PROJECT OVERVIEW

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Studio
Name / Theme
Complex Projects – Bodies & Building Milan

How can hospital design positively influence staff well-being?

Fig. 1 - Collage design ambition

Assignment

The project is made as part of The Bodies and Building Complex Project Studio. The main task is designing a building in place of an existing one as if the original one was never built. The design is based in Milan, Italy, and it follows evidence-based design principles. Eight types of buildings consist of a train station, an airport, a hospital, a school, a courthouse, a library, a museum, and an opera.
Each of the eight types belongs to one of the subtopic groups: materials, health or culture. The hospital belongs to the health group, which will lead to the implementation of design principles that are meant to improve the health of the building and the city.
The chosen type is the hospital, designed in place of the existing Clinica La Madonnina, created by Eugenio and Ermenegildo Soncini in the 1950s.

Design background and research question

Design ambition: Creating a medical facility that prioritizes the well-being of medical staff to improve the general quality of healthcare.
The project explores how hospital design can positively influence staff well-being while maintaining operational efficiency. The analysis includes spatial planning, workflow optimization, and environmental improvements inspired by hospitals such as Rigshospitalet North Wing (Copenhagen), Erasmus Medical Center (Rotterdam), and Lunder Building (Boston).

Research question: How can hospital design positively influence staff well-being?

Fig. 2 - Existing hospital

Expected outcomes

By flipping the narrative, from a usually patient-centred design into a staff-centred one, the facility is supposed to test the efficiency of the new approach. By rearranging the layout zones and flows, emphasizing vertical and horizontal division, it is anticipated to reach a new, smarter way of managing the facility. The new hospital should put less physical and mental strain on staff, improving the general healthcare outcomes. It is worth noting, that systemic issues are abundant in the Italian healthcare system and they can not be fixed by architectural factors. Despite this, the building design could improve the work environment and positively influence the well-being of medical staff.

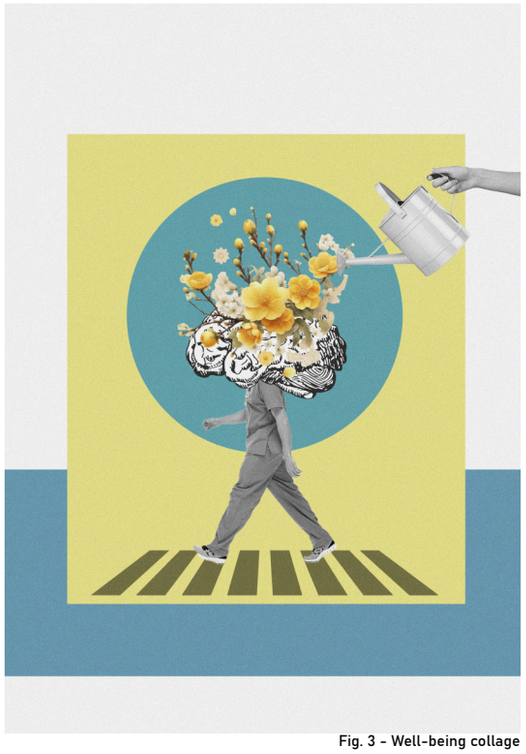


Fig. 3 - Well-being collage

RESEARCH

Recognised Issues

This research focuses on how hospital design can enhance employee well-being, particularly within healthcare environments. It emphasizes the need to prioritize not just the physical health of patients but also the mental, emotional, and physical well-being of the staff working in these facilities. The research integrates principles of human-centred design, adaptability, and flexibility to propose solutions that can create a more supportive working environment for hospital staff while improving healthcare delivery.

Research and data collected from surveys, case studies, and benchmarking have identified the following critical areas for improvement:

a. Significance of Staff Well-Being

- Healthcare workers, particularly nurses and surgeons, spend extensive hours in hospitals. Nurses walk up to 8 km per day, equivalent to a marathon weekly, creating physical and mental fatigue.
- High levels of stress, anxiety, and depression among medical staff significantly impact the quality of care. Reports indicate 15% of Italian nurses experience severe stress levels, and 50% report mild to moderate depression

b. Systemic and Architectural Challenges

- Issues such as insufficient staff rest areas, long walking distances, and inefficient spatial organization hinder productivity and job satisfaction
- Single elevators and poorly optimized vertical circulation contribute to time wastage and inefficiencies in delivering patient care

c. Global Importance of Employee Well-Being

- Studies indicate that improving employee well-being leads to better decision-making, higher productivity, and reduced medical errors. It is estimated that 8–12% of hospitalizations in Europe are associated with adverse events, half of which are preventable
- The focus on staff well-being is also economically significant, with workplace well-being investments projected to grow globally from $20.4 billion in 2021 to $87.4 billion by 2026

Facility Operations and Staff Flows

The facility's design also takes into account the daily routines and flow of staff, patients, and visitors. Nurses work long hours, often up to 240 hours per month, and their efficiency is directly impacted by the layout and design of the hospital. Surgeons, with shifts of up to 320 hours a month, also need facilities that support quick and easy access to essential areas. By mapping out the staff and patient movements, the design optimizes key touchpoints such as patient rooms, operating rooms, staff changing areas, and rest zones, thus reducing unnecessary walking and improving both

Research Goals

- Investigate spatial relationships and traffic flows to reduce fatigue and stress among staff
- Explore methods to integrate therapeutic and rest spaces into hospital designs
- Identify global best practices in hospital architecture that promote staff well-being
- Develop a flexible and efficient layout that aligns with challenges specific to public healthcare systems like Sistema Socio Sanitario Lombardia and Servizio Sanitario Nazionale.

Fig. 4 - Scheme of the weekly walking distance of a

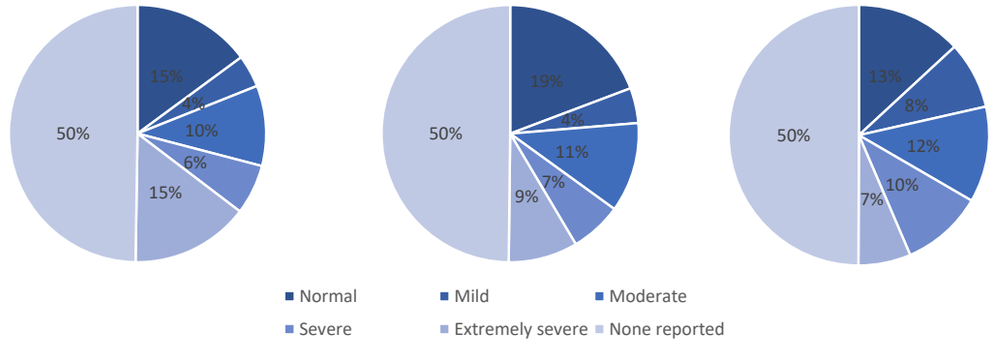


Fig. 5- Mental struggles among italian nurses

DESIGN BRIEF

Client

The initial medical facility serving as the starting point for the design brief currently belong to the largest private group providing medical services in Italy. Most of their sixty-three facilities are located in northern Italy, with the majority of them being in Milan. The company promotes itself as patient-centred, with La Madonnina having particularly extravagant and famous patients, due to the fact that it also provides services such as plastic surgery.
After carrying out analyses and determining the main design objectives, it was decided that the clinic will be converted into a public facility. Through this, the new clients are the Sistema Socio Sanitario Lombardia (SSSL), a regional health system in Lombardy that manages the provision of health services at a local level, focusing on the integration of health care with social services and the promotion of a sustainable approach to public health, and the Servizio Sanitario Nazionale (SSN), a national public health system in Italy that provides universal access to medical services, mainly financed by public funds, with an emphasis on equality of access and high-quality healthcare. By transforming Clinica La Madonnina into a public facility, these two entities will be integral clients, ensuring the facility's design meets both local and national healthcare needs, while also enhancing the working

SSN SERVIZIO SANITARIO NAZIONALE

Fig. 6 - Servizio Sanitario logo

Sistema Socio Sanitario
Regione Lombardia

Fig. 7 - Regione Lombaria logo

Site

The project site is in located in Milan in Via Quadronno 29, within a highly urbanized and well-connected area that accommodates various medical, residential, and commercial facilities. The site's strategic position provides easy access to essential healthcare services, making it an integral part of the city's medical infrastructure.

Nearby Medical Facilities:
Two prominent healthcare institutions are located in close proximity to Clinica La Madonnina, contributing to a comprehensive medical ecosystem:
1. AUXIOLOGICO CAPITANIO
- Specializes in auxology, the study of human growth and development, with a focus on endocrinology, nutrition, and metabolic disorders.
- The facility is well-known for its research and treatment of growth disorders, obesity, and diabetes.
- It offers a multidisciplinary approach combining diagnostics, therapy, and prevention programs.

2. ISTITUTO ORTOPEDICO GAETANO PINI
- A leading orthopaedic hospital specializing in musculoskeletal disorders, trauma, and rehabilitation services.
- The institute provides advanced treatments for orthopaedic surgery, sports injuries, and chronic conditions like arthritis.
- Equipped with state-of-the-art surgical units and rehabilitation centres, it serves both acute and long-term orthopaedic patients.

Fig. 8 - Map of Surrounding Medical Facilites

Transport Connectivity

The Clinica La Madonnina site benefits from a well-developed public transport network, ensuring convenient access for patients, visitors, and staff. Key transport features include:

1. Metro Stations:
   - Closest metro stations include Crocetta and S. Sofia, providing direct connections to Milan's city center and other key districts.
2. Bus Stops:
   - Multiple bus routes pass through the area, offering accessibility to nearby neighbourhoods and suburban areas.
3. Traffic Flow and Access:
   - The site is surrounded by a network of one-way streets, which regulate traffic and reduce congestion around the hospital.
   - Emergency vehicle access routes are well-defined to facilitate rapid response in critical situations.

This comprehensive transport infrastructure ensures that the facility is well-connected, minimizing delays for medical professionals and patients alike.

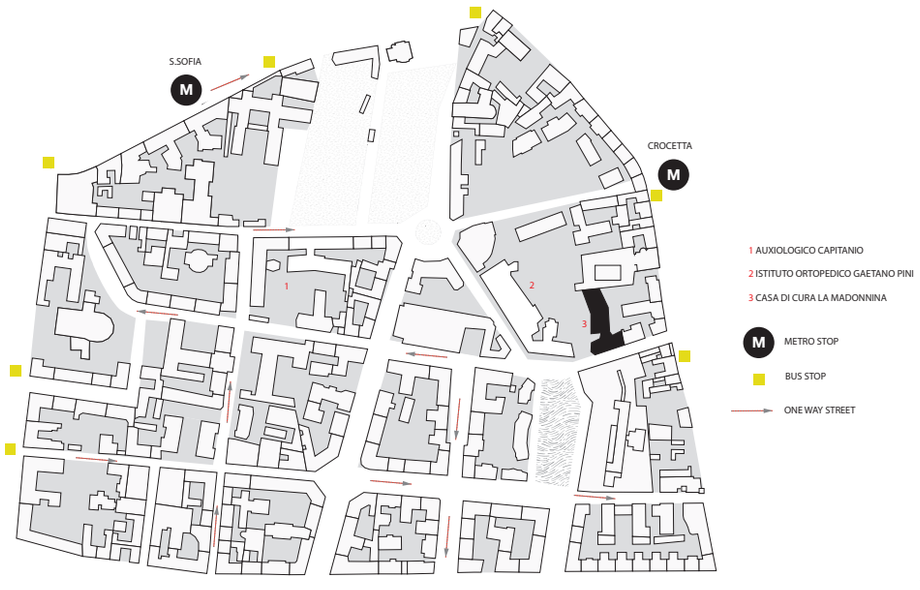


Fig. 9 - Map of Surrounding Public Transport

Surrounding Functions

The site's surroundings offer a diverse mix of urban functions, creating a dynamic environment that influences hospital operations and patient experience. Key functions include:

1. Residential Areas:
   - Located nearby, these areas provide accommodation options for patients' families and healthcare professionals.
   - Residential presence contributes to a steady demand for outpatient services and emergency care.
2. Offices and Commercial Spaces:
   - Several office buildings and commercial establishments surround the hospital, providing opportunities for partnerships and business collaborations.
   - Presence of pharmacies, medical suppliers, and wellness centers further enhances healthcare accessibility.
3. Religious Institutions:
   - Churches and religious centers in the vicinity provide spiritual support for patients and their families, addressing holistic well-being needs.
4. Construction Sites:
   - Ongoing development projects in the area may impact hospital access and logistics, requiring careful traffic management solutions.

By considering the site's comprehensive context—including medical collaboration opportunities, transport accessibility, and surrounding urban functions—the new medical facility aims to create a well-integrated and future-proof healthcare facility.

Fig. 10 - Map of Surrounding Functions

Train station

Library

Opera

Courthouse

Hospital

University

Museum

Airport

Fig. 11 - Map of the buildings in Milan

Current facility

The existing facility includes various categories of spaces:

- Patient Spaces: Inpatient rooms, delivery rooms, waiting areas, etc.
- Operational Spaces: Operating rooms, diagnostic rooms, nurse stations, etc.
- Public Spaces: Lobby, visitor areas, lounge, chapel, etc.
- Staff Spaces: Offices, changing rooms, etc.
- Technical Spaces: Warehouses, generators, kitchen, laundry, etc.
- Green Spaces: Gardens.

Current limitations include inefficiencies in workflow, lack of sufficient staff amenities, and disjointed spatial relationships.

Traffic managment in hospitals

Traffic management in hospitals has been mainly studied based on an article written by Dr Zuber M. Shaikh, called “Vertical and Horizontal Traffic Management in Hospitals: Ensuring Safety and Efficiency”. The article recognizes the challenges, as well as best practices in managing traffic management in hospitals. Some of them are presented such as:

- Challenges: Diverse traffic streams, emergency response, infection control.
- Best Practices: Strategic segregation, advanced wayfinding systems, timed access control, and technology integration.

The most important and relevant one that will be implemented into the design is strategic segregation, to make certain that the sanitary obligations are being met.

