



**Politecnico
di Torino**

POLITECNICO DI TORINO

Master's Degree in
Architecture Construction City

A.Y. 2024-2025

Adaptive Reuse of the
Santa Maria del Piano Abbey:
Sensual Harmony Meditation Retreat

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Acknowledgements

I am grateful for my thesis tutor, Professor Davide Rolfo, whose guidance have been very valuable throughout the development of this thesis. I am also thankful for my friends, who helped me with their feedback during the design procedure. A special thanks goes to my family since they were always supporting me during my Polito journey.

I dedicate this work to my grandmother. Her love and encouragement continues to inspire me.

Abstract

This thesis explores an adaptive reuse solution for an abandoned church, Santa Maria del Piano in Orvinio, Italy by designing a meditative space that encourages the use of 5 senses and focuses on mindfulness. It aims to expose how contemplative architecture can revitalize historic structures thoughtfully through spatial design and contextual sensitivity.

The centered proposal involves designing an underground space under the church ruins to serve as a meditation space capable of evoking silence and stimulating all five senses. Focus is given to design rooted in topography, integration, adaptive reuse strategies, preservation of historical ruins, and balance among spaces. At an organizational level, this project involves site evaluation, archival investigation, literature review on religious and adaptive reuse programs. The result is a story in space that captures the reverent stillness of the abbey while transforming it with architectural elements.

Finally, the research shows that adaptive reuse is a creative and ethical solution which deeply goes beyond mere preservation of tangible heritage and transforms it emotionally and culturally. Through design, Sensual Harmony Meditation Retreat suggests a future where architecture is experienced with the whole self; not merely seen or analyzed from distance.

Keywords: Topography Integrated Architecture - Subterranean Architecture - Light Wells and Skylights - Minimal Impact Design - Adaptive Reuse - Biophilic Design - Environmental Integration - Sensory Architecture

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1. Introduction

Over the years, adaptation has emerged as a potent strategy for the conservation of culture alongside serving modern functionality. Due to shifts in the social order, economic activity, and demographic changes within the population, many old buildings lose their utility over the years. Among these, churches are some of the most affected. Many of them have been abandoned because of urban migration, falling attendance, or changing attitudes towards religion and church practices. Dismantling or neglecting such structures is not ideal: adaptive reuse can preserve their beauty while converting them to function in the modern world.

As always, religious architecture served purposes much beyond the simple utility by having worshippers looking with admiration, elevated contemplation, and a state of out of body sensation. Generally, churches possess spatial characteristics that aid in meditation and mindfulness practices. Their high vaulted ceilings, controlled natural lighting, acoustics as well as the materials used, make for

an environment that aids self-examination and the contemplation of spiritual matters. That makes them well-suited for conversion into retreat facilities, meditation spaces or wellness centers. These areas have witnessed a surge in demand over the last few years because of an increased focus on mental health, mindfulness, and stress management. Due to the fast pace of life and noise pollution, urban centers do not offer dedicated spaces for meditation. Transforming a neglected church into a meditation center preserves historical architecture while responding to contemporary needs for wellness.

The initial concept for this thesis stems from an adaptive reuse design competition held recently which invited participants to reimagine the vacant Abbey of Santa Maria del Piano. Although I didn't submit a proposal, the challenge inspired me to develop this thesis. It showcases how sacred buildings can be repurposed into modern centers for meditation while honoring their history and attending to contemporary demands for mental health support.

1. 2 Research Problems and Object

The repurpose of churches poses a delicate problem to solve: how to conserve, honor and alter these buildings for modern use while retaining their authentic value? Many churches are constructed having worship as the single point of focus, thus turning them into multi-functional spaces would require major alterations. Unlike typical renovations, changing the use of a church requires a delicate blend of architectural preservation and practical reconstruction.

The essence of this research is to understand how best to transform the existing structure of a church, whilst keeping its distinct character, into a space that facilitates deep meditation. This research seeks to determine how structural alteration can be utilized to create a nurturing environment that inspires mindfulness and tranquility.

As the focus areas of people's mental well-being, this research intends:

- To study churches with features, and structural forms, that naturally foster silence and meditation beyond their religious function.
- To propose a design that fulfills the criteria of contemporary wellness architecture within preserved historical context.
- To investigate processes of sound, light, and material enveloping to shift the focus of attention to meditative experience enhancement.
- To create conditions for a building that can be responded to in a meaningful way without compromising its historical significance while enabling contemporary responsive functions.
- To explore the effects of designed space on meditation, relaxation, and other forms of passive experiencing at the level of feeling and perception.

This research is an architectural investigation as well as an investigation of the design's impact on human health. It aims to show how new meanings can be created for meaningful structures through the adaptive reuse of an abandoned church into a meditation center.

1. 3 Hypothesis and Key Questions

This case study starts with the assumption that an abandoned church can be repurposed as a meditation center while preserving its historical and sacred value, while giving attention to spatial planning, materials selection, and environmental design.

To address this question, the study examines the following central queries:

- What key architectural characteristics of a space enhance meditation and calmness?
- In what ways can an abandoned church be adapted to a new function while still preserving its historical and cultural value?
- What design changes can enhance the experience of meditation with regards to lighting, acoustics, and other material elements?
- What issues are encountered in the conversion of religious architecture, and in what ways can these be solved with regard to the past and contemporary times?

These questions serve to direct the research so that the design proposal is visually and practically appropriate as well as contextually and historically considerate.

1. 4 Scope and Limitations

The design solutions are balancing contemporary use and heritage preservation and it requires a deep historical research, case study analysis, spatial design and material principles synthesis.

The following shortcomings exist:

- Architectural Scope: An interpretive design framework based on architectural history does not delve deeply into structural retrofitting. Some discussion outlining structural reinforcement concepts will be provided, however.
- Case-Specific Application: The research was conducted around a specific church and its features; the findings cannot be generalized to all abandoned religious buildings.
- Cultural and Social Factors: While the study analyzes the use of the church in the culture, there are no explanations provided for the religious space and its context.
- Budget and Practicality Restrictions: The design is made without

a budget or a specific client.

- Landscape and Urban Context: The project focus the meditation space transformation, not the surrounding landscape.

2. Site Analysis

2. 1 Location and Historical Context

2.1.1. Location

The building is located in a town called Orvinio, which is situated in Rieti, Lazio.



Figure 1: Map of Italy, red area shows the region of Lazio (source: Created with Mapbox / <https://www.mapbox.com>)

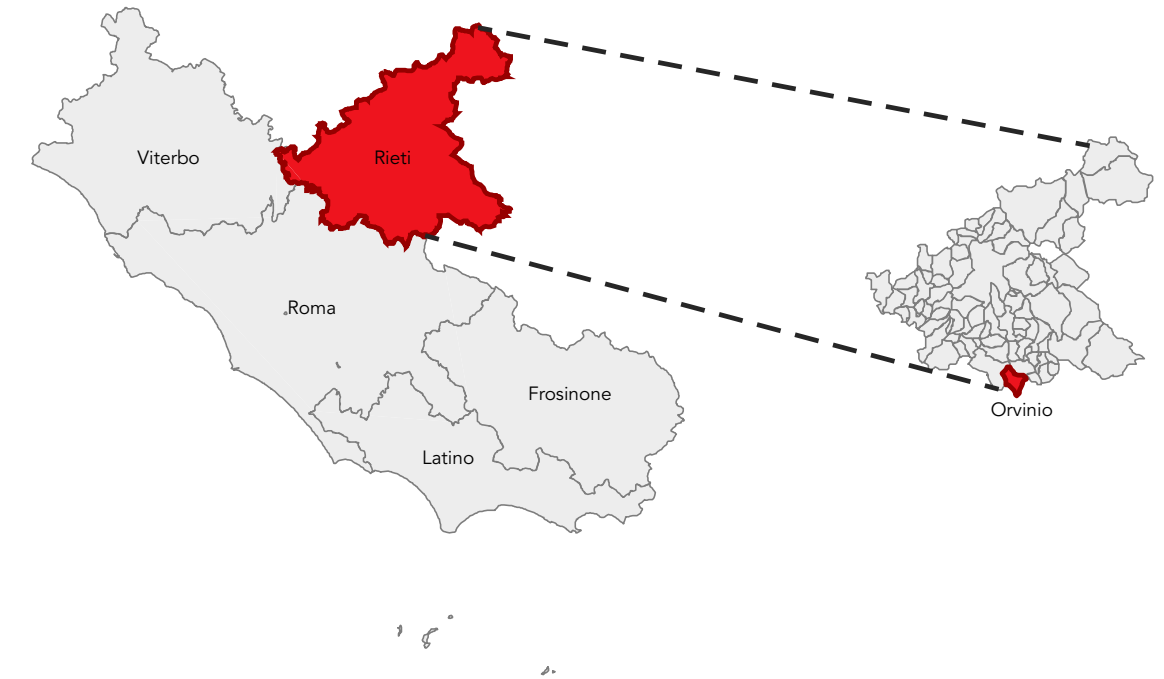


Figure 2: Map of Lazio and Rieti (source: Created with Mapbox / <https://www.mapbox.com>)

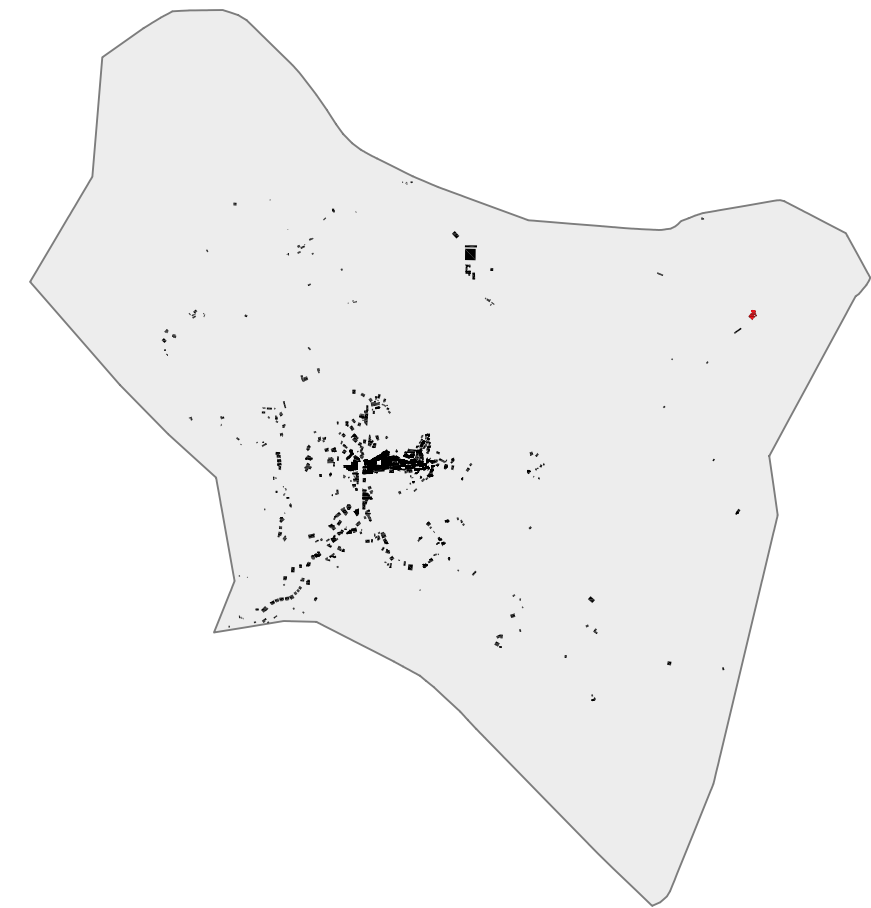


Figure 3: Map of Orvinio, red building is Santa Maria del Piano (source: Created with Mapbox / <https://www.mapbox.com>)

Located in the province of Rieti, in the Lazio region, the Abbey of Santa Maria del Piano lies in these coordinates. This region has an approximate area of 1600 km² of which two thirds is covered by the mountains of Apennines.

The area used to be the part of Sabina region. Sabina became distinct over centuries, also having a unique economy and demography with areas closer to Rome being supercharged, while the ones farther away remained agriculture and rural.

The dispute over the ownership has a Medieval past. The Municipality of Orvinio possessed it till the 1970s even though its in the administrative area of Sabina. The conflicts appeared among these two towns regarding the possession of the abbey and the land surrounding it. (1)

1 - Reuse Italy, Santa Maria del Piano Abbey: Historical Analysis and Restoration Prospects (Reuse Italy, 2022)



Figure 4: Town of Orvinio (source: <https://www.italia.it/en/lazio/orvinio>)



Figure 5: Street of Orvinio (source: <https://stock.adobe.com/de/search?k=orvinio>)



Figure 6: Orvinio building typology (source: <https://viaggiatorinonturisti.net/alla-scoperta-di-orvinio/>)



Figure 7: Orvinio topography (source: <https://www.booking.com/hotel/it/il-sorriso-dei-monti.html?activeTab=photosGallery>)

2.1.2. Built Form

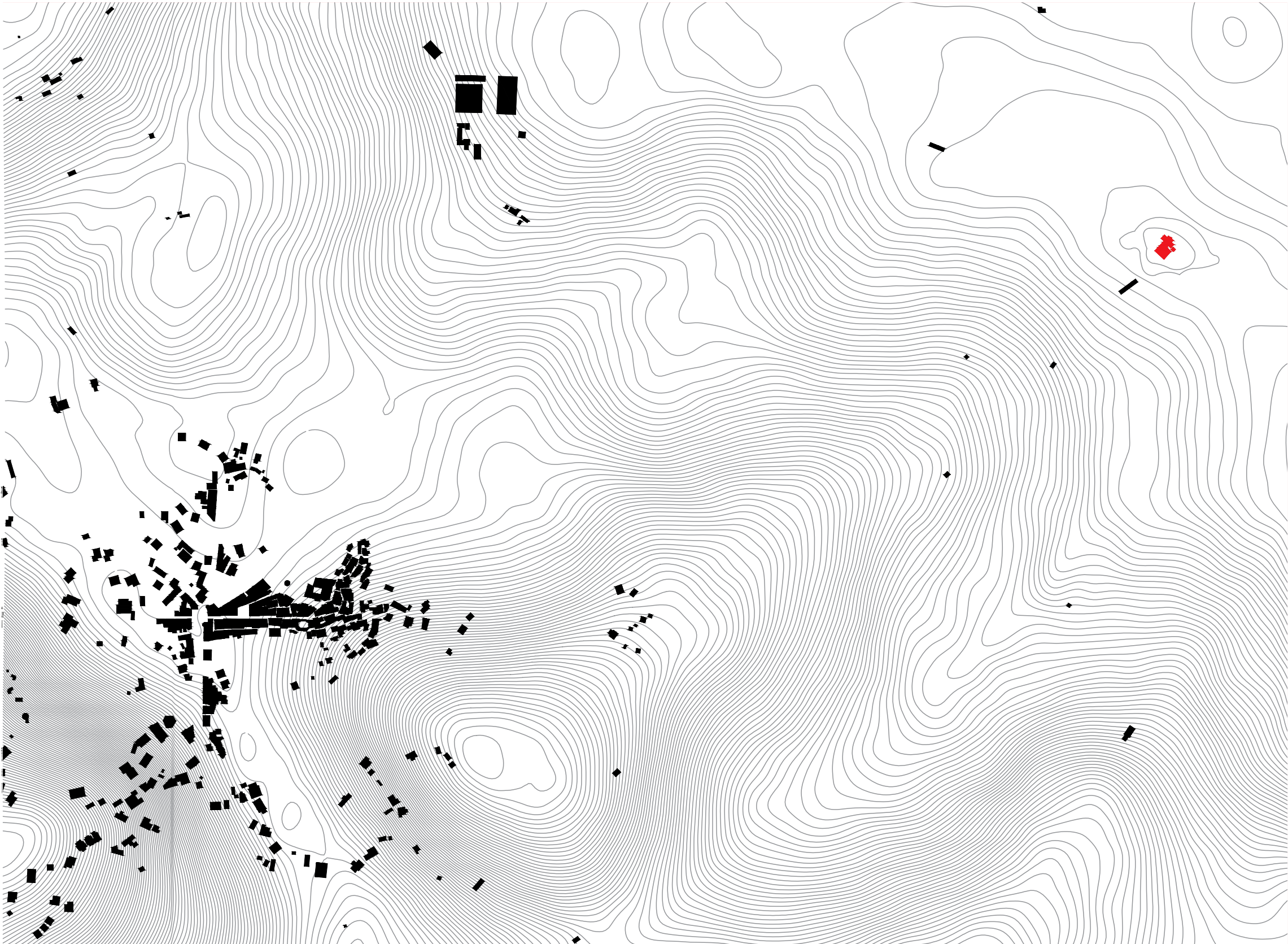


Figure 8: This built form map shows the distribution and density of built structures in the surrounding area, with the church marked in red. Contour lines shown every 1 meter.

The built form analysis notes the remarkable detachment of the church as it sits completely away from the rest of the town. The most dense cluster of structures is located towards the west, forming a compact historical settlement, while the church stands alone in a sparsely populated region. This further enhances the church's solitary and deeply meditative nature. The site presents a balance of challenges and opportunities. Limited road infrastructure, external accessibility, and regional constraints pose difficulties for construction logistics as well as visitor access. However, from a design perspective, the site's isolation makes it more appealing as it could be used as a meditation retreat offering peace away from the distractions of the urban environment. Furthermore, the building's sparse distribution indicates uneven topography which could affect the building's above and below ground spaces. The terrain does indeed slope downwards so excavation-based designs can be designed to blend with the surrounding landscape which will improve the structures visual appeal. This is achieved while also ensuring natural light can be guided through strategic openings.

To address accessibility concerns, alternative entry strategies such as shuttle connections to the settlement could be constructed. The natural context and the site's historical context makes it ideal for an adaptive approach that focuses on preserving the area while rebuilding it in a way that enhances sustainable interventions.

2.1.3. Transportation

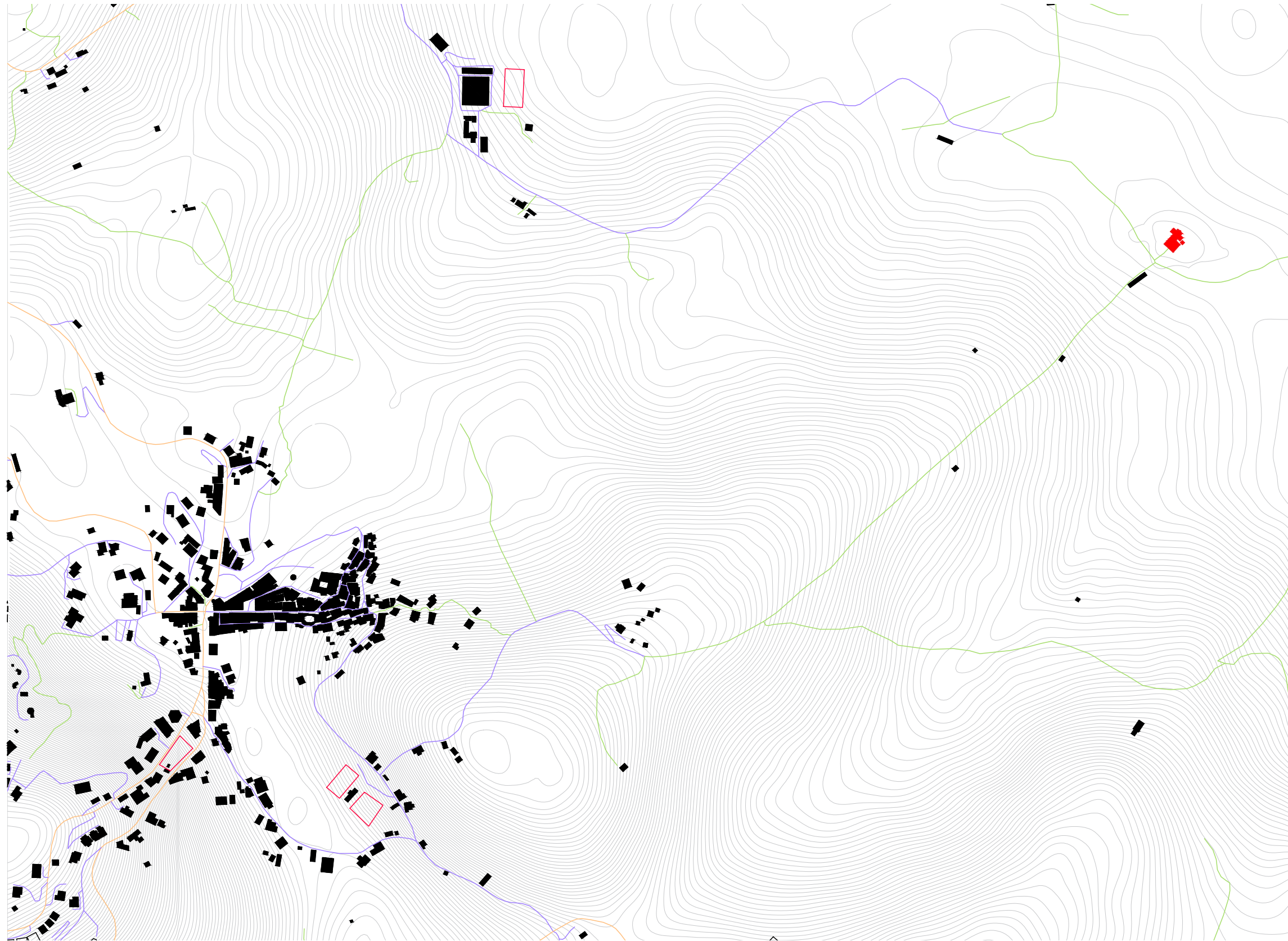


Figure 9: The transportation map of Orvinio, green showing major roads, pink showing minor roads, blue showing the pathways, red showing the parks. Contour lines shown every 1 meter.

As noted in the site analysis, the road network is hierarchical: major roads (green) are situated at the core of the urban area and support the city center's historical core, while minor roads (pink) seem to radiate outward, connecting more sparse settlements. In contrast, pathways (blue) seem to pass over the area as though they follow the natural shapes of the landscape. The abbey's location in the upper right is still quite distinct from everything else due to its minimal road access, so the transport and visitor connection with the site is critical. Given the infrastructure, it seems that adaptive reuse approaches would need to look at other ways of providing access such as through pedestrian pathways or limited access by vehicles. To further enable the tranquil functions of meditation retreat spaces within the abbey, stronger connections to the existing pedestrian walkways could be constructed, inviting visitors to approach the site from a slower, more intentional pace.

2.1.4. Historical Development

9th Century (Legendary Origins):

Local folklore claims the abbey was built by Charlemagne after Turret had a victory over the Lombards or Saracens. This theory has been dismissed by scholars due to a lack of evidence.

11th Century (Actual Construction):

Construction of the abbey is believed to have taken place between 1050 – 1100 AD based on archaeological evidence and medieval building tendencies in the region alongside the adaptation of prior Roman and early medieval structures.

12th – 15th Century (Religious and Architectural Flourishing):

- The abbey was first mentioned in 1026 and 1062 as Santa Maria de Putealia.
- Papal Bull of 1217 contains mention of the abbey which validates its notable standing.
- There is an inscription about some renovation work being done regarding the façade in 1219..
- Changes were also made in the 15th century particularly regarding the main portal.



Figure 11: Only image of the stolen window, partially seen, the date is unknown (source: <http://www.discovers-abina.com/the-abandoned-abbey-of-santa-maria-del-piano/>)

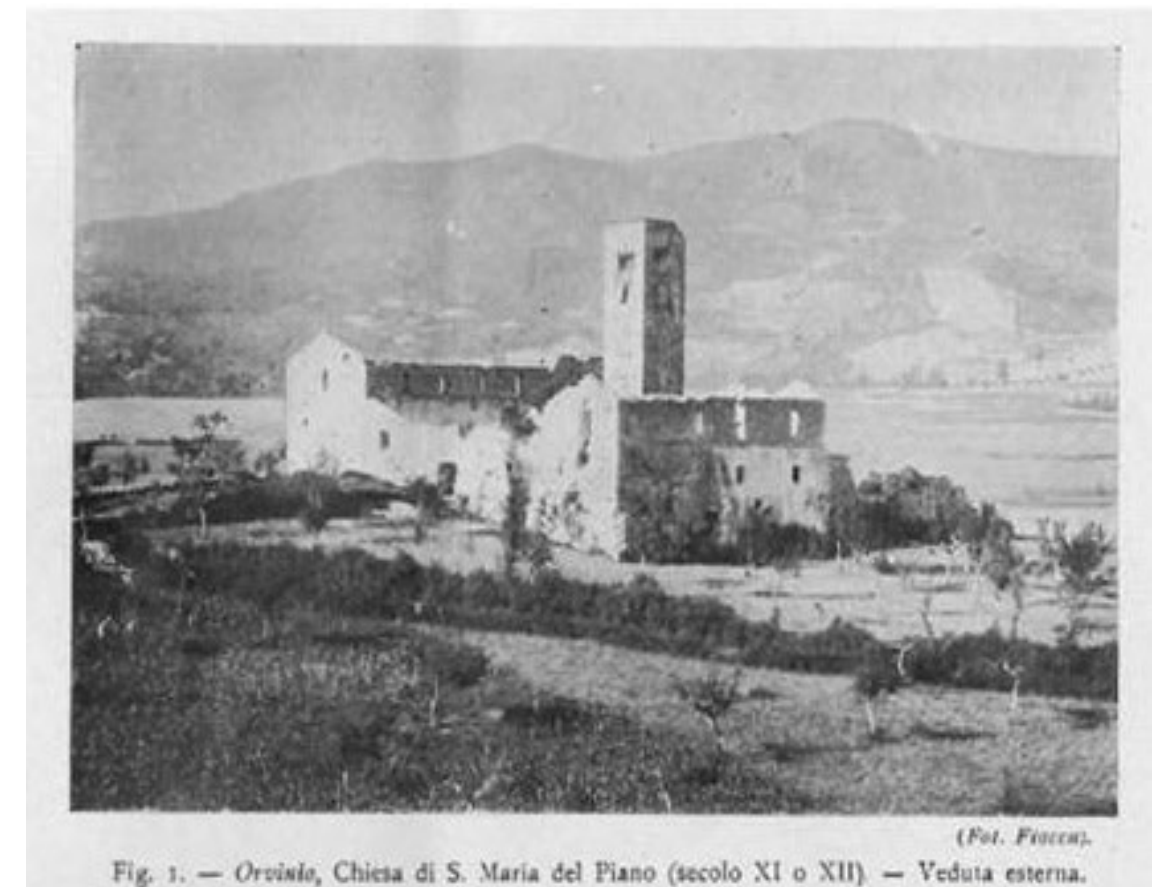


Figure 12: View of the church in 1911 (photo by Prof. Lorenzo Fiocca) (source: Reuse Italy. Santa Maria del Piano Abbey: Historical Analysis and Restoration Prospects. Accessed March 7, 2025. www.reuseitaly.com)

19th Century (Decline and Deconsecration):

In 1855, a cholera outbreak hit the town of Orvinio, which caused the death of too many citizens. There was an absence of a cemetery. To be able to bury the dead, it was decided to use Santa Maria del Piano as a cemetery. Santa Maria del Piano became completely destroyed at this point: the doors were removed, the roof was fully uncovered, some of the brickwork has been removed and the main entrance was changed. (2)

20th-21st Century (Destruction and Abandonment):

- 1952: The bodies were transferred to a cemetery in Orvinio to be able to preserve what is left from the ruins of the church. However at the end of the work, the church has been abandoned again.
- 1953–1957: Attempts of restoration were made, though the abbey remained inactive.
- 1970s–1980s: Extensive acts of vandalism happened and some items such as the rose window, capitals, and sculptures were stolen.
- 2015–2016: Some restoration attempts have been made, though the structure still sits in abandonment. (3)

2 - Reuse Italy, Santa Maria del Piano Abbey

3 - Andrea Del Vescovo, L'Abbazia di Santa Maria del Piano a Orvinio (Rome: AEQUA Associazione Culturale, 2021).

