Ruben Afman
5213673

Supervisors:
Jorge Mejia Hernandez
Matthijs Klooster

Graduation Report

A matter of scale

Methods of Analysis & Imagination
Graduation studio

The Crossing

Standing within the Patarei sea fortress, one is confronted with walls that bear the scars of a traumatic past. While the International Museum for the Victims of Communism gives a vital voice to this heritage, visitors are met with a deafening silence as they leave. This project occupies that silence.

Rooted in the concept of religare, to re-link or reconnect, this project proposes a public pavilion that negotiates the threshold of Patarei, introducing spaces for both internal and external reconnection. The museum's necessary display of historical trauma is complemented by a narrative of hope and appreciation, understanding that this contrast ultimately strengthens both parts.

This project does not aim to erase the traumatic memory of Patarei. Rather, it creates a space for people to absorb the experience and reflect upon it. It is an exploration of how we may build for the soul in a post-secular world, keeping our gaze fixed on the horizon even while we reflect on the past.

Table of Contents

Part 1 4

Problem Statement 6
Scope 7
Relevance 10
Objective & Motivation 11
Research and Design question 12

Part 2 14

Methods 16
Theoretical framework 18

Part 3 34

Research & Design results 36

Part 4 76

Conclusion 78
Recommendations 80
Reflection 82

INTRODUCTION

Problem Statement
Scope
Relevance
Objective & Motivation
Research questions

Problem statement

This project addresses two distinct challenges within the contemporary Estonian context: the architectural trauma of the Soviet occupation and the nation's uniquely individualistic spiritual landscape.

Decades of Soviet oppression have left behind highly loaded landmarks, like Tallinn's Patarei Prison, which carry profound collective trauma. As the Patarei prison is transformed into the International Museum for the Victims of Communism, the site is coupled with an emotionally taxing narrative. This heavy museum environment conveys the story of isolation to the visitor, presenting a jarring, abrupt threshold back into the city, with no space for emotional decompression. The museum is currently centered on displaying emergency and lacks the perspective of expressing hope and appreciation for the present world.

Furthermore, the Tallinn urban landscape is lacking non-denominational civic infrastructure that reacts to its highly diverse spiritual landscape. In Estonia, traditional religious affiliation is exceptionally low, yet interest in individual belief systems remains high. Non-denominational public infrastructure can help counter this traumatic narrative of isolation that will be displayed in the museum and transform a narrative of trauma into one of hope and appreciation.

Scope

More specifically, the project proposes a spatial counterpart to the museum, utilizing the adjacent, abandoned bread factory that once served the prison complex. Grounded in the etymology of religion, re-ligare, meaning "to re-link" or "to reconnect", the design applies the architectural qualities of sacred architecture to counter emotional and spatial isolation with personal and contextual reconnection. These two topics shape the architectural intervention.

Personal Reconnection
The personal reconnection will take the shape of an introverted sanctuary; the existing, thick limestone walls of the former bread factory will be preserved. These walls will act as a barrier, secluding the visitor from the outside world, while opening up towards the sky. The outside world will be carefully framed to soften the threshold of isolation. These spaces will foster introspective reconnection and personal contemplation through the art of architecture.

Contextual Reconnection
The contextual reconnection will be facilitated in an extroverted public pavilion that will capitalize on the site's unique topography and coastal position. The terrain on which the bread factory stands is currently about 5 meters higher than the land bordering the waterfront, offering a unique uninterrupted view. The goal of the pavilion is to foster appreciation for the site's context by acting as an architectural filter and framing the extensive views of the surroundings. To activate this threshold as a vibrant piece of civic infrastructure, the pavilion integrates an open-air theatre for informal gatherings and public events, alongside a restaurant and café. By transforming this historic void, the project delivers a public place of assembly at the waterfront, reclaiming the sea for the people of Tallinn and transforming an instrument of state oppression into a sanctuary of connection.



Figure 1.1 Spatial organization concept

Relevance

Beyond its immediate implementation at the Patarei prison in Tallinn, this project addresses several pressing discourses within contemporary architectural theory and practice. It challenges traditional views across two main disciplinary foundations: The psychological dimension of adaptive reuse of traumatic sites, and the evolution of sacrality.

Sites burdened by tragic collective memory are frequently transformed into places of remembrance and memorialization (Stone, 2026). This proposal introduces an alternative for altering these politically charged landscapes, incorporating dedicated spaces for emotional decompression, introspective stillness, and layered reconnection to soften the abrupt boundaries between the site and the outer world. While contemporary memorials often focus on displaying emergency, introducing a spatial dimension that delivers hope profoundly enhances the visitor experience, ultimately strengthening the transformative impact of the architecture.

Furthermore, with growing secularization and spiritual fragmentation (Hackett, 2025), the architectural profession faces the challenge of designing sacred architecture without relying on denominational iconography and function. By returning to the etymological root of religion, re-ligare, meaning to re-bind or re-connect (Horr, 1912), this project applies sacrality as a purely architectural toolkit. The project offers a blueprint for contemporary sacred architecture that can provide public non-denominational sanctuaries that foster internal and external reconnection.

To achieve this impact, architecture is treated not merely as a functional enclosure but as an art form capable of actively shaping human behaviour and spatial perception. Shifting from a purely utilitarian perspective to one of heightened human experience, the project rigorously investigates the interplay of scale, proportion, sensory engagement, and contextualization. Grounded in theoretical research and critical case study analysis, these ideas form a resilient foundation capable of informing broader future architectural interventions.
(Zumthor, 1998), (Zumthor, 2006), (Frampton, 1993), (Pallasmaa, 1996)

Objective & Motivation

The Architectural Ambition
The ambition of this project is to bridge the gap between theory and physical manifestation, using the design itself as a real-world testing ground for sacred architecture research. Throughout the creative process, the theoretical framework and the architectural iterations have existed in a symbiotic dialogue; the research continuously sculpted the spaces, while design discoveries simultaneously refined the underlying theory. This iterative methodology ensures that the final architecture is deeply layered and conceived through multiple scales and lenses, backed by a rigorous intellectual foundation.

Technical Precision as a Tool for Wonder
To evoke a genuine sense of wonder, the technical execution of the project is critical. The way a joint is expressed, the way light washes a surface, and how a material feels to the touch are examples of elements where phenomenological architecture meets technical execution. In addition, the project needs to respond to the site-specific climate. This will ensure the spaces are comfortable for their intended use. The technical installations must be harmoniously integrated into the architecture to ensure that they work in synergy with one another. As the architecture focuses on the human experience, the interaction between the person and the building needs to be studied in detail to ensure seamless interaction.

Personal Motivation: Human-Centric Design
At the center of this investigation is a profound commitment to the human scale, where the visitor’s sensory and perceptual experience guides design decisions. By deliberately defining and confining the physical scope of the intervention, the project shifts its focus away from expansive, generic spaces toward a specific exploration of architectural detailing, craftsmanship, and materiality. This allows the design to be fully realized at a meticulous scale, motivated by the idea that the most profound experiential impacts are often delivered through the precise articulation of details.

Research questions

Main question

What role can sacred architecture play in fostering personal and contextual reconnection at the Patarei prison museum in Tallinn?

Sub-questions

- What architectural qualities can be derived from sacred architecture to provide a non-denominational sense of sacrality?
- What other architectures foster personal and contextual reconnection?
- In what ways can adaptive reuse sensitively transform historical heritage into civic functions?
- How can proportional frameworks guide the design of harmonious and clear architectural spaces?

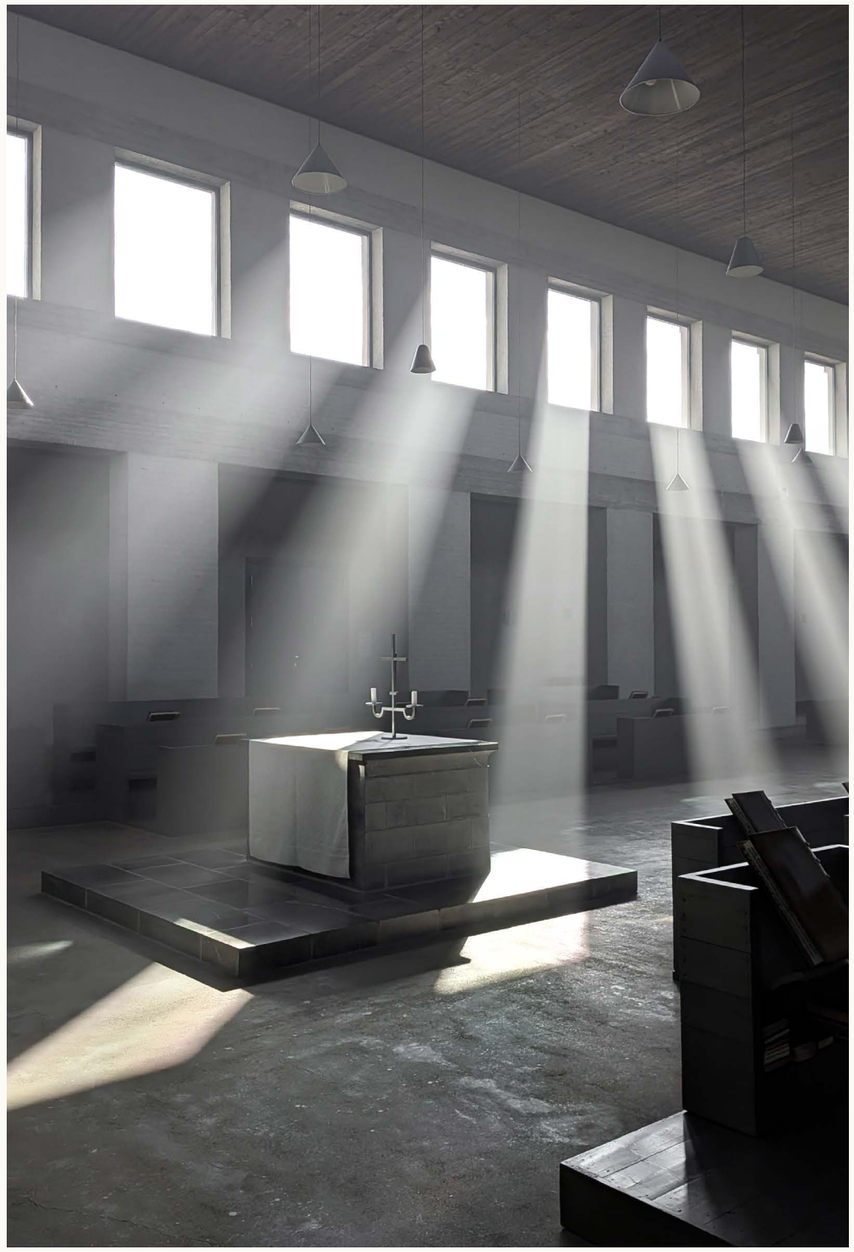


Figure 1.2 St. benedictusberg Abbey
Personal photograph taken in the church of the St. benedictusberg Abbey, displaying the importance of light, proportion and materiality.

APPROACH

Methods
Theoretical Framework

Throughout the design process, extensive research was conducted to establish the project's theoretical framework. This investigation culminated in three primary studies focusing on spatial proportion, religious architecture, and the project's positioning within architectural theory. These comprehensive analyses are attached to this report as an appendix.

A concise summary of tthe main foundational studies is presented in the following chapter, capturing the core theoretical and analytical discoveries that drove the design.

Methods

The project employs a Research-through-Design methodology, where analysis and design experimentation exist in a continuous, iterative loop. This ensures that every architectural gesture is grounded in thoughtful consideration and theoretical backing. The methods used will be a blend of the following:

Site-Specific Mapping

Further research into the site will inform how the project will fit into its context. This step will help with translating a general design into a context informed architecture.

Literature research

Literature research will be conducted to establish the project's foundation. This will winden my knowledge on project specific themes and will inform design decisions.

Case Study Analysis

By analyzing projects that share characteristics with the proposal, these architectures can help with translating theoretical ideas to detailed designs. These case studies will form the foundation for design decisions, while leaving room for personal interpretation.

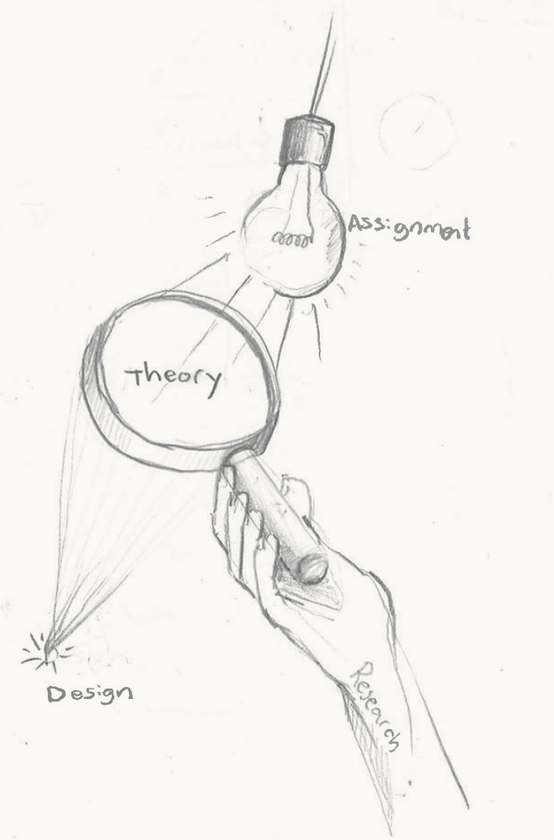


Figure 2.1 Methods concept
Concept sketch on how the different parts of the process inform one another.

