Re:MIND

A Public Library for Private Well-Being

Myrte van de Ven | June 2026 | Delft University of Technology | Architecture | Master thesis

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Re:MIND

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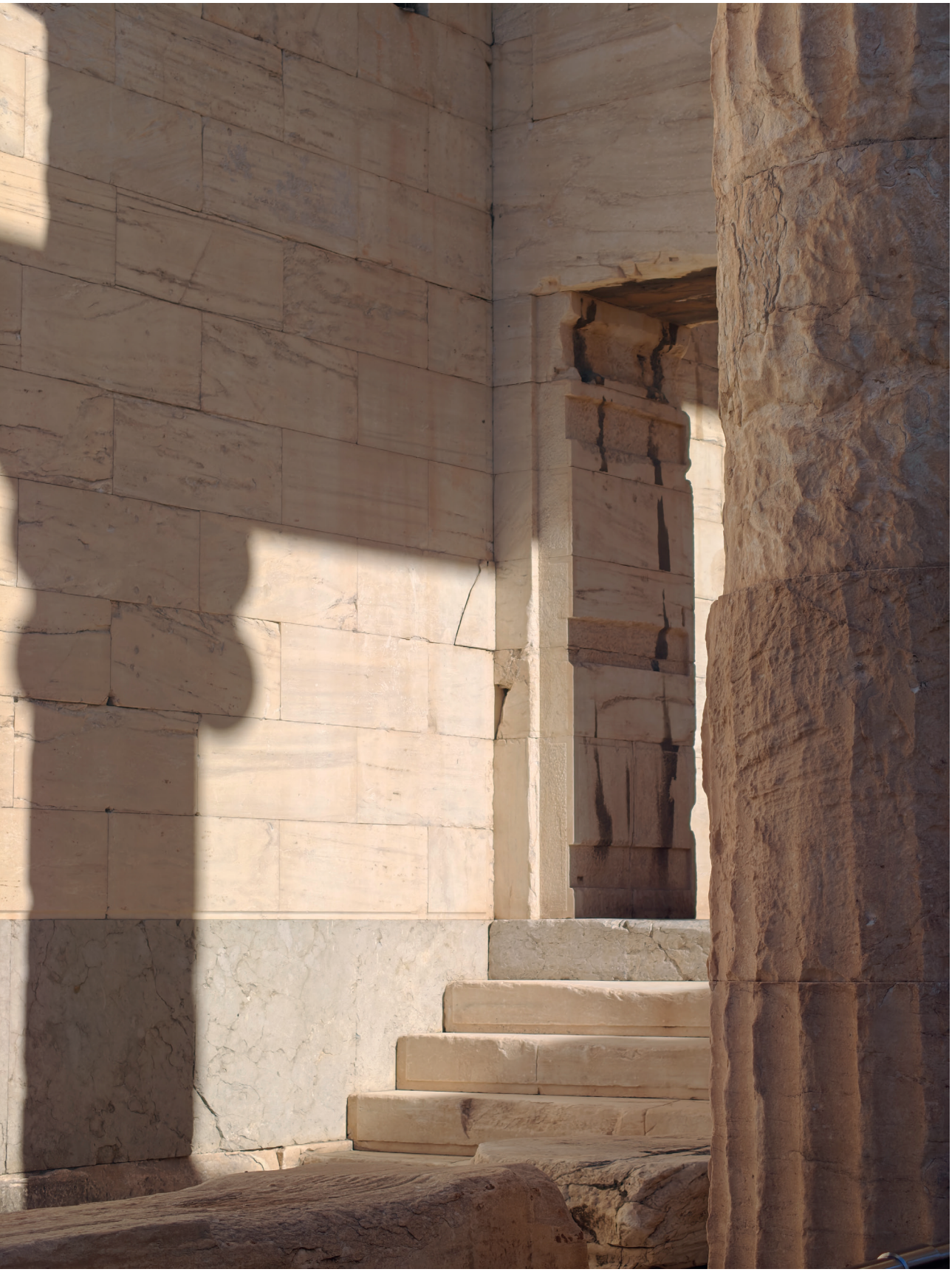

Figure 0.1: Photo of Propylaea, entrance to the Acropolis of Athens (own work 2025)

"If the head and the body are to be well, you must begin by curing the soul; that is the first and essential thing."

Socrates

"Wherever the art of medicine is loved, there is also a love of humanity."

Hippocrates

Acknowledgements

I would like to thank everyone who contributed to the completion of this graduation project.

I would like to thank my graduation mentors, Angela Rout and Marija Mateljan, for their guidance, critical feedback, and support throughout this project. Their advice and reflections helped me develop both the research and the design.

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Finally, I would also like to thank my fellow students, friends, and family for their help, encouragement, and support throughout this graduation year. The many conversations, discussions, and moments of support were invaluable during the project.

Myrte van de Ven
Utrecht, 2026



Figure 0.2: Photo of Athens taken from the Acropolis (own work 2025)





Figure 0.3: Photo of the Acropolis in Athens (own work 2025)



Abstract

Mental health challenges are increasing, particularly among teens and young adults, while opportunities for prevention and mental health education remain limited. Many people lack the knowledge and tools to understand, manage, and strengthen their own well-being before problems escalate. This graduation project explores how architecture can support preventive mental health by enabling mental health literacy within an accessible civic setting: the public library.

The project proposes a public library that combines learning, social interaction, and spaces for reflection with low-threshold mental health resources. Located on the former Pyrkal site in Athens, the building is positioned at the intersection of pedestrian routes and designed as an open and accessible environment for young people, supporting both collective and individual use.

The library is embedded beneath a public park landscape, allowing the site to remain open and publicly accessible while creating quieter and more private environments below ground. A series of pavilion entrances distributed throughout the park provide multiple points of access to the building. Inside, the library is organised as a sequence of longitudinal bands that accommodate different functions and atmospheres, ranging from active and social spaces to areas for focused study, consultation, reflection, and retreat. Daylight is introduced through atria and skylights integrated into the landscape above, while materiality, atmosphere, and spatial sequencing reinforce the gradual transition between different modes of use and levels of privacy.

By integrating mental health literacy into a familiar civic typology, this project explores how architecture can create accessible environments for learning, reflection, and support while lowering barriers to engagement with mental well-being.

Reading guide

This reading guide explains the structure of the graduation report.

As this thesis is an architectural design project, the report is organised differently from a conventional research report and combines design, analysis, and reflection.

The main report presents the project ambition, design approach, and final design outcomes (figure 0.3). The appendices contain the analyses, references, research, and contextual material that inform and support the design decisions. Readers are encouraged to move between the report and appendices, rather than reading the document from start to finish.

Report

1. INTRODUCTION

Introduces the project problem, relevance, ambition, objective, research questions, and scope.

2. APPROACH

Explains how research and design inform each other in this thesis, and which methods, theories, literature, and precedents are used.

3. RESULTS

Presents the architectural research and design and explains design decisions.

4. CONCLUSION AND DISCUSSION

Concludes on the research and design questions, discusses implications and recommendations, and ends with a final reflection.

Appendix

A. READ LITERATURE

Overview of theoretical and contextual literature informing the project.

B. PRECEDENT PROJECTS

Detailed analyses of precedent architectural projects to inform the thesis design.

C. ATMOSPHERE RESEARCH

Development and application of a research method to analyse architectural atmosphere through spatial variables.

D. ATHENS ANALYSIS

Analysis of Athens, including site maps, photographs, climate graphs, and institutional context.

E. PYRKAL ANALYSIS

Site-specific analysis of Pyrkal, including site maps, photos, the municipality's masterplan, and design decisions.

F. DESIGN RESEARCH

Design studies exploring concept development, programme, spatial organisation, thresholds, and atmosphere.

G. DESIGN ELABORATION

Detailed explanation of the final design and its architectural, technical, material, and landscape-related design decisions.

Figure 0.4: Reading guide visualisation (own work, 2025)

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Figure 0.6: Photo of metro and temple of Hephaistos in the Agora (own work 2025)

1.
INTRODUCTION

1.1 Problem statement

Across the world, societies are facing growing mental health challenges. Today, more than 1 in 7 people globally live with a mental disorder, affecting over one billion individuals (World Health Organisation 2025). One-third of disorders begin by age 14, half by 18, and two-thirds by 25.

Mental disorders are now the second leading cause of "years lived with disability" (YLDs), years people live with non-fatal health issues. Despite costing trillions each year through lost productivity and indirect societal impacts, countries allocate on average only 2% of their health budgets to mental health, leaving many people without timely or adequate support.

This global treatment gap, combined with rising social and environmental stressors, signals an urgent need to rethink how societies promote wellbeing, prevent distress, and create accessible, non-stigmatising forms of mental support.

In the national context, Greece has made progress in aligning its mental health governance with international standards through a mental health law and national insurance covering treatment for major conditions (World Health Organisation 2020). Nevertheless, the country ranks among the lowest 3% of high-income nations on the Happiness Ladder, scoring 5.95 out of 10 (Kotsis et al. 2024). Mental health promotion and prevention programmes remain largely absent, while psychosocial support and mental health data collection and monitoring are still very limited (Appendix A.1) (World Health Organisation 2020; Kotsis et al. 2024).

Together, these gaps reveal a system where clinical coverage for severe disorders exists, yet accessible early support, prevention, and everyday mental well-being services remain critically underdeveloped.

While clinical care addresses severe mental disorders, it does not provide accessible ways for people to understand, manage, and strengthen their own mental well-being. Opportunities for early support and mental health education remain limited, particularly for children and adolescents. As a result, many people lack the knowledge and tools to recognise and respond to mental health challenges before they escalate.

Preventive mental health therefore requires environments that support learning, awareness, and informal engagement without the need for clinical intervention. Architecture can contribute by creating accessible, non-institutional spaces that enable people to develop mental health literacy and engage with well-being on their own terms.

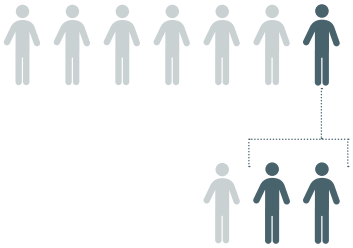
World Health Organization. 2025. "World Mental Health Today: Latest Data." https://iris.who.int/server/api/core/bitstreams/31714489-1345-4439-8b37-6cbdc52e15ca/content

Thornicroft, Graham, Somnath Chatterji, Sara Evans-Lacko, et al. 2016. "Undertreatment of people with major depressive disorder in 21 countries." *The British Journal of Psychiatry* 210 (2): 119–24. https://doi.org/10.1192/bjp.bp.116.188078.

World Health Organisation. 2020. "Mental Health Atlas 2020: Greece." https://cdn.who.int/media/docs/default-source/mental-health/mental-health-atlas-2020-country-profiles/grc.pdf?sfvrsn=9e20ee19_6&download=true.

Kotsis, Konstantinos, Lauro E. Marchionatti, André Simioni, et al. 2024. "The state of mental health in Greece: An international comparative analysis using data from the Global Mental Health Countdown 2030." *International Journal of Social Psychiatry* 71 (4): 757–69. https://doi.org/10.1177/00207640241303029.

THE PROBLEM



1 in 7 people live with a mental disorders

2/3 by age 25

treatment > prevention

THE DATA

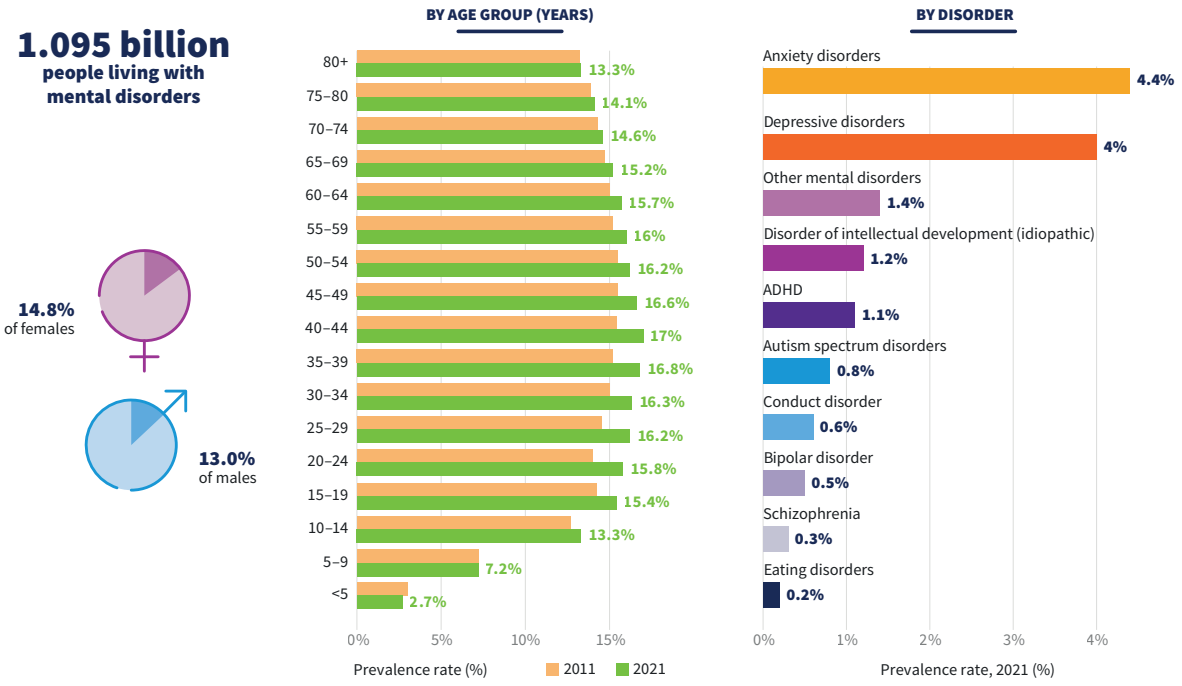


Figure 1.1.1: Global prevalence on mental disorders in 2021 (World Health Organisation 2025).

1.2 Relevance

Mental health is receiving increasing attention through policy and healthcare reform. In Greece, the "National Action Plan for Mental Health" focuses on deinstitutionalising care, strengthening primary support, prioritising children and adolescents, and reducing stigma (Ministry of Health 2023).

However, these strategies primarily address treatment and care provision, while opportunities for prevention, mental health literacy, and accessible, non-clinical support remain limited.

Architecture shapes access, thresholds, and behaviour. Through spatial sequencing, atmosphere, and degrees of visibility and privacy, architecture influences whether spaces feel safe, approachable, or intimidating. In mental health contexts, these qualities can either reinforce stigma and avoidance or enable early, informal engagement.

By embedding mental health literacy and preventive support within a familiar civic institution such as a library, this project addresses a gap between knowledge, support, and accessibility. Libraries already support learning, social interaction, and reflection. Expanding this typology to include mental health literacy creates accessible environments where people can develop awareness, skills, and resilience, while lowering thresholds to support and normalising engagement with mental well-being.

Ministry of Health. 2023. "National Action Plan for Mental Health 2021–2030." https://www.moh.gov.gr/articles/health/domes-kai-draseis-gia-thn-ygeia/c312-psyxikh-ygeia/c685-draseis/11499-ethniko-sxedio-drashs-gia-thn-psyxikh-ygeia.

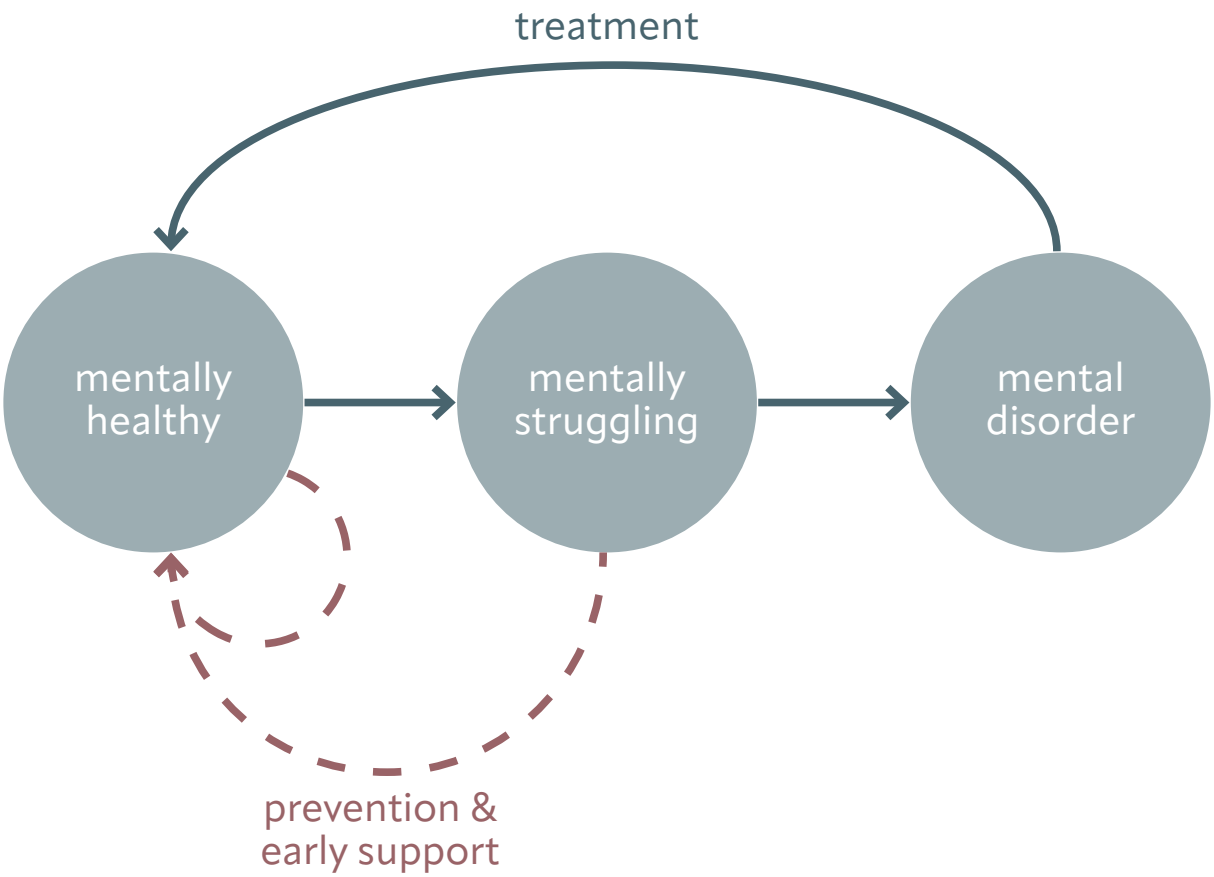


Figure 1.2.1: Diagram showing where in the mental health process this project intervenes (own work 2026)

1.3 Objective & motivation

The objective of this graduation project is to design a public library that supports preventive mental health through the development of mental health literacy among teens and young adults. Mental health literacy is understood as the basic knowledge and skills that enable people to understand, manage, and strengthen their own well-being over time.

I propose a public library that fosters mental health literacy by combining traditional social and educational functions with spaces for learning, retreat, reflection, conversation, and consultation. In doing so, the project explores how architecture can improve access to mental health knowledge, lower thresholds to support, reduce stigma, and provide people with the tools to build emotional resilience.

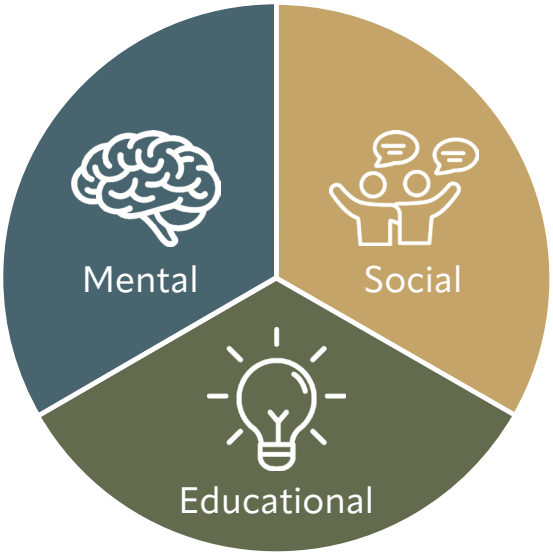
My motivation is grounded in the belief that mental health is as fundamental as physical health, yet far less understood and openly addressed. Architecture shapes behaviour, perception, and access, and can therefore actively make mental health more visible, approachable and normalised. By embedding mental health education and support within accessible public environments, architecture can contribute to a more resilient and compassionate society.

Cambridge University Press & Assessment. 2026. "Literacy." In *Cambridge Dictionary*. Accessed March 26, 2026. https://dictionary.cambridge.org/dictionary/english/literacy.
Institute for Positive Health. 2026. "Positive Health." January 18, 2026. Accessed March 12, 2026. https://www.iph.nl/en/.
Positive Health International. 2026. "Positive Health." 2026. Accessed March 12, 2026. https://positivehealth-international.com/.

THE IDEA

library
+
mental health literacy

THE DOMAINS



THE CONCEPT

Creating easy access to mental health literacy

- *Literacy = a basic skill or knowledge of a subject (Cambridge University Press & Assessment 2026)*
- *Focus on prevention rather than treatment*
- *Mental health ≠ absence of illness*
- *Mental health literacy = public resource*

"Health is broader than the absence of disease or symptoms. An increasingly central role is played by other aspects, such as resilience, sense of purpose, meaningfulness and self-management." - Machteld Huber (Institute for Positive Health 2026)

1.4 Research & design questions

Main design question

How can a public library be designed to actively support and normalise preventive mental health for teens and young adults?

Research questions

1. Which architectural characteristics distinguish civic, non-clinical buildings from healthcare environments?
2. Which architectural and programmatic qualities contribute to welcoming and accessible public environments?
3. How can libraries and civic buildings accommodate different modes of use (social, focused, and withdrawn) within one building?
4. How can atmospheric design elements (light, materiality, acoustics, and scale) support mental well-being?
5. How can architectural thresholds and spatial transitions guide movement and spatial organisation within libraries?

Design questions

1. How can a public library be spatially organised to integrate mental well-being without labelling it as a mental health facility?
2. How can a public library combine spaces for learning, social interaction, support, and retreat within one building?
3. How can architecture balance openness and accessibility with privacy and emotional safety?
4. How can spatial sequencing and thresholds (public → semi-public → private) be designed to support different emotional states and levels of vulnerability?

1.5 Scope

This project proposes a public library that integrates preventive mental health support into a civic setting. It is not designed as a healthcare facility, but as an accessible and familiar public environment where people can engage with mental health in an informal, non-stigmatising way.

Target group

The primary target group consists of teens and young adults (ages 12–25) from diverse backgrounds, and lifestyles. The library is also accessible to adults and other visitors.

It functions both as a place people can pass by, as well as a destination in itself, for example for university students.

Geographical context

The project site is located in southern Athens, Greece, within the former Pyrkal defence industry area. The library is positioned centrally within the masterplan, at the intersection of pedestrian routes and embedded within a park landscape (figure 1.5.1 & Appendix D).

The wider Pyrkal development is envisioned as a green mixed-use area combining civic, residential, and recreational functions (Appendix D.4).



Figure 1.5.1: Map of Pyrkal site in Athens (1:2000 scaled) (own work 202


Pyrkal - current situation
Boundary of Pyrkal site
Building
Park
Site entrance

26)

Mental health scope

The project focuses on prevention, mental health literacy, everyday support, and resilience-building. It does not provide clinical therapy, diagnosis, medication, or emergency care (figure 1.5.2). Instead, the library offers low-threshold support while maintaining connections to professional services for referral when needed (figure 1.5.3).

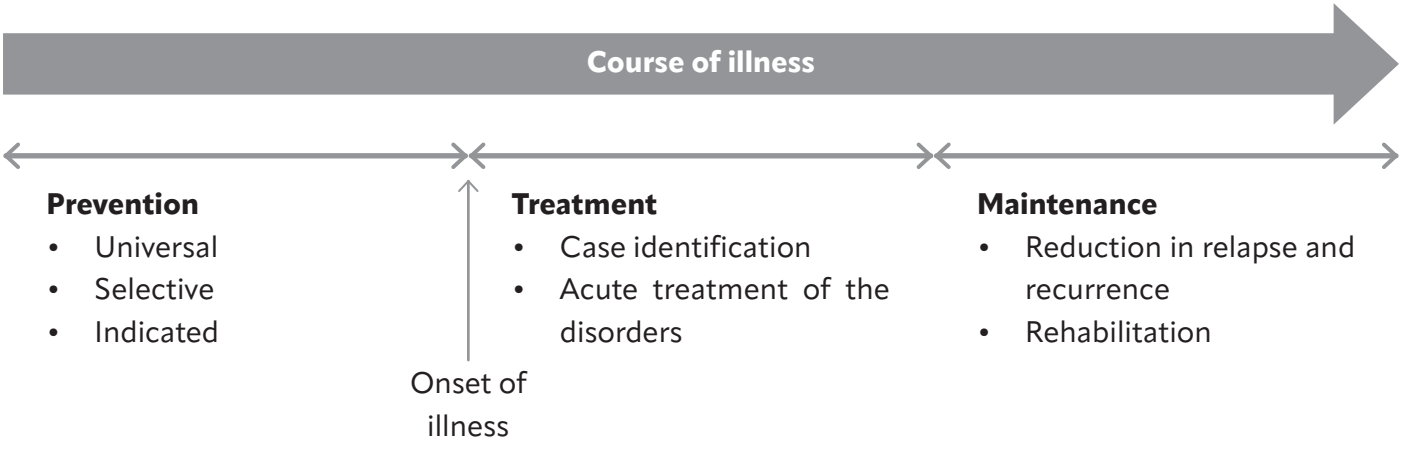


Figure 1.5.2: The interventions for mental illness as classified by the Institute of Medicine (IOM) Committee on Prevention of Mental Disorders (Singh, Kumar, and Gupta 2022).

Program

The programme combines learning, study, social, and reflective spaces (table 1.5.1).

Important spaces include the civic living room as the public heart of the building, a number of retreat spaces for different forms of reflection and well-being, and consultation rooms that provide opportunities for individual guidance and support.

The library operates from 9:00 to 21:00, aligning with school and student rhythms (Appendix D.1 figure D.1.7).

The building has an area of approximately 10,000 m² and is designed to fit within the scale of the surrounding urban context.

Symbolism & meaning

The project does not rely on explicit signage or institutional expression to communicate its function. Instead, it is designed as a familiar and welcoming place that encourages people to enter, stay, return, and engage with mental well-being as part of everyday life.

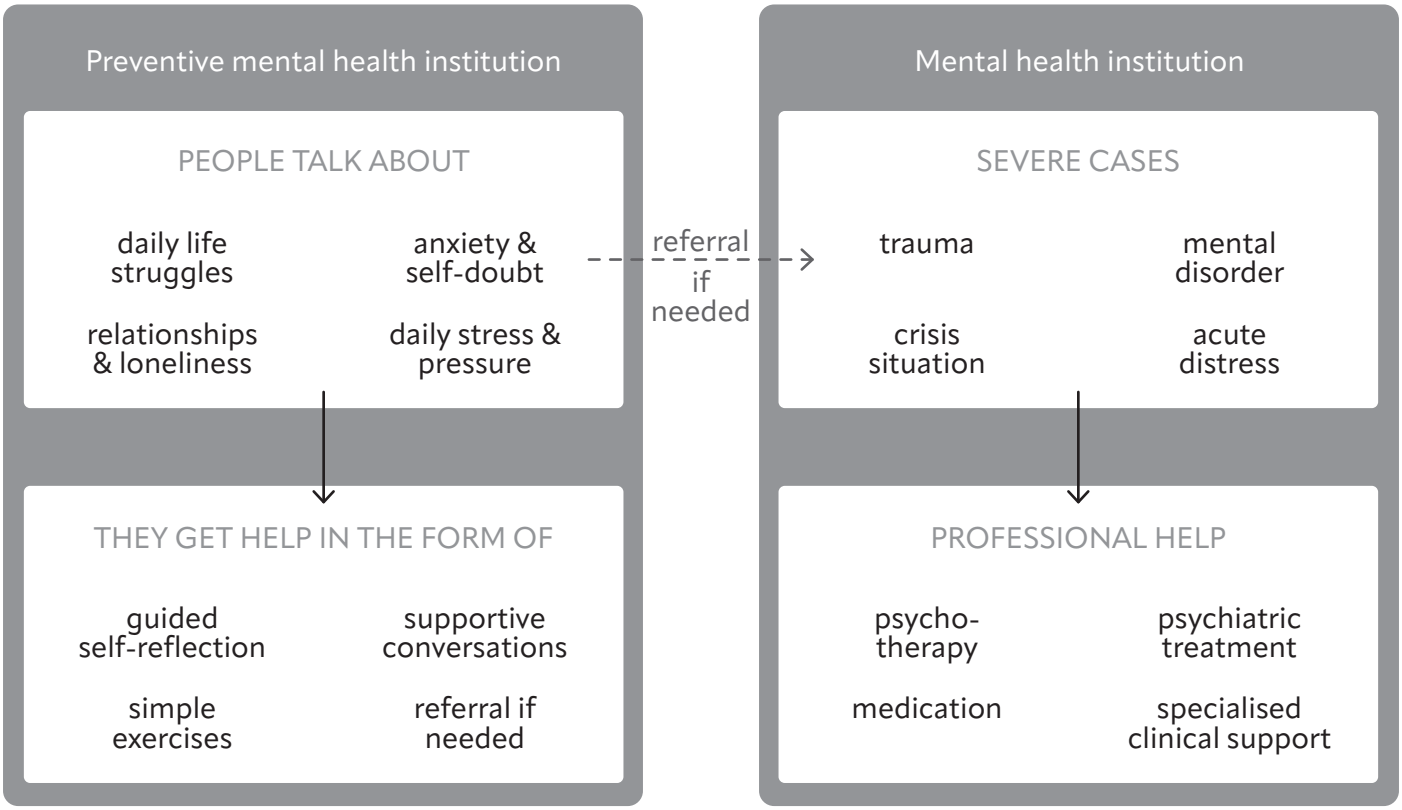
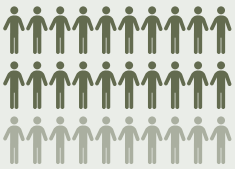


Figure 1.5.3: Preventive mental health institution vs. mental health institution (own work 2025)

Table 1.5.1: Program overview

Space	Social idea/urgency	Spatial requirements	Spatial quality
Civic living room	Support social interaction and informal engagement.	Entrance of the building. Open, visible from the street. Helps with visible orientation in the building. Informal seating (sofas, tables, steps). Connection to restaurant and main circulation. Mixed activities (meeting, chatting, reading, studying). Good daylight. High ceiling.	Welcoming, open, informal, inclusive, non-institutional
Restaurant & bar	Lower thresholds by creating a familiar, accessible, and socially supportive environment.	Independent (street) access. Varying sizes of (shared) tables. Supports informal gathering, community activities, and events. Use throughout the whole day.	Lively, familiar, accessible, socially connective
Body retreat space	Support embodied well-being through movement, mindfulness, relaxation, and guided practice.	Closable space with acoustically seperation. Daylight. Free floor space with informal, flexible floor seating. Supports yoga, mindfulness, meditation, relaxation, and quiet movement.	Active, educational, flexible, supportive, restorative
Workshop & lecture space	Support learning, skill development, and mental health literacy.	Closable space with acoustically seperation. Flexible layout supporting lectures, workshops, peer mentoring, and lif-skills education. Combination of formal and informal settings. Easy access from public zones.	Participatory, educational, flexible, informal
Study spaces	Provide supportive environments for studying, learning, and self-development.	Quiet, controlled acoustic environment. Good daylight. Combination of shared tables, individual desks, and informal study settings. Access to Wi-Fi and power.	Calm, focused, supportive, flexible
Group session spaces	Support group sessions, peer learning, and discussion.	Closable or semi-enclosed spaces Acoustic control. Daylight. Flexible seating and tables. Suitable for discussions and collaboration.	Informal, social, collaborative, adaptable
Mind retreat space	Provide low-stimulus environments for reflection, contemplation, and mental restoration.	Soft acoustics. Low, indirect lighting. Clear threshold from public zones. Informal seating (lounging, soft furniture). No disturbance from active areas. Supports reading, thinking, or reflecting, or other calming activities.	Protected, calm, inward-focused, restorative
Private group spaces	Support small group discussions, peer support, and collaboration.	Enclosed or semi-enclosed room. Acoustic separation. Formal and informal settings. Suitable for 3–8 people.	Private, comfortable, supportive, approachable
Consultation rooms	Provide accessible, low-threshold mental support without a clinical setting.	Private rooms for one-on-one conversations. Sound insulation. Ventilation. Natural light. Discreet but accessible locations. Accessible for the professional staff.	Supportive, calm, safe, private, approachable, non-clinical
Quiet booths	Provide low-threshold withdrawal from public environment.	Closabe space. Acoustically enclosed. Suitable for one person. Distributed throughout the building. Supports focussed reading, studying, and reflection.	Protected, calm, quiet, personal, low-threshold

PRIVATE ROOMS		6 m²	• Quiet booth	15x	90 m²
		9 m²	• Consulation room • Private talk space	12x	100 m²
		12 m²	• Private group space	8x	100 m²
COLLECTIVE GROUP ROOMS		25 m²	• Group session space	2x	50 m²
		60 m²	• Lecture & workshop	7x	420 m²
		70 m²	• Quiet retreat • Social retreat • Body retreat (yoga & meditation) • Mind retreat (study)	4x	280 m²
		100 m²	• Auditorium • Exhibition space	2x	200 m²
PUBLIC LIVING ROOM		open	• Social zone: restaurant, café, event space • Activity zone: informal seating landscape • Library zone: books, information • Study zone: tables, seating		3000 m²
STAFF		9 m²	• Staff office	2x	18 m²
		25 m²	• Meeting room • Archive • Admin support • Technical staff	8x	200 m²
		70 m²	• Cafetaria	1x	70 m²
		150 m²	• Shared staff office • Shared professionals office	2x	300 m²

2.
APPROACH

2.1 Architectural theory

This chapter outlines the architectural theories that inform the project's approach to publicness, well-being, and accessible, non-institutional mental health support.

Mental institutions & stigma

Erving Goffman's "Asylums" (1961) provides a foundational critique of how mental illness has historically been addressed through isolated, total institutions. Goffman shows that such environments, despite therapeutic intentions, often undermine dignity, autonomy and well-being through rigid routines, surveillance, and separation from everyday life. His critique underpinned the shift toward deinstitutionalisation of mental health care.

Drawing on her experience as a cancer patient, Maggie Keswick Jencks (1995) advocates for humane, non-institutional environments prioritising comfort, choice, and emotional safety. These ideas were realised through the Maggie's Centres, which provide support for people affected by cancer in domestic-scale, informal, and welcoming environments that support well-being without signalling illness.

Both define an anti-institutional approach in which care is embedded in accessible, non-clinical environments rather than isolated institutional settings, supporting early engagement and accessibility.

Civic institutions & publicness

Ray Oldenburg (1999) describes libraries and similar informal public environments outside home and work as "third places": neutral, accessible spaces characterised by social equality, conversation, and a welcoming atmosphere (table 2.2.1.1). Participation in third places is informal and independent of status, purpose, or obligation.

As such, third places offer a spatial model for lowering thresholds to engagement.

Mehta and Bosson (2009) translate third-place theory into four spatial characteristics that support use and social interaction:

1. Personalisation of the street front
2. Permeability between street and interior
3. Seating that supports flexibility, lingering, consumption and outdoor use
4. Shelter and comfort across weather and time of day

These conditions provide spatial criteria for designing a library that is accessible, welcoming, and supportive of informal use and social interaction.

Goffman, Erving. 1961. *Asylums: Essays on the Social Situation of Mental Patients and Other Inmates*. New York, United States of America: Anchor Books, Doubleday and Company.

Jencks, Maggie Keswick. 1995. *View From the Front Line*. London, United Kingdom of Great Britain and Northern Ireland.

Mehta, Vikas, and Jennifer K. Bosson. 2009. "Third Places and the Social Life of Streets." *Environment and Behavior* 42 (6): 779–805. https://doi.org/10.1177/0013916509344677.

Oldenburg, Ray. 1999. *The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons, and Other Hangouts at the Heart of a Community*. Da Capo Press.

Table 2.2.1.1: Characteristics of "third places" (Oldenburg 1999)

Characteristic	Definition
Neutral ground	Individuals can come and go freely without obligation or formal commitment.
Leveler	Social status, rank, or professional identity are irrelevant; acceptance and participation require no prerequisites.
Conversation is main activity	Conversation is a main focus of activity in which playfulness and wit are collectively valued.
Accessibility & accommodation	Easy to access and accommodate frequent use.
The regulars	Regular users shape the atmosphere and attract newcomers.
A low profile	Characteristically homely and without pretension.
The mood is playful	The general mood is playful and marked by frivolity, verbal word play, and wit.
A home away from home	Home-like in terms of Seamon's (1979) five defining traits: rootedness, feel-ings of possession, spiritual regeneration, feelings of being at ease, and warmth.

Atmosphere, well-being & biophilia

Atmosphere is the immediate emotional and bodily impression of space, shaped by materiality, light, sound, proportion, and detail (Zumthor 2006). Understood by Pallasmaa (2012) as complete embodied perception beyond vision alone, and by Böhme (2016) as a spatial mood that is neither subjective nor objective but produced by architecture and perceived by the body.

In this project, atmosphere functions as an architectural means of creating calm, safe, and supportive environments without relying on explicit cues.

Biophilic design is an architectural approach grounded in "biophilia", the innate human tendency to affiliate with life and natural processes (Fromm 1964; Wilson 1984). Kellert (2018) translated this affinity into spatial strategies integrating natural elements, materials, and processes into the built environment to support human well-being. These strategies were later synthesised by Zhong et al. (2021) into design elements (figure 2.2.1.1).

Biophilic design is supported by environmental psychology, particularly Stress Recovery Theory (Ulrich 1984) and Attention Restoration Theory (Kaplan & Kaplan 1989), which show that exposure to nature reduces stress and restores cognitive capacity, positively impacting mental well-being and resilience.

In "Color for Architects", Juan Serra Lluch (2019) frames colour as an architectural instrument shaping atmosphere, perception, and emotional response. Interacting with light, material, and scale, colour influences orientation, depth and mood. In this project, colour is used to support orientation, distinguish different modes of use, and create atmospheres that feel welcoming, calm, and non-institutional.

Together, these theories inform an architectural approach that uses atmosphere, biophilia, and colour to shape calm, approachable, and supportive environments for learning, reflection, and well-being.

Böhme, Gernot. 2016. *The Aesthetics of Atmospheres*. https://doi.org/10.4324/9781315538181.
Kaplan, Rachel, and Stephen Kaplan. 1989. *The Experience of Nature: A Psychological Perspective*. Cambridge University Press.
Kellert, Stephen R. 2018. *Nature by design: The Practice of Biophilic Design*. Yale University Press.
Lluch, Juan Serra. 2019. *Color for Architects*. Princeton Architectural Press.
Pallasmaa, Juhani. 2012. *The Eyes of the Skin: Architecture and the Senses*. John Wiley & Sons.
Ulrich, Roger S. 1984. "View Through a Window May Influence Recovery From Surgery." *Science* 224 (4647): 420–21. https://doi.org/10.1126/science.6143402.
Zhong, Weijie, Torsten Schröder, and Juliette Bekkering. 2021. "Biophilic design in architecture and its contributions to health, well-being, and sustainability: A critical review." *Frontiers of Architectural Research* 11 (1): 114–41. https://doi.org/10.1016/j.foar.2021.07.006.
Zumthor, Peter. 2006. Atmospheres: Architectural Environments, Surrounding Objects. Birkhaüser.

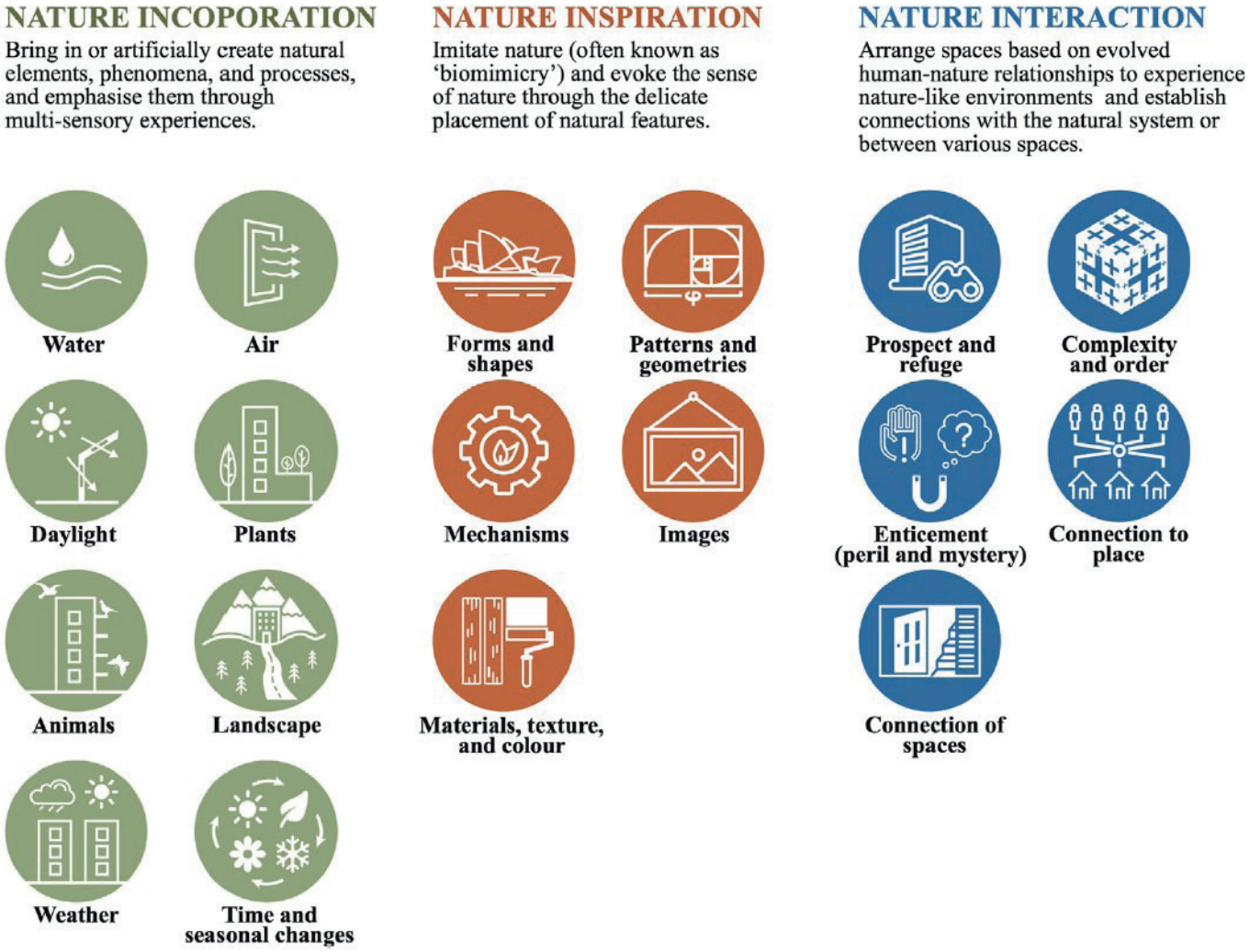


Figure 2.2.1.1: Biophilic design framework (Zhong et al. 2021)

2.2 Methods

Research methods

To gather information for this project, I use multiple research methods, combining qualitative fieldwork, literature review, precedent analysis, and spatial mapping (Appendix A, B, C & D).

The spatial analysis includes mapping of the urban context, accessibility, and public buildings frequented by youth (Appendix C & D).

Architectural theory is used as research to inform design decisions (Chapter 2.2).

Precedent studies focusing on libraries, community mental health spaces, and hybrid civic buildings are conducted to understand spatial strategies related to accessibility, programme, publicness, atmosphere, and psychological comfort (Appendix B).

Iterative design process

This project follows an iterative design process grounded in Schön's reflection-in-action (1983), where design decisions are continuously developed, tested, and refined through drawing, modelling, and diagrams.

Design methods

Design development is supported by sectional drawings and analytical diagrams to explore spatial relationships, transitions, and programme organisation (Clark & Pause 2012; Ching 2014; Lewis, Tsurumaki & Lewis 2016). Additionally, atmospheric qualities through are explored and tested through models and drawings (Pallasmaa 2012).

Atmosphere research

To analyse architectural 'atmosphere' in a structured and comparable way, I developed a framework of spatial variables to translate qualitative spatial conditions into measurable data.

Based on the theoretical framework, I argue that architectural atmosphere is not fixed and cannot be measured directly, as it varies between individuals, moments, and emotional states. However, research shows that atmospheric experience is related to specific spatial properties of the built environment. I therefore chose not to measure atmosphere or mood itself, but to measure architectural conditions that shape perception, behaviour, and patterns of use.

These conditions are translated into spatial data, allowing atmospheres to be quantified and interpreted indirectly.

Ching, Francis D. K. 2014. *Architecture: Form, Space, and Order*. John Wiley & Sons.
Clark, Roger H., and Michael Pause. 2012. *Precedents in Architecture: Analytic Diagrams, Formative Ideas, and Partis*. John Wiley & Sons.
Lewis, Paul, Marc Tsutumaki, and David J. Lewis. 2016. *Manual of Section*. Chronicle Books.
Pallasmaa, Juhani. 2012. *The Eyes of the Skin: Architecture and the Senses*. John Wiley & Sons.
Schön, Donald A. 1983. *The Reflective Practitioner: How Professionals Think in Action*. Basic Books.
Zumthor, Peter. 2006. *Atmospheres: Architectural Environments, Surrounding Objects*. Birkhaüser.

Method

Variable

Light

Sound

Materiality

Colour

Nature

Scale

Enclosure

Exposure

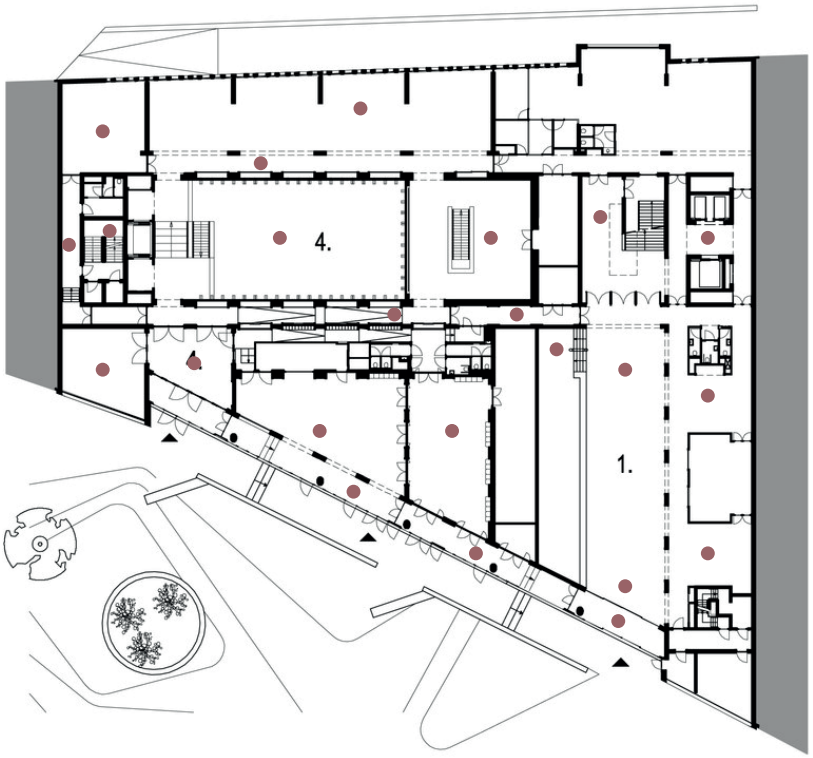
Legibility

Density

Movement

Occupation

Location



[1 - 5]

Variable definition

The atmosphere data research is based on a set of sensory and spatial variables that describe observable conditions of the built environment. Each variable is defined descriptively, focusing on what is present in the space rather than on subjective experience or emotional response.

I selected and defined the variables based on the theoretical research discussed in the previous chapter.

The variables are organised into three overarching categories:

1. Sensory conditions: environmental and material stimuli acting on the body and senses
2. Spatial configuration: how space is structured and perceived
3. Occupation: how many people there are, how they move, and how free they are to inhibit.

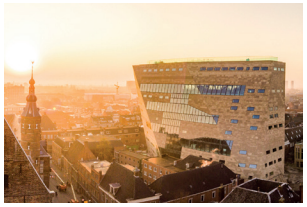
These variables translate measurable architectural conditions into spatial data.

Table 2.2.1: Atmosphere heat maps - variable definitions

	Variable	Definition	Informed by / drawing on
SENSORY CONDITIONS	**Light**	Degree of light level, source (natural/ artificial), and contrast	Ulrich 1984; Kaplan & Kaplan 1989; Kellert 2018; Zhong et al. 2021
	Sound	Degree of acoustic presence and intensity	Zumthor 2006; Pallasmaa 2012; Böhme 2016
	Materiality (hard - soft)	Degree of material hardness and absorption	Zumthor 2006; Pallasmaa 2012; Böhme 2016
	Colour	Degree of chromatic saturation and variation	Lluch 2019 Zumthor 2006; Pallasmaa 2012; Böhme 2016
	Nature	Degree to which natural elements are integrated indirectly and directly	Ulrich 1984; Kaplan & Kaplan 1989; Kellert 2018; Zhong et al. 2021
SPATIAL CONFIGURATION	**Scale (size)**	Perceived spatial size relative to the human body	Zumthor 2006; Pallasmaa 2012; Böhme 2016
	Enclosure (geometry)	Degree of physical enclosure formed by surrounding surfaces	Zumthor 2006; Pallasmaa 2012; Böhme 2016
	Exposure (sightlines)	Degree of visual exposure based on sightlines within a space	Zumthor 2006; Pallasmaa 2012; Böhme 2016
	Legibility	Degree to which spatial organisation and routes are immediately understandable without reliance on signage	
OCCUPATION	**Density (people)**	Degree of human occupancy relative to available space	Oldenburg 1999; Mehta and Bosson 2009 Böhme 2016
	Movement	Degree of bodily movement and circulation	Oldenburg 1999; Mehta and /Bosson 2009 Böhme 2016
	Freedom of occupation & behaviour	Degree to which a space allows multiple, non-prescribed bodily postures, durations of stay, and modes of use	Goffman 1961; Jencks 1995 Oldenburg 1999; Mehta and Bosson 2009

Precedent projects

Cultural centre



Forum (Groningen)

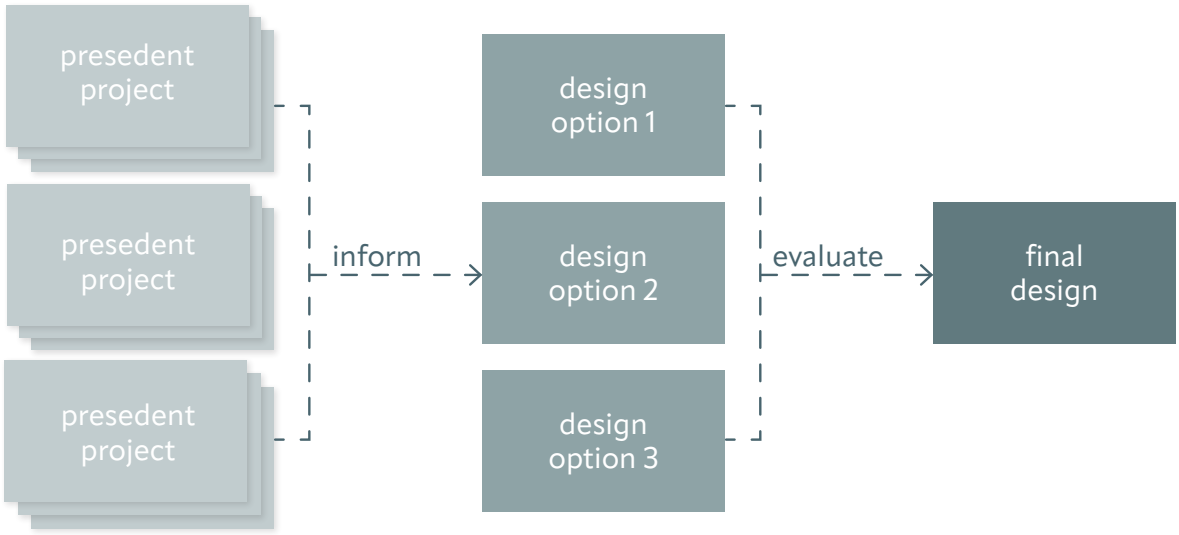


Eemhuis (Amersfoort)



Rozet (Arnhem)

Process



Atmospheric variable criteria

A fixed set of criteria was developed for each variable to ensure internal consistency in scoring across all cases. The criteria are defined as ordinal scales, structured as a five-point Likert-type scale, allowing spatial conditions to be evaluated relative to one another rather than measured absolutely.

Table 2.2.2: Atmosphere heat maps - variable criteria

	Variable	Score 1	Score 2	Score
SENSORY CONDITIONS	**Light**	Low light levels Predominantly artificial No daylight access	Mostly artificial Limited daylight	Mixed
	Sound	Very low sound levels Sound largely absent	Low sound levels Limited sources	Single source
	Materiality (hard - soft)	Predominantly hard, non-absorptive surfaces	Mostly hard surfaces with limited absorption	Balanc
	Colour	Grayscale only (black, white, grey)	Low-saturation colours Limited palette	Neutra muted
	Nature	No visible natural elements	Minimal natural elements Representational or distant (images, remote views)	Indirec
SPATIAL CONFIGURATION	**Scale**	Very small Body nearly fills the space	Small Short distances between boundaries	Mediu Propor scale s
	Enclosure (geometry)	0-1 enclosing sides	1-2 enclosing sides	2-3 enc
	Exposure (sightlines)	Not easily visible Visually protected from most directions	Limited visibility Screened or recessed position	Moder Partial
	Legibility	Spatial organization unclear Destinations not readable	Partially readable Frequent ambiguity	Genera zones
OCCUPATION	**Density (people)**	Large amount of unoccupied space	Low occupancy relative to space	Balanc
	Movement	Predominantly static People mostly stationary (sitting, standing)	Limited movement Slow, occasional circulation	Contin paths
	Freedom of occupation & behaviour	Single, clearly prescribed use Behaviour tightly scripted	Limited range of permitted uses Behaviour mostly predefined	Multip Some

Application to precedent projects

I apply the atmosphere research method to three precedent projects: Forum (Groningen), Eemhuis (Amersfoort), and Rozet (Arnhem). I visit these libraries in person, where I observe, analyse, and map their atmospheric conditions.

I link the data to specific spatial locations, creating a dataset that reveals patterns between atmospheric conditions, programme, and spatial organisation. I use these patterns to inform the design of the project.

3	Score 4	Score 5
artificial and natural light	Daylight dominant Artificial as supplement	Daylight dominant Light defines spatial focus
source or controlled sound es	Noticeable sound from several sources	Continuous high sound levels Multiple overlapping sources
ed mix of hard and soft materials	Soft or absorptive materials dominant	Highly soft, absorptive, tactile surfaces
l colours (beige, wood tones, hues)	Multiple distinct colours Mix of muted and bright hues	Highly saturated and dominant colours
t nature (views, natural materials)	Direct presence of natural elements (plants, water, landscape)	Nature integrated as spatial component
m rtions comparable to typical room- paces	Large Long distances High ceiling or large span	Very large Atrium/hall scale Volume dominates perception
closing sides	3-4 enclosing sides	Fully enclosed (walls, screens, or complete spatial boundary)
ate visibility visual buffering	Visible from several directions Limited visual interruption	Visible from many directions Long uninterrupted sightlines
ally readable with some unclear	Clear hierarchy and routes Signage secondary	Immediately understandable Routes and functions self-evident
ed occupancy and free space	Moderate-high occupancy	High occupancy Minimal free space
nuous movement along defined	Active movement Multiple flows intersect	Highly dynamic movement Fast and dispersed circulation
le recognised uses freedom within defined norms	Broad range of uses supported Users choose posture and duration	Open-ended use Behaviour largely self-defined and appropriable

3.
DESIGN

3.1 Design research



Figure 3.1.1: Analysis map of Athens (1:20000 scaled) (own work 2026)



Athens context

The Pyrkal site is located in southern Athens, within a dense urban environment with limited access to green and open space (Appendix D.1). At the same time, it is well accessible by public transport, car, and foot.

This combination of density, accessibility, and limited opportunities for retreat makes the site suitable for a project that integrates mental well-being into everyday urban life.

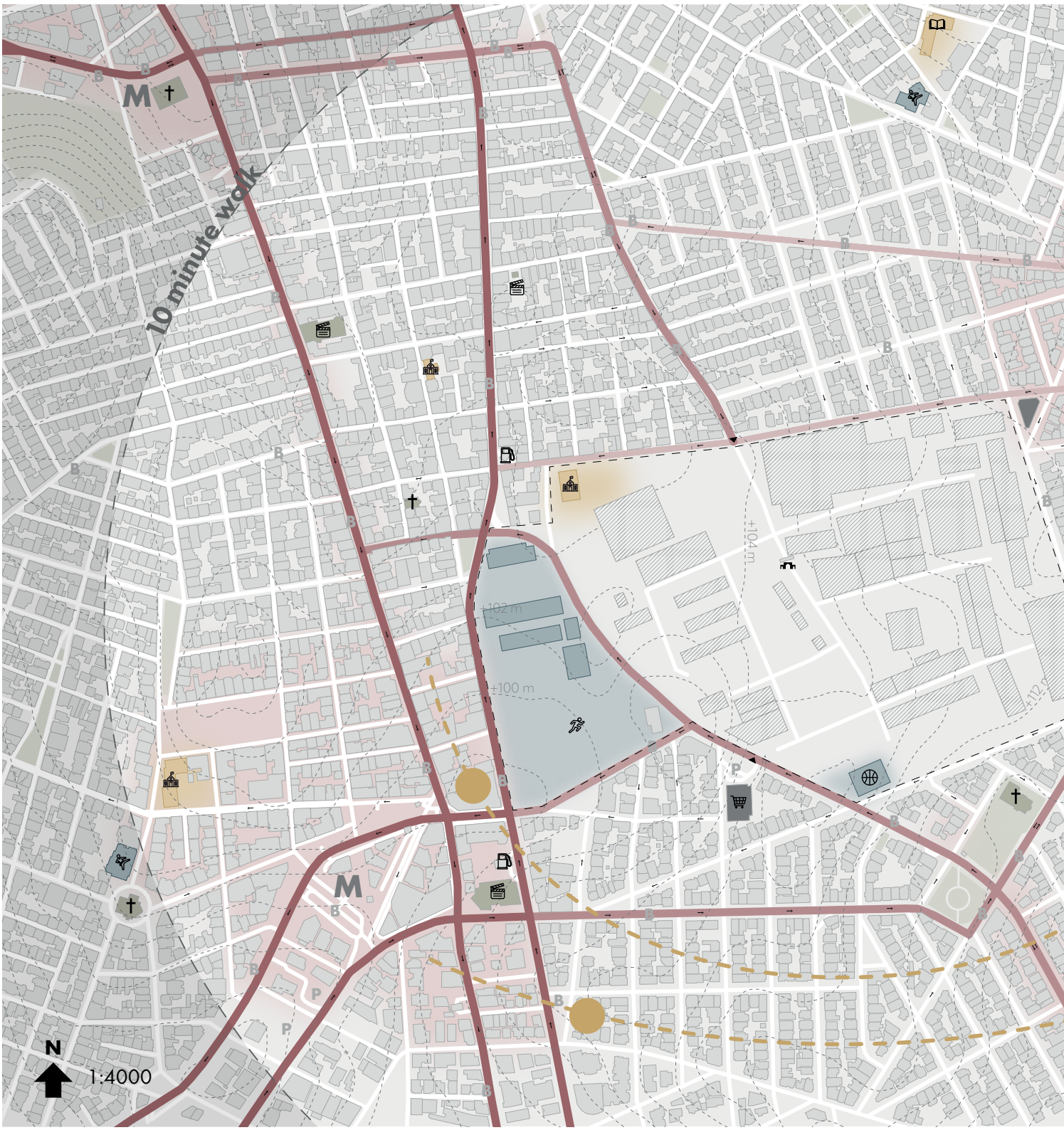


Figure 3.1.2: Analysis map of Pyrkal (1:4000 scaled) (own work 2026)



Pyrkal site analysis

The site is located at the centre of the Pyrkal masterplan, where multiple pedestrian routes connect the surrounding neighbourhoods (Appendix E.1). The direct surroundings consist primarily of residential areas, complemented by social and commercial functions.

Multiple schools and sports facilities are located within walking distance of the site, indicating the presence of a substantial youth population. At the same time, there are no libraries and no preventive mental health facilities nearby. This reveals a gap between the concentration of young people and the availability of spaces that support learning, reflection, and low-threshold guidance.

Although the site is connected to active urban areas and large roads, the analysis also identifies opportunities to create quieter environments for retreat and reflection.

Program

The program was analysed according to degrees of publicness and type of use (Appendix F.1). This revealed a gradient from public and social activities towards more private and individual forms of learning, reflection, and support. This gradient became a key organisational principle for the project.

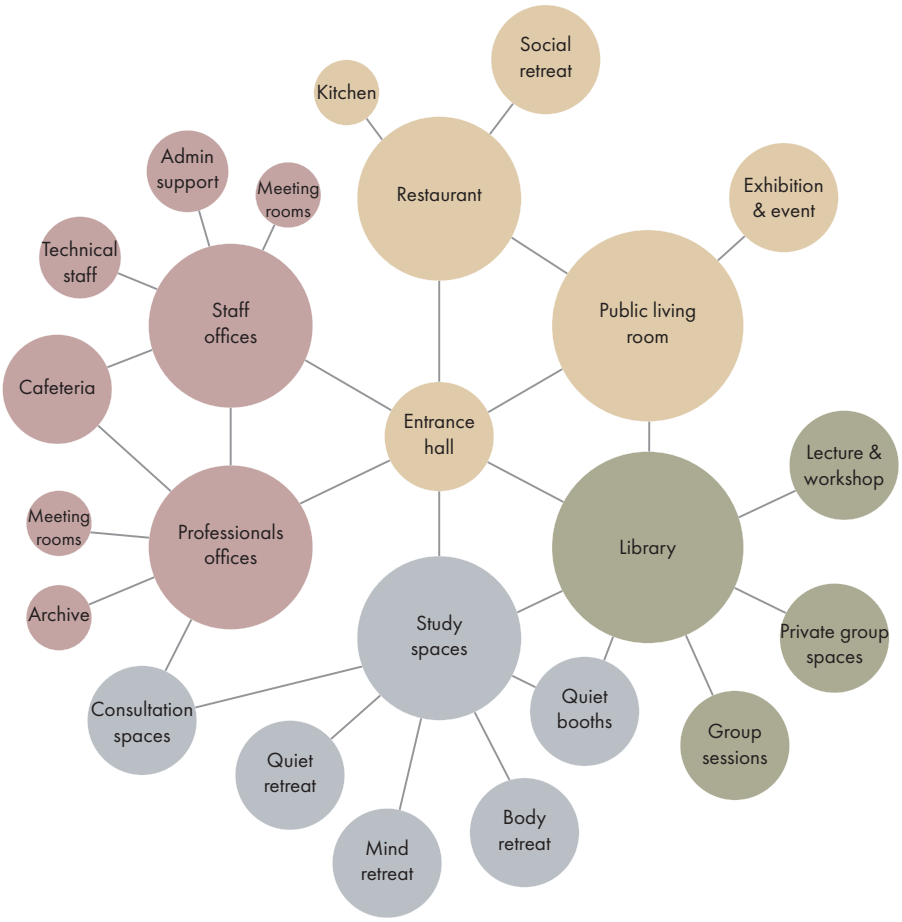


Figure 3.1.3: Program bubble diagram (own work 2026)

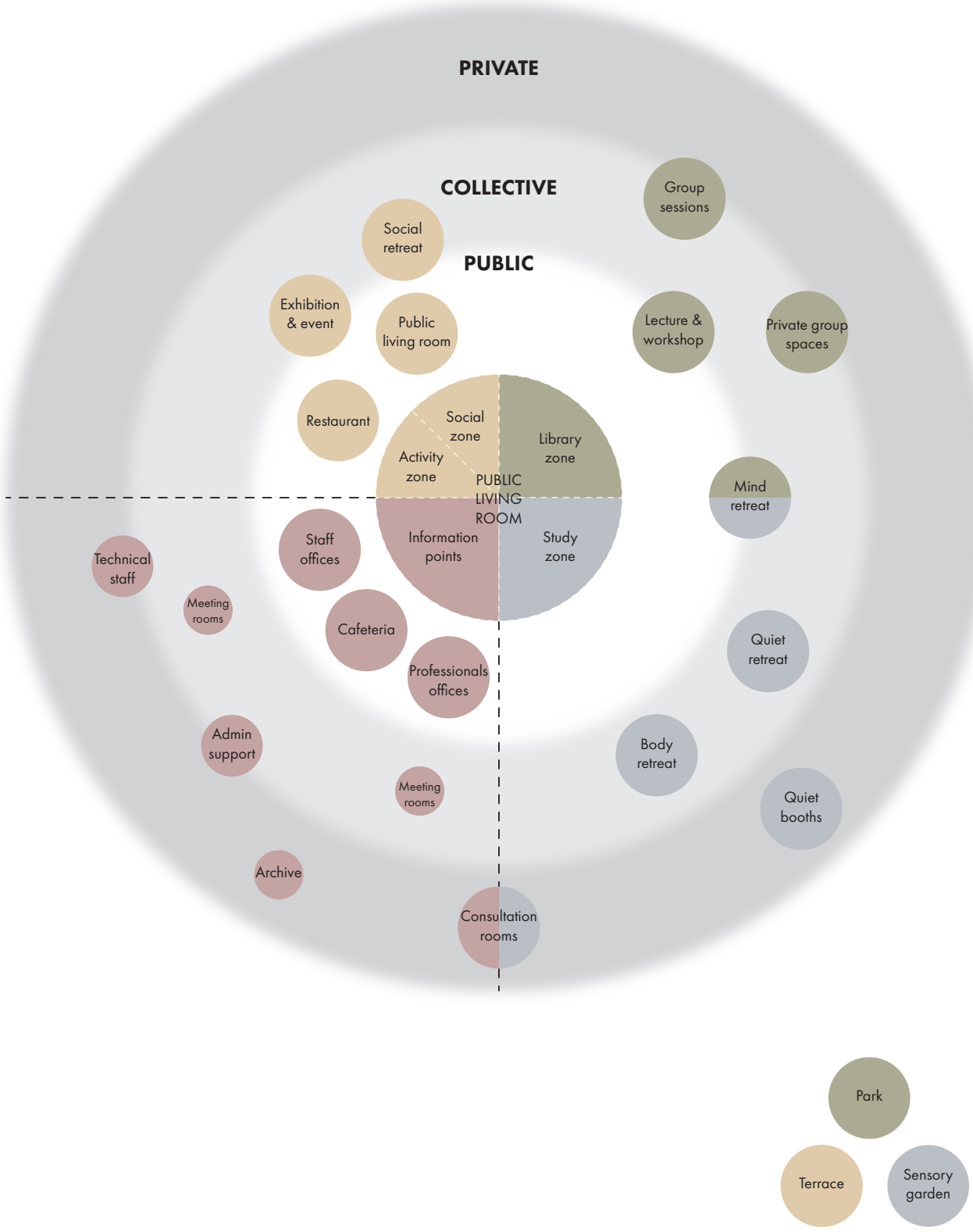


Figure 3.1.4s: Different levels of publicness of the building program (own work 2026)

Users

To inform the design, I defined a range of user profiles representing different ways people might approach, use, and move through the building. These profiles reveal different needs in terms of accessibility, privacy, social interaction, and support, and help guide the spatial organisation and program.

THE ONES WH

They pass by and obser



The park visitor

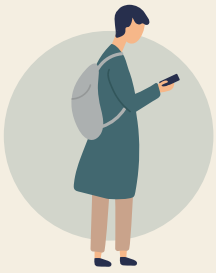
This visitor is just passing through the park and notices the building along the way. People seemed to enjoy themselves inside. She might stop for a moment and grap a cup of coffee.

What he needs:

- A path that continues through the building
- Spaces to pause, sit, and observe

THE INDIVIDUAL USERS

They come alone and blend into the collective environment.



The student

She has an important exam coming up but cannot focus at home because of noise and distractions. She regularly goes to the library to concentrate without being disturbed.

What she needs:

- Quiet study spaces
- Flexible seating

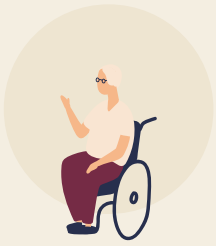


The one who practices yoga

She has a busy and hectic life and uses movement to clear her mind. She practices yoga and breathing exercises regularly to relax and reconnect with herself.

What she needs:

- A calm space for movement and breathing
- A quiet atmosphere



The lonely elderly

She feels alone in her daily life, where most days are quiet, with little moments of interaction. Her favorite moments of the week are the Tuesday and Thursday evenings, when people gather for dinner at the library's community kitchen.

What she needs:

- Informal social spaces
- Community activities (e.g. shared meals)



The reader

He is interested in self-development and wants to understand his thoughts and behavior better. He looks for guidance on what to read.

What she needs:

- Access to books
- Light guidance or recommendations

THE SOCIAL & G

They make pla



The study group

This group of high school friends study together regularly. They make homework, discuss, and take coffee breaks together.

What she needs:

- Shared study spaces
- Places to sit together without disturbing others
- Coffee place



The one who needs a listening ear

She is going through a difficult time and needs a friend to talk to. She is not looking for therapy, just a safe and informal conversation over lunch.

What they need:

- A casual, comfortable place to talk
- A sense of privacy without isolation
- Lunch at a restaurant

HO PASS BY

rve from the outside



The first-time visitor
This visitor has never been to the library before but has heard about it. Today, he happens to pass by, feels drawn in by the people and atmosphere, and decides to explore the space on his own.

What he needs:
- Freedom to wander
- No pressure to participate

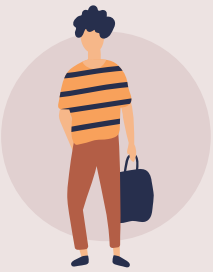
THE STAFF

They run the library and support its users.



The professional
She works here full time and helps people with everyday struggles at school, work, or home. She listens, asks questions, and helps them figure out what they need. She also gives workshops on topics like mindfulness and stress.

What she needs:
- An office
- Consultation spaces
- Workshop spaces



The librarian
He is here every day and knows the library well. He helps people find books that match their interests, whether they know exactly what they're looking for or not. He enjoys seeing their enthusiasm and helping them discover something new.

What he needs:
- An information desk
- Direct access to the library collection

GROUP USERS

ns together



The workshop friends
These friends are interested in self-development and enjoy participating together in lectures about topics like habits, focus, and mindset.

What they need:
- Interactive learning spaces
- A relaxed, open atmosphere



The team building colleagues
They come as a group from work to learn how to create a healthy workspace and better support each other.

What they need:
- A workshop space
- A semi-private group setting

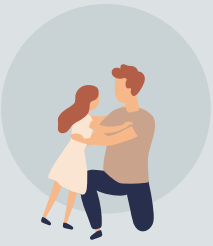
THE SUPPORT & CARE USERS

They come alone and seek support



The one who's overwhelmed
He feels overstimulated and cannot find peace at home because it is always noisy and chaotic with his brothers and sisters around. He needs a place where he can slow down, clear his mind, and simply find some peace and quiet.

What he needs:
- Quiet, low-stimulus spaces
- A place to sit alone without feeling isolated



The single dad
He is a single dad who struggles to balance everything in his life. He wants to do the best for his daughter but does not always have the answers. Sometimes he needs someone to talk to and ask for guidance.

What she needs:
- Access to low-threshold professional support
- A private space for conversation



The bullied kid
He is being bullied at school and does not have any friends there. He feels very alone and does not know what to do or who to talk to. He is looking for a place where he feels safe and understood.

What he needs:
- A group session with people with the same struggle
- Safe group environments

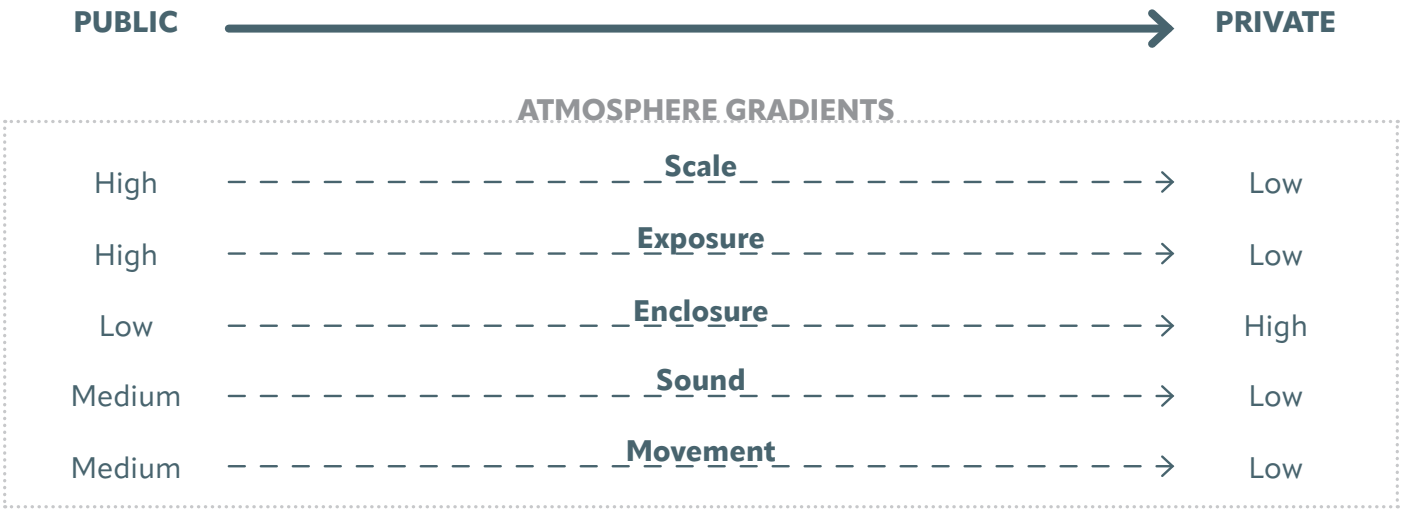


The one who's struggeling
He has been feeling down for a while but does not fully understand why. He finds it hard to talk about his feelings and does not want to burden others by asking for help.

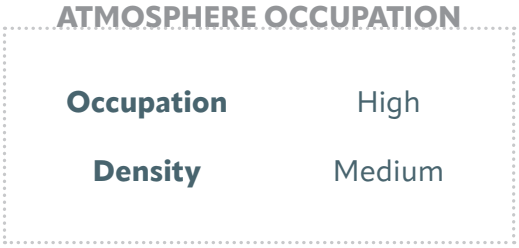
What he needs:
- Low-threshold guidance
- A safe, private space to talk to a professional

Atmosphere research

Atmospheric characteristics of contemporary libraries were analysed through a comparative study of three precedent projects (Appendix C). The research revealed the importance of gradual transitions between active public spaces and quieter environments for concentration and retreat. These findings informed the atmospheric gradients used throughout the design.

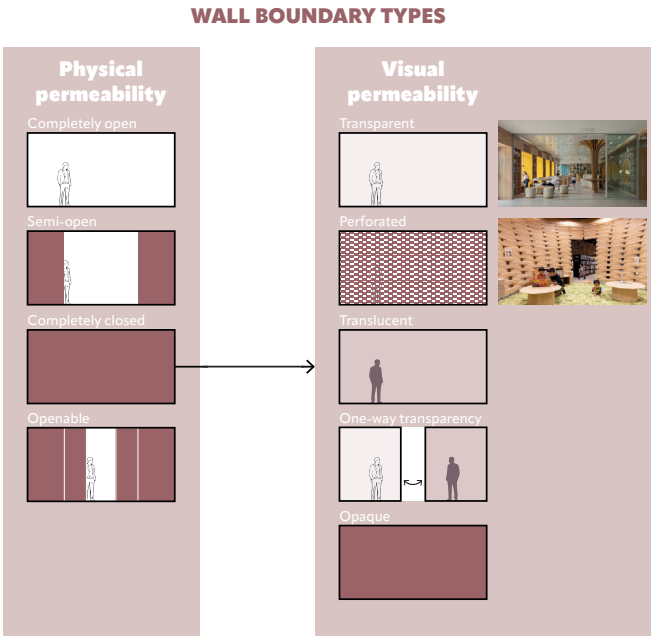

PUBLIC
PRIVATE
ATMOSPHERE GRADIENTS
Scale
High
Low
Exposure
High
Low
Enclosure
Low
High
Sound
Medium
Low
Movement
Medium
Low

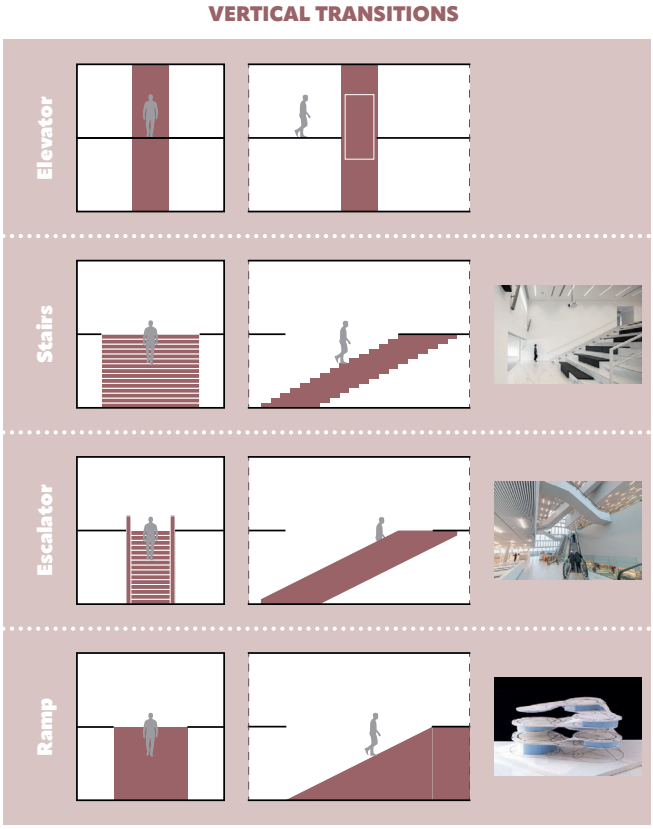

ATMOSPHERE FINISHING
Colour
Low-medium
Materiality
Medium

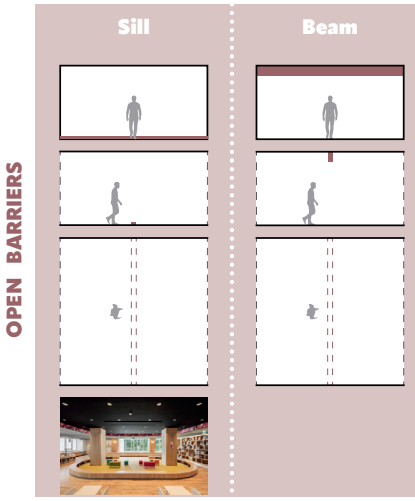

ATMOSPHERE OCCUPATION
Occupation
High
Density
Medium

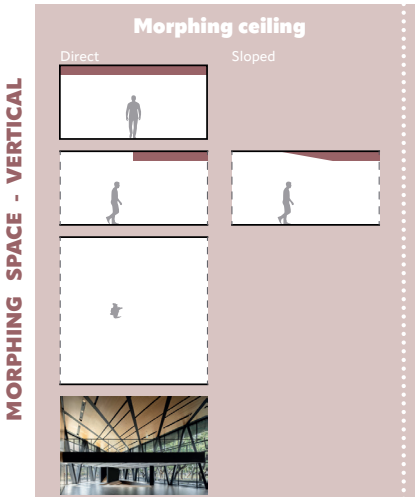
Transitions research

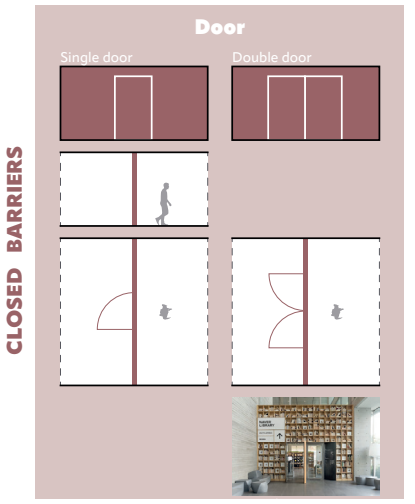
I explored different types of spatial thresholds and transitions, ranging from soft and gradual to more defined boundaries, to understand how they shape perception, movement, and degrees of privacy (Appendix F.2).

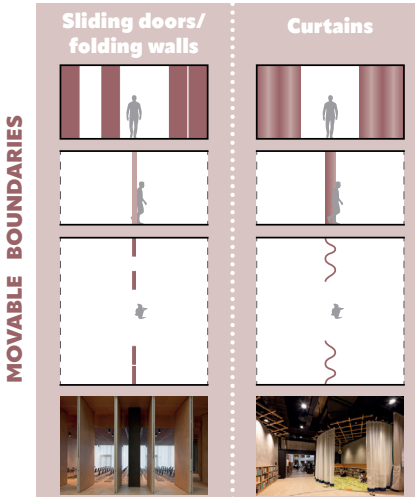


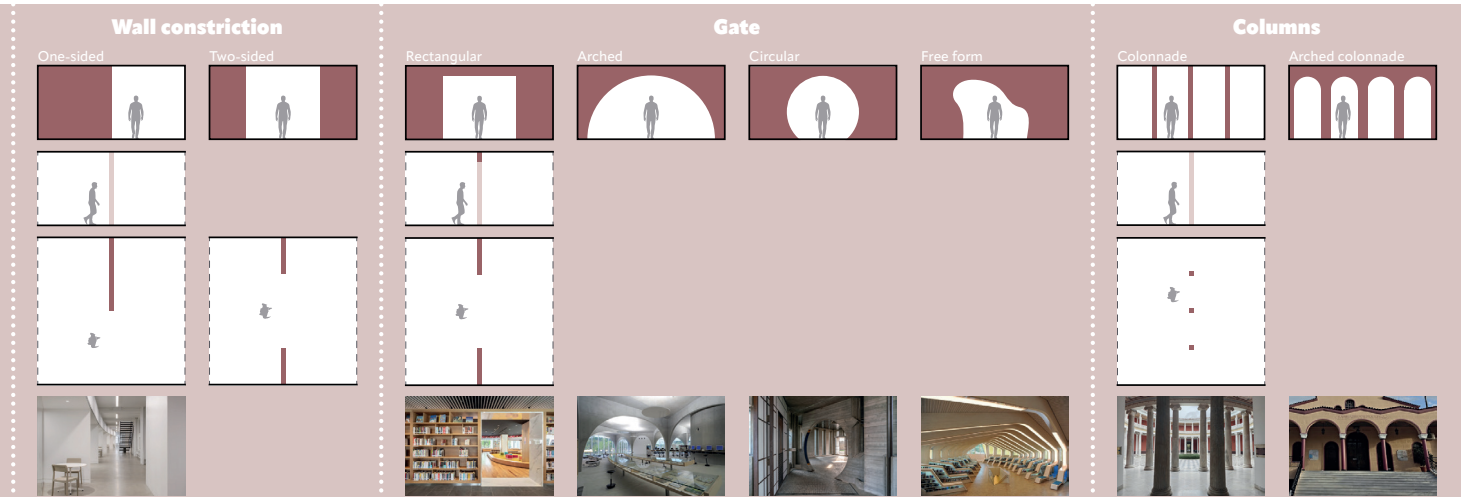


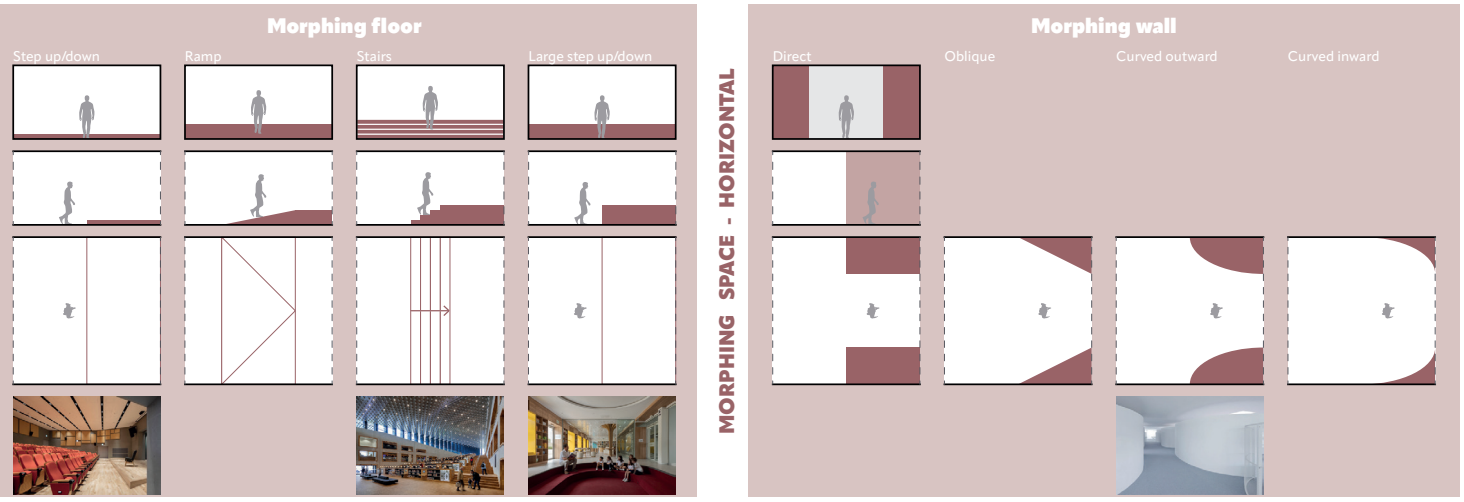


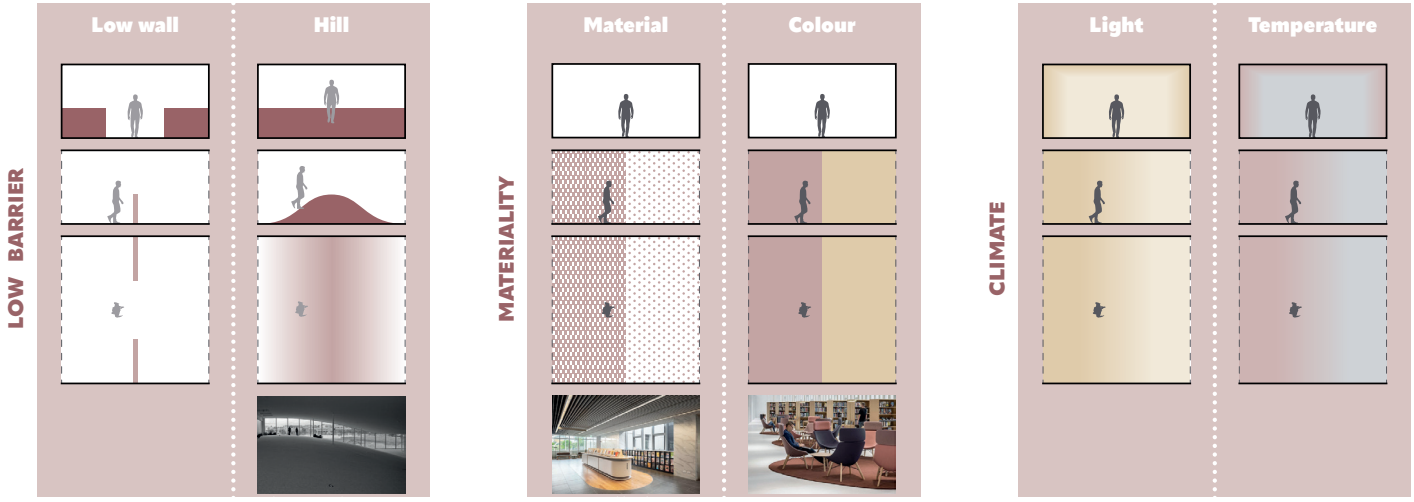


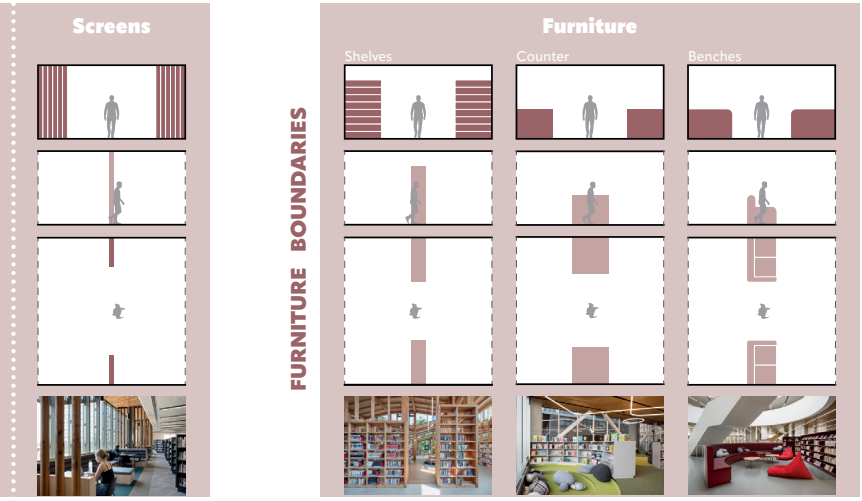





Wall constriction
One-sided
Two-sided
Gate
Rectangular
Arched
Circular
Free form
Columns
Colonnade
Arched colonnade


Morphing floor
Step up/down
Ramp
Stairs
Large step up/down
MORPHING SPACE - HORIZONTAL
Morphing wall
Direct
Oblique
Curved outward
Curved inward

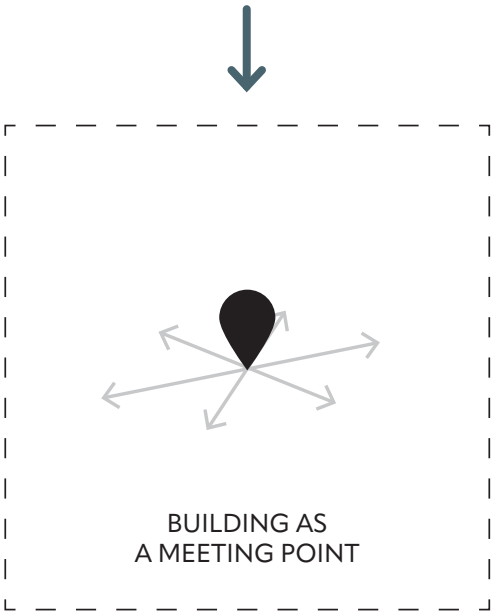

LOW BARRIER
Low wall
Hill
MATERIALITY
Material
Colour
CLIMATE
Light
Temperature


Screens
FURNITURE BOUNDARIES
Furniture
Shelves
Counter
Benches

3.2 Design principles & concept

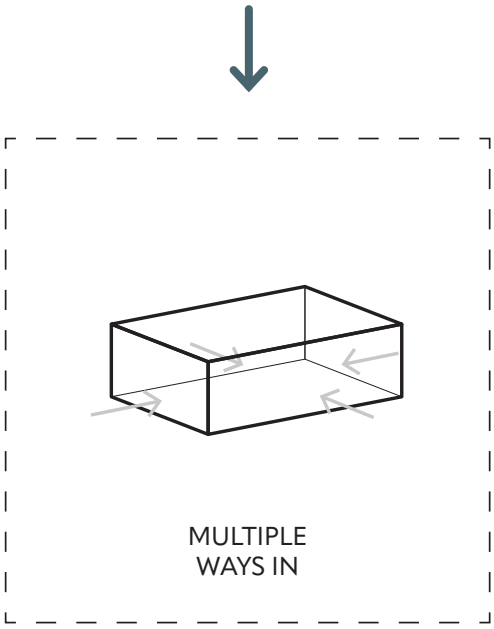
Design principles
Based on the design research presented in Chapter 3.1, I derived five design principles that guide the library design.