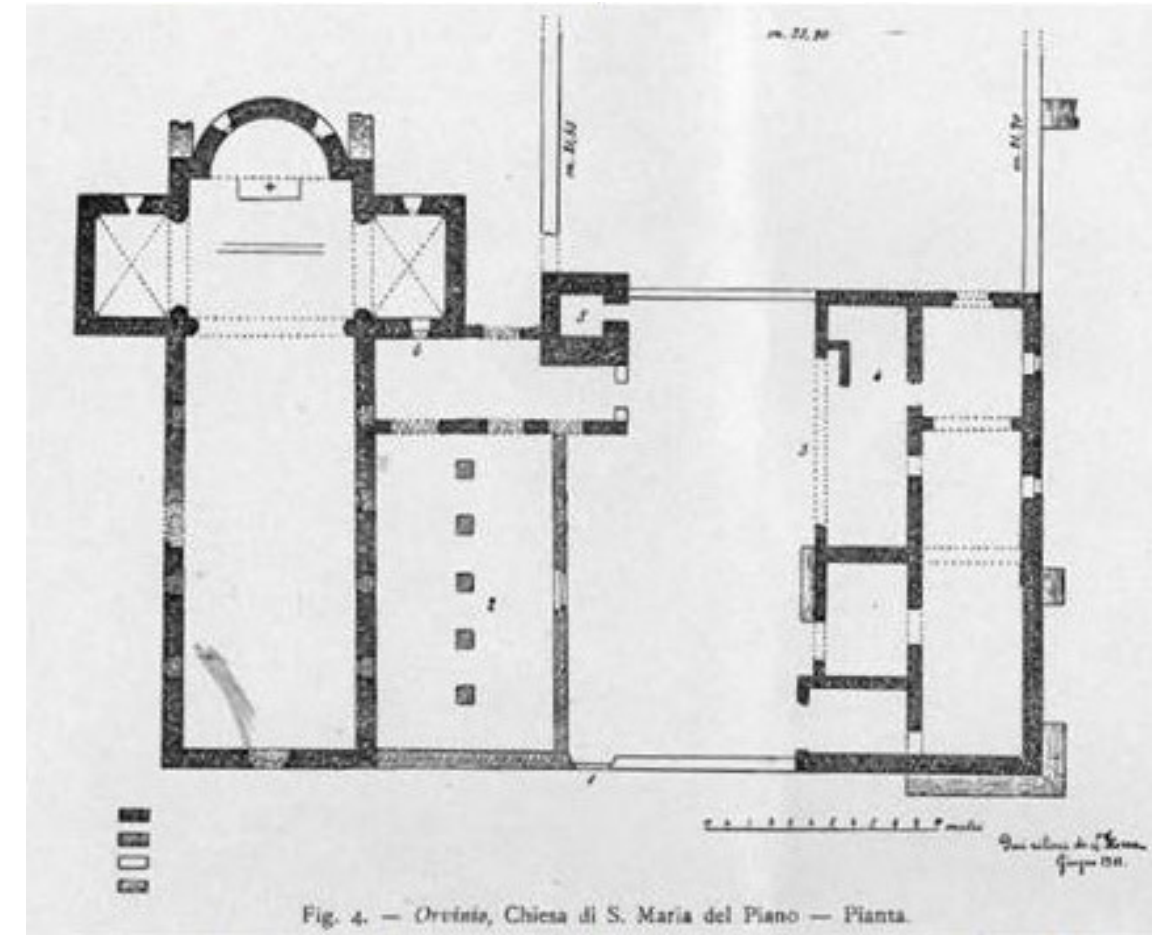


Figure 13: General plan of the complex in 1911 (survey by Prof. Lorenzo Fiocca) (source: Reuse Italy. Santa Maria del Piano Abbey: Historical Analysis and Restoration Prospects. Accessed March 7, 2025. www.reuseitaly.com)

2. 2 Architectural, Structural and Environmental Assessment

2.2.1. Architectural Layout



Figure 13: View from the top of the church, current situation (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)

The Abbey of Santa Maria del Piano follows a Romanesque design with later Gothic influences. The Latin cross plan consists of:

- A single nave (formerly roofed).
- A semicircular raised apse.
- A transept, originally with cross vaults.
- A bell tower.

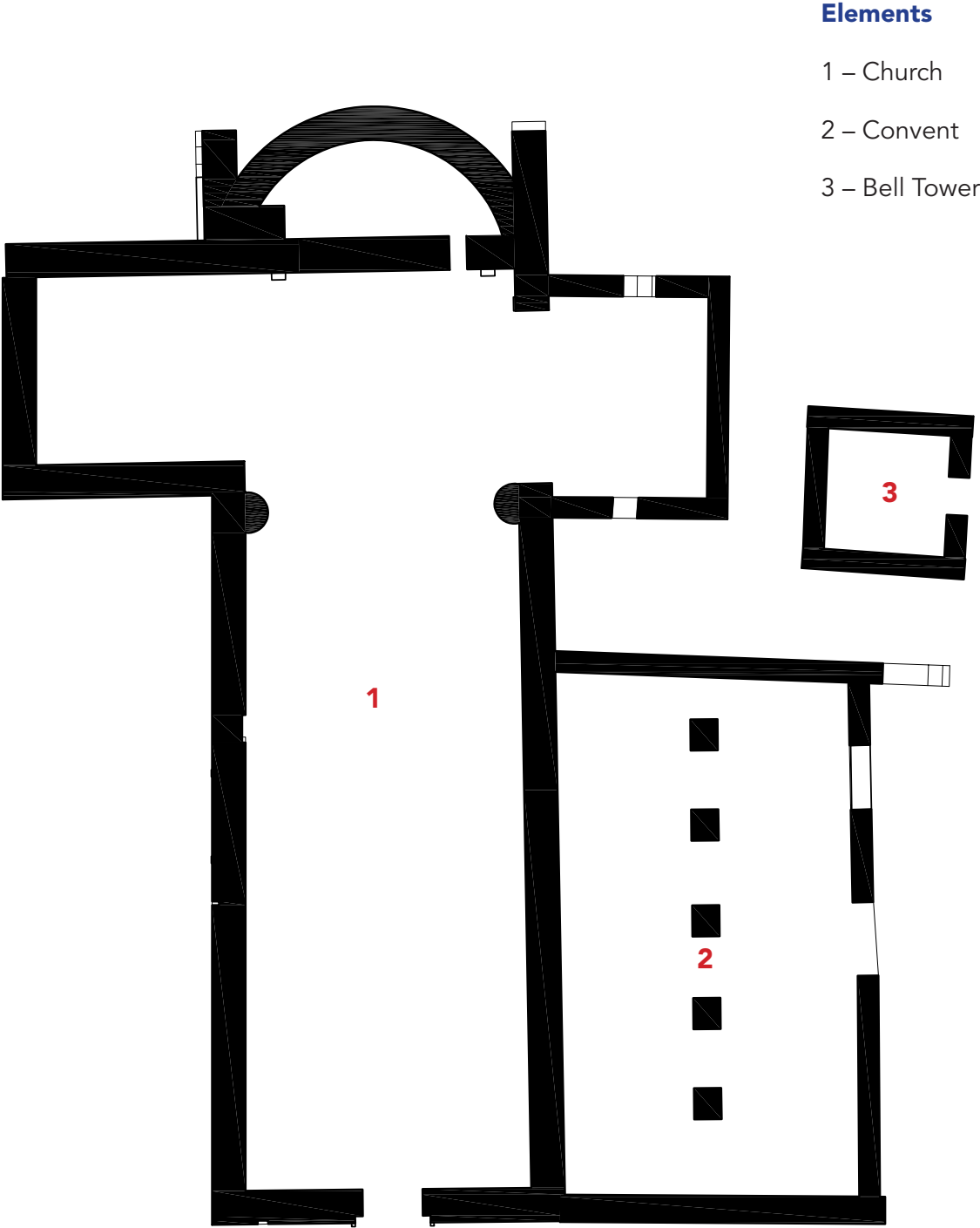


Figure 14: The plan of the church, current situation

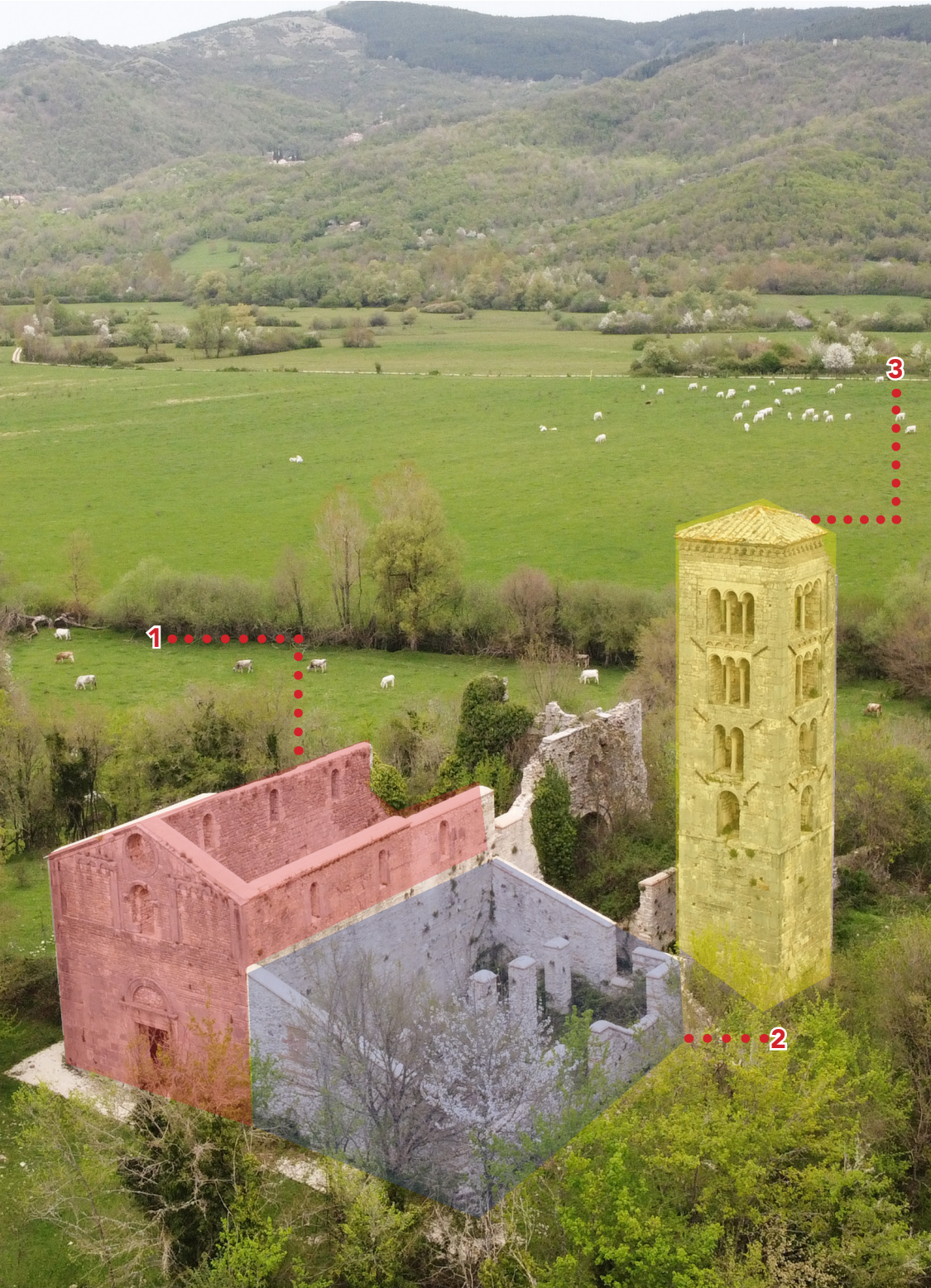


Figure 15: Current situation of the church (source: <https://www.reuseitaly.com/competitions/re-use-the-abbey-pozzaglia-sabina/>)

2.2.2. Plan, Sections and Elevations

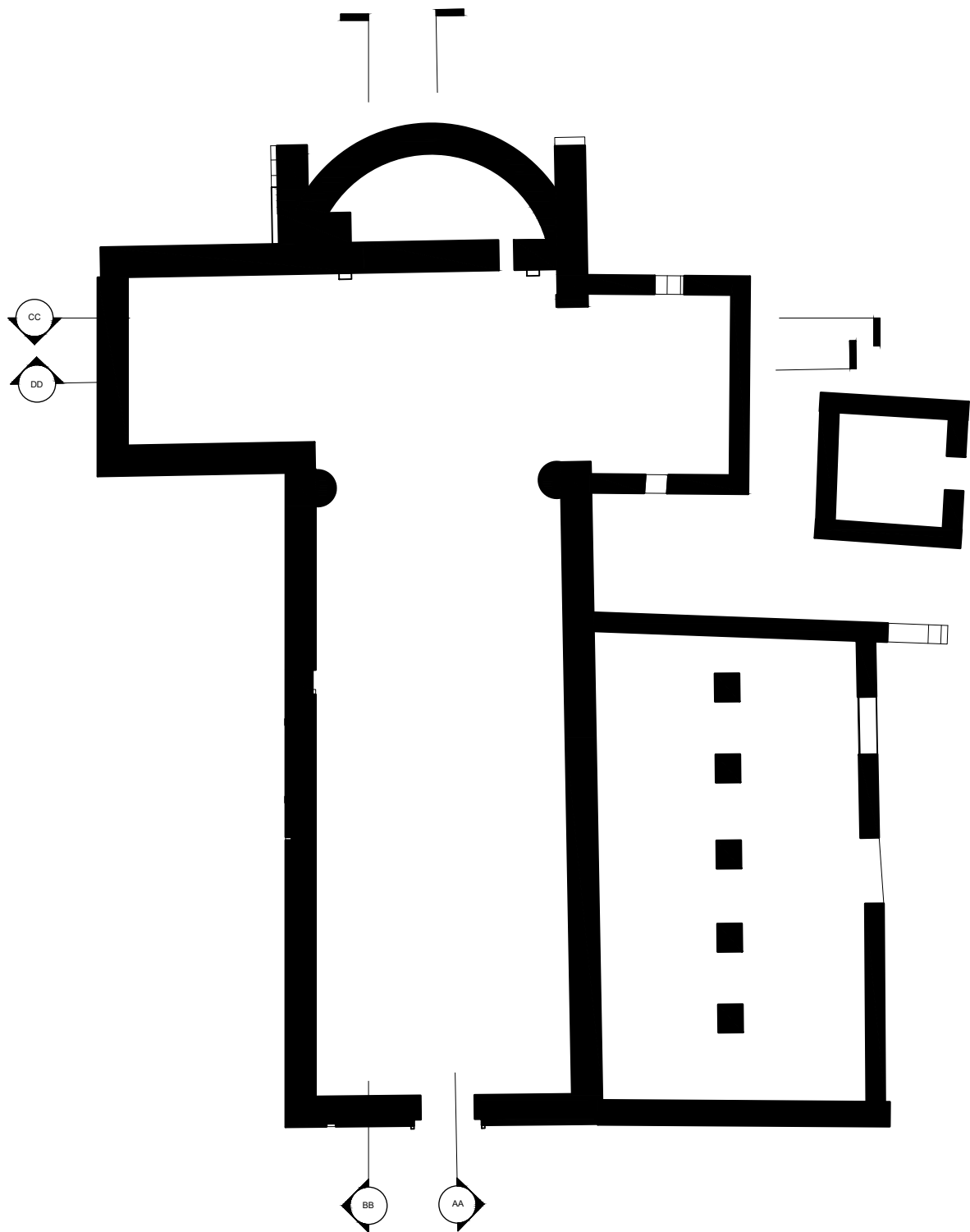


Figure 16: The plan of the church, current situation in scale 1/200

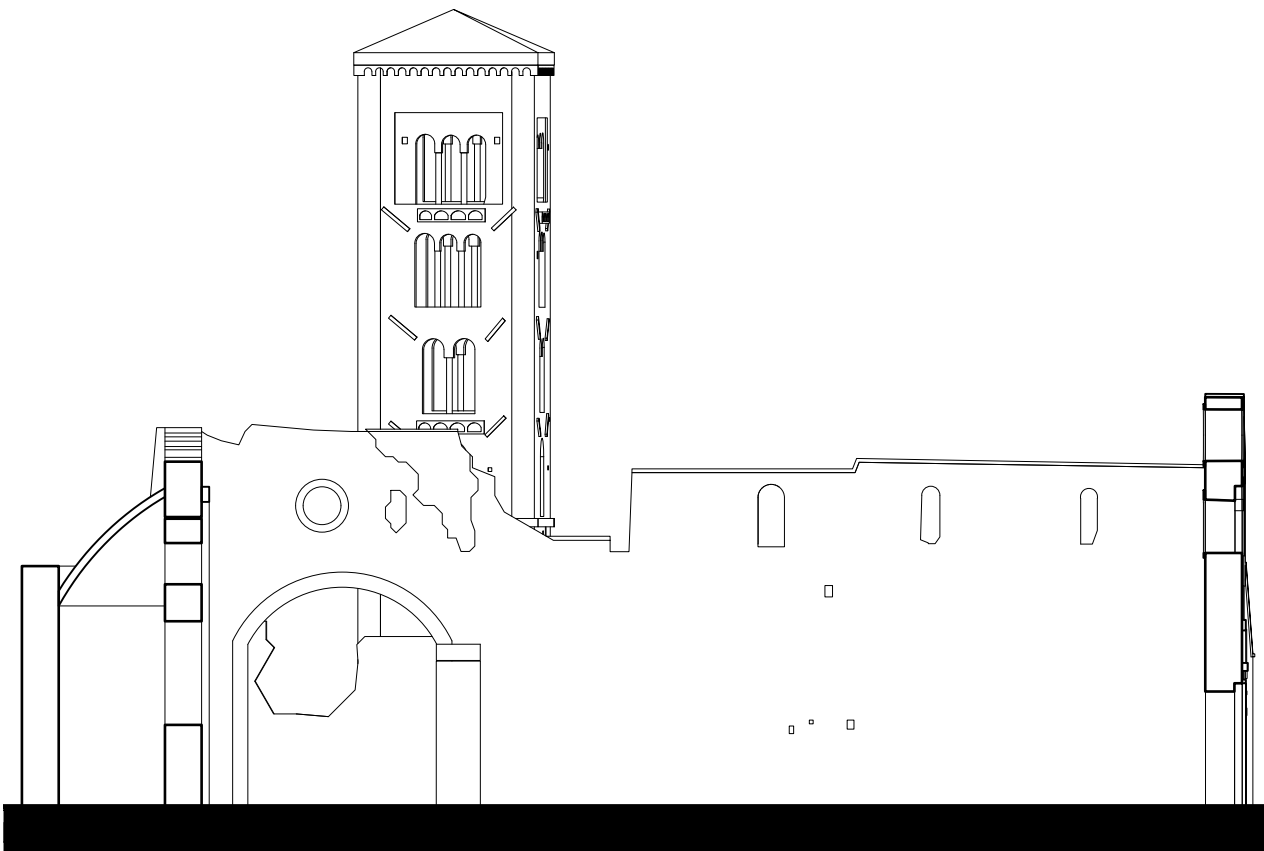


Figure 17: SECTION AA in scale 1/200

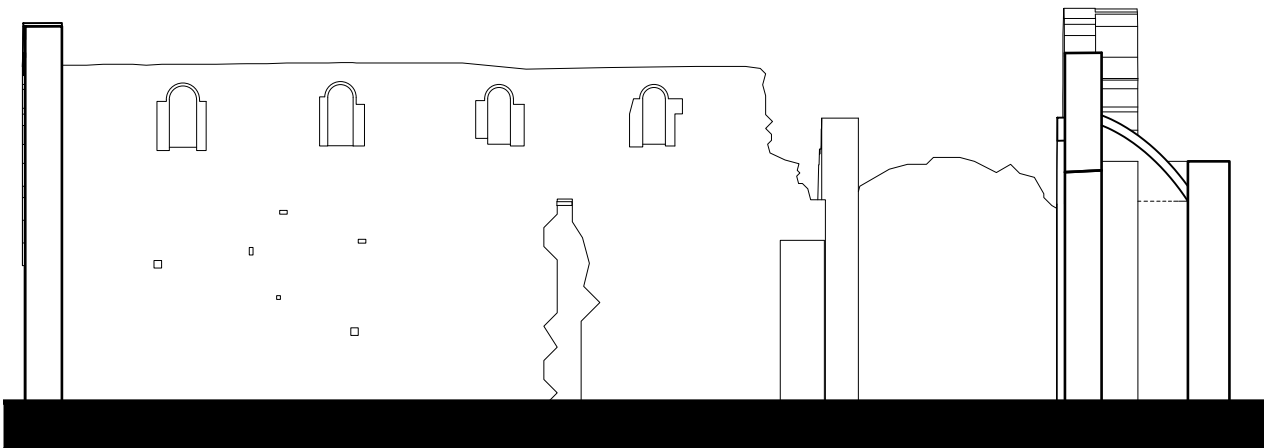


Figure 18: SECTION BB in scale 1/200



Figure 19: SECTION CC in scale 1/200

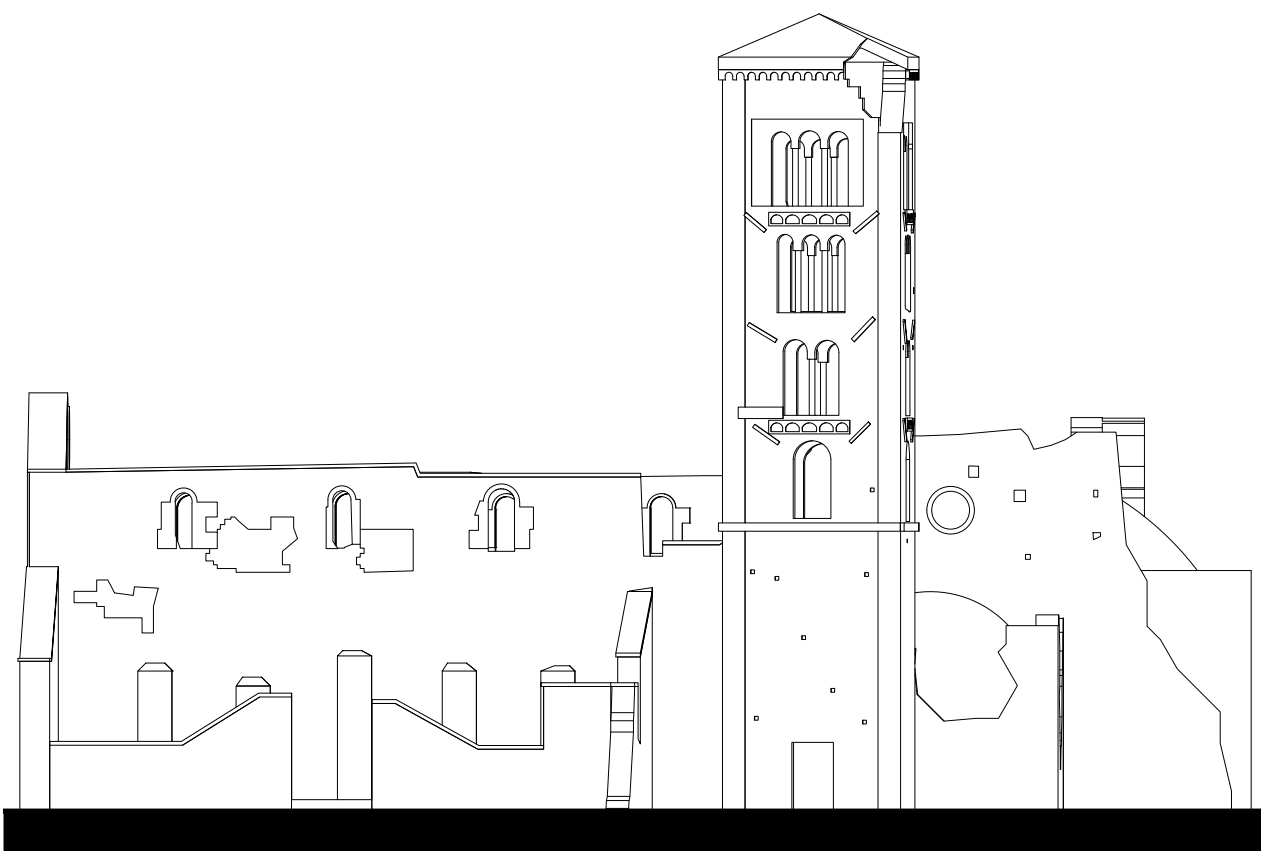


Figure 22: Southeast elevation in scale 1/200

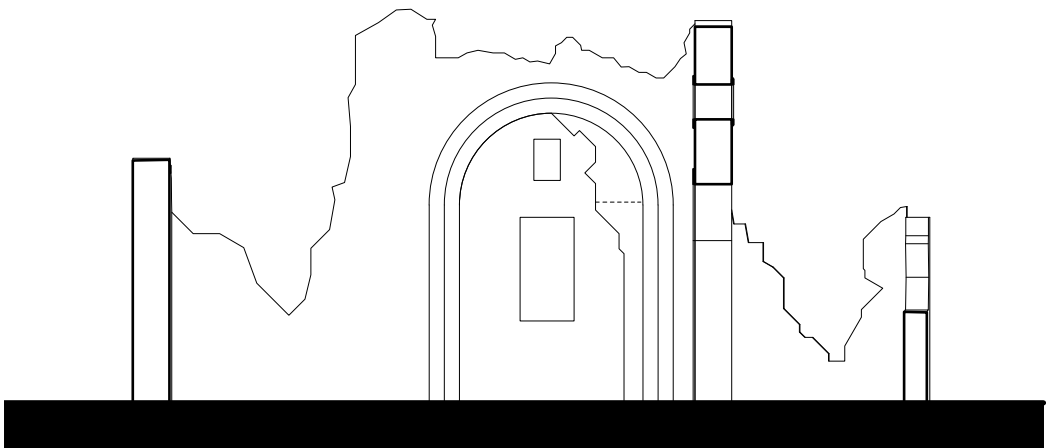


Figure 20: SECTION DD in scale 1/200



Figure 21: Southwest elevation in scale 1/200



Figure 23: Northwest elevation in scale 1/200

2.2.3. Topography



Figure 24: Sattelite image taken from Google Earth, the surrounding context of the church (source: Google Earth)

The surrounding landscape of the Santa Maria del Piano site is predominantly rural in nature, consisting of open fields, vegetation, and patches of dense forestry. The composite is gathered with natural green spaces and agricultural fields which increases the calmness of the site. This is ideal for the multi-purpose use of the site as a meditation retreat. The existence of agricultural fences and fragmented forests indicates that this site already possesses some form of natural infrastructure that could facilitate the integration of built habitats with existing landscapes for environmental continuity.

