GOOD TRIP

complex projects

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GOOD TRIP: BUILDING PLEASURES IN QUADRONNO CANCER CENTER

2025

COMPLEX PROJECTS
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Good Trip proposes a cancer care center for Quadronno district in Milan.

Good Trip seeks to investigate hospital architecture through the lens of pleasure. The research questions normative models of healthcare and the perpetuating bigness in medical institutions. Advances in medical sciences and technology along with population boom-inflated demands in healthcare facilities in the nineteenth century have since aerated bigness and perpetuated genericness in hospital designs across European metropolis. In these derived hospitals, patients become bodies moved along Kafkaesque corridors, stigmatized and stripped off joy of living. Rejuvenated interest in hospitals post-Covid 19 and rising cancer incidences linked with the dawn of super-aged societies in Europe urge a radical redefining of cancer care buildings, from curing to caring.

Good Trip hopes to reflect on the injunction to pleasure that is imposed today in the hospital. The research speculates on a radical hybrid of an urban hospital to imagine how space and architecture can support healing and promote the joy of living in a non-institutional setting. Dwelling on material culture and anti-ageist studies, this research-by-design seeks to formalize pleasure in hospital's Third Place through intimacy, domesticity, and non-normative social engagement while reflecting on the hospital as both a healthcare and socio-cultural infrastructure within the city.

I.
RESEARCH PLAN

00
PROLOGUE

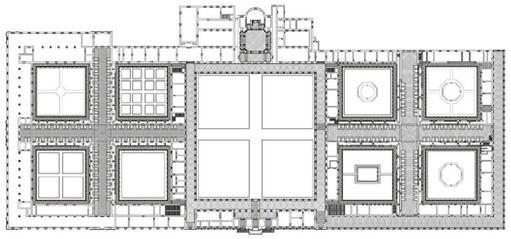

Fig. 1 Ospedale Maggiore, Milan, 1456-1465, Plan.

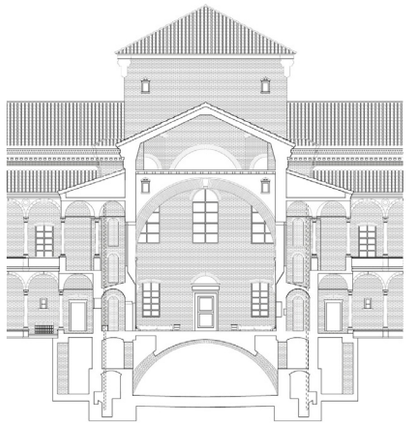

Fig. 2 Ospedale Maggiore, Milan, 1456-1465, Section.

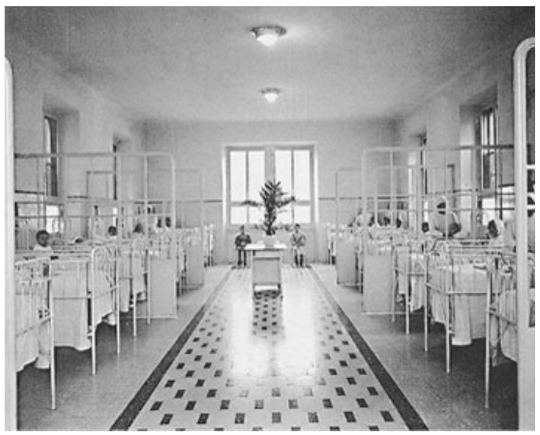

Fig. 3 ”Vittore Buzzi” Children’s Hospital with layout based on the pavillion type.

The history of Milan healthcare has been marked by various hospitals and health reformations that engender paradigm shifts in hospital architecture in the west. Michele A. Riva and Giancarlo Cesana, Professors at University of Milano-Bicocca, investigated the global panorama of medicalization of hospitals by tracing – through a “micro-historical approach” – Ospedale Maggiore in Milan since its establishment in the Renaissance.[1]

The fatal aftermath of the Black Death epidemics (1346–1353) and Europe’s rapidly growing medieval cities led to hospitals being instituted by the bourgeoisie in Europe. Amongst the prominent examples is Ospedale Maggiore in Milan, also known as Cà Granda (“big house”), designed in 1456 by Filarete.[2] The hospital represents the charitable largesse of sponsoring patrons to the sick and the poor and was the first of its kind to employ the crossward plan: a symmetrical composition according to the Renaissance principles, comprising of two main wings, each with four open courtyards. (figure 1) Rather than derived from the contour of the land, it was designed on the page, “siteless and idealized.” [3]

Hygienic concerns in the design of hospital ‘Maggiore’ set it apart from preceding religious healing temples. The hospital aimed to improve efficiency in healthcare by centralizing patients into a single bigger building, while implementing hygienic innovations. Filarete’s sections of the hospital reveal a new sewage system enabled by the privy running along the back of the patient bed and emphasis on room ventilation through large windows front of the bed. (figure 2) Anticipated the concept of the general hospital, which serves the sick in general to improve public health, the hospital initiated the centralization of healthcare in Italy and represented a new archetype for non-religious institutions all over Europe.

Not until the final decades of the eighteenth century did Milan hospitals begin to forge a new relationship with its medicalized inhabitants, transforming from charity-based institutions into civic institution. Enlightenment policy attributed social progress to improving children’s health.[4] From orphans to ‘the incurables’, sick children with chronic mental or physical disability were displaced from foundlings and transferred to a new hospital built solely for them in Abbiategrasso in the outskirts of Milan.[5] To be cured, they must be taken on a trip out of their routine. Emerged along with this new marginal group of patients were new doctors whose education emphasized clinical observations.

1
Riva, M. A., & Cesana, G. (2013). The charity and the care: the origin and the evolution of hospitals. *European Journal of Internal Medicine*, 24(1), 1-4. https://doi.org/10.1016/j.ejim.2012.11.002

2
ibid.

3
Murphy, M. P., Murphy, M. P., Mansfield, J., & Group, M. D. (2021). *The Architecture of Health: Hospital Design and the Construction of Dignity. Cooper-Hewitt Museum,* 52

4
Ben-Shalom, O. *Medicalizing Milan: Hospital Reform and Urban Identities in Enlightenment Italy. Harvard Mellon Urban Initiative.*

5
ibid.

6
ibid.

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ibid.

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ibid.

Population boom in the most industrialized city of Italy in the latter half of nineteenth century further reconfigured the hospital. Ospedale Maggiore's 288 beds proved inadequate to serve its sick citizens, compared to the 1000 beds in the concurrent Hôtel-Dieu in Paris.[6] The need for more beds resulted in the expansion of the hospital to another area and the adoption of the Nightingale pavilion model that dominated western hospitals.

Constructions of 'specialists' hospitals and research-driven hospitals post-WWII was the keynote of this era where medical sciences and technology took over architecture in the hospital. In the span of a century, several specialized hospitals were found targeting specific patient groups: pregnant women (Obstetrics and Gynecology Institute "Luigi Mangiagalli", 1906), children (1915, "Vittore Buzzi" Children's Hospital), or tumor (1928, National Cancer Institute).[7] (figure 3) This mushrooming of specialized hospitals caused a controversy in the medical milieu that emphasizes all-round competence. Meanwhile, Ospedale Maggiore was officially affiliated with the medical school of "University of Milan" and earned the national title of "Research Hospital" (IRCCS).[8] The Filarete building became a university campus, and the hospital was moved to a vast area across the street. This marked a full leap from charitable hospitals to full medical institutions.

The later half of twentieth century observed further developments of the vertical modern hospitals. The functional hospital came to life in this era with three primary massings – inpatient unit, outpatient unit, and public amenities – and its signature hospital corridor. Among many of those in Milan is Clinica La Madonnina in Quadronno district, designed by the Soncini brothers. The hospital typifies the mood of the time with a rational modern take to hospital architecture including individual patient's room with adjoint loggias facing a healing garden. (fig. 4) Here, the hospital is no longer a horizontal urban campus, but a radical medical condenser made for curing.

Fig. 4 Clinica La Madonnina in Quadronno with loggias overlooking healing garden.

01
INTRODUCTION

“Illness is the night-side of life, a more onerous citizenship. Everyone who is born holds dual citizenship, in the kingdom of the well and in the kingdom of the sick. Although we all prefer to use only the good passport, sooner or later each of us is obliged, at least for a spell, to identify ourselves as citizens of that other place.”

– Susan Sontag, Illness as Metaphor.

1.1 Thesis topic

Hospitals are grim reminders of our mortality. From a panoramic view, hospitals as civic institutions that provide care and cure for the sick reflect how a society treats its ill citizens. The expectation of a healthcare infrastructure like hospitals to induce ease, comfort, and wellbeing is a tautology, yet it is not always the case in practice. Hospitals are mired in the complex and absurd, defined by rules and constraints of the ever-evolving medical system. In other words, hospital architecture has become a wild goose chase for constant restructuring and expansion to avoid obsolescence.

Once almshouses for the poor, hospitals evolved from charity-based institutions to the modern machine à guerir, to healing centers for chronic illness. (figure 5) As stringent design briefs overtook the direct role of architecture and healthcare, the medicalization of architecture since the nineteenth century stripped patients of pleasure and dignity. As portrayed in Sontag’s metaphor, the hospital functions like a kingdom of the sick with its strict border control at the entrance, further segregating the two kingdoms. After all, the modern hospital is supposed to be a quiet, functional, and sterile sanctuary for curing and healing.

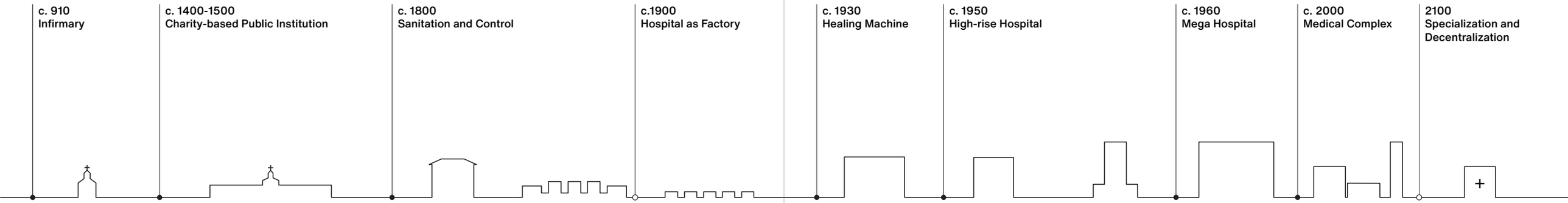

Fig. 5 Timeline of hospital typologies.

Drawing by author. Data from Wagennar, C., The Architecture of Hospitals (Rotterdam: NAi Publishers, 2006), 206-213

1.2 Problem Statement

Medicalization, Genericness, and Bigness

Hospitals lack pleasures. The modern hospital, unrestricted to the context of Milan, relies predominantly on medical rhetoric to problematize and resolve architectural, urban, and environmental problems.[9] Specific resolutions sought to remedy specificities of the so-called "design brief" result in the extreme genericness of the sterile medical machine. Tailored solutions pertaining to treatments of illnesses engender contradictory results, marginalize sick bodies, and segregate various demographic groups.

The stringent adherence to design briefs to accommodate medical technologies also led to bigness in the hospital. A relentless chase for spatial expansion further contributes to early obsolescence as architecture shifts the focus to ultimate efficiency and innovation while detaching itself from the patient's experiences. On this topic, Borasi analogizes the hospital — subject to medicalization — to a "'sick' body" and proposes the notion of demedicalization of architecture.[10]

The bidirectional nature of medicalization refers to a phenomenon of incremental development over the last century while implying the possibility of a reversal. Successful demedicalization has occurred in some cases within the medical sphere, for instance, related to homosexuality and masturbation.[11] In the architectural discourse, the radical hybrid model of Maggie's Center for Cancer exemplifies this notion by yoking together non-medical programs to create a new environment for more pleasurable forms of cancer care. "They are in a way monumental, and precious, like a church that isn't a church, a gallery that is not in a museum, or a house that is not a home." [12]

> "Above all, what matters is not to lose the joy of living in the fear of dying."
>
> – Maggie Keswick Jencks, cancer patient and co-founder of Maggie's Center

Population ageing and the marginalized

Rising cancer incidences coinciding with population aging[13] engender a demographic redistribution with implications for specialized hospitals. Italy has the highest old-age dependency ratio in Europe, predicted to rise to 66.5% by 2050, against a European average of 52% in 2050.[14] (figure 6) Urban ageing phenomenon corresponds to the rising cancer occurrence and mortality in Italy, with over 377,000 new cases diagnosed annually, making cancer the second leading cause of death in Italy.[15] Rising cancer incidences in the context of superaged Italy and the thinning of family support networks translate to an overdue need to revise and reconfigure facilities specific to this patient group.

Furthermore, spatial segregation persists in the general hospital, where palliative care, or end-of-life care, is embedded in cancer care departments, tucked away at the end of cavernous hospital corridors. Amongst many examples are the oncology unit at McGill University Health Center in Montréal or even in the more recently constructed St. Olav's University Hospital in Trondheim, Norway.[16] In such settings, being sick or being old, sometimes at once, amounts to the marginalized, segregated environment for strictly curing efficiency.

Cancer care: a dichotomy of needs

The consequences of cancer gravely affect the experience of joy in people living with cancer physically and mentally. Loss of bodily functions, inability to maintain social roles and to engage in routine activities, and psychosomatic symptoms are among the impacts of cancer and its treatment regimens.[17] Occupation therapy exemplifies one of the medical approaches to facilitating the experience of joy and improving the life quality of people with advanced state cancer based on eudaimonic well-being.[18] Nevertheless, architectural approaches are

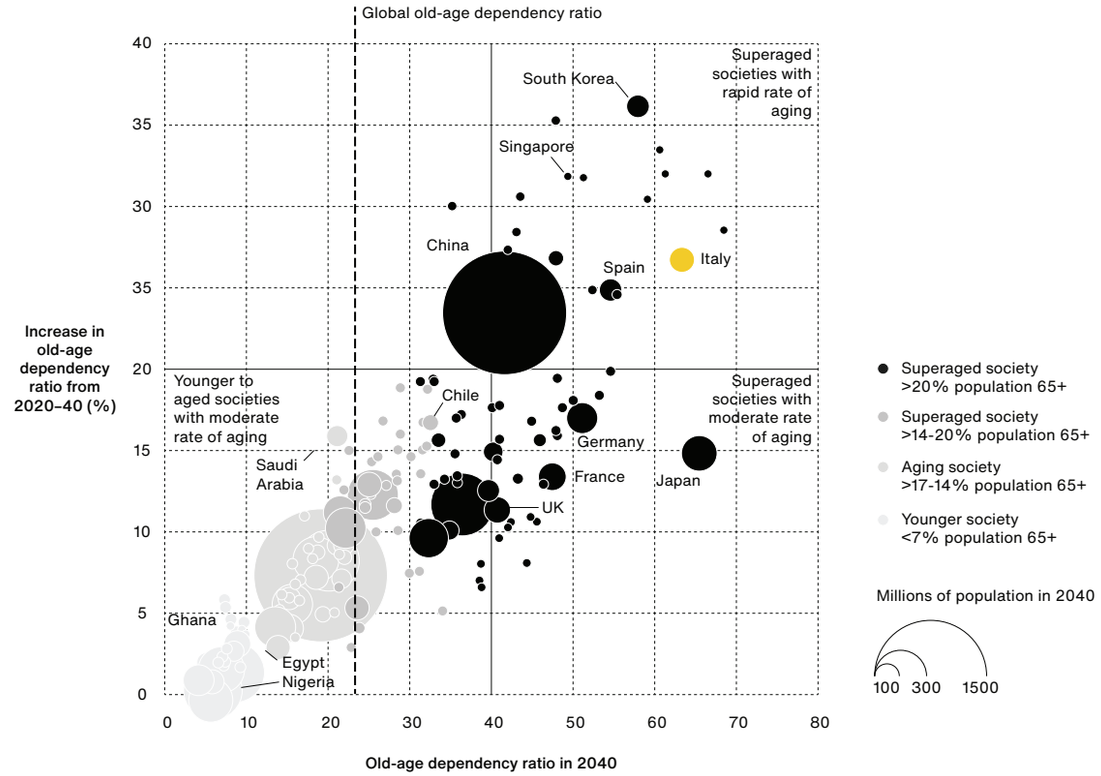

Fig. 6 Italy as a superaged society

rare. Minimal research has been conducted to improve the built environments specific to cancer care where the typical treatment regimen is primarily outpatient.

More than 80 percent of all cancer care, including high-dose chemotherapy and high-tech radiation diagnostics, is delivered in ambulatory-based settings, typically at infusion centers.[19] As a result, insights gained from studies on inpatient settings of regular hospitals may not be relevant to these outpatient environments. For example, while evidence-based design attributes single-patient rooms to reduced infections and enhanced patient healing in hospital settings, such configurations in infusion centers may limit patients' ability to call for help from nurses. Curiously, the first cancer center, the New York Cancer Hospital, has a centripetal open ward with ventilation ducts and nursing tables in the center. (figure 7) The strict restriction on patient freedom to control windows in single patient rooms due to infection control in regular hospitals also applies loosely to the case of cancer treatment, where the contrary could be proven more beneficial.

Longer waits, long-hour treatment sessions, more frequent trips to the hospital – typically ranging from three to six months – and the hospital itself, altogether render the traditional oncological departments stigmatizing and obsolete. (figure 8) What makes pleasure above all more relevant in this context is its dichotomy of needs – between choice and control, privacy and kinship, tranquility and positive distractions. Such contrast needs result in an intensified duality of emotions experienced by cancer patients where joy can be twofold in the backdrop of pain. For instance, the transformative empowerment of fake wigs brings pure pleasure by creating a sense of normalcy. As such, a focus on providing private comfort in non-residential outpatient facility and positive distractions within the hospital's third places will faciliate an architecture of pleasure, while reflecting on a non-normative model of healthcare.

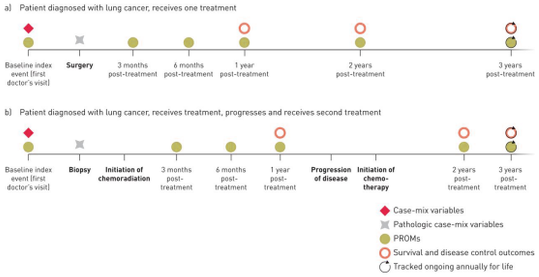

Fig. 8 Sample timelines illustrating cancer treatment paths for patients treated with different modalities, including a) surgery or b) multiple treatments with definitive chemoradiation followed by chemotherapy after disease progression. PROMs: patient-reported outcome measures.

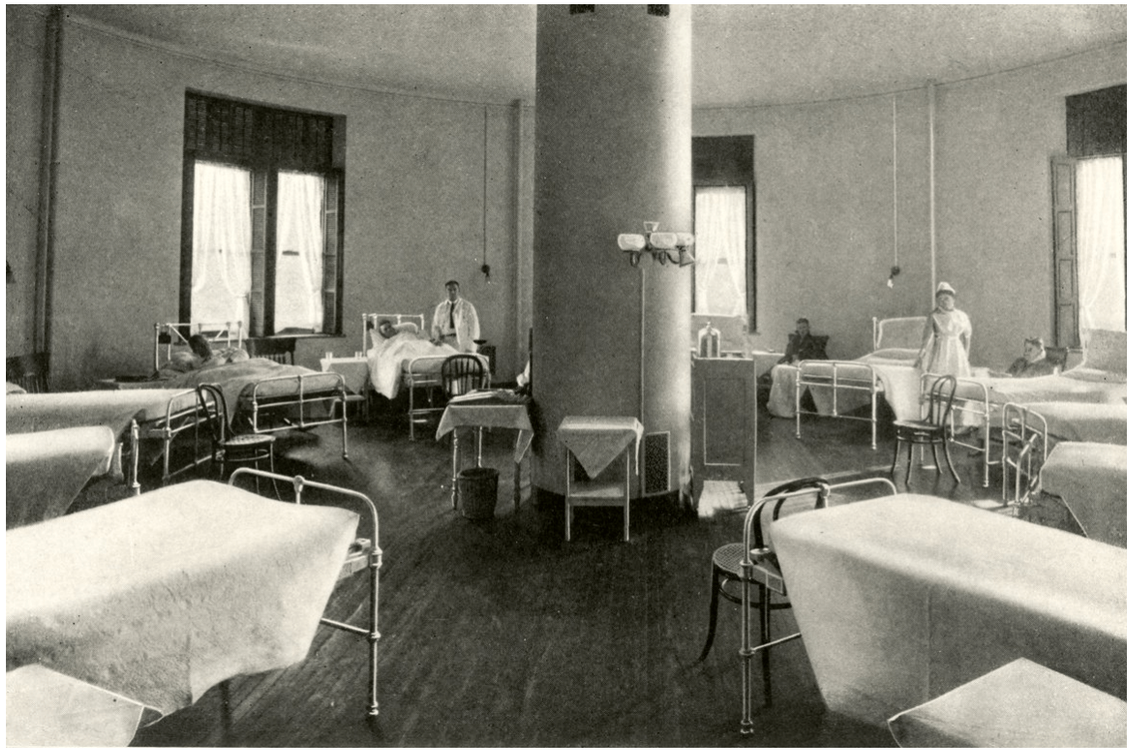

Fig.7 New York Cancer Hospital as the first cancer center in the world, 1887, employed radial plan to prevent dirt and germs from accumulating in corners.

1.3 Research question

Should hospitals exude pleasure? This is precisely not a question one ponders when thinking about the architecture of hospitals, even more so in cancer hospitals. In Lütjens Padmanabhan's words, architecture can be joyful or sad, relaxed or tense, sympathetic or moralistic, personal or aloof.[20] Hospital architecture, I argue, is no exception. Hospitals, commonly perceived as a site of sorrow and pain, can also be a site of pleasure and joy.

Joy differs from pleasure in that pleasure is derived from an external source, while joy arises from within when we bring our full awareness to the experience. (source)With this distinction, the research theorizes on the architecture of pleasure in a hospital for cancer to investigate whether the building, as a tangible, external environment embracing the body, can encourage the joy of living from within the self. The research question is as follows:

Can architectural pleasure in the urban hospital foster healing and joy in people living with cancer?

This research question is subsequently broken down into two sub-questions:

How to uncomplicate the complex structure of treatment areas for patients?

How to formalize pleasure in hospital's third place (corridor, waiting lounge, etc.) for people undergoing treatment and staffs?

What is the role of material cultures in the everyday life of hospital corridors, emblematic yet often demoralizing and disorienting?

Fig. 9 Ceci n'est pas un hôpital, concept collage.
Drawn by author.

02
RESEARCH
FRAMEWORK

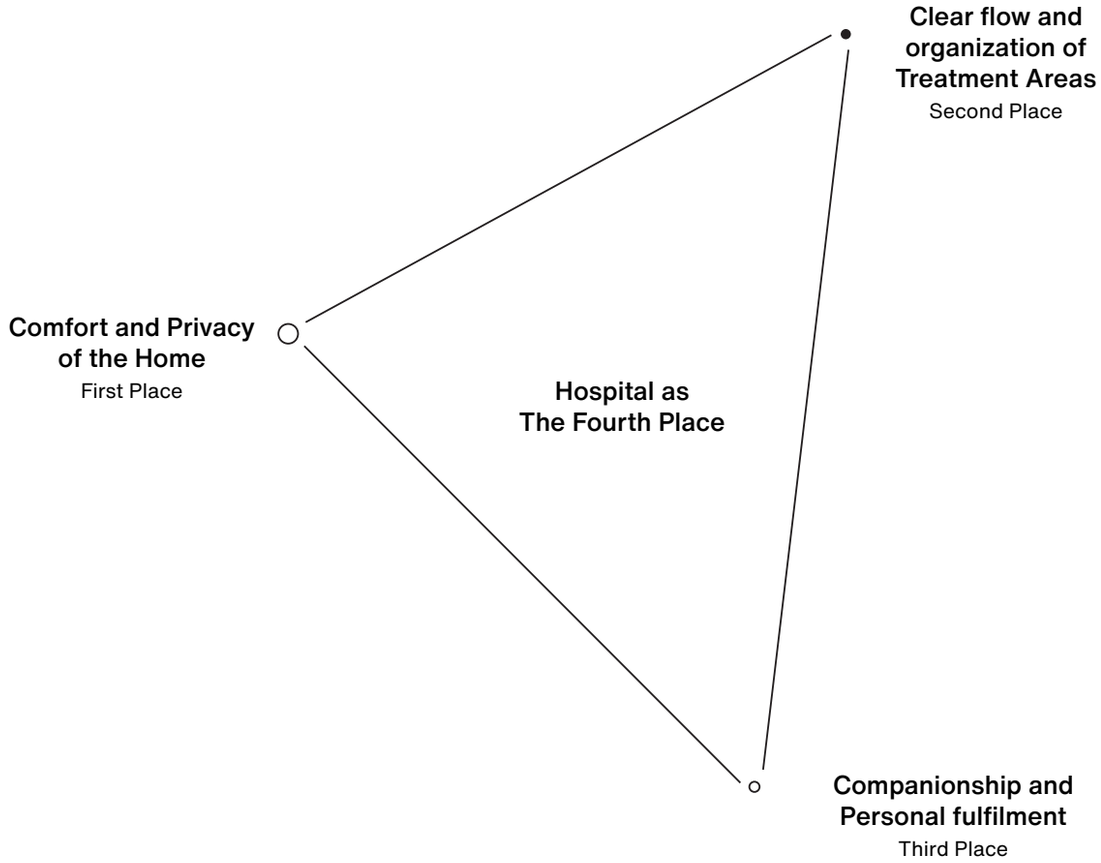

Fig. 10 Hospital as the fourth place, theoretical framework diagram.

2.1 Theoretical framework

Pleasure has a slightly slippery definition. Although pleasure is often associated with leisure, spaces built for leisure are not necessarily pleasurable, and vice versa. The architecture of pleasure will be investigated and later substantiated through the theories that follow.

The Third Place, The Fourth Place

To formalize pleasure, the research will investigates the notion of the third place in the hospital and speculate on the hospital as the fourth place. Sociologist Ray Oldenburg theorized that the third place refers to informal social spaces which exist outside the structured environments of the first place (home) and the second place (work), "where people gather primarily to enjoy each other's company."[21] If the hospital were a city, its third place would translate to interstitial spaces between the treatment room and the patient room. Foyers, waiting lounges, front elevators, staircase landings, corridors exemplify Oldenburg's concept. These spaces, contrary to being socially engaging, also contribute primarily to the negative connotations associated with hospital visits as an unpleasant and demoralizing experience.

The hospital, however, is not quite the third place in and of itself. While being the workplace for staffs, the hospital does not translate to a socializing or decompressing space from a patient's perspective. Neither is the hospital a workplace nor a home for those who have fallen ill—one only hopes to be discharged as soon as possible. When the definition of the third place still stands, the hospital as a special type falls through the cracks. Could hospitals, then, be theorized as the fourth place?

In a paper discussing a typology of places in the knowledge economy, Morisson elaborates that the fourth place is a superimposition of certain elements pertaining to the first, second, and third place.[22] Station F in Paris typifies this new type as an innovation center combining restaurants, bars, a post office, FabLab, working desks, and shared apartments residence. In the fourth place, the frontier between social and private dynamics, work and leisure, becomes blurred. In the same vein, the hospital, as the fourth place, is borne out of the injunction on pleasures due to consequences of illness and treatments. In this context, with the 'social' label disrupted, the fourth place lays a framework for conceptualizing the hospital influenced by superimposition of places and a dichotomy of needs in cancer care – between choice and control, privacy and kinship, tranquility and positive distractions.

"Maybe the ideal hospital is not a question of design outline, but more about sensitive concepts such as human interaction or well-being?"

– Phylum H ©Brunet Saunier Architecture

Henri Lefebvre's Jouissance

Henri Lefebvre's theorization of jouissance distinguishes between the ideas of "enjoyment of architecture" and "architecture of enjoyment," of which the latter indicates a space that encourages and stimulates pleasure, rather than simply admiring beautiful architecture.[23] While both sentiments can coexist, the latter gives rise to more intense emotions. He contrasts abstract space, shaped by capitalist interests like office buildings or institutions, with lived space of quotidian experiences. Whereas abstract space is cold, rational, and alienating, designed to control behavior and limit freedom, lived space challenges traditional boundaries, routines, and expectations by enabling spontaneous encounters. The terrazza ("roof terrace") as a cinematic key space depicted in post-war

and contemporary Italian films exemplifies this place of hedonism that invites both encounters and contemplation, such as terraces seen in Sorrentino's La grande bellezza. [24]

Bernard Tschumi's The Pleasure of Architecture

Tschumi's concept of pleasure in architecture embraces disjunction and tension between forms and functions, where pleasure arises from the interplay between space, event, and movement.[25] Tschumi argues that architecture should provoke, stimulate, and even contradict, creating spaces that foster dynamic interactions rather than static, predetermined uses. Through this approach, Tschumi proposes that unexpected and transgressive encounters within space evoke a unique form of pleasure tied to human engagement and sensory experience.

"As beautiful as the chance encounter of a sewing machine and an umbrella on an operating table."

– Lautréamont, Les Chants de Maldoror

One can draw a parallel with Lautréamont's metaphor, which captures one crucial principle of surrealism: the enforced juxtaposition of two completely alien realities to challenge an observer's preconception of reality. This juxtaposition evokes a sense of the uncanny to challenge conventional aesthetics and reflects Lautréamont's desire to disrupt logical thought and provoke new ways of seeing and experiencing. Relating this notion to architecture, spaces with surprise and surreal qualities will offer delight rather than sadness, for "pleasant surprise beats most forms of entertainment, particularly when it results in a positive change of mind."[26] As such, compared to the fixity of required treatment rooms or patient rooms, third place in hospitals enables opportunities for this type of contradictory spatial experience and invites reappropriation from the user.

Juhani Pallasmaa: The Eyes of the Skin

Pallasmaa's theory on multisensory experience in architecture offers another layer to the architecture of pleasure.[27] In The Eyes of the Skin, he criticizes modern architecture – renowned associated with the International Style perpetuating in hospital architecture to this date – for being too visually oriented and argues that tactile, auditory, and even olfactory aspects are crucial to creating good architecture.[26] Hospitals then shall offer a sense of comfort and pleasure through materials, textures, acoustics, and spatial configurations, including but not limited to visual tectonics.

Maggie's centers: A radical hybrid

For that a constructed building speaks more than any written words, Maggie's blueprint of a radical hybrid provides the last but the most crucial theoretical basis in this research. Maggie's Center meshes seemingly different functions together under one roof to evoke contradictory experiences and spontaneous pleasures. Absorbing programs of a day-care center like a kitchen, a library, and a garden, Maggie's is "a house but not a home, a museum that is not a museum, a church that is not a church, and a hospital that is not a hospital", everything all at once.[28] With this hybrid typology, patients have a choice to take risks in treatment, to take part in counseling or group sessions, or to take pleasure in retreating to their niches within the public sphere. Private niches within public spaces, or flexible spaces that invite appropriation without imposing, contribute to a hospital echoing a domesticated landscape of heterogeneity. Here, the hospital becomes a theatre of the routine every day, amplifying the joy of living without the hedonistic erasure of reality.

Psychedelic metaphor: a final note

The project title plays on the double entendre of "good trip", a colloquial term describing pleasurable experiences derived from psychedelic experiences used in treating patients with psychosomatic symptoms, including cancer-induced depression. Psychedelic journeys are inherently unpredictable, ranging from joyful to distressing; whether a trip is a "good trip" depends significantly on one's mental state, personality, expectations, and physical surroundings, also known as "set and setting." [28] Drawing a parallel of hospital architecture to a stage set for pleasure, Good Trip emphasizes the psychosomatic and physical aspects of cancer and its link to the physical environment. The title suggests a hope that a pleasurable space can foster better healing in cancer patients as a metaphor for psychedelics in treating cancer-induced depression. Perhaps, to take pleasure in a hospital visit is to embark on a good trip.

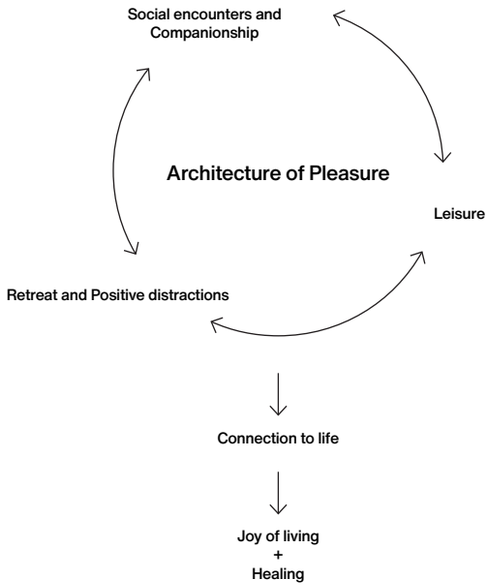

Fig. 11 Theorization of pleasure hinges on the dichotomy of needs in patients, theoretical framework.

2.2 Relevance to studio

As Peter Haneke has shown in his movie Amour, today, illnesses are often experienced by patients in the comfort but also the solitude of their own homes.[29] Cancer treatment, above all, can induce psychosomatic symptoms and aggravate negative thoughts in patients. For this reason, the project believes that, like the renaissance Ospedale Maggiore once was, the core of a healthcare facility should be to offer both private and collective spaces that celebrate simultaenously personal pleasure and public welfare. Rather than being a strictly functional clinical environment, the proposal involves a non-residential cancer center in Milan focusing on outpatient treatment, care, and support.

The research focuses on outpatient settings, which are more dominant in cancer care, as these may fail to support socio-spatial needs, such as privacy and control, more so than inpatient facilities. The complexity of cancer hospital under the umbrella concept of *flow* lies in the multiple spatial and programmatic needs of the bodies within buildings. The theorization of architecture of pleasure thereby hinges on the three primary relationships driving in this dichotomy of needs: between privacy and companionship, autonomy amd control, retreat and positive distractions. (figure 11)

Material position adds the last layer to the proposal. White-plastered walls are a norm for sanitation requirements in hospitals, whereas wood and textiles remain the moot point in the sterile environment. Strangely enough, one rarely questions whether such wall paint has carcinogen properties or not. To challenge this preconceived notion, the research hopes to study wood as the primary building material through the material culture lens. The research will study material floow by considering first its life cycle implications and then exploring potentials for Design for Disassembly relevant to the Material group's position.

03
RESEARCH METHODS

Fig. 14 Map locating existing cancer facilities in Milan and the assigned site in yellow. Drawn by author.

3.1 Research methods

Clients

Client research focuses on two primary groups of users: those experiencing cancer and those who do not. This distinction emphasizes that the experiences of pleasure pertaining to these two groups may not manifest similarly but are both crucial within the scope of the research.

The former group consists of patients undergoing cancer treatment and those returning to hospitals for follow-up care. An understanding of patients' medical and social needs facilitates a better understanding of their spatial needs. Literary reviews on the flow of cancer treatment, the physical and psychological consequences of these treatments, the impacts of the built environment, and post-occupancy evaluations will help identify the nodes within the patient's care journey where unpleasant experiences are most prominent or even aggravated. Field investigations and interviews of cancer patients and caregivers can contribute to understanding how these user groups perceive pleasure and confirm the initial suspicion about the role of spatial autonomy and reappropriation in building pleasures.

The latter group involves hospital caregivers and visitors. Creating comfort and a sense of privacy while maintaining the patient-caregiver connection and patient-visitor kinship is among the key aspects of the pleasurable healthcare environment. For instance, patients' proximity to caregiver stations, visual and audible connections between caregivers and patients, or accommodation for visitors within infusion hubs are identified as factors contributing to feelings of safety and assurance through preliminary literary research.

Site

Site research addresses two primary aspects: contextual requirements for a hospital and relevant criteria for social infrastructure incorporating leisure programs. As the building site has been assigned in the Quadronno district of Milan, spatial mapping and environmental analysis will enable a better understanding of the site characteristics, including aspects such as environmental and sensory quality (orientation, light, air, views, noise pollution), accessibility (connections to urban green, connection to mobilities), and social interactions (leisure functions, concentration of demographics groups within the neighborhood and within the city). Based on the same criteria, contextual analysis and comparison of existing cancer hospitals within Milan and exemplary case studies in Europe, from treatment centers to research institutes to care-only centers, provide insights into how these elements contribute to or detract from pleasurable experiences.

Additionally, on-site surveys, behavioral observation, and qualitative heuristics[1] can capture how spaces intended for leisure, such as libraries and gardens, or their lack thereof, affect people's behaviors. Data gathered from these methods eventually allows for an assessment of site features that are relevant and applicable to the assigned site in Quadronno.

Program

Programmatic and spatial requirements will be investigated primarily through benchmarking of case studies and typology studies. As the research seeks to reconcile clinical treatment and supportive care under one roof, it is crucial to analyze the programmatic and spatial compositions of cancer treatment hospitals, cancer research institutes, and the hybrid cancer care model of Maggie's Cancer Centers. In the context of urban aging in Italy, other urban hospitals not exclusive to cancer, such as children's hospitals, rehabilitation centers, and senior daycares, provide insights into age-inclusive design and potential public amenities in hospitals beyond curing, such as leisure, self-care, and productivity.

Particularities of cancer treatment regimens necessitate further literary research and case studies into outpatient treatment areas like infusion centers where degrees of privacy manifest differently from a regular hospital, be it private hubs, semi-open infusion hubs, or informal infusion areas. A comparative analysis at the end will provide a comprehensive grasp of programmatic and spatial composition for the final proposal with patient's pleasure at its core.

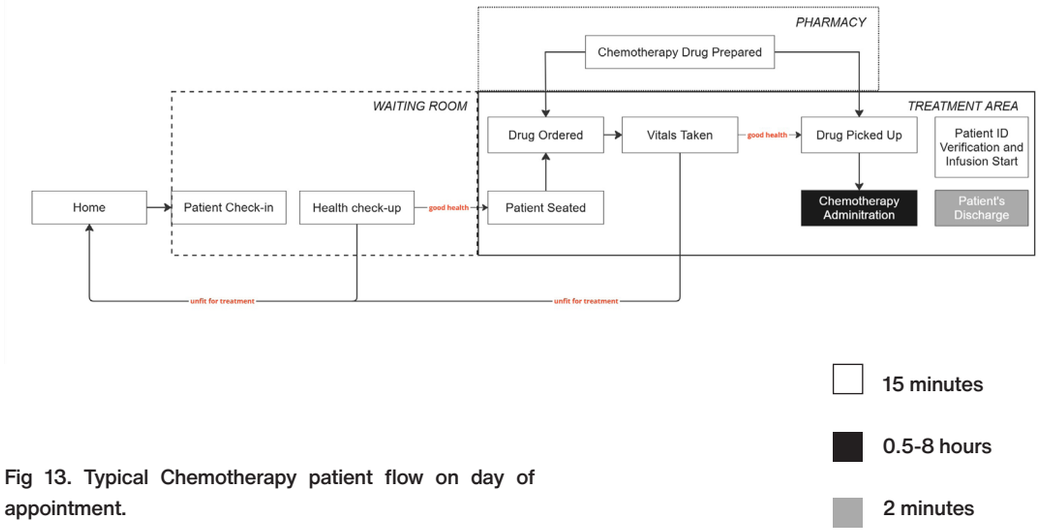

Fig 13. Typical Chemotherapy patient flow on day of appointment.

Fig. 14 Preliminary program case study

APPENDIX I

Endnotes

9
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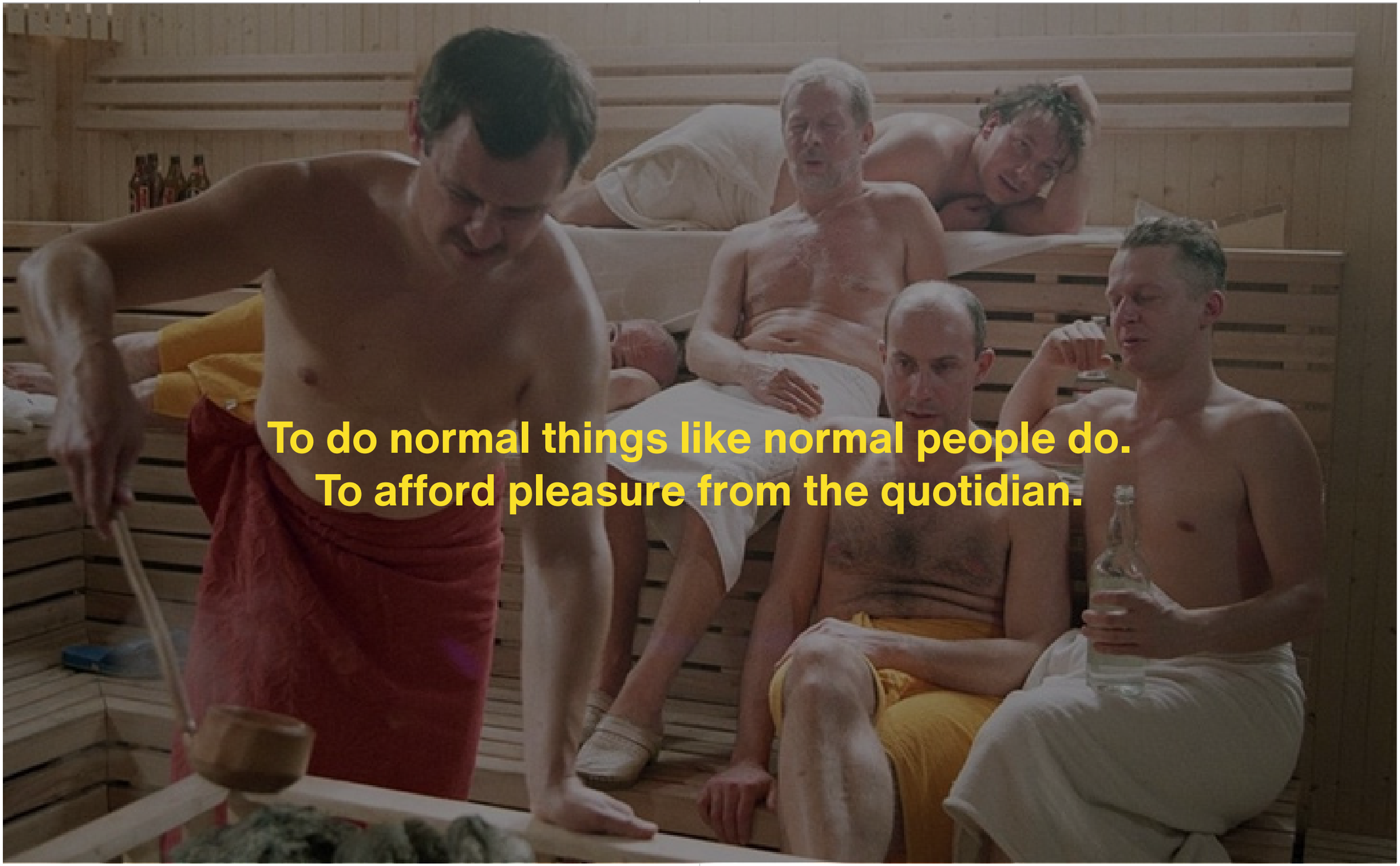
II.

PROCESS BOOK

01 KAFKAESQUE CORRIDORS: REFORMALIZED

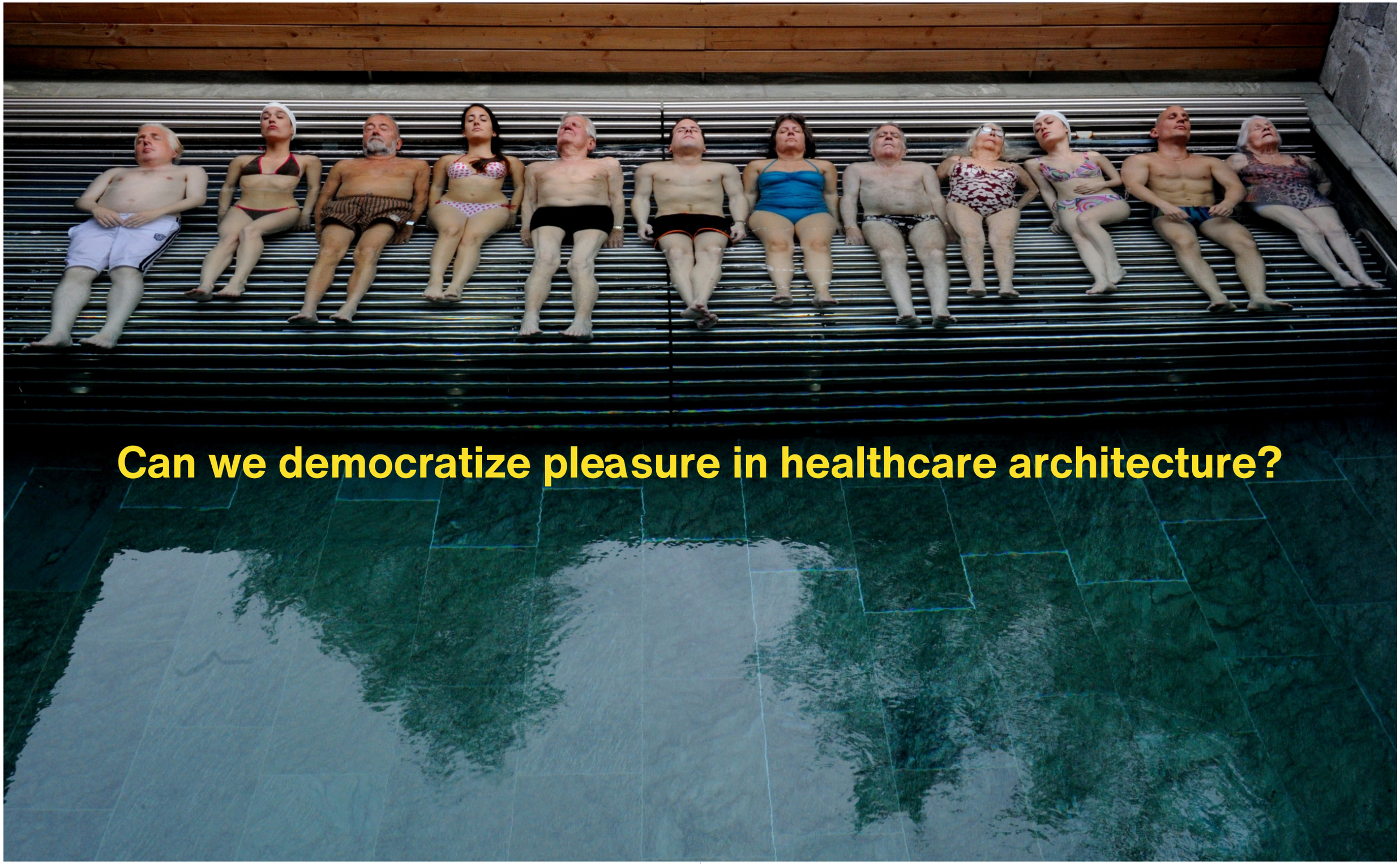
Film still from Amour (2012) by Michael Haneke

Film still from La Notte (1961) by Michelangelo Antonioni

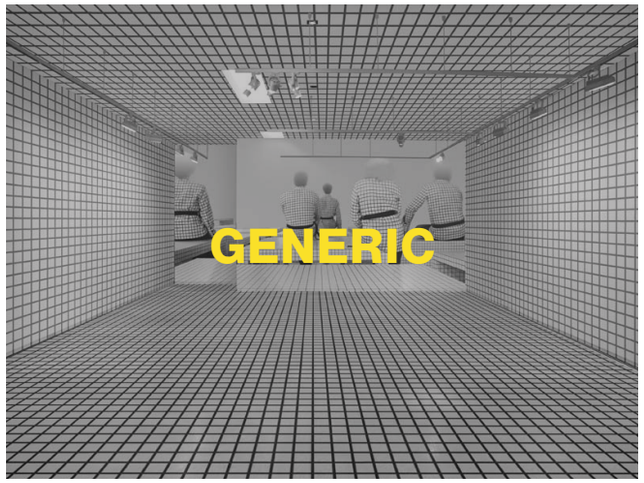


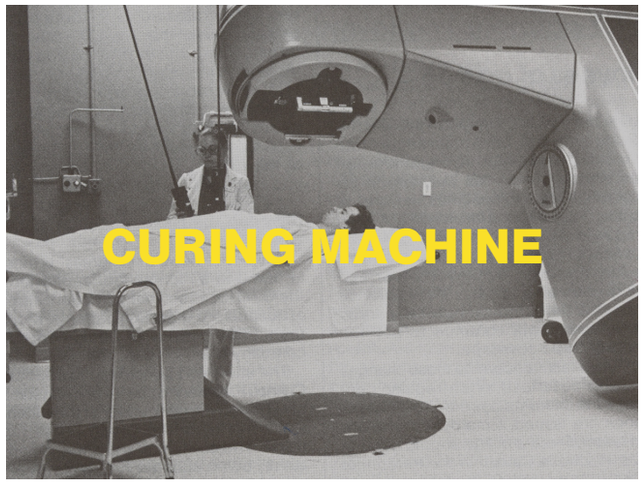
Film still from Sauna (1992) by Filip Bajon

Film still from Allelujah (2022) by Richard Eyre



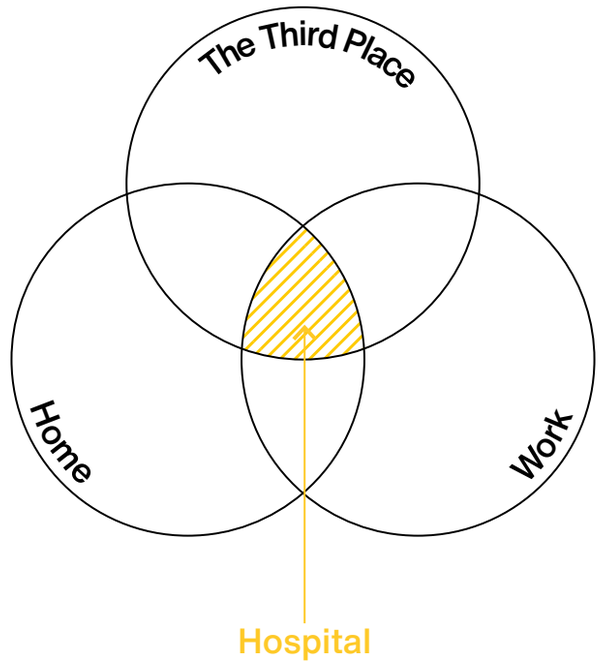
Film still from Youth (2015) by Paolo Sorrentino





Where exactly can one find pleasure in the hospital, a generic, hermetically sealed curing machine? Theorizing the hospital as the Fourth Place where opposite needs cross, the research focuses on the infamous Kafka-esque corridors as the hospital's key space. The assignment from this point is to challenge the typical efficiency-driven corridor as leftover space and imagines a different experience: a space that opens to social interactions while also allowing personal retreat of privacy.

