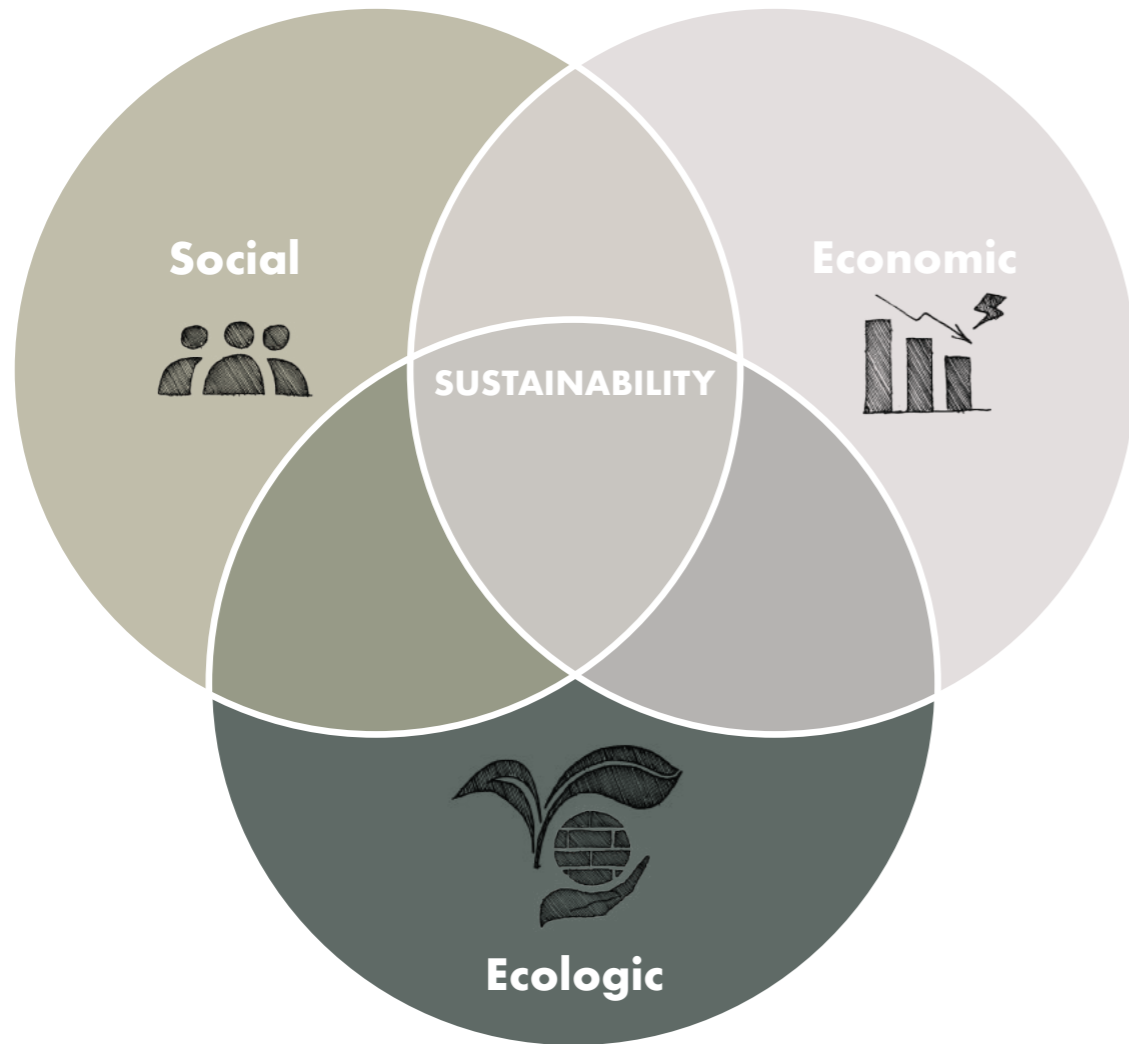
- Removable room walls (Flexibility)
- Possible addition of another story

### Threats

- No space for building services

# Design Strategies

## Task & Vision



### Social



#### Health Promotion (Design Strategy)



- **Square revitalization:** creating human centered spaces that include the community and promote health through access to shared functions such as:
  - Plant beds
  - Multi-purpose rooms
  - Refuge spaces
  - Appropriable spaces
  - Share & Repair Functions
- **Biotope:** Implementation of Evidence-based design principles including access and proximity to greenery and water.
- **Light:** Further aspect of evidence-based design ensuring generous daylight through:
  - Outfacing windows in all examination rooms
  - Atrium
  - Skylights

### Economic



#### Future Proofing (Design Strategy)



- **Digitalization:** Health corner with self-check and vital control
- **Adaptability:**
  - Jack & Jill Solution for shorter staff travel times
  - Separated flows when necessary through facade
- **Resilient Building:**
  - Flexibility: Post & beam construction allowing easy resizing
  - Natural ventilation due to less susceptibility to malfunction and less maintenance
  - Elasticity: Ensuring extension of the building in the future.

### Ecologic



#### Circularity (Design Strategy)

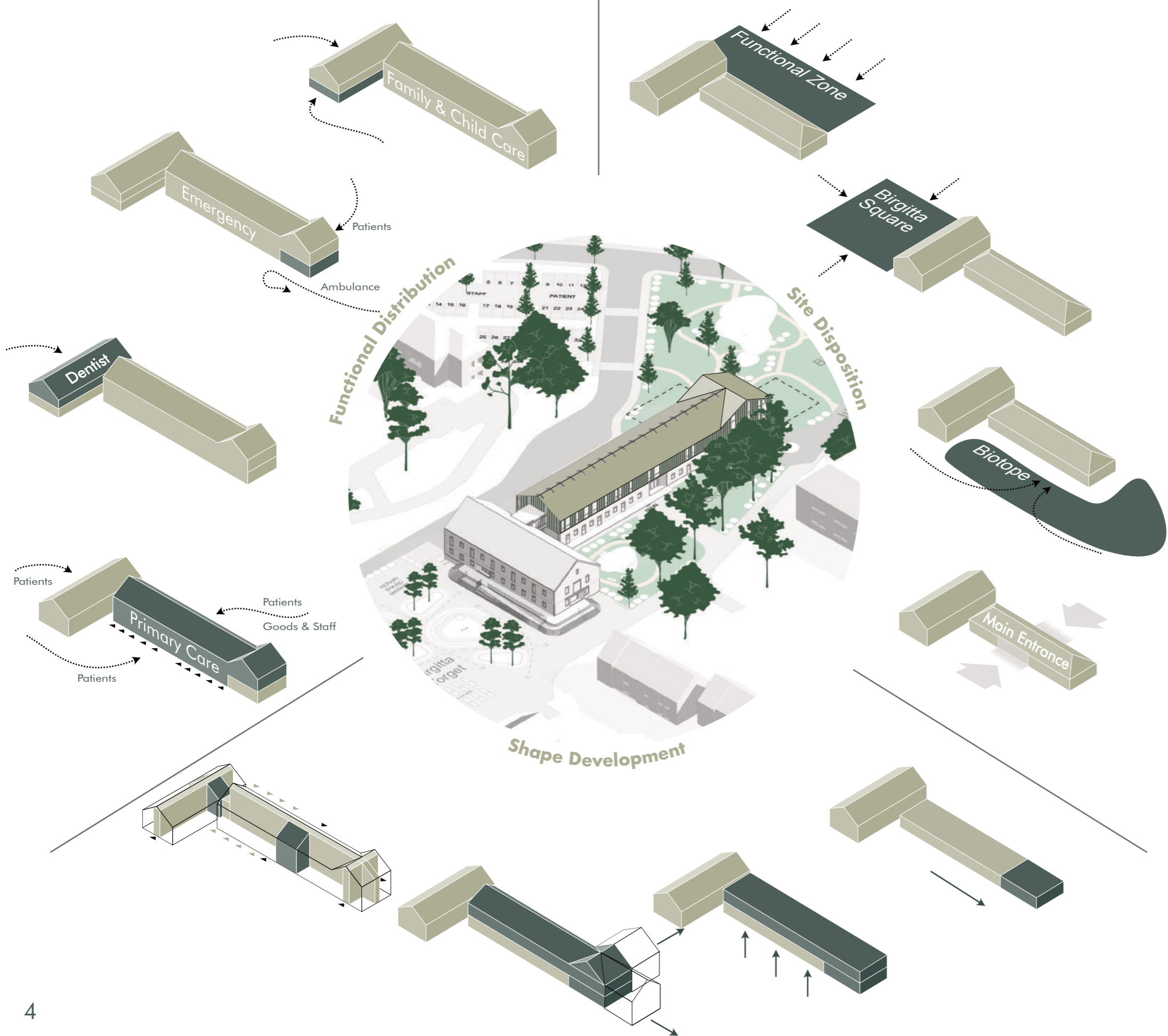


- **Keep existing structure** Preserving heritage and gray energy
- **Keep dug out Material** Rearranging the sites topography to achieve new qualities for the landscape using the excavated earth from the new foundation.