The site seems to be poorly surrounded by faint tracks with little to no gravel or dirt roads leading to it. This poses a unique problem as the landscape adds to the isolation and tranquility needed for a meditation retreat. However, lack of appropriate infrastructure and services adds to the issue regionally and for overall maintenance. The surrounding region is on an incline, however gentle slopes are observable which might aid in deciding the vertical construction strategy and organizational layout of the subterranean structures to be built.



Figure 25: Church with the surrounding context, the topography is shown (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)

The topography of the surrounding context is not flat, the level difference is visible. This could be used as an opportunity when designing the space.

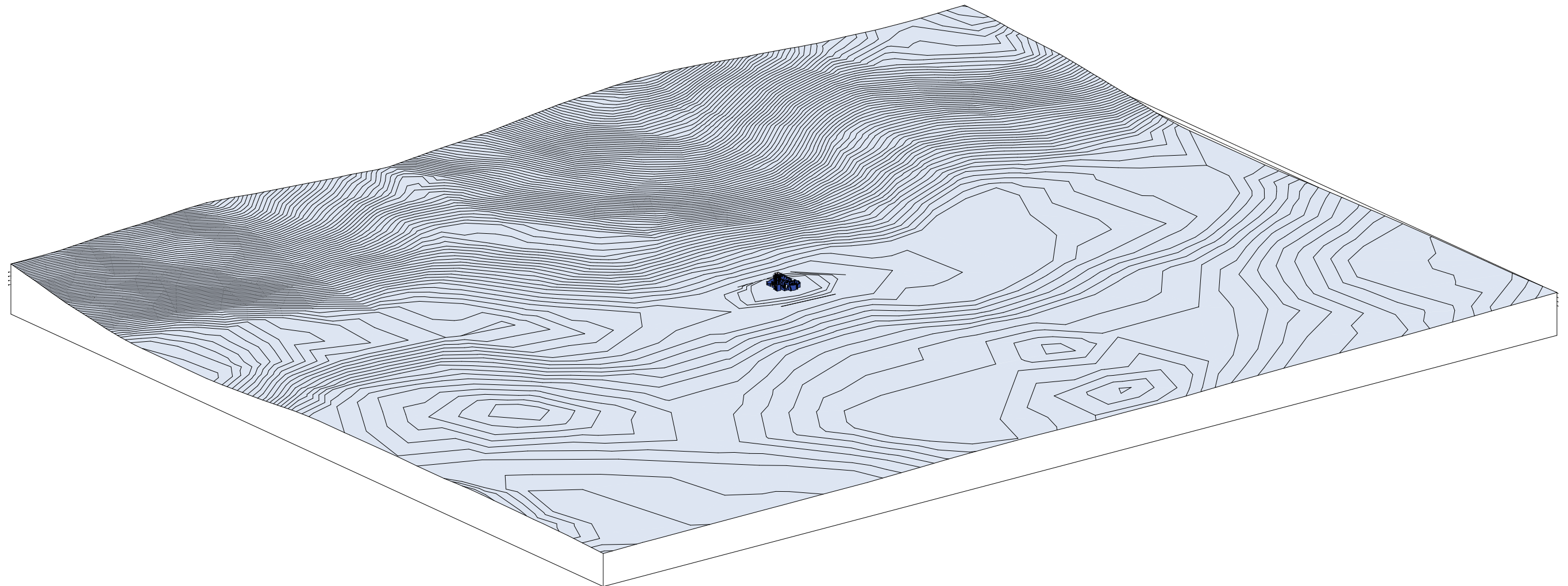


Figure 26: Topographic model of the existing surrounding made with contour lines every 1 meter.

The topographic model portrays a gently rolling landscape with the Santa Maria del Piano site at the center. The abbey rests on a gentle rise that purposefully sets it apart from the area while elegantly blending with the local landforms.

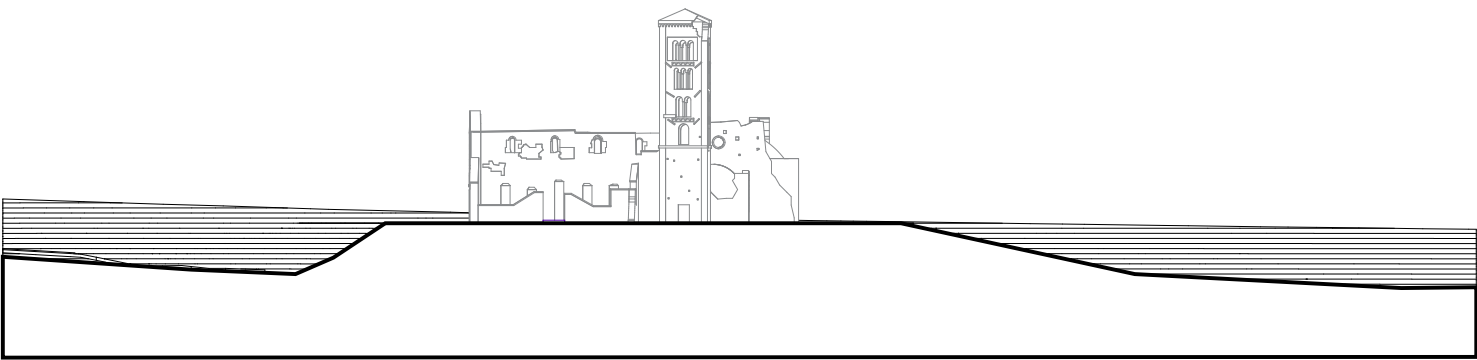


Figure 27: Section of the topography in scale 1/500 (SECTION AA)

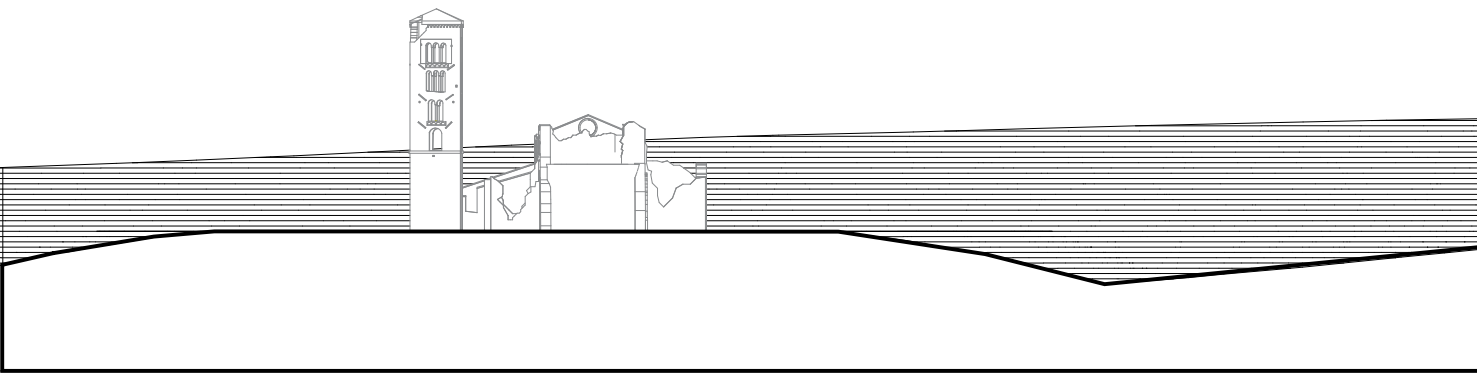


Figure 28: Section of the topography in scale 1/500 (SECTION BB)

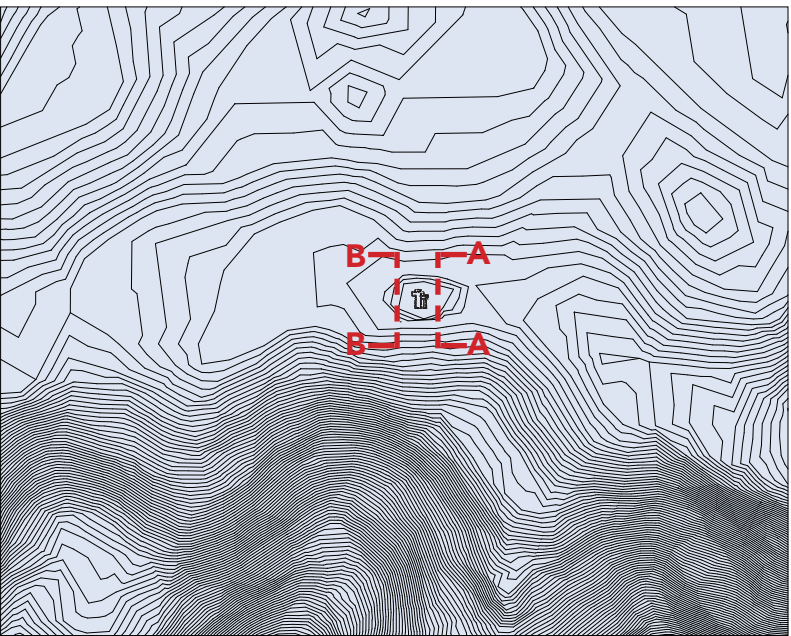


Figure 29: Keyplan of the topography

The section drawings show the abbey's relationship with the surrounding landscape, showcasing its prominent position as well as possible adaptive reuse opportunities. The bell tower provides a vertical reference point and topographical contrast. The site's gradual topography provides opportunities for further expansion below grade, creating new spaces that can be seamlessly concealed behind the historic face. This approach optimizes space for hidden courtyards or light shafts which could improve natural light and airflow. Employing the surroundings for contour cooling and insulation would permit sustainable design while maintaining the architectural integrity of the abbey.

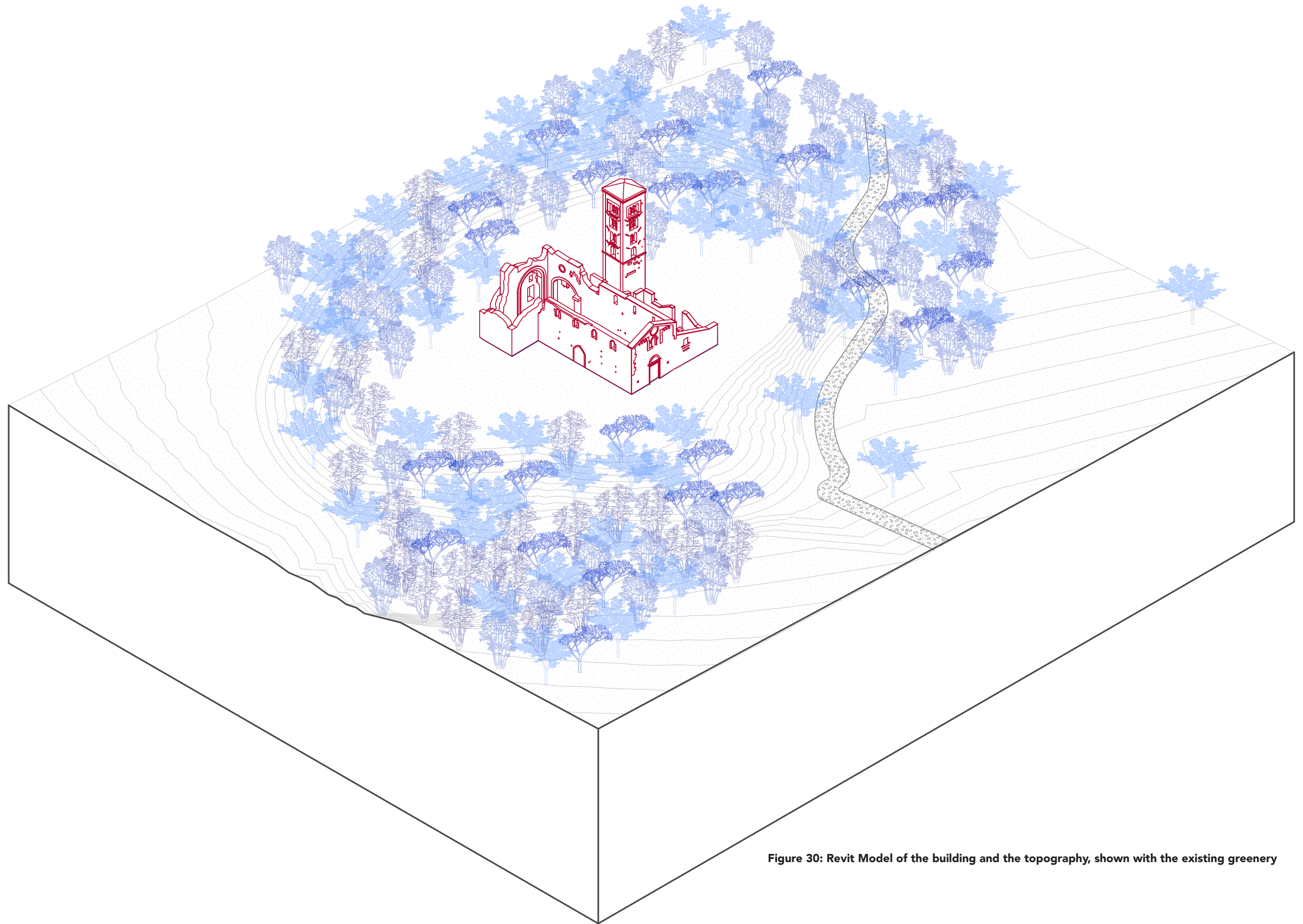


Figure 30: Revit Model of the building and the topography, shown with the existing greenery

2.2.3. Structural Aspects

1. Nave and Transept

- Creation of the transept resulted in the nave having four large arches which were divided using half-columns of various capitals.
- The construction shows signs of multiple changes over many years.



Figure 31: Interior of the church, one arch collapsed (shown in red) (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)

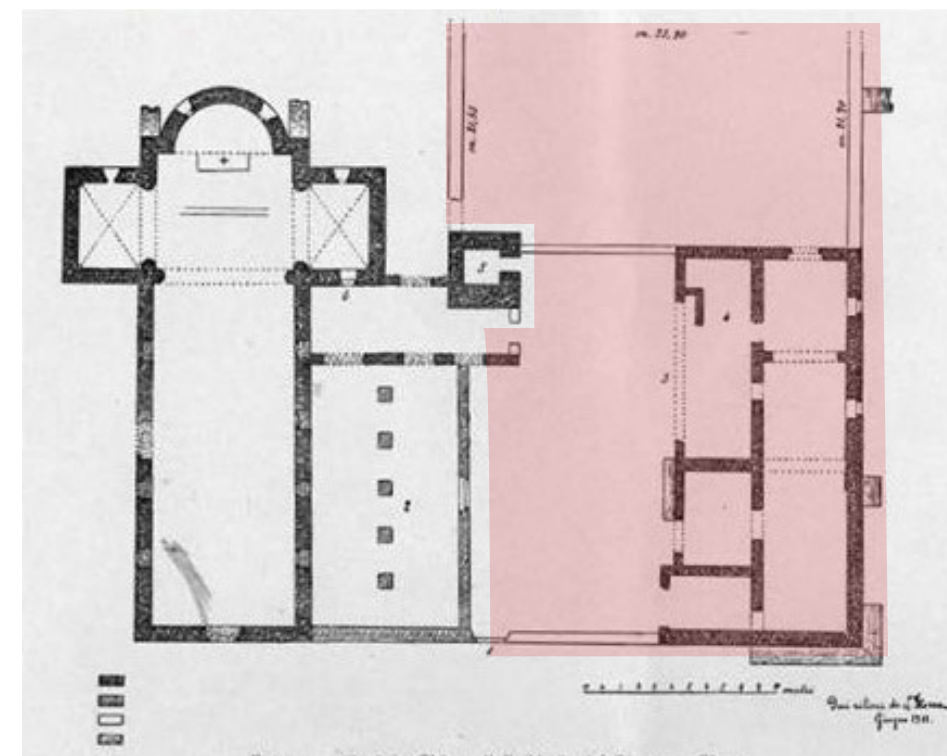


Figure 32: General plan of the complex in 1911, Non existent part shown in red (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)

2. Facade

- Building has surfaced erosion and was retrofitted after collapses.
- The rose shaped window of 1219 was taken away during an incident in 1979.

Without the original rose window, the front of the building now holds an obvious empty spot, yet that blank space also invites fresh ideas. A brand-new, freely shaped pane of colored glass could slip into that opening and become a bold artwork that gives the whole place a renewed character.



Figure 33: Facade of the building, changes on the facade are visible (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)



Figure 34: The rose window part of the building, the window was stolen in 1979 (source: <https://www.reuseitaly.com/competitions/>)

3. Bell Tower

- Square base with a height of 20 meters.
- Divided into an upper and lower section.
- The lower portion does not have any openings whereas the upper part has four rows of windows (single-lancet, double-lancet, and triple-lancet).
- Used to have wooden floors and spiral stairs on the inside.

4. Convent

- Mostly ruins
- Losing sections of the walls.



Figure 35: The windows of the bell tower (source: <https://www.reuseitaly.com/competitions/re-use-the-abbey-pozzaglia-sabina/>)



Figure 36: The bell tower of the building, shown in red (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)



Figure 37: Convent on the front, the roof does not exist (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)

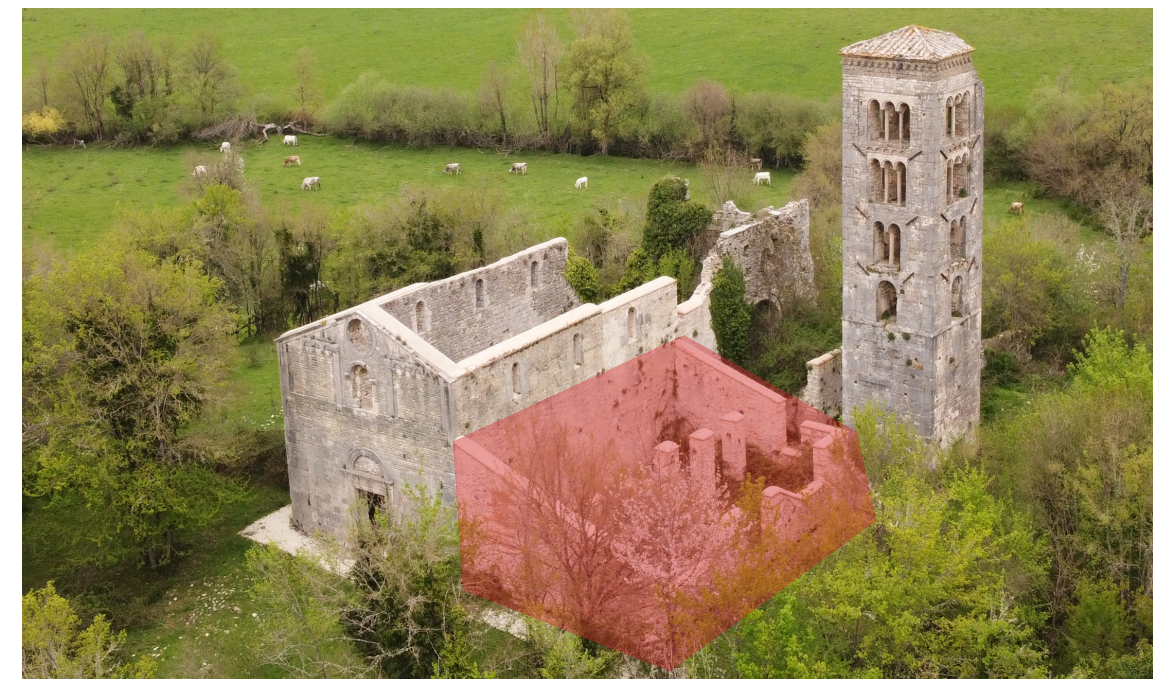


Figure 38: The convent of the building, shown in red (source: <https://www.reuseitaly.com/competitions/reuse-the-abbey-pozzaglia-sabina/>)

2.2.5. Environmental Aspects

Santa Maria del Piano is in an mountainous region mixed with rugged topography and elevated areas. The geological structure consists of limestone formations, which may create problems regarding soil preservation alongside new construction excavation, as well as pose difficulties in maintenance preservation works.

The area has a Mediterranean climate with hot and dry summers alongside warm, wet winters, adding to various moisture and erosion activities on seasonal cycles. Alongside these factors, the area receives moderate strength earthquakes which adds to the danger level considering the level of structural damage.

The Lazio region, encompassing Rieti, is classified as having a medium earthquake hazard, indicating a 10% chance of potentially damaging seismic events in the next 50 years. This necessitates careful consideration in construction and preservation efforts. (4)

4 - ThinkHazard!, "Lazio – Earthquake," (Global Facility for Disaster Reduction and Recovery), medium seismic hazard rating.

2. 3 Challenges and Opportunities

2.3.1. Challenges

Structural Deterioration

- Earthquakes, neglect and vandalism have damaged the abbey.
- Restoration may be difficult due to the possible collapsing issues and missing elements such as the rose window.

Accessibility Issues

- Transport logistics for construction and future visitors are difficult because of the location.
- Road infrastructure is limited.

Preservation vs. Adaptation

- Meditative space necessities alongside historical conservation balance is challenging.
- Spatial features such as high ceilings, stone materials, and echoing acoustics may need alterations for usability.

Topographical Constraints

- Design and construction are difficult due to existing terrain and integration of underground spaces needing careful excavation strategies.
- There are technical challenges in ensuring earth stability, drainage, natural light access, and stability in subterranean areas.
- Exhibiting above-ground heritage structures and below-ground meditation spaces requires smart design approaches to facilitate transitions.

2.3.2 Opportunities

- The available spatial volume (tall nave, high ceilings, and natural light) meets the aimed design principles.
- Offsetting the environmental impact of restoration using local materials (stone, wood) is purposeful.
- The possibility to use terrain in the use of natural light.
- The local economy could be boosted from the project as it might attract spiritual tourism and retreat visitors.

5- N. S. Kumar and J. Janardhan, "Preservation and Adaptive Reuse of Historical Buildings: Sustaining Heritage in the Modern Era," International Journal of Scientific Research in Engineering and Management 7, no. 12 (2023): 1–4.

3. Literature Review

3. 1 Adaptive Re-use in Architecture

In the 21st century, adaptive reuse practices have become an important architectural and urban planning technique that balances modern requirements with heritage conservation. The repurposing of old buildings is now more relevant than ever with the evolution of urban areas and the need for sustainable development. In the case of historical structures, adaptive reuse enables planners and architects to maintain the cultural heritage while meeting the needs of today's society in terms of functionality, economy, and environment.

3.1.1 Theoretical Foundations of Adaptive Reuse

Adaptive reuse is the process of modifying historic buildings to serve different purposes from the ones originally intended. It is neither restoration nor conservation, but rather a blend of remembering the past while innovating the present.

As pointed out by Sunil Kumar and Jahnavi Janardhan (2023), adaptive reuse mitigates carbon footprints, construction waste, and land consumption while maintaining the character of the historical structure. Their work also highlights how the benefits of adaptive reuse extend beyond the environment to provide economic gain through neighborhood revitalization via tourism, business, and cultural engagement (5).

Maha Shree et al. (2024) expand this view by incorporating the socio-cultural dimension of adaptive reuse, which fosters innovation and social connectivity by creating productive multifunctional spaces. They remark how reused buildings become cultural incubators, enabling community participation in the arts and public discourse while promoting regional identity and heritage. (6).

3.1.2. Strategies and Benefits of Adaptive Reuse

Adaptive reuse integrates four strategic pillars of environmental stewardship, design innovation, cultural conservation, and economic sustainability.

Environmental Benefits: Adaptive reuse, unlike new construction projects, incurs minimal embodied energy expenditure and expenses attached to demolition and reconstruction. As Kumar and Janardhan underlined, the retrofitting of older historical buildings offers a degree of energy efficiency through material reuse and the addition of renewable systems (7).

Cultural Continuity: In their study, Maha Shree et al. explain reused heritage structures help to symbolise and deliberate the cultural memory as well as resilience of the societies which possessed them. They increase and improve the sense of belonging

and pride to the community (8).

Economic Revitalization: These initiatives also boost investment, tourism, and other economic activities while enhancing job creation. Furthermore, the ability to transform underused land into commercially or socially productive assets fosters regional development.

Design Innovation: Renewal of usage in older structures demand new creativity and architectural skills which follows context-sensitive design. Often, new programmatic responses are influenced by the pre-existing spatial conditions. As a result, the environments are much more unique and meaningful.

6- M. Shree, R. Yogesvar, R. Madhushri, R. Vishal, and J. Eunice, "Adaptive Reuse of Cultural Heritage," International Research Journal on Advanced Engineering and Management 2, no. 4 (2024): 1188–1192.

7- Kumar and Janardhan, "Preservation and Adaptive Reuse."

8- Shree et al., "Adaptive Reuse of Cultural Heritage."

3.1.3. Application to Santa Maria del Piano

Structurally adaptive reuse cultivates the potential and principles of Orvinio’s Abbey of Santa Maria del Piano. The abandoned abbey and convent has diseased from grace as a result of communal neglect. In spite of its ruins, the spatial and atmospheric remnants of medieval Romanesque-Gothic architecture lend themselves beautifully to transformation into a meditation retreat.

Informed by the theories of adaptive reuse set out by Kumar and Shree, it becomes evident that this case portrays remarkable benefits, along with distinct methodologies:

Sustainability: The project can preserve the stone remnants while embedding new structures into topography, which reduces environmental impacts. Furthermore, the area’s reused materials will be enhanced with passive lighting, ventilation, and energy-efficient systems (9).

Cultural Reverence: The abbey’s past is not forgotten or erased. Symbolic reference and ritual continuity is maintained as meditation supports the original spiritual purpose, and thus reinforces the abbey’s contemplative charm (10).

Community Revitalization: The wellness center is envisioned to draw tourists and promote economic development which is beneficial not only to Orvinio, but to the entire region as well (11).