Primary Elements
Site-Specific Mapping



Figure 2.2 Primary elements analysis

Soft Atlas
Site-Specific Mapping

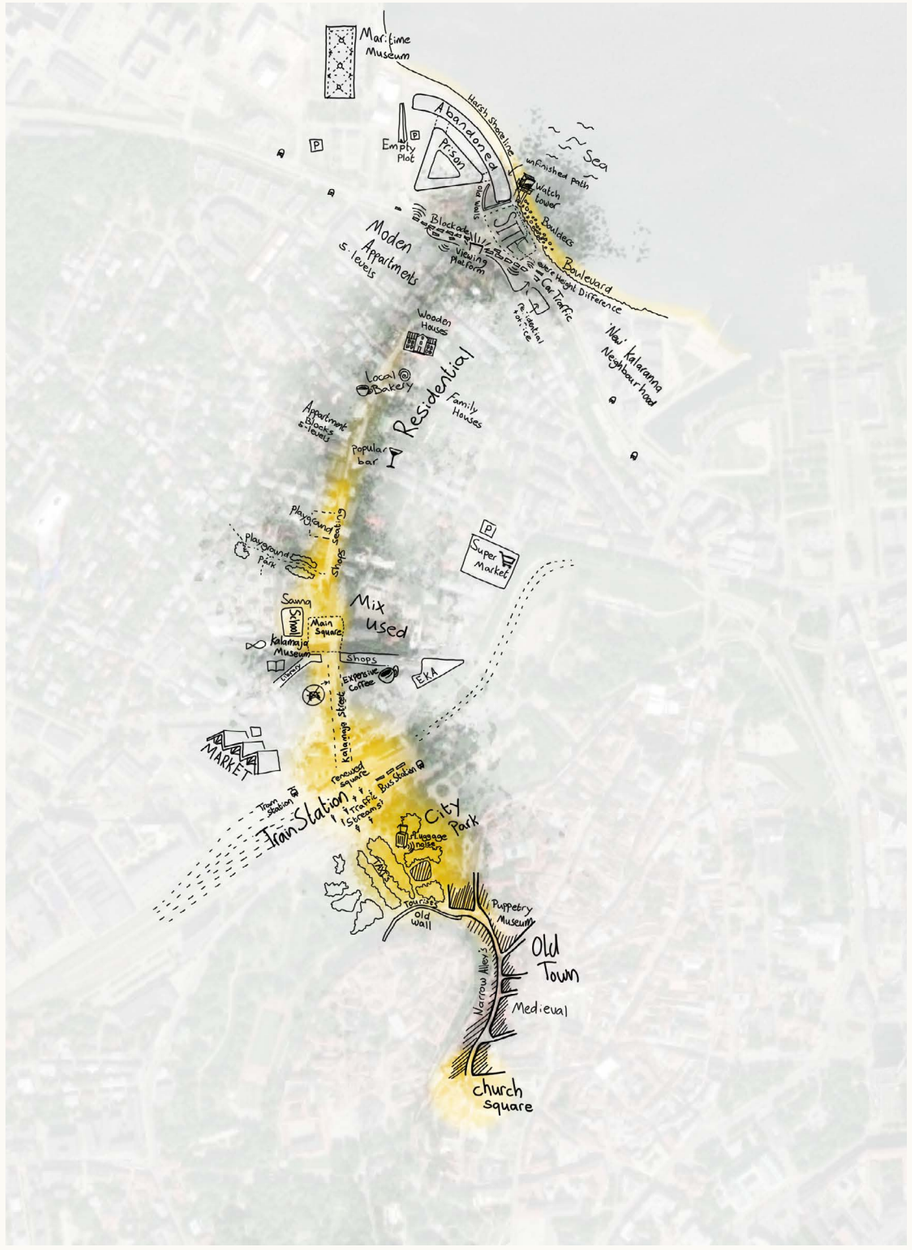


Figure 2.3 Soft Atlas

= active zones

Circulation
Site-Specific Mapping

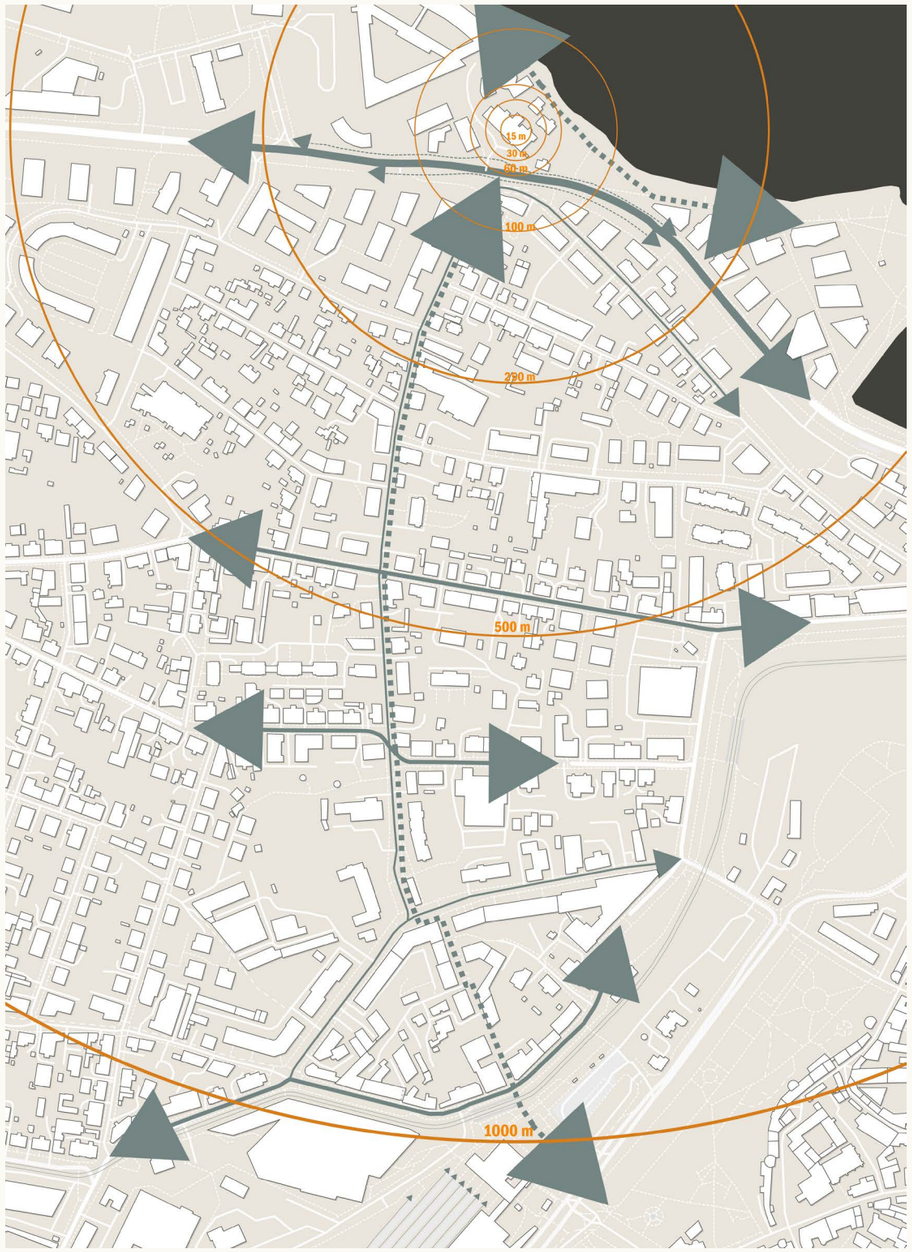


Figure 2.4 Circulation Analysis

Function
Site-Specific Mapping

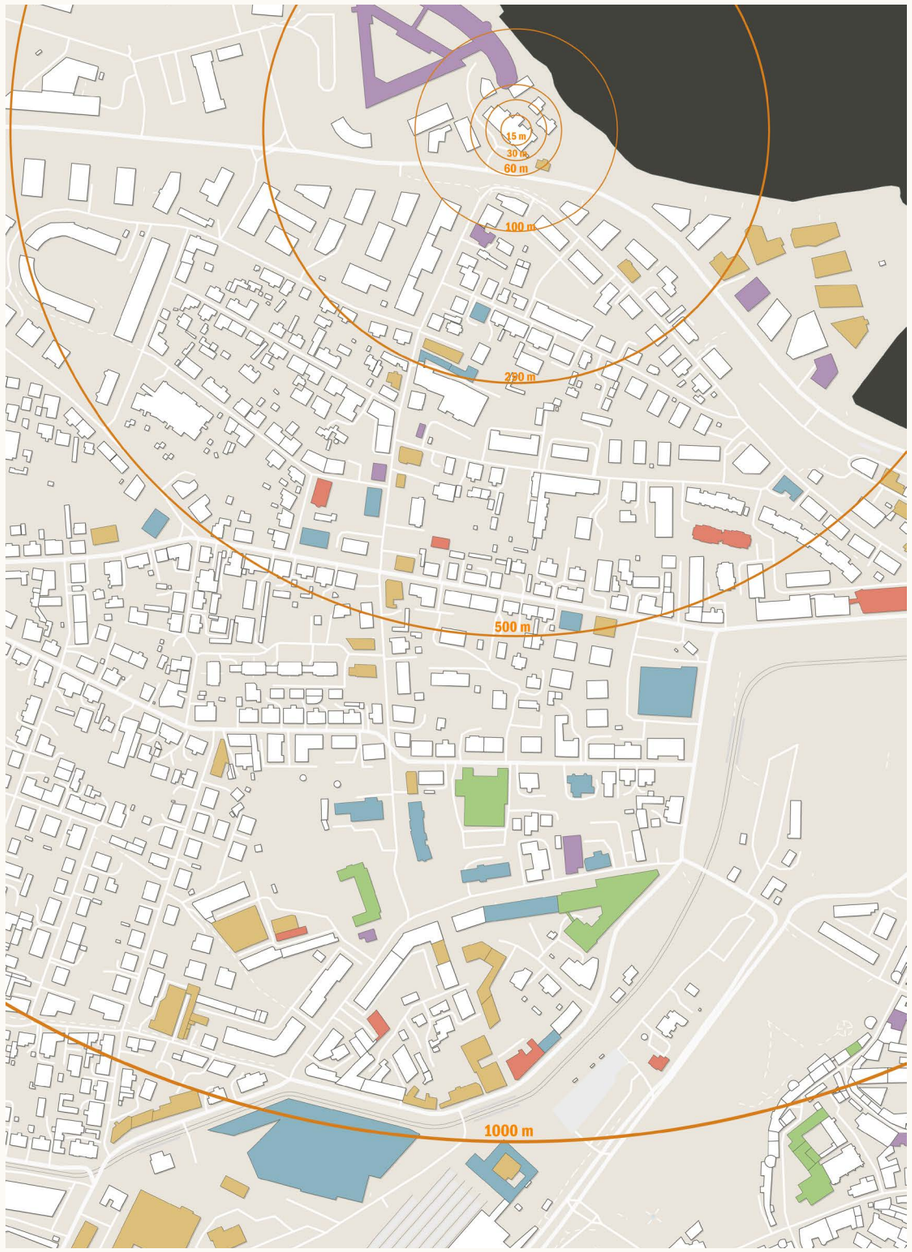


Figure 2.5 Function Analysis

Activity
Site-Specific Mapping



Figure 2.6 Activity Analysis

Conclusion
Site-Specific Mapping

An examination of the urban fabric surrounding the Patarei Sea Fortress highlights Kalamaja Street as a historically significant axis. This pedestrian artery has traditionally served as a vital urban link, connecting Tallinn's Old Town through the historic Kalamaja neighborhood,originally a vibrant fishermen's settlement, directly to the sea. A recent municipal transformation of this street has further accentuated its critical civic quality, reinforcing it as a primary public axis.

While the zone surrounding the main station is intensely activated and dense with public life, the street's vitality systematically diminishes as it approaches the coast, where programming becomes sparse and activity dies down. This decline, along with the abrupt end of Kalamaja Street, which was planned as a viewing platform but suffers from restricted views, creates a profound physical and psychological disconnect from the seashore.

Given that the street's foundational historic purpose was to provide direct sea access, a significant architectural opportunity presents itself, to extend this urban axis, activate the neglected waterfront, and permanently restore a public connection to the sea.

Primary Elements

Literature Research

Aldo Rossi, 1982

In his book ‘The Architecture of the City’, Aldo Rossi defines primary elements as fixed “urban artifacts” that act as catalysts for development, possessing the power to both retard and accelerate the urbanization process (Rossi et al., 1982). While a city is largely composed of residential areas, which Rossi views as more fluid and subject to change, primary elements remain stable, anchoring the collective memory of the urban fabric.

The development of Tallinn’s Kalamaja district offers a compelling case study of this dialectic between the temporary residential fabric and the permanence of primary elements.

The name Kalamaja, meaning “Fish House” (Zobel, 2008), points to its origins as a settlement of fishermen and maritime laborers. Historically, the neighborhood’s coastal location made it strategically vulnerable. This led to a unique urban typology: wooden residential structures built with the intent of being sacrificial. During anticipated military attacks, these houses were frequently burned to the ground to deny cover to invaders (Zobel, 2008).

This “temporary” character is still legible in the neighborhood’s materiality today. However, while the timber envelopes were temporary, their stone foundations were not. These foundations functioned as a hidden urban grid, ensuring that even after a fire, the residential structure would be rebuilt upon the same footprint, maintaining the district’s continuity.

If the wooden houses represent the dynamic, shifting “area” of the city, the Kalamaja Street and the Patarei Sea Fortress represent the primary elements that have fixed the neighborhood in time.

The Kalamaja Street acts as a primary urban vein, a permanent urban element that has facilitated the connection between the Old Town and the sea for centuries (Zobel, 2008).

The Patarei is the oldest remaining monumental structure in the district. Constructed of durable stone, it stands in stark material contrast to the surrounding timber fabric. While its function has shifted from a defensive fortress to a prison, its physical presence has remained fixed.

The urban character of Kalamaja is defined by this division in materiality. The wood emphasizes the dynamic nature of domestic life, while the durable stone of the primary elements ensures the structure of the city throughout the years, allowing it to evolve without losing its essential urban identity.

Knowledge & Understanding

Literature Research

Aldous huxley, 1956

In his essay “Knowledge and Understanding,” Aldous Huxley draws a crucial distinction between these two modes of comprehension. Knowledge is acquired when a new experience can be successfully integrated into our existing conceptual system, grounded in previous experience (Huxley, 1956). It represents articulated, conceptual information that can be communicated, documented, and passed on to others through explanation.

Understanding, by contrast, cannot be transmitted in the same manner. It is an immediate, non-conceptual experience rooted entirely in our direct awareness of the present moment. Because true understanding cannot be forced or engineered, it arises spontaneously and of its own accord (Huxley, 1956).

An architecture that facilitates this type of understanding must engage directly with emotion and raw experience, anchoring the visitor’s awareness firmly in the present moment. This is not a lesson that can be communicated through an exhibition label; rather, it is a carefully curated spatial experience that can only be truly understood when it is lived through.

Thin Place Design

Literature Research

Phillip J. Tabb, 2023

In his book Thin Place Design: Architecture and the Numinous, Phillip James Tabb explores the concept of “thin places”—spatial environments where the boundary between the everyday world and the numinous is deliberately softened (Tabb, 2023). These unique spaces are designed to heighten human consciousness and facilitate transcendental experiences. Within architectural practice, thin place design moves a structure beyond mere shelter, turning it into a medium for profound experience by fostering deep connections to nature, history, and the sacred. Crucially, these concepts apply equally to both religious and non-religious functions (Tabb, 2023).

According to Tabb, these architectures typically rely on several core spatial qualities:

- Strong centers and thresholds that mark transitions from ordinary to the sacred.
- Careful use of natural light, shadow, and elemental features (water, stone, vegetation).
- Proportional geometry, rhythmic repetition, and harmonious composition.

Furthermore, thin places require an absolute integration with their specific site and context. Rather than existing in isolation, the architecture draws directly upon local historical layers, collective memory, and its immediate relationship with the surrounding natural landscape (Tabb, 2023).

Patio & Pavillion

Literature Research

Penelope Curtis, 2007

In Patio and Pavilion: The Place of Sculpture in Modern Architecture, Penelope Curtis examines the intricate dialogue between spatial design and the sculptural object, challenging the traditional separation of the two disciplines. Rather than treating art and architecture as distinct entities, Curtis argues for a symbiotic relationship where sculpture actively shapes the scale, atmosphere, and functional reading of a building, serving as a vital instrument to establish focal points within the broader architectural composition (Curtis, 2007).

The text highlights two foundational typologies that historically mediate this relationship: the patio and the pavilion. The patio operates as a contained, inward-looking sanctuary, an introverted frame where the sculptural object exists in deliberate isolation from the external urban context (Curtis, 2007). Conversely, the pavilion functions as an extroverted, porous structure that serves as a bridge between the built form and the open landscape. Within the pavilion typology, sculpture is integrated simultaneously into both the architecture and the environment (Curtis, 2007).

Through various historical case studies, Curtis illustrates these shifting dynamics, pointing to Ludwig Mies van der Rohe’s Barcelona Pavilion as a primary example. In this open-plan configuration, Georg Kolbe’s Alba (Dawn) is strategically deployed to cultivate a specific atmosphere and construct visual anchors that guide the visitor’s eye. Rather than acting as mere decoration, the sculpture translates the architect’s spatial intentions, orchestrating precise moments of pause, reflection, and focus within an otherwise fluid architectural plan (Curtis, 2007).

Phenomenological Architecture

Case study analysis

Phenomenological architecture does much more than create a space; it constructs a tangible, immersive narrative. By engaging in a dialogue with its surroundings, architecture serves as a mediator between the human spirit and the world. The power of this experience is often found in the transition between the “outer” world and the “inner” sanctuary, which heightens our awareness of space and self.

1. The Art of Framing

Architecture functions as a selective, interpretive lens. Through curated framing, the designer intentionally dictates what to reveal and what to obscure, directing the user’s gaze to transform a mundane view into an extraordinary event. This process of architectural editing isolates the observer from the overwhelming complexity of the wider environment, inviting a focused, intimate connection with a singular, distilled element of reality.

2. The Choreography of Sequence

The experience of arrival, departure, and the crossing of thresholds constitutes a deliberate spatial choreography. This architectural procession operates as a ritual, systematically stripping away the cognitive distractions of the exterior world as the user moves deeper into the heart of the structure. By intentionally compressing and expanding volumes along this path, the architecture manipulates the visitor’s behaviour, slowing movement, heightening sensory receptivity, and psychologically grounding the mind.

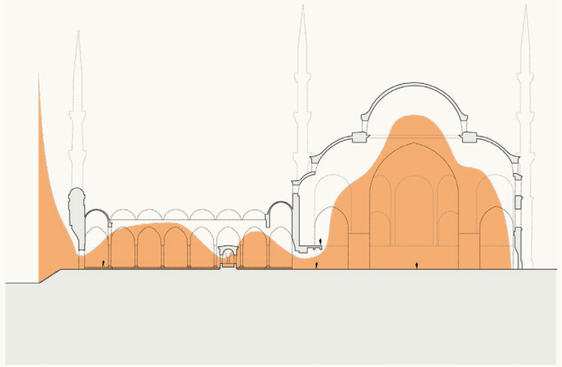
3. Atmosphere

Atmosphere is the immediate, emotional embodiment of a space, the cumulative effect of light, shadow, materiality, and acoustics. Within sacred and contemplative design, atmosphere is actively employed to bridge the gap between the material world and the ineffable. By precisely orchestrating these sensory variables, the architecture induces a state of quiet receptivity. This creates a profound spatial resonance, allowing the individual to transcend the immediacy of the physical enclosure and experience a meaningful connection to a larger context.

Religious Architecture

Case study analysis

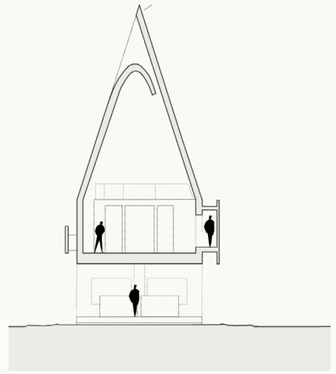
Sacred architecture is designed to facilitate religious or spiritual experiences. These spaces aim to prepare the soul for sacred encounters, evoking a profound sense of respect that not only stirs emotional responses but also influences the behavior of those within.



1. Compression & Expansion

Sacred architecture often utilizes a spatial sequence of compression followed by expansion. This contrast amplifies the perceived scale and grandeur of the building, heightening the sense of awe and wonder experienced by visitors.

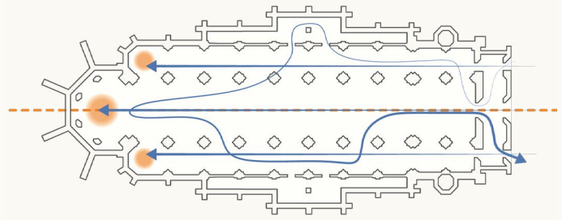
Figure 2.7 Blue Mosque - Istanbul



2. Hierarchy in scale

A key component of religious design is the interaction between human scale and spatial hierarchy. While larger, grandiose settings allow for group gatherings and shared spiritual experiences, intimate places are usually used for introspection and prayer.

Figure 2.8 Seashore Chapel - Qinhuangdao



3. Geometry & Focal points

Religious architecture traditionally relies on a clear axis and geometric logic to establish spatial clarity. Within these rigorous frameworks, strategic focal points are deployed to anchor the user’s eye, defining both the aesthetic structure and the spiritual experience of the space.

Figure 2.9 Grundtvigs Kirke - Copenhagen

Dom Hans van der Laan

Case study analysis

The architecture of Dom Hans van der Laan is centered around the concept of balance and cohesion through a rigorous proportional system. By linking the smallest detail to the larger scale, his architecture maintains a unified, scalar harmony. This system is informed by the Plastic Number, a 3 to 4 ratio, the smallest scalar difference distinctly perceptible to the human mind. Conversely, the 1:7 ratio defines the maximum threshold where two distinct measures can still be visually and conceptually related.

Van der Laan developed a proportional scale ranging from 1 to 7, where each authentic measure increases by a factor of 3:4 from the previous one, supplemented by derived proportions equal to 6/7 of the authentic measure, see figure 2.10. This system is applied across four architectural orders of size: wall, cell, court, and domain. To maintain continuity, the orders overlap; the highest value of a smaller order serves as the lowest value of the subsequent, larger order.

To extend this logic to vertical surfaces, Van der Laan defined proportional values for wall openings. If a wall is composed of columns, one of five distinct column-spacing types (stylos) is applied. Where as if an opening is carved into a solid wall, it adheres to one of five specific window arrangements, ensuring the facade reflects the building's logic, see figure 2.12.

Because the maximum width of a cell is restricted to seven times the wall thickness, larger spaces require additional thresholds to fit the theory, a principle known as superposition. These thresholds define the maximum dimension by applying the strict 1:7 limit, see figure 2.11. To emphasize these boundaries, juxtaposition is employed, ensuring that the autonomy of individual structural parts is preserved while still contributing to the greater composition.

Within his designs, light acts as a primary guiding force. Light is carefully introduced to emphasize threshold spaces and orchestrate spatial sequence: while circulation zones remain dim, transition points and main spaces are accentuated by natural light, see figure 2.13.

Ultimately, these principles align architecture directly with human spatial perception. The resulting sense of balance feels inherently "right", a qualities-driven phenomenon that must be experienced physically, yet remains fully grounded in strict architectural theory.