**Concept**  
II. Proposal



**Site disposition**

Based on the analysis of the area we amplified the sites division into three main areas. A functional zone for patient, staff and goods inflow, a composed refuge space in form of a biotope and a small urban square. While the functional zone is predominantly reserved for support functions towards the primary care center, the square and biotope are created to provide value for the community.

“Birgitta Target” provides space for appropriation and possibilities for exchange and interaction that create a sense of ownership in the community. This will in turn increase the utilization of the facility.

Serving as a secluded and protected refuge space, the biotope creates a counter pole to the square and the surrounding “green deserts”.

The main Entrance is centrally located for ease of way-finding and to facilitate future extension without the need for relocation. Inside a generous atrium doubles as waiting and meeting space.

**Shape development**

The Volume itself is extended to fit the emergency department and more examination rooms.

A second story is then added on top, providing space for more rooms while decreasing the building envelope compared to the building volume. Therefore increasing energy efficiency. Furthermore the footprint remains similar while retaining the basement.

Finally a gable is added at the end, facilitating future extensions and bounding the volume to the surrounding scale.

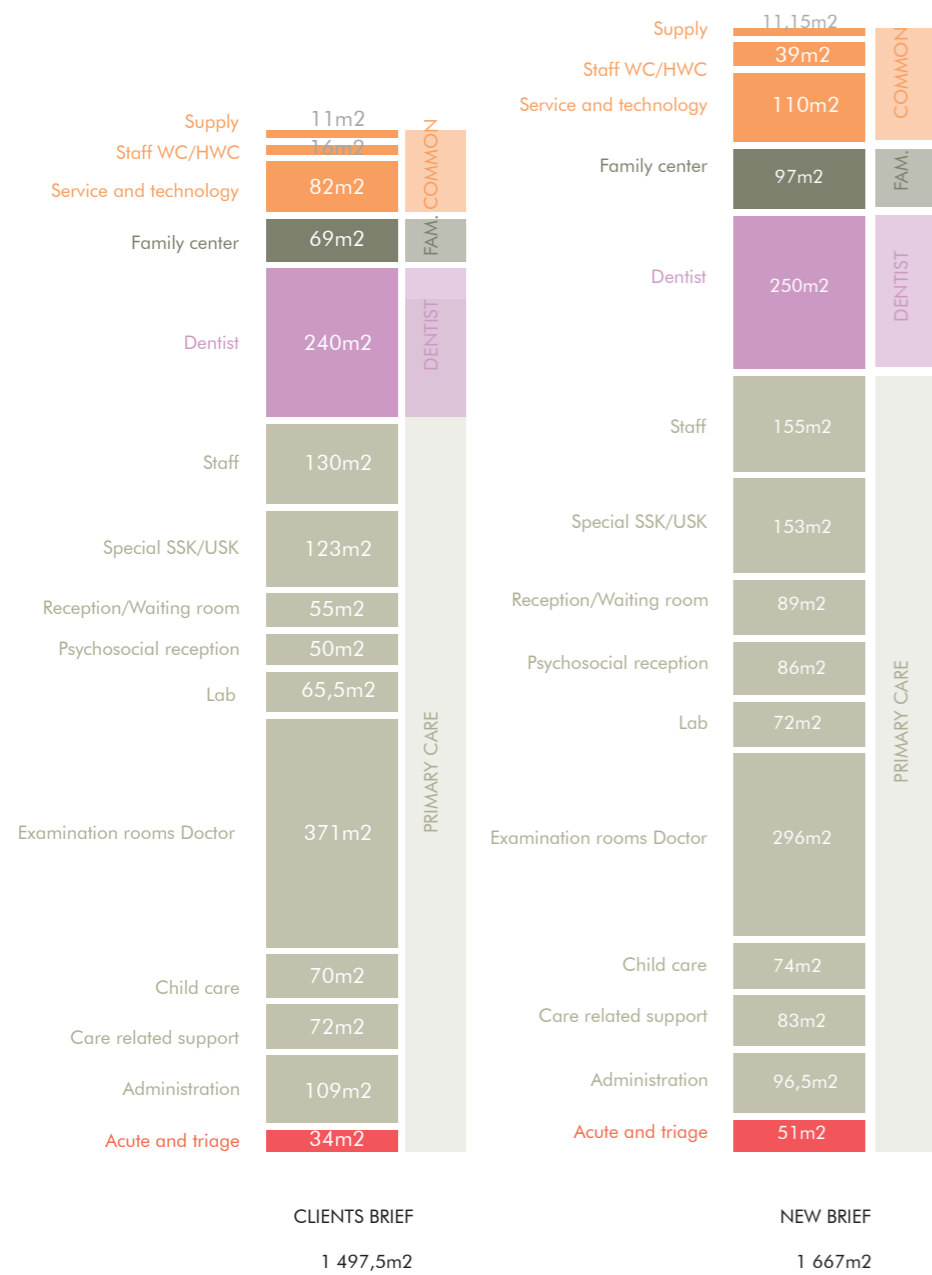
**Functional distribution**

The primary care is located in the larger one of the existing buildings, extending from the main entrance in both directions. Examination rooms are distributed over both floors, the ground floor also easily allows separated flows through the outside.

Family, childcare and dentist are located in the west, in the smaller one of the existing buildings. These functions are easily accessible from the square separating the inflow to those departments from the main primary care. Each department is provided with their own waiting rooms to facilitate infection control. The staff share a common area between them.