Design Strategy: As noted in the thesis, sensory experience zoning spatially structures portions of a site. This exemplifies how adaptive reuse invites innovative, human-centered, and place-responsive design.

Any form of adaptive reuse transcends technical boundaries; it is inherently cultural and ecological in nature. It prompts a reconsideration of our connections with history, memory, and geography. The Santa Maria del Piano project shows that even a forgotten place of worship can become repurposed and revitalized as a center for healing, contemplation, and community rejuvenation.

Based on esthetic and functional frameworks rooted in sustainability, adaptive heritage conservation, and experience-based visitations, the integrated remodeling of the abbey develops into a case of justified, ecological, and architectural adaptive transformation.

9 - Kumar and Janardhan, "Preservation and Adaptive Reuse."
10 - Shree et al., "Adaptive Reuse of Cultural Heritage."
11 - D. Nischal and S. Dotel, "Journal of Building Conser

3. 2 Case Studies in Adaptive Re-use

3.2.1. St. Nicholas Church (Kyloe, England) – Private Residential Home, 2008

St. Nicholas Church was transformed into a private home with un-noticeable structural changes comprising the original Gothic windows, high ceilings, and stonework remaining. This highlights how religious buildings can be adapted for modern use whilst retaining their historic identity. (12)



Figure 39: St. Nicholas Church in Kyloe, England, exterior (source: <https://www.wikidata.org/wiki/Q26652142>)



Figure 40: St. Nicholas Church in Kyloe, England, interior (source: <https://inhabitat.com/dilapidated-18th-century-church-transformed-into-a-private-home/renchurch-ed07/>)

12- Atlas Obscura. St. Nicholas Church (Church House).

3.2.2. Library 'De Petrus' (Vught, Netherlands) – Library Adaptation, 2018

Formerly a medieval church, this building is now a public library, demonstrating how sacred spaces can serve other community purposes. Arches and the nave were retained, along with new contemporary reading spaces, glass dividers, and modular furniture. This exemplifies one form in which the religious architecture can adopt contemporary culture through its adaptive reuse. (13)



Figure 41: De Petrus Library in Vught, Netherlands, interior (source: <https://www.archi-tonic.com/it/project/molenaar-bol-vandillen-architects-library-museum-and-community-centre-de-petrus/20001407>)



Figure 42: De Petrus Library in Vught, Netherlands, exterior (source: <https://www.apartmenttherapy.com/dutch-church-turned-library-258542>)

3.2.3. St. Peter's Church (Lubeck, Germany) – Exhibition Hall, 1987

The church hosts a variety of cultural events, including classical concerts, choral performances, and art exhibitions. These events provide visitors with an opportunity to experience Lübeck's vibrant cultural scene in one of the city's most atmospheric settings. (14)



Figure 43: St. Nicholas Church in Kyloe, England, exterior (source: <https://travel2unlimited.com/germany-lubeck-st-peters-church/>)



Figure 44: St. Nicholas Church in Kylloe, England, interior (source: <https://travel2unlimited.com/germany-lubeck-st-peters-church/>)

3. 3 Historical and Cultural Significance of Churches

For centuries, churches have functioned not only as places of worship and prayer but as monuments of community identity, cultural continuity, and social memory. In many parts of Europe, they serve as local historical symbols where rituals are practiced, events are commemorated, and social ties are fostered. D’Aprile (2019) highlights that churches go beyond their functional purposes “the spirit of place,” material and immaterial phenomena that serve to construct memory and identity. The architecture, the arrangement of space, and the shapings from generations of use tell a story that intersects with the people far beyond the religious narrative. (15)

In addition, churches also fulfill the obligations of a civic monument while providing spiritual services to congregants. Peter Scott (2015) draws attention to British churches that, despite experiencing a decline in numbers, remain active and engaged in civil society. They continue to function as public institutions, providing social welfare, education, and interfaith activities. Their contribution to social capital is described as “incalculable.” (16)

The sacredness of churches does not stem solely from liturgical functions. As D’Aprile observes, churches, even when deconsecrated or left abandoned, still bear emblems of significant attach-

ment. Through architecture, memory, and ritual, an “atmosphere” is formed which still affects perception and valuation of these structures. Hence, the adaptive reuse of such buildings requires balance, maintaining their non-physical aspects while integrating new uses. The challenge is to avoid cancellation of the cumulative even if the identity of the building risks being neutralized through transformation. (17)

Churches have cultural roles as well that are changing. As Scott (2015) observes, Anglicanism and other branches in the UK are confronted with multifaceted changes, yet they remain socially engaged with ethical, communal, and political concerns. In this case, churches continue to operate as spaces for dialogue and moral contemplation, thus maintaining their paradoxical position of being part of historical continuity and modern relevance. (18)

15 - D’Aprile, M. “Materiality and Immateriality of Neglected Historical Churches: Preservation and Adaptive Reuse.” Proceedings of Science and Technology. IEREK Press, 2019.

16-18 - D’Aprile, “Materiality and Immateriality of Neglected Historical Churches”

3. 4 Projects Incorporating Topography with Architecture and Subterranean Spaces

3.4.1. Area Duchi (Sestriere, Italy) – Paolo Zermani, designed in 1994

In 1994, architect Paolo Zermani entered a competition for the redevelopment of the “Area Duchi” in Sestriere, Turin. He was particularly noted for his proposal which tried to integrate the mountains into the design as it sought to mitigate architectural damage to the landscape. Understanding and implementing the principles of topography-Integrated Architecture was one of Zermani’s striking features. (19)

Adaptation to the Thesis Project: The constructs of Zermani captures clearly how embedding structures into the existing topography is vital for aesthetic balance and sensitivity to nature. Similarly, these approaches can be taken to create tranquil spaces of meditation aligned with the surroundings.

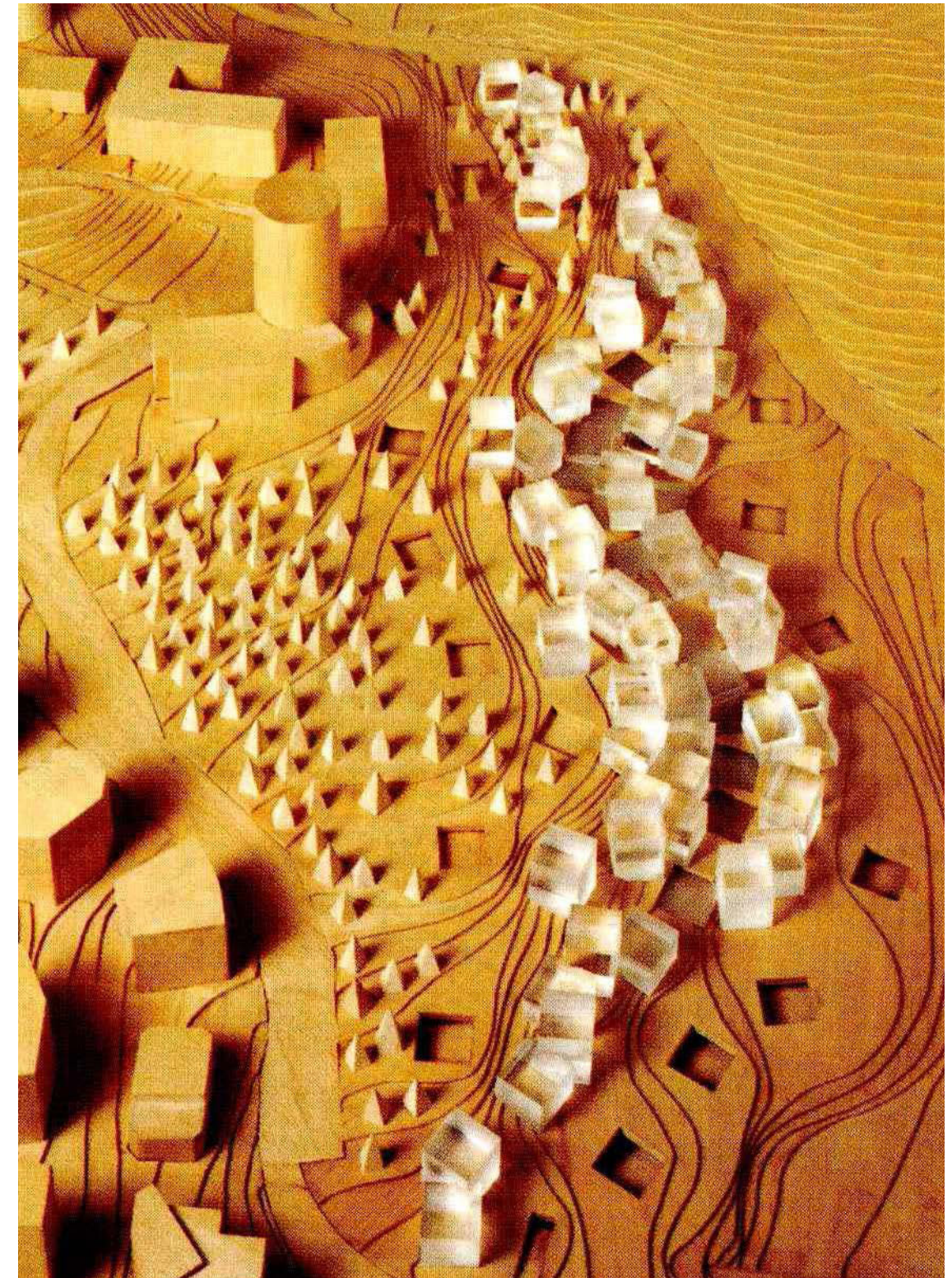


Figure 45: Area Duchi in Sestriere, Italy, conceptual model (source: <https://studiozermaniassoc.wixsite.com/zermaniassociati/sistemazione-area-duchi>)

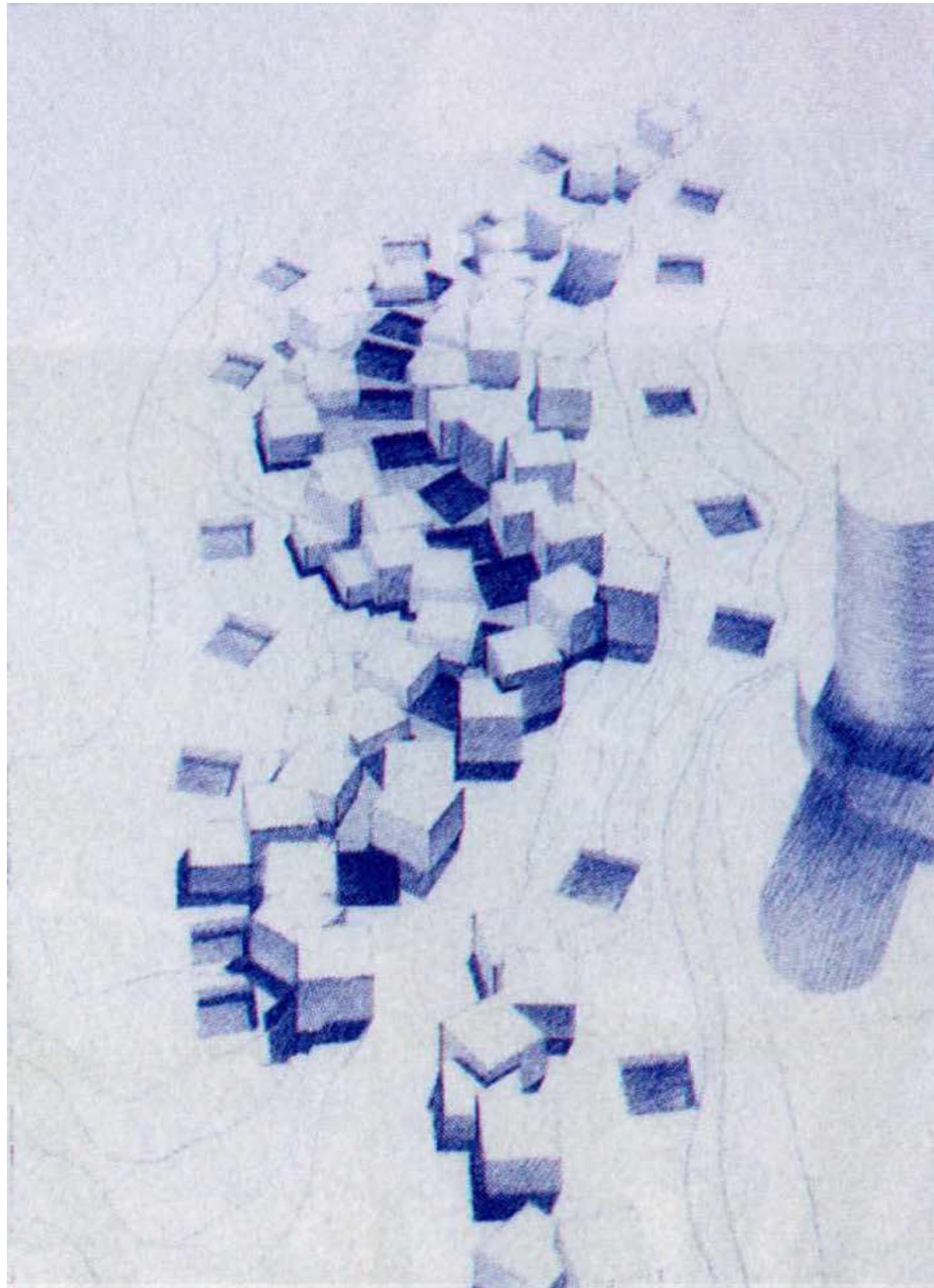


Figure 46: Area Duchi in Sestriere, Italy, conceptual sketch
 (source: <https://studiozermaniassoc.wixsite.com/zermaniassociati/sistemazione-area-duchi>)

3.4.2. Therme Vals (Vals, Switzerland) – Peter Zumthor, 1996

Located in Switzerland, The Therme Vals is an example of architecture creating an immersive meditative experience through the use of materials, light, and space as designed by Peter Zumthor. Constructed over natural thermal springs, the project combines local stone, extracted daylight, and filtered sound to provide an overwhelming sensory experience. Not a religious structure, but one where design principles closely associate with specialized spaces, demonstrating how the architectural components can generate peace, reflection, and mindfulness. These design approaches perhaps using natural materials, light, and the incomplete complete spaces is permitted provide pieces of what is essentials needed to convert an abandoned church into a meditative space. (20)

Adaptation to the Thesis Project: Instead of adding new structures beside the abbey, new spaces could be carved as meditation rooms into the terrain.



Figure 47: Therme Vals in Vals, Switzerland, exterior (source: <https://www.archdaily.com/13358/the-therme-vals>)



Figure 48: Therme Vals in Vals, Switzerland, exterior (source: <https://www.archdaily.com/13358/the-therme-vals>)



Figure 49: Therme Vals in Vals, Switzerland, section view (source: <https://www.archdaily.com/13358/the-therme-vals>)

3.4.3. The Lowline (New York, United States) – James Ramsey, designed in 2009

The Lowline is a project that seeks to convert an old underground trolley terminal into a vibrant public park. Public space is created by bringing natural light into the terminal where plants are grown utilizing advanced solar technology. This project is a case study of what can be accomplished in the underground spaces with creativity and technology. (21)

Adaptation to the Thesis Project: The possibility of natural light access through light channeling could positively increase the attractiveness of underground meditation rooms.



Figure 50: The Lowline in New York, US, conceptual render (source: https://www.archdaily.com/188295/delancey-underground-a-k-a-the-low-line?utm_)



Figure 51: The Lowline in New York, US, conceptual render (source: https://www.archdaily.com/188295/delancey-underground-a-k-a-the-low-line?utm_)

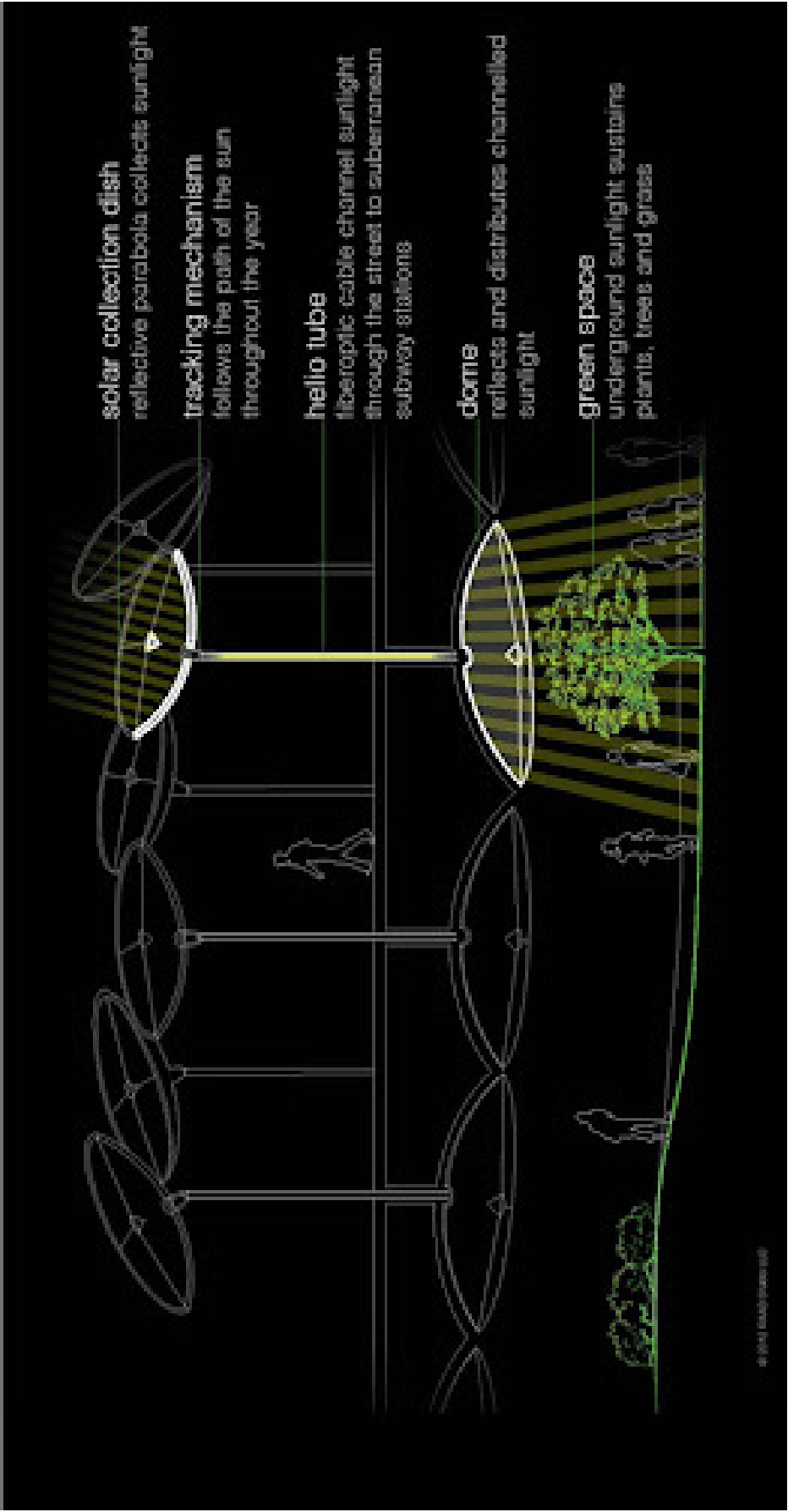


Figure 53: The Lowline in New York, US, conceptual section (source: https://www.archdaily.com/188295/delancey-underground-a-k-a-the-low-line?utm_)

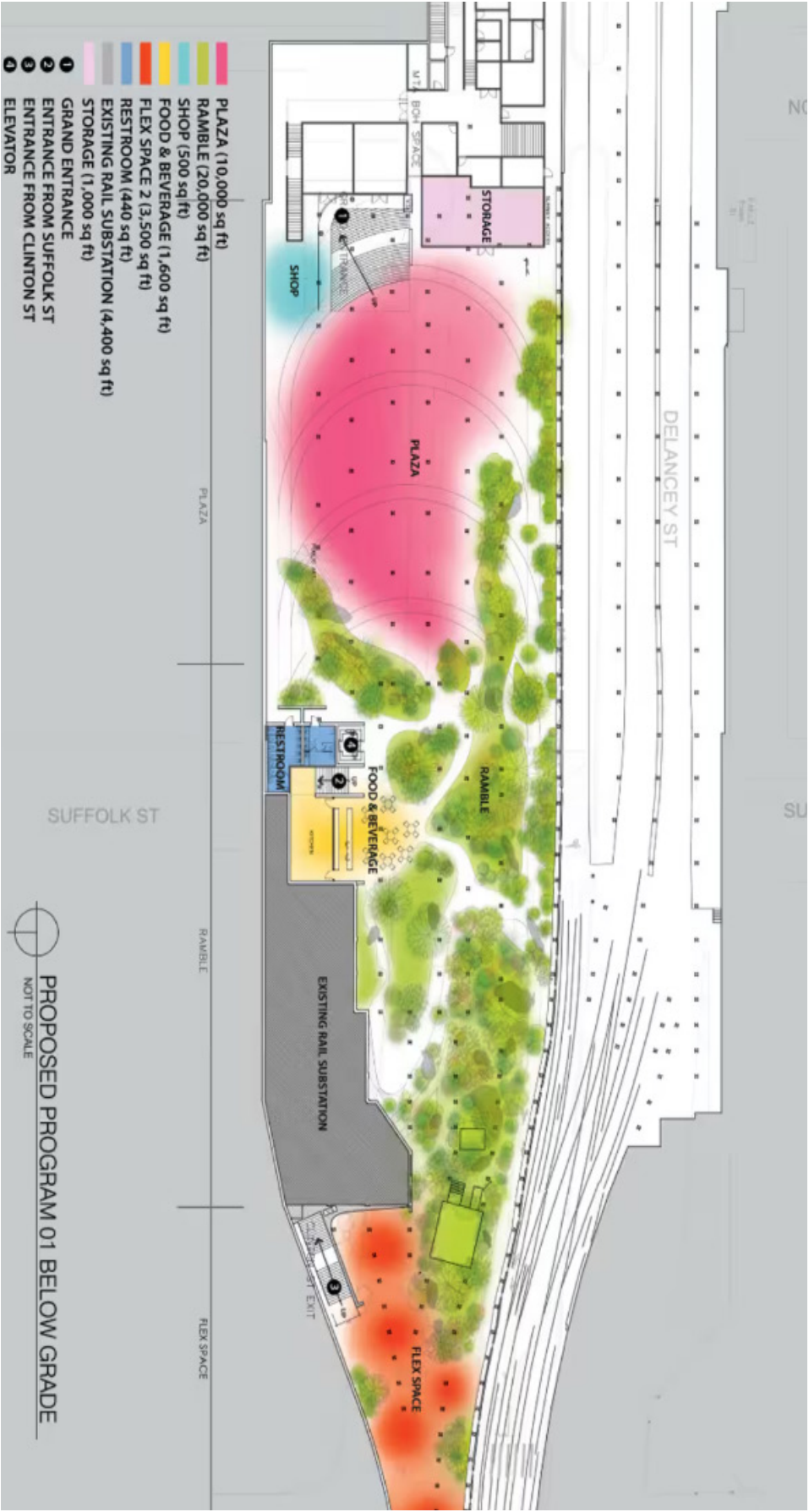


Figure 52: The Lowline in New York, US, conceptual plan (source: https://www.archdaily.com/188295/delancey-underground-a-k-a-the-low-line?utm_)

The Lowline has never been realised but the concept is inspirational. The plan shows how an underground space can be utilized beneficially.

3.4.4. Villa Vals (Vals, Switzerland) - SeARCH and CMA, 2009

Villa Vals entirely submerges a residence into a hillside to hide its presence. The open facade of the structure provides the interior with valley views and allows rich daylight penetration. (22)

Adaptation to the Thesis Project: The integration of window like cutouts through the land form allows for the light to penetrate into meditation spaces carved out into the earth, enhancing the relationship between nature and architecture.



Figure 54: Villa Vals in Vals, Switzerland, exterior view (source: <https://www.search.nl/works/villa-vals/>)



Figure 55: Villa Vals in Vals, Switzerland, section (source: <https://www.search.nl/works/villa-vals/>)



Figure 56: Villa Vals in Vals, Switzerland, exterior view (source: <https://www.search.nl/works/villa-vals/>)

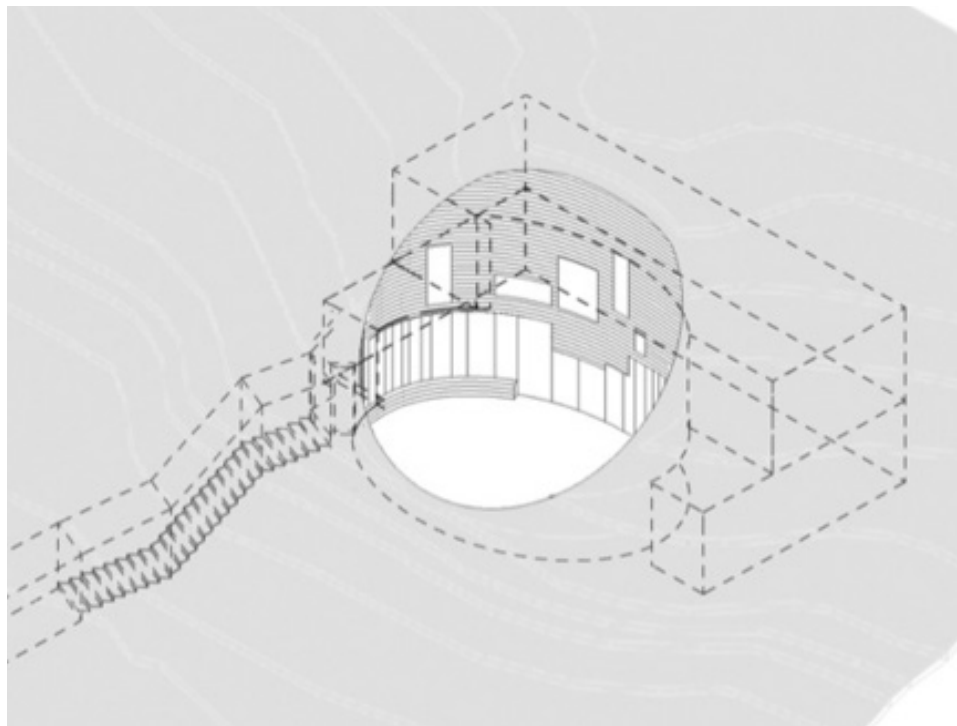


Figure 57: Villa Vals in Vals, Switzerland, topography (source: <https://www.search.nl/works/villa-vals/>)

3.4.5. House in Monsaraz (Monsaraz, Portugal) – Aires Mateus, 2018

This structure was constructed by Aires Mateus, who incorporated it into a hillside. This allows the roof to double as an extension of the hill. This approach reduces the visual footprint and utilizes the earth's natural warmth. (23)

Adaptation to the Thesis Project: Embedding meditation spaces within the landscape makes it possible to create calm environments that integrally flow with nature, enabling users to connect with the earth.