SITE RESEARCH



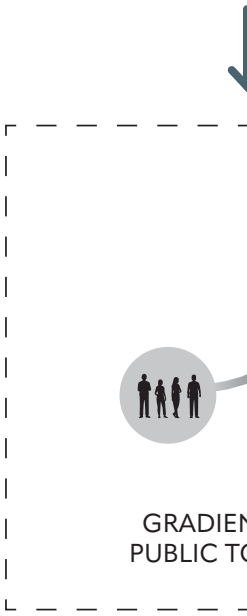
The library is integrated into a network of pedestrian routes connecting the surrounding neighbourhoods. This allows it to be reached from multiple directions while also being encountered along routes through the Pyrkal area. The building therefore functions both as a place to go to and as a place to pass through.

USER RESEARCH



Different users approach the library with different needs, moods, and intentions. The building therefore provides multiple entrances, ranging from clear and open points of arrival to quieter and more discreet ways of entering. This allows users to choose how they engage with the building.

ATMOSPHER



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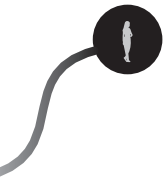

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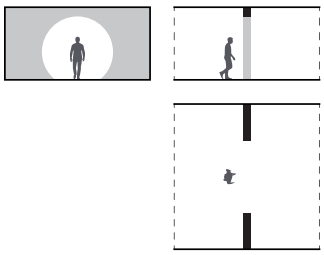
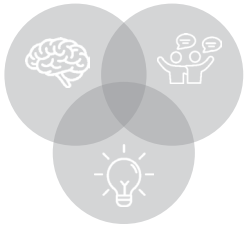
TRANSITION RESEARCH



DESIGN THROUGH
BOUNDARIES & TRANSITIONS

The design works through thresholds rather than rigid separations. Changes in materiality, light, height, and furniture create gradual transitions between spaces, helping users intuitively understand atmosphere, privacy, and use.

PROGRAM RESEARCH



INTEGRATED
PROGRAM

Different types of spaces are distributed throughout the building rather than being strictly separated into zones. This allows users to encounter learning, social interaction, reflection, and support without actively seeking them out.

Design concept

The library is largely placed below ground, creating more private and secure environments while avoiding a large and imposing presence within the landscape. A series of above-ground pavilions provide access to the building, allowing the park to remain continuous and open.

The pavilions form multiple entrances to the library, each responding to different routes, surrounding functions, and user needs.

Below ground, the library is organised in bands of increasing privacy. As users move through the building, spaces gradually become more enclosed, secluded, and secure, ranging from active social environments to quieter spaces for study, reflection, and support.

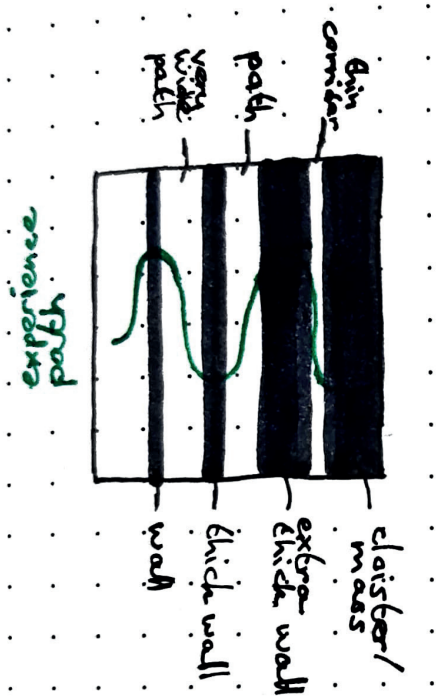


Figure 3.3.1: Conceptual floor plan sketch of the underground public to private gradient (own work 2026)

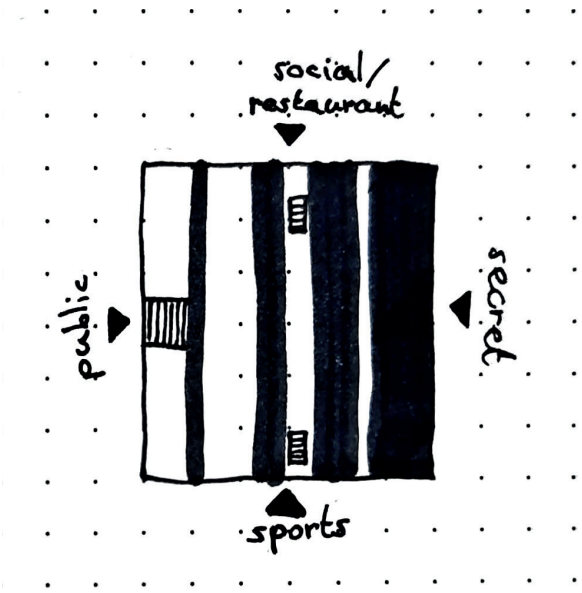


Figure 3.3.2: Conceptual floor plan sketch of entrances (own work 2026)

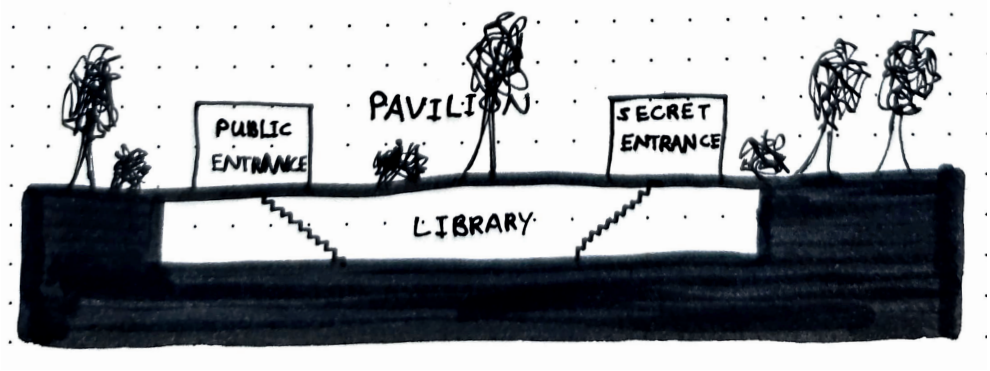


Figure 3.3.3: Section sketch of the pavilion and underground library idea (own work 2026)

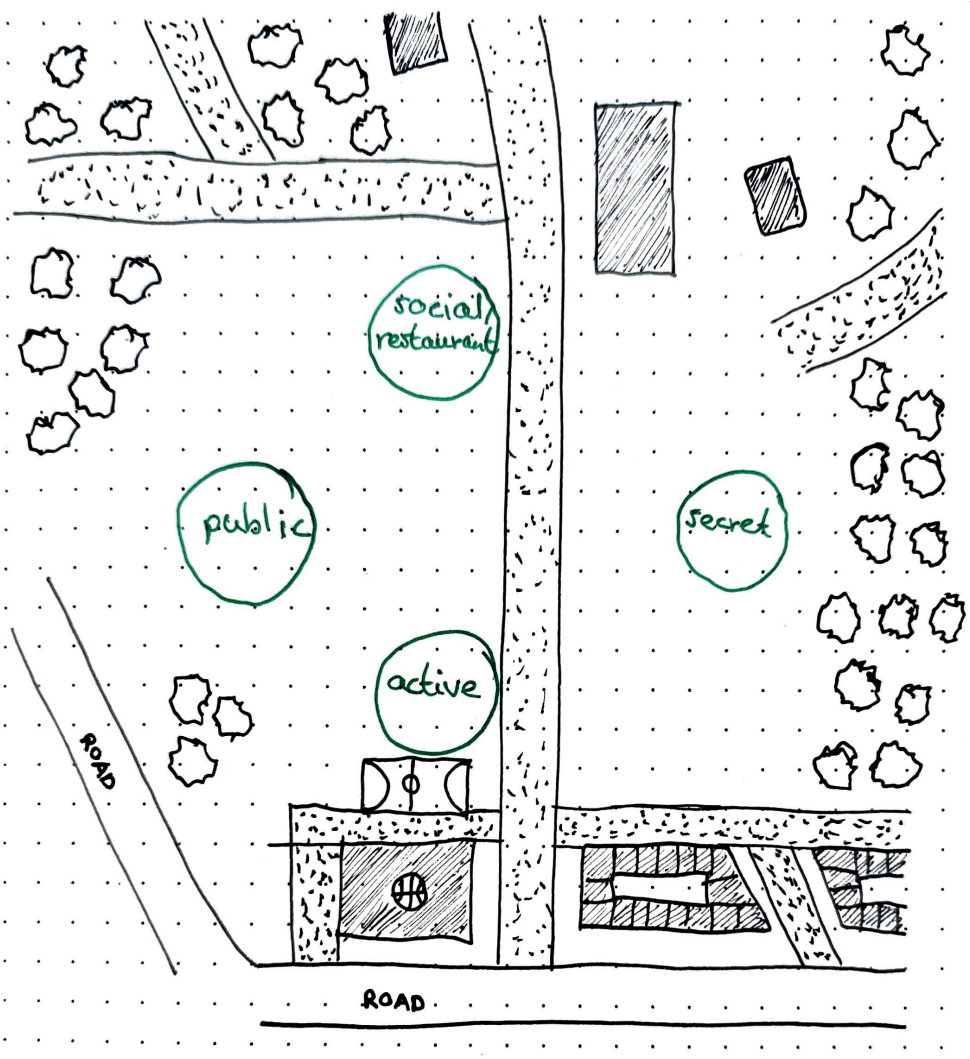


Figure 3.3.4: Floor plan sketch of pavilion entrance locations (own work 2026)

3.3 Masterplan

The masterplan preserves existing heritage buildings while transforming the former industrial site into a pedestrian-oriented park landscape (Appendix G.2). As the library primarily serves adolescents and young adults, the design prioritises walking and public transport. A network of pedestrian routes connects surrounding schools, sports facilities, residential areas, public spaces, and Dafni metro station, with the library positioned at the intersection of these routes as a central meeting point.

Car traffic is minimised by removing internal roads and locating parking underground. Green spaces are integrated throughout the site, connecting the eastern park, sports facilities, library, and surrounding neighbourhoods into one continuous landscape.

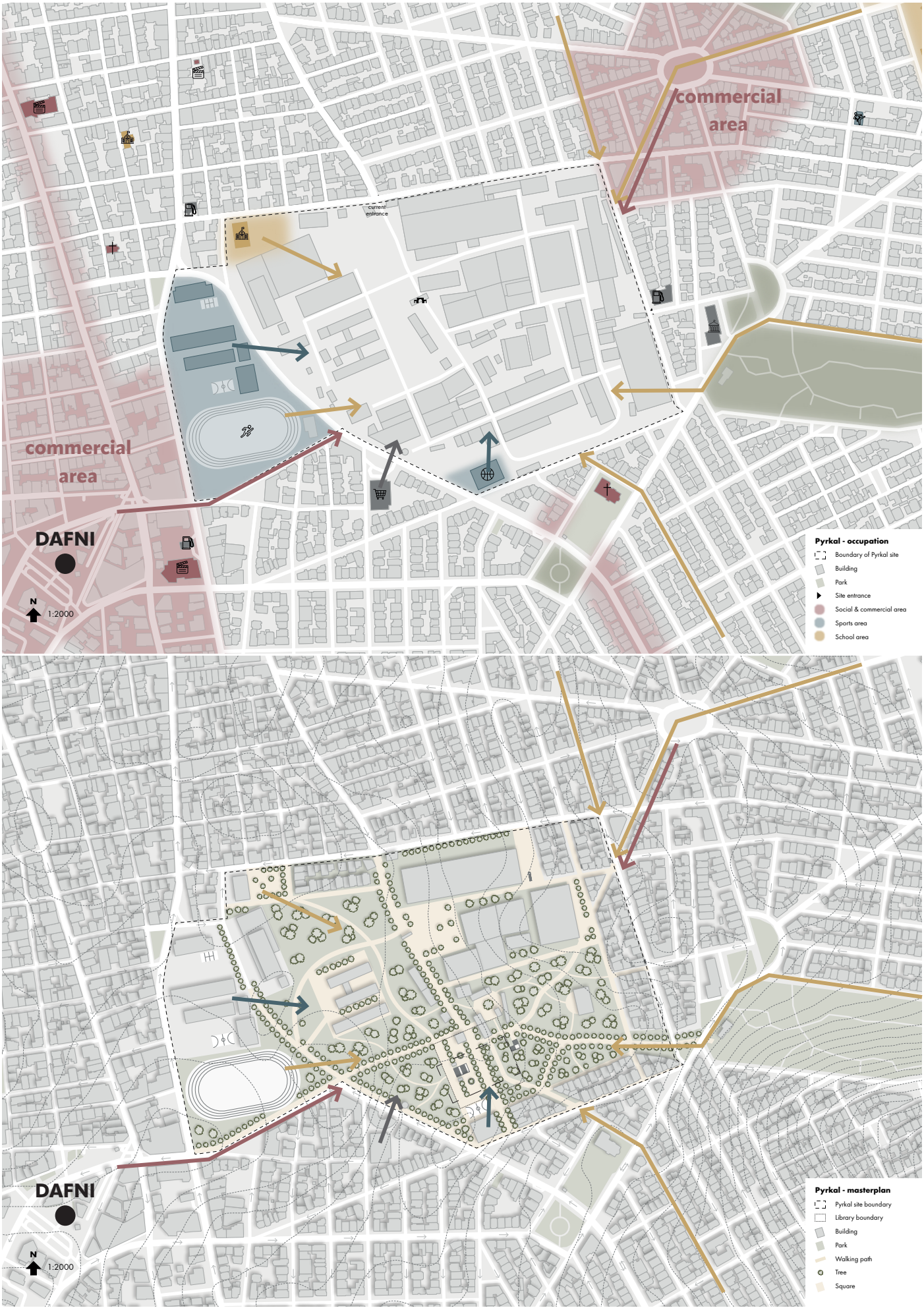


Figure 3.3.1: Masterplan of Pyrkal in Athens - connections to the surroundings (1:2000 scaled) (own work 2026)



 Figure 3.3.2: Masterplan (1:2000) (own work 2026)

Pyrkal - masterplan

- Pyrkal site boundary
- Library boundary
- Building
- Park
- Walking path
- Tree
- Square

3.4 Site plan

Park & pavilion

The library is positioned at the centre of the site's pedestrian network, connecting surrounding neighbourhoods, schools, sports facilities, public spaces, and Dafni metro station (Appendix G.2). The surrounding park forms an integral part of the project, using trees, planting, and open green spaces to support relaxation and mental well-being.

Above ground, the library consists of a series of pavilions embedded within the landscape. These pavilions keep the park open and continuous while providing access to the underground library. The park is organised in longitudinal bands of greenery and paved public space that reflect the underground spatial structure, corresponding to the bands of increasing privacy below ground.

Entrances

Four entrances respond to different users, activities, and surrounding atmospheres:

- The large public entrance (west) connects to Ilioupoleos Avenue and Dafni metro station, accommodating the main flow of visitors arriving from the city and surrounding neighbourhoods.
- The restaurant entrance (north) acts as a social meeting point along the park's main pedestrian routes.
- The active entrance (south) connects directly to the surrounding sports facilities and outdoor basketball court, linking physical activity to mental well-being.
- The discreet entrance (east) is positioned within the quietest part of the park, providing individual and low-threshold access to the library. Instead of a pavilion, it consists only of a staircase descending into the landscape.

Along Ilioupoleos Avenue, three ramps provide access to the underground parking garage, loading area, and bicycle parking.

Greenery

The park landscape uses Mediterranean trees, shrubs, grasses, and aromatic plants adapted to the climate of Athens (Appendix G.2). The vegetation provides shade, biodiversity, and contributes to a calm and restorative park environment.

Based on the selected vegetation, a soil depth of 1800 mm was applied within the planted areas.

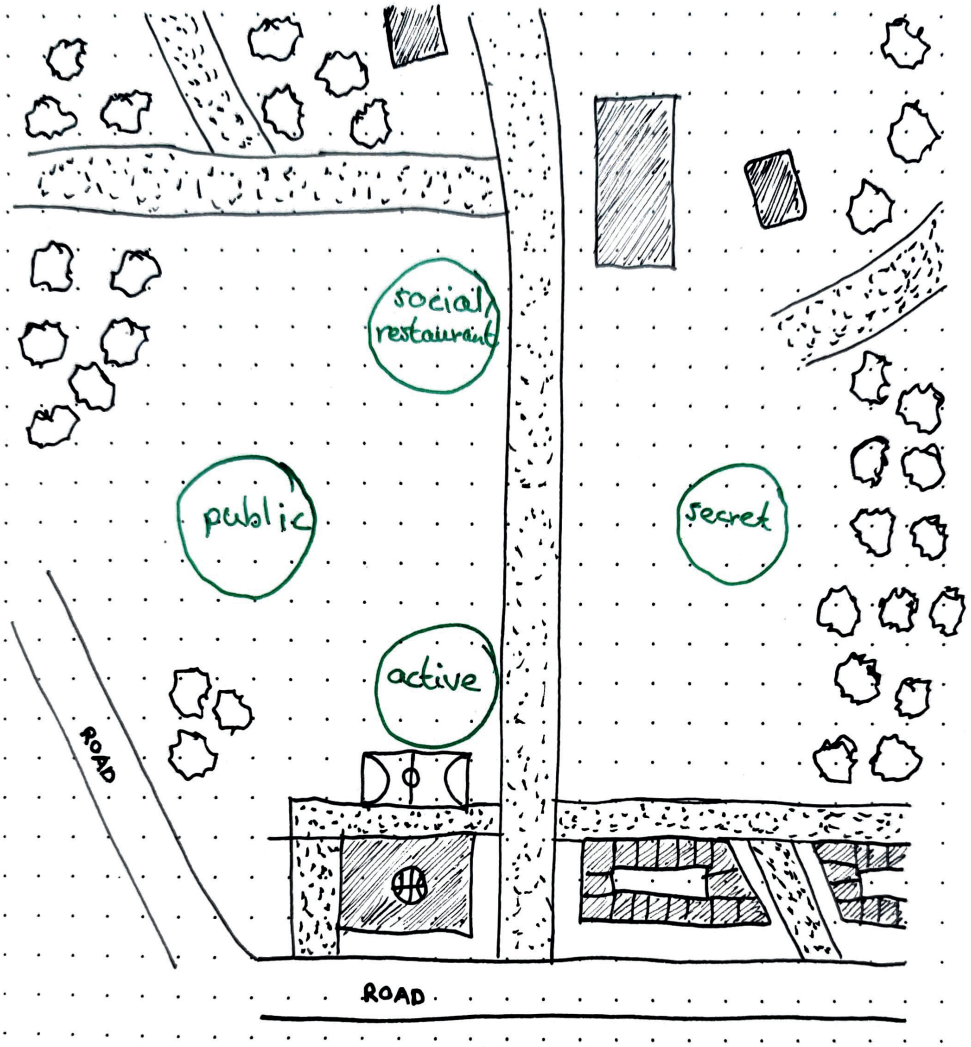


Figure 3.4.1: Floor plan sketch of pavilion entrance locations (own work 2026)

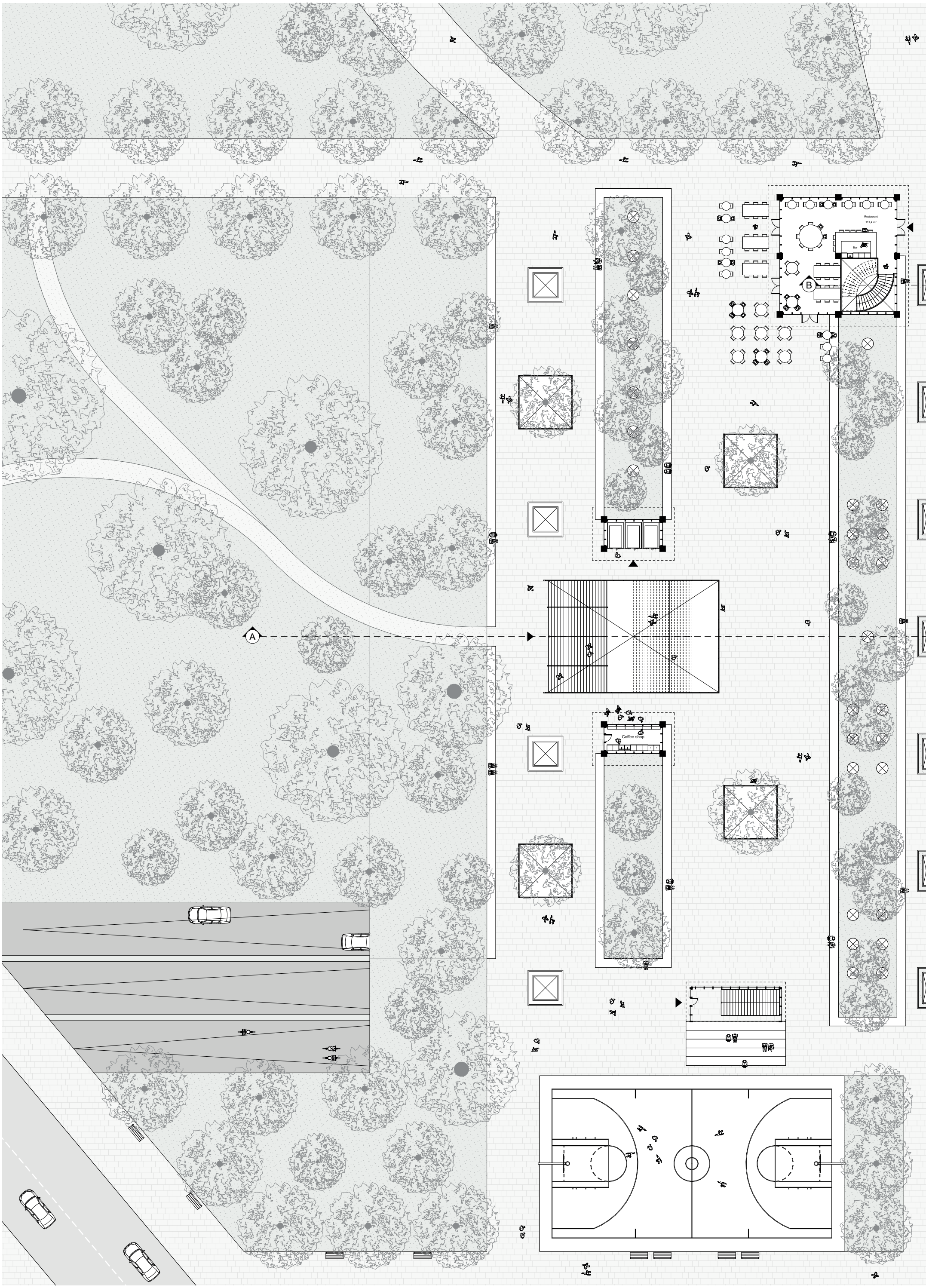


 Figure 3.4.2: Site plan (1:333) (own work 2026)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3.4 Building design

Underground library floor

The underground library is organised as a series of longitudinal bands that gradually transition from public and active spaces to quieter and more private environments (Appendix G.3). This organisation creates a continuous spatial sequence in which different levels of activity, interaction, learning, and support coexist.

The western side contains the most public functions, including the central public hall and exhibition space.

The northern side contains the restaurant, which forms the social entrance to the library.

The southern side accommodates spaces related to active well-being, such as yoga, mindfulness, and meditation, connected to the above ground sports facilities.

The central part of the building contains lecture and workshop spaces for activities related to mental health literacy, life skills, peer mentoring, and community education.

Towards the east, the library gradually becomes quieter and more private, containing quiet booths, group session spaces, and retreat spaces for different forms of well-being.

Staff offices and service spaces are located along the western edge of the building, together with the underground parking facilities.

Important spaces

Four retreat spaces support different forms of well-being:

- Body retreat: for yoga, mindfulness, and meditation.
- Mind retreat: a quiet environment for studying, reading, and reflection.
- Social retreat: for informal social interaction and meeting others.
- Quiet retreat: a low-stimulus environment for solitude, rest, and withdrawal from social activity.

Private spaces for conversation are distributed throughout the building. Consultation rooms support one-on-one conversations, while private group spaces accommodate peer support, discussion, and collaborative study.

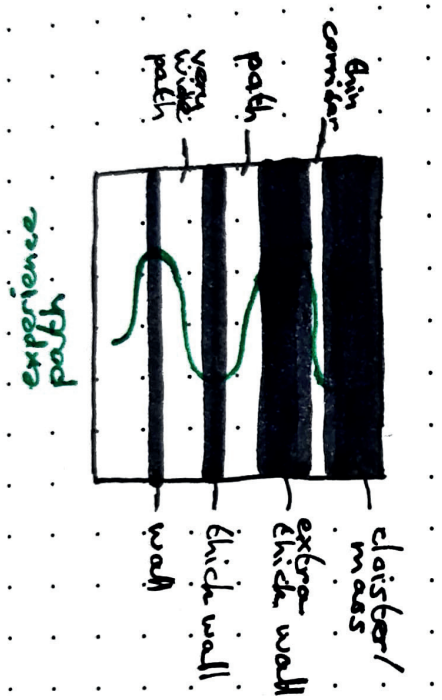


Figure 3.4.1: Conceptual floor plan sketch of the underground public to private gradient (own work 2026)

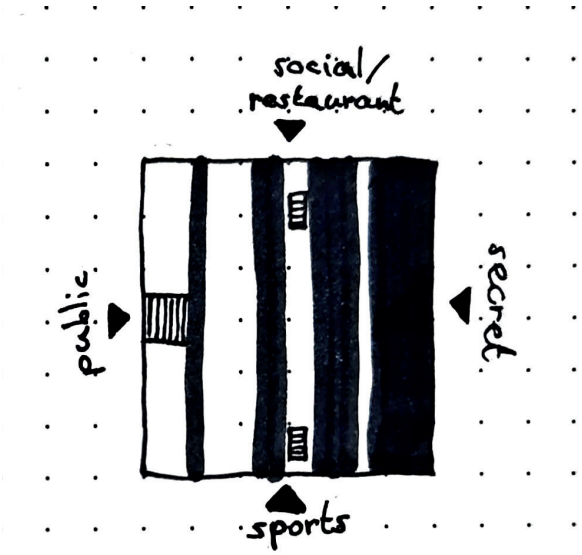


Figure 3.4.2: Conceptual floor plan sketch of entrances (own work 2026)

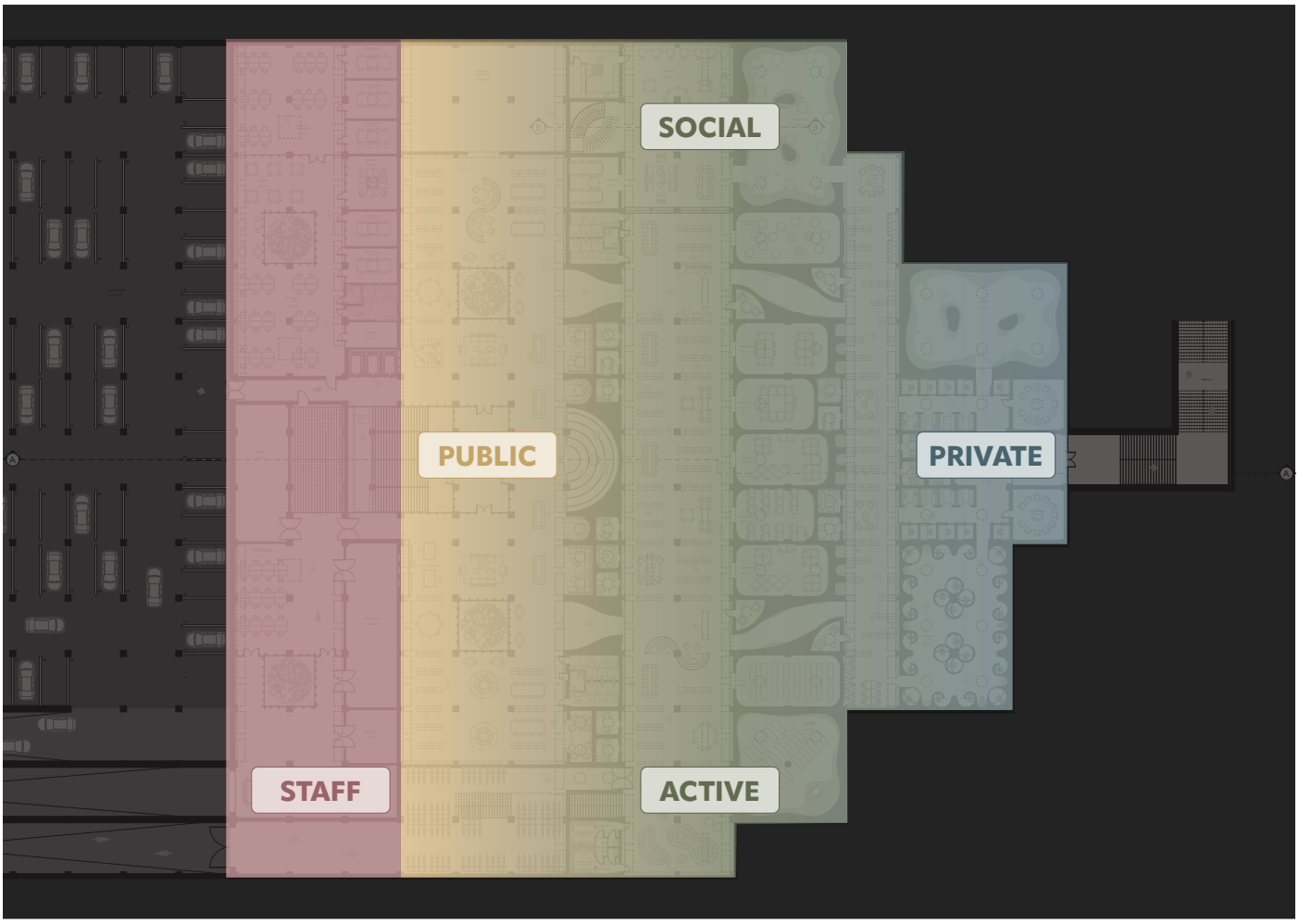
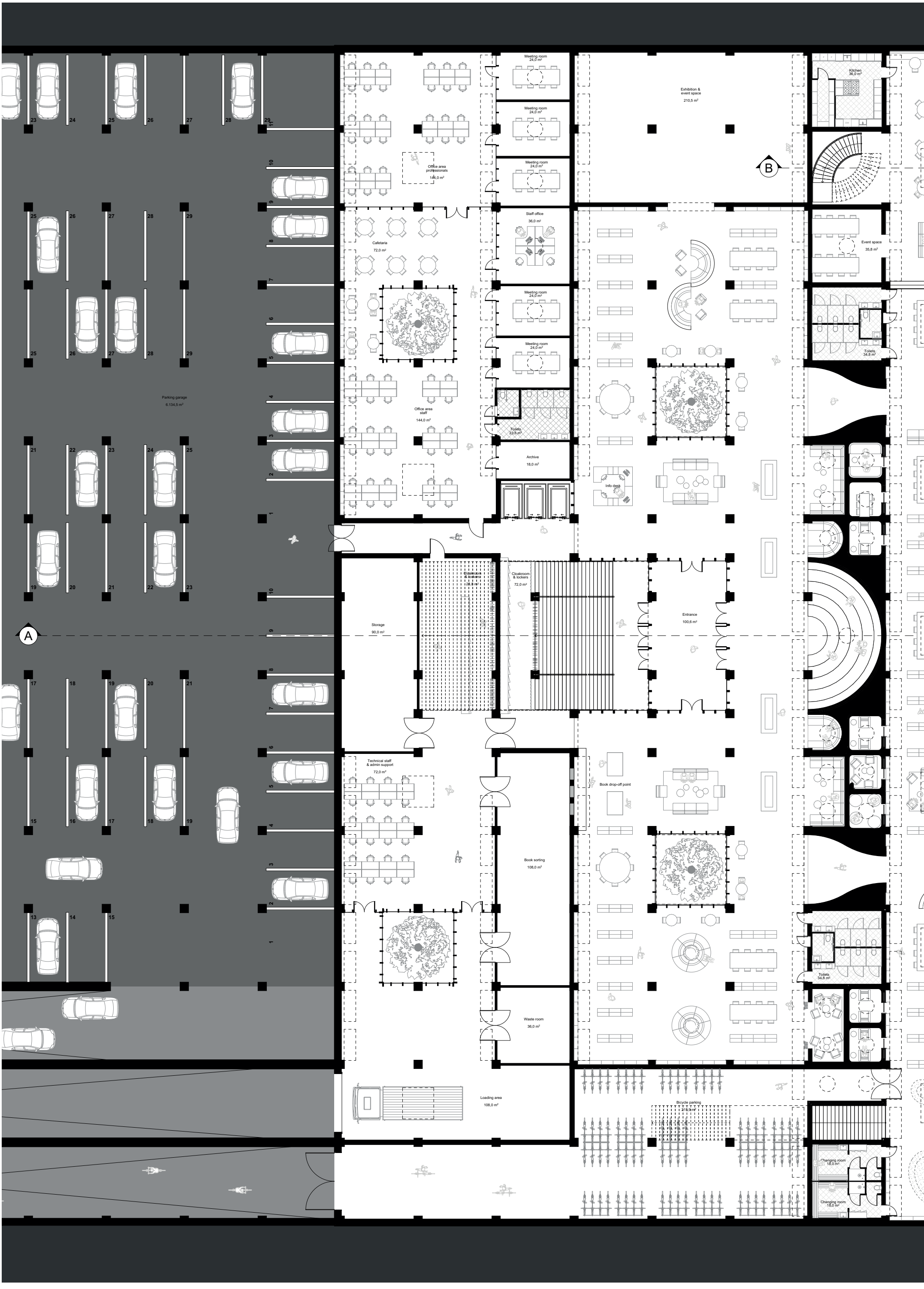
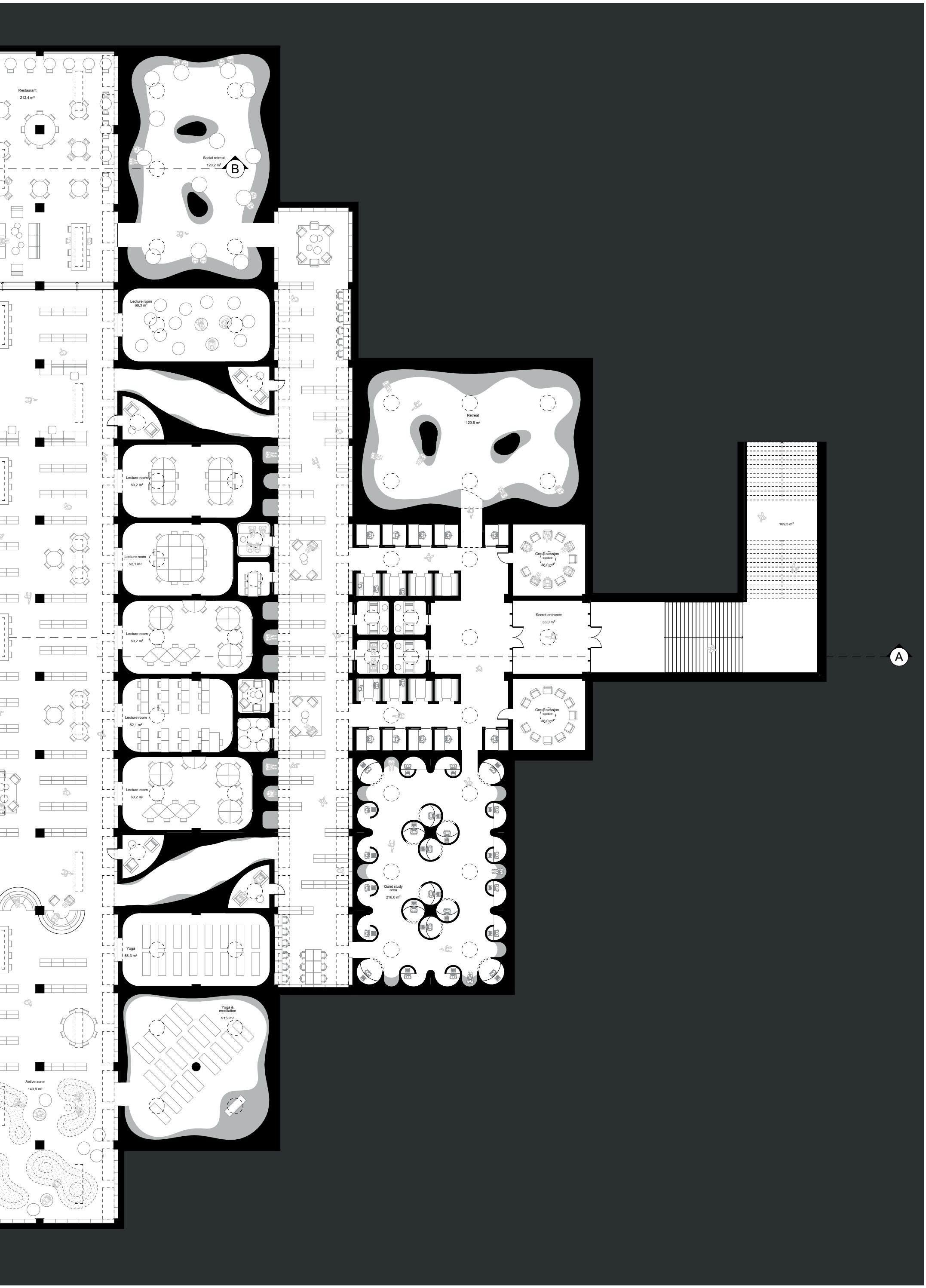
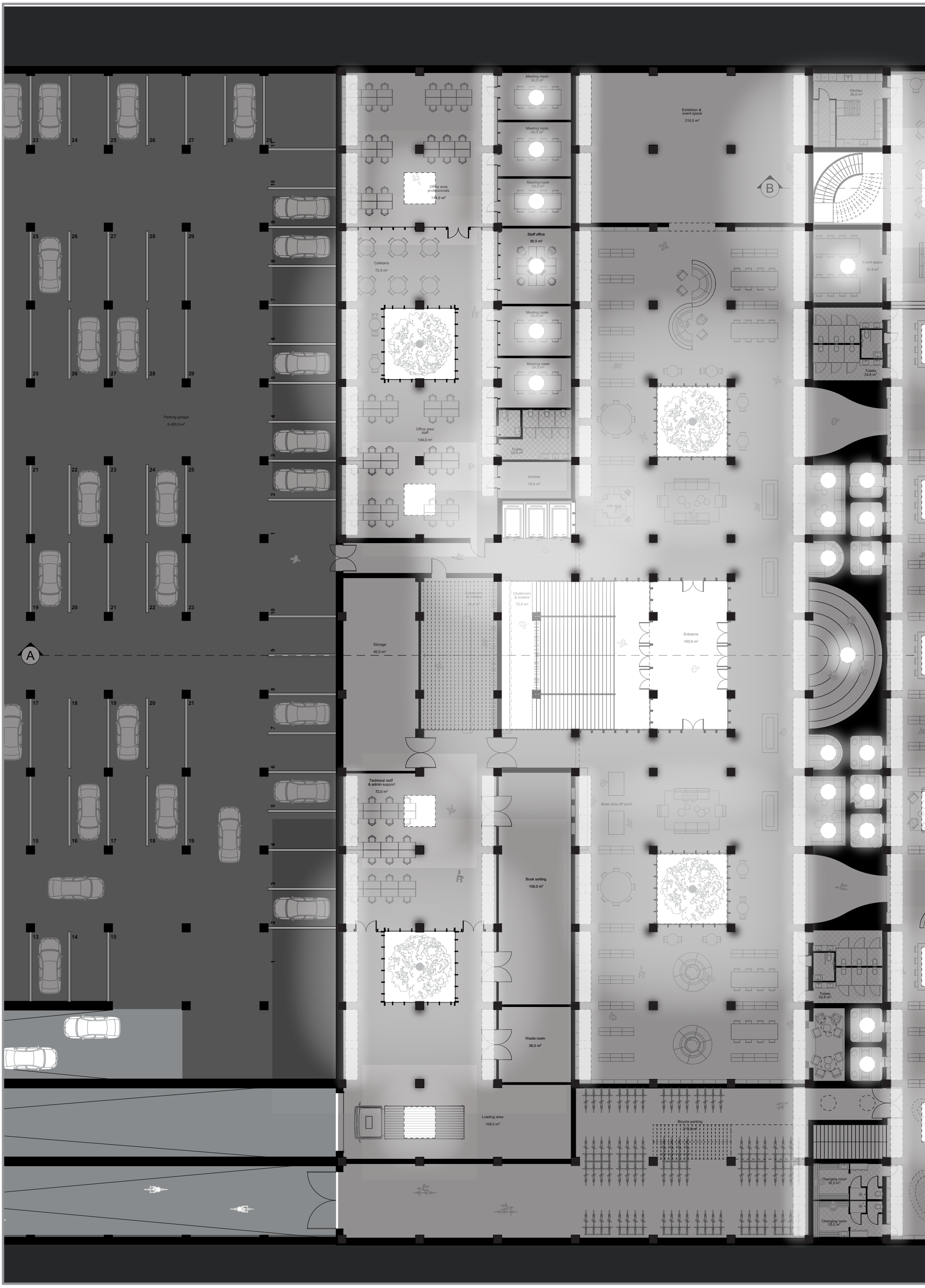


Figure 3.4.3: Underground floor plan - organisational logic (own work 2026)

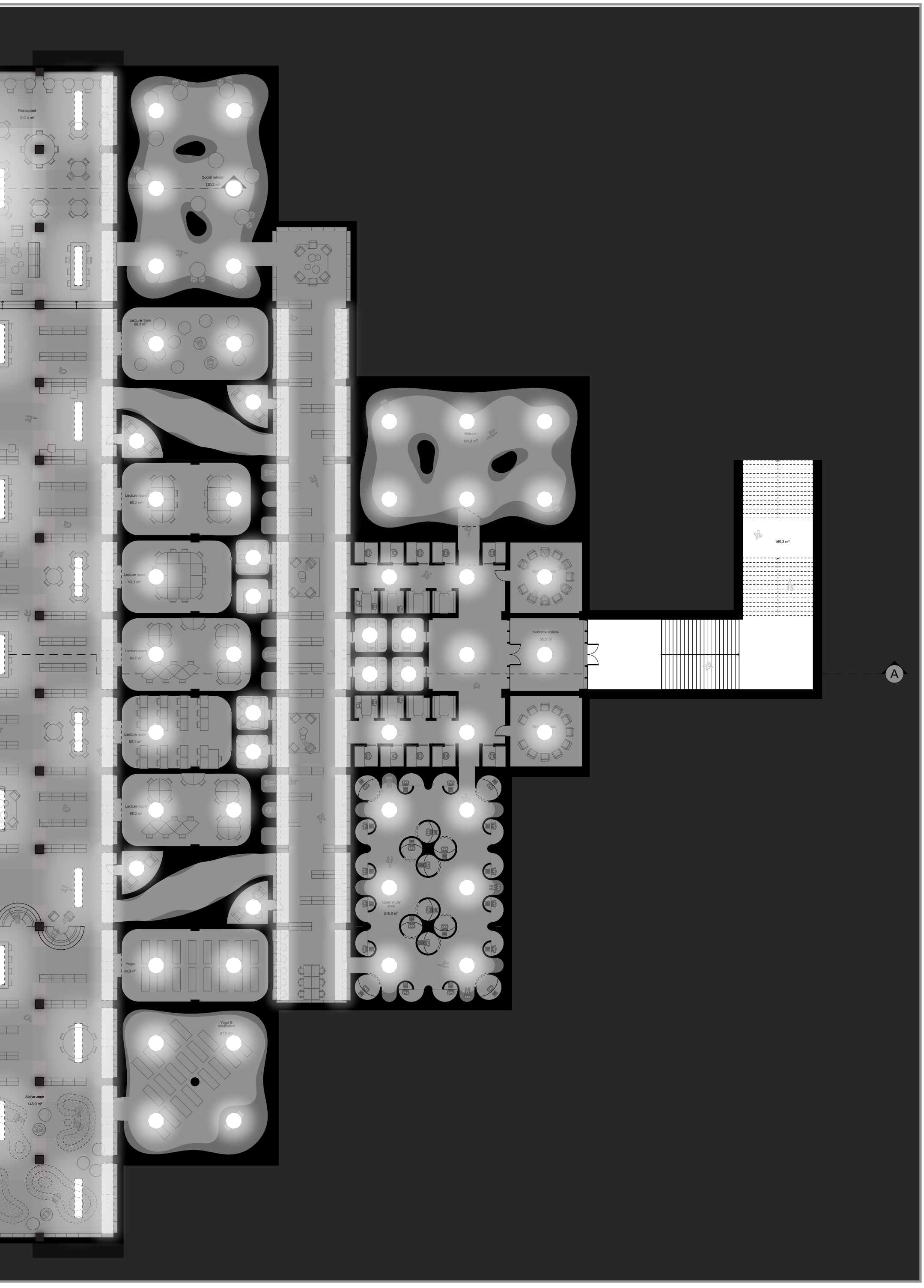


72 *Figure 3.4.4: Floor plan: underground floor (1:250 scaled) (own work 2026)*


Restaurant
212,4 m²
Social retreat
120,2 m²
B
Lecture room
68,3 m²
Retreat
120,8 m²
Lecture room
60,2 m²
Lecture room
52,1 m²
Lecture room
60,2 m²
Lecture room
52,1 m²
Lecture room
60,2 m²
Group session space
36,0 m²
Secret entrance
36,0 m²
Group session space
36,0 m²
169,3 m²
A
Quiet study area
216,0 m²
Yoga
68,3 m²
Yoga & meditation
91,9 m²
Active zone
143,9 m²



74 *Figure 3.4.5: Floor plan: underground floor shadow (1:250 scaled) (own work 2026)*


Restaurant
212,4 m²
Social retreat
120,2 m²
Lecture room
68,3 m²
Retreat
120,8 m²
Lecture room
60,2 m²
Lecture room
52,1 m²
Lecture room
60,2 m²
Lecture room
52,1 m²
Lecture room
60,2 m²
169,3 m²
Secret entrance
36,0 m²
A
Quiet study area
216,0 m²
Yoga
68,3 m²
Yoga & meditation
91,9 m²
Active zone
143,9 m²

Section

The section shows how the public-to-private gradient is expressed throughout the building (Appendix G.4). The library is organised as a series of alternating open and enclosed bands. Open bands contain circulation routes and book collections and are characterised by larger spaces, higher ceilings, low enclosure, high exposure, and greater movement. In contrast, enclosed bands contain more defined rooms and are characterised by smaller scales, lower ceilings, higher enclosure, lower exposure, and less movement.

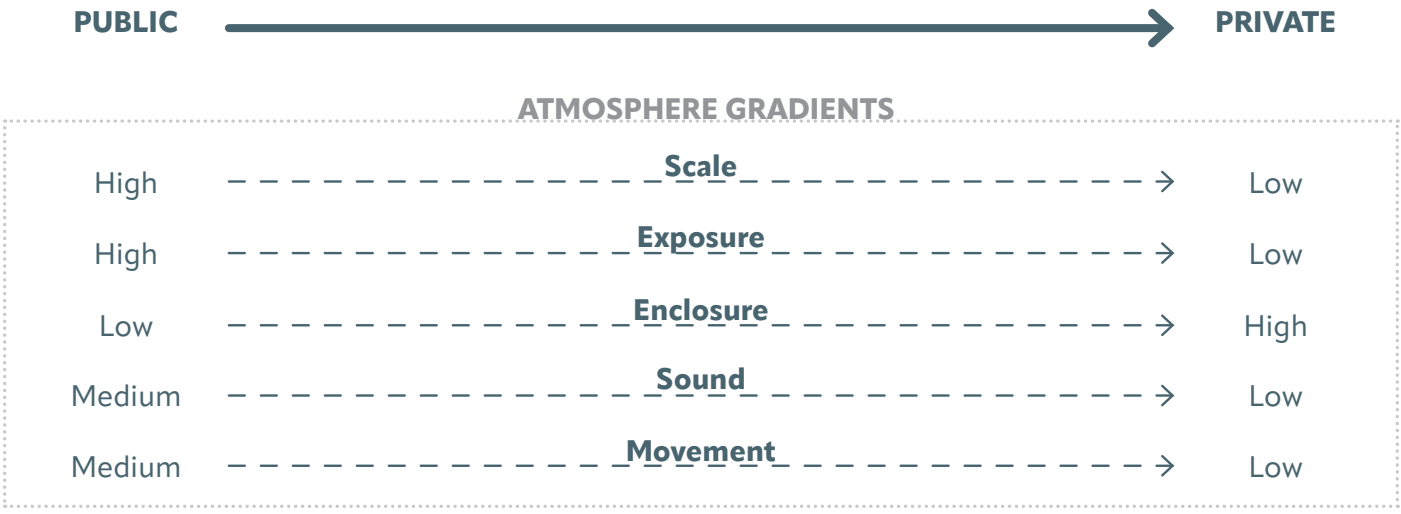
Moving from west to east, the enclosed bands gradually increase in width and importance, creating a transition from active and public environments to quieter, more secluded, and private spaces.

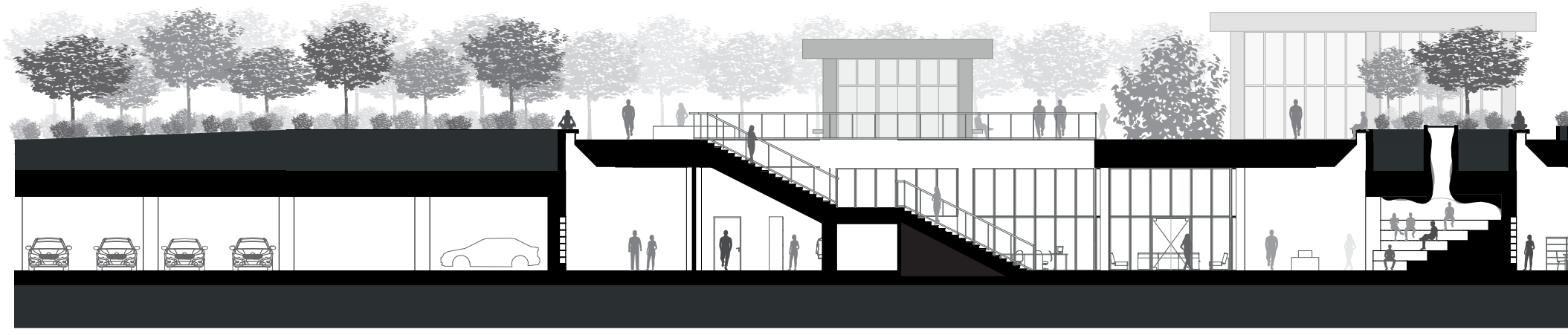
This organisation is reflected in the landscape above. The enclosed bands correspond to planted areas with deeper soil layers, while the open bands correspond to the paved pedestrian routes through the park.

A series of atria and skylights bring daylight into the underground spaces.



Figure 3.4.6: Diagram of public-private gradient of the library (own work 2026)





EAST

 Figure 3.4.7: Section A (1:200 scaled to 1:250) (own work 2026)



WEST

Skylights

As the library is located below ground level, daylight is introduced through a series of atria and skylights integrated into the park landscape (Appendix G.5). Four types of daylight openings are used throughout the project:

- Bench skylights are integrated into the level difference between pedestrian routes and planting bands, bringing daylight onto the bookcases along the open bands.
- Planter skylights are positioned within large planters along the pedestrian routes, allowing daylight to enter while preventing direct views into the library for privacy.
- Skylights within the planted bands extend through the deeper soil layers above the enclosed bands, bringing daylight into the more private rooms below.
- In the public hall, two large atria with trees and glazed entrance staircases introduce significant amounts of daylight into the building.

The daylight openings are distributed throughout the floor plan in response to both the landscape above and the spaces below. Moving from public to private areas, the openings become smaller and less exposed, reinforcing the library's public-to-private gradient.

Materialisation

The library is finished predominantly with natural materials, based on both the atmosphere research and biophilic design principles (Appendix G.5). The material palette centres around limestone and timber, creating a calm and coherent identity throughout the building.

The open bands are finished primarily in limestone, whose light colour helps reflect daylight throughout the underground spaces. Mineral fibre acoustic ceiling panels improve acoustic performance, while wooden bookcases provide a warmer material contrast to the limestone surfaces.

In contrast, the enclosed bands are finished predominantly in timber, with ribbed wooden walls and ceilings creating a stronger sense of enclosure, warmth, and retreat.

The distinction between limestone and timber reinforces the different atmospheric qualities of the open and enclosed bands, contributing to the overall public-to-private gradient of the library.

Above ground, the material palette continues through limestone paving, seating elements, and pavilion structures. Limestone roof volumes and glazed façades with soft beige frames create a coherent relationship between the park landscape and the underground library.

Detail finishing

The building is detailed in a simple and minimalist manner. Clean material transitions and integrated details reduce visual clutter, allowing the atmosphere, materials, and spatial experience of the library to remain central.

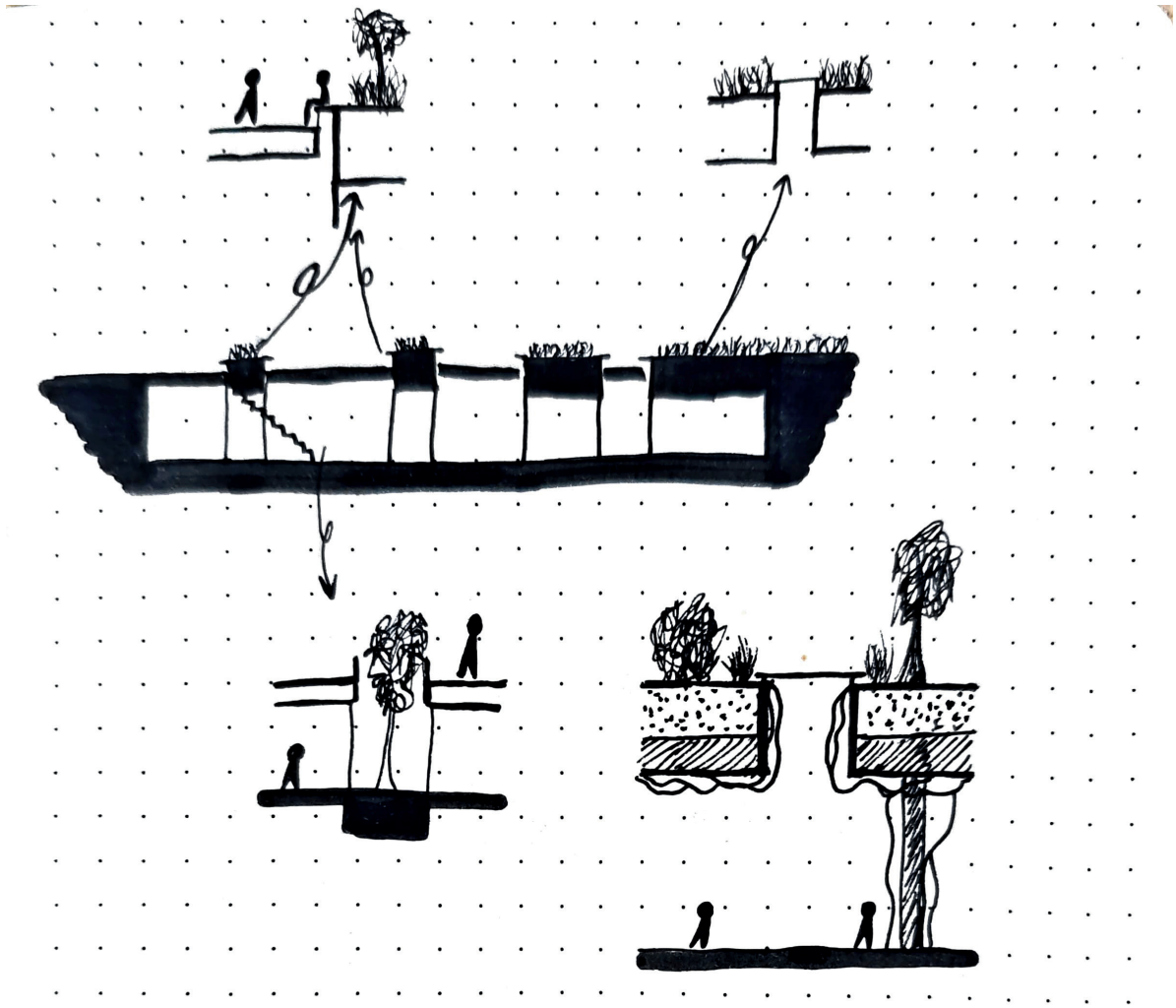
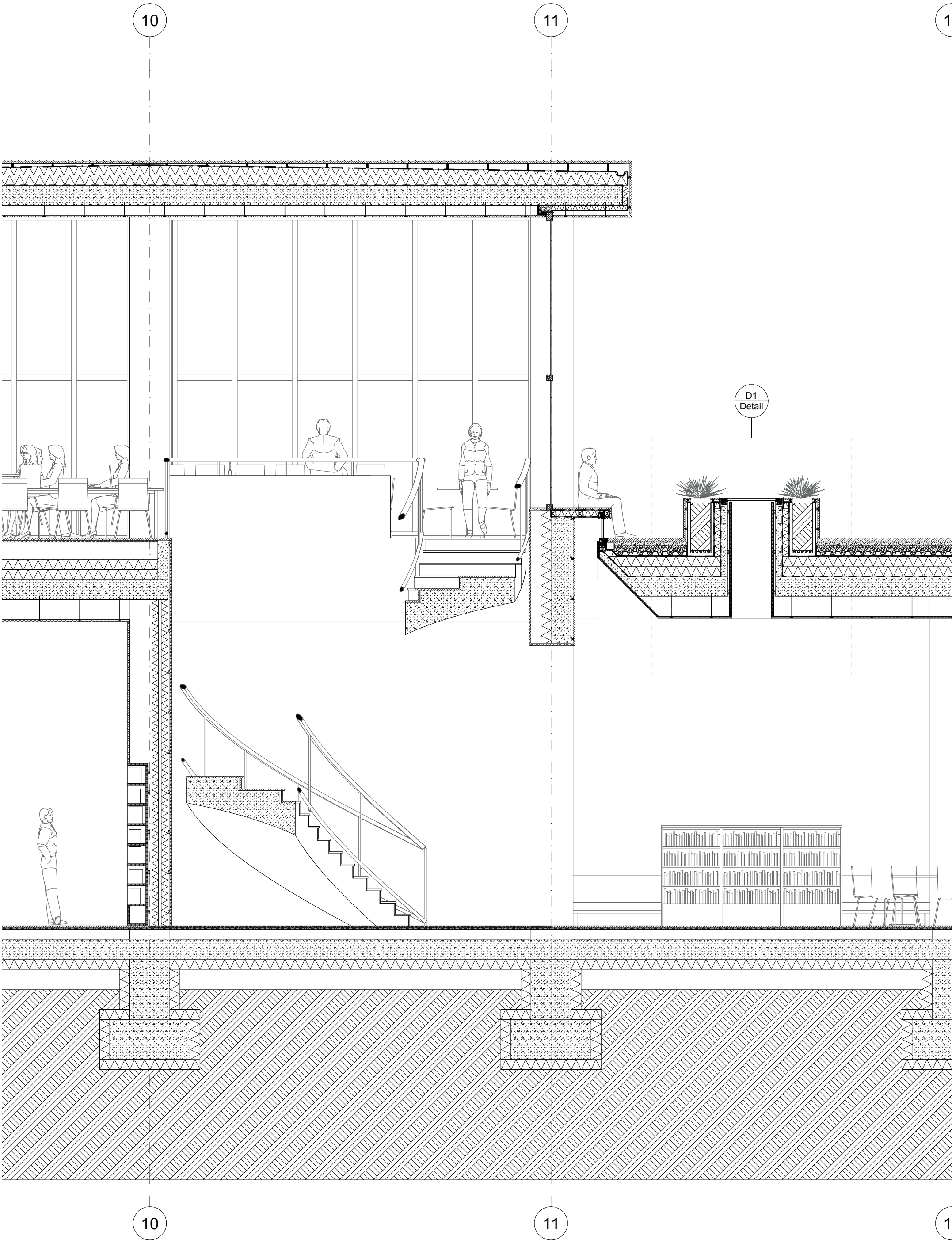


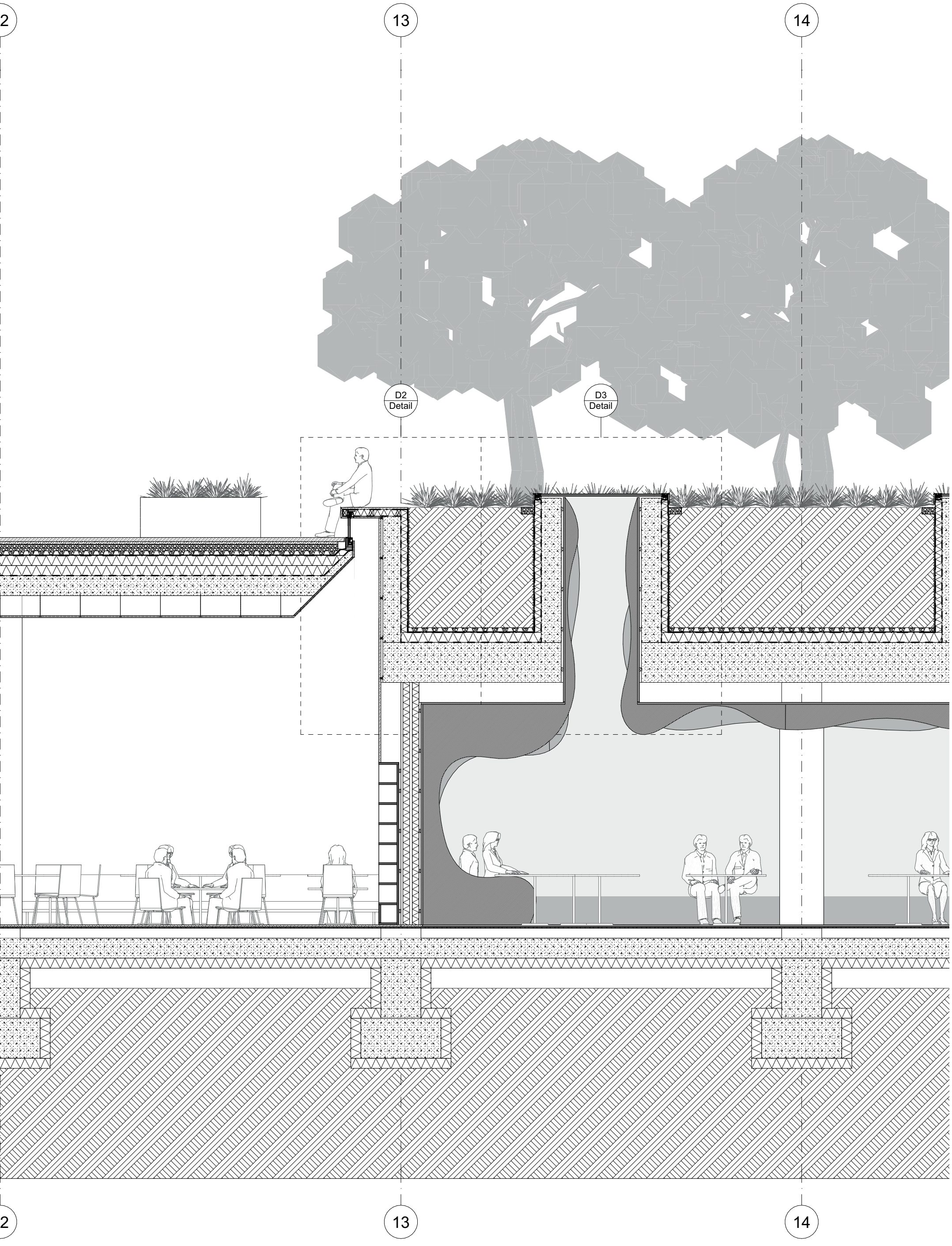
Figure 3.4.8: Section sketch of skylight ideas integrated in the park (own work 2026)



Figure 3.4.9: Section sketch of skylight ideas integrated in the park (own work 2026)

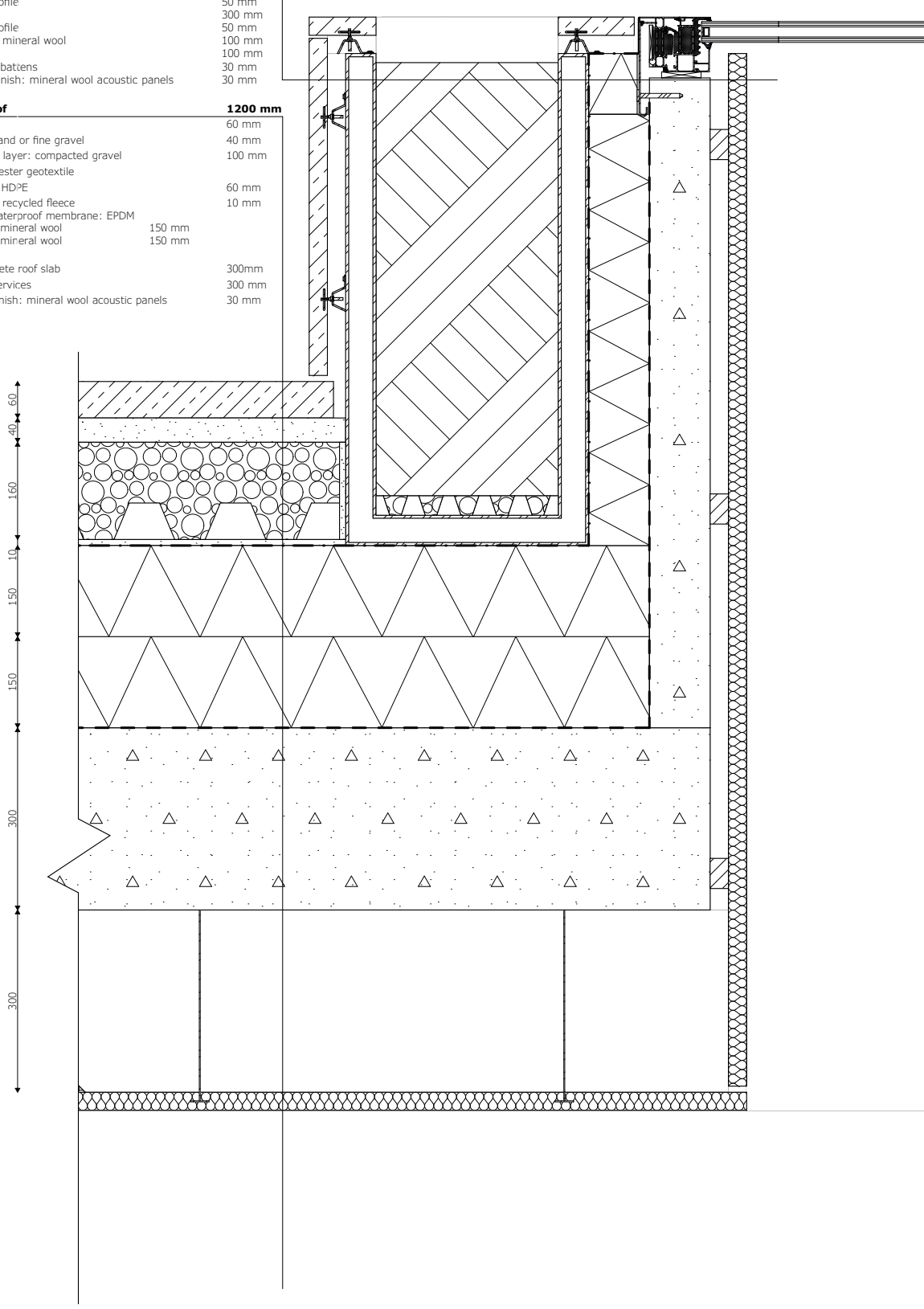


82 *Figure 3.4.10: Detailed section B (1:50) (own work 2026)*


12
13
14
D2
Detail
D3
Detail
12
13
14

Planter	**720 mm**
Limestone cladding	30 mm
Ventilated cavity with stainless steel stone anchors	30 mm
Metal planter profile	50 mm
Soil	300 mm
Metal planter profile	50 mm
Rigid insulation: mineral wool	100 mm
Concrete wall	100 mm
Service cavity / battens	30 mm
Interior ceiling finish: mineral wool acoustic panels	30 mm

Pavement roof	**1200 mm**
Pavement	60 mm
Bedding layer: sand or fine gravel	40 mm
Load distribution layer: compacted gravel	100 mm
Filter layer: polyester geotextile	
Drainage board: HDPE	60 mm
Protection layer: recycled fleece	10 mm
Root-resistant waterproof membrane: EPDM	
Rigid insulation: mineral wool 150 mm	
Rigid insulation: mineral wool 150 mm	
Vapor barrier	
Reinforced concrete roof slab	300mm
Ceiling cavity: services	300 mm
Interior ceiling finish: mineral wool acoustic panels	30 mm



Legend

Concrete

Insulation hard

Insulation soft

Vapor barriere membrane

Waterproof membrane

Soft wood

Plywood

Felt

Limestone

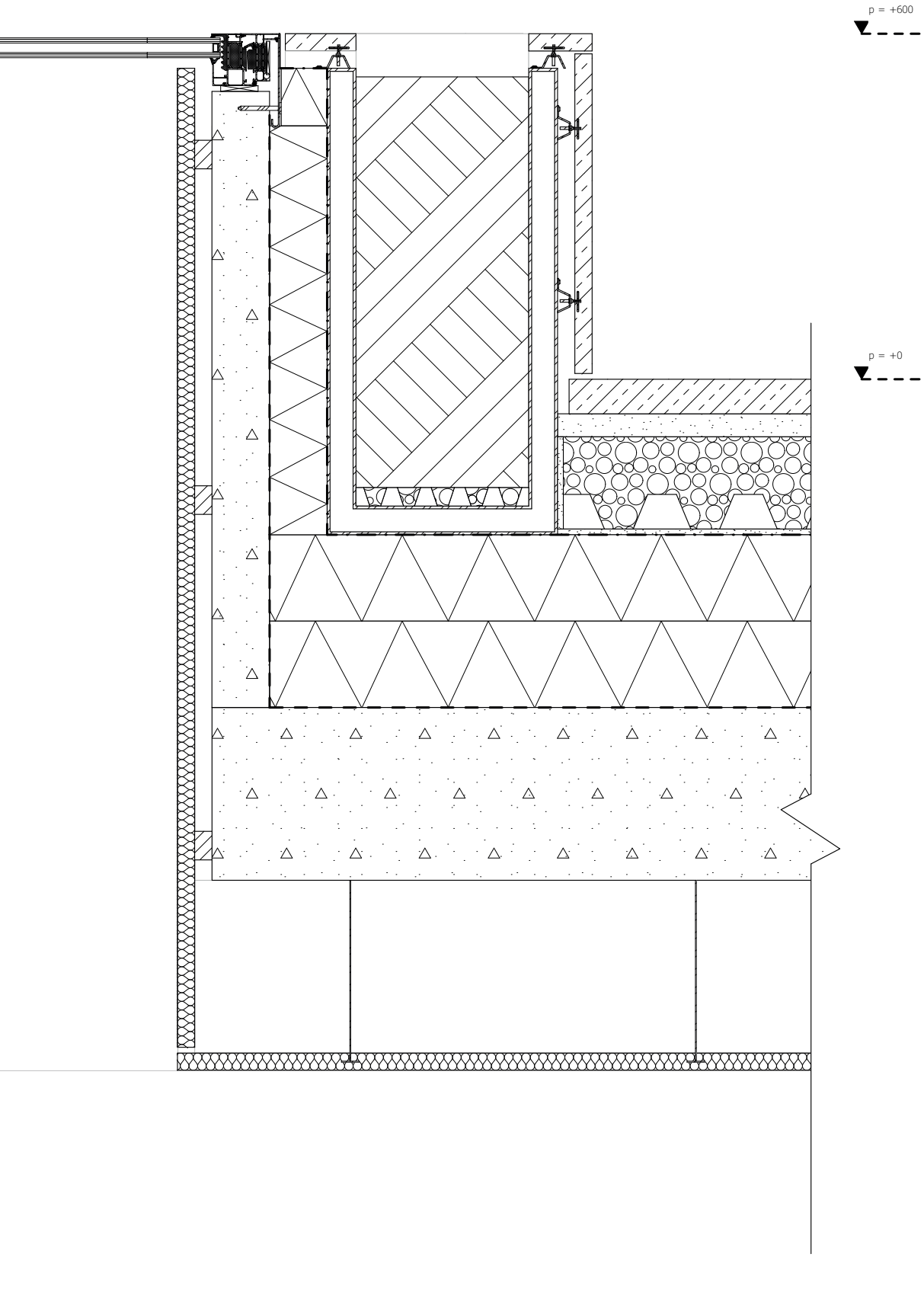
Aluminium

Sand

Gravel

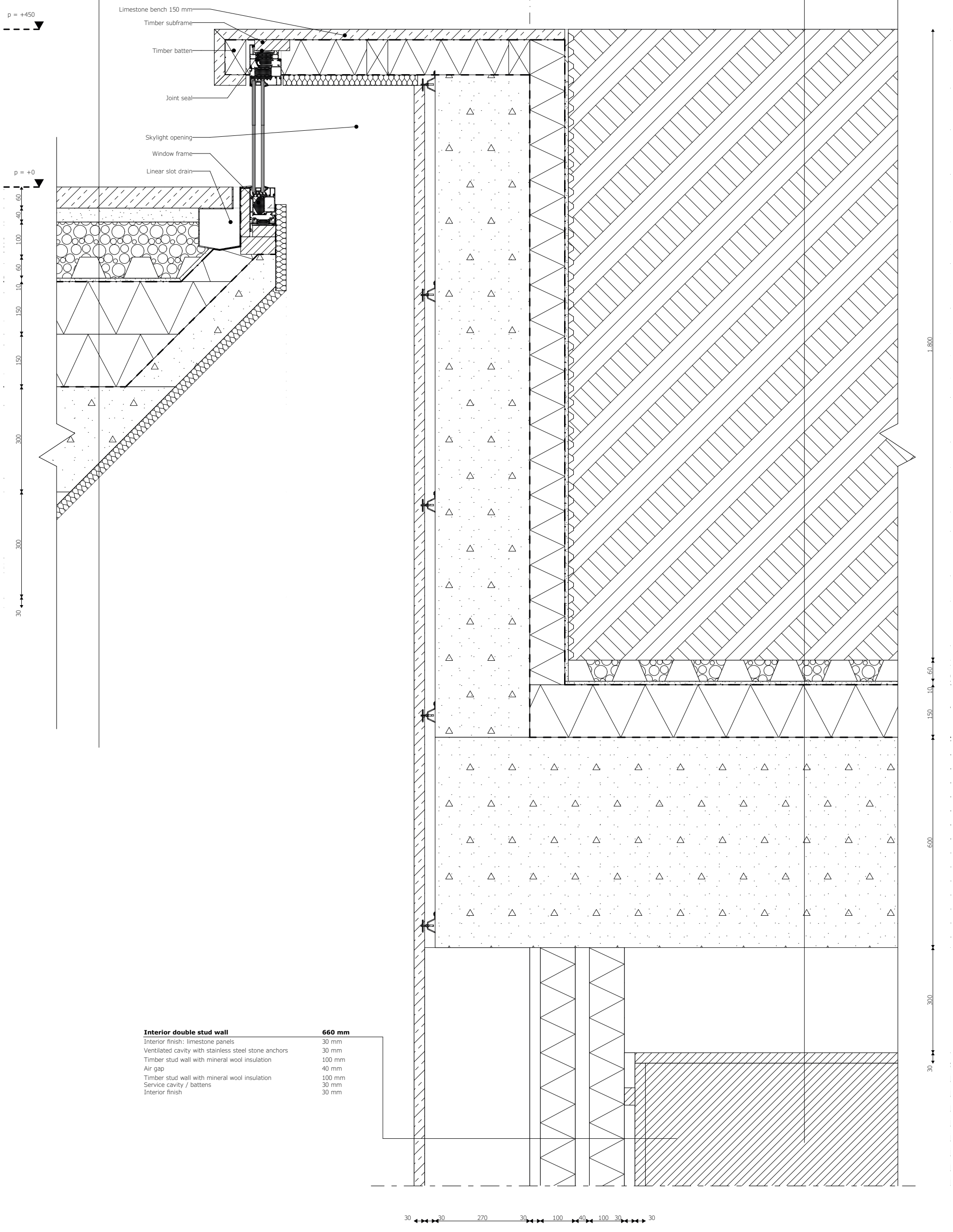
Soil

 Figure 3.4.11: Detail 1: skylight planter (1:10) (own work 2026)


p = +600
p = +0

Pavement roof	**1200 mm**
Pavement	60 mm
Bedding layer: sand or fine gravel	40 mm
Load distribution layer: compacted gravel	100 mm
Filter layer: polyester geotextile	
Drainage board: HDPE	60 mm
Protection layer: recycled fleece	10 mm
Root-resistant waterproof membrane: EPDM	
Rigid insulation: mineral wool	150 mm
Rigid insulation: mineral wool	150 mm
Vapor barrier	
Reinforced concrete roof slab	300mm
Ceiling cavity: services	300 mm
Interior ceiling finish: mineral wool acoustic panels	30 mm

Soil roof (1800 mm)	**2950 mm**
Vegetation	
Intensive roof substrate	1800 mm
Filter layer: polyester geotextile	
Drainage board: HDPE	60 mm
Protection layer: recycled fleece	10 mm
Root-resistant waterproof membrane: EPDM	
Rigid insulation: mineral wool	150 mm
Vapor barrier	
Reinforced concrete roof slab	600mm
Ceiling cavity: services	300 mm
Interior ceiling finish: timber acoustic panels	30 mm



Interior double stud wall	**660 mm**
Interior finish: limestone panels	30 mm
Ventilated cavity with stainless steel stone anchors	30 mm
Timber stud wall with mineral wool insulation	100 mm
Air gap	40 mm
Timber stud wall with mineral wool insulation	100 mm
Service cavity / battens	30 mm
Interior finish	30 mm

 Figure 3.4.12: Detail 2: skylight bench (1:10) (own work 2026)

Soil skylight walls	525 mm
Wooden cladding	30 mm
Battens	30 mm
Reinforced concrete wall	300 mm
Vapor barrier	
Rigid insulation: mineral wool	150 mm
Root-resistant waterproof membrane: EPDM	
Protection layer: recycled fleece	10 mm
Vertical drainage mat: HDPE	15 mm
Filter layer: polyester geotextile	
Soil	

Soil roof	2950 mm
Vegetation	
Intensive roof substrate	1800 mm
Filter layer: polyester geotextile	
Drainage board: HDPE	60 mm
Protection layer: recycled fleece	10 mm
Root-resistant waterproof membrane: EPDM	
Rigid insulation: mineral wool	150 mm
Vapor barrier	
Reinforced concrete roof slab	600mm
Ceiling cavity: services	300 mm
Interior ceiling finish: timber acoustic panels	30 mm

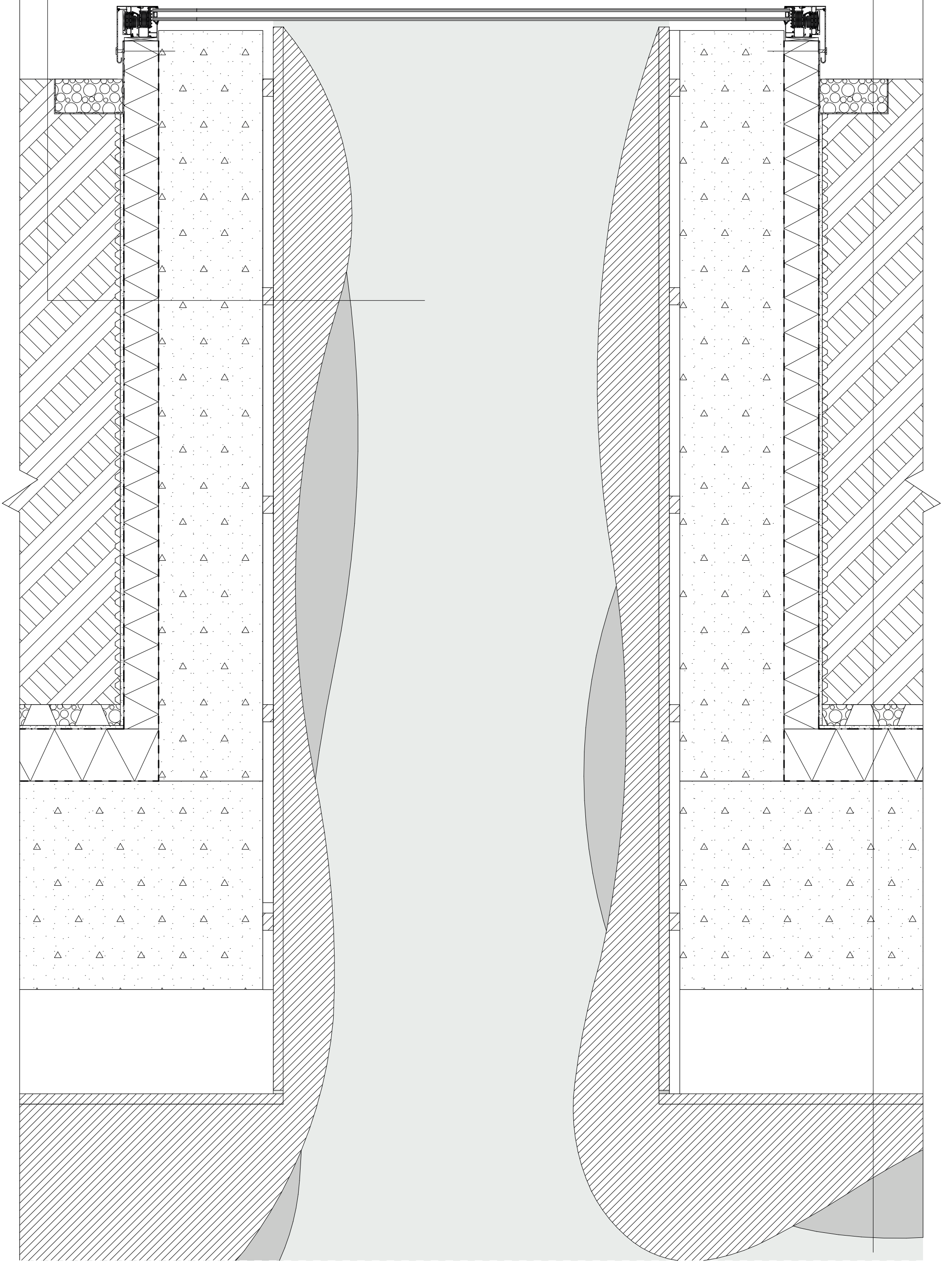


Figure 3.3.13: Detail 3: skylight in soil (1:10) (own work 2026)

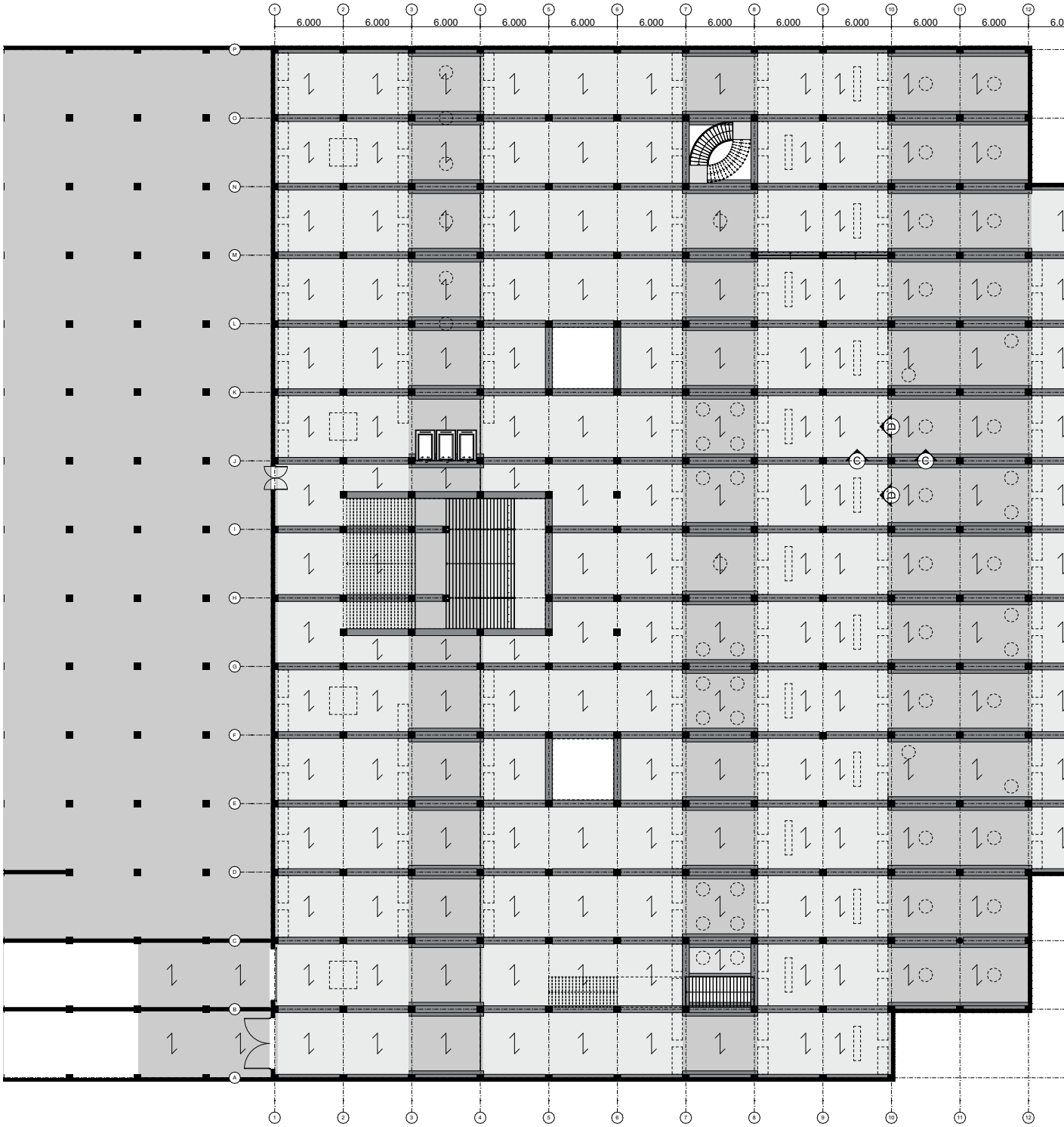
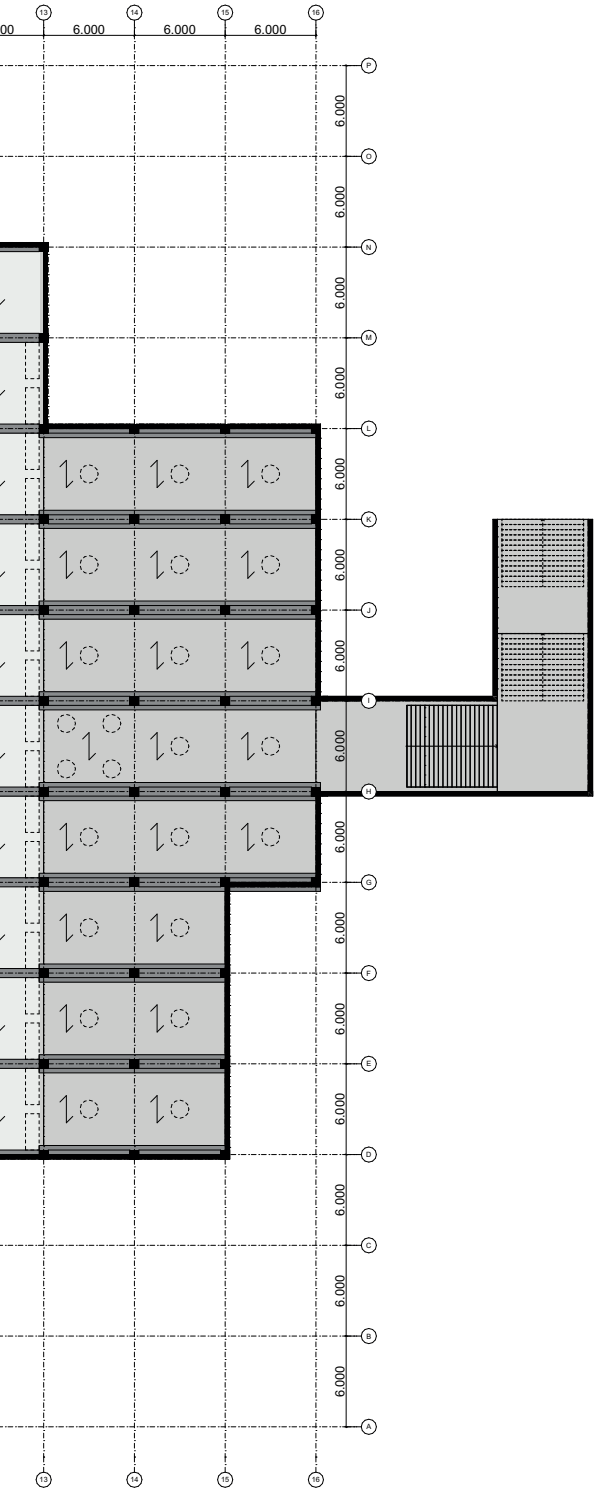


Figure 3.4.15: Structural floor plan (1:500) (own work 2026)



Construction

The library is constructed primarily in reinforced concrete to support the park landscape above (Appendix G.6). The structural system consists of retaining walls, columns on a 6x6 metre grid, and beam-and-slab floor structures. Skylights and atria are integrated within the structural grid.