# Brief

## II. Proposal

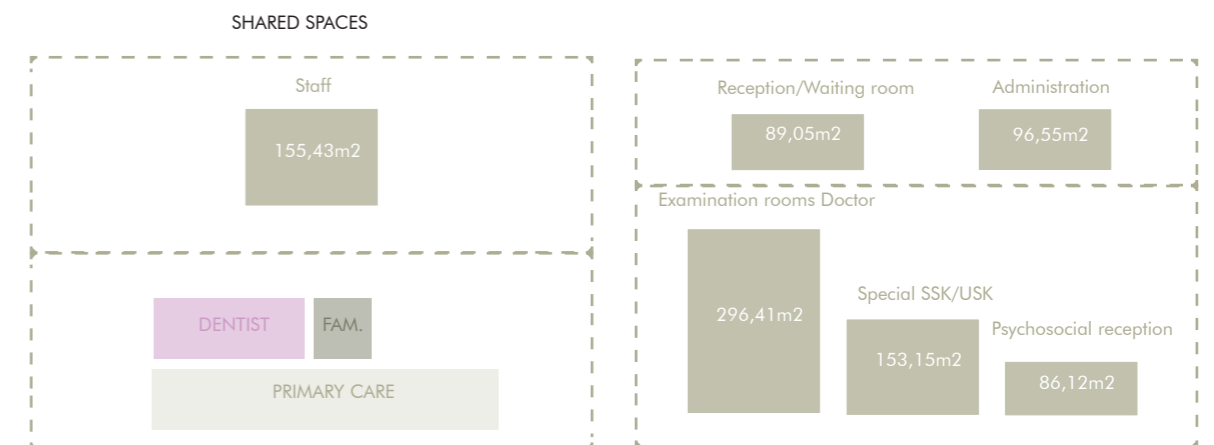
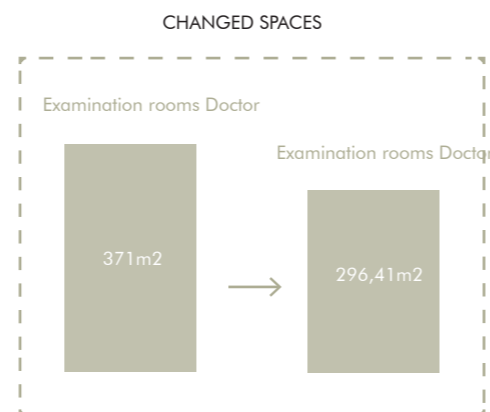
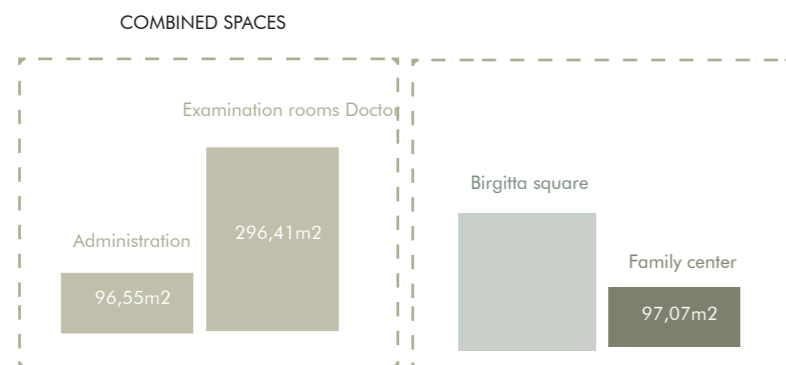
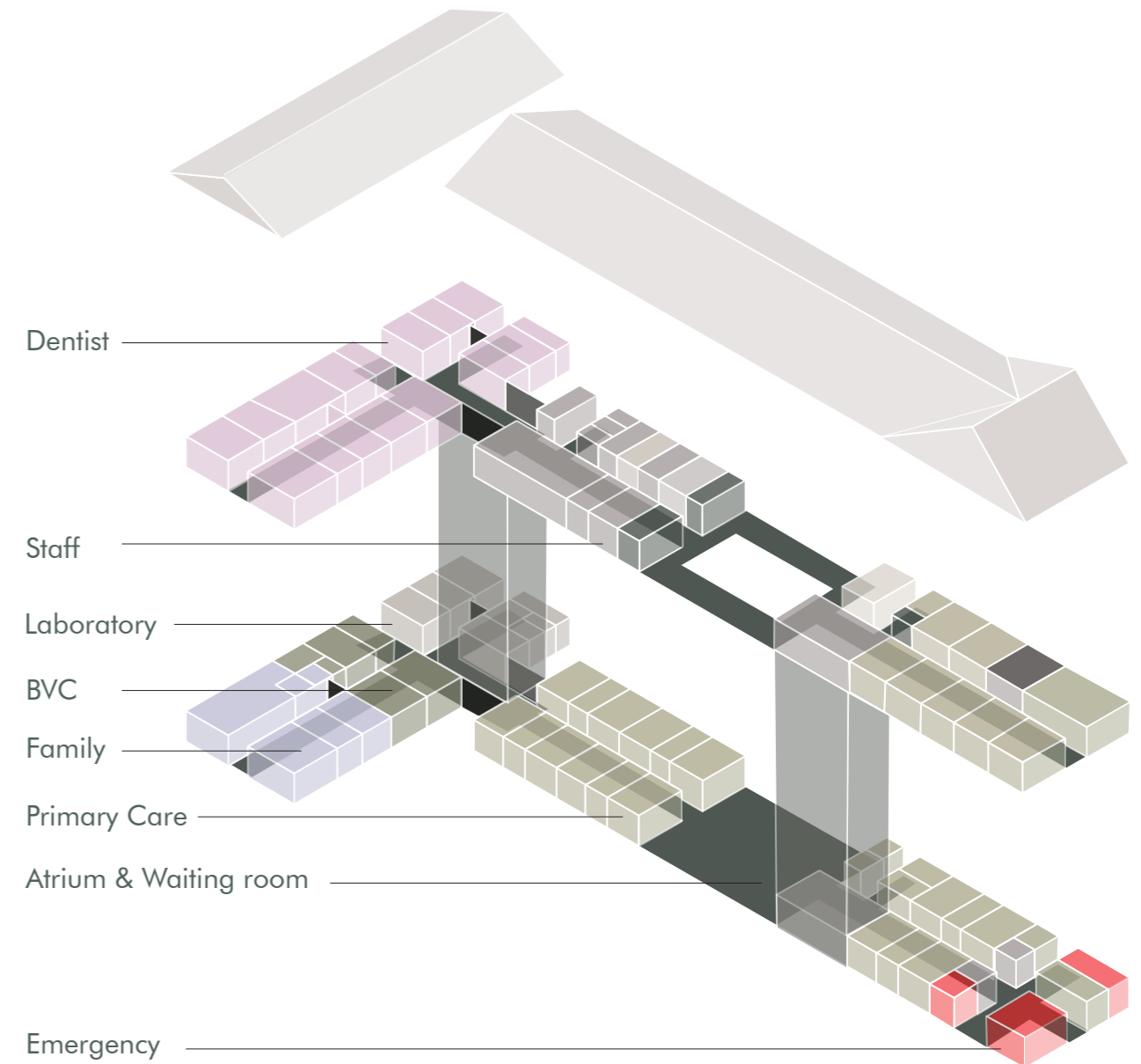


The brief was kept closely aligned to the clients requirements. We added functions such as a health-corner, shared multi-purpose rooms and functions in the square for the community. Various rooms and departments changed slightly due to restrictions originating from the reuse of the existing structures.

The biggest changes concern the family center which has two large multi-purpose rooms also usable by the community. Through a generous stair ensemble, they are seamlessly connected with the square and its functions.

By combining the conversation function with the administration space of every examination room, we increase its flexibility and usage frequency. Thus we can also reduce the total number of examination rooms.

