

Feasibility study

Haydom Lutheran Hospital 2022



Upendo, Umoja na Ujuzi;
Love, Unity, Knowledge. "mama Kari"



STAV ARKITEKTER

Vision and idea

CREATE A SUSTAINABLE MEDICINE CENTER THAT TAKES HAYDOM INTO THE FUTURE WITH A MORE SUSTAINABLE AND GREENER PERSPECTIVE.

Through collaboration, we want to contribute to creating a well-functioning Hospital with a high and modern standard of medical services, improve the opportunity for employees to perform a good job and at the same time improve the stay and medical facilities for patients. We want to contribute to a better health service.

Ensure good health and promote quality of life for all.



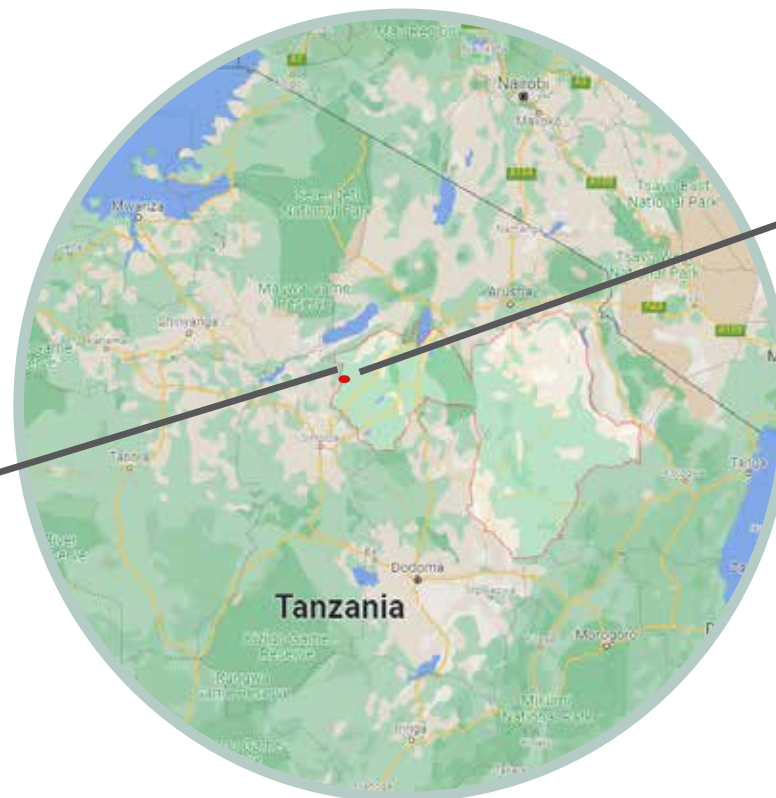
History



Location



Tanzania



Haydom is located in Manyara district



The plot of Haydom Lutheran Hospital

History

Haydom Lutheran Hospital is located in Manyara, south of Arusha in Tanzania. It was established on January 15, 1955. It was established and in the first years operated by Norwegian Lutheran Mission Association (NLM). The missionary and physician Ole Halgrim Evjen Olsen (1928–2005) and his wife Kari Olsen began work the day after Tanzania (Tanganyika) became independent in 1961. At the opening, the hospital had 50 beds. Formally, the hospital has been run by the Evangelical Lutheran Church of Tanzania (ELCT) since 1963.

In 1967, a newly built hospital was taken into use. It was officially opened by President Nyerere. The new hospital then had 250 beds. In the 1970s, the hospital started its nursing school and several local development projects were launched.

The hospital currently has about 400 beds after the opening of a pediatric ward in 2002. The hospital had over 16,000 inpatients and 60,000 outpatients patients and 4,558 births (2008). At the hospital and mobile village clinics, more than 50,000 vaccinations of children were performed. A total of 100,000 mothers and children received help at these clinics.

In addition to hospital operations, Haydom has initiated development projects in water supply, agriculture, food safety, education and road construction. More than 110 Norwegian doctors, nurses and others have worked at the hospital. The mission hospital is supported by active groups of friends in Norway, with Sørlandet and Olsen's hometown, Mandal, as its headquarters. Norad has for many years contributed to the hospital's operations, at times with up to 50% of the expenses.



The development of the area 1955-2021



HLH works under the vision that the hospital should take care of all human needs - physical, mentally, spiritual and socially.

They focus on reducing the burden of disease, poverty reduction, capacity building and to create good partnership with others organizations who share the same vision and goals.



The hospital's Core values

Holistic approach

Needs are always approached from a holistic perspective - patients and communities. To provide care for body, soul and mind, treat each patient with all their needs, treat the needs of society and provide social assistance such as water, roads, education, etc.

Dynamic

Always on the go to get better, able to implement when something needs to be done, be at the forefront of development, not stand still, quality improvement

Team spirit

Take care of each other, work with many people and partners who share the same goals and objectives

Hospitality

Rescue rule (always treat patients no matter how sick they are), no discrimination, respect, kindness, staff motivation

Towards

Doing things that must be done as we know will succeed, confidence, uniqueness, dancing to the beat of another drum, not always listening to experts from distant places, but more often listening to the expertise of society and among employees, resilience, despite, "we see what needs to be done and we do it", do not always accept that things are impossible, rely on our own" knowledge of there-and-then "

Reliable

Quality, enough equipment, good examples, research, service attitude, take the patient's needs and requirements seriously, patient satisfaction, efficient use of resources, service before payment, respect, openness





Associated Project



Project - Green energy / solar energy

Two meetings were held with the Gadgetronix company and an inspection of the Haydom site to look at the installation of more solar panels for safety power, water heating, safety lights and power for the guest houses.

The water source in Endagulda is located within the area belonging to the village of Murkuchida, and the inhabitants have for many years received drinking water from here. During the transition to electric current, the supply of drinking water had to be secured in another way.

A contract was therefore entered into with the company Gadgetronix in Arusha, which installed a plant for pumping water using solar energy. The facility was reviewed and approved in January by Dagfinn and the local employees.



Project, Clean Water- The waterworks in Endagulda.

Profitable with a green shift at the hospital in Haydom

It was encouraging that HLH's electricians Daniel Gidaguy and Penford Magara before the New Year carried out the electrical work that made it possible to also connect the waterworks in Bassongjagwe to the mains. The waterworks in Endagulda and Bassongjagwe needed upgrading after 30 years of operation where a total of three units were powered by animals and polluting diesel.

The work to improve the water supply has been well received at Haydom, and a party was held down in Endagulda on 9 January after the assembly work had been done. Bad weather put no brakes on the mood.

In an overview, the controllers at HLH have calculated that a total of 39,600 l of diesel was consumed at the two waterworks in 2020. In addition, they have also calculated the need for electric power this year at the same time as they have estimated the costs of following up the two waterworks. In a detailed spreadsheet, they conclude with reduced costs of 46,569,400 t. Sh (approx. NOK 173,000) in 2021. Important parts have also been upgraded, and the goal is for these new parts to last for 30 years.

The local craftsmen have been involved in the planning process and have also assembled so that they are able to perform future maintenance tasks.



Project Education - School Murkuschida

Here is one of the water posts from the waterworks in Haydom was water to the village of Murkuchida using Sol Power.

The school in Murkuchida has 700 students, about 90 students in each classroom, without electric light ..

Work will be done to get solar panels to provide light for the classroom.

Maybe drawings from local schools can also be used as decoration for the hospital?







Project Education / Work

Haydom Vocational Training & Entrepreneurship Center.
The Haydom Friends Foundation has for several years contributed to the construction and operation of the vocational school in Haydom.

Parts of the workshops are located by the hospital at Haydom, development and planning of vocational schools and workshops has started on a plot about 5 minutes from the hospital.

Here it is produced, among other things. bricks, wooden doors, car repairs and other mechanical equipment.





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Upgrading technical infrastructure

Review of technical infrastructure, safety lights, electrical installations, solar energy to water, heating and economy





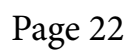
Inspection



Inspection

Existing building structure





Inspection

The immediate area







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Analysis



Extension HLH

Assignment order

Desired Ordering area new building: 16800m²

New building on at least 5 floors

Basement : (The basement should have the capacity to carry 6 to 7 floors)

Imaging, Laboratory Services, Histopathological Laboratory, Pharmacy

Ground floor: - Newborn ward, Labor ward + Theater, and Emergency room.

1st floor: - Department of Pregnancy, Postnatal and Gynecology, Department of Pediatrics,

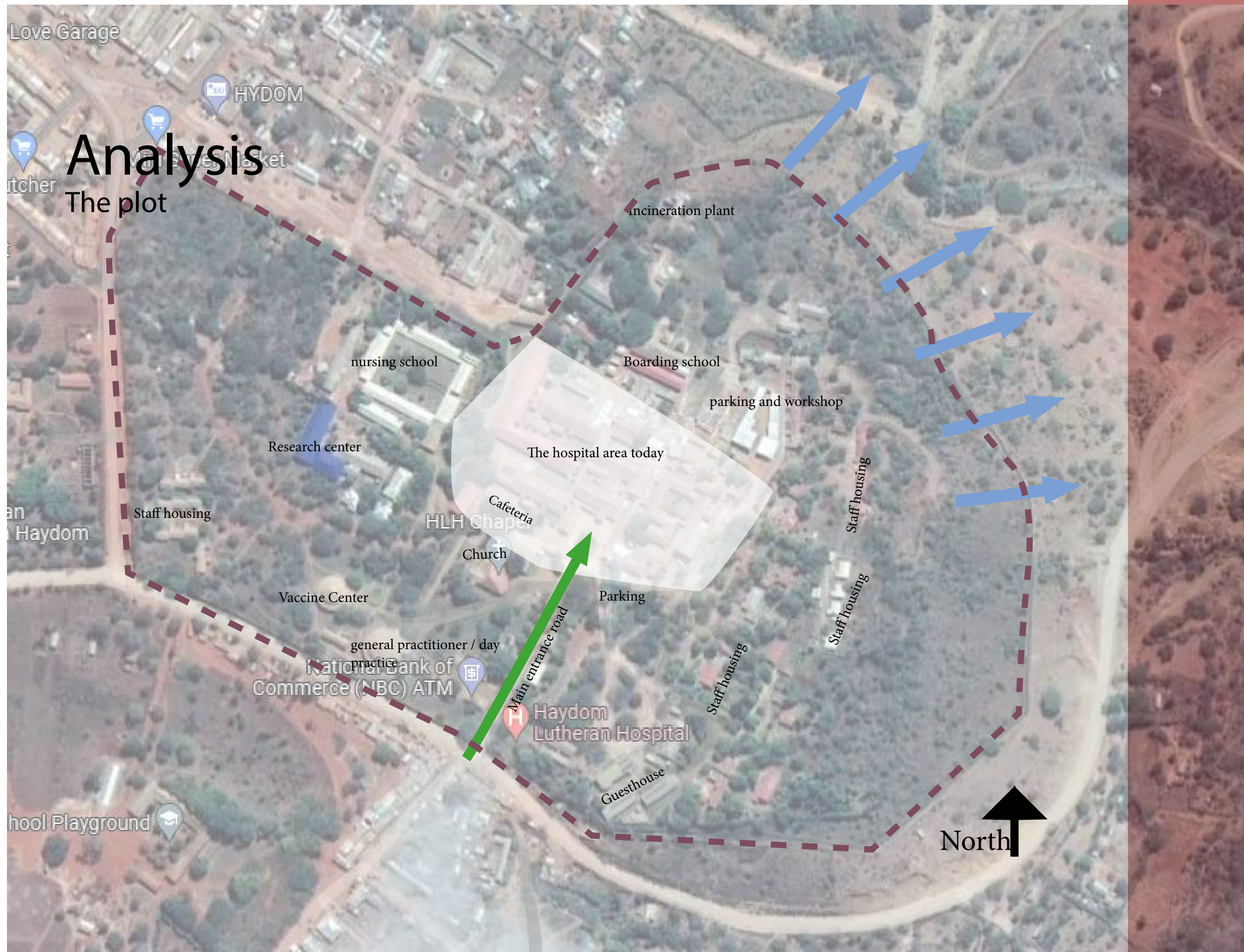
2nd floor: - Surgical department (theaters, general surgery, orthopedics, urology, ENT, ophthalmology departments) ... Surgical department can have 2 floors instead of 1 floor ?.

3rd floor: - Internal Medicine (Gastroenterology Department, Endocrinology Department, Lung Department, Infection / Isolation Department, Nephrology Department, Neurology Department and Oncology Department)

4th floor: - Administration offices, IT department, finance department and boardroom.

5th floor: - Three conference rooms





This aerial map illustrates the current layout and planned expansion of the Haydom Lutheran Hospital. The map includes the following labels and features:

- Development area:** Indicated by a dashed brown line in the upper left corner.
- Expansion of the hospital area:** A red shaded region with red arrows pointing to the existing hospital buildings.
- The hospital area today:** The current hospital buildings, shown in a light grey/white overlay.
- New Research Center:** A blue arrow points to a new building located to the west of the main hospital area.
- New ambulance road:** A red line with an arrow pointing to a new road on the eastern side of the hospital.
- Moving - parking and workshop:** A red arrow points to a new area on the western side of the hospital.
- Other labeled buildings and areas:**
 - Incineration plant
 - Boarding school
 - nursing school
 - Staff housing (multiple locations)
 - Guesthouse
 - Church
 - Cafeteria
 - HLH Chapel
 - Vaccine Center
 - general practitioner / day practice
 - National Bank of Commerce (NBC) ATM
 - Haydom Lutheran Hospital
 - Love Garage
 - HYDOM
 - Market
 - hool Playground
- Navigation:** A black arrow in the bottom right corner points North.