Figure 58: House in Mosaraz in Portugal, exterior view (source: https://www.archdaily.com/918263/house-in-monsaraz-aires-mateus?ad_source=search&ad_medium=projects_tab)



Figure 60: House in Mosaraz in Portugal, exterior view (source: https://www.archdaily.com/918263/house-in-monsaraz-aires-mateus?ad_source=search&ad_medium=projects_tab)



Figure 59: House in Mosaraz in Portugal, exterior view (source: https://www.archdaily.com/918263/house-in-monsaraz-aires-mateus?ad_source=search&ad_medium=projects_tab)

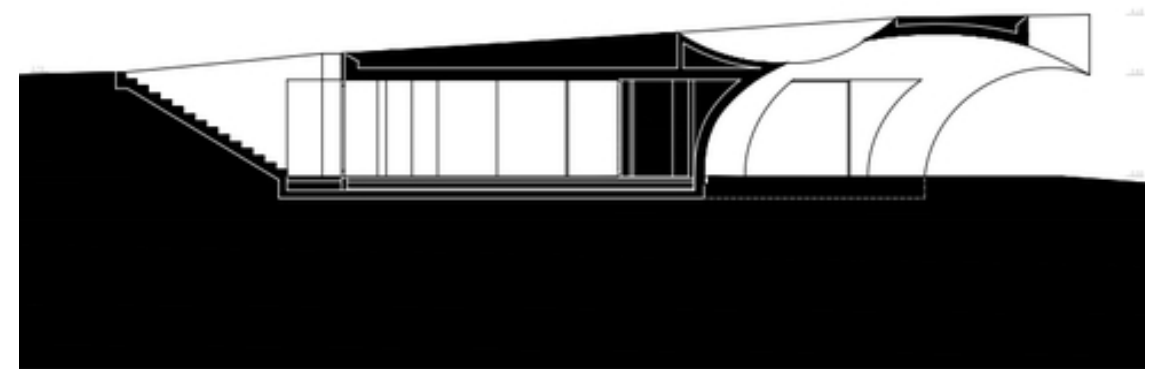


Figure 61: House in Mosaraz in Portugal, section (source: https://www.archdaily.com/918263/house-in-monsaraz-aires-mateus?ad_source=search&ad_medium=projects_tab)

3.4.6. Museo d'Antichità (Torino, Italy) – Roberto Gabetti and Aimaro Isola, 1994

The museum is a part of the Royal Palace of Torino. It uses underground architecture to engage with the with historical material.



Figure 62: Museo d'Antichità in Torino, Italy, entrance (source: https://it.wikipedia.org/wiki/Museo_di_antichit%C3%A0)

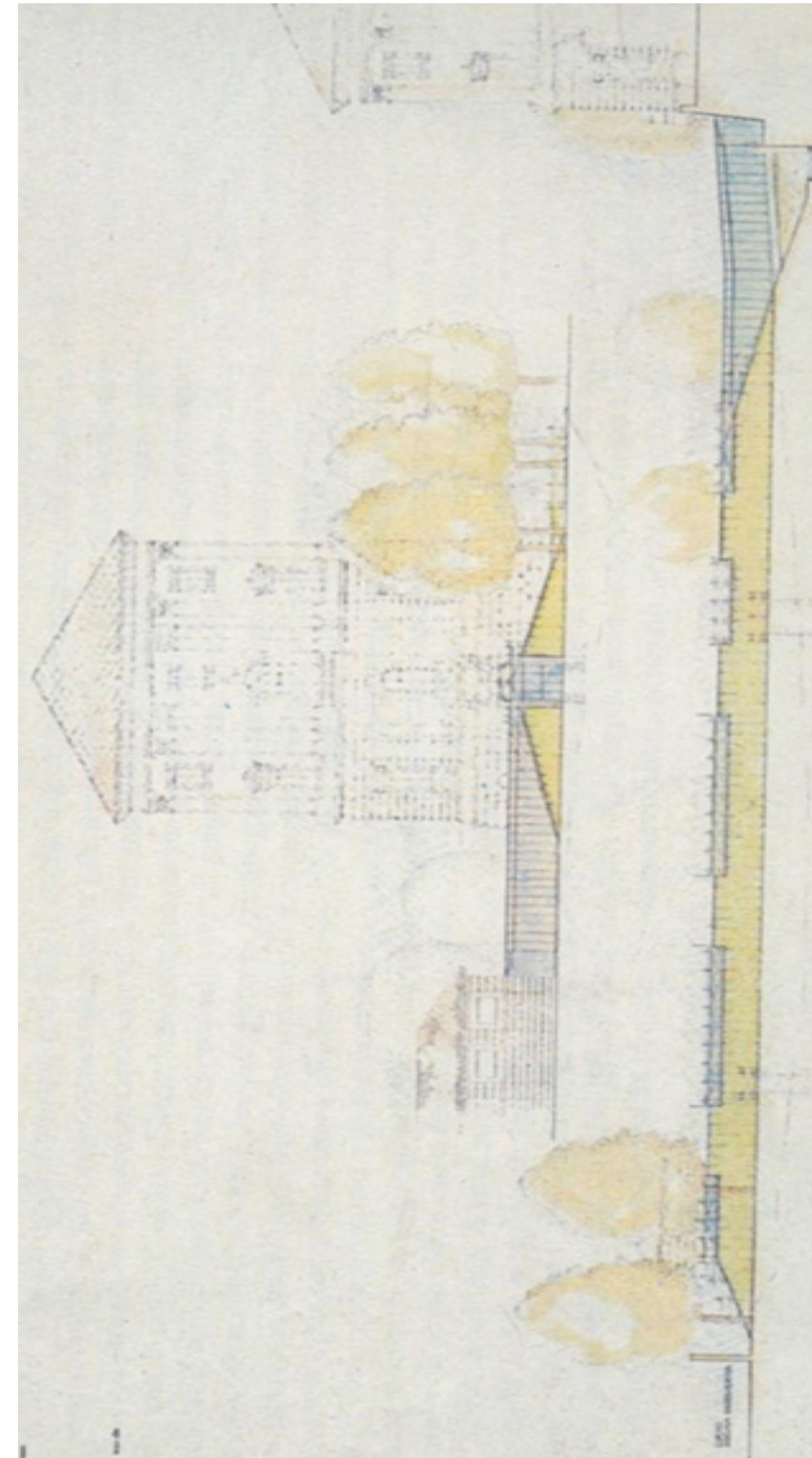


Figure 63: Museo d'Antichità in Torino, Italy, section (source: https://iris.polito.it/retrieve/e384c432-f9d0-d4b2-e053-9f05fe0a1d67/1984_Museo%20d%27Antichit%C3%A0.pdf)

3. 5 Keywords and Concepts

An analysis of architectural works involving combined horizontal and vertical integration of terrain levels into a building, as well as those featuring passive below ground levels, reveals a number of repetitive themes which are important for the present study. These keywords and the concepts associated with them can be put to good use in the construction of the meditation building suggested in this thesis:

1. Topography-Integrated Architecture

The design of structures that do not stand out from their surroundings aesthetically is accompanied by lower ecological footprint and increased ecological friendliness. Particularly, this method is useful when integrating meditation areas within the landscape of the site which creates a tranquil and smooth fitting environment.

2. Subterranean Architecture

Meditation and contemplation conducive spaces enjoy advantages such as natural thermal, acoustic, and insulating sound barriers on offer when placed under ground level. They can increase comfort for the user while minimizing overall energy expenditure by taking advantage of the earth's insulating properties.

3. Light Wells and Skylights

Bringing natural light into below-ground areas is important for making the space more welcoming and positive. Factors such as light wells and mirrors can be employed to guarantee sufficient daylight exposure, which optimizes the aesthetic and the psychological appeal of the space.

4. Minimal Impact Design

Designing with the least alteration to the landscape will reduce environmental impact and increase sustainability. By placing the structures into the earth and minimizing the visual access, the project can achieve a balance between architecture and nature.

5. Adaptive Reuse

Adjusting an already existing construction new design ideas and purpose meets the thesis goal of changing a church no one uses into a meditation space. Using principles of adaptive reuse with underground design will bring more culture and meaning into the project.

6. Biophilic Design

The inclusion of controlled landscape views, vegetation, and daylight creates an environment that is relaxing and favorable for meditation. This principle focuses on engaging the spaces to the senses for better health outcomes.

7. Environmental Integration

Buildings that integrate within their environment offer better aesthetic and energy value. More natural and architectural blend can result to calm and soothing environments where people can deeply reflect and meditate.

8. Sensory Architecture

Meditation spaces with controlled light, sound, materials, and spatial arrangement have their moods and perception altered for the better. Integrating them would create welcoming and supportive environment that encourage mindfulness.

4. Conceptual Design

4. 1 Building Function

When reimagining Santa Maria del Piano as a meditation space, the building function must cater the needs of users with psychological and emotional goals. As stated by Rajan and Singh (2025), meditation spaces are intended to foster inner peace, self-regulation, emotional balance, and heightened awareness. The environment constructed must enable meditation center users to achieve deeper mental states through relaxation and minimal sensory distraction. Spaces should be designed to enable mindfulness through the careful regulation of natural light, sound, and materials used. In addition, incorporating spaces for yoga, breathwork, and silent contemplation should also be included within the functional layout. (24)

These activities combine to prepare the body and mind for attaining deeper meditative states. Thus, the reuse of Santa Maria del Piano is more than an architectural consideration; it is organizing a sequence of experiences that guides a visitor through and enables transformation of grounding, introspective, and spiritually clear.

24 - Rajan, Garima, and Kamlesh Singh. Unraveling the Psychological Benefits of Meditation and Associated Positive Practices: A Thematic Analysis of Semi-Structured Interviews of Meditation Trainers and Advanced Meditation Practitioners from 11 Different Meditation Practices in India. 2025.

4.1.1. Meditation Technique

Meditation practice: Mindfulness meditation	Key features: Guided by Buddhist ideology, paying attention to the present moment and nonjudgmentally accepting it	Technique: Process of developing the skill of bringing one’s attention to events of the present moment by observing one’s breath or emotions or thoughts as is Mindful breathing, walking, eating, etc. are different types of ways to practice it
Other positive practices: Practicing mindful appreciation and listening along with a basic understanding of the Buddhist school of technique		
Probable psychological processes involved and its explanation: - Nonjudgmentally accepting reality changes, one’s outlook to life and situations - Not indulging in one’s thoughts and emotions and simply observing them allows one to change the emotional response pattern as when one disengages from thoughts and emotions and does not process it - It does not lead to any reaction; hence, one does not feel any positive or negative emotions leading to emotion regulation		

Table 1: Explanation of the mindfulness meditation technique, adapted from Rajan and Singh, Meditation Techniques and Practices, 2025

There are numerous forms of meditation practices, varies with different techniques, environments and programs. For the purpose of the adaptive re-use project, mindfulness meditation has been chosen. Mindfulness meditation is related to present moment awareness, including 5 senses that the practitioner has, encouraging them to observe their thoughts deeply, to feel their emotions more strongly and seek through their bodily emotions more precisely. This method works best with the purpose of designing to facilitate silence, deep thought, and soft sensory experiences. Unlike other forms of meditation which follow strict rituals, mindfulness can be practiced in a calm, but attentive space where one can focus on the self while still being aware of the external environment. In Santa Maria del Piano, adaptive reuse to support mindfulness meditation is mindful of the intention to design spaces that are simple, contemplative, and intimate with the nature and history of the site. (25)

4.1.2. Meditation Spaces Influence on Human Health

The design of meditation spaces facilitates mental clarity and the regulation of emotions by providing an environmental context that bolsters human health and wellness. Calmness and introspection can be encouraged by these guides because they reduce sensory stress. Psychological and physiological wellness are fostered by natural materials, ambient illumination, and acoustic shielding.

Comprehensive meditation rooms have been proven to optimize user comfort and enhance emotional equilibrium according to Rockfon. Soothing hues and organic textures that reduce mental

obtaining tauts provide ease of vision. Sound congestion with noise-cancelling walls and ceilings fundamentally increase mental peace while physically removing noise. Together these have proven to reduce heart rate, improve breathing rhythm, and reduce stress hormone levels which is referred to as cortisol. (26)

The design layout and arrangement of furnishings in meditation spaces mediate emotional health as well. Closed spaces with soft, natural light and biophilic design elements carry lower anxiety and better mood regulating qualities. Grounding and protective feelings from nature infused materials strengthen the meditative experience. The psychological concepts enhanced by the reduction of space quality add to the multitude of benefits experienced during meditation.

As a strong example of the nexus design and healing, the use of spatial design features that integrate multisensory balance, simplicity, user comfort, and well-being transforms meditation spaces into active contributors to health.

4.1.3. The Psychology of Mindfulness Meditation

Mindfulness meditation is intertwined with the concepts of modern multidisciplinary psychological care and the programming of health-oriented architecture. As walks of adaptive reuse of sacred places mindfulness-based design strategy integration within the context of sacred sites attunes both form and function with the spirit of these meditative techniques.

25 - Rajan and Singh, Psychological Benefits of Meditation.

26 - Rockfon. Meditation Room Design: How to Create a Five-Senses Experience.

Mindfulness as a practice is perpetually cultivated non-judgmental awareness of here and now. This evolution as consisting of a sequence of stages, beginning with mental effort and stabilization, surrendering and transcending self somewhere along the journey later. These stages are critical for architects to consider when designing environments intended to support or induce meditative states. Early-stage meditation demands spaces that reduce sensory overload and enhance focus, such as quiet zones where materials are natural, lighting is subdued, and visual noise is minimized.

The research highlights that meditation is diverse and multi-faceted, due to the variation in participant’s personality, practice intensity, and other formative influences. For this reason spaces intended for mindfulness meditation need to be adaptive and inclusive, allowing control over such factors as temperature, sound, and seating posture.

Moreover, the findings suggest that sustained practice of mindfulness leads to improved attention, reduction of emotional reactivity, enhanced clarity, and a change in relationship to oneself and others.

Ritualistic patterns and rhythms can be incorporated into a building’s design to provide such advantage benefits. Transitional spaces, and sensory thresholds such as running water or a scent corridor help reinforce the mental framing of the space as distinct from daily distractions. (27)

It has been noticed that the built environment impacts focusing, self-control, and emotional self-regulation. The meditation architecture harnesses psychology, human senses, and spirituality which goes beyond aesthetics. Consideration of integration of materials with structure, light, proportion, as well as acoustic design creates environments which function as holistic sanctuaries of inner awareness. (28)

Atmosphere and Spatial Perception

The balance between tranquility and openness must be achieved through spatial scale, natural light, and materials, evoking sensations of peace. Fostering inner reflections in mindful experience is shaped by spatial atmosphere, and soothing materials alongside visual simplicity aids in achieving this (29). Attention diversion towards cognitive distraction can be minimized by the use of diffused lighting, soft textures, blurred vision, and more, marking a shift towards inward focus (30).

Calmness is enhanced through soundscape design, in addition to stillness. Natural barriers like vegetation alongside soft finishes and layered spatial sequences serve as sonic insulators that create a cocoon of calm (31). These sensations aid in anchoring the practitioner in the moment, improving focus and emotional regulation (32). In addition, spatial range and the smooth transition of light from the exterior to the interior fosters retreat feeling from the outside world.

27- Matko, K., Sedlmeier, P., & Christiansen, H. (2022). Mapping Mindfulness: Assessing the Stages of Meditation.

28 - Thampanichwat, C., Wongvorachan, T., Bunyarittikit, S., Chunjajinda, P., Phaibul-uthipong, P., & Wongmahasiri, R. (2023). The Architectural Design Strategies That Promote Attention to Foster Mindfulness: A Systematic Review, Content Analysis and Meta-Analysis.

29 - Chen, A., Porter, N., & Tang, Y. (2022). How Does Buddhist Contemplative Space Facilitate the Practice of Mindfulness? .

30- Thampanichwat et al., “Architectural Design Strategies”.

31 - Chen, Porter, and Tang, “Buddhist Contemplative Space”.

32- Thampanichwat et al., “Architectural Design Strategies”.

The framing, proportion, and touchable attributes of textures assist in creating areas that are securely safe and calm (33). The rest of this spatial tale has the impact of slowly lowering one’s level of sound until silence is achieved, which is ideal for meditation.

Embodied Experience and Flow

Mindfulness as a technique is a muscle memory as much as it is a matter of the psyche. The requirements for any meditation space must include comfort, ease of movement, and posture flexibility. The important features of the spatial flow, movement from noisy to quiet spaces, from open to semi-open cells, represent the stillness deepening within as one progresses through the stages of meditation. (34)

Careful design and arrangement of spaces including transitional areas, low expression of vertical elements, and uninterrupted horizontal surfaces add to the movement awareness and body awareness of the user. Such flexible seating as tatami mats or low benches makes it easy to sit in different meditative postures. (35)

Architectural features like wording floors and lights of gradually decreasing intensity at the edges form paths for attentive walking and strengthen the bond one has with their body and breath. Such features make it easier to modify use with walker partitions and modular layouts, fostering solo or collective sessions without breaking the harmony of space. (36)

Biophilic Integration

Multisensory activities stimulate nature supporting mindfulness. Biophilic design features such as indoor plants, natural ventilation, open windows, and exposed wood strengthen the connection between a user and the environment, aiding clarity and presence. (37) Attention to spatial greenery, natural light dynamics, seasonal changes and sight reminders enhance user participation and subtly remind users of life’s rhythm and impermanence: key themes in mindfulness philosophy. (38)

Biophilic environments help mitigate stress while boosting attention, enabling mindfulness. (39) Breezeways, water features, and wooden screens that let through soft natural light filtering clearly aid gentle stimulation of the senses beyond attentional overload. Moreover, outdoor meditation gardens along with terraced transitions further cultivate core meditative engagement with environmental processes and the wind, broadening the meditative experience. (40)

33 - 37 -Chen, Porter, and Tang, “Buddhist Contemplative Space”.

38- Thampanichwat et al., “Architectural Design Strategies”.

39- Chen, Porter, and Tang, “Buddhist Contemplative Space”.

40- Thampanichwat et al., “Architectural Design Strategies”.

4. 2 Case Studies on Mediative Spaces

4.2.1. Buddhist Shrine (Tangshan, China) – Arch Studio, 2017

An exceptional instance of architecture fused with nature is Arch Studio's underground Buddhist shrine located in Hebei province. The structure is designed as a quiet space for contemplation and ritual which is built right into a grassy hill, merging with the landscape and not towering above it. This technique reduces the view's impact which also cultivates a deep connection to nature.

The shrine can be accessed from an earthbound long and narrow path where one enters a closed introspective space that is above them. A circular concrete room sits beneath the hill and has gentle lighting coming from a skylight which functions as a mouth to the mound above giving light furthering the dialogue between earth and sky.

Through topographic embedding of the shrine, Arch Studio not only preserves the site's natural contours, but also shows buddhist values of meditation such as humility, inwardness, and calmness. The shrine remains quiet which extends the experience of spiritual escape. This impressively demonstrates the ability of architecture to vanish from the landscape while enhancing the experience of mindfulness. (41)

41- Dezeen. "Concrete Buddhist Shrine Hidden Beneath Grassy Mound by Arch Studio." Dezeen, May 10, 2017.

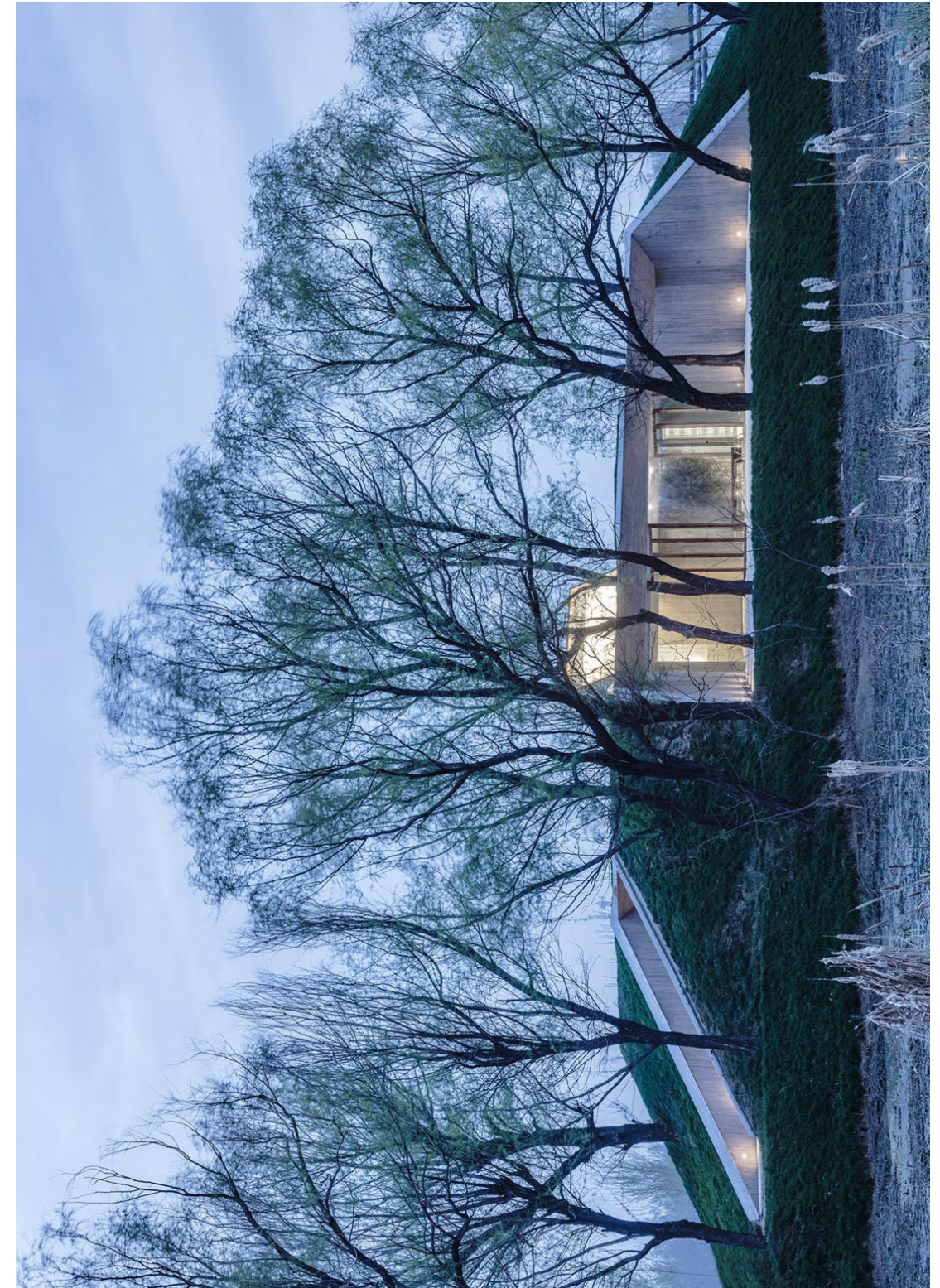


Figure 64: Buddhist Shrine in China, exterior view (source: <https://www.dezeen.com/2017/05/10/arch-studio-concrete-buddhist-shrine-subterranean-underground-grassy-mound-hebei-china/>)



Figure 65: Buddhist Shrine in China, entrance (source: <https://www.dezeen.com/2017/05/10/arch-studio-concrete-buddhist-shrine-subterranean-underground-grassy-mound-hebei-china/>)



Figure 66: Buddhist Shrine in China, exterior view (source: <https://www.dezeen.com/2017/05/10/arch-studio-concrete-buddhist-shrine-subterranean-underground-grassy-mound-hebei-china/>)



Figure 67: Buddhist Shrine in China, interior view (source: <https://www.dezeen.com/2017/05/10/arch-studio-concrete-buddhist-shrine-subterranean-underground-grassy-mound-hebei-china/>)



Figure 68: Buddhist Shrine in China, roof (source: <https://www.dezeen.com/2017/05/10/arch-studio-concrete-buddhist-shrine-subterranean-underground-grassy-mound-hebei-china/>)

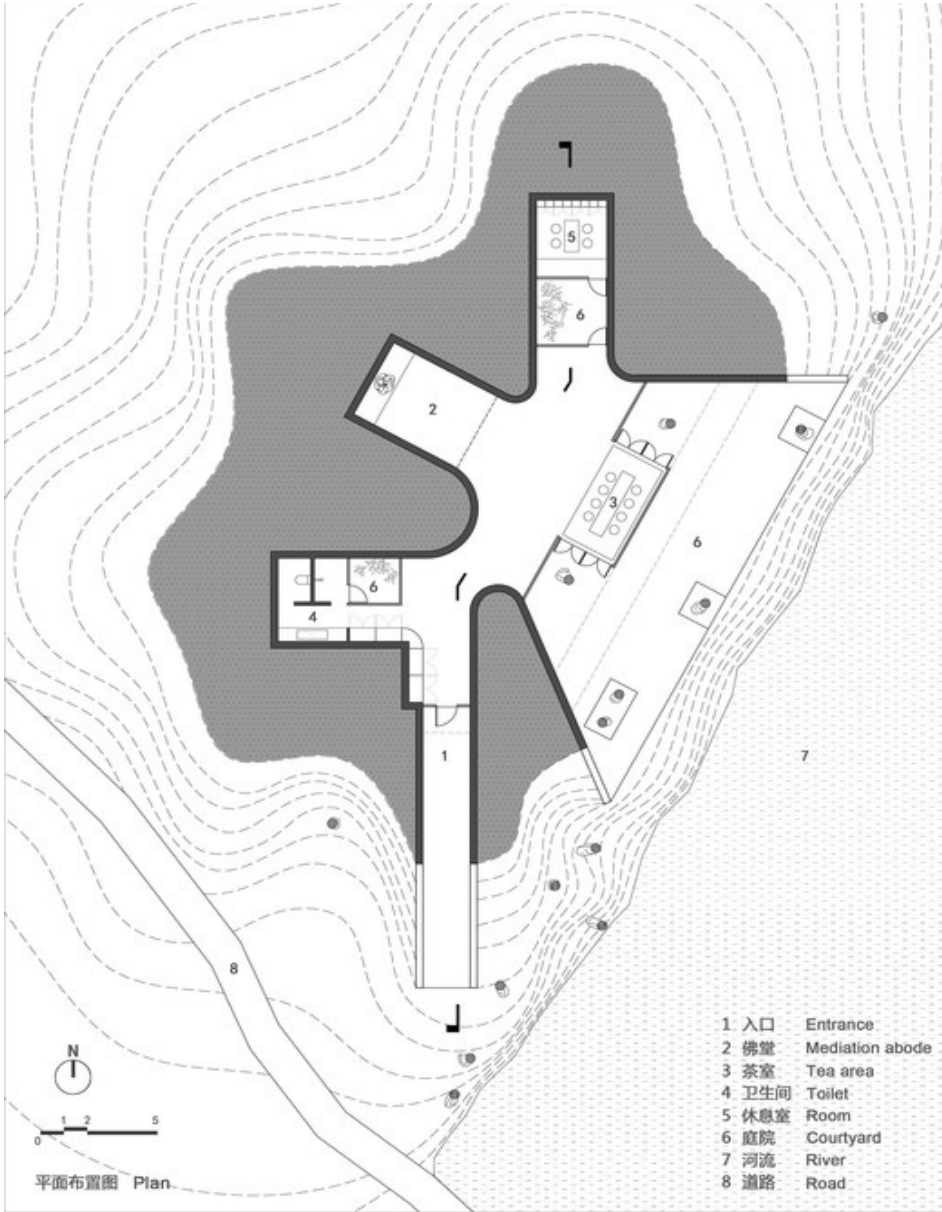


Figure 71: Buddhish Shrine in China, plan (source: <https://www.archdaily.com/870778/waterside-buddist-shrine-archstudio>)

4.2.2. Vajrasana Buddhist Retreat Centre (Suffolk, England) – Walters & Cohen, 2016

The Walter & Cohen Architects designed the Vajrasana Buddhist Retreat Centre, which is situated at Suffolk, England. The retreat centre combines meditation and sociable retreat into one sculptural form. Architecture in the monastic tradition is emulated as the building attempts to mindfully integrate minimalistic techniques into its rural surroundings.