BTA = 3528 m<sup>2</sup>



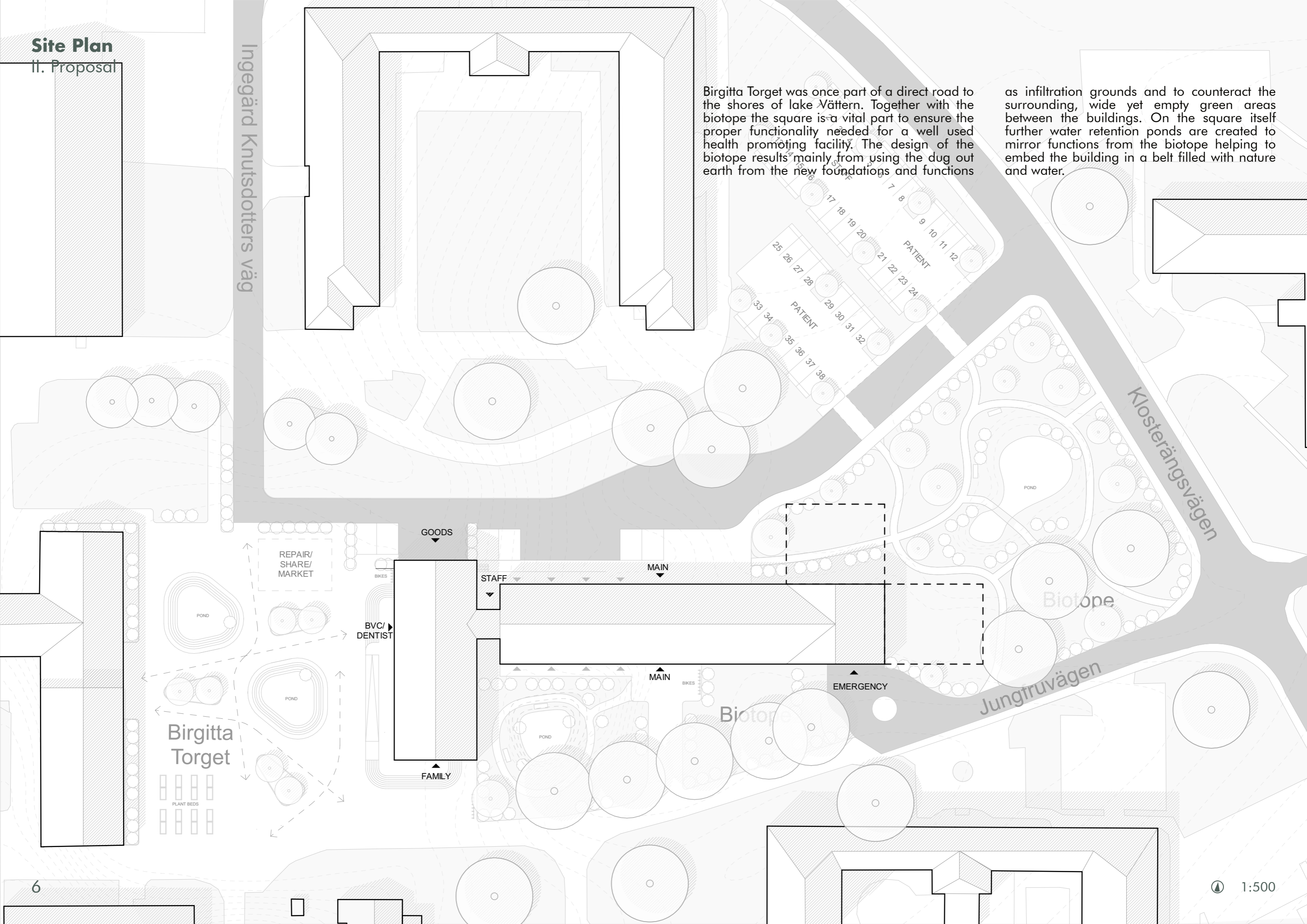
# Site Plan

II. Proposal

Ingegärd Knutsdotters väg

Birgitta Torget was once part of a direct road to the shores of lake Vättern. Together with the biotope the square is a vital part to ensure the proper functionality needed for a well used health promoting facility. The design of the biotope results mainly from using the dug out earth from the new foundations and functions

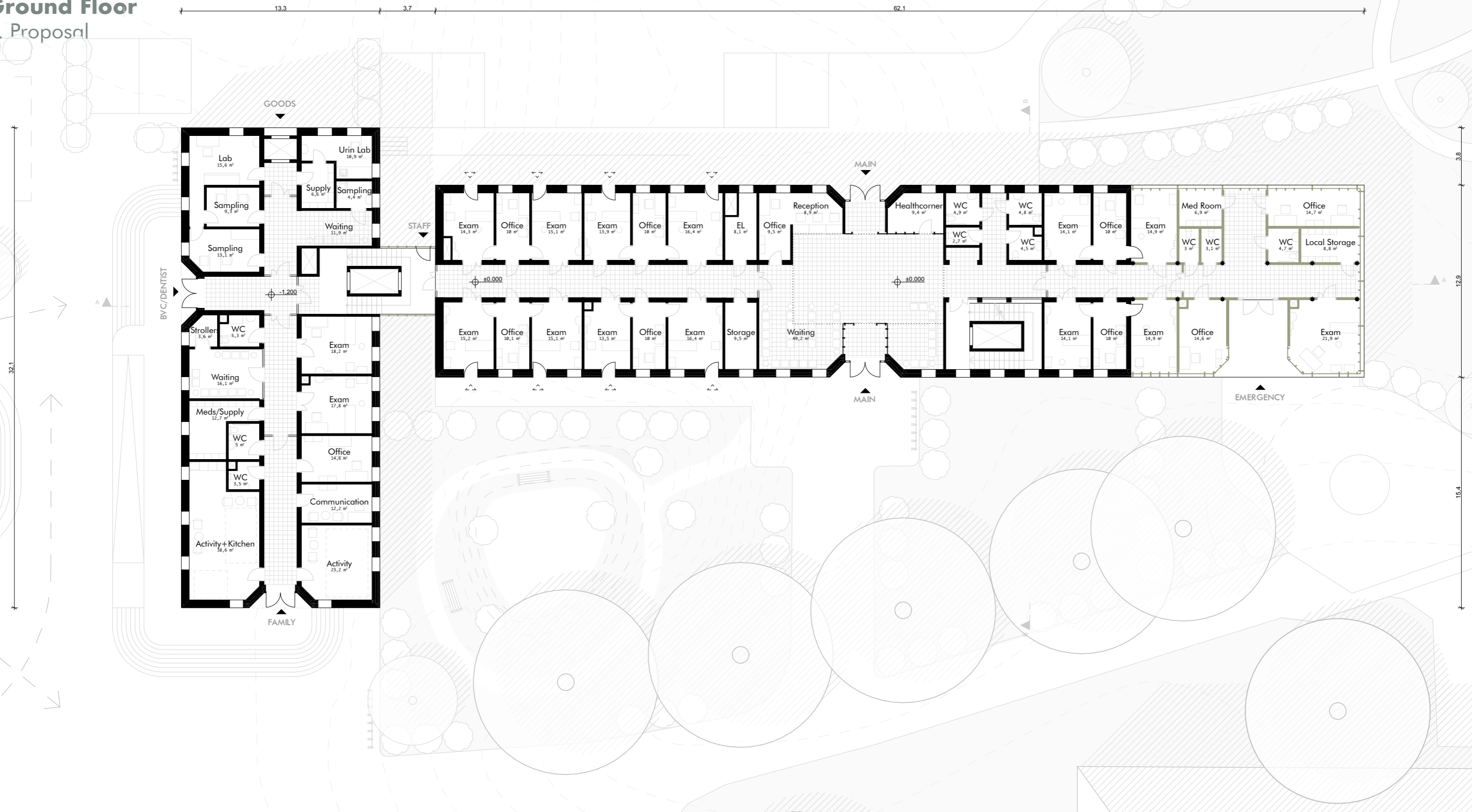
as infiltration grounds and to counteract the surrounding, wide yet empty green areas between the buildings. On the square itself further water retention ponds are created to mirror functions from the biotope helping to embed the building in a belt filled with nature and water.





# Ground Floor

## II. Proposal



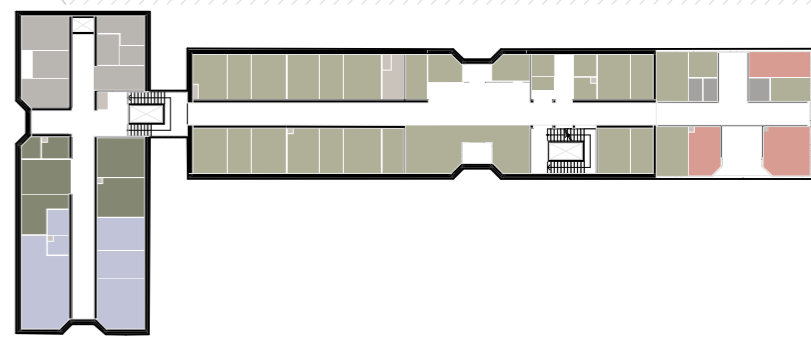
The existing structures provided central corridors over the whole length of the buildings. For ease of way-finding and to keep the hierarchy between visitors and staff in the shared areas as low as possible, we kept this distribution. As one corridor makes separated flows hard to accomplish, we added the possibility to enter examination rooms from the outside as well. To reduce the number of examination rooms and decrease the traveling time of staff between examination and administration rooms, we implemented a Jack & Jill solution. This is comprised of a shared office between two

examination rooms.