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- New ambulance road:** A red line with a blue arrow pointing to a new road connecting the hospital to the main entrance.
- Moving - parking and workshop:** A red line with a green arrow pointing to a new location for parking and workshop facilities.
- Other labeled areas:**
 - Incineration plant
 - Boarding school
 - nursing school
 - parking and workshop
 - Staff housing (multiple locations)
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- Expansion of the hospital area:** A red shaded region with red arrows pointing to the 'Incineration plant' and 'Boarding school'.
- The hospital area today:** A white shaded region representing the current hospital footprint.
- New Research Center:** A blue shaded area with a blue arrow pointing to a new building.
- New ambulance road:** A red line with an arrow pointing to a new road.
- Moving - parking and workshop:** A red label with a green arrow pointing to a new area.
- Other labels:** Love Garage, HYDOM, Market, Incineration plant, nursing school, Boarding school, parking and workshop, Staff housing, Vaccine Center, general practitioner / day practice, National Bank of Commerce (NBC) ATM, Haydom Lutheran Hospital, Guesthouse, Church, Cafeteria, HLH Chapel, and School Playground.
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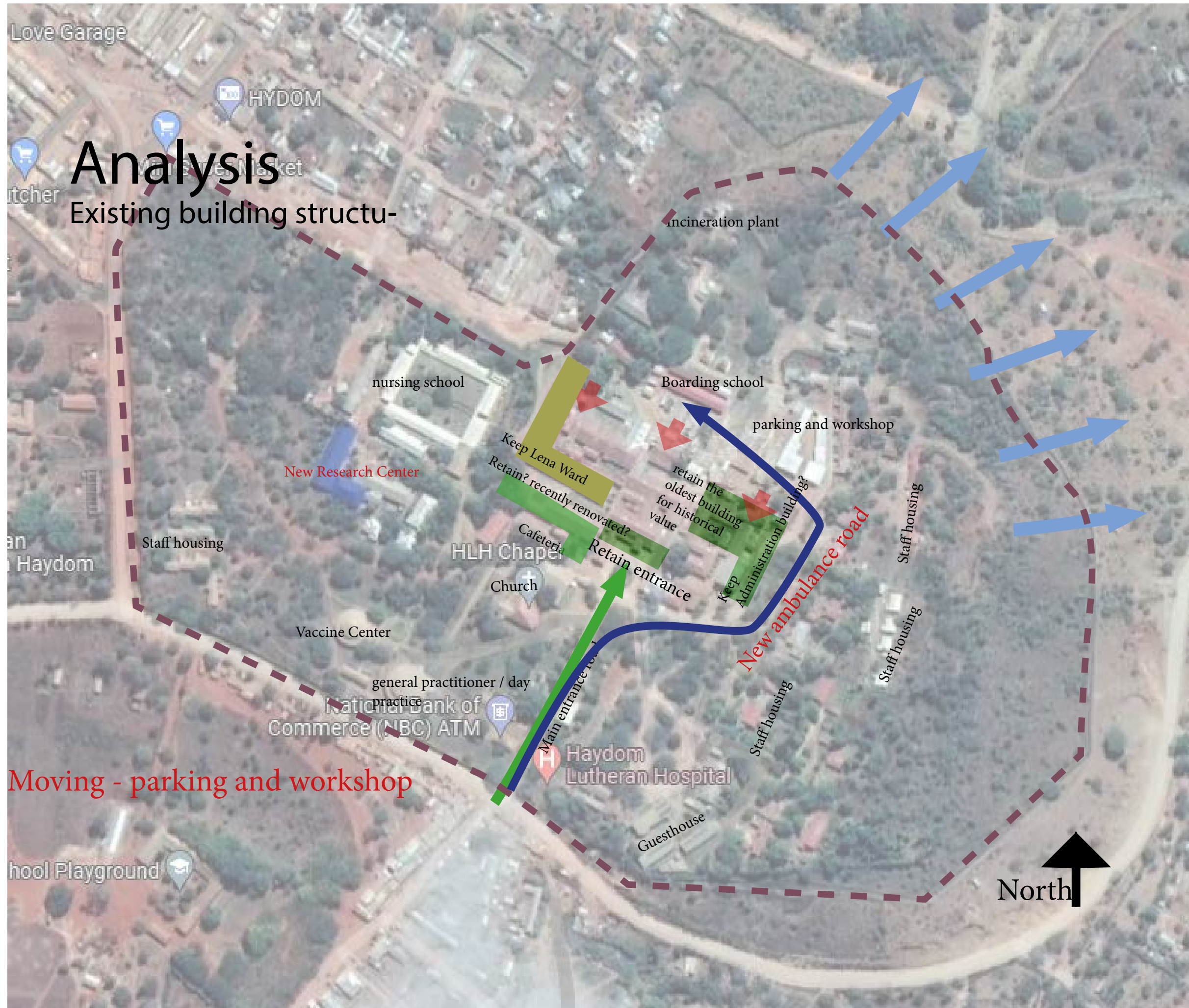
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- New ambulance road:** A red line with a red arrow pointing to it.
- Moving - parking and workshop:** A red label with a red arrow pointing to the 'parking and workshop' area.
- Current Hospital Area:** Labeled 'The hospital area today' in white text on a light grey background.
- Other Labels:** Incineration plant, Boarding school, nursing school, Staff housing, Vaccination Center, general practitioner / day practice, National Bank of Commerce (NBC) ATM, Haydom Lutheran Hospital, Guesthouse, HLH Chapel, Church, Cafeteria, and Main entrance road.
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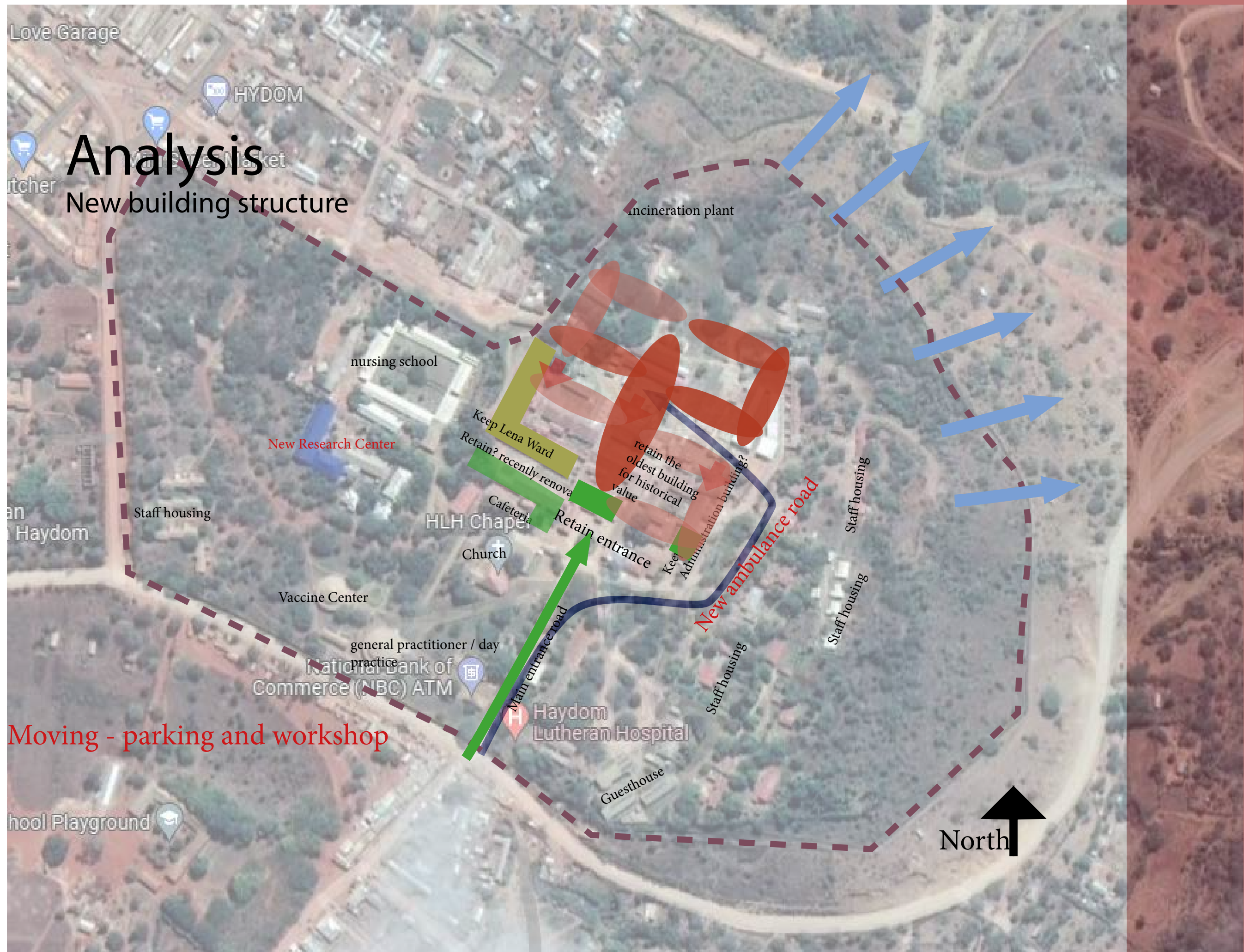
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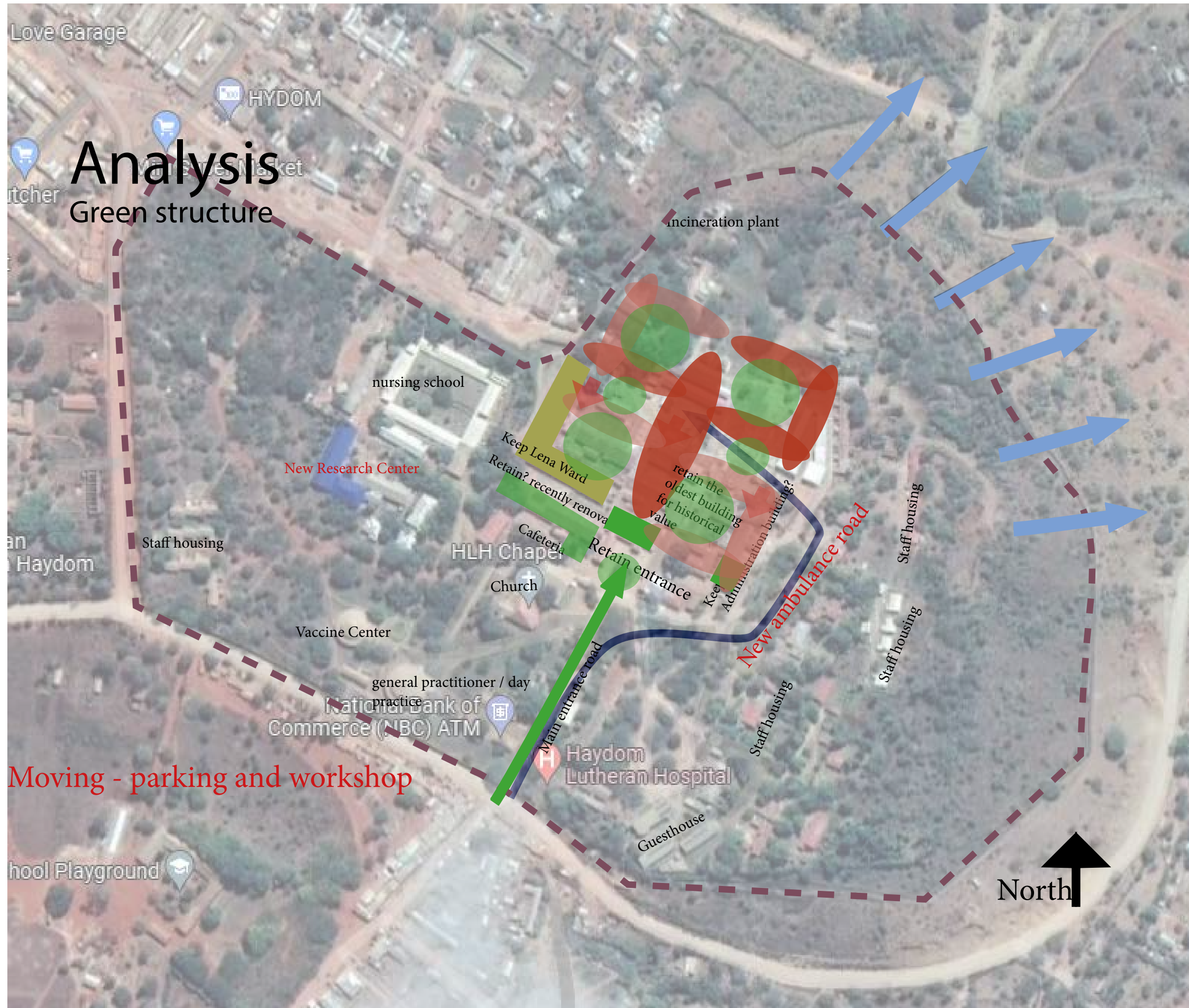
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Moving - parking and workshop





Moving - parking and workshop

Analysis

Important focus areas for further design

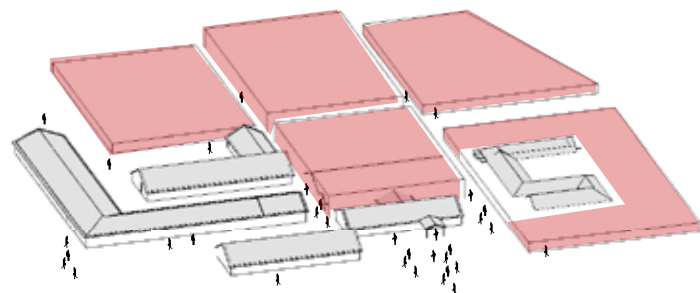
Shade PLANTS History
Air Ventilation
VIEW Green "lungs" NATURE
Colors Logistics
Art Light Transparency
Materiality Trees workflow

Concept

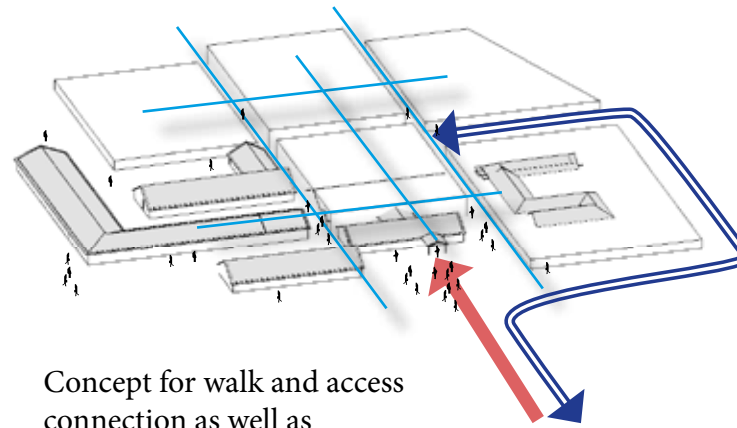


Concept

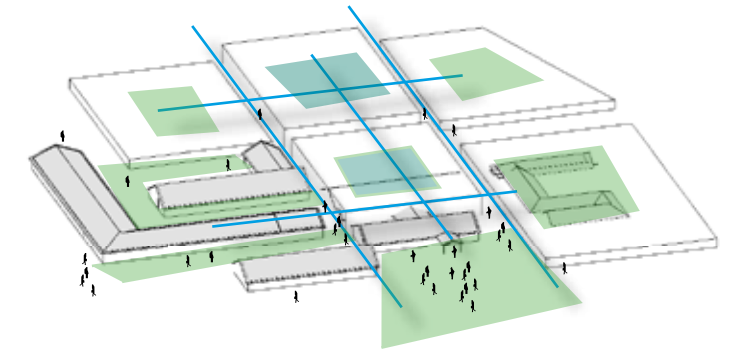
Design principles



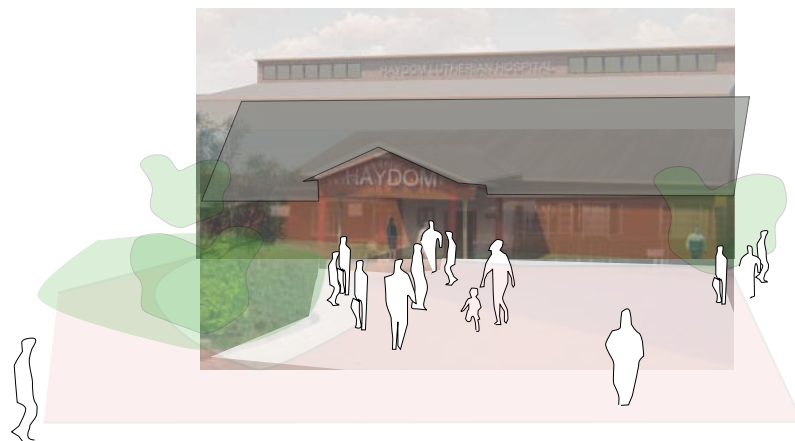
Expansion and volume principle
Build on the "village" experience, new buildings on one to two floors, with the possibility of a basement on parts of the buildings



Concept for walk and access connection as well as communication internally in the building. Concept for good and easy orientations for workers, patients and visitors. Suggestions for new cost for ambulance



Concept for social zones, green lungs as atrium principle, living room, waiting room, roof terrace, outdoor space etc.