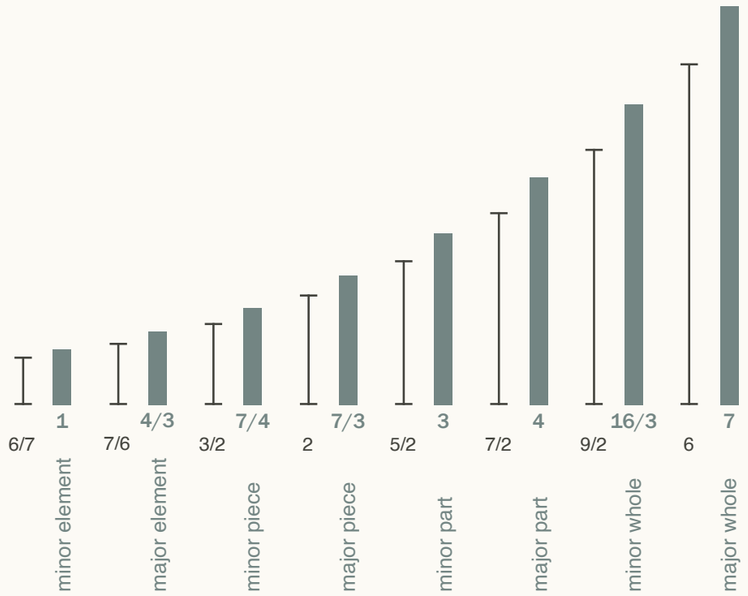


Figure 2.10 Dom Hans van der Laan
Illustration of proportional theory

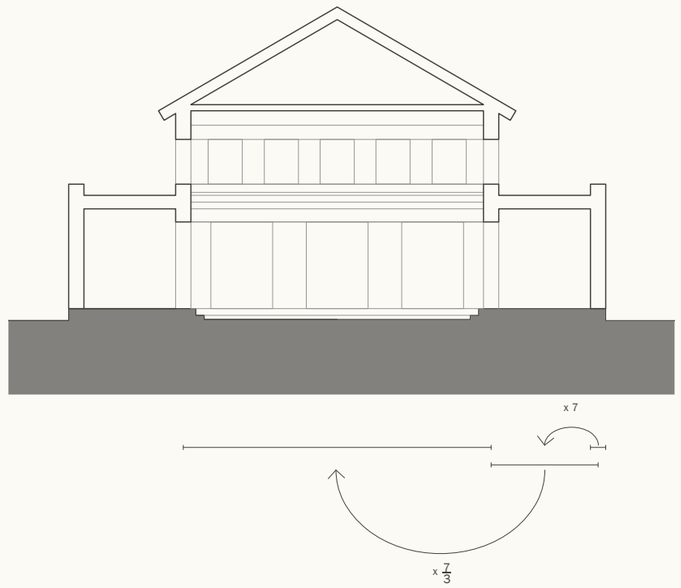


Figure 2.11 St. benedictusberg Abbey
Illustration of superposition theory

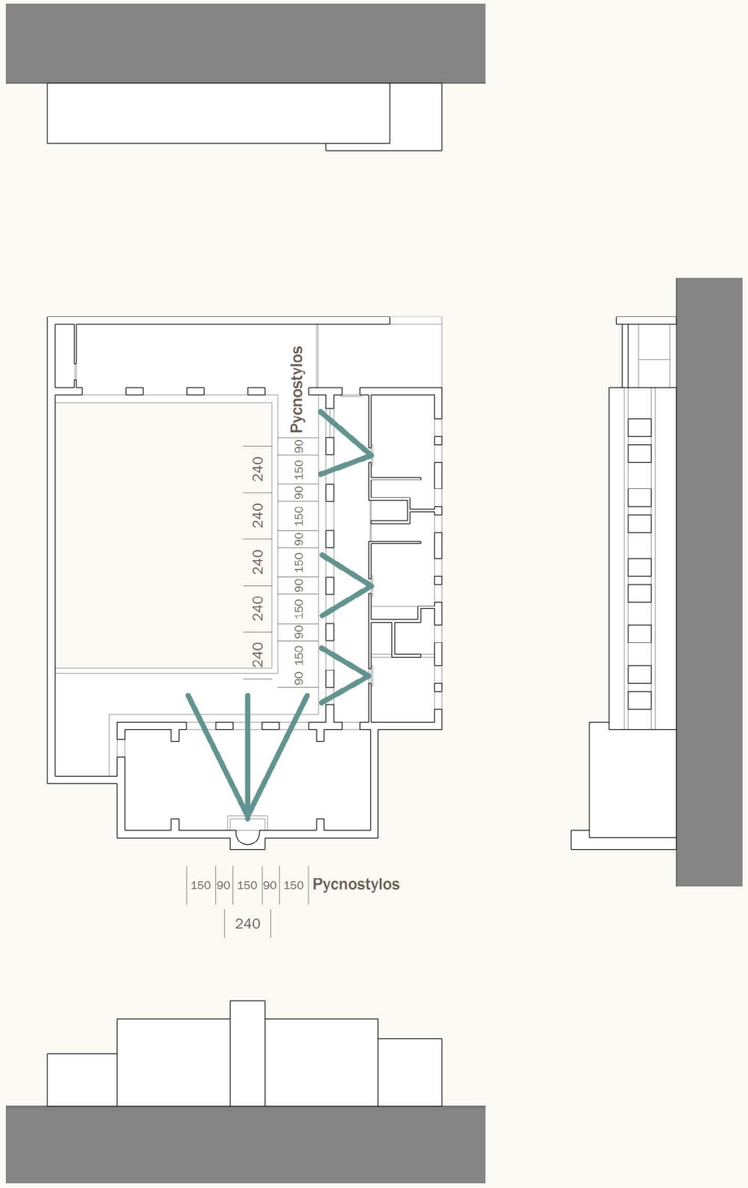


Figure 2.12 House Naalden
Wall opening proportions and opening alignment diagram

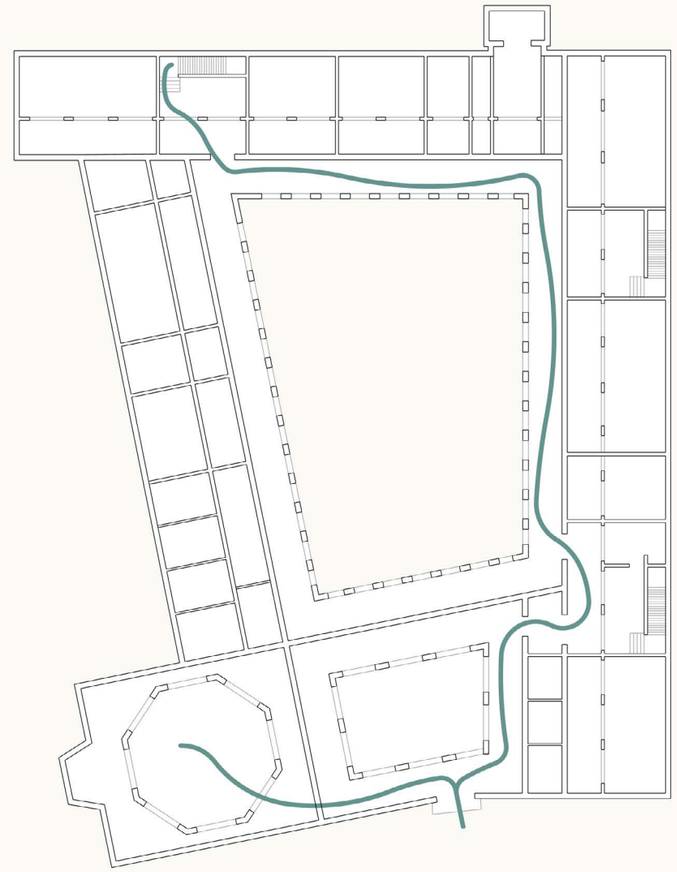


Figure 2.13 Roosenberg Abbey
Spatial organization and circulation diagram

RESULTS

Research
Design results

The design development followed an iterative process, driven by making clear decisions and carefully analyzing their outcomes. This created a loop where initial choices were evaluated to identify weaknesses, allowing the design to evolve through consistent refinement and growth.

This approach began with broad questions of form and configuration. As these foundational aspects were resolved, the focus gradually shifted toward more technical and architectural details.

The design was also shaped by ongoing research, which provided a deeper understanding of the site and its specific requirements. Integrating this knowledge helped ground the design choices and ensured they were well informed. Over time, this progression allowed the project to move from a conceptual starting point to a resolved and detailed state, as documented in the following chapter.

The blue-tinted pages show the research and design explorations, which are followed by the final results presented on crème pages

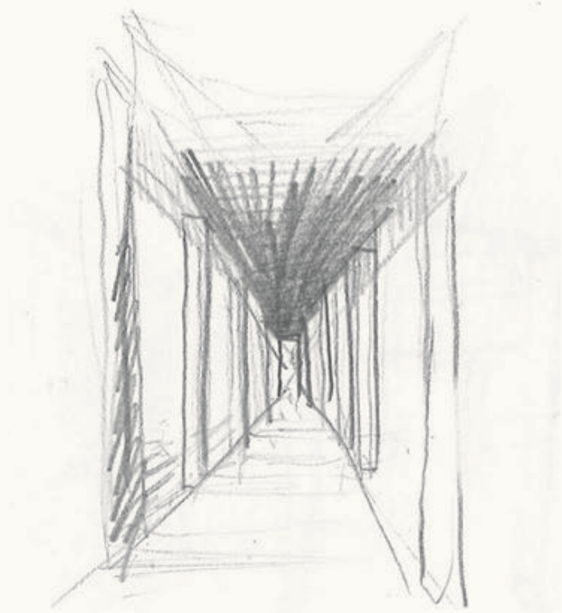


Figure 3.1 colonnade sketch

Emotional narrative of the building

If the walls could talk, they say.
Meandering through the prison, the walls, the scream.
The gruesome history I am faced with, weighs me down.
Confronted with the gruesome acts of humankind, I feel alone.

As I continue my journey, I encounter walls that are unburdened by history.
I am moving beyond the confining walls of the prison, yet I feel no release.
The heaviness stays with me in my soul.
I walk the path to find some release.

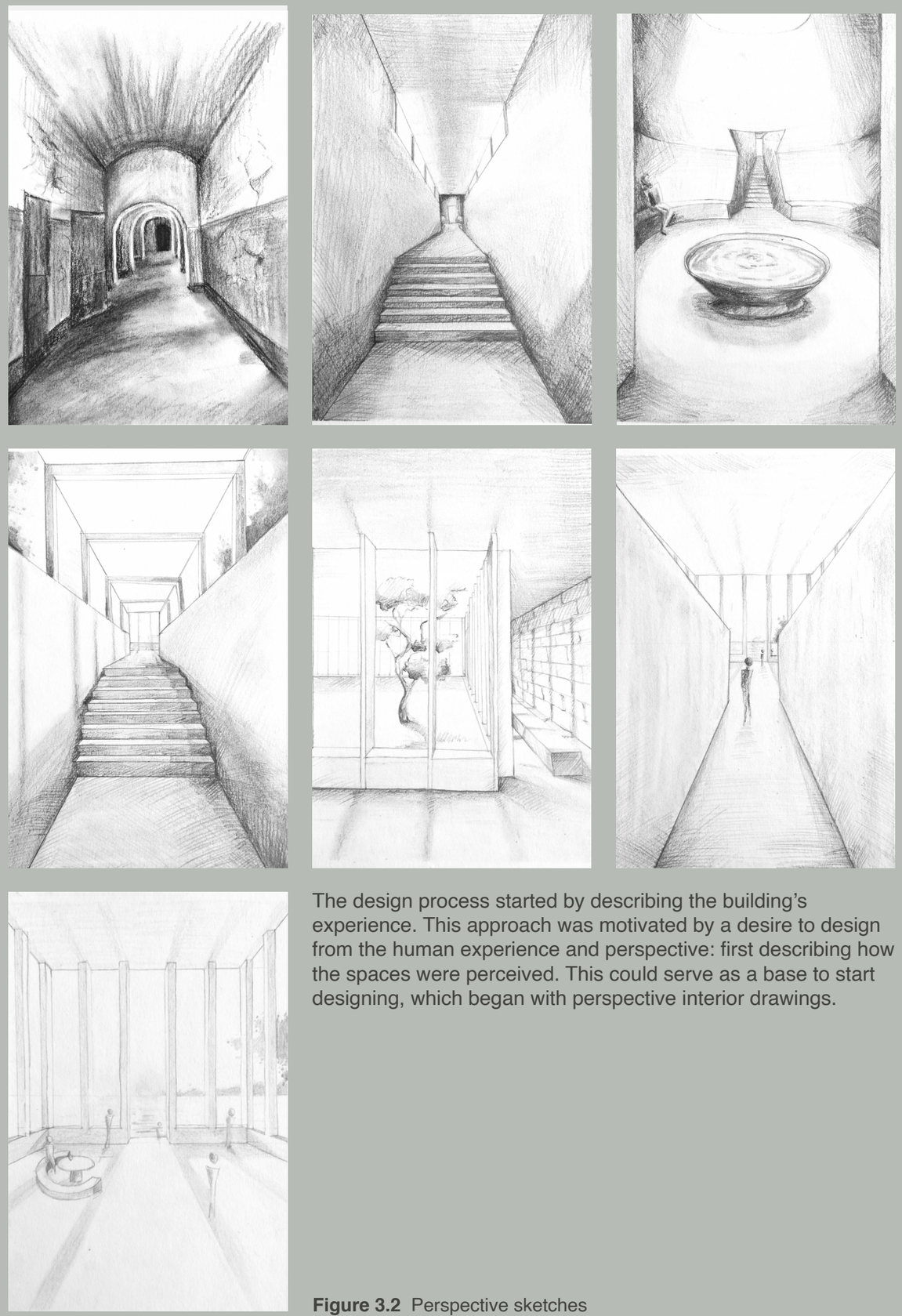
Before me, I see a beam of light whose reflections dance on the water.
As the miracle of light amazes me, my body slows down, and so do my thoughts.
Sitting down, I admire the light as it casts wonderful reflections throughout the room.
A sudden water drop reminds me of the world beyond the prison walls.

Feeling ready for the following steps, I start the next course of my walk.
The familiar light guides me and reveals traces of trees swaying in the wind.
The void of the prison cells yields to a growing wonder.
What world awaits me beyond the prison, and how will I fit in?

As I ascend into the courtyard, I am welcomed by the same old walls.
Lit by this light, they no longer confine me; they are my shelter.
The courtyards frame a beautiful scene; in observation, reality seems one step closer.
As I sit, I think about how wonderful scenes can be created when the past and present merge.

While observing the courtyard, I start to become more aware of a light calling me.
The light comes from a narrow hallway, reminding me of the paths before.
The light hints that something big awaits me at the other end.
I have learned to trust this light, so I follow.

At last, I understand what was lacking.
I've been working on this all alone.
But I could never feel alone here.
I see the sea, connecting worlds,
I see the city, people walking
I see people talking, drinking tea.
I see the light welcoming me.
Only after isolation do I feel their presence so clearly.



The design process started by describing the building's experience. This approach was motivated by a desire to design from the human experience and perspective: first describing how the spaces were perceived. This could serve as a base to start designing, which began with perspective interior drawings.

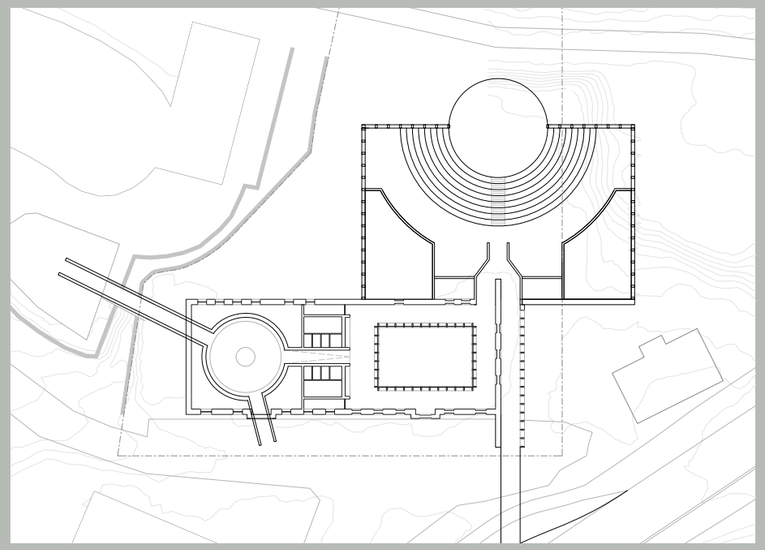
Figure 3.2 Perspective sketches

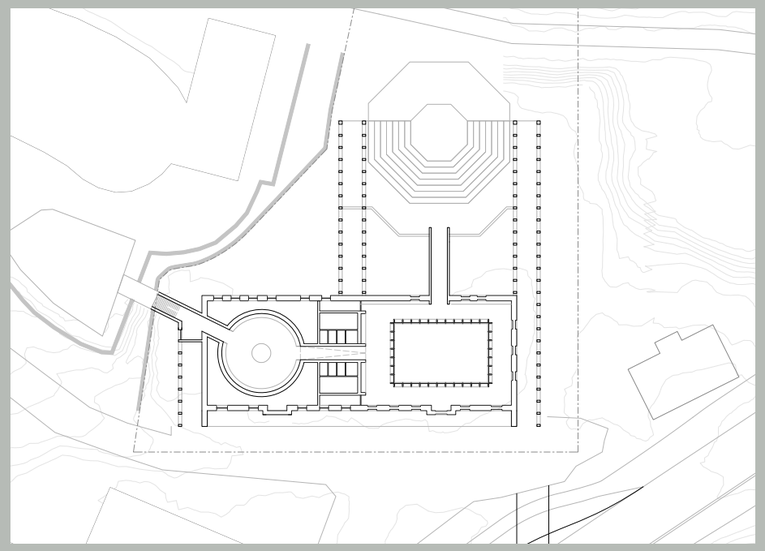
Floorplan Iterations

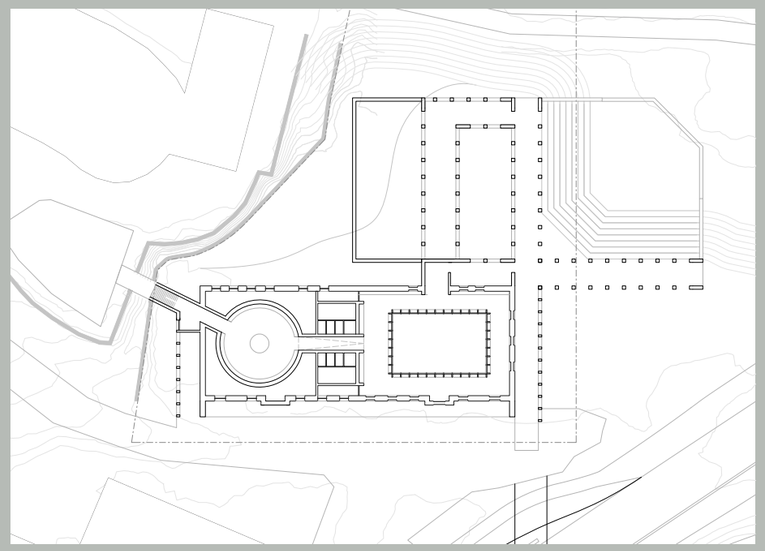
Working from the base of the A1 Floorplan, many different configurations were tested to strengthen the link between the context and the public pavilion. Furthermore, the possibilities of incorporating different functions were examined to further help activate the pavilion.



Figure 3.3 A1 floorplan







Itterations

Figure 3.4
Floorplan development

Floorplan Concept

This iterative process informed the design and the understanding of the context. This understanding informed the placing of two axes, framing the sea and the Patarei while establishing strong connections to the immediate context.

The two axes created voids that are filled with public functions aimed at activating the public pavilion. The topography of the site informed the placement of the open-air theater, which is positioned in a naturally sloping area. whereas the restaurant is placed on top of the hill, allowing for wide views.

A consistent element of the floor plan has been the placement of the spaces catered towards personal reconnection. The thick walls of the limestone bread factory perfectly catared itself towards this. The weight of the walls secludes the visitor from the turmoil of the world while simultaneously grounding the visitor in the history of the site.

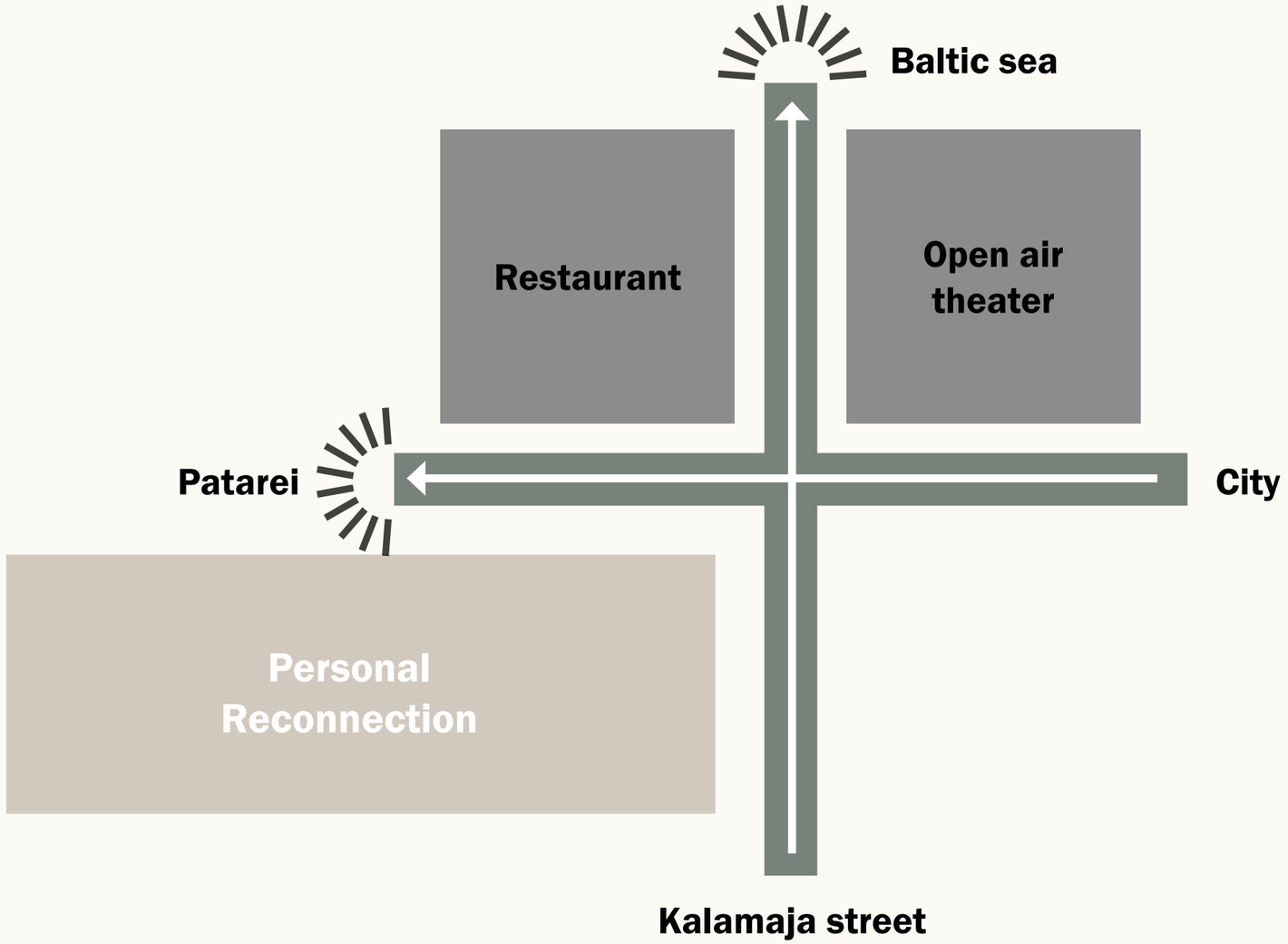


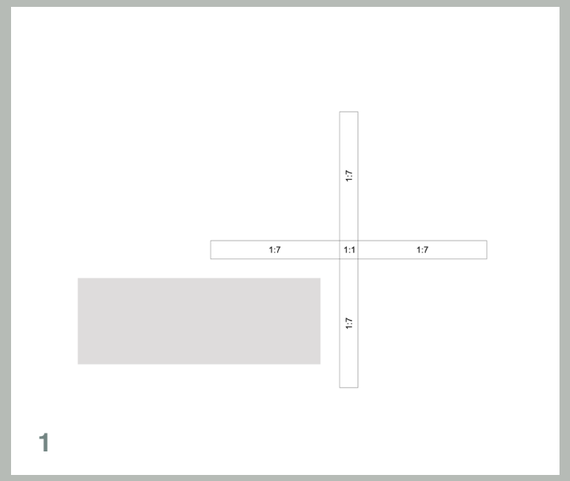
Figure 3.5 Design concept drawing

Proportional System

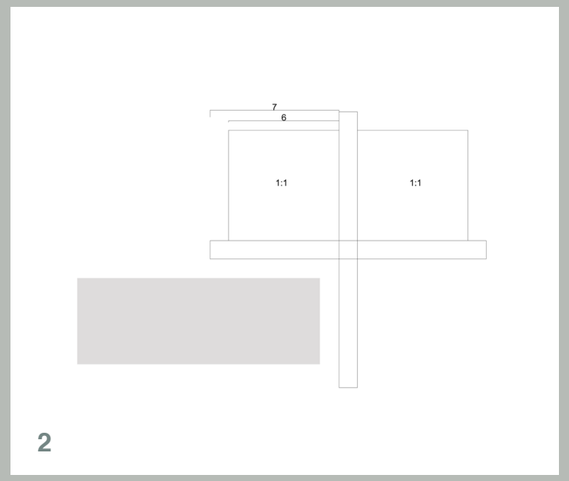
The floor plan was developed using Dom Hans van der Laan's theory of the Plastic Number. Following research into his design philosophy and proportional measurement system, these principles were applied to both the building's form and its internal organization.