From the main entrance you enter directly into a double height atrium whose waiting areas are placed around the wind-catchers in the south. The north part is dedicated to the reception and a self administration space where patients can among others control their own vitals.

Generous stairs embrace building A on south- and west side, connecting it with the square and thus providing the option to use both simultaneously.

- Laboratory
- BVC
- Family Center/ Multi purpose rooms
- Primary Care
- Emergency Department
- Storage





Interior Perspective  
II. Proposal



MOTTAGNING

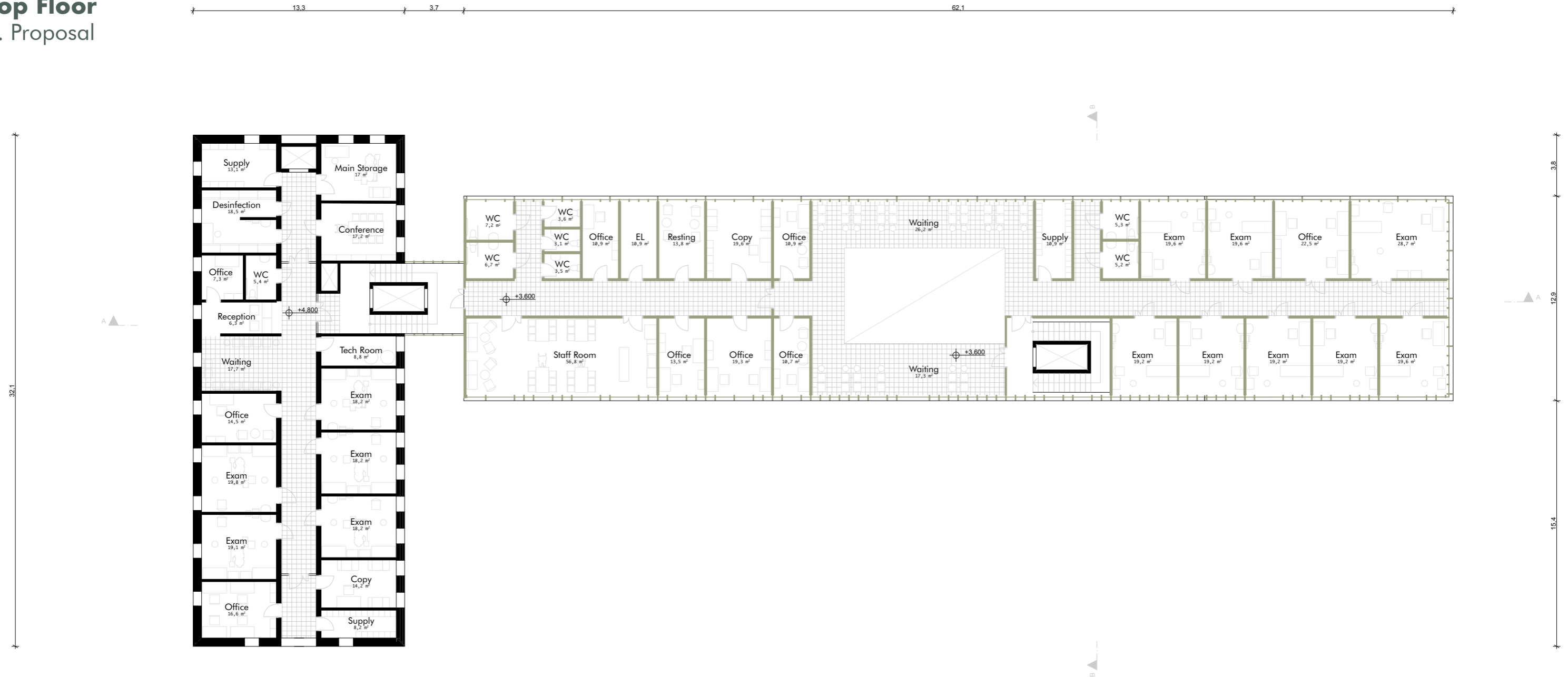
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# Top Floor

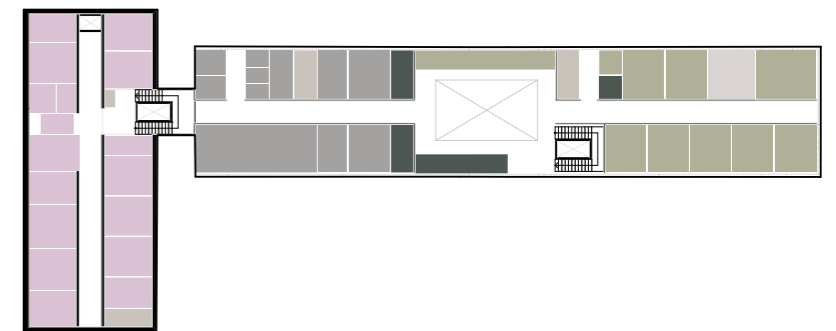
## II. Proposal



The top-floor, unlike the ground-floor, follows a strict 60cm grid. This is made possible as there is no existing facade dictating the grid. To allow for more flexibility and thus future proof adaptability we also dispensed with structural corridor walls, instead spanning the buildings width with the aid of tension cables on the rafters. For bracing several walls are used in addition to the stair core.

Apart from the main waiting room around the atrium, every other department has their own waiting room, again aiding in adaptability for infection prevention. For the dentist this is located next to its own reception. The dentists staff has easy access to the staff room that is shared between all departments. Located centrally between the two staircases it acts as a functional joint for the staff.

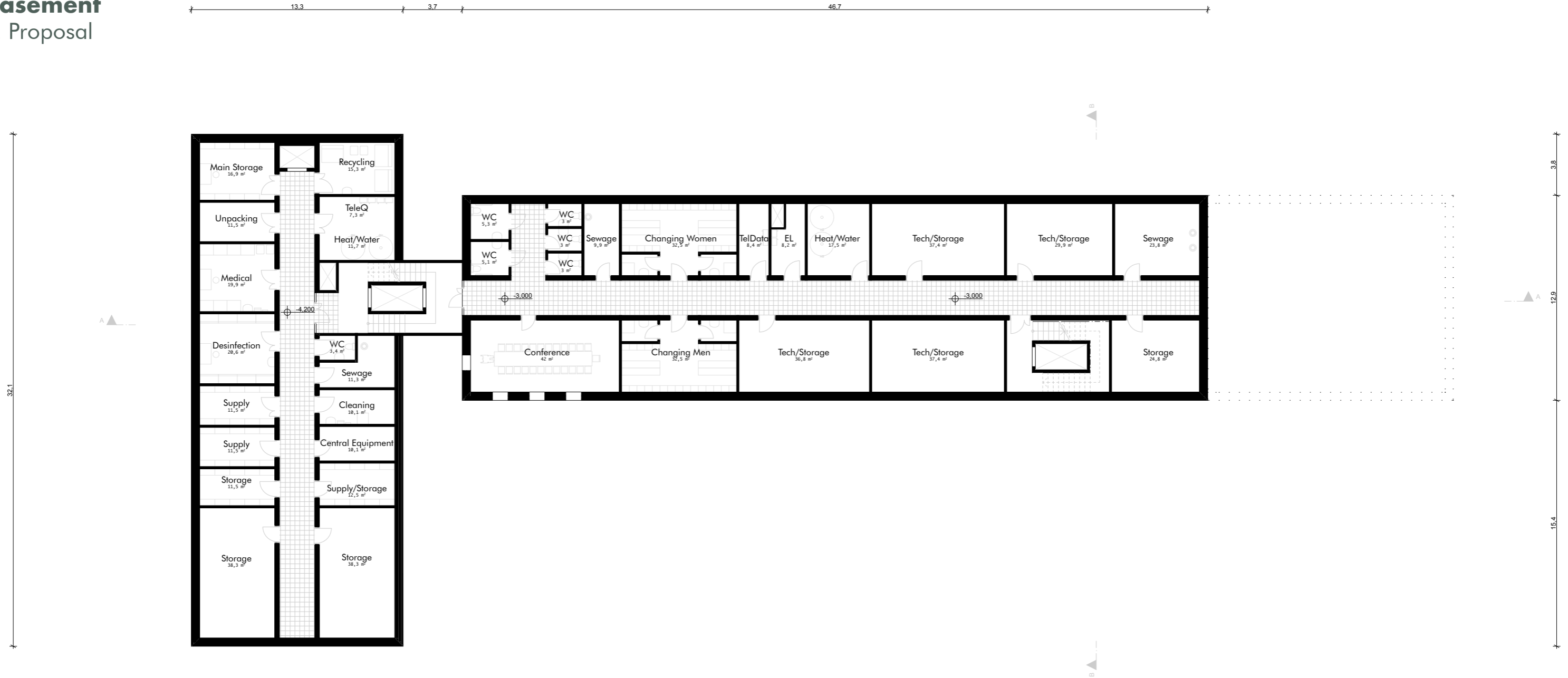
- Dentist
- Staff Area
- Psychosocial & Waiting
- Special Examination & Waiting
- Administration