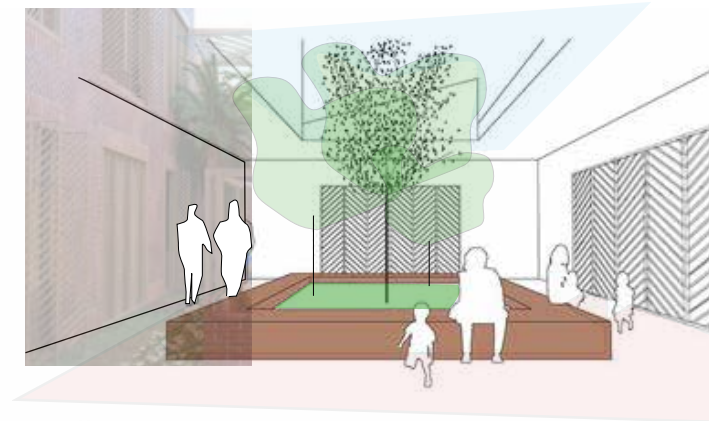
History, Materiality, Color, Identity

Retain iconic entrance / facade, retain historic buildings, create open and welcoming main entrance.



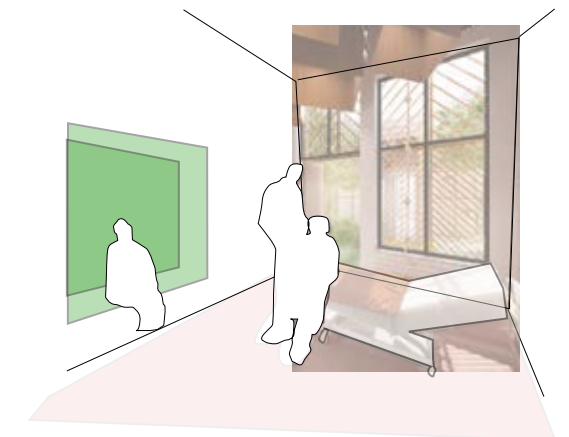
Logistics, workflow, Transparency

Easy orientations for workers, patients and visitors. Create a good workflow and communication between different departments



Green Lungs, shade, nature, trees

Create good social zones and waiting areas for patients, employees and visitors both indoors and outdoors



Daylight, air, light, color

Daylight in all rooms as patient rooms, hallways, and offices

Concept

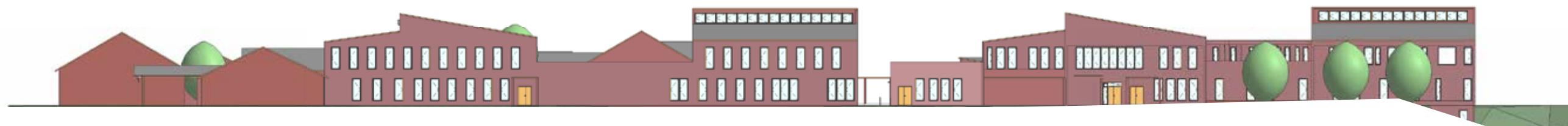
Sustainability



All UN sustainability goals



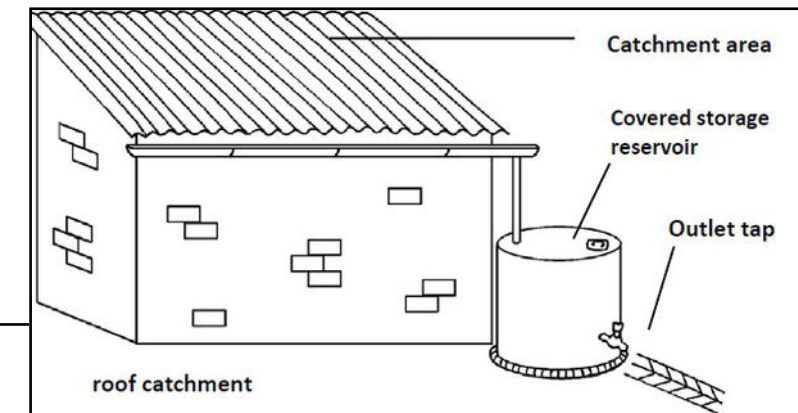
Here are our suggestions for selected sustainability goals we can work on further in the project





Concept

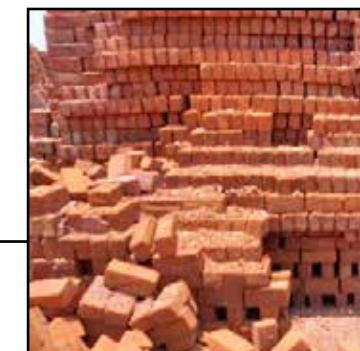
Important Sustainability principles for a building concept in line with the UN's sustainability goals



Adjust the add-on for collecting rainwater from roof surfaces



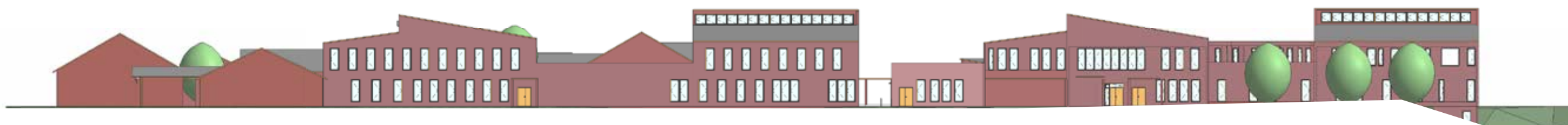
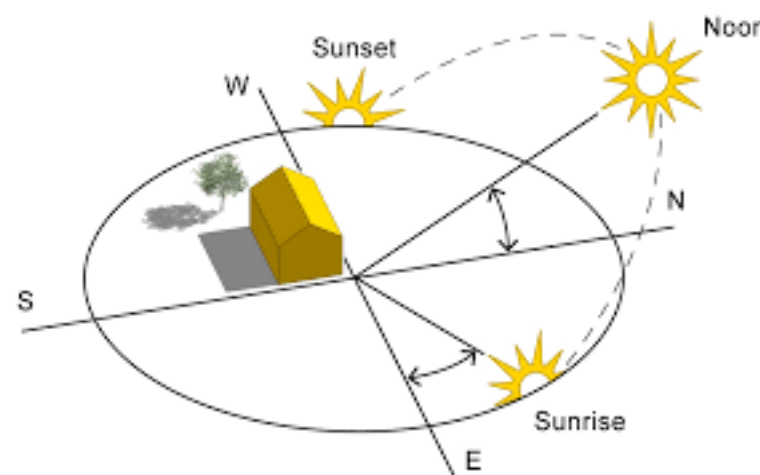
Natural ventilation and focus on daylight



Use local building materials



Adding roof surfaces for the use of solar panels to get the majority of energy supply to renewable energy



Concept

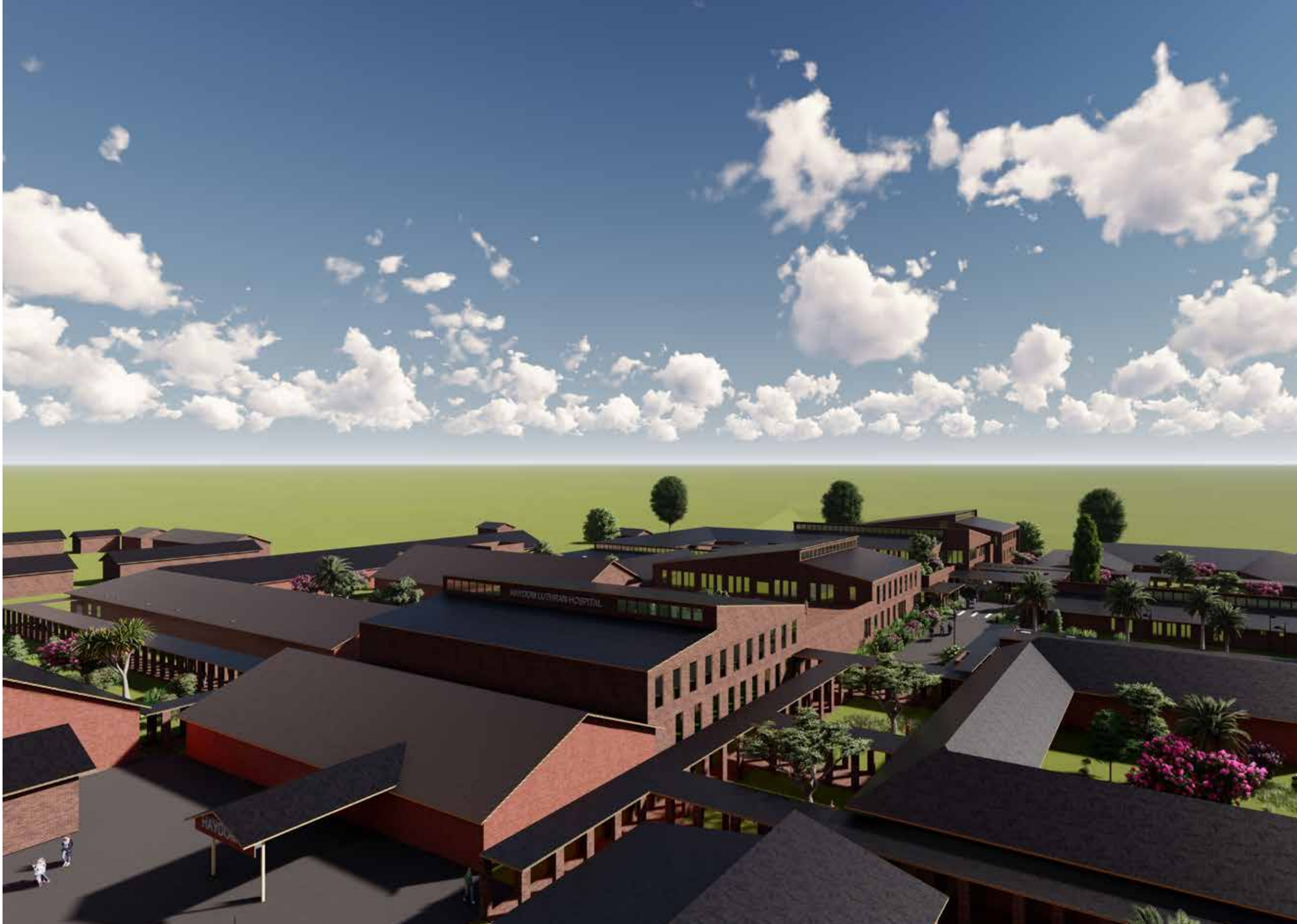
Building structure





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New hospital building structure

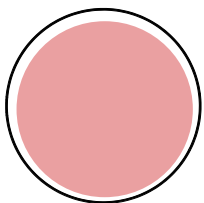


Ground_Floor

Overview Departments - New hospital building

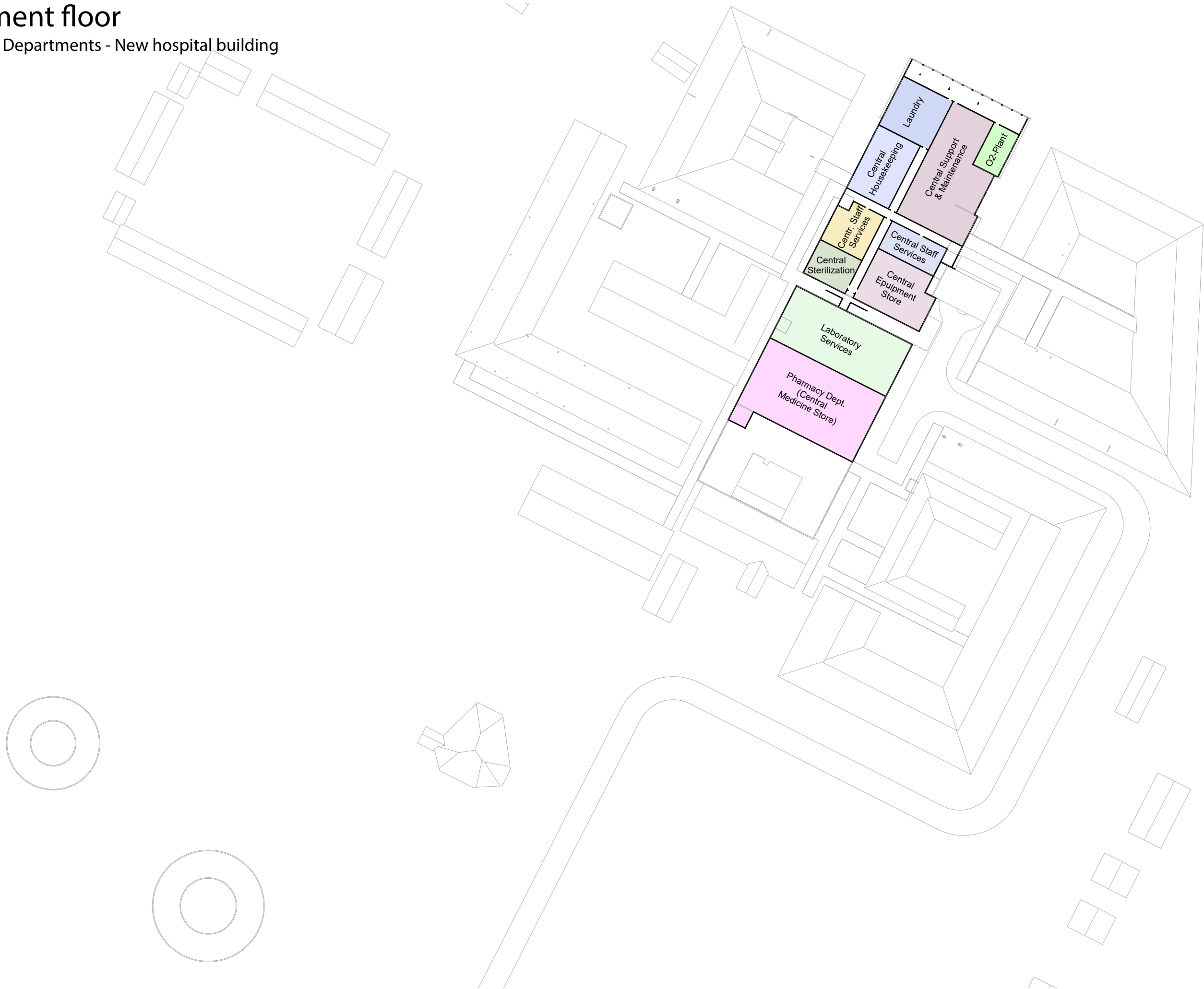


Conference rooms and offices for Research center?