Health Group Design Restrictions

“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” – WHO(2025)
Based on the definition of Health made by WHO, the Health Group identifies three subgroups of health: social, physical and mental health. The main health challenges of the city of Milan are being identified as such: flood risk, urban heat island effect, air pollution and accessibility and integration.
Health group research question: How can the design and planning of public spaces in Milan be optimised to enhance the physical and mental health of its residents?
The Health group categorized the design solution into four scales: human, building, neighbourhood and urban one. The said design solutions are: a patio, a public passage, a piazza and a health belt.

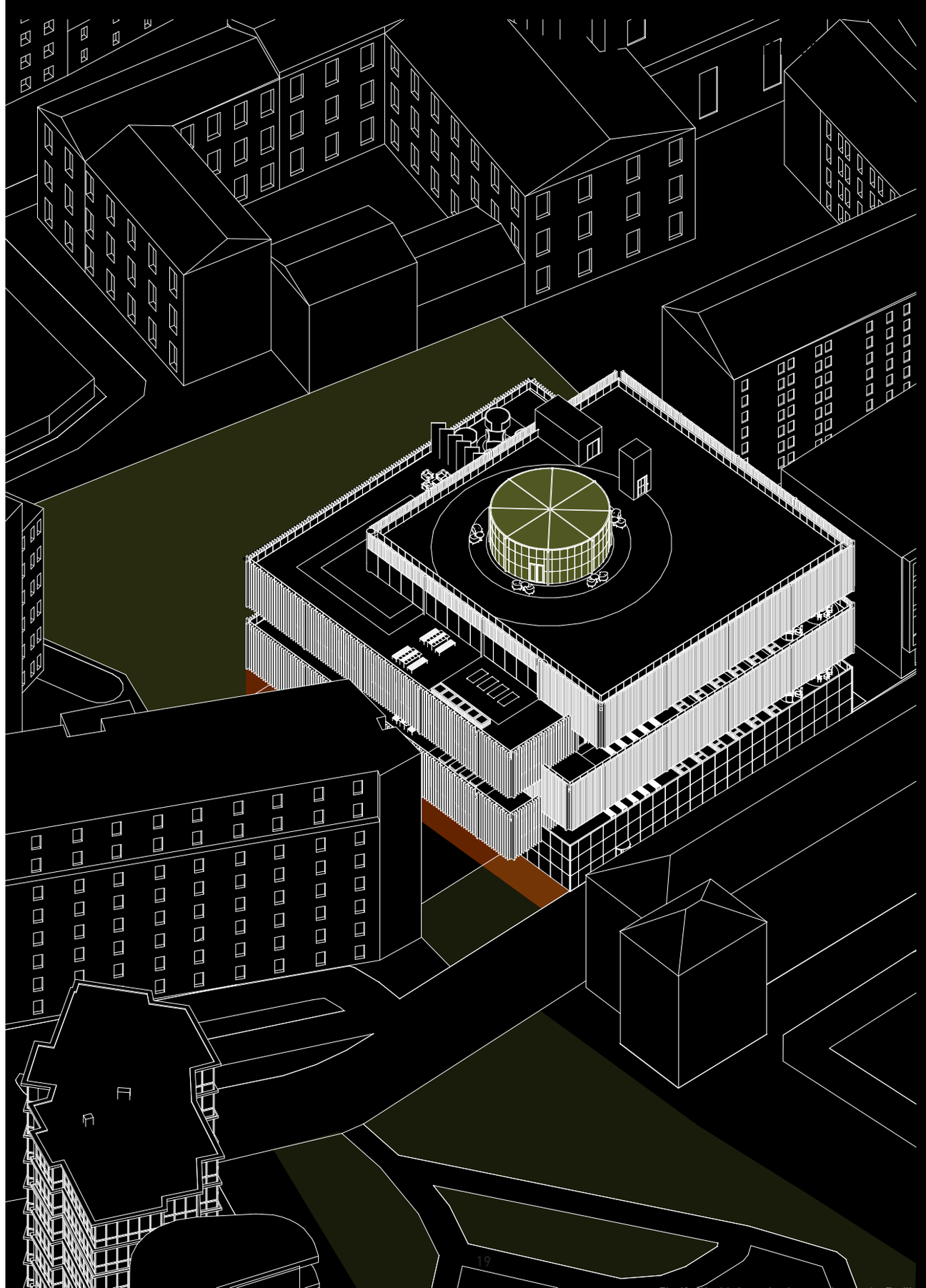
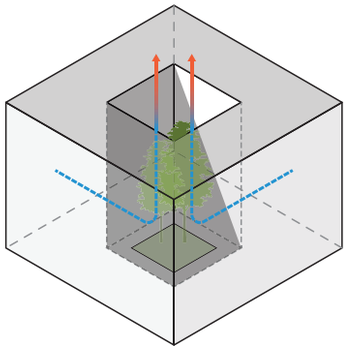
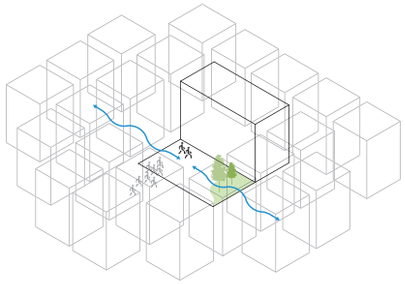
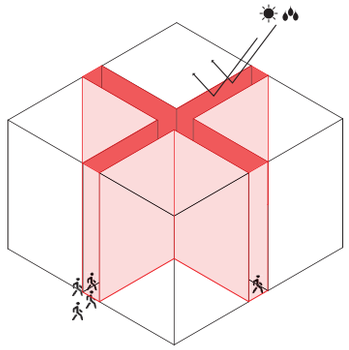


Fig. 12 - Health Group Implementations in the Facility







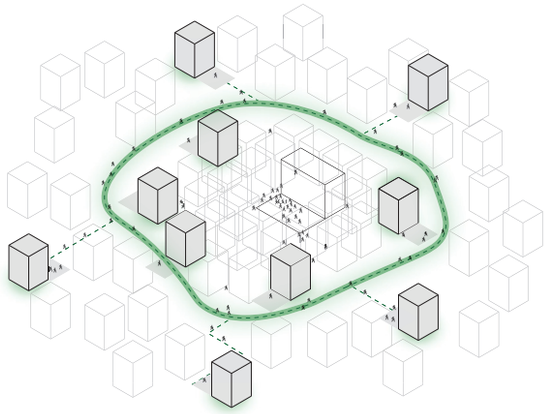


Fig. 13 - Scheme of the Health Group Design Interventions

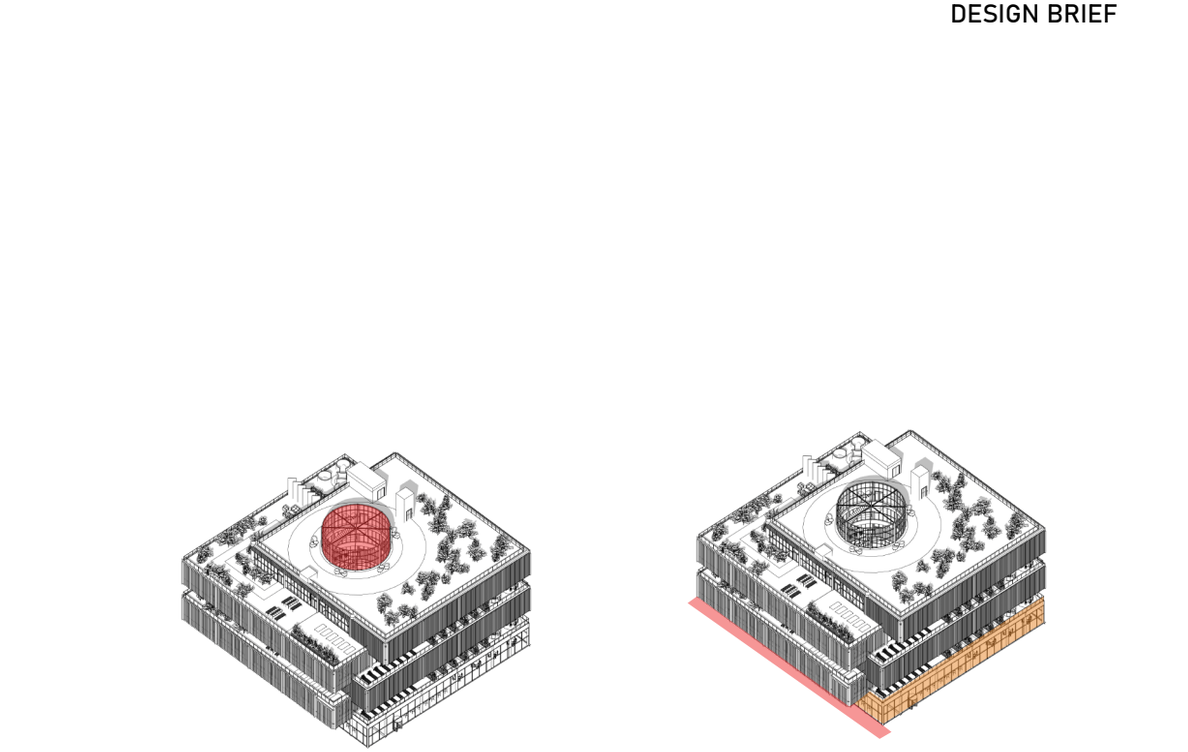


Fig. 14 - Scheme of the Health Group Elements in the Hospital

Benchmarking

To make changes in the benchmarking of existing Clinica La Madonnina, an analysis of three existing medical facilities has been conducted. The principles of these medical facilities align with the topic of research and the design ambition. The chosen examples were:

- Rigshospitalet North Wing (Copenhagen): Decentralized clinical units, noise reduction, natural light integration.
- Erasmus Medical Center (Rotterdam): Central connecting axis, vertical zoning for efficiency.
- Lunder Building (Boston): Central circulation spine, future-ready flexible layouts.

Key takeaways from benchmarking include the importance of staff lounges, flexibility, decentralized medical units, automated logistics, and clear operational/patient separations. The big point of new benchmarking is the reduction of circulation spaces itself, and adapting them into different functions.

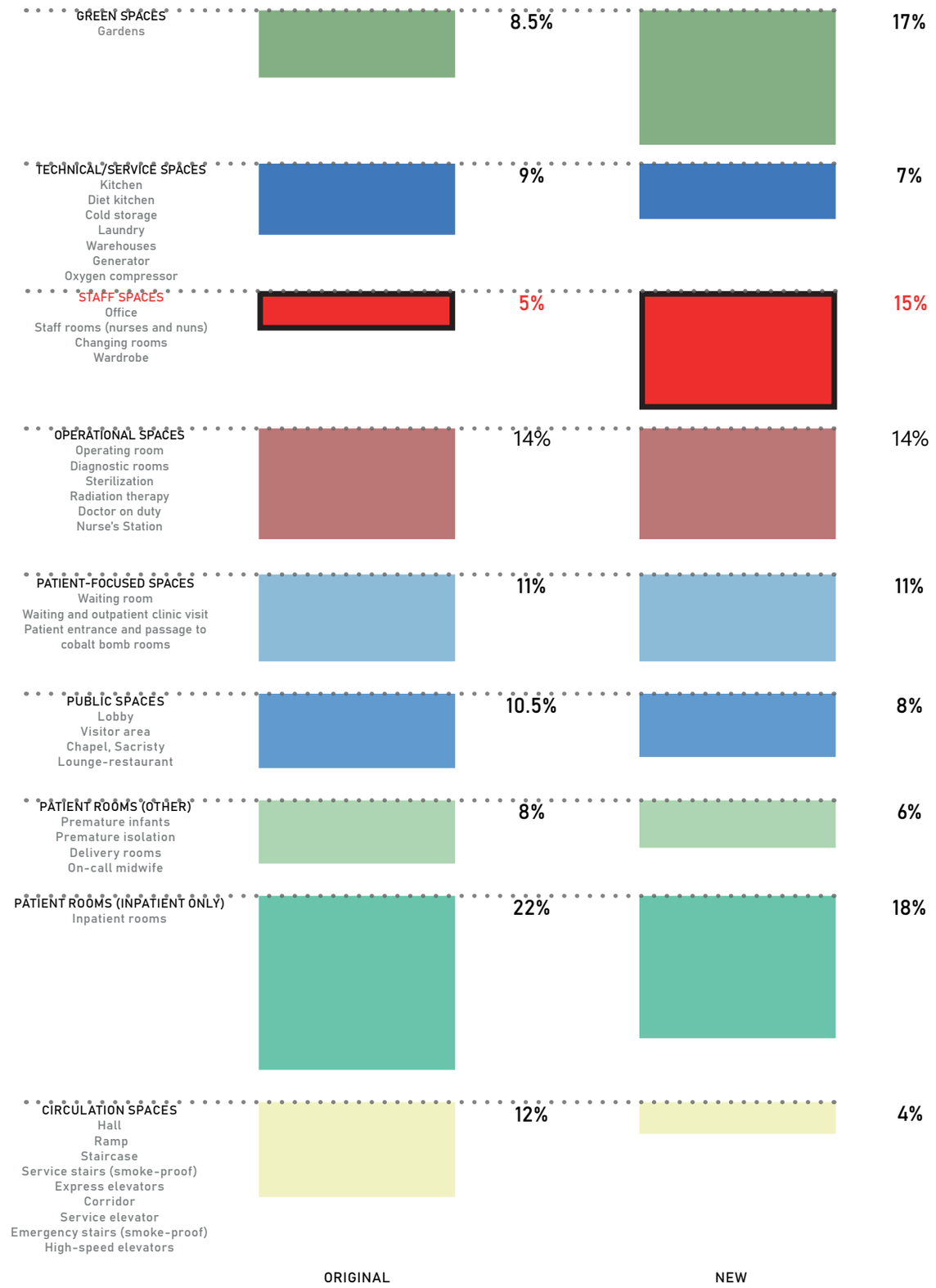


Fig. 15 - Benchmarking comparison

Spatial Relationship

Analysis of the same, previously mentioned existing medical facilities has been conducted to create a new spatial relationship.
To create a facility that is focused on the staff well-being these are the main conclusions and principles for designing the new spatial relationship:

- Clear separation in vertical traffic in the facility
- Connecting zones and common spaces to create less corridor space and more open, common spaces
- Separate vertical circulation towers to take care of sanitary restrictions
- Adding green zones throughout the whole facility
- Implementing staff rest spaces throughout all parts of the facility

Comparative analysis of the proposed spatial relationships with existing facilities highlights the need for decentralization and easy

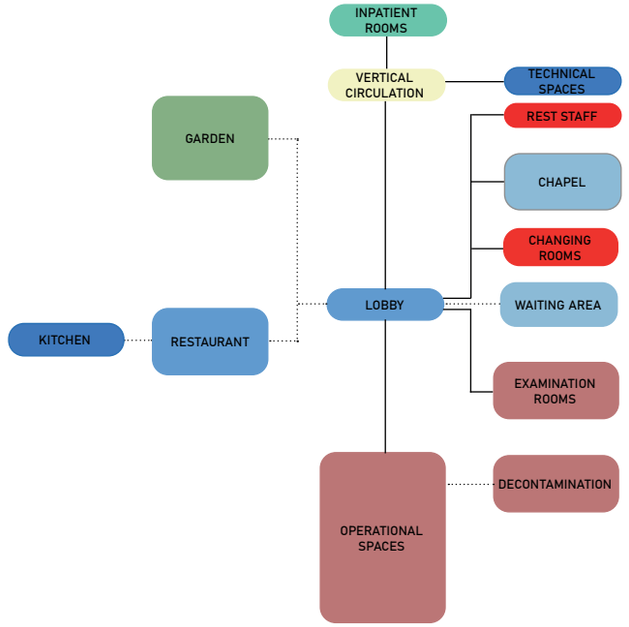


Fig. 16 - Spatial relationship comparison

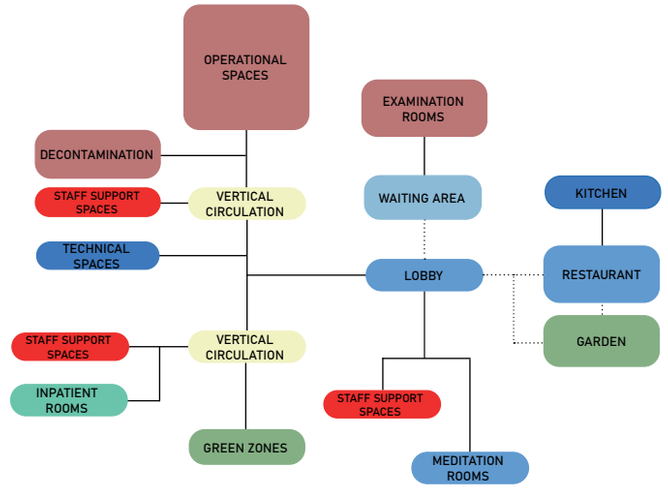


Fig. 17 - Spatial relationship comparison

Massing testing

As a first step in the design process, I explored nine possible volumetric iterations. The initial conclusion pointed toward a building that organizes its functions through vertical stacking—an approach that directly aligns with the core design principles. Based on insights from the research, this strategy emerged as the most responsive form for the facility, emphasizing vertical connections and layered programming. Key advantages of this approach include:

- The opportunity to integrate green spaces across different levels
- Efficient use of the site, allowing room for a public park
- Enhanced flow and circulation throughout the building
- The creation of rich, multi-level spatial experiences and views
- A form that fits harmoniously within the surrounding urban fabric

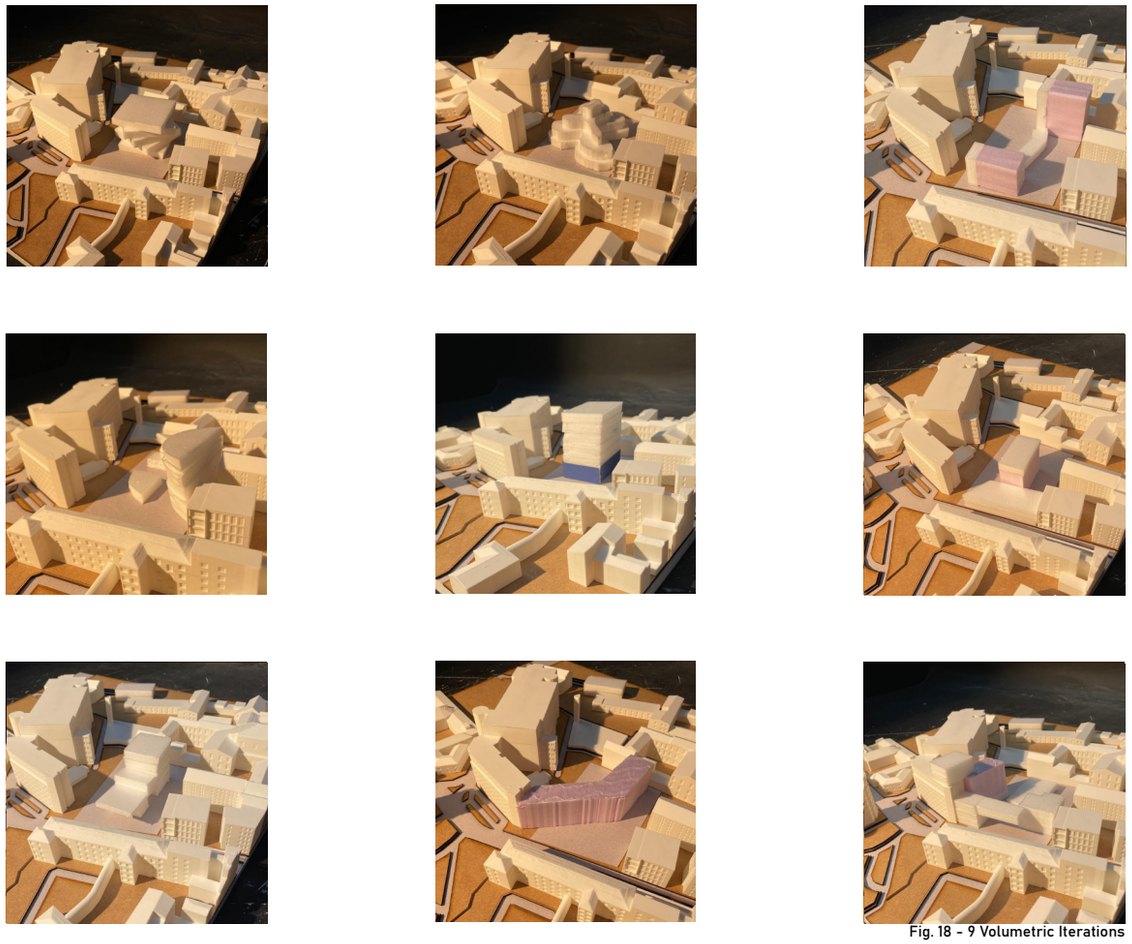


Fig. 18 - 9 Volumetric Iterations

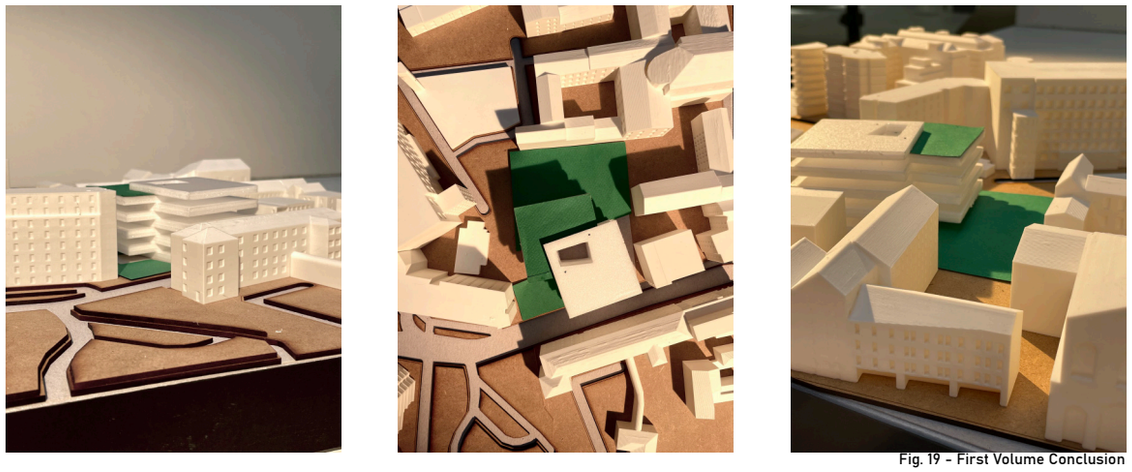


Fig. 19 - First Volume Conclusion

Connection of functions

HORIZONTAL CONNECTIONS

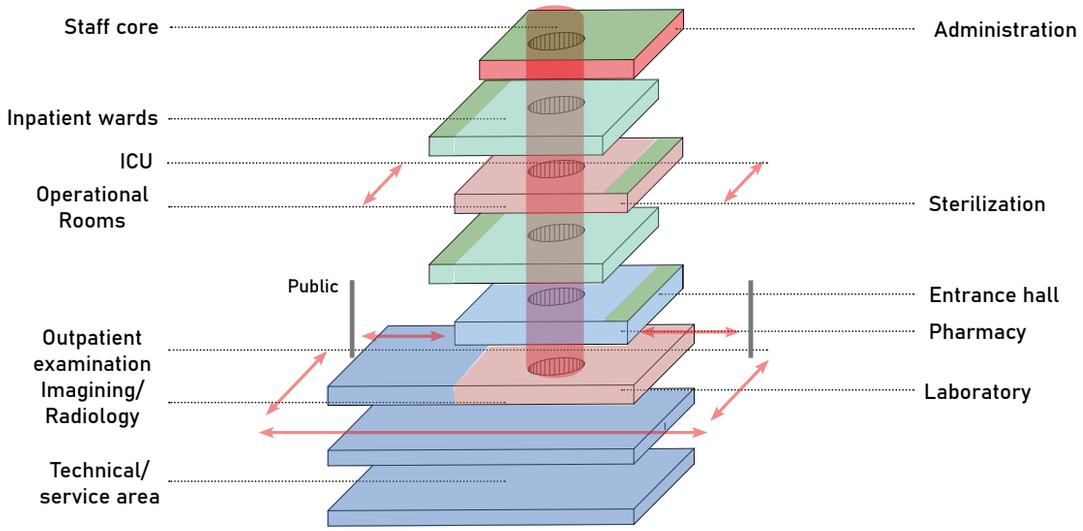


Fig. 20 - Horizontal Connections of Functions

VERTICAL STACKING

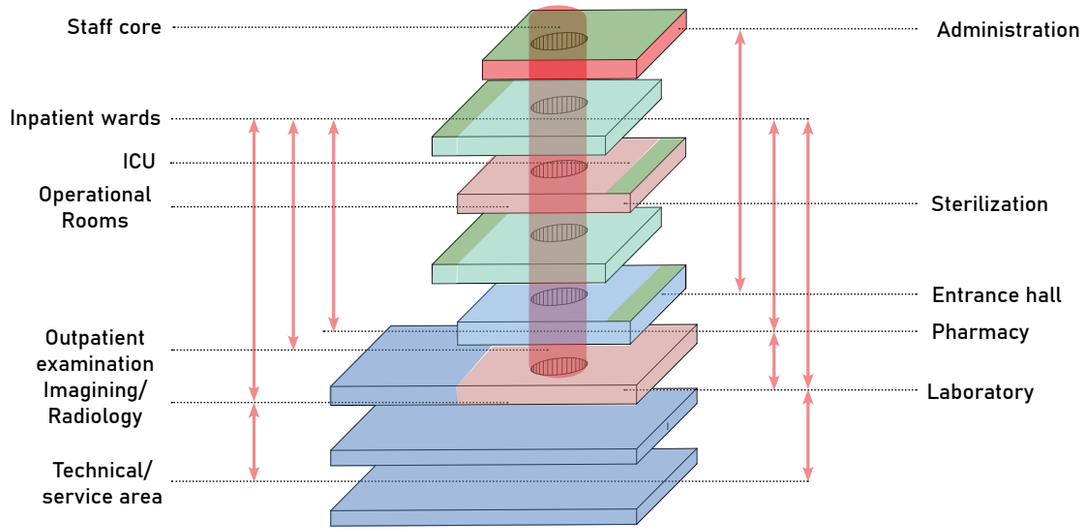


Fig. 21 - Vertical Connections of Functions

DESIGN

Design Principles &Concept

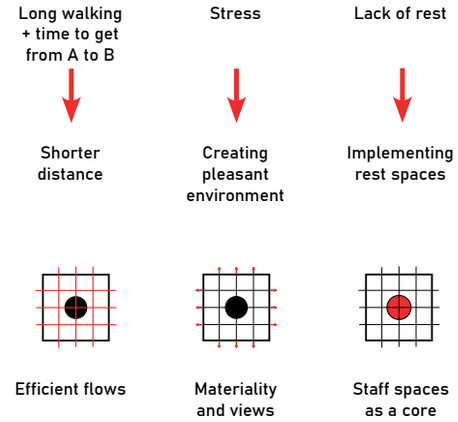
In response to the design brief and the core challenges identified through research, the project embraces three guiding architectural principles: efficient flows, materiality and views, and staff spaces as a core. These emerged directly from the spatial and psychological needs of healthcare workers, revealed through evidence-based studies and reflective analysis.

The hospital is conceived not as a machine for care, but as an organism that supports it — its structure and logic organized around the well-being of those who give care. The building grid serves as the project's structural and conceptual backbone, supporting clarity, flexibility, and streamlined circulation. At the same time, it enables strong visual orientation and flow efficiency — reducing walking distances and cognitive strain for staff.

At the heart of the building, staff spaces are placed centrally — both symbolically and functionally. These zones serve as anchor points of recovery and reconnection. Their location reinforces the core idea: staff well-being is not a support function, but a central programmatic and spatial driver of the hospital.