# Basement

## II. Proposal



The Basement houses primarily supporting functions such as storage spaces, from which the local storages in the departments will then be filled. In the north a goods exclusive elevator facilitates transportation and refill.

Apart from housing the healthcare centers main storage, changing rooms and further support

rooms, such as technological and sewage rooms are placed here.

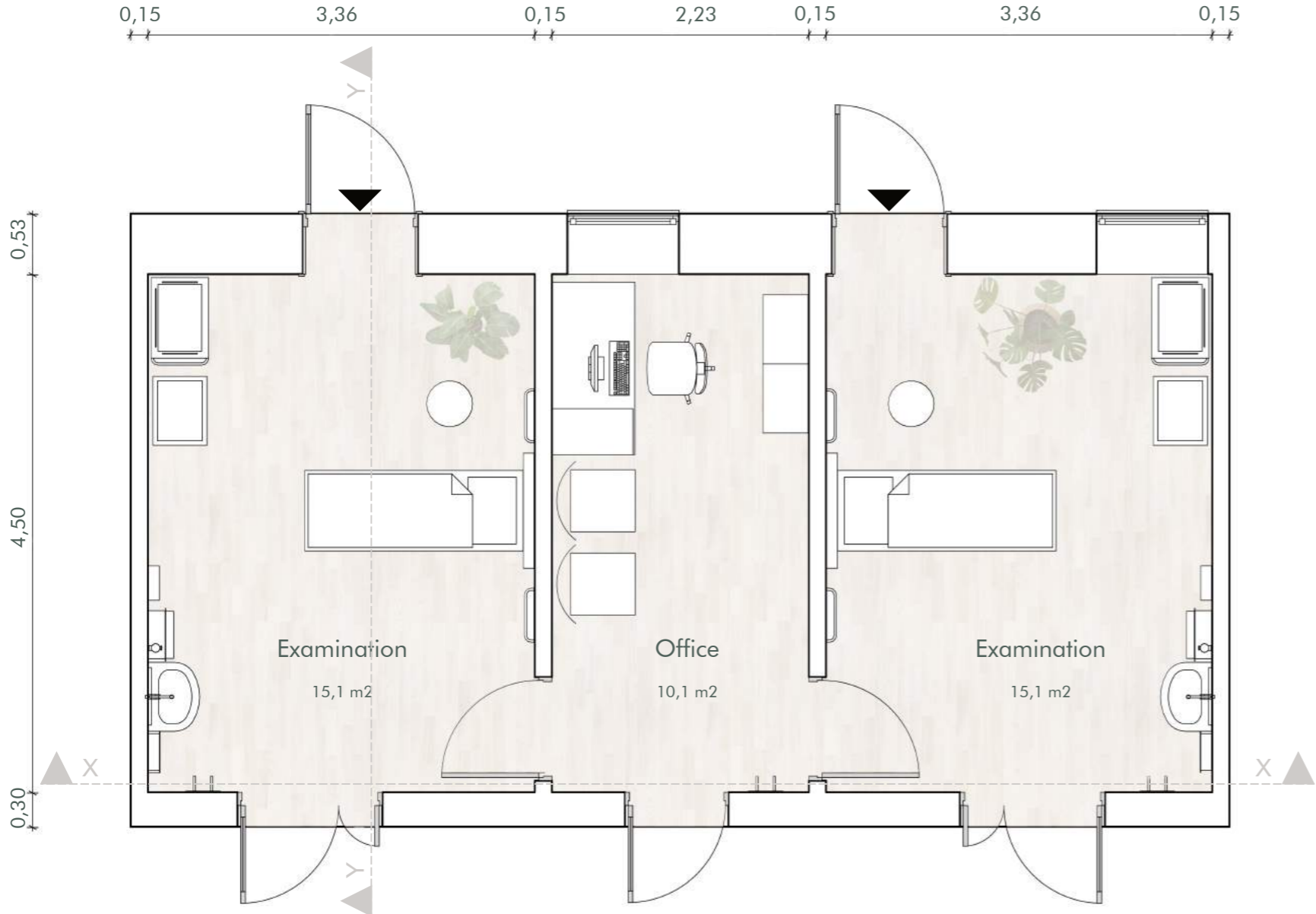
A large conference room can be used for multiple shared functions between the staff, acting as an examination room for a whole family, avoiding that parents or siblings are left out.

- Medical Supply
- Storage
- Conference
- Changing Rooms
- Building Technology



# Treatment Room

## II. Proposal



All examination rooms have direct contact to the outside. Following evidence based design principles, natural sounds and views into natural environments will improve overall health and wellbeing. To further increase comfort for potentially vulnerable patients the walls are textured in warmer colors and tones to avoid the cold, white atmosphere of traditional examination spaces. On the top floor, the walls are textured through wooden planking that is used to construct partition walls. And also on the ground floor the existing brick walls are textured as

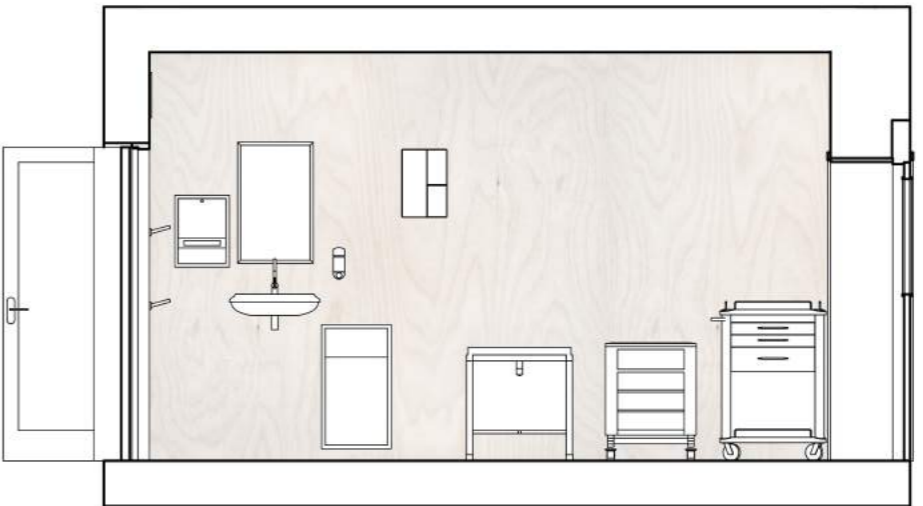
opposed to just plain and white.

To reduce the number of examination spaces and to increase their usage frequency, we combined a administration office with examination rooms. The office is also functioning as a conversation space, freeing up the examination rooms faster. Furthermore it reduces the travel-time of staff making for more efficient workflows.