Basement floor

Overview Departments - New hospital building



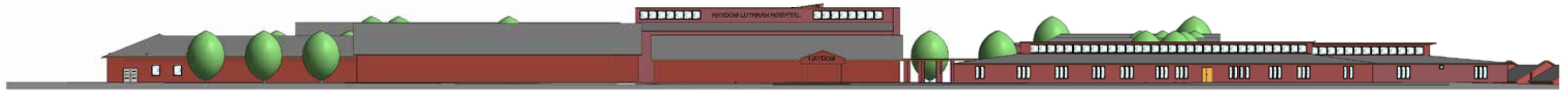
1st floor

Overview Departments - New hospital building



Facades

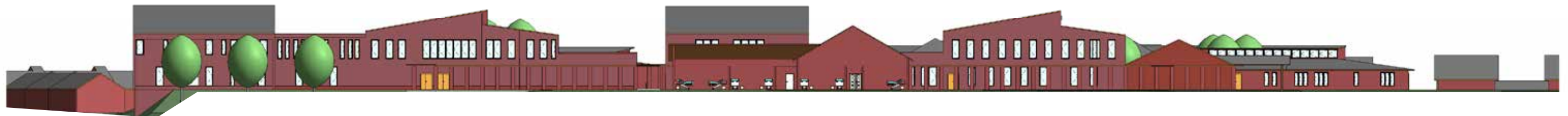
New hospital building



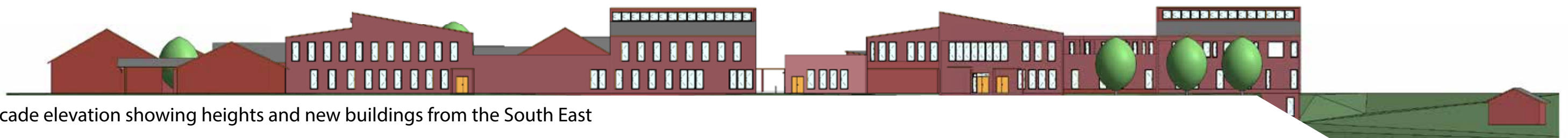
Facade elevation showing heights and new buildings in the front from the South West



Facade elevation showing heights and new buildings from the back from the North East



Facade elevation showing heights and new buildings from the North West



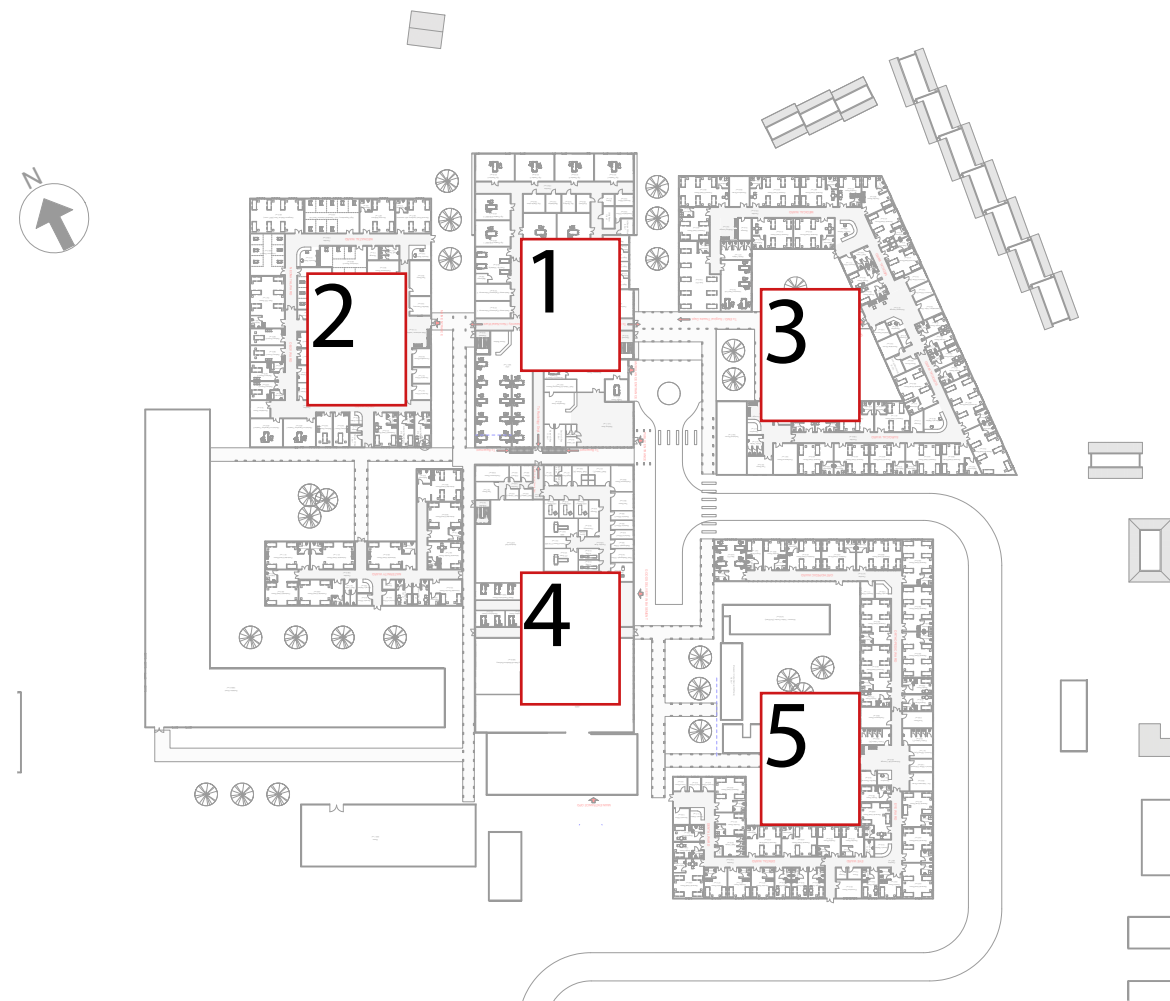
Facade elevation showing heights and new buildings from the South East

Page 45



Concept

Construction stages / prioritization



Construction/ prioritization stages

- 1 Basement floor**
Central Laundry, Central Support & Maintenance, Central Housekeeping, Central Equipment storage, O2-Plant, Central Sterilization, Central Staff Service
- Ground Floor**
ICU, EMD, Surgical Theatre Department
- 1st floor**
Administration incl. pastoral services, Central Kitchen/Staff Cantine/Central staff services

- 2 Ground Floor**
OBGY - Maternity,
Neo - Natal Ward

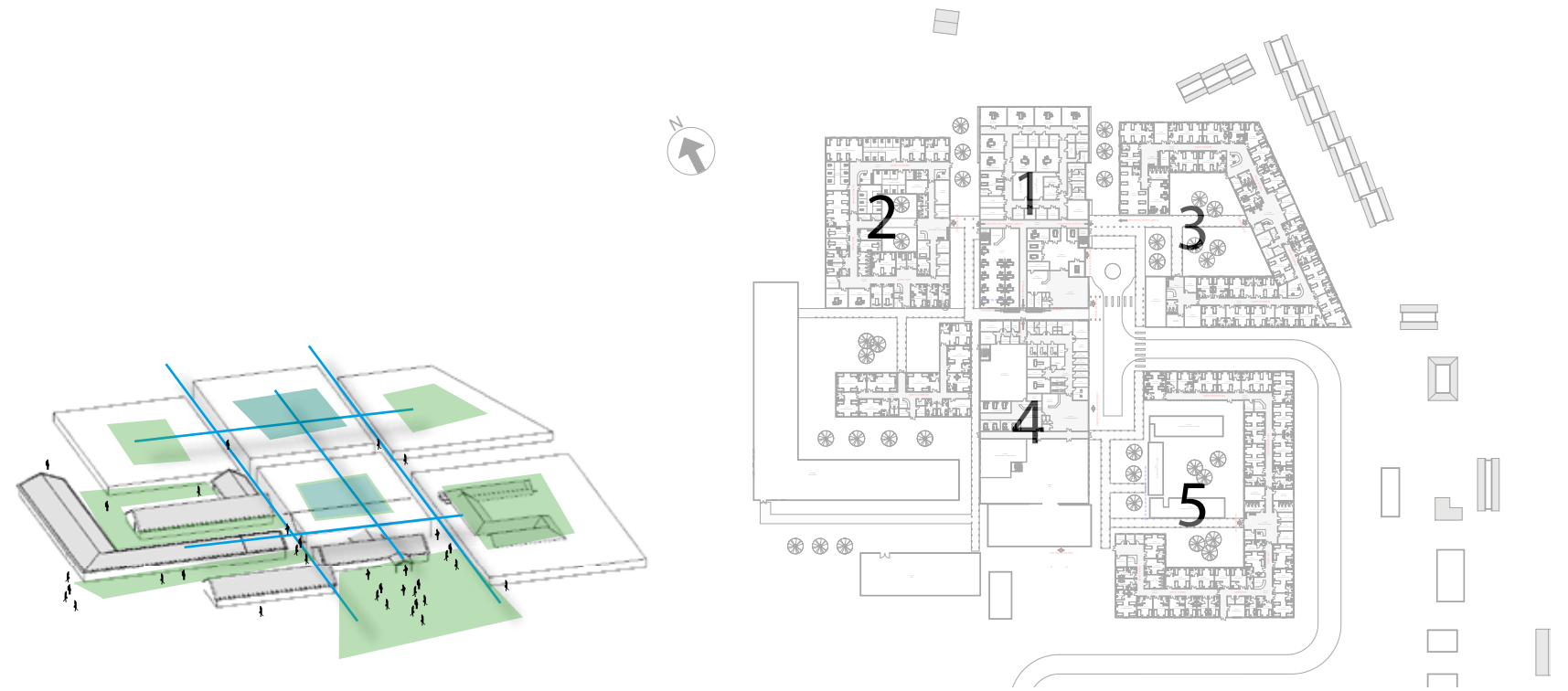
- 3 Ground Floor**
Medical + Surgical Ward

- 4 Basement floor**
Laboratory Services, Pharmacy Dept.
(Central Medicine Store)
- Ground Floor**
Laboratory, Radiology Dept.
Pharmacy, OPD
- 1st floor**
OPD, Physioterapy Dept.,
Psychiatric OPD, Pharmacy Dept.

- 5 Ground Floor**
Eye ward, ENT/Dental Ward ,
Orthopedic Ward

Concept

Construction stage / prioritization





The area and buildings as they are today, existing situation

Construction/ prioritization stage

1

Basement floor

Central Laundry, Central Support & Maintenance, Central Housekeeping, Central Equipment storage, O2-Plant, Central Sterilization, Central Staff Services

Ground Floor

ICU, EMD, Surgical Theatre Department

1st floor

Administration incl. pastoral services, Central Kitchen/Staff Cantine/Central staff services



Demolish / remove buildings, before starting the 1st construction stage. This will apply to these buildings:
Drying yard, Dormitories, Store, Toilet



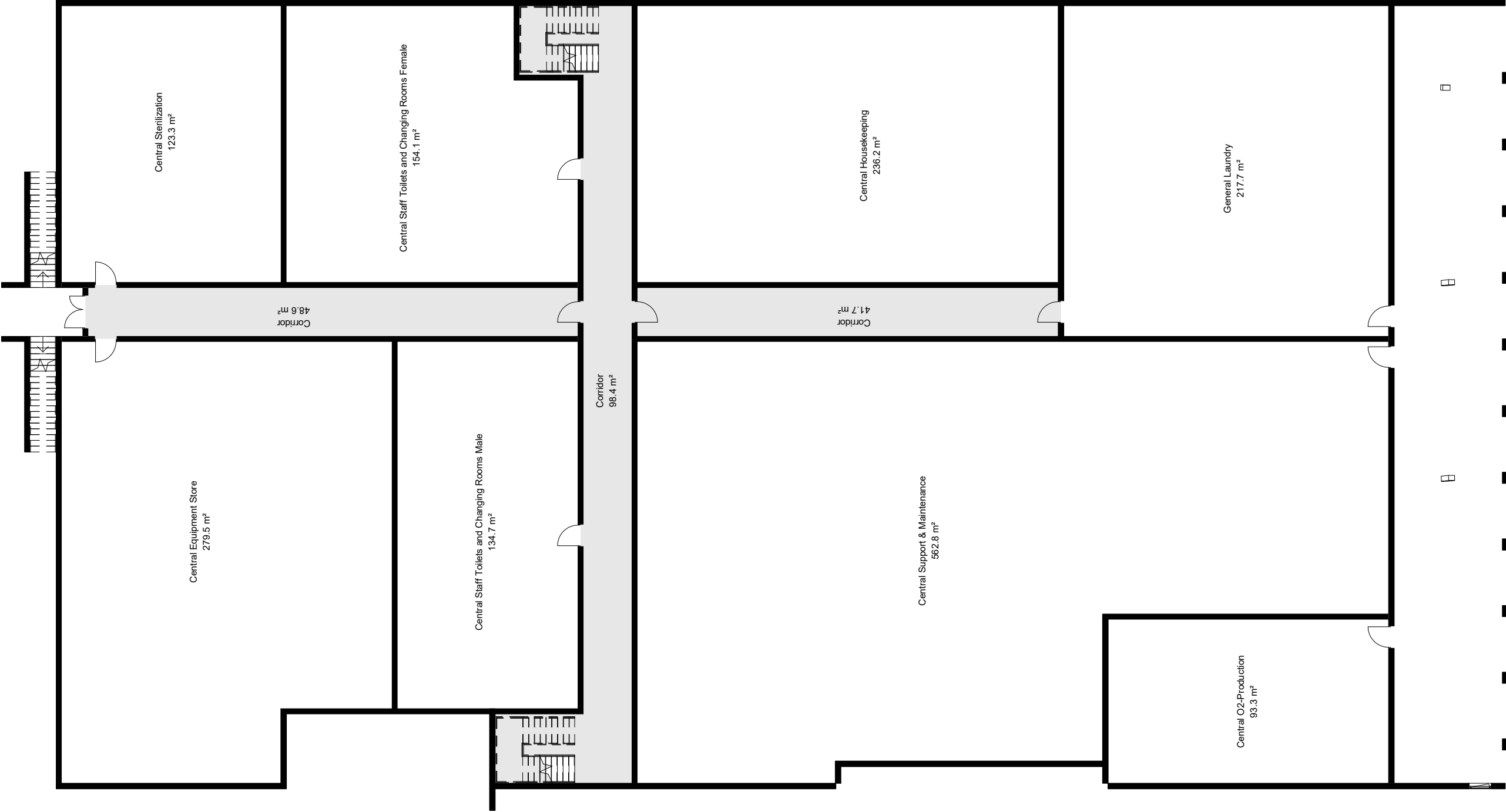
1st construction stage, three-storey building, buildings shown on maps, can be retained until the next construction phase