The roof structure varies according to the loads above, with larger structural elements beneath planted areas to support the additional weight of soil, trees, and vegetation.

The pavilion structures above ground are also constructed in reinforced concrete, creating a continuous structural system between the landscape and the library.

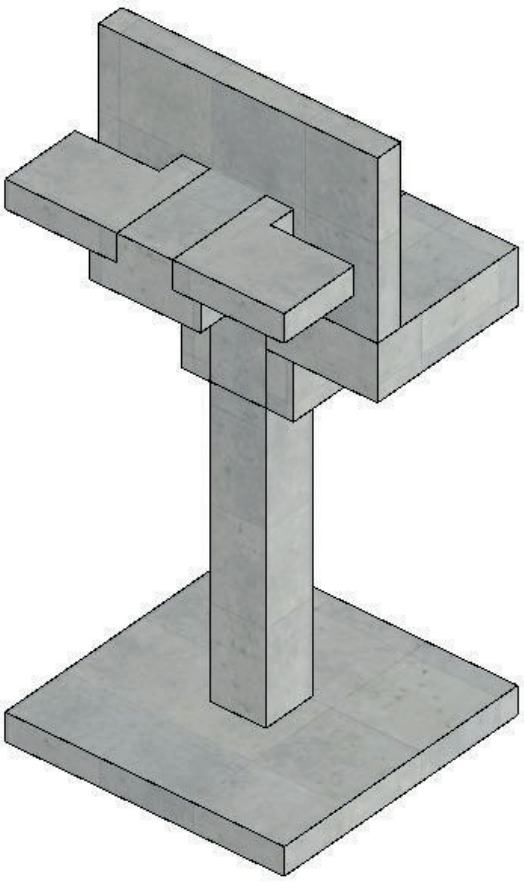


Figure 3.4.16: Structural column in perspective (own work 2026)

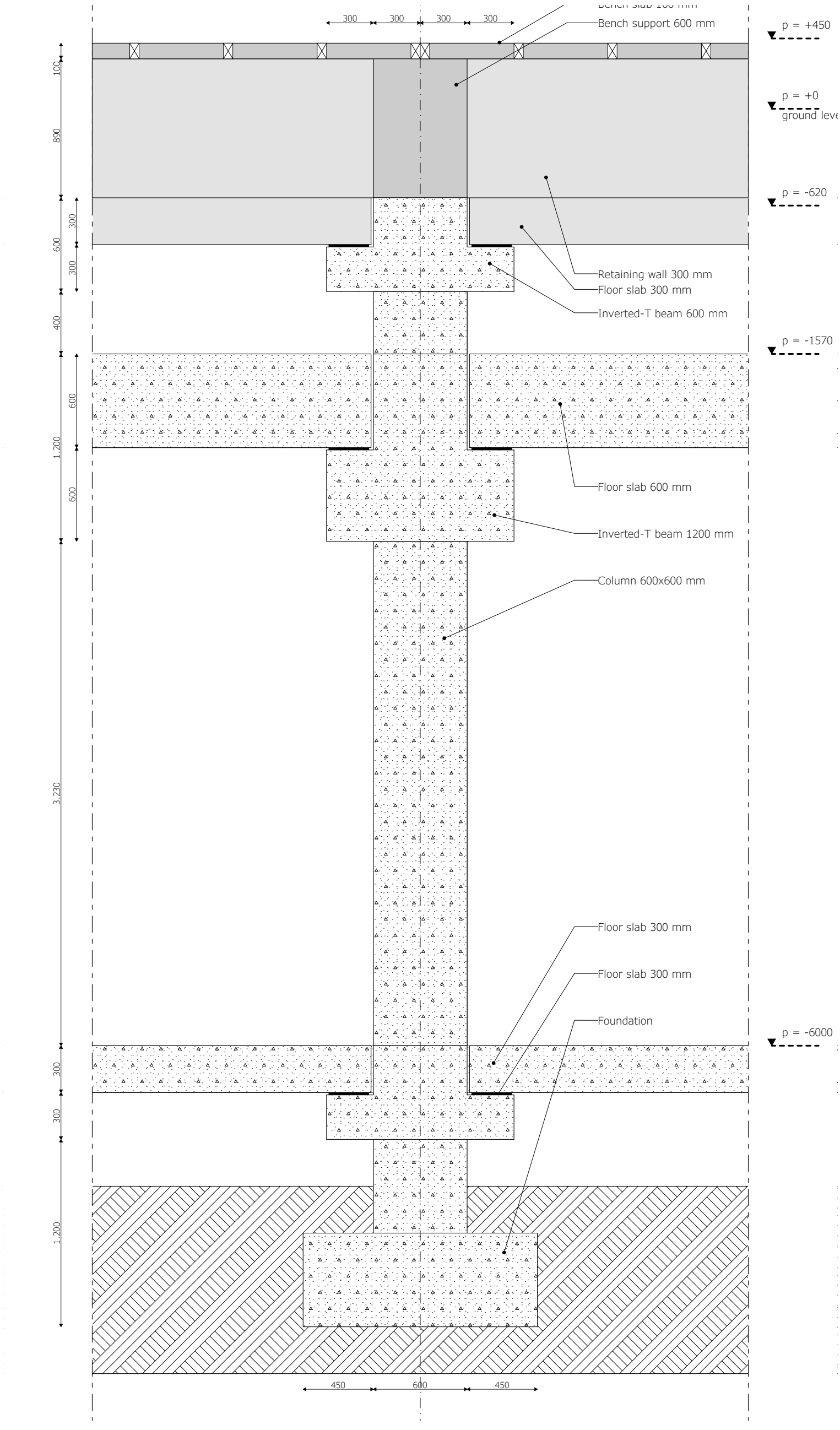


Figure 3.4.17: Construction column section D (1:20 scaled 75%) (own work 2026)

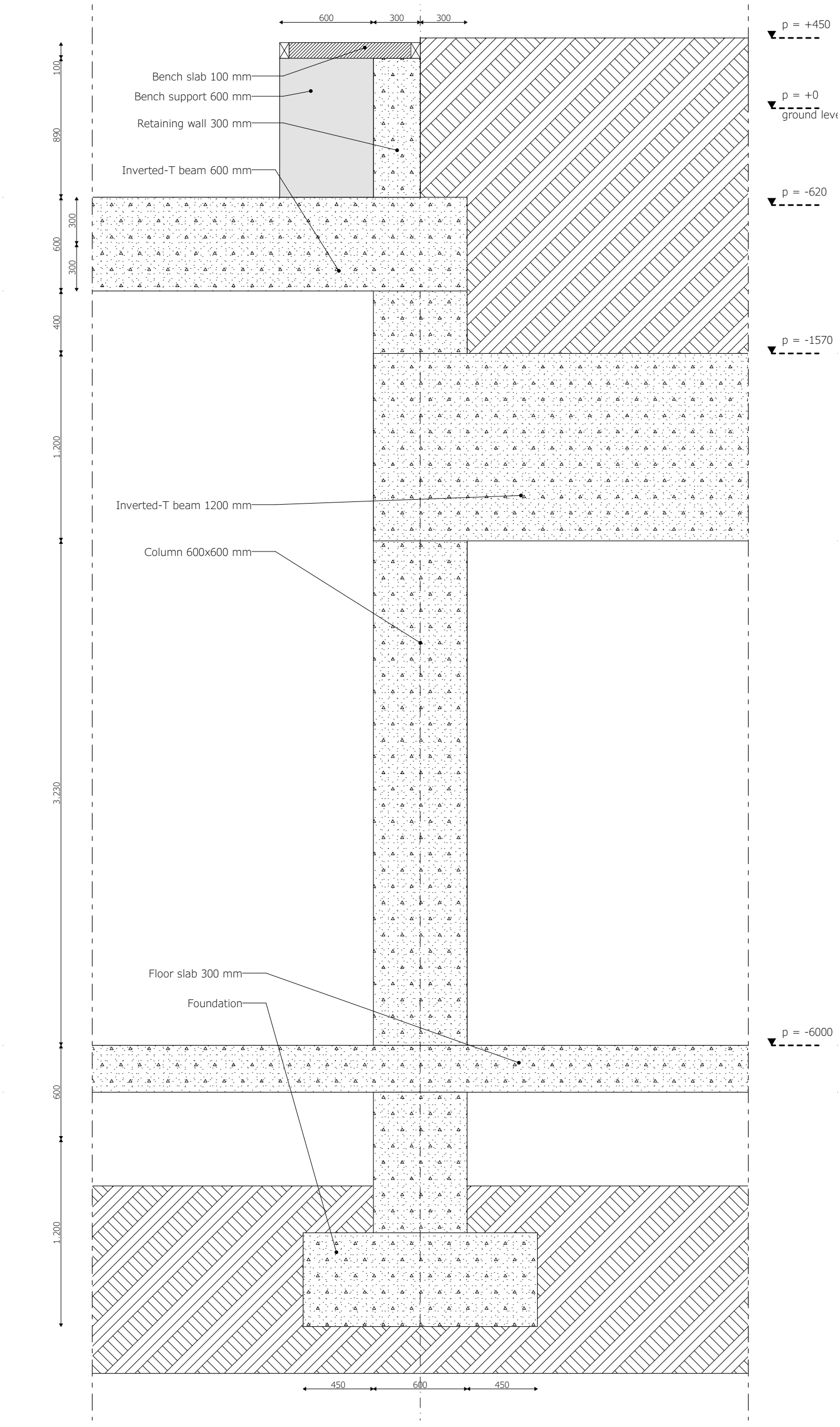


Figure 3.4.18: Construction column section C (1:20 scaled 75%) (own work 2026)



Figure 3.4.19: Render: library interior of the middle public area (own work 2026)



Renders

The following renders illustrate the atmosphere and spatial qualities of the proposed library.



Figure 3.4.20: Render: public square, entrance & restaurant in the park (own work 2026)



Figure 3.4.21: Render: quiet entrance in the park (own work 2026)



Figure 3.4.22: Render: library interior of the public entrance (own work 2026)



Figure 3.4.23: Render: library interior of the quiet retreat space (own work 2026)

4.
CONCLUSION & DISCUSSION

4.1 Conclusion

This project explored how a public library can be designed to actively support and normalise preventive mental health for teens and young adults. In response to increasing mental health challenges, the project investigated how architectural design can contribute to mental health literacy and well-being through the creation of an accessible and non-clinical public environment.

Research conclusions

The research demonstrated that mental health support can be integrated into public libraries without adopting the institutional characteristics of healthcare environments. Findings from Goffman and Maggie's Centres showed that domestic scales, natural materials, and informal social spaces can create supportive and non-clinical environments.

Research into third places showed that welcoming and accessible public environments are characterised by low thresholds to participation, strong connections to the public realm, permeable transitions between inside and outside, flexible seating, and opportunities for informal social interaction. Programmatically, they accommodate a variety of activities, allowing people to participate without obligation or commitment.

Research into precedent library and cultural centre projects showed that contemporary libraries often combine functions beyond book collections, including study spaces, cafés, learning facilities, event spaces, workshops, and informal meeting areas. By offering a variety of spatial settings, libraries can accommodate different modes of use, ranging from social interaction and collaboration to focused work, reflection, and retreat.

Architectural characteristics, including scale, materiality, enclosure, exposure, light, sound, and movement, were found to influence the atmosphere of spaces. Different combinations of these variables create a range of spatial experiences, from active, social, and stimulating environments to quieter, more enclosed, and restorative settings. Atmospheric design can therefore support mental well-being by accommodating different emotional states, activities, and user needs.

Research into thresholds and spatial transitions demonstrated how spatial boundaries can be defined through both hard and soft transitions. Changes in level, materiality, enclosure, and light can distinguish spaces and guide movement throughout a building. Thresholds can create gradual or abrupt transitions, influencing how users experience changes in atmosphere, activity, and function while supporting navigation and spatial organisation.

Together, these findings informed the design of a library organised as a gradual transition from public and active spaces to quieter and more private environments, integrating learning, social interaction, support, and retreat within a single civic building.

Design summary

The resulting design is a public library embedded beneath the Pyrkal park landscape in Athens. Rather than creating a large and dominant building object, the library is located underground, allowing the park to remain open, accessible, and continuous. A series of pavilion entrances distributed throughout the site provide multiple ways of entering the building,

responding to different users, activities, and levels of privacy.

The library is organised as a series of longitudinal bands that gradually transition from public and active environments to quieter and more private spaces. This organisation is reinforced through atmosphere, daylight, materiality, and landscape design. Together, these strategies create a variety of environments for learning, social interaction, support, reflection, and retreat.

Design conclusions

Mental well-being was integrated into the library by embedding spaces for learning, support, reflection, and retreat within a public civic building rather than a dedicated healthcare environment. This allowed mental health-related activities to become part of everyday library use within a non-clinical setting.

The library combines spaces for learning, social interaction, support, and retreat through a diverse programme that includes study spaces, a restaurant, workshops, lectures, consultation rooms, group spaces, and retreat spaces. Rather than separating these functions into rigid and isolated zones, they are distributed throughout the building and connected through a coherent spatial organisation, allowing different activities to coexist and overlap.

Openness and accessibility were balanced with privacy and emotional safety through a public-to-private spatial gradient. By gradually varying levels of enclosure, exposure, and activity throughout the building, the design provides environments ranging from open social spaces to private consultation rooms and retreat spaces, allowing users to select settings that match their needs and desired level of privacy.

Spatial sequencing and thresholds were translated into a system of longitudinal bands that organise the library. The bands define different functions and atmospheres while maintaining clear circulation routes through the building. This creates a legible spatial structure that guides movement and helps users orient themselves within the library.

Conclusion

The project demonstrates that a public library can actively support and normalise preventive mental health by integrating mental health literacy, social interaction, support, and retreat within a public civic building. Rather than separating mental health into a dedicated healthcare environment, the design embeds these activities within the educational and social functions of a public library. Through its integration within the park, its non-clinical atmosphere, and its gradual transition between different levels of activity and privacy, the project provides an accessible environment that supports different user needs while reducing barriers to engagement with mental health literacy and support.

4.2 Discussion & recommandations

Discussion

Preventive mental health is still an emerging field and many forms of support, education, and intervention continue to develop. As a result, it remains difficult to define exactly which facilities and programmes are required within a building that aims to support preventive mental health. This uncertainty presents a challenge for architectural design, but also highlights the relevance of the topic and the opportunity for architecture to contribute to a rapidly evolving field.

This project demonstrates how architecture can contribute to mental health literacy and well-being without relying on healthcare building typologies. By integrating support, learning, reflection, and social interaction within a public library, the project suggests a broader role for architecture in addressing contemporary social challenges.

For the architectural profession, the project highlights the potential of public buildings to contribute to preventive mental health. While architecture cannot solve mental health challenges on its own, it can help facilitate mental well-being by providing access to information and creating comfortable and supportive environments.

The project also demonstrates the value of accommodating different needs and modes of use within a single building. Rather than separating functions into isolated zones, the library combines learning, social interaction, support, and retreat through a variety of spaces and atmospheres. This highlights the potential of spatial organisation and atmospheric design to support a wider range of user needs.

Recommendations

Future research could involve interviews with mental health professionals, educators, and potential users to better understand their spatial, social, and programmatic needs. Such insights could inform the design of more targeted environments for preventive mental health support.

Future projects could further explore how mental health literacy, support, and well-being can be integrated into different types of public buildings and civic programmes.

In addition, post-occupancy research and user evaluations could provide valuable insights into how such environments are experienced in practice and how they influence patterns of use and engagement with mental health-related resources.

Finally, the concept explored in this project could be expanded beyond a single library to a network of public buildings distributed throughout a city. Libraries, schools, community centres, and other civic facilities could collectively provide access to mental health literacy, support, and preventive programmes at a neighbourhood scale, improving accessibility and strengthening collaboration between organisations.

4.3 Reflection

One of the decisions I regret making was choosing Pyrkal as the project site. Not because it was unsuitable for the concept, but because of its size. Designing a masterplan for such a large site required a significant amount of time, while there were relatively few constraints to guide the process. Looking back, I think the time spent on the masterplan reduced the time available to develop the library itself. As a result, I believe the architectural design could have been explored in greater depth and detail.

One of the most interesting parts of the project was the atmosphere research. Although the amount of data was limited, I found the method valuable because it changed the way I looked at spaces. Instead of judging a space as a whole, I started analysing individual characteristics such as scale, enclosure, exposure, light, sound, and movement. The method provided a systematic way of breaking down atmospheres and comparing spaces more objectively. For example, a space can feel cozy without relying on soft materials, which is something I would initially have expected.

At the same time, I also realised the limitations of the method. Atmosphere remains a complex phenomenon that cannot be fully captured through analysis. Nevertheless, I feel that the method brought me closer to understanding how atmosphere is created and experienced.

I had a similar experience with the threshold and transition research. It showed that spaces and zones can be defined in many ways besides simply placing walls between them. Subtle changes in materiality, light, level, and enclosure can also create boundaries and transitions between spaces.

At the same time, both the atmosphere and threshold research showed how difficult it is to separate individual spatial characteristics from one another. While the methods analyse these characteristics individually, in reality they continuously interact and influence one another.

Finally, I found it somewhat ironic that I could probably have used my own building during this graduation project. Not only the library spaces for studying, but also the consultation and conversation spaces to discuss frustrations and challenges encountered throughout the process. My own experiences, together with conversations with fellow students and friends, reinforced my belief that the topic of preventive mental health is highly relevant and that many people could benefit from accessible and non-clinical environments that provide opportunities for learning, support, reflection, and retreat.

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APPENDIX

Appendix A: Literature review

Appendix A.1: Literature on preventive mental health

This appendix contains extra information on preventive mental health to support the introduction in Chapter 1 and the theoretical framework presented in Chapter 2.

Preventive mental health

Preventive mental health focuses on reducing the risk of mental health problems before they develop, rather than treating them after onset (Singh, Kumar, and Gupta 2022). It addresses the social, environmental, and behavioural conditions that influence well-being in everyday life.

Mental health interventions can be understood along the course of illness, as shown in Figure A.2.1, ranging from prevention to treatment and maintenance (Singh, Kumar, and Gupta 2022). Preventive mental health specifically concerns interventions that take place before the onset of illness, aiming to strengthen protective factors and reduce risk factors.

Research distinguishes three levels of prevention:

- Universal: targeting the general population to promote overall mental well-being.
- Selective: focusing on groups at higher risk.
- Indicated: addressing individuals showing early signs of distress.

Effective preventive strategies operate across multiple settings, including schools, communities, and public environments, and emphasise accessibility, early intervention, and integration into daily life (Arango et al. 2018; Singh et al. 2022).

For youth, prevention is particularly dependent on low-threshold environments that are easily accessible and embedded in everyday routines, reducing stigma and encouraging early engagement with support systems (Van Doorn et al. 2021).

Arango, Celso, Covadonga M Díaz-Caneja, Patrick D McGorry, Judith Rapoport, Iris E Sommer, Jacob A Vorstman, David McDaid, et al. 2018. "Preventive Strategies for Mental Health." *The Lancet Psychiatry* 5 (7): 591–604. https://doi.org/10.1016/s2215-0366(18)30057-9.

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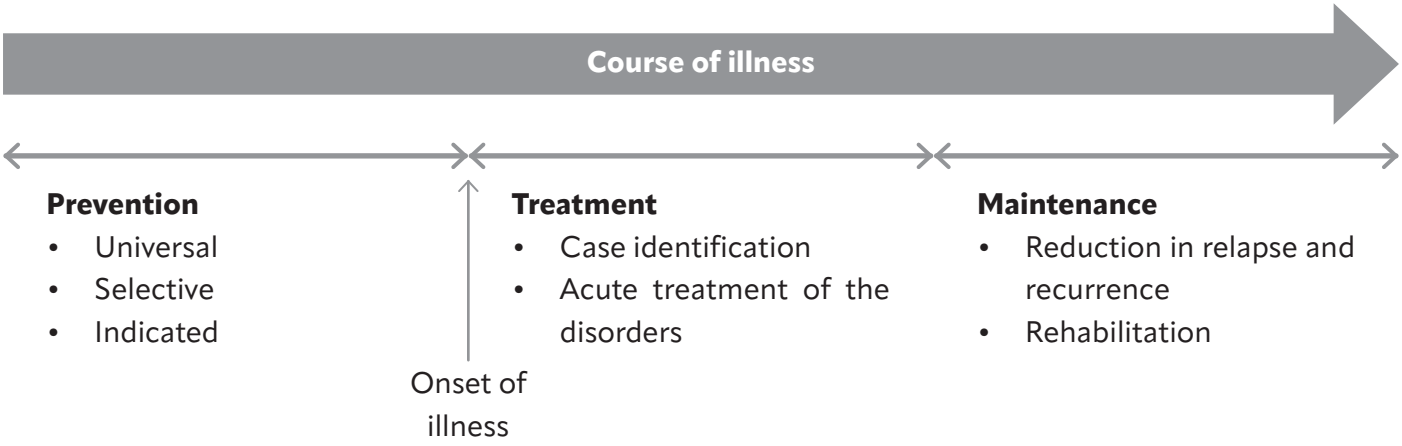


Figure A.1.1: The interventions for mental illness as classified by the Institute of Medicine (IOM) Committee on Prevention of Mental Disorders (Singh, Kumar, and Gupta 2022).

Table A.1.1: Commonly used terms in mental health prevention (Singh, Kumar, and Gupta 2022).

Term	Common definitions
Mental health	WHO defines MH as a state of wellbeing in which a person is cognizant of their potential, equipped to deal with typical life stressors, capable of productive and fruitful employment, and capable of contributing to their community (18).
Mental health promotion	It is a means of empowering people to take more control of their own health and wellbeing. It encompasses several initiatives aimed at positive effects on mental health and relates to mental wellbeing rather than mental illness (18). Any intervention is done to improve individuals' and communities' mental health and wellbeing (52). Improving an individual's, family, group's, or community's ability to reinforce or promote good emotional, cognitive, and associated experiences (53).
Mental health protection	There is no universally agreed-upon definition of mental health protection. The definition has been derived from the literal meaning of protection, that states "the act of keeping somebody/something safe so that he/she is not harmed or damaged." In the prevention model of illness, health protection comes under primary prevention to prevent the occurrence of the illness, physical or mental.

Mental health in Greece

To better understand the national context of mental health in Greece, Table A.2.2 compares a selection of mental health indicators with those of other high-income countries. While Greece has established mental health legislation and treatment coverage for major conditions, the data reveals significant shortcomings in prevention programmes, psychosocial support, and mental health monitoring. These findings support the need for more accessible and preventative approaches to mental well-being.

Table A.1.2: Greece's and high-income countries' indicators from the Global Mental Health Countdown 2030 (Kotsis et al., 2024).

Subdomain	Code	Indicator description	Greece's score	High-income countries[a]: median	Greece centile
Burden	B1.1	Age-standardized suicide rates (per 100,000 population)[b]	3.62	8.76	86.79
Laws, policies & leadership	C1.1	Presence of a national stand-alone policy or plan for mental health	1.00	1.00	11.11
Service quality	C5.3	Psychosocial interventions for mental health conditions are available and provided at primary care level	0.00	0.00	0.00
Service quality	C5.4	Percentage of mental health inpatients who receive timely diagnosis, treatment and follow up for physical health conditions	1.00	3.00	6.90
Integration of mental health into other services	C6.1	Functional integration of mental health into primary care	3.00	4.00	16.22
Promotion & prevention	C7.1	Extent to which countries offer programs for promotion and prevention	0.00	4.00	0.00
Monitoring & evalutaion	C8.1	Frequency of key mental health system data collection	0.00	2.00	0.00
Monitory & evaluation	C8.2	Existence of indicators/targets to monitor implementation of policies/plans	0.00	2.00	0.00
Wellbeing	D1.1	Happiness Ladder Score (0-10)	5.95	6.58	2.27

Note: a.) High-income countries: Andorra, Antigua and Barbuda, Australia, Austria, the Bahamas, Bahrain, Barbados, Belgium, Brunei Darussalam, Canada, Chile, Croatia, Cyprus, Czechia, the Democratic People's Republic of Korea, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kuwait, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, New Zealand, Norway, Nauru, Panama, Poland, Portugal, Qatar, the Republic of Korea, Romania, Saint Kitts and Nevis, San Marino, Saudi Arabia, Seychelles, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Trinidad and Tobago, the United Arab Emirates, the United Kingdom of Great Britain and Northern Ireland, the United States of America, Uruguay.
b.) Centiles were inverted (higher values indicated poorer performance).

Implementation of preventive mental health programs

Preventive mental health programs consist of coordinated strategies that promote well-being, strengthen social support, and develop personal skills. These programs often operate across different domains, including education, community spaces, and public infrastructure, rather than being limited to clinical settings (Arumugam 2019).

They aim to create supportive environments, encourage social interaction, and provide opportunities for learning, reflection, and participation.

Table A.1.3: Five main strategies for mental health promotion for action (Arumugam 2019).

Strategies	Explanation
Building public health policy	Policy and funding decisions in the welfare, education, and judiciary are important to promote positive mental health.
Creating supportive environments	Supportive social, economical, cultural, and physical environments provide a basic framework for and developing and maintaining mental health.
Strengthening community action	Affordable and accessible leisure activities, social support, strong social networks, and a sense of integration and inclusion are key predictors of positive mental health. "Empowered communities" with high levels of social capital are characterized by trust, tolerance, and reciprocity.
Developing personal skills	Mental health promotion includes strengthening individual skills such as emotional regulation, coping with stress, communication, relationship-building, and resilience
Expanding the orientation of health service	Health services should incorporate promotion, prevention, and early intervention alongside treatment, aiming to reduce risk factors, strengthen protective factors, decrease psychiatric morbidity, and limit disability.

Table A.1.4: Recommendations for low-and-middle-income countries (Singh, Kumar, and Gupta 2022).

Recommendation
Enhance the mental health literacy of the population through information, education, and communication (IEC) activities that reduce stigma and support early identification and help-seeking.
Involving teachers, workplace managers, community leaders, non-mental health professionals.
Integrate mental health promotion and prevention into education curricula
Train non-specialists (e.g. community health workers) across the life course
Collaborate with specialists from other disciplines (e.g. complementary and alternative medicines) within an integrated health system.
In low-resource settings, develop mental health promotion interventions (e.g. community-and school based) that are culturally relevant, acceptable, and scalable.
Use and explore digital platforms as a cost-effective framework to scale mental health services (e.g., telepsychiatry services to at-risk populations).
Increase financial and human resources for prevention
Identify vulnerable populations and intervene early
Involve people with lived experience in planning and delivery

Table A.1.3 shows five main strategies for mental health promotion for action, highlighting the importance of policy, supportive environments, community strengthening, personal skill development, and integrated health services (Arumugam 2019).

Table A.1.4 shows key recommendations for implementing preventive mental health strategies, particularly in low- and middle-income contexts, with a focus on accessibility, education, early intervention, and community-based approaches (Singh, Kumar, and Gupta 2022).

Table A.1.5 shows principles associated with preventive programs that have proven effective, emphasising comprehensive approaches, active engagement, continuity over time, and the importance of social relationships (Macklem 2013).

Table A.1.6 shows program features that facilitate effective implementation, including clear structure, adaptability, support for facilitators, and integration into everyday settings (Macklem 2013).

These principles inform the design by supporting the creation of accessible, flexible, and socially engaging spaces that integrate mental well-being into everyday use and encourage both collective interaction and individual retreat.

Table A.1.5: Principles associated with preventive programs that worked (Macklem 2013).

Principles associated with preventive programs that worked
1. Effective programs were comprehensive involving multiple interventions and settings.
2. They included some type of active skill building with hands-on experiences and interactive instruction
3. Programs had sufficient dosage; i.e., they were implemented long enough to make a difference
4. They included booster sessions to prevent decay
5. They were theory driven, focussing on risk and protective factors
6. They provided strategies for changing risk factors
7. Building relationships were a critical component of programs what worked
8. Effective programs were attached to critical development periods and delivered at times of school transitions
9. The programs were relevant and culturally appropriate
10. Effective programs were evaluated and improved

Table A.1.6: Program features which make implementation easier (Macklem 2013).

Program features which make implementation easier
Programs need a clear framework of objectives and a clear sequence of activities
Clear instructions for implementation strategies that actively involve students are critical
A methodology for teacher or other staff to apply skills learned to other subjects areas and physical areas of the school will help integrate learning throughout the school
Easy-to-follow lesson plans make a huge difference to teachers and encourage implementation fidelity
When assessment and monitoring tools are provided, this saves time
Strategies for family involvement and developing school-community partnerships are extremely helpful
Training for staff that will implement the programming makes a difference
Training for staff beyond classroom teachers generalizes learning
Availability of technical support is important
Tools for outcome evaluation save time

Appendix A.2: Positive health

The concept of Positive Health, developed by the Institute for Positive Health (IPH), defines health not as the absence of disease, but as the ability to adapt and maintain well-being in the face of physical, emotional, and social challenges (Institute for Positive Health 2026).

It identifies six dimensions of health: bodily functions, mental well-being, meaning, quality of life, participation, and daily functioning. These dimensions emphasise that health is shaped by a broad range of everyday conditions rather than solely medical treatment.

This project uses the Positive Health framework to understand mental well-being as part of daily life. It supports the design approach of integrating spaces for social interaction, reflection, learning, and retreat within a public library, contributing to a low-threshold and preventive mental health environment.

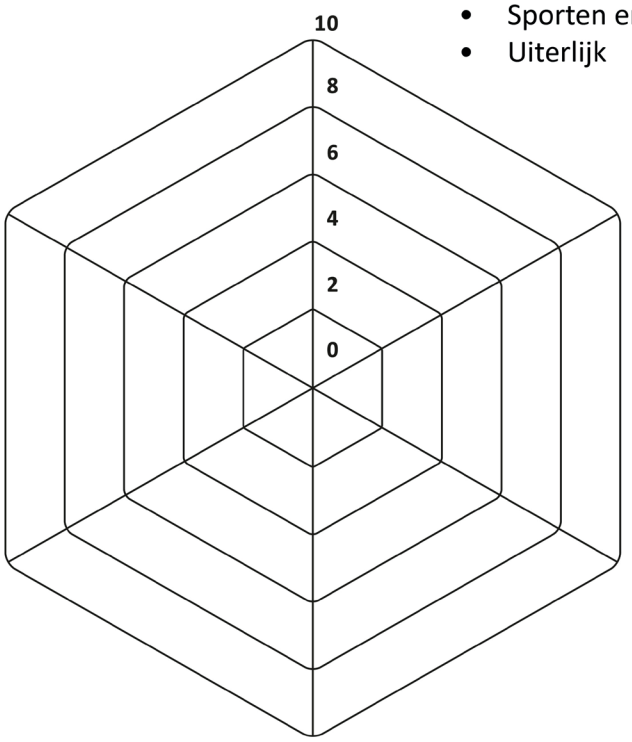


Figure A.2.1: Spiderweb of Positive Health for youth from 16 to 25 (Insti

Institute for Positive Health. 2026. "Positive Health." January 18, 2026. Accessed March 12, 2026. https://www.iph.nl/en/.
Positive Health International. 2026. "Positive Health." 2026. Accessed March 12, 2026. https://positivehealth-international.com/.

MIJN LICHAAM

- Je gezond voelen
- Energie hebben
- Lichamelijke klachten en pijn
- Gezond eten
- Slapen
- Conditie
- Sporten en bewegen
- Uiterlijk



MIJN GEVOELENS EN GEDACHTEN

- Concentreren
- Omgaan met je gevoelens
- Positief in het leven staan
- Jezelf accepteren
- Vertrouwen hebben in jezelf
- Omgaan met verandering
- Grip hebben

ZINGEVING

- Zinvol leven
- Vertrouwen hebben in de toekomst
- Levenslust
- Doelen en dromen hebben
- Keuzes maken
- Situaties accepteren
- Dankbaarheid

KWALITEIT VAN LEVEN

- Gelukkig zijn
- Genieten
- Balans ervaren
- Je veilig voelen
- Fijne omgeving ervaren
- Hoe je woont
- Rondkomen met je geld

ument 1.0

Meer weten? Ga naar jongeren.mijnpositievegezondheid.nl

itute for Positive Health 2026)

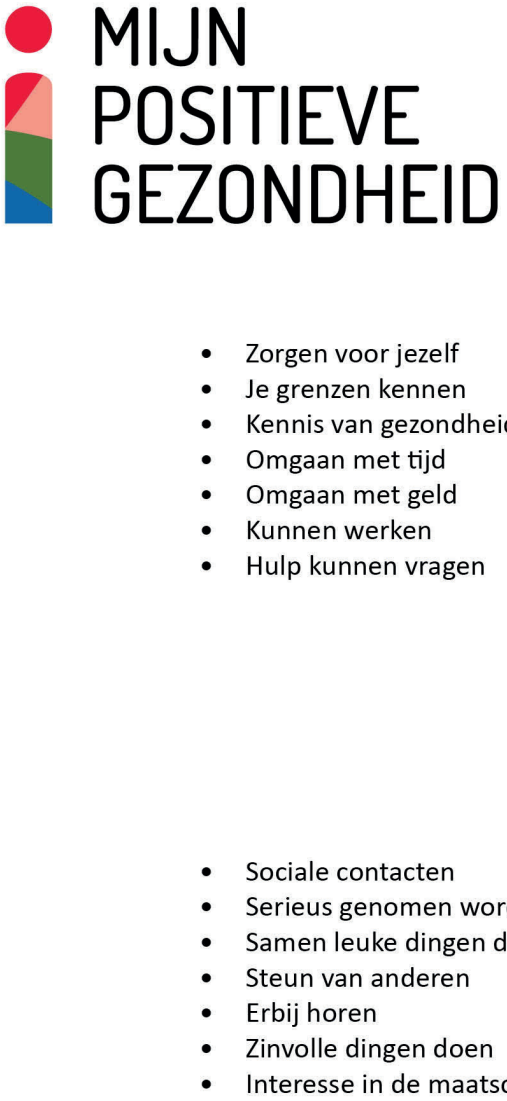
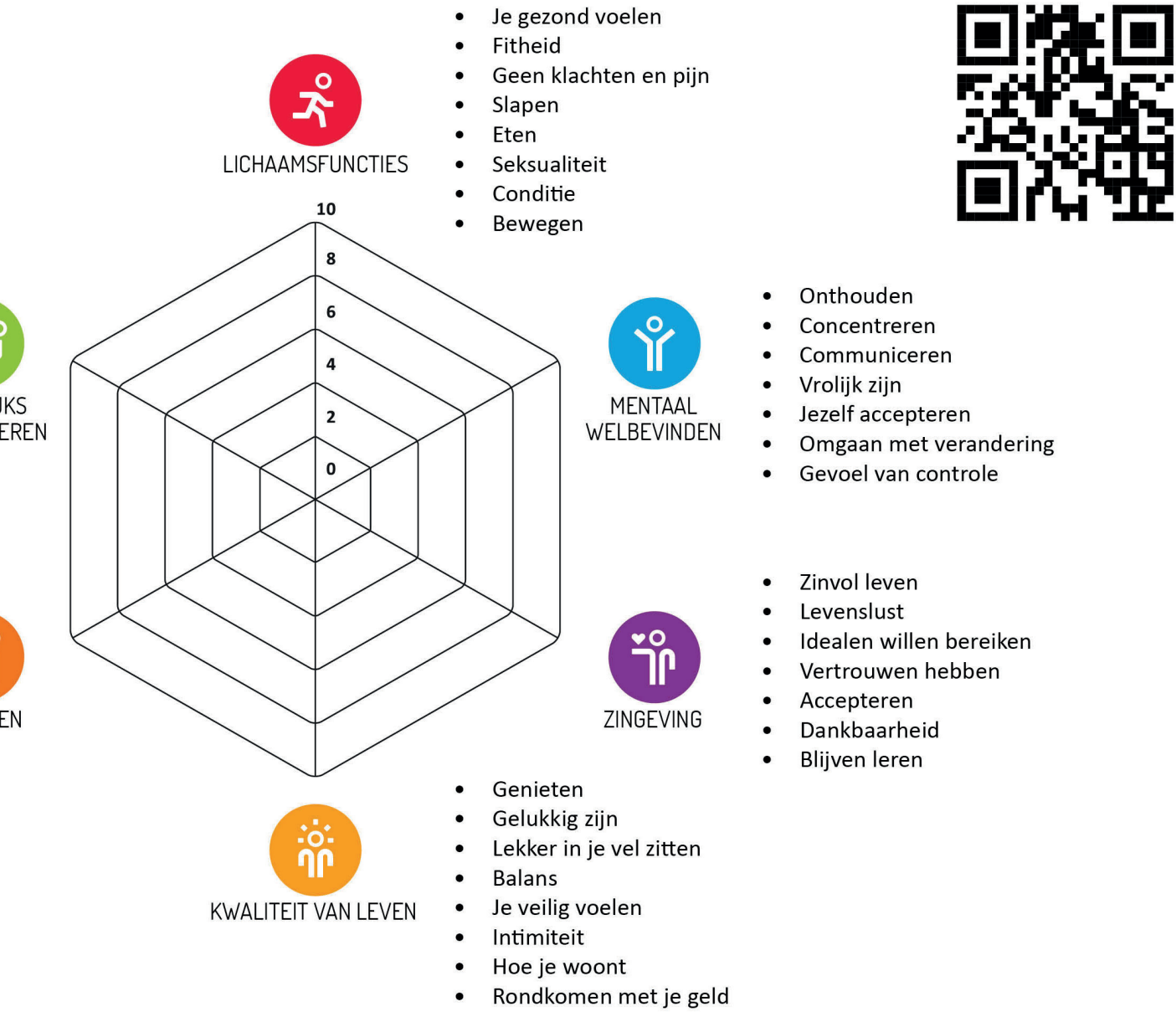


Figure A.3.1: Spiderweb of Positive Health for adults (Institute for Posit

Institute for Positive Health. 2026. "Positive Health." January 18, 2026. Accessed March 12, 2026. https://www.iph.nl/en/.
Positive Health International. 2026. "Positive Health." 2026. Accessed March 12, 2026. https://positivehealth-international.com/.



ment 2.0

Aan de slag met je Positieve Gezondheid? Vul de vragenlijst in op mijnpositievegezondheid.nl

ive Health 2026)

Appendix B: Precedent projects

This appendix presents the precedent projects analysed during the thesis. The selected projects were studied for their approaches to programme, spatial organisation, atmosphere, and public accessibility. The findings informed the development of the final design.

List of precedent projects:

PROJECT	ARCHITECT	LOCATION
Forum	NL Architects	Groningen, Netherlands
Deichman Library	Atelier Oslo, Lund Hagem	Sentrum, Norway
Idea Store Whitechapel	Adjaye Associates	London, UK
Toyama Kirari	Kengo Kuma and Associates	Toyama, Japan
Library of the Stravros Niarchos Foundation Cultural Center	Renzo Piano	Athens, Greece
Maggie's Leeds Centre	Heatherwick Studio	Harehills, UK
Craft College	Dorte Mandrup	Herning, Denmark
Rozet	Neutelings Riedijk Architects	Arnhem, Netherlands

Appendix B.1: Forum

Location:	Groningen, The Netherlands
Architects:	NL Architects
Year:	2019
Area:	17,000 m^2
Function:	cultural centre & library

"Forum Groningen is NOT a library, NOT a museum, NOT a cinema, but a new type of public space where the traditional borders between these institutes will dissolve." (ArchDaily 2019)

Forum demonstrates how a contemporary library can operate as a multifunctional civic building. By combining cultural, educational, and social programmes, it accommodates a wide range of activities and users. A clear spatial hierarchy balances active public spaces with quieter areas for study and retreat, while the central void connects the different levels and strengthens orientation and openness throughout the building. The project is particularly relevant for its integration of multiple programmes and its accommodation of different modes of use within a single library.



Figure B.1.1: Forum Groningen: aerial photo (ArchDaily 2019)

ArchDaily. 2019. "Forum Groningen Multifunctional Building / NL Architects." December 14, 2019. Accessed December 17, 2025. https://www.archdaily.com/930102/forum-groningen-multifunctional-building-nl-architects.

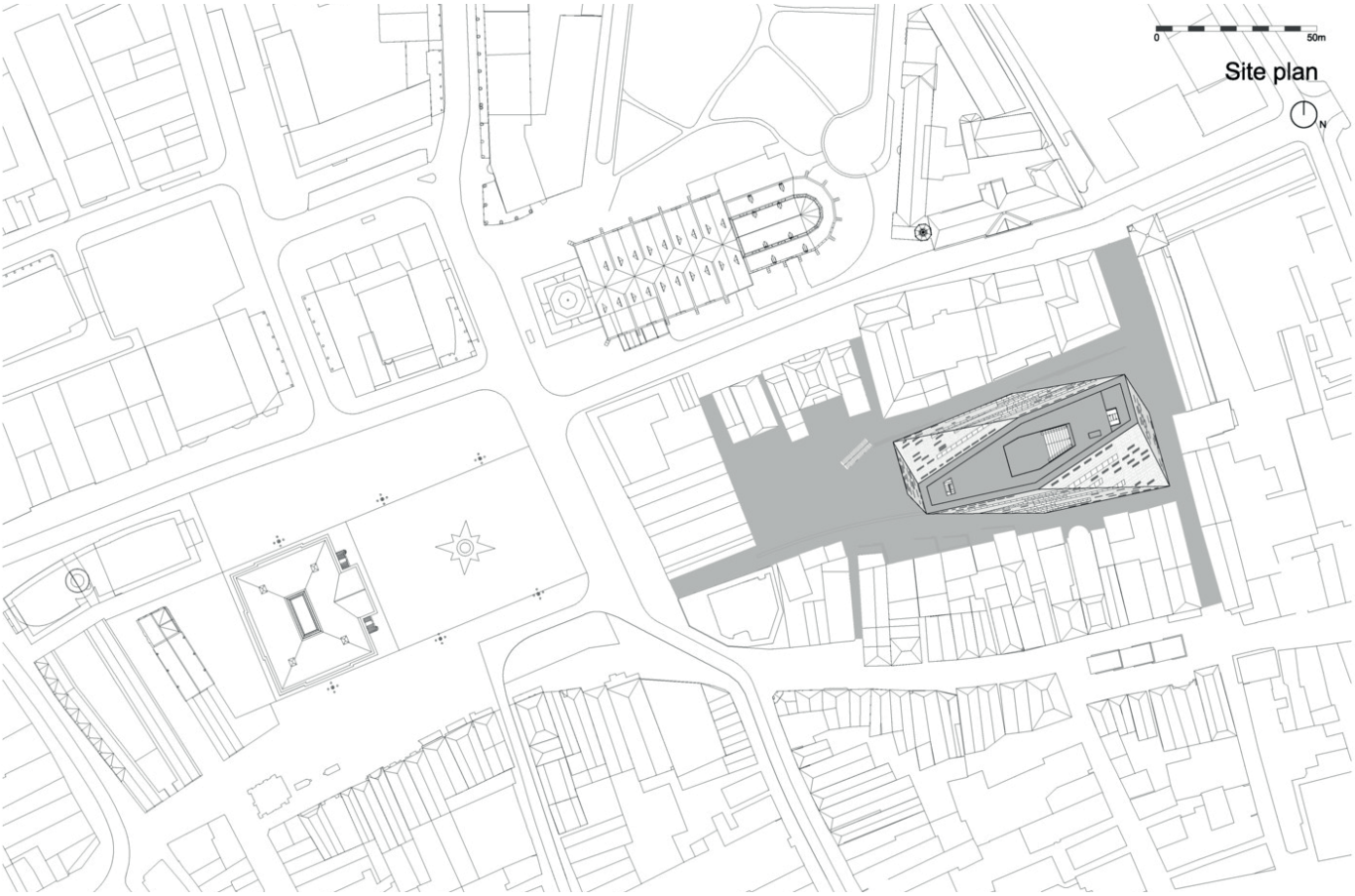
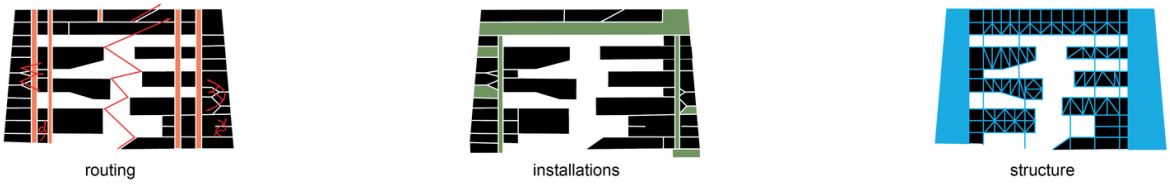


Figure B.1.2: Forum Groningen: site plan (ArchDaily 2019)



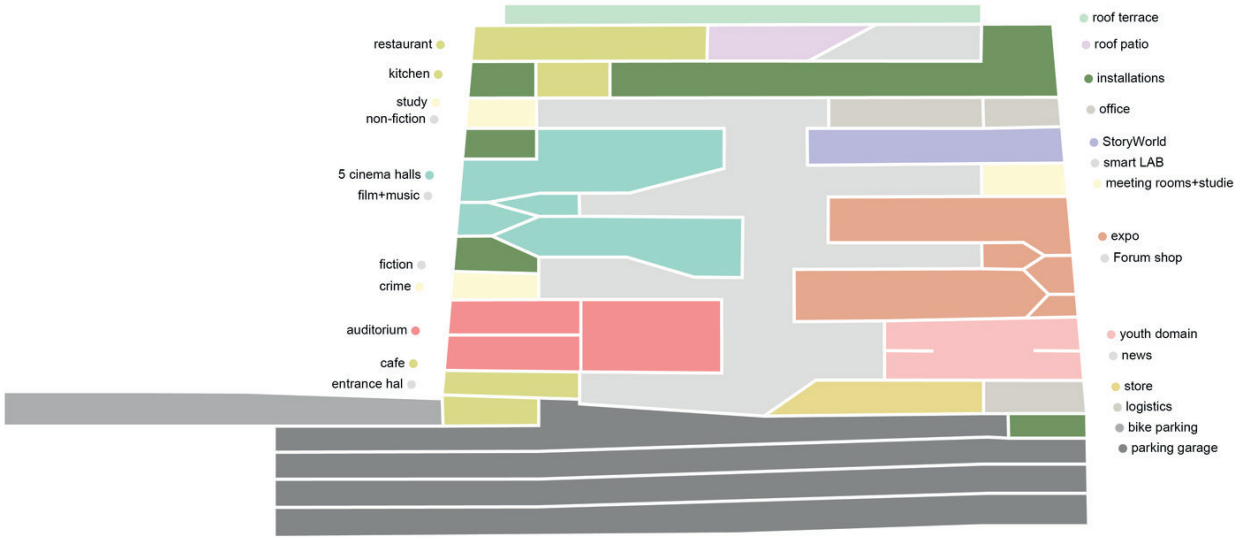


Figure B.1.3: Forum Groningen: scheme of all functions (ArchDaily 2019)

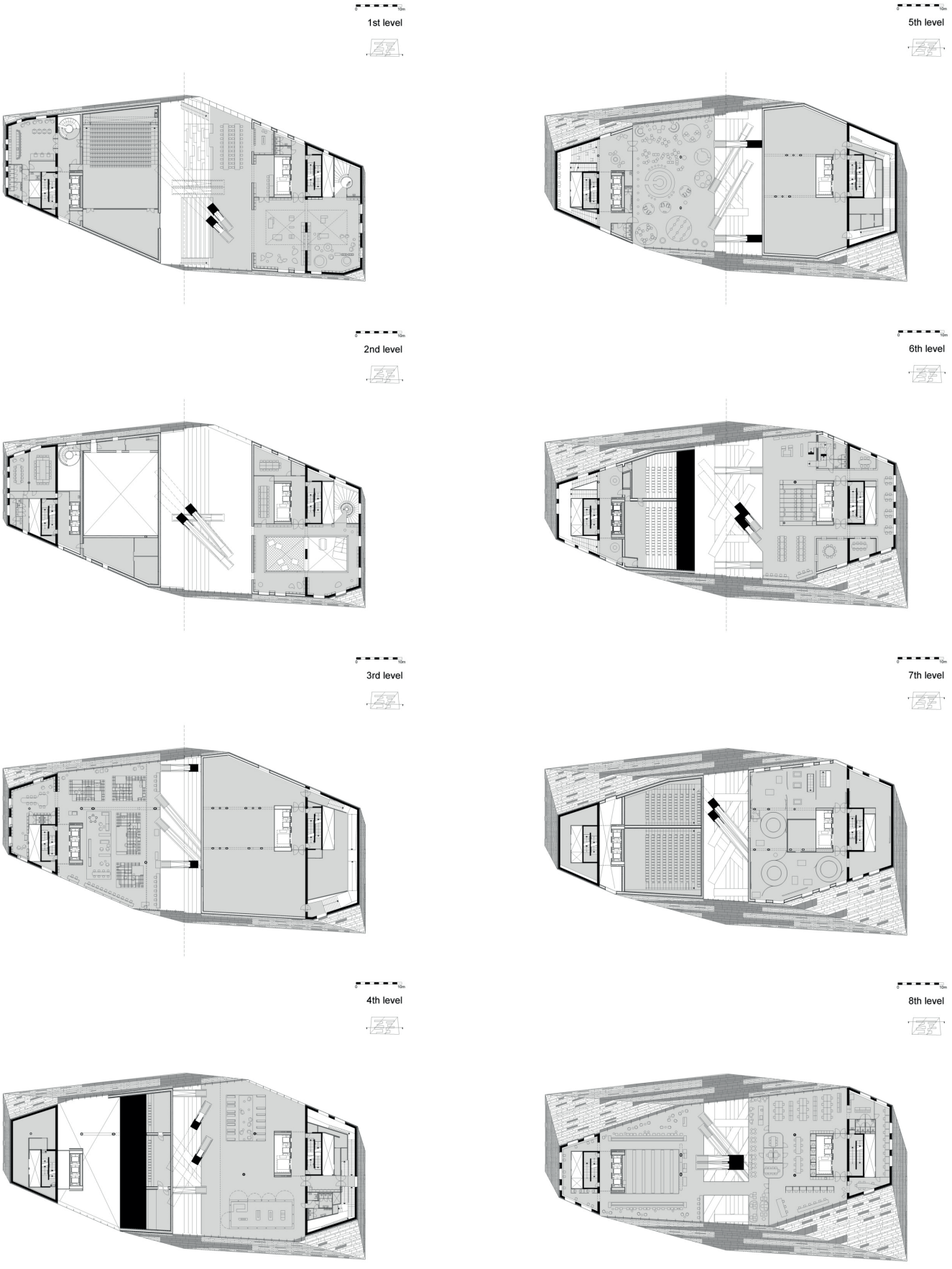


Figure B.1.4: Forum Groningen: floor plans of level 1-8 (ArchDaily 2019)



Figure B.1.5: Forum Groningen: section interior (ArchDaily 2019)

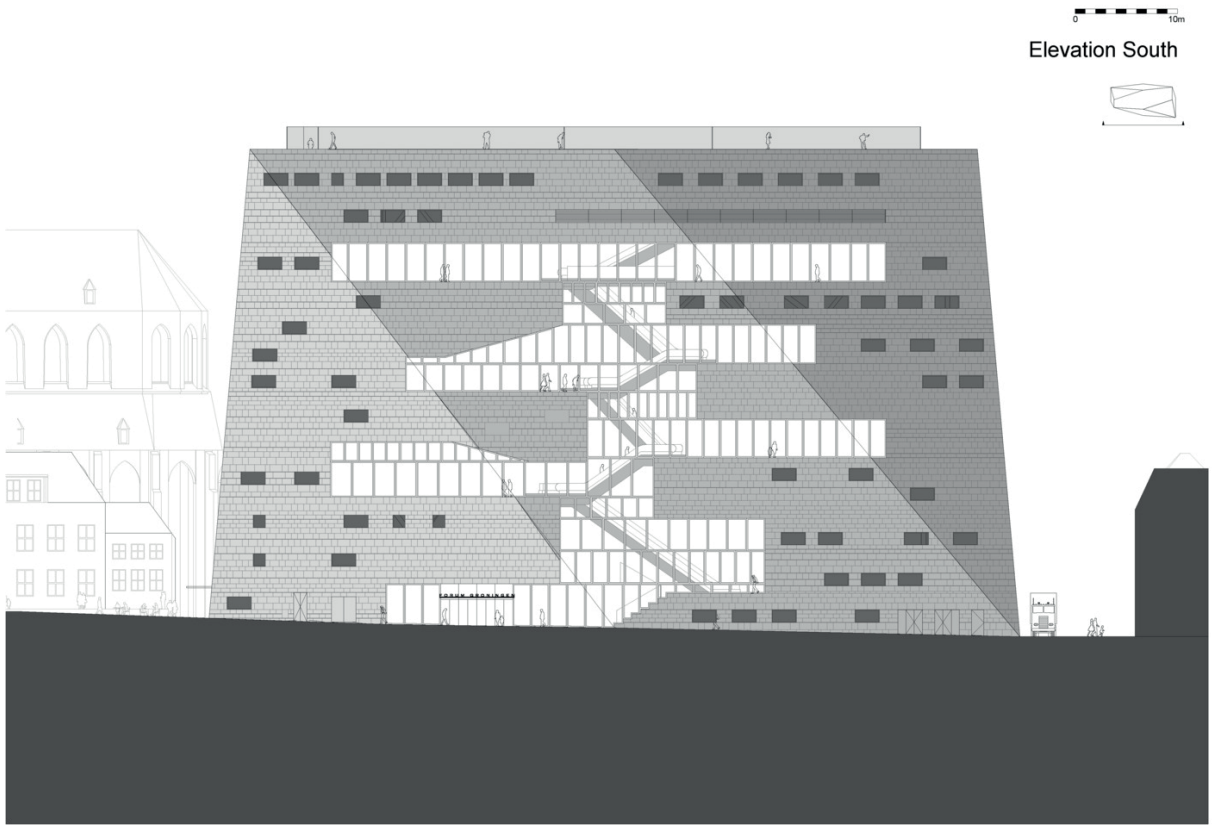


Figure B.1.6: Forum Groningen: south elevation (ArchDaily 2019)

Appendix B.2: Deichman Library

Location:	Sentrum, Norway
Architects:	Atelier Oslo, Lund Hagem
Year:	2020
Area:	19,600 m^2
Function:	library

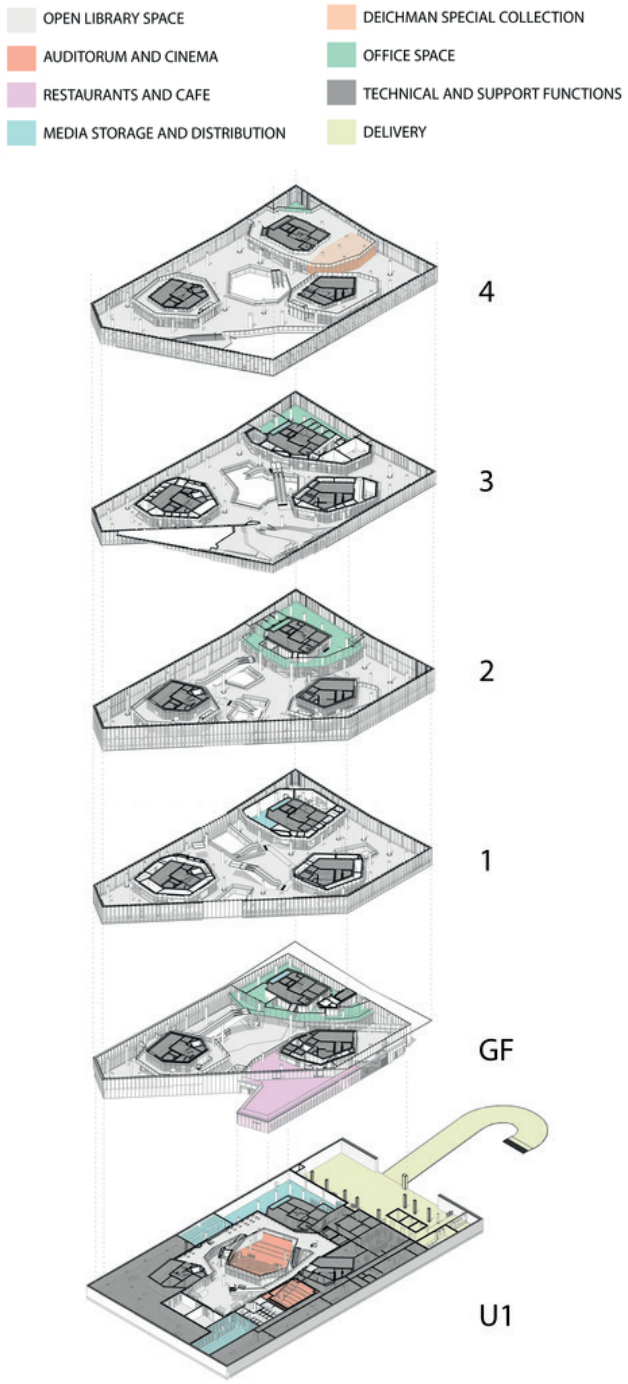


Figure B.2.1: Deichman Library: axo (ArchDaily 2021a)

Deichman Library demonstrates how a public library can accommodate a variety of atmospheres within a single building. By combining open public spaces with quieter areas for study and concentration, it creates a range of spatial settings that support different modes of use.

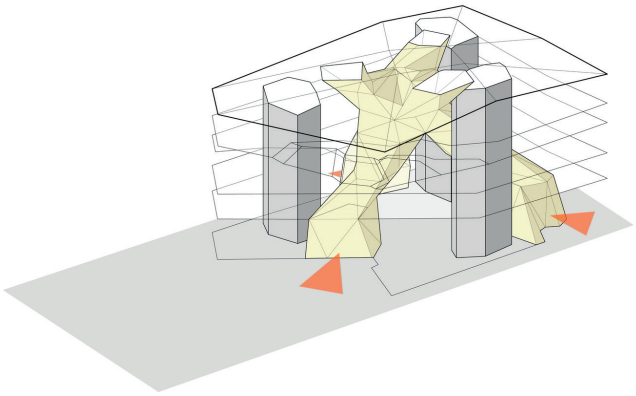


Figure B.2.2: Deichman Library: axo (ArchDaily 2021a)

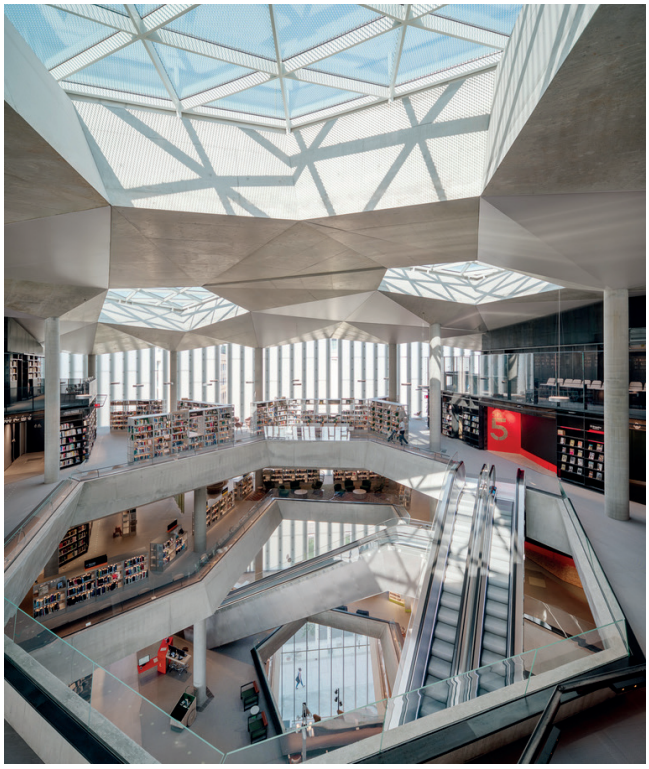


Figure B.2.3: Deichman Library: photo (ArchDaily 2021a)

ArchDaily. 2021a. "Deichman Library / Atelier Oslo + Lund Hagem." July 7, 2021. Accessed December 17, 2025. https://www.archdaily.com/942813/deichman-library-atelier-oslo-plus-lund-hagem.



Figure B.2.4: Deichman Library: photos (ArchDaily 2021a)

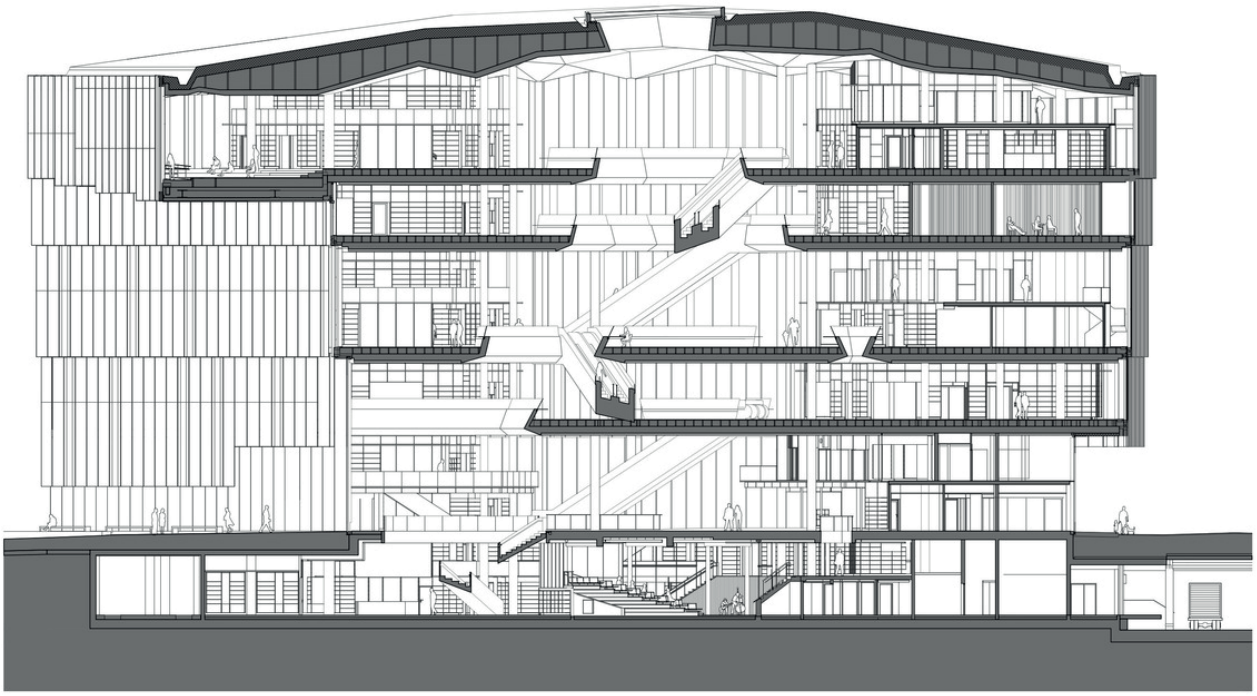
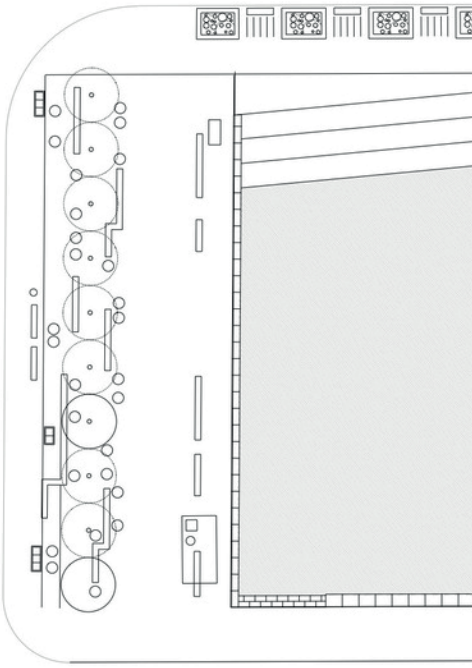
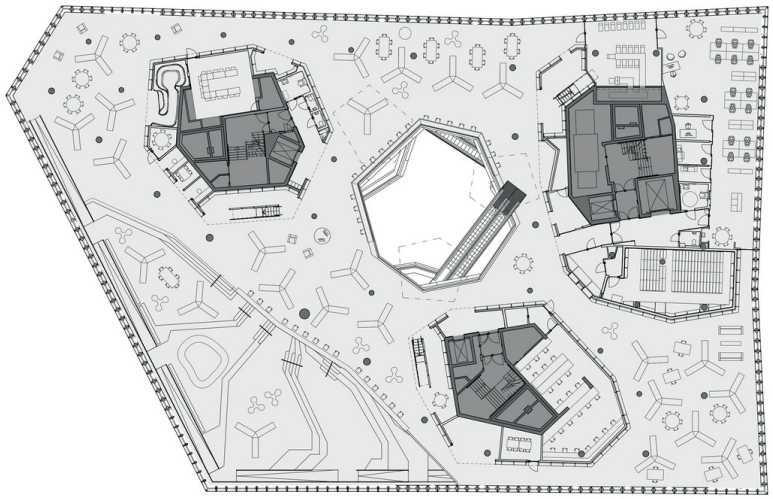


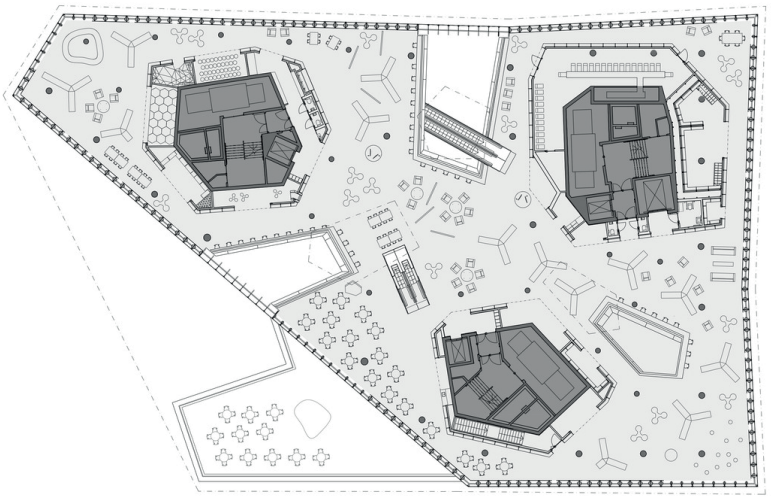
Figure B.2.5: Deichman Library: cross section (ArchDaily 2021a)



Fourth floor



First floor



Ground floor

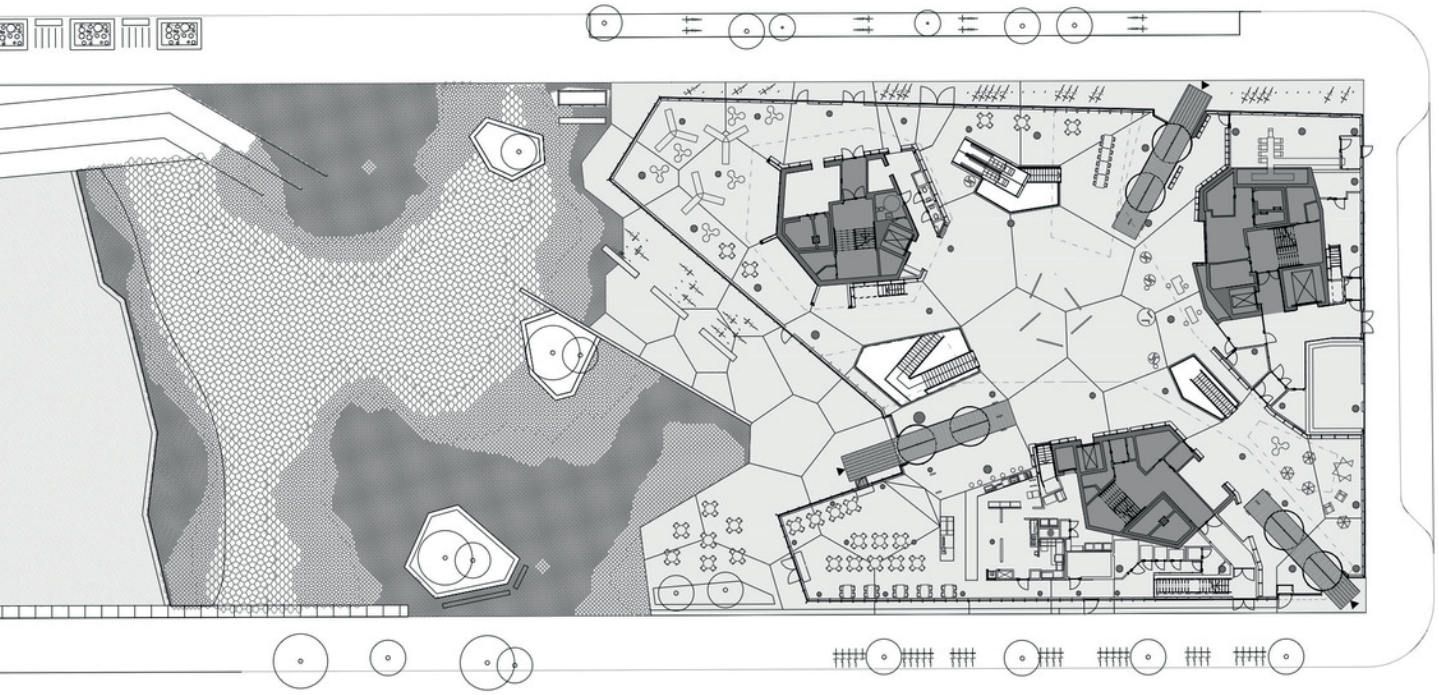


Figure B.2.6: Deichman Library: floor plans (ArchDaily 2021a)








Figure B.2.7: Deichman Library: photos of the interior (ArchDaily 2021a)

Appendix B.3: Idea Store Whitechapel

Location:	London, UK
Architects:	Adjaye Associates
Year:	2005
Area:	3,440 m^2
Function:	library

Idea Store Whitechapel reinterprets the traditional library as a multifunctional public facility. In addition to library services, it incorporates adult education, community programmes, and informal learning opportunities within a highly accessible and visible building. Located on a busy shopping street, the project is designed to be encountered as part of everyday urban life rather than as a specialised cultural institution. The project is particularly relevant for its integration of multiple public functions and its low-threshold approach to learning and community engagement.

In a TEDx talk on the Idea Store concept, CEO Judith St John explained that extensive user research and interviews into everyday needs informed the project, leading to the identification of three key needs to be addressed (2012):

1. **"We want to go to places that are where we go in the normal course of our lives."**

   "We don't want to have to make a special trip to go somewhere to get some information, to do a course, to take a book out, to watch a DVD or whatever it may be."

2. **"We want a place that makes us feel good about ourselves."**

   "We don't want to have to go somewhere and feel that we have to beg for the information; that we have to beg people to give us the things that we're interested in."

3. **"It needs to belong to us.".**

Adjaye Associates. 2026. "Idea Store Whitechapel." 2026. Accessed January 8, 2026. https://www.adjaye.com/work/idea-store-whitechapel/.
Archiweb. n.d. "Idea Store Whitechapel." Accessed January 8, 2026. https://www.archiweb.cz/en/b/idea-store-whitechapel.
TEDx Talks. 2012. "The Idea Store: Judith St John at TEDxEastEnd." https://www.youtube.com/watch?v=WWxGq7kRYtI.

CONNECTION TO THE STREET



Figure B.3.1: Idea Store Whitechapel: photos of the library's connection to the street (Archiweb n.d.)

INTERIOR

INFORMING & ORIENTING

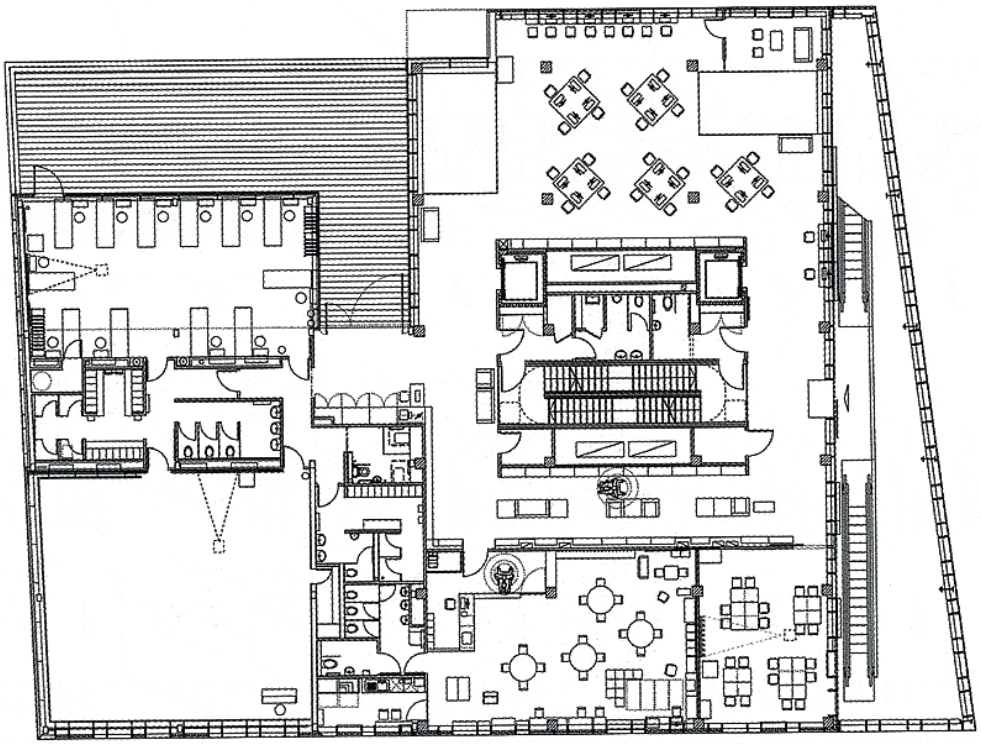
STORING BOOKS

CIRCULATION



Figure B.3.2: Idea Store Whitechapel: photos of the interior (Archiweb n.d.)

First floor



Ground floor

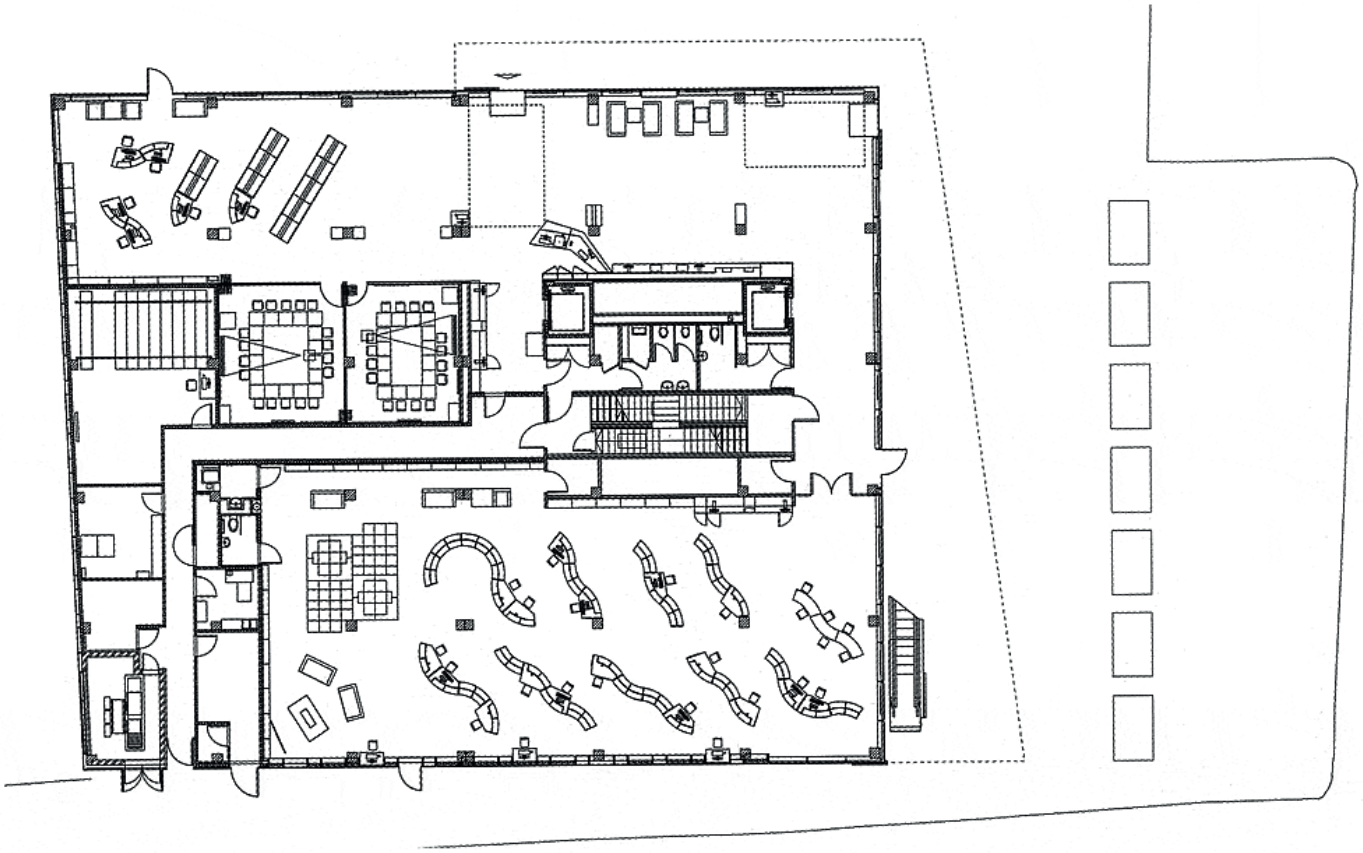
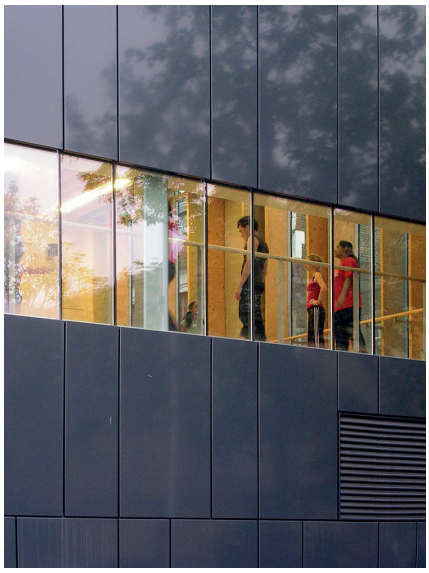


Figure B.3.3: Idea Store Whitechapel: floor plans (Archiweb n.d.)