Fully separated flows are enabled through a second entrance to the examination room through the facade. This provides high flexibility and future proofing.



Section X - X



Section Y - Y



## North Elevation

II. Proposal



The facade is partitioned by vertical wooden slats that work as fixed shading elements and break up the otherwise monotonous facade by hinting at the compartments behind. Timber is a common construction and cladding material in Vadstena and

also a sustainable alternative to various metals. By using timber we not only address sustainability issues but also give the building its own expression by interpreting traditional wood claddings.

**South Elevation**  
II.Proposal





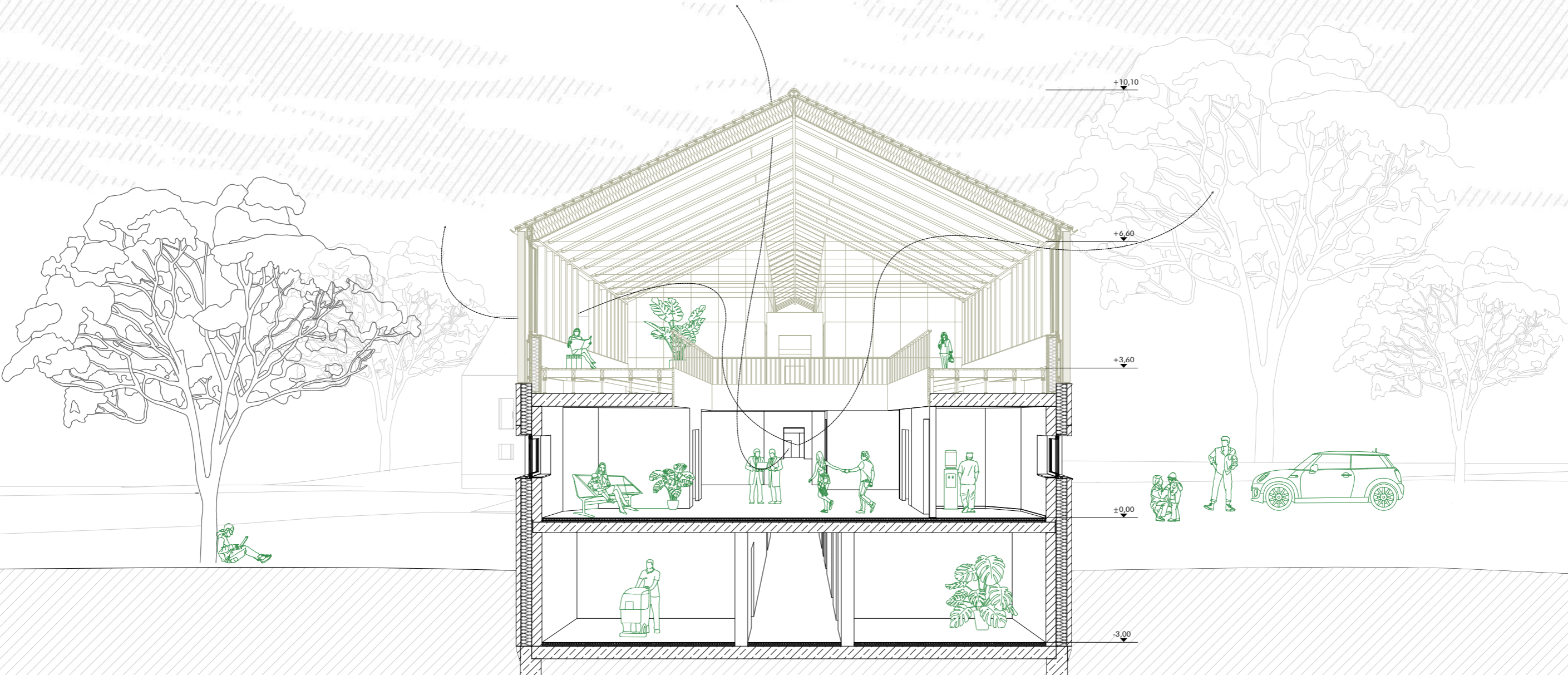
# Section A – A

## II. Proposal

By keeping not only the existing load bearing walls but also the ceiling slab, we save both work and resources. To ensure sufficient noise barriers between the floors we add a double floor onto the existing slab. This would be able to house mechanical ventilation should this be necessary in the future. For now we consciously propose natural ventilation as the only air conditioning system as it combines several beneficial aspects. Not only does it provide very high air change rates that keep the risk for infection low, it also requires less maintenance and is less susceptible to malfunctions. To keep the heat losses through natural ventilation

as low as possible, the walls are very well insulated and triple glazing ensures efficient solar heat gains. During Summer large trees provide additional shade without blocking solar heating gains during the winter, when the trees are leafless. This enhances the natural air circulation and prevents overheating. To increase the amount of natural light, skylights are added as they provide more light in Vadstena than vertical glazing due to often overcast skies and therefore diffuse lighting.

- New Construction
- Existing Construction
- Natural air circulation





## Section B – B

### II. Proposal

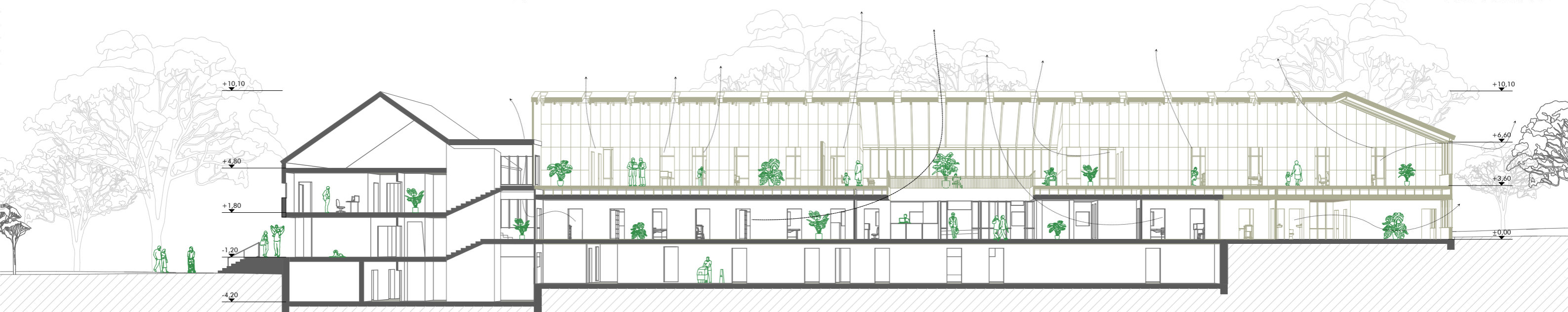
Instead of insulating from the inside, as is occasionally done in repurposing projects with heritage considerations, the existing insulation in the wall core was improved. Although this means partly dismantling the outer part and rebuilding it after insulation is added, it avoids complex details and insures easier adaptability in the future.

The central atrium also works as a natural chimney for air circulation. Air that enters and leaves the

rooms through small ventilation gaps also enters into the corridors through non mechanical vents. The Atrium as the largest air volume will pull cool air from the outside during summer when it heats up and provide warmer air in the winter when windows are opened in the examinations rooms.

The gable height of the top-up keeps the buildings height similar to the vernacular surroundings.