Construction stage 1, seen in connection with completed development

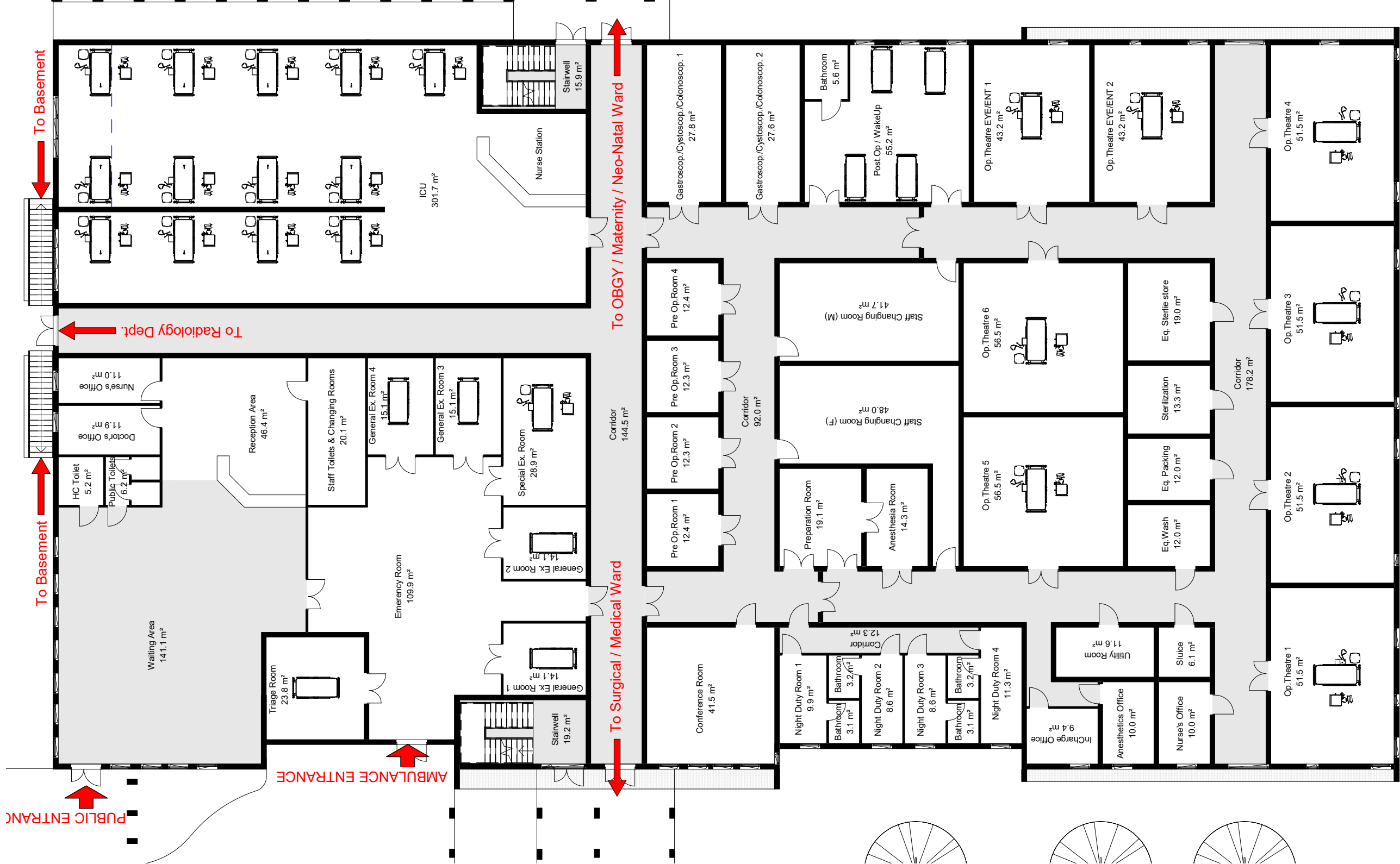


Basement floor



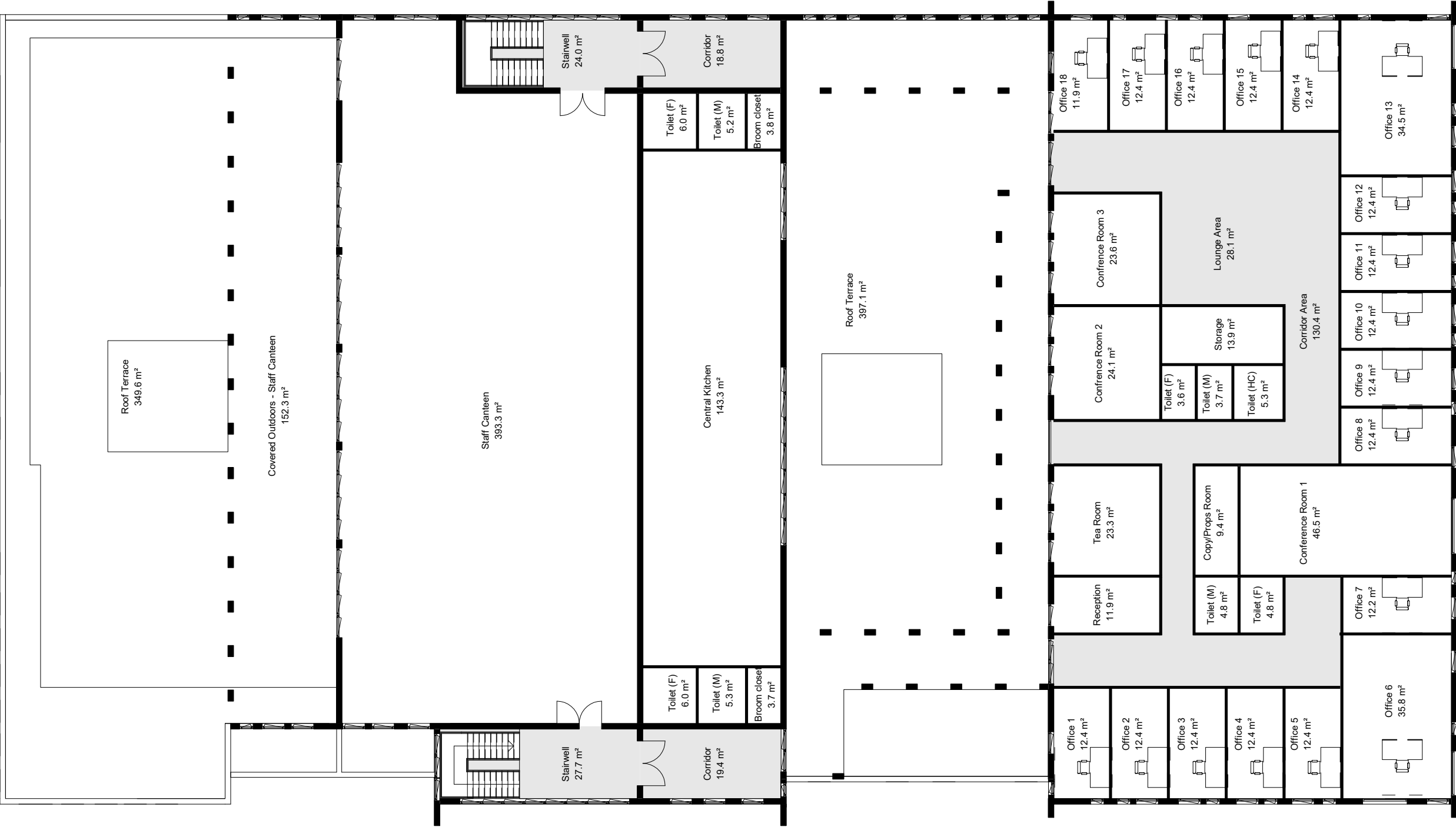


Ground Floor





First Floor



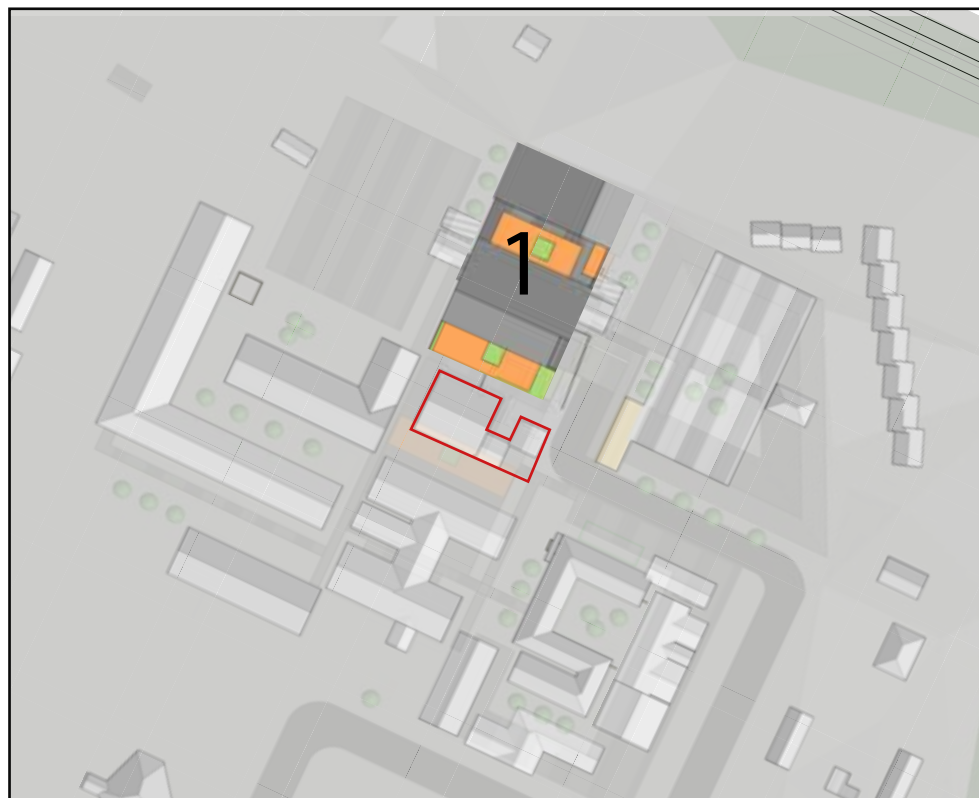


The area and buildings as they are today, existing situation

Construction/ prioritization stage

2

Ground floor
OBGY - Maternity,
Neo - Natal Ward



Demolish / remove buildings, before starting the 2st construction stage. Move containers and other storage equipment

Since laundry and oxygen ceilings are proposed on the basement floor in construction stage 1, these building can be removed.

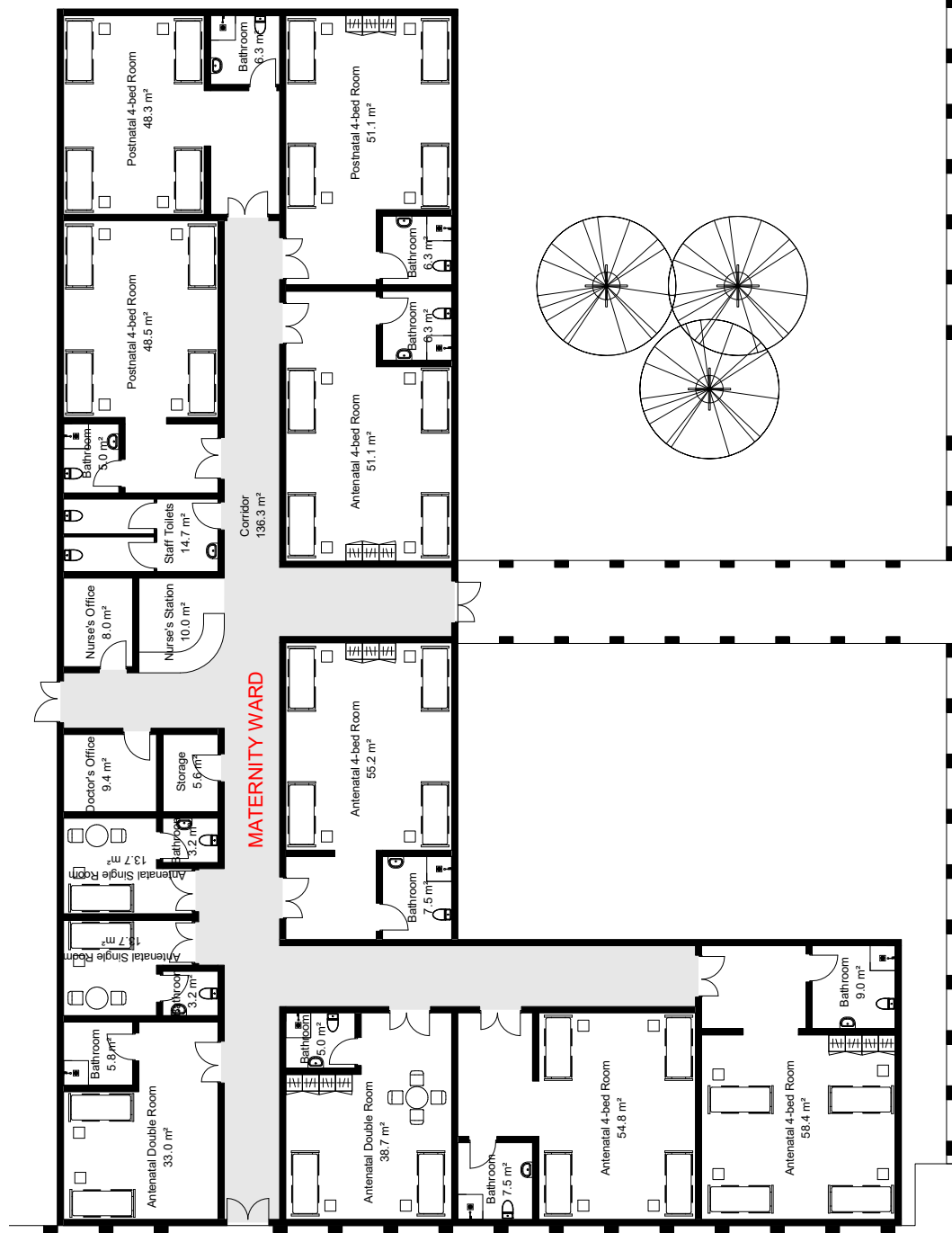


2 st construction stage, a ground floor building. Buildings shown on maps, can be retained until the next construction phase