The retreat is built within the yard of an old farmhouse and integrates newly constructed and refurbished existing buildings into a courtyard formation. This promotes a soothing meditative rhythm while obeying calmness and order. A hallmark of the project is the integration of timber, concrete and glass which, alongside each other, depict the Buddhist ideal of simplicity and durability.

Meditation rooms are softly lit and overlook the garden and nature, therefore natural light becomes an imperative factor in enhancing the spectator's experience. Natural light encourages contemplation, silence and stillness which are critical to the atmosphere alongside subdued materials. Moreover, there are designated areas for walking meditation and outdoor reflection which Northfield claims encourages holistic spiritual practice through architecture. (42)

42- Dezeen. "Walters & Cohen Creates Buddhist Retreat with 'Monastic Simplicity' in Rural England." Dezeen, November 26, 2016.



Figure 72: Vajrasana Buddhist Retreat Centre, exterior view (source: <https://www.dezeen.com/2016/11/26/walters-cohen-architects-buddhist-retreat-meditation-suffolk-england-farm/>)



Figure 73: Vajrasana Buddhist Retreat Centre, exterior view (source: <https://www.dezeen.com/2016/11/26/walters-cohen-architects-buddhist-retreat-meditation-suffolk-england-farm/>)



Figure 74: Vajrasana Buddhist Retreat Centre, dining room (source: <https://www.dezeen.com/2016/11/26/walters-cohen-architects-buddhist-retreat-meditation-suffolk-england-farm/>)



Figure 75: Vajrasana Buddhist Retreat Centre, exterior (source: <https://www.dezeen.com/2016/11/26/walters-cohen-architects-buddhist-retreat-meditation-suffolk-england-farm/>)



Figure 76: Vajrasana Buddhist Retreat Centre, exterior view (source: <https://www.dezeen.com/2016/11/26/walters-cohen-architects-buddhist-retreat-meditation-suffolk-england-farm/>)



Figure 77: Vajrasana Buddhist Retreat Centre, meditation room (source: <https://www.archdaily.com/798645/vajrasana-buddhist-retreat-walters-and-cohen-architects>)

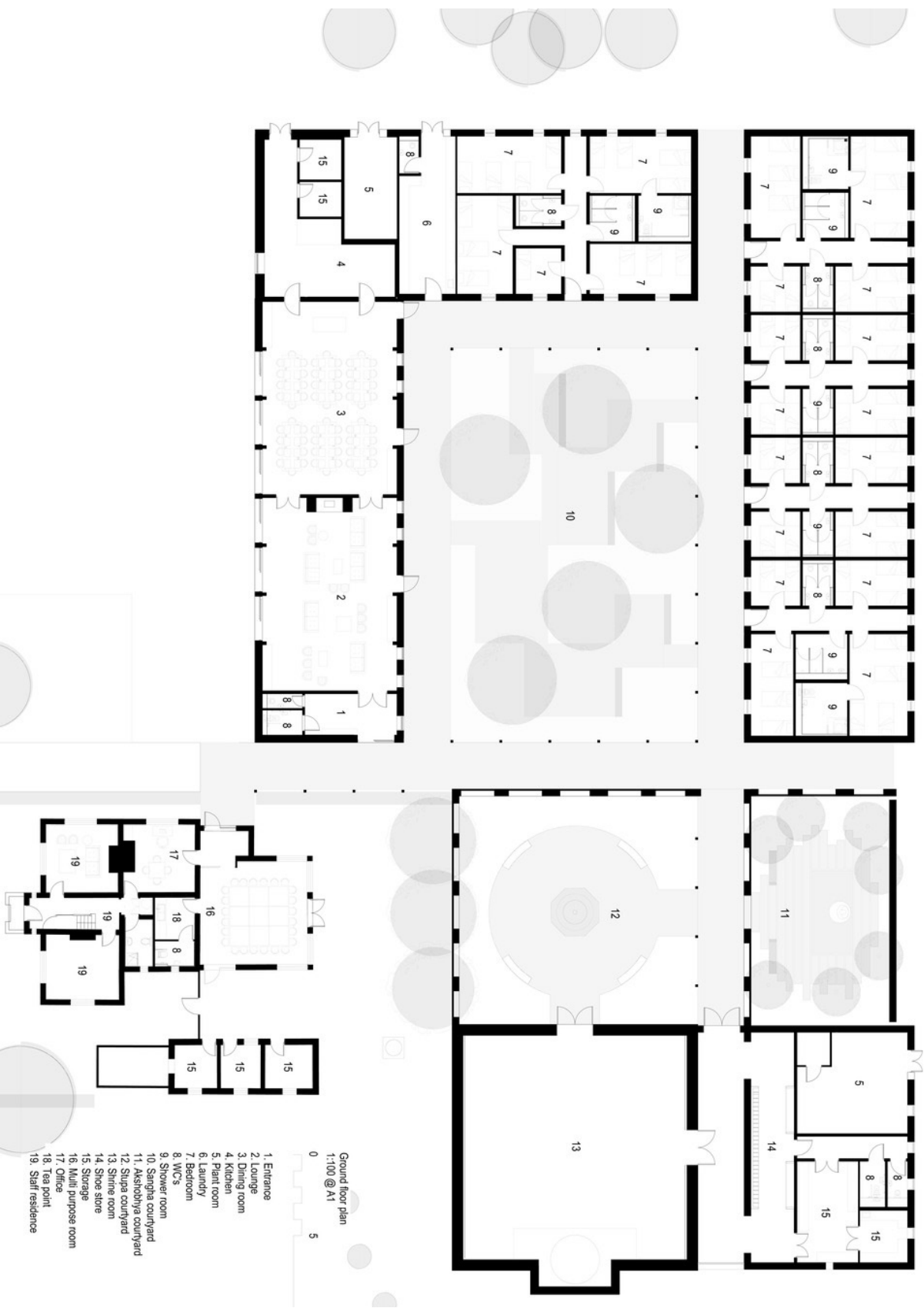


Figure 79: Vajrasana Buddhist Retreat Centre, plan (source: <https://www.archdaily.com/798645/vajrasana-buddhist-retreat-walters-and-cohen-architects>)

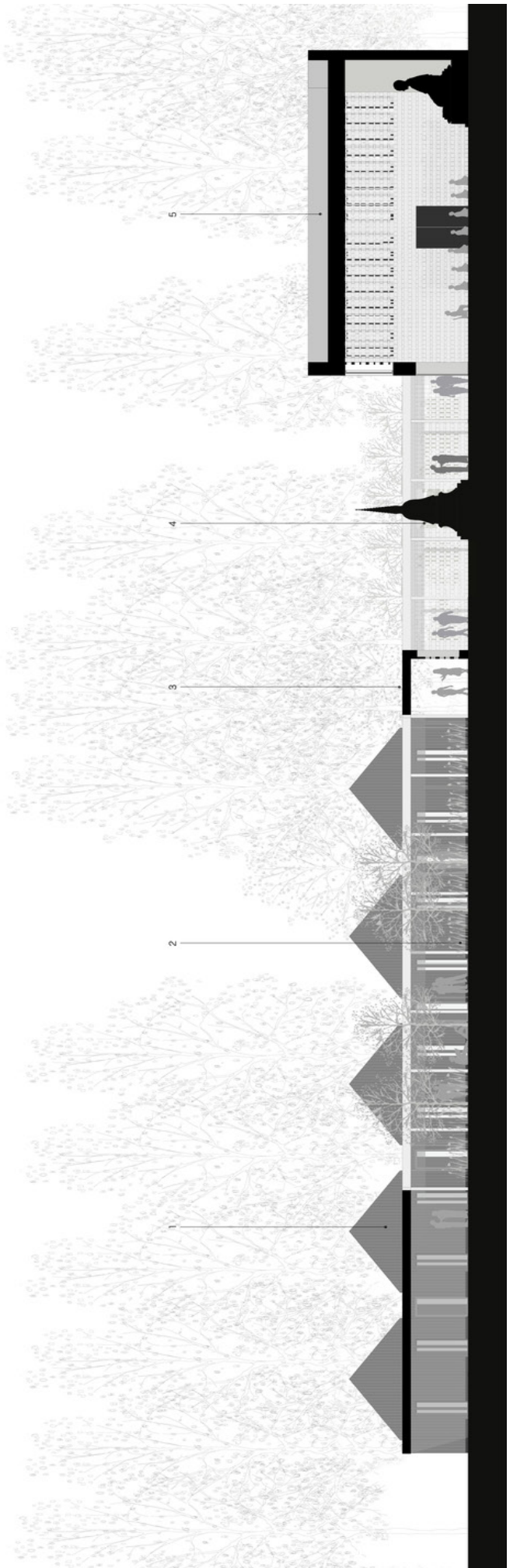


Figure 78: Vajrasana Buddhist Retreat Centre, section (source: <https://www.archdaily.com/798645/vajrasana-buddhist-retreat-walters-and-cohen-architects>)

4.2.3. The Windhover Contemplative Center (San Francisco, US) – Aidlin Darling, 2014

Aidlin Darling Design's The Windhover Contemplative Center sits atop the Stanford University campus in California. It is scoped out to be a non-spiritual quiet zone (meditation center) for stillness and contemplation, embedding the university's nature and academic vibe right into its framework.

The aesthetic rammed earth walls feature is the most notable because of their strong structural presence. These walls also serve the purpose of thermal and soundproof insulation, ensuring a calm interior environment. Calming walls is not the only factor placidating the interior environment; the structure is also deliberately placed within a low-lying oak tree grove, allowing windows to deliver unobstructed views of the forthosing lavaroth. This embedding within nature charm free the essence of shutting off from reality.

Polished openings of transform reflection baths and luscious greenery externally frame selectde views of the countryside. This ensures that water reflections greeness flood the contemplation space. The material palette poses a distressing and calming effect encouraging a slow gaze internally. It serves to calm one's thoughts aiding in mindfulness practices by aligning spatial perception with longing sought clarity. (43)

43- Dezeen. "Aidlin Darling Design Uses Rammed-Earth Walls to Create Spiritual Centre at Stanford University." Dezeen, May 23, 2016.



Figure 80: The Windhover Contemplative Center, reflection pool (source: <https://www.dezeen.com/2016/05/23/aidlin-darling-design-windhover-spiritual-meditation-centre-stanford-university-california-rammed-earth-walls/>)

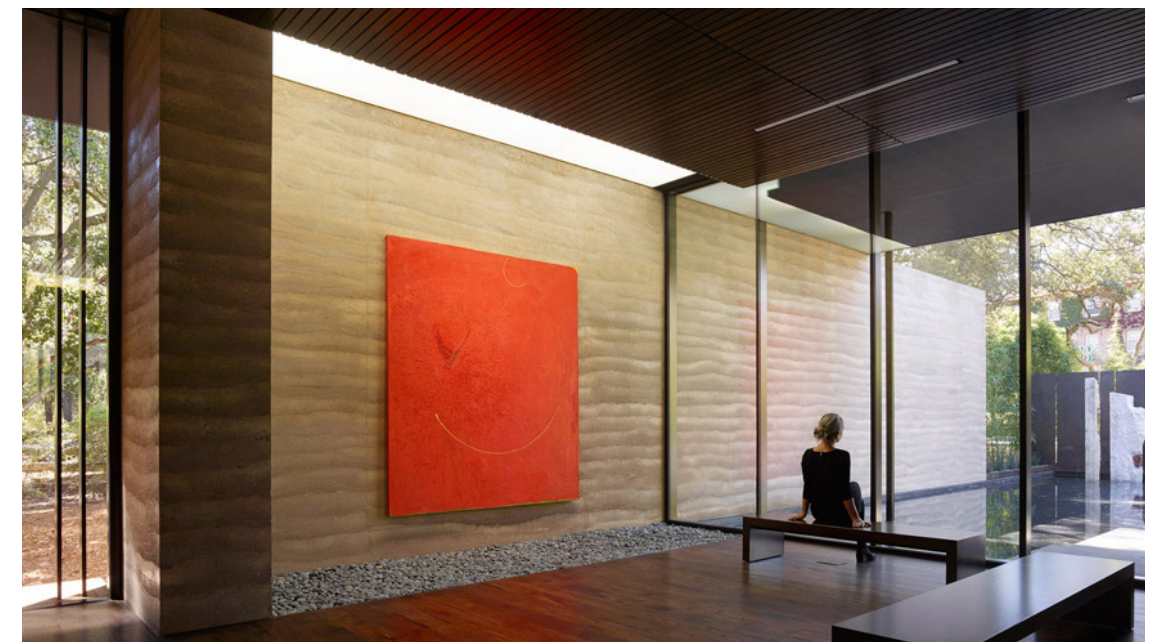


Figure 81: The Windhover Contemplative Center, interior view (source: <https://www.dezeen.com/2016/05/23/aidlin-darling-design-windhover-spiritual-meditation-centre-stanford-university-california-rammed-earth-walls/>)



Figure 82: The Windhover Contemplative Center, passage (source: <https://www.dezeen.com/2016/05/23/aidlin-darling-design-windhover-spiritual-meditation-centre-stanford-university-california-rammed-earth-walls/>)



Figure 84: The Windhover Contemplative Center, interior (source: <https://www.dezeen.com/2016/05/23/aidlin-darling-design-windhover-spiritual-meditation-centre-stanford-university-california-rammed-earth-walls/>)



Figure 85: The Windhover Contemplative Center, interior (source: <https://www.dezeen.com/2016/05/23/aidlin-darling-design-windhover-spiritual-meditation-centre-stanford-university-california-rammed-earth-walls/>)



Figure 83: The Windhover Contemplative Center, exterior view (source: <https://www.dezeen.com/2016/05/23/aidlin-darling-design-windhover-spiritual-meditation-centre-stanford-university-california-rammed-earth-walls/>)

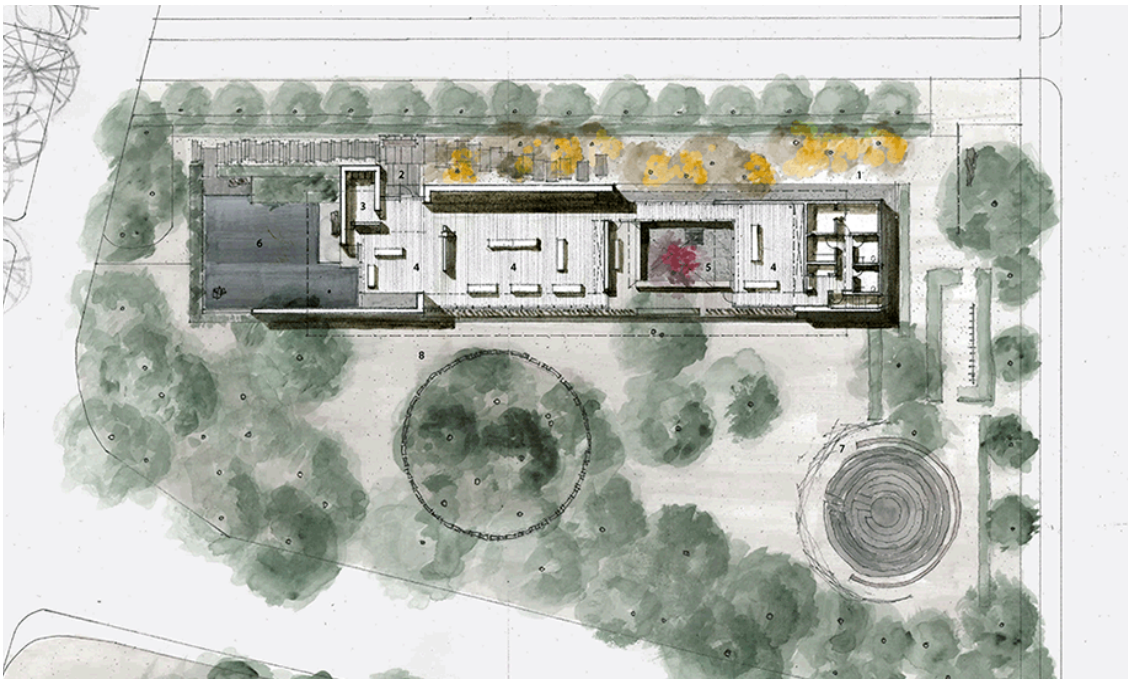


Figure 86: The Windhover Contemplative Center, plan (source: <https://www.dezeen.com/2016/05/23/aidlin-darling-design-windhover-spiritual-meditation-centre-stanford-university-california-rammed-earth-walls/>)

4. 3 Concept

The underpinning philosophy to revitalize Santa Maria del Piano is to create a circulation of senses, which focuses on 2 human senses in each area. The circulation design is structured as a complete experience which encourages visitors to enhance the practice of mindfulness, as they move through crafted environments for 2 senses each, designed to focus on the journey.

Each meditation zone will focus on 2 senses, as stated, starting from sight to touch, to sound, to smell and lastly, the taste sense. Each space becomes a meditation of perception, a contemplation on using material surfaces, sunlight, soft sounds, friendly flora, temperature, and gentle breeze. In support of the layers of narrative, sensory environment transforms the building into a dynamic participant of meditation while supporting mindfulness rest and aspect of noticing the present moment.

- The first room will be the reflection pool room which is focused on the sight sense
- Followed by the light meditation chamber which is focused on the touch and sight senses
- Followed by the sound healing room which is focused on the sound and touch senses
- Followed by the sensory immersion room which is focused on the sound and smell senses
- Followed by the dining room which is focused on smell and taste senses

In total, after the journey, the user of the space will have a calm mind, improved focus and inner peace.

Along with these functions, there has to be service rooms, reception area, offices, storage areas, and a kitchen.

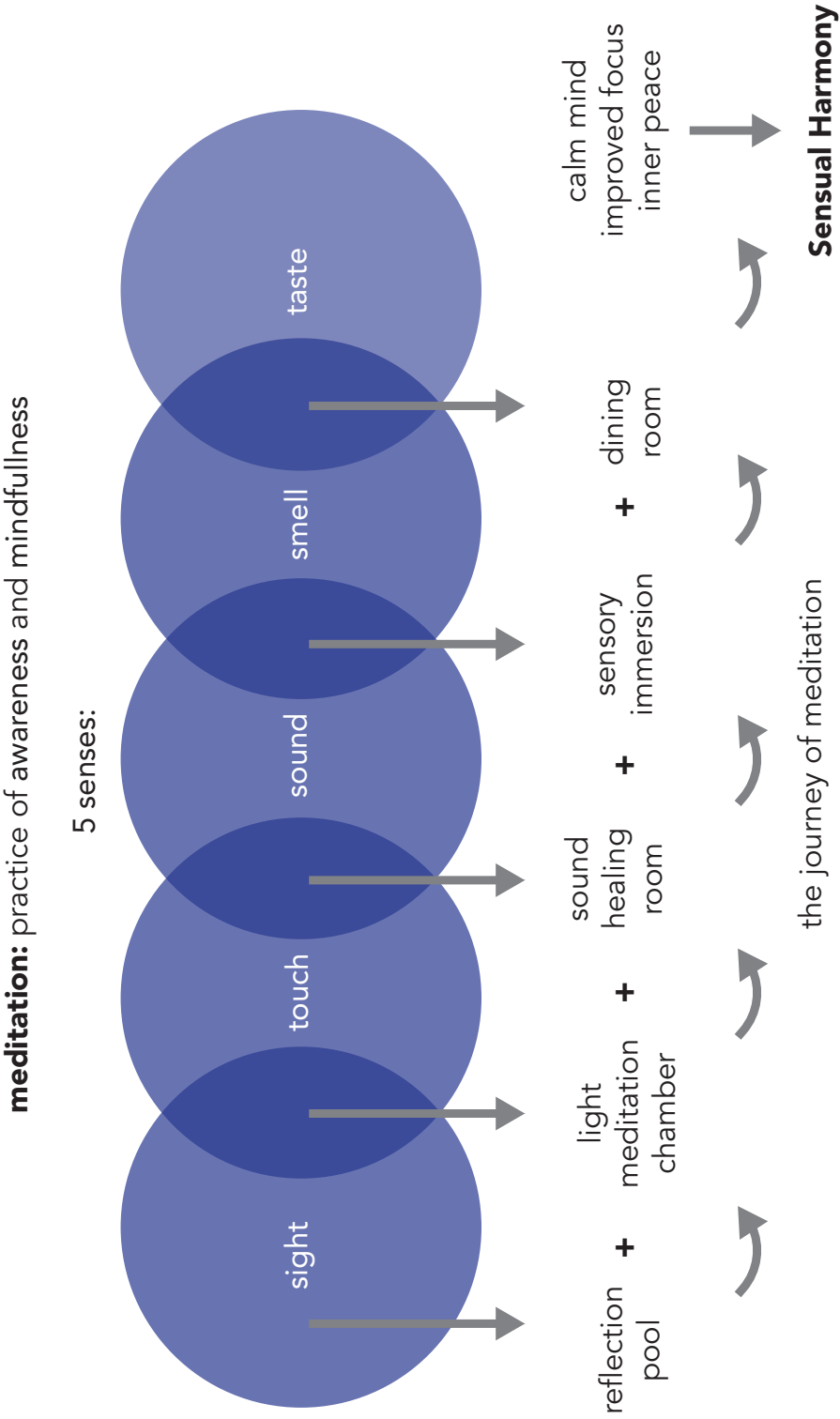


Figure 87: Concept diagram

5. Architectural Design Proposal



Figure 88: Entrance

5. 1 Spatial Organization and Layout

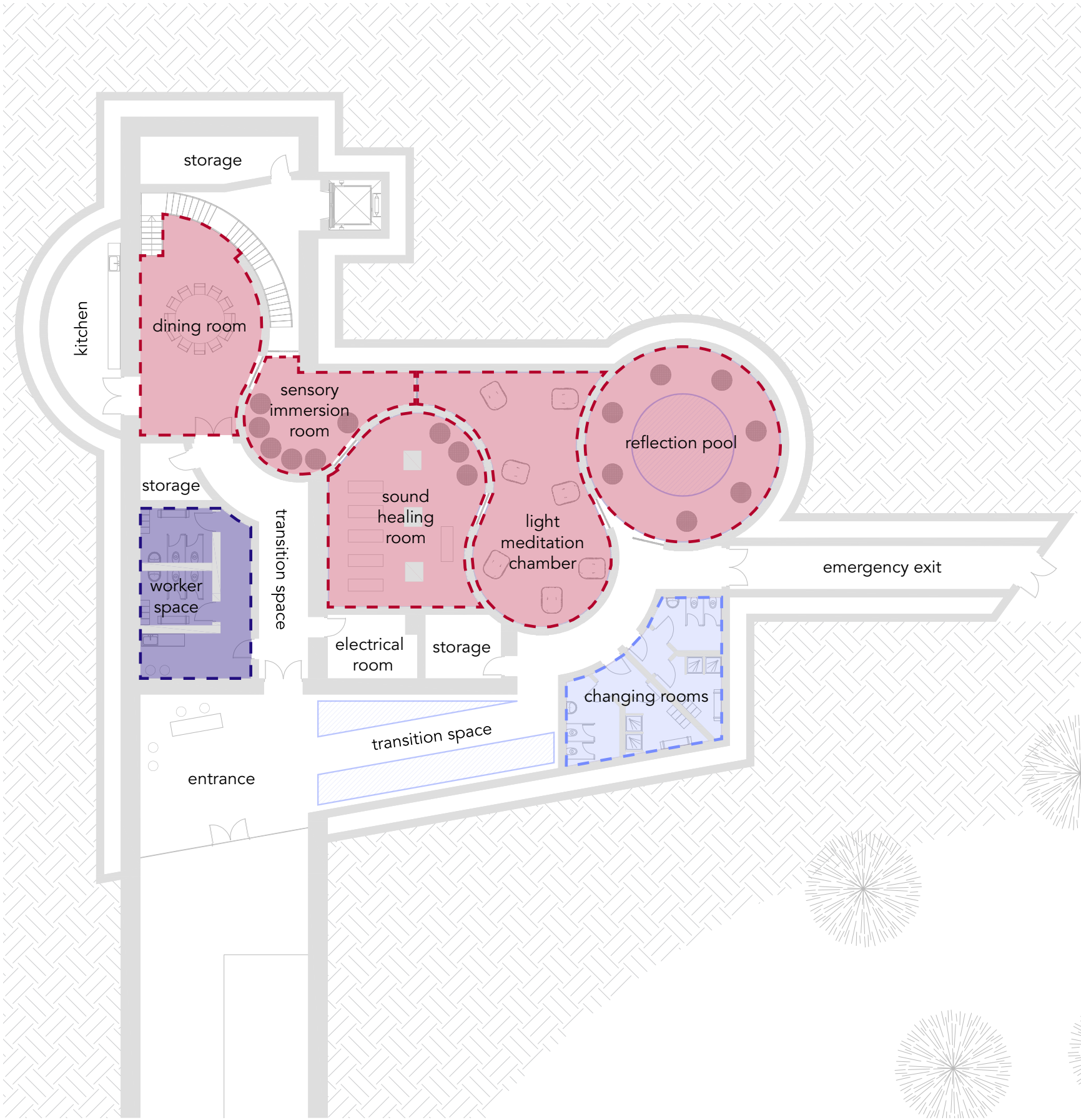
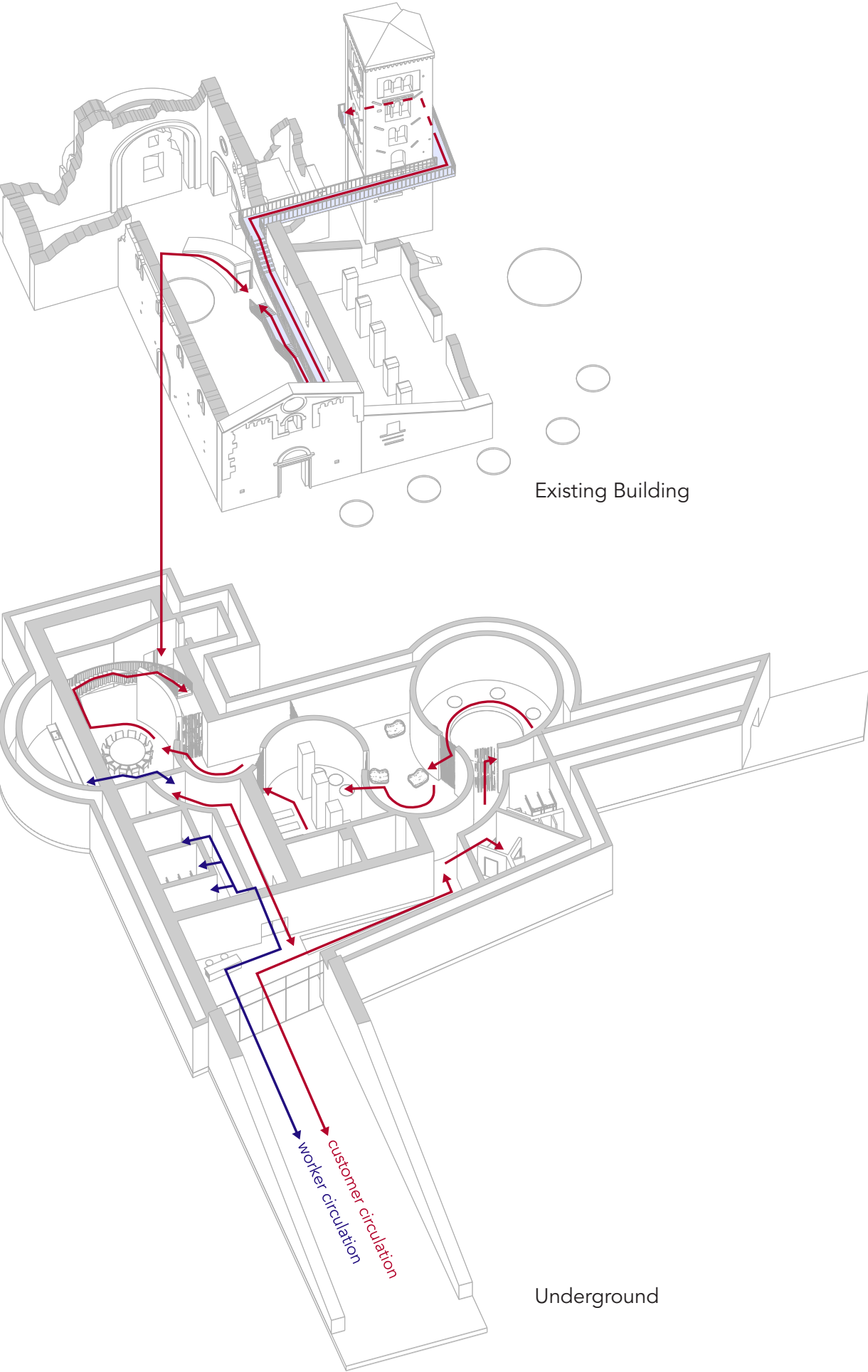


Figure 89: Functional Plan

5.1.1. Zoning and Functional Distribution

There are:

- 5 meditation rooms, each serving for 2 senses
- 2 service blocks that are dedicated to customers and workers of the meditation center
- 3 storage rooms
- a kitchen for dining service
- an entrance and 2 transitional spaces to begin and end the meditation journey



5.1.2. Circulation and Accessibility

The journey begins with the transitional space, the customer goes through meditation rooms and ends up with a staircase that leads to the inner part of the church.