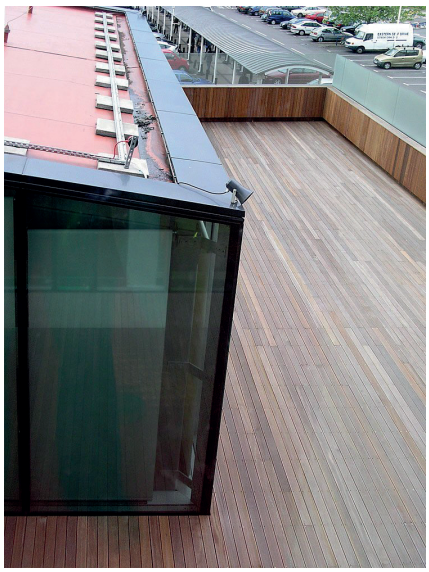
EXTERIOR

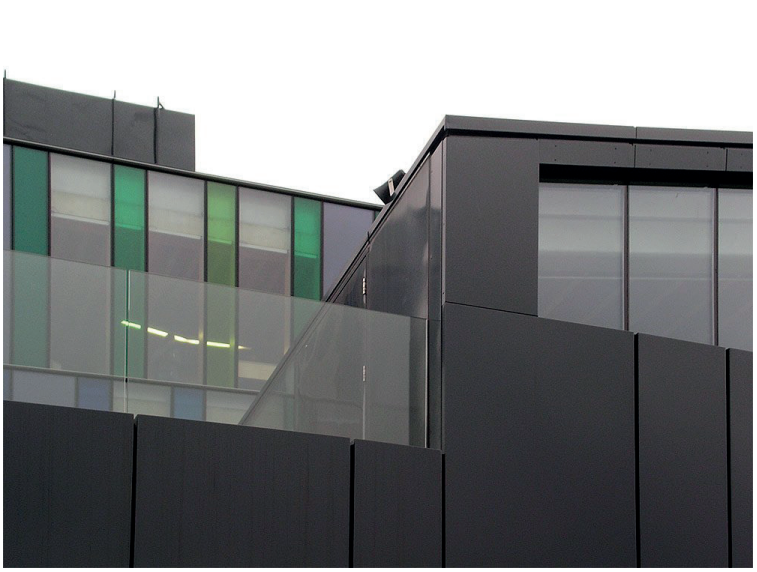
FACADE





ROOF





WINDOWS

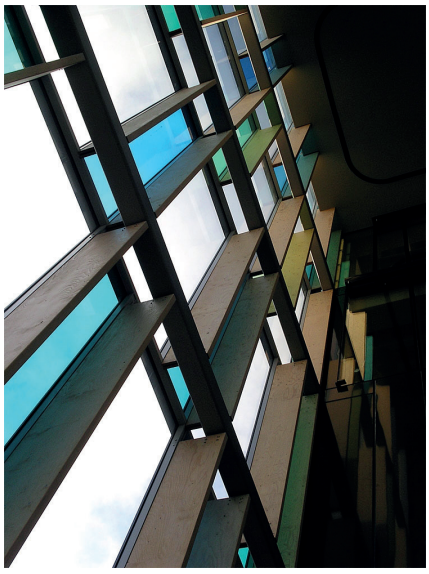




Figure B.3.4: Idea Store Whitechapel: photos of the exterior (Archiweb n.d.)

Appendix B.4: Toyama Kirari

Location:	Toyama, Japan
Architects:	Kengo Kuma and Associates
Year:	2015
Area:	26,792 m^2
Function:	library

Toyama Kirari demonstrates how materiality can contribute to the atmosphere of a public library. The extensive use of timber creates a warm and welcoming environment, while the central atrium introduces daylight deep into the building and visually connects the different floors. The project is particularly relevant for its use of materiality and daylight to create an inviting civic space.



Figure B.4.1: Toyama Kirari: photos (ArchDaily 2018)

ArchDaily. 2018. "Toyama Kirari / Kengo Kuma and Associates." August 23, 2018. Accessed January 7, 2026. https://www.archdaily.com/900661/toyama-kirari-kengo-kuma-and-associates.
Kengo Kuma and Associates. 2015. "Toyama Kirari." 2015. Accessed January 7, 2026. https://kkaa.co.jp/en/project/toyama-kirari/.

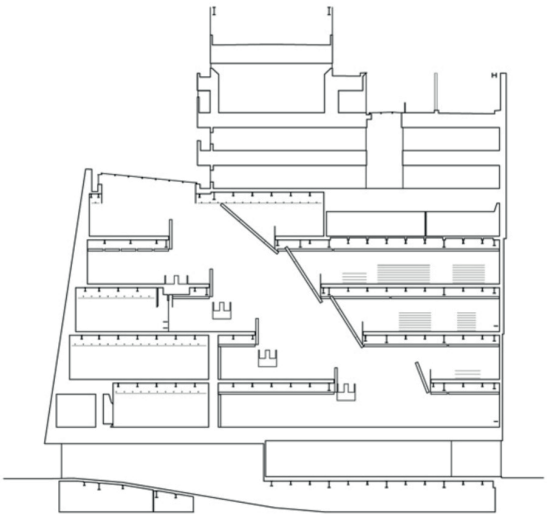
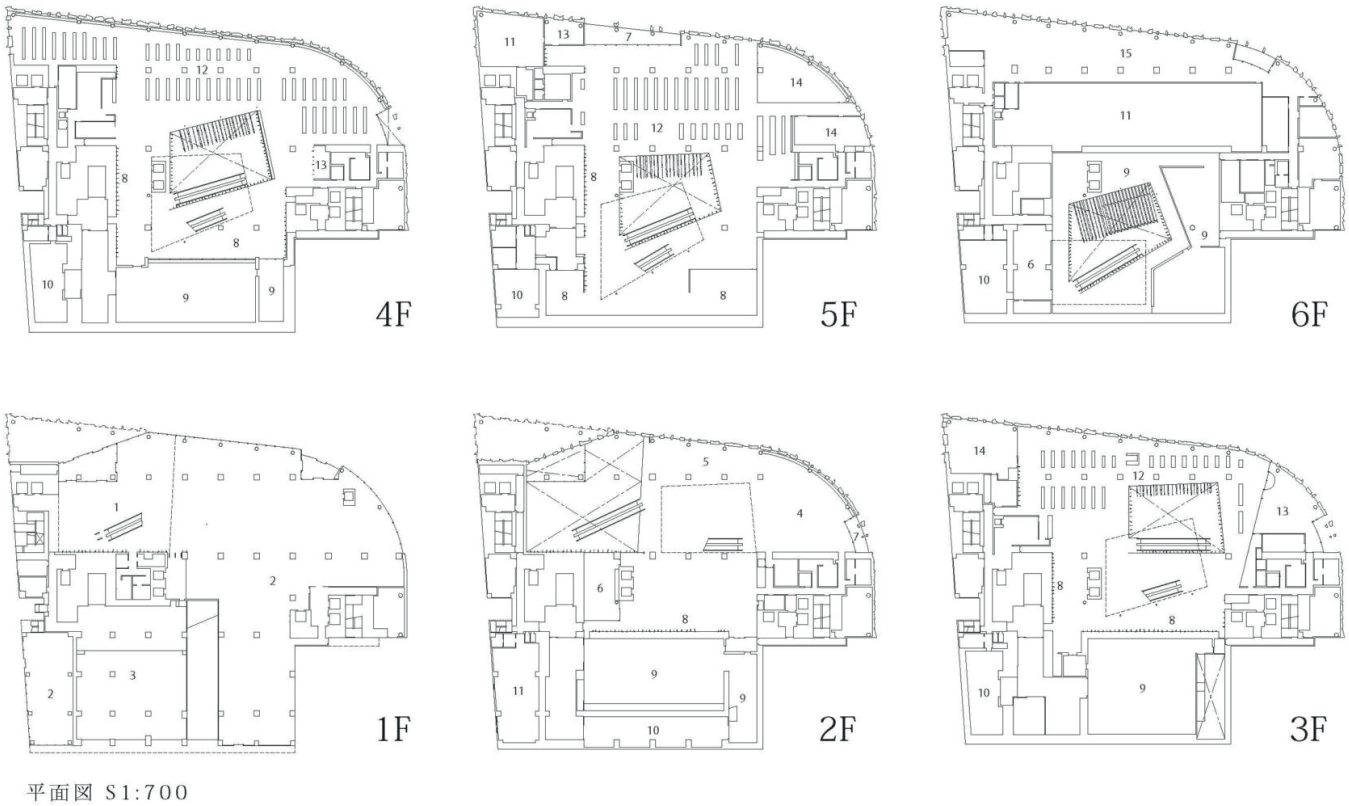


Figure B.4.2: Toyama Kirari: section (Kengo Kuma and Associates 2015)

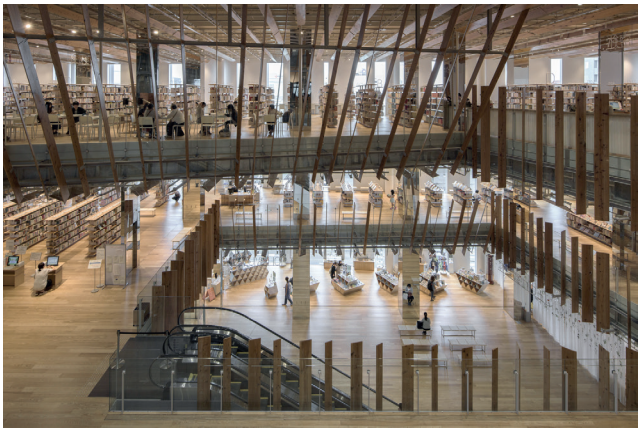


1. Entrance
2. Office
3. Service area
4. Cafe
5. Shop
6. Conference room
7. Terrace
8. Gallery
9. Showroom
10. Vault
11. Closed-shelf book stacks
12. Reading rooms with open-shelf book stacks
13. Reading room
14. Study room
15. Office
16. Parking lot

Figure B.4.3: Toyama Kirari: floor plans (Kengo Kuma and Associates 2015)

BOOK SHELVES



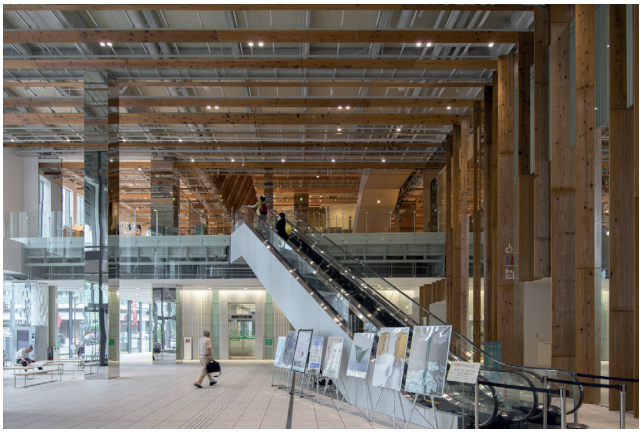


SEATING





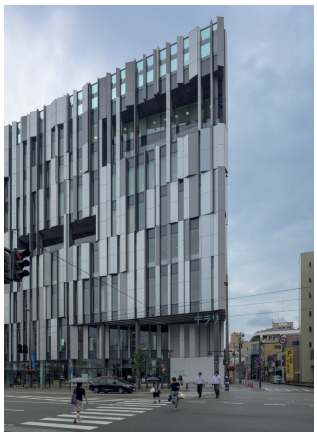
CIRCULATION





ENTRANCE





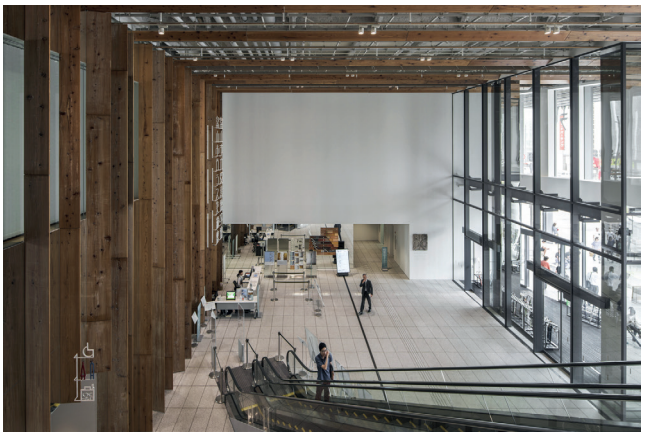


Figure B.4.4: Toyama Kirari: photos (ArchDaily 2018)

Appendix B.5: Library of the Stravros Niarchos Foundation Cultural Center

Location:	Athens, Greece
Architects:	Renzo Piano
Year:	2016
Area:	9,100 m^2
Function:	cultural centre

The SNFCC demonstrates how a cultural institution can be integrated into a larger park landscape. The building and park are designed as a continuous public environment, creating strong connections between indoor and outdoor spaces. The project is particularly relevant for its integration of architecture and landscape and its use of the roof as a public space.



Figure B.5.1: SNFCC library: photos (ArchDaily 2016)

ArchDaily. 2016. "Stavros Niarchos Foundation Cultural Centre / Renzo Piano Building Workshop." July 4, 2016. Accessed December 19, 2025. https://www.archdaily.com/790678/stavros-niarchos-foundation-cultural-centre-renzo-piano-building-workshop.

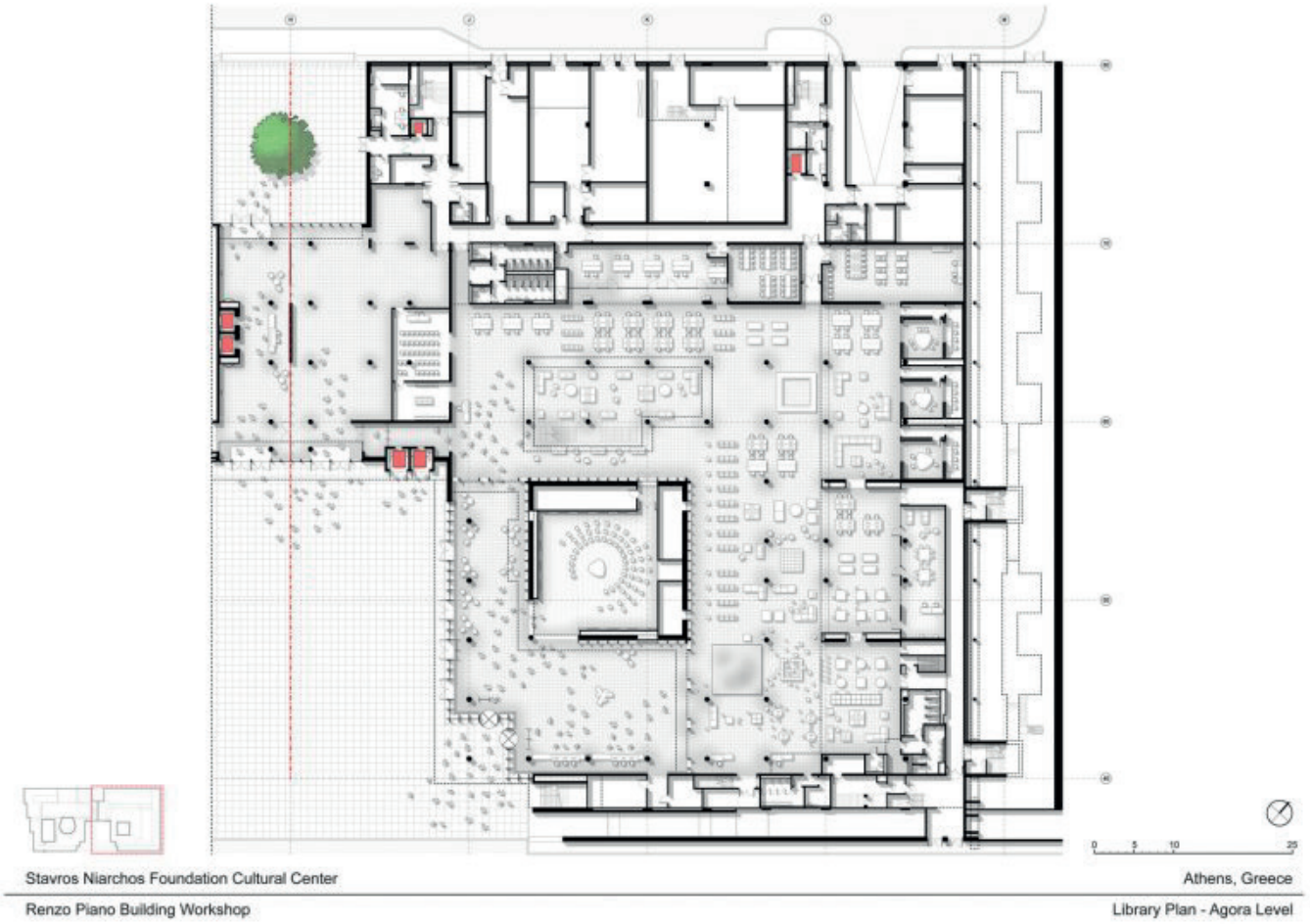


Figure B.5.2: SNFCC library: ground floor plan (ArchDaily 2016)

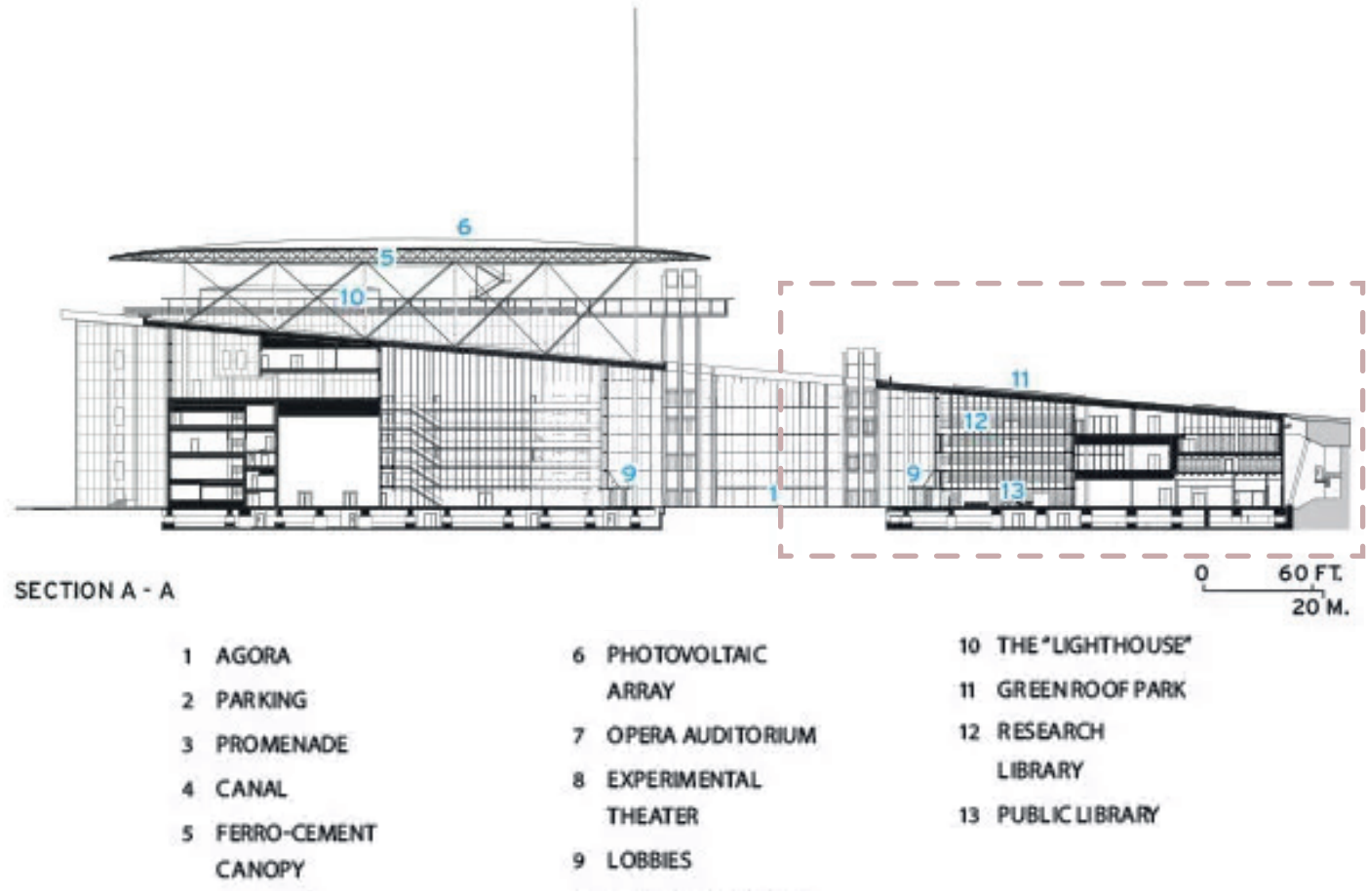


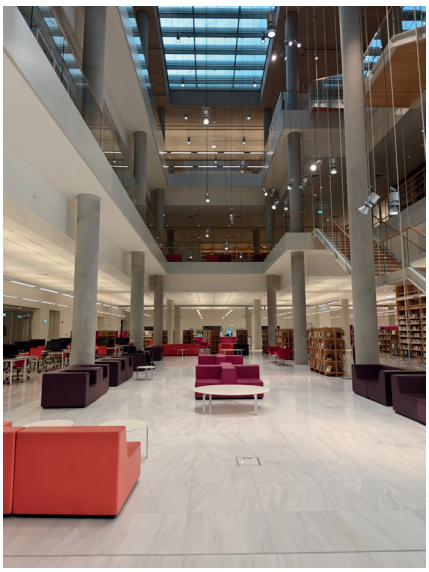
Figure B.5.3: SNFCC library: cross section (ArchDaily 2016)

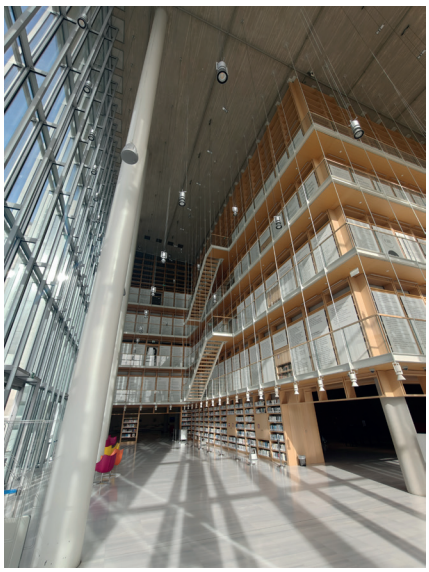
EXTERIOR

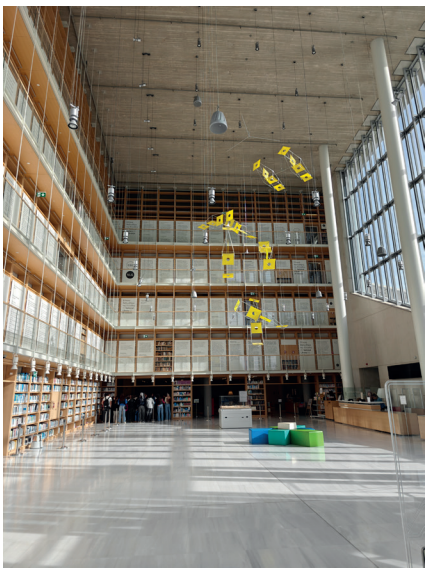




HALLS







DETAILS



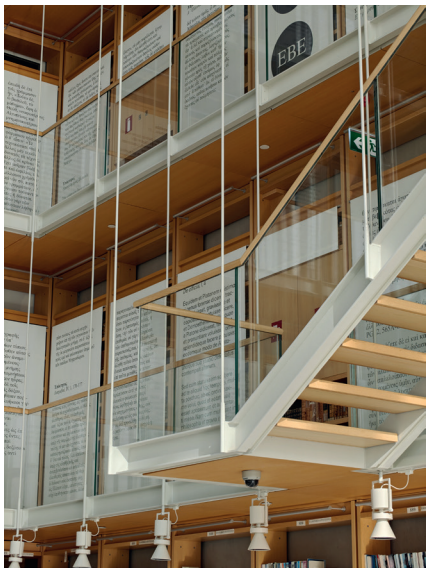




Figure B.5.4: SNFCC library: photos (own work 2025)

Appendix B.6: Maggie's Leeds Centre

Location:	Harehills, UK
Architects:	Heatherwick Studio
Year:	2020
Area:	462 m^2
Function:	healthcare centre



Maggie's Centre Leeds demonstrates how architecture can create a supportive and non-clinical environment through atmosphere, materiality, and spatial organisation. Within a largely open plan, intimacy is created through furniture groupings, changes in ceiling height, planting, and layered spatial boundaries, allowing privacy without rigid compartmentalisation. The building balances openness and daylight with quieter places for reflection and conversation, creating a range of spatial experiences within a single volume. Through its domestic character and strong connection to nature, the project offers an alternative to the institutional atmosphere often associated with healthcare environments.

While Maggie's Centres are designed for cancer patients and function as specialist support environments, the project offers insights into how architecture can create welcoming, comfortable, and emotionally supportive spaces.





Figure B.6.1: Maggie's Leeds Centre: photo impressions (ArchDaily 2021b)

ArchDaily. 2021b. "Maggie's Leeds Centre / Heatherwick Studio." July 24, 2021. Accessed December 17, 2025. https://www.archdaily.com/941540/maggies-leeds-centre-heatherwick-studio.



Figure B.6.2: Maggie's Leeds Centre: ground floor plan (ArchDaily 2021b)

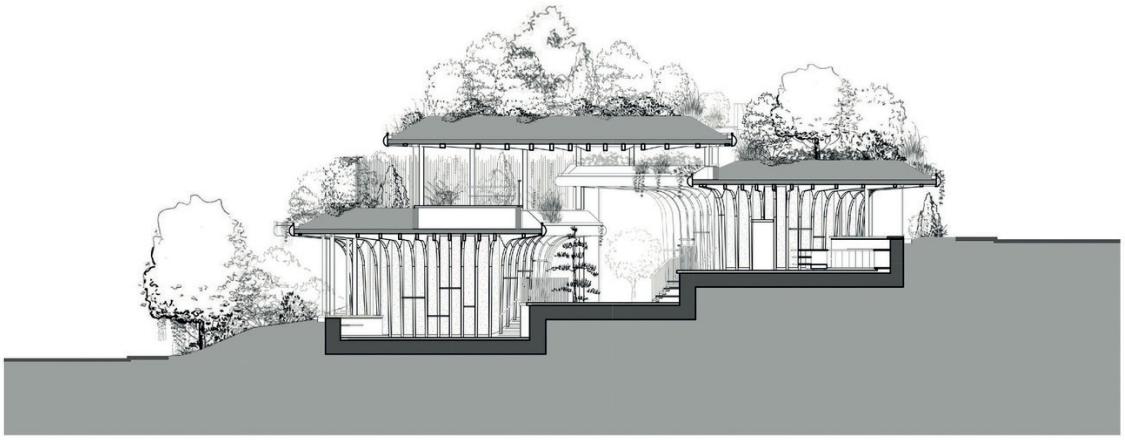


Figure B.6.3: Maggie's Leeds Centre: long section (ArchDaily 2021b)

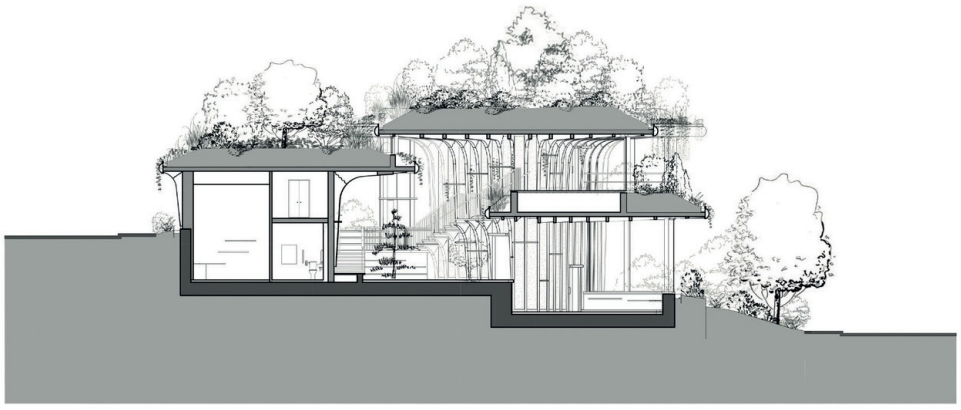


Figure B.6.4: Maggie's Leeds Centre: cross section (ArchDaily 2021b)

Appendix B.7: Craft College

Location: Herning, Denmark
Architects: Dorte Mandrup
Year: 2025
Area: 9,100 m^2
Function: college

The Crafts College demonstrates how architecture can support learning through a calm and non-institutional environment. Organised around a central courtyard, the building combines communal spaces, workshops, and smaller study areas within a clear spatial sequence. The gradual transition from collective to more focused spaces, together with its human scale and strong relationship to the landscape, creates a welcoming and supportive learning environment.



Figure B.7.1: Craft Collage: photo (Metalocus 2025)

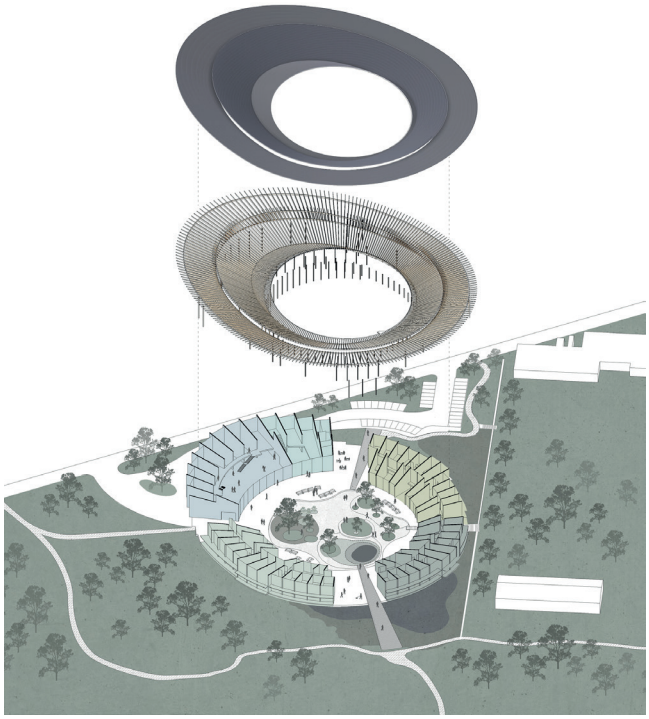


Figure B.7.2: Craft Collage: axonometry (Holcim Foundation Awards n.d.)



Figure B.7.3: Craft Collage: section (Holcim Foundation Awards n.d.)

Ayers, Andrew. 2025. "In Denmark, Dorte Mandrup Designs Exemplary Accommodations for Apprentices in the Building Trades." Architectural Record. November 4, 2025. Accessed December 17, 2025. https://www.architecturalrecord.com/articles/17829-in-denmark-dorte-mandrup-designs-exemplary-accommodations-for-apprentices-in-the-building-trades.

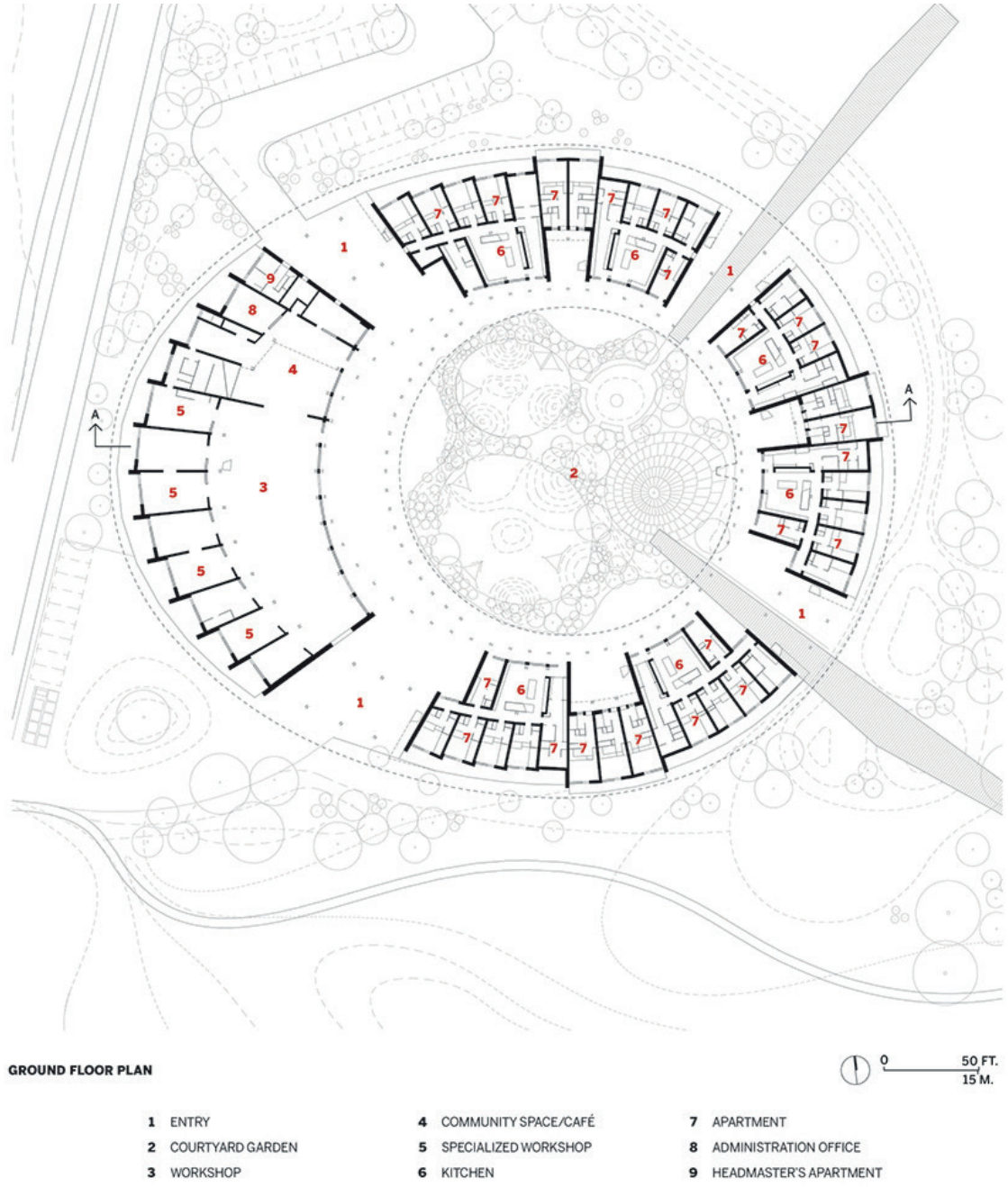
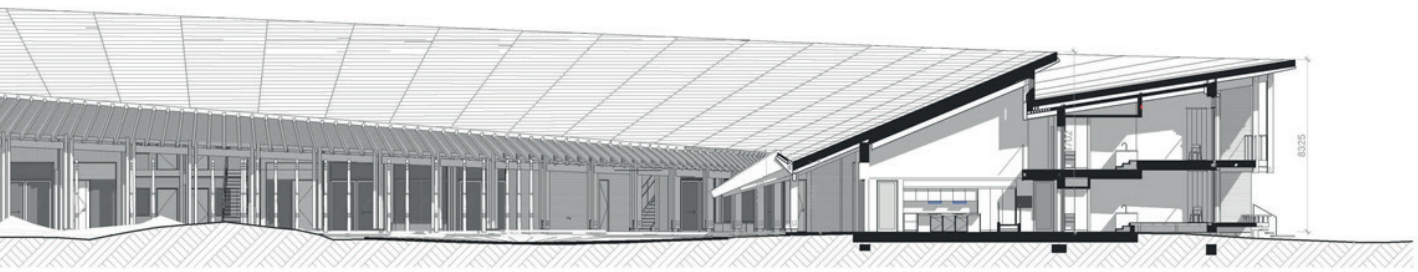


Figure B.7.4: Craft Collage: ground floor plan (Ayers 2025)



Holcim Foundation Awards. n.d. "Crafts College." Accessed December 17, 2025. https://awards.holcimfoundation.org/2025-winners/the-crafts-college.

Metalocus, Antonio Gras. 2025. "Dorte Mandrup, a space for future craftspeople in Crafts College." Metalocus. December 5, 2025. Accessed December 17, 2025. https://www.metalocus.es/en/news/dorte-mandrup-space-future-craftspeople-crafts-college.

Appendix B.8: Rozet

Location:	Arnhem, The Netherlands
Architects:	Neutelings Riedijk Architects
Year:	2013
Area:	12,000 m^2
Function:	library & cultural centre

Rozet demonstrates how circulation can become the primary organising element of a building. A continuous public route connects the different floors and programmes, guiding visitors through the library and cultural centre while creating opportunities for encounter, browsing, and informal use. Rather than separating functions into isolated zones, the route links a variety of activities and atmospheres into a coherent spatial sequence. The project is particularly relevant for its use of circulation as a tool for orientation, spatial organisation, and public engagement.

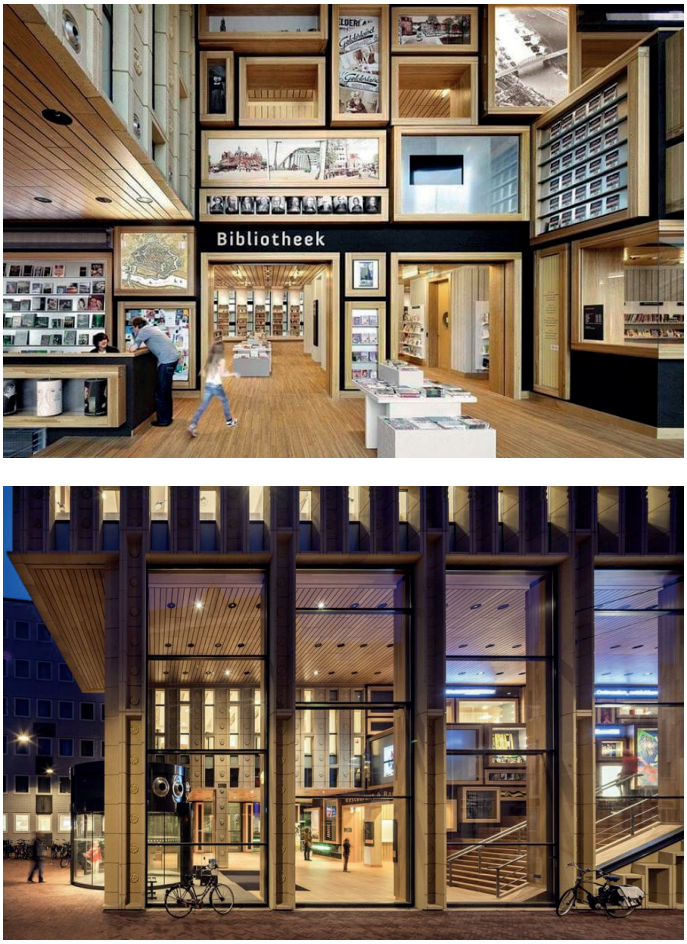


Figure B.8.1: Rozet Arnhem: photos (ArchDaily 2014)

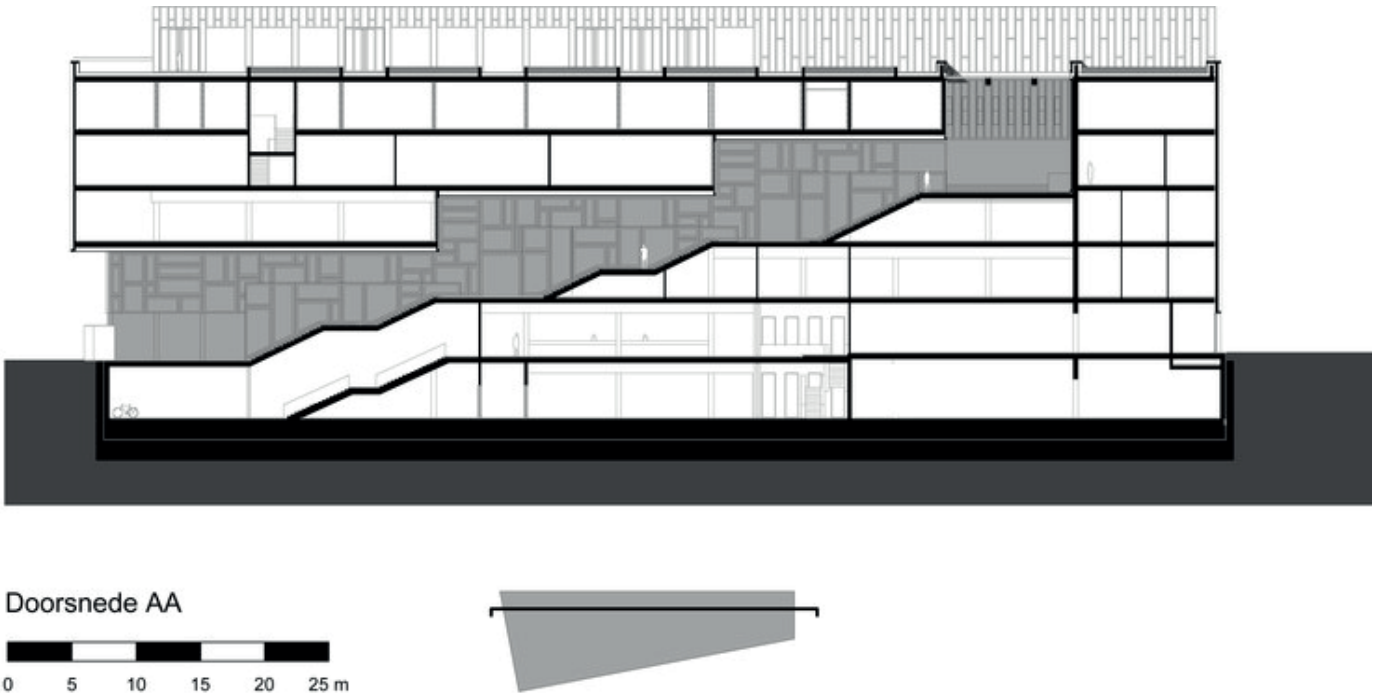


Figure B.8.2: Rozet Arnhem: section (ArchDaily 2014)

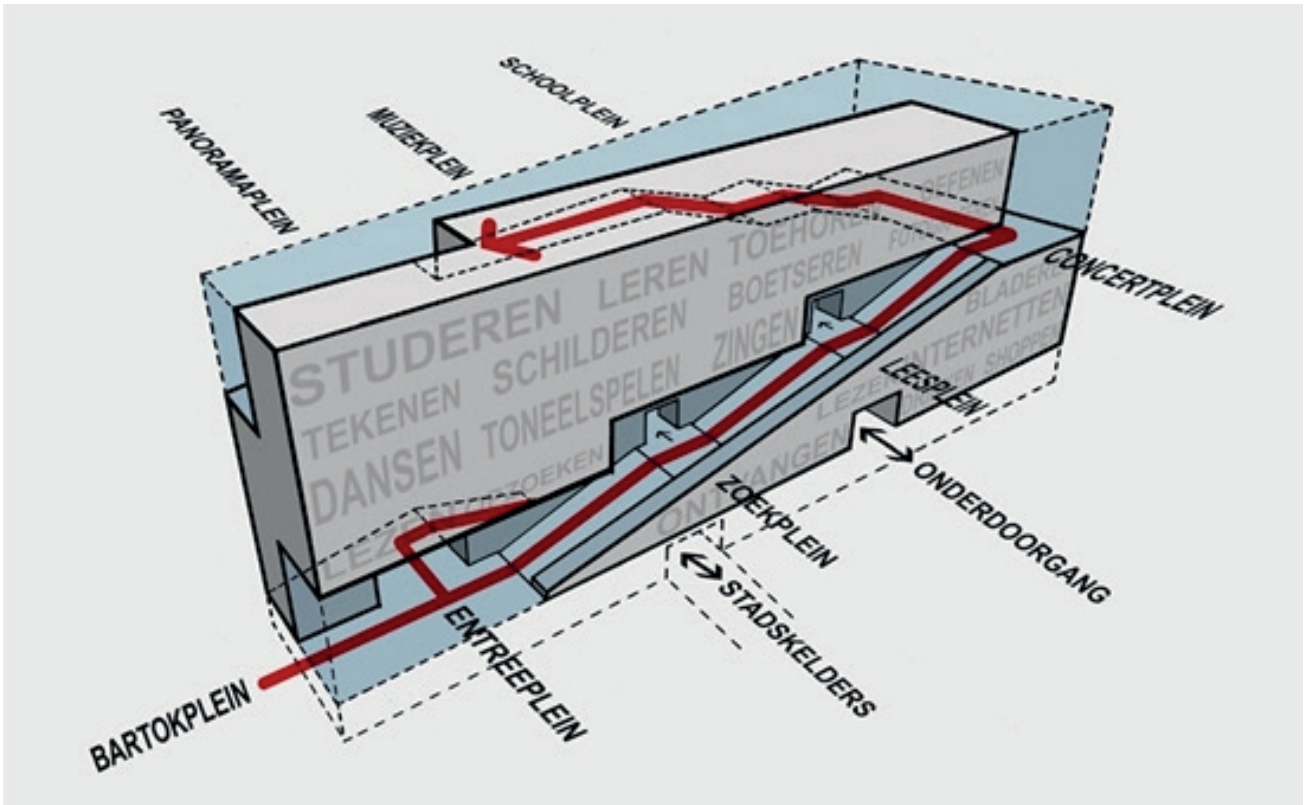


Figure B.8.3: Rozet Arnhem: organisational diagram (ArchDaily 2014)

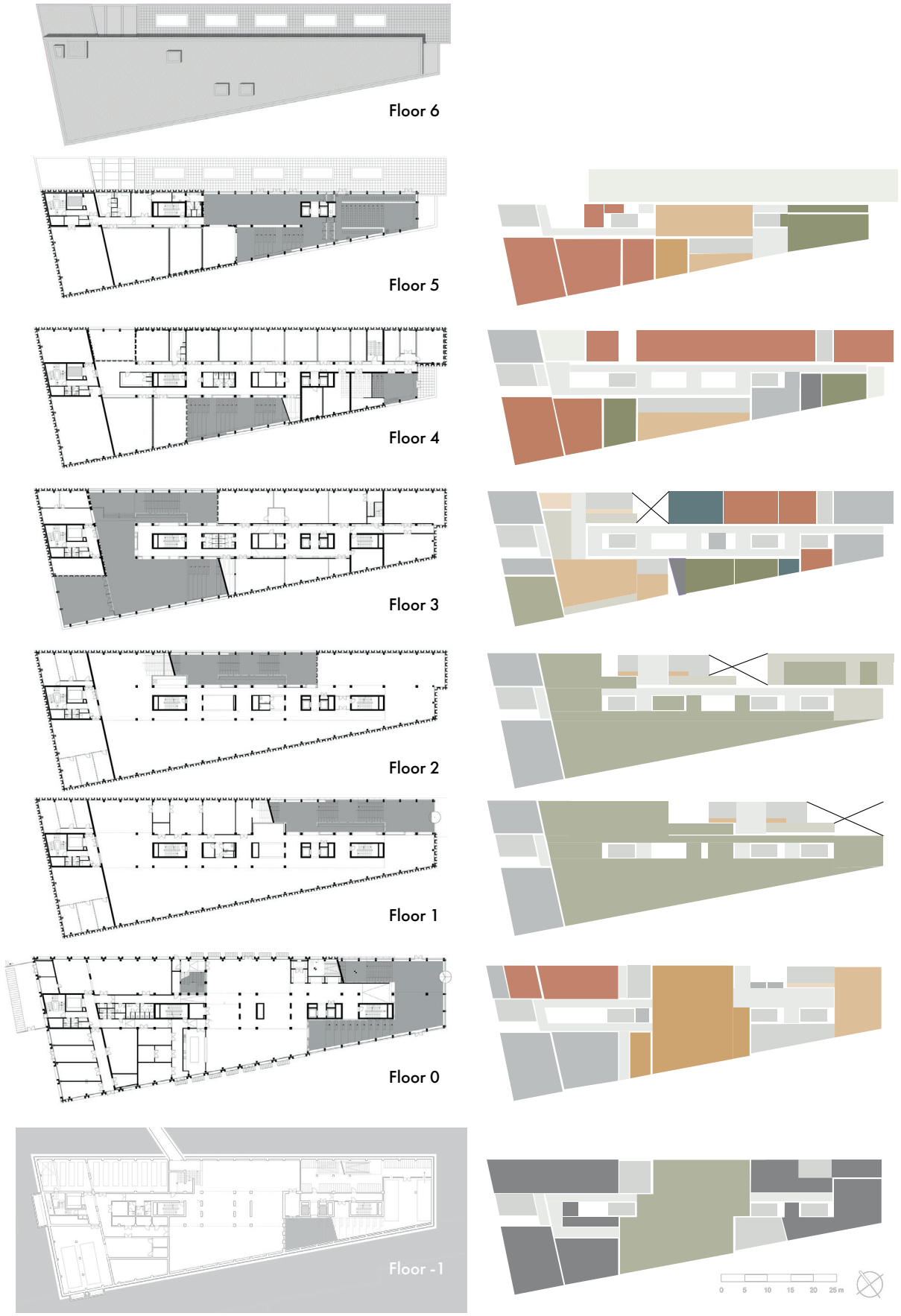


Figure B.8.4: Rozet Arnhem: floor plan function analysis (own work 2026)

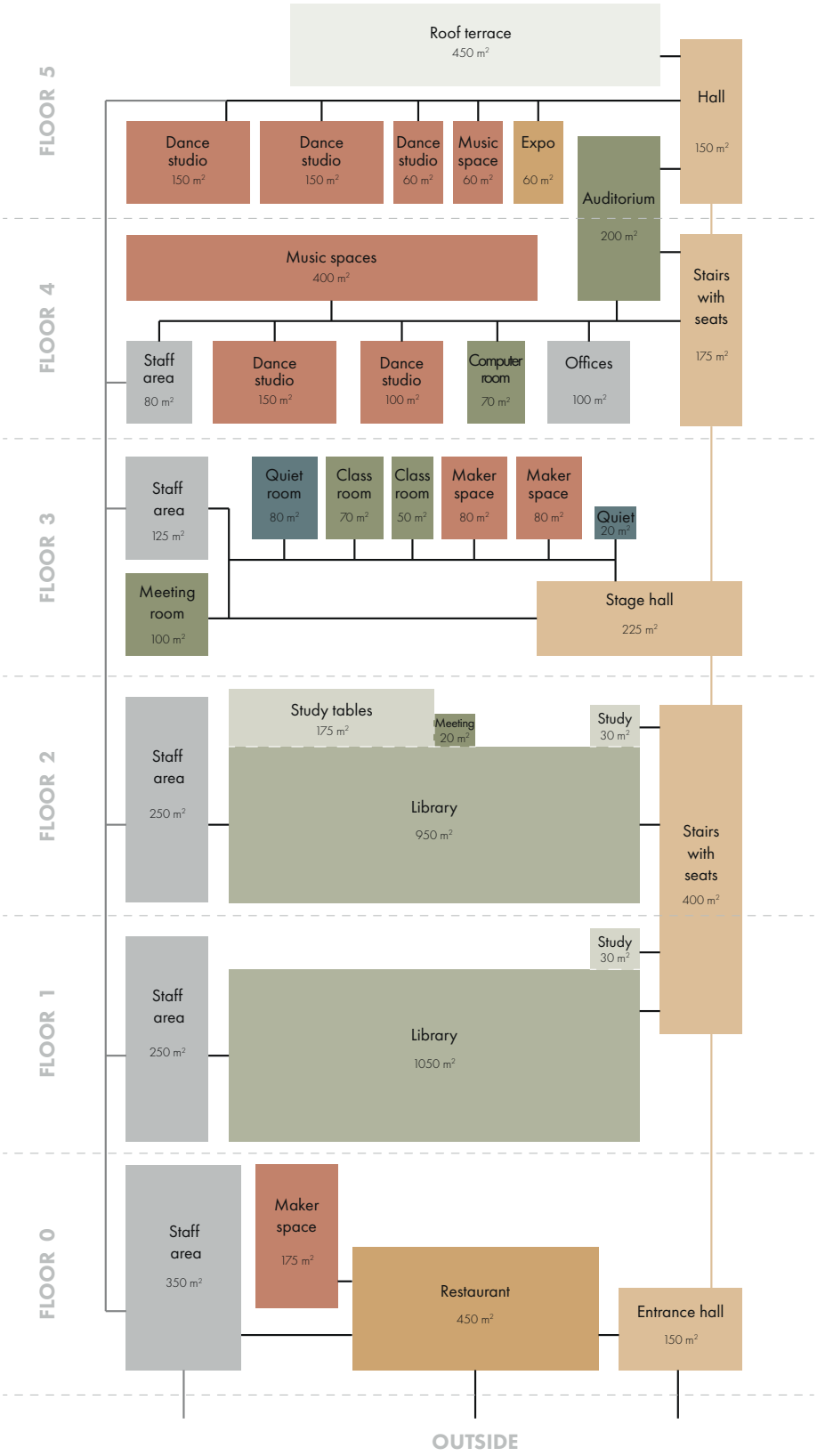


Figure B.8.5: Rozet Arnhem: floor plan bubble diagram (own work 2026)

Appendix C: Atmosphere research

This appendix presents the data derived from the research method described in Chapter 2.2. I applied this method to three libraries/ cultural centres in the Netherlands, selected for their comparable scale to the project and their combination of library functions with other public programs (such as cultural spaces, cafés, and performance areas).

For each building, I analysed all floors by mapping:

- Functions and observed spatial elements (blue).
- Location of bookcases (red).
- Defined measurement points (green).

Each floor plan is accompanied by a corresponding table that records the values of the atmospheric variables derived at each measurement point.

This dataset is used to identify spatial patterns and inform design decisions related to the creation of specific atmospheric conditions within the project.

Forum (Groningen, The Netherlands)

Location: Groningen, The Netherlands
Architects: NL Architects
Year: 2019
Area: 17,000 m^2
Function: library & cultural centre



Rozet (Arnhem, The Netherlands)

Location: Arnhem, The Netherlands
Architects: Neutelings Riedijk Architects
Year: 2013
Area: 12,000 m^2
Function: library & cultural centre



Eemhuis (Amersfoort, The Netherlands)

Location: Amersfoort, The Netherlands
Architects: Neutelings Riedijk Architects
Year: 2014
Area: 16,000 m^2
Function: library & cultural centre



Appendix C.1: Atmosphere data of Forum (Groningen)

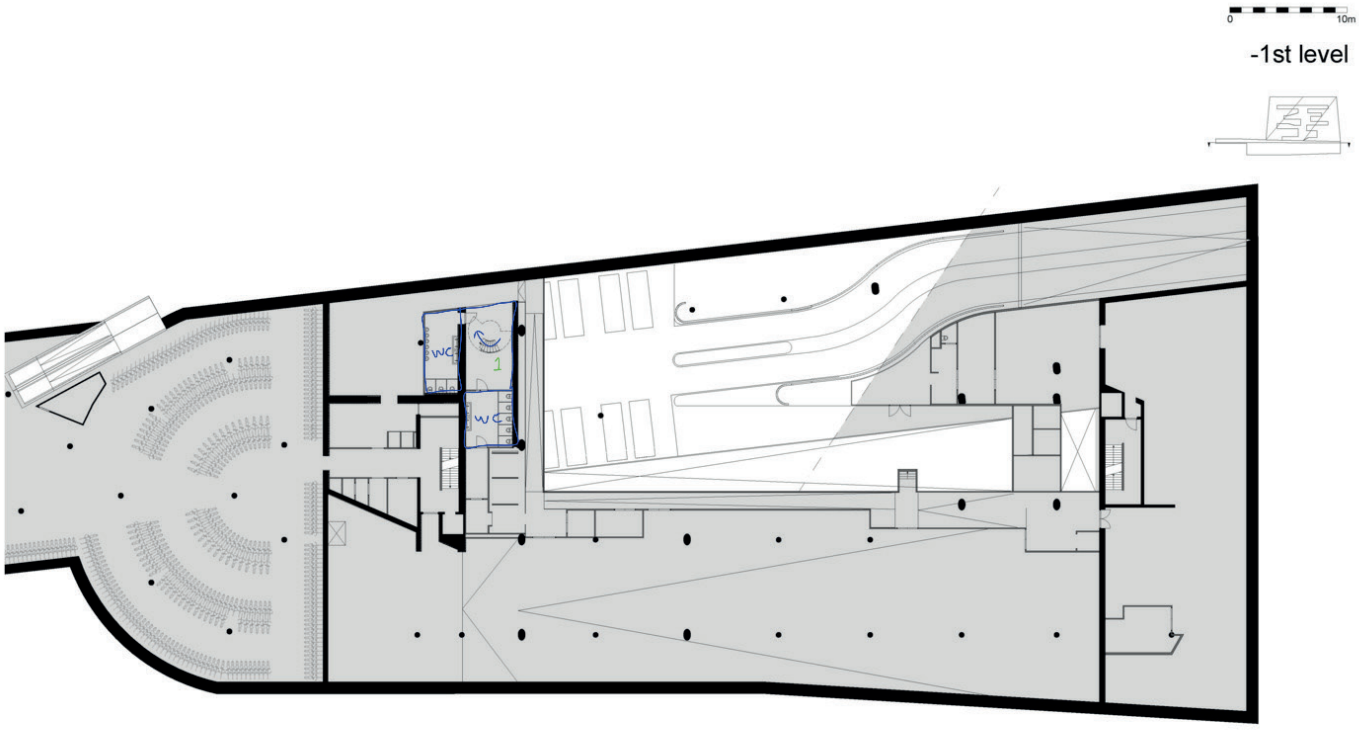


Figure C.1.1: Atmosphere research Forum Groningen: floor -1 (own work 2026)

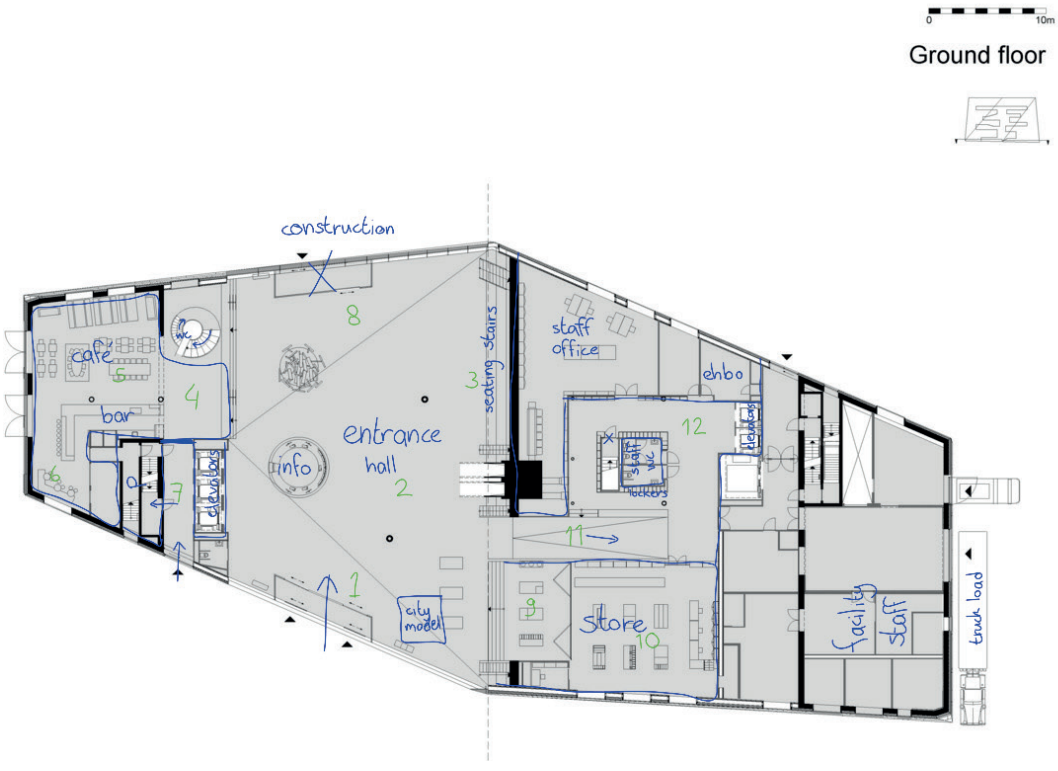


Figure C.1.2: Atmosphere research Forum Groningen: floor 0 (own work 2026)

Floor -1

Table C.1.1: Atmosphere research Forum Groningen: floor -1 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	-1	2	4	1	3	2	3	5	1	4	2	4	1	Circulation	Yes

Floor 0

Table C.1.2: Atmosphere research Forum Groningen: floor 0 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	0	4	4	1	1	1	4	1	5	4	2	3	1	Circulation	Yes
2	0	3	4	1	1	1	4	1	5	4	1	4	1	Circulation	Yes
3	0	4	4	2	1	1	5	1	5	4	3	1	3	Seating	Yes
4	0	3	4	1	3	3	4	2	4	4	3	2	2	Circulation	Yes
5	0	3	4	2	3	4	3	3	3	4	4	1	2	Restaurant	Yes
6	0	3	4	2	3	4	3	4	2	4	3	1	2	Restaurant	Yes
7	0	3	2	1	1	1	2	3	3	2	2	4	1	Circulation	Maybe
8	0	4	4	1	1	1	4	1	5	4	2	3	1	Circulation	Maybe
9	0	3	4	1	4	2	3	2	4	4	2	4	1	Store	Yes
10	0	2	4	1	4	3	3	4	2	4	2	3	1	Store	Yes
11	0	3	3	1	1	1	3	2	4	4	1	3	1	Circulation	Yes
12	0	2	2	1	1	1	3	4	2	4	1	4	1	Circulation	Yes

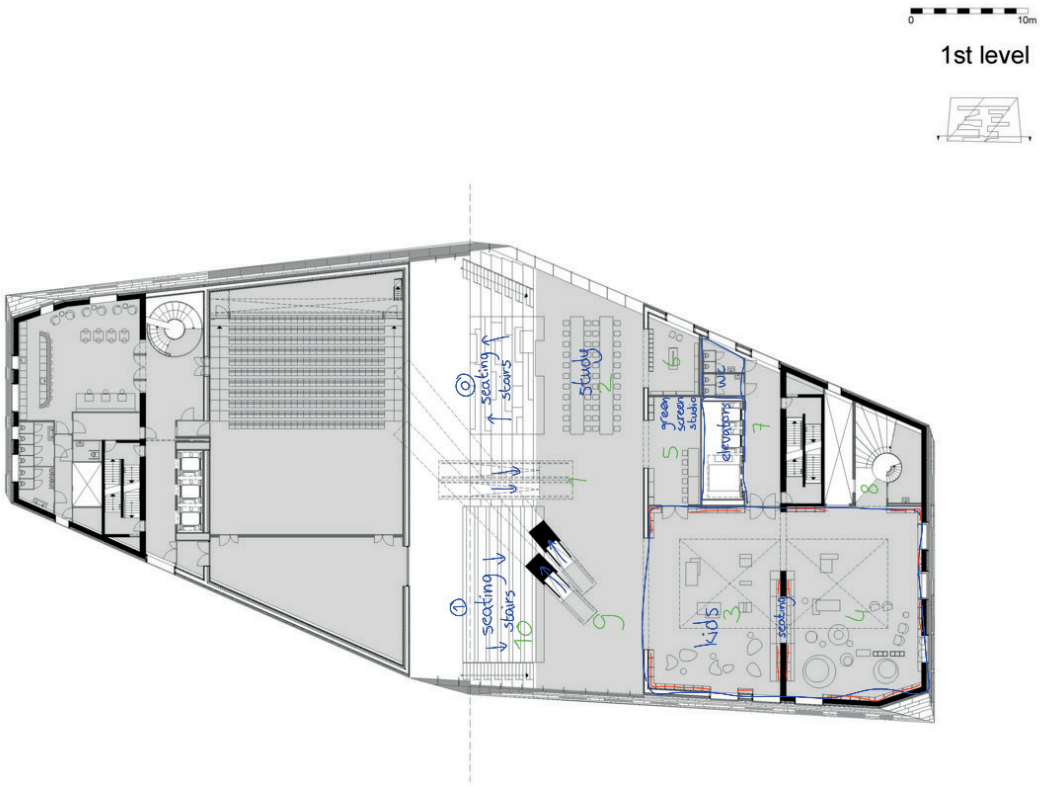


Figure C.1.3: Atmosphere research Forum Groningen: floor 1 (own work 2026)

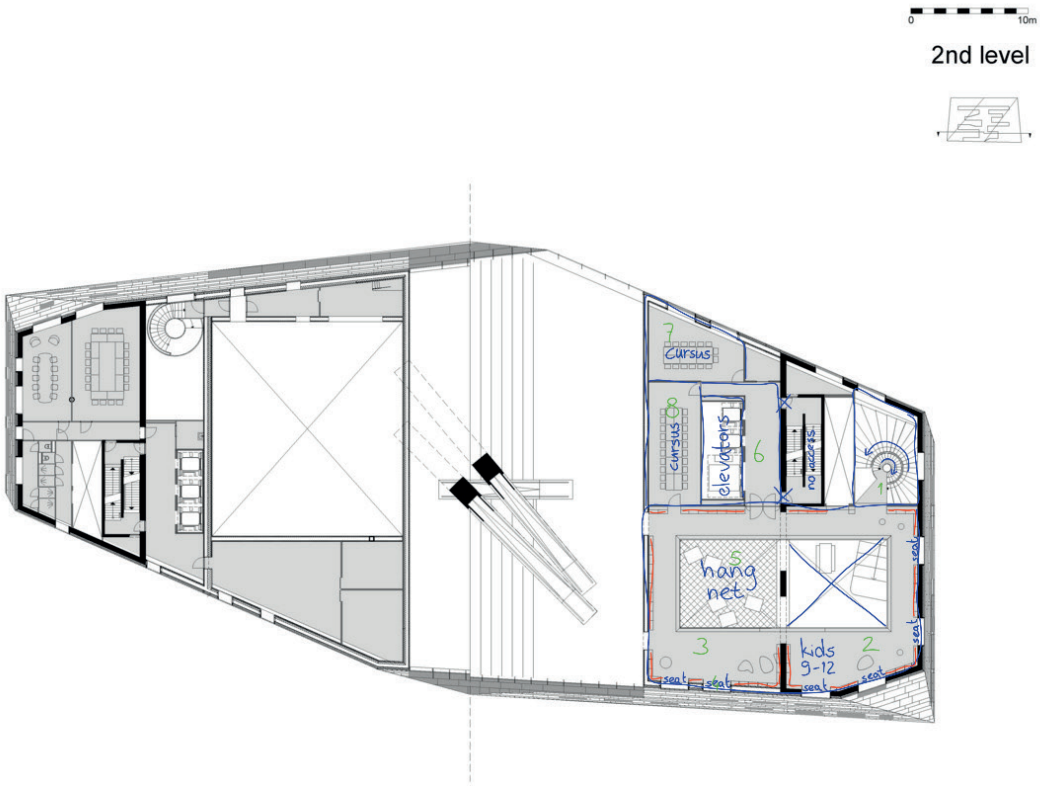


Figure C.1.4: Atmosphere research Forum Groningen: floor 2 (own work 2026)

Floor 1

Table C.1.3: Atmosphere research Forum Groningen: floor 1 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	1	5	4	1	1	1	5	1	5	5	2	4	1	Circulation	Yes
2	1	4	3	1	4	1	5	1	5	5	4	1	1	Study tables	Yes
3	1	2	4	2	4	3	3	4	4	5	3	5	5	Library kids	Yes
4	1	2	4	2	4	3	3	5	3	5	3	5	5	Library kids	Yes
5	1													Meeting room	Yes
6	1													Library	Yes
7	1	3	2	1	1	1	2	3	2	4	2	3	1	Circulation	Yes
8	1	3	2	1	3	3	4	5	2	4	1	2	1	Circulation	Yes

Floor 2

Table C.1.4: Atmosphere research Forum Groningen: floor 2 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	2	3	2	1	3	3	4	4	2	4	1	3	1	Circulation	Yes
2	2	3	2	2	4	3	3	4	2	4	2	2	1	Library kids	Yes
3	2	3	2	2	4	3	3	4	3	5	3	2	2	Library kids	Yes
4	2	5	2	3	3	3	1	4	4	5	3	1	5	Seating	Yes
5	2	2	4	5	3	3	4	1	5	4	2	2	4	Seating	Yes
6	2	2	1	1	1	1	2	4	2	3	1	2	1	Circulation	Yes
7	2	3	2	2	4	2	3	4	2	3	3	1	2	Meeting room	Yes
8	2	2	2	2	4	1	3	5	2	3	3	1	2	Meeting room	Yes

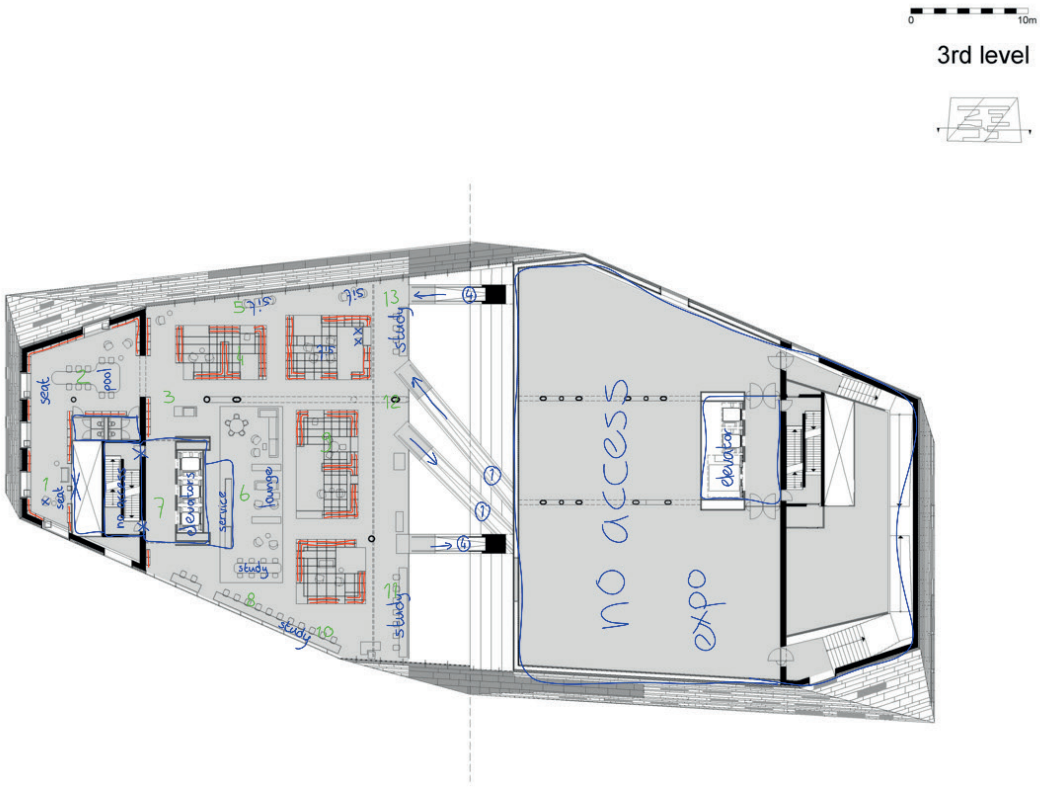


Figure C.1.5: Atmosphere research Forum Groningen: floor 3 (own work 2026)

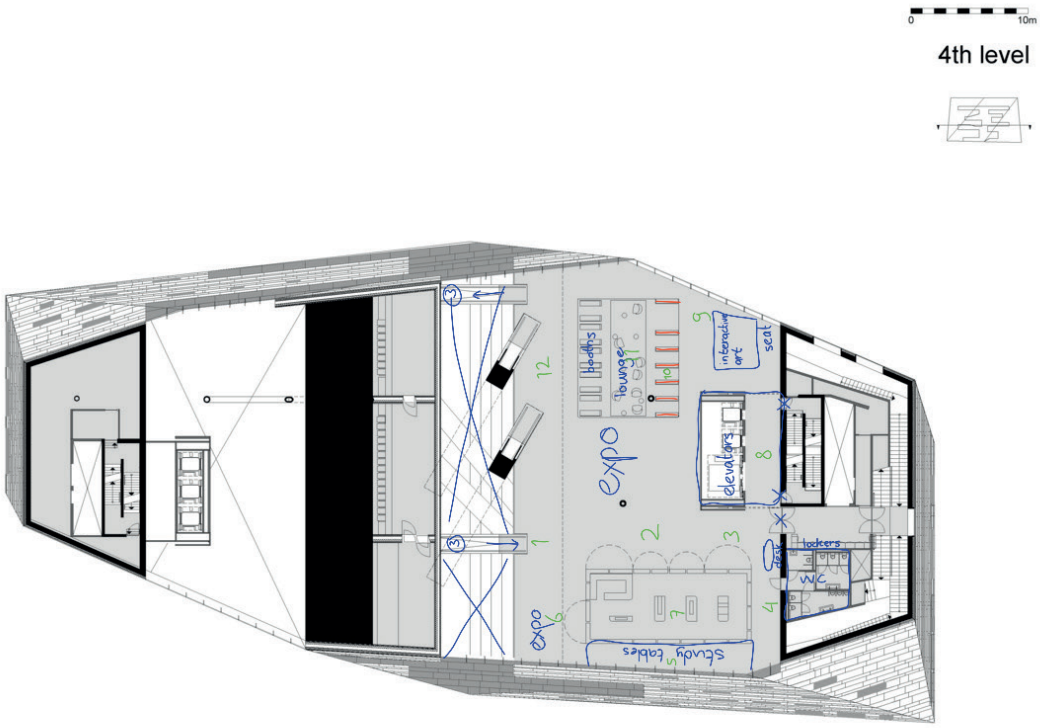


Figure C.1.6: Atmosphere research Forum Groningen: floor 4 (own work 2026)

Floor 3

Table C.1.5: Atmosphere research Forum Groningen: floor 3 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	3	3	1	3	2	1	3	4	2	3	1	2	1	Library	Yes
2	3	3	2	3	2	1	3	3	3	4	2	2	1	Library	Yes
3	3	3	4	1	1	1	4	3	4	3	2	4	1	Circulation	Yes
4	3	3	3	2	2	1	2	4	4	3	2	2	1	Library	Yes
5	3	5	3	1	1	2	3	2	2	2	2	1	1	Seating	Yes
6	3	3	4	3	2	2	4	1	5	5	3	2	2	Seating	Yes
7	3	3	4	1	1	1	3	3	3	2	2	4	1	Circulation	Yes
8	3	5	2	1	1	1	4	1	5	4	3	1	1	Study tables	Yes
9	3	2	4	2	2	2	3	4	3	2	2	2	1	Library	Yes
10	3	5	2	1	1	1	3	2	3	3	3	2	1	Study tables	Yes
11	3	4	3	1	1	1	4	1	5	4	3	2	1	Study tables	Yes
12	3	3	4	1	1	2	4	2	4	5	1	4	1	Circulation	Yes
13	3	5	4	1	1	1	4	2	4	4	1	4	1	Circulation	Yes

Floor 4

Table C.1.6: Atmosphere research Forum Groningen: floor 4 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	4	3	4	1	1	1	5	1	5	5	1	4	1	Circulation	Yes
2	4	3	4	1	1	1	4	2	4	5	1	3	1	Circulation	Yes
3	4	3	4	1	4	1	3	2	4	4	1	2	1	Circulation	Yes
4	4	4	3	1	4	1	3	3	3	3	1	2	1	Circulation	Yes
5	4	5	3	2	1	1	4	3	2	2	2	1	3	Study tables	Yes
6	4	5	4	1	1	1	5	1	5	5	1	2	1	Expo	Yes
7	4	3	3	1	4	1	3	4	3	3	2	4	1	Store	Yes
8	4	3	3	1	1	1	3	3	3	3	1	3	1	Circulation	Yes
9	4	4	4	1	1	1	3	3	2	4	1	2	2	Expo	Yes
10	4	2	4	1	1	1	2	3	4	4	1	2	1	Library	Yes
11	4	4	5	2	1	1	4	1	5	5	3	1	3	Study tables	Yes
12	4	5	4	1	1	1	5	1	5	5	2	4	1	Circulation	Yes

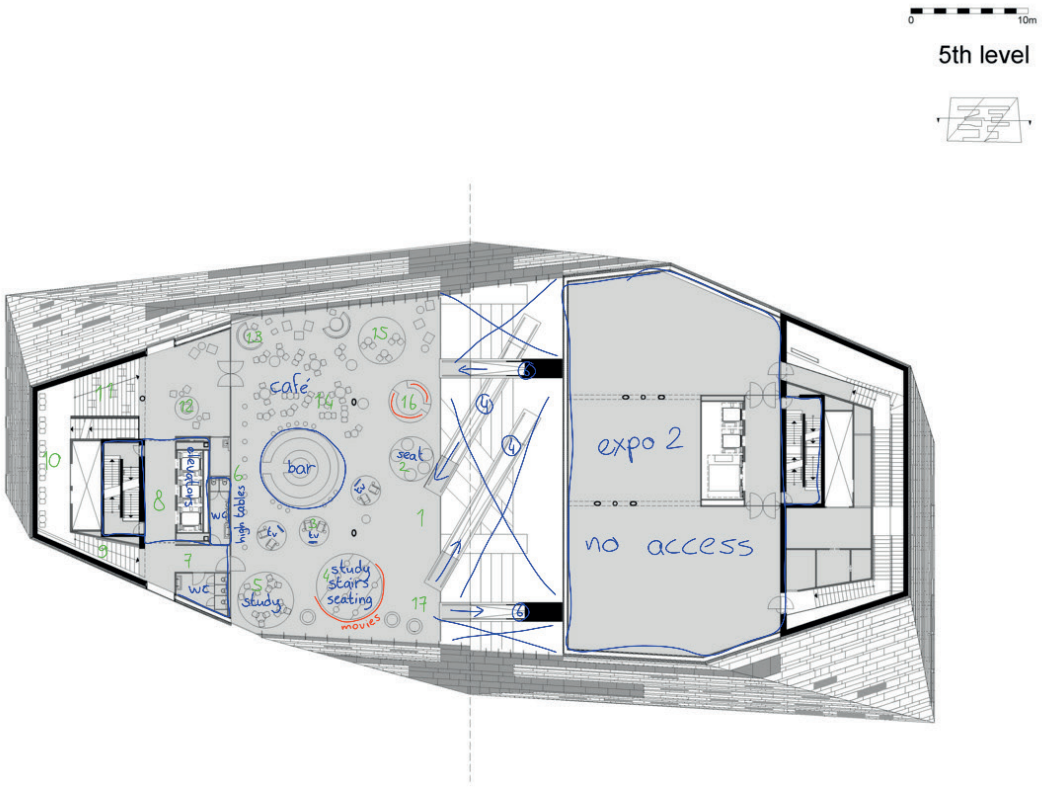


Figure C.1.7: Atmosphere research Forum Groningen: floor 5 (own work 2026)

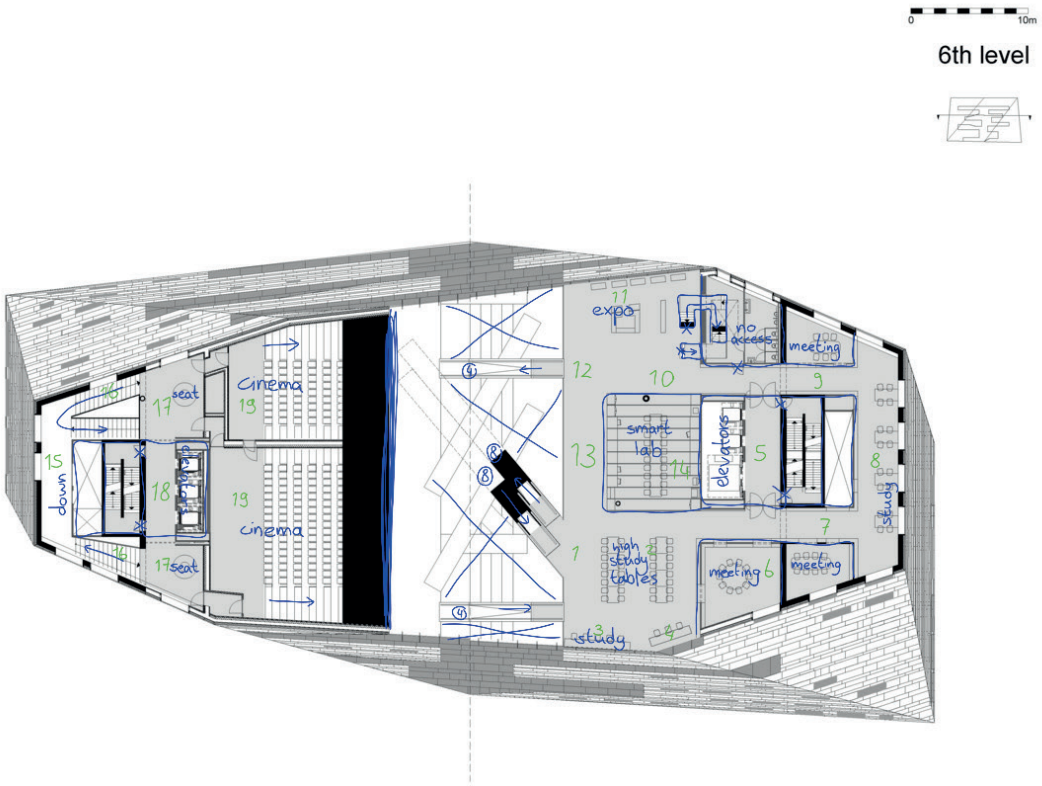


Figure C.1.8: Atmosphere research Forum Groningen: floor 6 (own work 2026)

Floor 5

Table C.1.7: Atmosphere research Forum Groningen: floor 5 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	5	4	5	1	1	1	5	1	5	5	2	4	1	Circulation	Yes
2	5	4	5	4	3	1	5	1	5	5	3	1	3	Restaurant	Yes
3	5	3	5	3	3	1	4	1	5	5	2	1	2	Seating	Yes
4	5	4	4	3	2	1	4	2	4	4	3	1	4	Seating	Yes
5	5	4	5	3	2	1	4	2	4	5	3	1	4	Study tables	Yes
6	5	3	5	1	2	1	4	2	3	5	3	1	4	Restaurant	Yes
7	5	2	2	3	4	1	2	3	3	5	1	3	1	Circulation	Yes
8	5	3	2	3	4	1	3	3	4	4	1	3	1	Circulation	Yes
9	5	2	3	4	4	1	2	4	2	3	1	3	1	Circulation	Yes
10	5	3	3	4	4	1	2	5	2	2	3	4	2	Seating	Yes
11	5	3	3	4	4	1	3	3	3	4	1	3	1	Circulation	Yes
12	5	1	3	4	4	1	3	3	3	4	2	2	2	Seating	Yes
13	5	4	5	3	4	1	3	2	4	5	3	1	3	Restaurant	Yes
14	5	3	5	2	4	1	3	1	5	5	4	1	3	Restaurant	Yes
15	5	4	5	4	3	1	4	1	5	5	2	1	3	Restaurant	Yes
16	5	3	5	1	1	1	2	4	3	3	2	2	1	Library	Yes

Floor 6

Table C.1.8: Atmosphere research Forum Groningen: floor 6 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	6	4	4	1	1	1	5	1	5	5	2	4	1	Circulation	Yes
2	6	3	4	1	3	2	4	2	4	5	3	1	4	Study tables	Yes
3	6	4	3	1	1	1	4	2	4	5	3	1	3	Study tables	Yes
4	6	4	3	1	1	1	4	2	4	5	3	1	3	Study tables	Yes
5	6	2	3	1	3	3	3	3	3	3	2	3	1	Circulation	Yes
6	6	3	2	2	2	1	3	5	3	3	2	1	3	Meeting room	Yes
7	6	2	2	1	3	3	2	3	3	4	1	3	1	Circulation	Yes
8	6	4	2	1	3	3	3	4	2	3	3	1	3	Study tables	Yes
9	6	2	2	1	3	3	2	3	3	4	1	3	1	Circulation	Yes
10	6	3	4	1	3	1	3	3	4	5	2	3	1	Circulation	Yes
11	6	4	4	1	1	1	3	2	4	5	2	2	2	Expo	Yes
12	6	3	4	1	1	1	4	1	5	5	1	4	1	Circulation	Yes
13	6	3	4	1	3	1	3	2	5	5	1	3	1	Circulation	Yes
14	6	3	4	1	4	2	3	3	4	5	3	3	4	Maker space	Yes

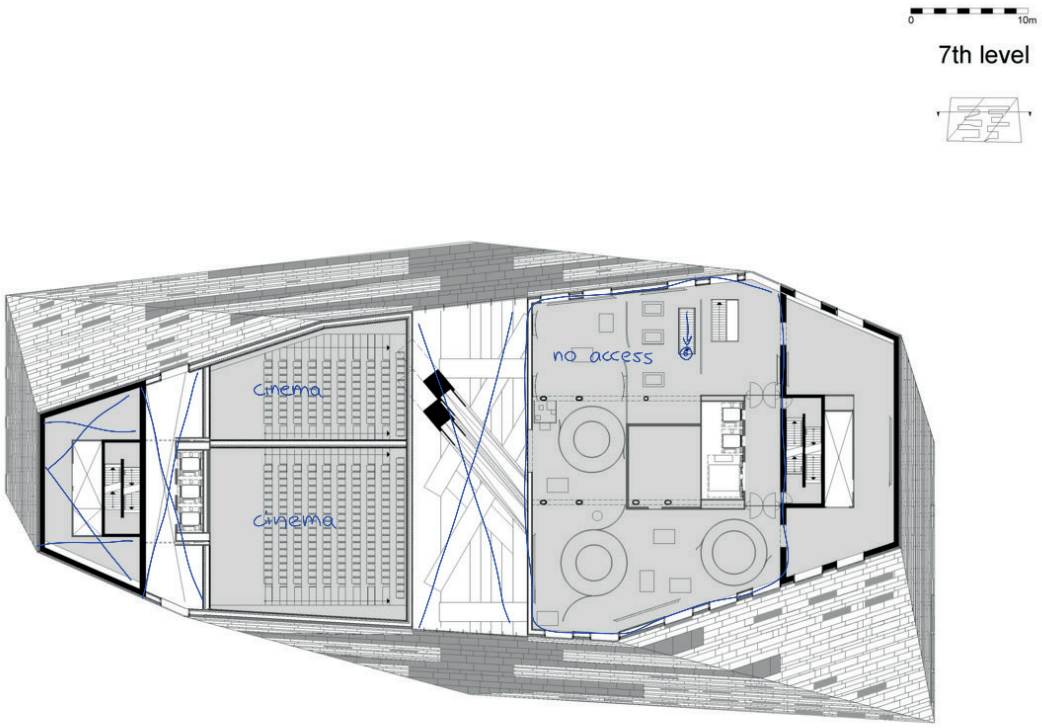


Figure C.1.9: Atmosphere research Forum Groningen: floor 7 (own work 2026)

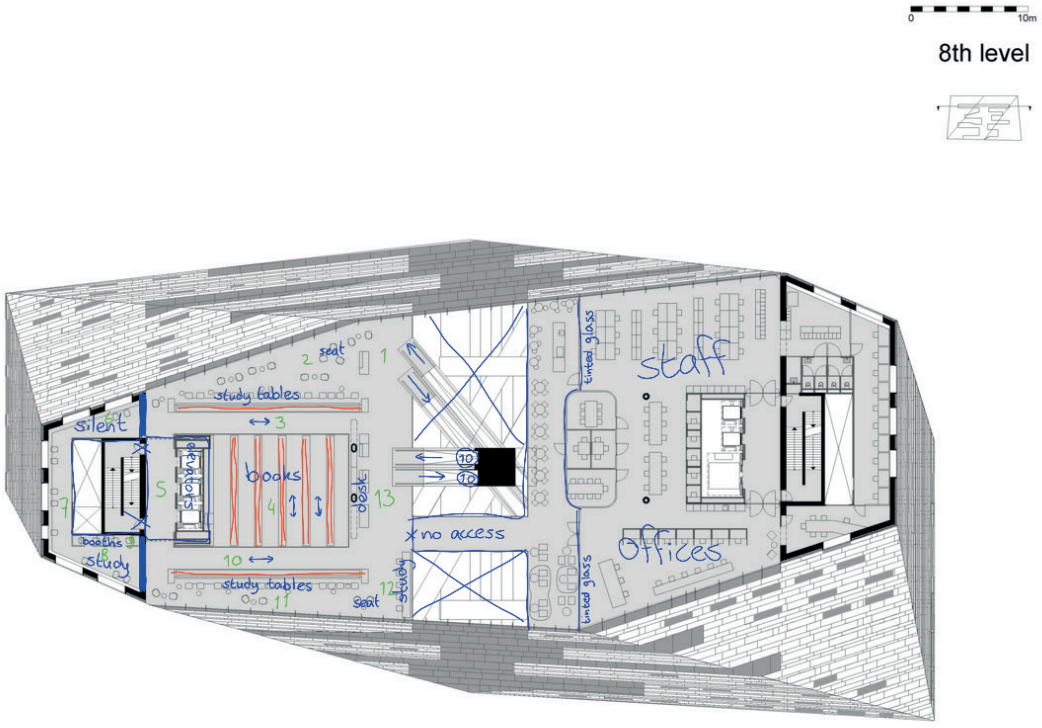


Figure C.1.10: Atmosphere research Forum Groningen: floor 8 (own work 2026)

Floor 7

No access.