Construction stage 2, seen in connection with completed development

Ground_Floor

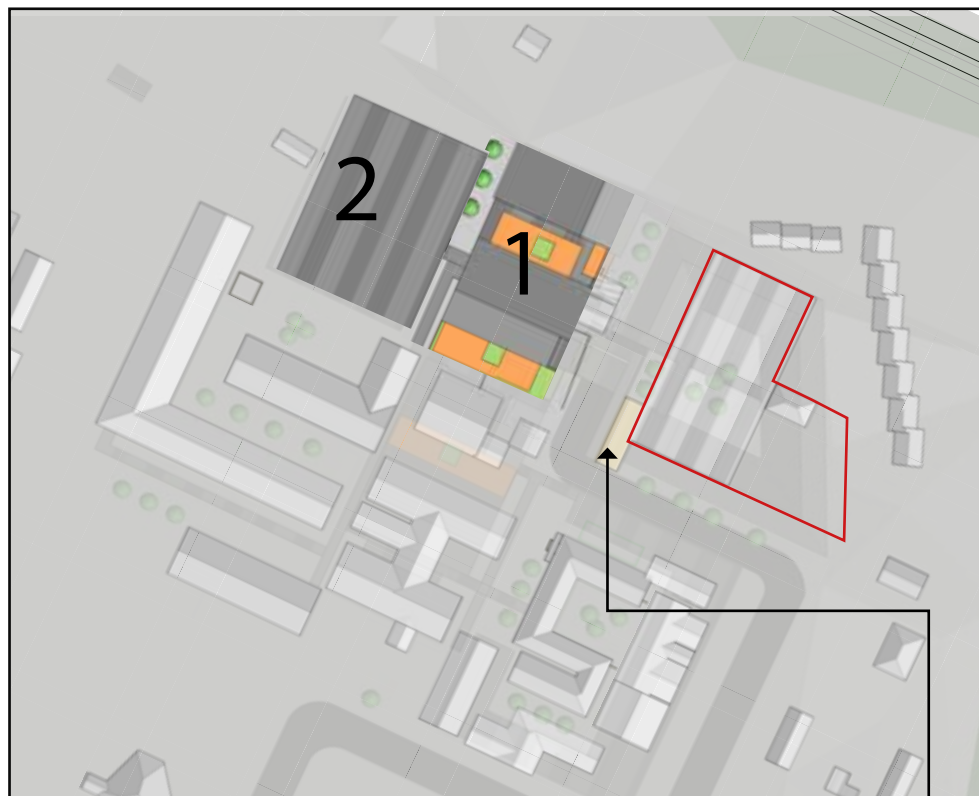




The area and buildings as they are today, existing situation

Construction/
prioritization stage

3 Ground floor
Medical + Surgical Ward



Demolish / remove buildings, before starting the 3st construction stage. This will apply to these buildings:
Garage, Welding, Carpentry, Mech, IT

The building with the UPS can be preserved, then the newly built roof over this building will also be retained in the future

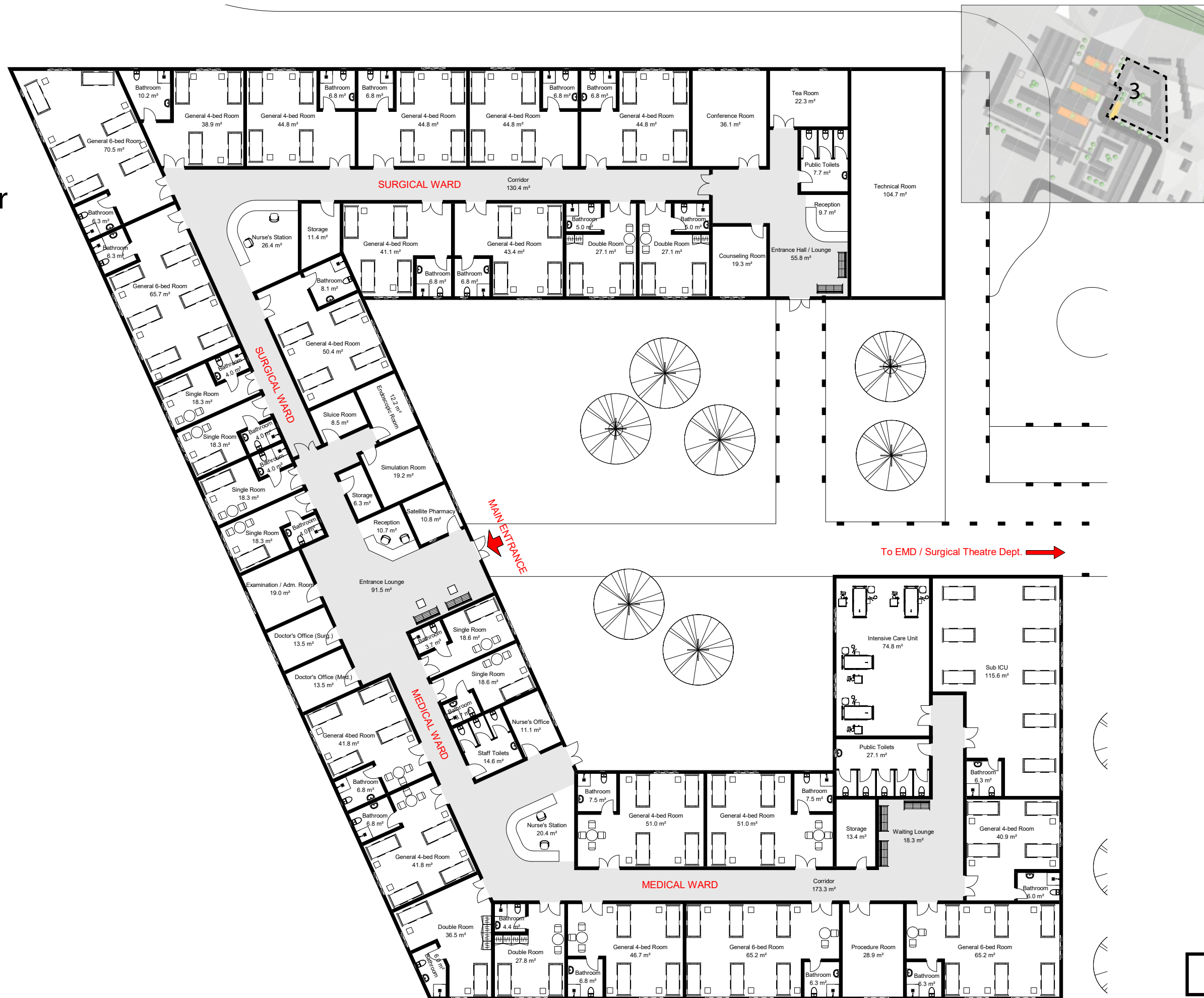


3 st construction stage, a ground floor building. Buildings shown on maps, can be retained until the next construction phase



Construction stage 3, seen in connection with completed development

Ground Floor





The area and buildings as they are today, existing situation

Construction/ prioritization stage

4

Basement floor

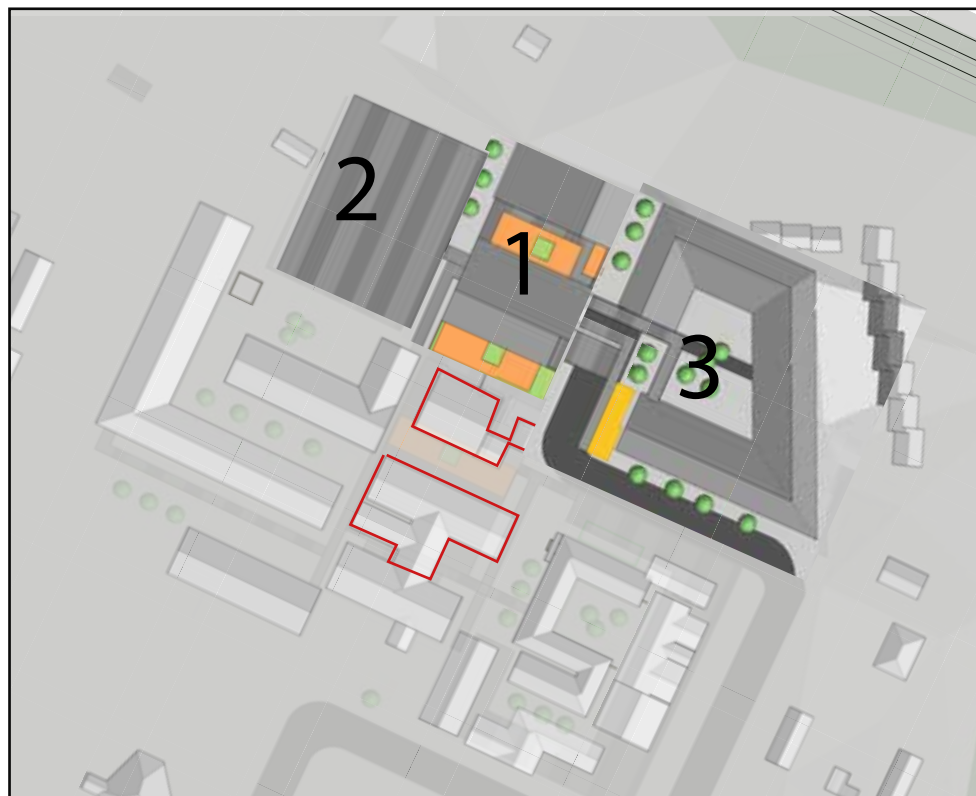
Laboratory Services, Pharmacy Dept.
(Central Medicine Store)

Ground Floor

Laboratory, Radiology Dept.
Pharmacy, OPD

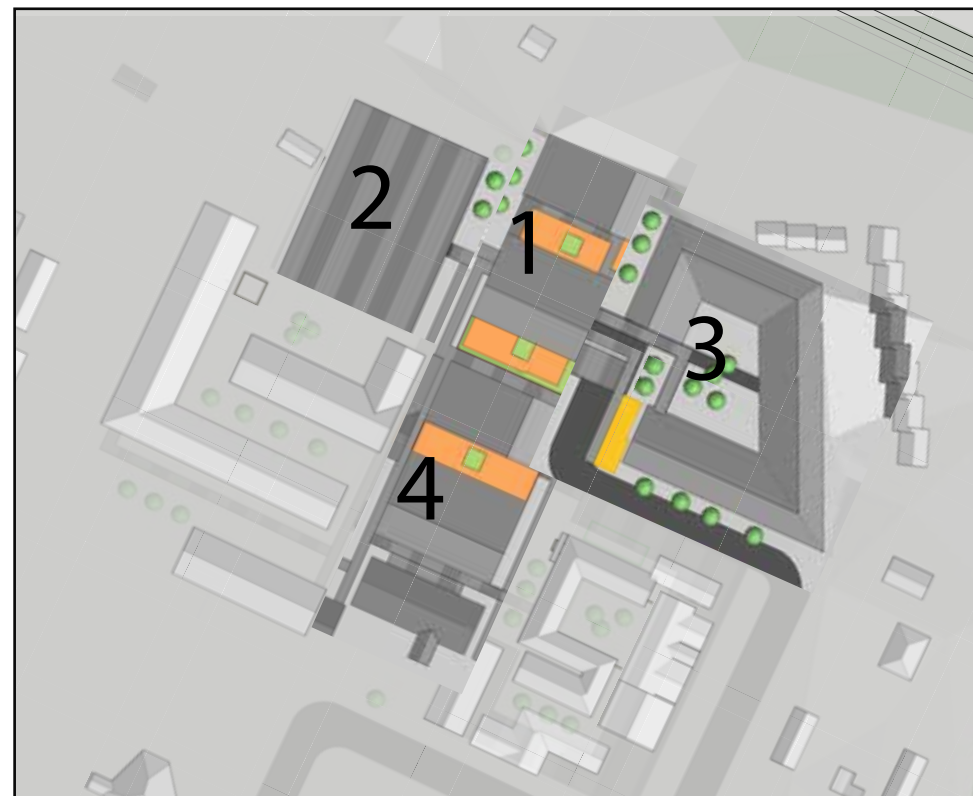
1st floor

OPD, Physioterapy Dept.,
Psychiatric OPD, Pharmacy Dept.