Digging through the archives of Milan and that of the Diaconessenhuis in Eindhoven reveals unexpected , unfamiliar images of a hospital corridor. The corridor was never a mere circulating or leftover space but rather, a protagonist space of the hospital itself - the third place.



Assortment of Hospital corridors in Milan, collaged by author.

Infant Ward at Dateo Hospital, Living room corridor with nannies and children. Milan, 1935.
Source: Fototeca Archivio Storico Lombardia Beni Culturali

Waiting lounge, Erasmus MC Cancer Institute, photo taken by author.

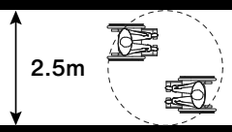
Nurses taking a break in the circulation zone, Diaconessenhuis, 1967
Source: Máxima MC

A corridor reality in Occupational Therapy in Barnsley Hospital, United Kingdom.- a department supposed to help patients overcome challenges and bringing joy to patients through every activities. Yet, everyday spaces as common as corridors are undesigned.

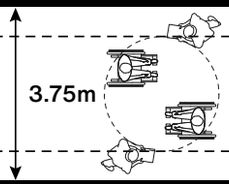
Corridor wears many hats:

Breakout space for staffs	Consult for treatment	Wait for treatment
Mover space	Retreat from awkward situations	Take a phone call
Take a stroll	Socialize	Avoid socializing

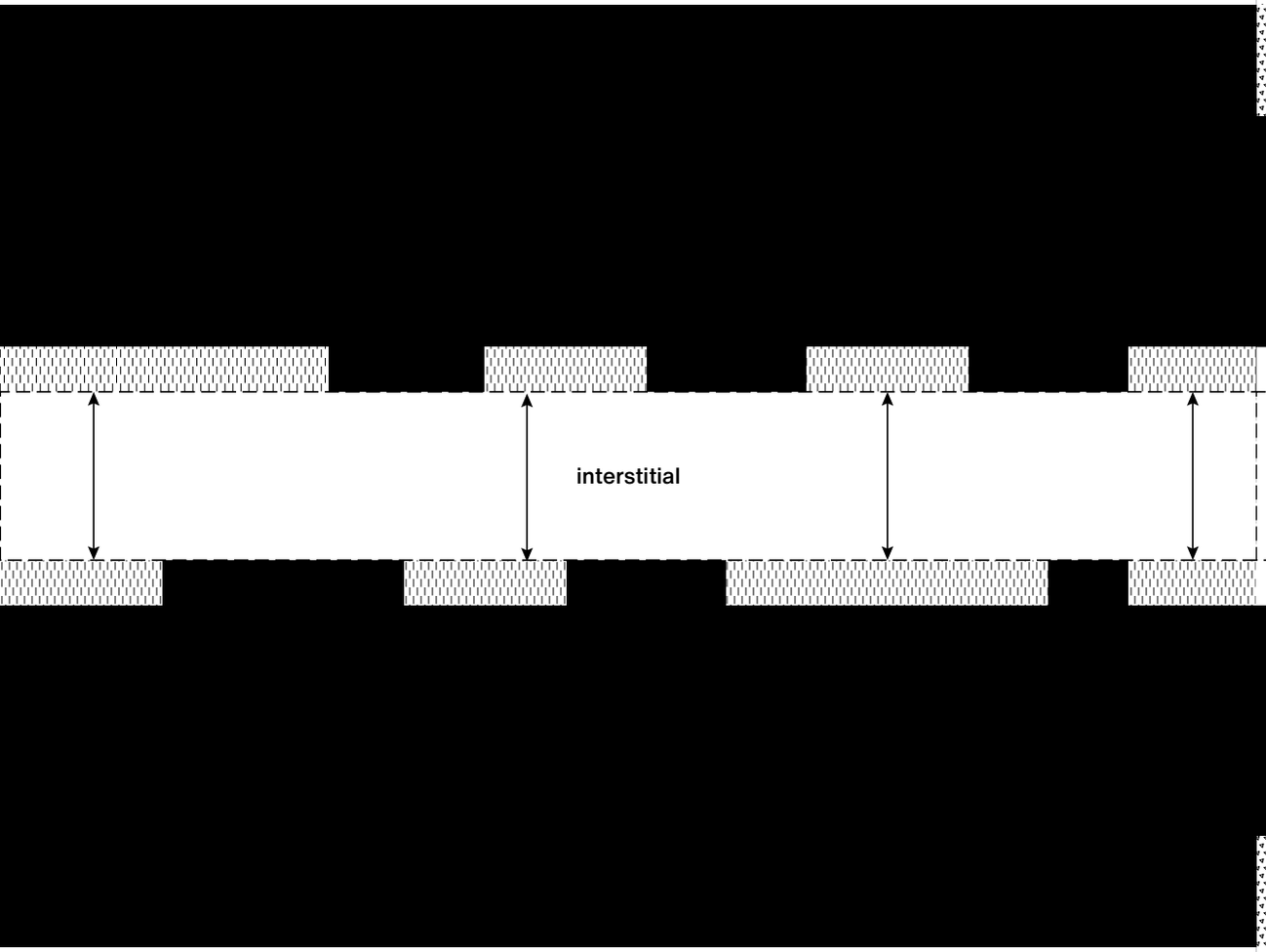
Standard corridor width requirements according to International Health Facility Guidelines (iHGF)



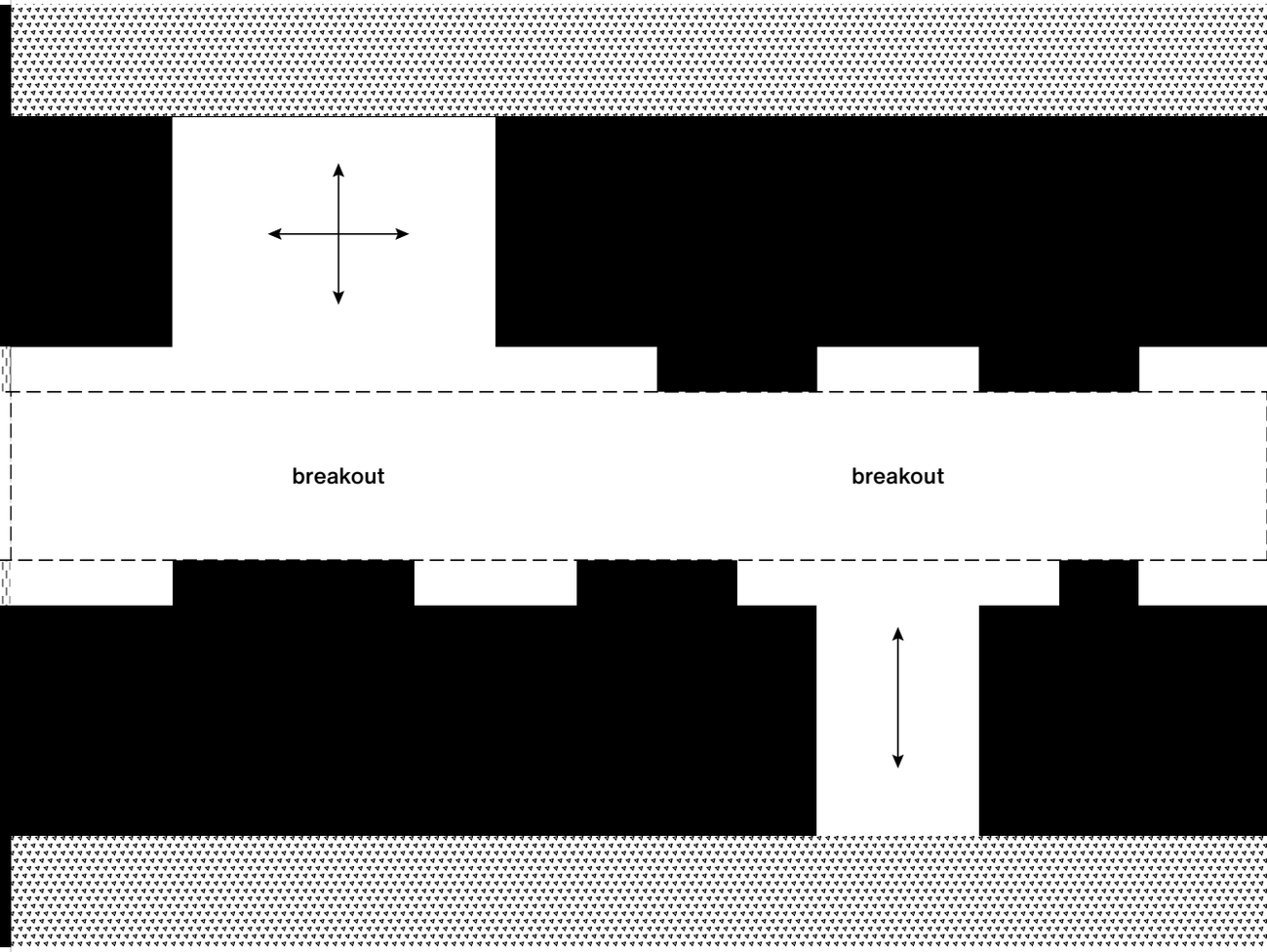
Propose to enlarge



Add porosity

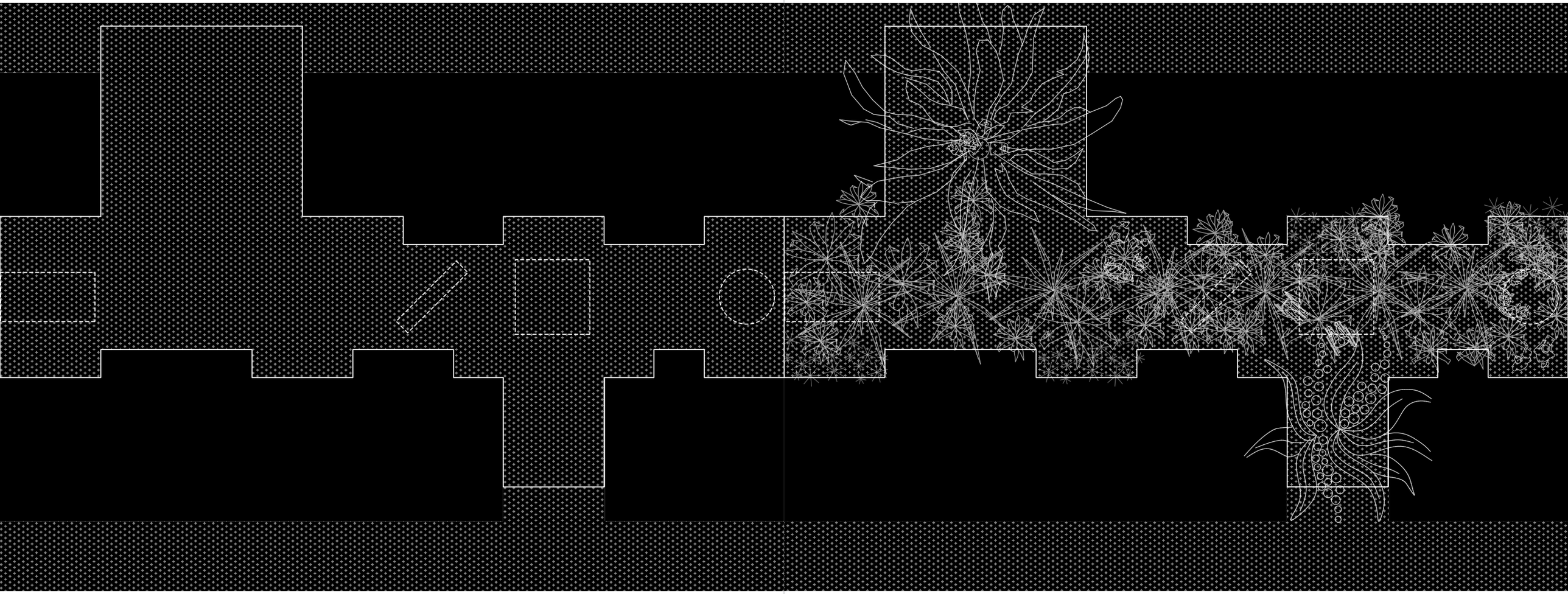


Diversify different spatial conditions for refuge / socialize



Open up the ceiling: Add eccentricity to the familiar

Life happens in the in-between



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5

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8

3

1
Ospedale Maggiore (Ca' Granda), Milan.
Filarete
Source: Guida Milano e Lombardia

2-3
De Drie Hoven Senior Home, Amsterdam.
Herman Hertzberger
Source: A+U Herman Hertzberger, April 1991

4
Maggie's Centre Gartnavel.
OMA.
Source: OMA

5
Prentice Women's Hospital, Chicago.
Bertrand Goldberg.
Source: Geoff Goldberg

6

6-7-8
Paimio Sanatorium, Paimio.
Alvar Aalto
Source: Divisaire

9
REHAB Basel, Rehabilitation Center, Basel.
Herzog & de Meuron
Source: Herzog & de Meuron

9

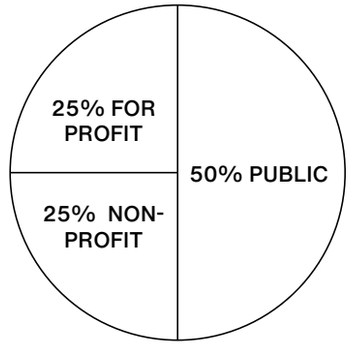
02
DESIGN BRIEF

Public-Private Partnership (PPP)

Milan and Lombardy healthcare system relies primarily on public health units (ATS) and hub hospitals managed by private entities to provide healthcare services to the public. This prominent public-private partnership (PPP) which distinguishes Lombardy healthcare from the rest of Italy enables residents a diverse range of choices depending on economic standings. The hub-and-spoke Milan model exemplifies this relationship through a network of community houses (spokes) and hub hospitals (mini ospedali) to render healthcare accessible on a neighborhood scale, several of which are managed by private entities.

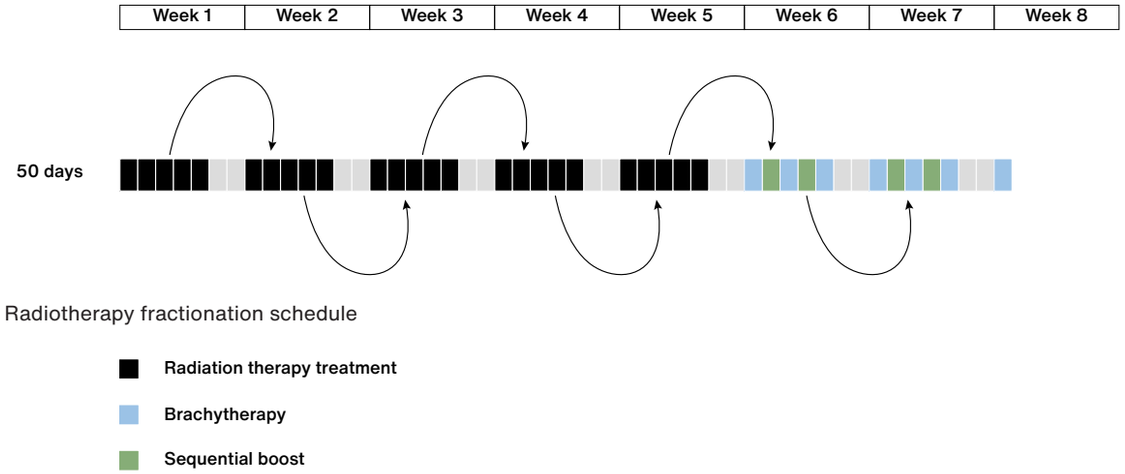
The project proposes to maintain this PPP model and have San Donato Group as one of the leading healthcare company in Italy as the owner and managing entity of the cancer center. Public health services and complementary therapies are funded by National Health Service through Regione Lombardy, while private accomodations and supplementary services with incurred expenses will be managed by San Donato Group.

Another crucial stakeholder is Maggie's Center as the non-profit organization partner, invited to Milan and to Italy for the first time to introduce their cancer care model centering on non-clinical support. This collaboration serves to initate Milan cancer care's departure from strictly cure-centric hospitals like the INT and IEO to a hybrid less institutional model.



Specificity of cancer treatment

Cancer treatment regimens vary from one person to another, yet a typical fragtionation schedule of radiotherapy treatment (below) or those of chemotherapy treatment exhibit similar weekly patterns with long-span treatment hours, recurring trips, some with 5 out of 7 days per week - not unlike going to school - lasting for several weeks until recovery. This specificity of cancer treatment means that the hospital environment has a major impact on patient's social and psychological wellbeing on a daily basis.



Interview with users

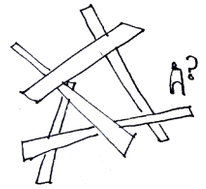
Interview with different users ranging from patients to caregivers to hospital staffs at Erasmus Cancer Institute in Rotterdam and Casa di Cura La Madonnina in Milan reveal that users tend to prefer a smaller, more intimate settings as they have to frequent the hospital often. Confusion and feeling of aloofness are primarily associated with circulation spaces. **Distraction and visual connection to nature are remarked to be desirable in waiting lounges and corridors.**

"This hospital is a giant factory. *We call it "fabriek" in Dutch. You can just get lost."*

- Patient from Erasmus Cancer Institute

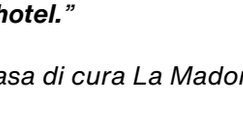
"My daughter and I, we just want to get out of the hospital and go shopping once her treatment finishes. If I have to pick, I like the cafes and shops here. They ***keep you distracted and forgetting*** *for a moment about all the serious clinical procedures."*

- Caregiver from Erasmus Cancer Institute



"Moving through the hospital feels ***like moving through a labyrinth****. There is the main road, with gardens, then there are flyovers from one department to another."*

- Researcher from Erasmus MC



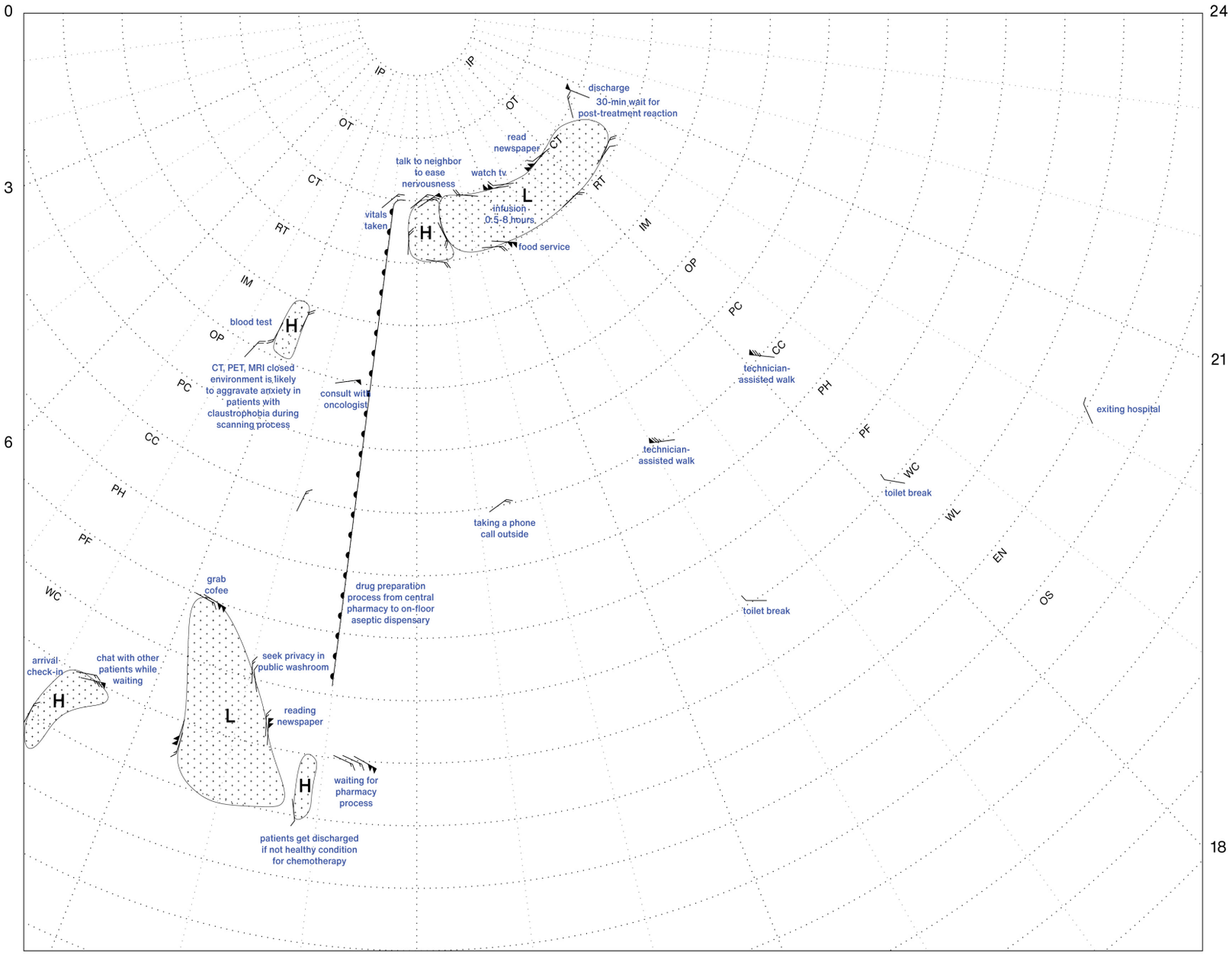
"I like both, big and small hospital. If I had to choose, I would prefer the smaller hospital where we share a common kitchen amongst staffs. The hospital felt more ***like a big house.****"*

- Staff from Erasmus Cancer Institute

"I do not feel like working at a hospital at all. It is a compact, cozy place. It is almost ***like you work at a hotel.****"*

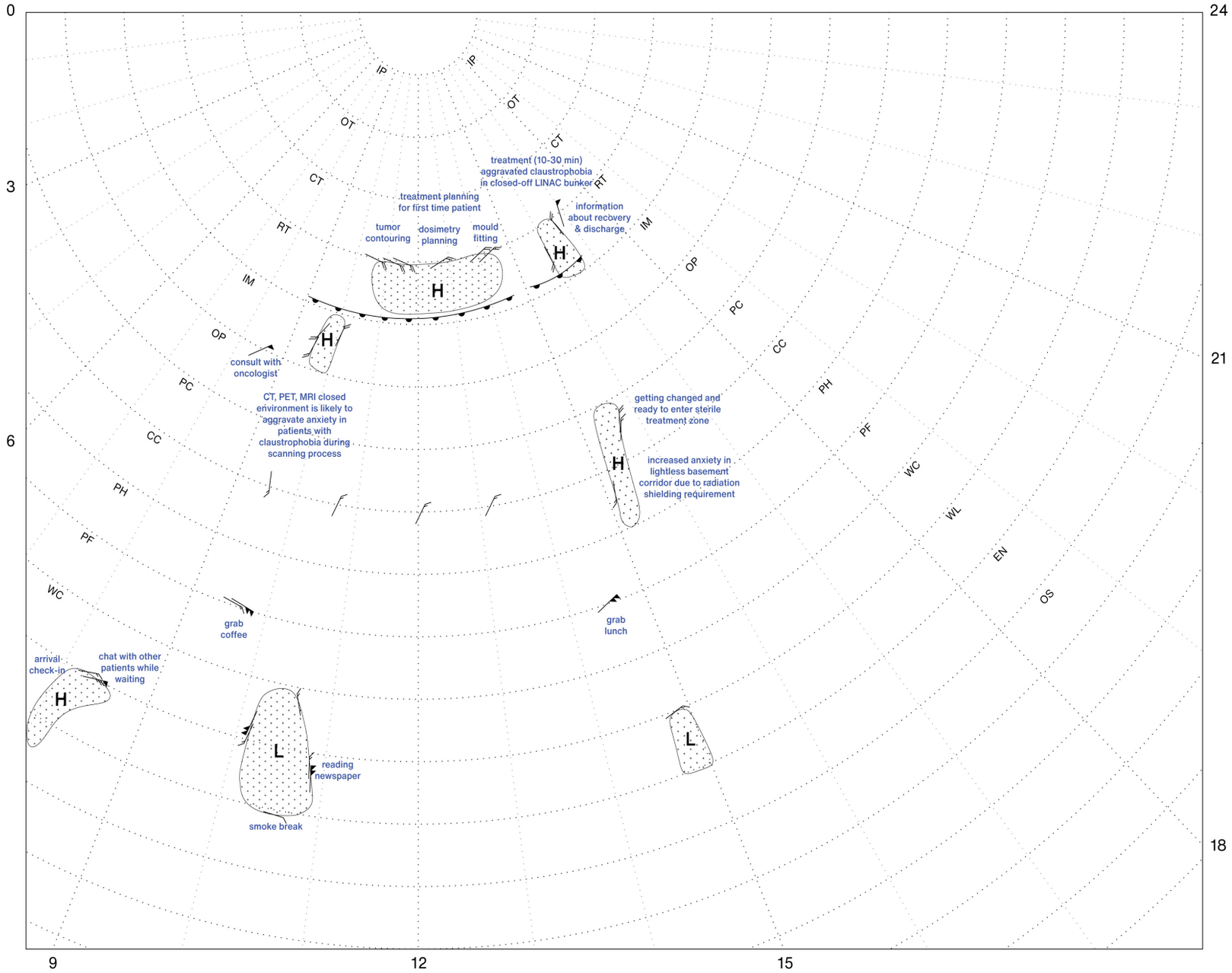
- Staff from Casa di cura La Madonnina

Patient's Weatherchart: A Day at Chemotherapy



LOCATION				ACTIVITY TYPE	FRONT (STAFF BACKGROUND ACTIVITIES)
IP	Inpatient Bed	CC	Circulation Corridor & Stairs	Retreating/Resting	
OT	Operating Theatre	PH	Pharmacy	Waiting	PRESSURE
CT	Chemotherapy Bay	PF	Public Facilities (café, restaurants)	Getting treatment	
RT	Radiotherapy Department	WC	Public Toilet	Consulting	H High stress
IM	Imaging & Diagnostics	WL	Waiting Lounge	Consuming	L Low stimultation
OP	Outpatient Consult & Exam rooms	EN	Entrance & Reception	Socializing	
PC	Patient Change & Preparation Room	OS	Outside		

Infusion Bay, Low stimulation



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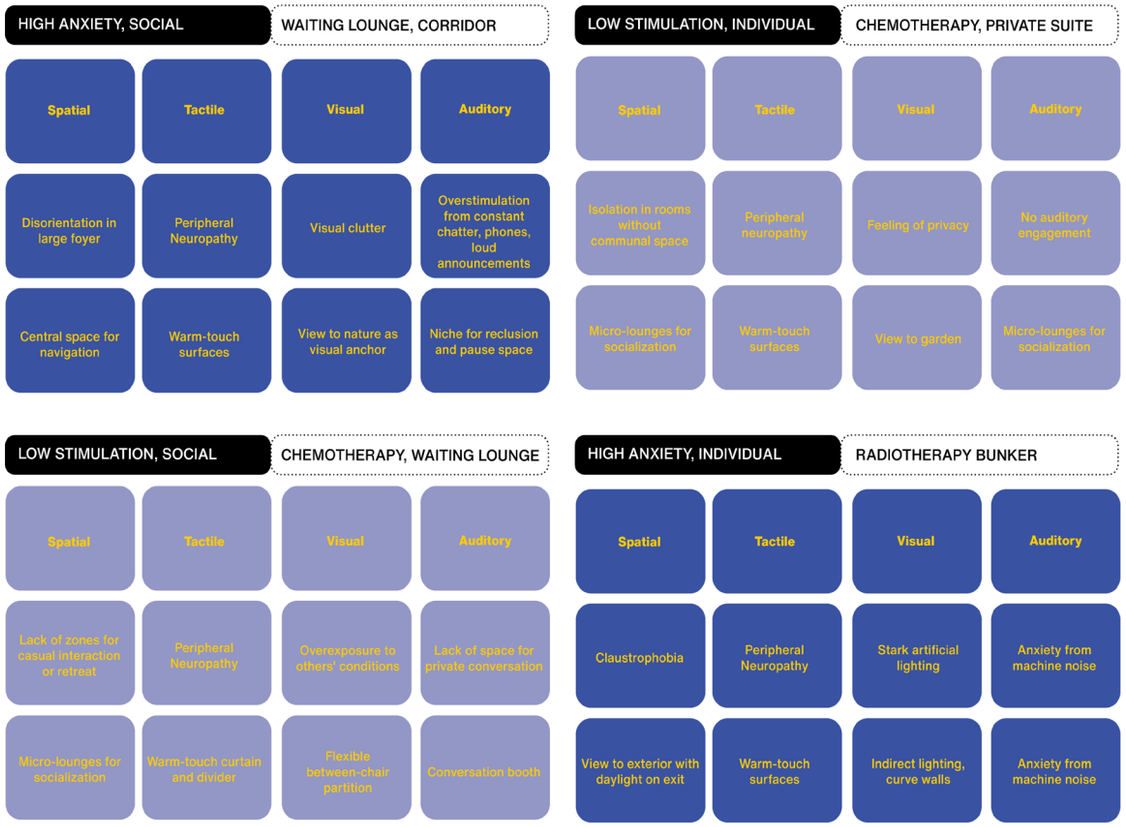
OP	Outpatient Consult & Exam rooms	EN	Entrance & Reception	Socializing	L Low stimultation
PC	Patient Change & Preparation Room	OS	Outside		

CONCLUSION FROM USER STUDY

Qualitative research from various methods of user study from interview to literary review on the usage and experiences of hospital spaces were recorded in the form of behaviour mapping. Conclusions are drawn from these qualitive observations in a diagram regarding key spaces associated with low stimulation and high pressure according to patients.



CHEMOTHERAPY BAY

The typical layout of multi-bed infusion bay ensures surveillance for staffs and creates a condition for encounter. However, it also contributes to lack of privacy.

|

Add more private suites

CORRIDOR & BREAKOUT SPACES

Kafka-esque corridors are disorientating and often intimidating to patients.

|

The integration of color shemes and material compositions of walls, flooring, and ceiling will improve wayfinding.

RADIATION BUNKER

LINAC machines are located mostly in lightless basement due to structural requirements and radiation-shielding.

|

Open up and add light to basement

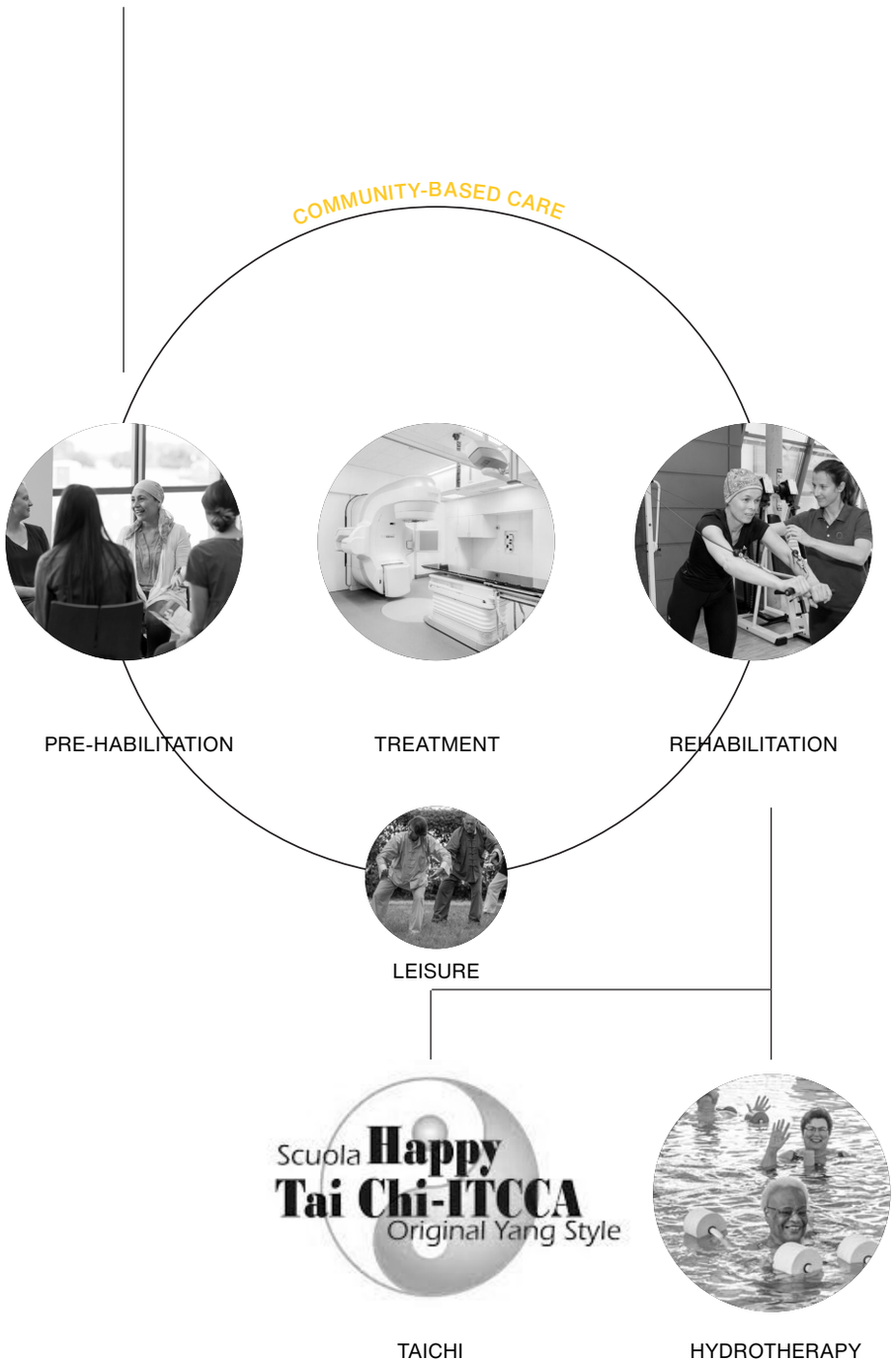
Cure and Care

Cancer hospitals are typically part of a larger medical campus as oncology department or a standalone treatment-only center. Cancer hospitals have strict requirements for technology and machine space, i.e radiation shielding for linear accelerator bunker (LINAC), which often results in lightless basement and endless corridors of cure-centric spaces.

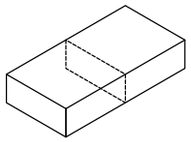
The aim of the new Cancer Center is to diversify programs offered by typical cancer hospitals and consider the entire treatment journey from diagnosis to post-discharge by integrating prehabilitation and rehabilitation programs alongside typical treatment regime. The program redistribution underscores the crucial role of pleasure understudy in cancer hospital to alleviate anxiety and depression that patients often cope with throughout treatment regime. Meanwhile, the hospital seeks to also fortify a support network by creating a sense of companionship in patients through group-based leisure activities and interactions. The ambition is to erase the aloofness of hospital's clinical environment and attend to patient's social and psychological health, and ultimately, joy in living not just surviving.

MAGGIE'S

Everyone's home of cancer care



ONCOLOGY BED WARD

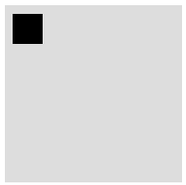


Area in sqm	200–400
Number of floors	1
Long-term stay	Yes (host hospital)

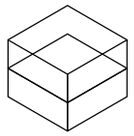
Programs	Multiple therapies Invasive surgery + complementary therapies

Part of a larger hospital with patients bed rooms

Surgical in operating theatre of the host hospital



DAY CANCER CARE CENTER



	400–500
	1–2
	No

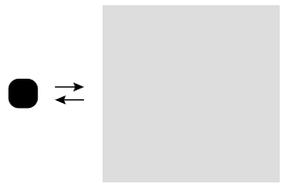
Multidisciplinary patients support (practical, social, lifestyle, emotional)

Cne-to-one or Group support
Courses and workshops

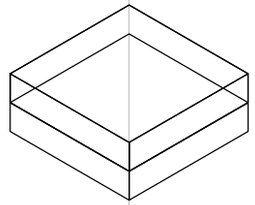
Small-scale

Location near or adjacent to a cancer hospital

Non-institutional environment as post-treatment and recovery



SINGLE-THERAPY DAY TREATMENT CENTER

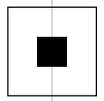


	2,400–6,000
	1–7
	No

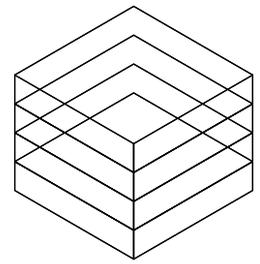
One type of therapy

Proton therapy
or Radiotherapy

Small-scale to medium-scale



MULTI-THERAPEUTIC DAY TREATMENT CENTER

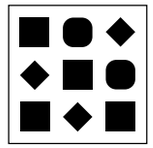


	10,000–20,000
	2–15
	No - Low proportion

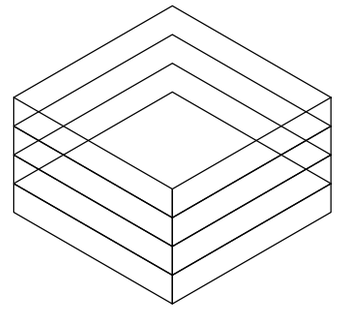
Multiple therapies

Day surgery
Radiotherapy
Chemotherapy
Other therapies
Multidisciplinary patients support

Medium-scale



MULTI-THERAPEUTIC DAY AND LONG-STAY TREATMENT CENTER

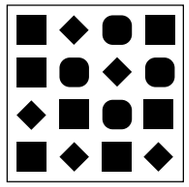


	30,000–45,000
	5+
	Yes

Multiple therapies

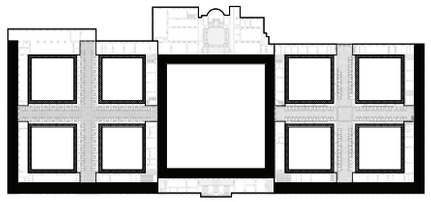
Invasive surgery
Radiotherapy
Chemotherapy
Proton therapy
Other therapies
Multidisciplinary patients support

Large medium-scale

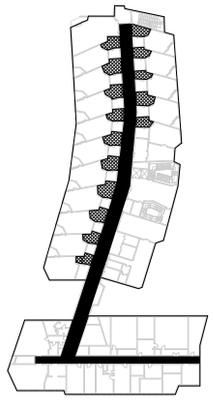


CURE

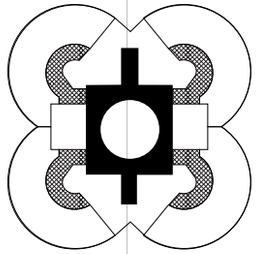
Ospedale Maggiore
Milan, 1456-1465



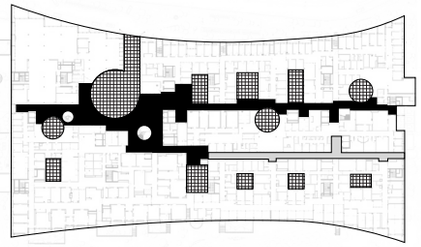
Casa di cura La Madonnina
Milan, 1958



Women's Prentice Hospital
Chicago, 1975

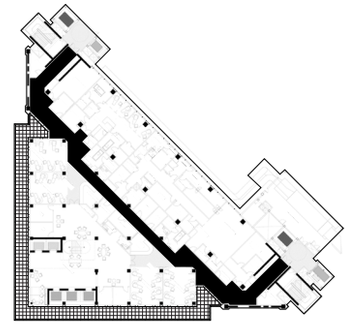


Kinderspital Zurich
Zurich, 2014-2024



BENCHMARK:
CANCER HOSPITALS

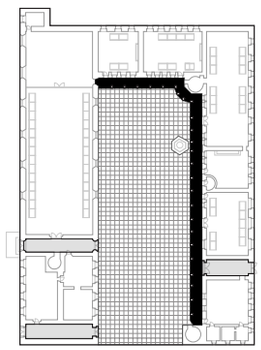
Guy's Hospital Cancer Center
London, 2010-2016



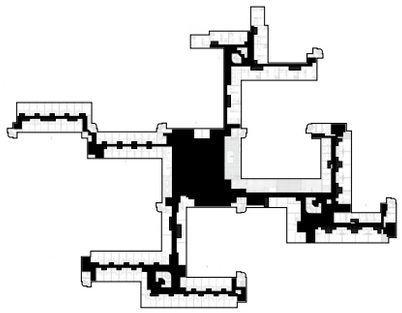
HISTORICAL

CONTEMPORARY

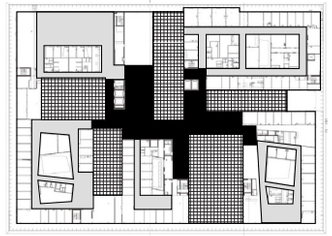
Hotel Dieu de Beaune
Beaune, 1451



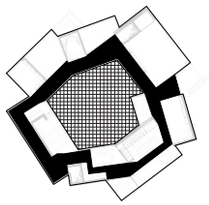
De Drie Hoven Elderly Housing
Amsterdam, 1964-1974



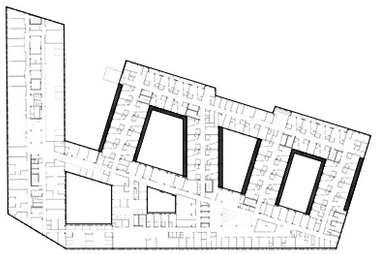
Rehab Basel Rehabilitation Clinic
Basel, 2002



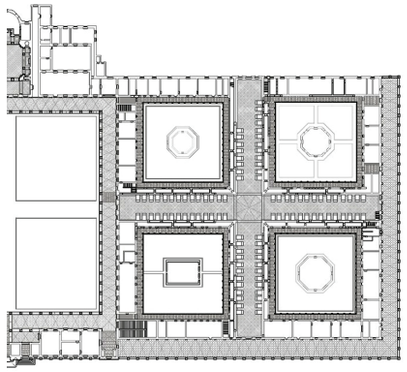
Maggie's Cancer Care Center
Glagow, 2011

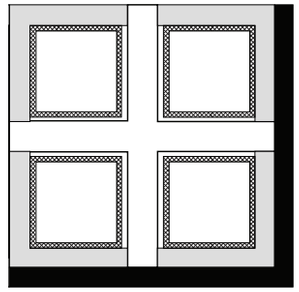


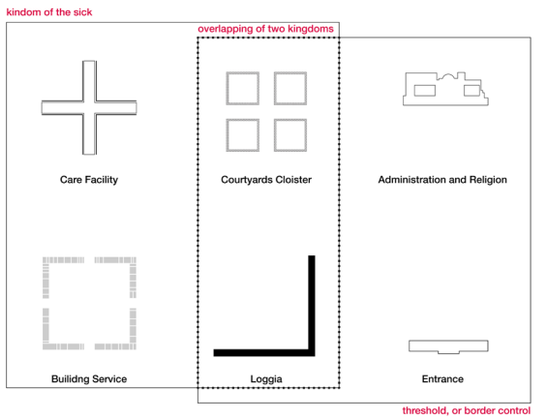
Princess Máxima Center
Utrecht, 2018



CARE





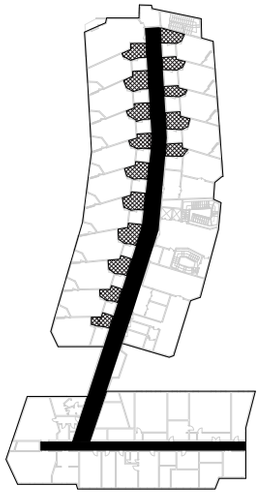


Staff support & Admin	7.4%
Accomodation	16.3%
Public amenities	2.9%
Landscape	36.7%
Building support	14.1%
Circulation	22.6%

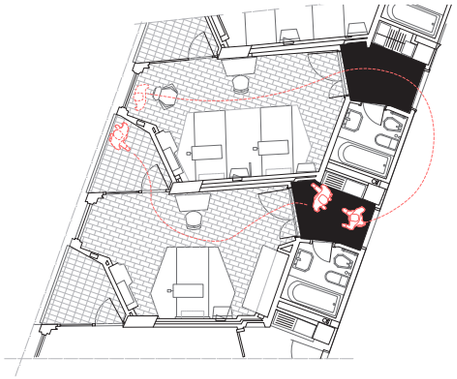
Ospedale Maggiore, albeit of its massive site and size, sits embedded and intagrated in the center of Milan without extruding monumentality. Courtyards and loggias serve as breather and gathering spaces, forming an intergal part of the large hospital. Here, the design is guided with light and air.

GFA:	~33,000
Floors:	2
Beds:	288

Visibility and Privacy



Flow: Curved spine



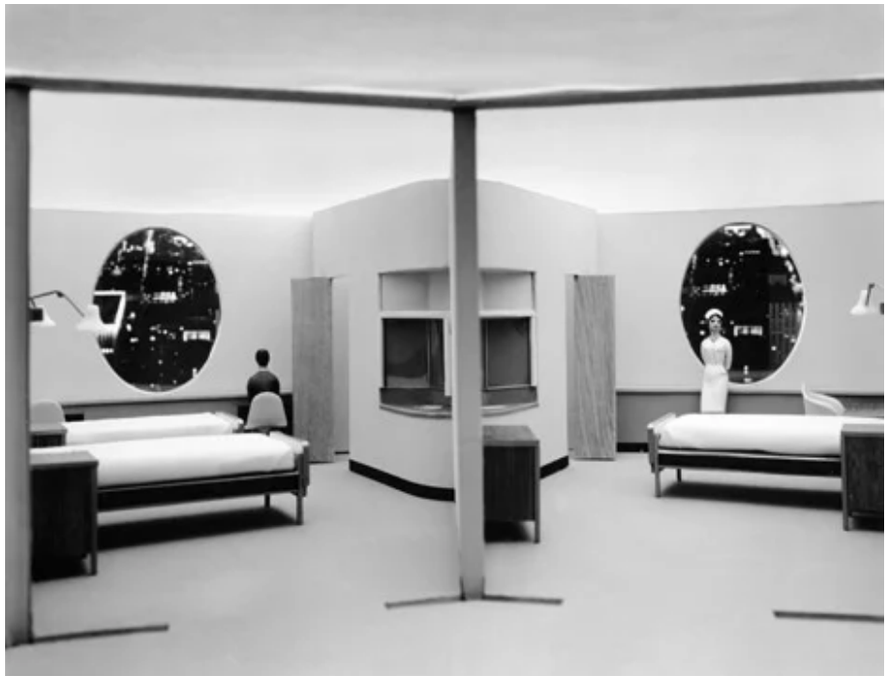
Patient room: interstitial space

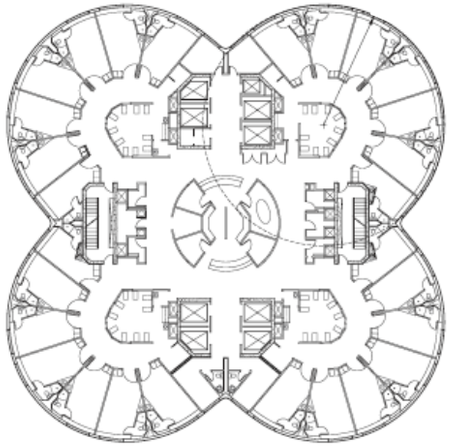
Clinica La Madonnina's corridor is double-loaded, featuring a curved spine that drives the massing of the main hospital volume. This curve spine albeit strictly efficiency-driven, is derived from the need for visibility of patients room from nurse station located at the mid-point of the curve.