By embedding visual and physical access to natural light, outdoor release points, and tactile materiality throughout, the project resists the depersonalized aesthetic of institutional care. Instead, it offers an environment that is breathable, navigable, and attuned to the emotional complexity of healthcare work. The architecture becomes a quiet ally to the care process — one that protects, uplifts, and sustains.

Fig. 22 - Terrace View



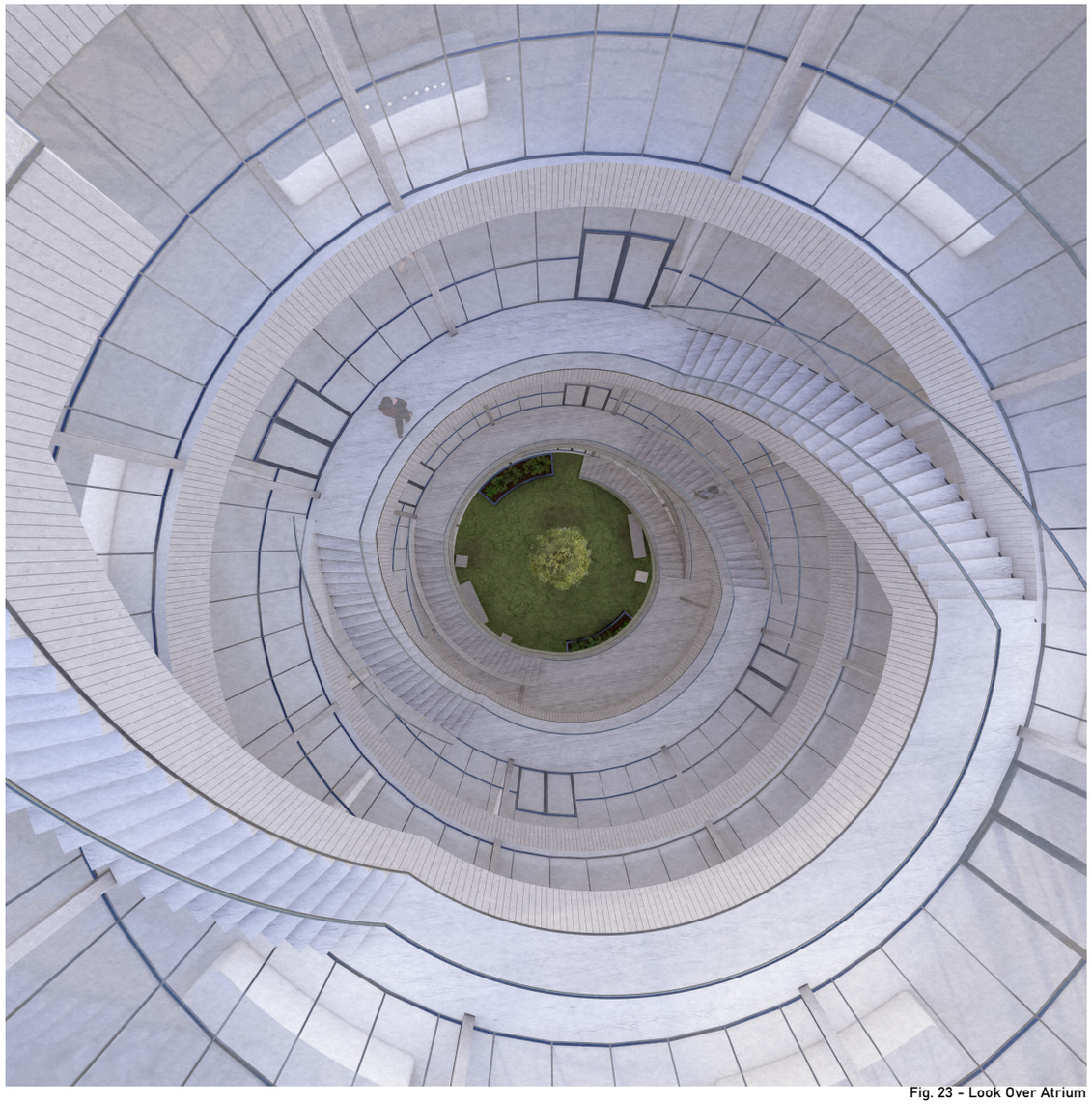


Fig. 23 - Look Over Atrium

Urban Implementation

The hospital is located in Milan's historic Quadronno District — a compact and highly structured context shaped by continuous street façades and a refined, rhythmic grain. Rather than introducing a disruptive new volume, the building integrates itself with sensitivity, extending the Milanese tradition of urban continuity. It respects existing alignments and responds to the constrained site conditions with precision.

Positioned between the street and a newly designed public park, the facility functions as a threshold. Its placement offers protection from the street while inviting access into a more private and contemplative green space. The addition of these two landscape elements — one smaller and one larger — contributes to the broader Health Belt vision passage that connects street and park. This gesture not only enhances public flow but also communicates the hospital's openness — a civic institution embedded in the fabric of the city.

Fig. 24 - Exterior View of the Facade

Spatial Logic

Internally, the building is guided by a highly rational 8.3 × 8.3 m structural grid that supports both spatial flexibility and functional clarity. Circulation routes are compact and efficient, reducing travel distances for staff and enabling fast, intuitive orientation for visitors. The main atrium forms the spatial heart of the facility — a vertical void that brings light deep into the plan, enables cross-visibility, and visually connects the operational and inpatient areas.

Staff spaces are placed at the core of each floor, minimizing their walking distances and ensuring proximity to all key medical functions. This central positioning becomes both literal and symbolic — placing the caregivers at the very heart of the hospital. The strategy reinforces the project's ambition to make care for the caregiver a spatial priority.

work and rest spaces. These green elements are not decorative; they are tools of comfort and recovery, carefully integrated into the hospital's flow. The architecture becomes a framework for well-being — supporting staff, patients, and the wider community with spatial logic that is both empathetic and efficient.

Fig. 25 - Bottom of the Atrium

Fig. 26 - Site Model - Top View

Fig. 27 - Site Model - Perspective View

REFLECTION

Research and Design

The nature of my graduation project – a hospital, that is designed through the lens of staff well-being – required a research process that was both analytical (via the analysis of criteria developed through an exploration of existing medical facilities) and emotionally attuned. As of 2017, approximately 7.7% of Italy's total workforce was employed in the health and long-term care sectors. That is a large group of people, who potentially struggle in their work environment due to architectural issues. Therefore, from the start, the typology was not the guiding core, but a question: How can hospital design positively influence staff well-being?

Initial research focused on healthcare environments, drawing from case studies of existing hospitals, special policies, well-being literature, and environmental psychology. The project's relevance was also tested in a broader context of caring for the worker's well-being, not only in the medical context. This research clarified early on that many architectural norms in hospitals, especially older ones, neglected the living experience of staff. Circulation is often inefficient, views are limited or absent, rest areas are either reduced to leftover spaces or missing altogether, and the material palette tends to feel hard, cold, and unwelcoming. These findings were drawn from spatial data, but also heard, from surveys and first-person accounts.

The research phase was directly responsible for shaping the program and the spatial configuration, with the starting point being that of Clinica La Madonnina, located in Milan, Italy. During the design phase, rather than accepting a fixed list of functions, I allowed the design to reshape the brief. Based on spatial priorities, rest terraces, optimized flows, and staff rest spaces were all strategically located or reimagined. For example, the biggest architectural decision was making the staff spaces the heart of the facility, making it easier and faster for them to move smoothly through the building.

Through this process, staff became not just one of the users, but the organizing logic of the building. The structural moves were evaluated for how they could contribute to clarity, comfort, and recovery. In some cases, the architectural ambitions conflicted with the programmatic expectations and therefore had to be compromised. It's important to acknowledge that the spatial strategies guided by the project's core theme can't be universally applied to all types of healthcare facilities. In many cases, they would need to be accompanied by a broader restructuring of the healthcare system itself. While not all systemic issues are responsive to architectural intervention, some could be meaningfully addressed through design. As a result, the final proposal evolved into a facility that operates more like a clinic with surgical floors, rather than a general hospital. One key implication of applying staff-centered principles is the potential to support — or even encourage — a more decentralized healthcare system.

The Relationship Between Graduation and Studio Topic

The graduation project was developed within the framework of Complex Projects studio, specifically under the theme of "Bodies and Building". The theme allowed me to explore how architecture can engage with the physical needs of human bodies, as well as the larger, systemic, infrastructural "bodies". With the location of the project being in Milan, a city of layered public institutions, visible class differences, and often opaque healthcare infrastructure, offered the ideal backdrop for questioning how spatial decisions can become instruments of care.

In a context where hospitals are usually defined by logistical efficiency and technical performance, this studio pushed me to ask: what if architecture prioritized the bodily experience of those who serve within it — the caregivers themselves? This meant interrogating the institutional status quo through spatial research and rethinking the logic of architectural representation.

Fig. 28 - View of the Atrium

Research Method and Approach in Relation to the Graduation Studio

The starting point of the research method was looking into the potential issues of the Italian healthcare. With the topic of workers' wellness being extremely relevant, I did not have to search far. The topic, being very social and more connected with the system's design, had to be translated into architectural principles. The hospital had to be understood not as a typology, but as a complex body that reflects systemic priorities and affects human health on multiple levels.
The research approach was multi-layered and iterative, embedded throughout the design process. Although the project began with a predefined program, I allowed the brief to evolve through continuous spatial analysis. The building's form and its urban placement were not imposed, but rather shaped by the site conditions and the functions surrounding it — allowing context to guide both programmatic and architectural decisions.
As the project developed, the research moved from general studies of hospital circulation and healthcare labour in Italy toward specific spatial challenges: how rest areas are positioned, how structural slabs affect acoustic and thermal performance, and how the building envelope can support calm and clarity.

Wider Social, Professional, and Scientific Relevance

This project contributes to a broader conversation that is already beginning to take shape. The narrative around healthcare design is shifting — gradually, but significantly — and recent hospital projects increasingly reflect more radical, human-centred approaches. The design of care environments is evolving rapidly, especially in the 21st century, where hospitals continue to grow in size and complexity. With that growth comes the risk of losing human-scale logic. This project resists that trend by demonstrating that even a highly complex hospital can be structured around empathy, not efficiency alone.
It also touches on professional relevance: in a post-pandemic world, where staff shortages are systemic and morale is fragile, the role of architecture in staff retention, safety, and psychological well-being is no longer optional — it's fundamental. If we expect people to care for others, we need to build environments that care for them.

Ethical Issues and Dilemmas

Working within a highly research-driven process helped to minimize random or biased decisions. However, it revealed an ethical dilemma of: can a project, that is so logical and efficiency-riven, still feel empathetic? In prioritizing evidence-based design, there was a risk of making the architecture too rational, too "clean" for the complex emotional reality of healthcare work.
The studio helped reframe this. In a context as layered and pluralistic as Milan, and in a typology as fraught as the hospital, clarity and coherence become forms of care. The scale of the project, and the number of invisible stakeholders involved — patients, families, cleaning staff, administrators — made it clear that designing from empathy means designing for everyone, not just for the visible few. This requires not just the sensitivity for the aesthetics, but procedural transparency.
One of the more nuanced ethical challenges that emerged was the risk of overcorrecting: in prioritizing staff well-being as the spatial driver of the building, there was a fine line between support and exclusion. By putting an emphasis on the workers, I did not want to push the patients to the complete periphery of the design. This issue required constant calibration – ensuring that the comfort of one group didn't result in neglect of another.

Fig. 29 - View of the Administration Floor

DRAWING SET

Site Plan

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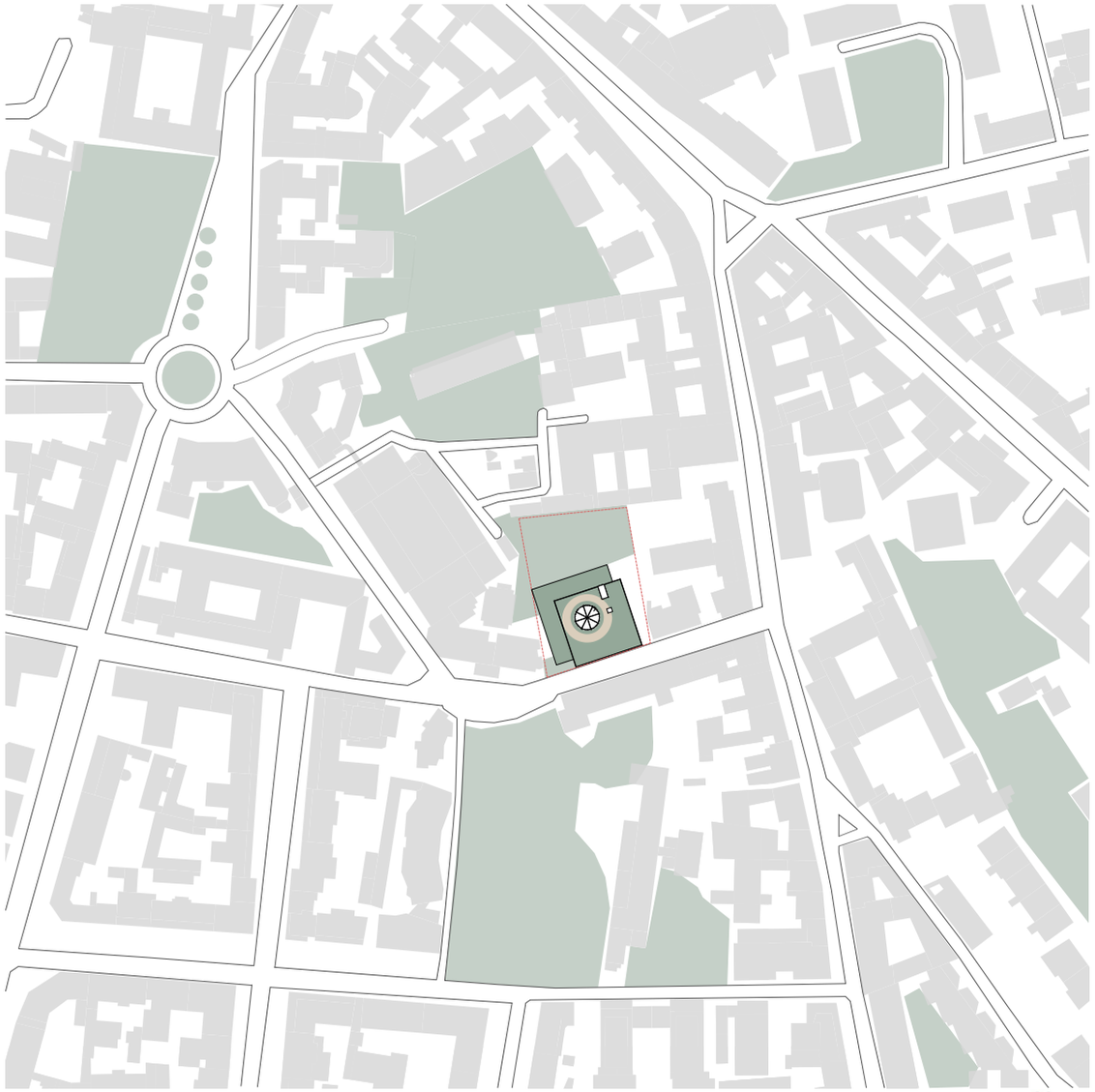