The staircase could be used to explore the ruins of the church, while serving a natural view of the mountains.

Figure 90: Circulation Diagram

5. 2 Architectural Drawings

5.2.1. Master Plan

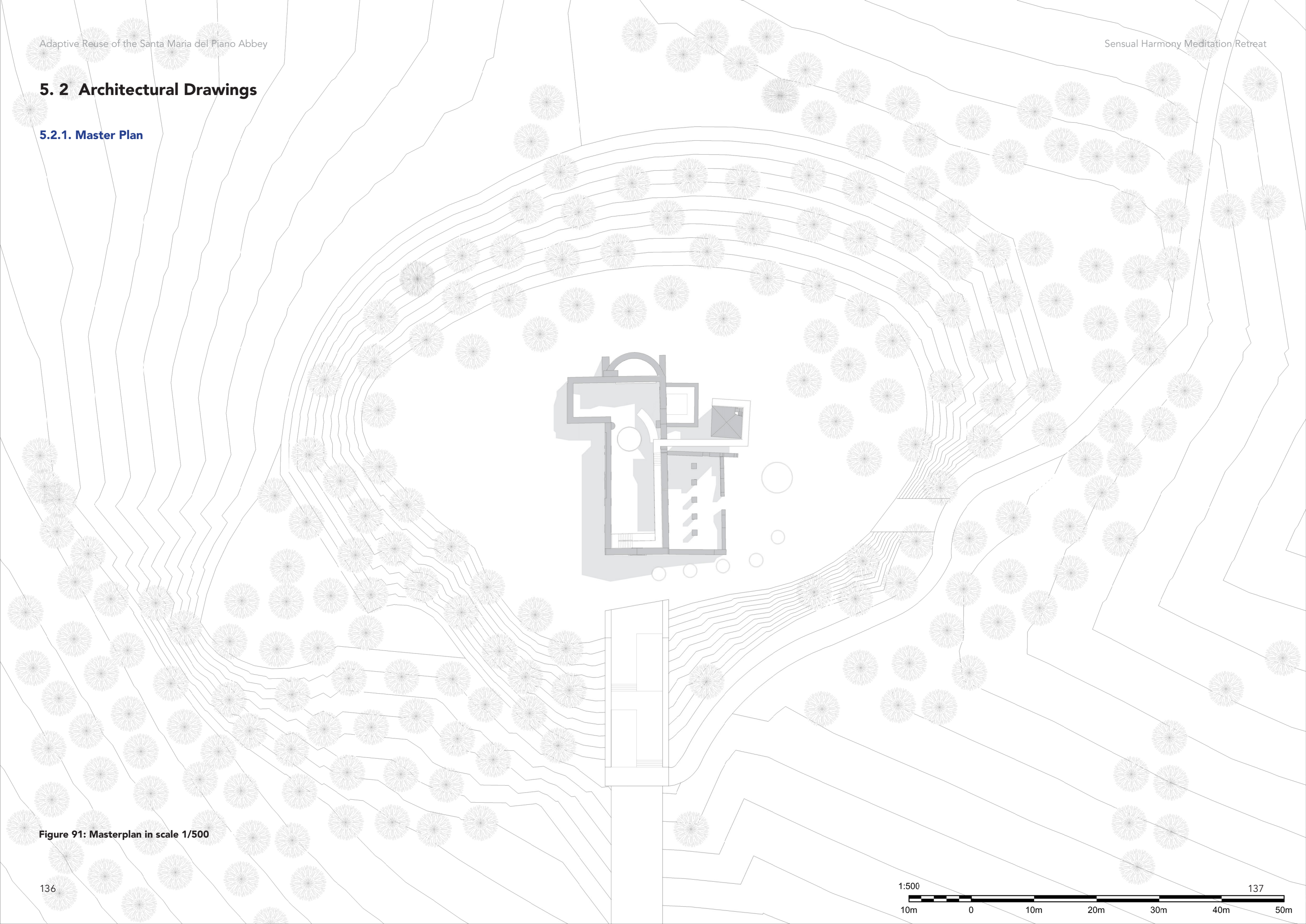


Figure 91: Masterplan in scale 1/500

5.2.2. Basement Plan

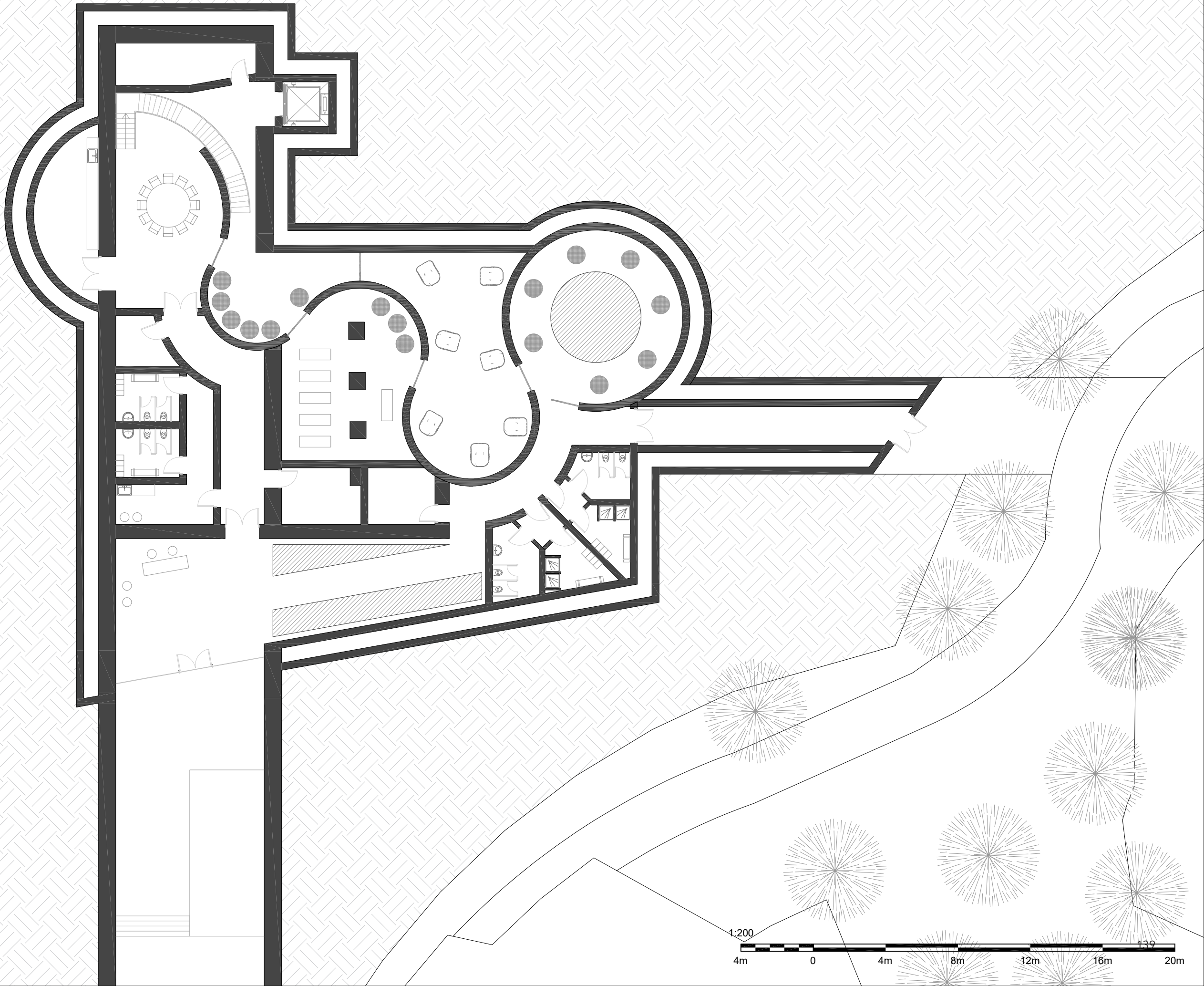


Figure 92: Basement Plan in scale 1/200

5.2.3. Ground Floor Plan

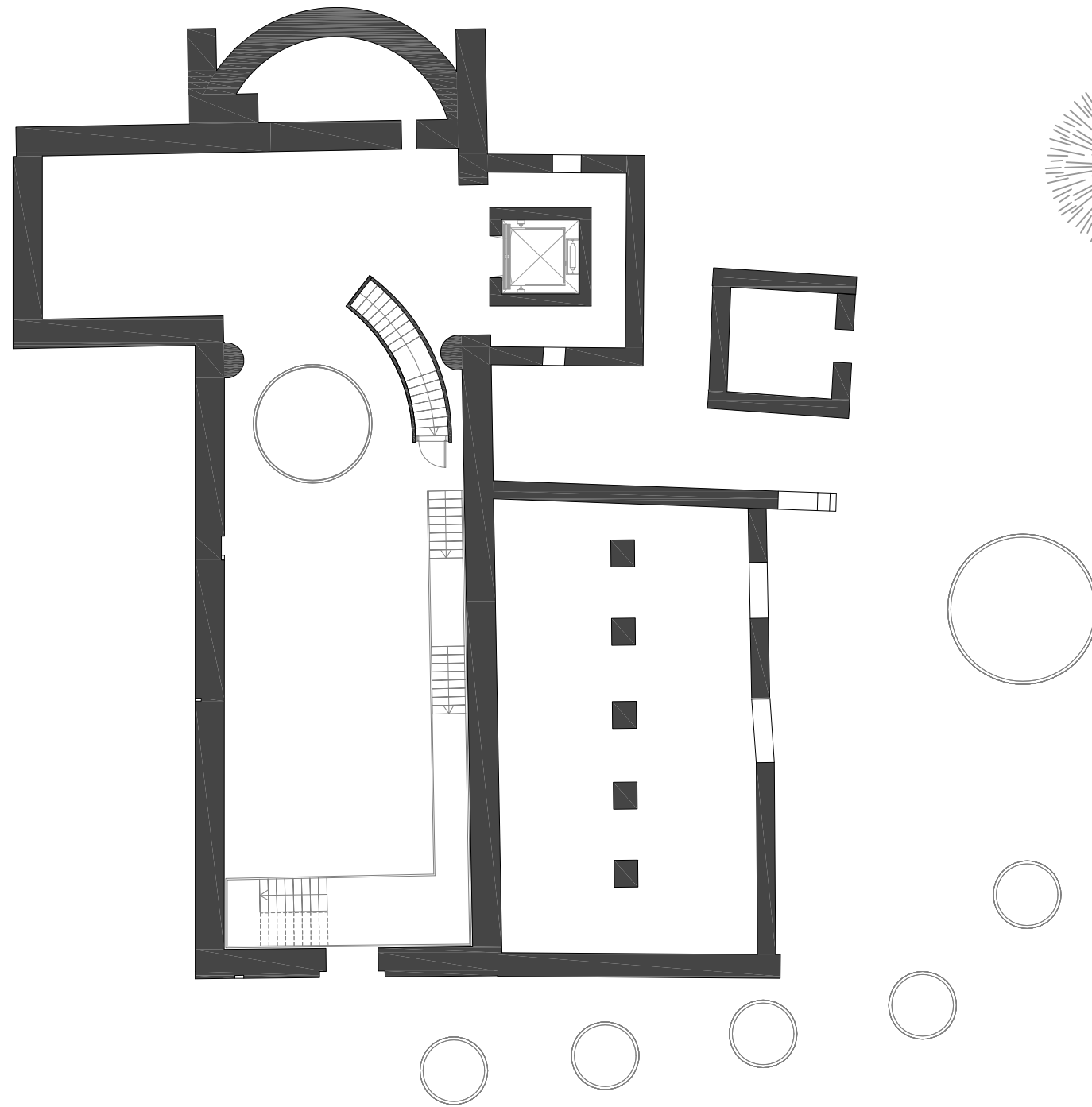


Figure 93: Ground Floor Plan in scale 1/200

5.2.4. Sections

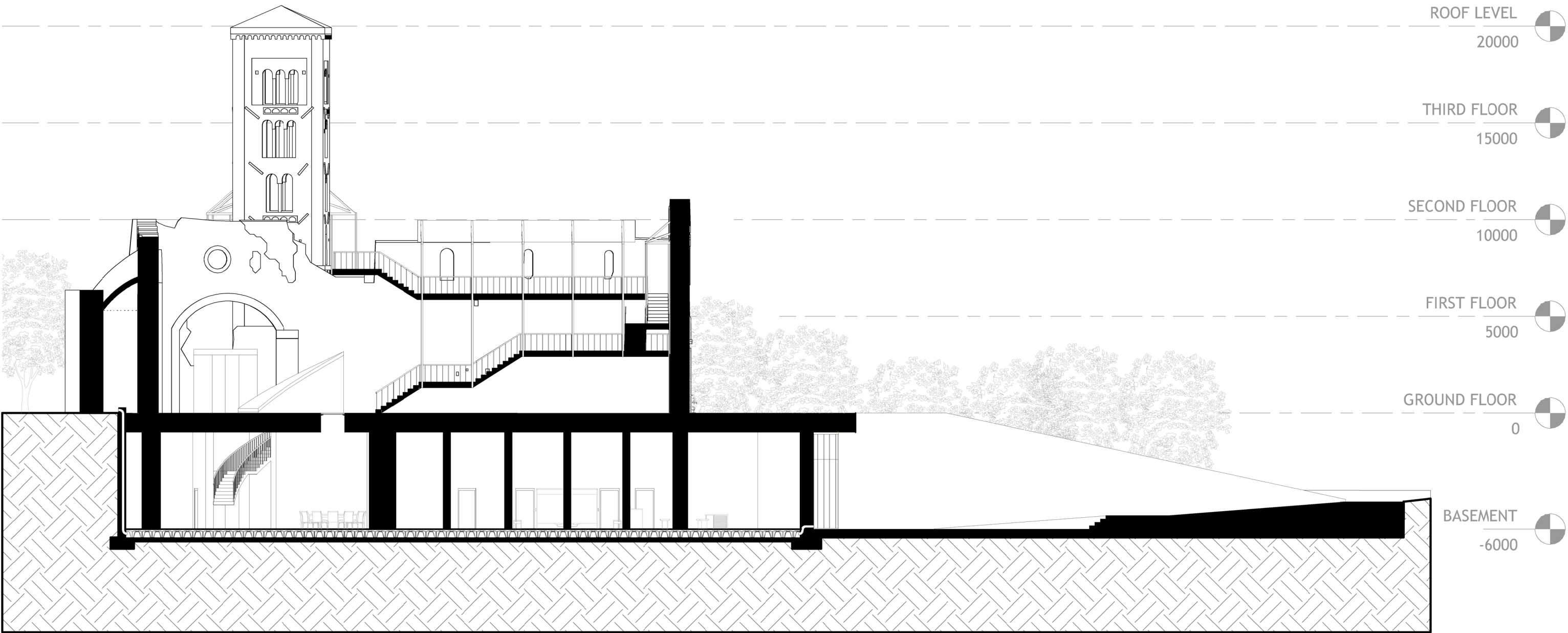
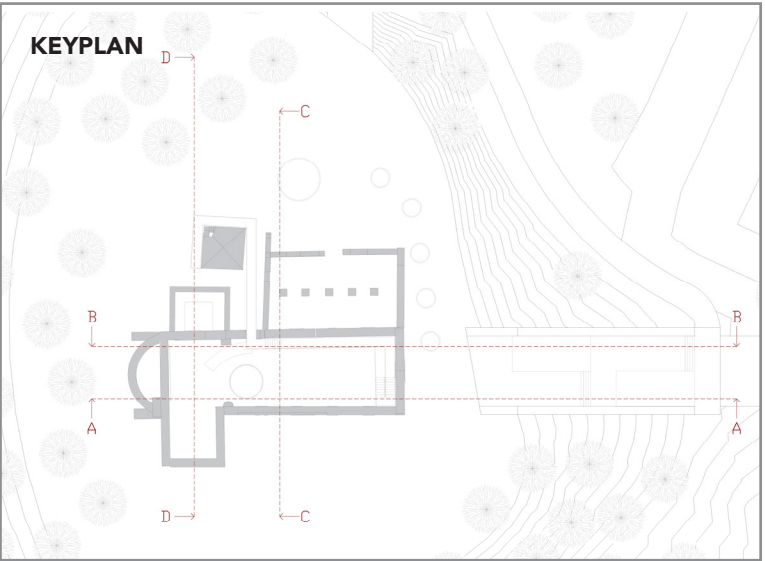