Treatment	8.6%
Diagnosis & Consultation	3.6%
Staff support & Admin	3.7%
Accommodation	33.1%
Public amenities	5.9%
Landscape	13.3%
Building support	10.0%
Circulation	21.7%

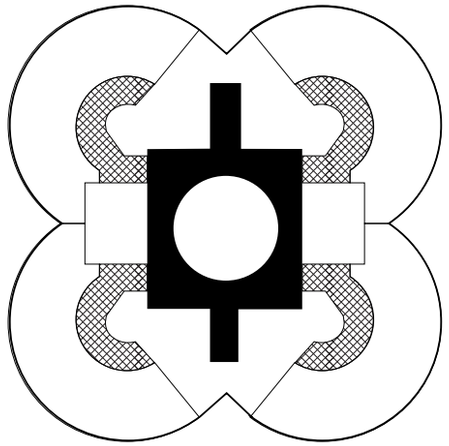
GFA:	14,000 sqm
Floors:	8
Beds:	131

Micro-community





Clusters of bed units



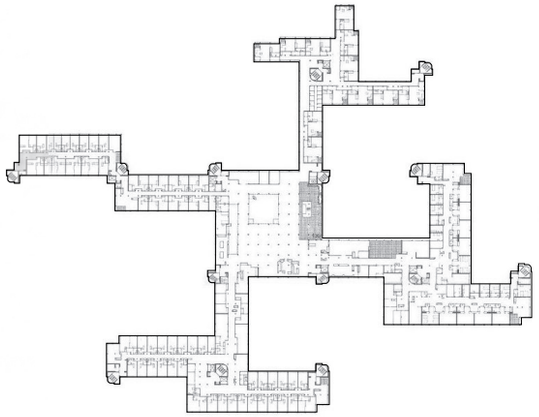
Flow: Central core and sub-core

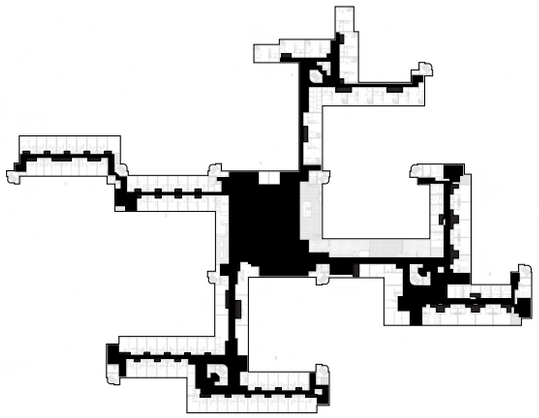
Micro-community formed by clusters of rooms allows immediate interaction while also allowing retreat from publicness, if chosen to. The local corridors and introverted public interiors within the plan can be implemented towards spaces requiring less publicness in nature in the cancer hospital, such as consulting rooms.

Treatment	29.0%
Staff support & Admin	7.2%
Accomodation	23.8%
Public amenities	4.8%
Building support	12.2%
Circulation	23.0%

GFA:	~26,000 sqm
Floors:	11
Beds:	168

Micro-community

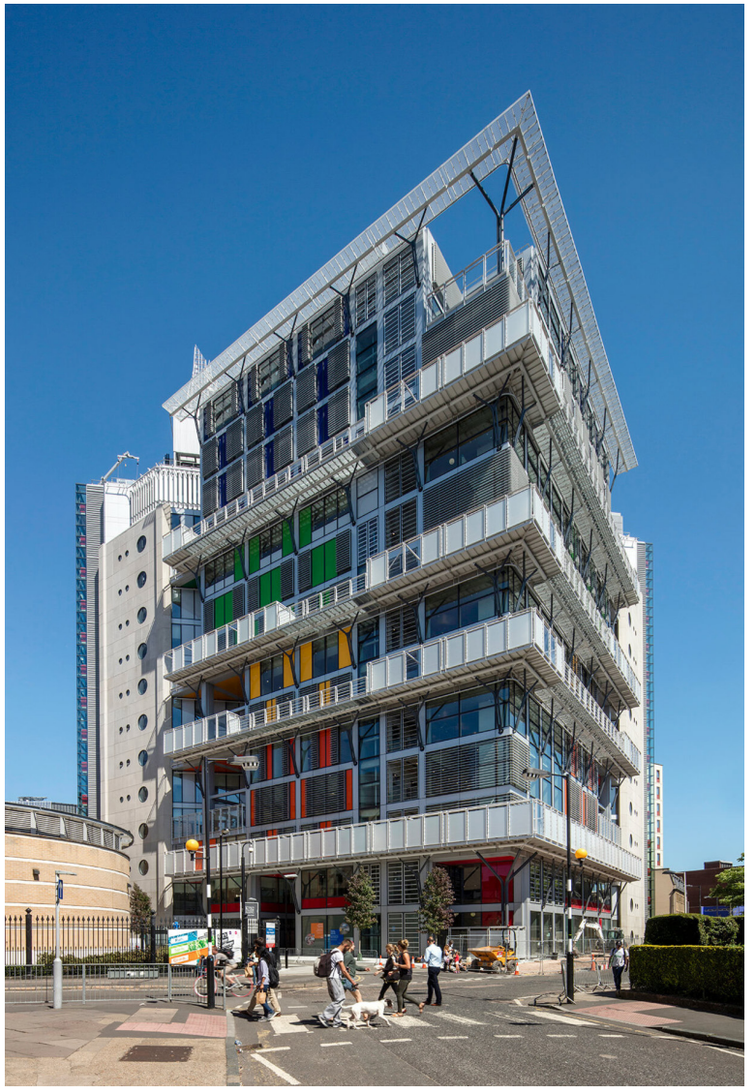


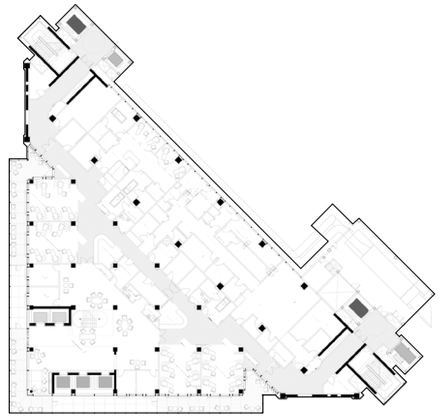


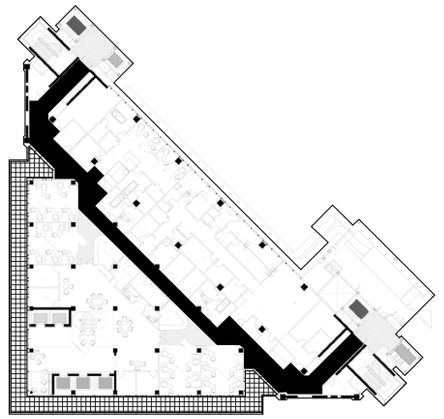
Flow: Sprawling streets

Accommodation	46.3%
Public amenities	9.2%
Landscape	4.0%
Building support	7.5%
Circulation	33.0%

Stacked villages for more human-scale interior





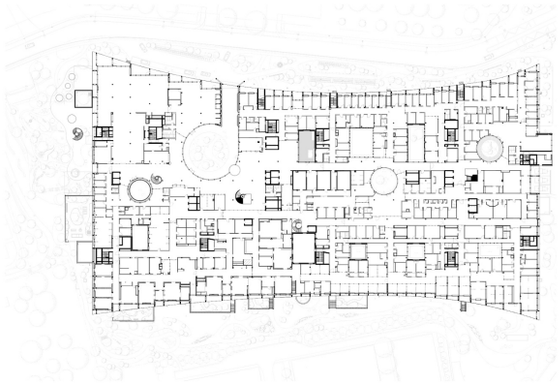


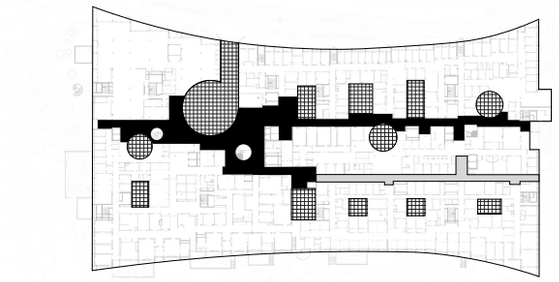
Treatment	20.0%
Diagnosis & Consultation	10.2%
Research	3.7%
Staff support & Admin	6.0%
Accommodation	7.0%
Leisure & Nonclinical Care	1.5%
Public amenities	13.0%
Building support	13.9%
Circulation	24.8%

Flow: Barrier

GFA:	20,000 sqm
Floors:	14
Beds:	53

Courtyard as orientation nodes

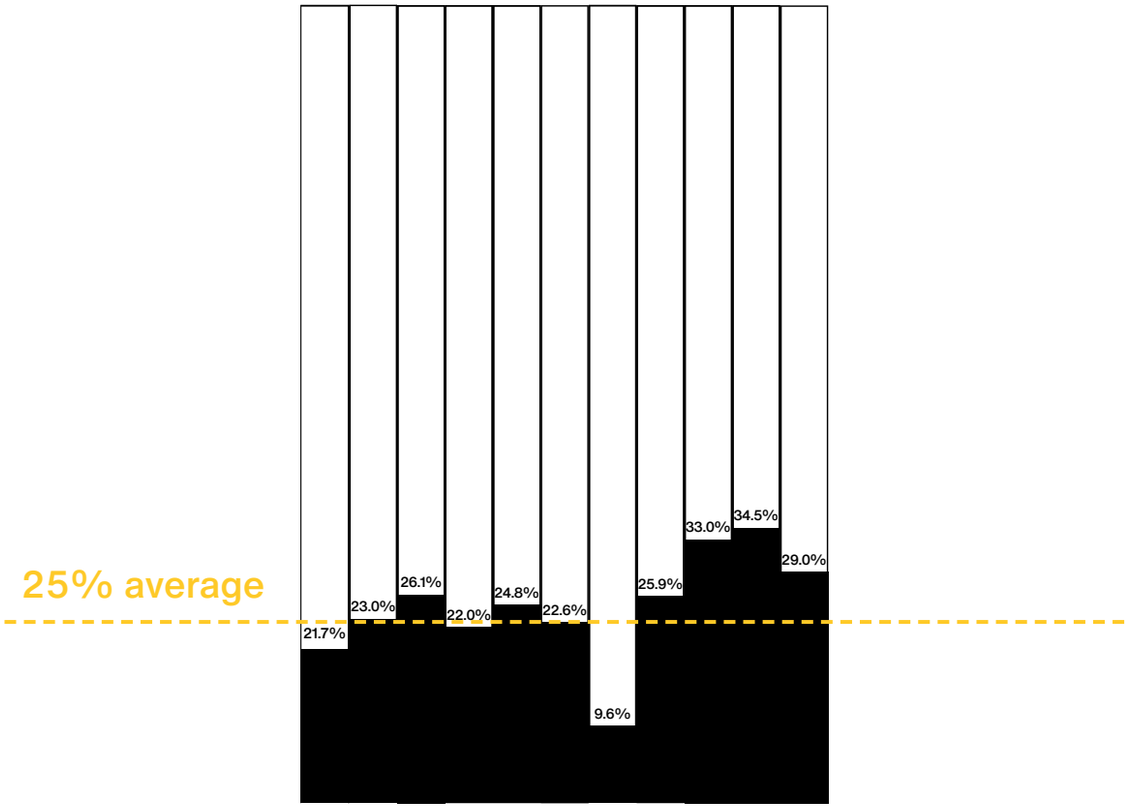


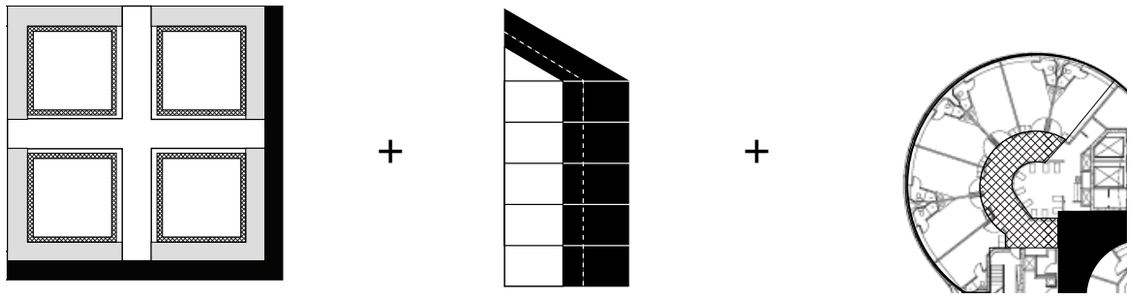


Treatment	15.4%
Diagnosis & Consultation	3.2%
Staff support & Admin	11.0%
Accommodation	11.0%
Leisure & Nonclinical Care	3.7%
Public amenities	2.8%
Landscape	2.7%
Building support	24.0%
Circulation	26.1%

Flow: Main street with squares & alleyways

GFA:	~33,000 sqm
Floors:	14
Beds:	200





courtyard for air and light

village stacking mixing care-cure functions

micro-community and introverted public spaces

BENCHMARKING CONCLUSIONS

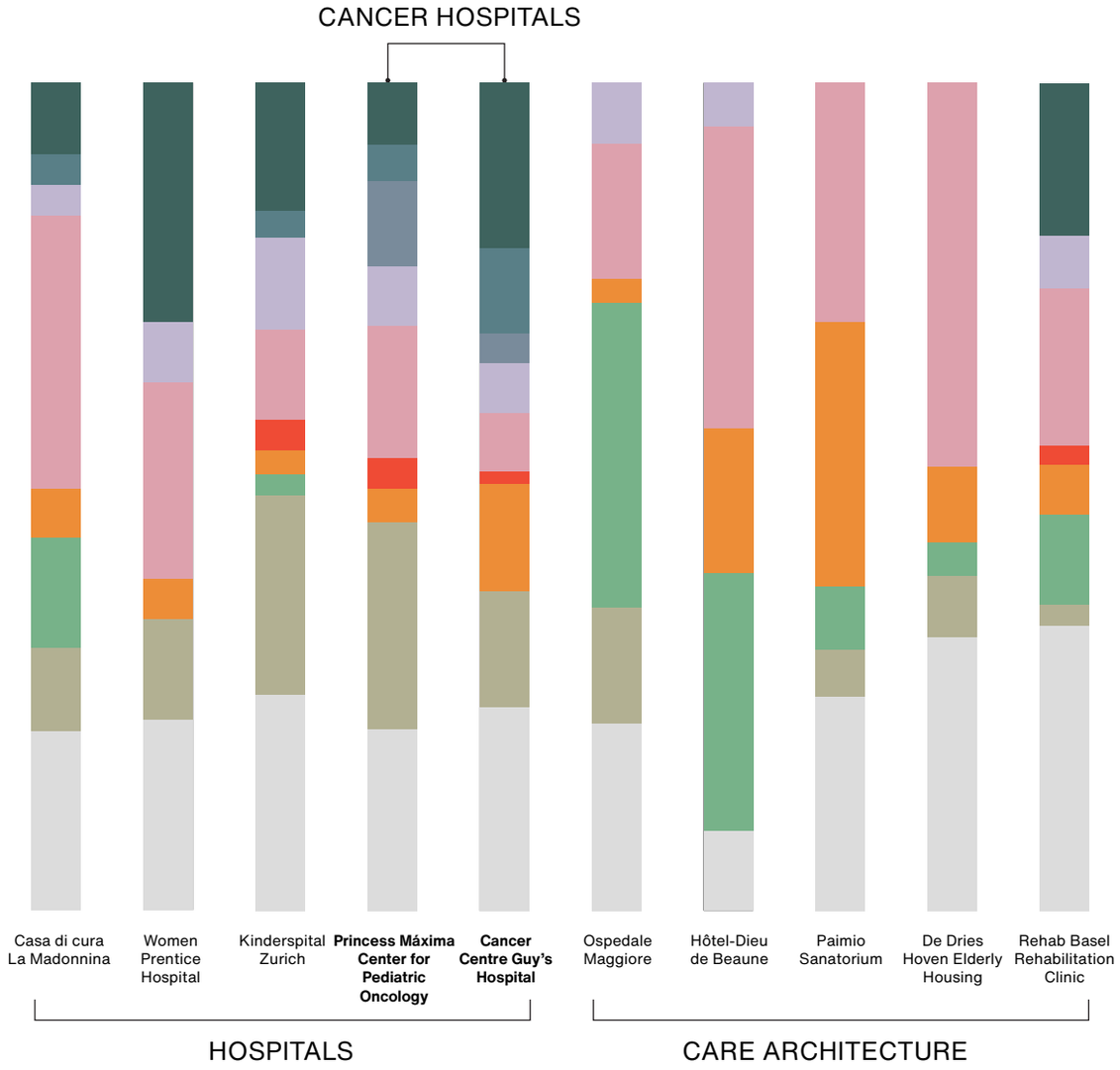
1. Care-oriented spaces have more generous circulation areas, average above 25%.

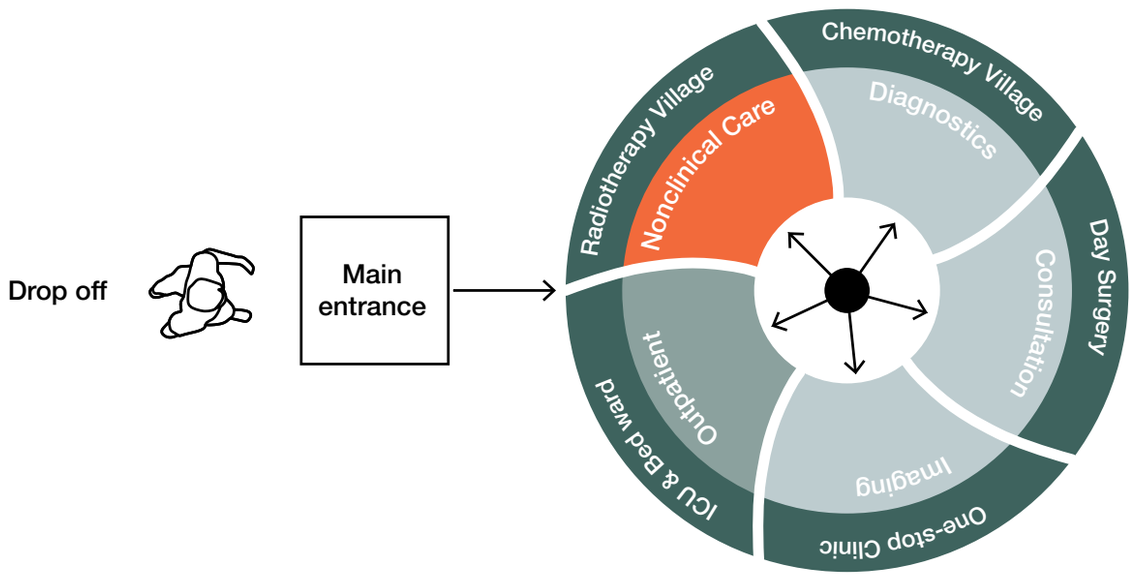
2. Cancer hospitals have much lower area of landscape. This will be improved in the proposed cancer center.

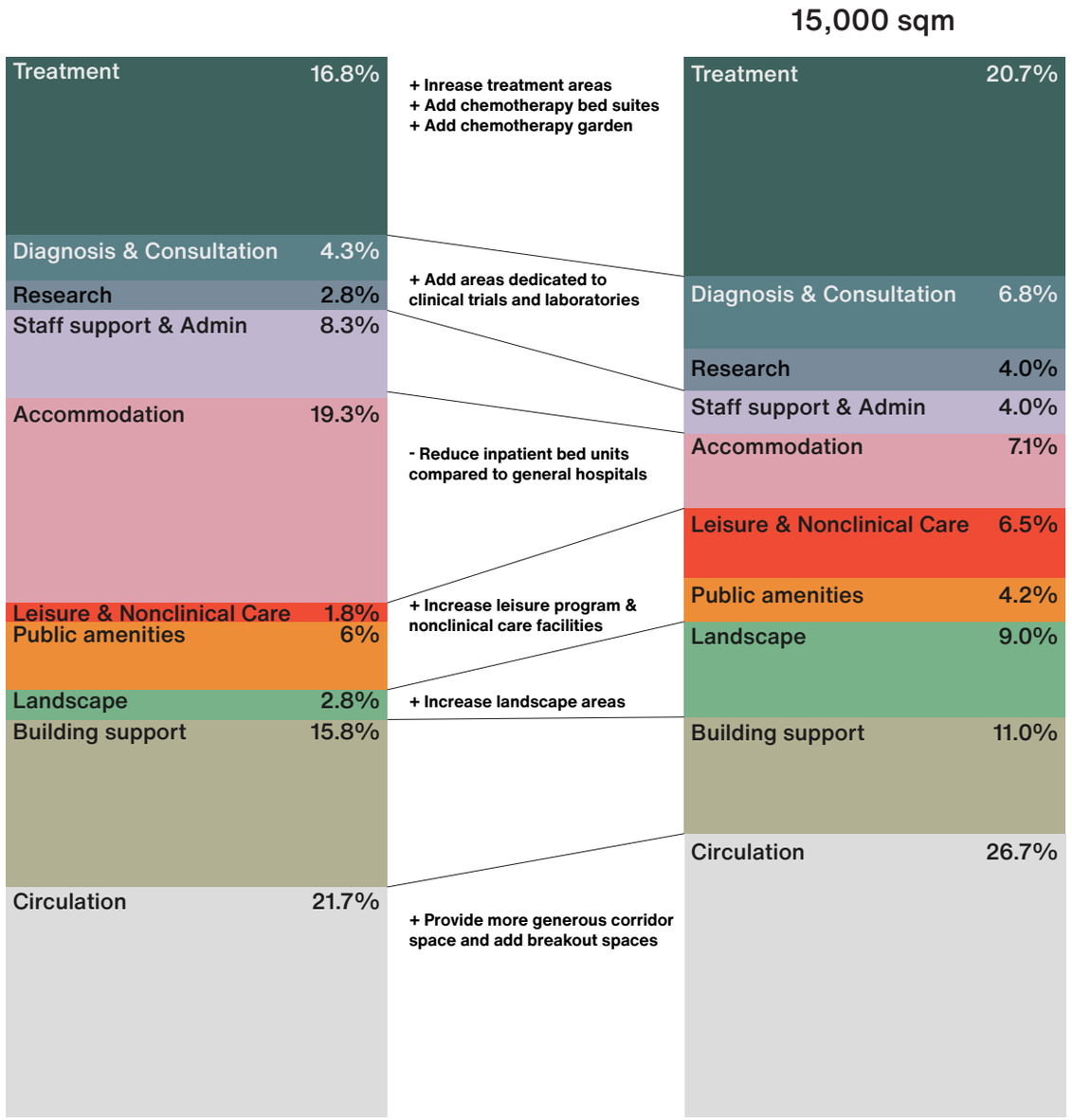
3. Cancer hospitals dedicate more areas for leisure and non-clinical care, similar to rehabilitation clinic or children hospital, than general hospitals do.

4. Cancer center needs less inpatient accomodation compared to private hospitals with higher proportions of bed units.

5. Although two chosen cancer treatment centers are not research institutes, there is still a significant portion dedicted to research & clinical trials.

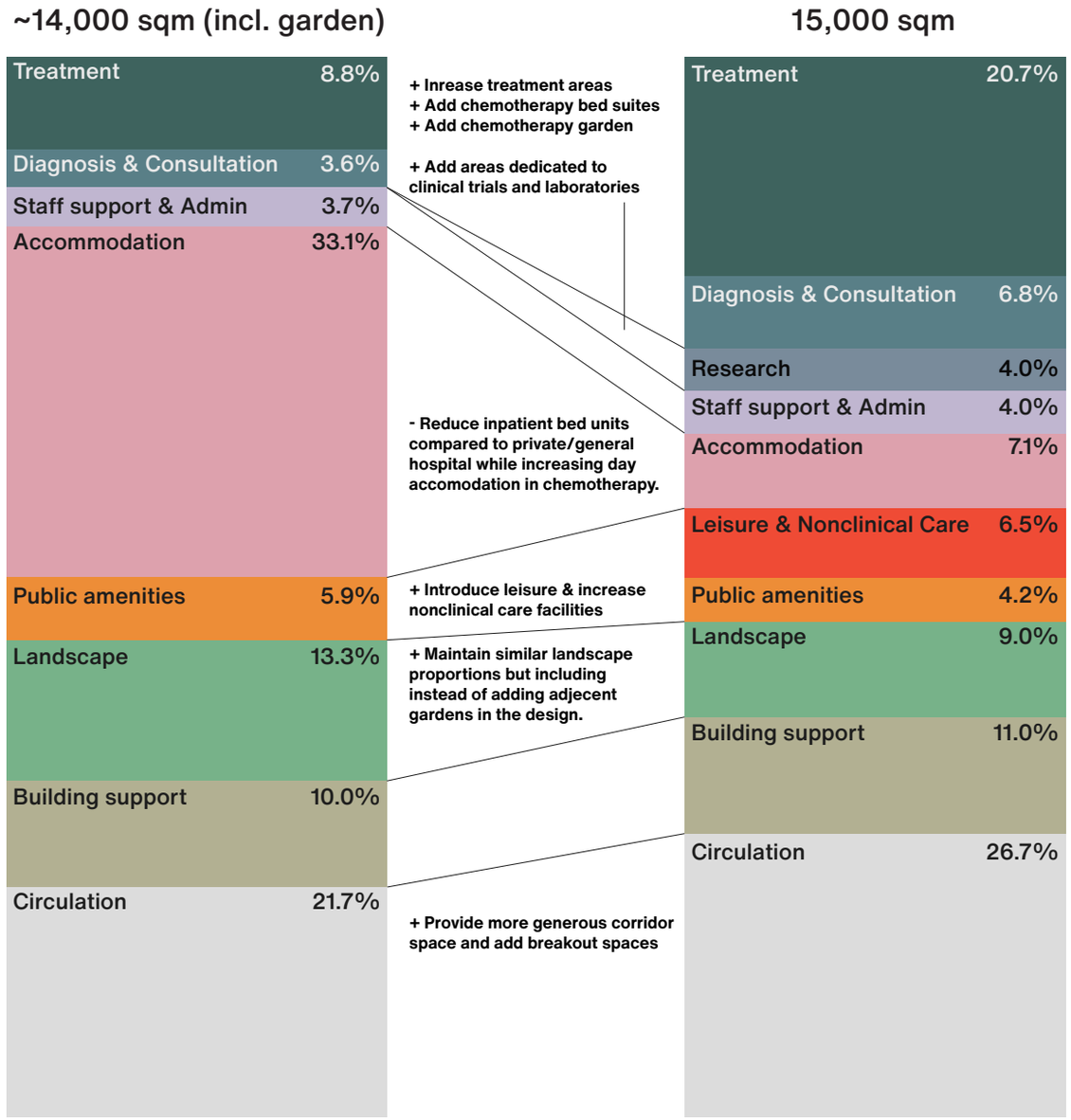






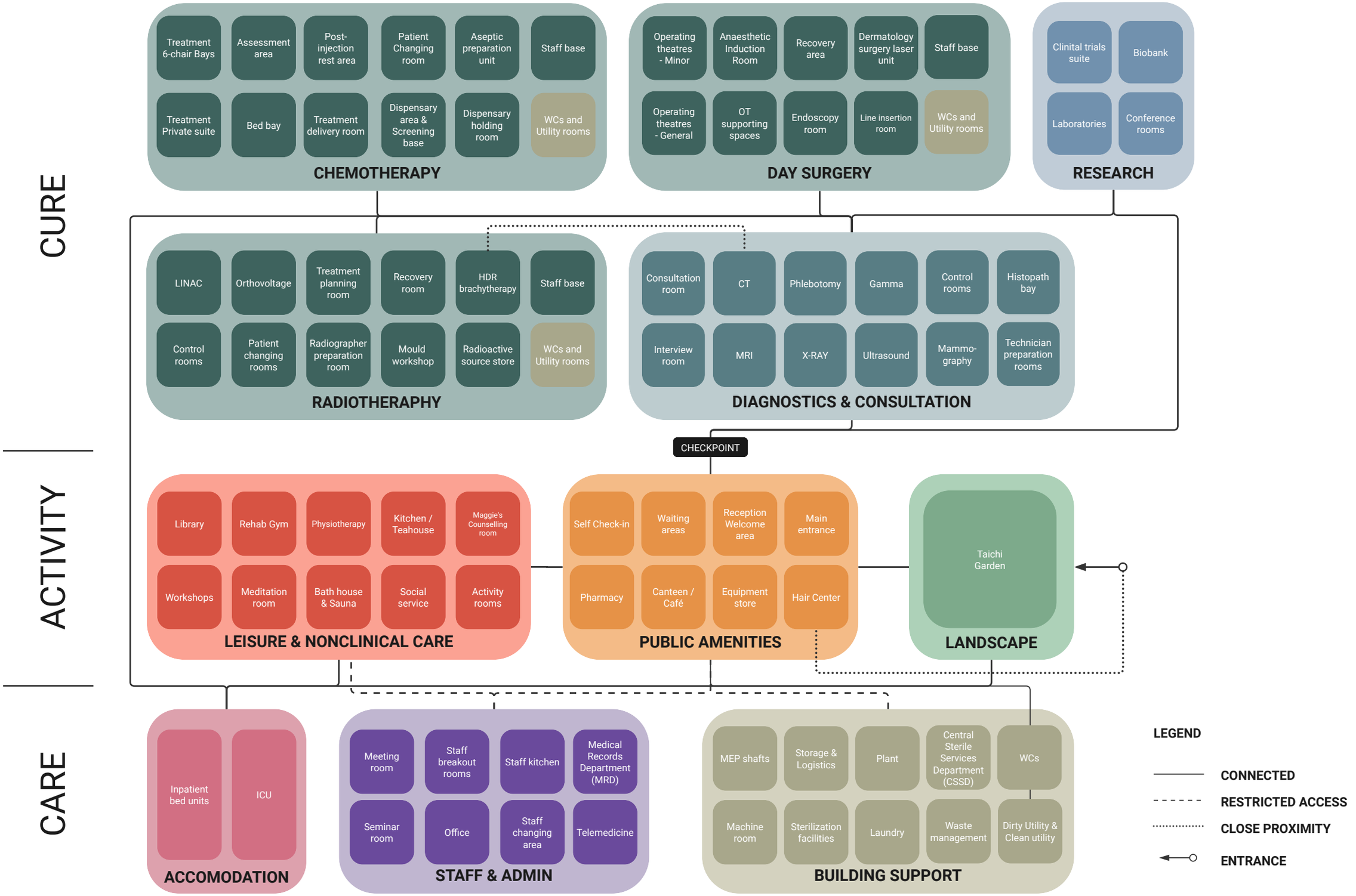
BENCHMARK AVERAGE

PROPOSAL



CASA DI CURA LA MADONNINA

PROPOSAL


CURE
ACTIVITY
CARE
Treatment 6-chair Bays
Assessment area
Post-injection rest area
Patient Changing room
Aseptic preparation unit
Staff base
Treatment Private suite
Bed bay
Treatment delivery room
Dispensary area & Screening base
Dispensary holding room
WCs and Utility rooms
CHEMOTHERAPY
Operating theatres - Minor
Anaesthetic Induction Room
Recovery area
Dermatology surgery laser unit
Staff base
Operating theatres - General
OT supporting spaces
Endoscopy room
Line insertion room
WCs and Utility rooms
DAY SURGERY
Clinital trials suite
Biobank
Laboratories
Conference rooms
RESEARCH
LINAC
Orthovoltage
Treatment planning room
Recovery room
HDR brachytherapy
Staff base
Control rooms
Patient changing rooms
Radiographer preparation room
Mould workshop
Radioactive source store
WCs and Utility rooms
RADIOTHERAPHY
Consultation room
CT
Phlebotomy
Gamma
Control rooms
Histopath bay
Interview room
MRI
X-RAY
Ultrasound
Mammo-graphy
Technician preparation rooms
DIAGNOSTICS & CONSULTATION
CHECKPOINT
Library
Rehab Gym
Physiotherapy
Kitchen / Teahouse
Maggie's Counselling room
Workshops
Meditation room
Bath house & Sauna
Social service
Activity rooms
LEISURE & NONCLINICAL CARE
Self Check-in
Waiting areas
Reception Welcome area
Main entrance
Pharmacy
Canteen / Café
Equipment store
Hair Center
PUBLIC AMENITIES
Taichi Garden
LANDSCAPE
Inpatient bed units
ICU
ACCOMODATION
Meeting room
Staff breakout rooms
Staff kitchen
Medical Records Department (MRD)
Seminar room
Office
Staff changing area
Telemedicine
STAFF & ADMIN
MEP shafts
Storage & Logistics
Plant
Central Sterile Services Department (CSSD)
WCs
Machine room
Sterilization facilities
Laundry
Waste management
Dirty Utility & Clean utility
BUILDING SUPPORT
LEGEND
CONNECTED
RESTRICTED ACCESS
CLOSE PROXIMITY
ENTRANCE

Treatment
3105 sqm

Chemotherapy village
1200 sqm

Treatment - Multichair bay (6) 5-chair	360 sqm
Treatment - Private suite (8) Bed/chair	240 sqm
Treatment - Bed bays (4)	100 sqm
Dispensary holding room (2)	40 sqm
Aseptic unit (2)	30 sqm
Dispensing area & Screening base (2)	150 sqm
Post-injection rest area	100 sqm
Patient changing room (4)	120 sqm
Staff base (4)	80 sqm

Radiotherapy village
1260 sqm

Linear accelerator (LINAC) (4)	600 sqm
Control rooms (6)	120 sqm
Radiographer prep. room (4)	40 sqm
Patient changing room (6)	90 sqm
Orthovoltage (1)	50 sqm
Treatment planning room (4)	40 sqm
Recovery room (4)	80 sqm
Mould workshop(1)	50 sqm
HDR brachytherapy (1)	70 sqm
Radioactive source store (2)	20 sqm
Staff base (2)	100 sqm

Day surgery Clinic
645 sqm

Operating theatres - Minor (2)	70 sqm
Operating theatres - General (2)	90 sqm
Anaesthetic induction room (4)	60 sqm
Scrub bay & OT support (4)	100 sqm
Dermatology laser unit (1)	50 sqm
Sterile stock (1)	50 sqm
Recovery area & Staff bay (1)	125 sqm
Endoscopy room (2)	50 sqm
Line insertion room (1)	50 sqm

Diagnostics & Consultation
1025 sqm

Diagnostics & Imaging
695 sqm

MRI (2)	270 sqm
CT (2)	200 sqm
X-Ray (1)	50 sqm
Ultrasound (USG) (2)	50 sqm
Mammography (1)	25 sqm
Gamma (1)	50 sqm
Phlebotomy (1)	50 sqm
Histopath bay (1)	50 sqm
Consultation and Examination room (12)	240 sqm
Interview room (6)	90 sqm

Consultation & Examination
330 sqm


Research
600 sqm
Laboratories
200 sqm
Clinical trial suite
300 sqm
Hematology
100 sqm
Pathology laboratory 50 sqm
Cytopathology laboratory 50 sqm
Histology laboratory 50 sqm
Biochemistry laboratory 50 sqm
Clinical trial suite 75 sqm
Clinical trial suite 75 sqm
Clinical trial suite 75 sqm
Clinical trial suite 75 sqm
Hematology laboratory 50 sqm
Blood bank 50 sqm


Staff & Administration
600 sqm
Administrative & Training area
350 sqm
Staff support area
250 sqm
Office (8-10) 100 sqm
Meeting room (4) 100 sqm
Seminar room 100 sqm
Medical Records Department (MRD) 50 sqm
Staff breakout area 50 sqm
Staff kitchen / pantry 50 sqm
Staff changing area 150 sqm

Accomodation
1060 sqm

ICU unit (8 beds)
+ Nurse station
100 sqm

Inpatient ward (24 beds)
960 sqm

ICU bed unit	100 sqm
Ensuite bed unit	40 sqm
Ensuite bed unit	40 sqm
Ensuite bed unit	40 sqm
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Ensuite bed unit	40 sqm

Leisure & Non-clinical Care
975 sqm

Maggie's Center programs
375 sqm

Leisure & Rehabilitation
600 sqm

Library (3)	150 sqm
Kitchen	25 sqm
Activity room (S)	25 sqm
Activity room (M)	50 sqm
Activity room (L)	100 sqm
Meditation room / Silent room	50 sqm
Rehabilitation Gym	150 sqm
Physiotherapy	50 sqm
Acupuncture	25 sqm
Social service	25 sqm
Bathhouse	300 sqm


Public amenities
625 sqm
Welcome area
375 sqm
Main entrance 25 sqm
Reception area 70 sqm
Self check-in 25 sqm
Café & Dining area 150 sqm
Pharmacy (Central) 100 sqm
Waiting lounges 250 sqm
per floor
Department waiting area
250 sqm
Garden & exterior area
1350 sqm
Taichi garden 100 sqm
Chemotherapy outside 100 sqm
Strolling garden

Building support
1670 sqm

Central service area
930 sqm

Per-floor service area
740 sqm

Plant 320 sqm

Central Sterile Services Department (CSSD) 100 sqm

Waste management 50 sqm

Kitchen 30 sqm

Laundry 30 sqm

Mortuary 100 sqm

Machine rooms 200 sqm

Storage & Logistics 100 sqm

MEP shafts 140 sqm

WCs 300 sqm

Dirty utilities & Clean utilities 300 sqm

Circulation
3990 sqm

Horizontal circulation
2520 sqm

Vertical
1470 sqm

Corridor 2520 sqm

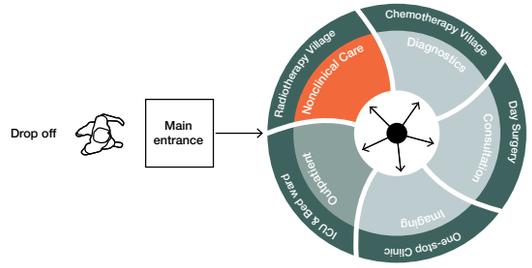
Elevators & Stairs 1470 sqm

+ Design a slow way of entering/exiting the building: Entrance should have path moving through garden/courtyard for leisurely stroll for patients alleviate pre-treatemnt anxiety, or simply, an extrance garden as a meeting place.

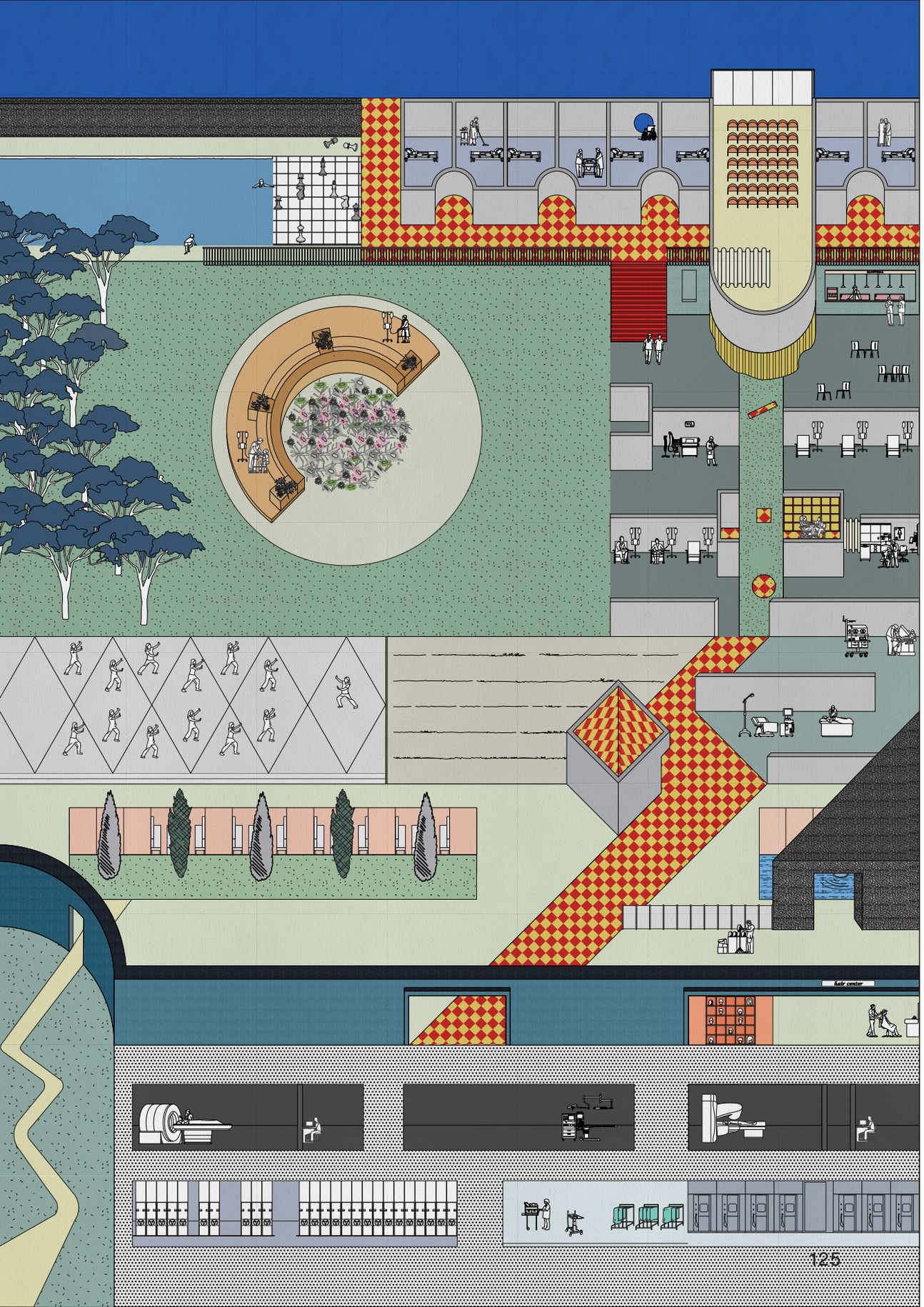
+ Enable external views and access to gardens where possible.

+ Emphasize design of waiting spaces and circulation space allowing for social interaction as well as refuge, to aid patients with ‘high or low pressure’ moments.

+ Since radio bunker cannot have a view to exerior, the entrance corridor towards the bunker should allow view of daylight.



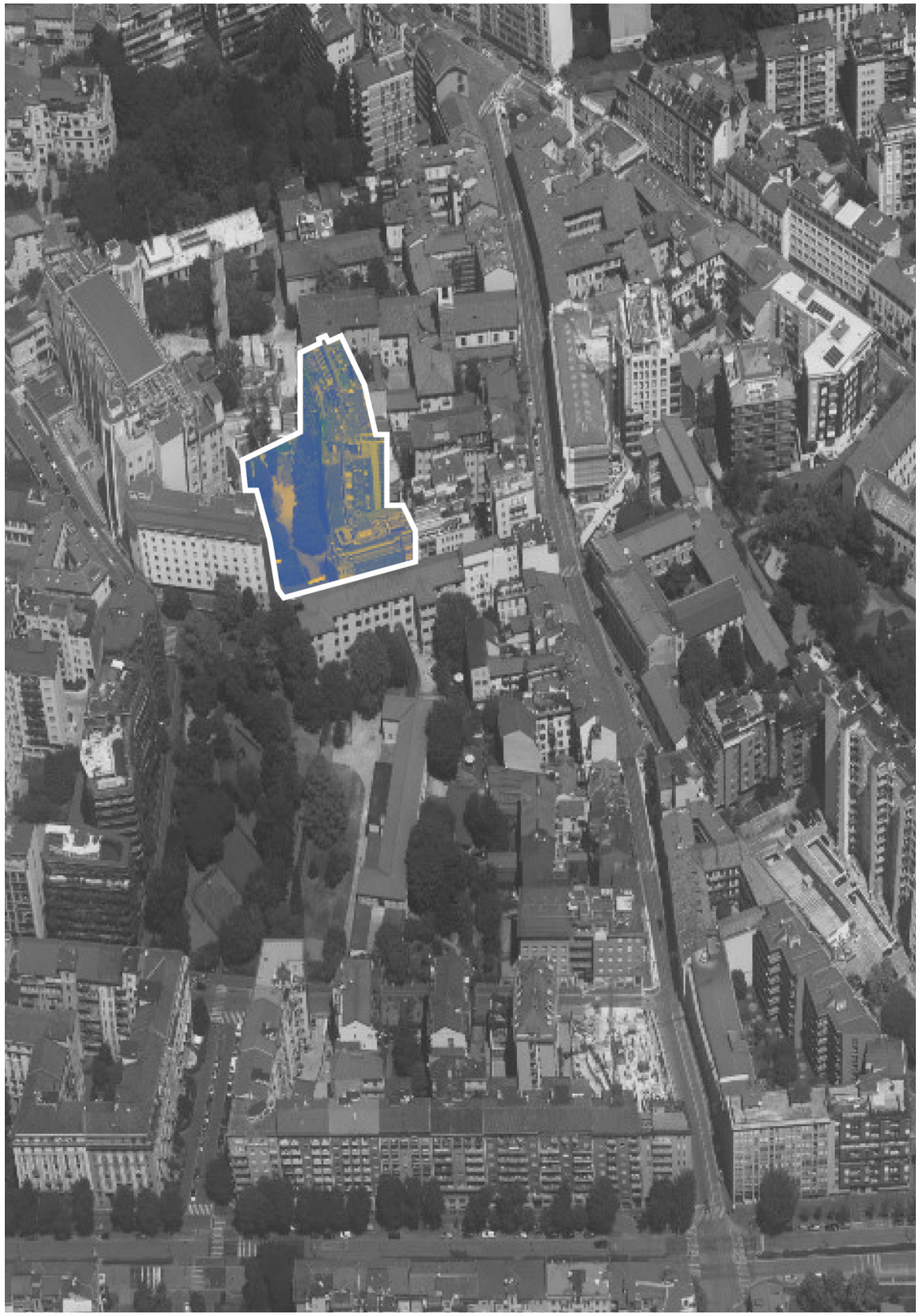
+ Clear flow from public functions separating to care or high-risk treatment programs according to sanitization and radiation shielding requirements.



Good Trip, concept drawing.
Reference: Alex Wall's Architecture of Pleasure.
Drawn by author.

A new cancer center for Milan

The academic framework of Complex Projects - Milan Studio is based on a hypothetical scenario where the existing hospital Casa di Cura is used as a case study and the buidling site for the proposed hospital. The aim is to enable a thorough understanding of the existing building - why and how it reacts to the surroundings - and of the urban conditions that could be embraced or improved through an alternative intervention. Good Trip, therefore, based its program proposals and site massing on site study through three scales: urban, neighborhood, and building.



Quadronno, Milan

The given site for the new hospital is located in Quadronno neighborhood, one of the wealthiest neighborhood in the central district. Site analysis on an urban scale underscores the framework of the 15-minute city and requirements targeting the demographic group of Milanese elderly as the hospital's primary client-user group.

Proximity to inclusive socio-cultural infrastructures
Analysing neighborhood centralities with public infrastructures - schools, sports, libraries, markets, open squares - provides and overview of what type of activities being offered in the city for social encounters and promote wellbeing.