Urban Plan
1:1000

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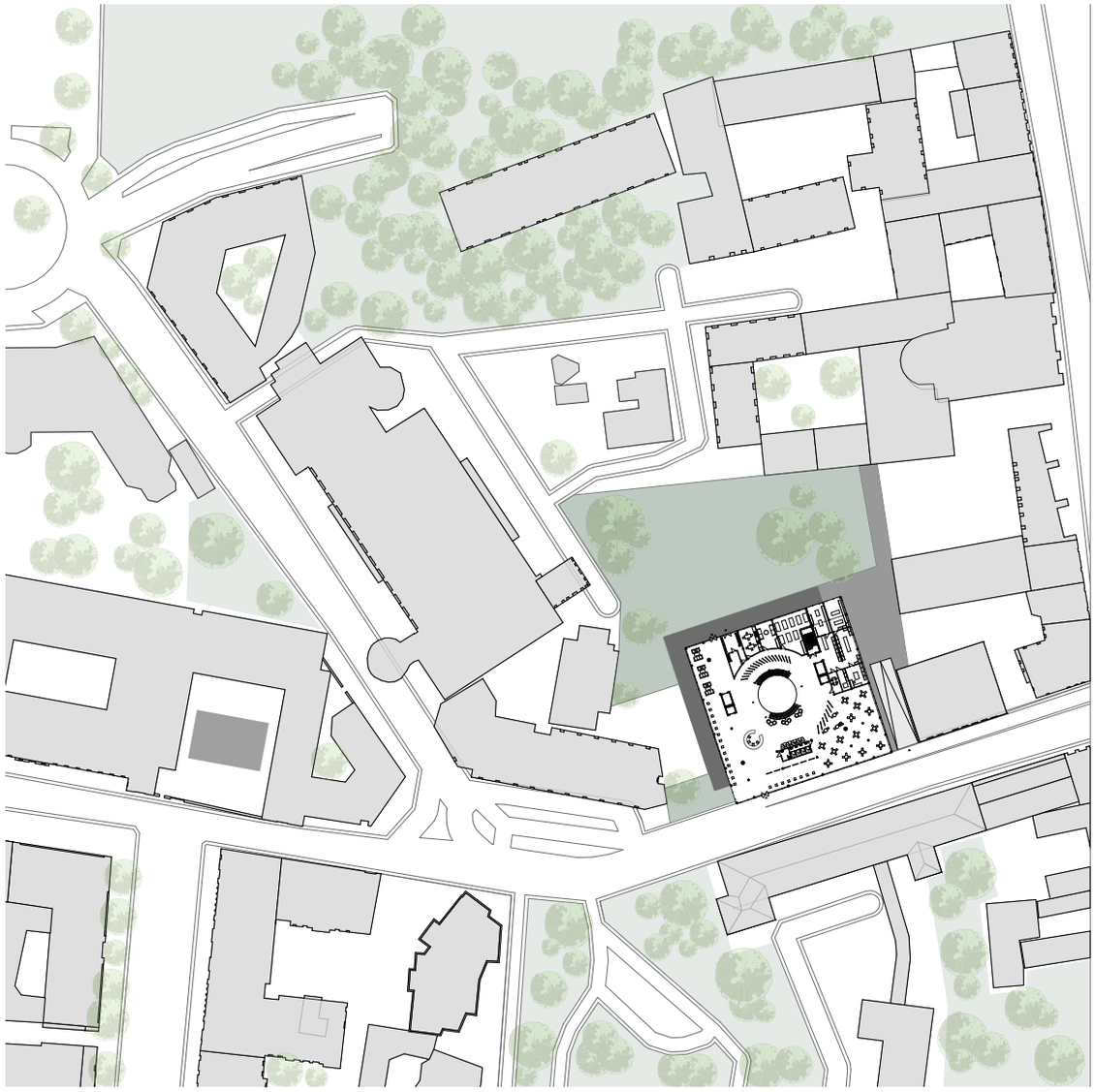
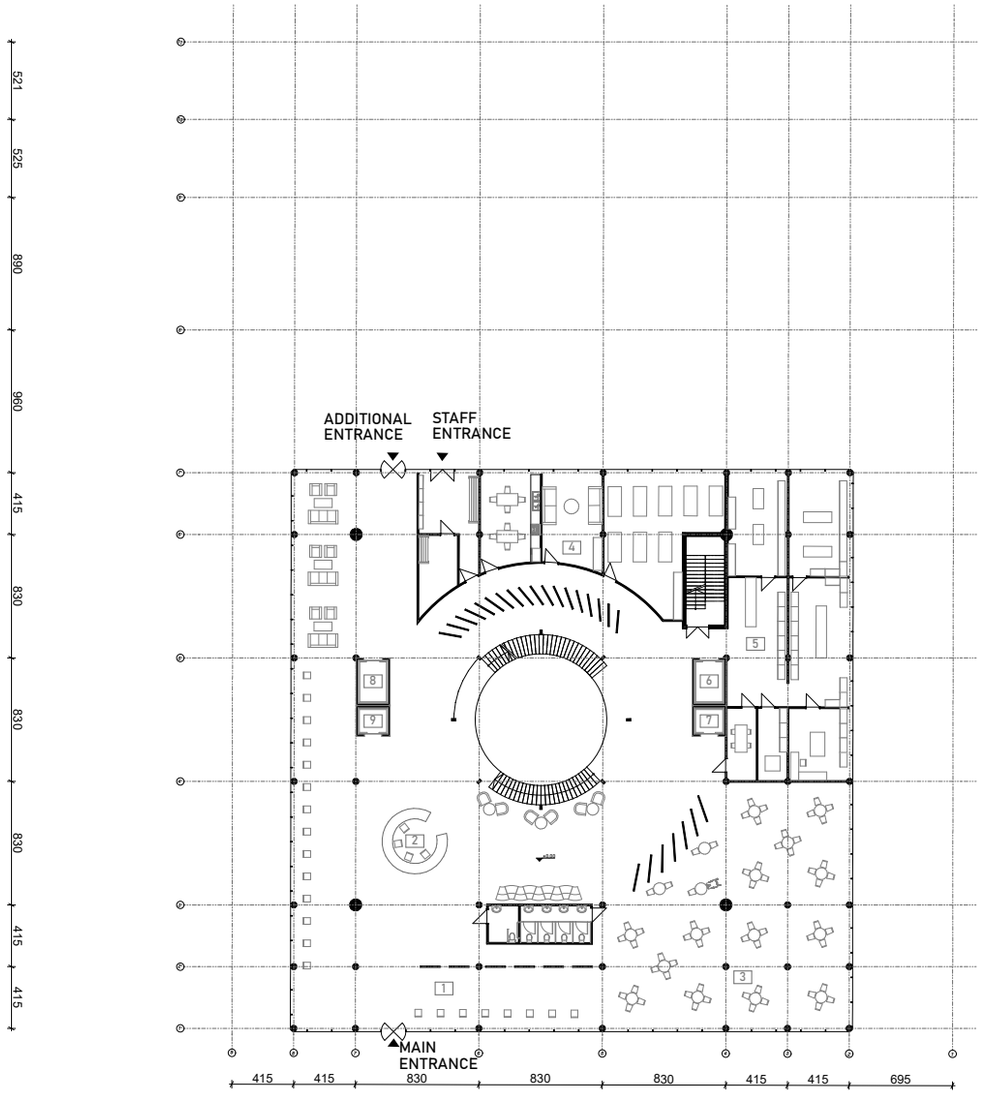


Urban Implementation
1:500

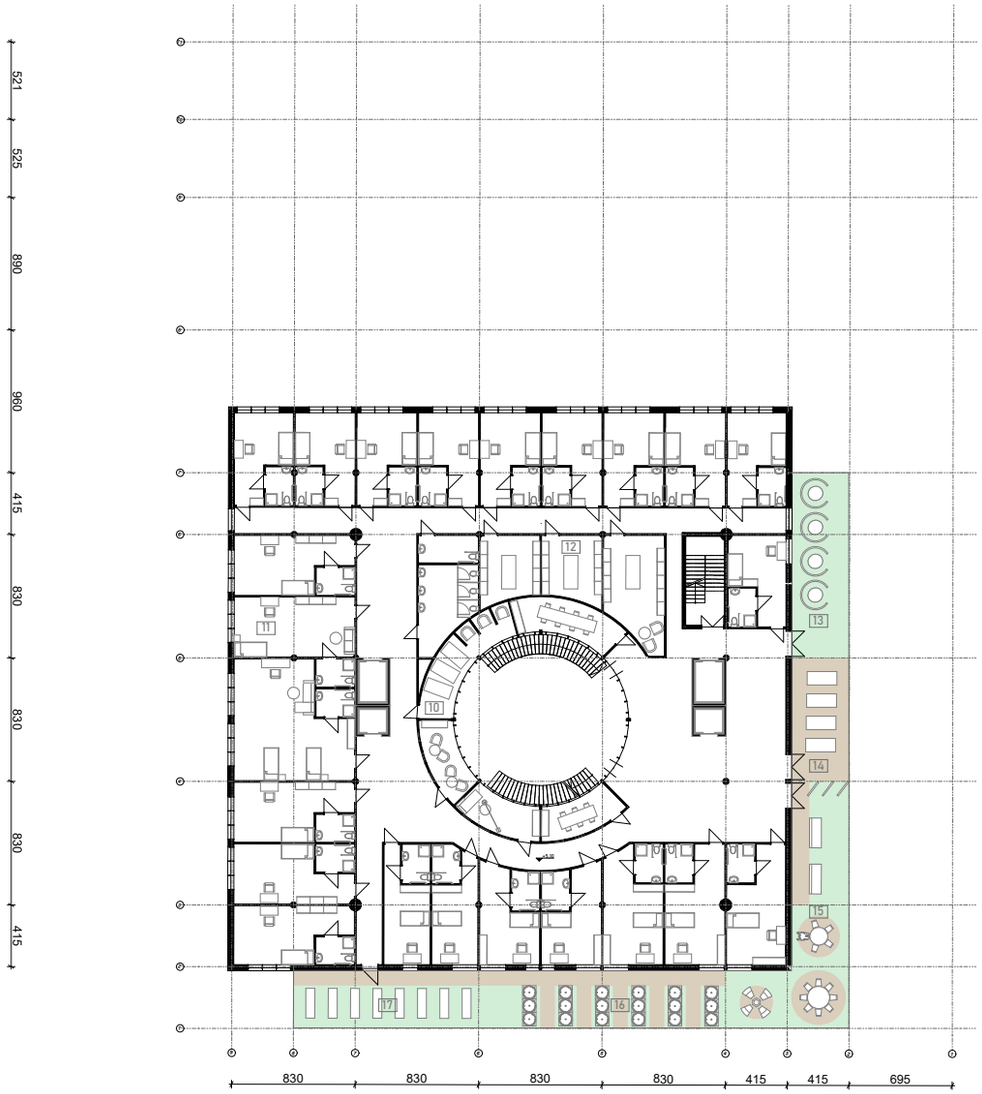
N

1 - self registration
2 - lobby
3 - restaurant
4 - staff rooms
5 - pharmacy
6 - service elevator
7 - staff elevator
8 - clean elevator
9 - public elevator