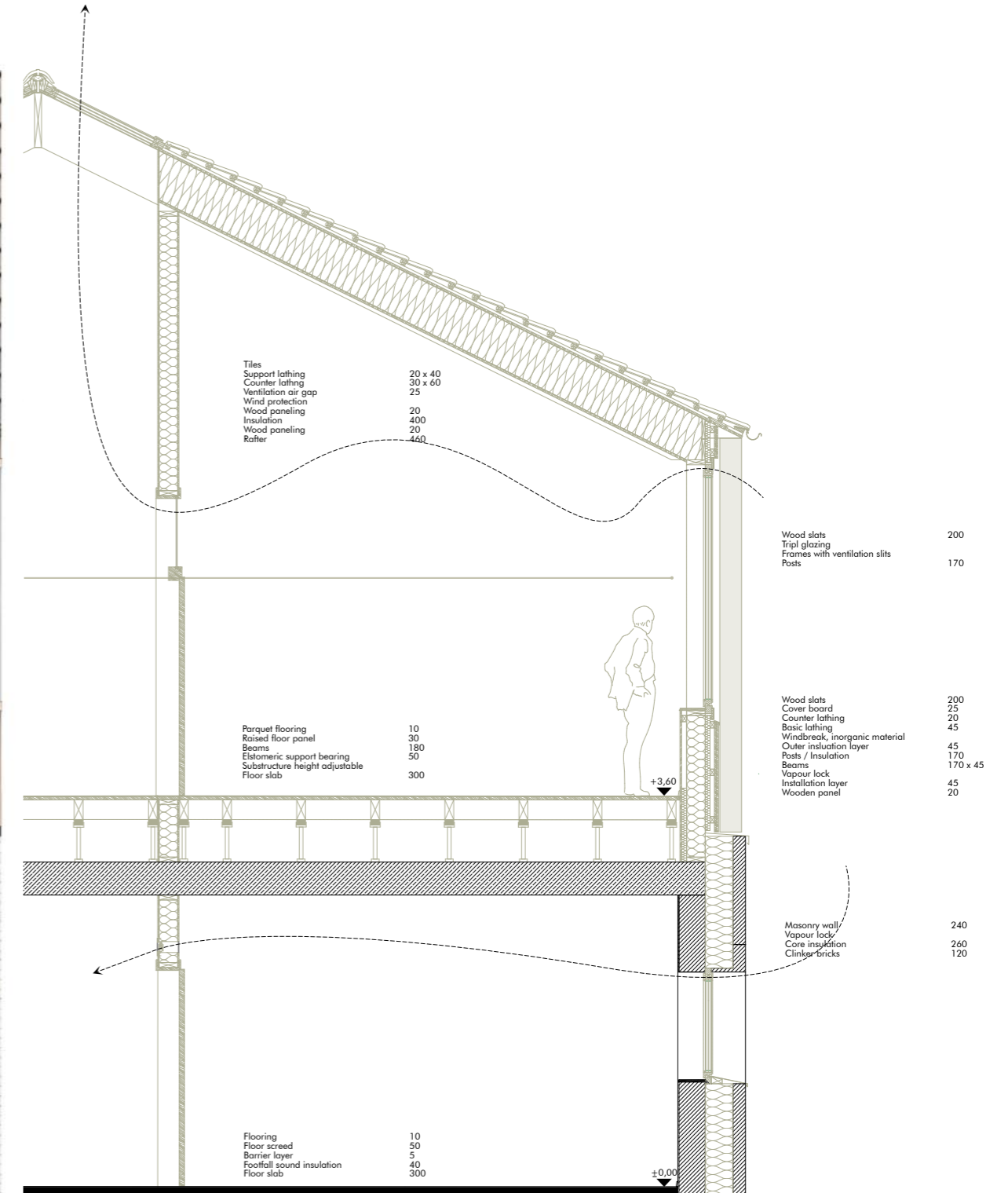
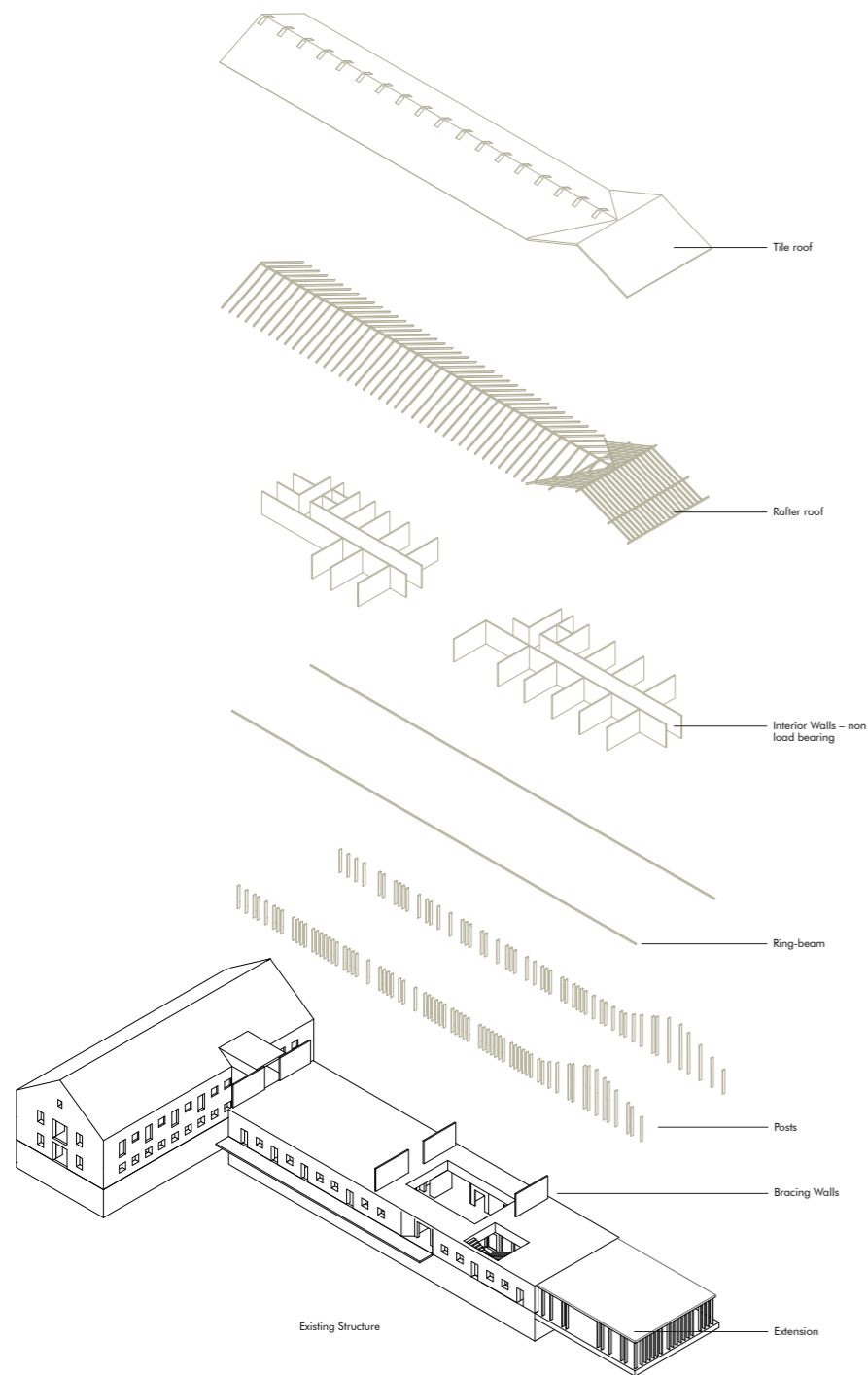
- New Construction
- Existing Construction
- Natural air circulation





## 2- Panel Projection

### II. Proposal



The overall construction is designed to be flexible and lightweight to avoid strengthening the existing brick walls. Consisting of a traditional post & beam system it is possible to place walls flexibly according to user needs. Except for a few structural walls for bracing purposes (walls, stair & elevator core) all other partitions only have the facade as border. To span the entire width of the building, the rafters are supported by tension cables.

The windows are kept operable to allow for user centered modulation and comfort. As wall-high windows would not only have meant a privacy concern, but also not have aided in increasing climatic interior comfort, we decided to restrict the glazed part of the facade to the top. Thus it harnesses the most amount of daylight while still providing a small ledge for comfort, energy efficiency and privacy.

- New Construction
- Existing Construction
- Natural air circulation



**Birgitta Square**  
II. Proposal