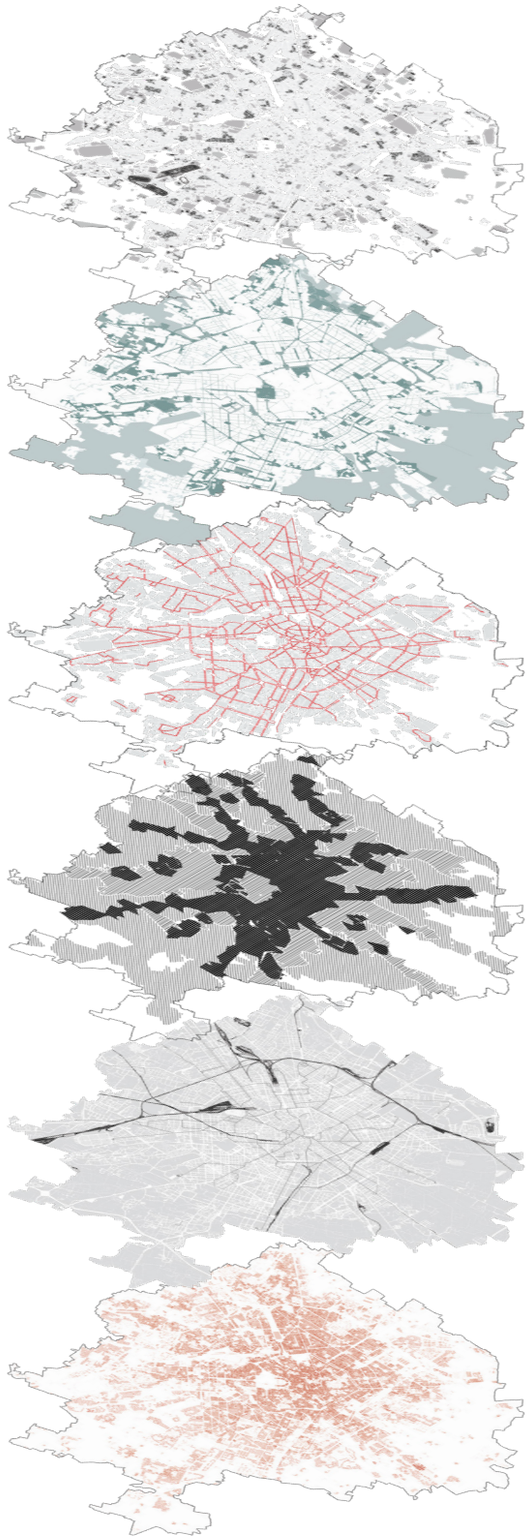
Expanding urban green
Analysing green infrastructures reveals the city's different landscape types and pattern, with the aim to identify opportunities to incorporate landscape within the new hospital.

Pedestrian-friendly area
Pedestrian-friendly pavements, rather than biking lanes, are the first requirement for age-inclusive spaces for the hospital's main targetted demographic: the elderly. Quadronno falls in to zones with narrow and limited pavement width, a point to be improved. The neighborhood is also located in the area indicated to open up urban plinthe and create active public ground floor to promote more human-scale interactions.

Walkability in 15-minute city
The focus on elderly population engenders the reachability of the hospital within 400 meter from a dropoff point. This analysis helps to speculate of a network of cancer care centers throughout the 15-minute city, rather than centralized centers.

Transport network
Mapping all modes transportations provides insights on how patient may approach the site. Milan has an extensive internal transport network. The site can be reached by all modes of transportation.

Areas with high patient footfall
Density of residential area helps determine patient footfall in the given site. The concentration of housing along the rings means higher demand in healthcare facilities and for those in close proximity.



INCLUSIVE INFRASTRUCTURES

GREEN AND BLUE INFRASTRUCTURE

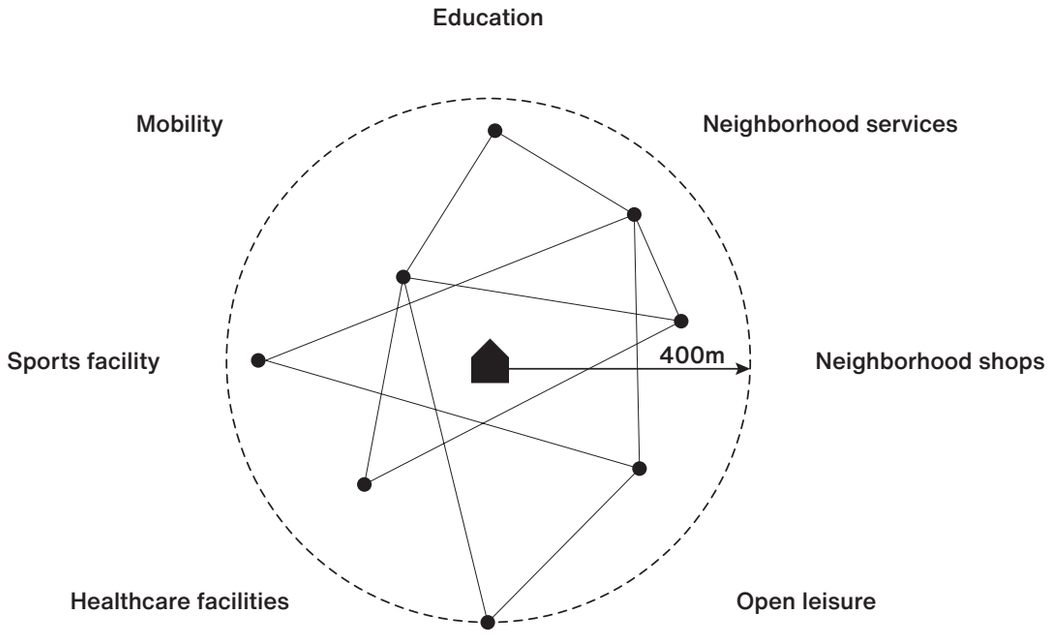
PAVEMENT WIDTH

400-METER RADIUS FROM PUBLIC TRANSPORT

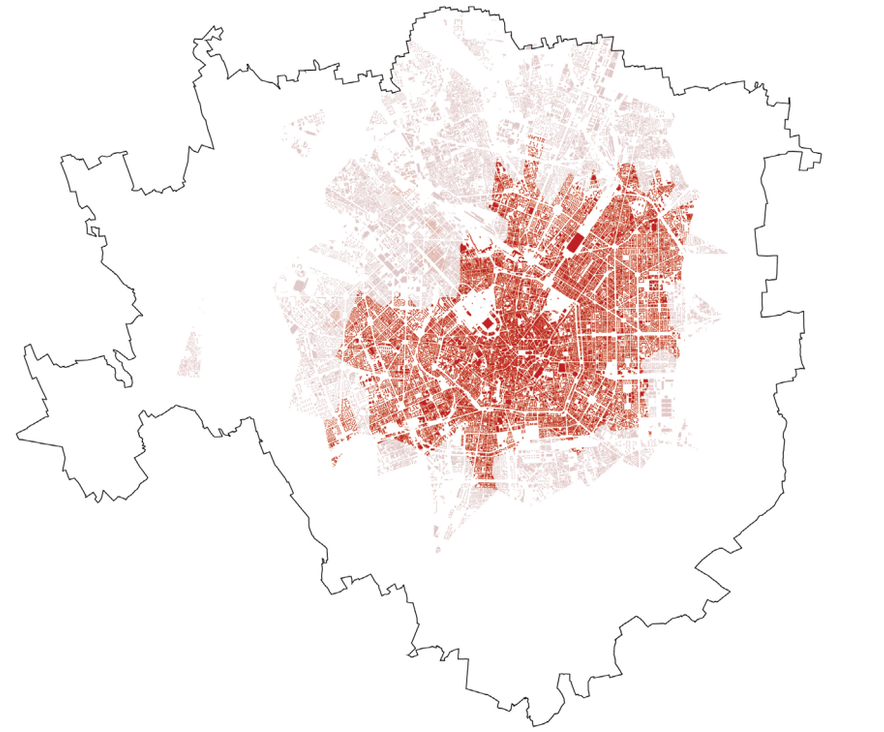
TRANSPORT SYSTEM

HOUSING DENSITY

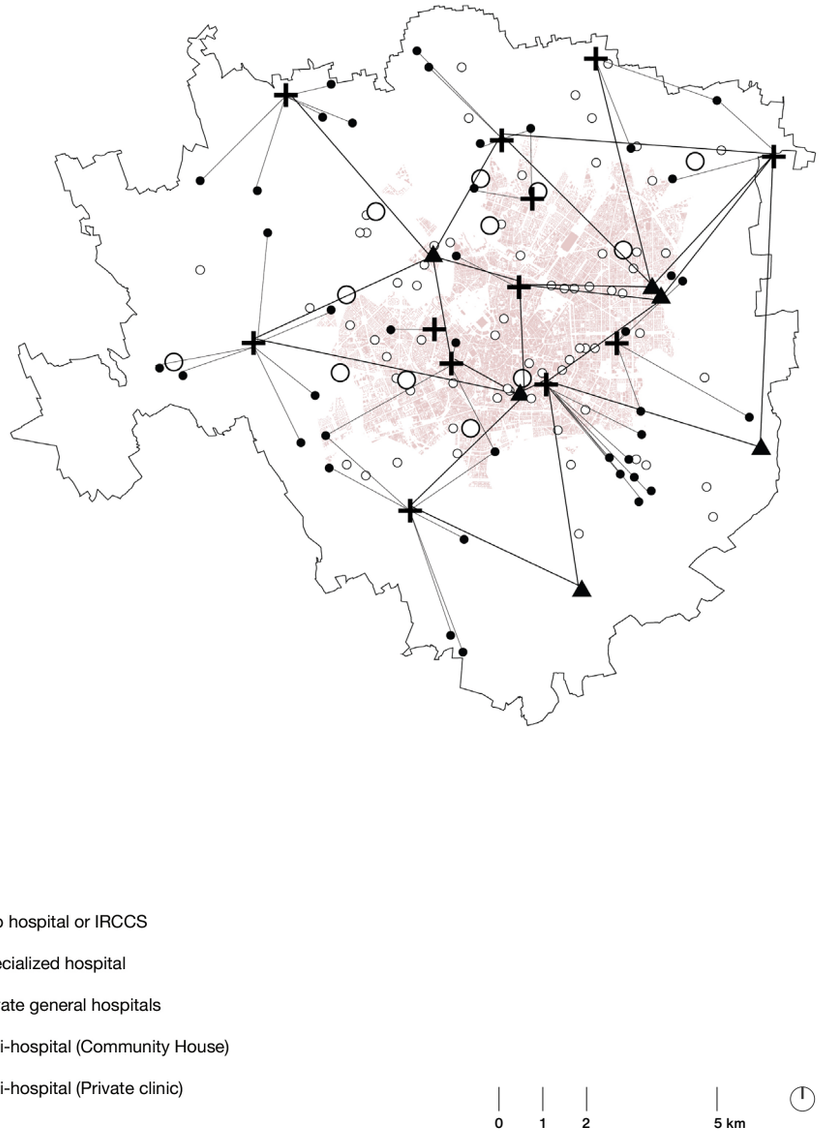
The city of Milan seeks to promote neighborhood-level healthcare facilities, within the 15-minute city framework, to address accessiblity issues and promoting age-inclusive public services to Milanese residents. Initiatives such as Moratti's healthcare reform underscores the crucial role of non-institutional environment for healthcare.



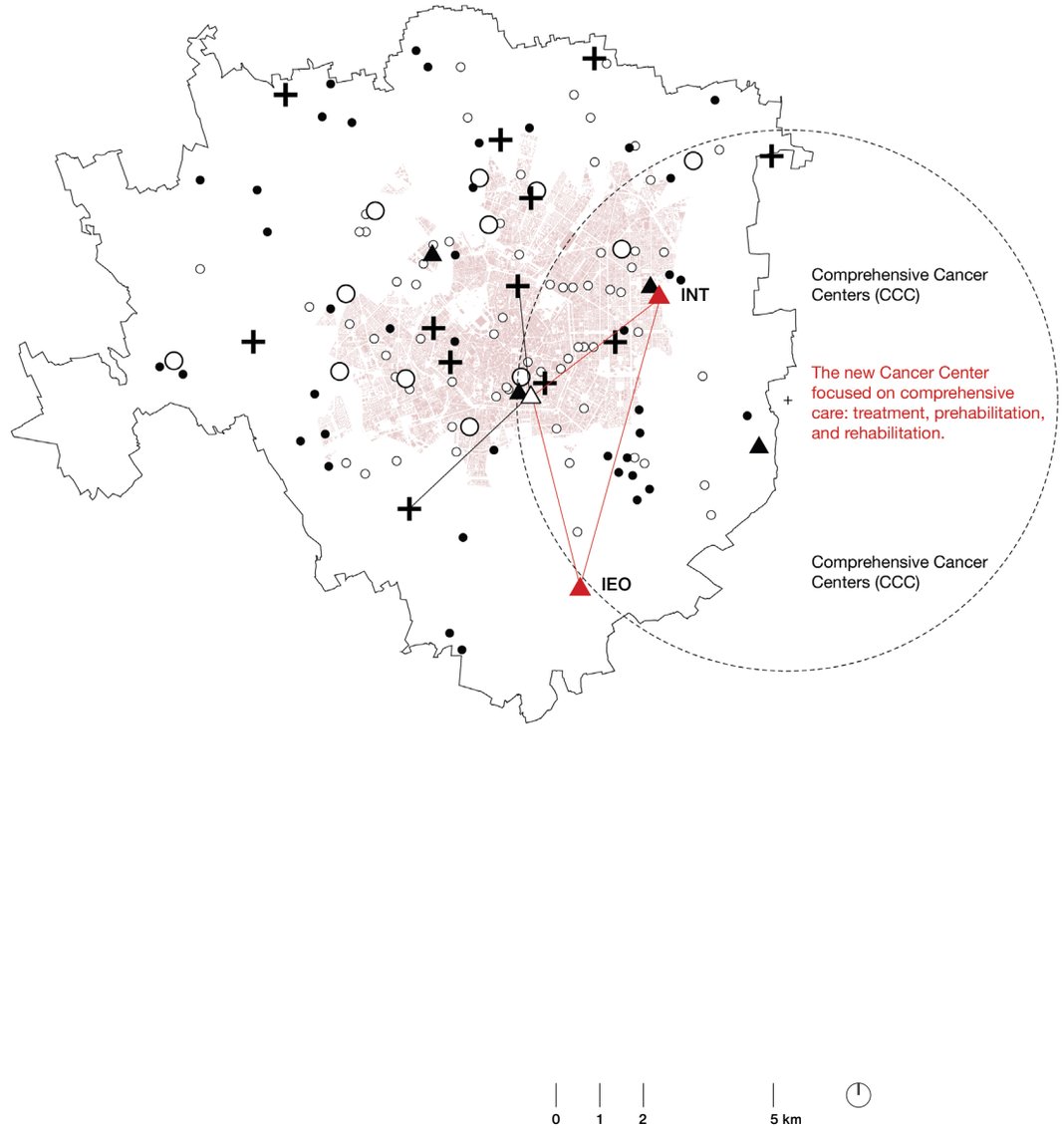
Areas with a public transit stop located within 400-meter radius walkability are primarily in the central district and around the city walls, with a high concentration towards the north.

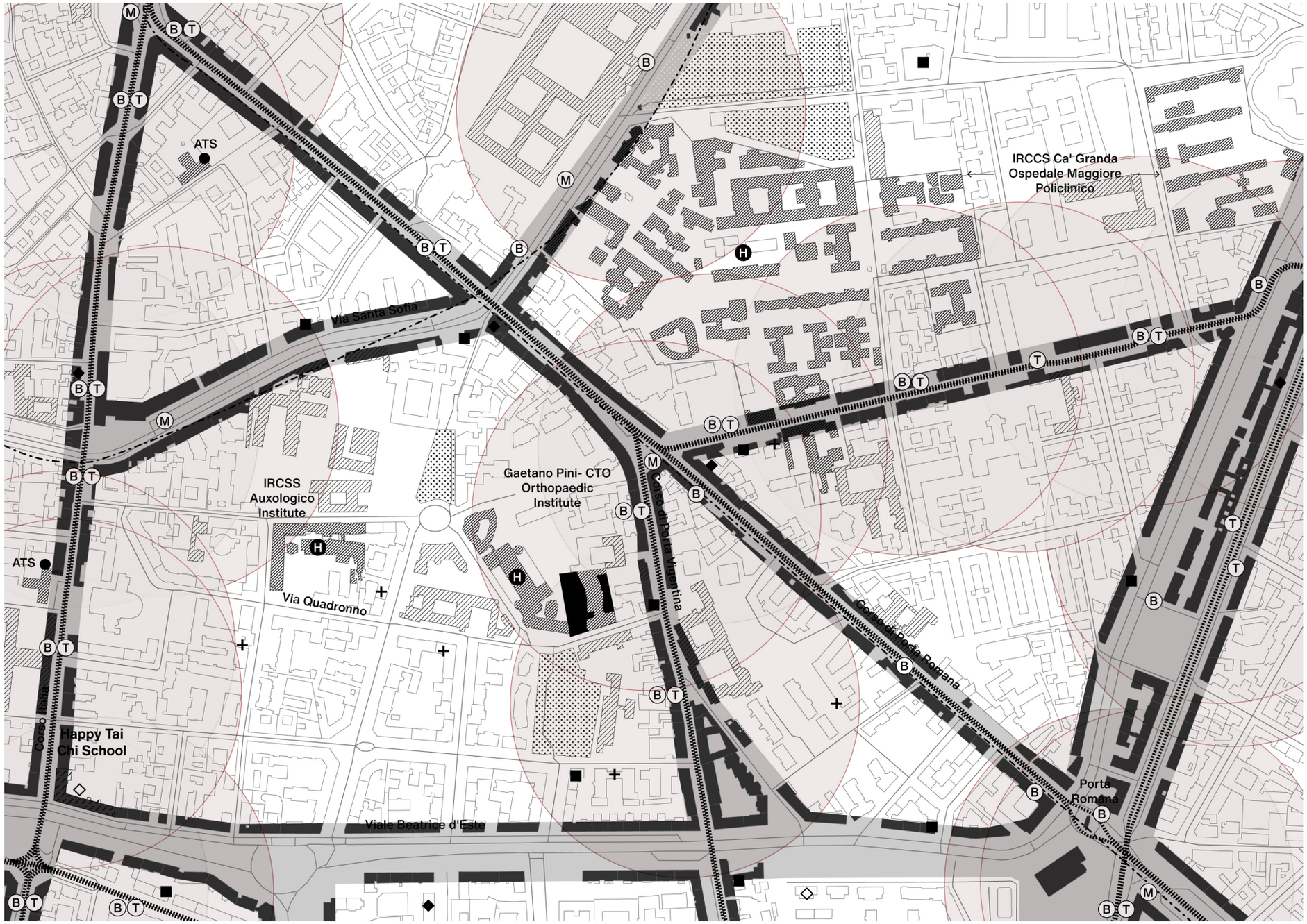


Mapping of current cancer facilities in Milan reveals a different reality. In general, most specialized hospitals in the city are located within 15 minutes by car to Linate airport. The two specialized cancer centers, the National Cancer Institute of Milan (INT) and European Institute of Oncology (IEO), with their designation as OECI Comprehensive Cancer Center, target a wider population beyond Milan, catering to that of Lombardy and Europe. Meanwhile, facilities for cancer care on a district level - pre-treatment and post-discharge care and rehabilitation - are scattered and absent. The task of navigating this disperse cancer carescape in Milan remains a challenge.



On an urban scale, the proposed drop-by cancer center seeks not to compete against, but to completement the two existing treatment-centric cancer hospitals and provide more focus on Milanese residents. The new center integrates treatment facilities with prehabilitation, rehabilitation, and leisure programs to address patient's social and psychological health. Here, residents can sit, have a tea, get consulted, get treated, train, relax, and find companionship with people who share the same journey.

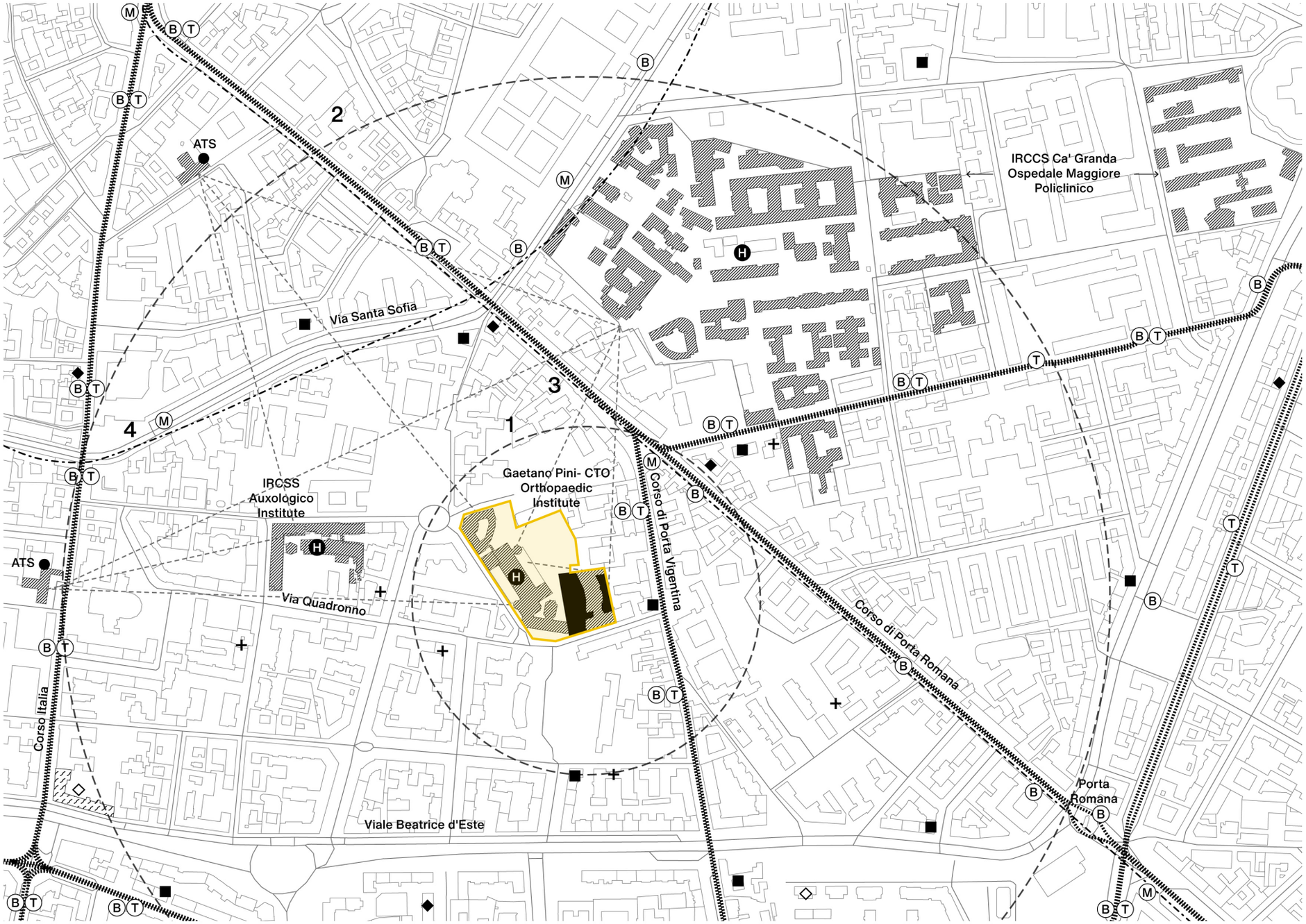




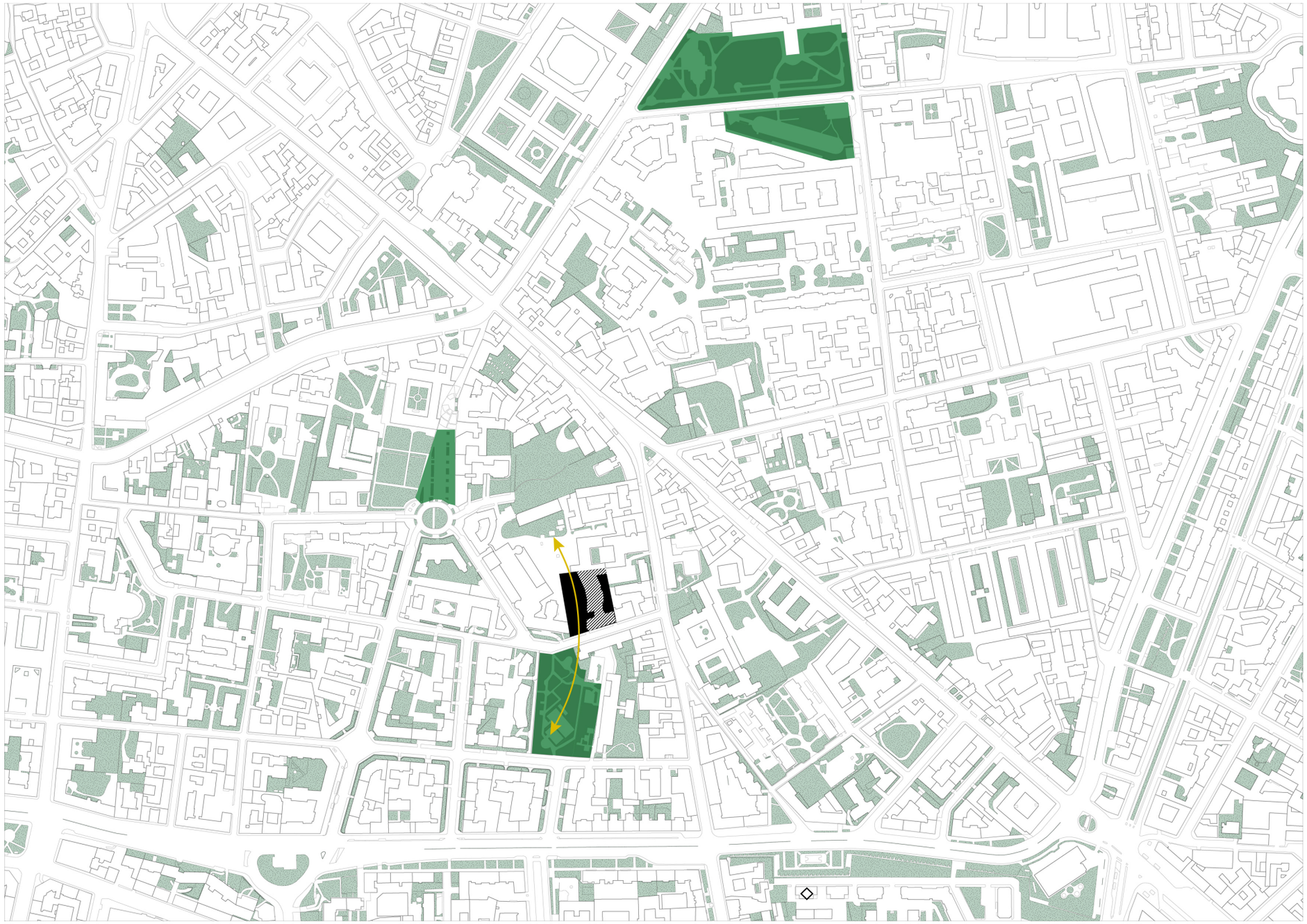
On a neighborhood scale, the building sits in a dense mix-use acoustic zone, surrounded with schools, residential buildings, and a hospital to the west. As such, it is crucial for the building to activate the urban plinthe and act as an active entity connecting the neighborhood and the hospital, rather than a closed-off institution like the Casa di Cura La Madonnina by the Soncini architects. Additionally, the new proposal will address the restricted pedestrian traffic by returning a more generous pedestrian area to the public. The building massing and façade should be distinct and recognizable from the main access via Corso di Porta Vigentina.

On a building scale, the building façade on via Quadronno should incorporate human-scale massing and composition. Within the material lens' framework on the detail scale (S), the building's entrance should be emphasized on the façade while implementing a material composition typical of Milan entrances. Furthermore, in response to the research requirement of architectural pleasure related to socio-psychological wellbeing, building should have two different entrances, one for a leisurely slow path, and one for a fast efficient flow.

The building should implement strategies to minimize unpleasing view of the adjacent hospital and orient long-stay facilities towards the school's soccer field. Moreover, the proposal should incorporate more greenery as breather spaces, with different landscape conditions facilitating diverse experiences pertaining to architectural pleasure as outlined n previous chapter (refuge vs. companionship vs. socializing), rather than merely a green garden on the side of a hermetic emblem of the institutional environment which remains scarcely used by patients.



There are various health facilities ranging from private to public in Quadronno, which engenders a future development towards a healthcare ensemble with different specialized departments within walkable distance.



1 5-min walking distance (400 m)
2 15-minute walking distance (1,2 km)
3 Metro line M3
4 Metro line M4

Metro/Bus/Tram station
Tram line
Commercial fronts
Trees

Medical-related facilities
Sports facilities
Parks
Schools

Private polyclinic (GP)
Public health service (ATS)
Pharmacy
Rehabilitation / Physio facilities

0 50 100 200 m

Large landscape coverage are scarce in the area. The hospital will address this lack of green spaces by providing different garden conditions as a breather space for gathering.

Clinica La Madonnina

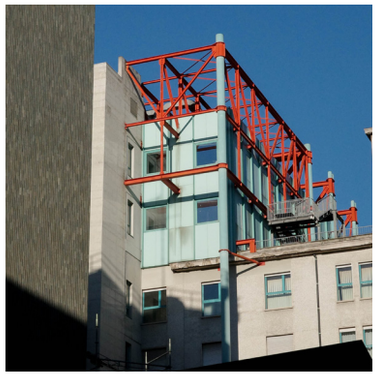
Pavement from the Park

Adjacent School Soccer Field

Opposite Park

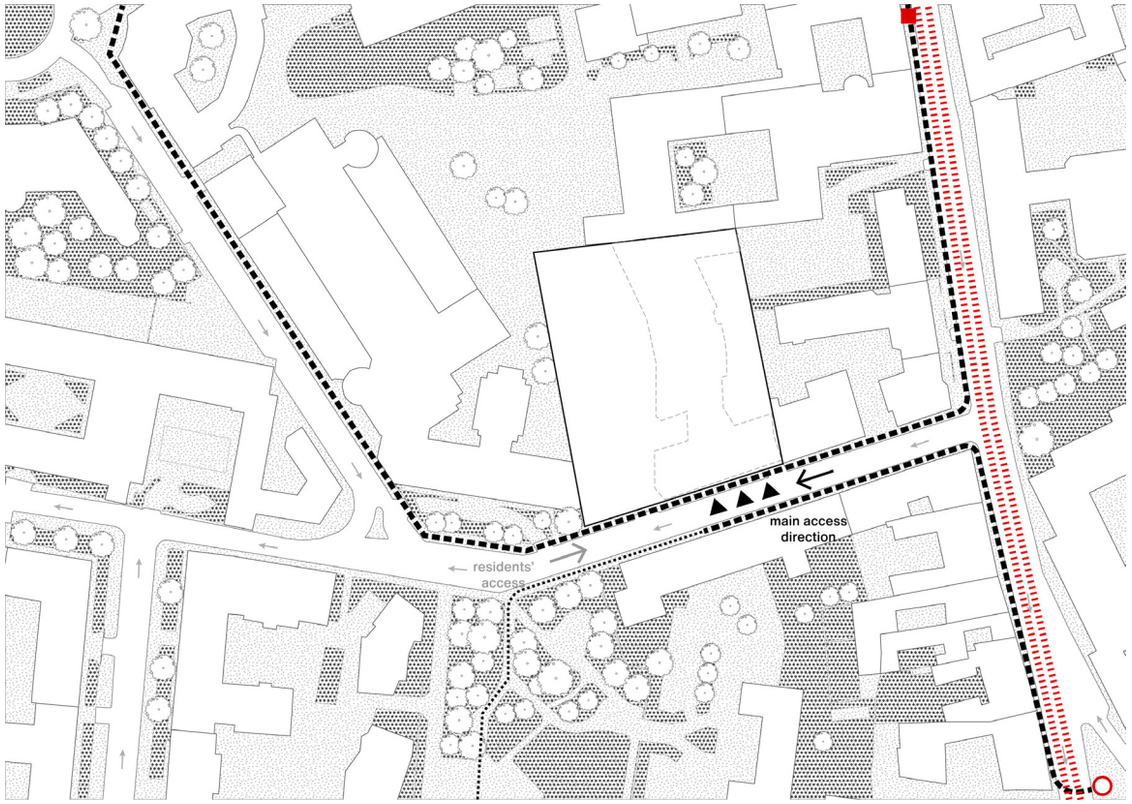
Nearby Residential Buildings

Main Streetfront entrance

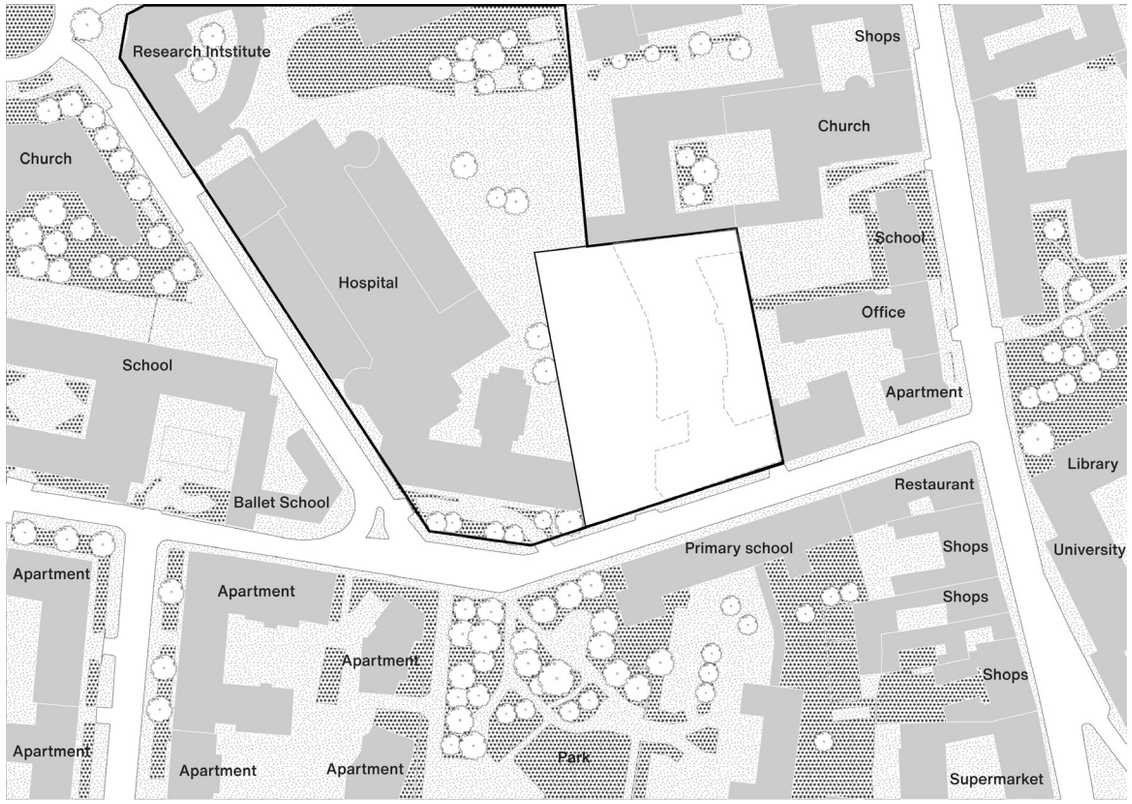


Adjacent Orthopaedic Hospital

The main approaches to site means the massing should be distinct and visible from the Corso di Porta Vigentina and the park.

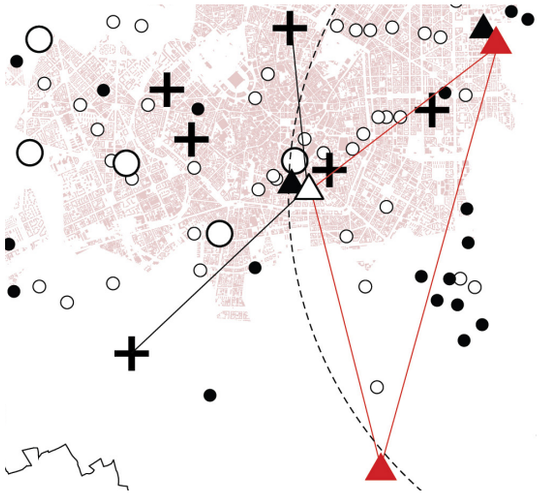


The immediate surrounding area includes various mixed-used buildings, 2 schools, and an adjacent orthopaedic hospital. The ambition is to open up the north facade and together with the orthopaedic institute, form a medical complex with shared landscape area.



Engagement with facing park and expand public-accessible green areas while maintaing usable green space for the cancer hospital is critical.

The massing should activate urban plinthe with human scale south façade.

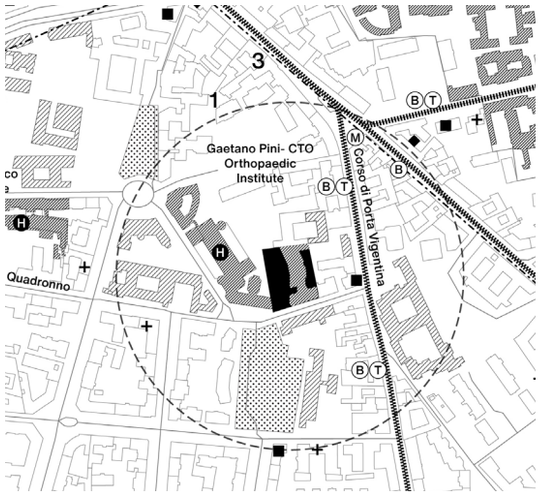


URBAN SCALE

+ Create a neighborhood-level cancer center serving one-third Milanese population to complement and ease the treatment loads in the apex cancer centers.

+ Bring together treatment and non-clinical care programs including pre-treatment consultation, alternative therapies, and group-based activities under one roof.

+ Maintain Milan's dual identity of soberness and innovation through material use made visible on the façade.

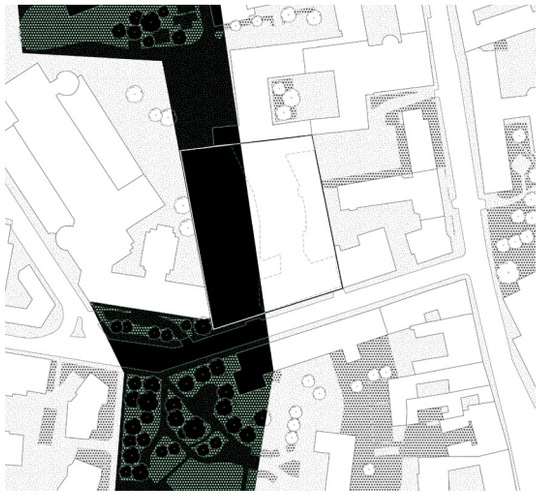


NEIGHBORHOOD SCALE

+ Activate the urban plinthe. The building must act as an active entity connecting the neighborhood and the hospital.

+ Increase pedestrian area on the street front in anticipation of higher foot traffic.

+ Collaborate on social or rehabilitation programs with existing entities within the neighborhood.



BUILDING SCALE

+ Emphasize visibility of the massing and distinct façade to be recognizable from the main access (via Corso di Porta Vigentina)

+ Incorporate human-scale massing and composition of the façade

+ Engage with facing park and incorporate diverse landscape areas.

+ Minimize view towards adjacent hospital and orient long-stay facilities towards the school soccer field.

\+ Near other general hospitals and specialized hospitals +

\+ Opposite a park +

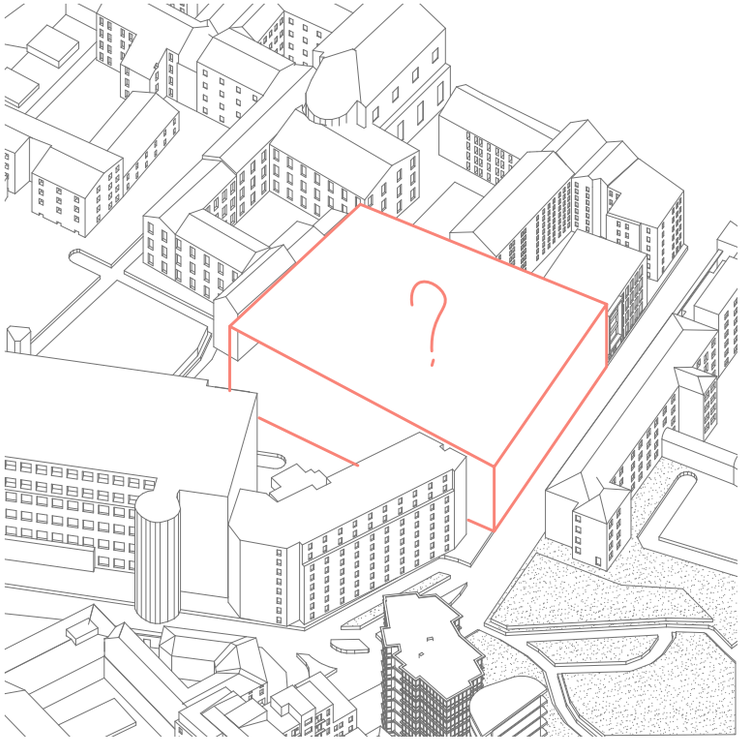
\+ Relatively good acoustic zone due to location off the main street +

\- Closed off south and north facade -

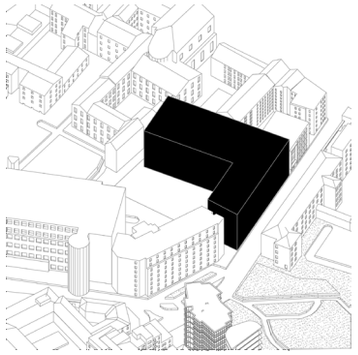
\- High urban density and constrained buildable area -

\- Lack of integrated landscaping within the current hospital -

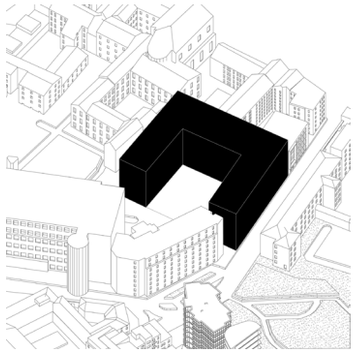
Break down of masses



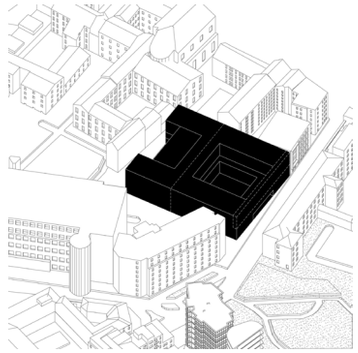
15,000 SQM



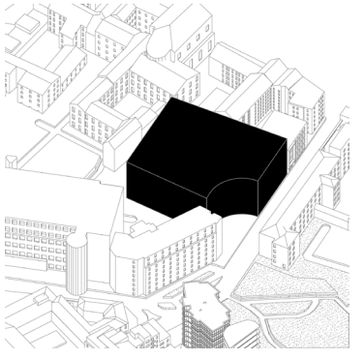
L-SHAPE



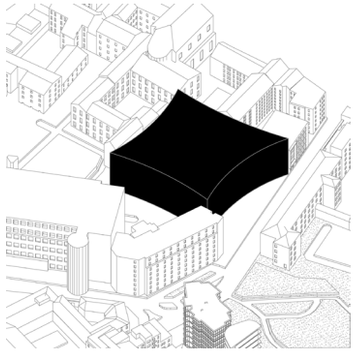
U-SHAPE



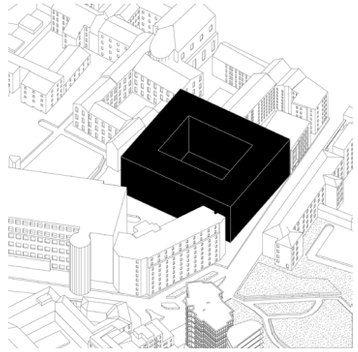
DUAL



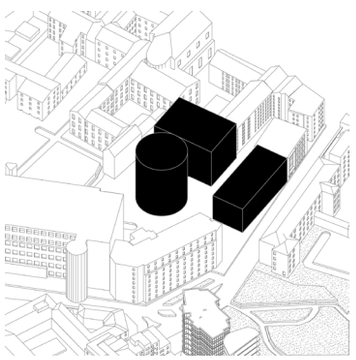
BITE



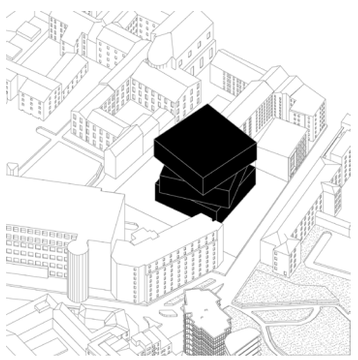
STRETCH



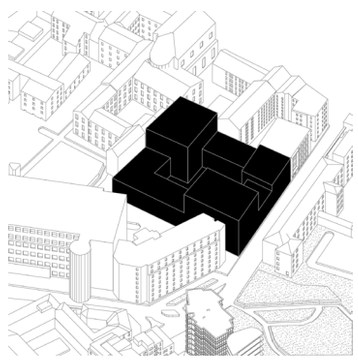
COURT



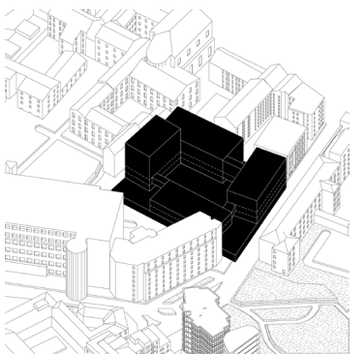
VILLAGE



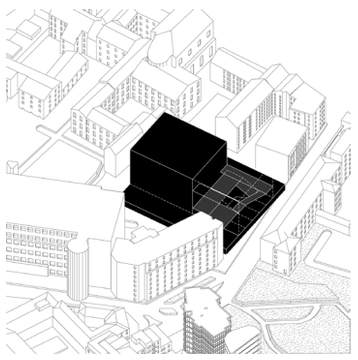
TWIST



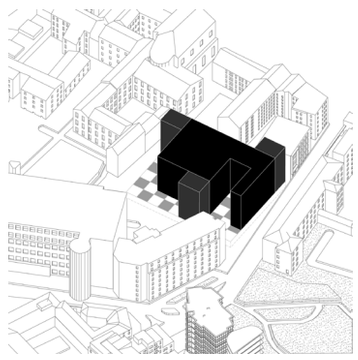
CAPS



HOUSES



SETBACK



EXTRUDE

03
MATERIAL
LENS

Within the framework of Complex Projects, this research incorporates a part of the collaborative research of Material Group.
Material Group delves into the narrative of material extraction in Milan and Lombardy, and draws a mutual design requirements concluded from this research.

Milan is historically great at harvesting raw materials from its local region, such as marble or wood, then refining them to high standards. Additionally, contemporary Milan underscores sustainability and innovation in building materials - aligning with its ambition as a C40 City- evident in Expo 2015 or Milan Design Week where post-consumer scrap become the new protagonist materials. As such, Material Group's strategy seeks to revise this extraction narrative to one of 'harvesting' existing materials from reusable stocks and from local sources while considering possiblities of future reuse of building elements.

MATERIAL GROUP STRATEGIES

Urban Scale

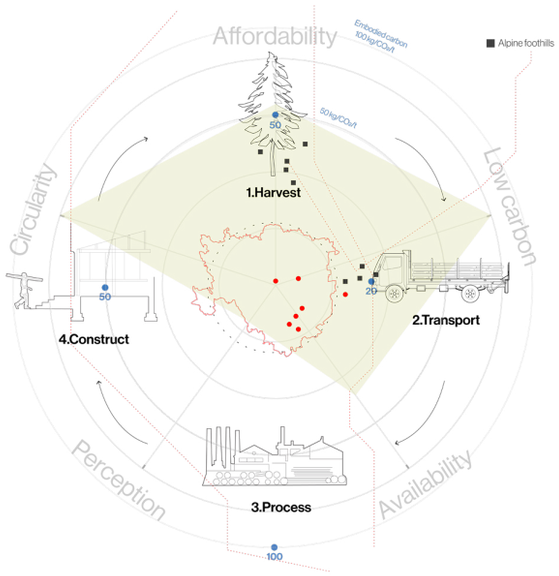
Urban-scale strategy involves harvesting existing materials within Milan from existing stocks or extracting new materials from local sources within Northern Italy to minimize transportation emissions. All primary materials must be sourced within 30 km of the project site, with at least 30% recycled or reclaimed content.