The design process began by defining the gallery widths at 3.5 meters, which, based on a 1:7 ratio, established a column depth of 500 mm and a maximum colonnade length of 24.5 meters. To maintain spatial hierarchy, public functions were recessed by one order relative to the colonnades, utilizing a 7:6 proportional relationship. Furthermore, thresholds were integrated into the public voids to mediate scalar transitions. To define the column dimensions, different column spacings were tested, informing the dimensions according to the proportional theory.

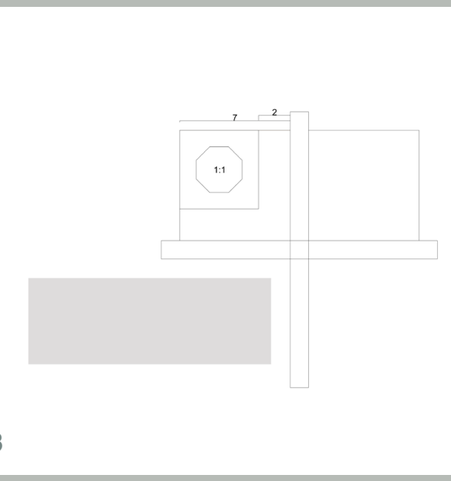
For the transformation of the abandoned bread factory, the limestone outer walls were used as a base. Within this base, the proportional logic was introduced through spatial dividers, focused on the spaces experienced by the visitor. Within these spaces voids were introduced that open up towards the sky. The column spacing of the courtyard walls led to a column dimension of 350 by 450 following the Araeostyle proportion.



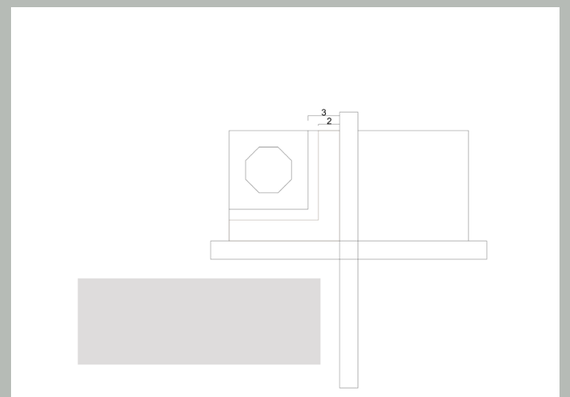
1



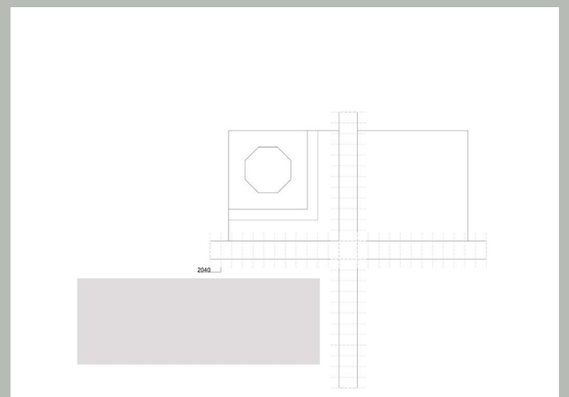
2



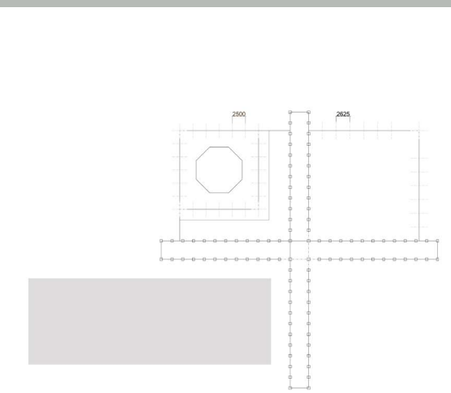
3



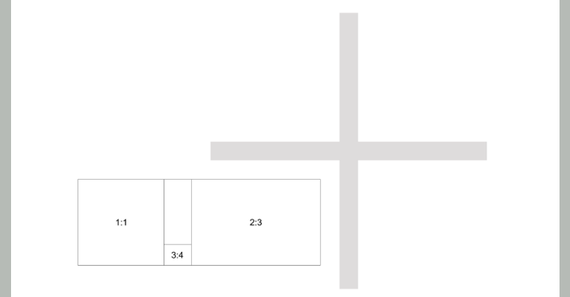
4



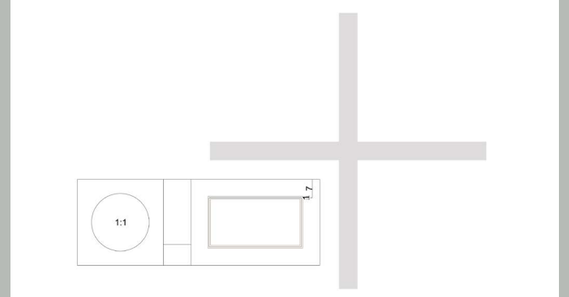
5



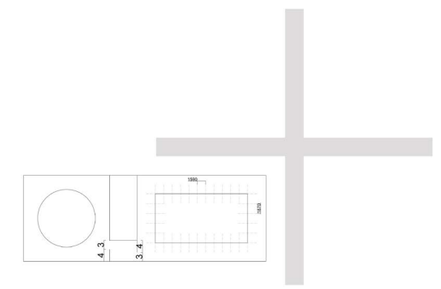
6



7



8



9

Figure 3.6 Proportional design logic

Spatial Organization

To establish a direct link between the Patarei Prison and the former bread factory, a long hallway is introduced. To negotiate the significant height differences in the site's terrain, a central vertical circulation hub is placed in the middle. This space features a winding staircase and an elevator, ensuring the entire pavilion is fully accessible.

This hallway guides visitors into a dedicated space featuring a dome structure. Natural light filters in through the perimeter of where the dome meets the roof, and a single, strategically placed window allows visitors to look back at the Patarei complex. Upon entering the dome, a light shaft from an oculus illuminates the space, where integrated seating invites visitors to sit down and look up at the light.

From the dome, a path leads to a gallery that encircles an open-air courtyard. A large mirror pond sits at the center, capturing the sky and reflecting the rhythmic structure of the building. The gallery is lined with benches, providing a quiet space to sit and view the exposed historic walls of the former bread factory. Upon entering the courtyard, a path slopes down, submerging the visitor in the landscape.

Towards the seashore, the building opens up into an extroverted public pavilion. This structure is organized by a rhythmic series of colonnades that filter views of the surrounding landscape. Shallow mirror ponds and height differences act as physical thresholds between the landscape and the public programming. The upper-level restaurant centers around an open kitchen, making the process of food preparation a visible centerpiece. Below this, a cafe connects directly to the seashore. Furthermore, an open-air theatre is integrated into a natural depression in the site's topography, nesting the seating directly into the slope for community gatherings.

All supporting facilities are located on the level below ground. This subterranean floor houses visitor restrooms for both the restaurant and the open-air theater, a wardrobe, storage, and staff backrooms. Placing these programs underground keeps the ground floor open and preserves unobstructed views of the surrounding environment.