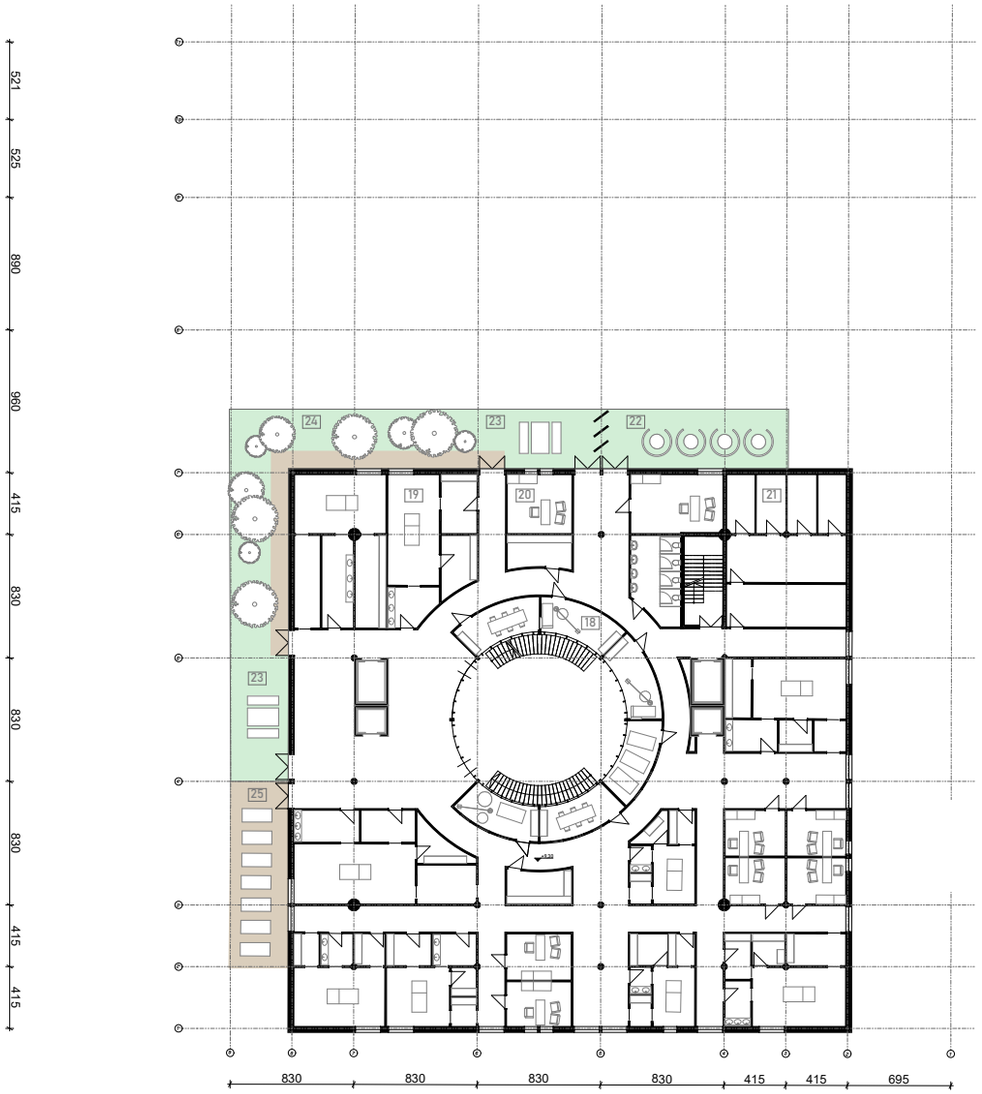
Ground Floor
1:200

10 - staff rooms
11 - inpatient wards
12 - storage
13 - meditation pods
14 - yoga zone
15 - meeting zone
16 - healing gardens
17 - rest spot



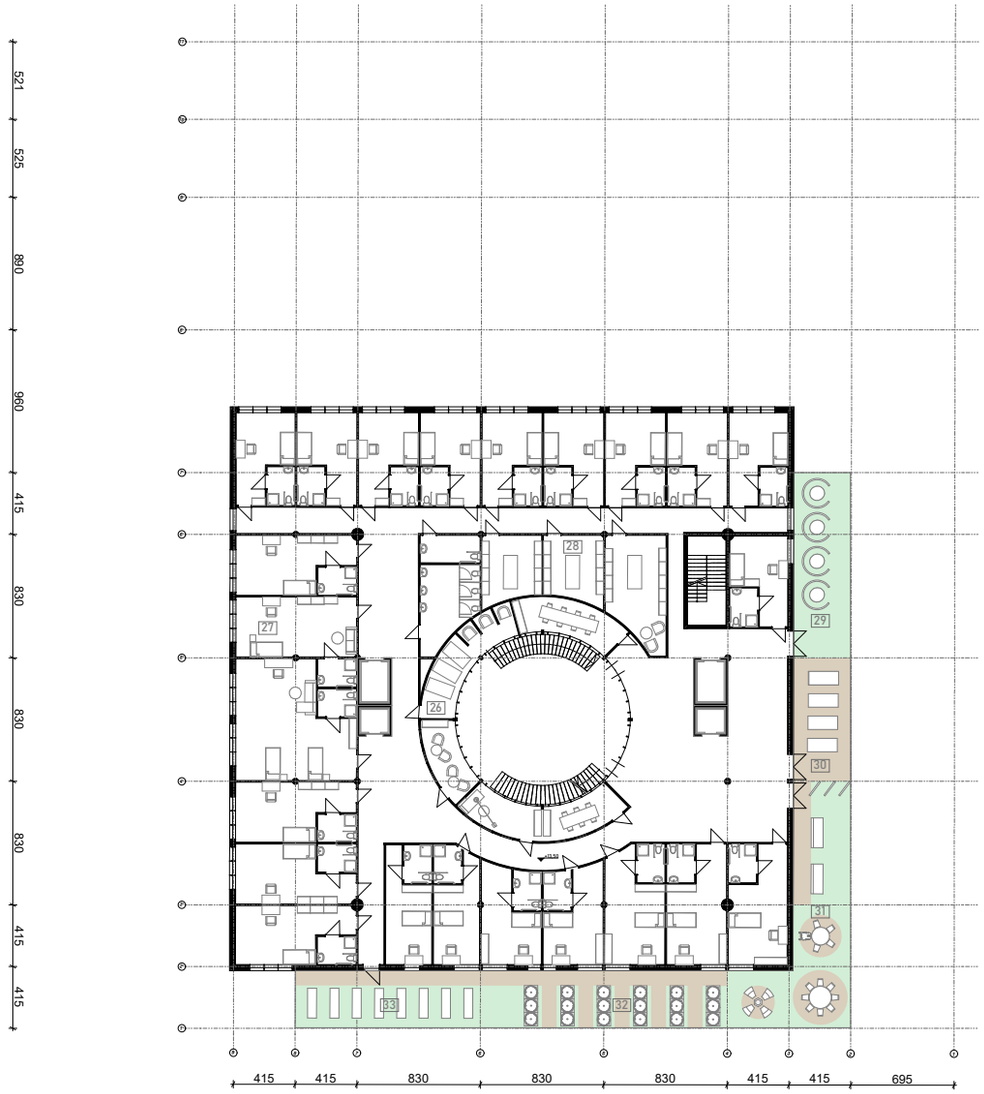
Floor +1
1:200

18 - staff rooms
19 - operational blocks
20 - examination
rooms
21 - morgue
22 - meditation pods
23 - resting spots
24 - garden loop
25 - yoga zone



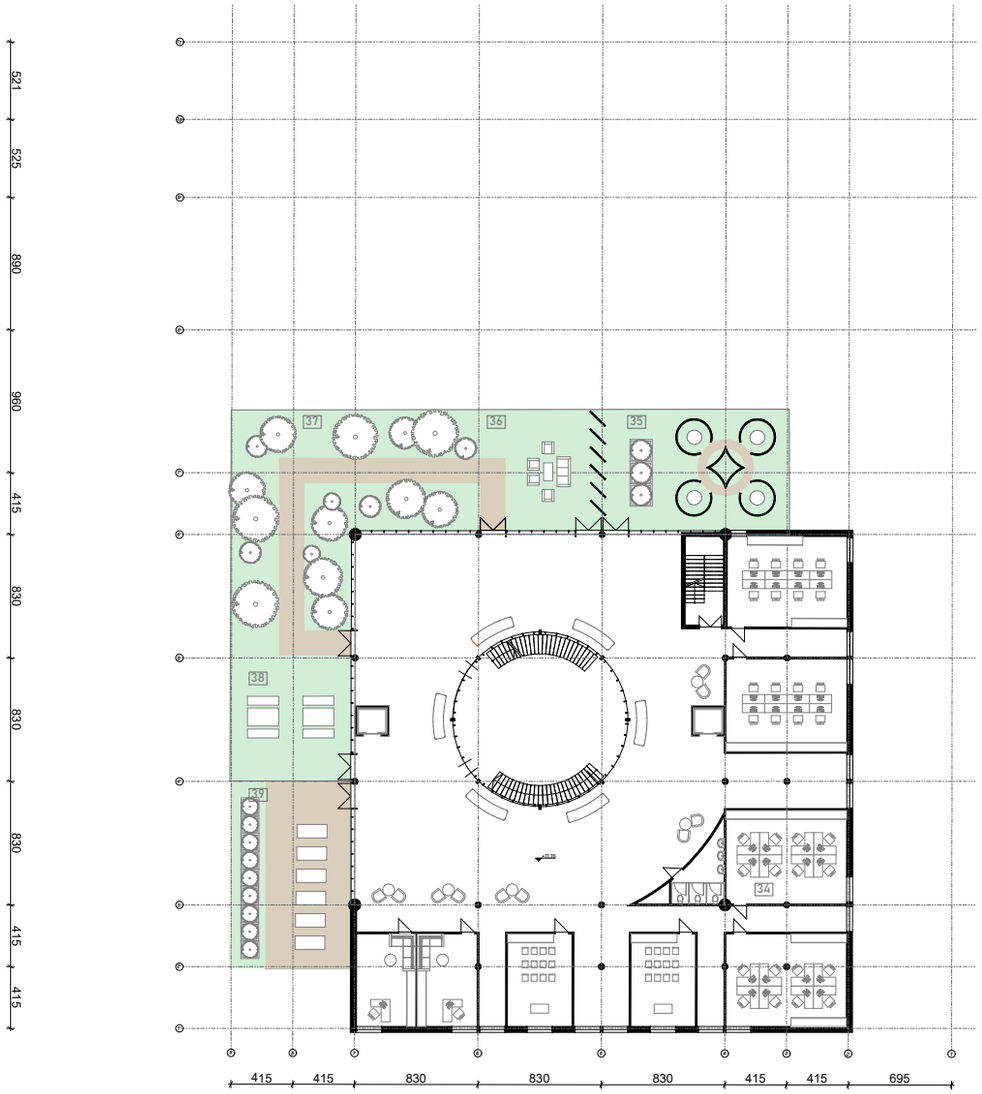
Floor +2
1:200

26 - staff rooms
27 - inpatient wards
28 - storage
29 - meditation pods
30 - yoga zone
31 - meeting zone
32 - healing gardens
33 - resting spot

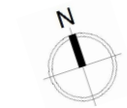


Floor +3
1:200

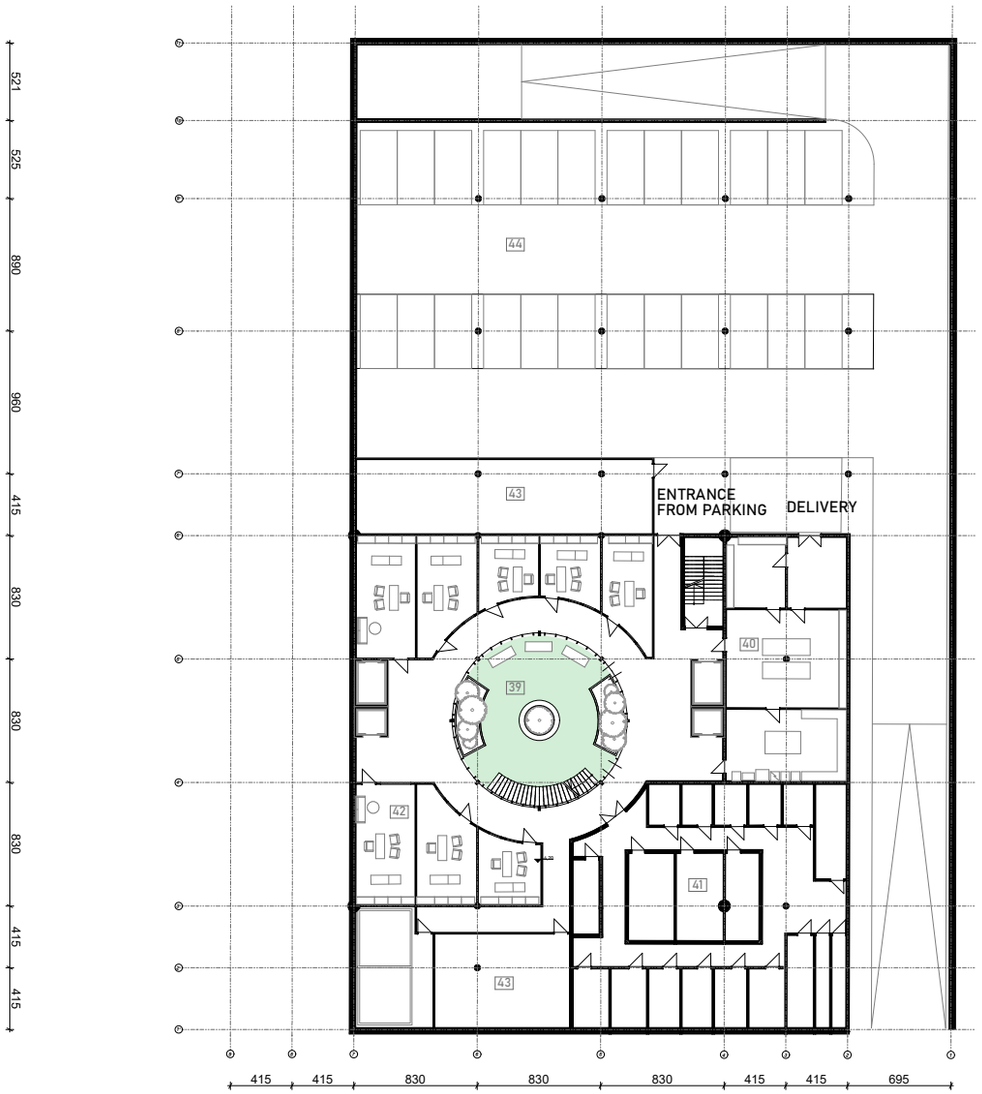
34 - administration
35 - meditation pods
36 - resting spots
37 - garden loop
38 - yoga zone