Building Scale

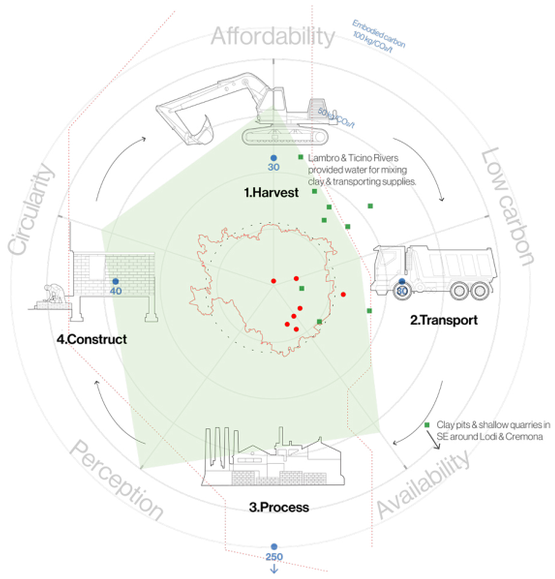
Every project must feature one prominently visible crafted element made from locally sustainably sourced materials.

Detail Scale

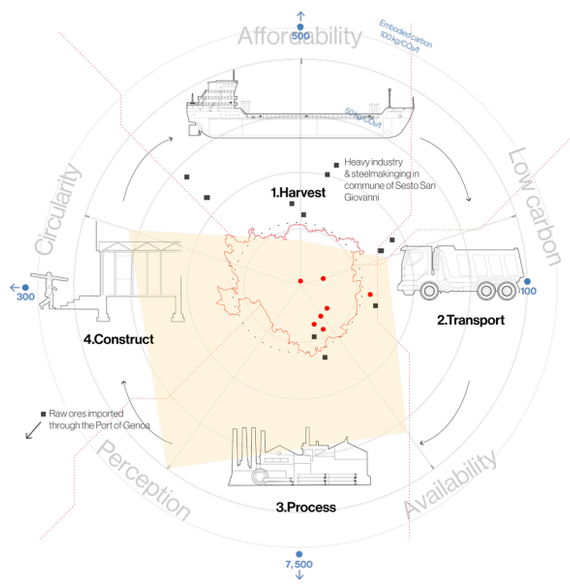
At least 50% of the building's structural and non-structural components must be designed for easy disassembly or repurpose.



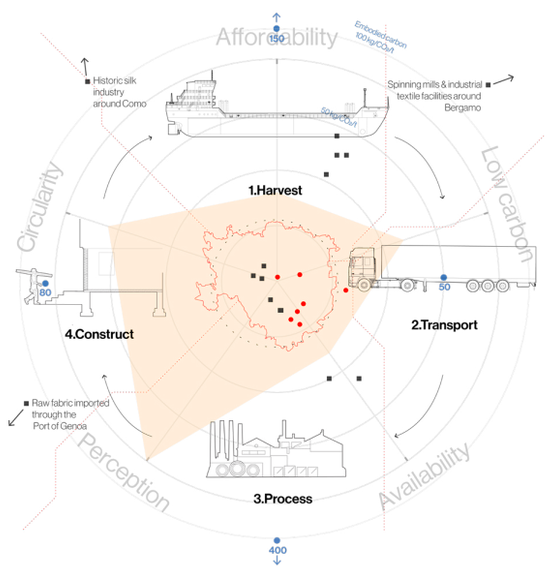
Timber



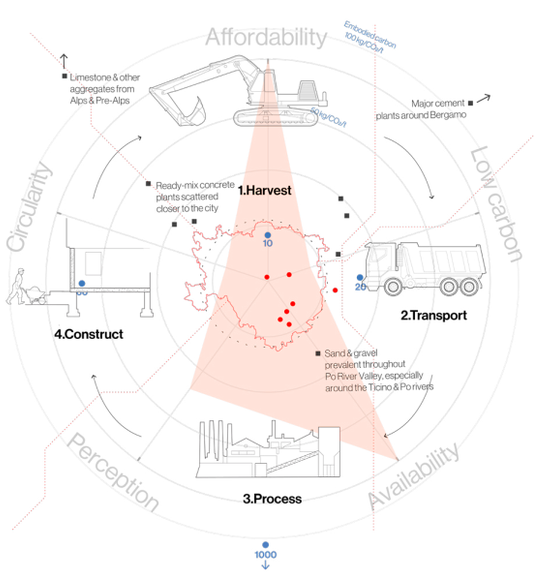
Clay / Bricks



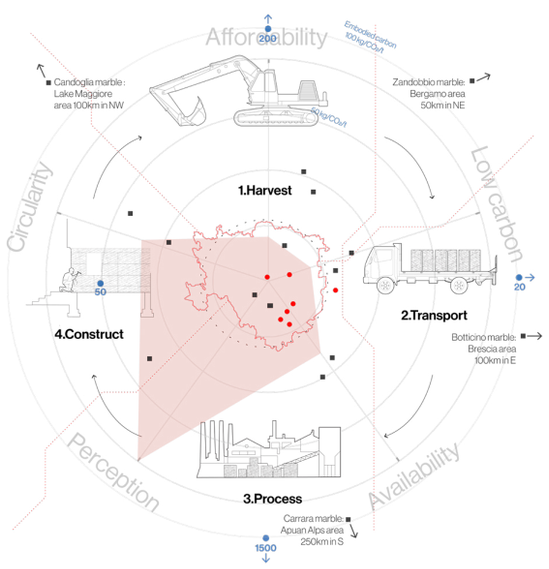
Steel



Textile



Concrete



Marble

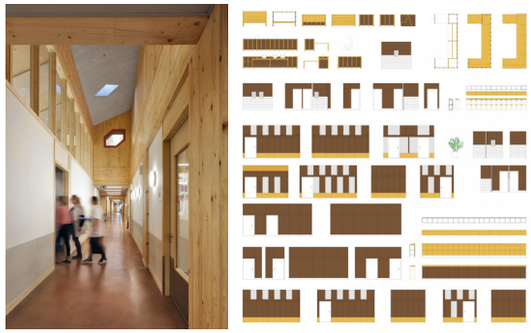
Sight **Touch**

Opaque **Open**

Diversity + **Tactility** + **Flexibility**
|
Wayfinding

|
Comfort

|
Adapting needs



The Hospital focuses on two key material strategy: Timber Construction (Urban Scale) and Design for Disassembly. (Detail Scale)
This materialapproach prioritizes the sanitary and hygienic concern as the most critical aspect in hiospital construction. As a result, the hospital will be investigate timber construction based on studying three aspects: multifunctionality, transformability, demountability.

The proposal will employ principles of DfD and Open Structure by proposing a concrete structure and circulation cores – which is also a particular requirement for Radiotherapy bunkers - while using lightweight construction material throughout as infills (i.e. wood, glass, fabric). A combination of glulam and CLT is used with standardized dimensions and design joinery to allow for future modification as hospital functions evolve and may expand.

SKIN & BONE
Lightweight construction in Timber for all structures except radiotherapy bunkers

Flexibility through Design for Disassembly
All nonstructural space plan elements should employ DfD and lightweight construction and be catalogued for future functional changes.

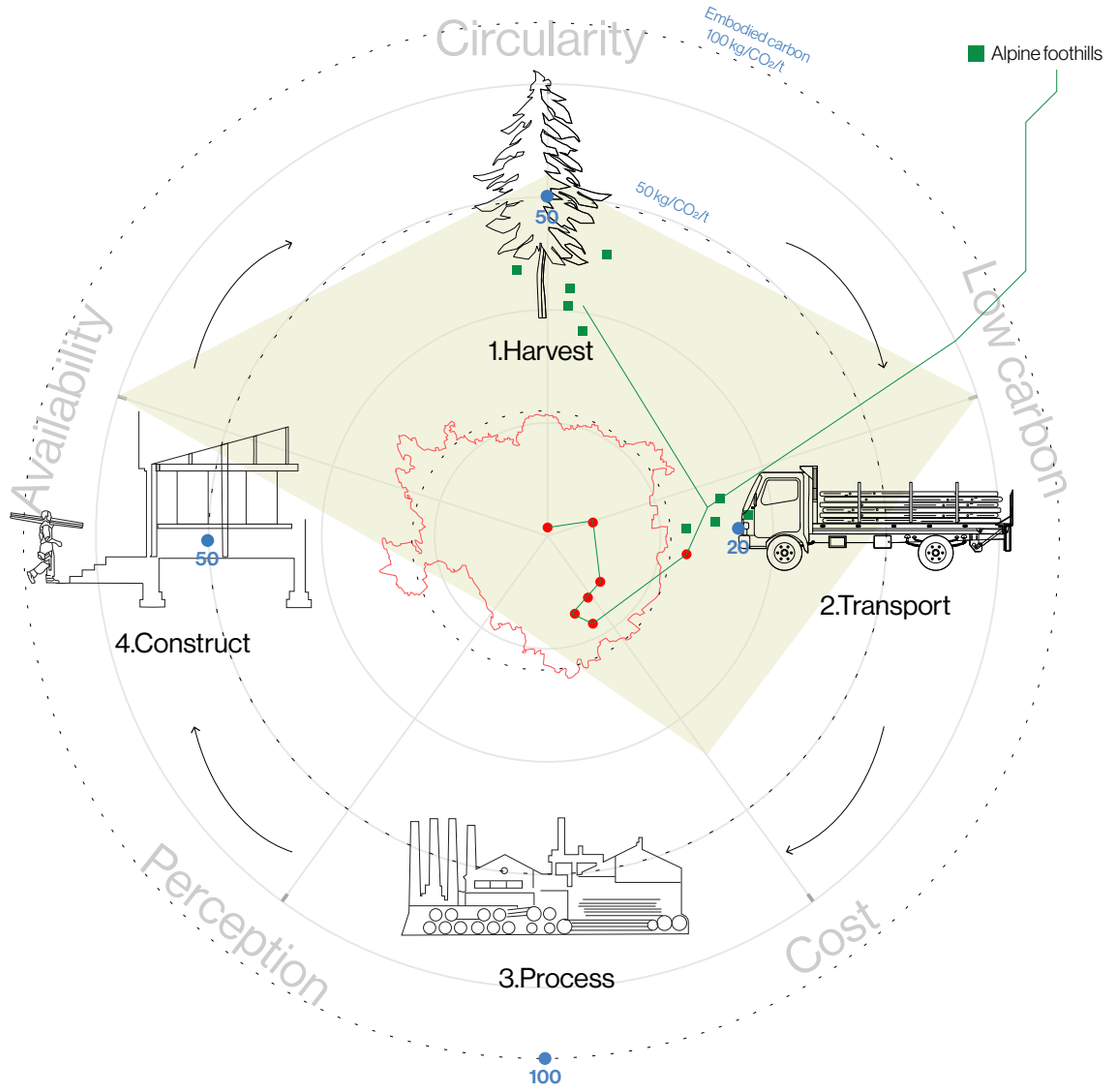
Tactility of Wood
Timber is used for its tactility and thermal properties when considering sensitive skin experienced by patients undergoing cancer treatment (peripheral neuropathy). i.e. everything a patient touches is in wood (hand
rail, door knob, opening frames, etc.)

Wayfinding
Composing wood of different sizes and types of lumber / CLT in separate departments enables easier way finding for patients.

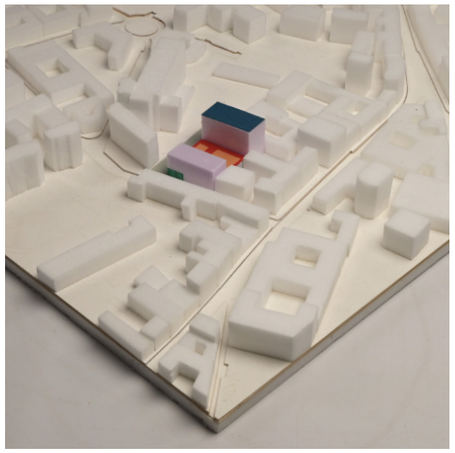
References images:

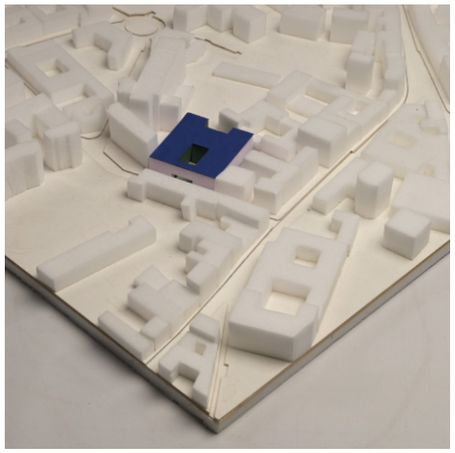
Futureproofing cities: designing for disassembly and adaptability, CIRCulT project.

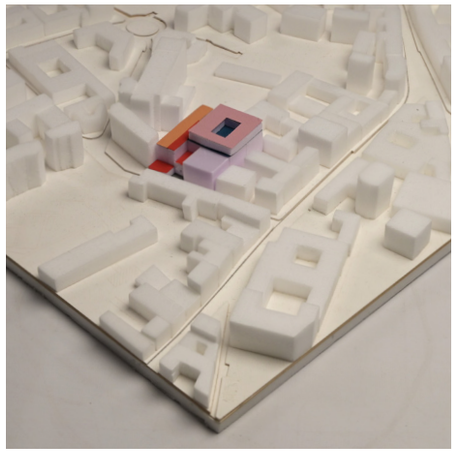
Bovenbouw Architectuur

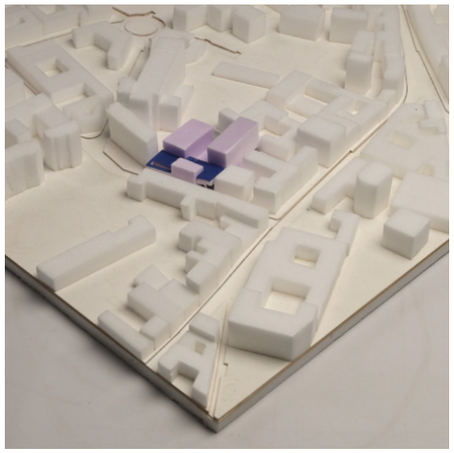


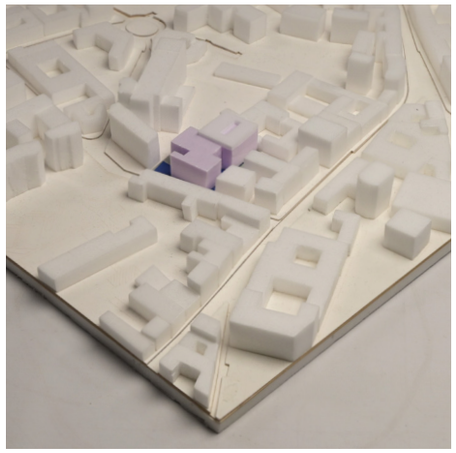
04
DESIGN











Massing Study

Site Model 1:1000

Client

- Non-linear, unexpected circulation path
- Gardens serve as the protagonist space
- Spaces with degrees of privacy should be organized to aid patients in moments of high pressure or low stimulation

Program

- Porosity of mass with views to outside or to gardens.
- Central garthering space for easy wayfinding
- Clear flow from public functions separating non-clinical care or high-risk treatment zones

Site

- React to the immediate site constraints (view, sunlight, blockage)
- Break down the mass to similar scales of the surrounding buidlings
- Extend urban green

Massing Study

Massing Criterias

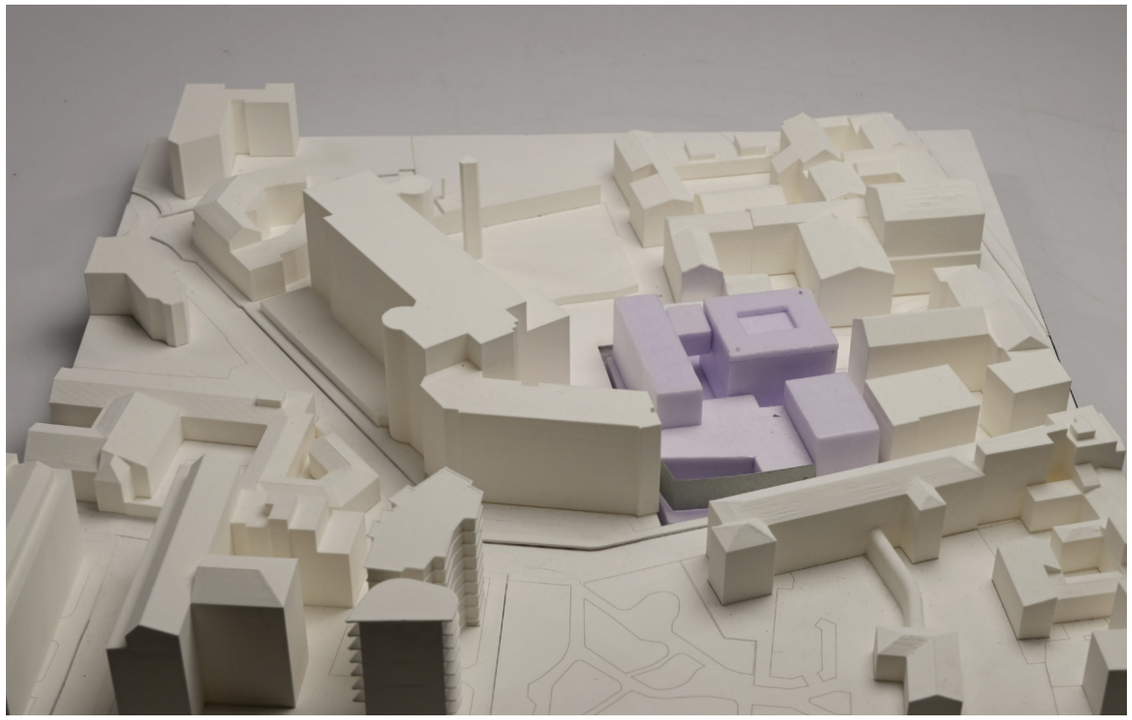
React to the opposite park and neighboring buildings. Compact efficient hospital.

Experiment with formal masses to created unexpected circulation loop. Inefficient hospital.

Push further formal volumes in reaction to the surroundings. Merge fragmented volumes.

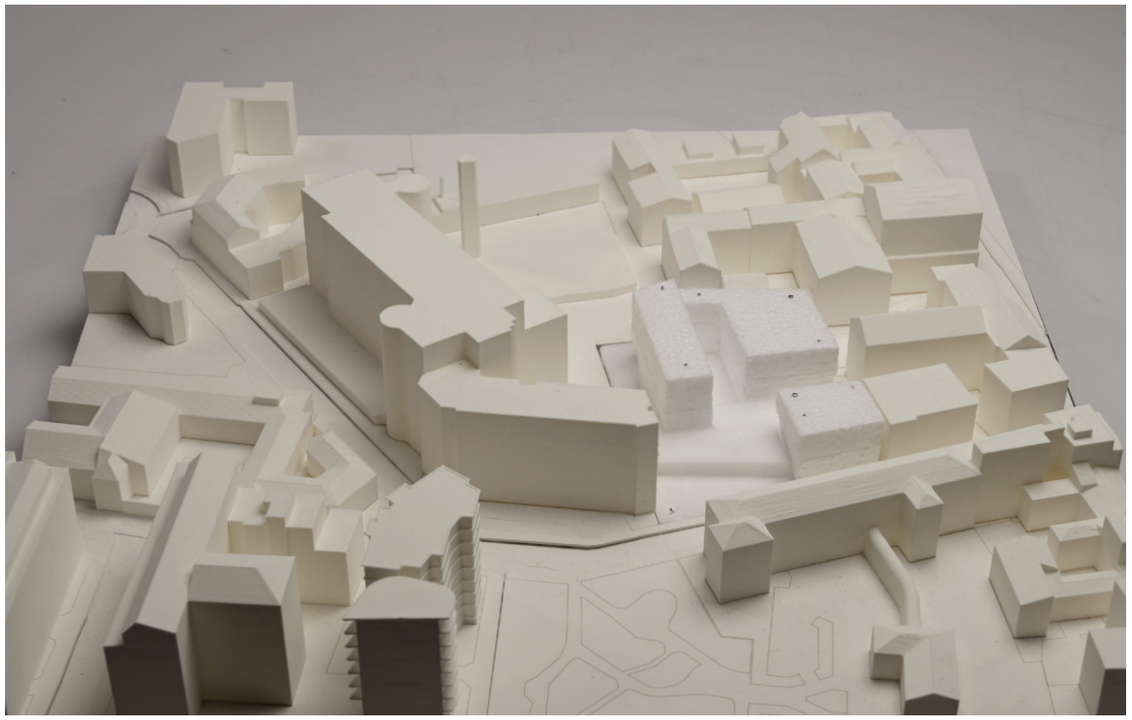
Massing Study Site Model 1:500 163

Return to orthogonal geometry axes. Break down the masses.
Negotiate programmatic volumes with site constraints. Connect urban plinthe.



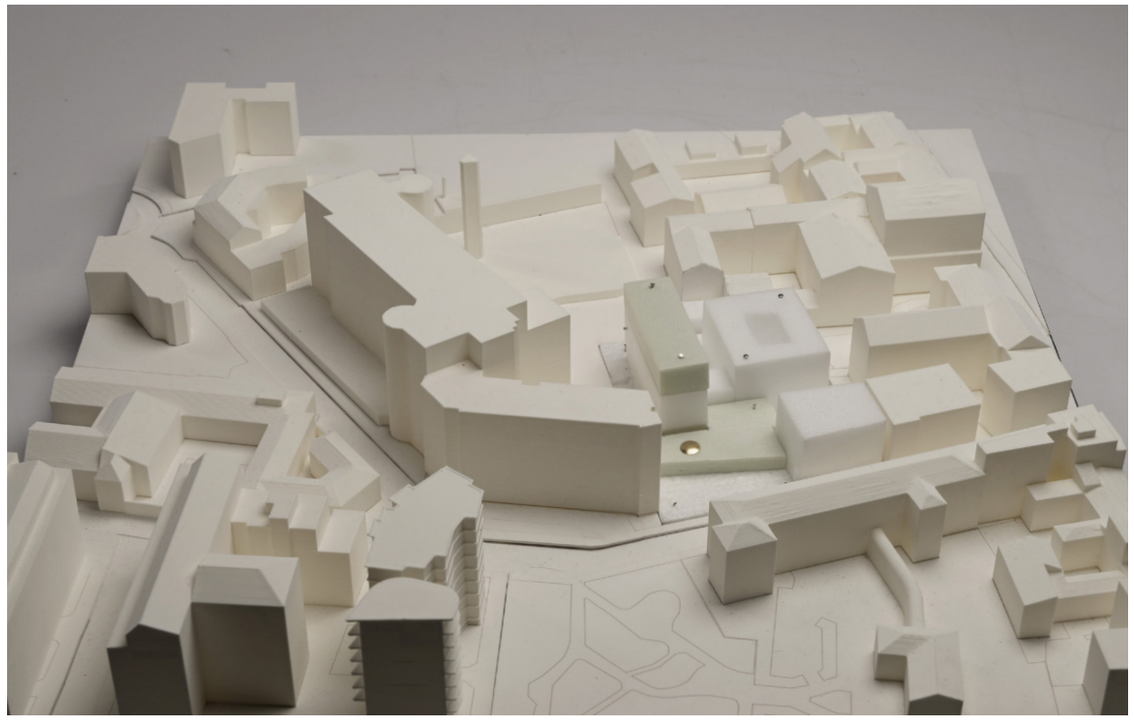
Massing Study Site Model 1:500 164

Test slight variations of connecting bridges



React to the opposite park.

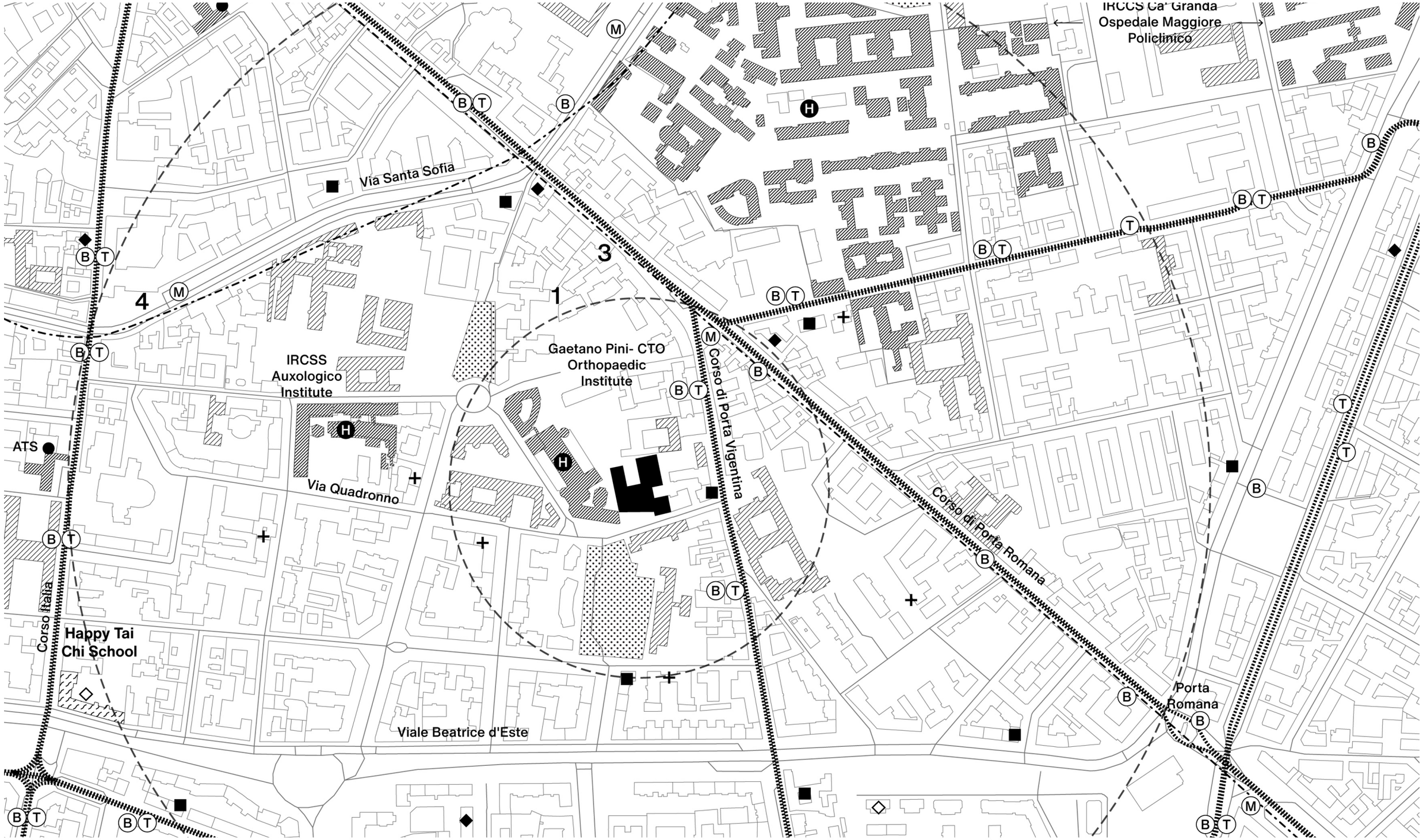
Use programmatic blocking (hydrotherapy pool) to accent the high volume.

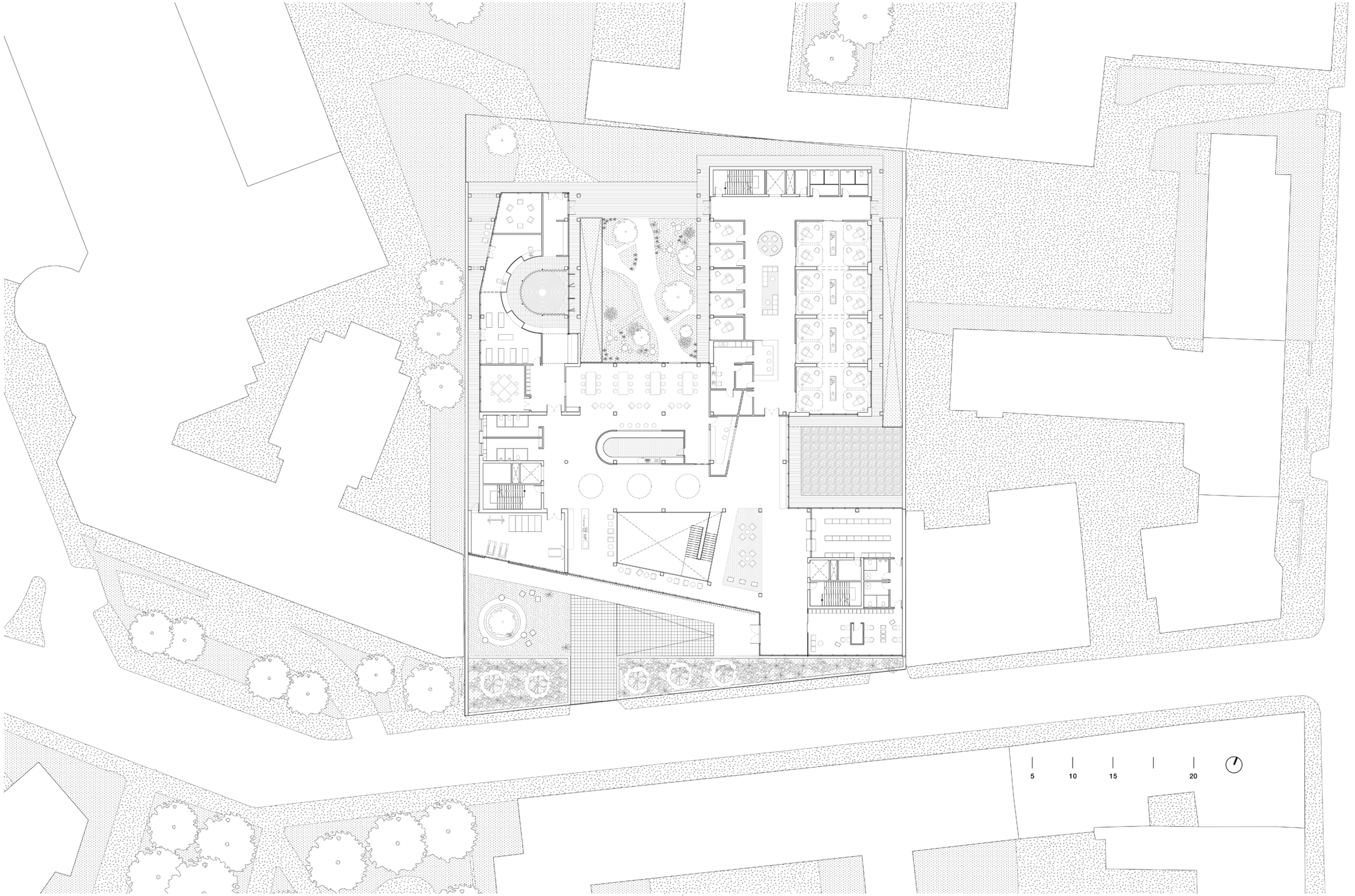


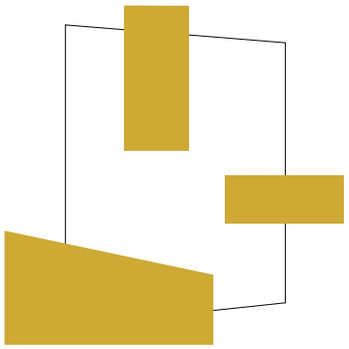
Massing Study Site Model 1:500 167

Use material distinction to accent the high volume like a beacon.

Massing Study Site Model 1:500 168

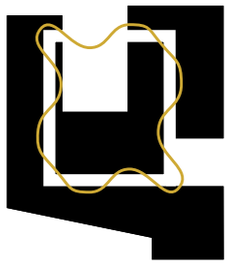

IRCCS Ca' Granda
Ospedale Maggiore
Policlinico
Via Santa Sofia
IRCSS
Auxologico
Institute
Gaetano Pini- CTO
Orthopaedic
Institute
Corso di Porta Vigentina
Corso di Porta Romana
ATS
Via Quadronno
Corso Italia
Happy Tai
Chi School
Viale Beatrice d'Este
Porta
Romana
1 5-min walking distance (400 m)
2 15-minute walking distance (1,2 km)
3 Metro line M3
4 Metro line M4
Metro/Bus/Tram station
Tram line
Commercial fronts
Trees
Medical-related facilities
Sports facilities
Parks
Schools
Private polyclinic (GP)
Public health service (ATS)
Pharmacy
Rehabilitation / Physio facilities
0
50
100
200 m


5
10
15
20

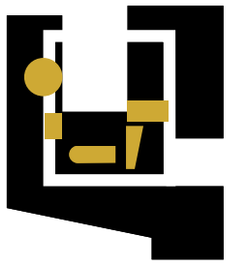


Enabling constraints

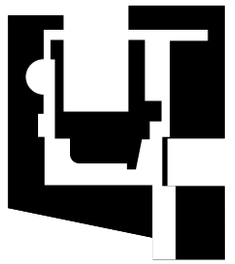
Porosity



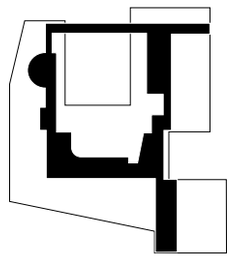
Loop



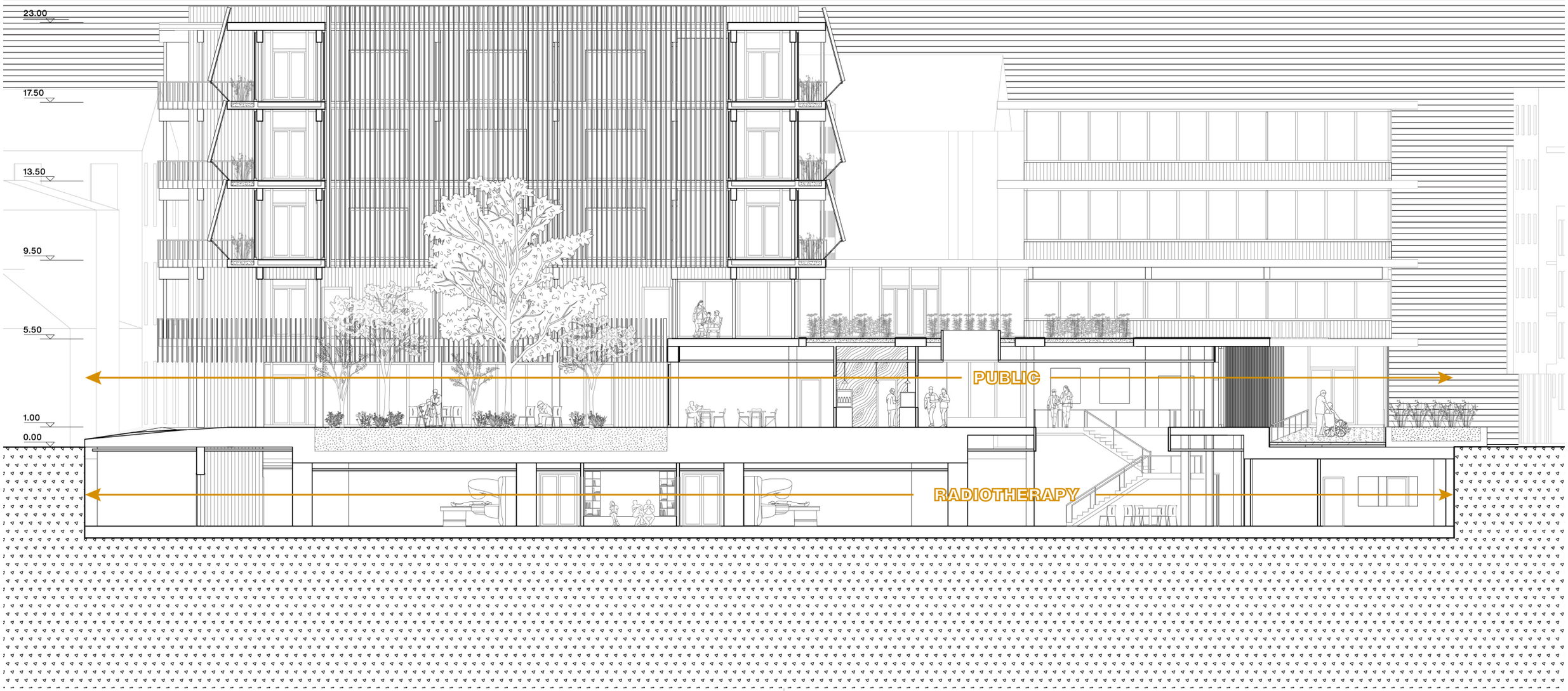
Oblique functions



Circulation void



The new corridor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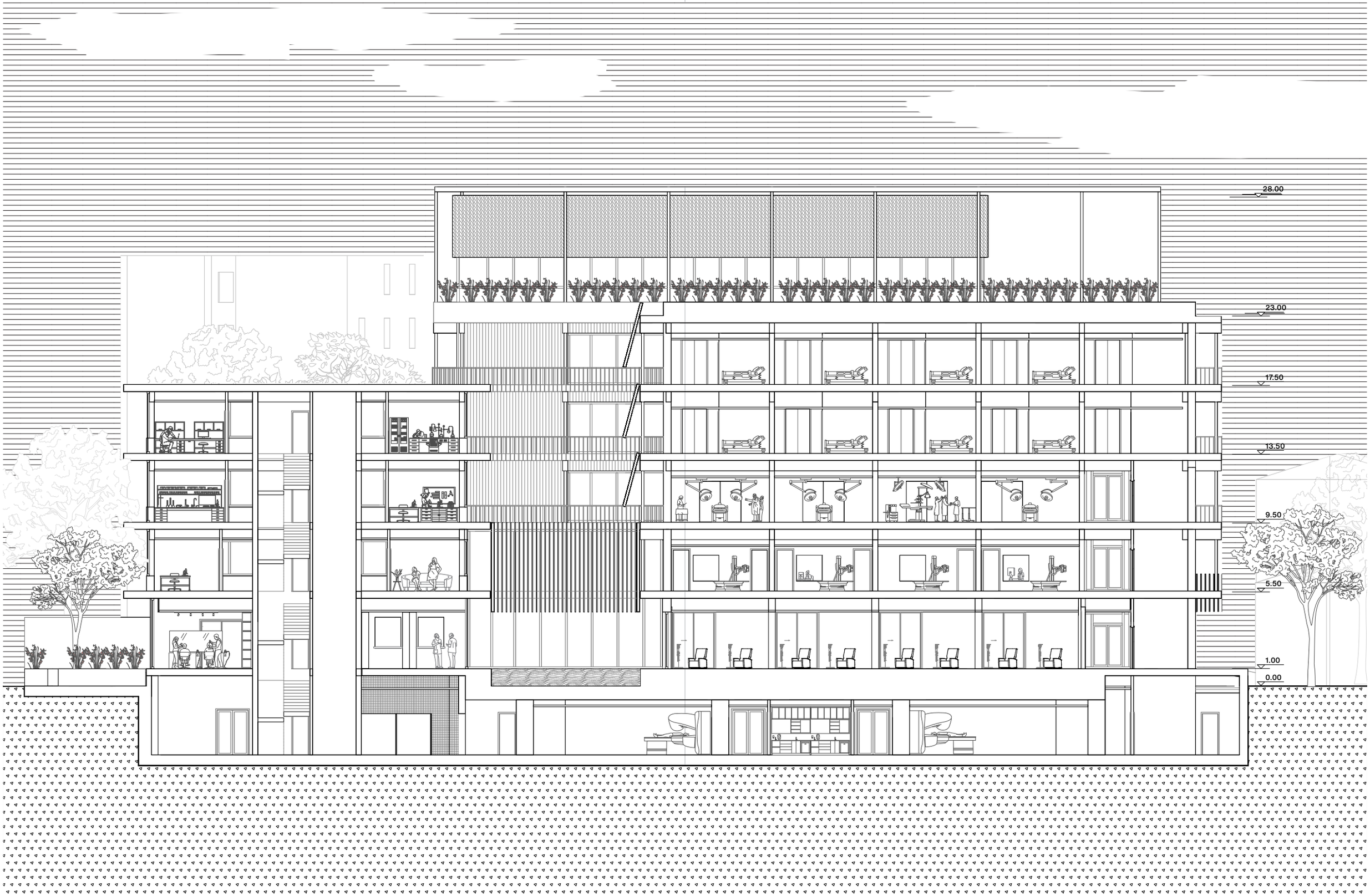
17.50
13.50
9.50
5.50
1.00
0.00
PUBLIC
RADIOTHERAPY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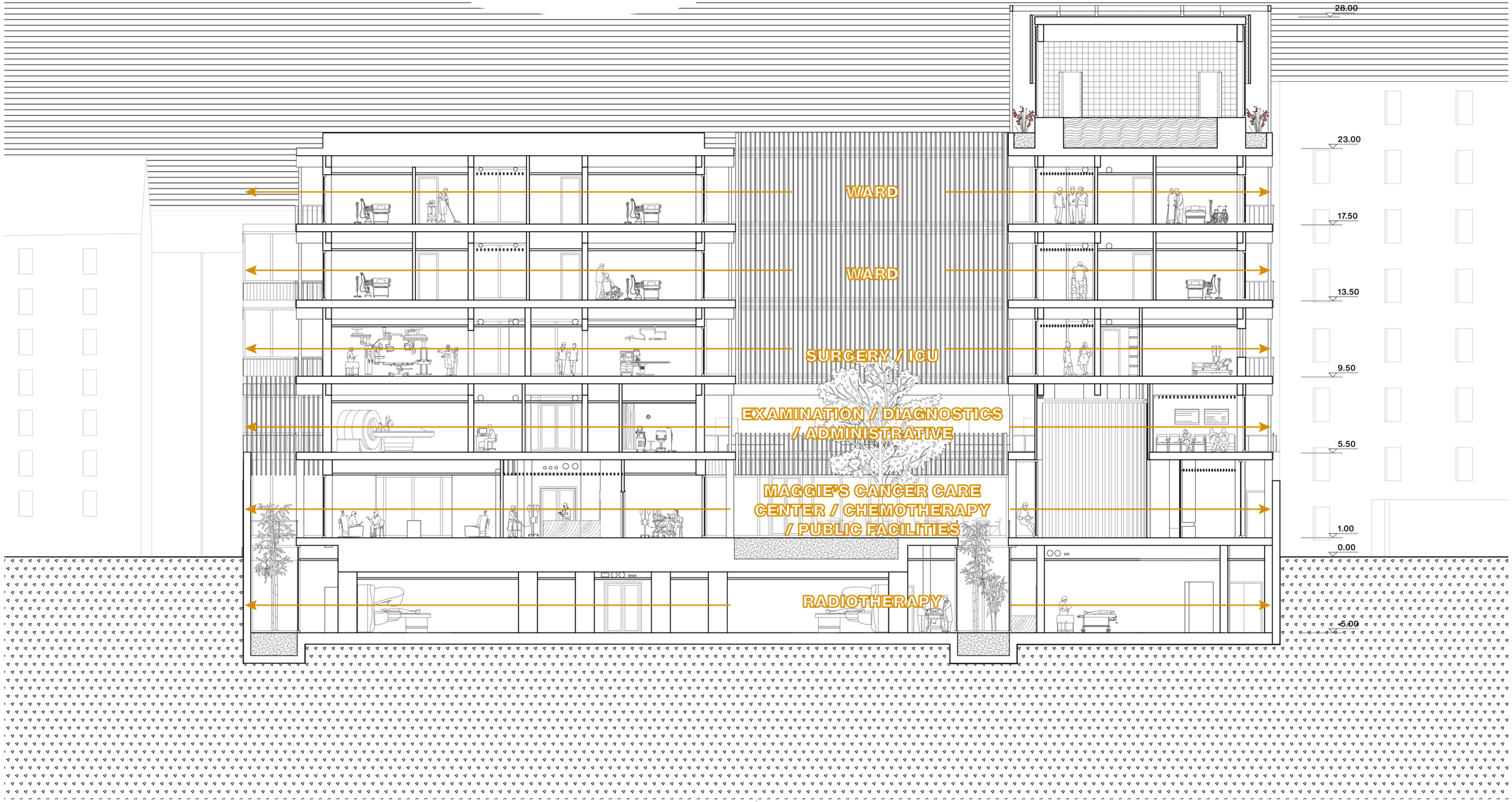
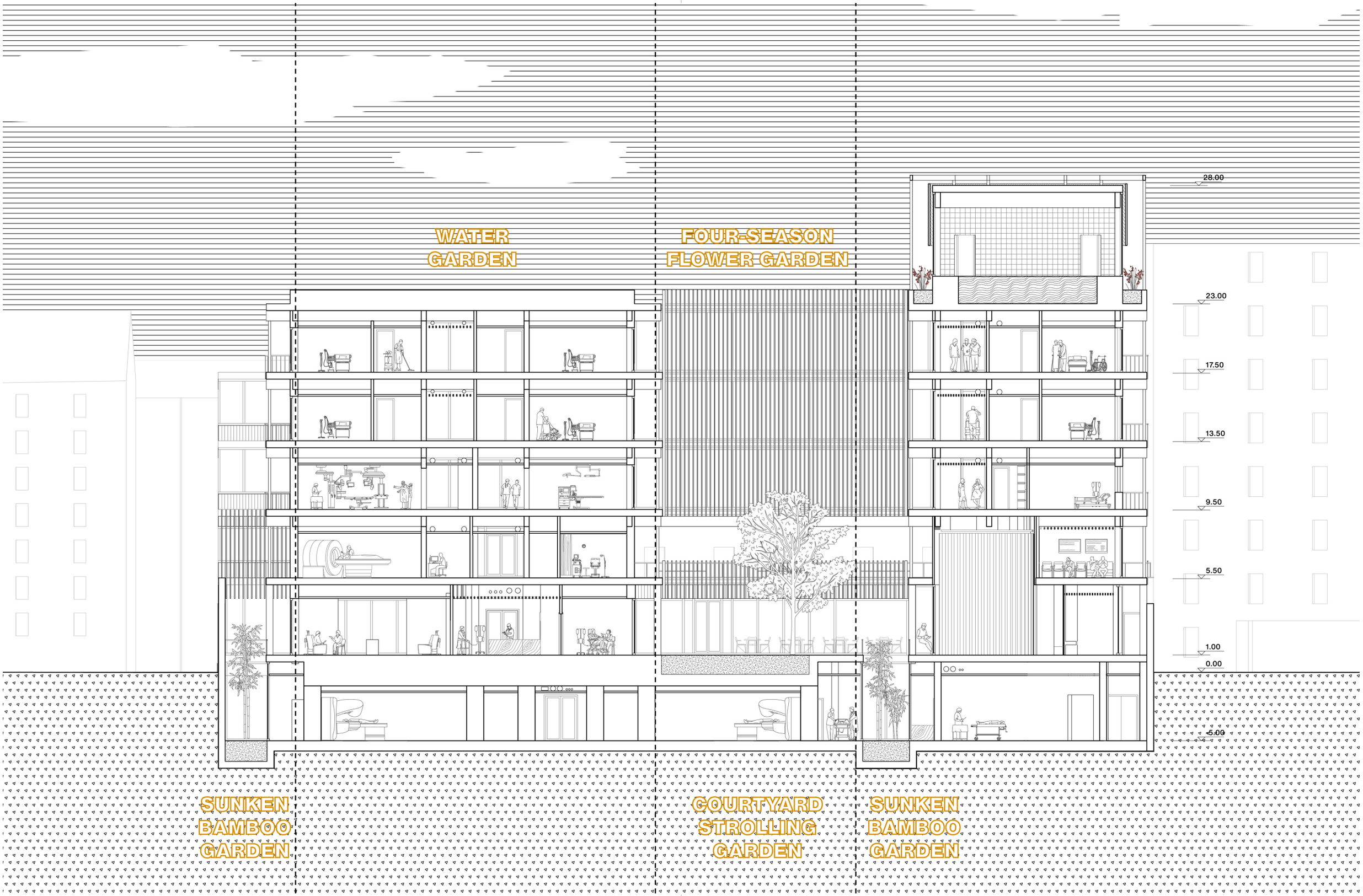
23.00
17.50
13.50
9.50
5.50
1.00
0.00