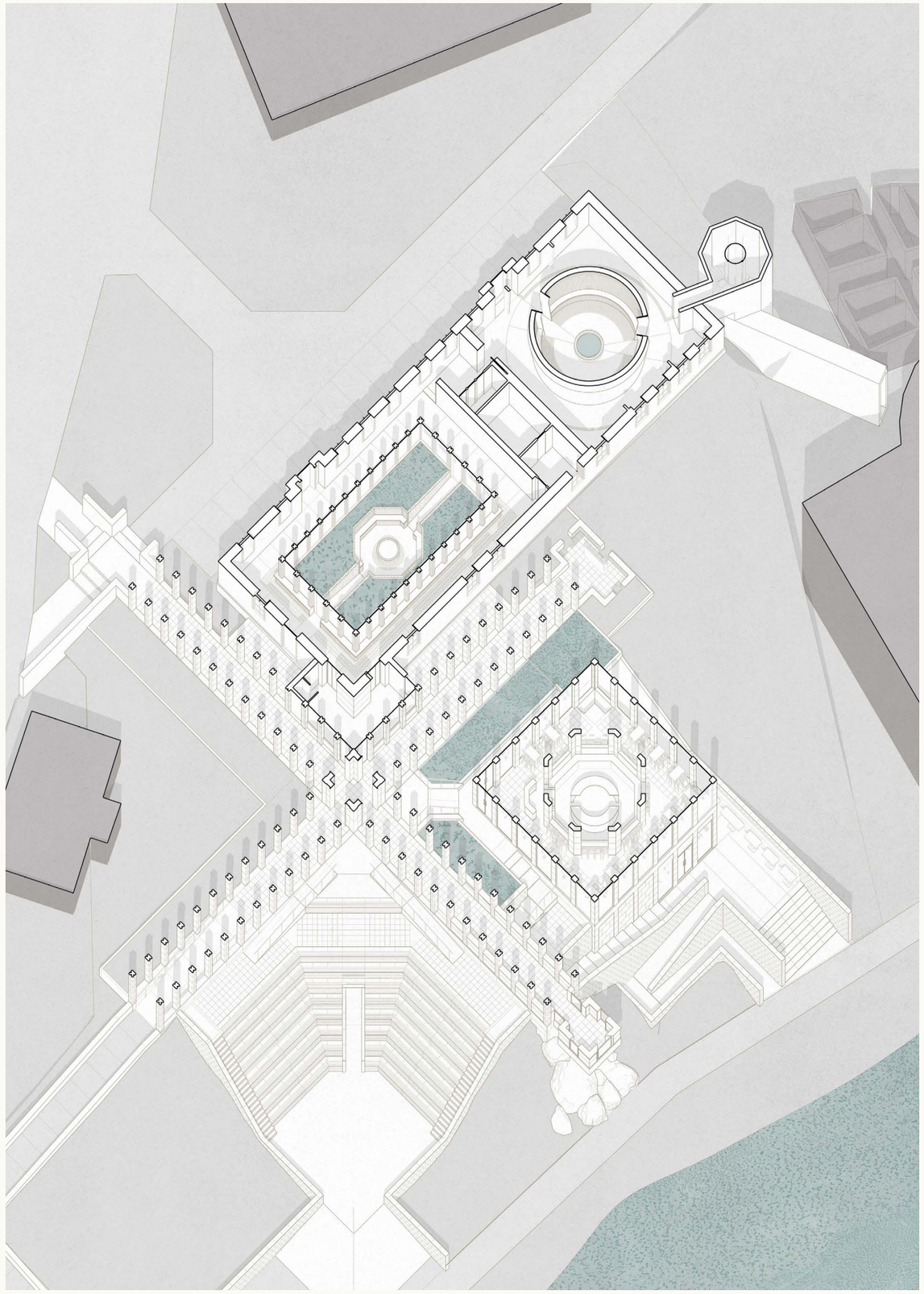


Figure 3.7 Oblique drawing

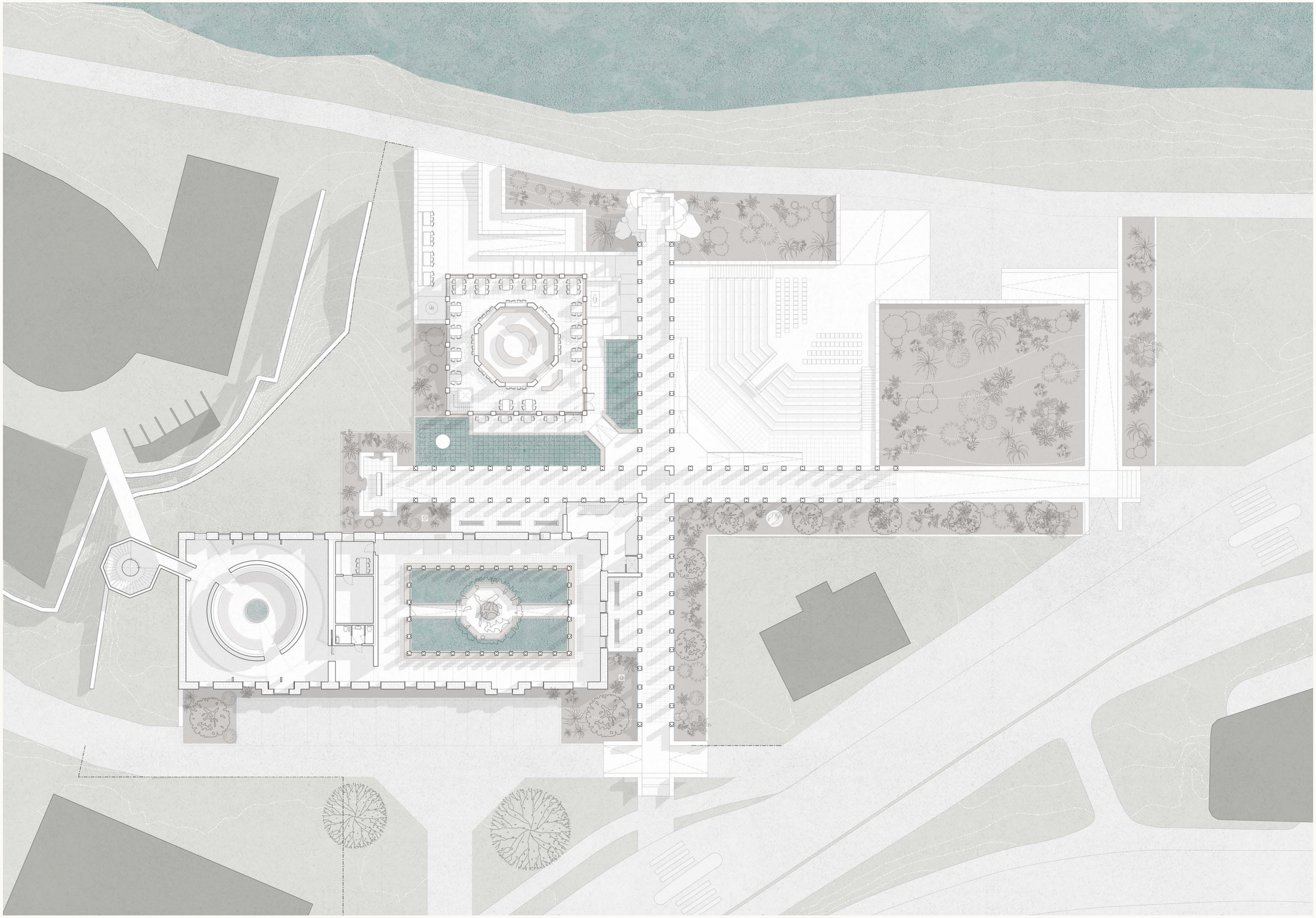


Figure 3.8 Floorplan - upper level

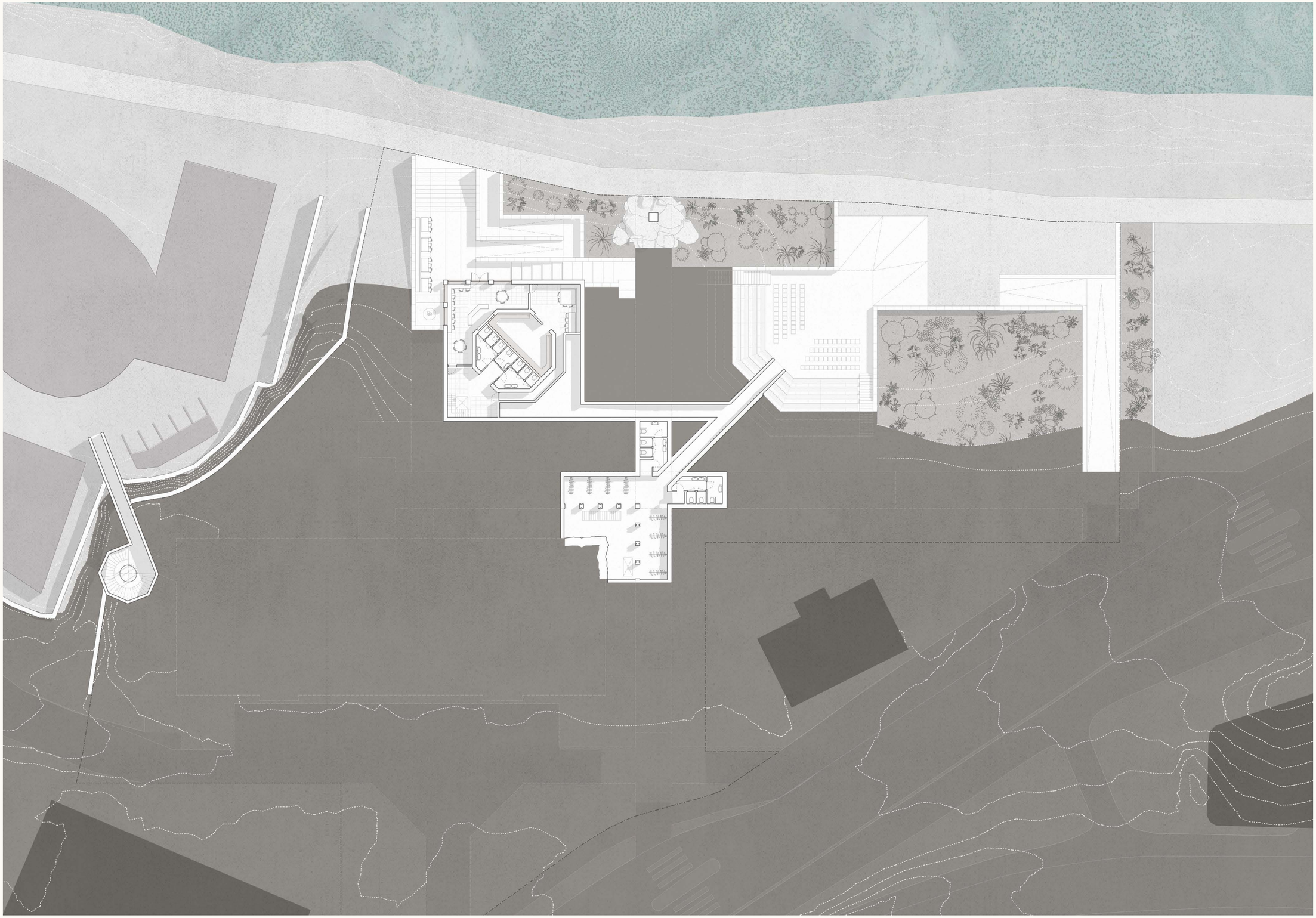


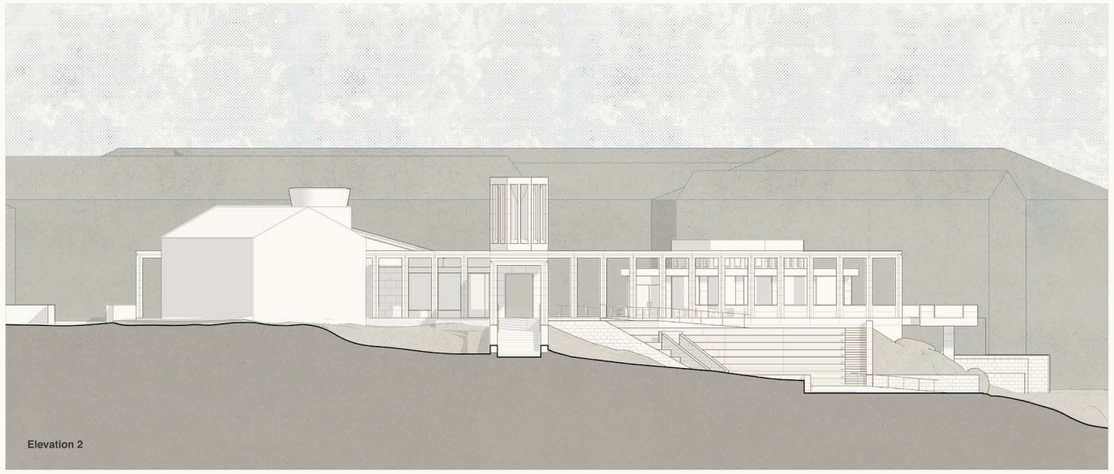
Figure 3.9 Floorplan - lower level

Elevations

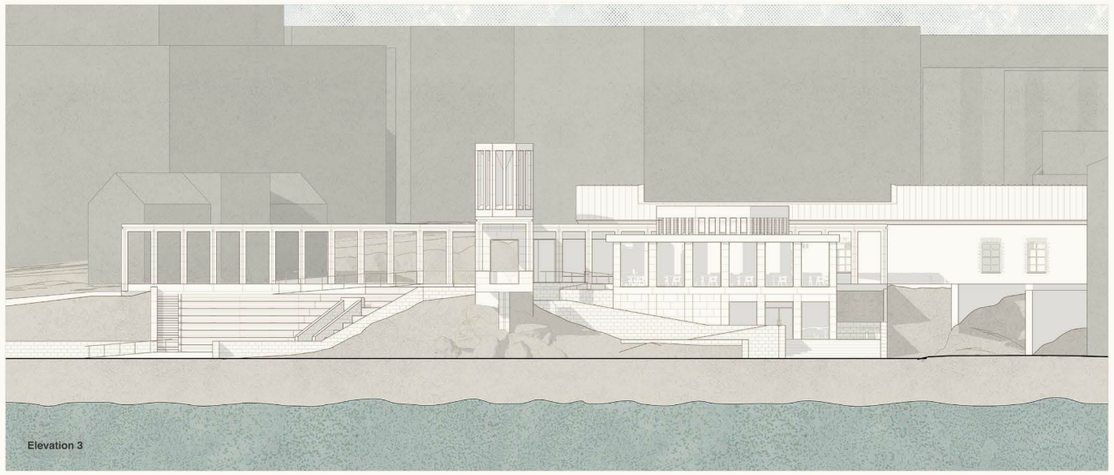
Elevation 1
This elevation illustrates the facade facing Kalamaja Street, where the original exterior of the historic bread factory is carefully restored. The voids in the roof suggest the updated internal programming. To the side, a minimal entrance structure clearly marks the threshold into the new pavilion without detracting from the heritage quality of the original building.

Elevation 2
This view shows the rhythmic colonnade connecting the public pavilion to the main avenue leading toward the city while simultaneously framing the Patarei prison complex. The drawing captures how the site gently slopes down toward the seashore, where visitors can naturally enter the pavilion through the integrated open-air theatre.

Elevation 3
Viewed from the waterfront, this elevation demonstrates how shifting floor levels communicate the internal thresholds of the design. A sweeping staircase winds down toward the shoreline, establishing a physical connection to the cafe and restaurant. On the skyline, the height of the wind tower serves as a strong visual anchor, directing visitors toward the central heart of the pavilion.









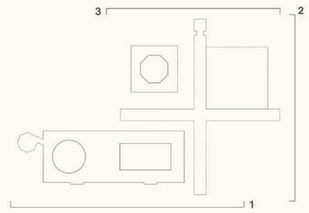


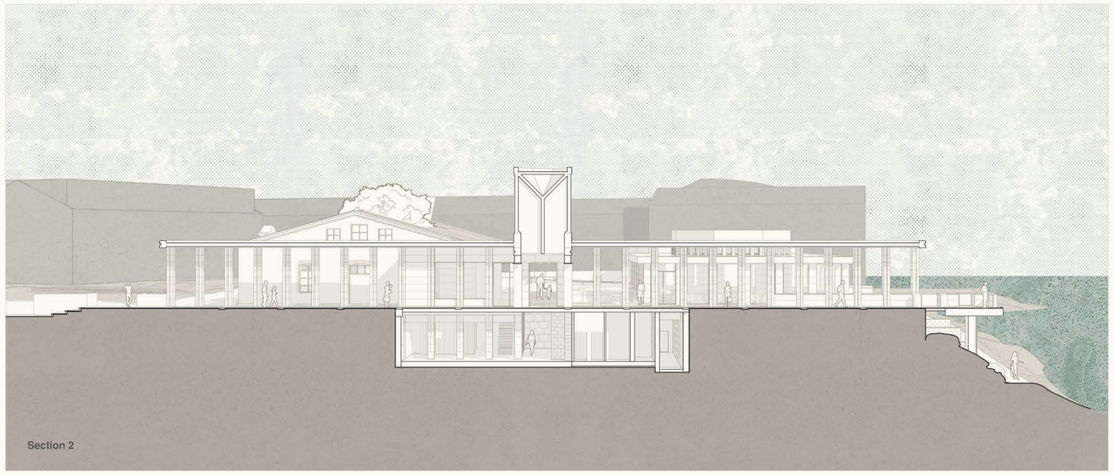
Figure 3.10 Design elevations

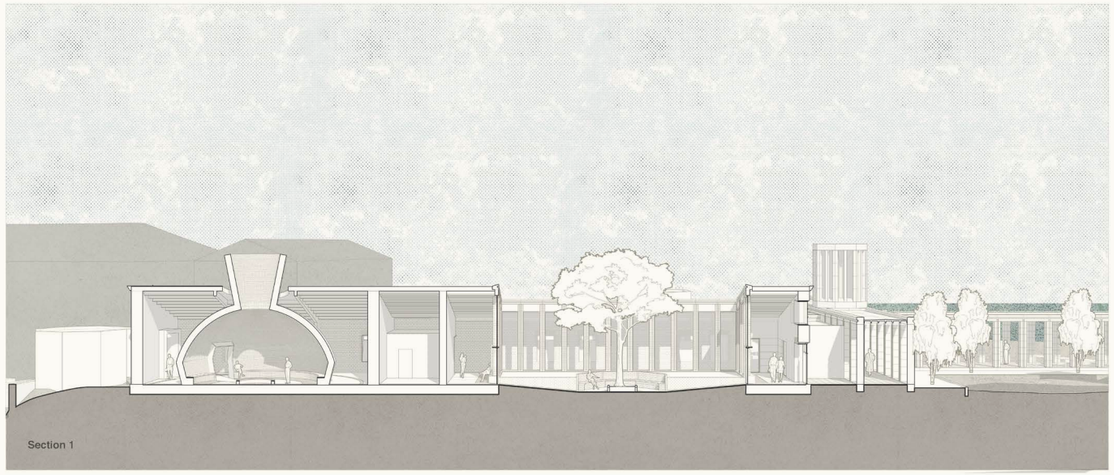
Sections

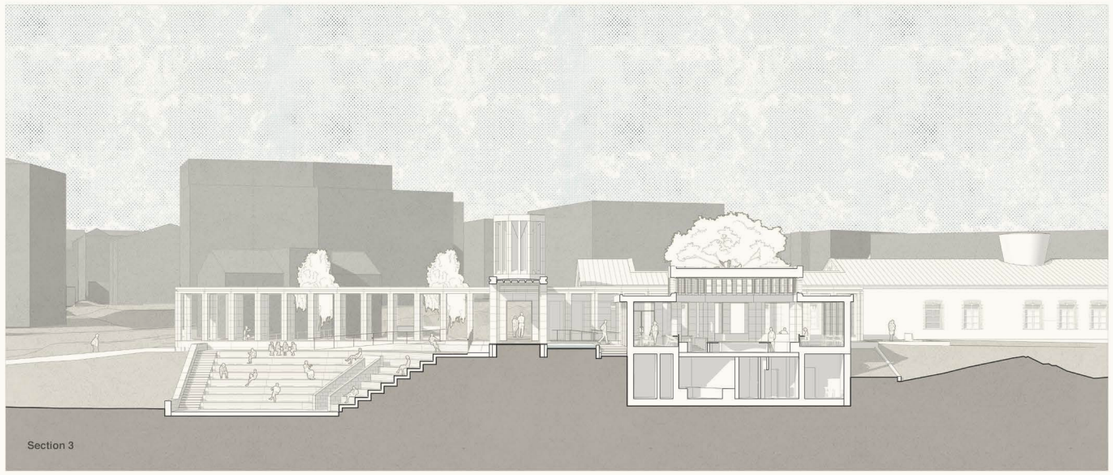
Section 1
This section illustrates the introverted character of the space, where visitors are positioned along the perimeter. The architectural envelope intentionally directs the gaze inward, minimizing direct visual connections to the outside world to foster a sense of seclusion and quiet reflection.

Section 2
This section highlights the rhythmic colonnades and a central wind tower designed to capture and direct airflow downward. By intentionally exposing visitors to the natural elements, the architecture heightens awareness of the surrounding environment. The colonnades support this purpose by filtering visual noise and selectively framing the external context.

Section 3
This section demonstrates how the colonnades interact with the public functions of the pavilion. It shows the use of shifting floor levels and mirror ponds to create subtle transitions between spaces. Additionally, the drawing illustrates how a lower floor is utilized to discreetly organize the support functions beneath the restaurant.









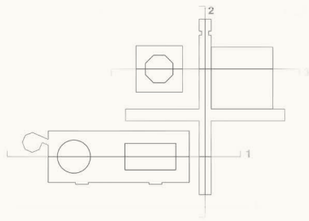


Figure 3.10 Design sections

Detailing the Dome

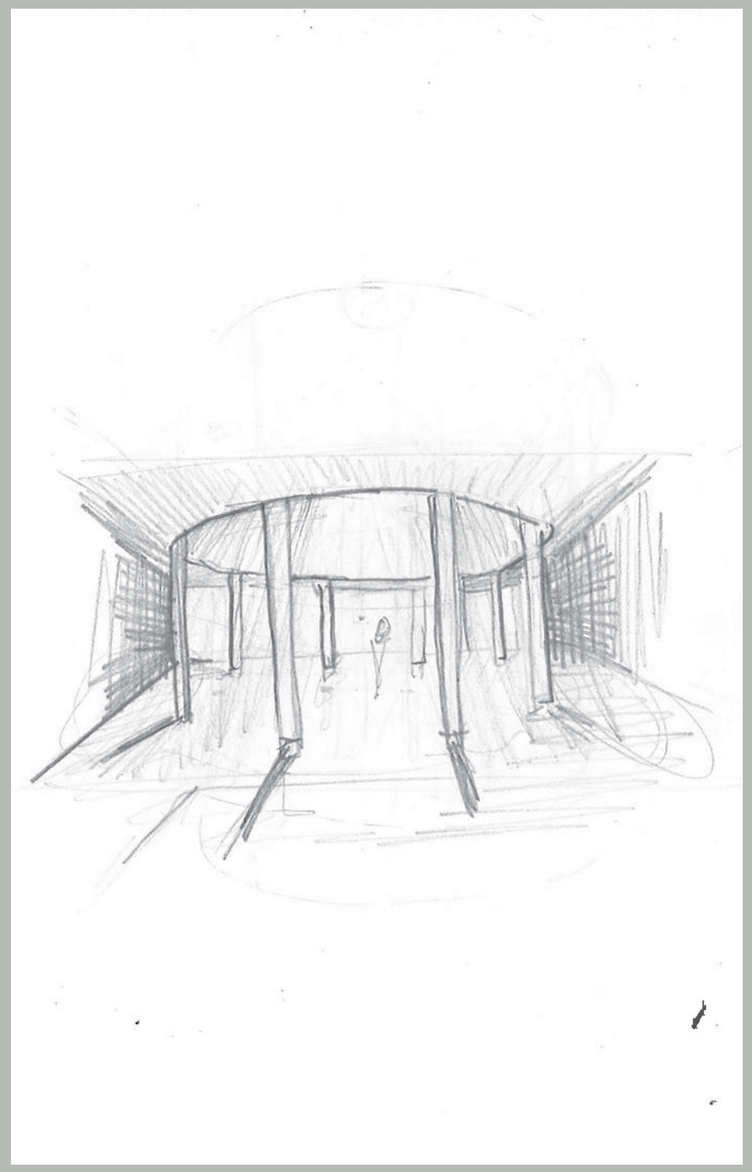


Figure 3.11 Design explorations dome structure

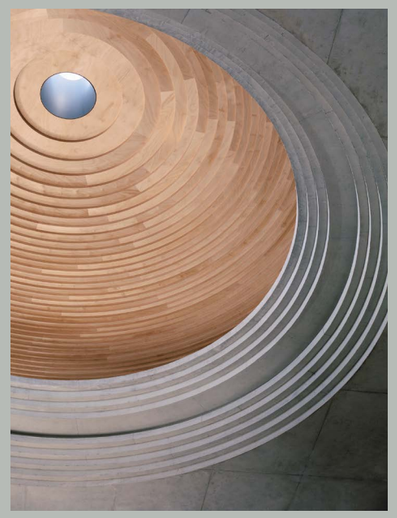


Figure 3.12
Punchbowl mosque
Candalepas Associates

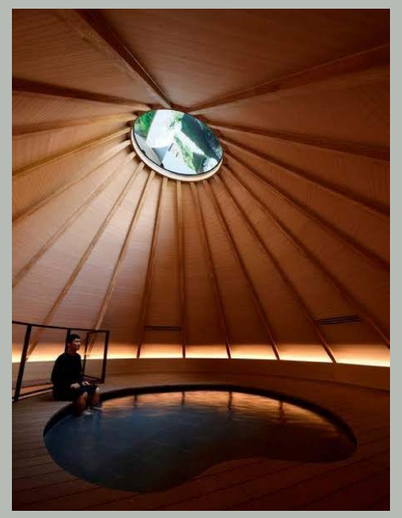


Figure 3.13
Hot spring foot spa
MAD architects

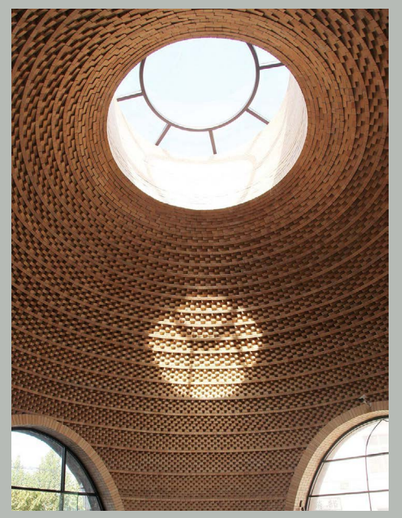


Figure 3.14
Millet vinegar museum
Zhanghua Studio

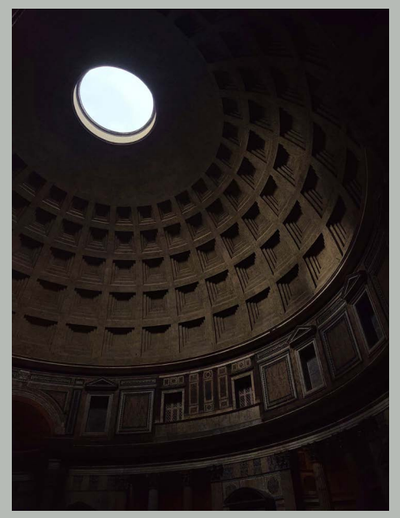
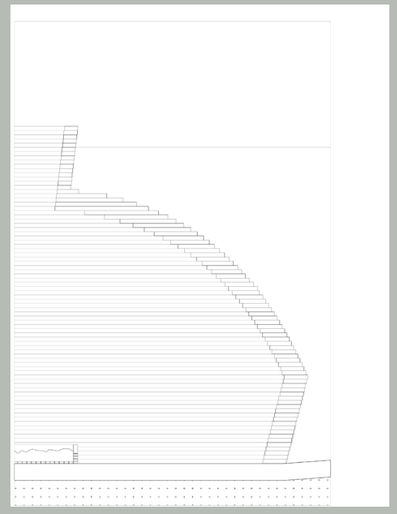
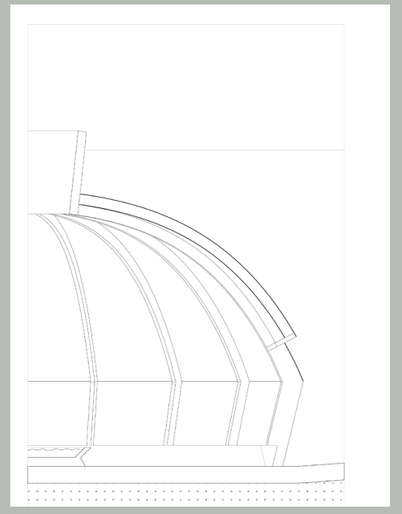


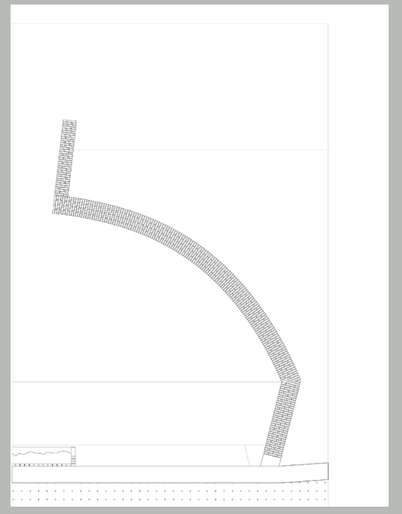
Figure 3.15
Pantheon



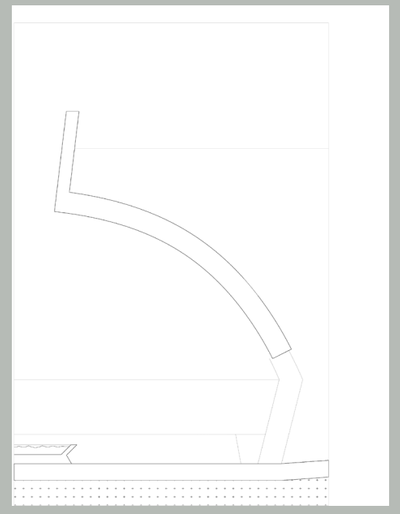
Layers
Sphere created by circular boards decreasing in diameter