Floor +4
1:200

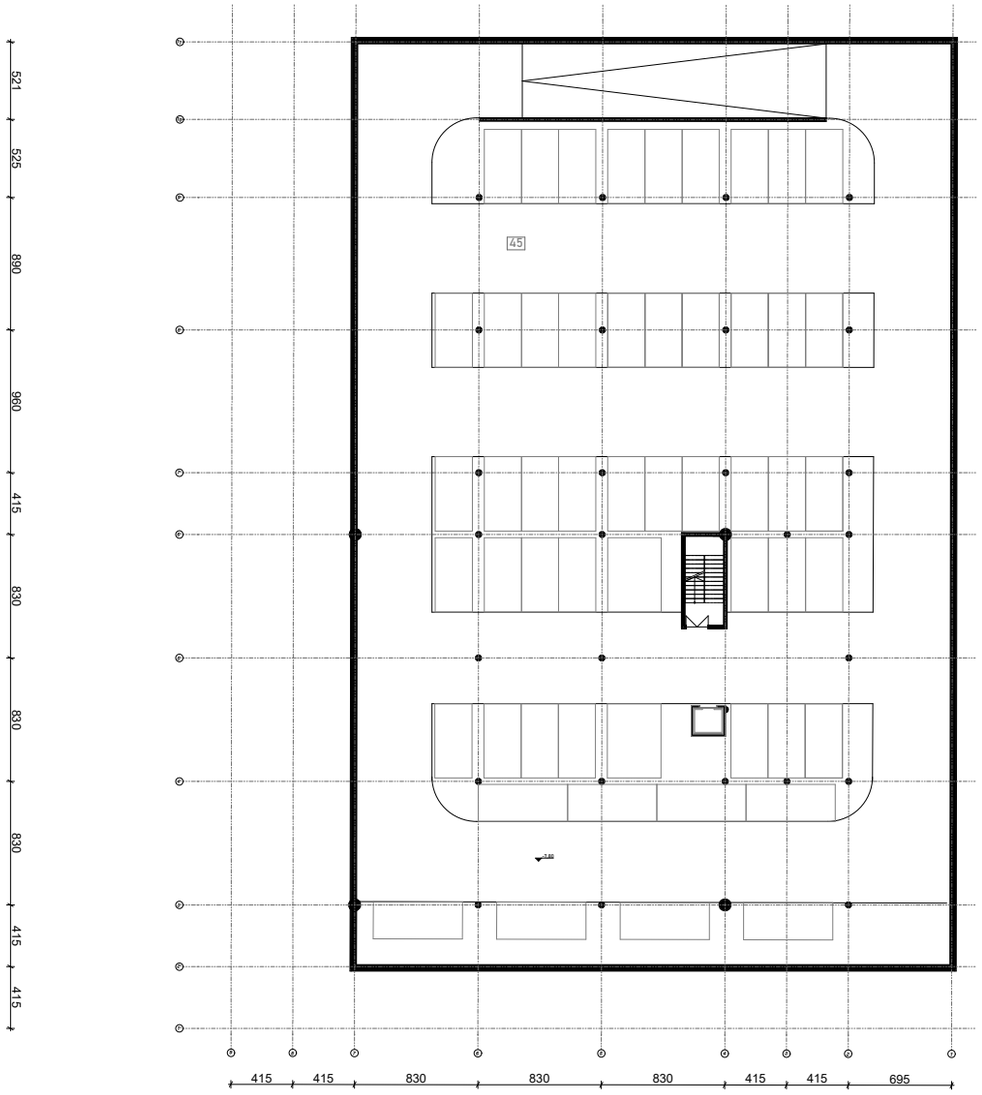


39 - atrium
40 - kitchen
41 - radiation
42 - examination
rooms
43 - technical spaces
44 - parking garage