28.00
23.00
17.50
13.50
9.50
5.50
1.00
0.00
-5.00
WARD
WARD
SURGERY / ICU
EXAMINATION / DIAGNOSTICS
/ ADMINISTRATIVE
MAGGIE'S CANCER CARE
CENTER / CHEMOTHERAPY
/ PUBLIC FACILITIES
RADIOTHERAPY


WATER GARDEN
FOUR-SEASON FLOWER GARDEN
28.00
23.00
17.50
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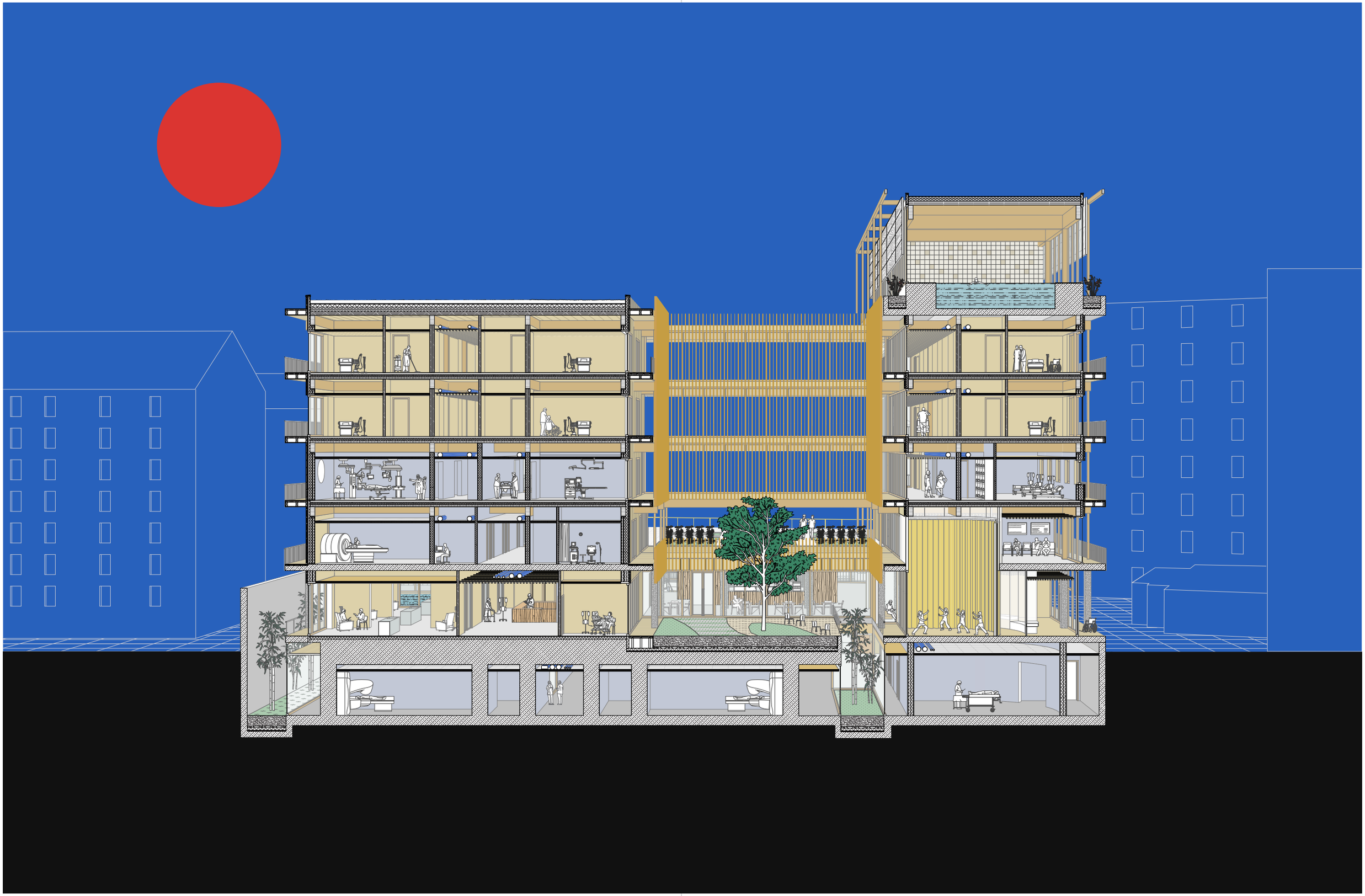
-5.00
SUNKEN BAMBOO GARDEN
COURTYARD STROLLING GARDEN
SUNKEN BAMBOO GARDEN




0
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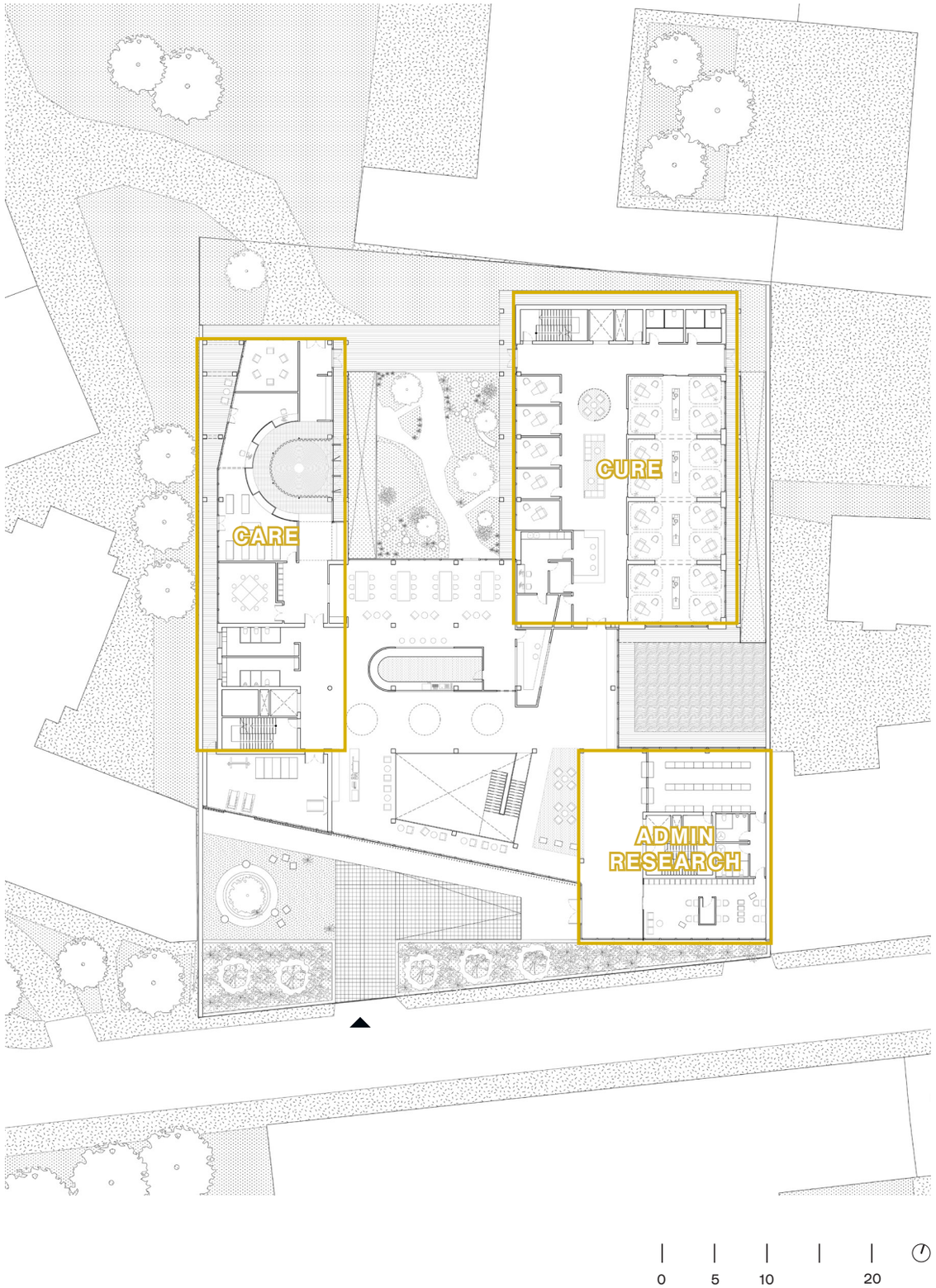
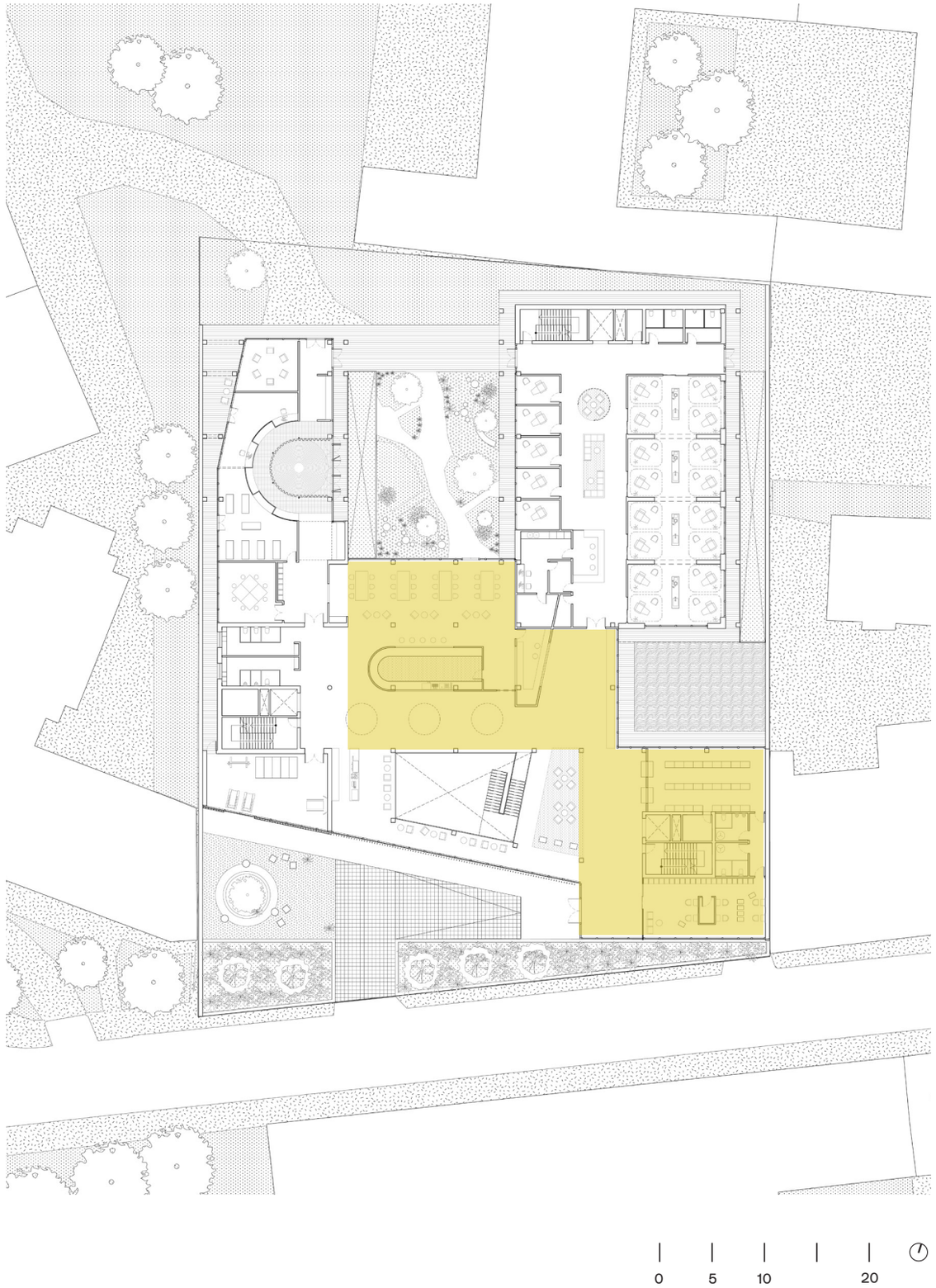
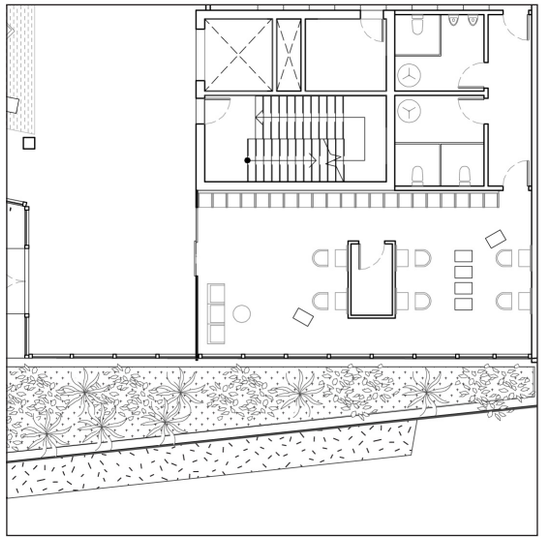
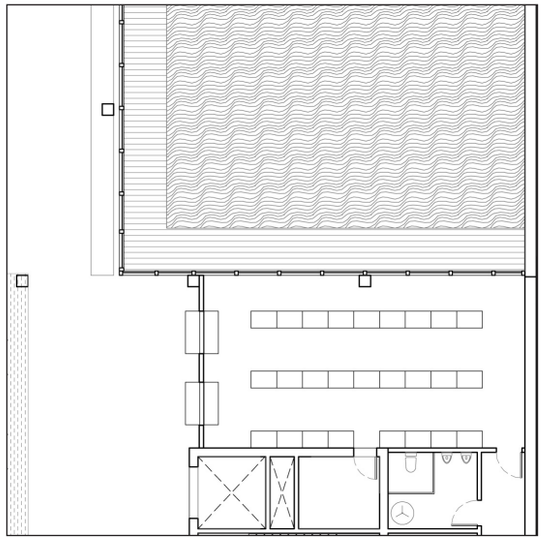

CARE
CURE
ADMIN
RESEARCH
0
5
10
20

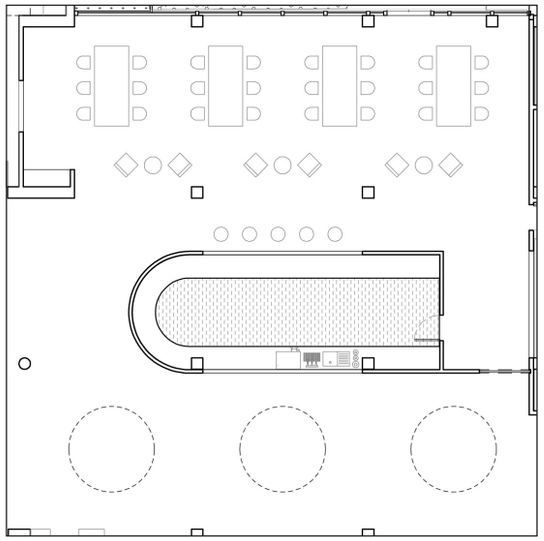




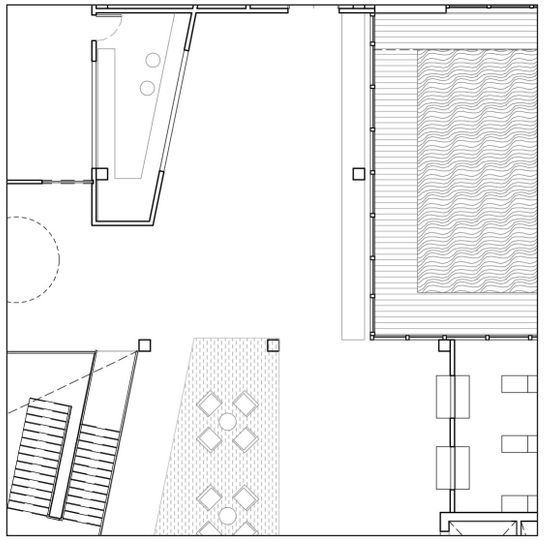
Hair Center



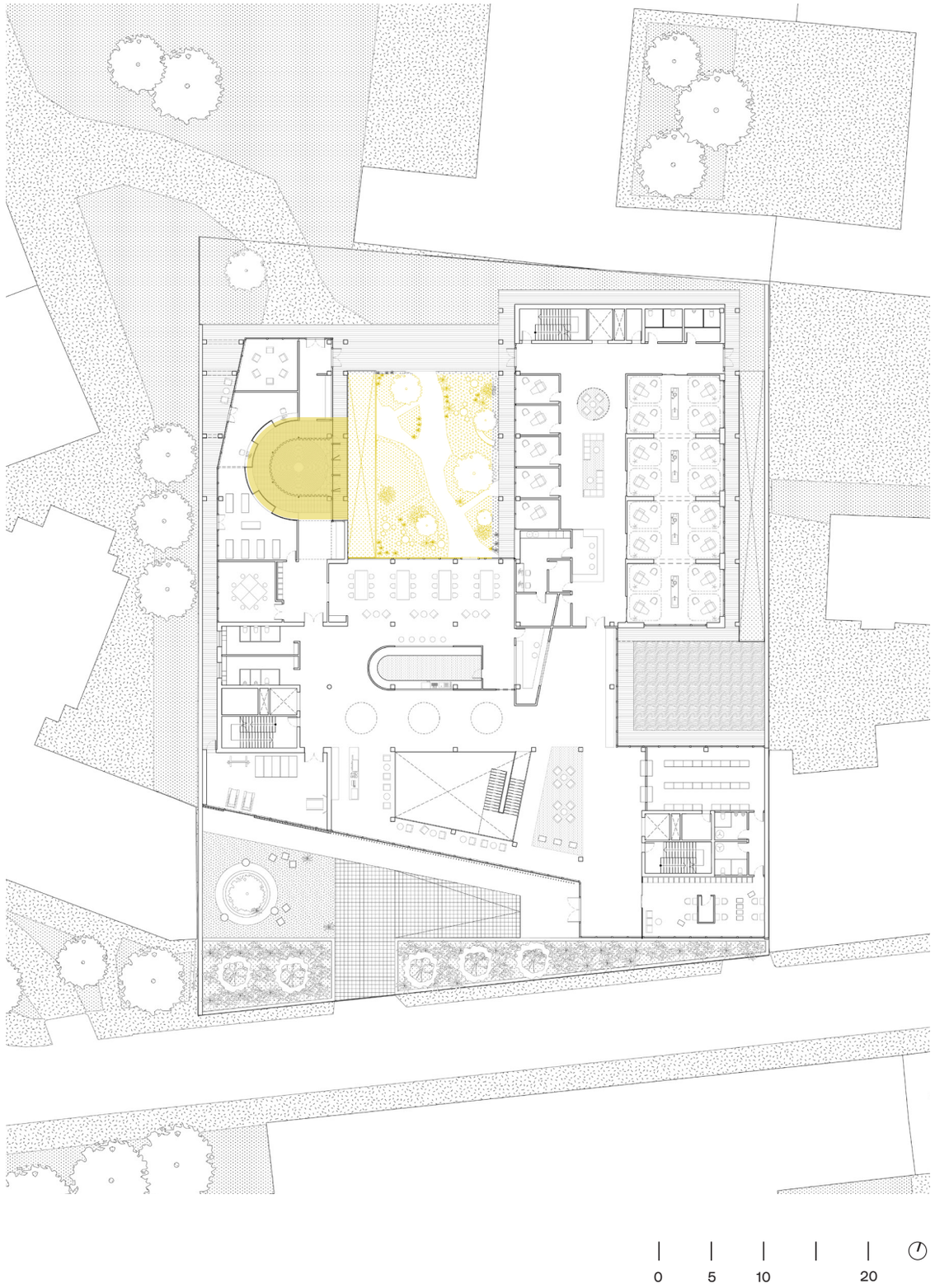
Pharmacy



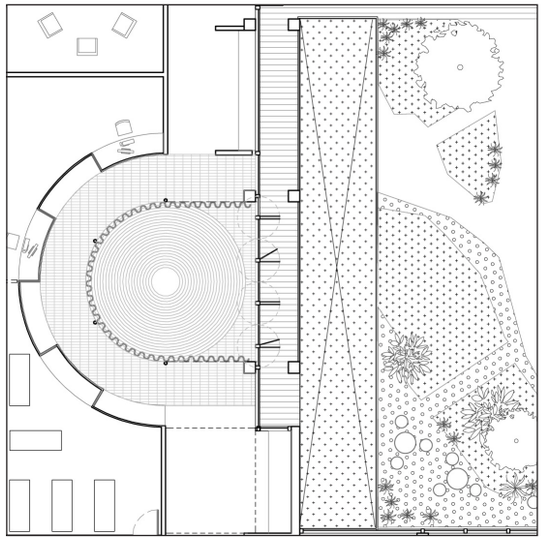
Cafeteria - Restaurant



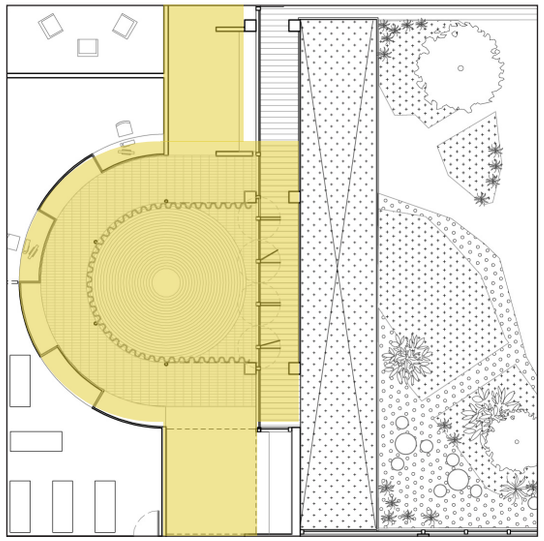
Reception



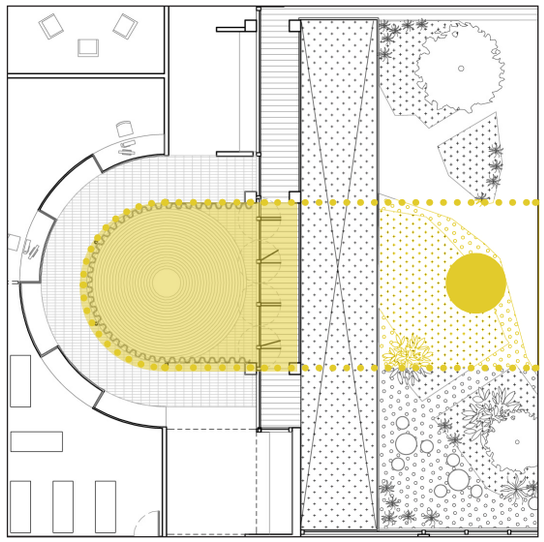
Ground Floor Plan



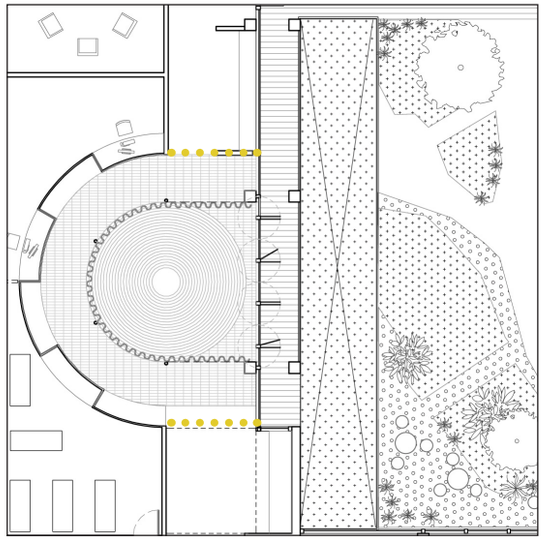
Adaptable Care “Living Room”



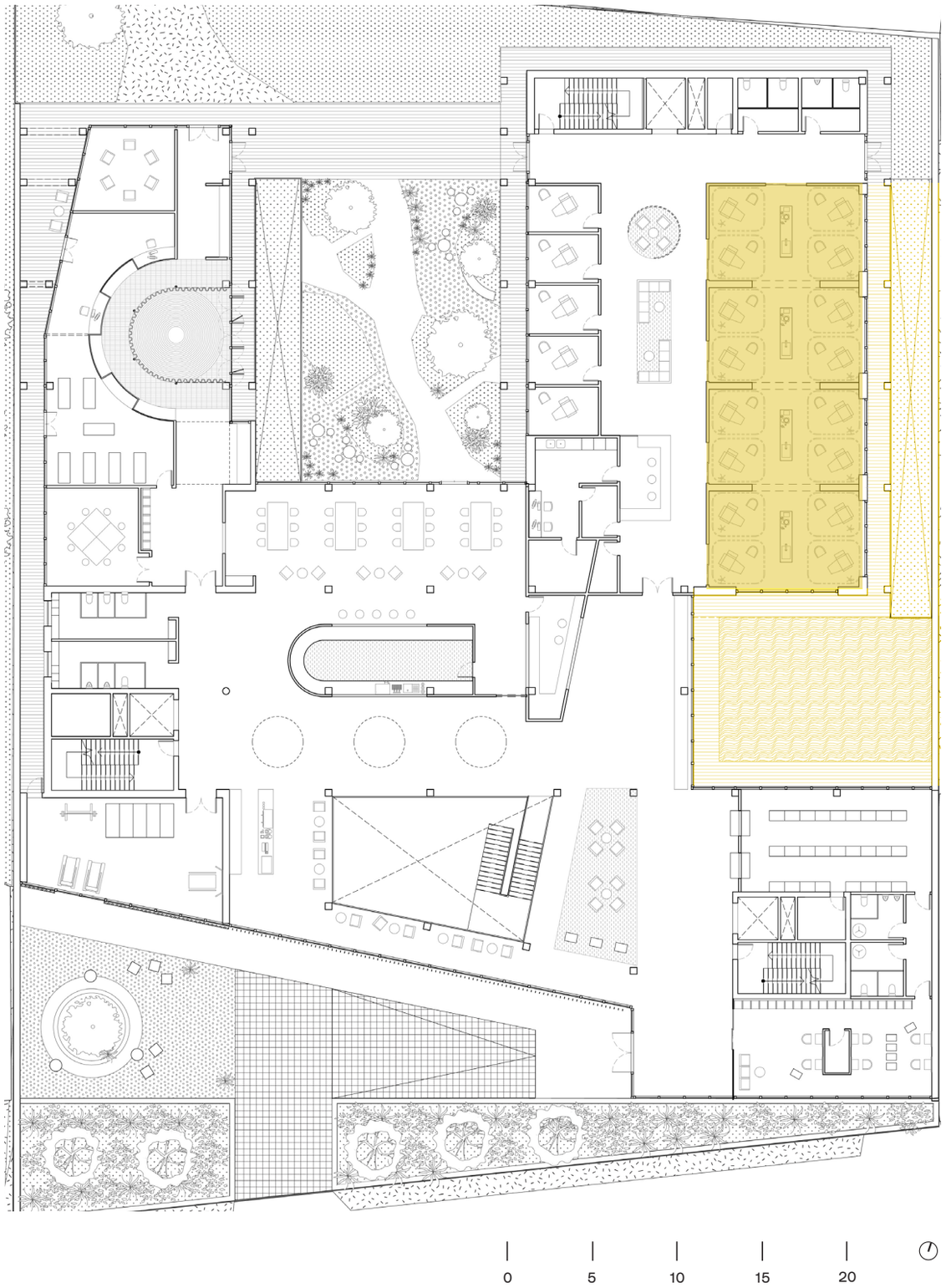
Scenario 1: Open door, open curtain
Social corridor



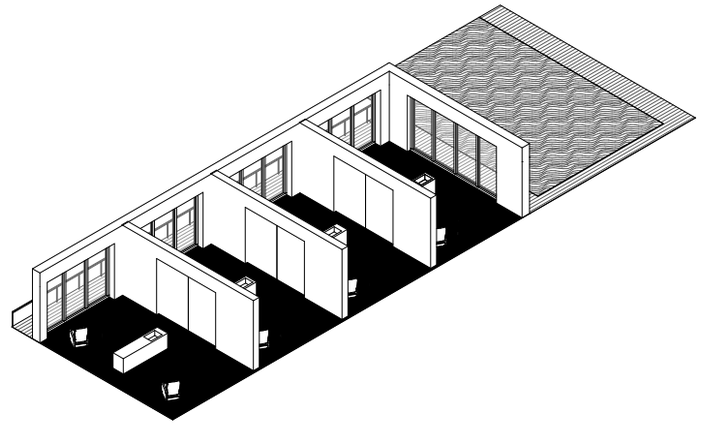
Scenario 2: Open door, drawn curtain
Meditation Room



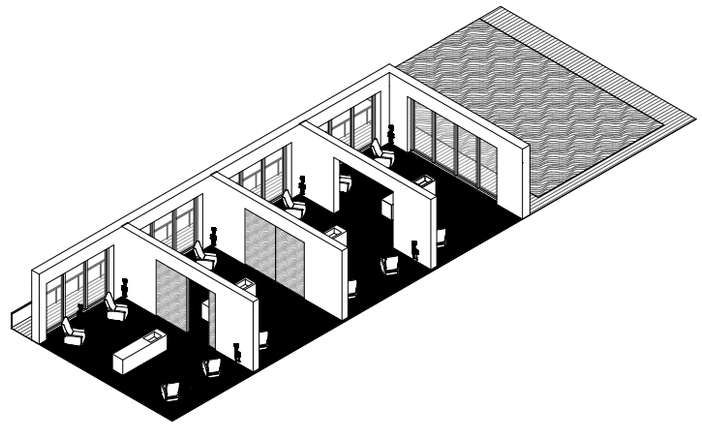
Scenario 3: Closed door, open curtain
Yoga Session - Group Therapy



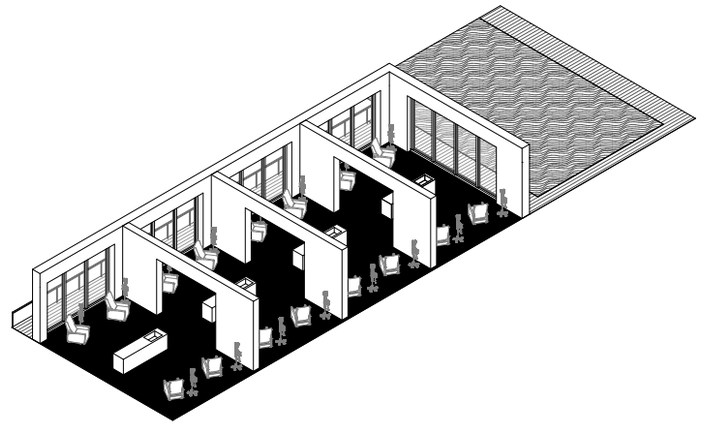
Chemotherapy S



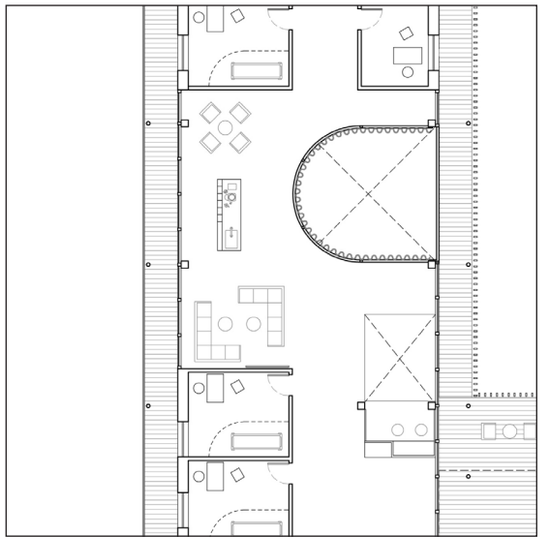
Chemotherapy M



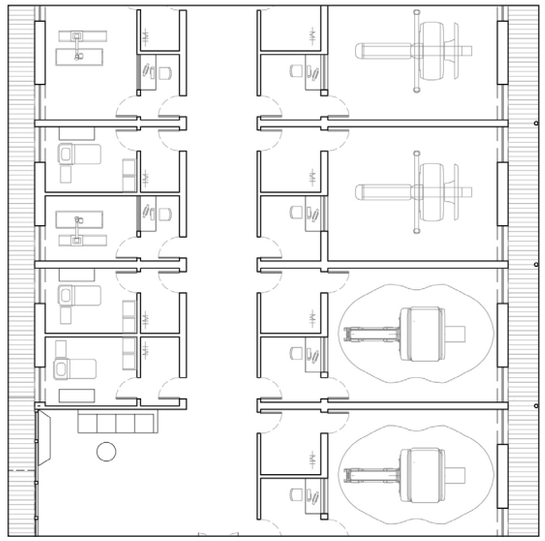
Chemotherapy L



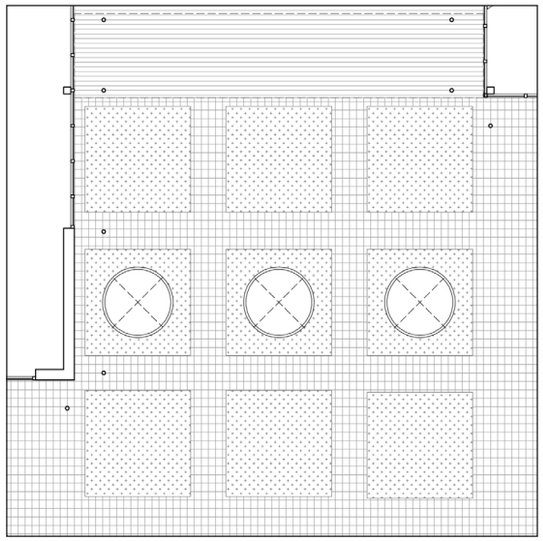
First Floor Plan



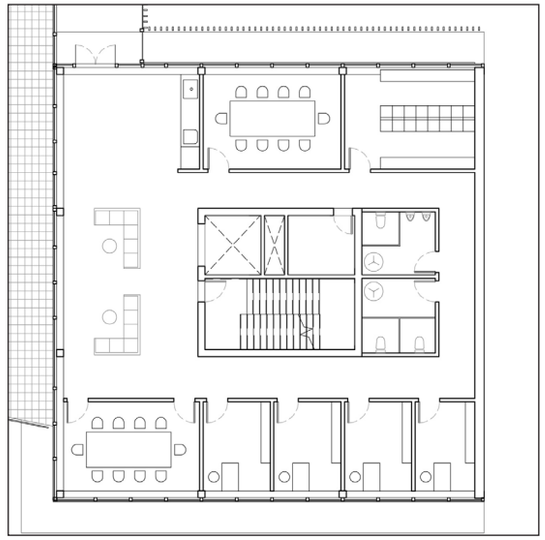
Examination Rooms and Waiting Lounge



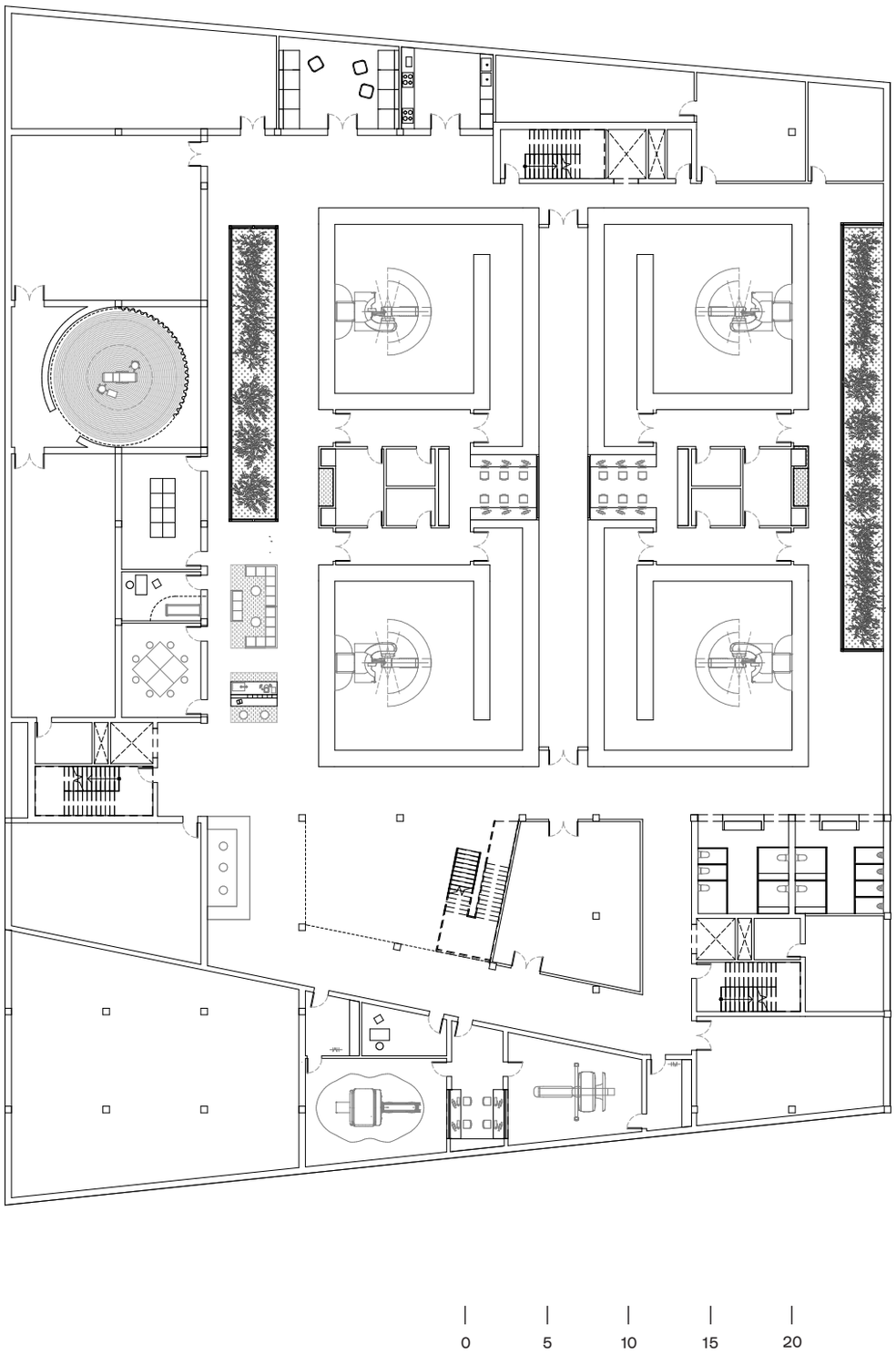
Imaging & Diagnostics



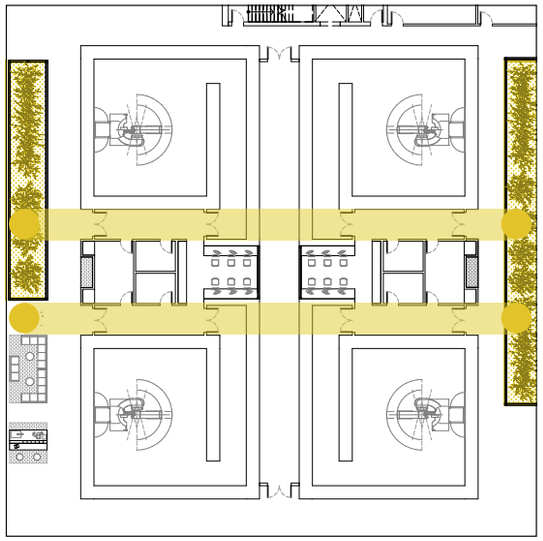
Shared Patio Flower Garden



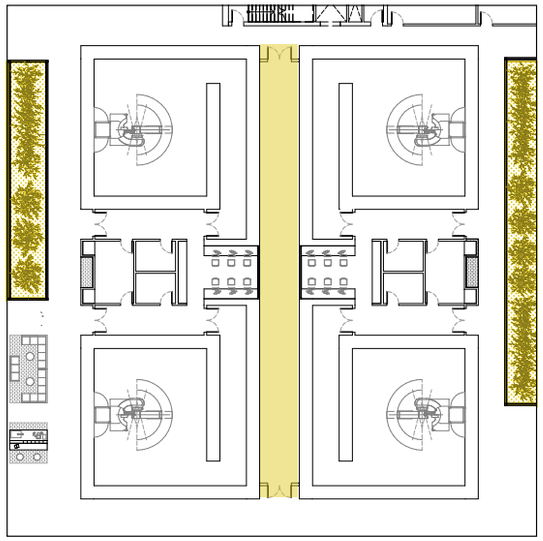
Staff areas



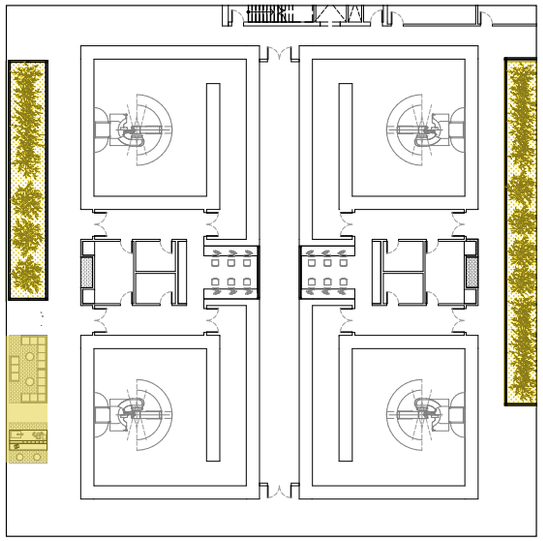
First Floor Plan



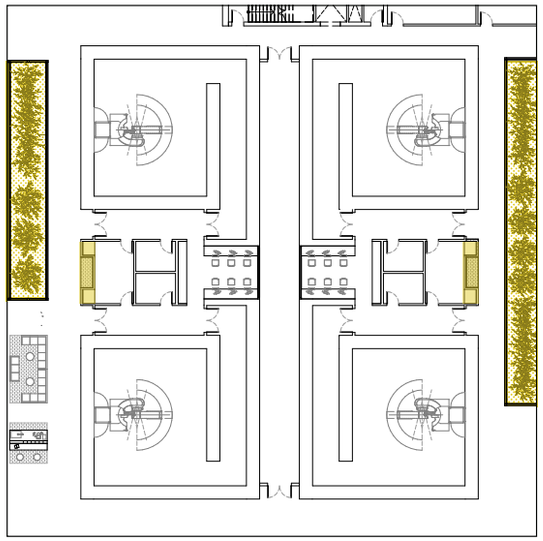
Patients Corridor



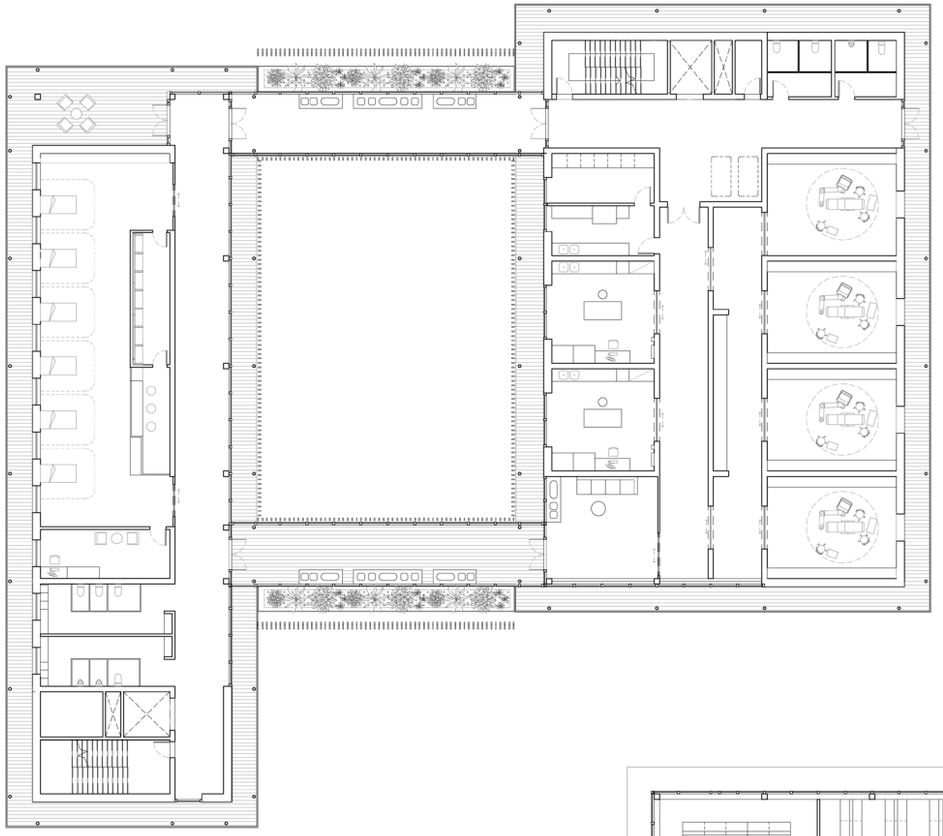
Staff Corridor

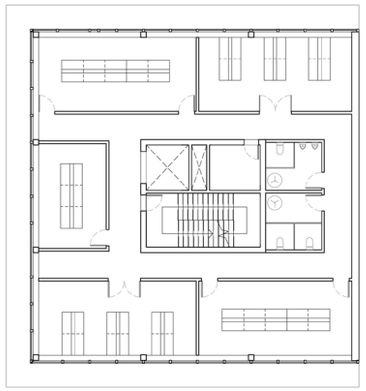


Caregiver Waiting Lounge and
Refreshment Bar



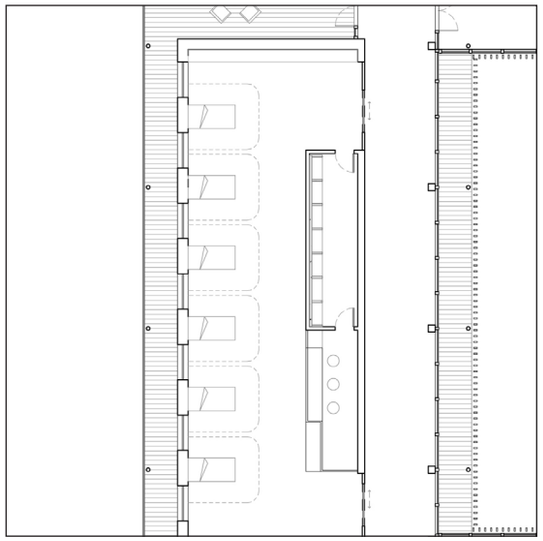
Niche for pause



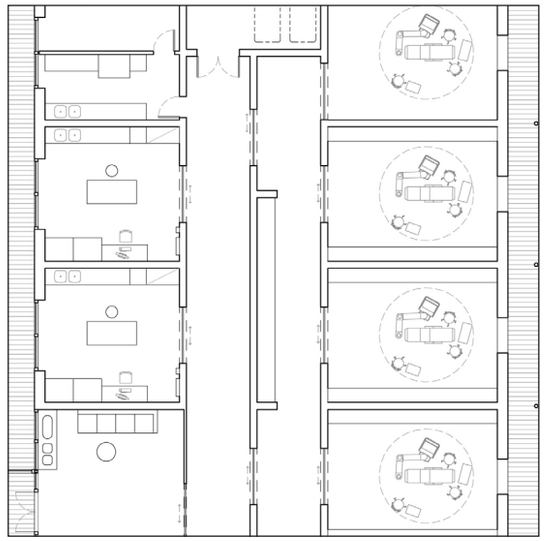


0 5 10 15 20

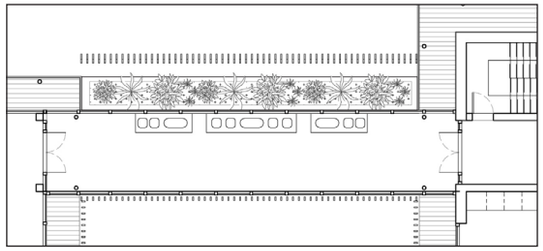
Second Floor Plan

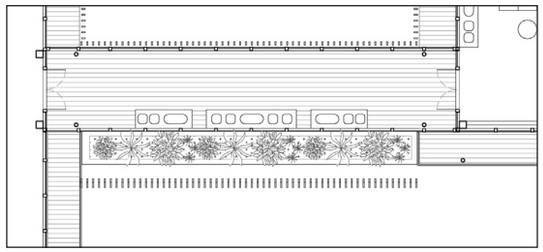


ICU

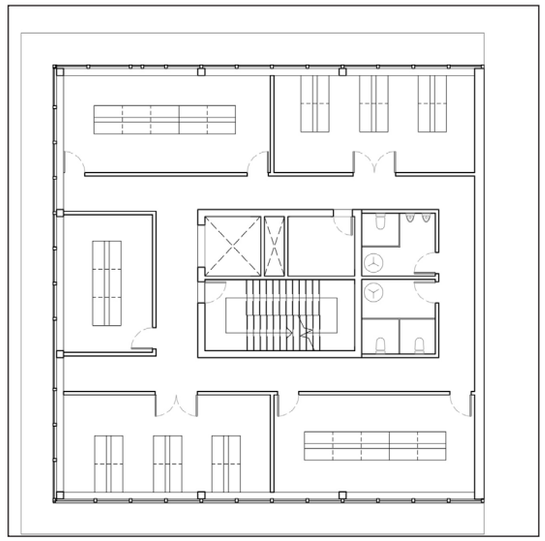


Day Surgery - Operating Theatres

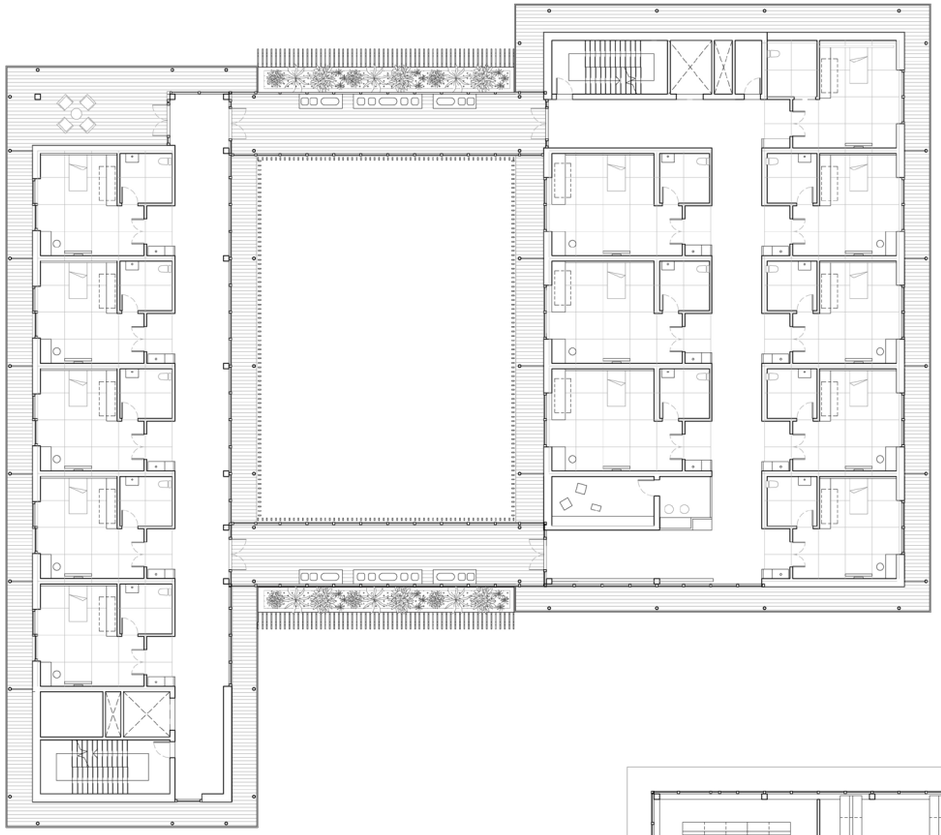


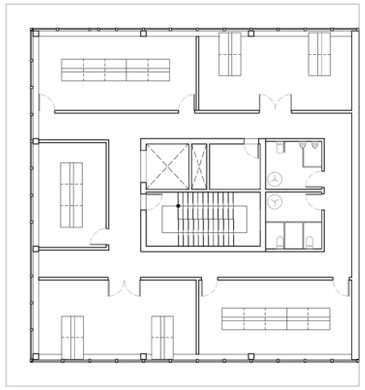


Passage



Laboratories





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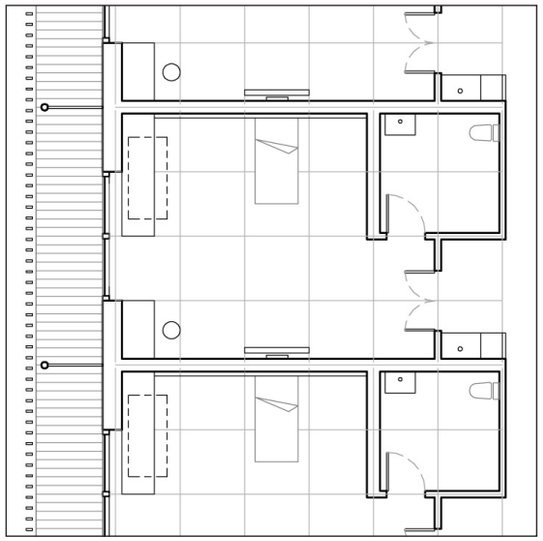
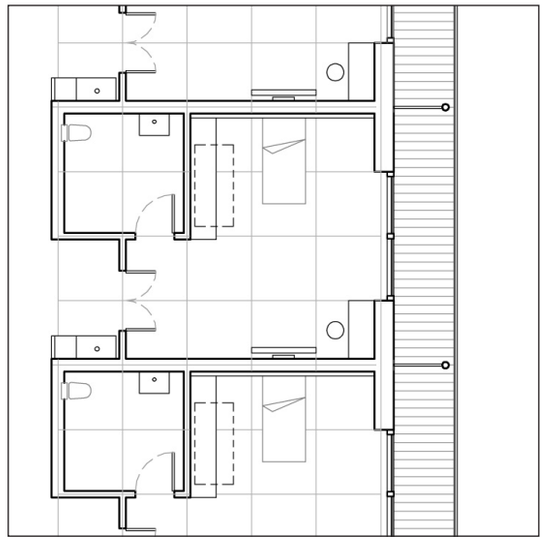
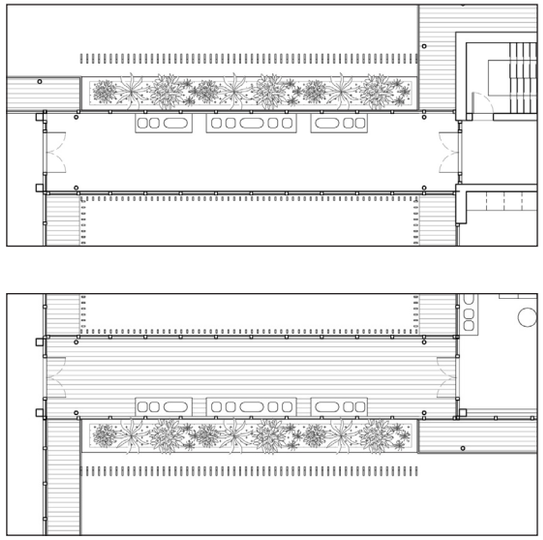
Third - Fourth Floor Plan