Portals
Curved portals with straight connecting boards



Bricks
Bricks slowly rotating around the center of the sphere



Cast concrete
Concrete poured in spherical mold

Detailing
the Courtyard



Figure 3.16
Säynätsalo town hall
Alvar Aalto

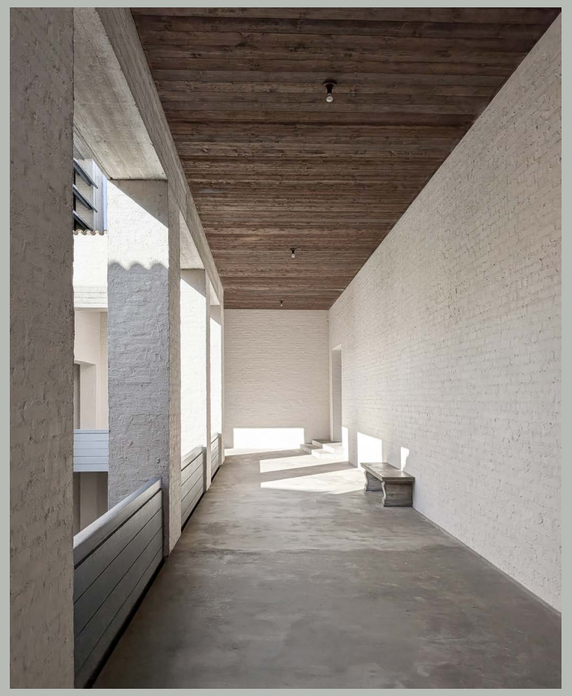


Figure 3.17
St. benedictusberg Abbey
Dom Hans van der Laan

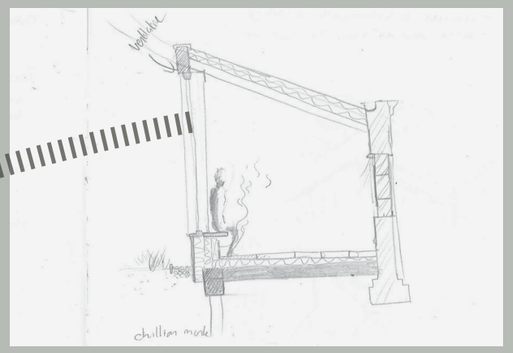


Figure 3.18
New temple complex
James Gorst Architects



Figure 3.19
Holocaust museum
Winhov Architects









Itterations

Figure 3.20
Gallery design explorations

Detailing
the Colonnades

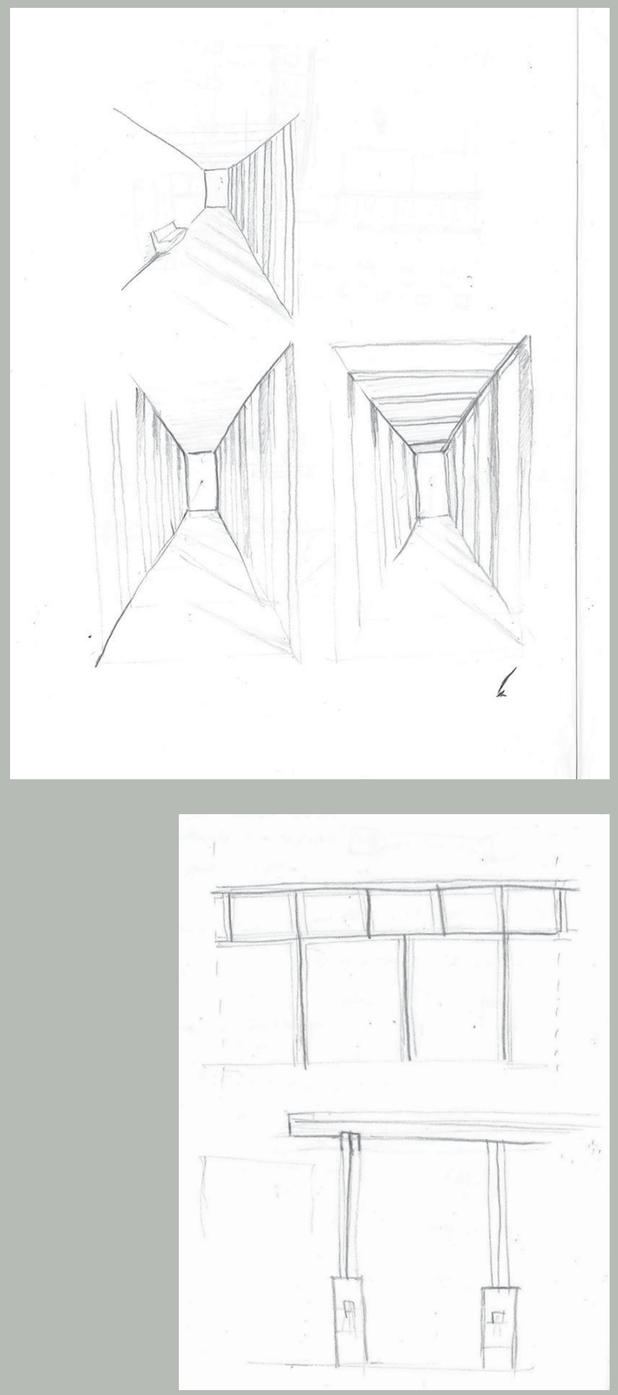


Figure 3.21
Colonnade design sketches



Figure 3.22
Mexican Art gallery
Arcadio and Javier Marín

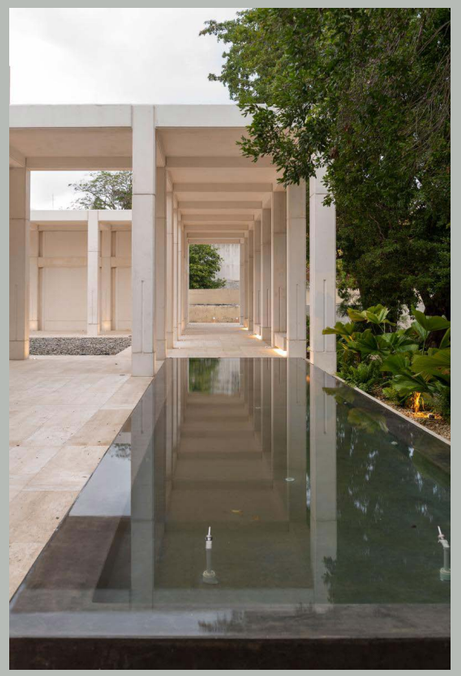


Figure 3.23
QMM cultural center
Materia - Gustavo Carmona

Figure 3.24
Cranbrook Academy
Eliel Saarinen

Detailing the Restaurant

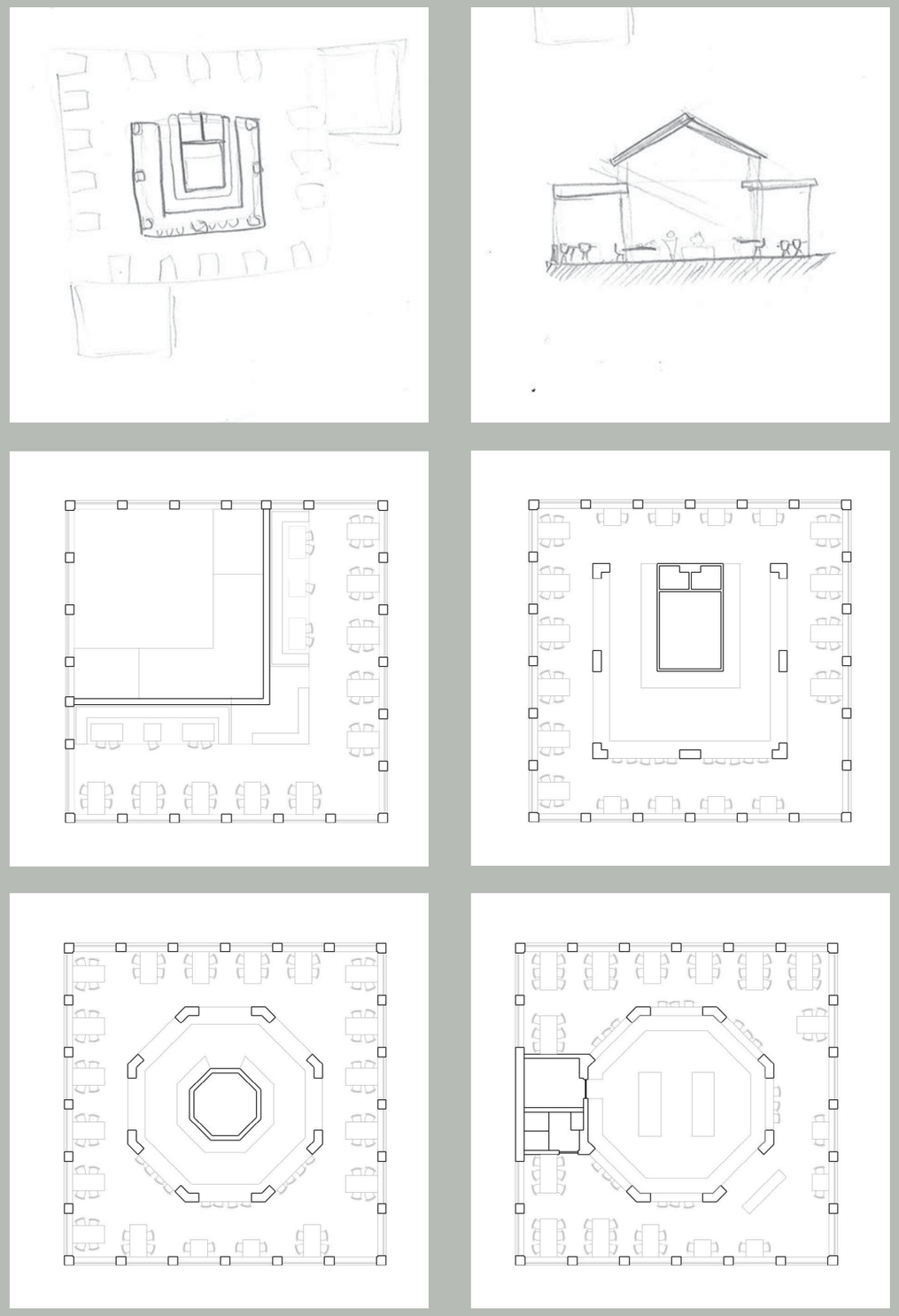


Figure 3.25
Restaurant design research



Figure 3.26
Roosenberg abbey
Dom Hans van der Laan

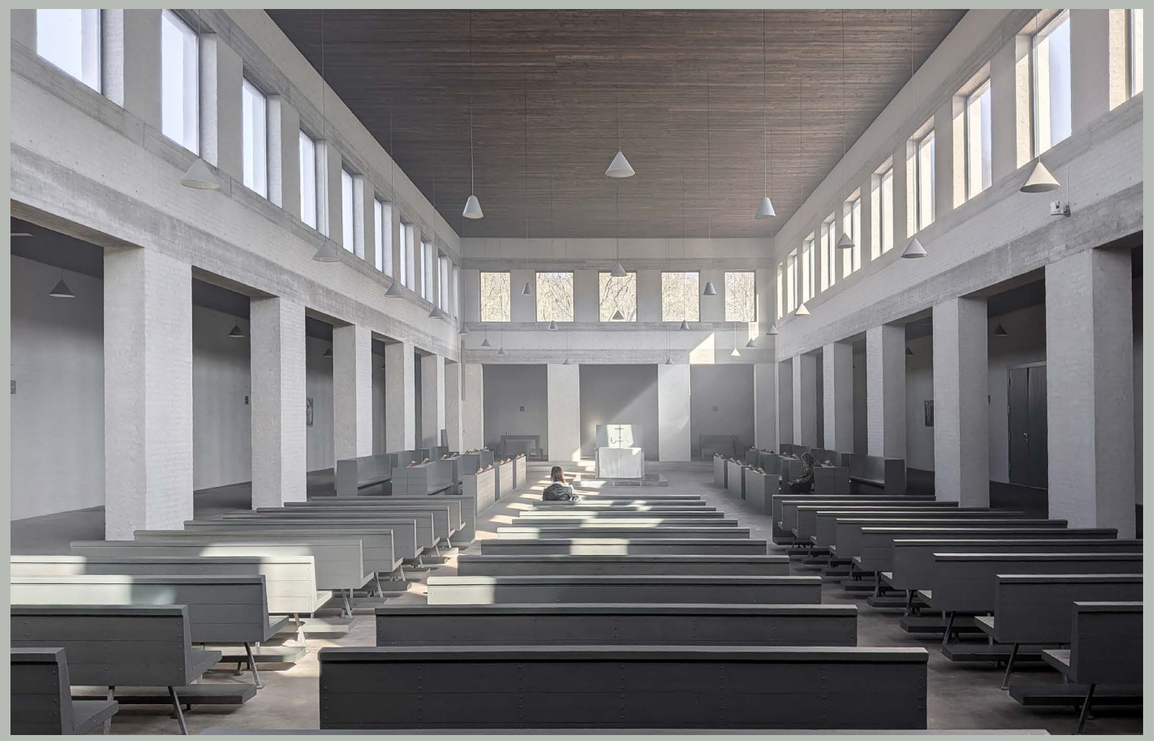


Figure 3.27
st. Benedictusberg abbey
Dom Hans van der Laan

Detailing
the Open-air Theatre

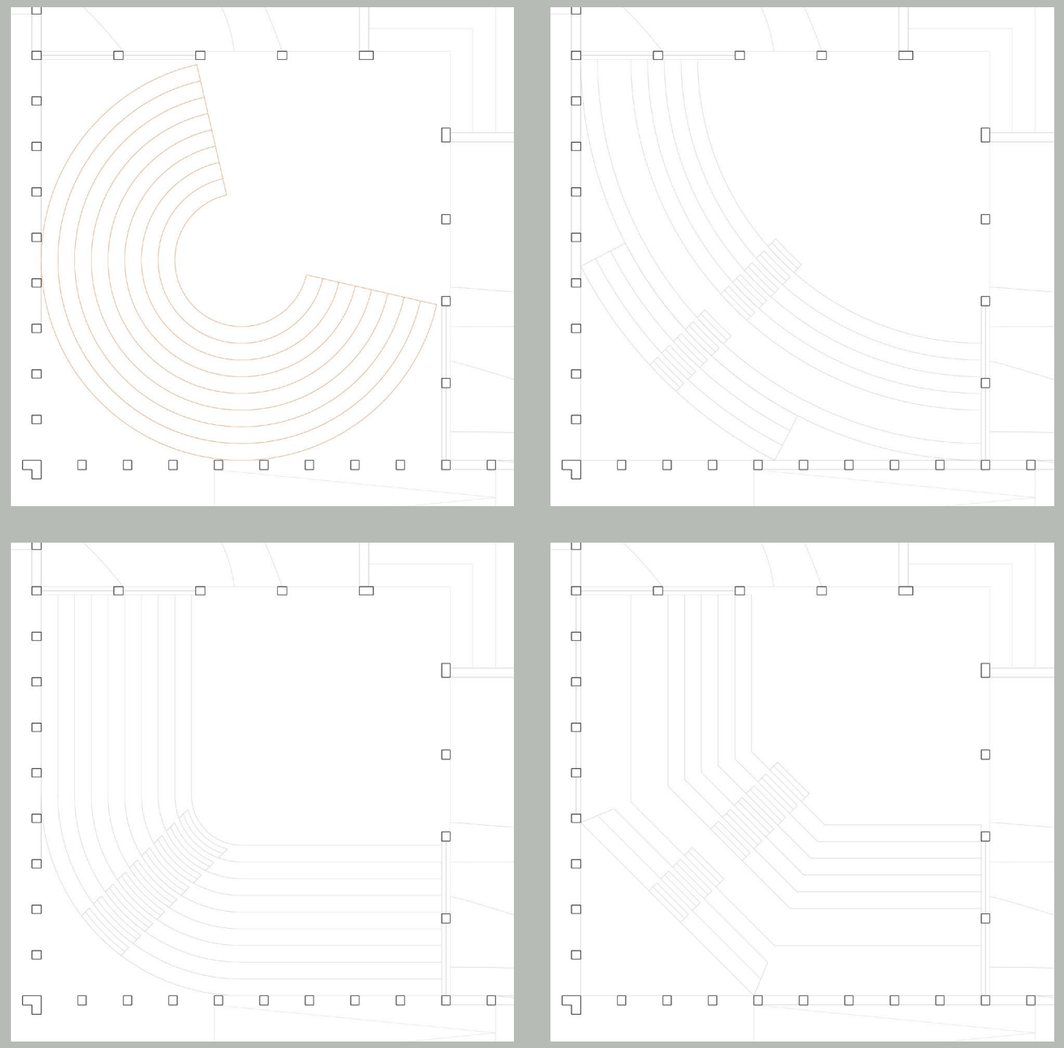


Figure 3.28
amphitheatre design research

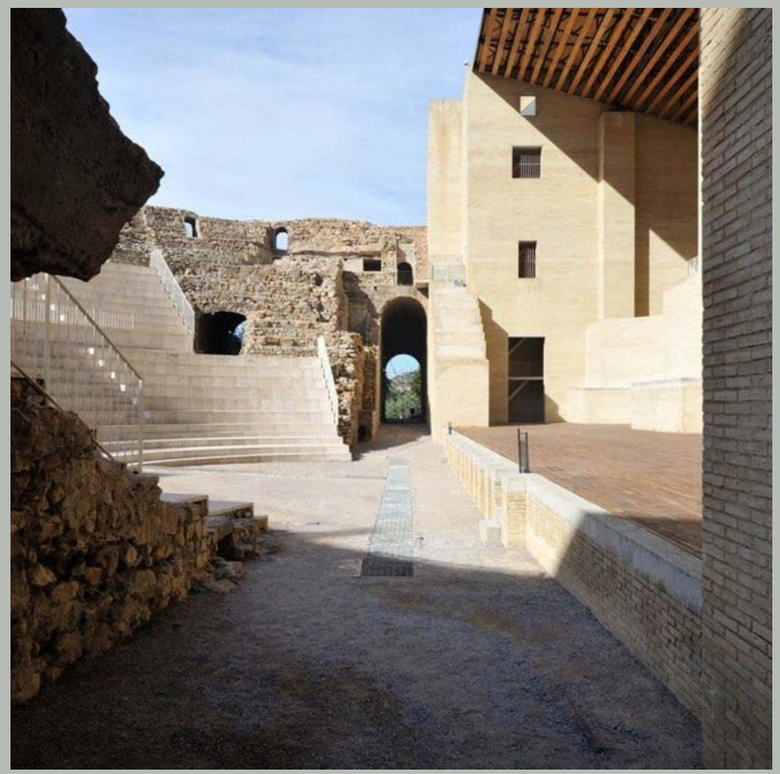


Figure 3.29
Sagunto roman theater
Giorgio Grassi



Figure 3.30
Housing complex ampitheatre
Aldo Rossi

Dome Fragment

Based on references of dome structures, the dome is executed with exposed brick masonry. This choice was made based on the texture that the bricks provided and the assembly method. The careful rotation of the brick follows and, in doing so, strengthens the curve of the dome. Furthermore, the use of brick allowed for a play with texture that could interact with the light entering the dome.

The exterior of the dome is finished in a stucco layer, making the surface less vulnerable to dirt and easier to clean when necessary. The outer rim where the dome meets the roof is left open, covered with a skylight, allowing natural light to come in and illuminate the dome.

The interior of the dome is built around the oculus, letting sunlight fall into the dome, into a small central pond. The outer rim of the dome is lined with a continuous bench, providing a place to sit down and look up at the skylight. Around the seats, the texture of the brick is minimal, allowing the wall to be used as a backrest. The textured brick is applied in the middle section, creating an interesting play with the light entering the dome.