Floor 8

Table C.1.10: Atmosphere research Forum Groningen: floor 8 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	8	4	4	1	1	1	4	1	5	5	2	4	1	Circulation	Yes
2	8	4	3	3	2	1	4	2	3	5	3	1	3	Study tables	Yes
3	8	3	3	1	1	1	4	1	4	5	1	3	1	Circulation	Yes
4	8	3	2	1	1	1	2	4	2	2	2	2	1	Library	Yes
5	8	3	3	2	2	1	3	3	3	3	1	3	1	Circulation	Yes
6	8	4	1	2	2	1	2	4	2	2	3	1	2	Study tables	Yes
7	8	4	1	2	2	1	2	4	2	2	3	1	2	Study tables	Yes
8	8	4	1	2	2	1	2	4	2	2	3	1	2	Study tables	Yes
9	8	3	1	2	2	1	1	4	1	2	3	1	2	Study tables	Yes
10	8	3	3	1	1	1	4	1	4	5	1	3	1	Circulation	Yes
11	8	4	3	3	2	1	4	2	3	5	3	1	3	Study tables	Yes
12	8	4	3	1	4	1	4	1	5	5	3	1	3	Study tables	Yes
13	8	3	4	1	1	1	4	1	5	5	2	4	1	Circulation	Yes

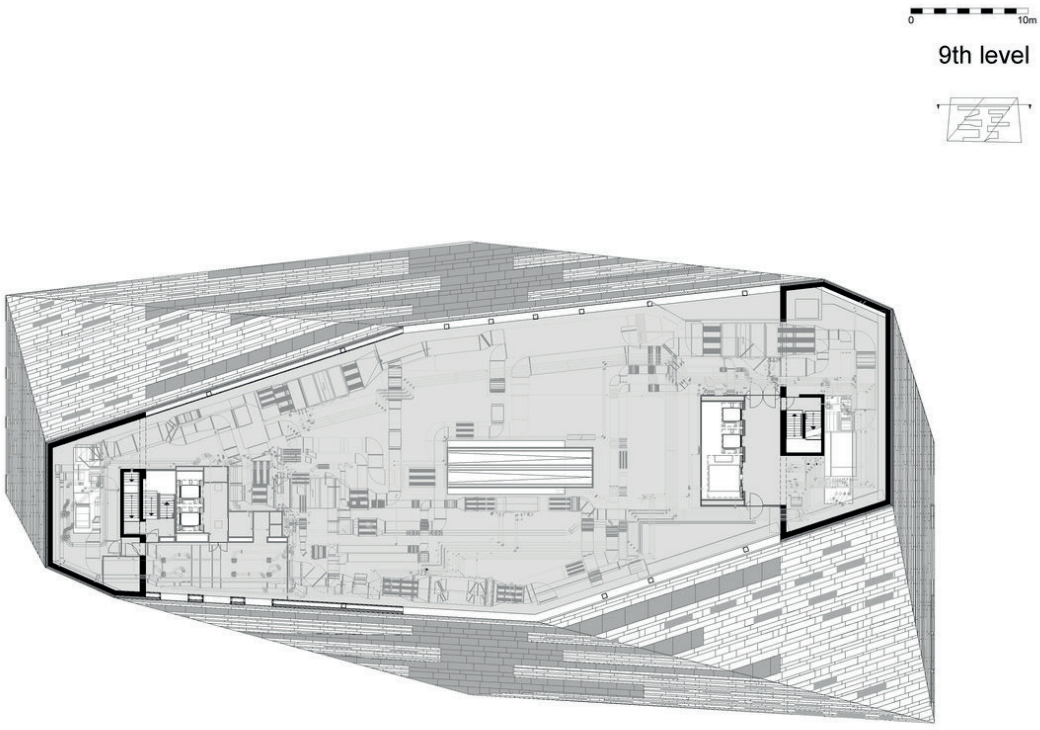


Figure C.1.11: Atmosphere research Forum Groningen: floor 9 (own work 2026)

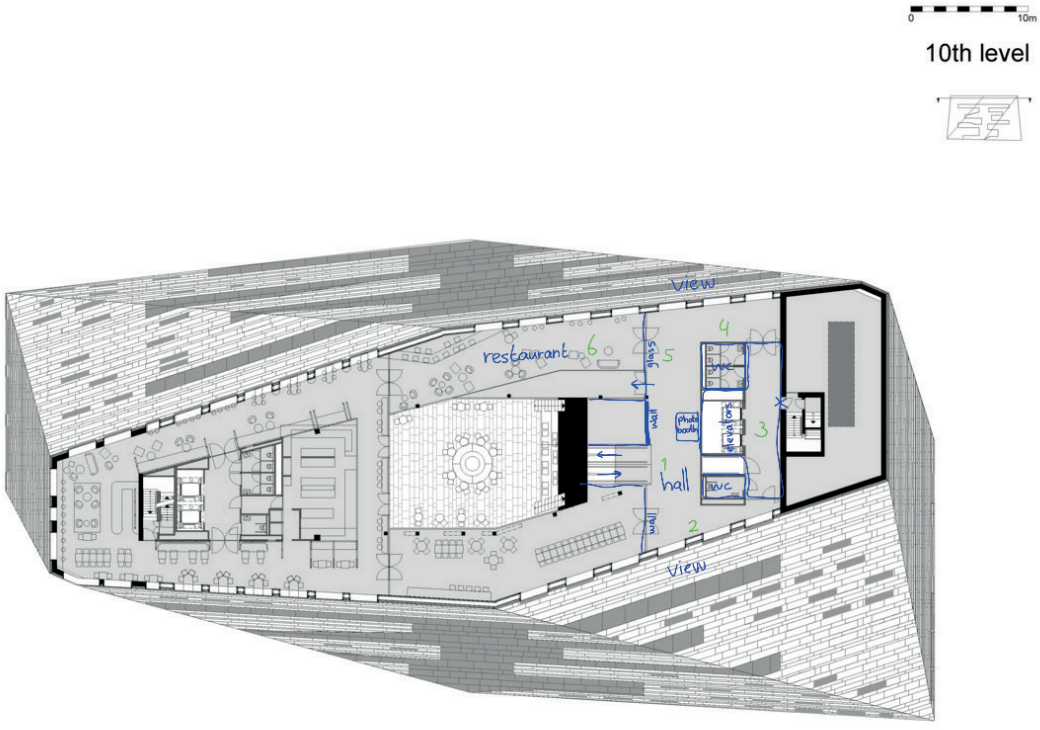


Figure C.1.12: Atmosphere research Forum Groningen: floor 10 (own work 2026)

Floor 9

No access.

Floor 10

Table C.1.12: Atmosphere research Forum Groningen: floor 10 (own work 2026)

ID	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	10	1	4	1	1	4	3	4	4	5	2	5	1	Circulation	Yes
2	10	4	4	1	1	4	3	4	3	4	2	3	2	View point	Yes
3	10	3	2	1	1	1	3	3	3	3	1	3	1	Circulation	Yes
4	10	4	4	1	1	4	3	4	3	4	2	3	2	View point	Yes
5	10	4	4	1	1	4	3	2	4	5	2	4	1	Circulation	Yes

Appendix C.2: Atmosphere data of Rozet Arnhem

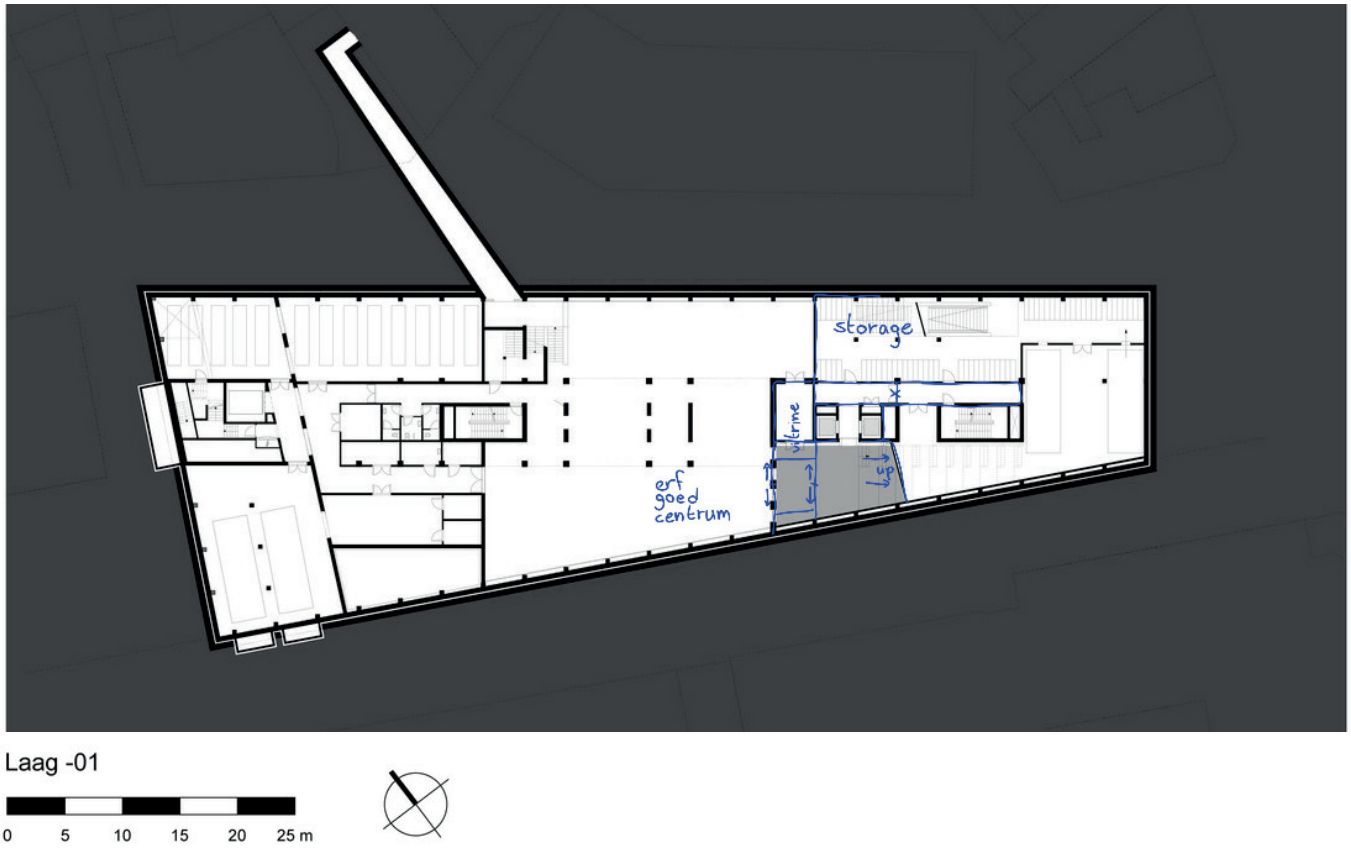


Figure C.2.1: Atmosphere research Rozet Arnhem: floor -1 (own work 2026)

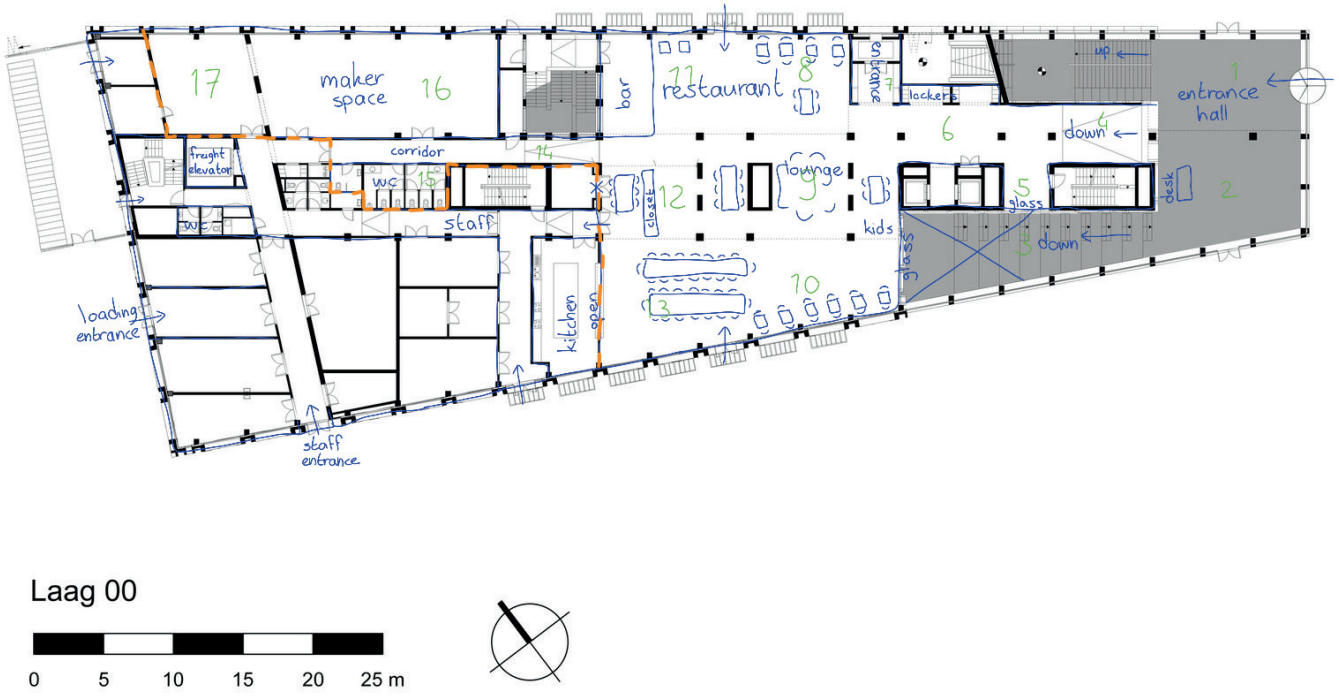


Figure C.2.2: Atmosphere research Rozet Arnhem: floor 0 (own work 2026)

Floor -1

Table C.2.1: Atmosphere research Rozet Arnhem: floor -1 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Used
1	-1	2	4	1	3	2	3	5	1	4	2	4	1	Yes

Floor 0

Table C.2.2: Atmosphere research Rozet Arnhem: floor 0 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	0	5	3	2	3	4	5	1	5	5	1	4	1	Entrance	Maybe
2	0	4	3	1	3	4	4	1	5	5	1	4	1	Entrance	Maybe
3	0	4	2	1	3	3	4	2	4	5	1	3	2	Circulation	Maybe
4	0	3	3	1	4	3	3	2	4	5	1	3	1	Circulation	Maybe
5	0	3	3	1	3	3	2	4	3	4	1	1	1	Circulation	Maybe
6	0	2	4	1	3	3	3	3	3	5	1	3	1	Circulation	Maybe
7	0	4	1	2	4	3	3	5	4	5	1	3	1	Circulation	Maybe
8	0	4	4	2	4	3	4	2	5	5	3	1	3	Restaurant	Maybe
9	0	3	4	4	4	4	4	2	5	5	3	1	4	Seating	Maybe
10	0	4	4	2	4	3	4	1	5	5	3	1	3	Restaurant	Maybe
11	0	4	4	2	5	3	4	2	5	5	3	1	3	Restaurant	Maybe
12	0	3	4	2	5	4	4	2	3	4	1	3	1	Restaurant	Maybe
13	0	4	4	1	4	4	4	1	5	5	4	1	3	Restaurant	Maybe
14	0	3	3	1	4	3	2	4	3	5	1	3	1	Circulation	Maybe
15	0	2	2	1	1	1	2	5	1	4	3	3	1	Toilet	Maybe
16	0	3	4	1	1	2	3	5	2	3	4	2	2	Maker space	Maybe

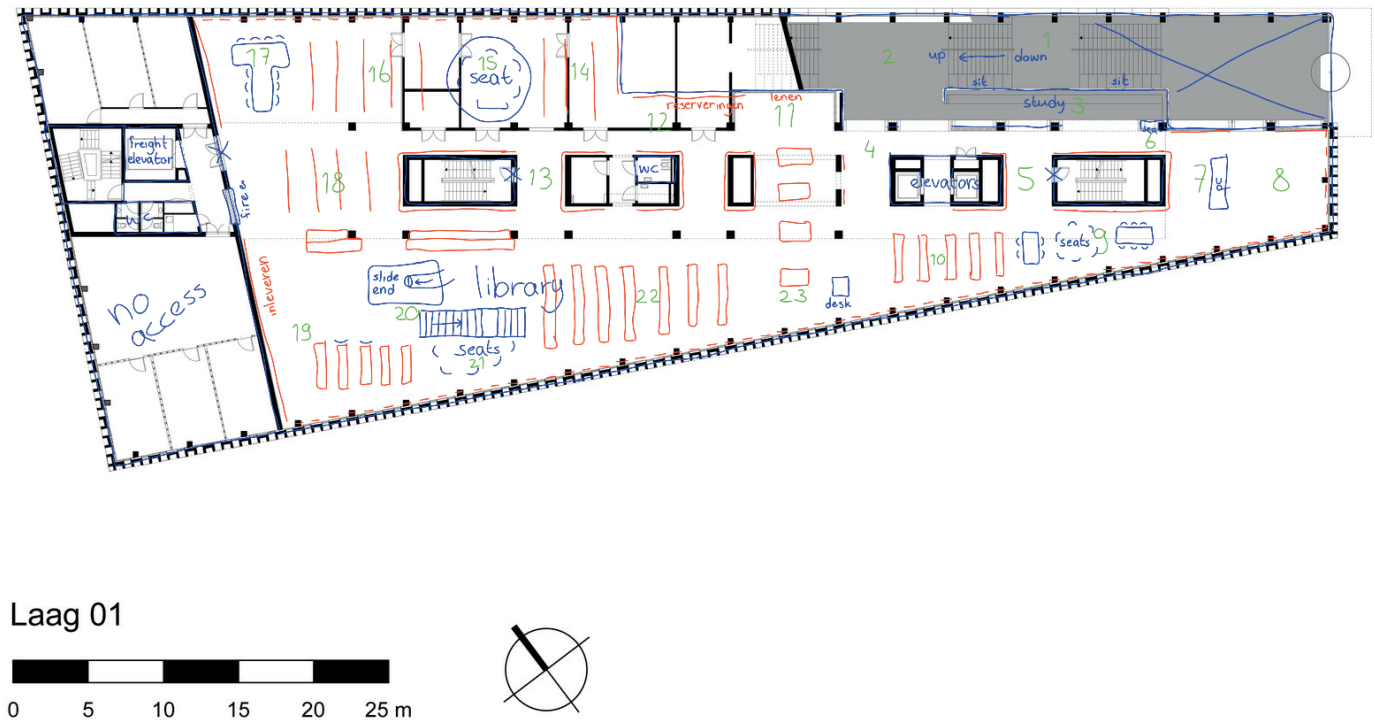


Figure C.2.3: Atmosphere research Rozet Arnhem: floor 1 (own work 2026)

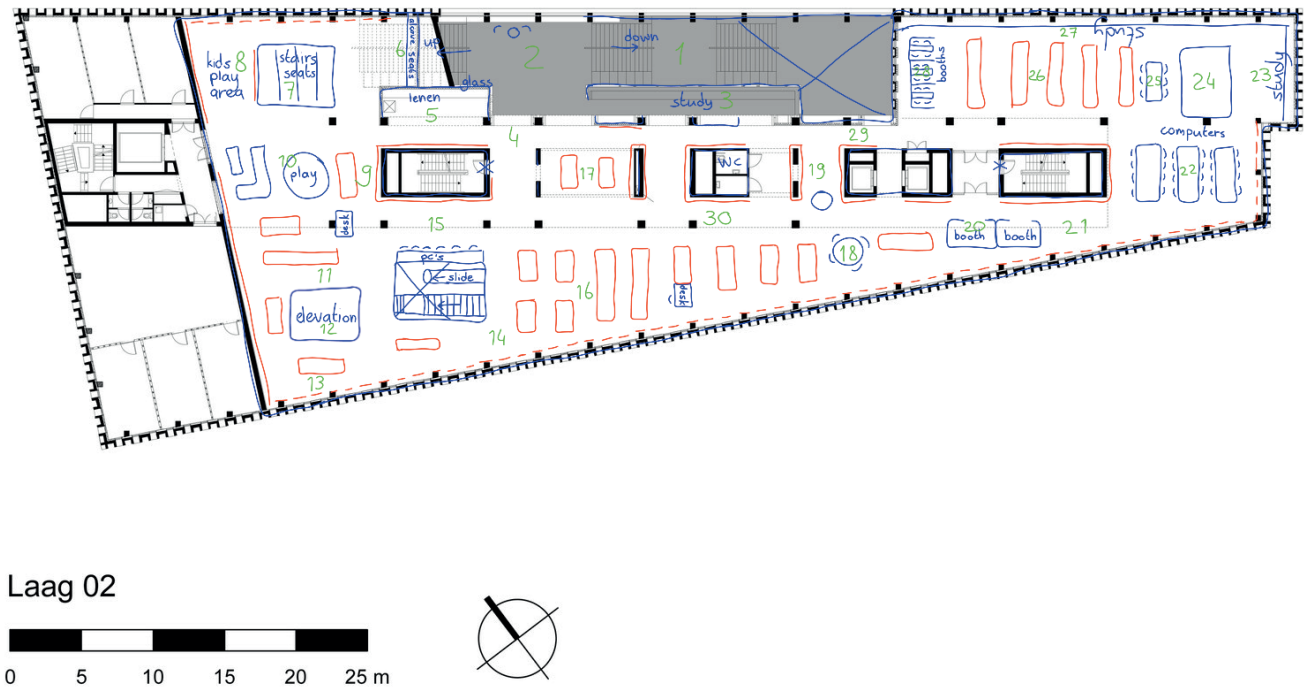


Figure C.2.4: Atmosphere research Rozet Arnhem: floor 2 (own work 2026)

Floor 1

Table C.2.3: Atmosphere research Rozet Arnhem: floor 1 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	1	4	3	1	3	3	5	2	4	5	1	3	3	Circulation	Maybe
2	1	4	3	1	3	3	5	1	5	5	1	3	1	Circulation	Maybe
3	1	4	3	1	3	3	4	2	2	5	3	1	3	Study tables	Maybe
4	1	4	3	1	3	3	4	1	5	5	1	4	1	Circulation	Maybe
5	1	3	3	1	3	3	3	4	2	2	1	3	1	Circulation	Maybe
6	1	3	2	1	3	3	2	4	4	5	1	3	2	Circulation	Maybe
7	1	3	2	1	3	3	3	5	2	2	2	1	1	Study tables	Maybe
8	1	3	2	2	3	4	4	4	3	4	1	2	1	Library	Maybe
9	1	3	3	2	3	3	4	4	2	3	3	2	3	Seating	Maybe
10	1	3	3	1	3	3	4	2	4	4	1	2	1	Library	Maybe
11	1	3	2	1	3	3	4	3	4	5	2	2	1	Library	Maybe
12	1	2	2	1	3	3	4	3	3	4	2	2	1	Library	Maybe
13	1	3	3	1	3	3	4	3	3	3	1	3	1	Circulation	Maybe
14	1	3	2	1	3	3	4	3	3	4	1	2	1	Library	Maybe
15	1	3	2	2	3	3	4	2	5	4	2	2	3	Seating	Maybe
16	1	3	2	1	3	3	4	1	5	4	1	1	1	Library	Maybe
17	1	3	3	1	3	3	4	2	3	5	3	2	3	Seating	Maybe
18	1	3	3	1	3	3	4	1	5	5	1	2	1	Library	Maybe
19	1	3	3	1	3	3	4	2	4	5	1	2	2	Library	Maybe
20	1	3	4	3	4	1	4	1	5	5	3	4	3	Kids play area	Maybe
21	1	3	3	2	3	3	4	2	4	5	2	3	3	Seating	Maybe
22	1	3	2	1	3	3	4	2	5	5	1	2	1	Library	Maybe
23	1	3	2	1	3	3	4	1	5	5	1	2	1	Library	Maybe

Floor 2

Table C.2.4: Atmosphere research Rozet Arnhem: floor 2 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	2	4	3	1	4	3	4	2	4	5	2	3	3	Circulation	Maybe
2	2	4	3	1	3	3	5	1	5	5	2	4	3	Circulation	Maybe
3	2	3	3	1	1	1	3	3	3	5	3	1	3	Study tables	Maybe
4	2	3	3	1	3	3	4	1	5	5	1	4	1	Circulation	Maybe
5	2	3	4	1	3	3	3	4	3	5	2	3	1	Library	Maybe
6	2	3	4	3	4	3	3	3	2	3	2	1	3	Seating	Maybe
7	2	3	4	4	1	1	4	2	5	5	3	2	5	Seating	Maybe
8	2	3	4	2	4	3	4	3	4	5	3	5	5	Kids play area	Maybe
9	2	2	4	1	4	3	4	2	4	5	1	3	1	Library	Maybe
10	2	2	4	1	4	3	4	1	5	5	3	4	4	Kids play area	Maybe
11	2	2	4	1	3	3	4	3	4	5	1	2	1	Library	Maybe
12	2	3	4	1	4	1	5	1	5	5	3	1	5	Kids play area	Maybe
13	2	3	4	1	3	3	4	3	2	3	1	2	1	Library	Maybe
14	2	3	4	1	3	3	5	1	5	5	1	4	1	Library	Maybe
15	2	3	4	1	3	3	4	2	4	5	2	3	2	Study tables	Maybe
16	2	3	4	1	3	3	5	1	5	5	1	2	1	Library	Maybe
17	2	3	4	1	3	3	4	3	4	5	1	2	1	Library	Maybe
18	2	3	3	1	3	3	4	2	4	5	2	1	3	Seating	Maybe
19	2	3	3	1	3	3	3	3	3	4	1	2	1	Library	Maybe
20	2	3	4	3	2	1	2	4	2	3	3	1	4	Booth	Maybe
21	2	3	3	1	3	3	3	3	3	4	1	3	1	Library	Maybe
22	2	3	2	1	3	3	4	2	3	3	3	1	2	Study tables	Maybe
23	2	3	1	2	3	4	3	4	2	3	3	1	4	Study tables	Maybe
24	2	2	1	2	3	3	2	1	3	4	3	1	3	Meeting room	Maybe
25	2	3	1	1	3	3	4	3	3	4	3	1	3	Study tables	Maybe
26	2	3	2	1	3	3	3	4	2	2	1	2	1	Library	Maybe
27	2	4	2	1	3	3	3	3	3	3	3	1	4	Study tables	Maybe
28	2	3	2	4	4	1	2	4	2	2	3	1	4	Booth	Maybe
29	2	2	3	1	3	3	2	3	3	5	1	3	1	Circulation	Maybe
30	2	3	3	1	3	3	4	2	3	4	1	2	1	Circulation	Maybe

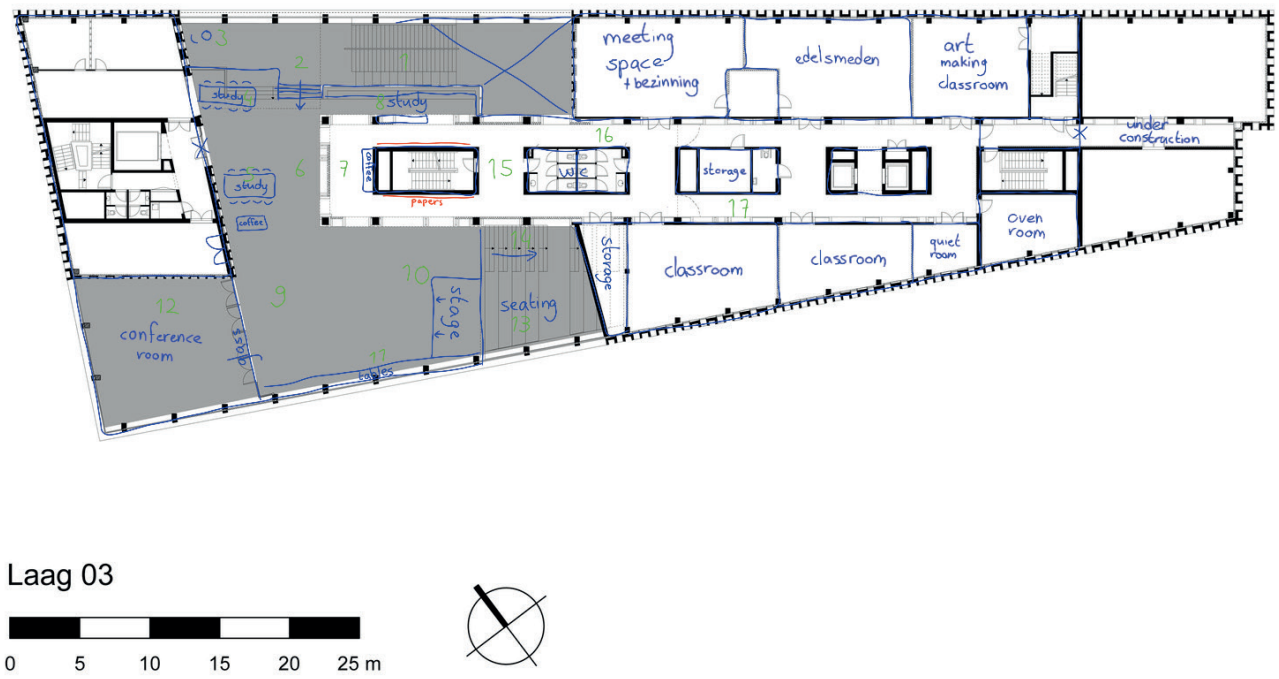


Figure C.2.5: Atmosphere research Rozet Arnhem: floor 3 (own work 2026)

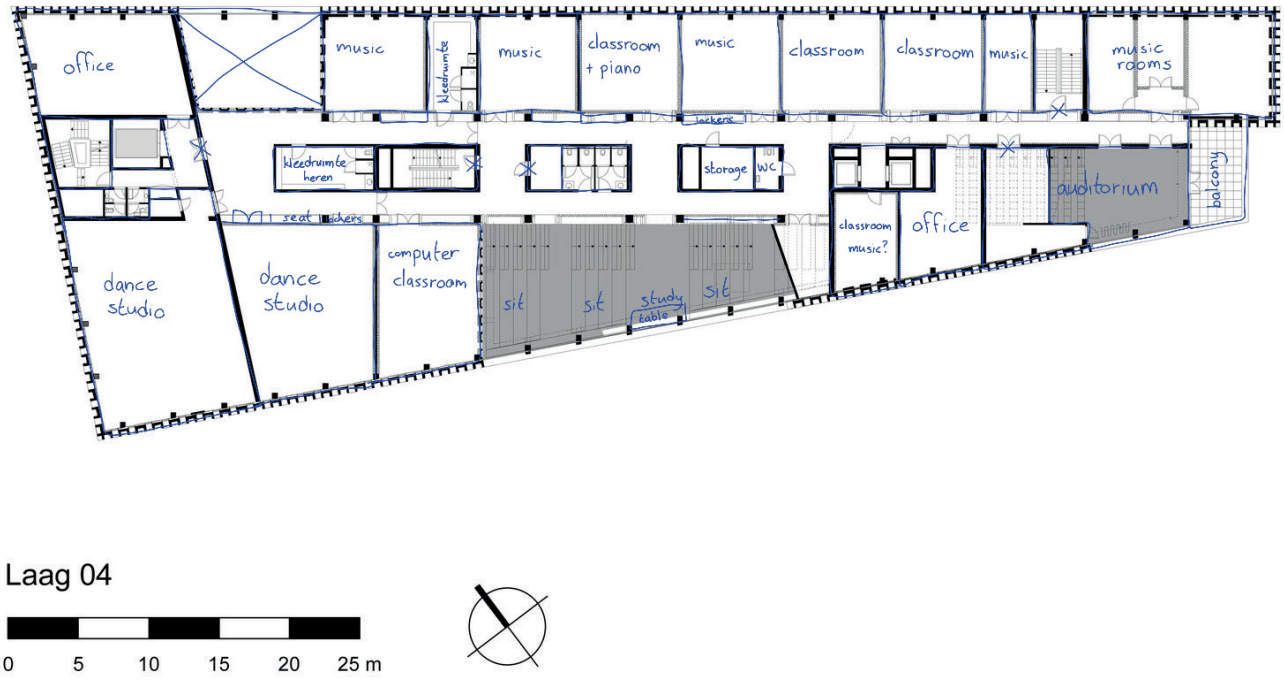


Figure C.2.6: Atmosphere research Rozet Arnhem: floor 4 (own work 2026)

Floor 3

Table C.2.5: Atmosphere research Rozet Arnhem: floor 3 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	3	4	3	1	3	3	5	2	4	5	3	3	4	Circulation	Maybe
2	3	5	3	1	3	4	5	1	5	5	1	4	1	Circulation	Maybe
3	3	5	3	1	3	3	4	2	4	5	2	1	3	Seating	Maybe
4	3	5	3	1	3	4	4	2	4	5	3	1	3	Study tables	Maybe
5	3	4	3	1	3	3	4	2	4	5	3	1	3	Study tables	Maybe
6	3	4	3	1	3	3	4	1	5	5	1	4	1	Circulation	Maybe
7	3	3	3	1	3	3	3	2	4	5	2	4	2	Coffe station	Maybe
8	3	3	2	1	3	3	3	2	2	5	3	1	3	Study tables	Maybe
9	3	3	3	1	3	4	4	1	5	5	1	4	2	Circulation	Maybe
10	3	4	3	1	4	4	4	1	5	5	1	4	2	Stage	Maybe
11	3	4	3	1	3	3	4	1	5	5	3	1	3	Study tables	Maybe
12	3	3	2	1	3	3	4	3	3	4	3	1	3	Meeting room	Maybe
13	3	4	3	2	4	3	4	2	4	5	3	1	4	Seating	Maybe
14	3	3	3	1	4	3	4	2	4	5	1	3	1	Circulation	Maybe
15	3	3	3	1	3	3	3	4	2	2	1	4	1	Circulation	Maybe
16	3	2	2	1	3	3	2	3	3	4	1	3	1	Circulation	Maybe
17	3	2	2	1	3	3	2	3	3	4	1	3	1	Circulation	Maybe

Floor 4

No access.

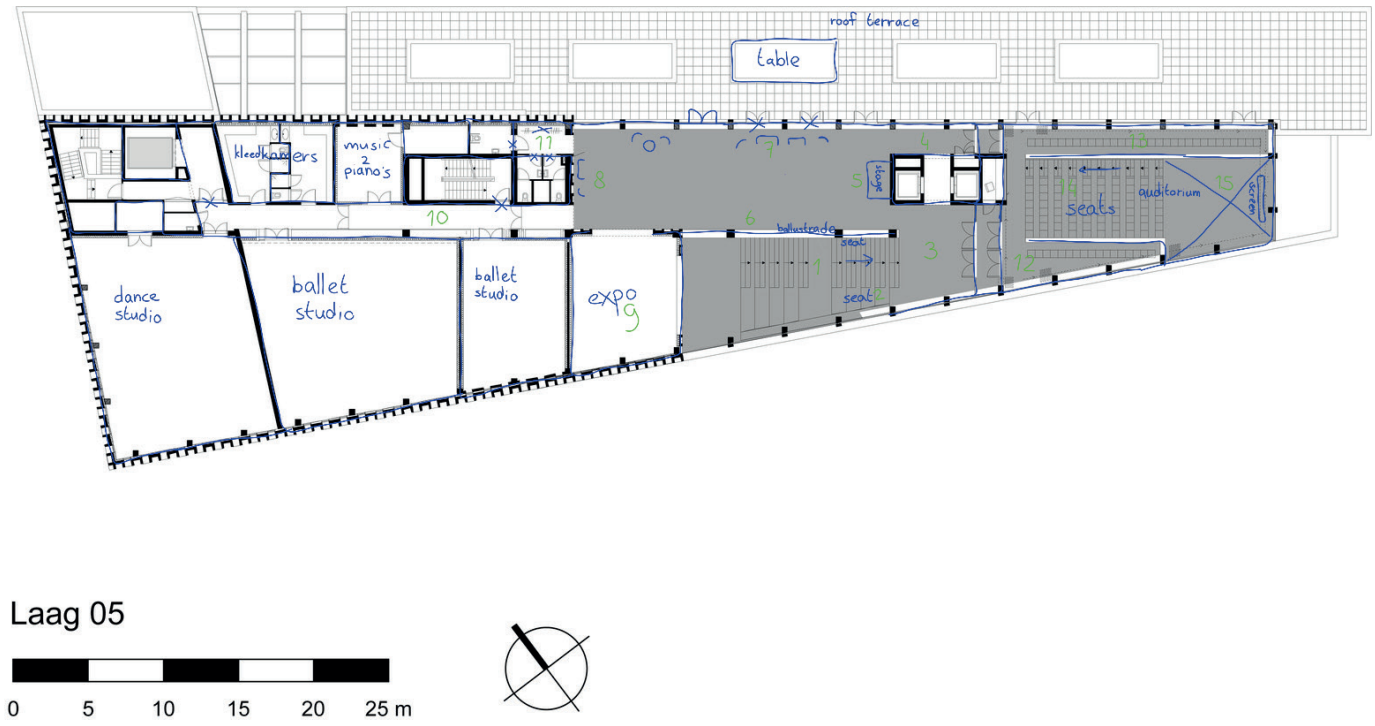


Figure C.2.7: Atmosphere research Rozet Arnhem: floor 5 (own work 2026)

Floor 5

Table C.2.7: Atmosphere research Rozet Arnhem: floor 5 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	5	4	2	1	4	3	5	1	5	5	1	2	1	Circulation	Yes
2	5	4	2	1	4	3	5	2	4	5	3	1	4	Seating	Yes
3	5	4	2	1	3	3	5	1	5	5	1	3	1	Circulation	Maybe
4	5	4	2	1	3	3	4	2	4	3	1	2	1	Circulation	Maybe
5	5	4	2	2	3	3	4	2	4	4	2	1	2	Stage	Maybe
6	5	3	2	1	3	3	4	1	5	5	1	4	1	Circulation	Maybe
7	5	4	2	2	3	3	4	1	5	5	2	1	3	Seating	Maybe
8	5	3	2	2	3	3	4	2	5	5	2	3	3	Seating	Maybe
9	5	3	1	1	3	3	3	4	2	5	2	4	1	Expo	Maybe
10	5	2	2	1	3	3	2	4	2	2	1	3	1	Circulation	Maybe
11	5	2	1	1	3	3	2	4	2	3	1	3	1	Circulation	Maybe
12	5	4	2	1	3	3	4	1	4	5	2	1	1	Auditorium	Maybe
13	5	4	2	1	3	3	4	1	4	5	2	1	1	Auditorium	Maybe
14	5	3	2	4	3	3	4	3	4	4	4	1	1	Auditorium	Maybe
15	5	4	2	3	3	3	4	3	4	3	2	3	2	Auditorium	Maybe

Appendix C.3: Atmosphere data of Eemhuis Amersfoort

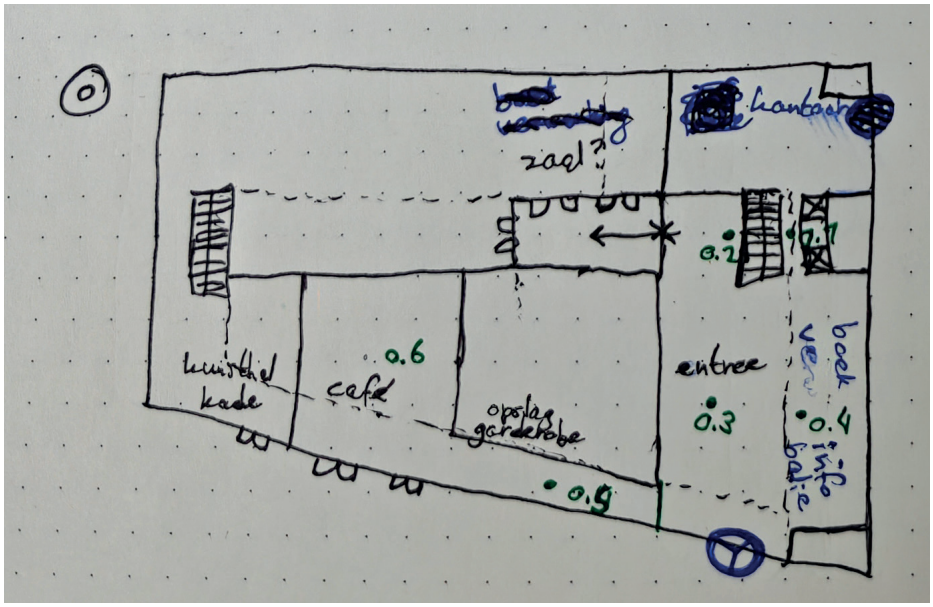
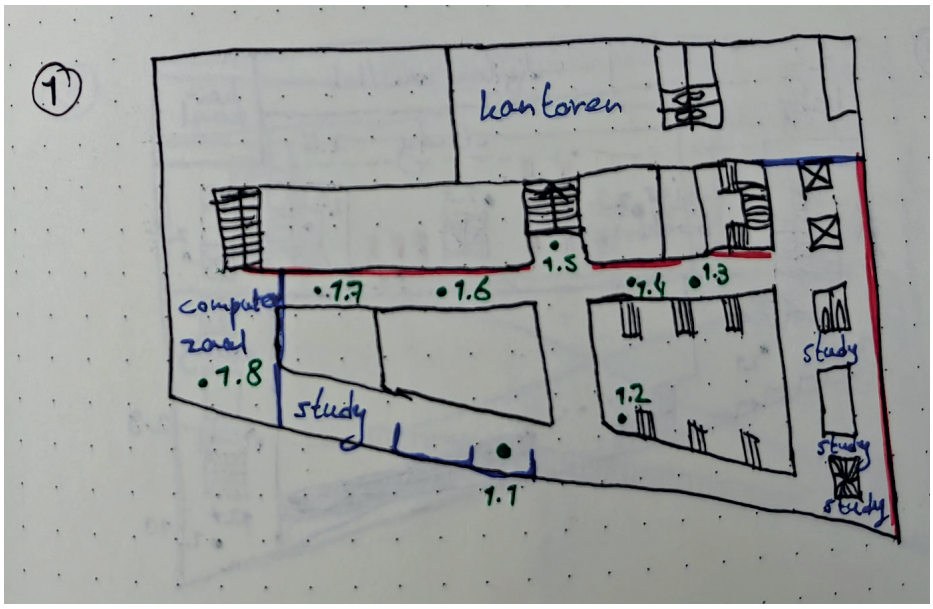


Figure C.3.1: Atmosphere research Eemhuis Amersfoort: floor 0 (own work 2026)



Fiugre C.3.2: Atmosphere research Eemhuis Amersfoort: floor 1 (own work 2026)

Floor 0

Table C.3.1: Atmosphere research Eemhuis Amersfoort: floor 0 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	0	2	2	1	3	3	3	5	2	5	1	4	1	Circulation	Yes
2	0	2	2	1	3	3	4	3	3	5	1	4	1	Circulation	Yes
3	0	3	3	1	3	3	5	1	5	5	2	4	2	Entrance	Yes
4	0	3	3	1	3	3	3	2	4	5	2	2	1	Service	Yes
5	0	4	1	1	3	3	2	2	4	4	1	3	1	Circulation	No
6	0	3	4	1	5	4	3	3	2	5	3	1	3	Restaurant	Yes

Floor 1

Table C.3.2: Atmosphere research Eemhuis Amersfoort: floor 1 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	1	2	2	1	4	2	3	5	3	2	1	2	1	Library	Yes
2	1	3	3	1	3	2	5	3	5	5	3	2	2	Study tables	Yes
3	1	2	3	1	3	3	2	1	5	5	1	3	1	Library	Yes
4	1	2	3	1	3	3	2	2	4	5	1	3	1	Library	Yes
5	1	2	3	1	3	3	3	4	2	5	1	3	1	Circulation	Yes
6	1	2	2	1	3	3	2	3	2	2	1	2	1	Library	No
7	1	2	3	1	3	3	2	2	4	3	1	2	1	Library	No
8	1	2	2	1	3	3	3	4	2	2	3	1	3	Meeting room	Yes

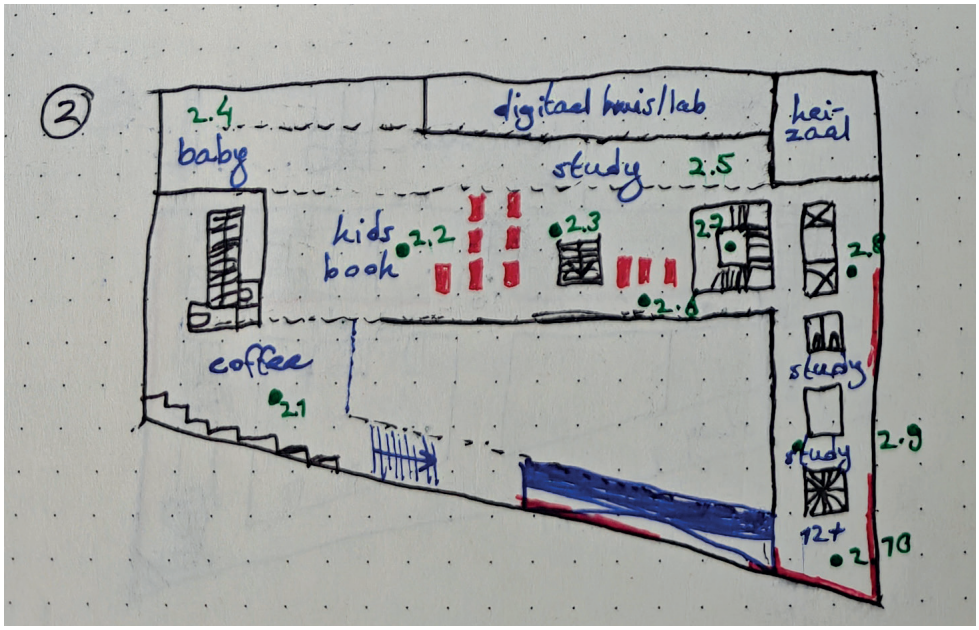


Figure C.3.3: Atmosphere research Eemhuis Amersfoort: floor 2 (own work 2026)

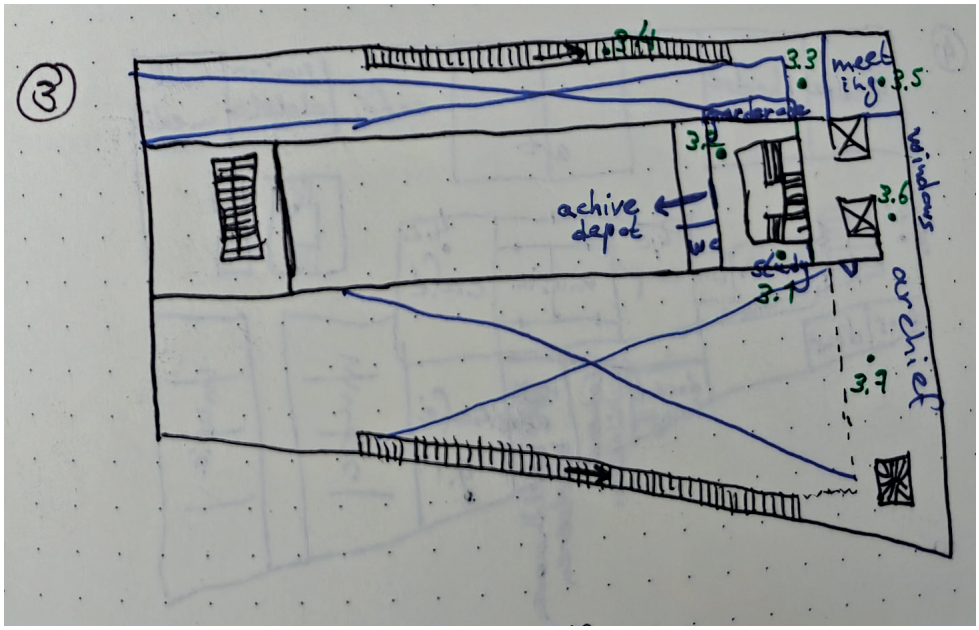


Figure C.3.4: Atmosphere research Eemhuis Amersfoort: floor 3 (own work 2026)

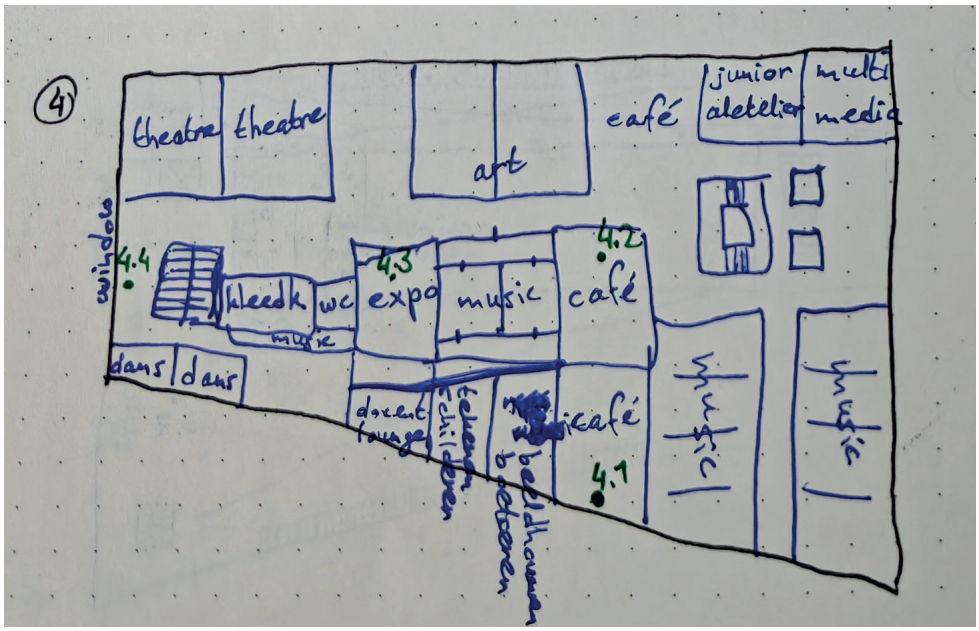


Figure C.3.5: Atmosphere research Eemhuis Amersfoort: floor 4 (own work 2026)

Floor 2

Table C.3.3: Atmosphere research Eemhuis Amersfoort: floor 2 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	2	4	3	2	3	3	4	1	2	4	4	3	2	Café	Yes
2	2	3	2	2	4	3	4	3	4	4	2	2	1	Library kids	Yes
3	2	3	2	2	4	3	4	3	4	5	2	2	2	Circulation	Yes
4	2	4	3	2	3	2	4	2	3	4	4	3	3	Kids play area	Yes
5	2	2	2	1	3	3	3	4	2	4	2	1	1	Study tables	Yes
6	2	3	2	1	3	2	3	1	5	5	1	2	1	Circulation	Yes
7	2	3	2	1	3	2	4	5	4	4	1	3	1	Circulation	Yes
8	2	2	2	1	4	2	2	4	3	3	1	2	2	Library	Yes
9	2	2	1	1	3	2	3	4	2	4	3	2	1	Study tables	Yes
10	2	2	1	1	4	2	3	4	1	3	2	1	1	Library	Yes

Floor 3

Table C.3.4: Atmosphere research Eemhuis Amersfoort: floor 3 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	3	2	1	1	3	3	2	4	2	3	3	2	3	Study tables	Yes
2	3	2	1	1	3	3	2	4	3	3	1	2	1	Circulation	Maybe
3	3	3	2	1	3	3	2	1	5	4	1	3	1	Circulation	Maybe
4	3	4	2	1	3	3	2	2	4	4	1	3	2	Circulation	Yes
5	3	4	2	1	3	3	3	3	2	3	3	1	3	Meeting room	Maybe
6	3	4	1	1	3	3	2	3	3	2	1	2	1	Circulation	Maybe
7	3	3	2	1	3	3	3	2	2	4	3	1	2	Office	Yes

Floor 4

Table C.3.5: Atmosphere research Eemhuis Amersfoort: floor 4 (own work 2026)

Variable	Floor	Light	Sound	Materiality	Colour	Nature	Scale	Enclosure	Exposure	Legibility	Density	Movement	Occupation	Function	Used
1	4	3	4	2	4	4	3	3	2	4	3	1	4	Café	Yes
2	4	2	4	2	4	4	3	4	2	4	3	1	4	Café	Yes
3	4	3	2	1	2	2	3	4	2	3	2	2	1	Expo	Yes
4	4	4	3	1	3	3	2	4	1	3	2	2	2	View point	Yes

Appendix C.4: Atmosphere data of all libraries

Data

All collected data from the three library projects are combined into one dataset and analysed. Table C.4.1 presents the number of samples (n), mean (μ), minimum, and maximum values for the different variables. The figures below show the average values and distribution of these variables across the different functions.

Table C.4.1: Library atmosphere data on all 3 precedent projects (own work 2026)

	Light				Sound				Materiality				Colour				Nature				Scale		
Function	**n**	**μ**	**min**	**max**	**n**	**μ**	**min**	**max**	**n**	**μ**	**min**	**max**	**n**	**μ**	**min**	**max**	**n**	**μ**	**min**	**max**	**n**	**μ**	**m**
Circulation	84	3,1	1	5	84	2,8	1	5	84	1,2	1	4	84	2,5	1	4	84	2,2	1	4	84	3,4	
Entrance	3	4	3	5	3	3	3	3	3	1,3	1	2	3	3	3	3	3	3,7	3	4	3	4,7	
Café	3	3	2	4	3	3,7	3	4	3	2	2	2	3	3,7	3	4	3	3,7	3	4	3	3,3	
Coffee station																							
Restaurant	13	3,5	3	4	13	4,4	4	5	13	2,2	1	4	13	3,8	2	5	13	2,6	1	4	13	3,7	
Store	3	2,7	2	3	3	3,7	3	4	3	1	1	1	3	4	4	4	3	2	1	3	3	3	
Expo	5	3,8	3	5	5	3	1	4	5	1	1	1	5	1,6	1	3	5	1,6	1	3	5	3,4	
Maker space	2	3	3	3	2	4	4	4	2	1	1	1	2	2,5	1	4	2	2	2	2	2	3	
Auditorium	4	3,8	3	4	4	2	2	2	4	2,3	1	4	4	3	3	3	4	3	3	3	4	4	
Meeting room	7	2,7	2	4	7	1,9	1	2	7	1,6	1	2	7	3,1	2	4	7	2,3	1	3	7	3	
Seating	22	3,4	1	5	22	3,2	2	5	22	2,5	1	5	22	2,9	1	4	22	2,4	1	4	22	3,7	
Booth	2	3	3	3	2	3	2	4	2	3,5	3	4	2	3	2	4	2	1	1	1	2	2	
Study tables	34	3,6	2	5	34	2,5	1	5	34	1,4	1	3	34	2,4	1	4	34	2	1	4	34	3,5	
Library	34	2,6	2	3	34	2,8	1	5	34	1,2	1	3	34	2,8	1	4	34	2,6	1	4	34	3,3	
Library kids	5	2,6	2	3	5	2,8	2	4	5	2	2	2	5	4	4	4	5	3	3	3	5	3,2	
Kids play area	5	3	2	4	5	3,8	3	4	5	1,8	1	3	5	3,8	3	4	5	2	1	3	5	4,2	
Toilet	1	2	2	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
Office	1	3	3	3	1	2	2	2	1	1	1	1	1	3	3	3	1	3	3	3	1	3	
Service	1	3	3	3	1	3	3	3	1	1	1	1	1	3	3	3	1	3	3	3	1	3	

e		Enclosure				Exposure				Legibility				Density				Movement				Occupation			
in	max	n	μ	min	max	n	μ	min	max	n	μ	min	max	n	μ	min	max	n	μ	min	max	n	μ	min	max
2	5	84	2,5	1	5	84	3,7	2	5	84	4,2	2	5	84	1,3	1	3	84	3,2	1	5	84	1,2	1	4
4	5	3	1	1	1	3	5	5	5	3	5	5	5	3	1,3	1	2	3	4	4	4	3	1,3	1	2
3	4	3	2,7	1	4	3	2	2	2	3	4	4	4	3	3,3	3	4	3	1,7	1	3	3	3,3	2	4
3	5	13	1,9	1	4	13	4	2	5	13	4,8	4	5	13	3	1	4	13	1,2	1	3	13	2,8	1	4
3	3	3	3,3	2	4	3	3	2	4	3	3,7	3	4	3	2	2	2	3	3,7	3	4	3	1	1	1
3	5	5	2,8	1	4	5	3	2	5	5	4,4	3	5	5	1,6	1	2	5	2,4	2	4	5	1,4	1	2
3	3	2	4	3	5	2	3	2	4	2	4	3	5	2	3,5	3	4	2	2,5	2	3	2	3	2	4
4	4	4	2	1	3	4	4	4	4	4	4,3	3	5	4	2,5	2	4	4	1,5	1	3	4	1,3	1	2
2	4	7	3,6	1	5	7	2,4	2	3	7	3,1	2	4	7	2,9	2	3	7	1	1	1	7	2,7	2	3
1	5	22	2,2	1	5	22	4	2	5	22	4,3	2	5	22	2,5	2	3	22	1,6	1	4	22	3,1	1	5
2	2	2	4	4	4	2	2	2	2	2	2,5	2	3	2	3	3	3	2	1	1	1	2	4	4	4
1	5	34	2,6	1	5	34	3,2	1	5	34	4	2	5	34	2,9	2	4	34	1,2	1	3	34	2,5	1	4
2	5	34	2,8	1	5	34	3,5	1	5	34	3,9	2	5	34	1,3	1	2	34	2,1	1	4	34	1,1	1	2
3	4	5	4	3	5	5	3,2	2	4	5	4,6	4	5	5	2,6	2	3	5	3,2	2	5	5	2,8	1	5
4	5	5	1,6	1	3	5	4,4	3	5	5	4,8	4	5	5	3,2	3	4	5	3,4	1	5	5	4	3	5
2	2	1	5	5	5	1	1	1	1	1	4	4	4	1	3	3	3	1	3	3	3	1	1	1	1
3	3	1	2	2	2	1	2	2	2	1	4	4	4	1	3	3	3	1	1	1	1	1	2	2	2
3	3	1	2	2	2	1	4	4	4	1	5	5	5	1	2	2	2	1	2	2	2	1	1	1	1

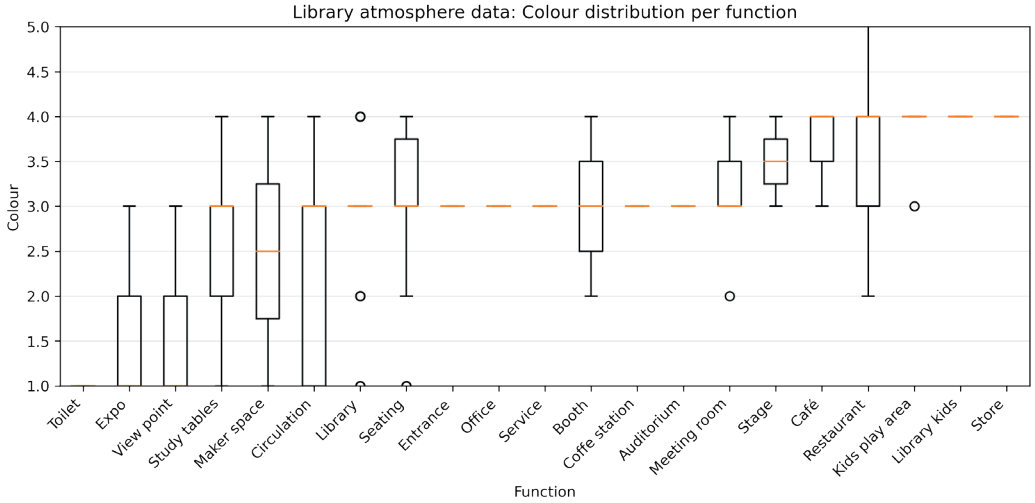


Figure C.4.1: Boxplot graph of libary atmosphere data: colour per function (own work 2026)

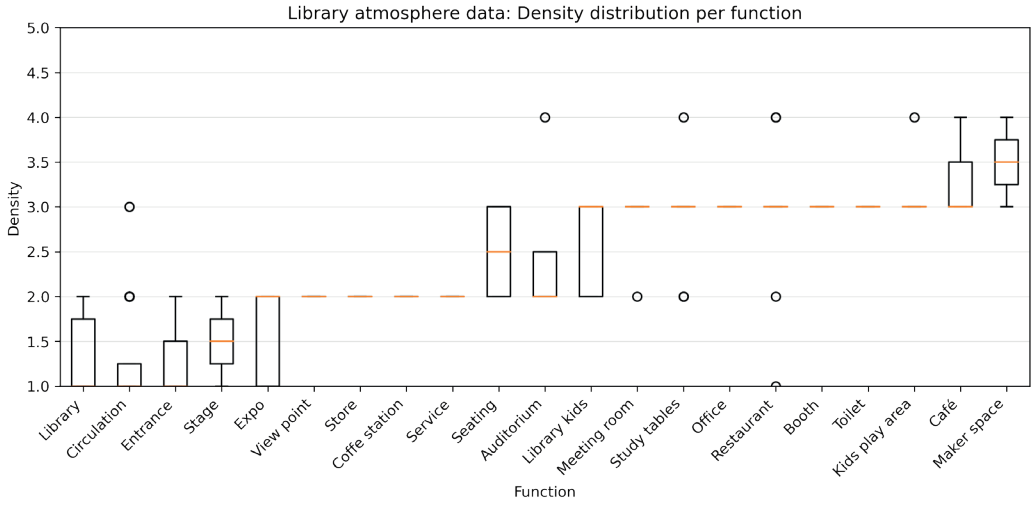


Figure C.4.2: Boxplot graph of libary atmosphere data: density per function (own work 2026)

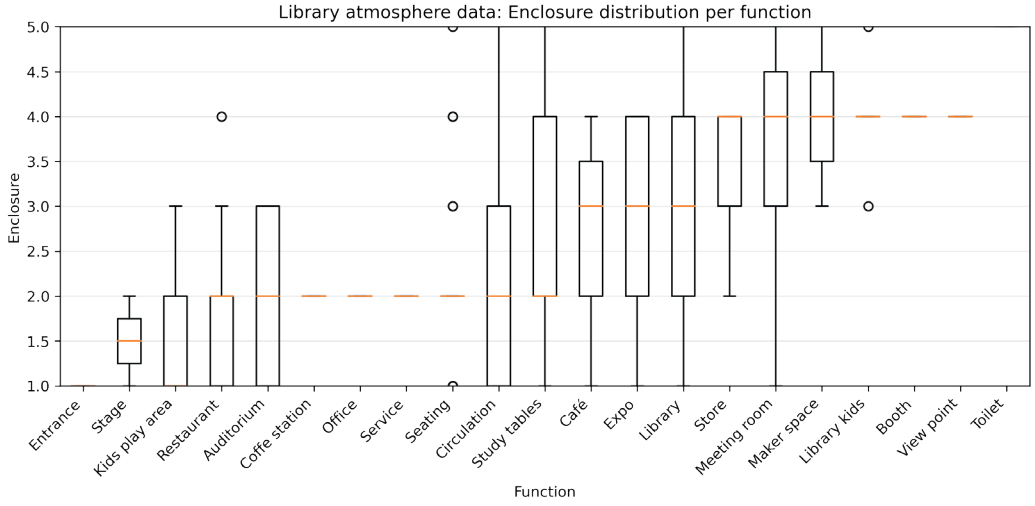


Figure C.4.3: Boxplot graph of libary atmosphere data: enclosure per function (own work 2026)

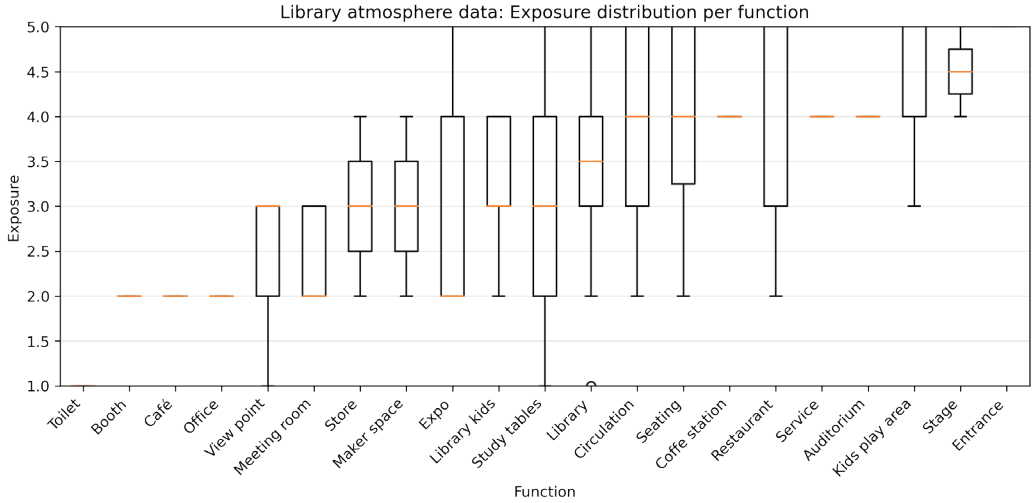


Figure C.4.4: Boxplot graph of libary atmosphere data: exposure per function (own work 2026)

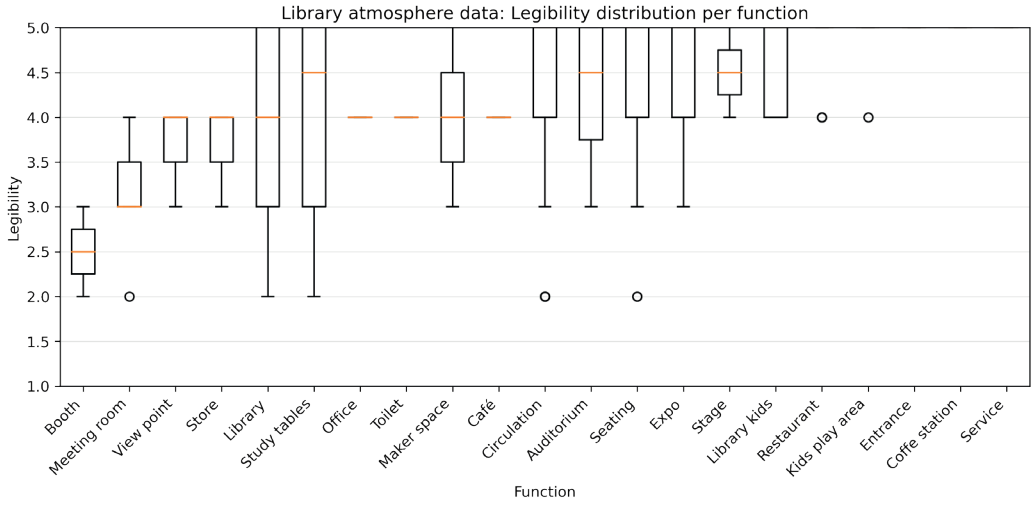


Figure C.4.5: Boxplot graph of libary atmosphere data: legibility per function (own work 2026)

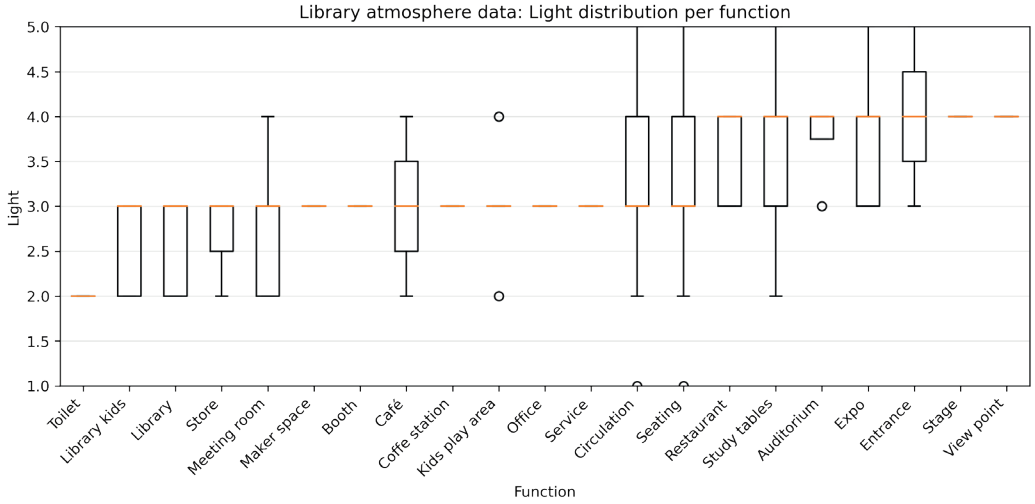


Figure C.4.6: Boxplot graph of libary atmosphere data: light per function (own work 2026)

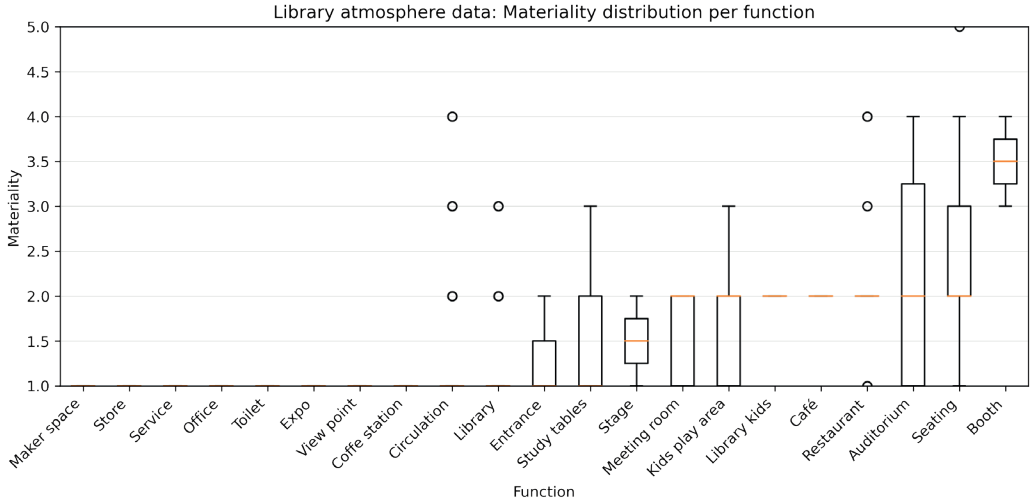


Figure C.4.7: Boxplot graph of libary atmosphere data: materiality per function (own work 2026)

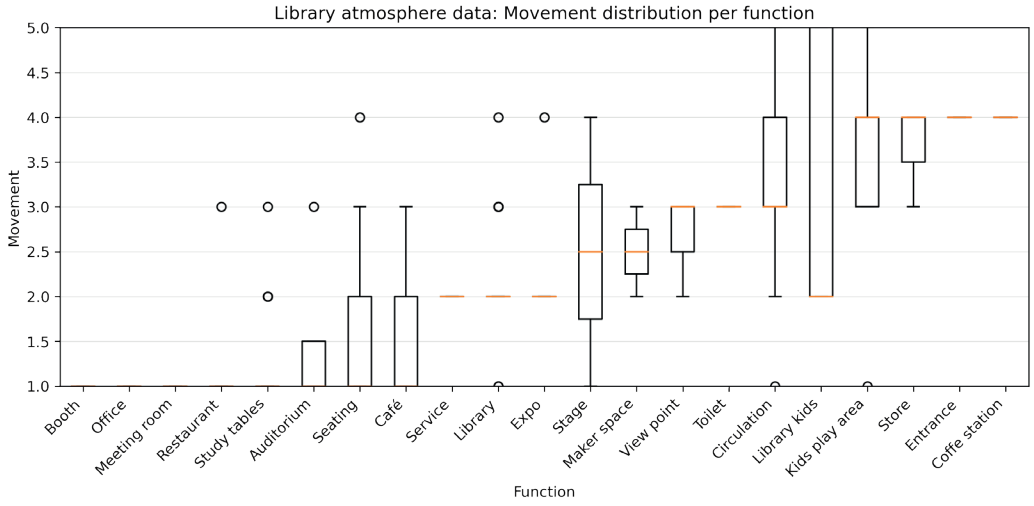


Figure C.4.8: Boxplot graph of libary atmosphere data: movement per function (own work 2026)

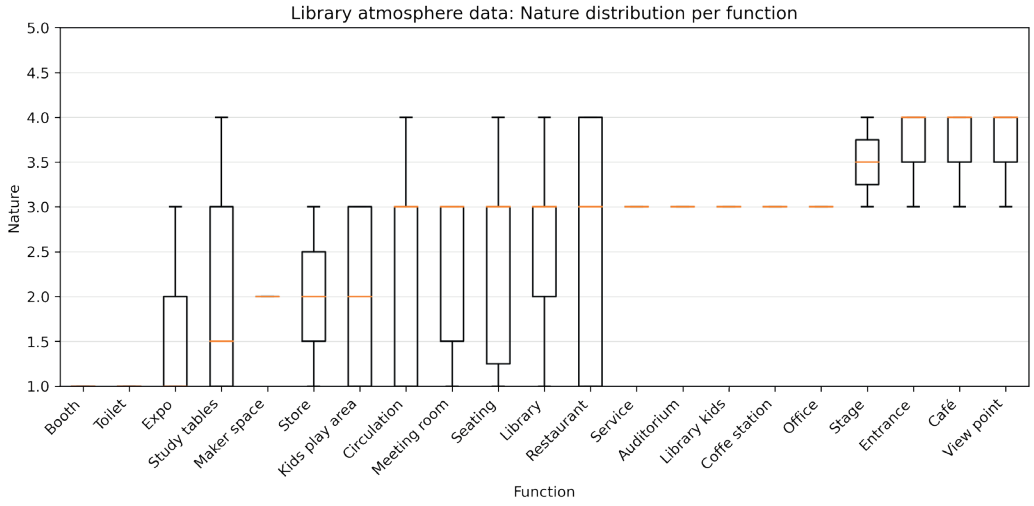


Figure C.4.9: Boxplot graph of libary atmosphere data: nature per function (own work 2026)

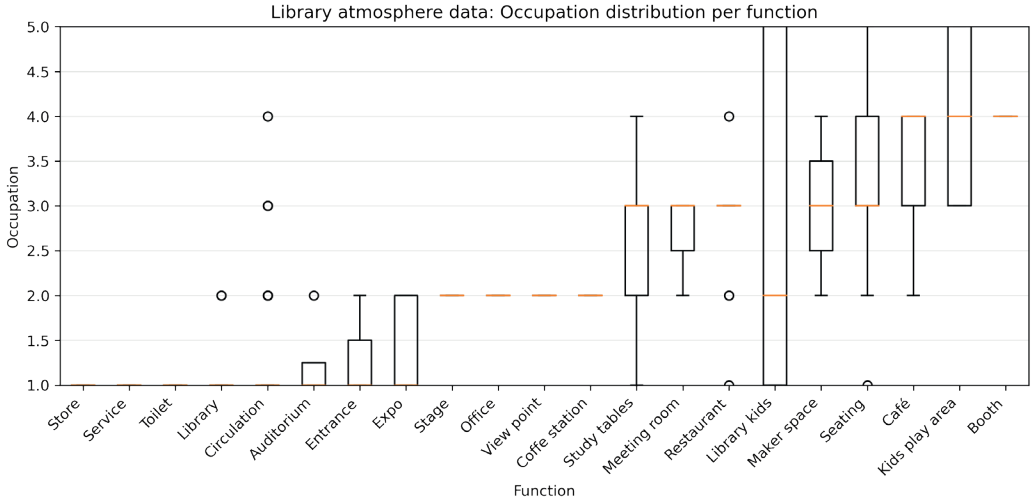


Figure C.4.10: Boxplot graph of libary atmosphere data: occupation per function (own work 2026)

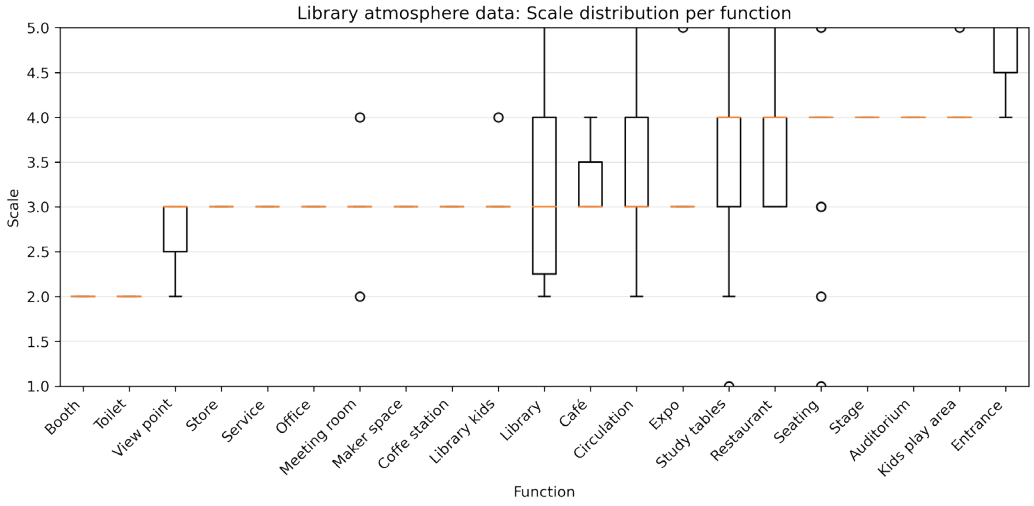


Figure C.4.11: Boxplot graph of libary atmosphere data: scale per function (own work 2026)

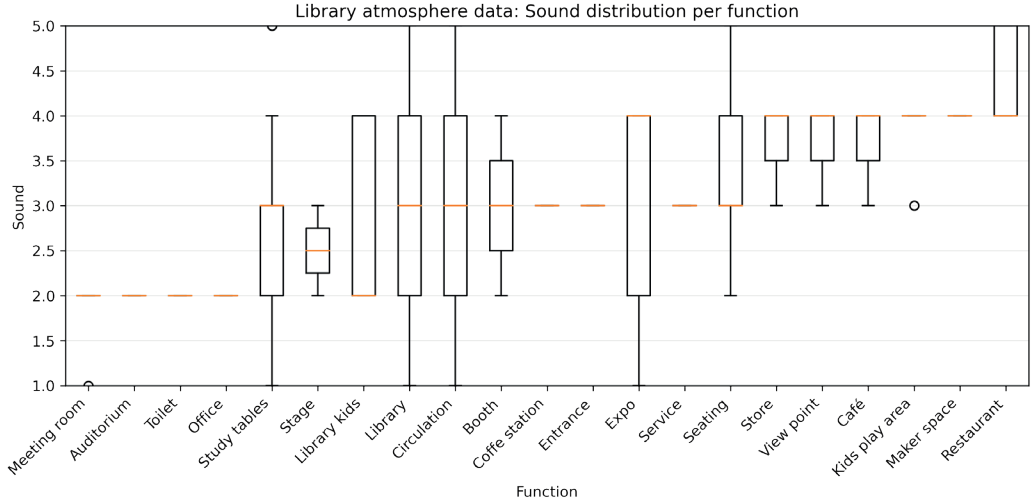


Figure C.4.12: Boxplot graph of libary atmosphere data: sound per function (own work 2026)

Findings

The atmosphere research reveals clear relationships between function and spatial character.

Across all three precedent projects, circulation spaces consistently show high levels of legibility, openness, and movement. These spaces act as the organisational backbone of the building, helping visitors orient themselves while encouraging exploration.

Public functions such as entrances, restaurants, cafés, and event spaces share similar characteristics, combining visual openness with higher levels of activity and sound.

Functions associated with concentration, such as libraries, study tables, meeting rooms, and booths, generally show lower levels of movement and sound and higher levels of enclosure. These spaces provide quieter environments for focused use while remaining visually connected to the wider building.

The analysis also highlights the importance of gradual transitions. Rather than separating functions through rigid boundaries, the precedent projects move gradually from active and highly exposed public areas to quieter and more enclosed study environments. Changes in enclosure, movement, sound, and visual exposure are used to create distinct atmospheres while maintaining spatial continuity.

Overall, the precedent projects show that contemporary libraries combine a variety of atmospheric conditions rather than relying on a single atmosphere. For the Re:MIND project, this suggests the need for a sequence of spaces ranging from open and socially active environments to more protected spaces for focus, reflection, and retreat. The variables of scale, enclosure, exposure, movement, and sound appear to have the strongest influence on spatial character and are therefore used as key design parameters in the project.

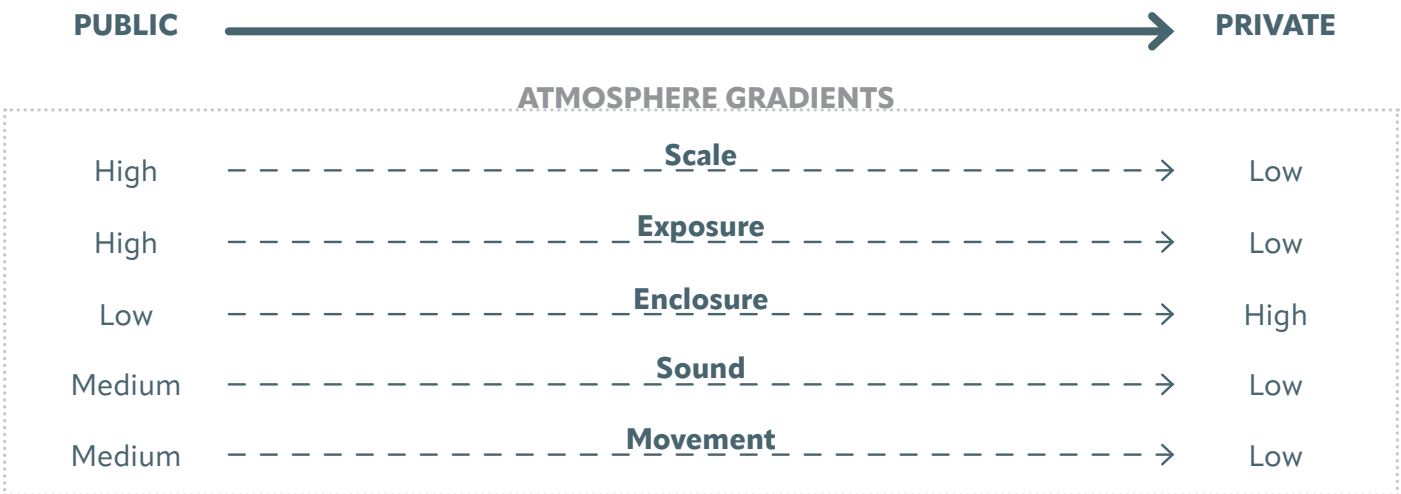
Design implications

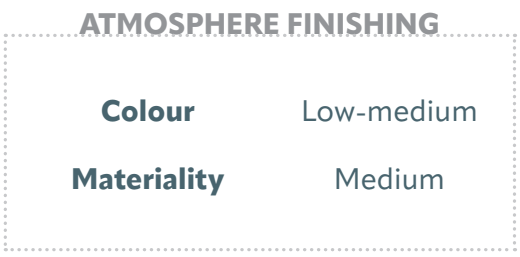
The atmosphere analysis shows that contemporary libraries support different forms of use through gradual spatial transitions rather than rigid separation. Based on these findings, Re:MIND is organised as a sequence of atmospheric gradients, moving from public and socially active environments towards more private spaces for study, reflection, and support.