Demolish / remove buildings, before starting the 4th construction stage. This will apply to these buildings:
Steam, Laundry, Theatre, ICU

The main entrance and building as well as the Old ward will be preserved and restored for historical value



4 st construction stage, three-storey building, buildings shown on maps, can be retained until the next construction phase

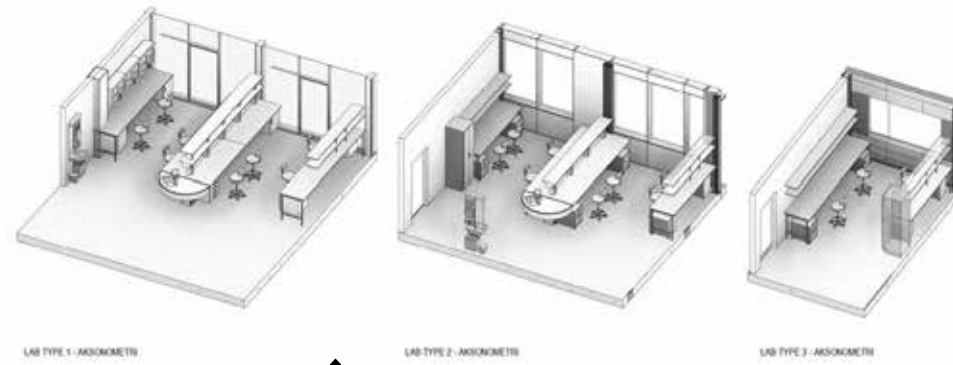


Construction stage 4, seen in connection with completed development

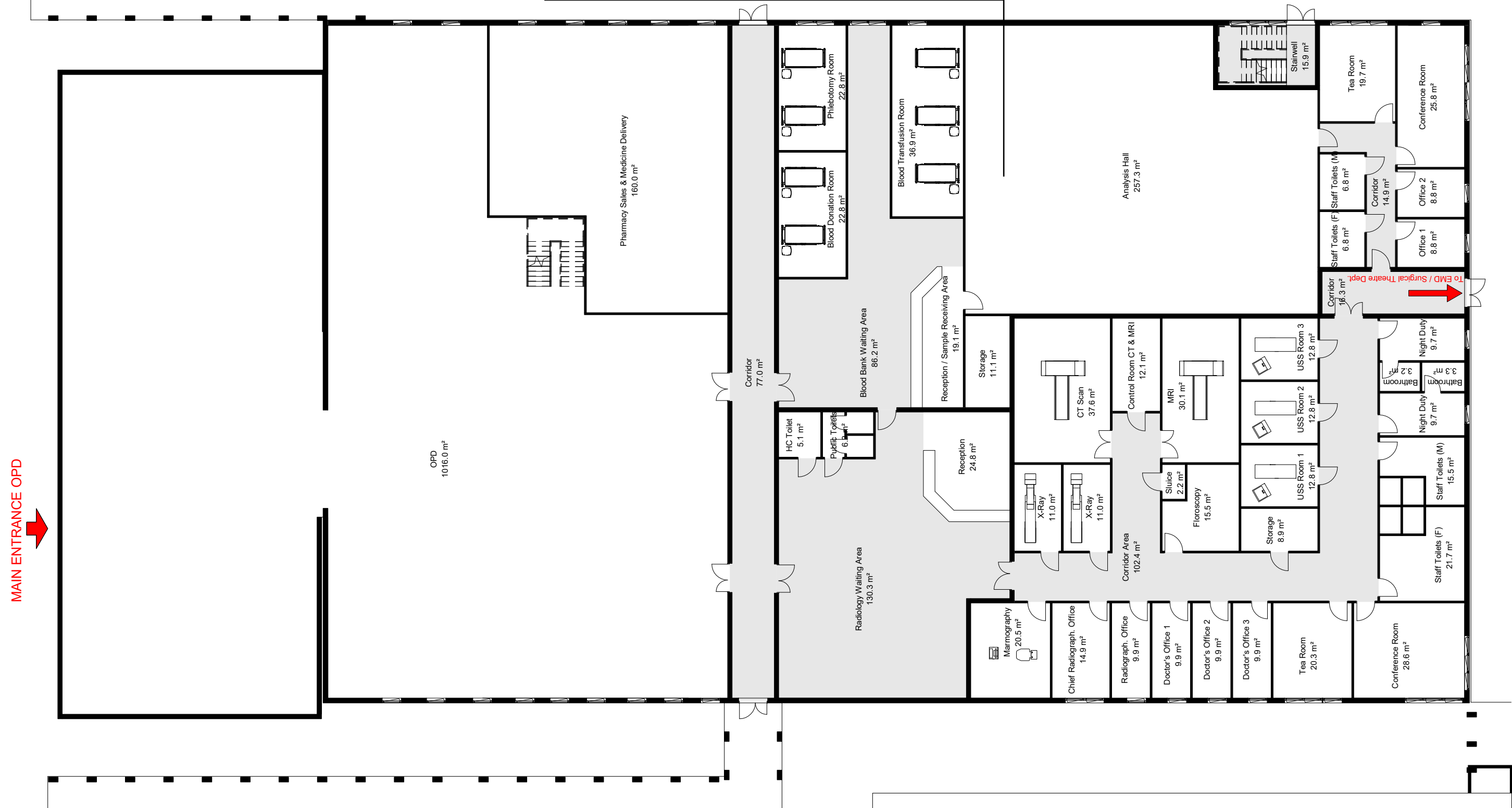


Basement floor



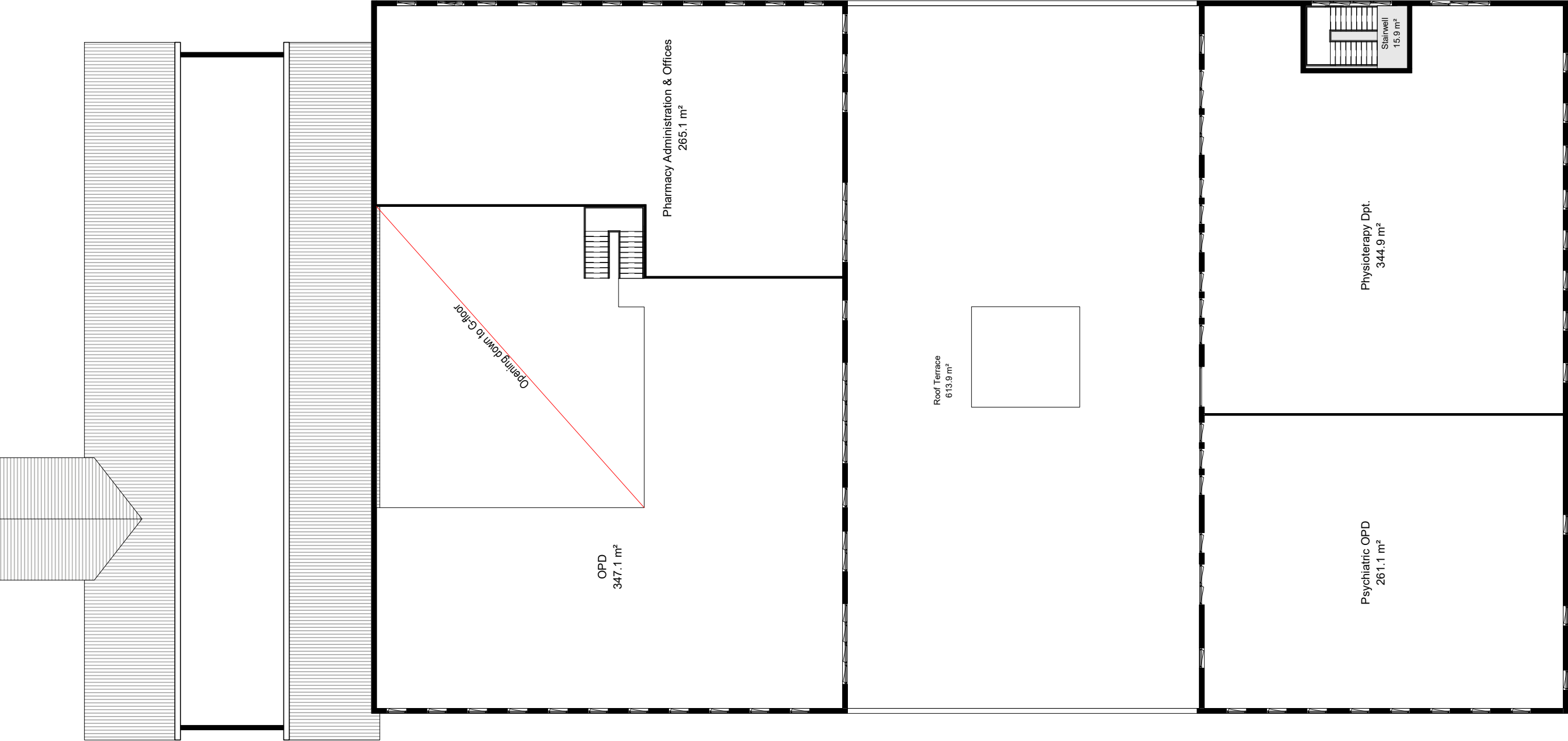


Ground Floor





First Floor

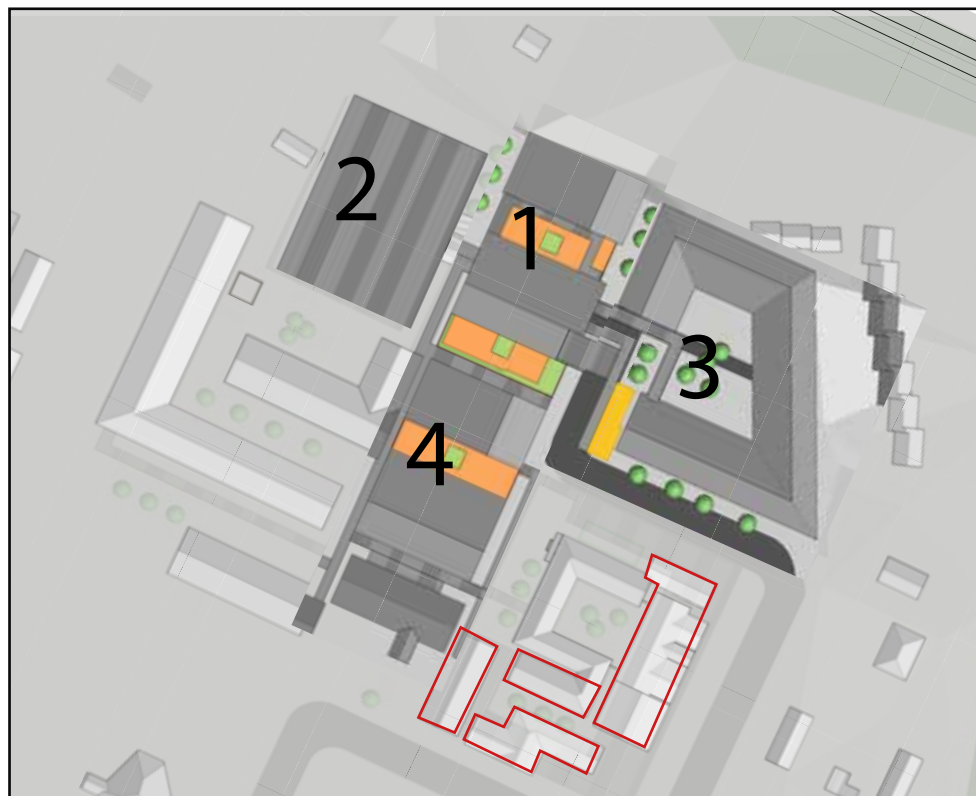




The area and buildings as they are today, existing situation

Construction/
prioritization stage

5 Ground floor
Eye ward, Dental Ward,
Orthopedic Ward



Demolish / remove buildings, before starting the 5st construction stage. This will apply to these buildings:
PhycOPD, Payment, Radio, Ultrasound, CT, Diabetic Clinic, Eye, HR, Lib, Adm, Pharmacy

The main entrance and building as well as the Old ward will be preserved and restored for historical value



5st construction stage, three-storey building, buildings shown on maps, can be retained until the next construction phase



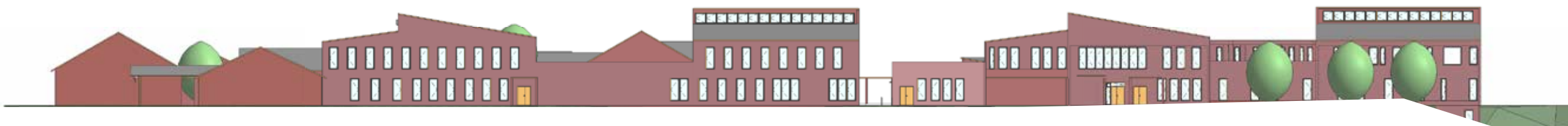
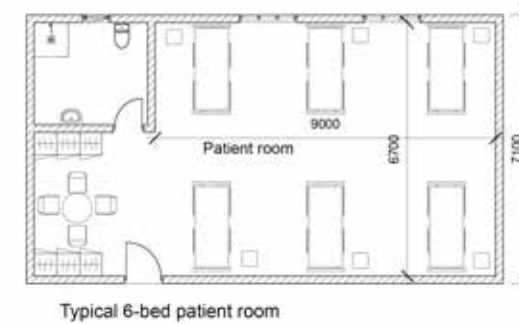
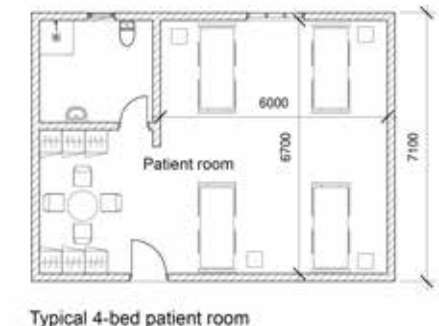
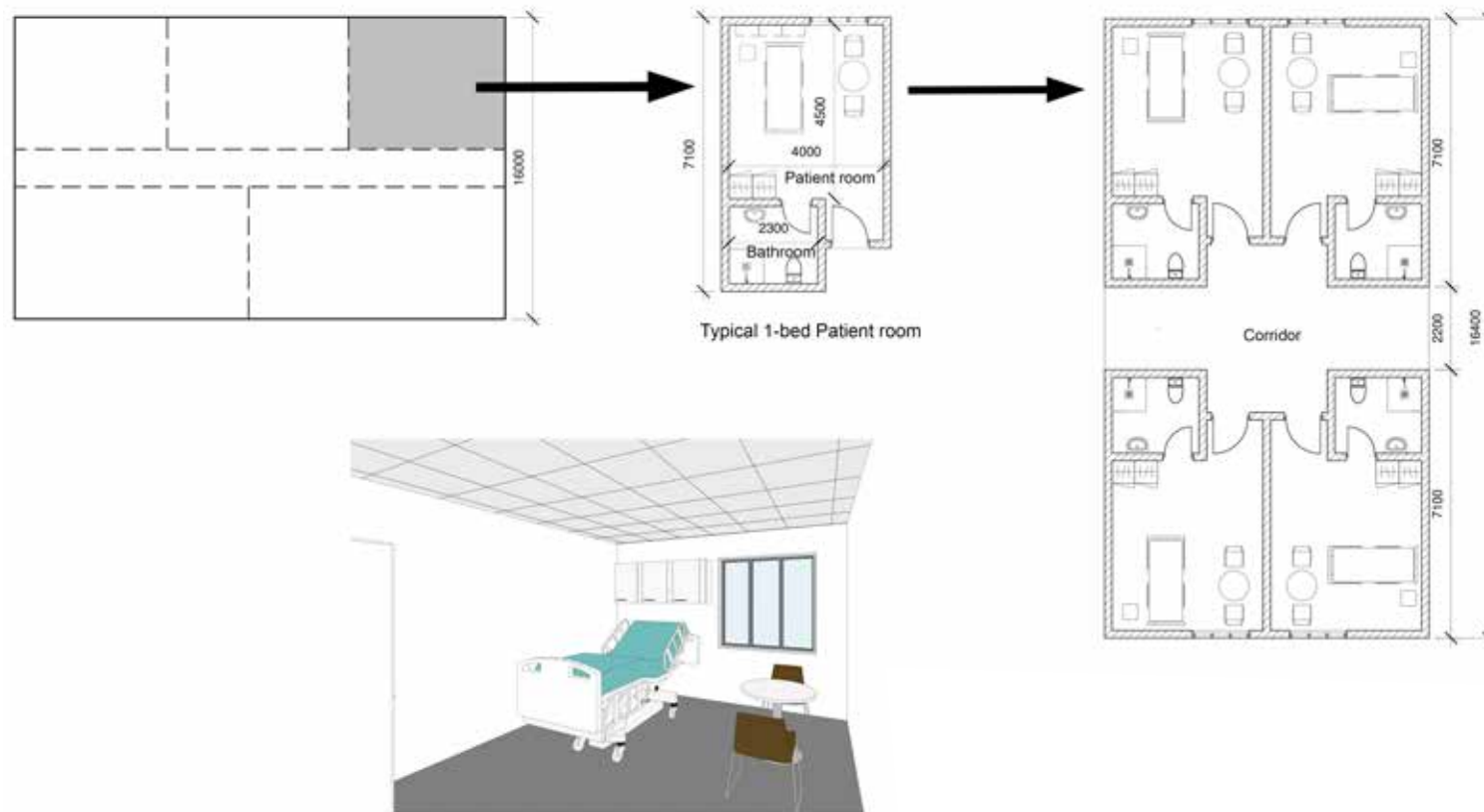
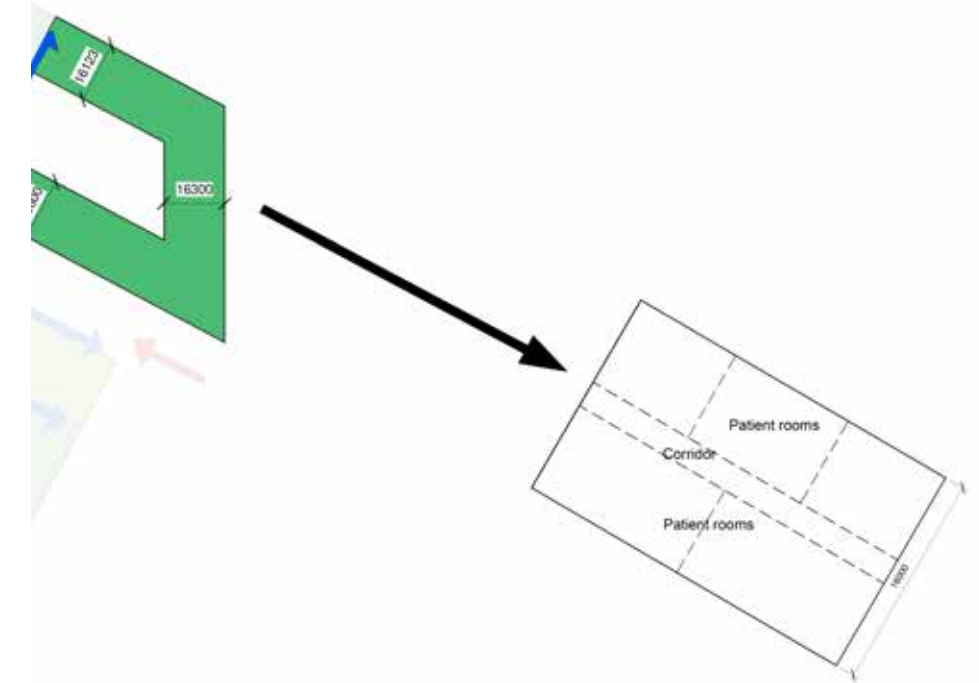
Construction stage 5, seen in connection with completed development