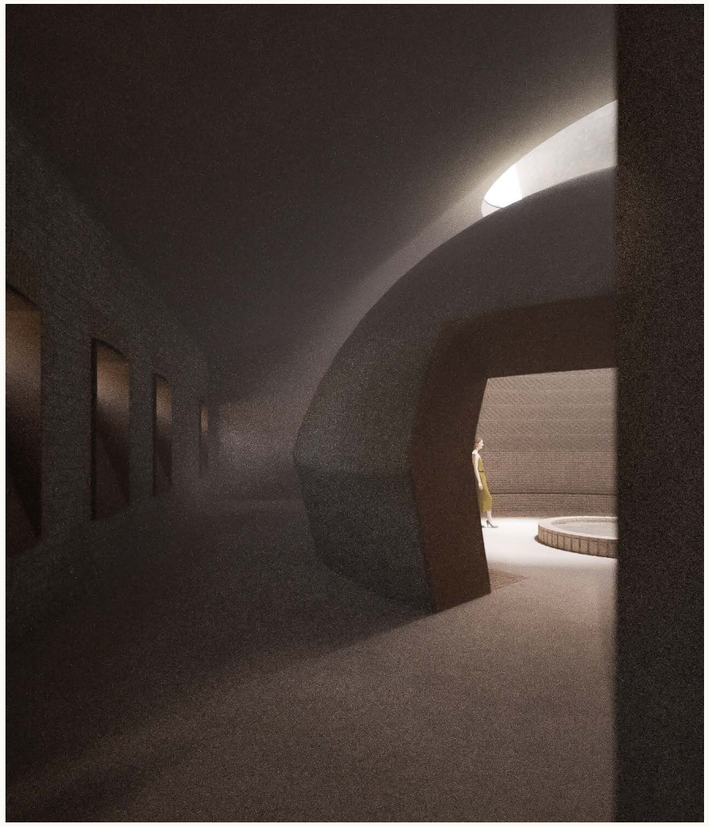


Figure 3.31
Exterior render dome

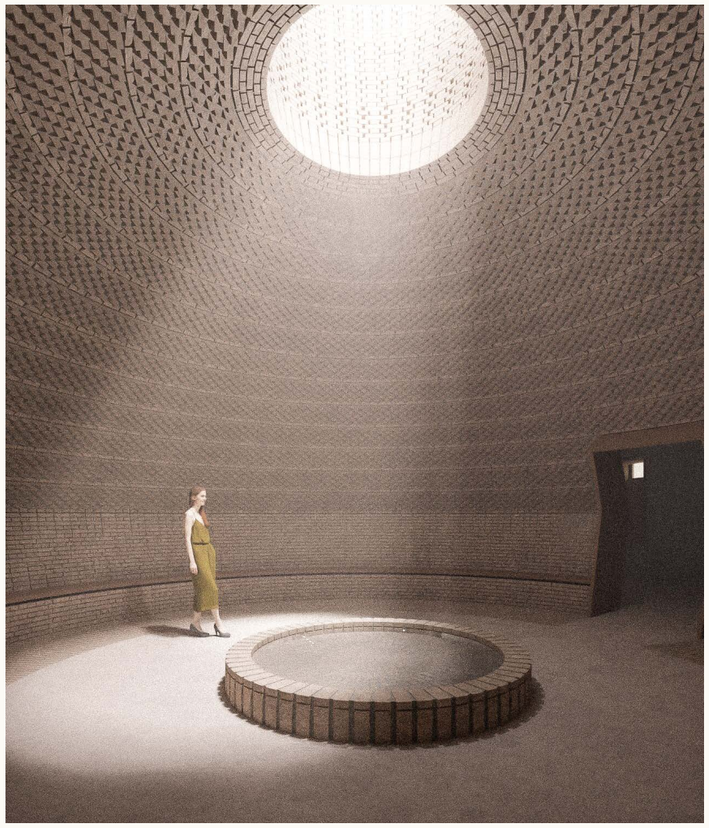
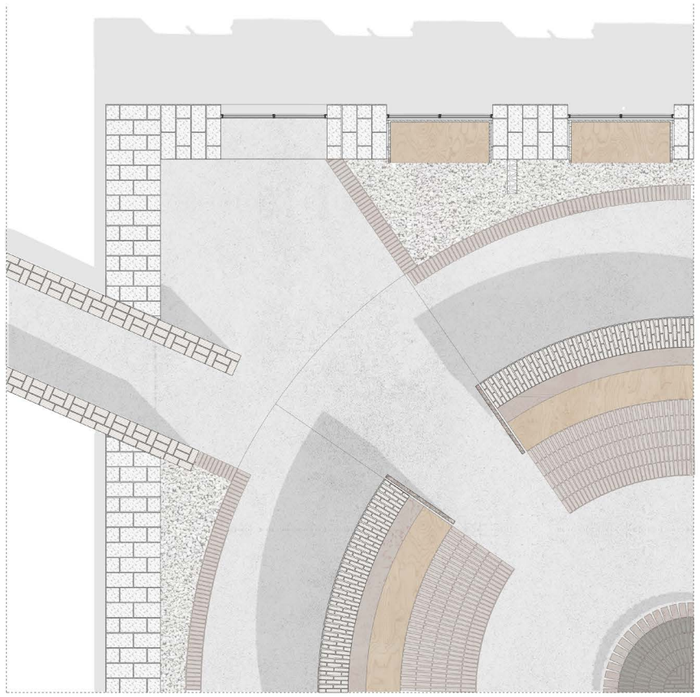
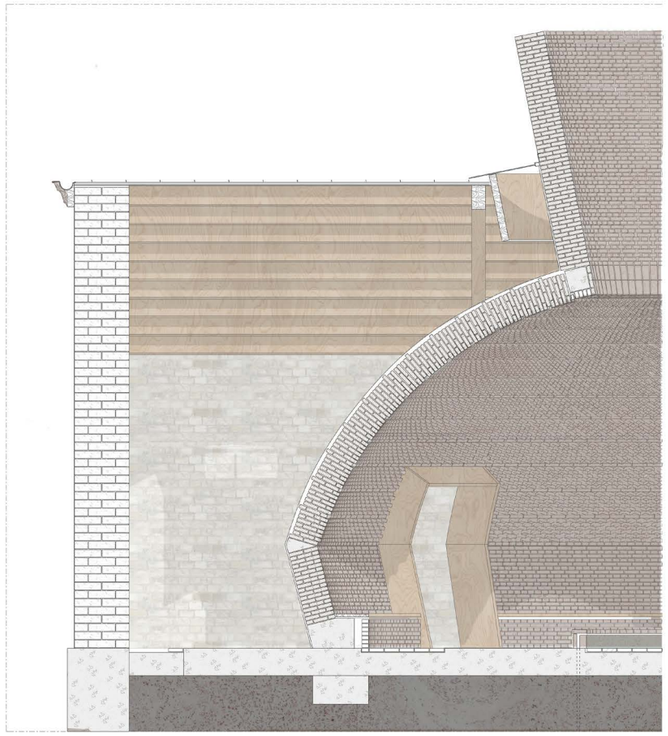


Figure 3.32
Interior render dome





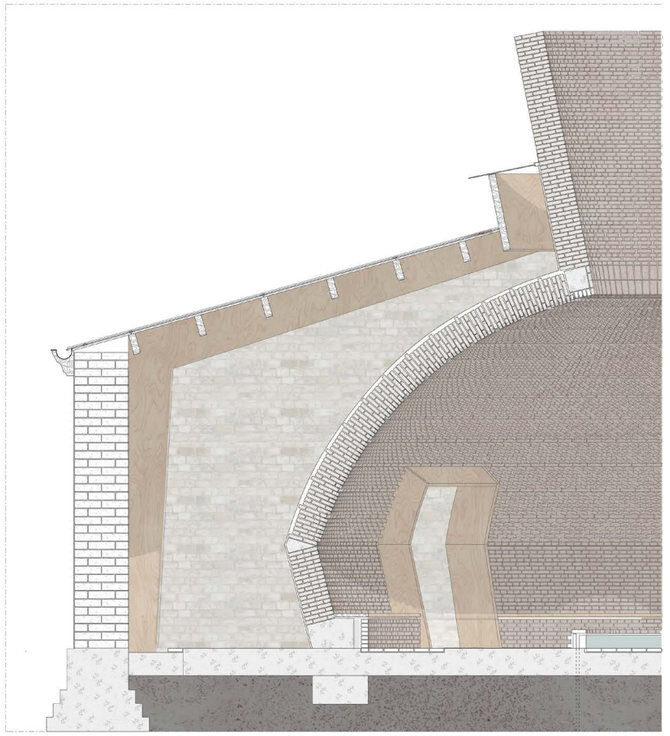




Figure 3.33
1:50 fragment dome (downscaled)

Courtyard Fragment

The main architectural influence impacting the design of the courtyard and its surrounding gallery was Alvar Aalto's Säynätsalo Town Hall. Specifically, the differentiation between circulation and resting zones through materiality, the relation between inside and outside, as well as the localized heating underneath the seating, is reinterpreted within this design.

The gallery of the courtyard is situated around the exposed limestone walls of the historic bread factory. Most of the window openings are blocked using a flexible wooden frame, while the top window panels are left exposed to allow for views of the sky and the penetration of natural light. Alongside the inner windows, a wooden bench is integrated on top of a brick wall, with localized heating realized via a radiator covered with a wooden grill. Brick is utilized to construct both the columns and the flooring, clearly demarcating the static seating zones from the active circulation paths.

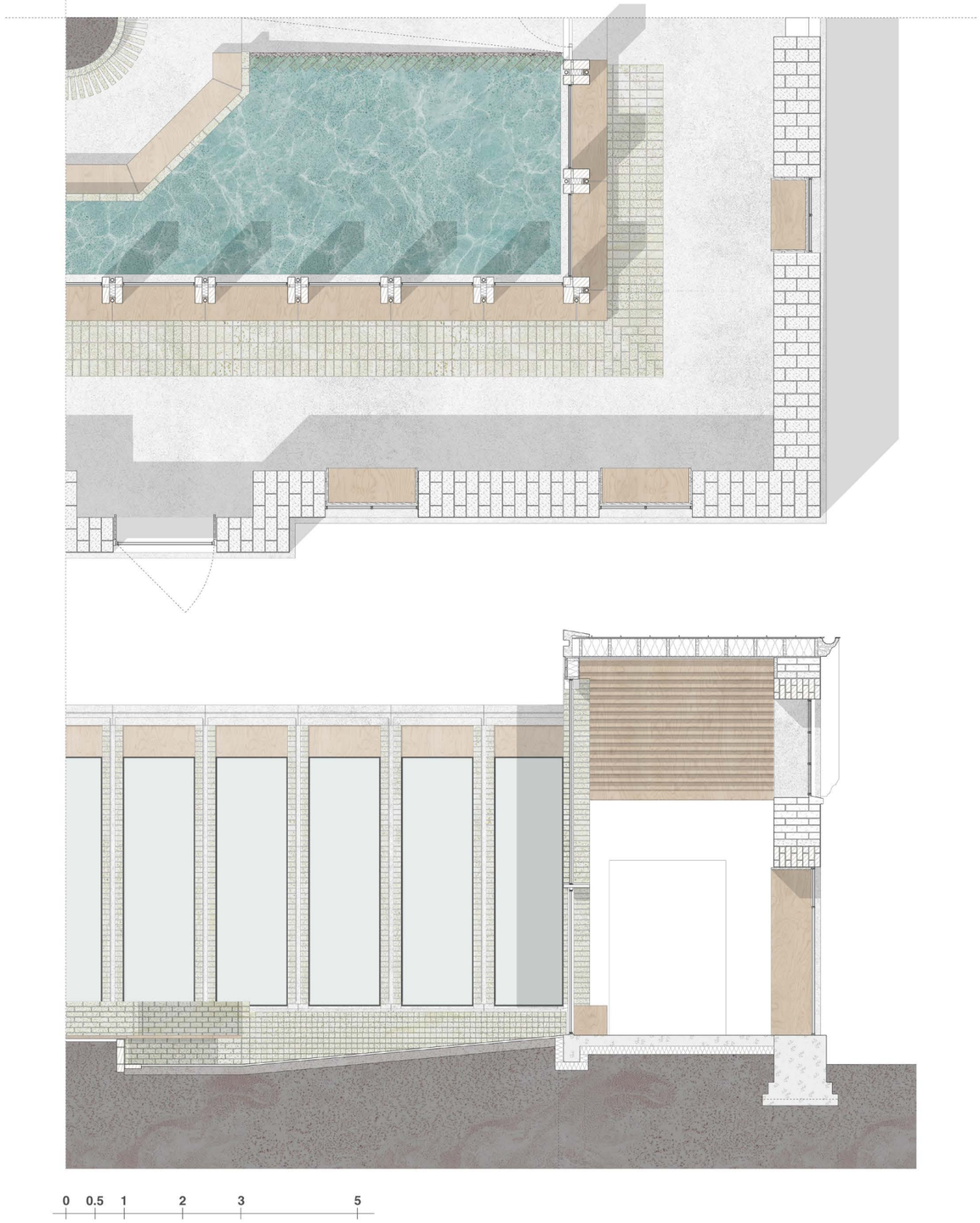
Within the courtyard, a landscape is formed around the element of water, which reflects the sky and the rhythmic architecture of the surrounding gallery. Down the middle, a downward-sloping path leads visitors to a lowered seating area, submerging them directly into the courtyard landscape. At the center, a single tree provides shade and acts as a clear focal point within the design, serving as a symbol of the temporality of the seasons.



Figure 3.34
Render interior Gallery



Figure 3.35
Render courtyard



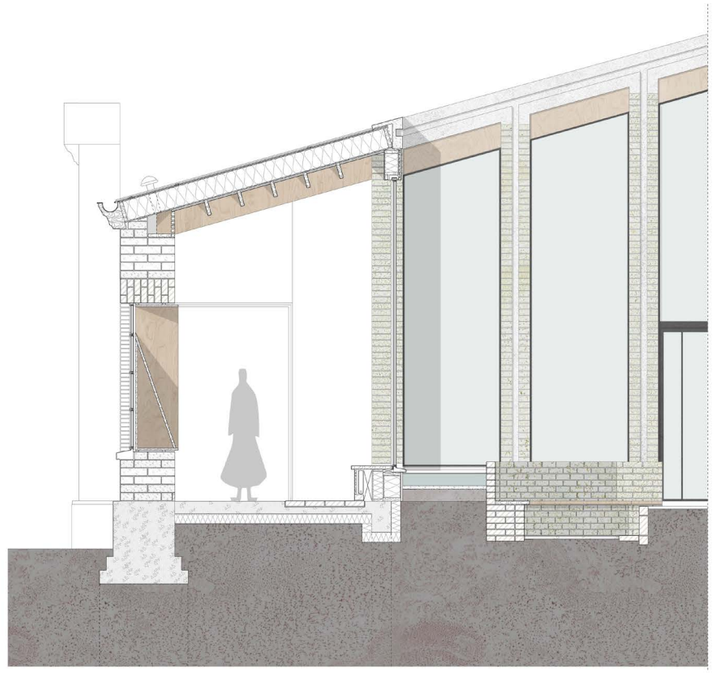


Figure 3.36
1:20 fragment courtyard (downscaled)

Colonnade Fragment

The design of the colonnades and public functions draws inspiration from both classical column orders and contemporary interpretations. This synthesis led to the selection of a clean, minimalist H-profile for the column sections, which transitions seamlessly into the horizontal beams to create a continuous structural frame. To clearly communicate the proportional logic of the pavilion, the grid of the floor tiles and the grid ceiling are precisely aligned, acting as a visual diagram of the spatial system. Accordingly, the overall detailing of the pavilion is kept intentionally simple to ensure that ornate articulation does not interfere with the building's proportional clarity and sense of balance.

To allow for a flexible and layered lighting scheme, fixtures are introduced at three distinct levels. Integrated floor lights cast light upward to highlight columns, mid-level wall fixtures provide general lighting, and ceiling-mounted fixtures are directed upward to illuminate the ceiling plane.

The material palette is deeply anchored in the immediate site context. Limestone is utilized as the primary material to establish a direct dialogue with the surrounding historic structures. In contrast, wood is introduced strategically at touchpoints and seating areas where tactile warmth and thermal comfort are desired, creating an intuitive balance between monumental masonry and human-scaled interventions.



Figure 3.37
Render interior Restaurant

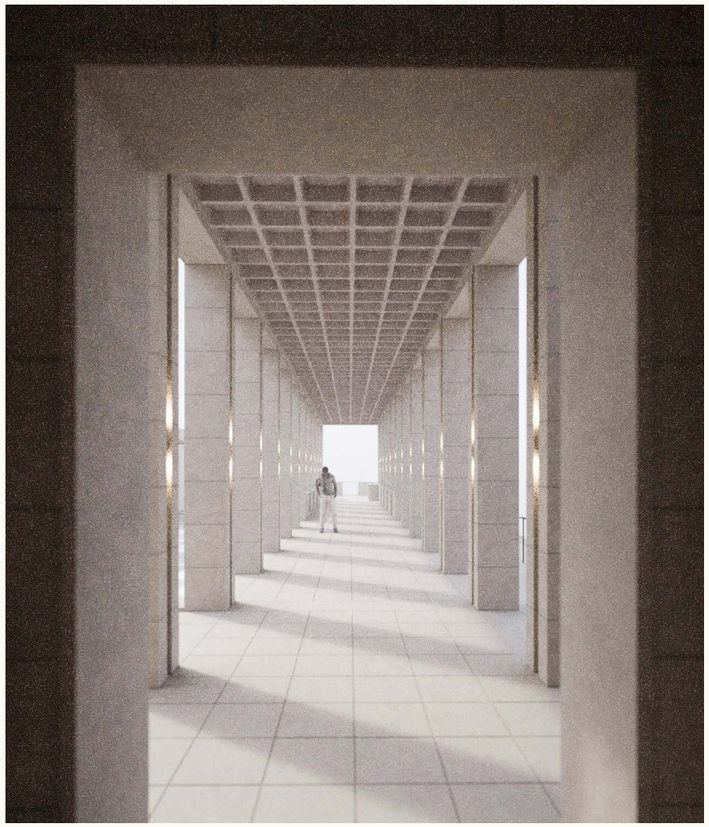


Figure 3.38
Render colonnades

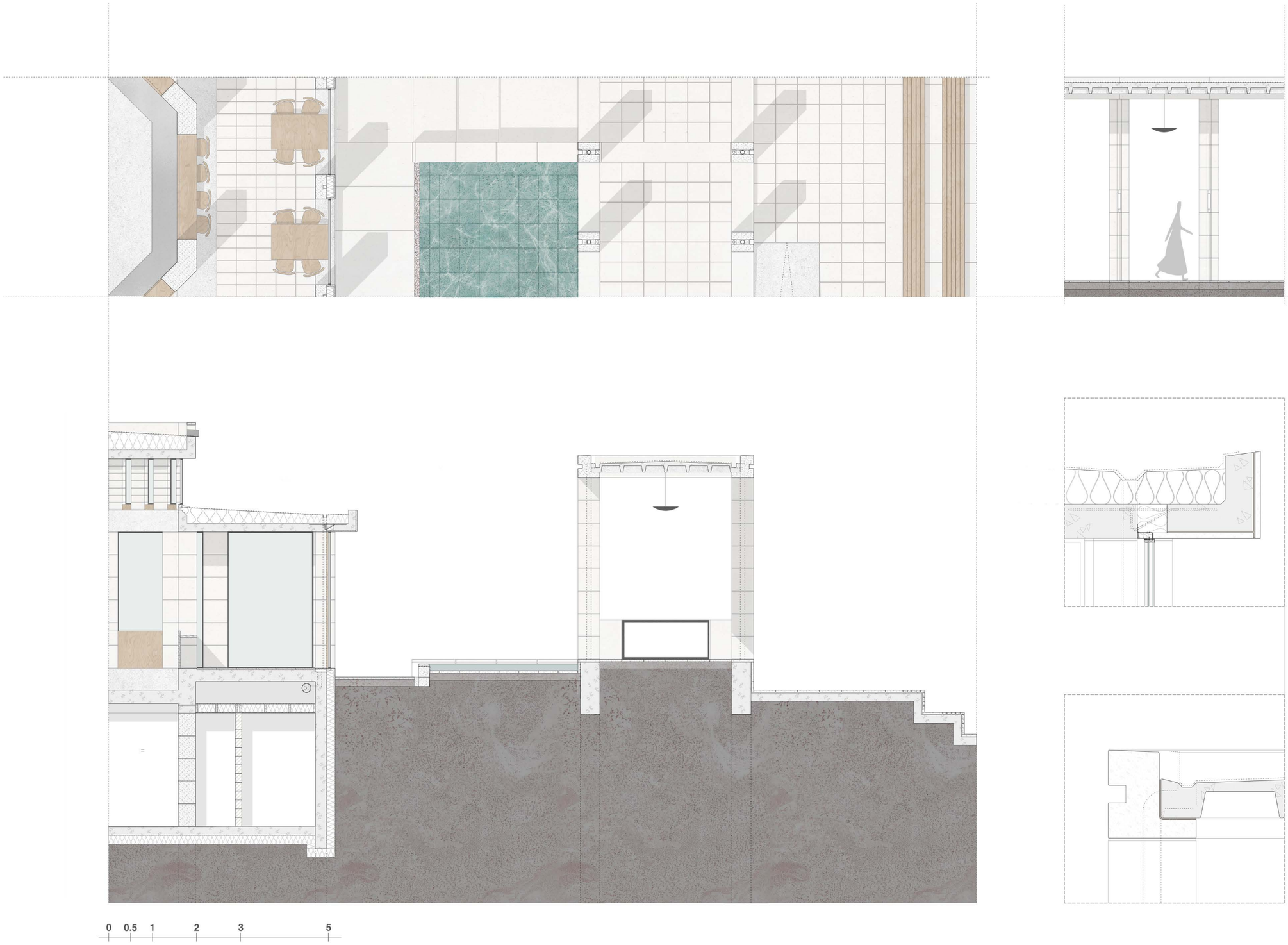


Figure 3.39
1:20 fragment public pavillion (downscaled)

CONCLUSION & DISCUSSION

Conclusion
Recommendation
Reflection

Conclusion

The project started with a clear conceptual direction, the exploration of sacrality in architecture. Even with this concept still being a leading thread in the final design, layers got added, deepening the conceptual and theoretical execution of the design. At the A1 examination, the design assignment took shape as a pavilion bordering the international museum for victims of communism. This design assignment led to the formulation of multiple research questions, which will be answered in the following paragraphs.