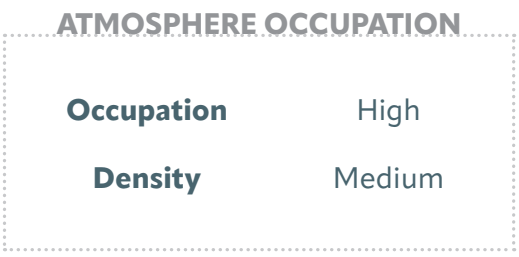
Along this transition, spaces become smaller, more enclosed, and less exposed, while sound and movement gradually decrease. Public areas such as the entrance, public living room, restaurant, and event spaces accommodate higher levels of activity and social interaction. In contrast, study spaces, retreat spaces, consultation rooms, and quiet booths provide calmer environments with greater privacy and reduced stimulation.

Several atmospheric variables remain relatively consistent throughout the building. Based on the atmosphere research and biophilic design principles, the project adopts a palette of natural, neutral colours, with subtle variations between functions. Materiality consists primarily of hard surfaces combined with softer materials where comfort, acoustics, or retreat are important. A high degree of freedom of occupation allows users to choose how they study, meet, reflect, or spend time within the building, while overall density remains moderate.

Together, these atmospheric principles support accessibility, comfort, emotional safety, and mental well-being.







Appendix D: Athens analysis

Appendix D.1: Analysis maps of Athens



Figure D.1: Map of Greece (own work 2025)



This appendix contains all the analysis maps and figures that were created to research the Athens.



Figure D.1.2: Map of Athens: buildings (1:20000 scaled) (own work 2026)



Figure D.1.3: Map of Athens: roads (1:20000 scaled) (own work 2026)



Figure D.1.4: Map of Athens: greenery (1:20000 scaled) (own work 2026)

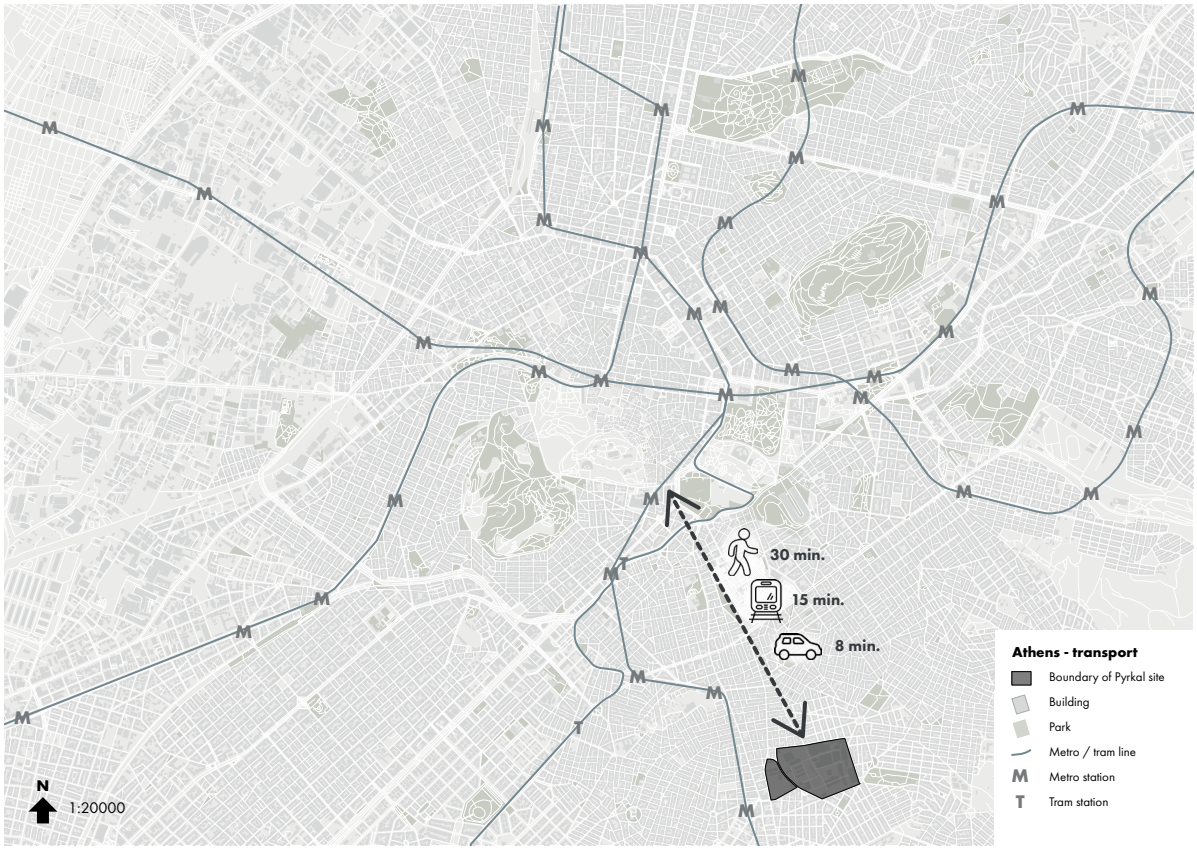


Figure D.1.5: Map of Athens: accessibility by public transport (1:20000 scaled) (own work 2025)

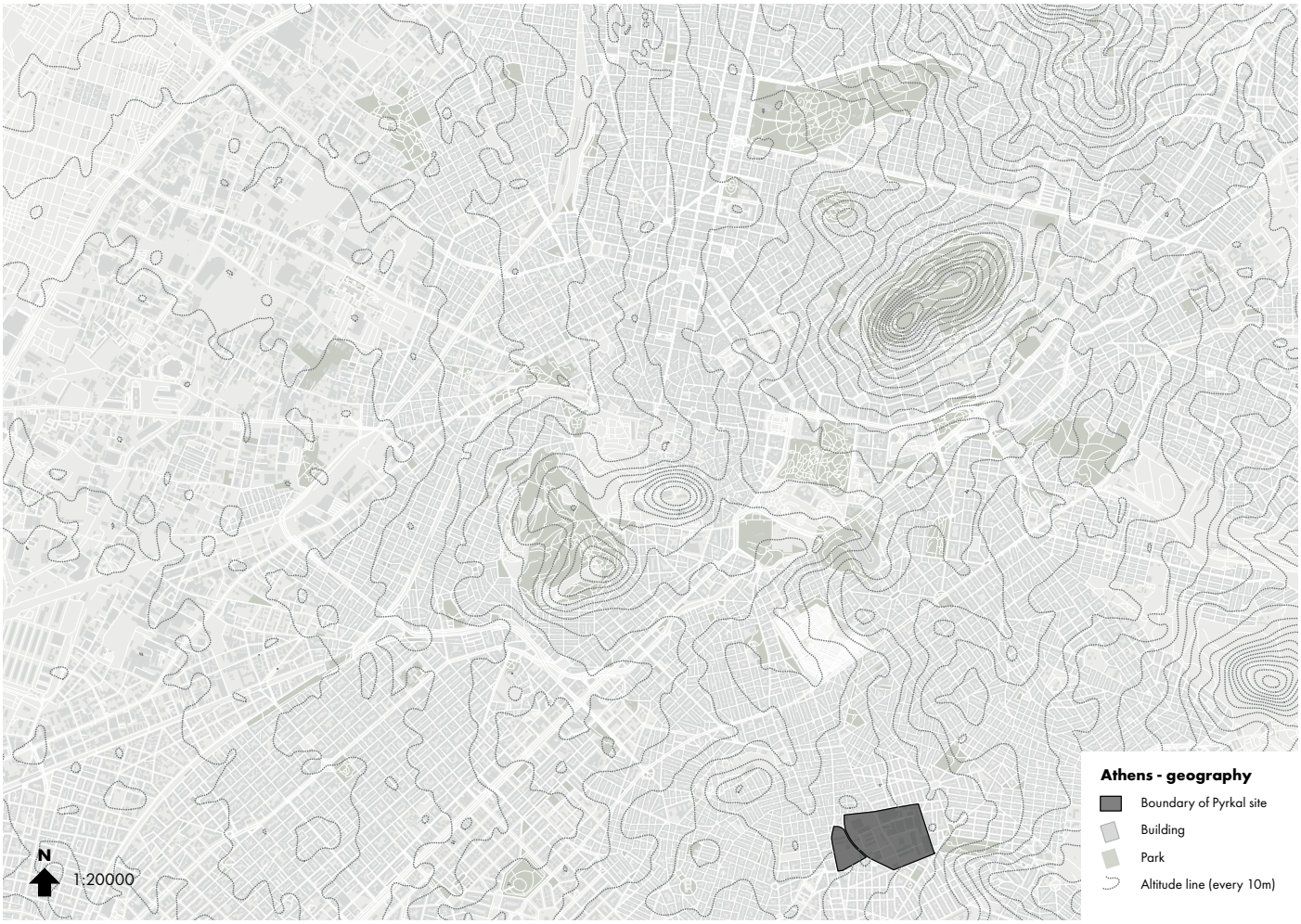


Figure D.1.6: Analysis map of Athens: altitude lines (1:20000 scaled) (own work 2026)

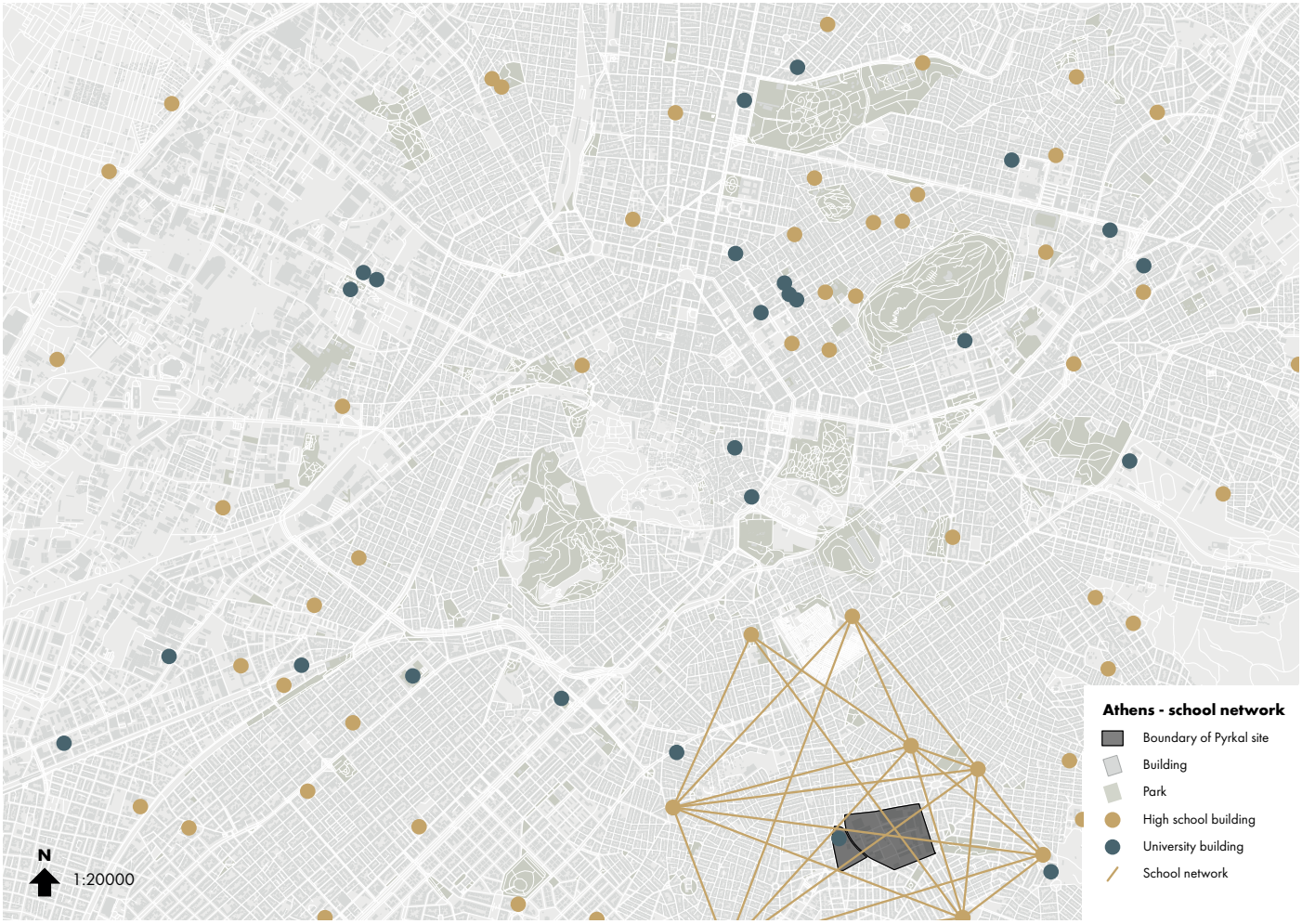


Figure D.1.7: Analysis map of Athens: high schools & universities (1:20000 scaled) (own work 2026)

School network

The Athens metropolitan area contains a dense network of secondary schools distributed throughout the city. Around the Pyrkal site, multiple schools are located within walking and cycling distance.

The concentration of schools in the surrounding area highlights the presence of a substantial youth population and supports the site's relevance for teens and young adults as the primary target group.

University buildings, however, are more dispersed across Athens and generally located further from the site. This positions the project primarily within a secondary-school context, while remaining accessible to university students through the wider public transport network.

This page summarises the main findings of the Athens site analysis presented in the preceding maps.



Figure D.1.8: Analysis map of Athens (1:20000 scaled) (own work 2026)



Context & site in Athens

The project site is located in southern Athens, Greece, within the former Pyrkal defence industry area.

The surrounding neighbourhood of Ymittos is one of the most densely populated areas of Attica and contains limited free and green spaces (Hellenic Republic, Ministry of National Economy and Finance 2024). The wider Pyrkal area is characterised by high building density, fragmentation caused by the surrounding road network, population growth following the introduction of the metro, and intense traffic.

Travel times from Athens city centre to the Pyrkal site are approximately:

- Metro: 15 minutes Dafni station + 6 minutes walk
- Walk: 30 minutes
- Car: 8 minutes

This shows that the Pyrkal site is embedded in everyday urban life, easily accessible, and characterised by a dense urban environment with limited opportunities for relaxation and retreat.

Appendix D.2: Impressions of Athens









Figure D.2.1 - D.2.8: Photos of Athens (own work, 2025)









Appendix D.3: Climate in Athens

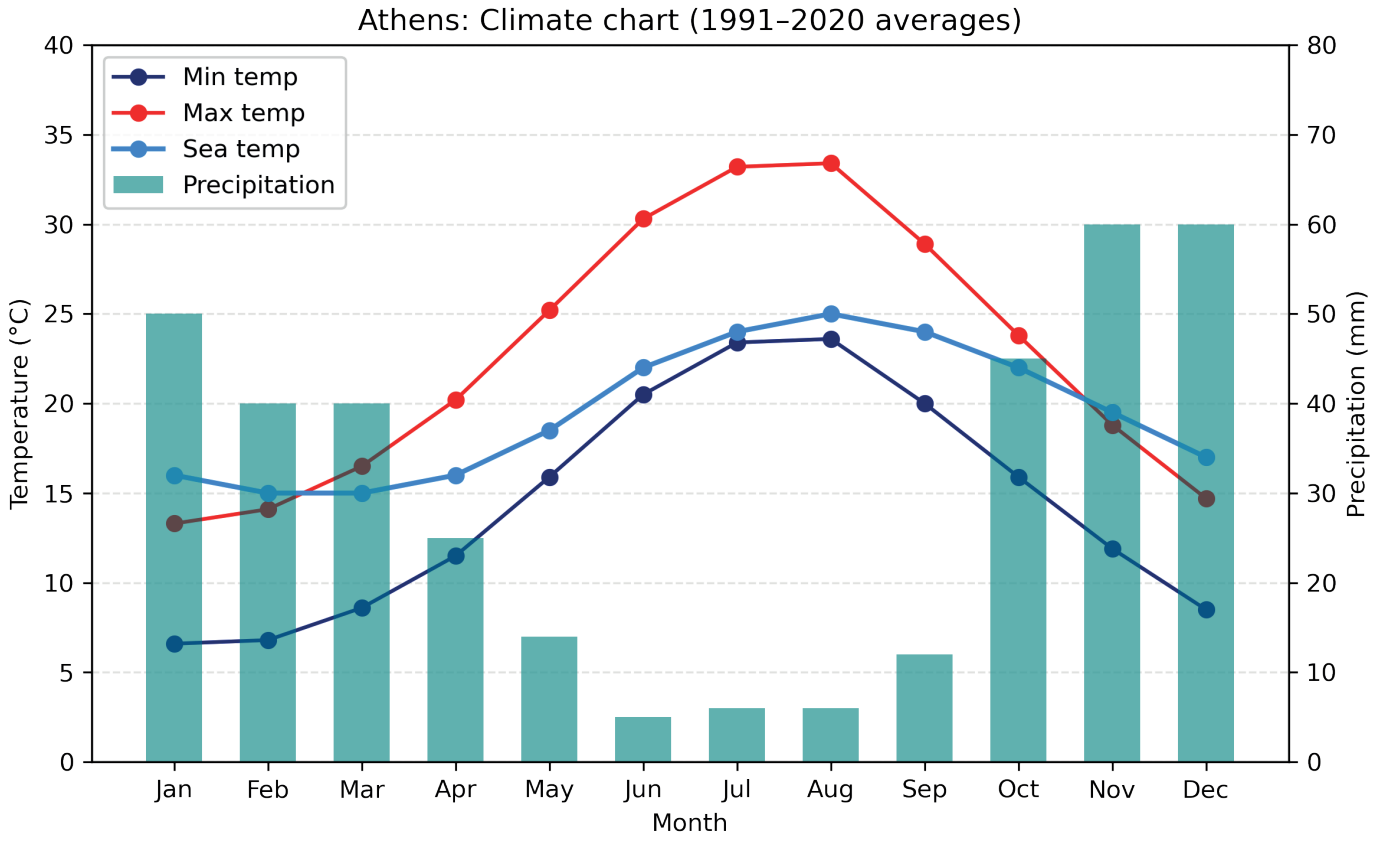


Figure D.3.1: Climate in Athens (own work 2025) (data from: "Climate in Athens (Greece)" n.d.)

"Climate in Athens (Greece)." n.d. Climates to Travel. Accessed December 4, 2025. https://www.climatestotravel.com/climate/greece/athens.

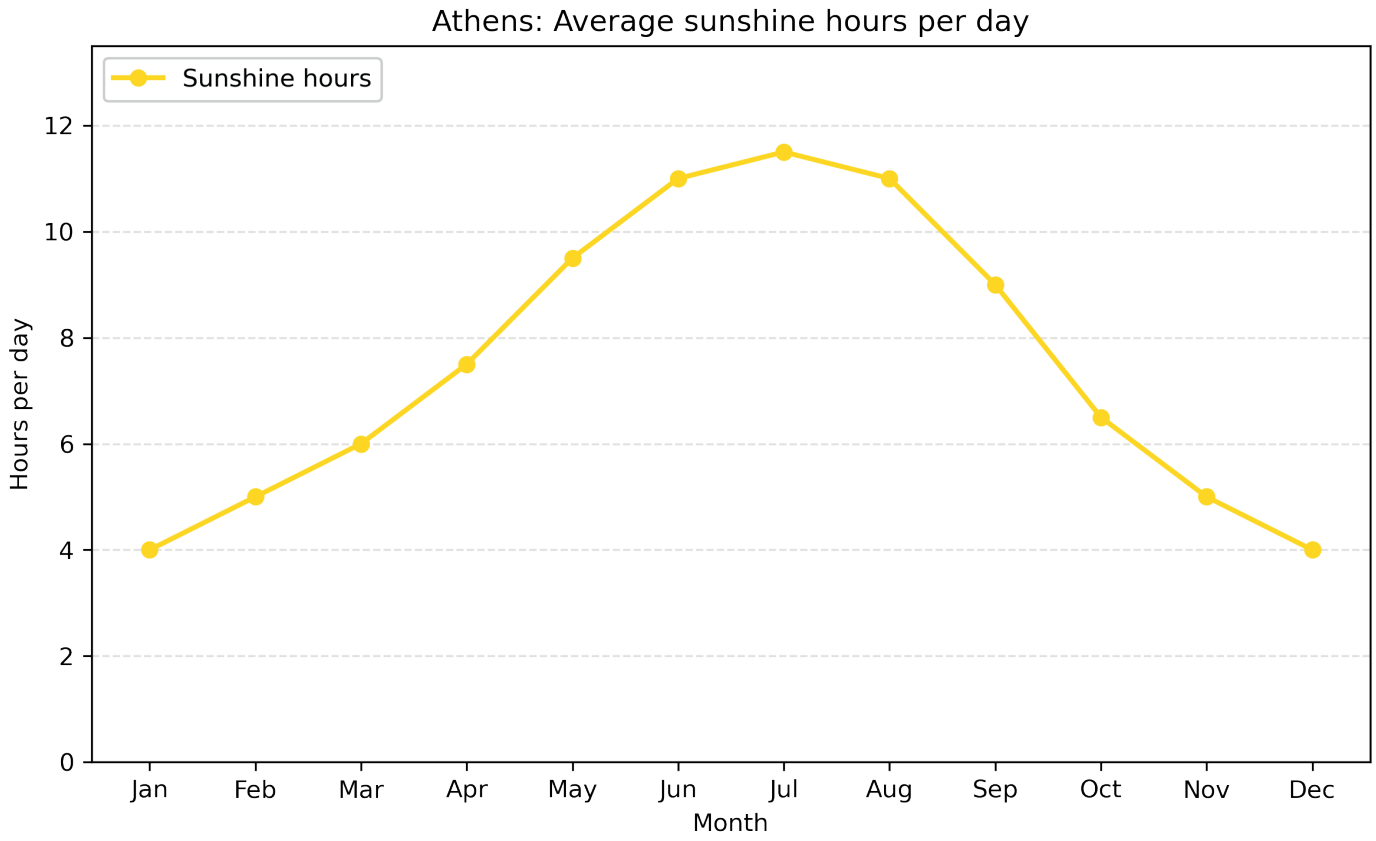


Figure D.3.2: Sunshine hours in Athens (own work 2025) (data from: "Climate in Athens (Greece)" n.d.)

Appendix D.4: Institutions in Athens

Parthenon

Temple
Acropolis
447-432 BC by Iktinos & Callicrates
Classical, Ancient Greek





Figure D.4.1 & D.4.2: Photos of the Parthenon (own work 2025)

Panathenaic Stadium or Kallimarmaro

Stadium
District of Pangrati
6th century BC (racecourse)
330 BC (in limestone) by Lykourgos
144 BC (in marble) by Herodes Atticus
Classical, Ancient Greek





Figure D.4.3 & D.4.4: Photos of the Panathenaic Stadium (own work 2025)

Odeon of Herodes Atticus

Odeon
Dionysiou Areopagitou Street (Acropolis)
161 AD by Herodes Atticus
Classical, Ancient Greek





Figure D.4.5 & D.4.6: Photos of the Panathenaic Stadium (own work 2025)

Zappeion

Meeting place
National Gardens of Athens
1874 by Theophil Hansen
Neoclassical





Figure D.4.9 & D.4.10: Photos of the Zappeion (own work 2025)

Hellenic Parlement

Parliament (former Royal Palace)
Syntagma Square
Build in 1836-1843 by Friedrich von gärtner
Transformed in 1929 by Andreas Kriezis
Neoclassical





Figure D.4.11 & D.4.12: Photos of the Hellenic parliament (own work 2025)

University of Athens

University
Panepistimiou Street
1837 by Christian Hansen
Neoclassical





Figure D.4.13 & D.4.14: Photos of the University of Athens (own work 2025)

Academy of Athens

University
Panepistimiou Street
1926 by Theophil Hansen
Neoclassical





Figure D.4.15 & D.4.16: Photos of the Academy of Athens (own work 2025)

Military museum

Museum
Vassilissis Sofias Avenue
1975 by Thucydides Valentis
Modern, Bauhaus





Figure D.4.17 & D.4.18: Photos of the Military Museum (own work 2025)

Embassy of the United States

Embassy
Vassilissis Sofias Avenue
1975 by Thucydides Valentis
Modern





Figure D.4.19 & D.4.20: Photos of the Embassy of the United States (own work 2025)

Athens Concert Hall

Concert hall
Vassilissis Sofias Avenue
1991 by Emmanouil Vourekas, Kyriakos Kyriakidis & Kostas Sgoutas
Modern





Figure D.4.21 & D.4.22: Photos of the Athens Concert Hall (own work 2025)

Hellenic Ministry of Foreign Affairs

Ministry of Foreign Affairs
Academias street
1874 by Ernst Ziller (neoclassical)
1971 by Vikelas Architects (modern)
Neoclassical & modern





Figure D.4.23 & D.4.24: Photos of the Hellenic Ministry of Foreign Affairs (own work 2025)

Stavros Niarchos Foundation Cultural Center

Cultural centre
Kallithea
2016 by Renzo Piano
Contemporary



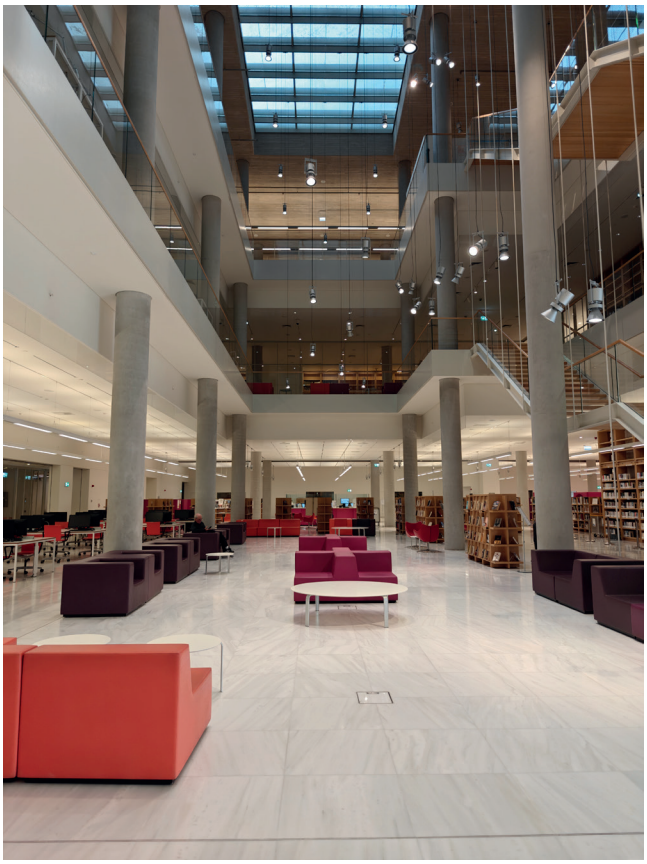


Figure D.4.25 & D.4.26: Photos of the Stavros Niarchos Foundation Cultural Center (own work 2025)

Acropolis museum

Archaeological Museum
Dionysiou Areopagitou Street
2009 by Manfredi Nicoletti and Lucio Passarelli
Contemporary





Figure D.4.27 & D.4.28: Photos of the Acropolis Museum (own work 2025)

Acropolis



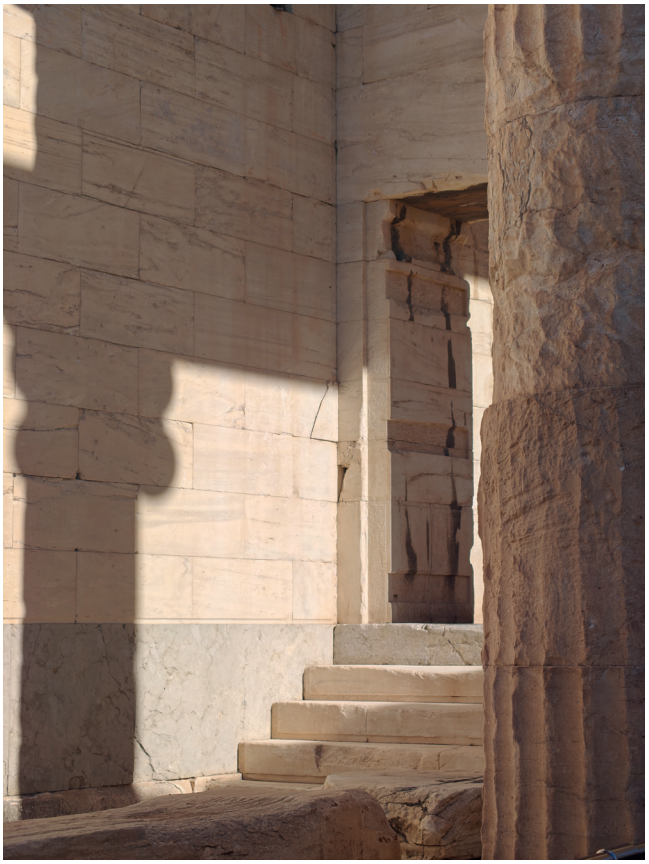





Figure D.4.33 - D4.42: Photos of the Acropolis (own work 2025)









Acropolis Museum





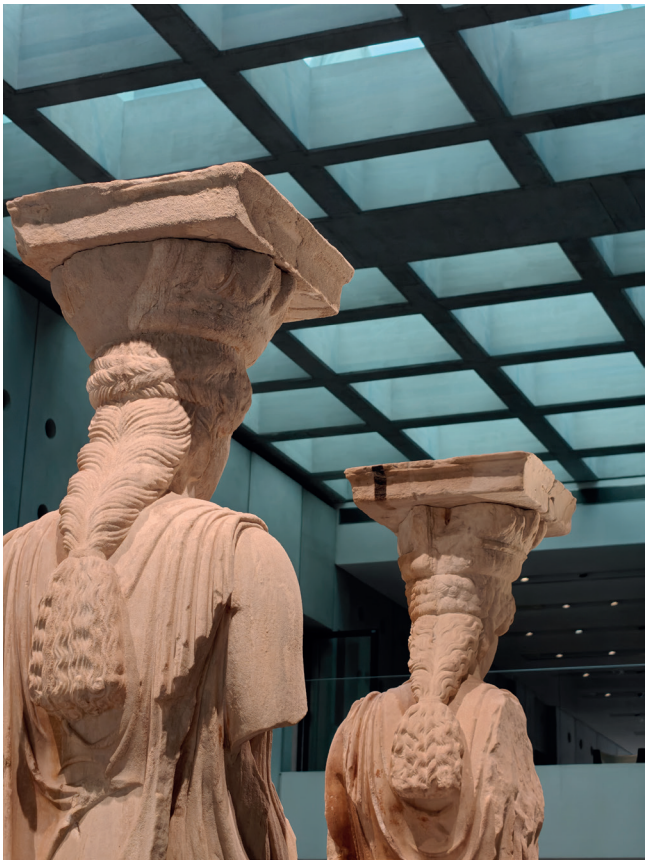




Figure D.4.43 - D4.50: Photos of the Acropolis (own work 2025)









Appendix E: Pyrkal analysis

Appendix E.1: Analysis maps of Pyrkal

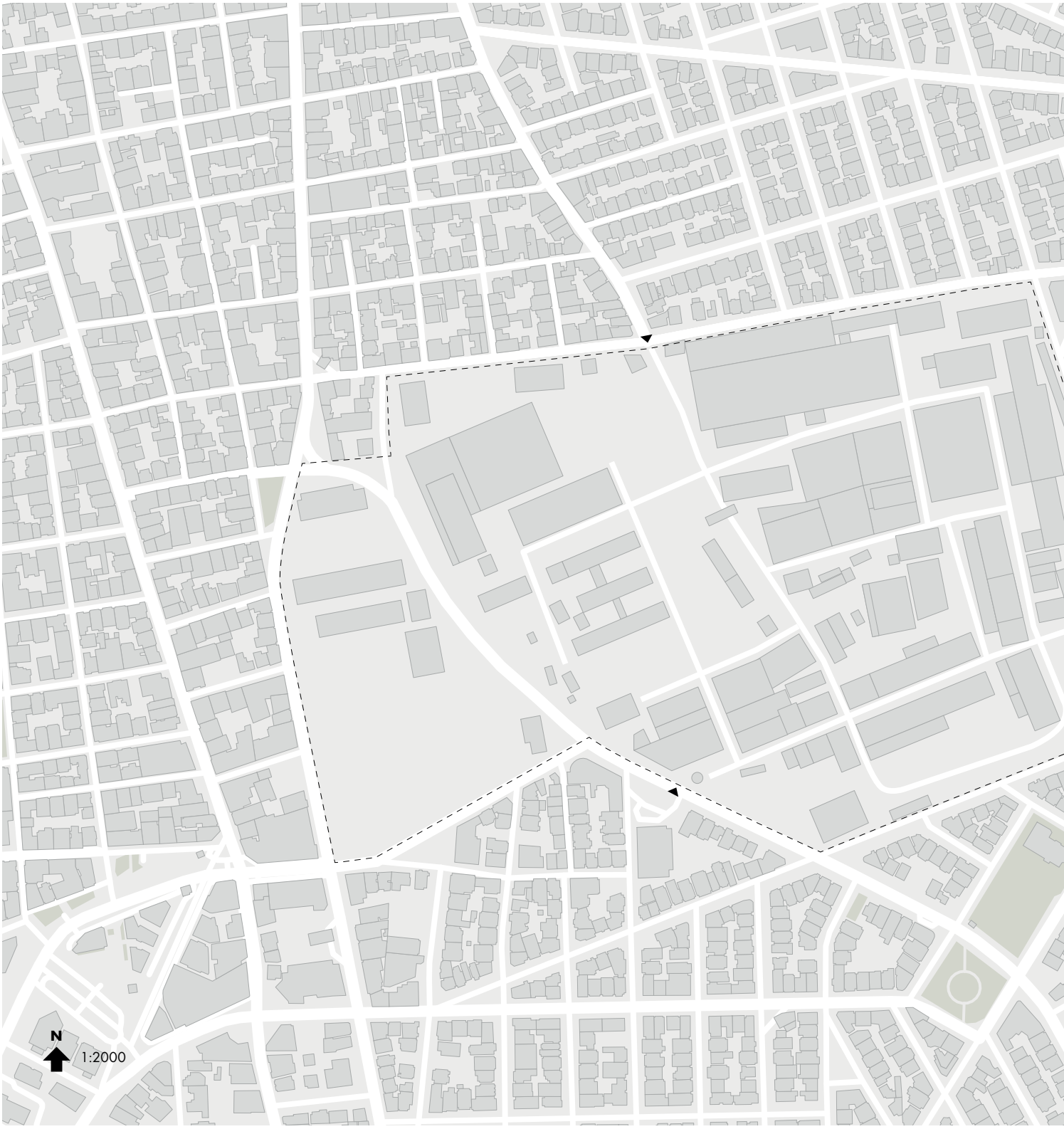


Figure E.1.1: Analysis map of Pyrkal: current situation (1:2000 scaled) (own work 2026)

This appendix contains all the analysis maps and figures that were created to research the Pyrkal site.

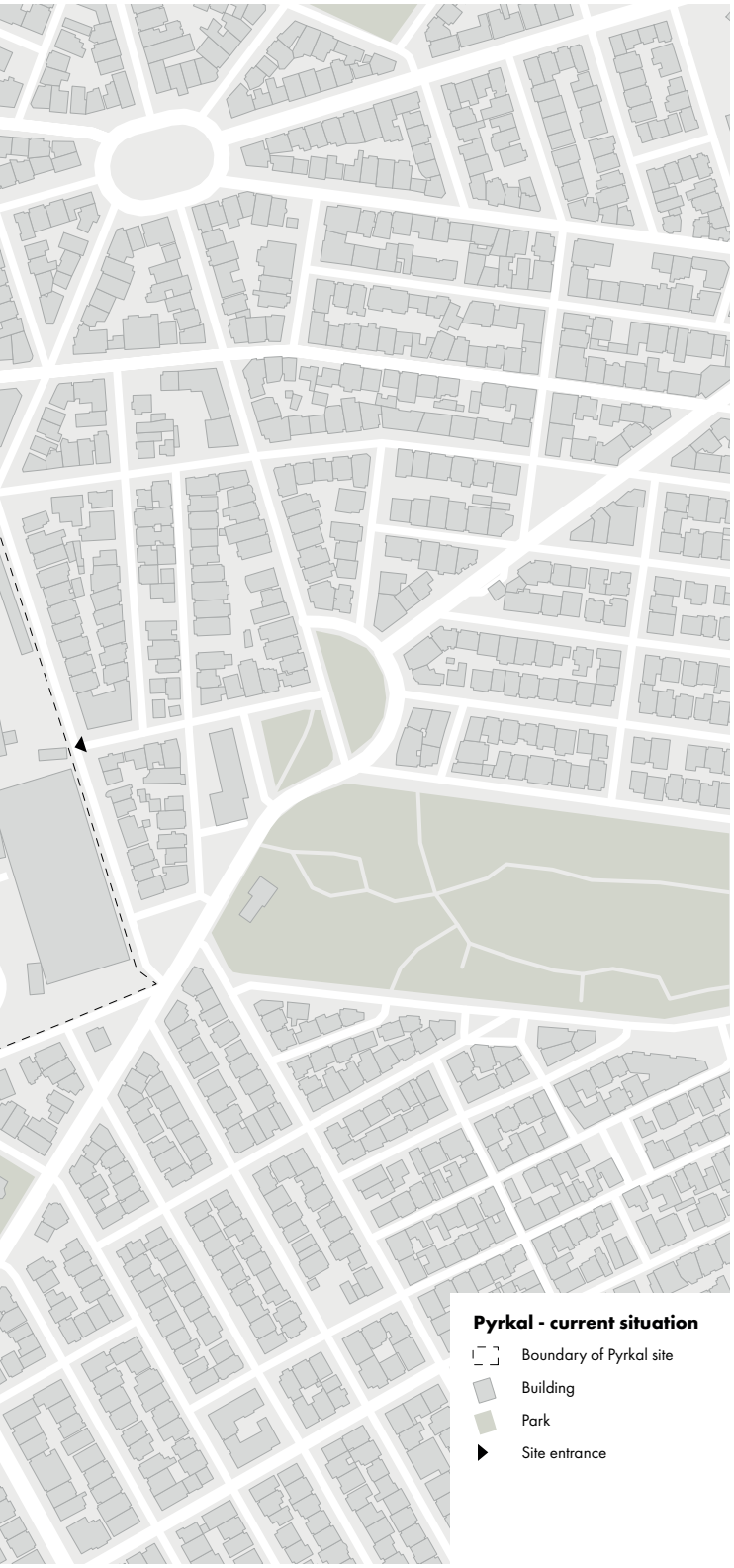




Figure E.1.2: Map of Pyrkal: buildings (1:2000 scaled) (own work 2025)



Figure E.1.3: Map of Pyrkal: roads (1:2000 scaled) (own work 2025)

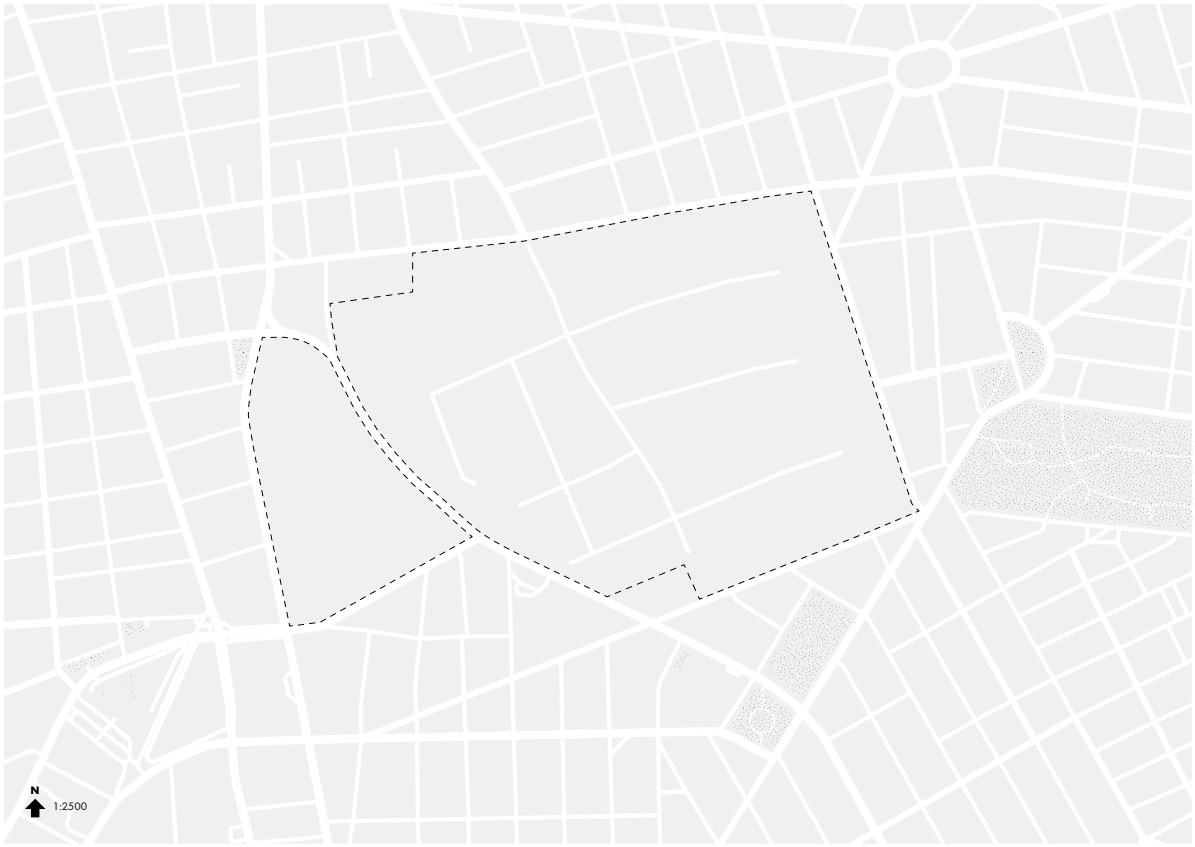


Figure E.1.4: Map of Pyrkal: greenery (1:2000 scaled) (own work 2025)

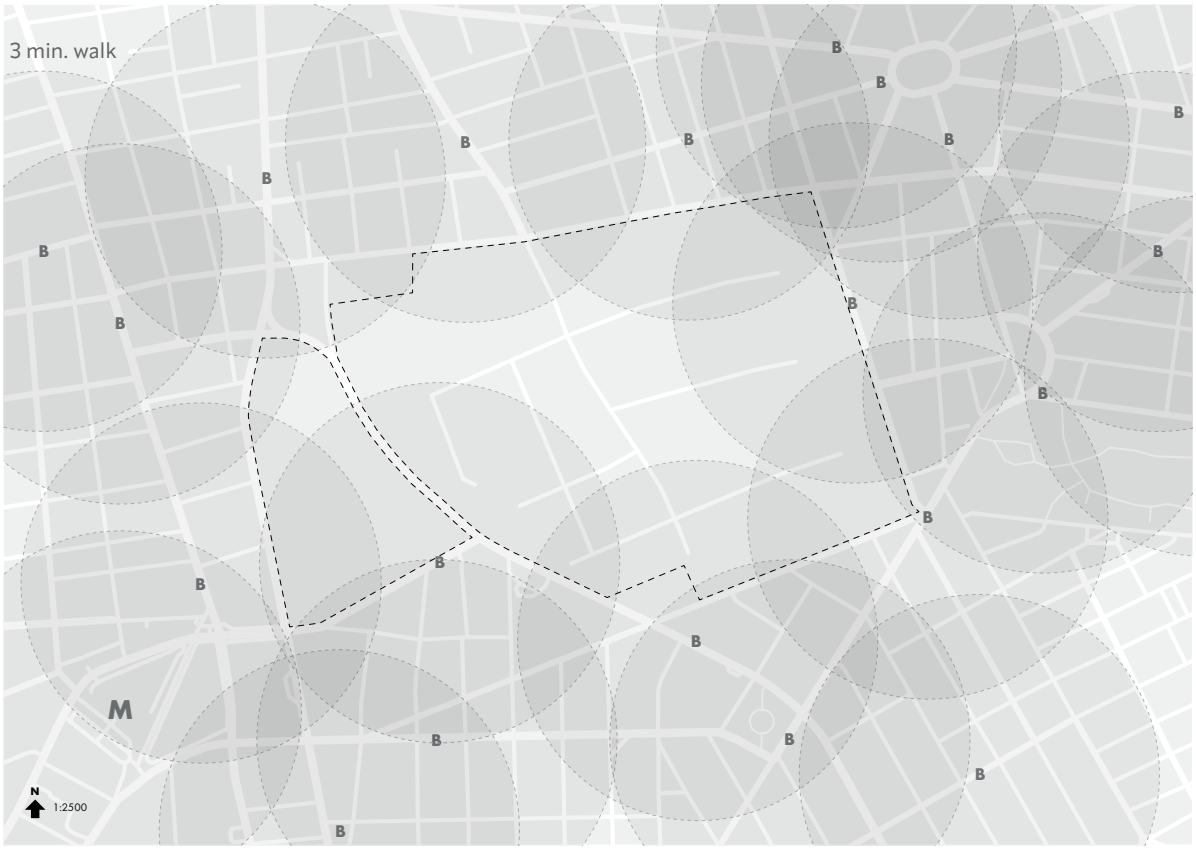


Figure E.1.5: Map of Pyrkal: accessibility by public transport (1:2000 scaled) (own work 2025)

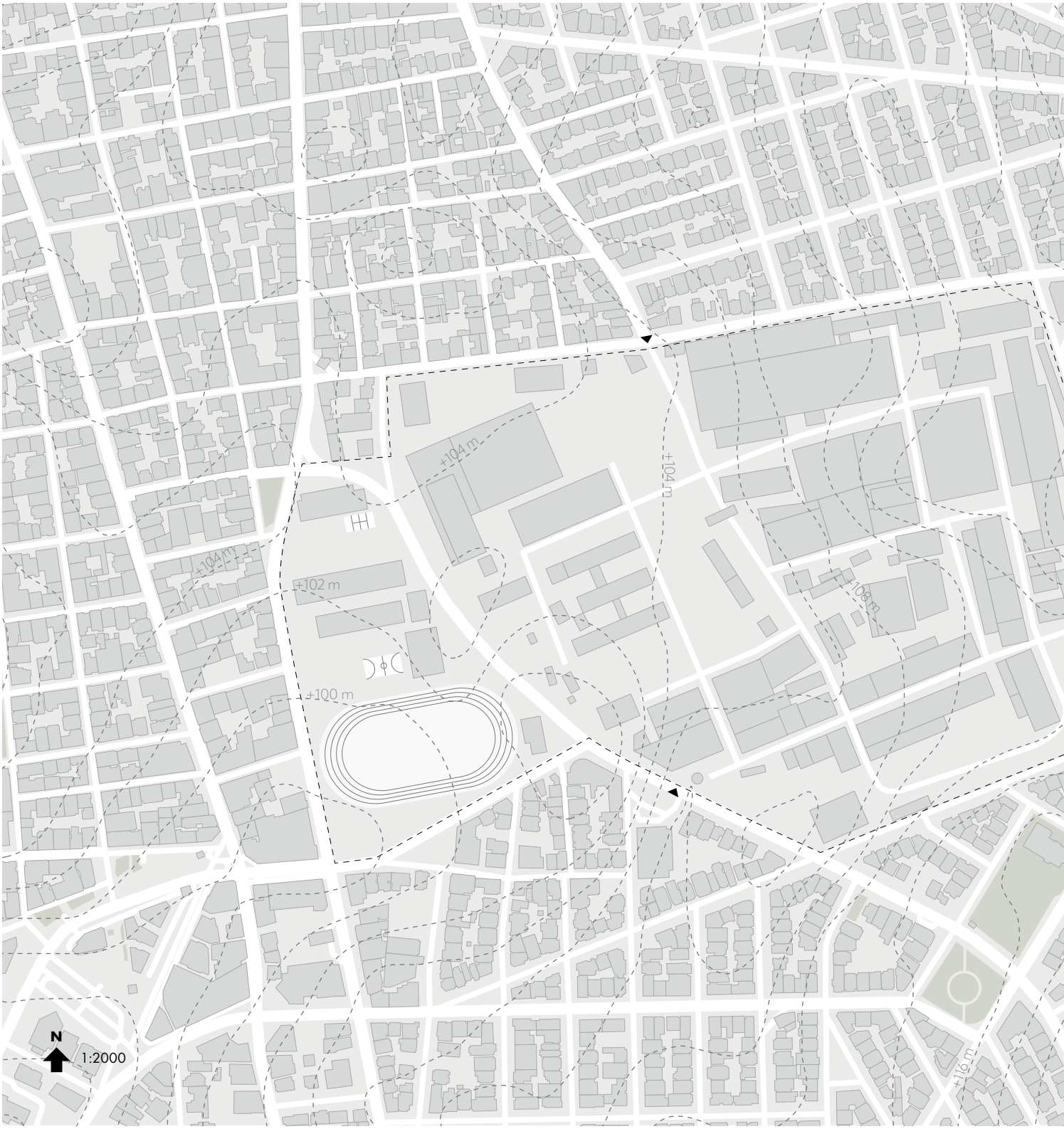
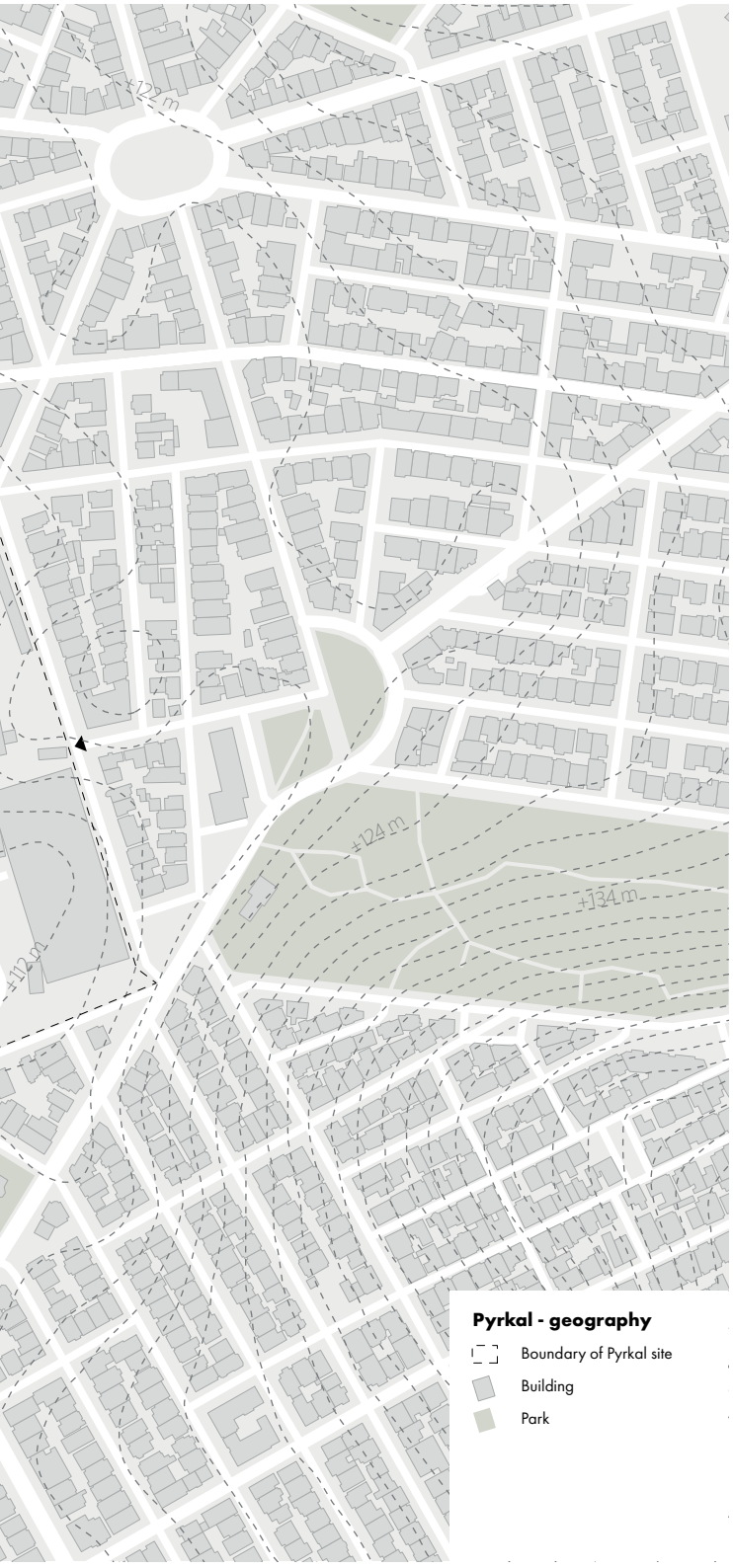


Figure E.1.6: Analysis map of Pyrkal: altitude lines (1:2000 scaled) (own work 2026)


+122 m
+124 m
+134 m
+112 m
Pyrkal - geography
Boundary of Pyrkal site
Building
Park

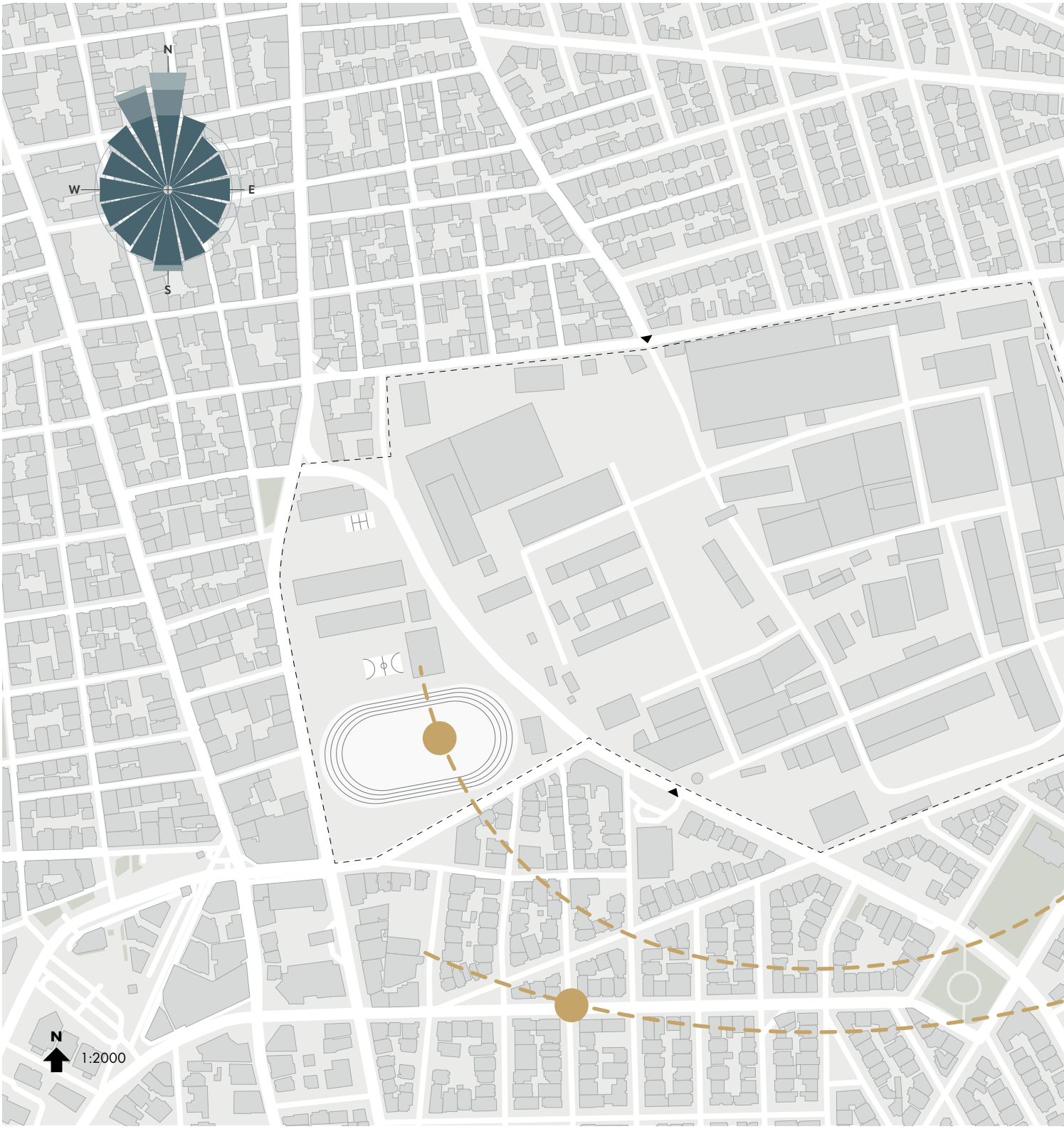
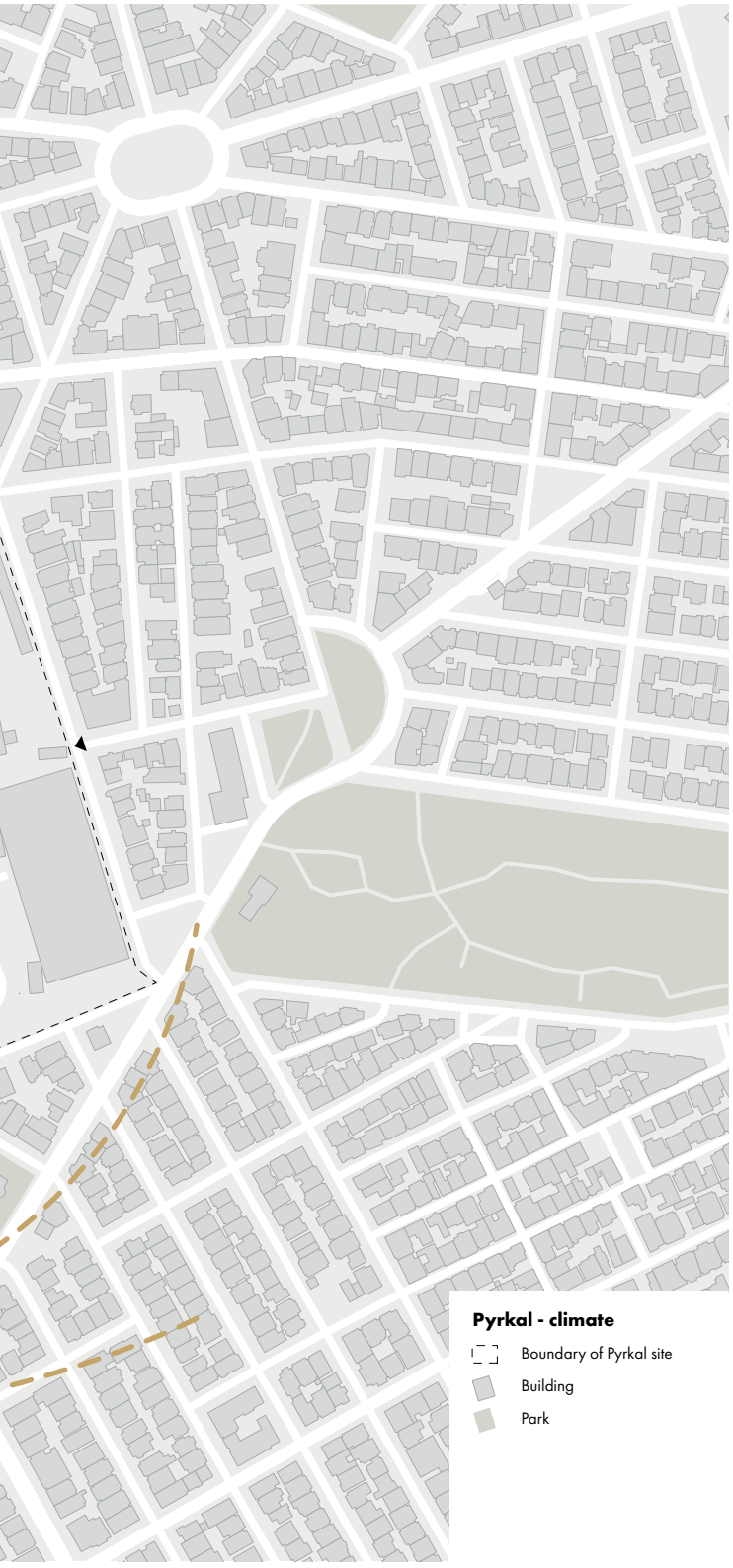


Figure E.1.7: Analysis map of Pyrkal: climate (1:2000 scaled) (own work 2026)


Pyrkal - climate
Boundary of Pyrkal site
Building
Park

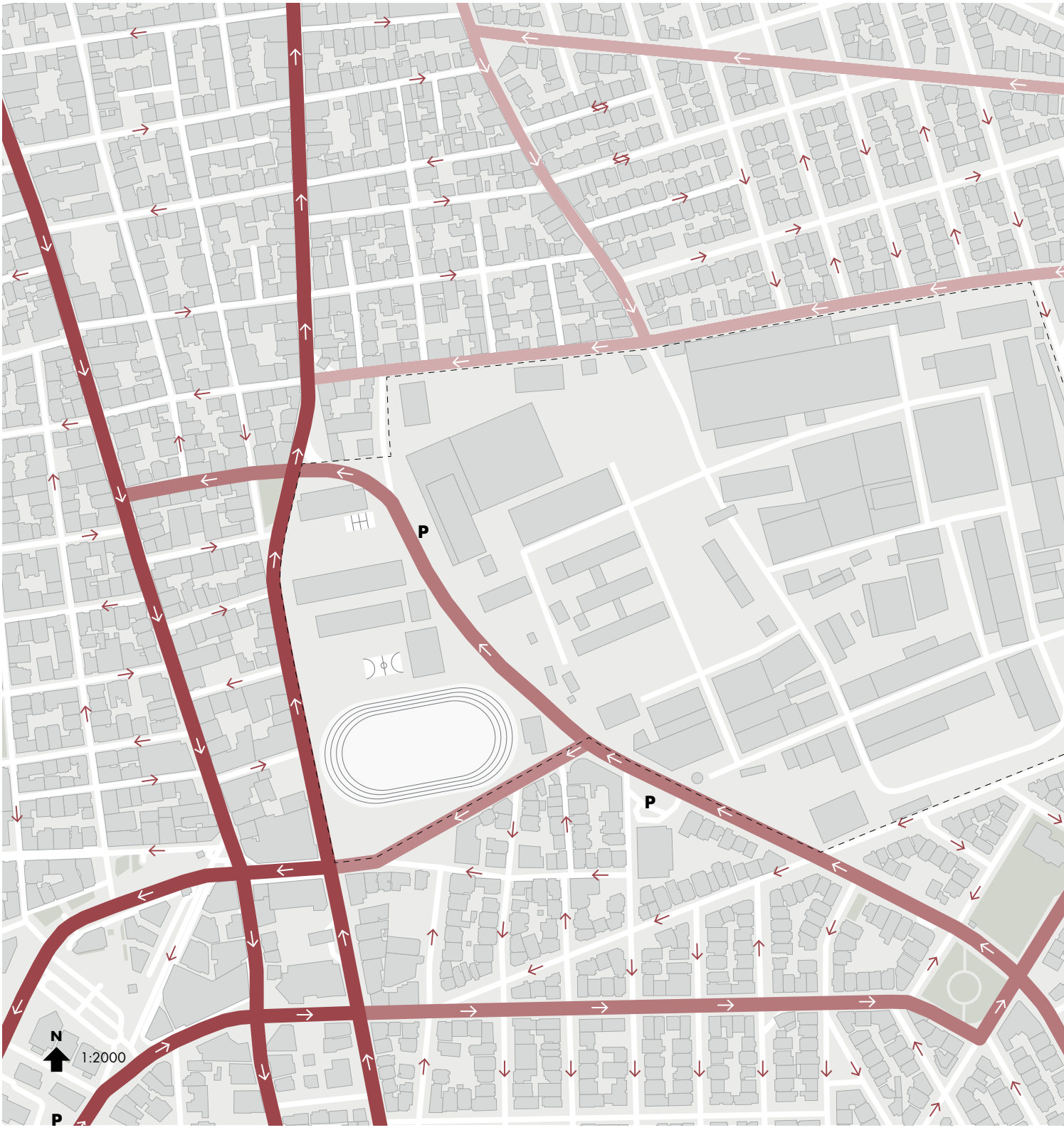


Figure E.1.8: Analysis map of Pyrkal: traffic (1:2000 scaled) (own work 2026)


Pyrkal - traffic
Boundary of Pyrkal site
Building
Park
Busy car traffic
Direction of traffic
P
Parking

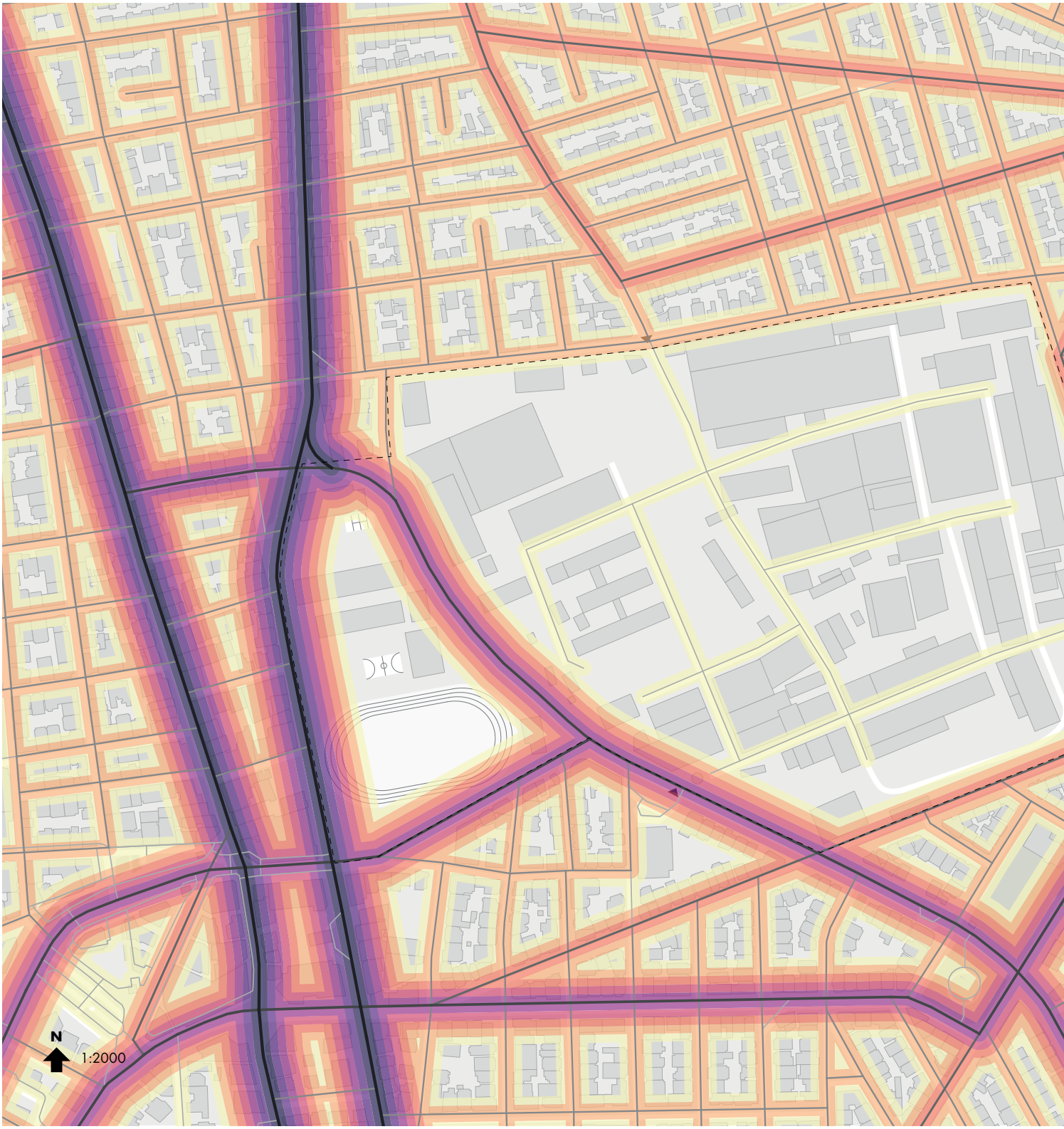
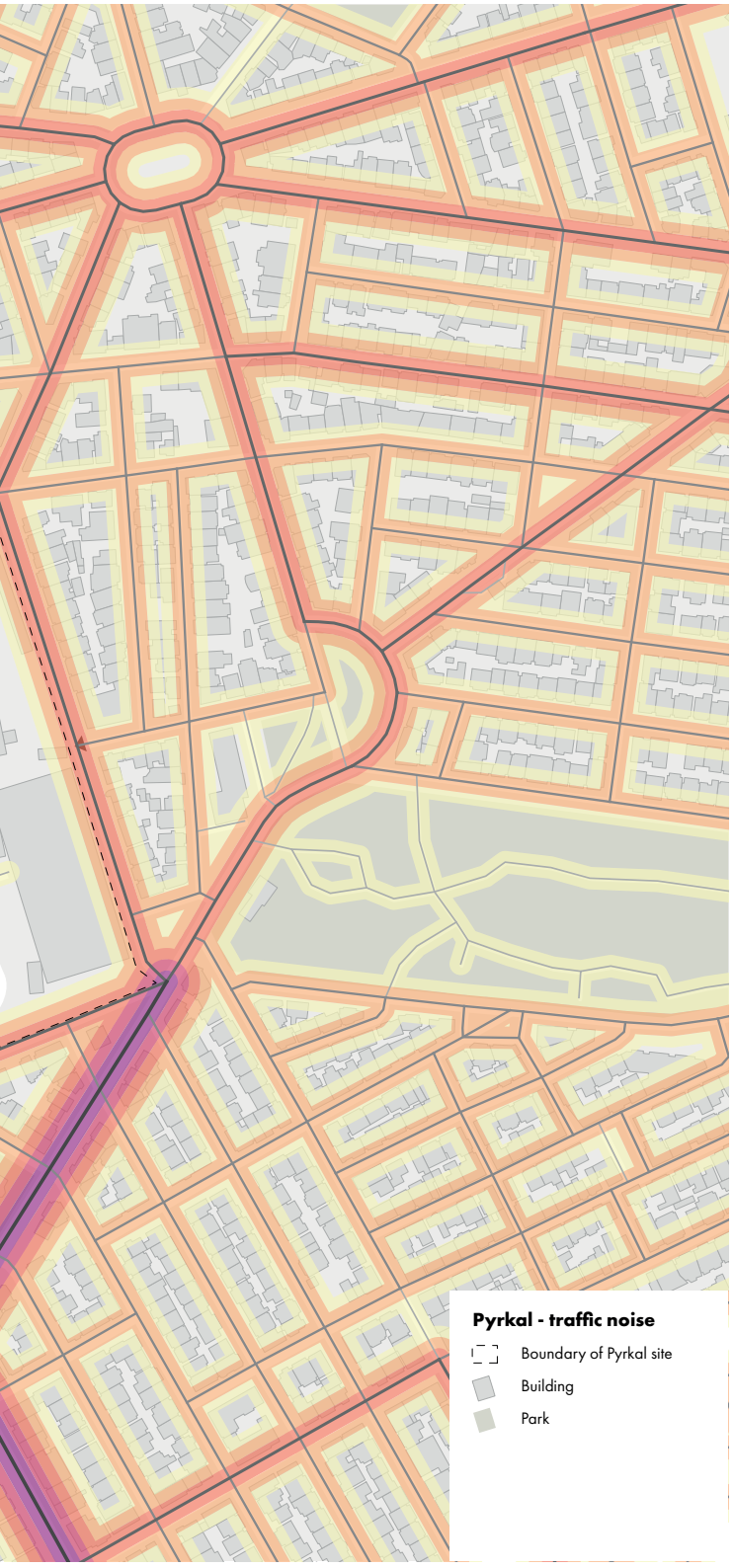


Figure E.1.9: Analysis map of Pyrkal: traffic noise (1:2000 scaled) (own work 2026)


Pyrkal - traffic noise
Boundary of Pyrkal site
Building
Park

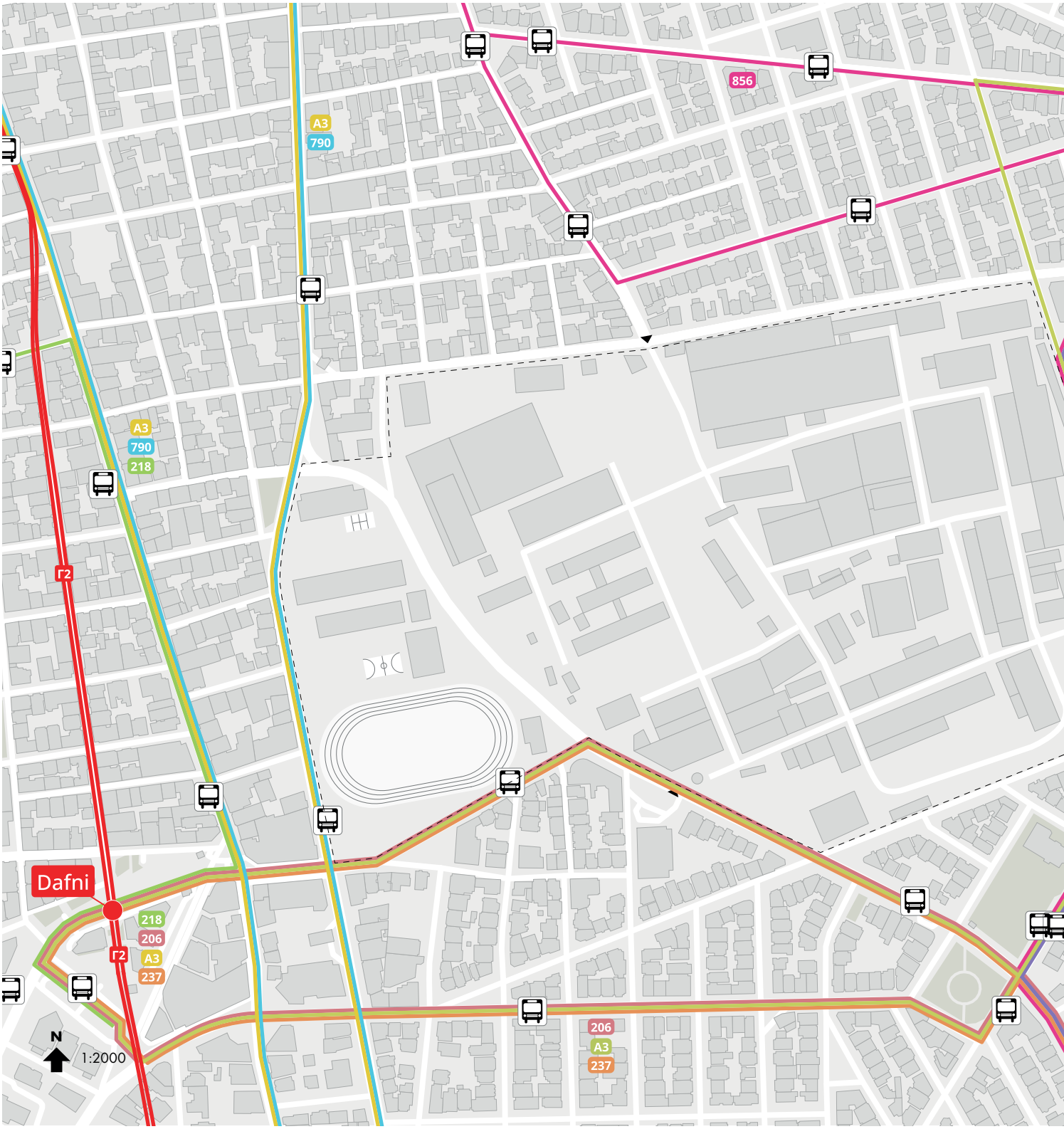


Figure E.1.10: Analysis map of Pyrkal: public transport (1:2000 scaled) (own work 2026)

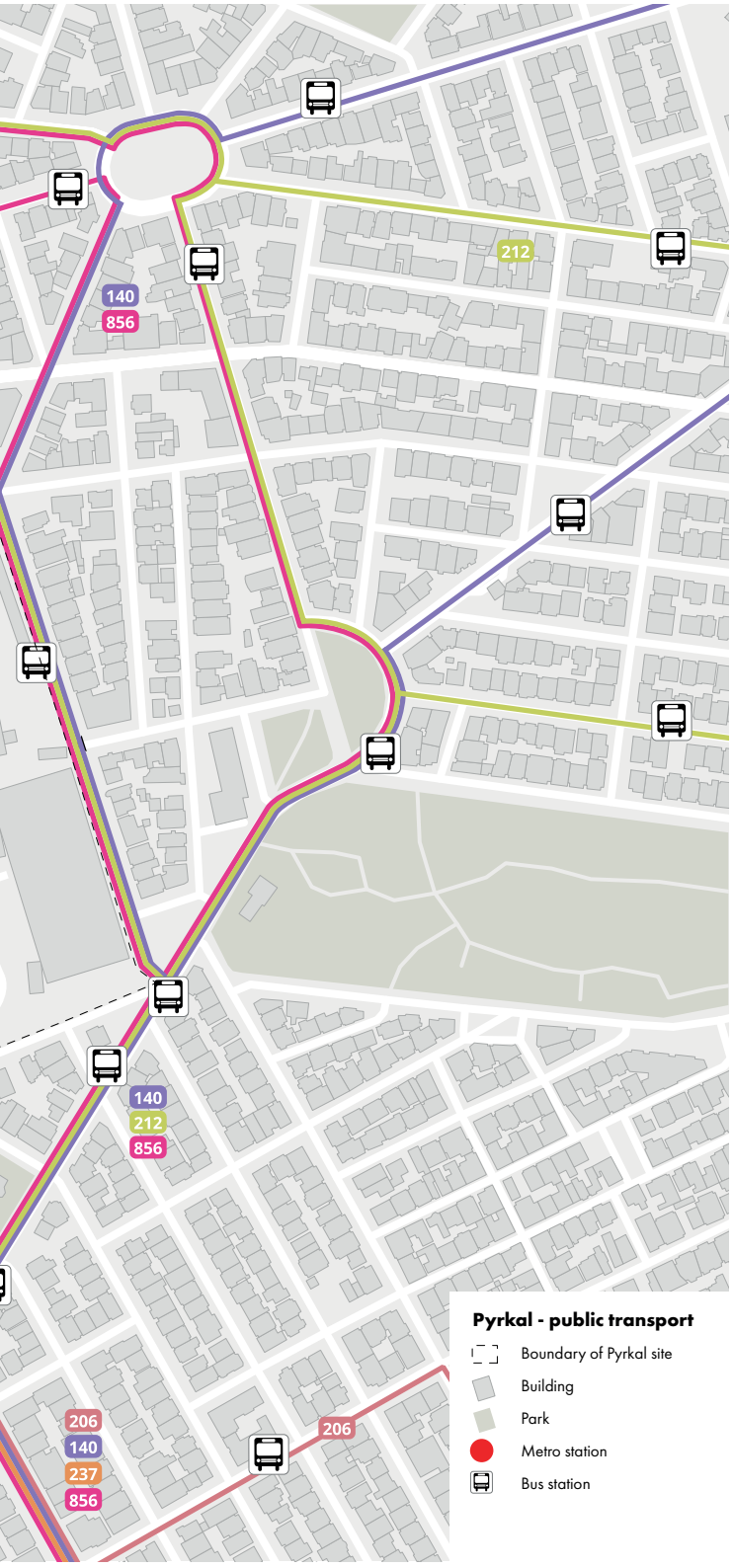

212
140
856
140
212
856
206
140
237
856
206
Pyrkal - public transport
Boundary of Pyrkal site
Building
Park
Metro station
Bus station



Figure E.1.11: Analysis map of Pyrkal: preservation & demolishion according to municipality masterplan (1:2000 scaled) (own work 2026)

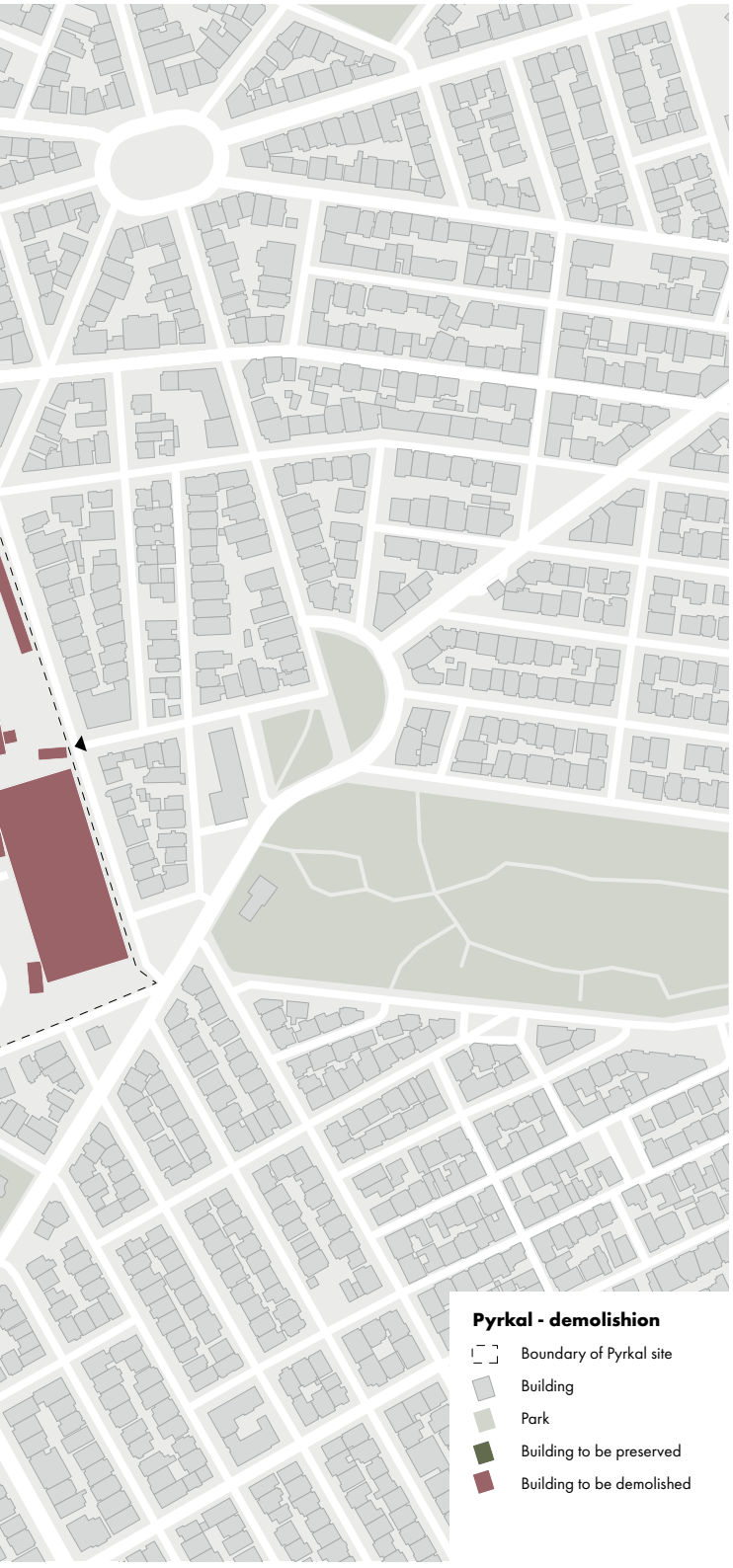

Pyrkal - demolishion
Boundary of Pyrkal site
Building
Park
Building to be preserved
Building to be demolished



Figure E.1.12: Map of Pyrkal: schools (1:5000 scaled) (own work 2025)



Figure E.1.13: Map of Pyrkal: after school activities (1:5000 scaled) (own work 2025)



Figure E.1.14: Map of Pyrkal: mental health institutions (1:5000 scaled) (own work 2025)