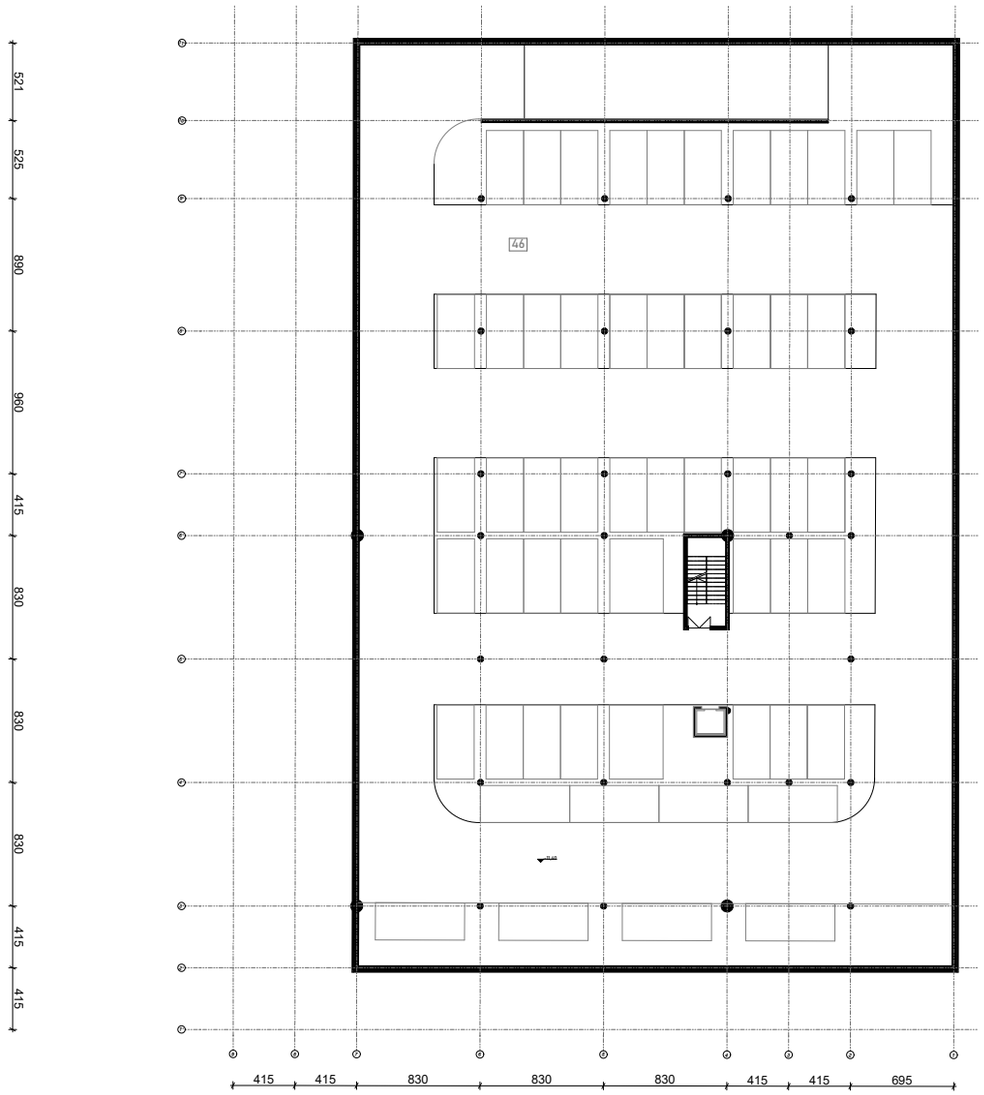
Floor -1
1:200

45 - parking garage

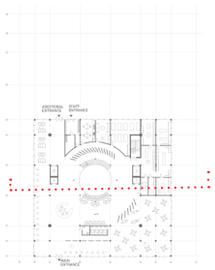


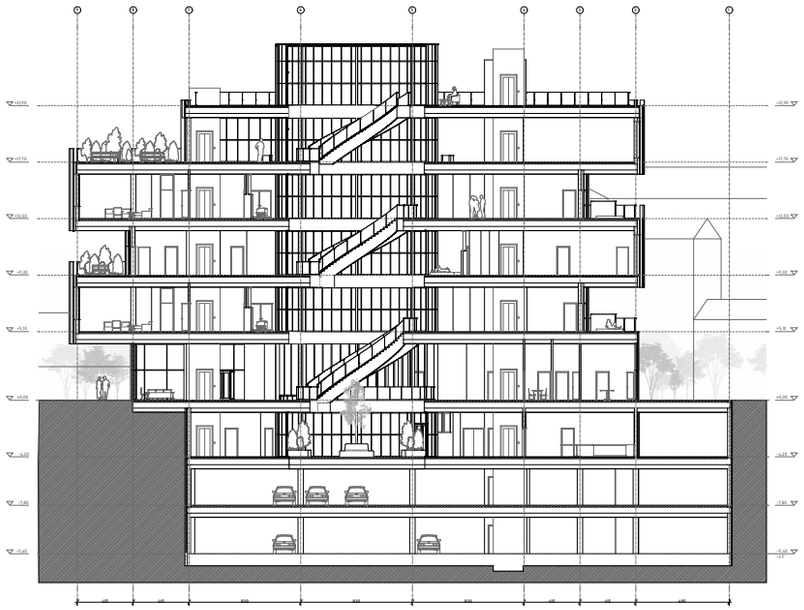
Floor -2
1:200

46 - parking garage

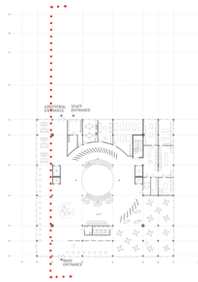


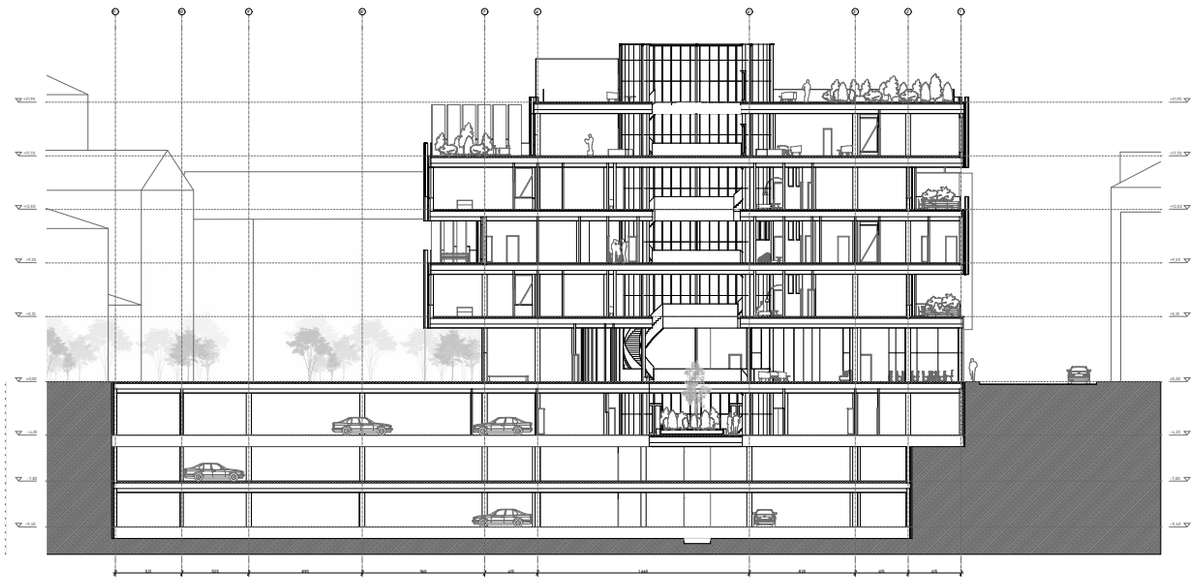
Floor -3
1:200



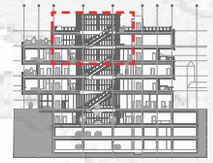


Section 01
1:200



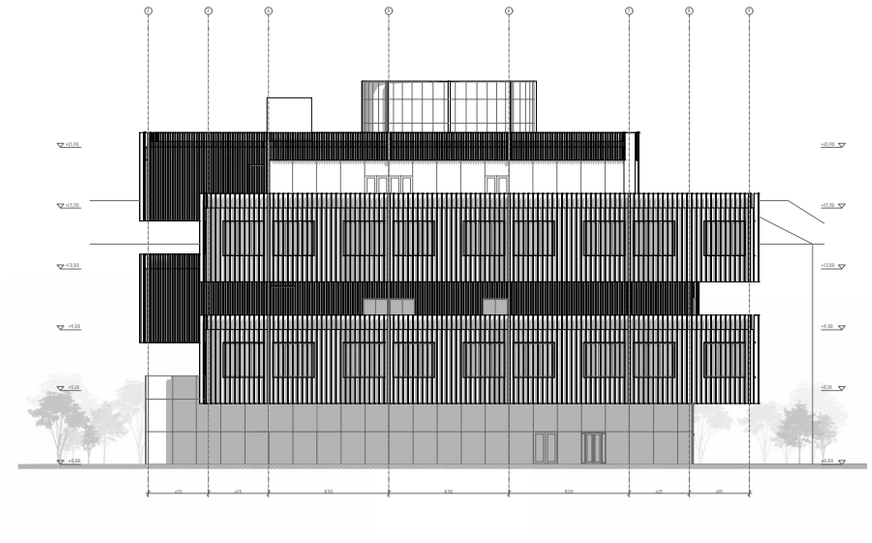


Section 02
1:200

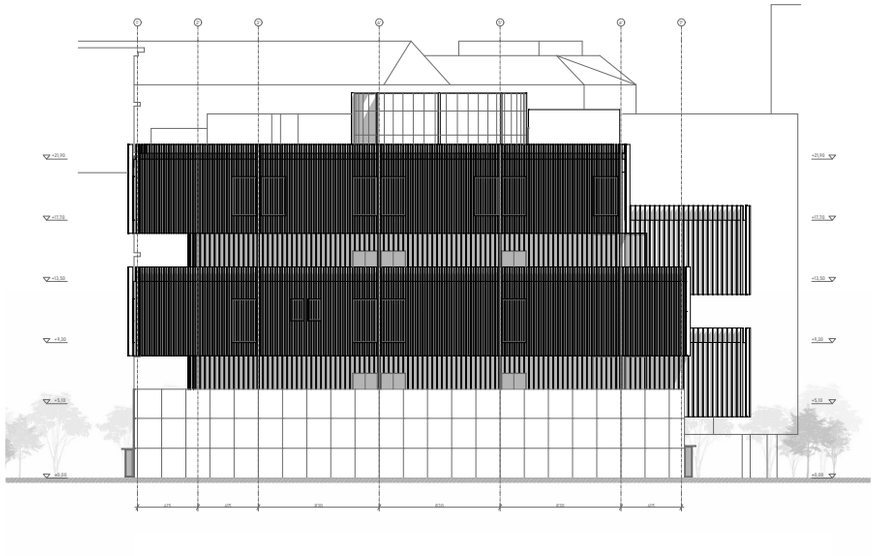


Interior Fragment 1/2

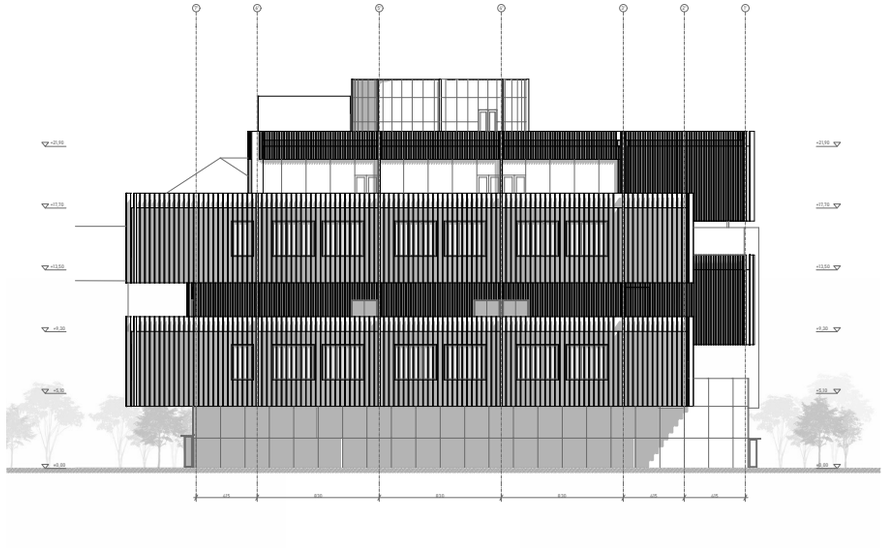
Interior Fragment 2/2



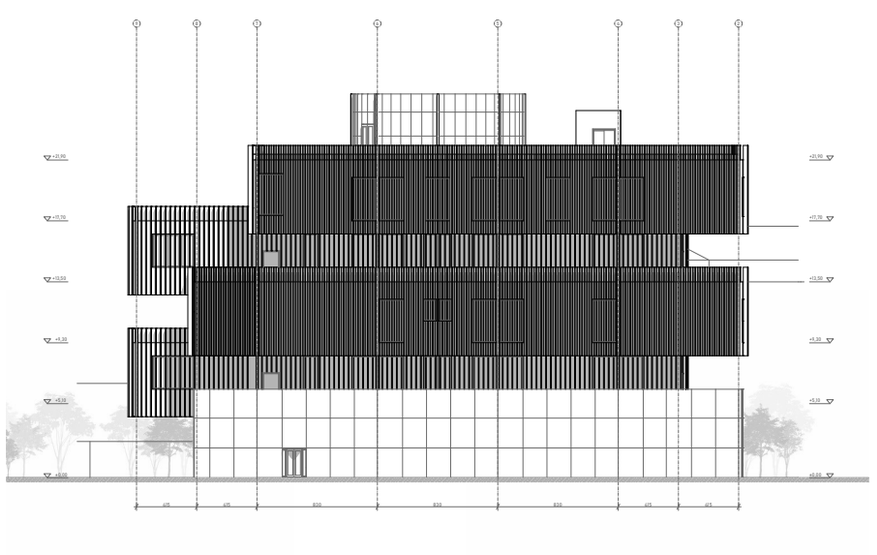
Nort-West Facade



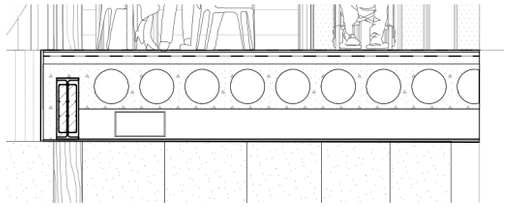
Nort-East Facade



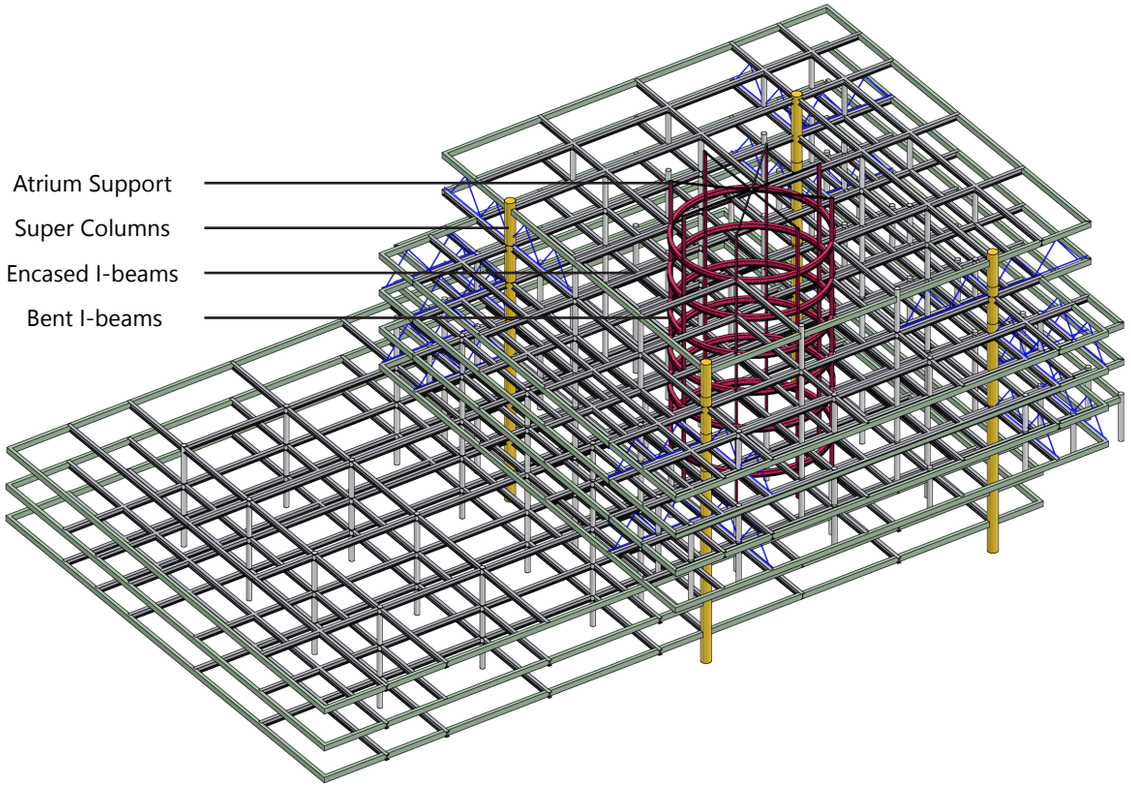
South-West Facade



South-East Facade

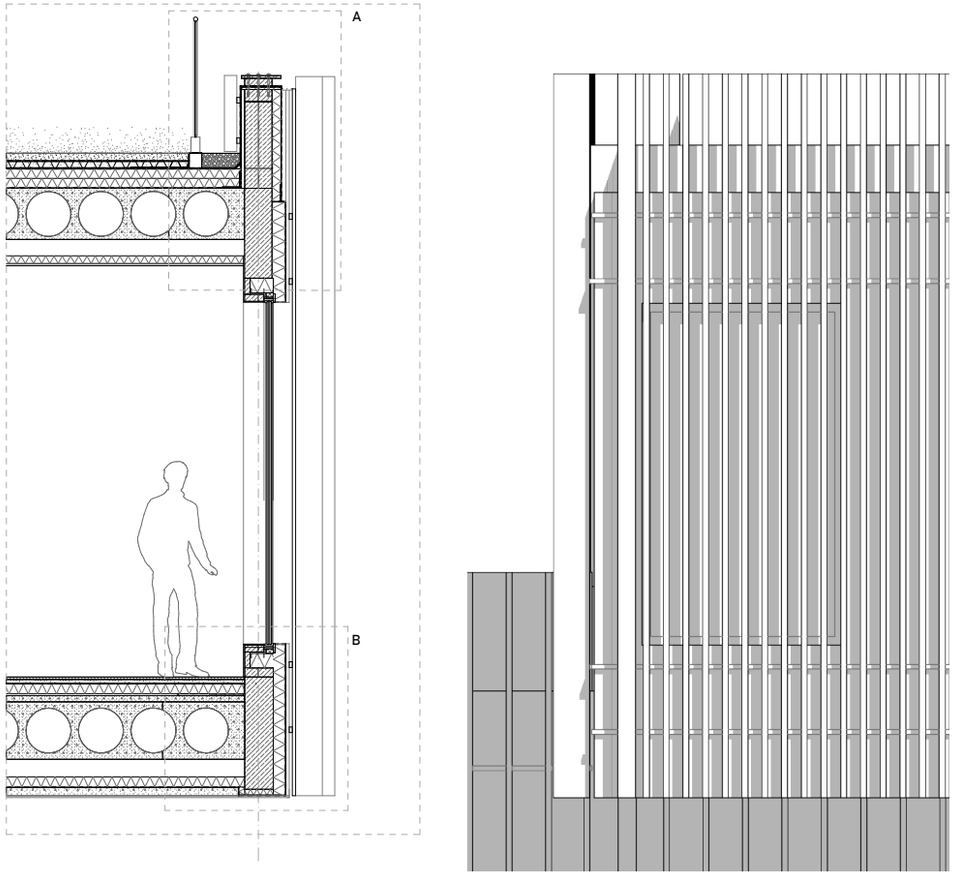


Bubbledeck Slabs

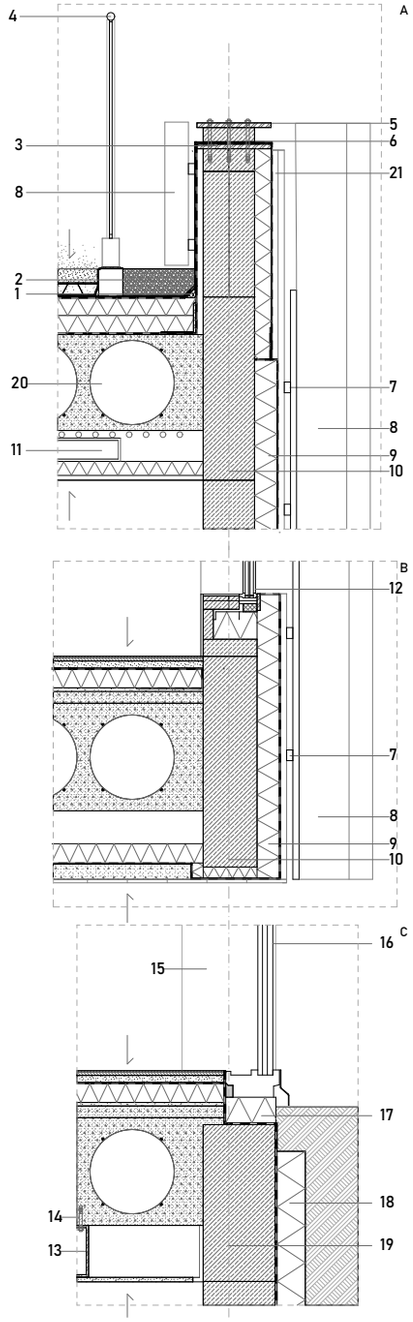


Structure Scheme

Structure Scheme Zoom



Facade Envelope Fragment
1:20



A
60 mm – Extensive green roof substrate
3 mm – Filter fleece
50 mm – Drainage layer - expanded clay
3 mm – Root barrier
3 mm – EPDM membrane (2 × 1.5 mm layers)
150 mm – Rigid wood fibre insulation (2 × 75 mm, STEICO)
3 mm – Bituminous membrane
460 mm - Reinforced Concrete Structural Slab with bubbledeck flooring and embedded HE 600 B I-beam
13 mm – Installation zone
50 mm - Mineral wool insulation
22 mm – Clay board Lemix
10 mm – White clay plaster

B
20 mm – Porcelain Stoneware Tiles
30 mm – Flexible Tile Adhesive Mortar
5 mm – Liquid-Applied Waterproofing Membrane
80 mm – Extruded Polystyrene (XPS) Insulation Board
15 mm – Polyethylene Acoustic Mat
50 mm – Fibre-Reinforced Cementitious Screed
460 mm – Reinforced Concrete Structural Slab with bubbledeck flooring and embedded HE 600 B I-beam starting 140 mm below slab top
80 mm - Mineral wool insulation
2 mm Vapor control membrane
65 mm - Concrete layer
15 mm - wood cladding

C
20 mm – Porcelain Stoneware Tiles
30 mm – Flexible Tile Adhesive Mortar
5 mm – Liquid-Applied Waterproofing Membrane
80 mm – Extruded Polystyrene (XPS) Insulation Board
15 mm – Polyethylene Acoustic Mat
50 mm – Fibre-Reinforced Cementitious Screed
460 mm – Reinforced Concrete Structural Slab with bubbledeck flooring and embedded HE 600 B I-beam
140 mm – Suspended Metal Frame Ceiling with Acoustic Panels

1 - XPS insulation wedge
2 - Gravel strip
3 - Steel capping panel
4 - Wood railing
5 - Parapet flashing profile
6 - Concrete block
7 - Substructure rails for the facade
8 - Fundermax NT Panel cladding 50 mm x 20 mm, 150 mm x 300 mm

9 - XPS 100 mm
10 - reinforced concrete beam
11 - HVAC flat duct
12 - window: triple glazing with 2× 4 mm laminated safety glass + 14 mm cavity + 6 mm float glass + 14 mm cavity + 2× 4 mm laminated safety glass 130/60 mm aluminium mulliontransom system
13 - RHS 200 × 100 × 10 mm (S355J2H)
14 - Fischer FSA-B Ø6 × 60 mm
15 - RC Ø400 Column
16 - Insulated Glazing Unit (IGU): 10 mm low-iron tempered glass / 16 mm argon-filled spacer / 6+6 mm laminated safety glass with PVB interlayer
17 - Foam - glass thermal insulation
18 - 120 mm XPS Rigid Insulation
19 - HE 600 B I-beam (602 mm high, 300 mm flange width)
20 - bubbledeck flooring
21 glued facade pannels

Facade Details
1:10

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Figures

Fig. 30 - View of the Staff Room

Fig. 31 - View of the Facility from the Street