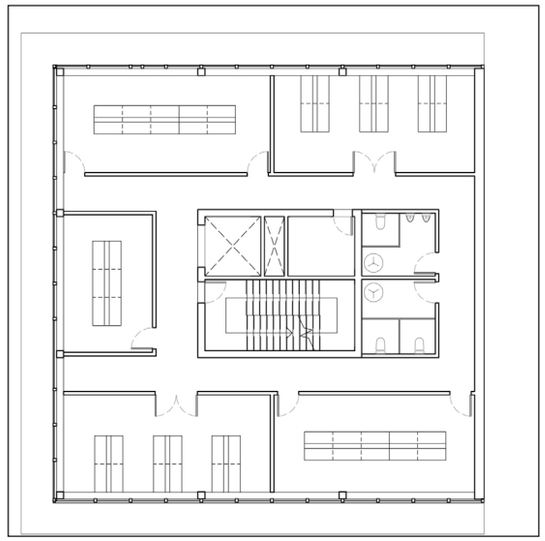
Patient Room M
Grid of 1.5 meter (wheelchair radius)



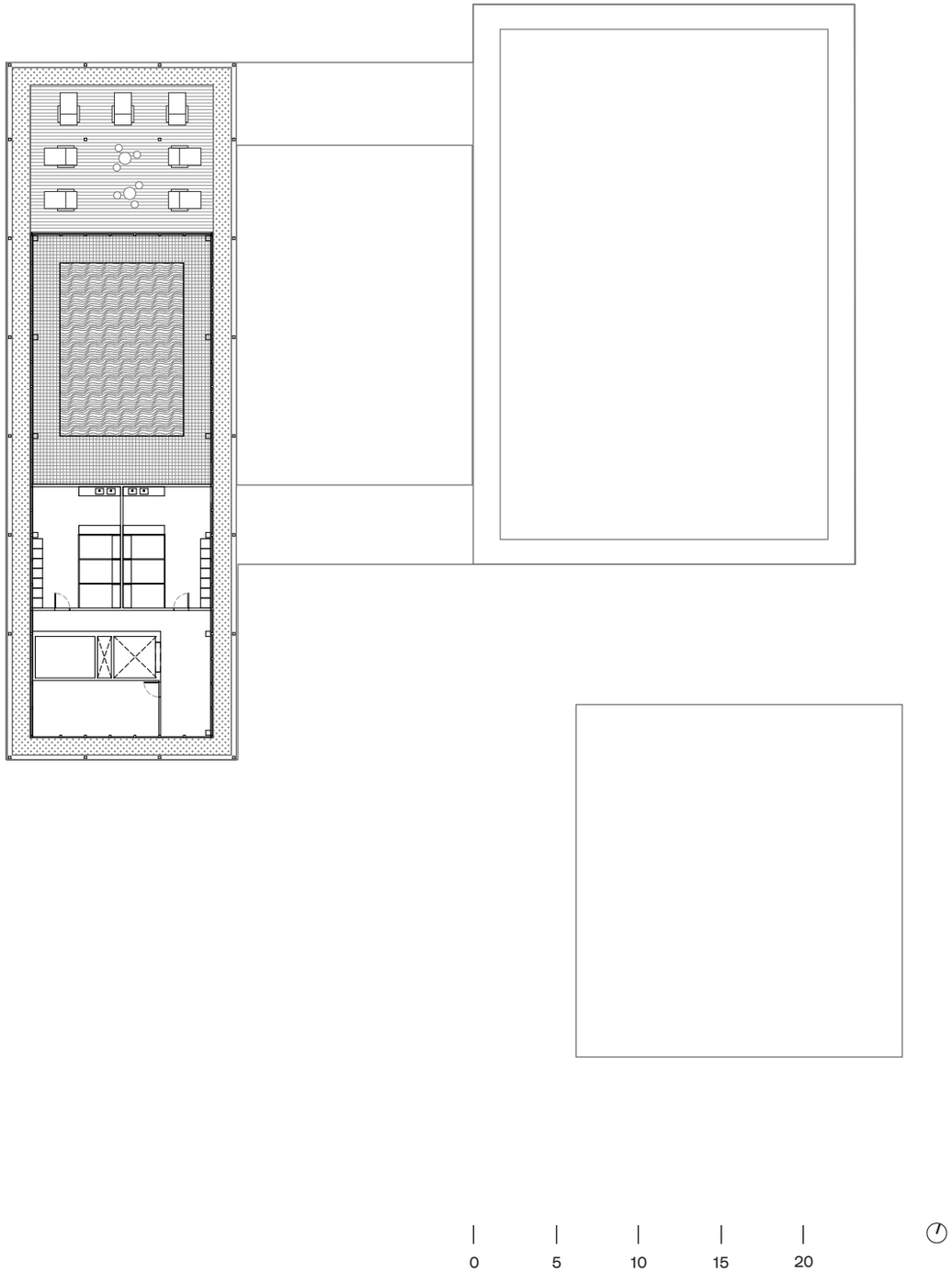
Patient Room S -
Grid of 1.5 meter (wheelchair radius)



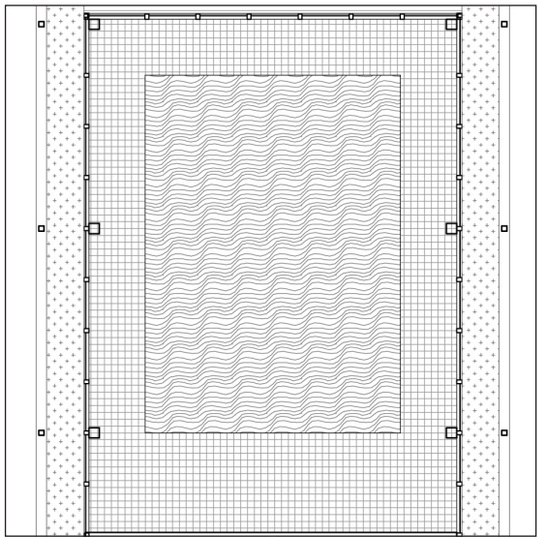
Passage



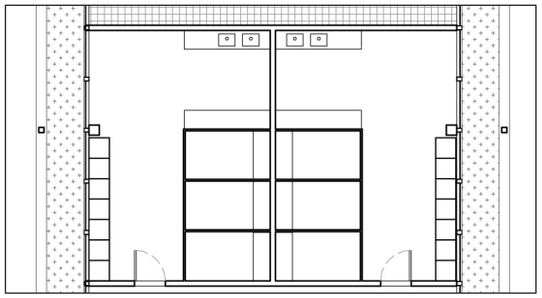
Laboratories



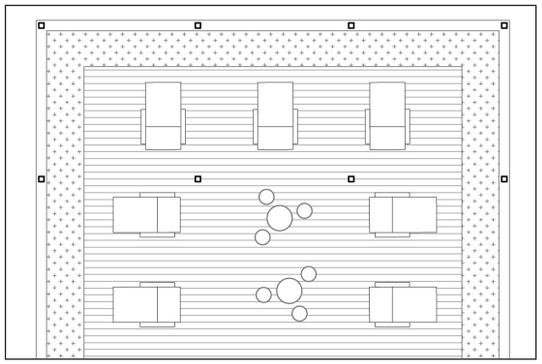
Fifth Floor Plan



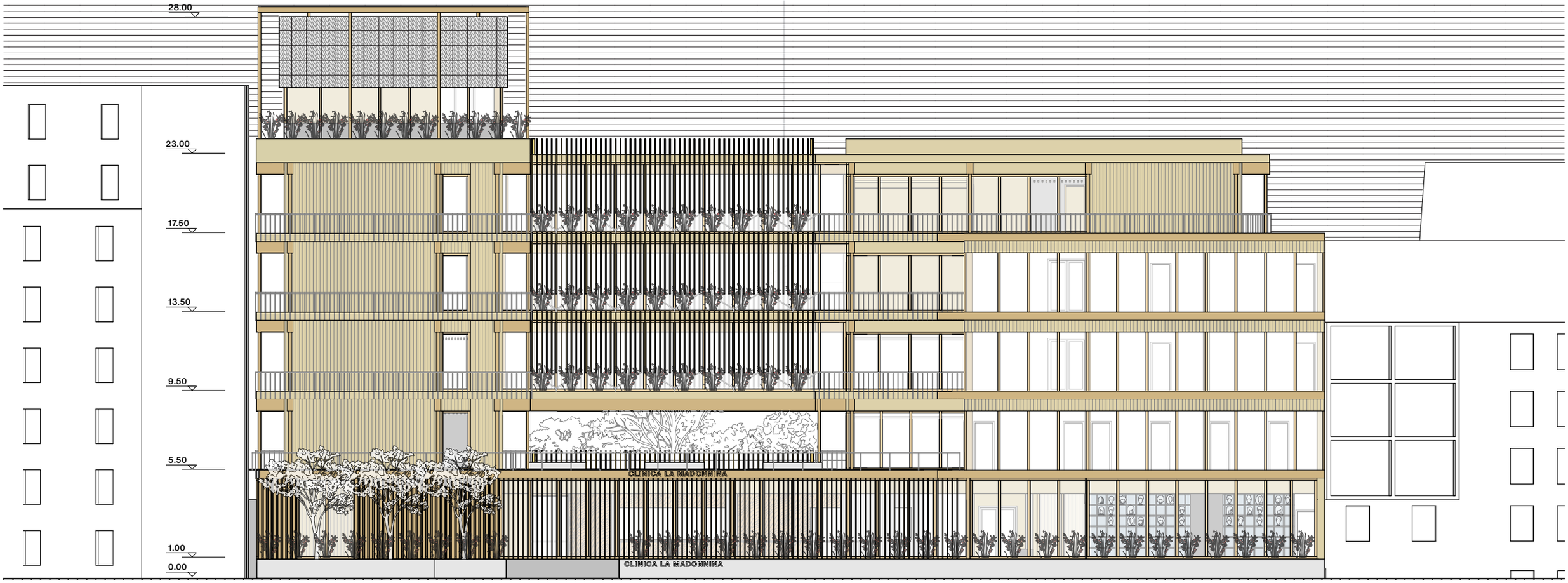
Hydrotherapy Pool

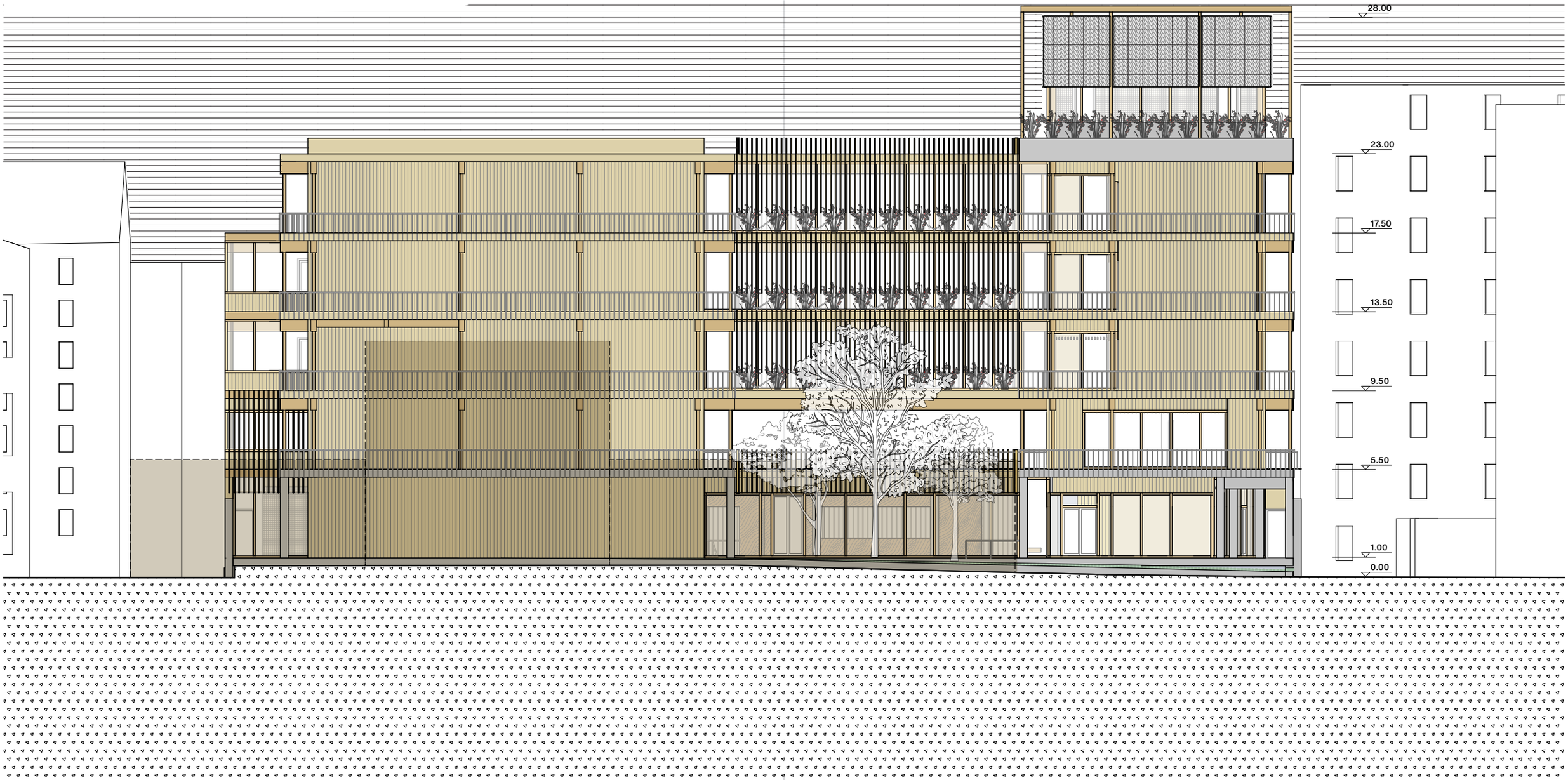


Vestiaire



Patio


28.00
23.00
17.50
13.50
9.50
5.50
1.00
0.00
CLINICA LA MADONNINA
CLINICA LA MADONNINA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17.50
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9.50
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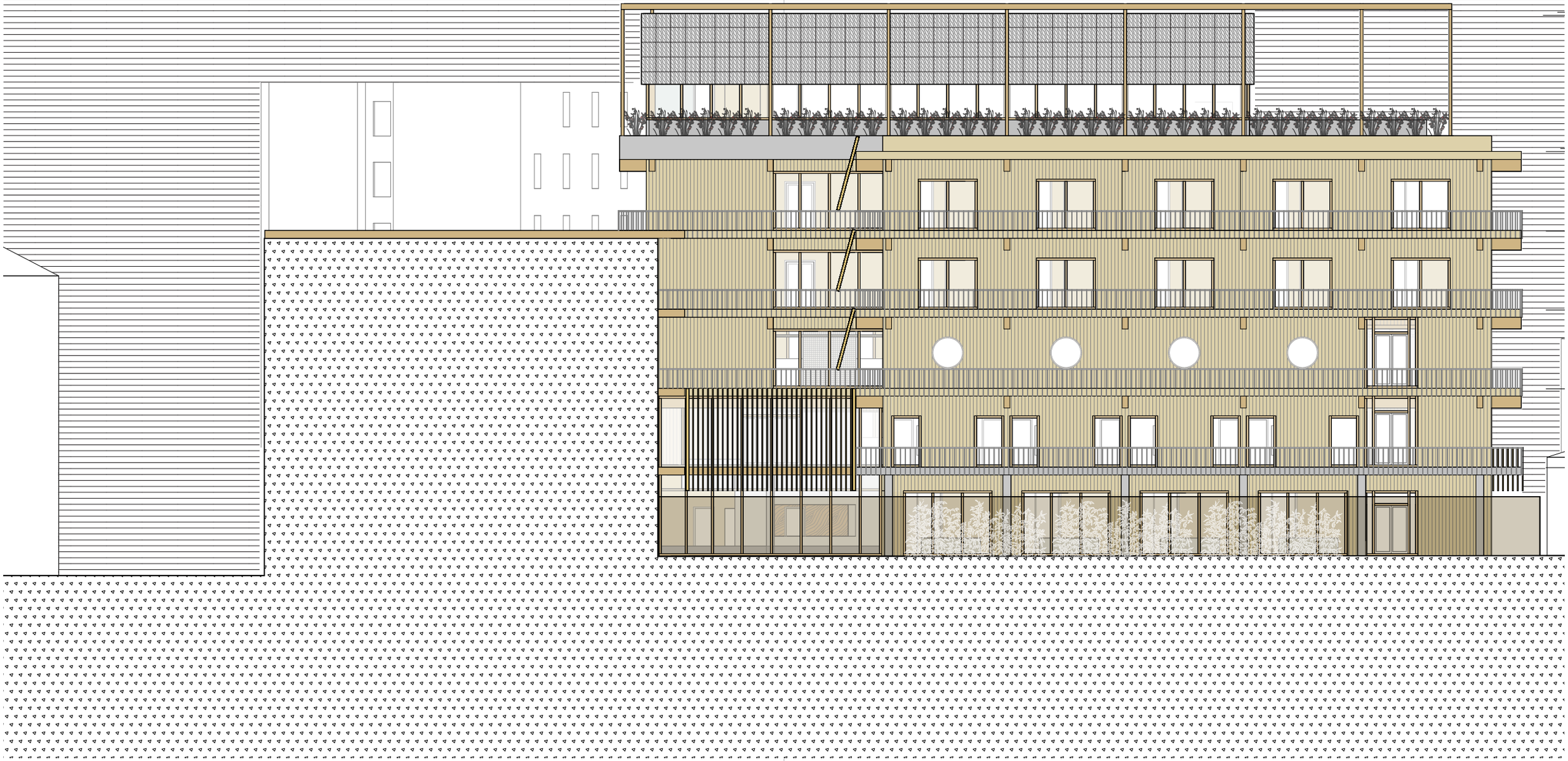
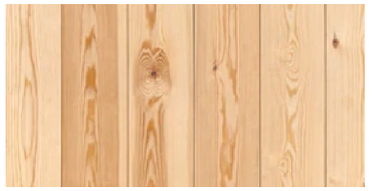
1.00
0.00




28.00
23.00
17.50
13.50
9.50
5.50
1.00
0.00

Western Red cedar
Frames and trims



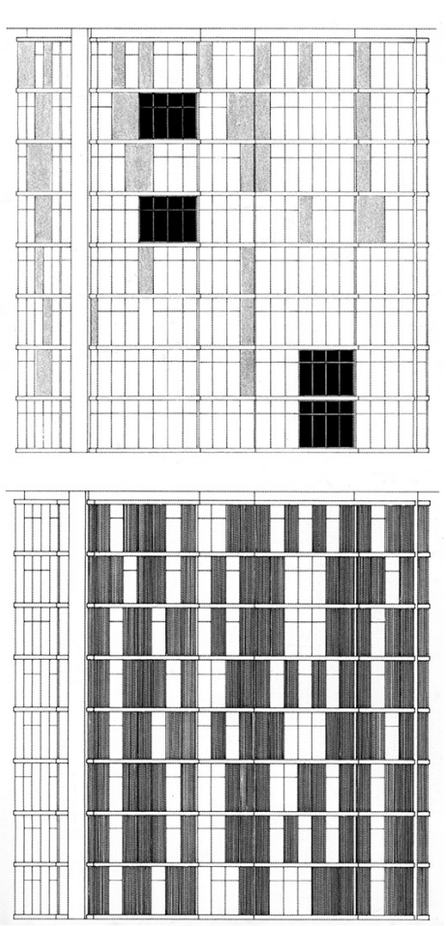
Thermally treated pine
Façade lamellas

Light Swiss maple
Interior flooring and ceiling

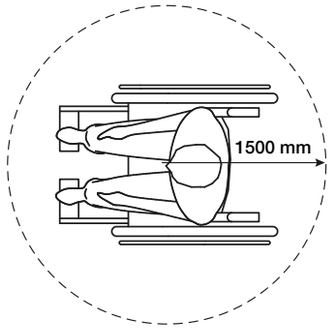
Stamped concrete
Linac Bunker, cores,
ground floor structure

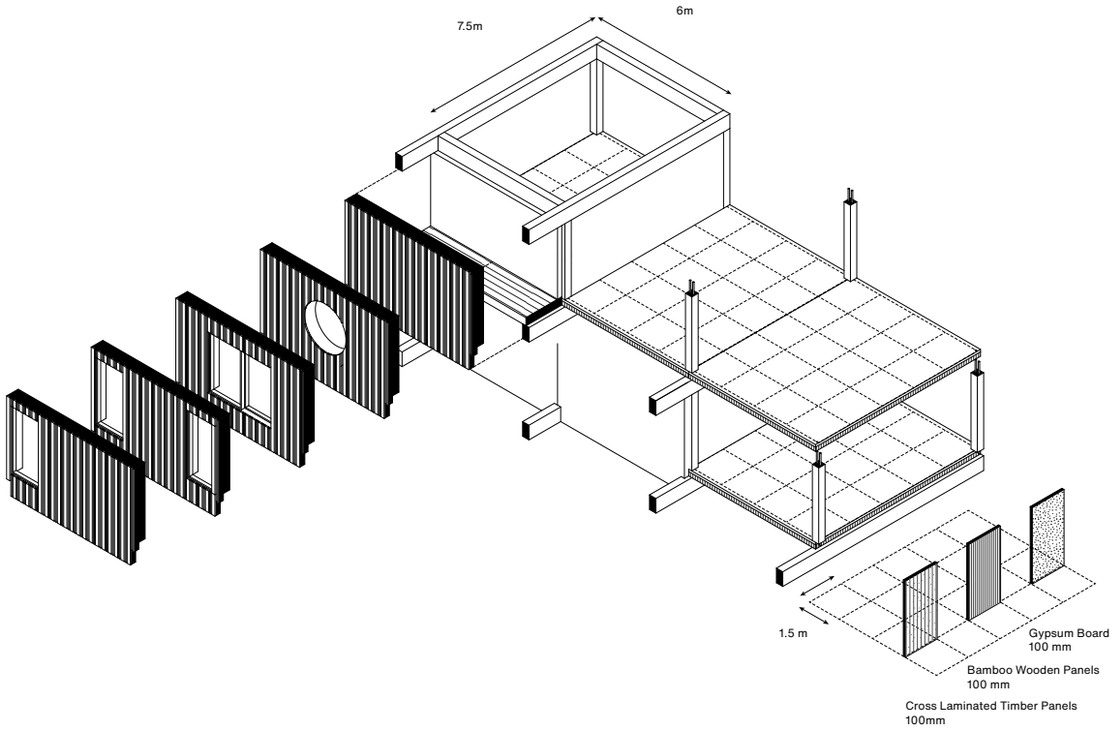
Modular Mycellium Panels
with biopolymer coatings

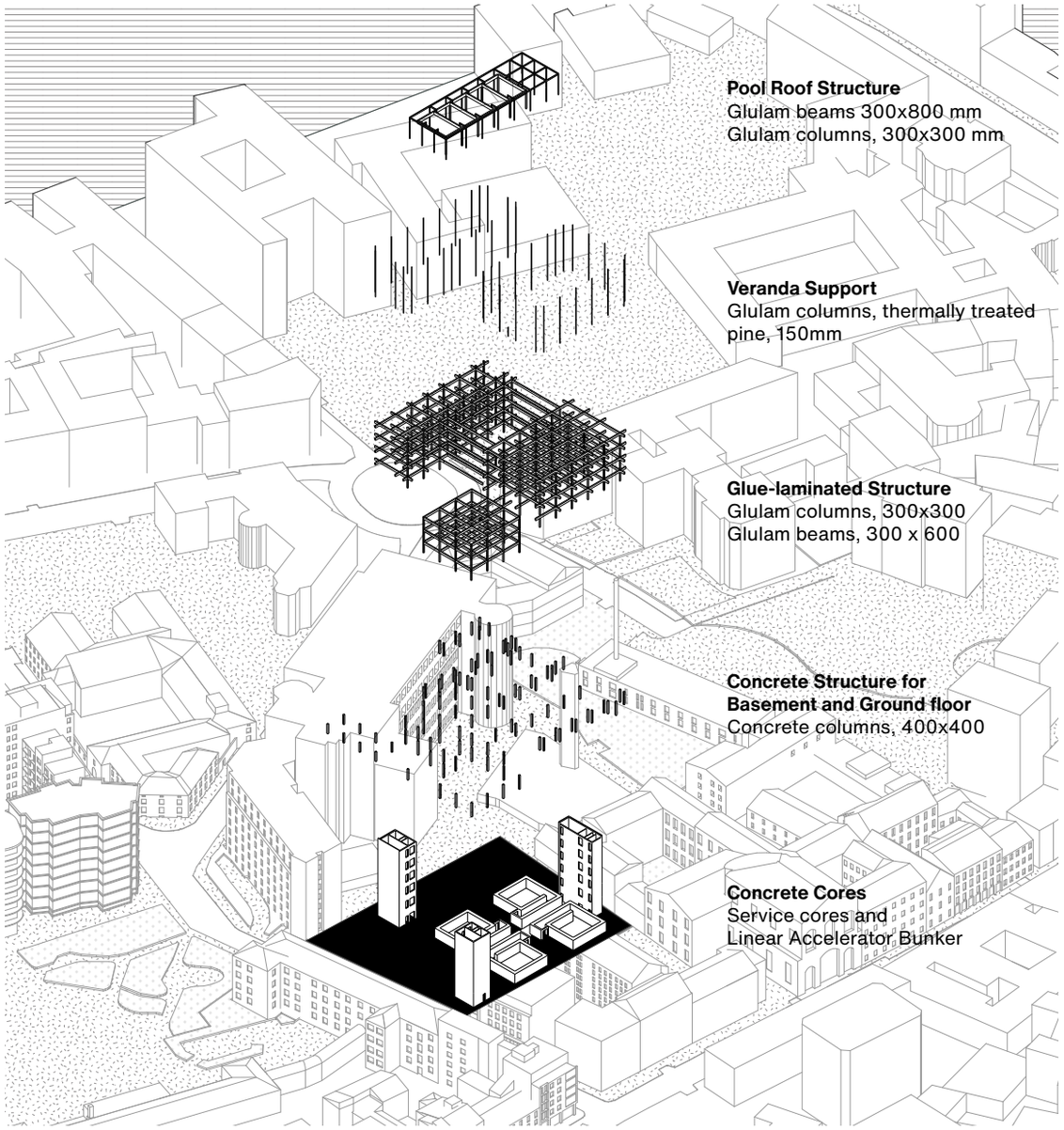
Different materialization for bathhouse to accent care program over cure functions.

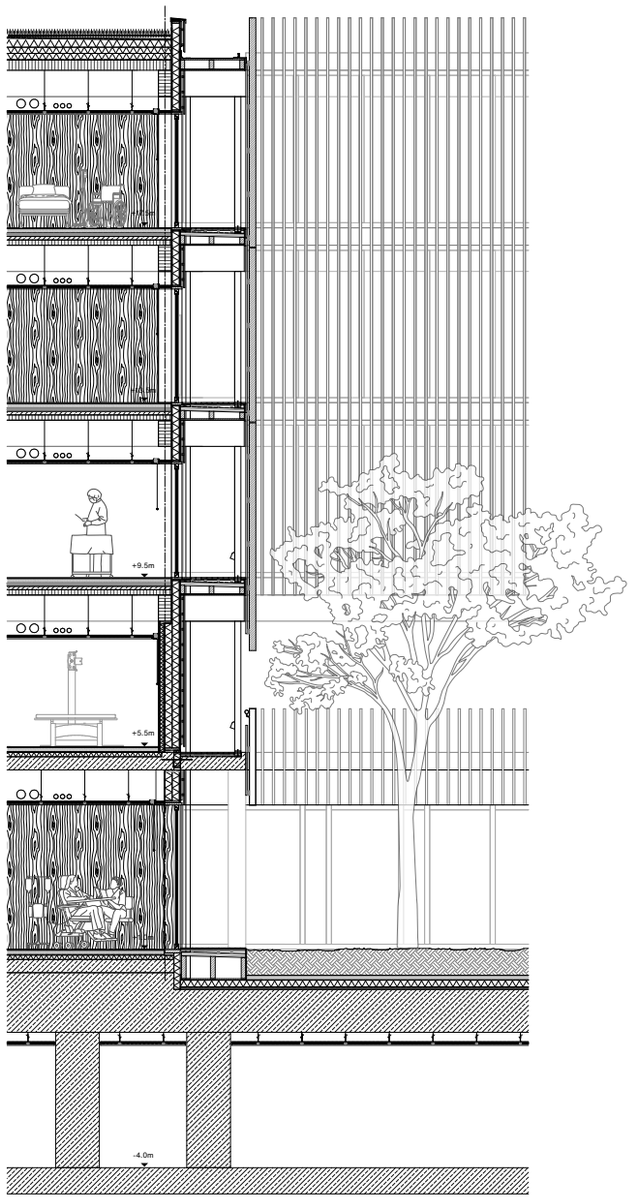


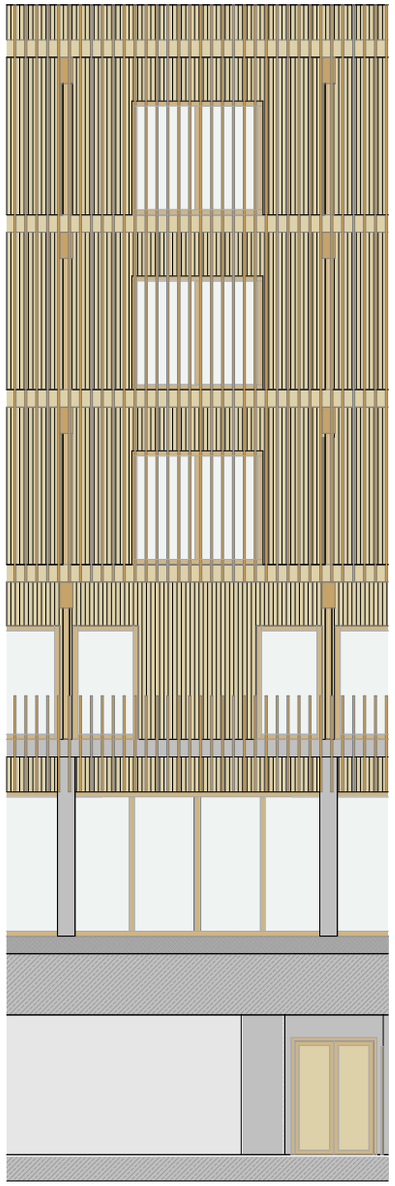
Prefabrication of wooden slatted panels, Via Quadronno,
by architects Angelo Mangiarotti and Bruno Morassutti

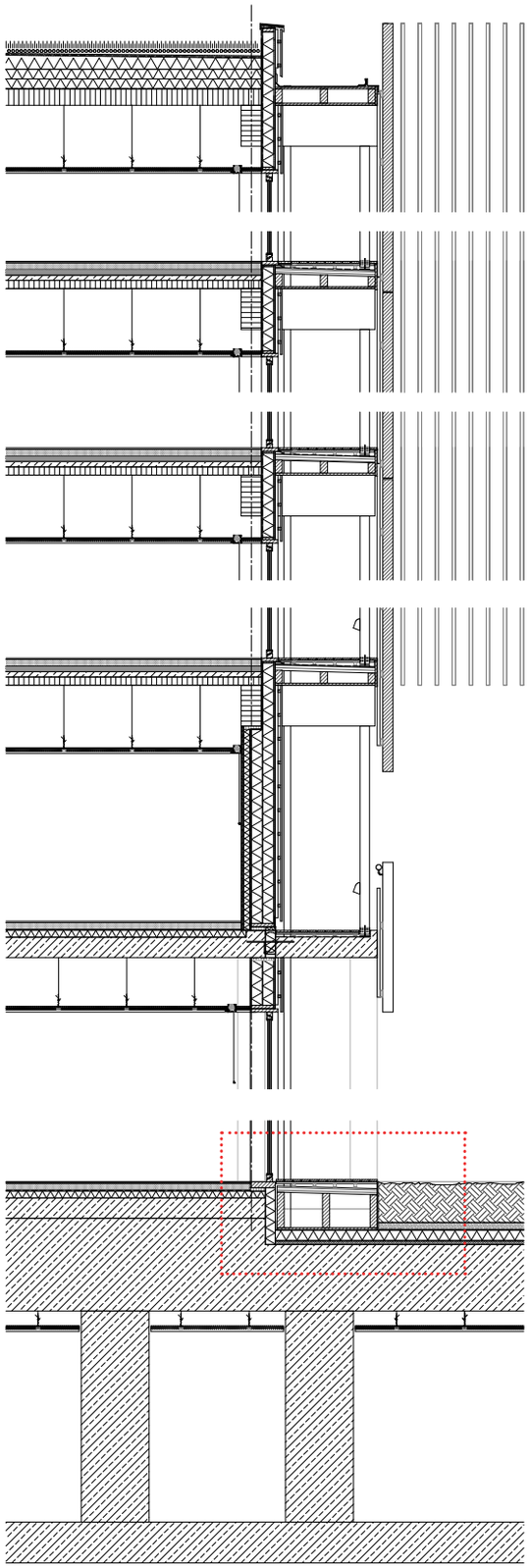

1500 mm


7.5m
6m
1.5 m
Gypsum Board
100 mm
Bamboo Wooden Panels
100 mm
Cross Laminated Timber Panels
100mm


Pool Roof Structure
Glulam beams 300x800 mm
Glulam columns, 300x300 mm
Veranda Support
Glulam columns, thermally treated pine, 150mm
Glue-laminated Structure
Glulam columns, 300x300
Glulam beams, 300 x 600
Concrete Structure for Basement and Ground floor
Concrete columns, 400x400
Concrete Cores
Service cores and
Linear Accelerator Bunker


+9.5m
+5.5m
-4.0m



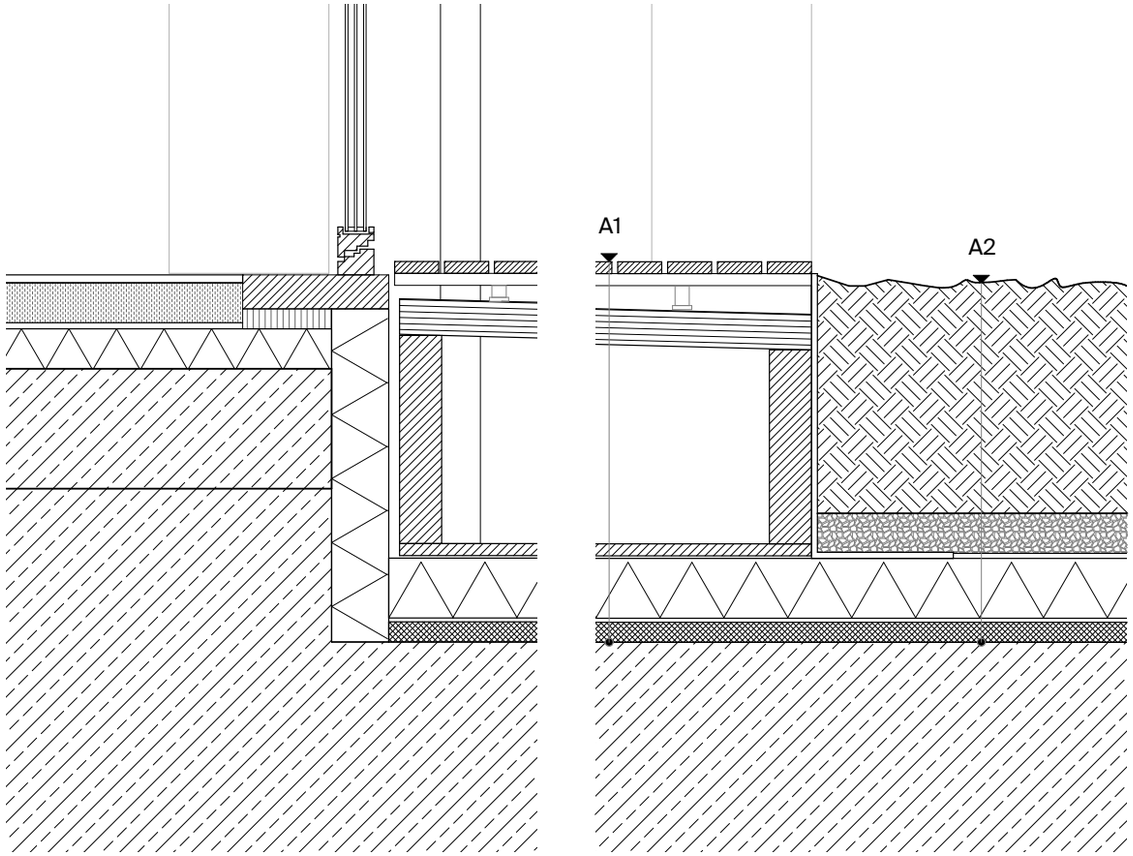


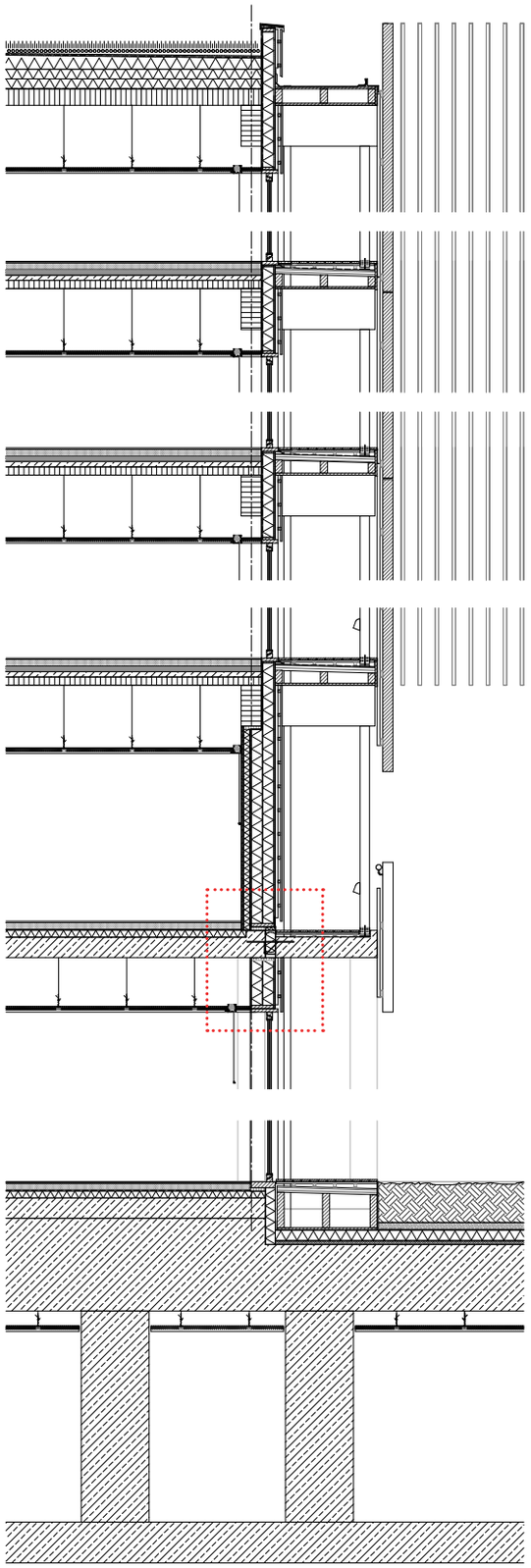
A1

Boards, silver fir, pressure-treated, planed/sanded 30 mm, battens 30 mm, mitered blocks 50– 80 mm
Elastomer bed (impact sound) 20 mm
Waterproofing, plastic membrane, mechanically fastened
Glued laminated board in gradient 1.5 %
Timber blocks 50– 80 mm
Timber boarding, oak 20 mm
Geotextile membrane
Rigid thermal insulation, 150 mm
Waterproofing membrane
Protection screed 50 mm

A2

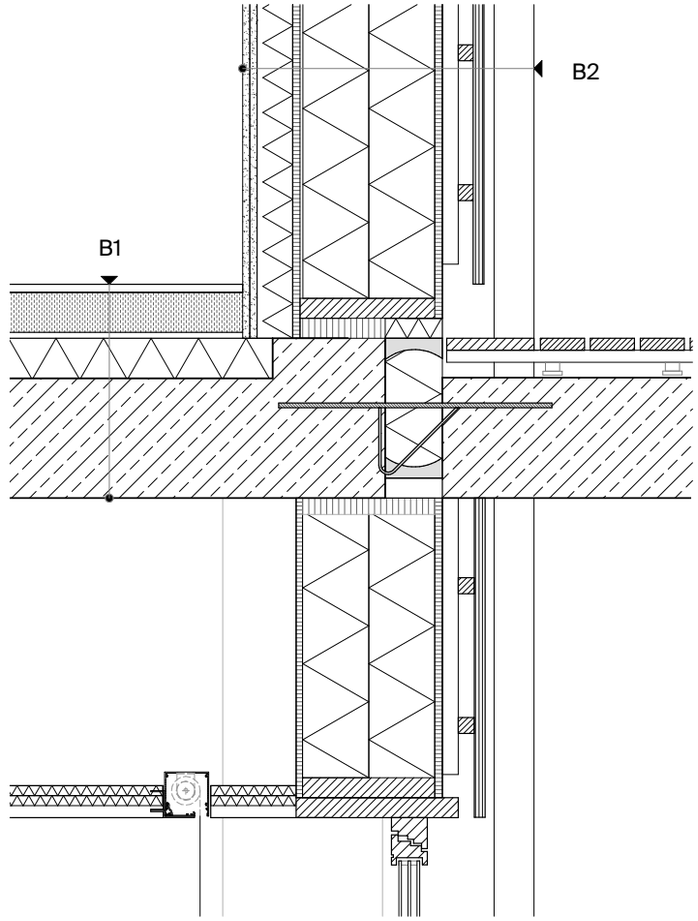
Topsoil, engineered soil 1000 mm
Drainage layer, gravel, 100 mm
Geotextile membrane
Rigid thermal insulation, 150 mm
Waterproofing membrane
Protection screed 50 mm