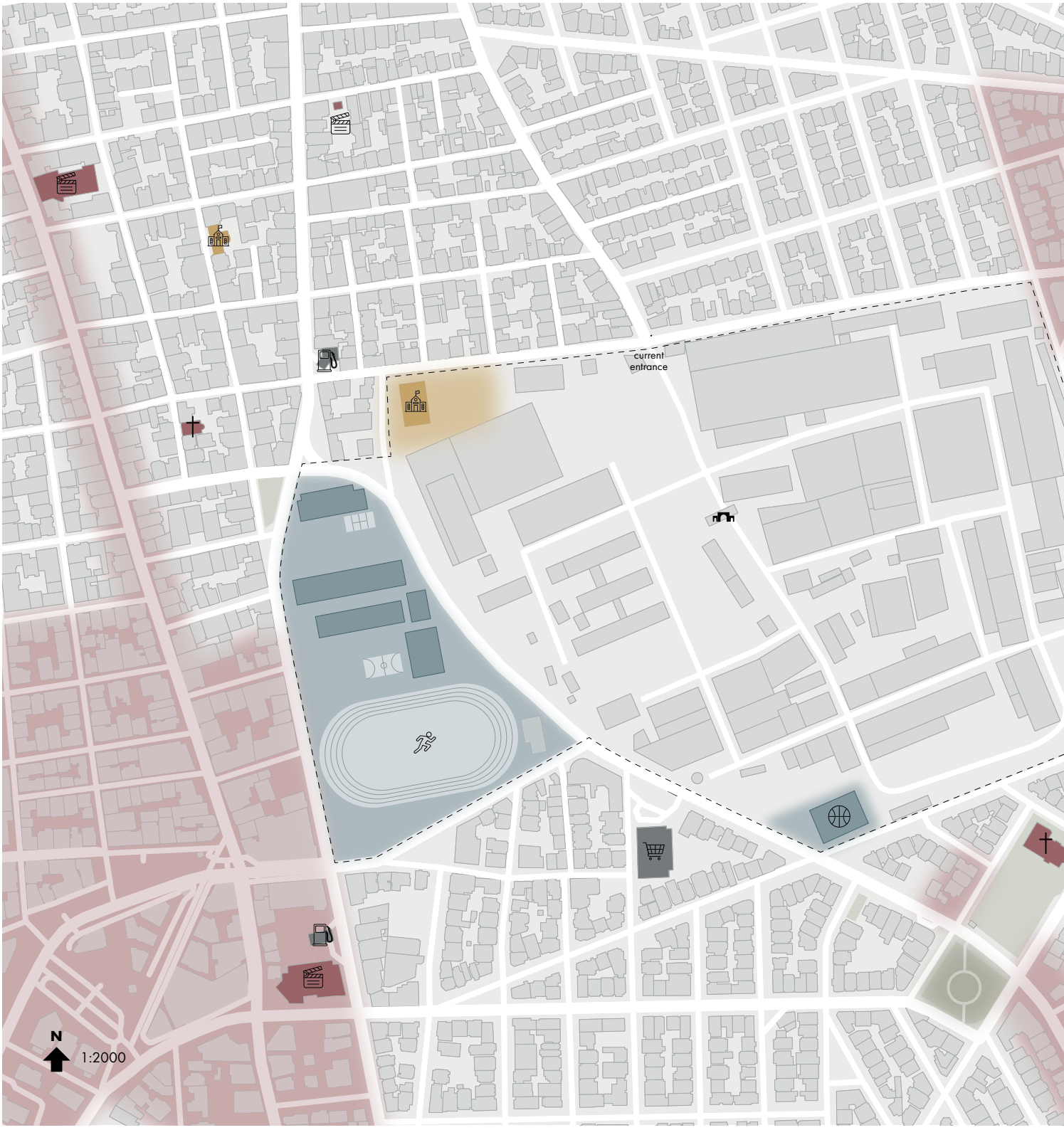
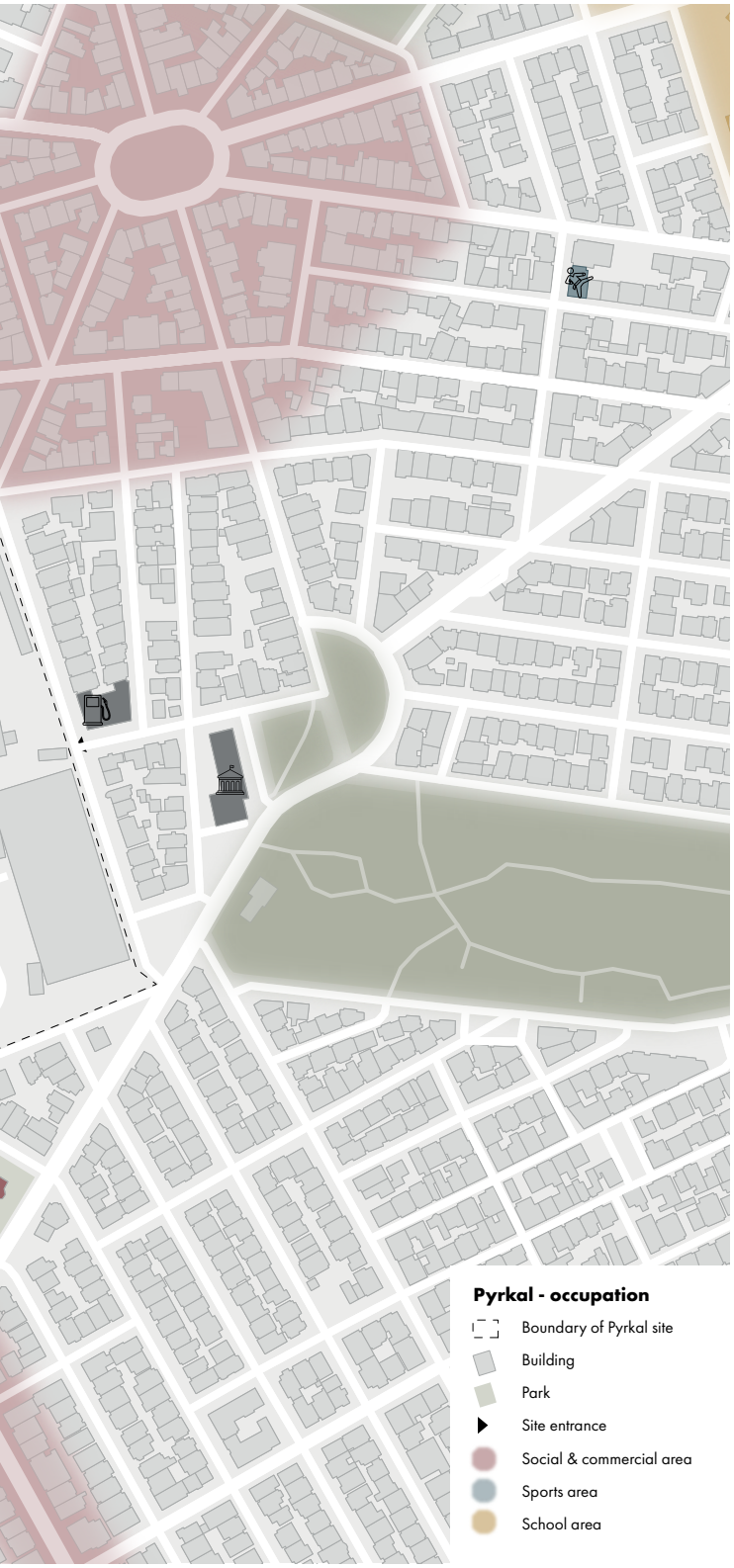


Figure E.1.15: Analysis map of Pyrkal: occupation (1:2000 scaled) (own work 2026)


Pyrkal - occupation
Boundary of Pyrkal site
Building
Park
Site entrance
Social & commercial area
Sports area
School area

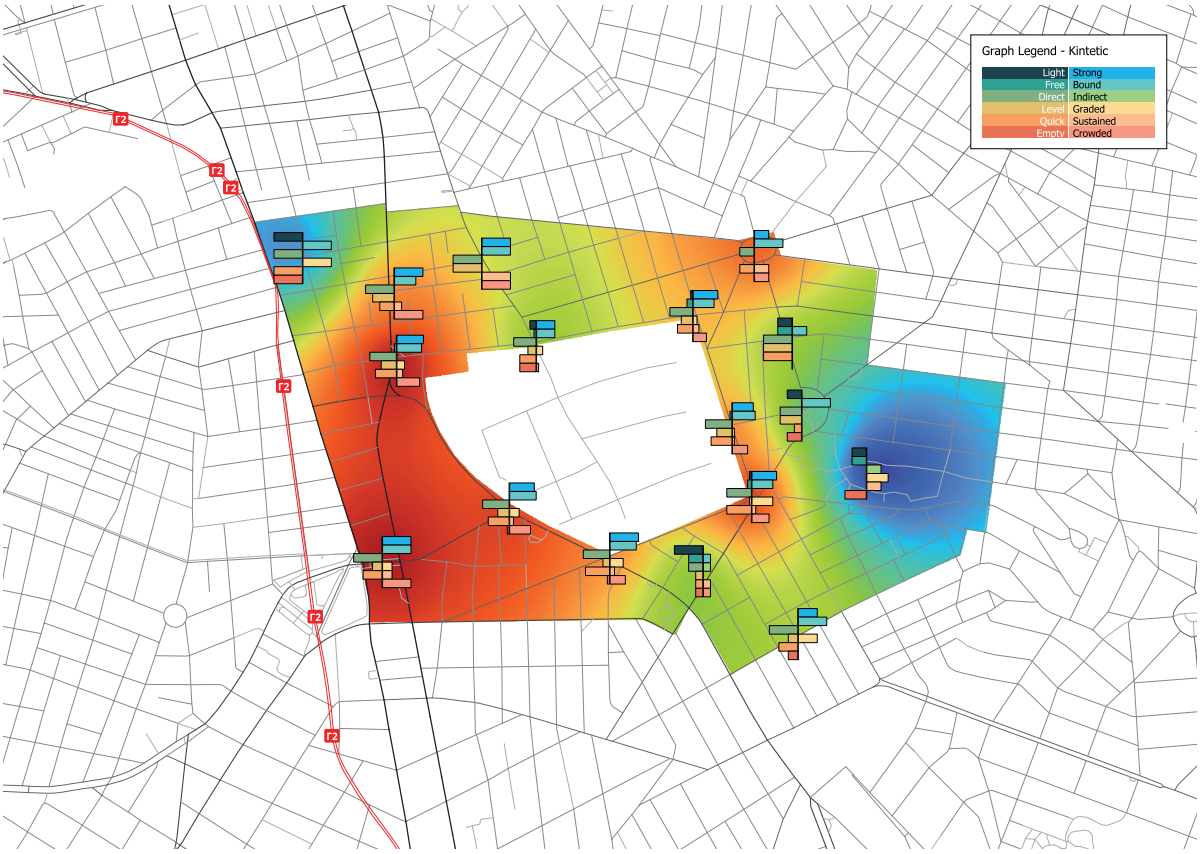


Figure E.1.16: Map of Pyrkal sensing survey: kinetic (1:2000 scaled) (Marcel Janssens 2025)

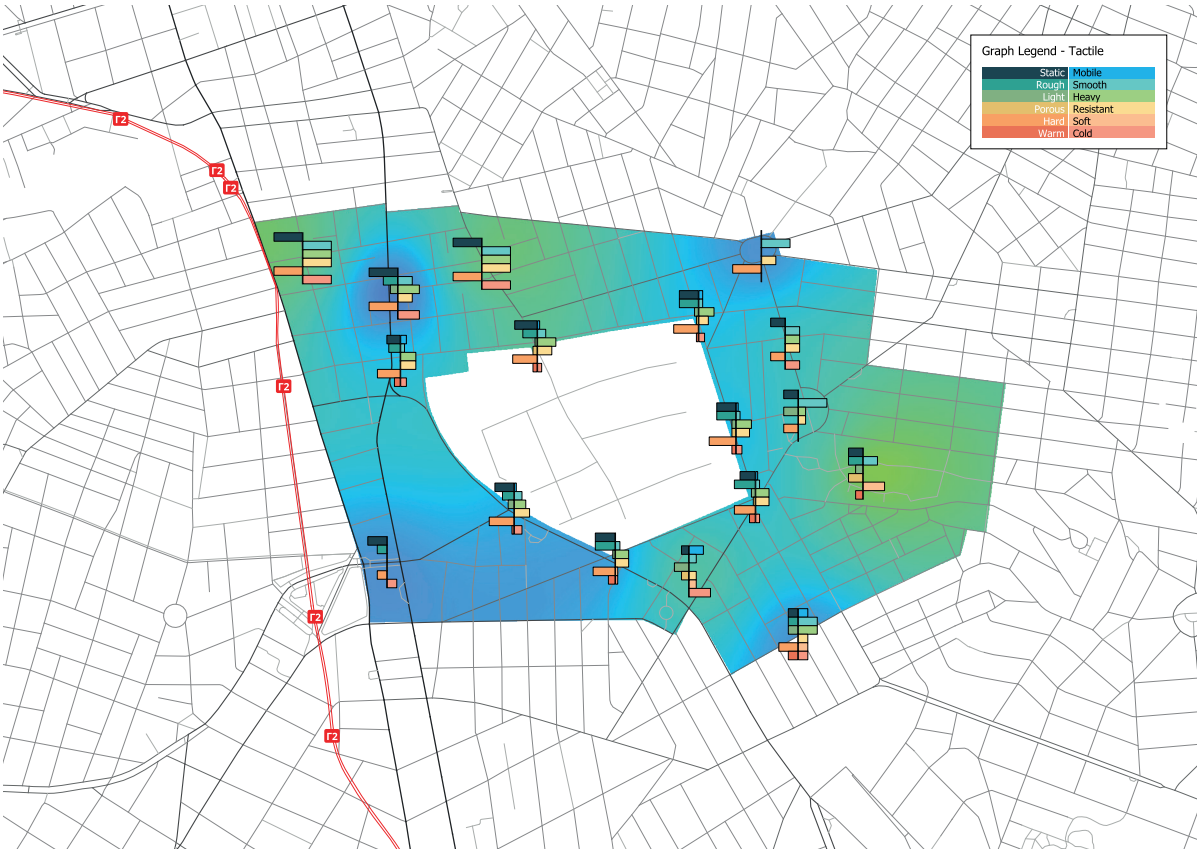


Figure E.1.17: Map of Pyrkal sensing survey: tactile (1:2000 scaled) (Marcel Janssens 2025)

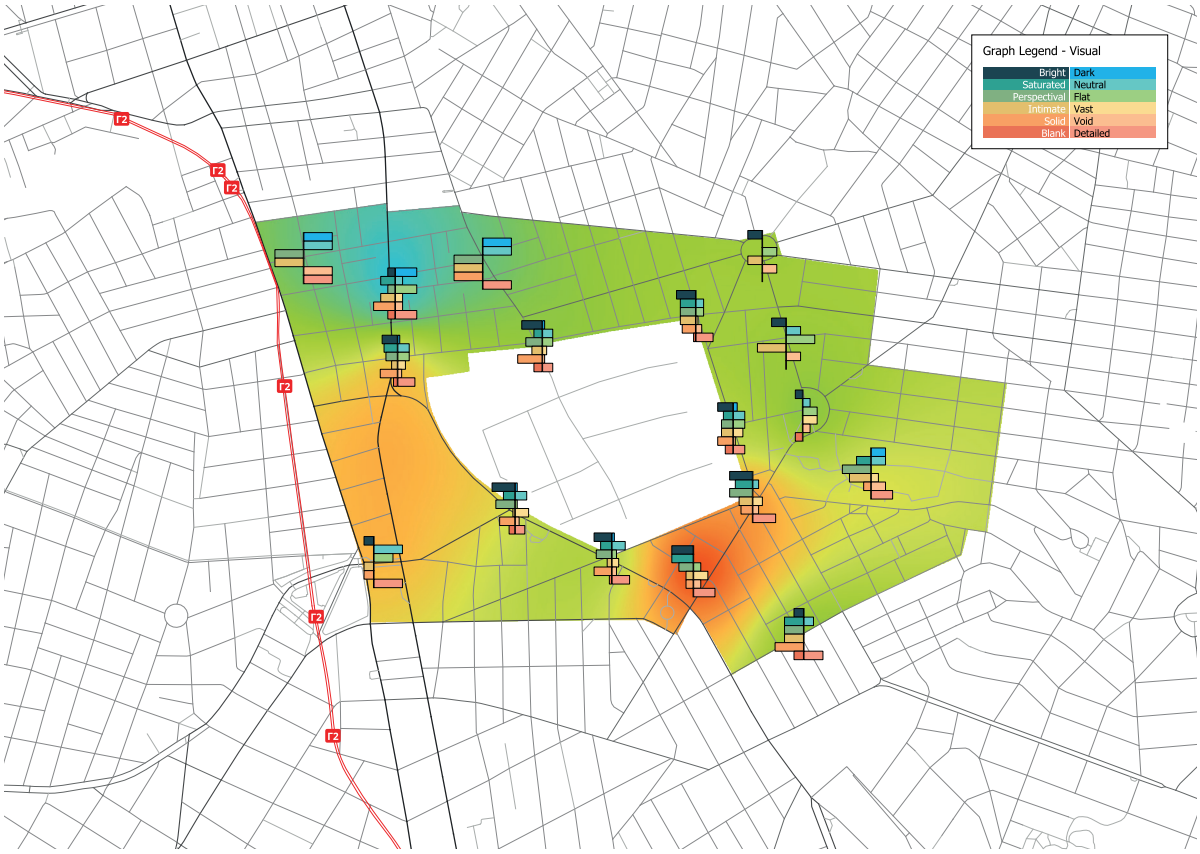


Figure E.1.18: Map of Pyrkal sensing survey: visual (1:2000 scaled) (Marcel Janssens 2025)

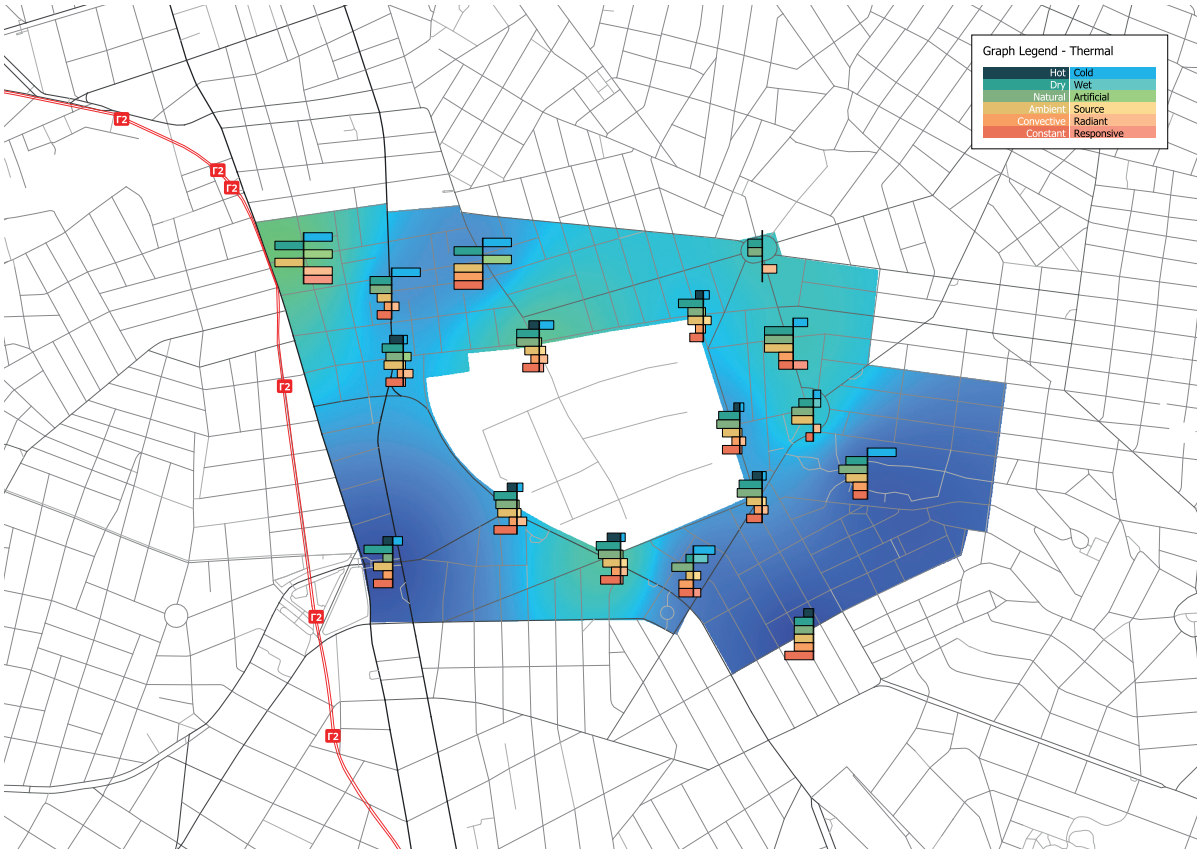


Figure E.1.19: Map of Pyrkal sensing survey: thermal (1:2000 scaled) (Marcel Janssens 2025)

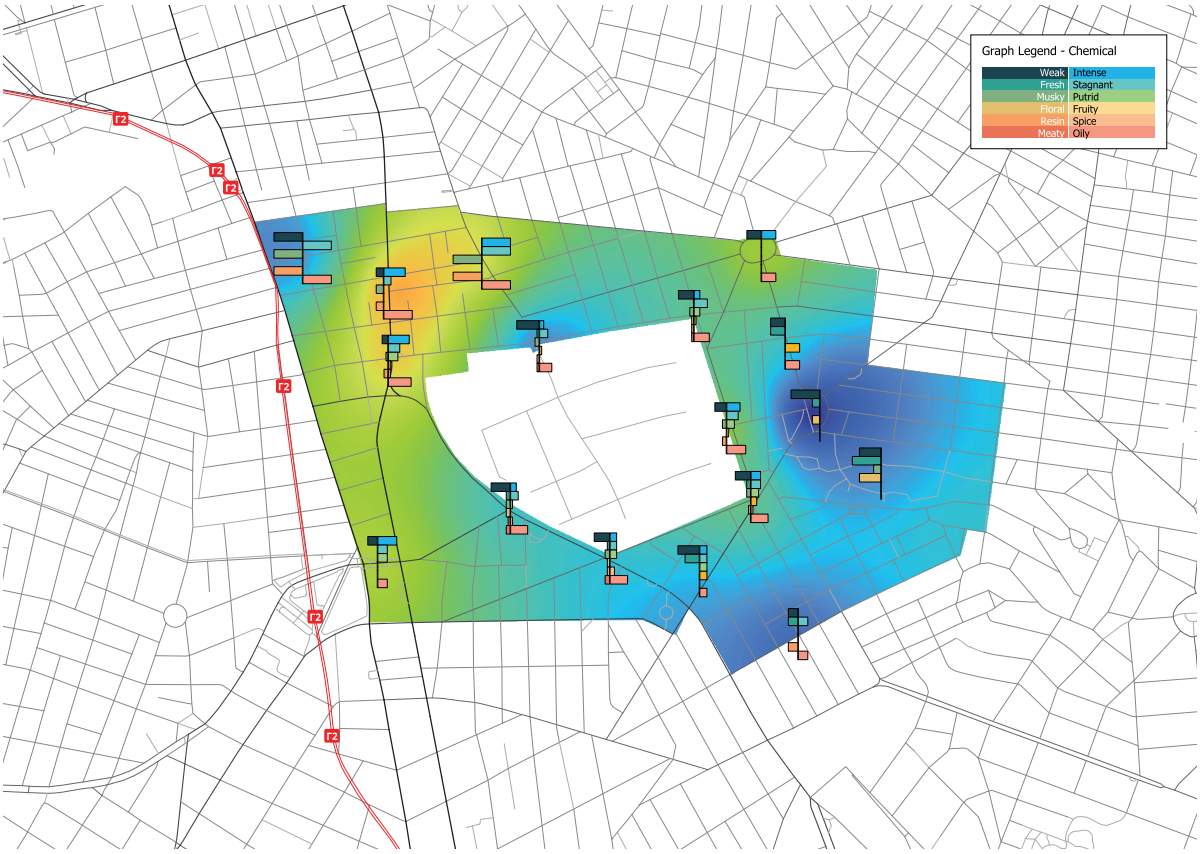


Figure E.1.20: Map of Pyrkal sensing survey: chemical (1:2000 scaled) (Marcel Janssens 2025)

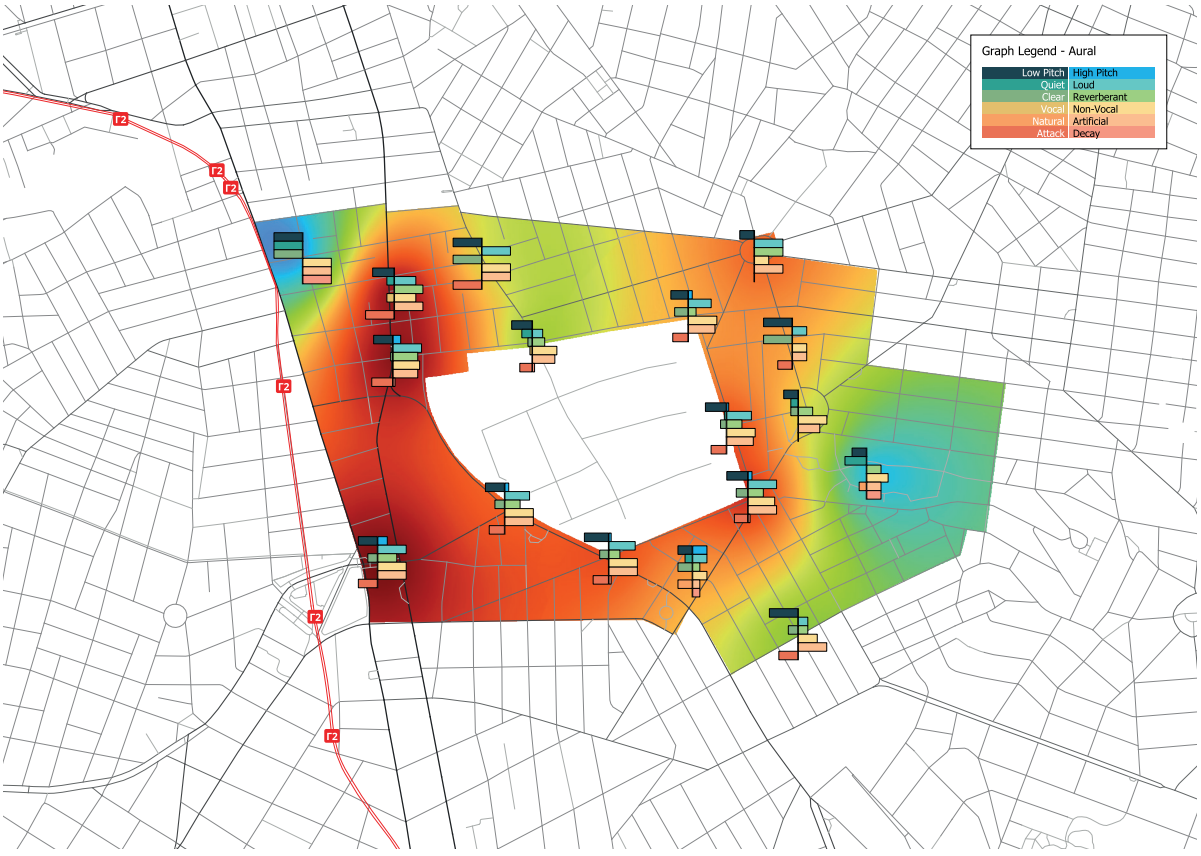


Figure E.1.21: Map of Pyrkal sensing survey: aural (1:2000 scaled) (Marcel Janssens 2025)

Sensing survey

As an additional layer of spatial analysis, a sensing survey was conducted by our group of students during the site visit. Through direct observation, subjective experiences related to kinetic, tactile, visual, thermal, chemical, and aural conditions were mapped across the Pyrkal site and its surroundings.

The maps reveal variations in sensory experience that are not captured by conventional urban analysis alone, helping identify areas that are active and stimulating as well as areas that support calm, retreat, and reflection.

The findings show that the southwestern road is the busiest part of the area, characterised by high levels of movement, noise, visual stimuli, and traffic-related smells. The other roads surrounding the site are considerably quieter. The roundabout to the west functions as a large traffic node, while the square to the south is less active but visually stimulating. In contrast, the park to the east is the coolest, quietest, and least affected by traffic-related sensory conditions, making it the most restorative environment within the direct context.

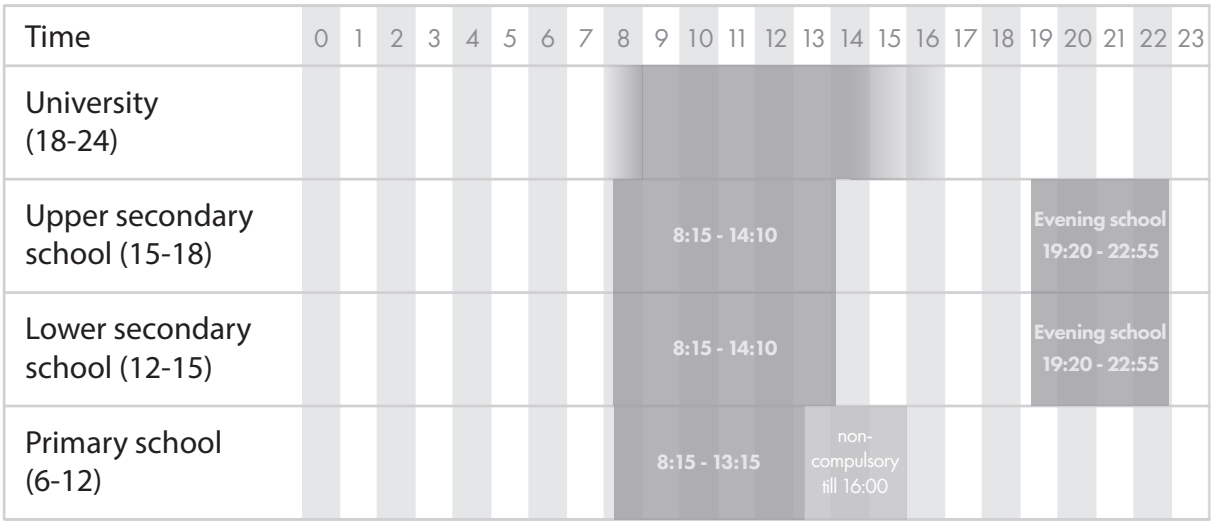


Figure E.1.22: Greek school schedule (own work 2025) (Data source: European Commission n.d.)

European Commission. n.d. "Organisation of General Lower Secondary Education." Eurydice. Accessed January 5, 2026a. https://eurydice.eacea.ec.europa.eu/eurypedia/greece/organisation-general-lower-secondary-education.

European Commission. n.d. "Organisation of General Upper Secondary Education." Eurydice. Accessed January 5, 2026b. https://eurydice.eacea.ec.europa.eu/eurypedia/greece/organisation-general-upper-secondary-education.

European Commission. n.d. "Organisation of Primary Education." Eurydice. Accessed January 5, 2026c. https://eurydice.eacea.ec.europa.eu/eurypedia/greece/organisation-primary-education.

Greek school schedule

The daily rhythm of Greek secondary education was analysed to understand when teens and young adults are most likely to use the library. School days typically end in the early afternoon, creating a period of free time before evening activities. This schedule informed the library's opening hours, programming, and spatial organisation, ensuring that learning, social, and retreat spaces are available during the hours most relevant to the primary target group.

This page summarises the main findings of the Pyrkal site analysis presented in the preceding maps and identifies the key opportunities and constraints that informed the design proposal.

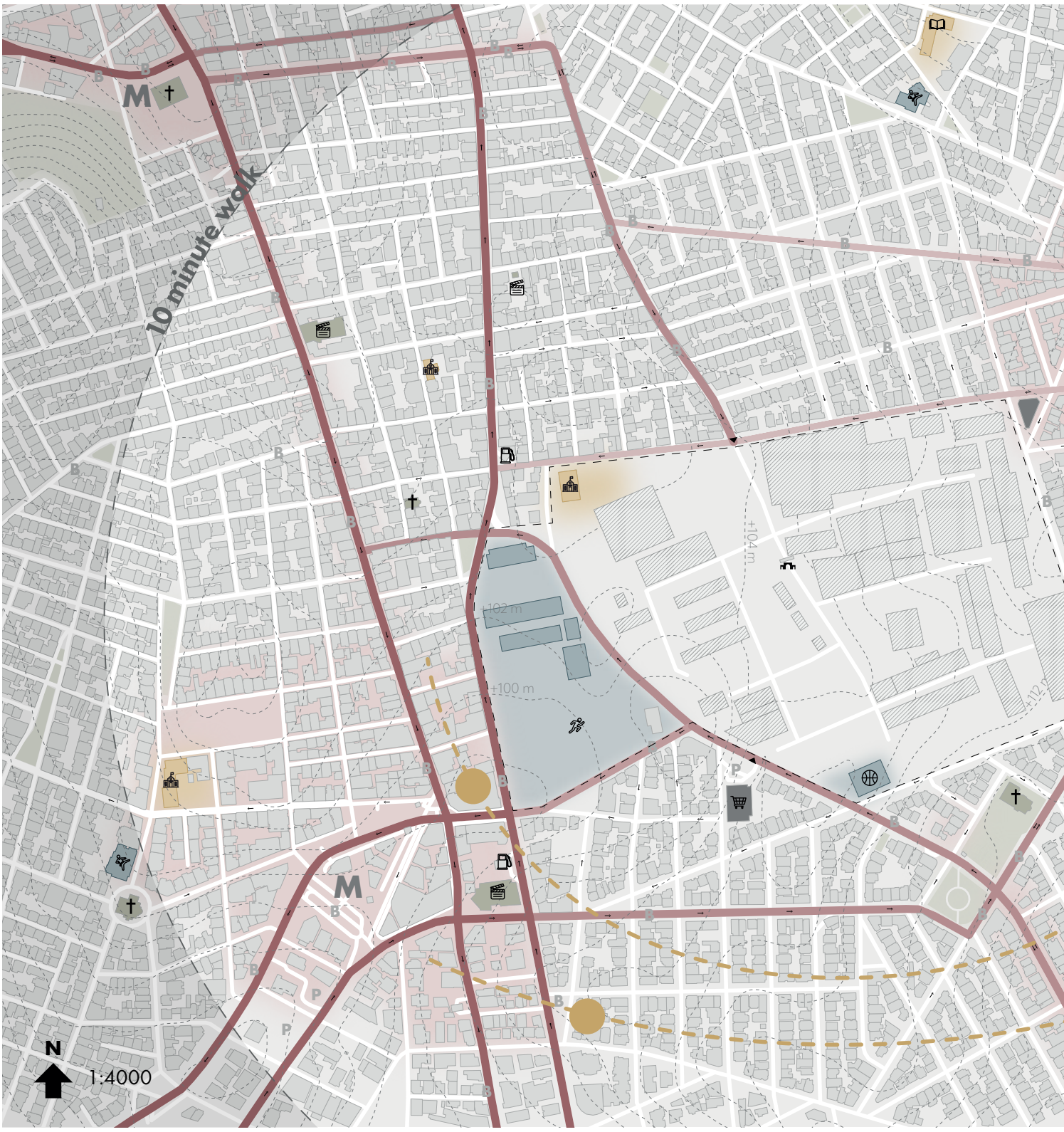


Figure E.1.23: Analysis map of Pyrkal (1:4000 scaled) (own work 2026)



Site surroundings

The library is positioned at the centre of the Pyrkal masterplan, at the intersection of multiple pedestrian routes, connecting the surrounding neighbourhoods.

The north and east areas are mainly residential. The northeast, south, and west contain more social and commercial areas, with shops and restaurants occupying many ground floors.

Accessibility

The site is well connected by public transport, with Dafni metro station a six-minute walk away and several nearby bus stops. By foot, the site is within ten minutes of residences, schools, sports facilities, and social areas.

Although located next to a busy road and accessible by car, pedestrian and public transport access are most relevant for the intended user group.

Youth context

Within a ten-minute walking distance, there are many places used by teens and adolescents, including:

- 8 schools
- Sports facilities
- Social & commercial areas

However, there are no libraries or universities in the direct area.

Mental health infrastructure

There are few mental health facilities in the direct area, especially in terms of low-threshold, preventive support. This highlights the need for spaces that integrate well-being into everyday life without being institutional.

Urban stressors

Student-led site surveys identify Ilioupoleos Avenue and the southeastern square as noisy, visually cluttered, and highly active.

This shows an opportunity to connect the library to these social, lively areas, while keeping enough distance to create spaces of retreat, calm, and quiet.

Appendix E.2: Pyrkal site photos









Figure E.2.1 - E.2.8: Photos of the Pyrkal surroundings (own work 2025)









Appendix E.3: Pyrkal governmental masterplan

Government masterplan

The government masterplan proposes the redevelopment of the former PYRKAL industrial site into a new governmental campus. Most existing industrial buildings are scheduled for demolition, while a limited number are preserved.

Demolition



Figure E.3.1: PYRKAL industrial buildings to be demolished (1 / 2) (Hellenic Republic, Ministry of National Economy and Finance 2024)



Figure E.3.2: PYRKAL industrial buildings to be demolished (1 / 2) (Hellenic Republic, Ministry of National Economy and Finance 2024)

Preservation

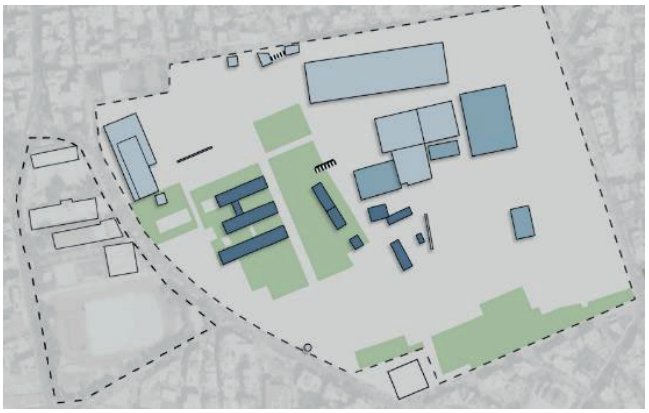


Figure E.3.3: PYRKAL industrial buildings to be preserved (1/2) (Hellenic Republic, Ministry of National Economy and Finance 2024)



Figure E.3.4: PYRKAL industrial buildings to be preserved (2/2) (Hellenic Republic, Ministry of National Economy and Finance 2024)

Hellenic Republic, Ministry of National Economy and Finance. 2024. "Technical Report and Masterplan Proposal for the Redevelopment of the PYRKAL Industrial Complex (Governmental Park 'Andreas Lentakis')." Athens, Greece.



Figure E.3.5: Aerial Photo of PYRKAL plot and industrial facilities (Hellenic Republic, Ministry of National Economy and Finance 2024)

Figure E.3.6 & E.3.7: Photorealistic depiction of governmental park "Andreas Lentakis". (Hellenic Republic, Ministry of National Economy and Finance 2024)

Program

The masterplan introduces new buildings to accommodate multiple ministries, consolidating governmental functions on the site. In addition, areas marked in dark green are designated for public, cultural, and entertainment facilities

Office buildings

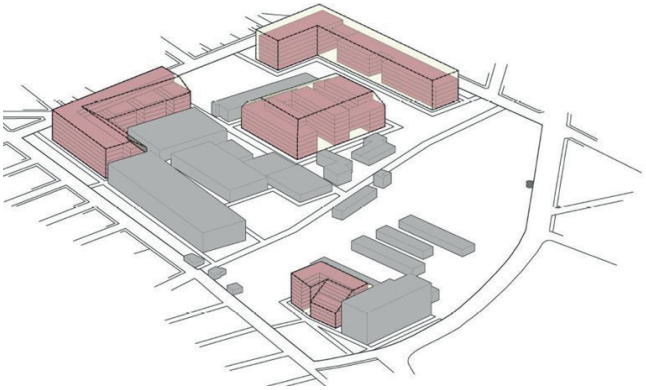
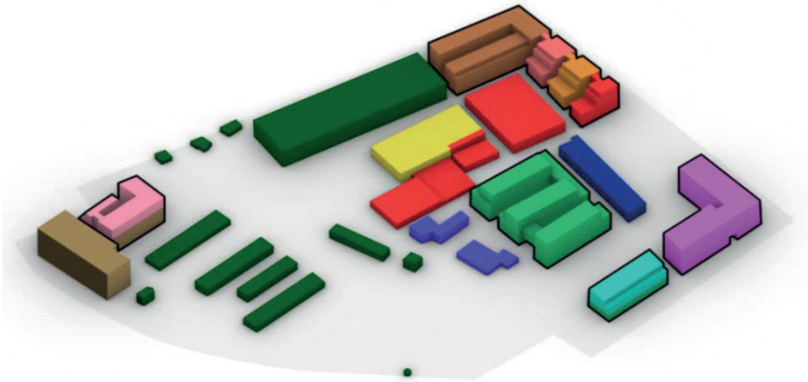


Figure E.3.8: Construction of 4 new office buildings (Hellenic Republic, Ministry of National Economy and Finance 2024)



			EMPLOYEES	GROSS (m^2) OFFICE
	1	MINISTRY OF ECONOMY AND FINANCE	2.200	19.580
	2	HCAP/HPPC/ HRADF	370	3.306
	3	MINISTRY OF DEVELOPMENT	3.710	33.133
	4	MINISTRY OF ENVIRONMENT AND ENERGY	640	5.702
	5	MINISTRY OF CULTURE AND SPORTS	1.370	12.190
	6	MINISTRY OF LABOUR AND SOCIAL AFFAIRS	720	6.417
	7	MINISTRY OF HEALTH	570	5.075
	8	MINISTRY OF THE INTERIOR	2.050	18.242
	9	MINISTRY OF TOURISM	510	4.557
	10	MINISTRY OF RURAL DEVELOPMENT AND FOOD	1.970	17.576
		SUBTOTAL	**14.110**	**125.778**
		FnB FACILITIES		1.359
		AUDITORIUM		1.836
		TOTAL		**128.973**
			9,1	(m^2)/person
		PUBLIC / CULTURAL / ENTERTAINMENT FACILITIES	**13.899m^2**	

Figure E.3.9: Distribution of ministries and public bodies (Hellenic Republic, Ministry of National Economy and Finance 2024)

Greenery

As part of the redevelopment, the site is transformed into a large public park integrated with the new buildings. Implementing this park and connecting the library directly to this green landscape supports accessibility and contributes to improved mental health and wellbeing through proximity to open, restorative public space.



Figure E.3.10: Green Spaces (Hellenic Republic, Ministry of National Economy and Finance 2024)

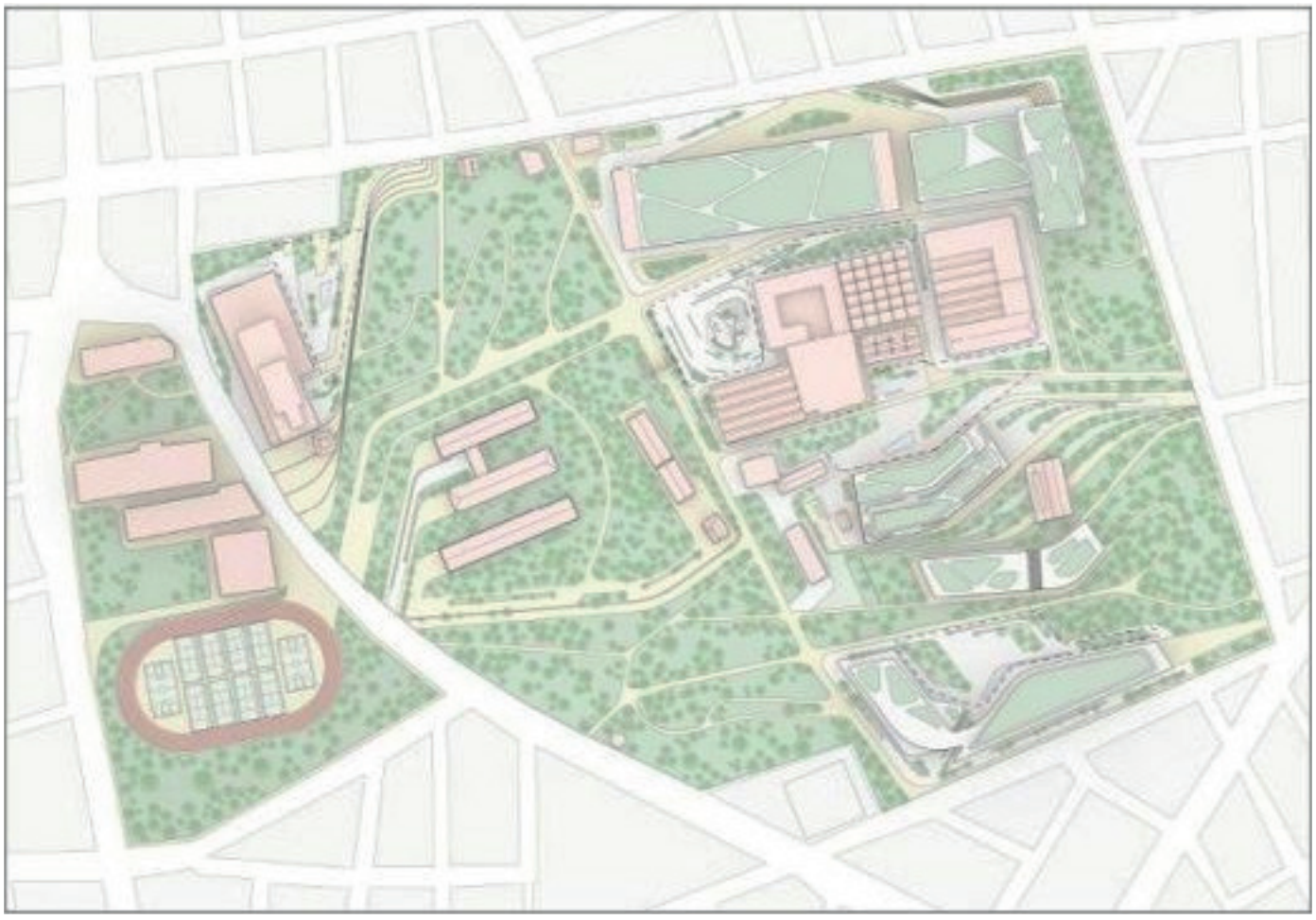


Figure E.3.11: PYRKAL plan for green areas (Paravantes 2021)

Paravantes, Maria. 2021. "'Ministry Park' Project to Free up Space in Athens for Public Housing." GTP Headlines, October 27, 2021. https://news.gtp.gr/2021/10/27/ministry-park-project-to-free-up-space-in-athens-for-public-housing/.



Figure E.3.12: Aerial Photo of PYRKAL plot and industrial facilities (Hellenic Republic, Ministry of National Economy and Finance 2024)



Figure E.3.13: PYRKAL industrial buildings to be demolished (Paravantes 2021)



Figure E.3.14: Photorealistic depiction of governmental park "Andreas Lentakis" (Hellenic Republic, Ministry of National Economy and Finance 2024)

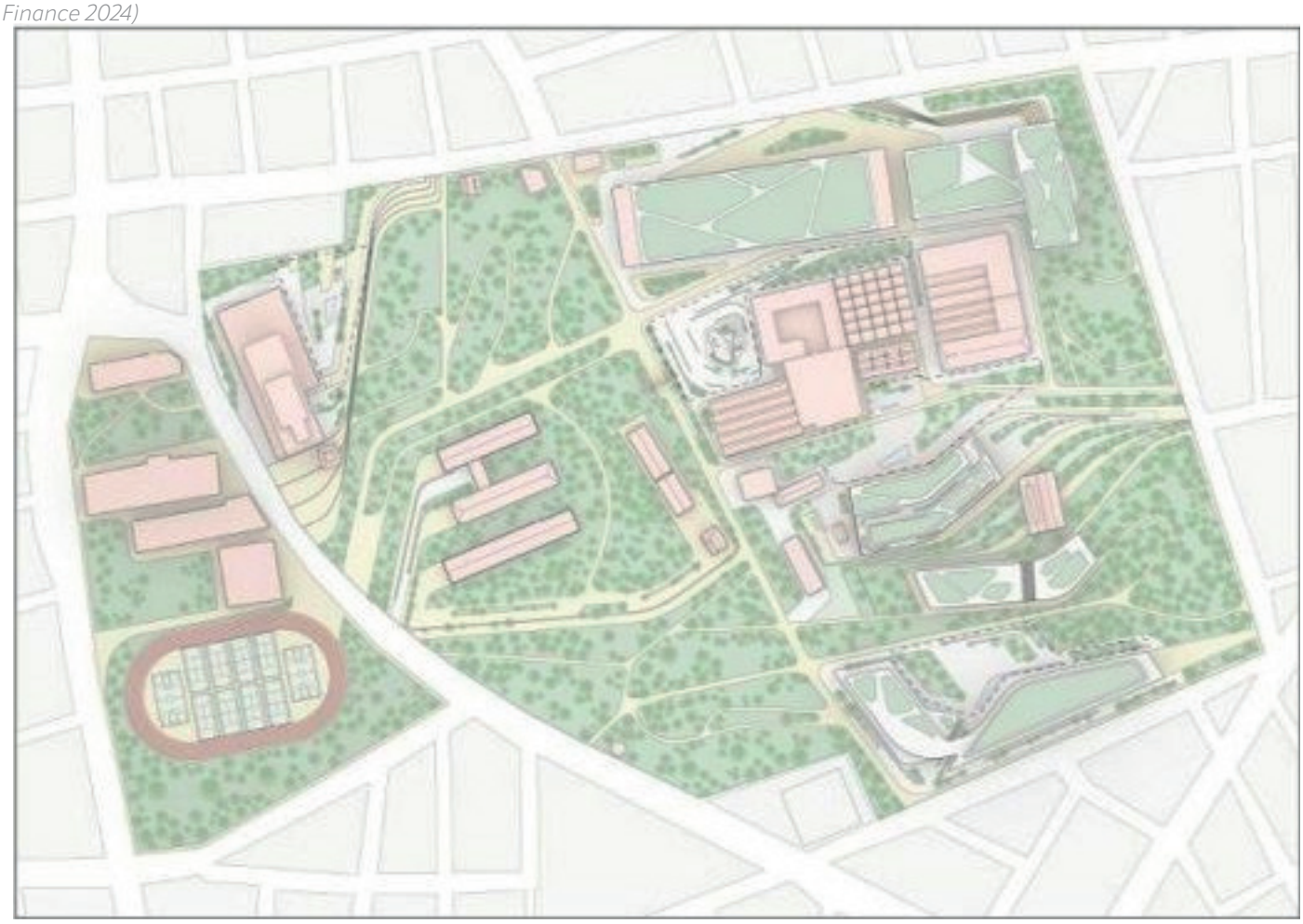


Figure E.3.15: PYRKAL plan for green areas (Paravantes 2021)

Appendix E.4: Pyrkal scale comparison

Forum (Groningen)



Eemhuis (Amersfoort)



Rozet (Arnhem)



To understand the scale of the Pyrkal site, I placed three precedent buildings within the site at the same scale. This comparison helps me assess how large the site is in relation to similar projects. It shows that the site is significantly larger than the precedent projects, requiring a masterplan approach to develop not only the library building but also its surrounding context.

Forum (Groningen)



Figure E.4.1: Scale comparison of the Forum (Groningen) building on the Pyrkal site

Eemhuis (Amersfoort)

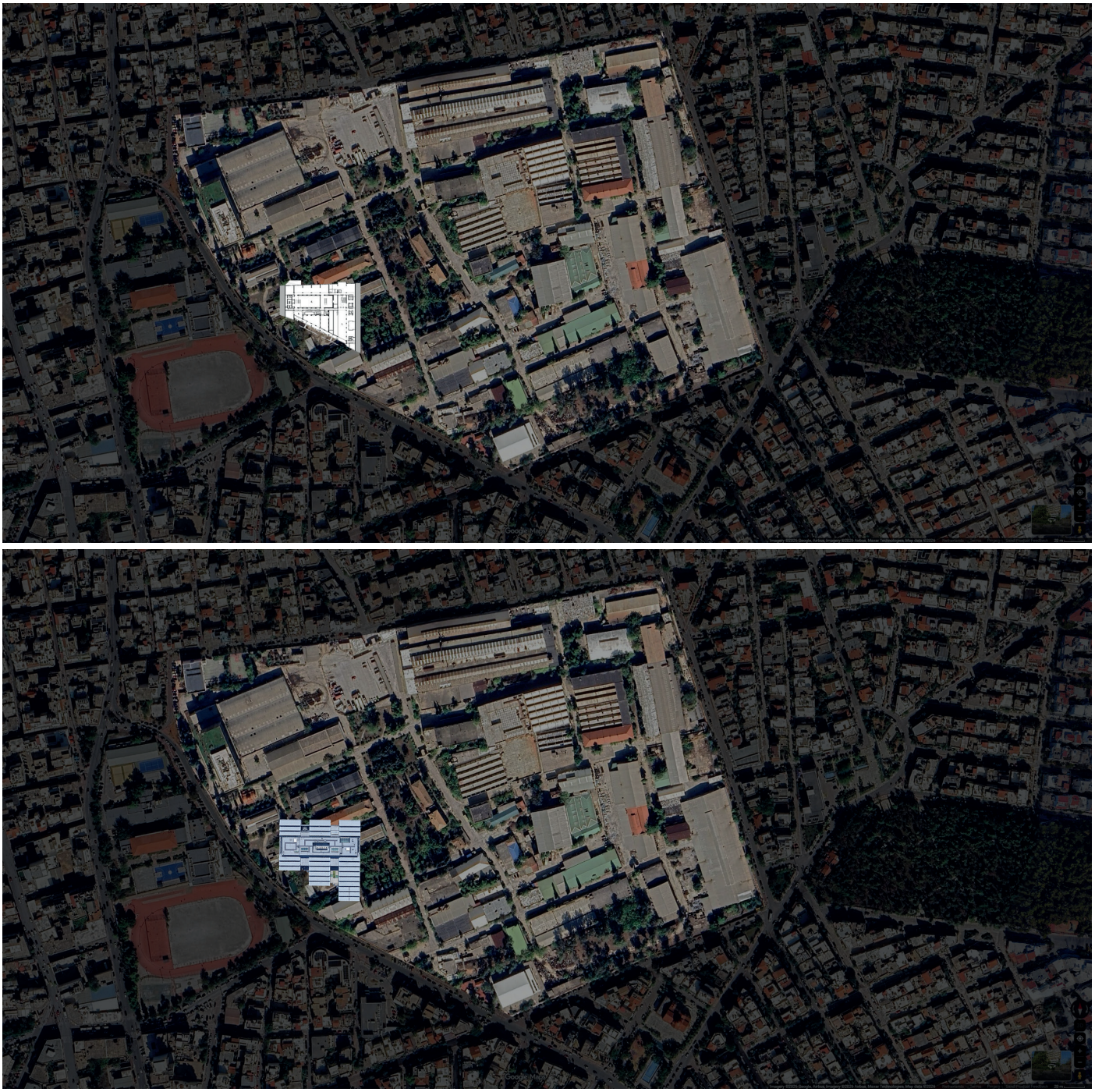


Figure E.4.1: Scale comparison of the Eemhuis (Amersfoort) building on the Pyrkal site

Rozet (Arnhem)

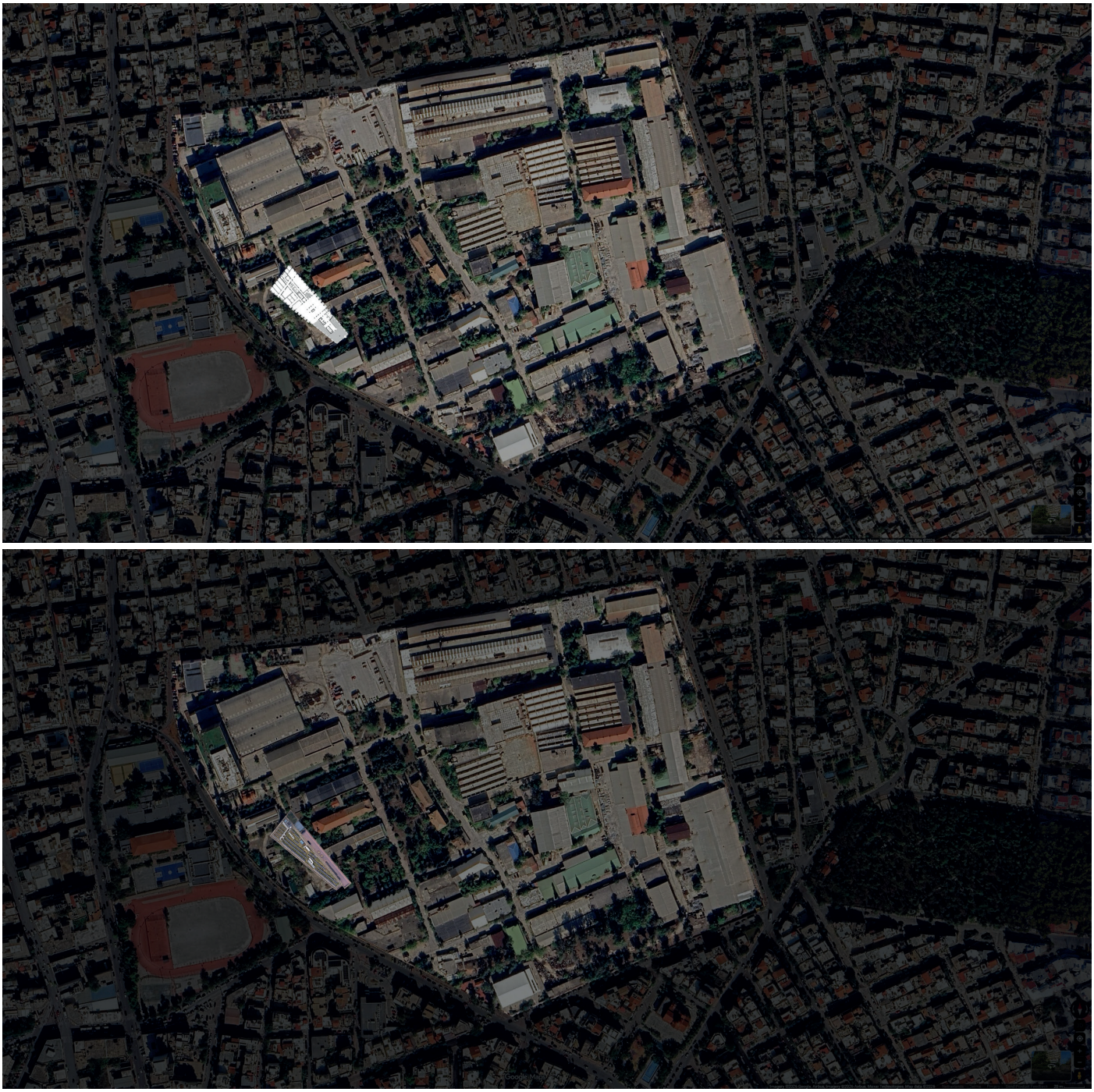


Figure E.4.1: Scale comparison of the Rozet (Arnhem) building on the Pyrkal site

Appendix E.5: Site decisions

Why Pyrkal as this project site?

For this thesis project, two possible sites in Athens were provided: Pyrkal and Plato's Academy Park. To determine which site was most suitable, I visited both locations, observed how they are used, analysed their surroundings, and researched the functions in the neighbouring areas. Based on this analysis, I selected Pyrkal for the following reasons.

The two most important considerations were the target group of the project (teens and young adults) and the character of the surrounding area. Pyrkal is located within a mixed urban environment containing schools, residential neighbourhoods, shops, restaurants, sports facilities, and public transport connections. As a result, the site is closely connected to a variety of public functions and facilities that are relevant to youth.

In contrast, Plato's Academy Park is located in a quieter environment, primarily surrounded by housing and industrial areas. While the park itself is well used, its surroundings offer fewer public facilities and destinations that could complement and support the proposed library programme. Pyrkal, therefore, provided a stronger context for the library institution.

Another reason for selecting Pyrkal was its potential for transformation. Through conversations with a user of Plato's Academy Park, I learned that the park is already valued and actively used by local residents. Pyrkal, by contrast, offers greater opportunities for improvement and the introduction of new public functions. This made it the more appropriate site for the ambitions of the project.

Why this location within Pyrkal?

The library is located on the southwest side of the Pyrkal site. This position provides direct visibility from the adjacent main road while remaining connected to the park landscape. The location is within walking distance of several schools, sports facilities, residential neighbourhoods, and the Dafni metro station. Together, these connections make the library easily accessible to a wide range of users, particularly teens and young adults. The transition from the busy urban edge to the quieter park environment also supports the project's ambition to create a gradual transition between active and reflective spaces.

Appendix F: Design research

Appendix F.1: Program research

Table F.1.1: Program (own work 2026)

Category	Space	Nr.	Approx. area per room		Approx. total area		Connected to	Daylight	Descr
Public, social 'living room'					1155	m^2			
	Entrance hall	1	200	m^2	200	m^2	Street	Yes	Inform
	Info desk	1	25	m^2	25	m^2	Entrance hall	Yes	Recep
	Cloakroom & lockers	1	30	m^2	30	m^2	Entrance hall	No	
	Exhibition & event space	1	200	m^2	200	m^2	Entrance hall	Yes	Flexib event litera
	Public living room	1	150	m^2	150	m^2	Entrance hall, restaurant	Yes	
	Restaurant	1	300	m^2	300	m^2	Library, street	Yes	Main Acces use.
	Kitchen	1	40	m^2	40	m^2	Restaurant	Yes	Food
	Bar	1	25	m^2	25	m^2	Restaurant	Yes	Drinks
	Multipurpose event space	1	40	m^2	40	m^2	Restaurant	Yes	To org
	Public toilets	3	40	m^2	120	m^2		No	
	Coffee shop	1	25	m^2	25	m^2	Park	Yes	For co
Collective education					2760	m^2			
	Library	1	1500	m^2	1500	m^2	Entrance hall	Yes	Libra
	Study spaces	1	250	m^2	250	m^2	Library	Yes	Share
	Lecture & workshop spaces	6	60	m^2	360	m^2	Library	Yes	Flexib Supp perso Adap
	Group session rooms	2	30	m^2	60	m^2	Library	Yes	Smal
	Quiet retreat	1	150	m^2	150	m^2	Library	Yes	Low-s
	Social retreat	1	150	m^2	150	m^2	Library	Yes	Inform
	Mind retreat (silent study)	1	150	m^2	150	m^2	Library	Yes	Quiet
	Body retreat (movement & meditation)	1	100	m^2	100	m^2	Library	Yes	Spac Flexib
	Changing room	2	20	m^2	40	m^2	Body retreat	No	Chan
Individual education					350	m^2			
	Help desk	2	10	m^2	20	m^2	Entrance, library	Yes	Recep
	Quiet booths	12	6	m^2	72	m^2	Library	Yes	Indivi
	Private group space	8	12	m^2	96	m^2	Library	Yes	Smal study
	Consultation room	8	12	m^2	96	m^2	Library	Yes	For in- Desig For co
Mental health professionals					275	m^2			
	Shared professionals offices	1	150	m^2	150	m^2		Yes	Share super
	Meeting rooms	3	25	m^2	75	m^2	Shared office workspace	Yes	
	Confidential archive	1	25	m^2	25	m^2	Shared office workspace	No	
	Toilets (professionals)	1	25	m^2	25	m^2		No	
Library staff					444	m^2			
	Shared staff office workspace	1	150	m^2	150	m^2		Yes	Share mana

ription
nal arrival, info point, seating, views into main stair/living room
otion/support to help people who need information
ole space for temporary exhibitions, presentations, workshops, and community ts. Supports student work, community projects, and topics related to mental health cy and well-being.
public gathering space for informal learning, social interaction, reading, waiting, etc. ssible café-restaurant supporting informal meetings, eating, studying, and everyday
preparation for the restaurant
s preparation for the restaurant
ganise group activities and to rent by people
offee to go, no seating.
ry collection focused on mental health literacy, well-being, and related subjects.
d tables, quiet-ish. Good light.
ole rooms for lectures, workshops, courses, peer mentoring, and group learning.
ort activities related to mental health literacy, emotional well-being, life skills, and onal development.
table to both formal and informal learning settings.
l-group learning, discussion, peer support, and study sessions.
stimulus space for sensory regulation, reading, reflection, and rest.
mal retreat space for conversation, social connection, and peer support.
t study and reflection space for focused individual work.
e for yoga, meditation, mindfulness, and gentle movement.
ole open floor area supporting relaxation, self-regulation, and well-being.
ging facilities for retreat, yoga, and movement activities.
otion/support to help people who need information
dual acoustic spaces for reflection, reading, studying, or quiet retreat.
l enclosed room for private conversations, peer support, mentoring, or small-group y.
-person conversations with a professional.
ned to provide accessible, low-threshold support without clinical atmosphere.
onsultations, guidance, referrals, and short-term support.
d workspace for mental health professionals (psychologists, youth workers, peer coordinators, visor, intake coordinator).
d workspace for librarians, programme coordinators, education coordinators, event gers, receptionists, and support staff.

	Staff meeting rooms	2	25	m^2	50	m^2	Shared office workspace	Yes	
	Staff cafeteria	1	60	m^2	60	m^2		Yes	
	Staff cloakroom & lockers	1	25	m^2	25	m^2		No	
	Toilets (staff)	1	25	m^2	25	m^2		No	
	Staff offices	2	12	m^2	24	m^2		Yes	For di
	Admin support room	1	50	m^2	50	m^2		Yes	Works
	Technical staff	1	40	m^2	40	m^2		Ues	Works
	Security office	1	20	m^2	20	m^2	Entrance hall	Yes	
Services & infrastructure					3598	m^2			
	Book sorting	1	70	m^2	70	m^2	Library	No	
	Main circulation	1	3000	m^2	3000	m^2		Yes	Centra
	Vertical elevator core	1	30	m^2	30	m^2	Entrance	No	
	Technical rooms	1	300	m^2	300	m^2		No	HVAC
	Restaurant storage	1	10	m^2	10	m^2	Restaurant	No	For fo
	Restaurant cold storage	1	8	m^2	8	m^2	Café storage	No	Heavi
	General storage	1	100	m^2	100	m^2		No	
	Event storage	1	40	m^2	40	m^2		No	
	Waste room	1	40	m^2	40	m^2		No	
	Bike parking	1	200	m^2	200	m^2		No	Above
	Car parking	1	1000	m^2	1000	m^2	Vertical elevator core	No	Under
Outside				m^2	1080	m^2			
	Entrance access	1	80	m^2	80	m^2	Entrance hall		
	Terrace	1	200	m^2	200	m^2	Restaurant		Part o
	Loading area	1	200	m^2	200	m^2	General storage		
	Sensory garden	1	600	m^2	600	m^2			Lands seaso
	Park	1		m^2		m^2			
	TOTAAL				9936	m^2			

rector, HR
space for administrative support (finance, HR, planning, program assistant).
space for facility manager, IT technician, maintenance person.

al stairs, staircases, paths, and transition spaces.

, etc.
od & drinks.
ly insulated.

e ground & underground
rground

f the public realm, shaded seating, bleachers/steps

scape designed to support sensory experience through planting, materiality, light, and
onal change.

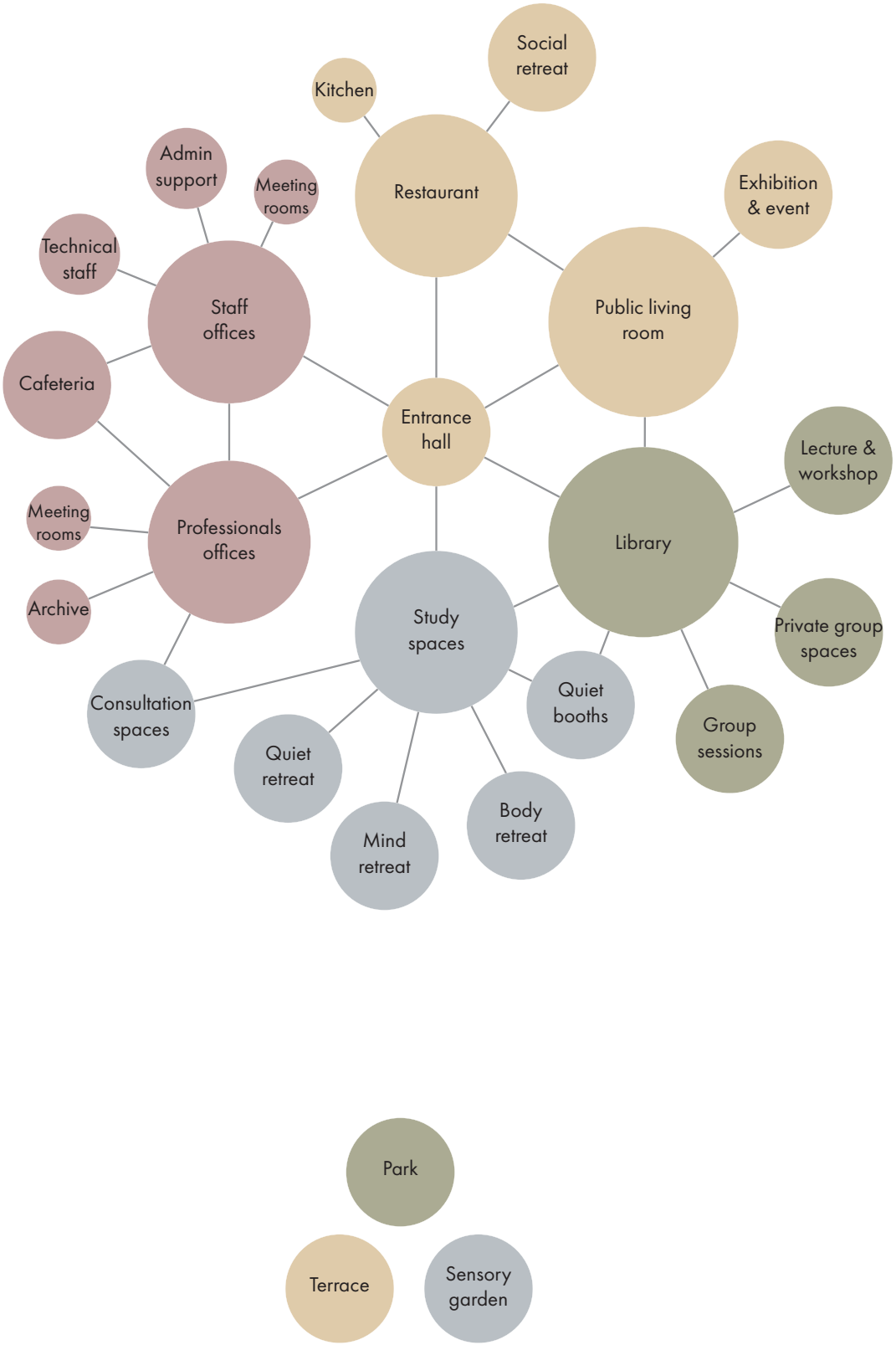


Figure F.1.1: Bubble diagram of the program (own work 2026)

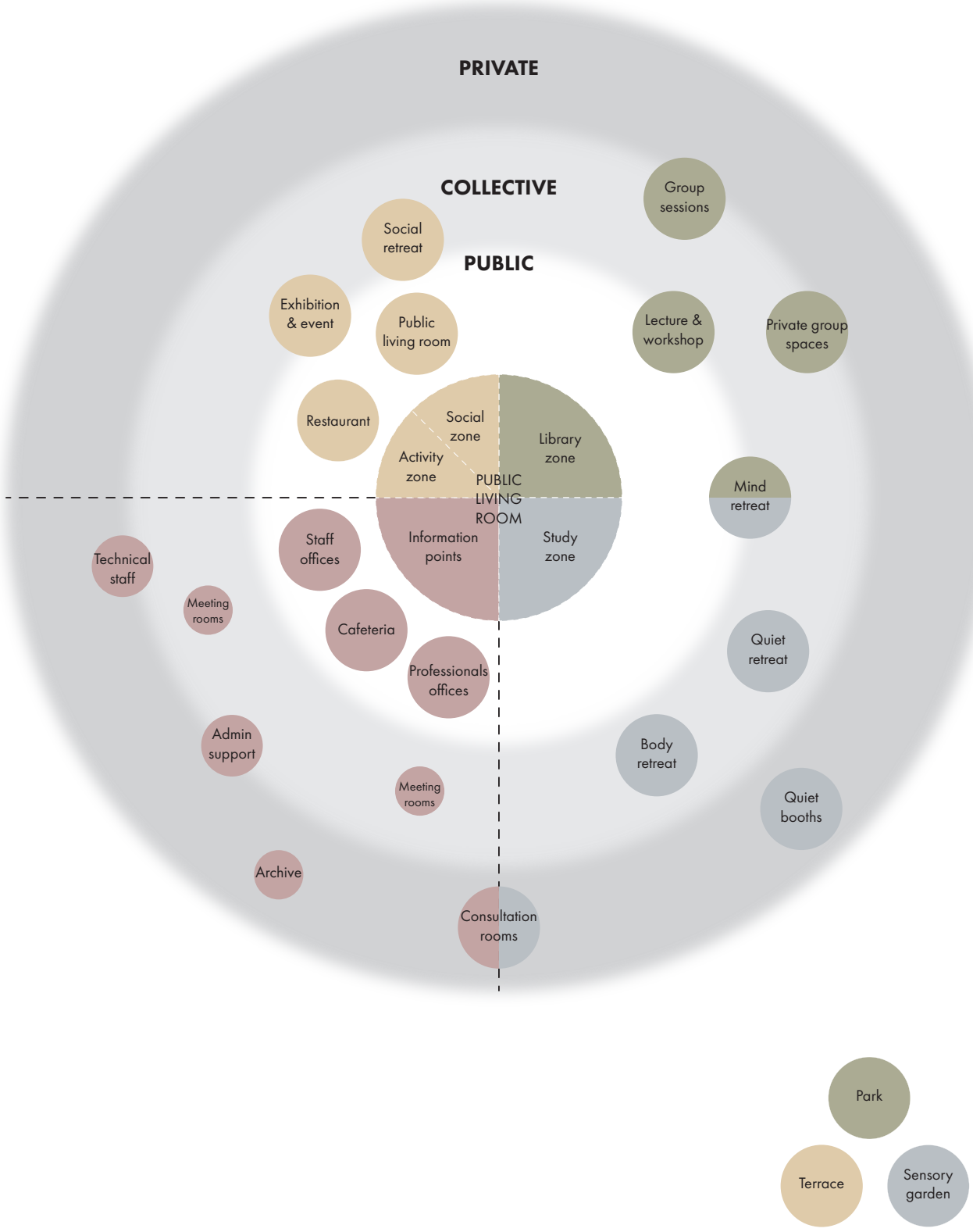
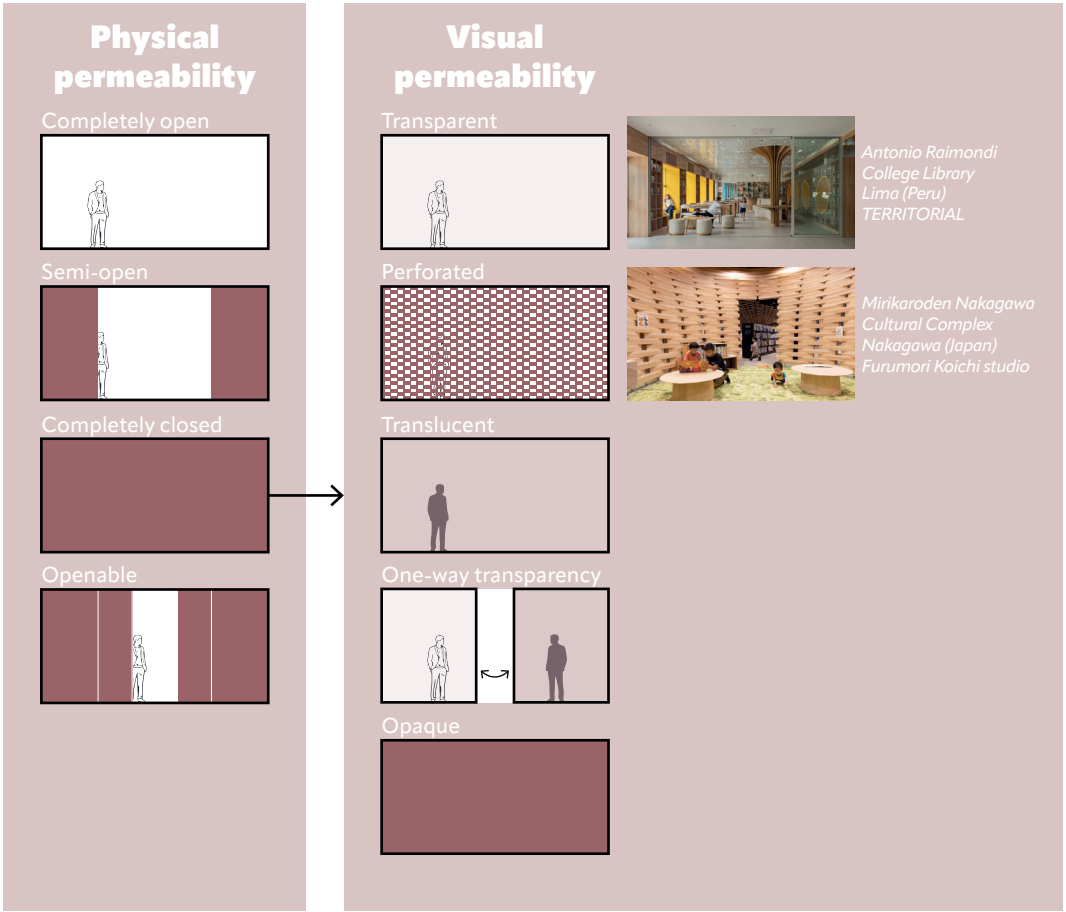


Figure F.1.2: Different levels of publicness of the building program (own work 2026)

Appendix F.2: Threshold research

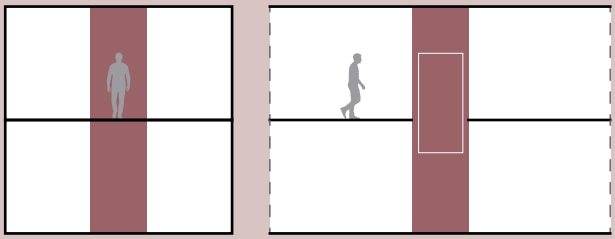
This appendix explores thresholds as moments of transition between distinct spaces. It demonstrates how these transitions can be articulated not only through doors and walls, but also through more subtle boundaries such as changes in floor level, materiality, and furniture.

WALL BOUNDARY TYPES

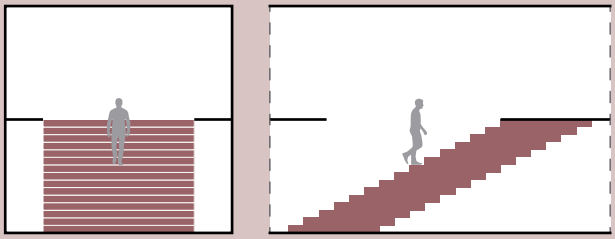


VERTICAL TRANSITIONS

Elevator



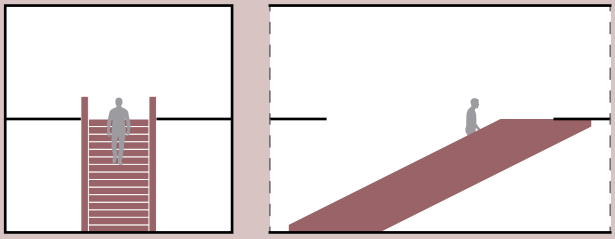
Stairs





Pingtung Public Library
Pingtung city (Taiwan)
MAYU architects

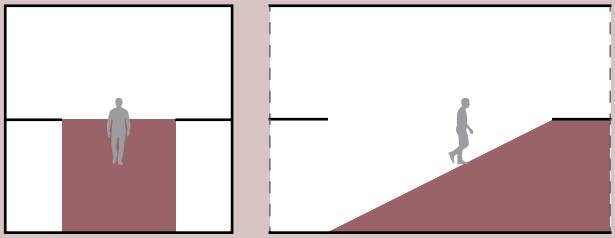
Escalator

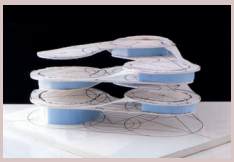




Forum Groningen
Groningen (The Netherlands)
NL Architects

Ramp

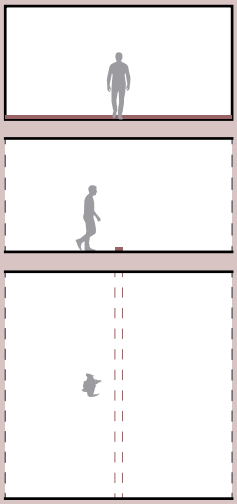




Mercedes-Benz Museum
Stuttgart (Germany)
UNStudio

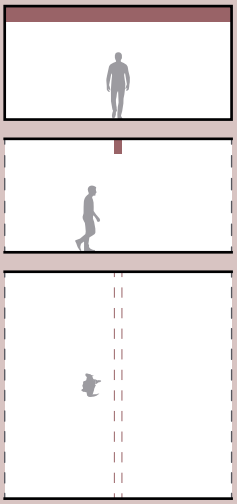
OPEN BARRIERS

Sill



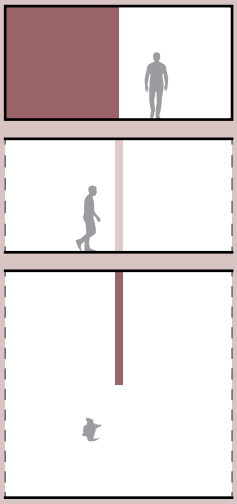
Pingtung Public Library
Pingtung city (Taiwan)
MAYU architects

Beam



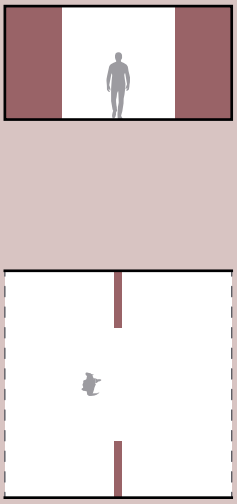
Wall constriction

One-sided

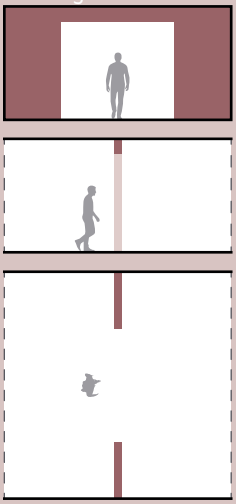


School of the Art Institute of
Chicago Flaxman Library
Chicago (USA)
Kwong Von Glinow

Two-sided



Rectangular

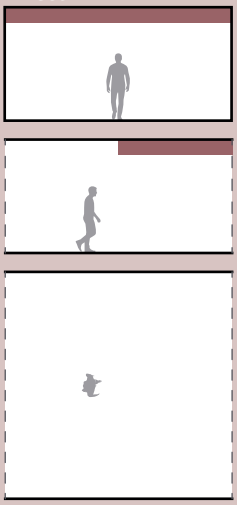


Pingtung Public Library
Pingtung city (Taiwan)
MAYU architects

MORPHING SPACE - VERTICAL

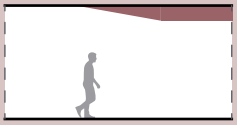
Morphing ceiling

Direct



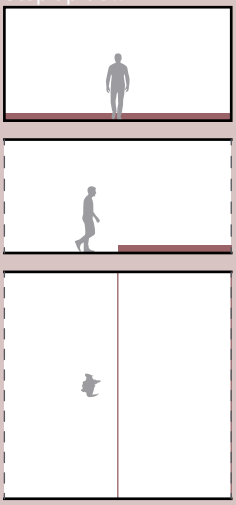
Pingtung Public Library
Pingtung city (Taiwan)
MAYU architects

Sloped



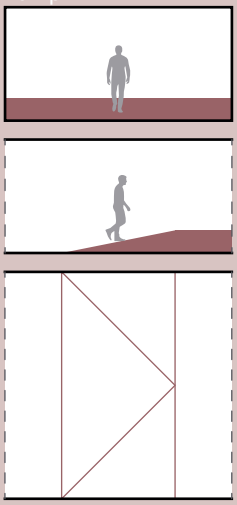
Morphing floor

Step up/down

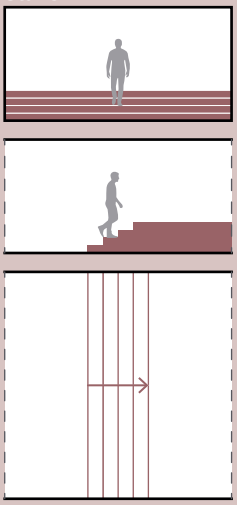


Pingtung Public Library
Pingtung city (Taiwan)
MAYU architects

Ramp



Stairs



Culture House Eemhuis
Amersfoort (The Netherlands)
Neutelings Riedijk Architects

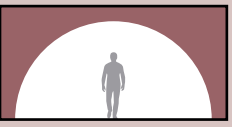
Large st



Antonio R
Library
Lima (Peru
TERRITOR

Gate

Arched





Tama Art University Library
Tokyo (Japan)
Toyo Ito

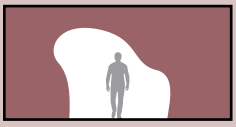
Circular





Tomba Brion
San Vito d'Altivole (Italy)
Carlo Scarpa

Free form

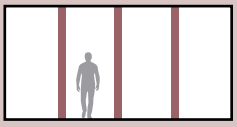


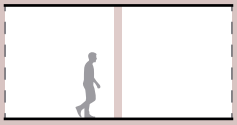


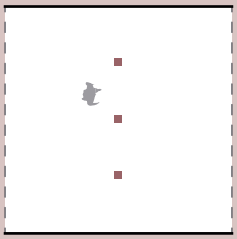
Vennesla Library and
Culture House
Vennesla (Norway)
Helen & Hard

Columns

Colonnade









Zappeion
Athens (Greece)

Arched colonnade





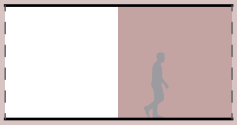
Ekklisia Evaggelismou tis
Theotokou kai Agias Fotinis
Athens (Greece)

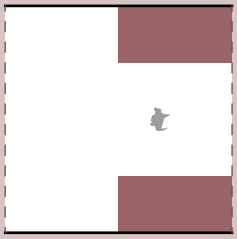
MORPHING SPACE - HORIZONTAL

Morphing wall

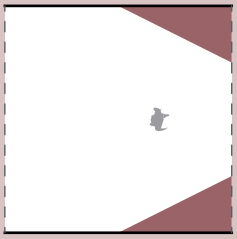
Direct



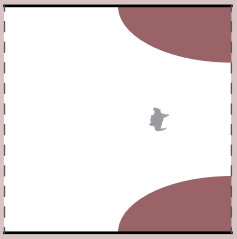




Oblique



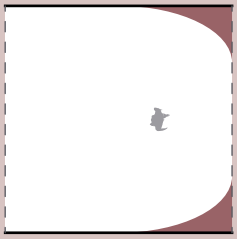
Curved outward





Rolex Learning Center
Lausanne (Switzerland)
SANAA

Curved inward



CLOSED BARRIERS

Door

Single door

Double door



Naver Library
Bundang (South Korea)

LOW BARRIER

Low wall

Hill



Rolex Learning Center
Lausanne (Switzerland)
SANAA

MATERIALITY

MOVABLE BOUNDARIES

Sliding doors/ folding walls



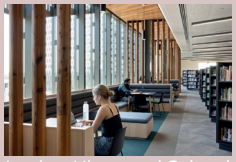
Alta Diagonal building
Barcelona (Spain)
BAAS arquitectura

Curtains



Mirikaroden Nakagawa Cultural Complex
Nakagawa (Japan)
Furumori Koichi studio

Screens



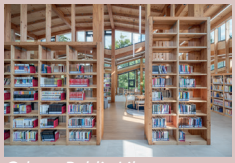
Ivanhoe Library and Cultural Hub
Melbourne (Australia)
Croxon Ramsay Architects

FURNITURE BOUNDARIES

Fur

Shelves

Counter

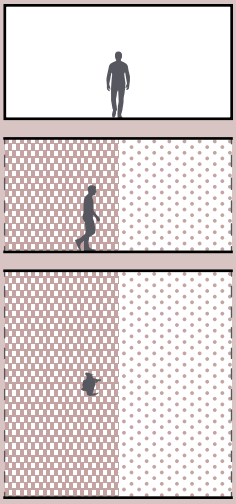


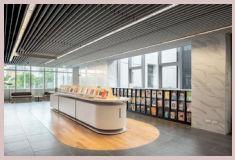
Odong Public Library
Seongbuk District (South Korea)
UnSangDong Architects



Gabrielle-Ro
Quebec city
Saucier + Pe
& GLCRM ar

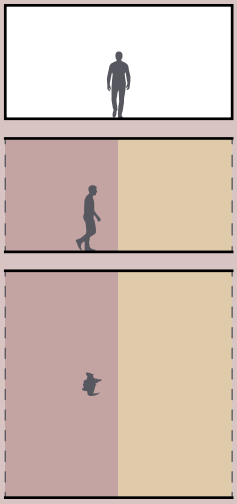
Material





Pingtung Public Library
Pingtung city (Taiwan)
MAYU architects

Colour

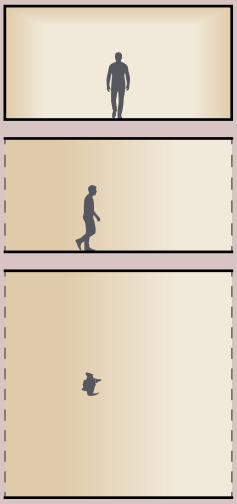




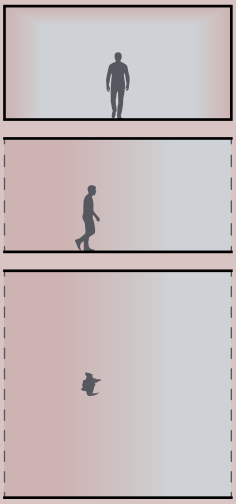
Kirkkonummi Library
Kirkkonummi (Finland)
JKMM Architects

CLIMATE

Light

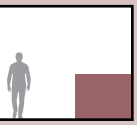


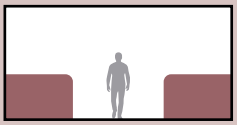
Temperature

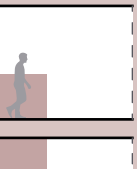


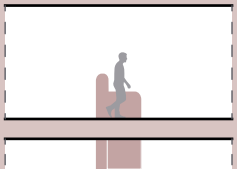
niture

Benches













y Library
(Canada)
rrotte architects
chitectes

Gabrielle-Roy Library
Quebec city (Canada)
Saucier + Perrotte architects
& GLCRM architectes

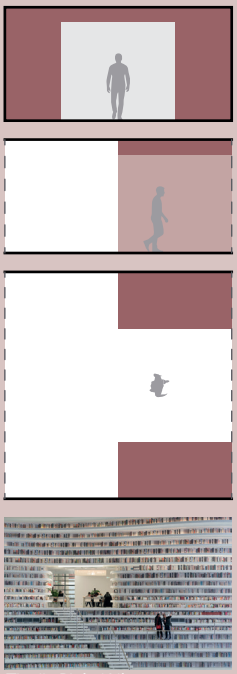
Combinations

Transitions can occur simultaneously or in sequence, creating layered spatial experiences that range from subtle, gradual boundaries to more distinct and defined separations.