Ground Floor



Concept

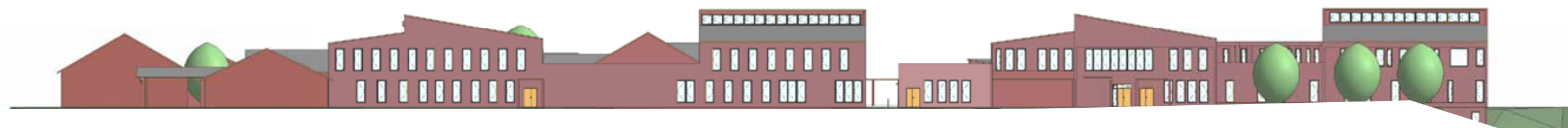
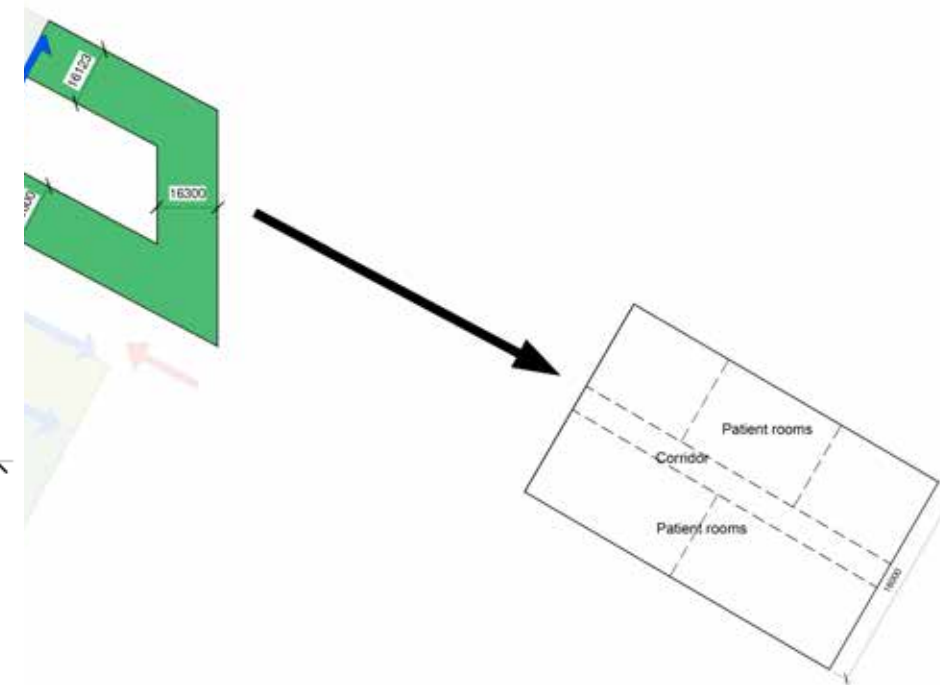
Ward and patient room principles



Concept

Ward and patient room principles

Suggestions for possible composition of rooms 22000



Concept

Color and materiality



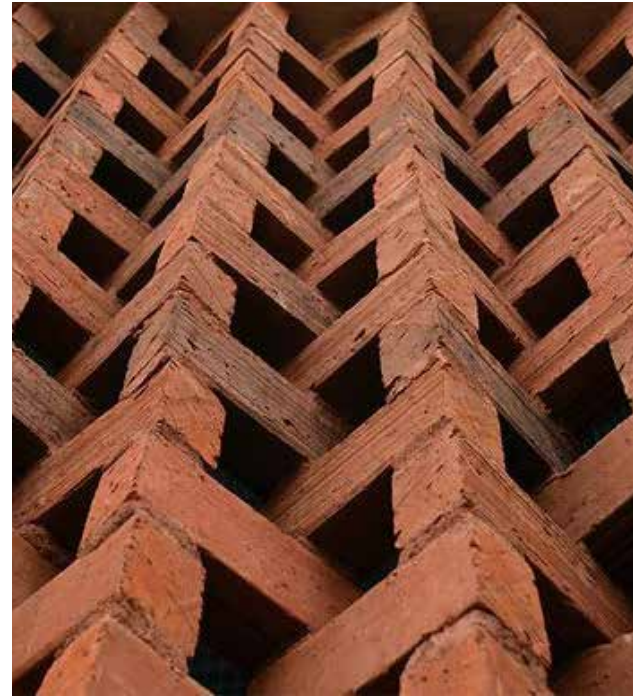
Inspiration

Color and materiality inspiration from Haydom



Inspiration

Materials - the main material is brick, local red brick

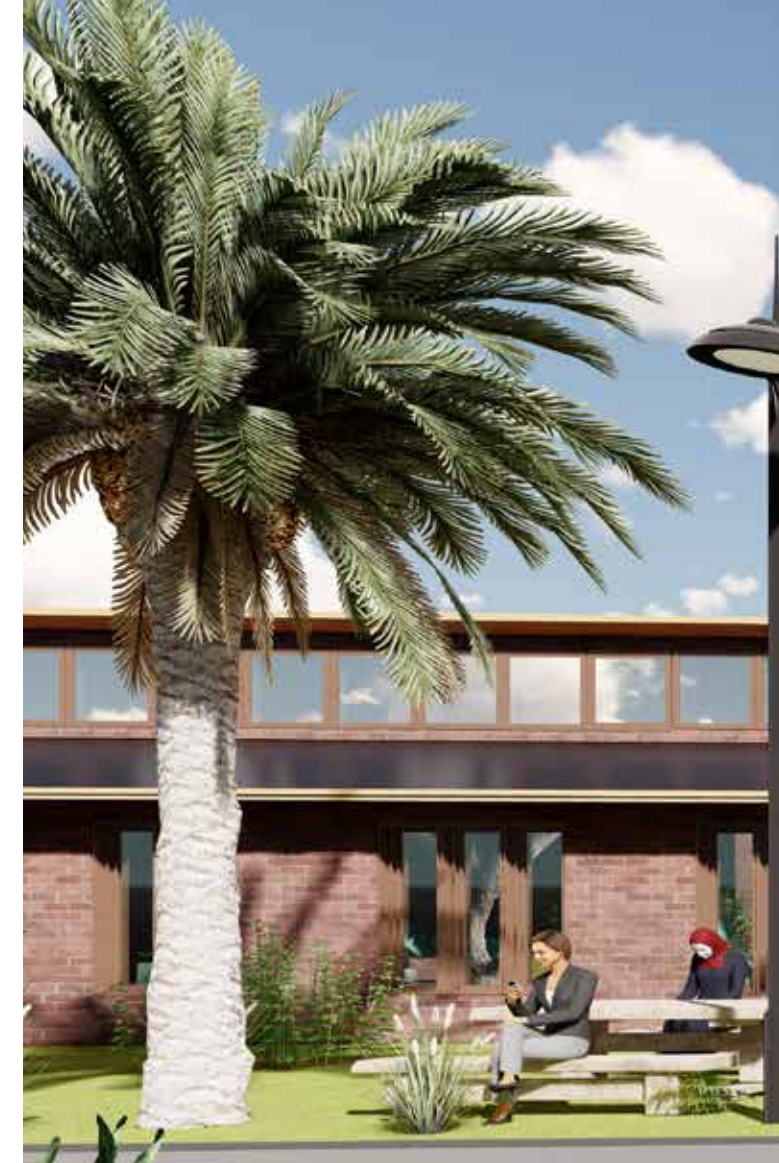


Inspirational images

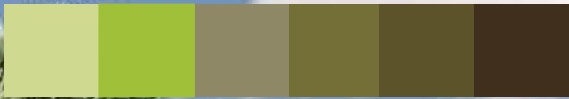


Inspiration

Outdoor areas



Inspirational images



Perspective towards a new road for ambulances towards construction stages 3 and 5

Inspiration

interior rooms and seating areas, waiting areas
and patient rooms



Inspirational images



takterrasse visualisering

Perspective from the new road towards the emergency department
and the connection to medical ward





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Perspective towards emergency entrance

Inspiration

Exterior walkways



Inspiration

Outdoor areas



Inspiration

Reference project

Friendship Hospital, Satkhira, Bangladesh

Date of completion April 2018

Location Shyamnagar, Bangladesh

Cost £ 1,516,000

Internal area 4,777 m²

Cost per month £ 317 / month

Contractor Golam Mostofa Limited

Structural Engineers Descon Engineers

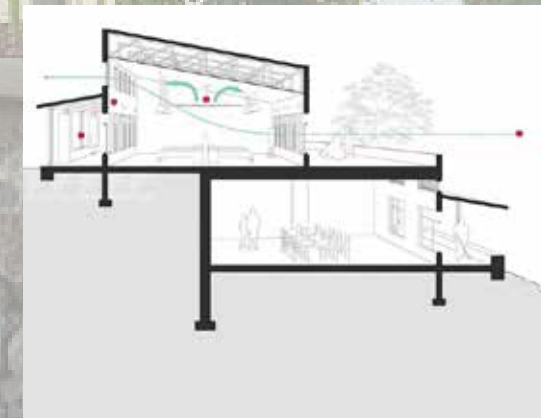
Electrical Engineer Independent

Plumbing Design M / S High Speed Engineers

Sewage Treatment Sigma Engineers Ltd.



MATERIALS, USE OF COLOURS, ART, PERSONAL CONTROL VISITORS, AIRQUALITY, NATURAL AND ARTIFICIAL LIGHT



| STUDY

"HOSPITAL AS MORE THAN A MECHANISM FOR TREATMENT"

We know that surroundings have a great impact on people, both the built- and natural environment, and this is true also for hospitals. Traditionally, architecture of hospitals stems from two contrasting paths; one is the ancient belief of the hospital as a space for healing, the other is the idea of the hospital as an efficient mechanism for delivering treatment. The latter is perhaps the most recognised thought and driver behind hospital architecture today¹. It is perhaps also why hospitals often are unpleasant buildings to be in, and people's experience has for long been overruled by this belief

which is understandable seeing that hospitals are complex buildings where efficiency, flow and sterility are literally a matter of life and death. However, the architecture should not stop there. When the two paths meet, the ideas are given great potential to compliment each other, and research show they should. In recent years, a new focus on hospitals also as a space for healing is given new attention. The way we design hospitals has a great opportunity to influence people's physical and mental health, and it can perhaps also alleviate the traumatic experience it is to be at, or visit a hospital.



ART

Local artists and local crafts

We suggest starting a collaboration with local artists who can exhibit art at the hospital, we have experience with this from the hospital we designed in Addis Ababa, Ethiopia.

We also suggest that local crafts be used as part of the furniture and as decoration in the new hospital. It can also be part of products that can be sold in the visitor center that we have proposed placed in the old building.







Perspective showing the existing roof of the building at the main entrance and how the new structure and roof surfaces appear



STAV ARKITEKTER



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Perspective shows the first construction stage towards the intensive care unit, the canteen and the roof terrace



ALONE WE CAN DO SO LITTLE;

TOGETHER WE CAN DO SO MUCH.

HELEN KELLER



Haydom - Sustainability - Future