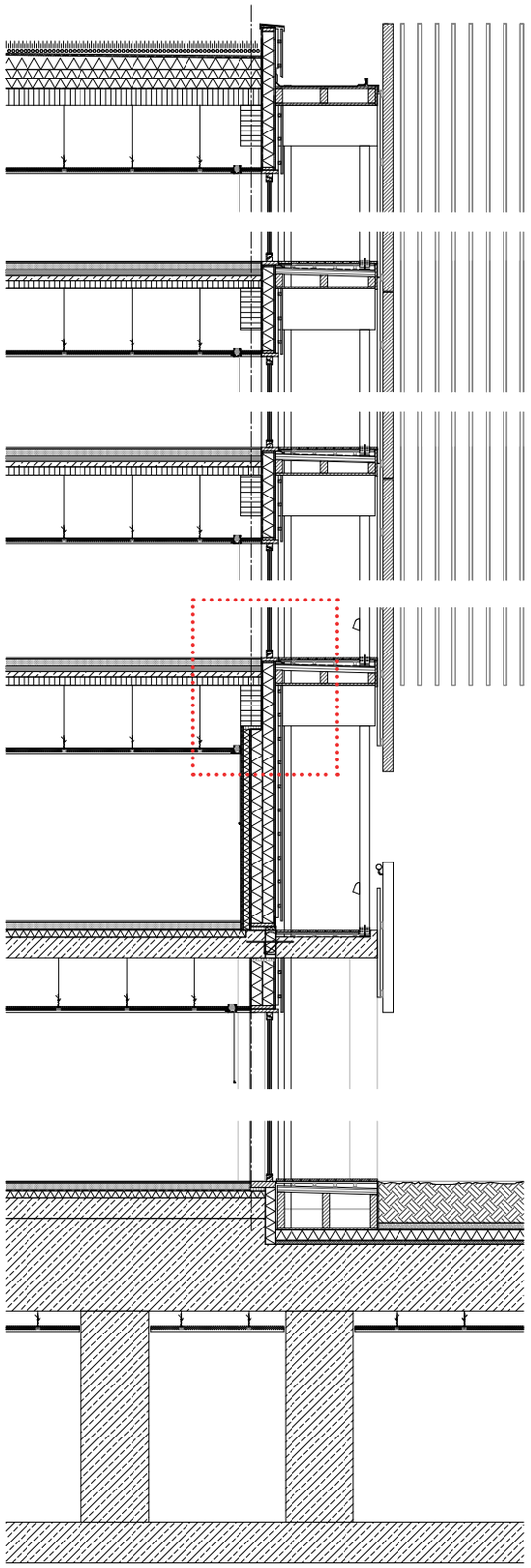




B1 - FLOOR
Flooring, linoleum, 20mm
Anhydride screed, 50 mm
PE foil separating layer
Mineral fibre footfall sound insulation, 100 mm
Concrete slab 100mm
Schöck Isokorb® thermal break
Installation cavity 710mm under slab
Suspended ceiling:
Suspended battens with spring clamps, 25 mm
Cavity insulation between battens, 50 mm
Wood panel, 40mm

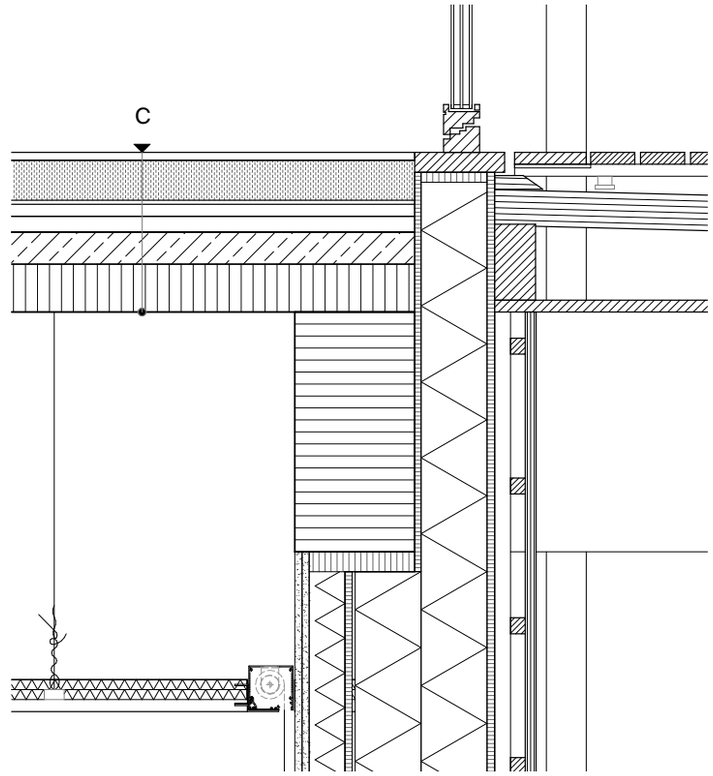
B2 - FACADE
Alternate notches boards, thermally treated pine wood. 30 mm
Horizontal battens 40/60 mm
Vertical battens 40/60 mm
Chipboard, cement-bonded with glued joints 18 mm
Frame construction, glulam timber 59/340 mm, inbetween thermal insulation, mineral wool 340 mm
Air resistance level, vapour barrier
OSB panel with glued joints (vapour barrier) 18 mm
Thermal insulation, mineral wool (installation) 75 mm
Interior finish:
Surgery: Plasterboard, 2x 19mm
Else: Parapet backboard, chipboard, oak, veneered 19 mm

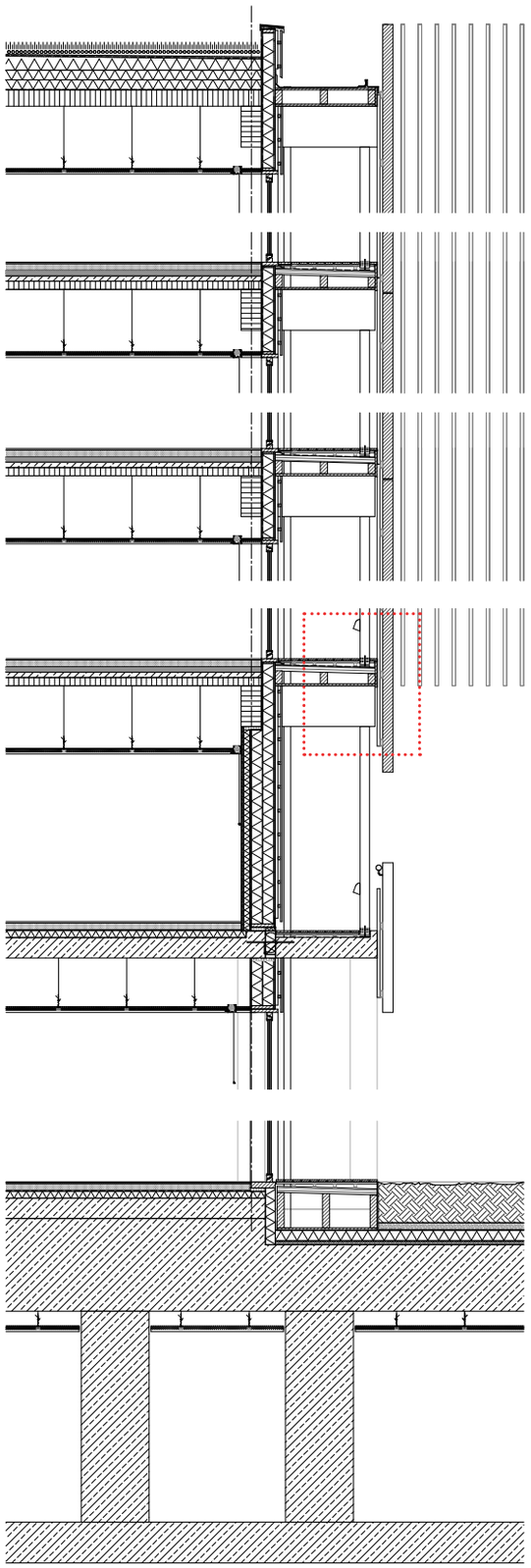




C - FLOOR (COMPOSITE CONCRETE-TIMBER)

Flooring, parquet, pine, 20mm
Anhydride screed, 50 mm
PE foil separating layer
Mineral wool footfall sound insulation, 30 mm
Additional mineral fibre insulation, 40 mm
Prefabricated composite timber-concrete (CTC) ceiling, joined with pincel to glulam structure:
Concrete top layer, 80mm
Dowel laminated timber, C24 120mm
Installation cavity 710mm under slab
Suspended ceiling:
Suspended battens with spring clamps 25 mm
Cavity insulation between battens 50 mm
Acoustic panels, white painted, 40mm



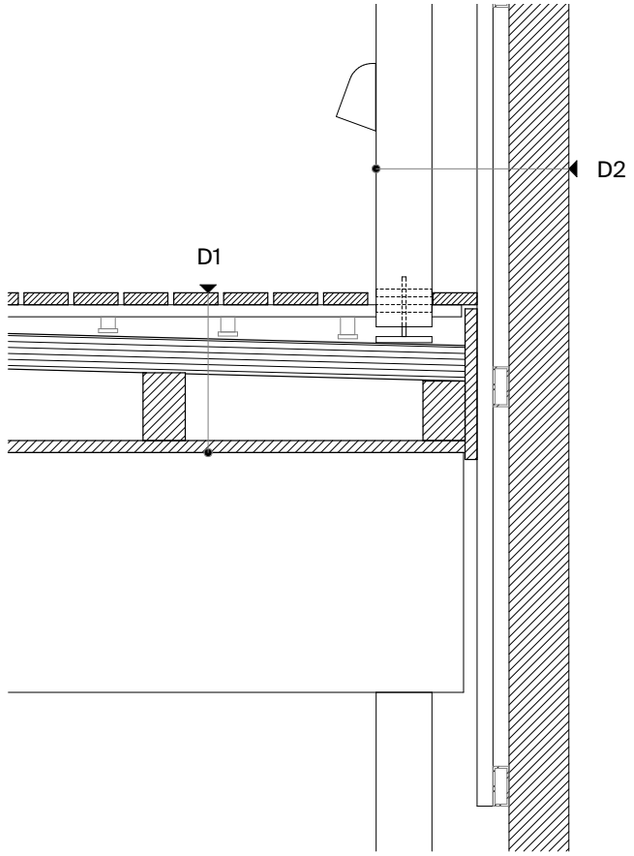


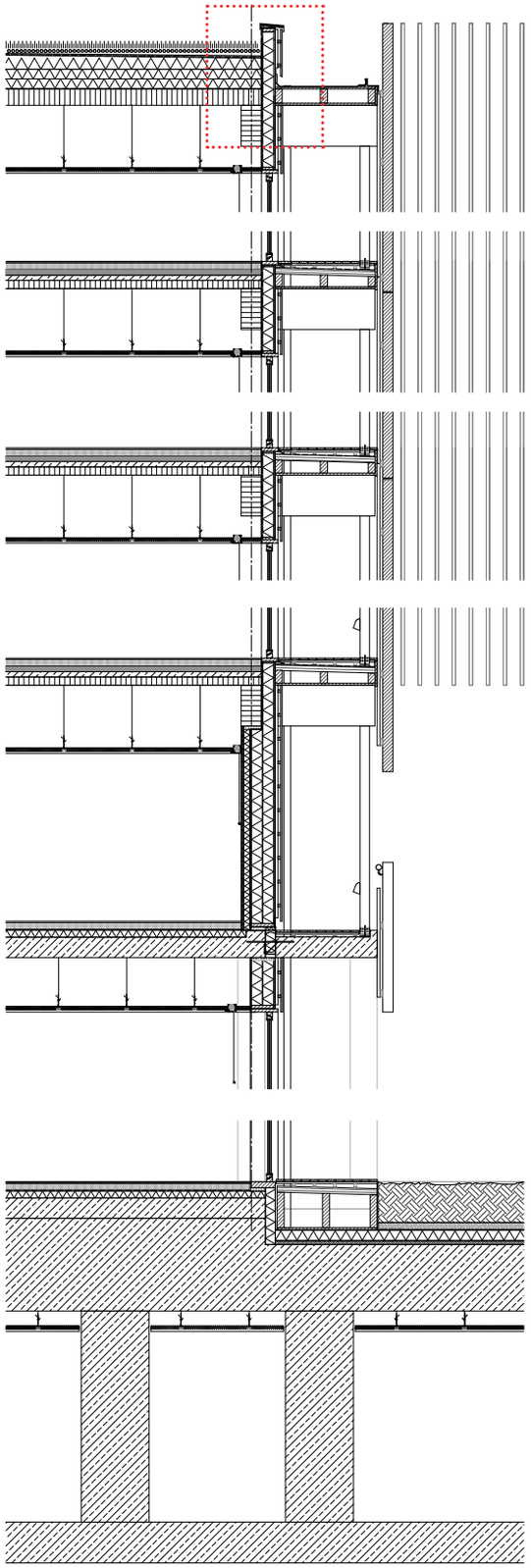
D1 - FLOOR STRUCTURE, VERANDA, 3rd-5th storey

Boards, silver fir, pressure-treated, planed/sanded 30 mm, battens 30 mm, mitered blocks 50– 80 mm
Elastomer bed (impact sound) 20 mm
Waterproofing, plastic membrane, mechanically fastened
Glued laminated board in gradient 1.5 %
Timber boarding, oak 20 mm

D2 - VERTICAL SUPPORT, VERANDA

Vertical wooden slats, motorized control, 150x40mm
Glue-laminated column, round section, thermally treated pine, 150mm, reversible steel knife plate connector.



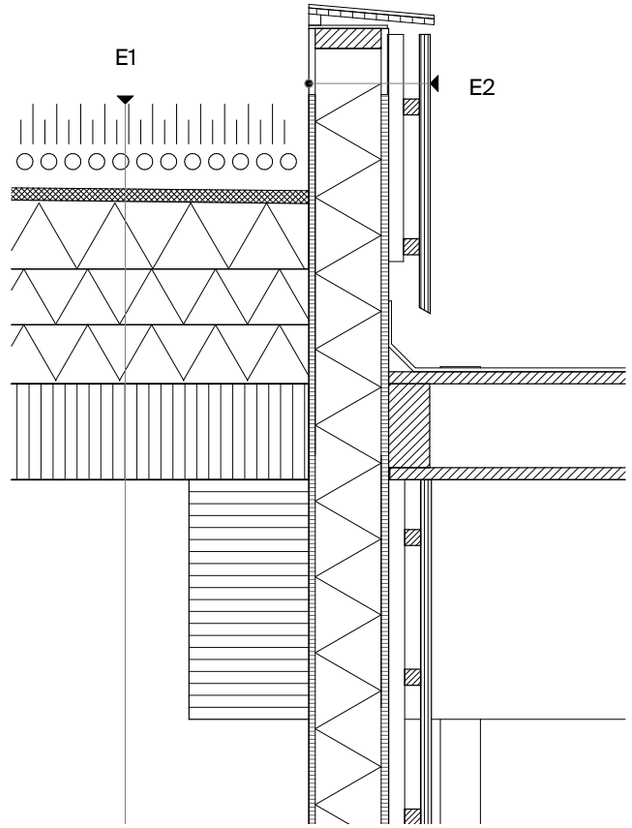


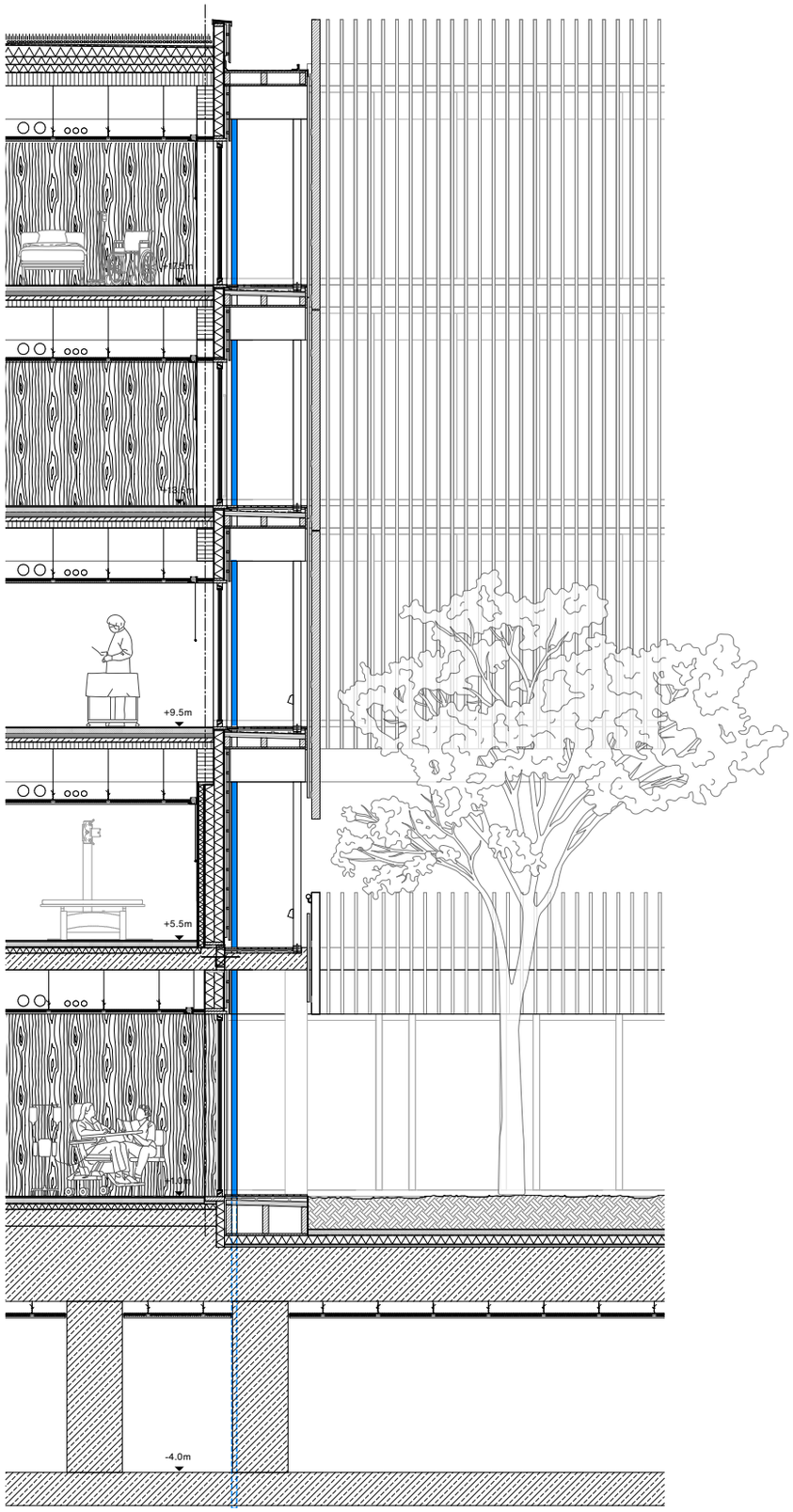
E1 - ROOF

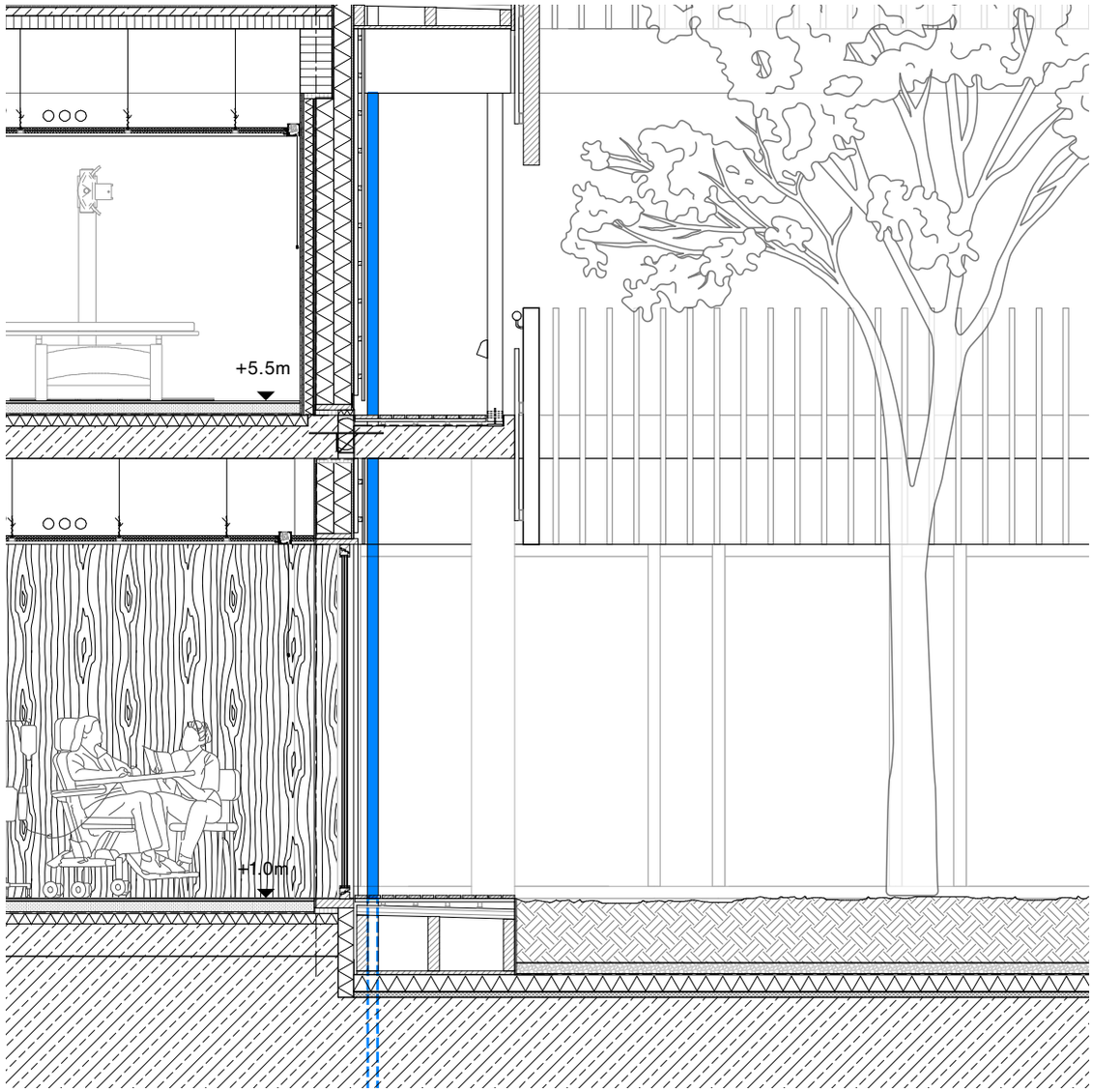
Extensive vegetation 100 mm
Roof waterproofing
Thermal insulation EPS in gradient 10 –140 mm
Thermal insulation EPS 140 mm x 2
Vapour barrier
Cross-laminated timber roof ceiling, 7-layer, 240mm
Installation cavity 600-700mm for medical equipments (var.)
Suspended ceiling:
Suspended battens with spring clamps 25 mm
Cavity insulation between battens 50 mm
Wood ceiling panel, oak

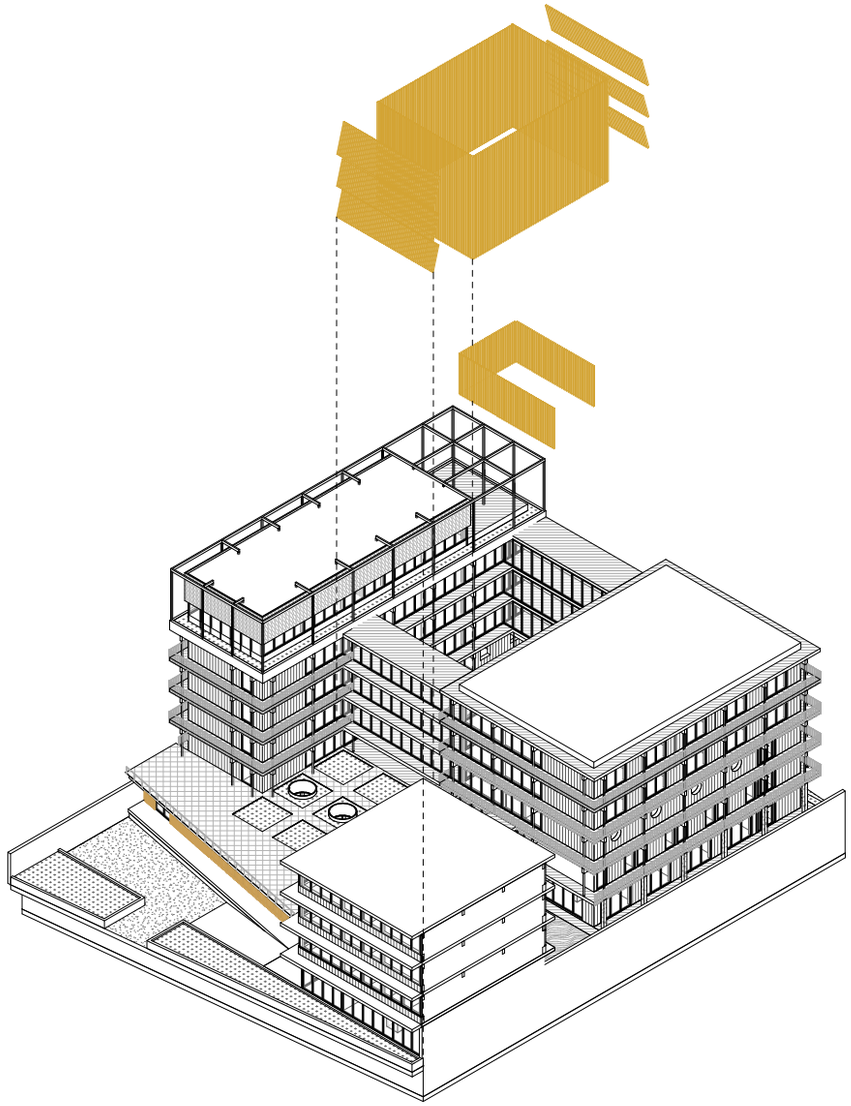
E2 - PARAPET

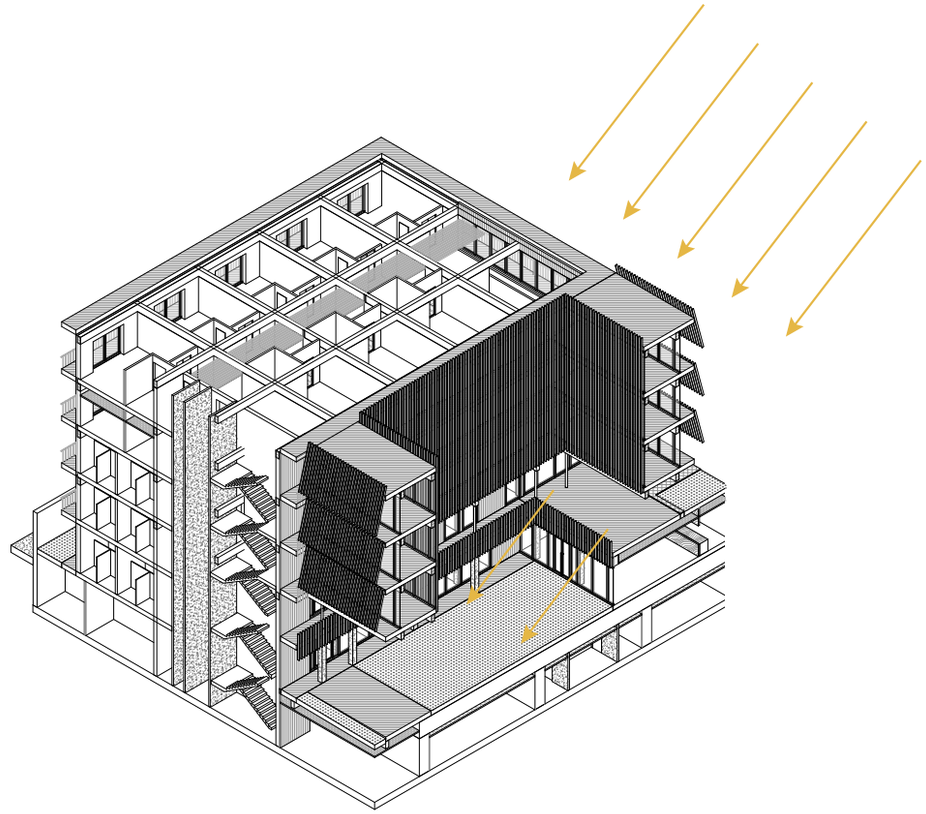
Timber boarding 30 mm
Battens 40/40 mm, counter battens 40/40 mm
Wind seal: paper, gypsum fibreboard 18 mm
Timber structure with thermal insulation, mineral wool 170 mm
Vapour barrier
OSB panel 18 mm, roof waterproofing

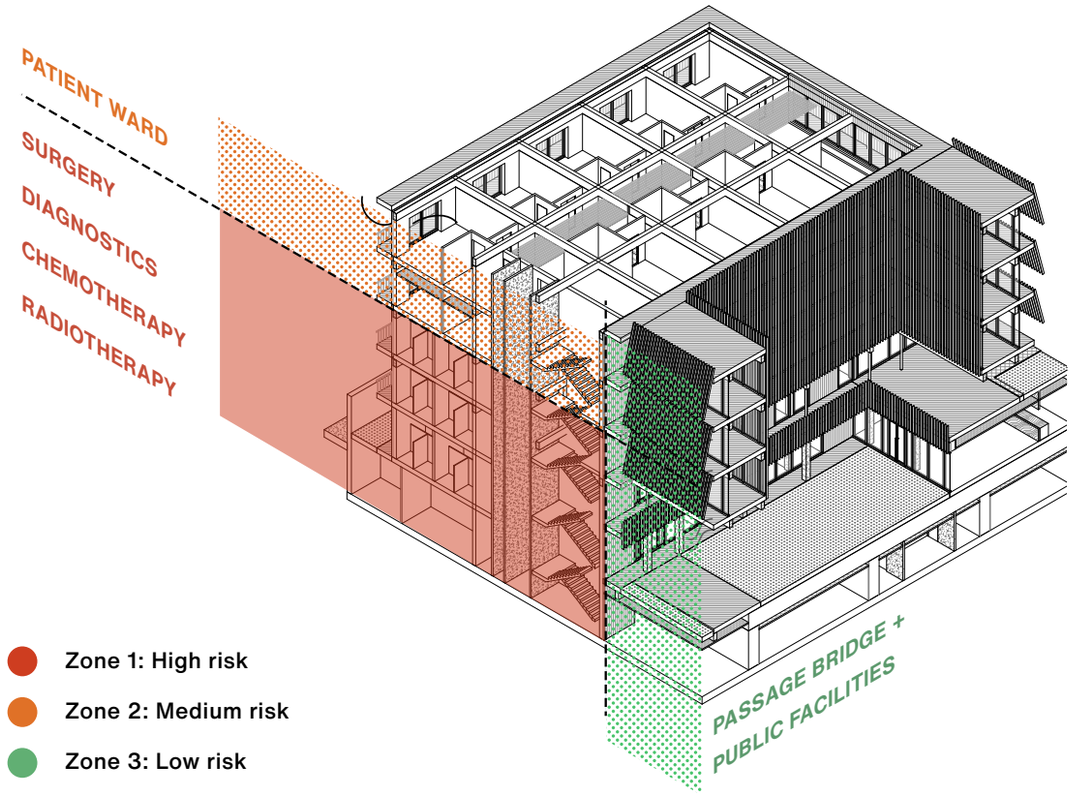



+9.5m
+5.5m
+1.0m
-4.0m

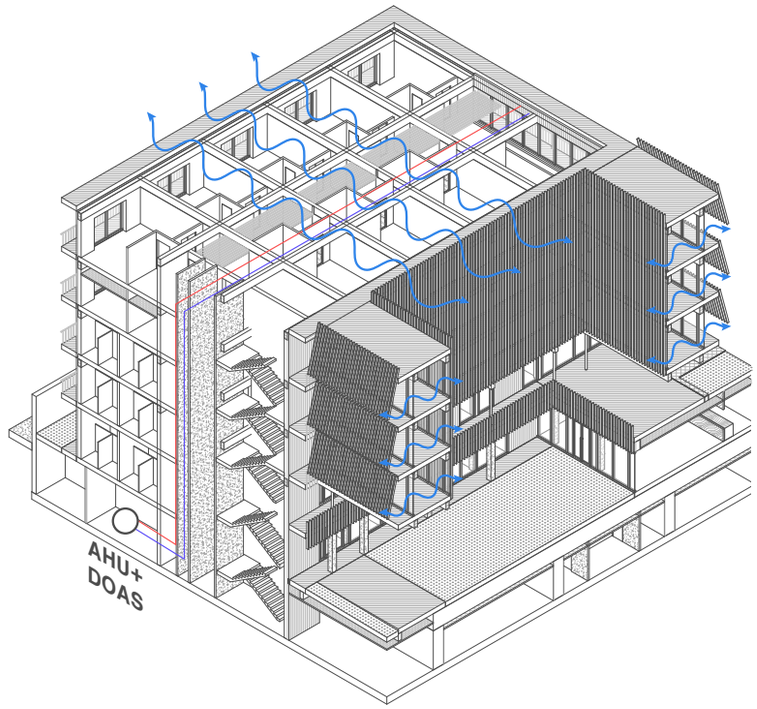

+5.5m
+1.0m







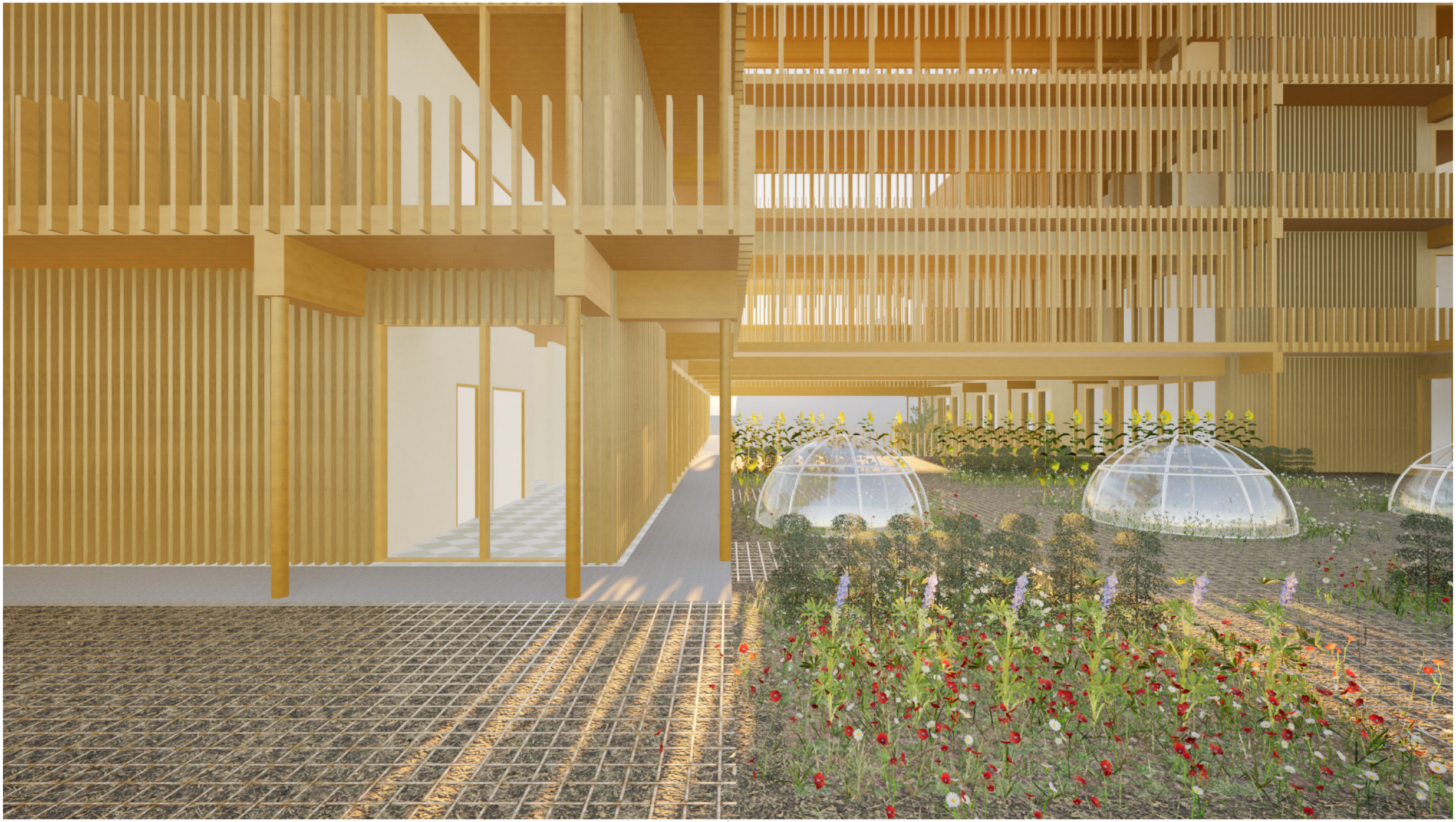
Off-season cross ventilation through operable windows in ward floor (Medium Rish Zone)

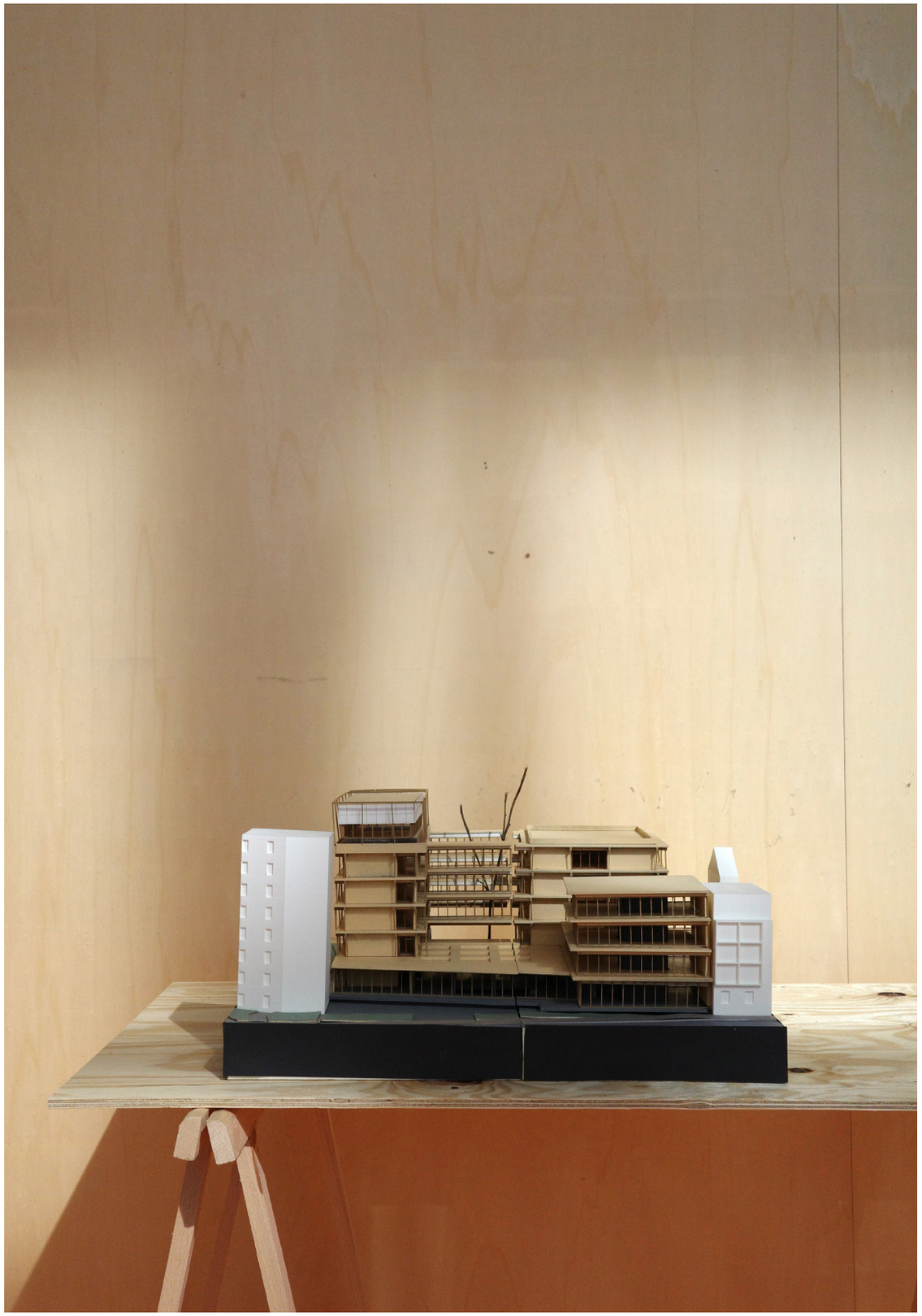


Design Perspective 233

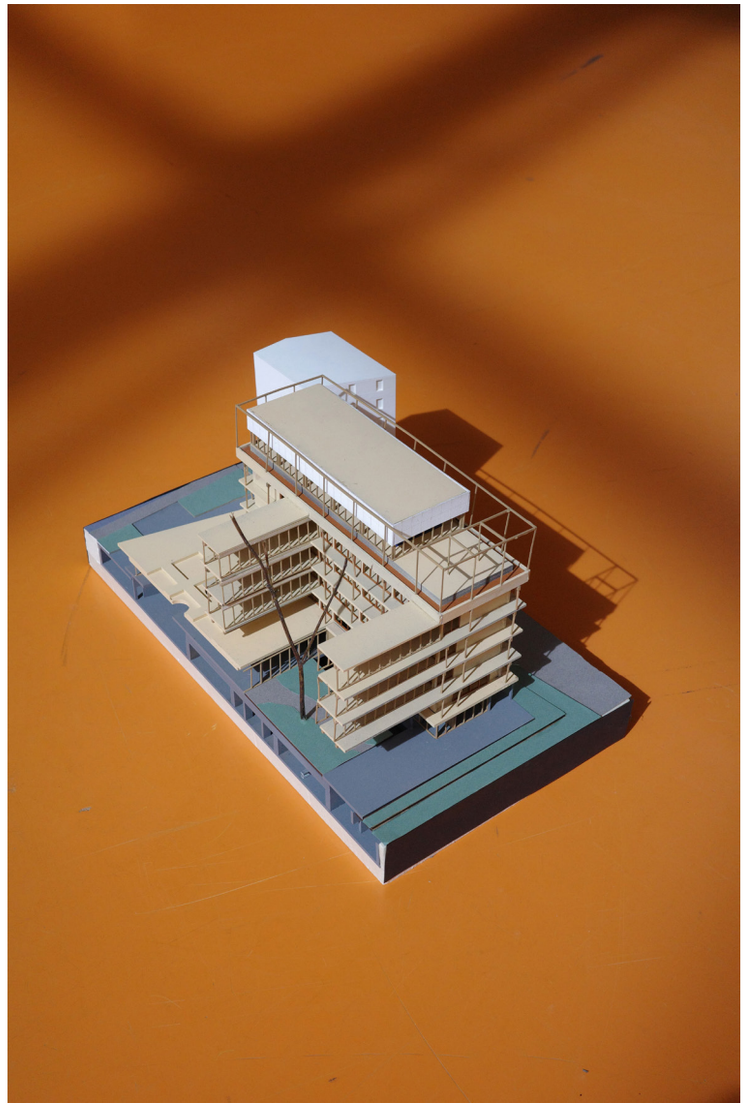
Design Exterior view from Oriana Fallaci park 234


CAFFETTERIA

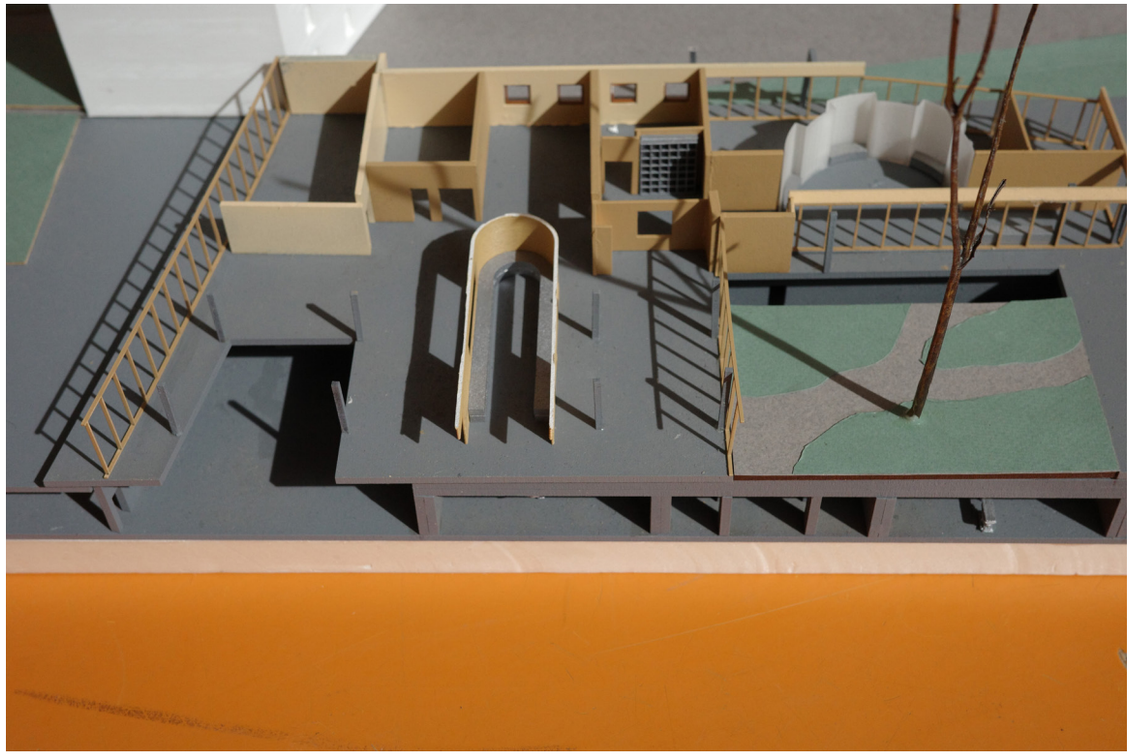




Model 1:150 South Facade 243



Model 1:150 Space Fragment 244



how to create architectural pleasure:

a non-medical brief for inefficient hospital design

*

Visibility and openness
No dead-end corridor exists.

*

Porosity
Circulation path ensures visibility of other department spaces from where one stands.

*

Anticipation
Circulation widens in anticipation of higher traffic such as elevator waiting area. Spaces for seating and trolleys are provided here.

*

Accommodation
In every treatment space and along circulation path, provide different spatial conditions cater to diverse needs and conditions from high anxiety to low stimulation.
Reclusion: Niches and interstices with seating for brief pauses or withdrawal.
Companionship: Seatings allowing for more than one person.
Socialization: Micro-lounges and kitchen, or tea bar facilitates social interactions.
Concentration: Areas for relax such as reading zone for caregiver

*

Flexibility
Spaces are designed to adapt to hospital functional changes, either expand or shrink in size.

*

Material attention and tactility
Cancer patients are vulnerable to peripheral neuropathy due to chemotherapy drugs. Warm-touch material like wood and curtain should be used throughout. The change of floor materiality in areas which does not obstruct the flow of traffic and stretchers creates a sense of comfort.

*

Wayfinding by visual anchor
External garden becomes anchoring spaces associated with specific departments.

APPENDIX II

Site

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