COMBINATIONS

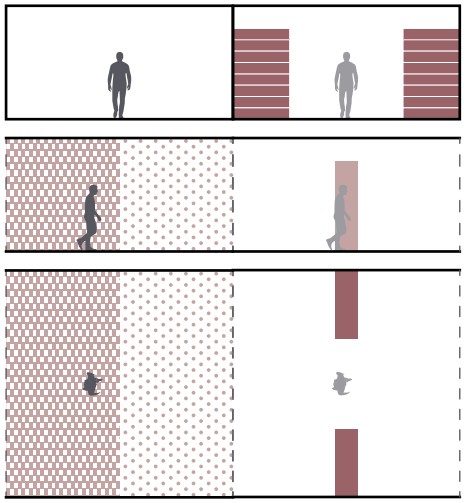
Simultaneously

Morphing horizontal & vertical



Tianjin Binhai Library
Tianjin (China)
MVRDV & Tianjin Urban Planning and Design Institute

In sequence





Mirikaroden Nakagawa Cultural Complex
Nakagawa (Japan)
Furumori Koichi studio

Appendix F.3: Design concept studies

This appendix presents sketches, diagrams, and concept models that document the development of the design throughout the project.

Concept sketches

The concept sketches explore different ways of integrating private spaces within a public library environment. Through drawings and diagrams, ideas of publicness, privacy, visibility, and movement were tested. The sketches investigate how to organise collective and individual spaces, leading to ideas for concepts, like “private but not hidden” spaces.

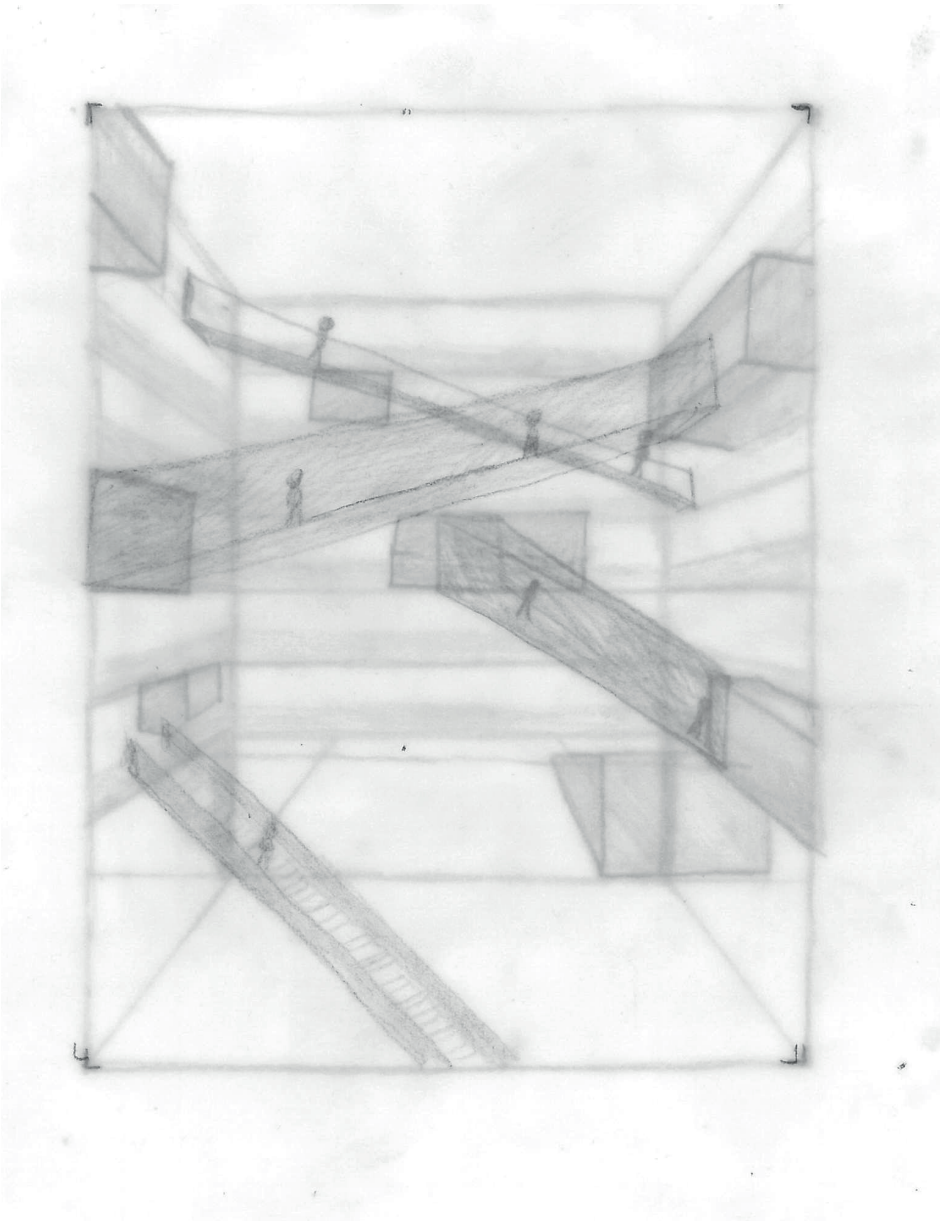


Figure F.3.1: Sketch of private but no hidden network (own work 2026)

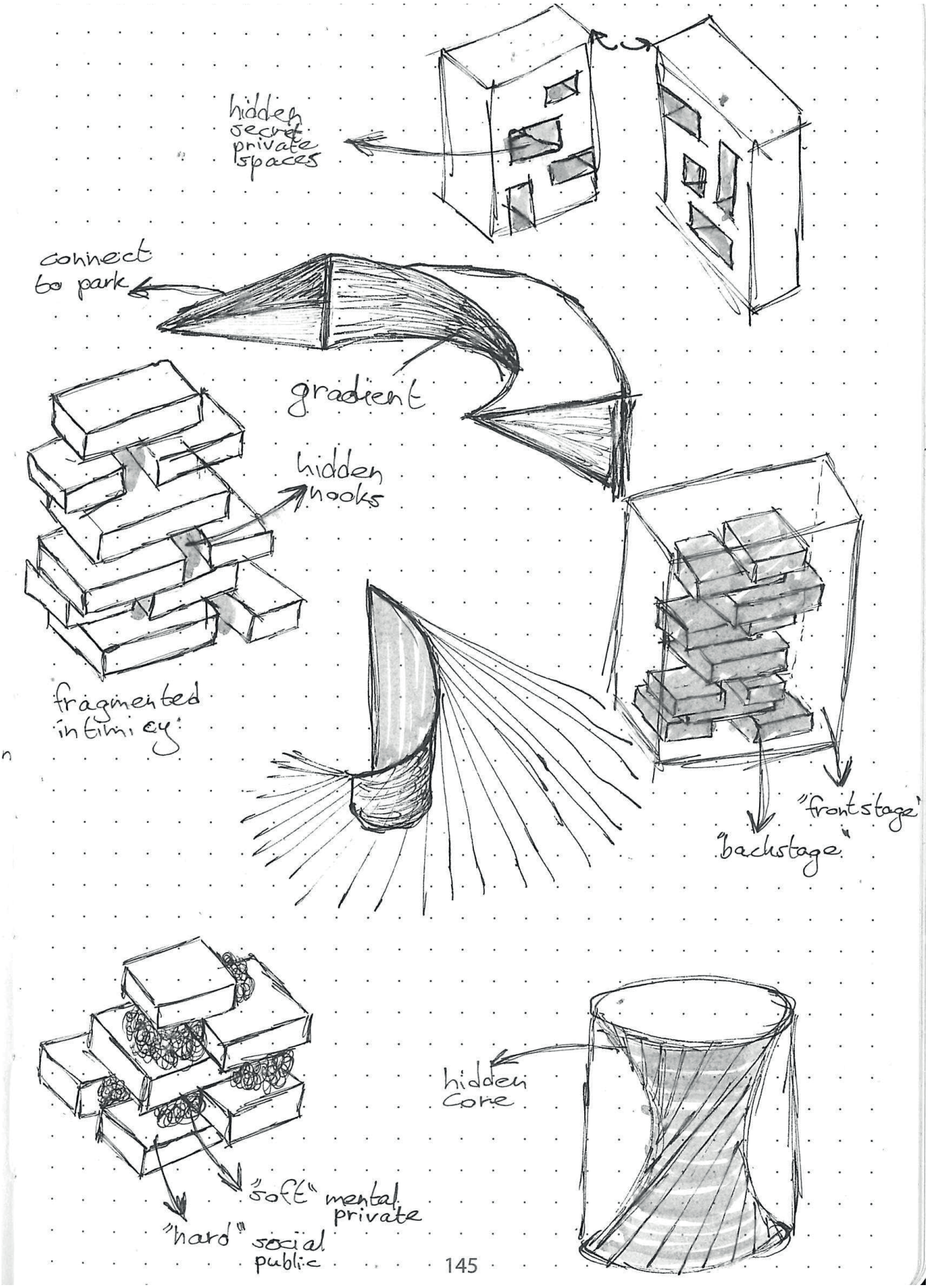
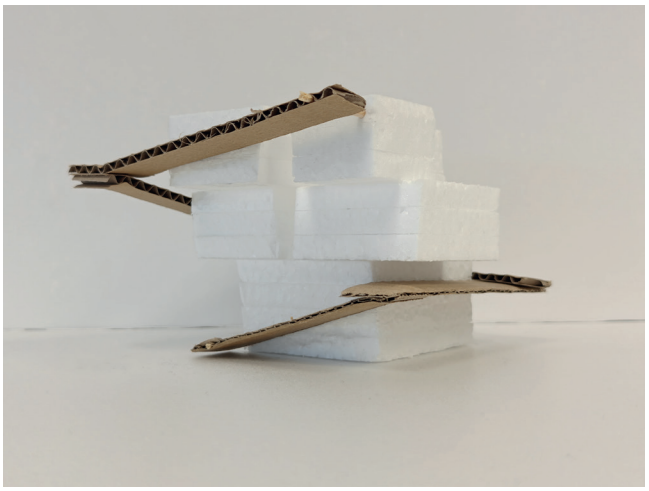
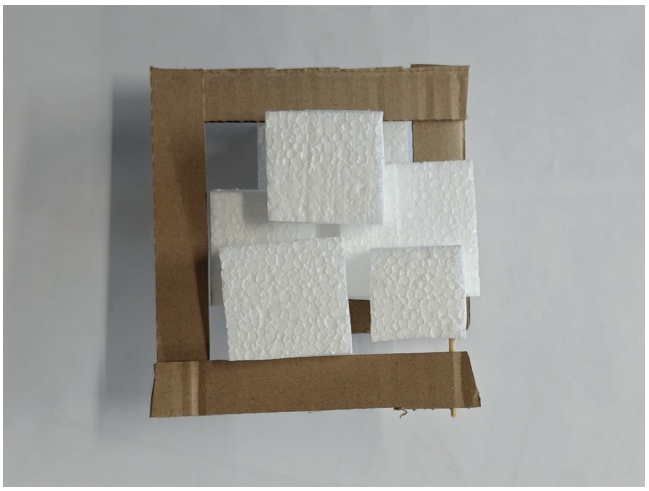


Figure F.3.2: Concept sketches (own work 2026)

Concept models

A series of physical concept models was used to test spatial organisation, privacy strategies, circulation, and building form. Each model explores a different concept idea, including the relationship between public and private spaces, the integration of secluded areas within collective environments, and the development of a circulation route through the building. Together, the models document the iterative design process that informed the final architectural concept.





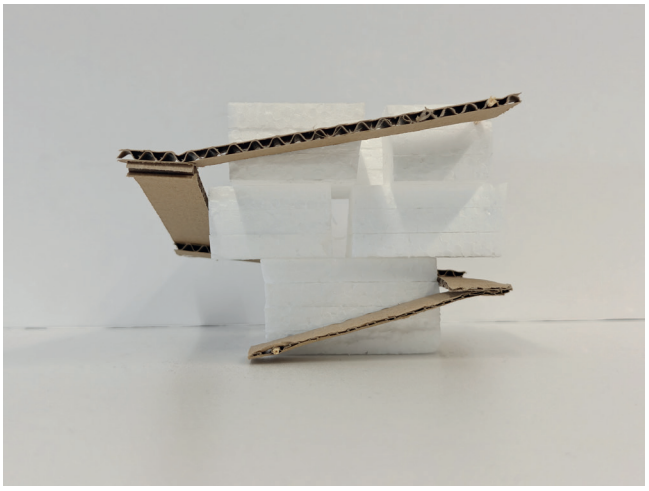
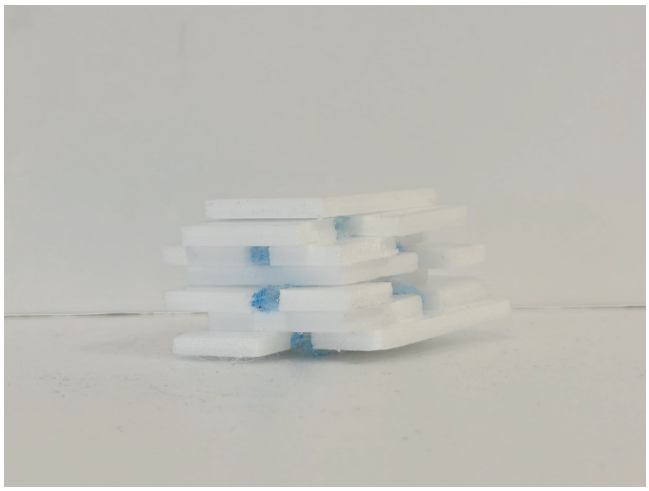


Figure F.3.3: Concept model: public around private (Chalmers Ong 2026)





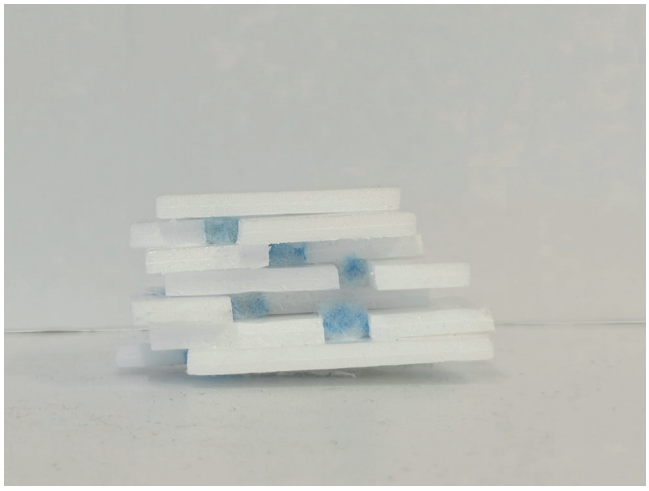
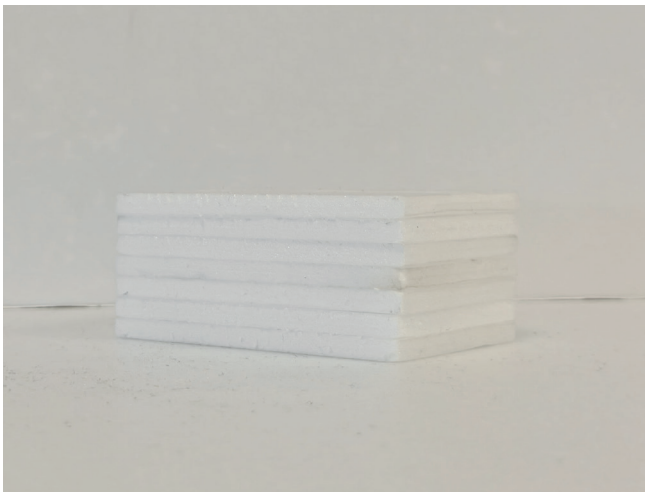
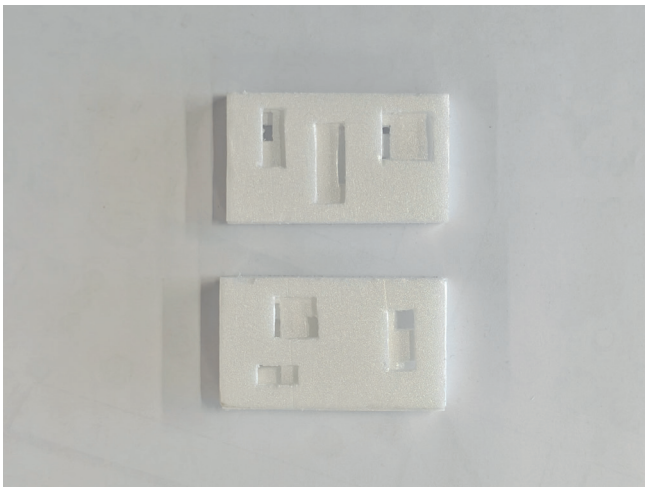


Figure F.3.4: Concept model: private nooks (own work 2026)









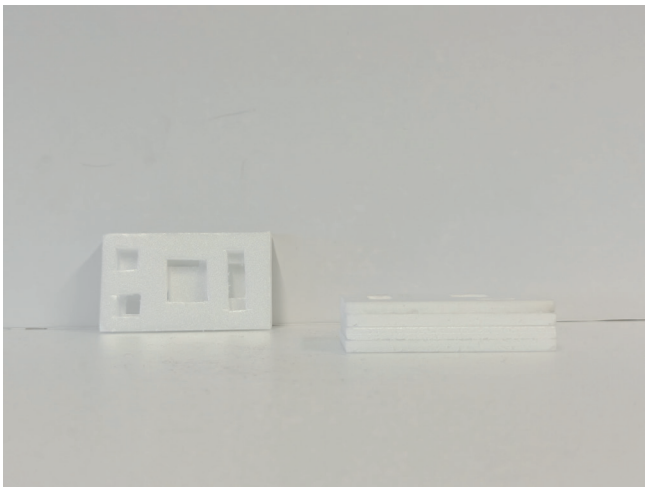




Figure F.3.5: Concept model: hidden spaces (own work 2026)

Figure F.3.6: Concept model: secure, private core (own work 2026)

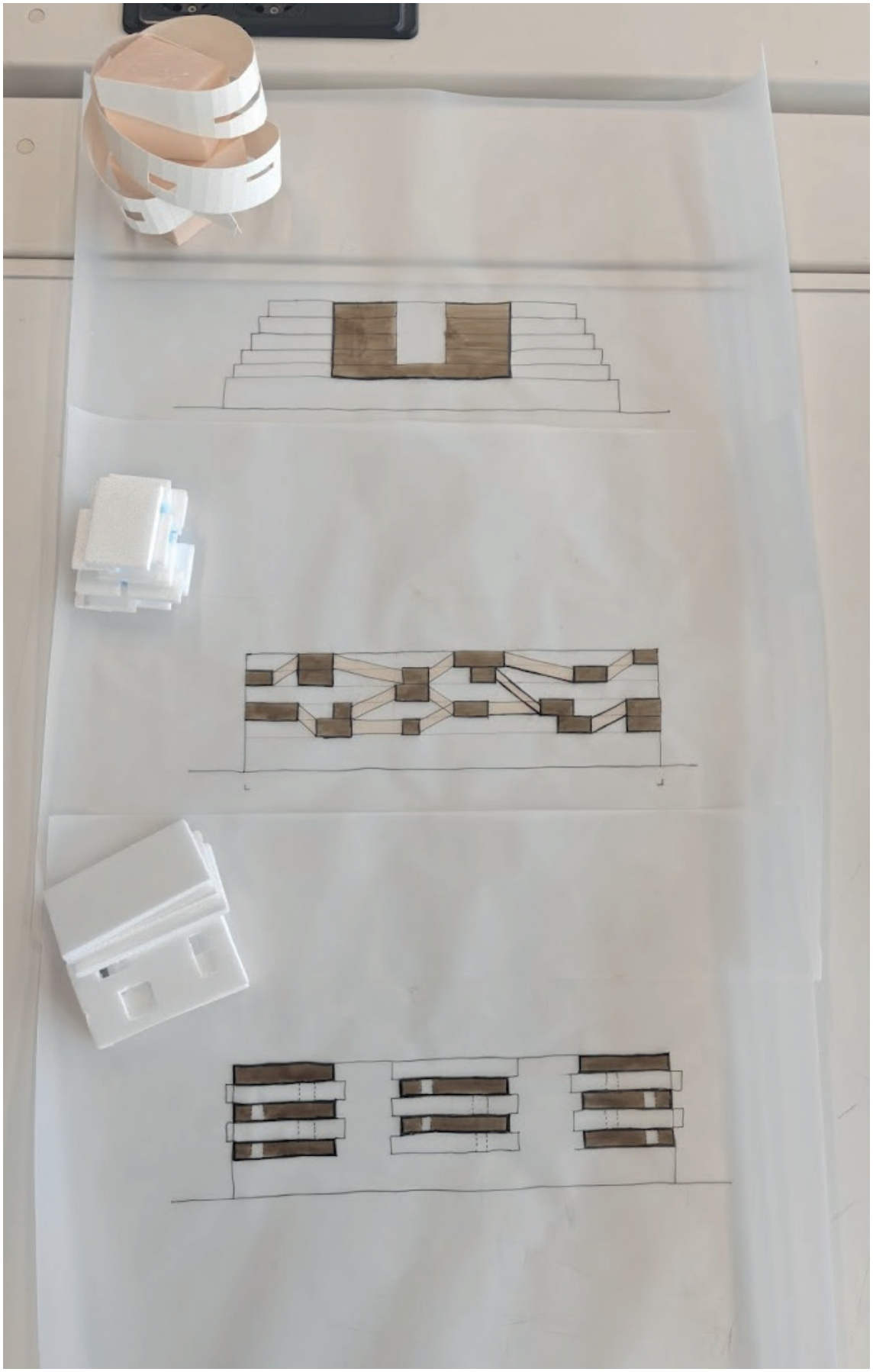
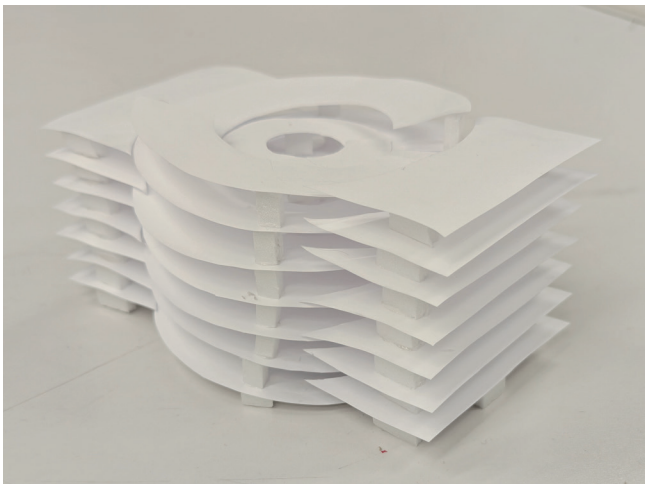
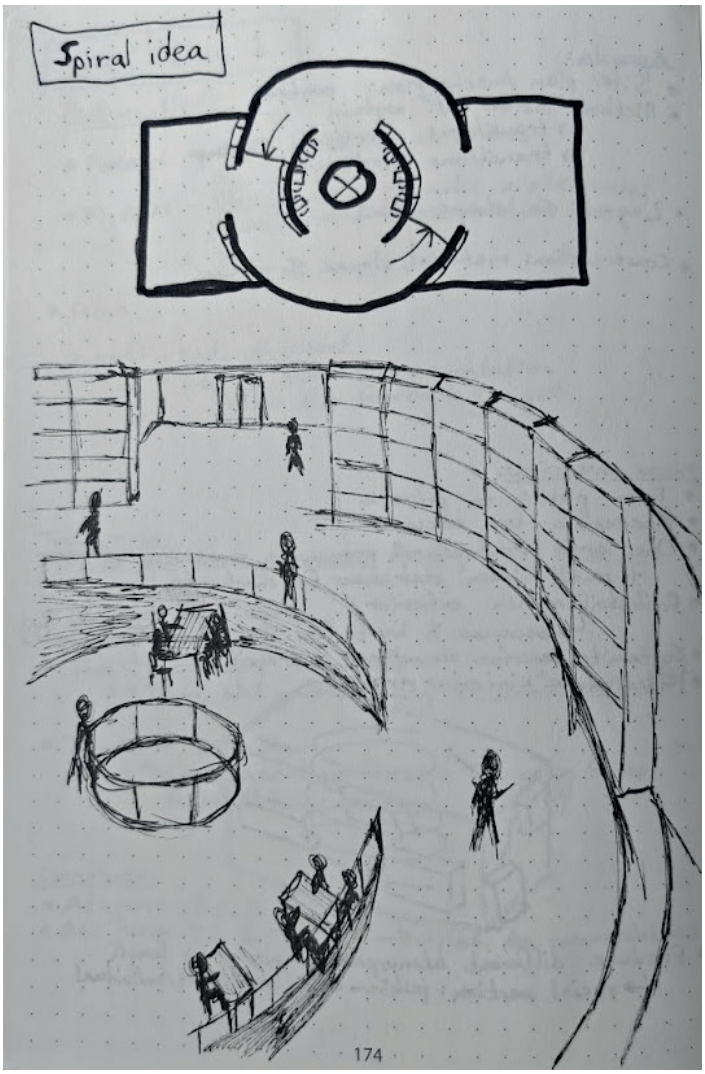
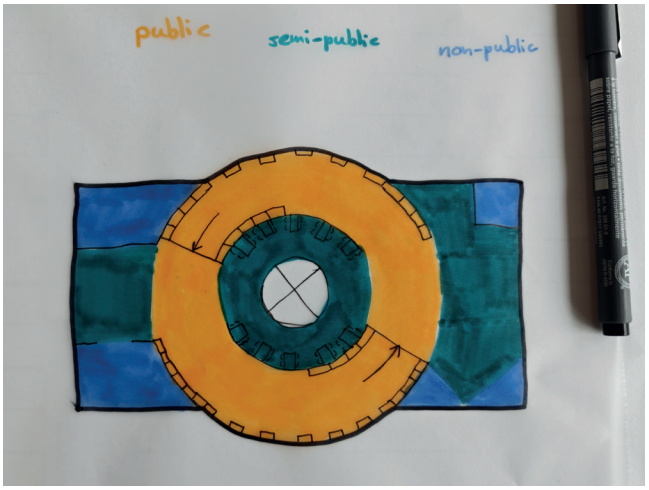


Figure F.3.7: Drawings of the concept models (own work 2026)







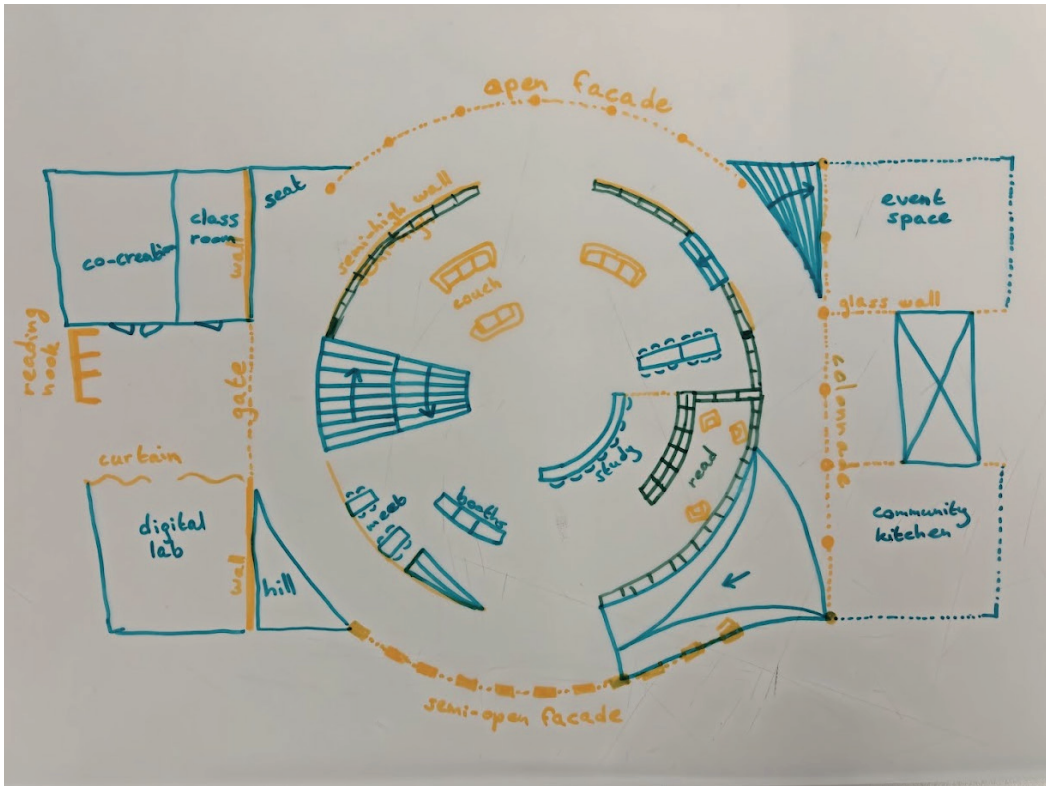


Figure F.3.8: Models & drawing of the 'spiral design' idea (own work 2026)

Appendix G: Design

Appendix G.1: Masterplan design

This appendix explains the design of the masterplan.

Masterplan

In the masterplan, existing heritage buildings are preserved and integrated into the overall design.

The design prioritises pedestrians by creating a network of walking paths across the site, connecting key destinations such as schools, sports facilities, public spaces, and the library. The building is placed at the intersection of these routes, acting as a central meeting point.

Car traffic is minimised by removing on-site roads and providing underground parking.

Green spaces, trees, and open areas are integrated throughout the site to support well-being, encourage outdoor use, and connect the park into one coherent landscape.

Preservation & demolishing

The municipality has provided a masterplan for the development of the Pyrkal area into a ministerial park (Appendix E.3). This plan is not directly applied, as it does not align with the concept of this project. However, research from this report informed two decisions:

- Buildings with heritage value are preserved.
- The strong connection to Dafni station is maintained and strengthened.

Connecting to the surroundings

The library building is about mental health literacy for youth. This lead to the following choices in the masterplan design:

- As the library primarily serves youth (ages 12–25), the design prioritises walking and public transport (Appendix F.1).
- Car access is limited to essential service routes, with parking located underground.
- The library is positioned at the intersection of main pedestrian routes, connecting schools (yellow), residential areas, and public facilities (red) through the shortest paths.
- Its central location allows it to act as a meeting point between different users and urban flows.
- The connection to Dafni metro station links the site to students across Athens.
- To strengthen the relationship between mental and physical well-being, the site connects to the basketball hall in the south and the public sports facilities in the west.
- Based on traffic research, the existing car road on the west side is transformed into a pedestrian route, strengthening the connection to the sports facilities.
- The site is connected to more lively commercial areas in the southwest and northeast, increasing activity, visibility, and accessibility.
- As research shows that nature has a positive effect on mental well-being, green spaces are introduced across the site. These connect the park in the east, the library, the sports facilities in the west, and the surrounding neighbourhoods.

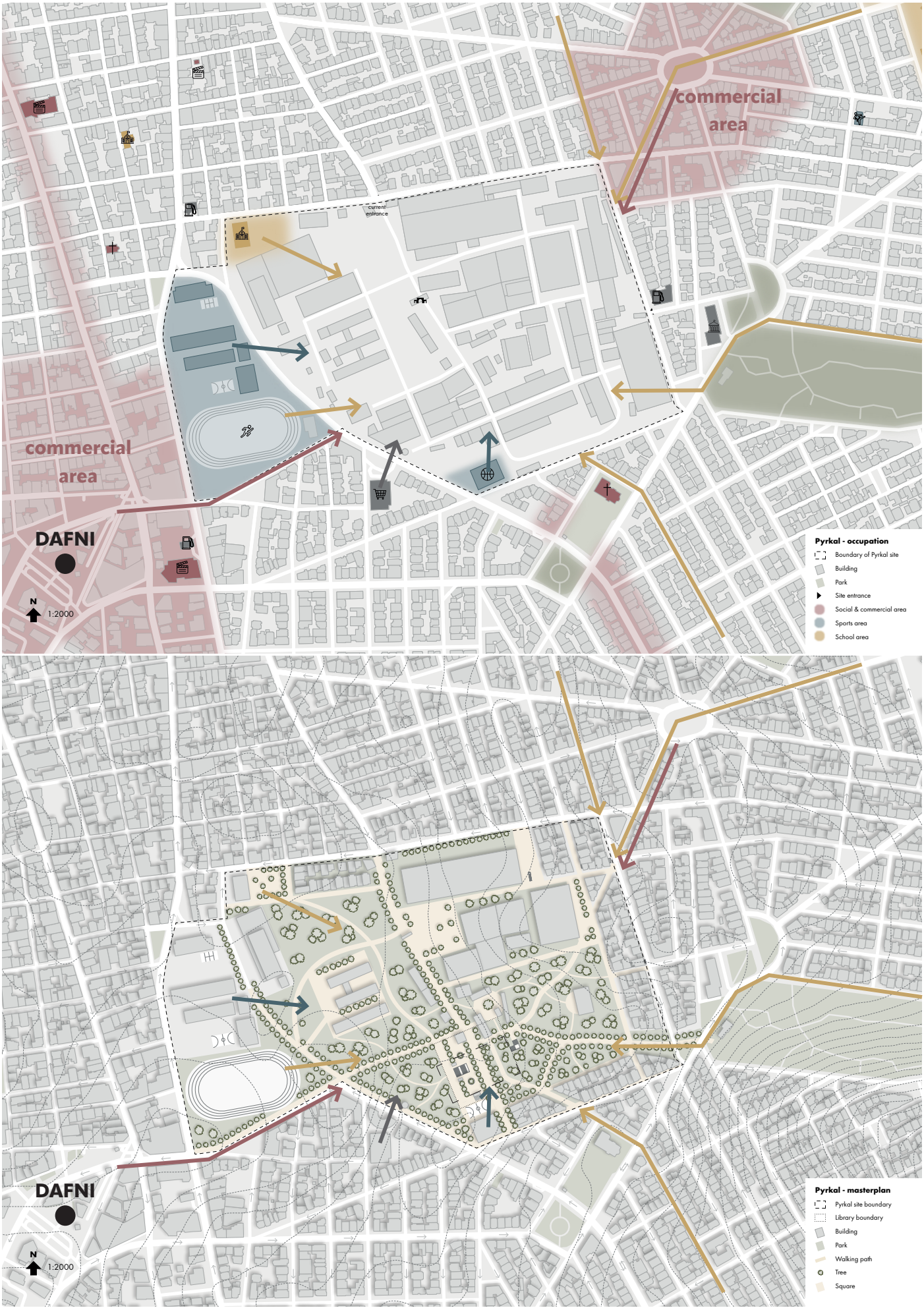


Figure G.1.1: Masterplan of Pyrkal in Athens - connections to the surroundings (1:2000 scaled) (own work 2026)



Figure G.1.2: Masterplan of Pyrkal in Athens (1:2000 scaled) (own work 2026)

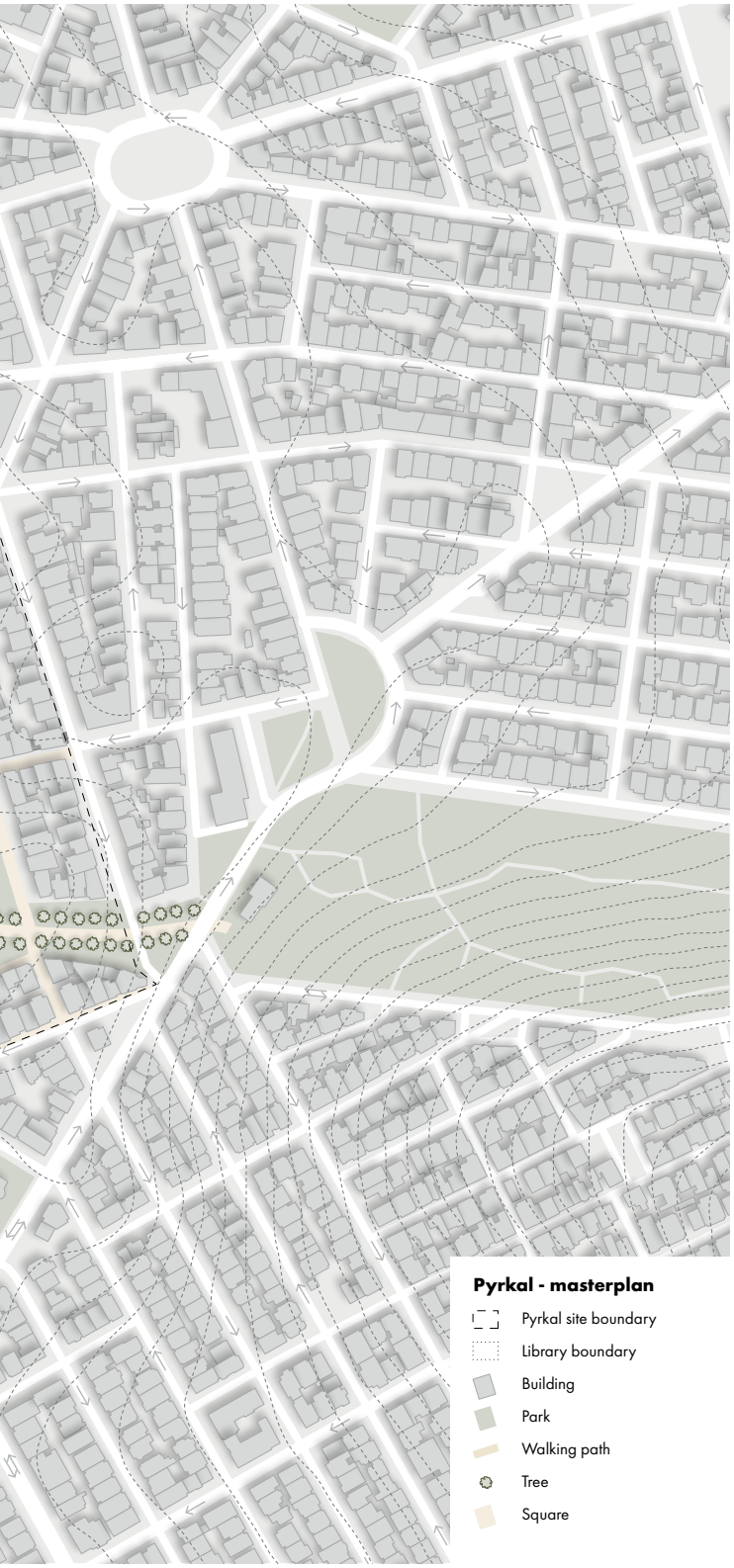
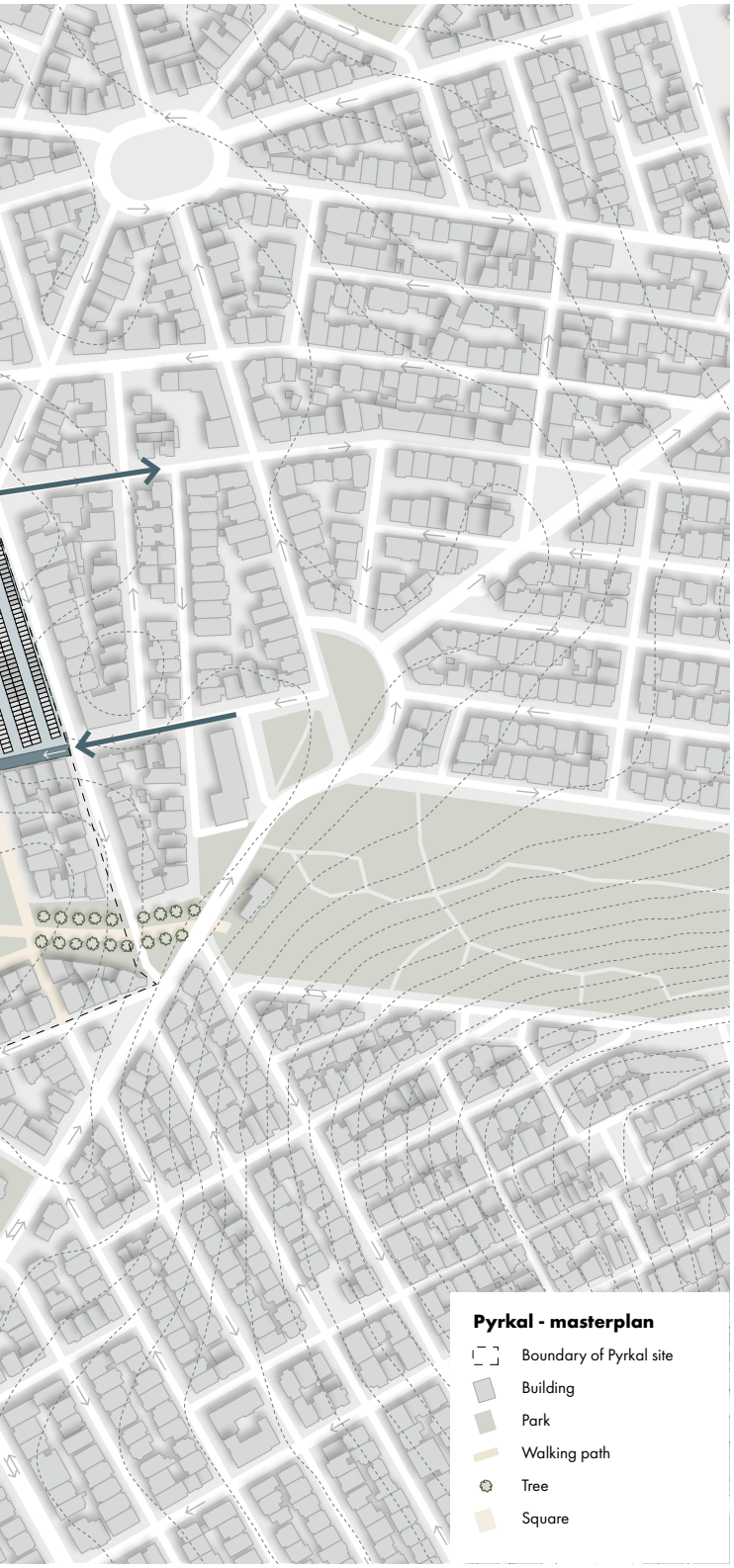

Pyrkal - masterplan
Pyrkal site boundary
Library boundary
Building
Park
Walking path
Tree
Square



Figure G.1.3: Masterplan of Pyrkal in Athens - parking (1:2000 scaled) (own work 2026)



Parking

Since the masterplan prioritises walking and public transport, car traffic within the site is minimised. To accommodate visitors arriving by car, three parking areas are provided:

- Northeast parking: this parking area is located above ground and serves the adjacent office buildings and sports facilities.
- East parking: This parking area is located underground and primarily serves nearby residential, commercial, and office buildings. The entrance is positioned on the east side as an extension of the existing road. Exits are located on the east and north sides, allowing for a natural integration into the existing one-way traffic system.
- Southwest parking: this underground parking area serves visitors of the library, park, sports facilities, and supermarket. The entrance is located at the former supermarket parking area and connects to the one-way road on the southwest side.

Appendix G.2: Site plan design

This appendix explains the design of the site plan and ground floor.

Site plan
The library is positioned at the centre of a network of pedestrian routes that connect the surrounding neighbourhoods, schools, sports facilities, public spaces, and Dafni metro station. This places the building at a natural meeting point within the park while maintaining strong connections to its surroundings.

The park forms an important part of the project. Trees, planting, and open green spaces create an environment where visitors are surrounded by nature, supporting relaxation, stress reduction, and mental well-being. Together, the park and library create a calm and supportive public environment.

Ground floor pavilion
The ground floor is designed as a series of pavilions embedded within the park landscape. Their limited size and dispersed placement allow the park to remain open and continuous, while making the library visible and easy to encounter along the pedestrian routes.

The pavilions form four entrances to the underground library. Each entrance responds to different users, activities, and surrounding atmospheres, creating multiple ways of entering the building, ranging from open and public to quiet and discreet.

Large public entrance (west)
Located towards Ilioupoleos Avenue and Dafni metro station, the western entrance responds to the largest flow of visitors arriving from both the surrounding neighbourhoods and the wider city. A generous staircase leads into the library and is accompanied by two smaller pavilion volumes containing the elevators and a café.

Restaurant entrance (north)
Positioned at the intersection of important pedestrian routes, the restaurant acts as a social meeting place where visitors can gather, eat, study, and interact. Partly above ground and partly underground, it also provides an accessible entrance to the library, aimed primarily at collective and social use.

Active entrance (south)
Connected to the surrounding sports facilities, this entrance links physical activity to mental well-being. An outdoor basketball court is integrated into the park, while the entrance structure functions both as seating for the court and as a staircase leading into the library.

Quiet entrance (east)
The eastern side of the site is the calmest and most secluded part of the park. Here, the entrance is designed for individual, quiet, and discreet access. Rather than a visible pavilion, it consists only of a staircase descending into the landscape, allowing it to blend naturally into its surroundings.

Service and parking access
Along the western edge of the site, connected to Ilioupoleos Avenue, three ramps provide access to the underground parking garage, loading area, and bicycle parking.

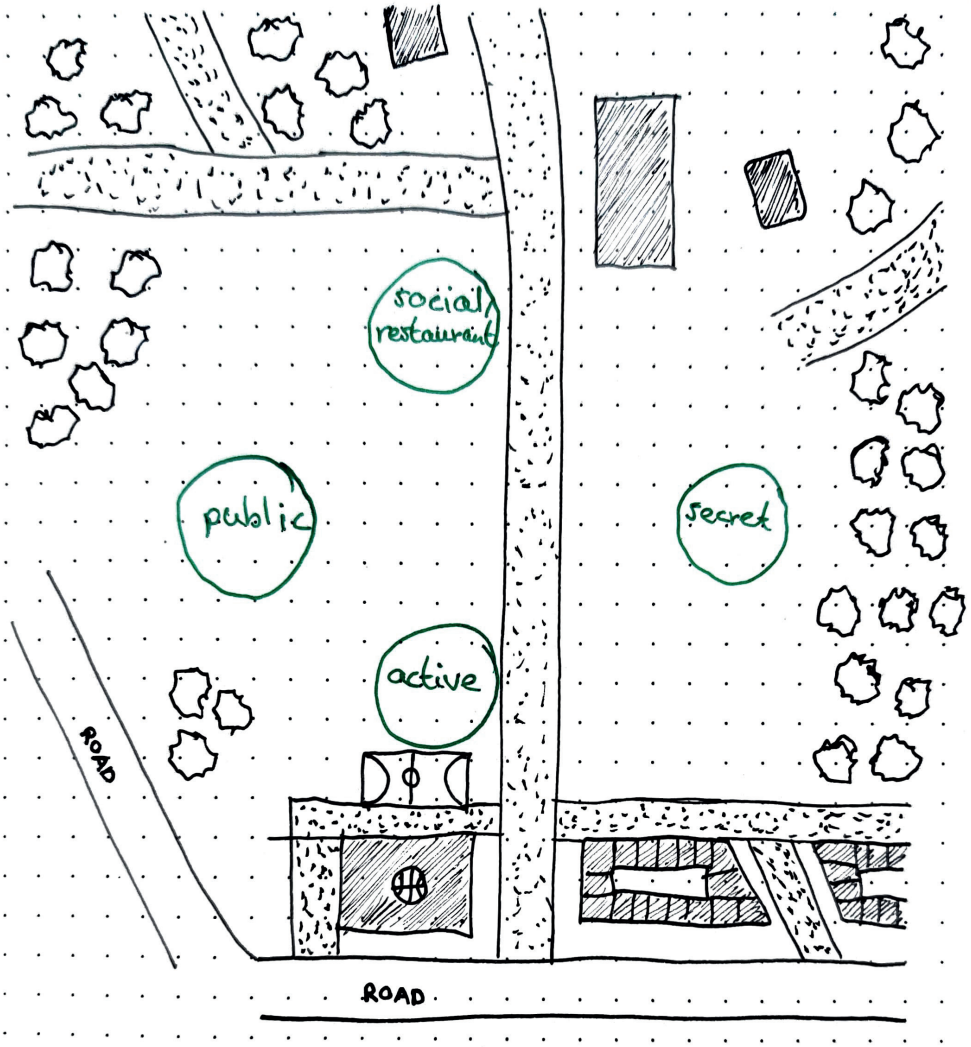


Figure G.2.1: Floor plan sketch of pavilion entrance locations (own work 2026)

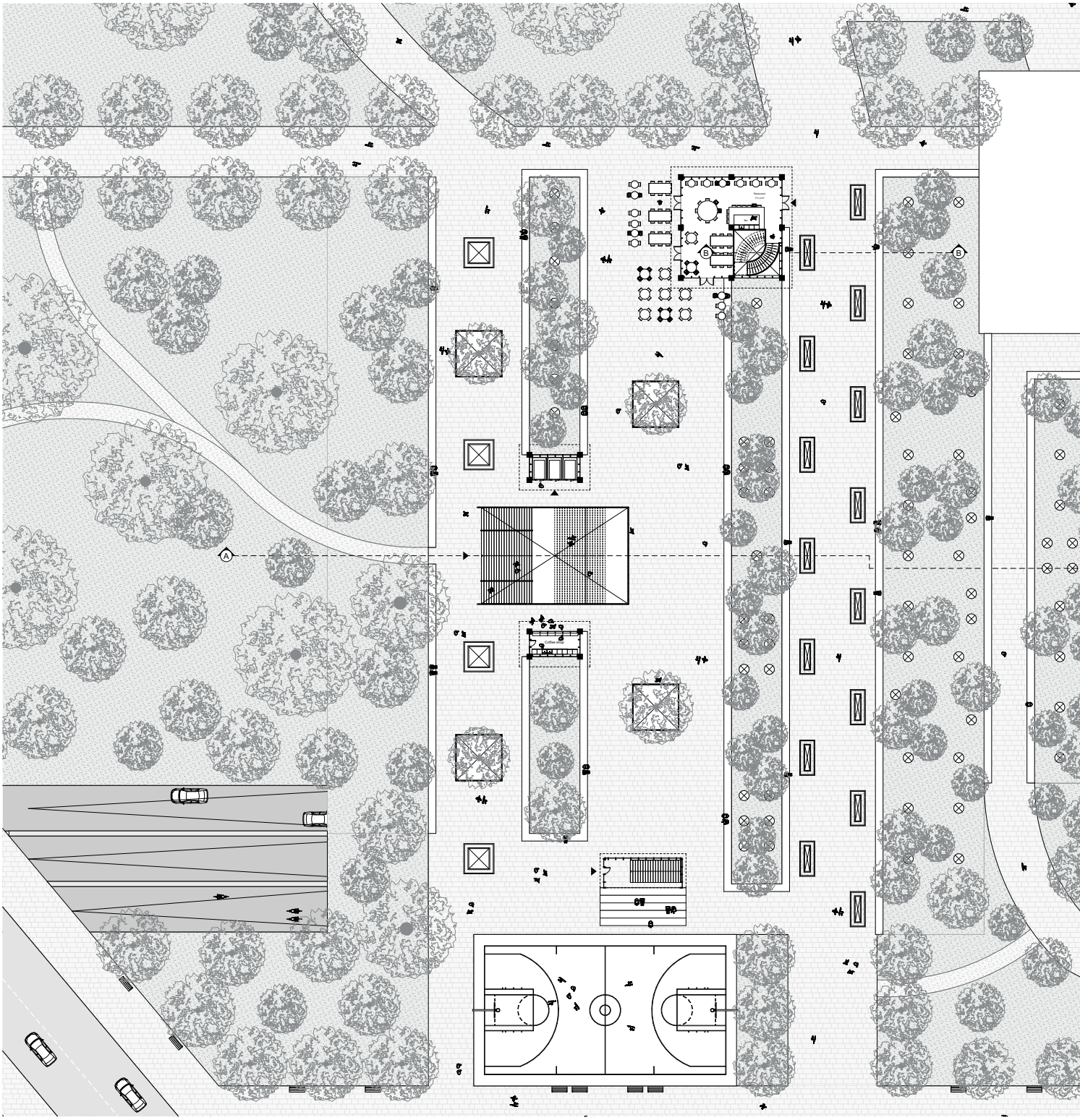


Figure G.2.2: Site plan (1:333 scaled) (own work 2026)


A
N

TREES



Strawberry tree
Arbutus unedo
2-8 m
1-2 m roots



Olive tree
Olea europaea
4-10 m
1-2+ m roots



Carob tree
Ceratonia siliqua
6-15 m
2+ m roots



SHRUBS



Rockrose
Cistus
0.5-2 m
0.5-1 m roots



Mastic tree
Pistacia lentiscus
1-4 m
1-2 m roots



Common myrtle
Myrtus communis
1-5 m
0.5-1.5 m roots



Olea
Ne

AROMATIC SHRUBS



Thyme
Thymus vulgaris
0.1-0.3 m
0.2-0.4 m roots



Sage
Salvia officinalis
0.4-0.8 m
0.3-0.6 m roots



Curry plant
Helichrysum italicum
0.4-0.8 m
0.3-0.5 m roots



T
Lavar
0.



Holm oak
Quercus ilex
10-20 m
2+ m roots



Mediterrane cipres
Cupressus sempervirens
10-20 m
1-2 m roots



nder / rose laural
erium oleander
2-6 m
1-2 m roots



Common thatching grass
Hyparrhenia hirta
0.8-1.5 m
0.5-1 m roots

GRASSES



rue lavender
ndula angustifolia
0.5-1 m
.3-0.6 m roots



Rosemary
Rosmarinus officinalis
0.5-1.5 m
0.5-1 m roots

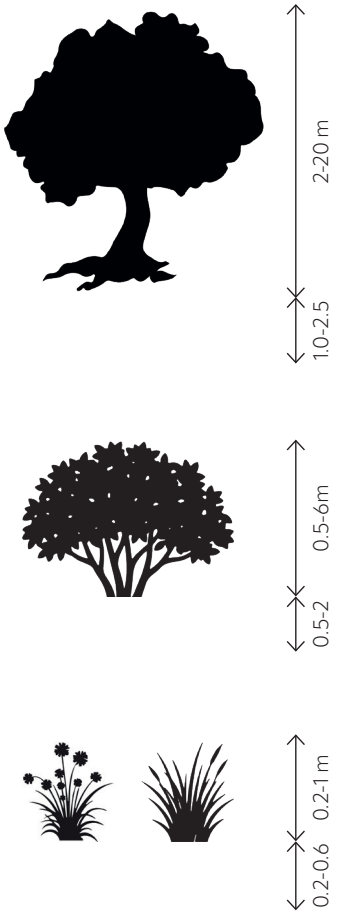
Greenery

Due to the dry and sunny climate of Athens, the park landscape cannot rely on regular grass or water-intensive planting. Based on research into the local climate, vegetation, and precedent park projects in Athens, I selected Mediterranean trees, shrubs, grasses, and flowering plants that can naturally grow in these conditions.

The vegetation provides not only greenery and shade, but also a more sensory and fully embodied experience of the park through moving grasses and aromatic shrubs with different smells.

Based on research into the root depths of these plans, I determined a soil depth of 1800 mm to support shrubs, grasses, and smaller trees throughout the park.

PLANT DIMENSIONS



Appendix G.3: Underground floor plan design

This appendix explains the design of the underground floor plan of the library.

Underground library floor
The underground library is organised as a series of longitudinal bands that gradually transition from public and active spaces to quieter and more private environments. Rather than separating functions into isolated zones, the bands create a continuous spatial sequence in which different levels of activity, interaction, and privacy coexist.

Moving eastward through the building, spaces gradually become quieter, more enclosed, and more secluded. Study areas, reading spaces, and group work environments are distributed throughout the intermediate bands, creating a variety of settings for learning, social interaction, reflection, and support.

West side: public
The western side of the library contains the most public functions and is directly connected to the main public entrance. Visitors arrive in a central public hall with an open atmosphere and a variety of seating arrangements. Located adjacent to the hall is the exhibition and event space, which can be used for temporary exhibitions, presentations, community projects, and events related to mental health literacy.

North side: social
On the north side, the restaurant connects the underground library to the park above. It functions as a social meeting place where visitors can gather, eat, study, and spend time together.

South side: active
The southern entrance connects directly to the outdoor basketball court and surrounding sports facilities. This side of the building contains spaces related to active well-being, including yoga, mindfulness, meditation, and other group activities. Bicycle parking is also located here, reinforcing the relationship between movement, physical activity, and mental well-being.

Centre: learning
The central part of the building contains the lecture and workshop spaces. These spaces support activities related to mental health literacy, resilience, life skills, peer mentoring, and community education. When not in use for organised activities, they remain accessible as flexible public spaces.

East side: private
The eastern side of the building contains the most private functions and is connected to the discreet entrance within the quietest part of the park. This area contains group session spaces, quiet booths, consultation rooms, and retreat spaces, providing environments for concentration, reflection, conversation, and low-threshold support.

Retreat spaces

Four retreat spaces are distributed throughout the eastern side of the library, each supporting a different form of well-being:

- Body retreat: for yoga, mindfulness and meditation.
- Mind retreat: a quiet environment for studying, reading, and reflection.
- Social retreat: an informal setting for meeting others.
- Quiet retreat: a low-stimulus environment for solitude, rest, and withdrawal from social activity.

These retreat spaces share a distinct architectural character that sets them apart from the rest of the library.

Private spaces for conversation

Different talking spaces are integrated throughout the building. Consultation rooms support private one-on-one conversations with friends, mentors, or professionals, while private group spaces accommodate group discussions, peer support, collaborative study, and informal meetings.

Staff

Staff offices and service spaces are located along the western side of the floor plan. This area is reserved for staff and is not accessible to the public.

Parking

The underground parking garage is located along the western edge of the building, connected to Ilioupoleos Avenue.

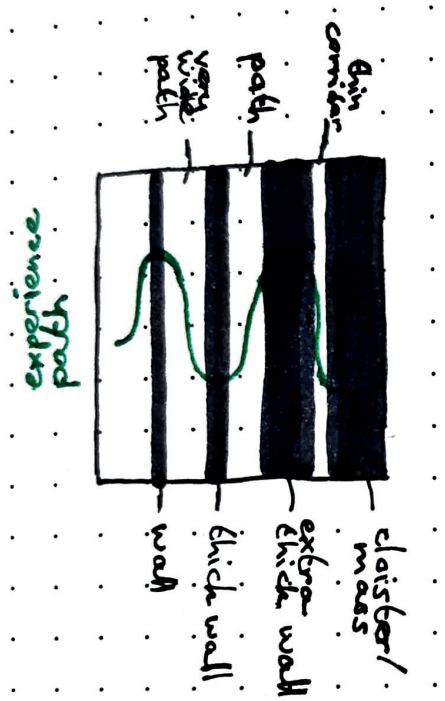


Figure G.3.1: Conceptual floor plan sketch of the underground public to private gradient (own work 2026)

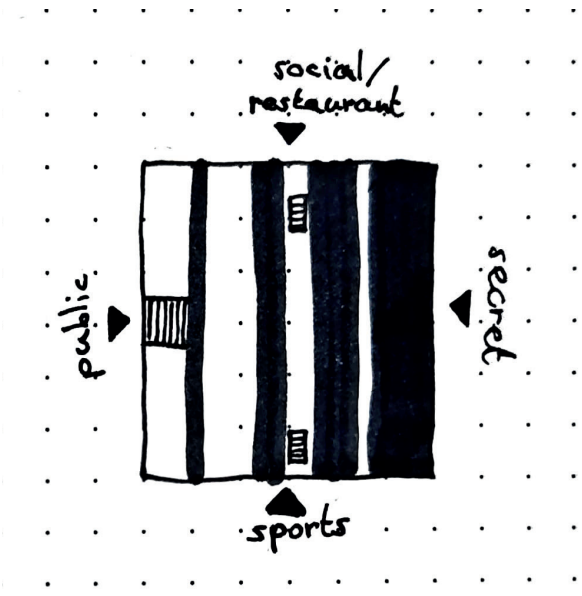


Figure G.3.2: Conceptual floor plan sketch of entrances (own work 2026)

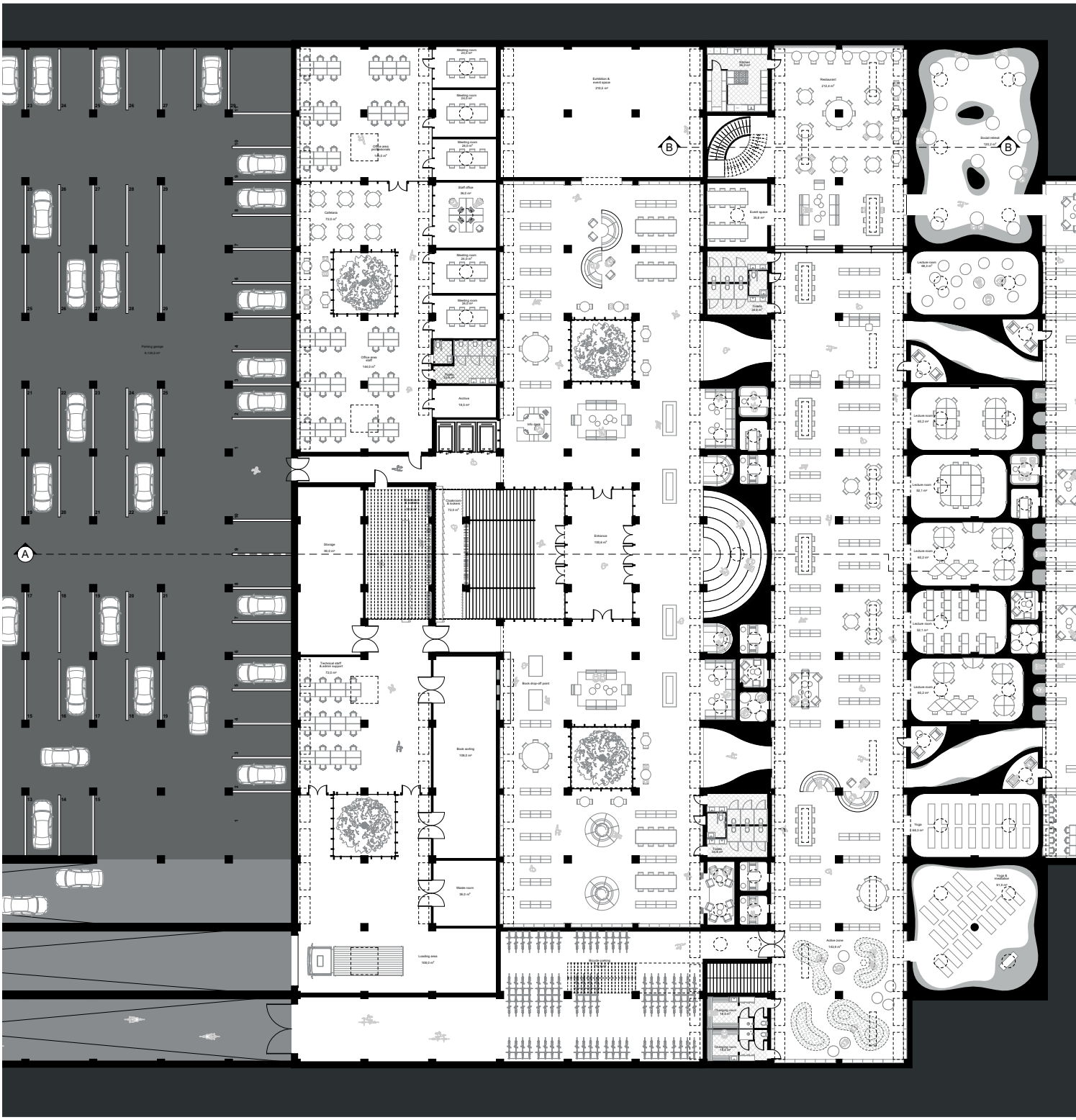
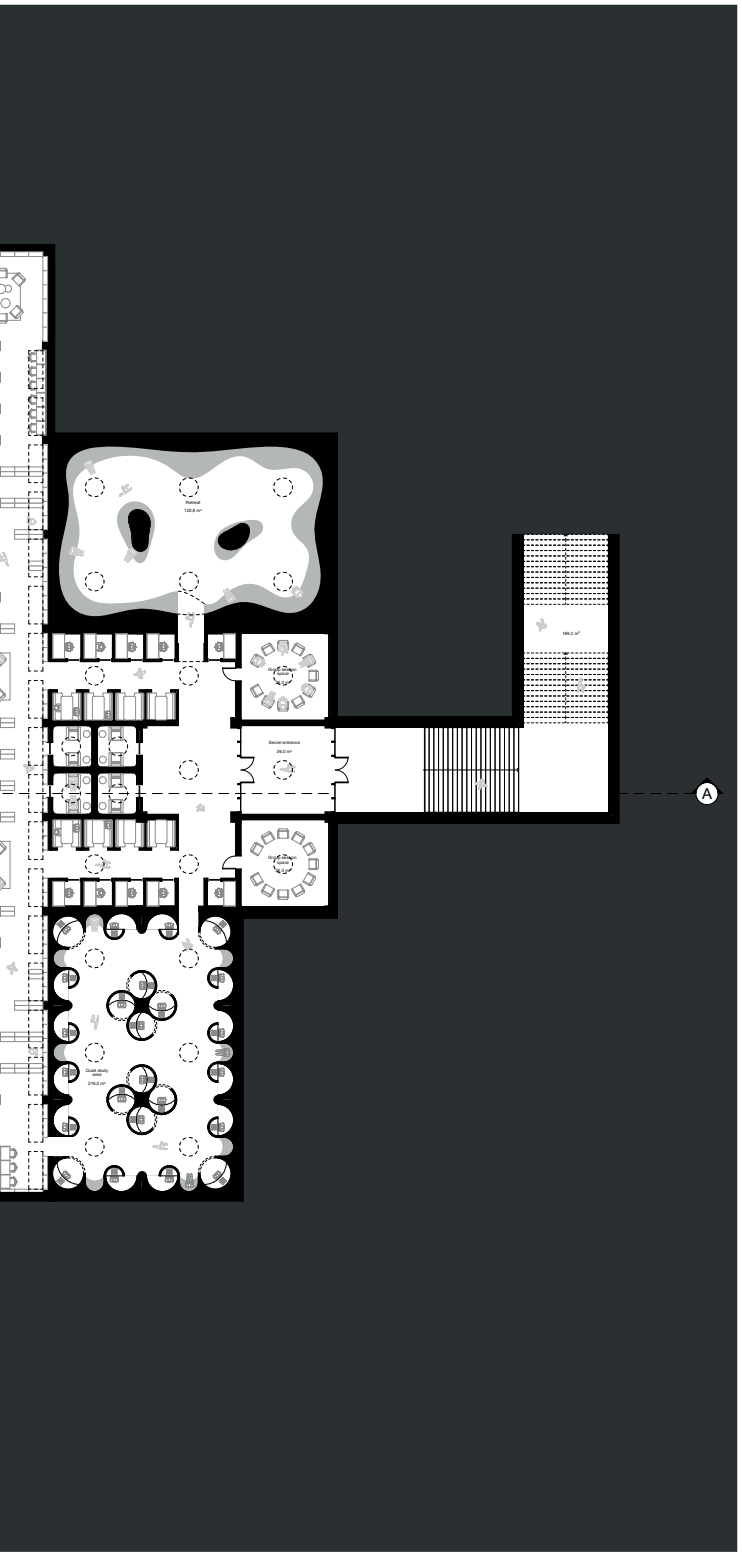


Figure G.3.3: Underground floor plan (1:250 scaled) (own work 2026)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Appendix G.4: Section design

This appendix explains the design of the section through the underground library (Figure G.4.1).

Underground library
The section shows the spatial organisation of the library and how the public-to-private gradient is expressed throughout the building.

The library is organised as a series of longitudinal bands that gradually transition from public and active environments to quieter and more private spaces. This organisation consists of two alternating band types: open bands and enclosed bands. The open bands contain circulation routes, book collections, and visual connections across the building, while the enclosed bands contain more defined rooms and enclosed spaces.

The open bands are characterised by larger spaces, higher ceilings, low enclosure, high exposure, and greater movement. Together, these qualities create an active, open, and public atmosphere.

In contrast, the enclosed bands are characterised by lower ceilings, smaller scales, higher enclosure, lower exposure, and reduced movement, creating quieter and more secluded environments.

On the western side of the library, the open bands are wider and more dominant, creating a spacious and collective environment. Moving towards the eastern side, the enclosed bands gradually increase in width and importance, creating progressively quieter, more private, and more secluded spaces. This gradual transition allows users to move between different levels of activity, interaction, concentration, and retreat.

Pavilion
The underground organisation is reflected in the landscape above.

The enclosed bands correspond to planted areas with deeper soil layers, as their lower ceilings create more space above the structure for trees, shrubs, and other vegetation. The open bands correspond to the paved pedestrian routes through the park. As a result, the spatial organisation of the library is directly expressed in the design of the landscape above.

The entrances to the underground library are integrated into the pavilion buildings distributed throughout the park.

In addition, a series of atria and skylights bring daylight into the underground spaces. These daylight strategies are discussed in more detail in the following chapter.

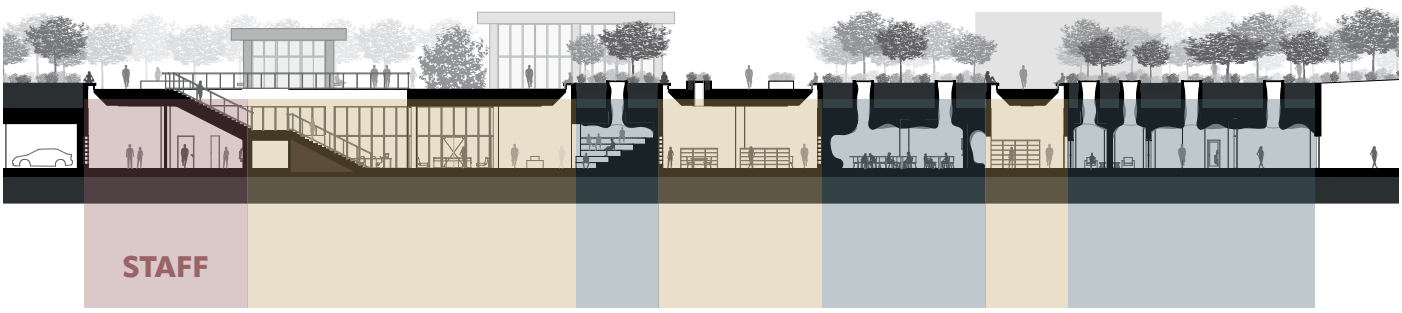

Figure G.4.1: Diagram of public-private gradient of the library (own work 2026)

PUBLIC → **PRIVATE**

ATMOSPHERE GRADIENTS

High	**Scale**	Low
High	**Exposure**	Low
Low	**Enclosure**	High
Medium	**Sound**	Low
Medium	**Movement**	Low

Appendix G.5: Details design

This appendix explains the design of the detailed section, the daylight strategy, and the materialisation of the underground library.

Skylights

As the library is located below ground level, daylight is introduced through a series of atria and skylights integrated into the park landscape. These daylight openings are integrated into the landscape design and respond to both the organisation of the park above and the spaces below.

Four types of daylight openings are used throughout the project.

The first type is the "bench skylight". These openings are created through a height difference between the pedestrian routes and adjacent planting bands. The skylight is integrated into the hollow bench element formed by this level change. Located along the edges of the open bands, they cast daylight along the walls of the open bands, highlighting the bookcases positioned against them.

The second type is the "planter skylight". These openings are positioned within large planters along the pedestrian routes. The vegetation in the planters prevents park visitors from looking directly into the library below, ensuring the privacy of the library visitors, while still allowing daylight to enter the open bands.

The third type consists of "skylights within the planted bands". These openings extend through the deeper soil layers above the enclosed bands, allowing daylight to reach the more enclosed rooms below. Surrounded by vegetation, they provide natural light without creating direct visual connections between the park and the interior spaces.

The fourth type is the atrium. The main public hall contains two large atria with trees growing through them. Together with the glazed entrance staircases, these atria bring significant amounts of daylight into the most public part of the library.

The different daylight openings are strategically distributed throughout the floor plan in response to both the landscape above and the programme below. Moving from west to east, the daylight openings gradually become smaller and more enclosed, reinforcing the transition from public and active spaces to quieter and more private environments.

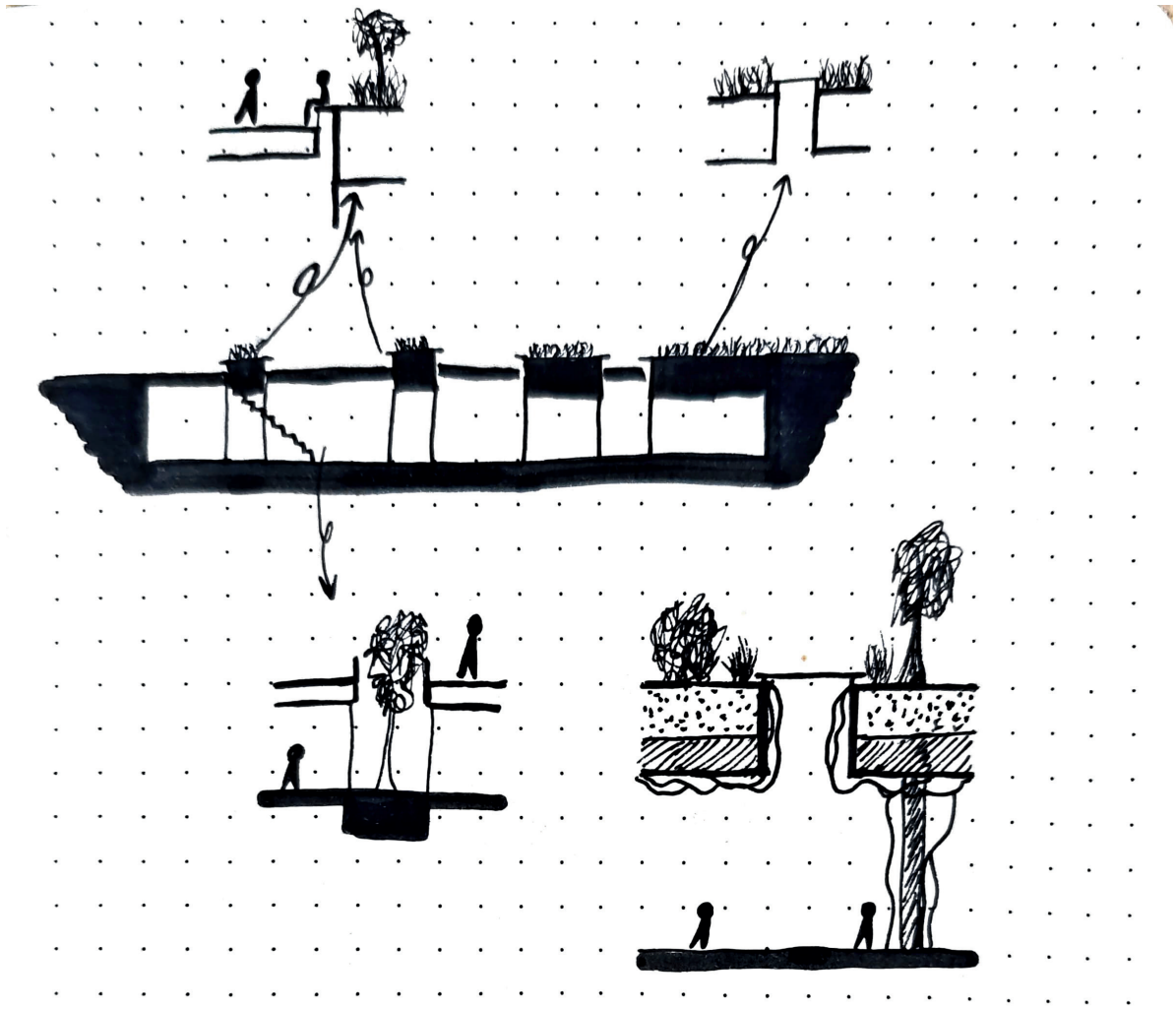

Figure G.4.2: Section sketch of skylight ideas integrated in the park (own work 2026)

Materialisation: underground

The library is finished predominantly with natural materials. This decision is based on both the atmosphere research and biophilic design principles, which indicate that natural materials can contribute positively to mental well-being by creating warmer, more comfortable, and less institutional environments.

The material palette is centred around two primary materials: limestone and timber. Together, these materials create a calm and coherent identity throughout the building while supporting the distinction between the open and enclosed bands.

The open bands form the public circulation spaces of the library and are finished primarily in limestone. Limestone walls and flooring create a durable and visually calm environment, while their light colour helps reflect and distribute daylight throughout the space. Mineral fibre acoustic ceiling panels improve acoustic comfort. Wooden bookcases introduce warmth and provide a softer contrast to the limestone surfaces. Window and skylight frames are finished in a soft beige tone to blend with the overall material palette. Together, these materials create an open, bright, and public atmosphere.

The enclosed bands contain the more private rooms and retreat spaces of the library. These spaces are finished predominantly in timber, with wooden wall and ceiling panels wrapping the spaces in a continuous ribbed surface that integrates walls, ceilings, seating niches, and shelving elements. The timber surfaces follow a softer and more organic expression, creating a stronger sense of enclosure and comfort. Timber flooring further reinforces the warm character of these spaces. Together, these materials create quieter and more intimate environments, giving users a stronger sense of enclosure, comfort, and retreat.

The transition from public to private is reinforced through materiality. The alternating open and enclosed bands are expressed through contrasting material palettes, strengthening their different atmospheric qualities. In this way, materiality contributes to the overall atmosphere gradient of the building.

Materialisation: above ground

The material palette of the underground library continues into the landscape and pavilion structures above ground. Limestone paving and seating elements extend the material expression of the open bands into the park, creating a visual and material connection between the interior and exterior environments.

The pavilions are designed as lightweight and transparent structures. Solid limestone roof volumes and columns give the pavilions a clear architectural presence, while the glazed façades maintain visual openness and allow views through the buildings towards the surrounding park.

Together, these materials create a coherent relationship between the park, the pavilion entrances, and the underground library, while ensuring that the pavilions remain visible without becoming dominant objects within the landscape.

Detail finishing

The building is detailed in a simple and restrained manner. Connections between materials, frames, ceilings, and built-in elements are kept clean and carefully integrated, avoiding unnecessary visual complexity. This approach allows the spatial qualities, natural materials, and atmosphere of the library to remain the primary focus, contributing to a calm and coherent environment.



Figure G.4.3: Materialisation (own work 2026)

Appendix G.6: Construction design

Construction

The underground library is constructed primarily in reinforced concrete to support the loads of the park landscape above. The structural system consists of retaining walls, floor slabs, columns arranged on a 6x6 metre grid, and inverted-T beams supporting one-way spanning concrete slabs. Skylights and atria are integrated within this structural grid to bring daylight into the underground spaces.

Two roof structures are used depending on the load above. Beneath paved areas, the roof consists of 600 mm deep inverted-T beams with 300 mm thick concrete slabs. Beneath planted areas, where soil depths reach approximately 1800 mm, the structure increases to 1200 mm deep beams with 600 mm thick slabs to support the additional loads of soil, trees, and vegetation.

The pavilion structures above ground are also constructed in reinforced concrete, consisting of columns, beams, and roof slabs.

Together, the underground and above-ground structures form a single structural system that integrates the library with the landscape above.

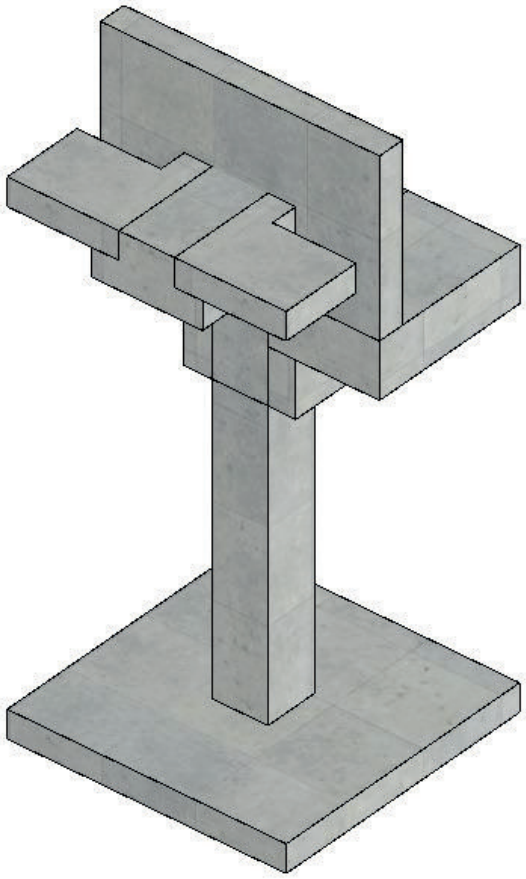

Figure G.6.1: Structural column in perspective (own work 2026)

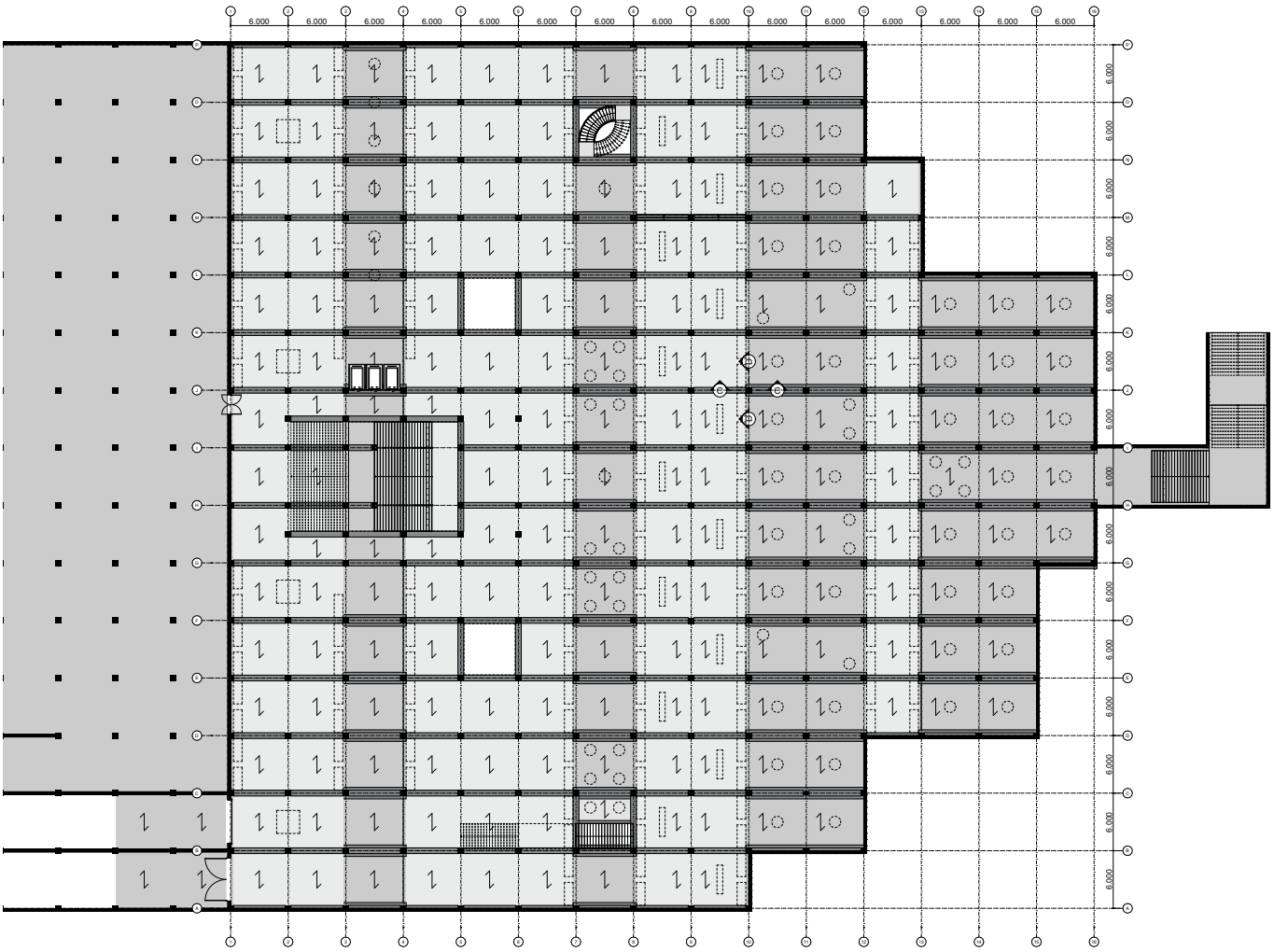

Figure G.6.2: Structural floor plan (1:500 scaled) (own work 2026)