What role can sacred architecture play in fostering personal and contextual reconnection at the Patarei prison museum in Tallinn?
The fundamental role of sacred architecture at the Patarei prison museum is rooted in the concept of religare—meaning to re-link or to reconnect. Within this historically loaded context, the architecture acts as a threshold mediator for both personal and contextual reconnection. This is achieved through the implementation of precise spatial gradients and pronounced thresholds that carefully transition the visitor into the sacred spaces. By orchestrating a sequence of compression and expansion, the architecture slows the user's pace and fosters a deep, contemplative state of reflection. The final design leverages clear geometry, centralized focal points, and the curated integration of elemental features to evoke a profound sense of non-denominational sacrality. Ultimately, by maintaining a deliberate spatial tension between extroverted, outward-focused spaces and introverted, inward-focused sanctuaries, the architecture gives physical form to its dual purpose: reconciling the site with its broader urban context while offering a profound sanctuary for individual reconnection.

What architectural qualities can be derived from sacred architecture to provide a non-denominational sense of sacrality?
To cultivate a non-denominational sense of sacrality, the design moves away from specific religious iconography and instead derives universal phenomenological qualities from sacred architecture. This is achieved through pronounced centres and thresholds that orchestrate the transition from the ordinary to the sanctuary, a deliberate spatial choreography of compression and expansion, playing with intimate and grand spaces, as well as a precise manipulation of sensory variables, such as light, shadow, and elemental materiality. This induces a state of quiet, inward receptivity as well as outward connection.

What other architectures foster personal and contextual reconnection?
Beyond traditional sacred spaces, other architectural typologies foster deep personal and contextual reconnection by exploring the dialogic relationship between built form, the human, and the outer world, fostering a deep appreciation and awareness. As seen in the typologies of the patio and the pavilion, architecture can act as an extroverted, porous bridge to the open landscape or as an inward-looking shelter. Within these spaces, the integration of sculpture becomes a tool to define scale, cultivate atmosphere, and establish visual anchors that guide the user through a fluid architectural continuum.

How can existing heritage structures be sensitively adapted into new uses?
The transformation of the abandoned bread factory stems from a deep appreciation for the building's history, leaving the perimeter walls with minimal alterations and utilizing the raw, exposed masonry as a defining spatial quality. The scale of the new extension is intentionally modest, complementing rather than overpowering the existing historic structures. Placed within broader architectural theory, the design carefully navigates the line between past and present by seamlessly integrating historical qualities into a contemporary vocabulary. Ultimately, the building acts as a spatial filter that fosters an appreciation for the site's layered history. Specifically, establishing a meaningful dialogue with the neighbouring Patarei Sea Fortress and casting this heritage structure in a completely new light.

What lessons can be learned from Dom Hans van der Laan to create a proportionally balanced and cohesive building?
The theories of Dom Hans van der Laan offer vital lessons in establishing a cohesive, proportionally balanced architectural language. By applying his strict principles of the Plastic Number, rhythmic repetition, and orchestrated circulation, the new interventions, such as the spatial proportions of the public pavilion, achieve a definitive structural logic. This spatial discipline ensures that the detailing remains intentionally simple, allowing an overriding sense of balance, clarity, and direction to guide the final architecture.

Recommendation

Beyond its execution as a concrete design proposal, this thesis has served as a vital exploration of architectural theory, carving out a specific position within the broader contemporary discourse. The project advocates for a forward-thinking methodology that remains deeply grounded in a rich, historic architectural tradition. Defining and refining such a position requires constant, iterative development and critical reflection to mature into a robust, universally applicable architectural framework.

At its current stage, the project acts not as a static conclusion, but as a dynamic foundational starting point. While the theoretical framework requires continued advancement to fully and irrefutably validate this specific architectural position, the thesis successfully articulates the underlying reasoning, structural logic, and deliberate theoretical choices that guided the process. It stands as a physical manifestation of what can be achieved when designing rigorously through this multi-layered theoretical lens.

To expand upon this research and address the current limitations of the project, future work should be directed toward the following three trajectories:

Scalability and Programmatic Adaptability
Investigating how this theory applies to varying programmatic requirements, diverse locations, and differing budgetary constraints will expose the true strengths and boundaries of the framework. While the system proved solid enough to support this specific project, its long-term viability relies on its capacity to adapt to a broader, more everyday selection of architectural typologies and economic realities.

The Role of Non-Denominational Sacrality
The capacity of sacred architecture to yield profound spatial qualities has been demonstrated through this project; however, the role of sacrality within the contemporary built environment requires deeper evaluation. Future research should critically examine both the limitations and the possibilities of non-denominational sacrality, allowing for broader implementation of these qualities.

Social Research on Traumatic Heritage Sites
While the final design aims to be deeply respectful of and complementary to the traumatic history of the site, the project recognizes the need for greater social depth. Transforming sites of collective trauma requires comprehensive sociological research and community engagement. Future iterations must employ rigorous qualitative studies to accurately map what these spaces mean to the local community, ensuring the architecture responds explicitly, sensitively, and authentically to their lived experiences and memories.

Ultimately, this project aims to advance contemporary architectural discourse while recognizing the critical importance of historical grounding. By acknowledging distinct opportunities for future growth, spanning scalability, non-denominational sacrality, and deeper community research, the project transcends its role as a singular design proposal. Instead, it offers an evolutionary framework and a sensitive methodology, demonstrating how the timeless principles of sacred architecture can be applied to create spaces that are fundamentally balanced, contextually sensitive, and deeply resonant.

Reflection

The design process is never a straight line; rather, I view it as an iterative loop that steadily advances the quality of the work. Looking back at this process, there are a couple of key moments that have had a significant impact on the development of this project.

The early stages started with an exploration of non-denominational spirituality. While this was a good starting point for developing a concept, it proved difficult to advance into a tangible project brief, mainly when it came to defining a clear function. The first key change that shaped the project was a shift in the way I thought about sacrality in architecture. Rather than viewing sacred architecture as separate from any other function, I realized that the qualities of sacred architecture could work together with more practical programs, reinforcing one another. This was partially inspired by observing how other great architects apply this way of thinking and, in doing so, create buildings that elevate the ‘everyday’ into something extraordinary. For example, Eliel Saarinen who states that ‘spiritual function is inseparable from practical function.’

Even though this realization helped with the further development of the design brief, a concrete function was still hard to find. I was stuck thinking about the function and the sacrality as two separate elements. Yet, what I needed to realize was that they had to be developed together; understanding the strength of sacred architecture was key to understanding what function it could serve. This brought me to sites of disconnect and linked my concept to another interest of mine: the architectural scars left by the Soviet occupation in Tallinn. Using the reconnecting qualities of sacred architecture offered a powerful opportunity to reconnect these isolated sites with the outside world, while also giving space for the memorialization of these traumatic histories. This realization shaped the final design brief and led to my project working in synergy with the International Museum for the Victims of Communism.

To develop this assignment further, design iterations were informed by case study analysis. Through these analyses, I learned what spatial qualities the project should possess to fulfil the design brief and facilitate the intended experience. In particular, research into religious architecture and phenomenology formed the foundation for the design iterations. Later on, discovering the work of Dom Hans van der Laan perfectly complemented this earlier research. Applying his theories on proportion, light, and circulation provided a solid footing for subsequent design decisions, bringing a clear sense of balance and direction to the final project.

From this point on, the foundation of the project was firmly established, allowing for a consistent and structured further development. When necessary, targeted theoretical research was undertaken, including studies on the role of sculpture within space, which did not alter the core trajectory of the design but rather enriched and supplemented it. This iterative approach not only elevated the final architecture but also fundamentally helped me define my own position within architectural theory, offering profound insights into the responsibilities of practice. Ultimately, this journey has made me realize that I position myself at the intersection of past and future discourses, remaining entirely open to contemporary developments while working from a deep, foundational appreciation of architectural history.

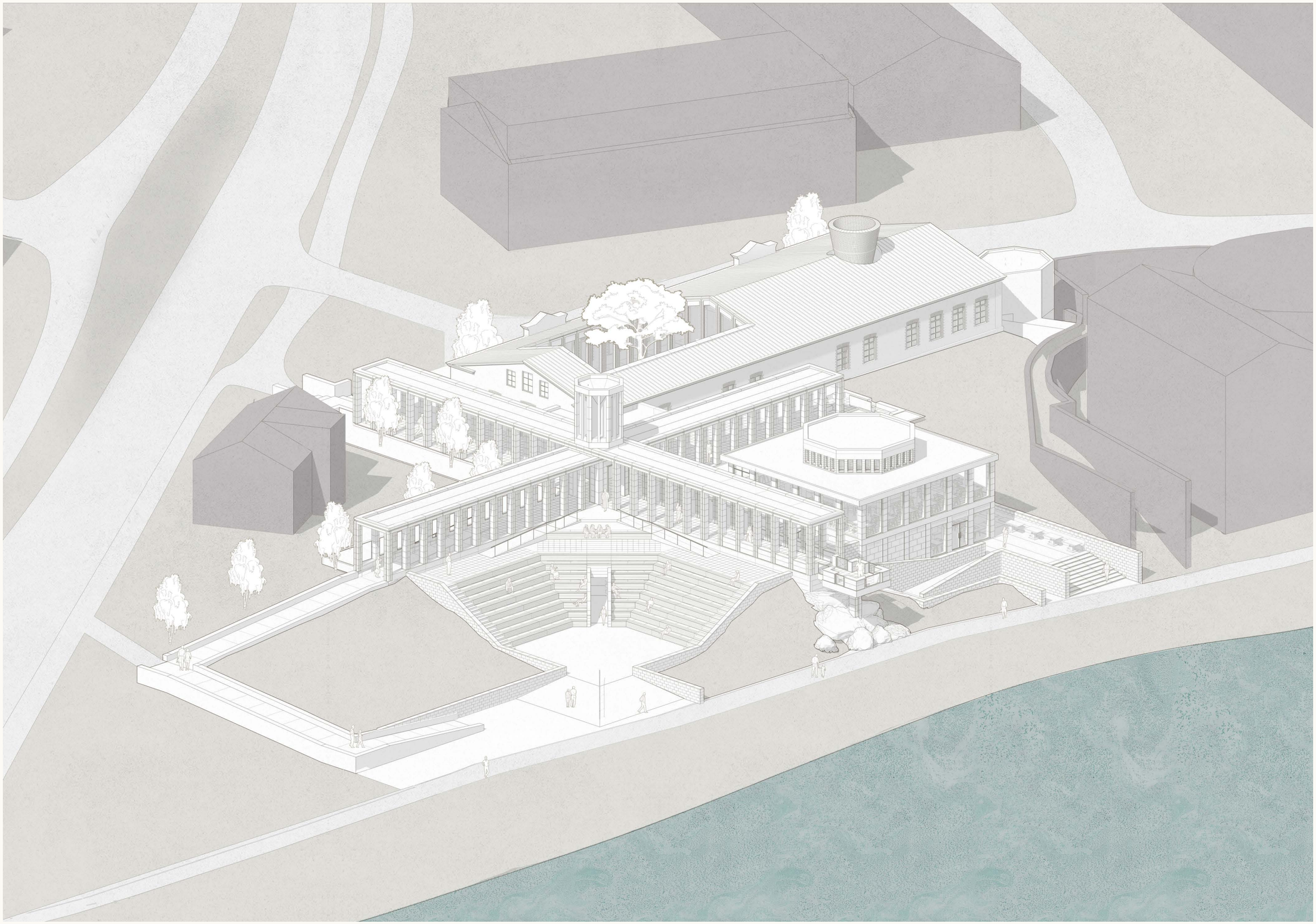


Figure 4.1
Isonometric drawing design

Bibliography

- Christ-Janer, A. (1979). Eliel Saarinen: Finnish-American architect and educator. h
- Curtis, P. (2007). Patio & Pavillion.
- Frampton, K. (1993). Towards a Critical Regionalism: Six Points for an Architecture of Resistance.
- Hackett, C. (2025, 15 december). How religion declines around the world. Pew Research Center. https://www.pewresearch.org/short-reads/2025/09/02/how-religion-declines-around-the-world/
- Hiiemäe, R. (2021). A Hundred Forms of Spirituality in the Least Religious Country in the World. Journal Of Religion in Europe, 13(3–4), 214–240. https://doi.org/10.1163/18748929-13040001
- Horr, S. F. (1912). The Etymology of Religion. Journal Of The American Oriental Society, 32(2), 126–132.
- Huxley, A. (1956). Tomorrow and tomorrow and tomorrow, and other essays. Internet Archive. https://archive.org/details/tomorrowtomorrow00huxl/page/n227/mode/2up
- Neumeyer, F. (1991). The artless word: Mies van der Rohe on the building art. The MIT Press.
- Padovan, R. (1999). Proportion Science, Philosophy, Architecture.
- Pallasmaa, J. (1996). The Eyes of the Skin: Architecture and the Senses. https://doi.org/10.1002/9781394200702
- Raghani, S., Brar, T. S., & Kamal, M. A. (2021). Impact of Contemplative Spaces and Sacred Geometry on Spiritual Development. American Journal Of Civil Engineering And Architecture, 9(2), 59–63. https://doi.org/10.12691/ajcea-9-2-3
- Remmel, A., & Uibu, M. (2015). View of Outside Conventional Forms: Religion and Non-Religion in Estonia. http://rascee.net/index.php/rascee/article/view/69/63
- Rossi, A., Eisenman, P., Ghirardo, D., & Ockman, J. (1982). The Architecture of the City.
- Stone, P. R. (2026). Dark Tourism: Commodifying Atrocity as Difficult Heritage (pp. 1–4). https://doi.org/10.1007/978-3-030-61493-5_203-1
- Tabb, P. J. (2023). Thin place design. https://doi.org/10.4324/9781003354888
- Tallinn City Tourist Office & Convention Bureau. (2020). Kalamaja, Telliskivi, and Noblessner – industrial heritage and bohemian charm. Visit Tallinn. https://www.visittallinn.ee/eng/visitor/ideas-tips/tips-and-guides/kalamaja-telliskivi-noblessner
- Timeline and museum design | Patarei Vangla. (z.d.). Patarei Prison. https://patareiprison.org/en/timeline-and-museum-design
- Voet, C. (2017). Dom Hans van der Laan A House for the Mind.
- Zobel, R. (2008). Tallinn (Reval) in the Middle Ages.
- Zumthor, P. (1998). Thinking architecture.
- Zumthor, P. (2006). Atmospheres: architectural environments. surrounding objects.

Images

- **Figure 1.1 – 1.2** Personal photographs and illustrations
- **Figure 2.1 – 2.13** Personal photographs and illustrations
- **Figure 3.1 – 3.11** Personal photographs and illustrations
- **Figure 3.12** Rory Gardiner and Boral Australia. Punchbowl mosque [Photograph]. https://www.candalepas.com.au/home/news/riba-international-award-for-excellence/
- **Figure 3.13** nacasa & partners inc . Hot spring foot spa [Photograph] https://www.designboom.com/architecture/mad-architectural-installations-historical-tunnel-of-light-echigo-tsumari-triennale-japan-08-06-2018/
- **Figure 3.14** Su Zhewei. Millet vinegar museum [Photograph] https://www.archdaily.com/901486/millet-vinegar-museum-zhanghua-studio-aatu
- **Figure 3.15** Personal Photograph
- **Figure 3.16** Niclas Mäkelä. Säynätsalo town hall [Photograph] https://www.finnishdesignshop.com/en/design-stories/architecture/alvar-aalto-saynatsalo-town-hall-is-a-masterpiece-that-represents-more-humanistic-design
- **Figure 3.17** Personal Photograph
- **Figure 3.18** Rory Gardiner. New temple complex [Photograph] https://jamesgorstarchitects.com/projects/new-temple-complex/
- **Figure 3.19** Stefan Muller. Holocaust museum [Photograph] https://www.winhov.nl/en/projects/national-holocaust-museum/
- **Figure 3.20 – 3.21** Personal illustrations
- **Figure 3.22** Edmund Summer. Mexican Art gallery [Photograph] https://www.dezeen.com/2020/04/21/arcadio-marin-javier-marin-mexican-art-space-inhabitable-sculpture/
- **Figure 3.23** Jaime Navarro. QMM cultural center [Photograph] https://divisare.com/projects/468790-materia-gustavo-carmona-jaime-navarro-qmm-cultural-center
- **Figure 3.24** Ngoc Minh Ngo. Cranbrook Academy [Photograph] https://fredericmagazine.com/2024/08/cranbrook-art-school-design/
- **Figure 3.25** Personal illustrations
- **Figure 3.26** Orsenigo Chemollo. Roosenberg Abbey [Photograph] https://divisare.com/projects/343767-dom-hans-van-der-laan-orsenigo_chemollo-roosenberg-abbey
- **Figure 3.27 – 3.28** Personal photographs and illustrations
- **Figure 3.29** Chen Hao. Sagunto roman theater [Photograph] https://divisare.com/projects/317637-giorgio-grassi-chen-hao-sagunto-roman-theatre-1985-86-1990-93
- **Figure 3.30** Francesco Bolis. Housing complex ampitheatre [Photograph] https://www.garvest.com/blog/wulkan-wymiata
- **Figure 3.31 – 3.39** Personal Illustrations
- **Figure 4.1** Personal Illustration

Acknowledgments

I would like to express my sincere gratitude to my tutors, Jorge Mejía Hernández and Matthijs Klooster, for their exceptional guidance and support throughout this project. By continuously challenging me to expand my boundaries, they have profoundly shaped my understanding of my own position within the architectural profession.

Furthermore, I am deeply grateful to my peers for their invaluable feedback, collaboration, and camaraderie throughout this journey. I also owe a debt of gratitude to my friends, whose unwavering support and companionship made navigating this graduation process together an unforgettable experience.

Lastly, I would like to extend a special thank you to the team at KOKO architects. Their generosity in sharing their work on the International Museum for the Victims of Communism in Tallinn was instrumental, providing me with the essential insights needed to develop a project that works in tandem with their beautiful design proposal.

This graduation process has had a profound impact on my development as an architect. I look back on the final design with immense pride, and I look forward to the future with great joy and anticipation.