Figure 94: Section AA in scale 1/200

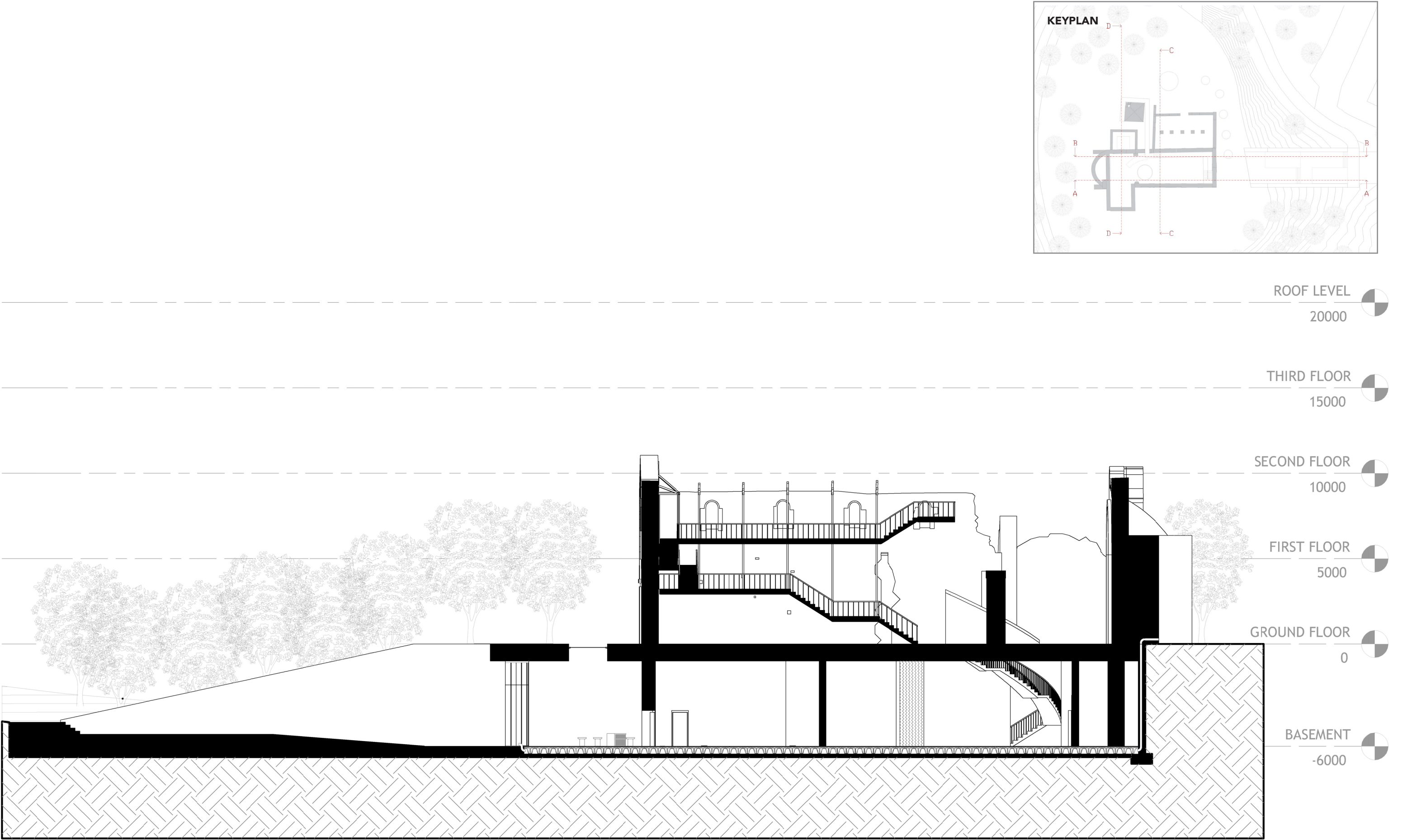


Figure 95: Section BB in scale 1/200

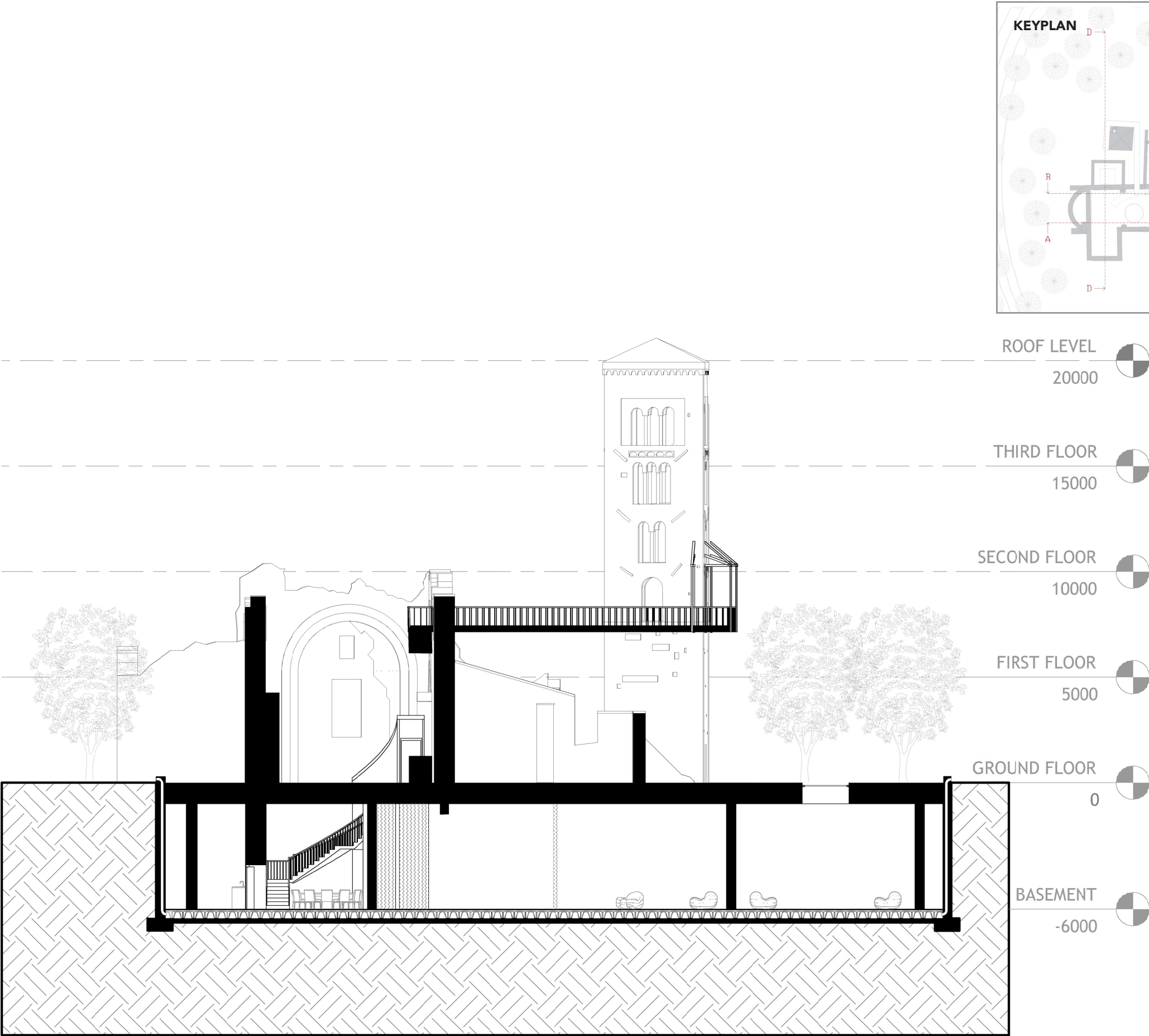


Figure 96: Section CC in scale 1/200

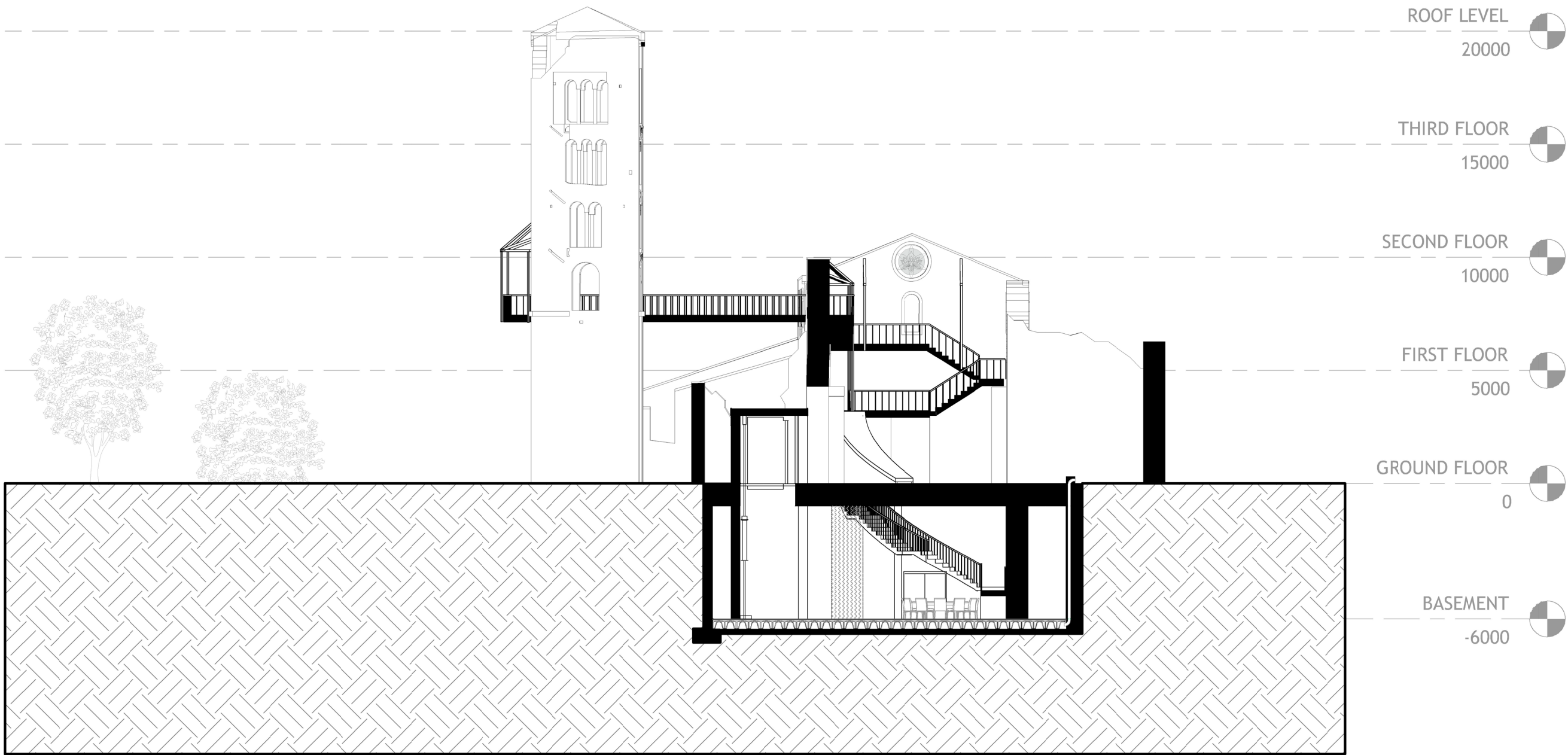
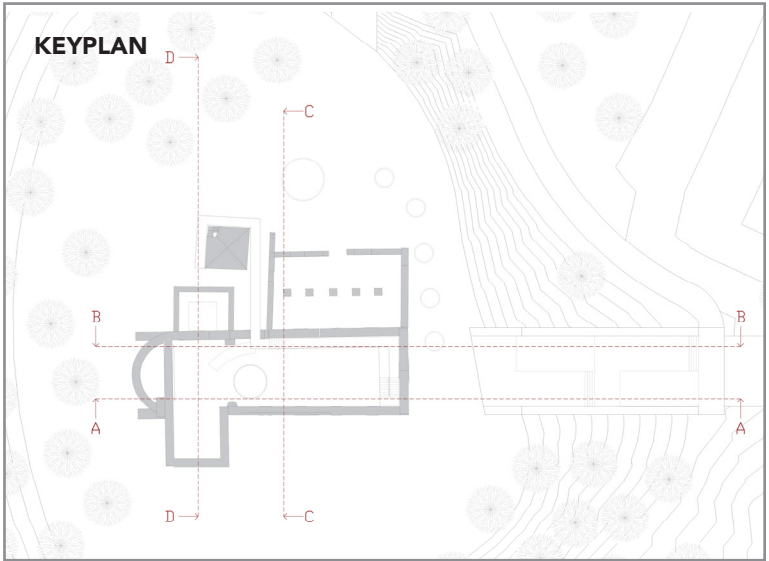


Figure 97: Section DD in scale 1/200

5.2.5. Elevations

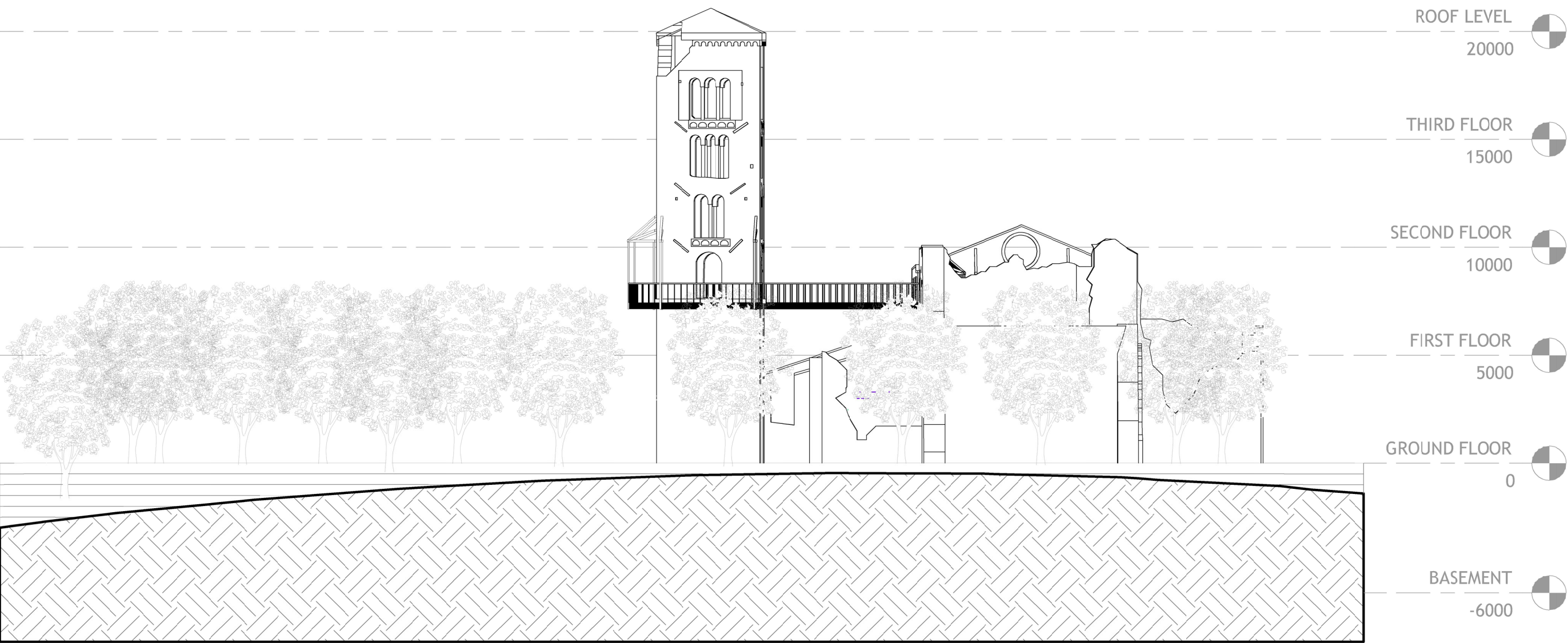


Figure 98: Northeast Elevation in scale 1/200

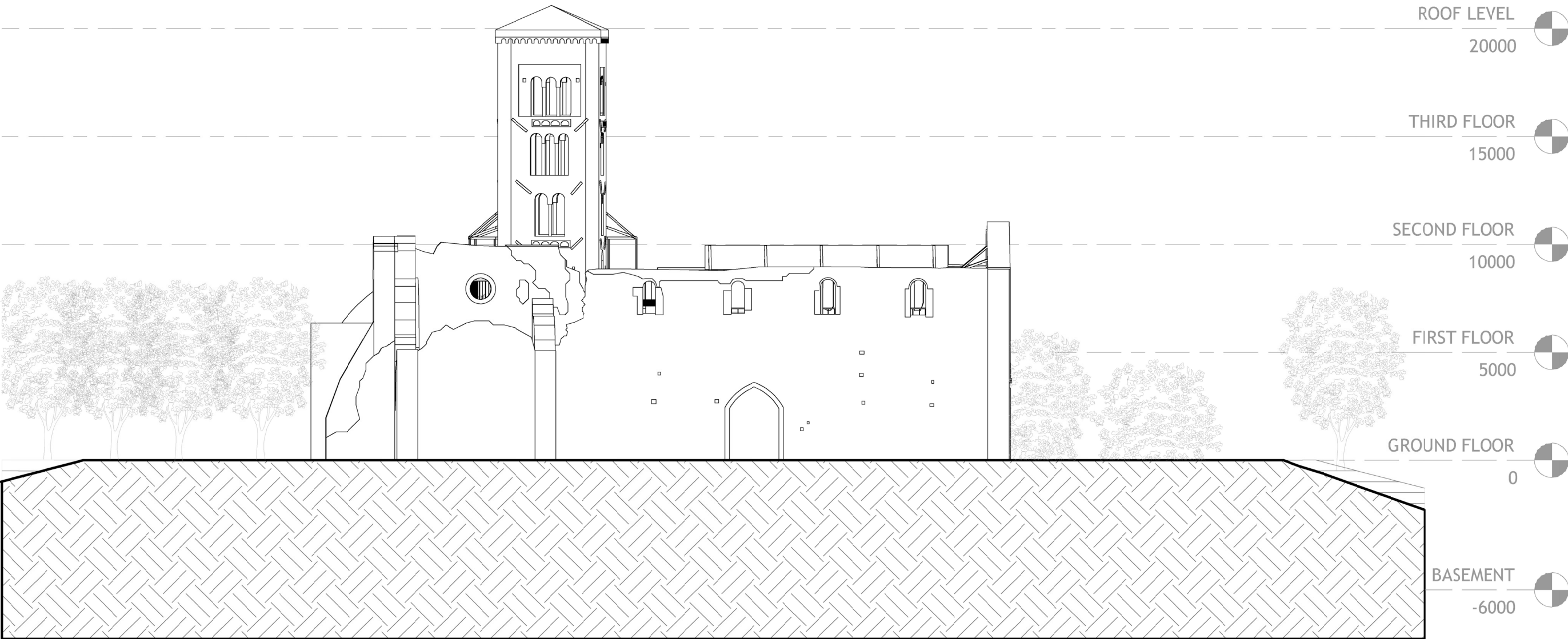


Figure 99: Northwest Elevation in scale 1/200

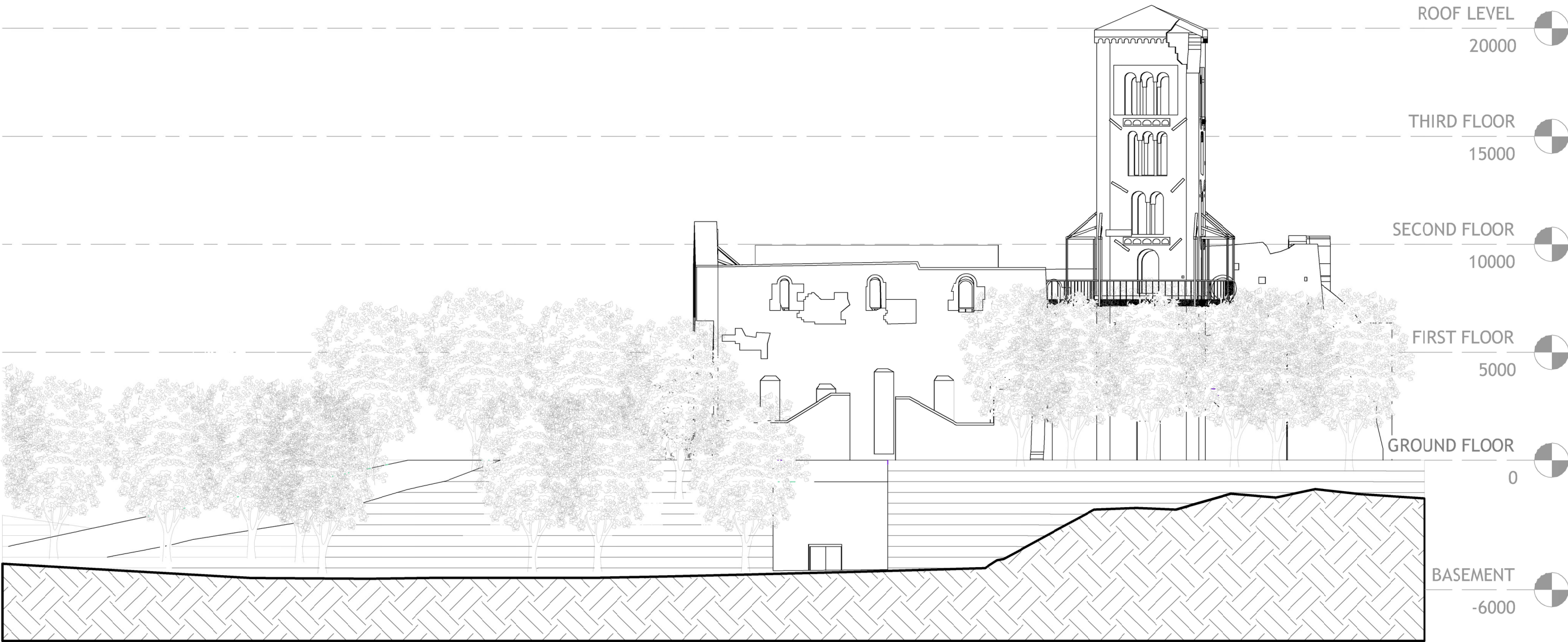


Figure 100: Southeast Elevation in scale 1/200

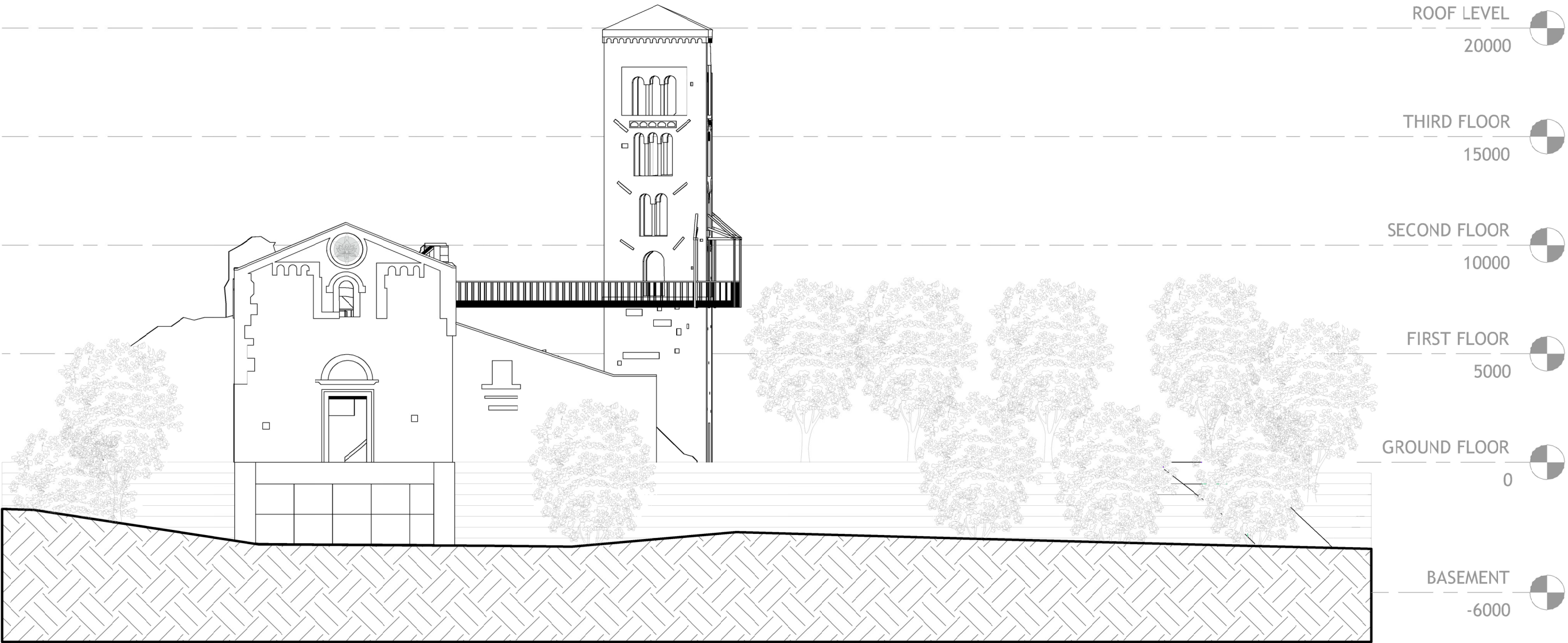


Figure 101: Southwest Elevation in scale 1/200

5. 3 Visualizations and Presentation Materials

5.3.1. Axonometric View

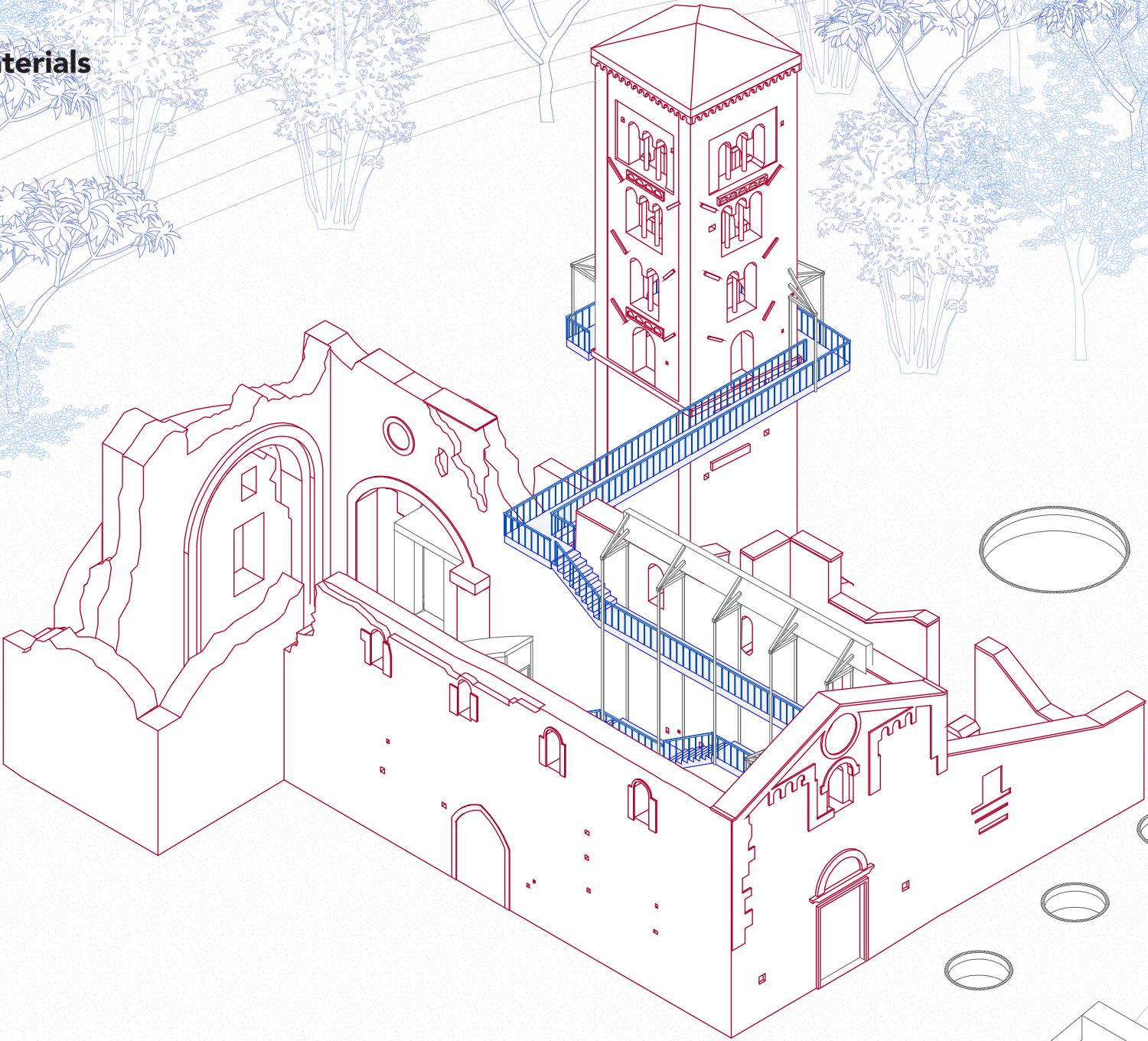


Figure 102: Axonometric view of the building

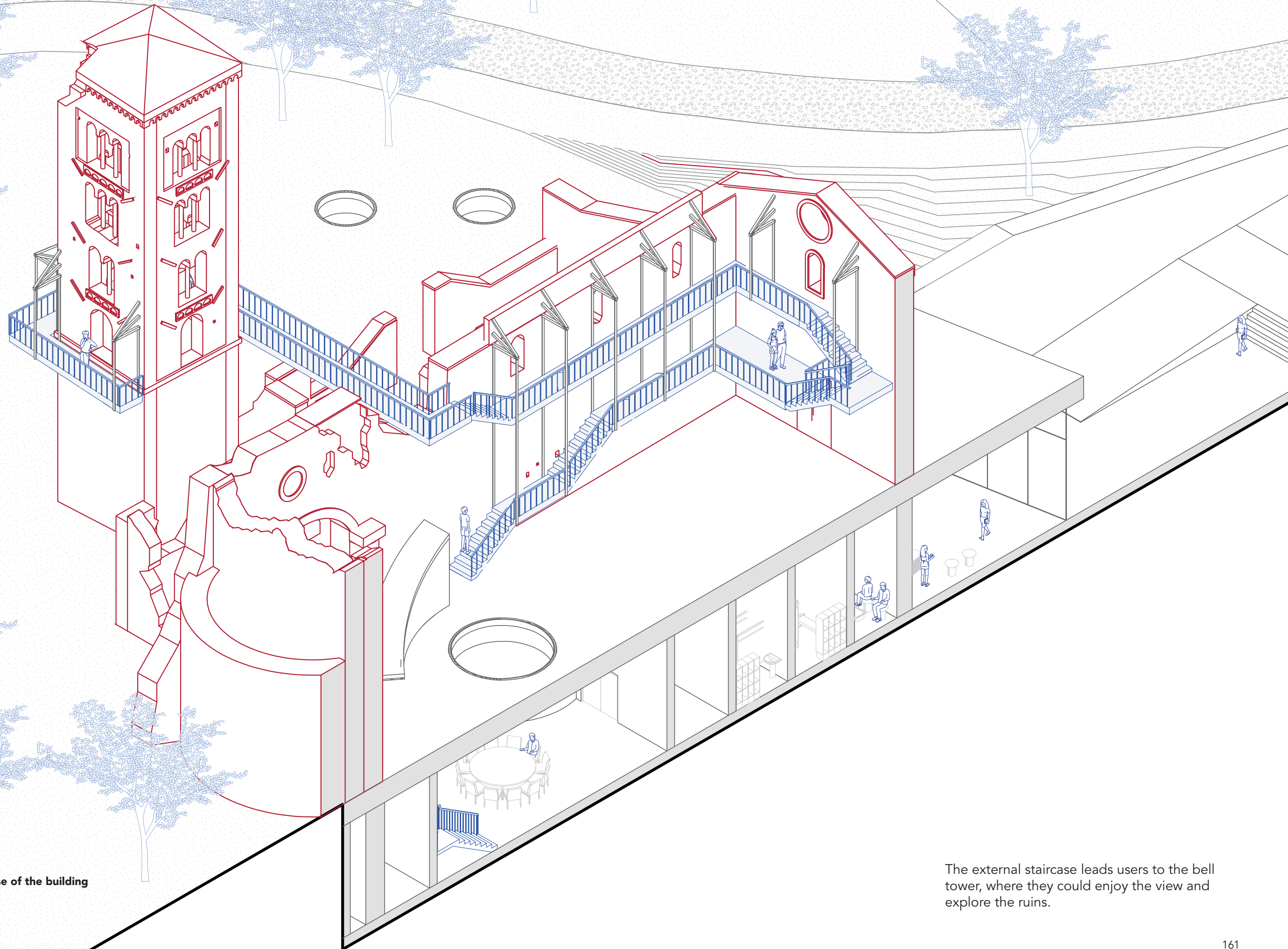


Figure 103: Exterior staircase of the building

The external staircase leads users to the bell tower, where they could enjoy the view and explore the ruins.

5.3.2. Interior Views

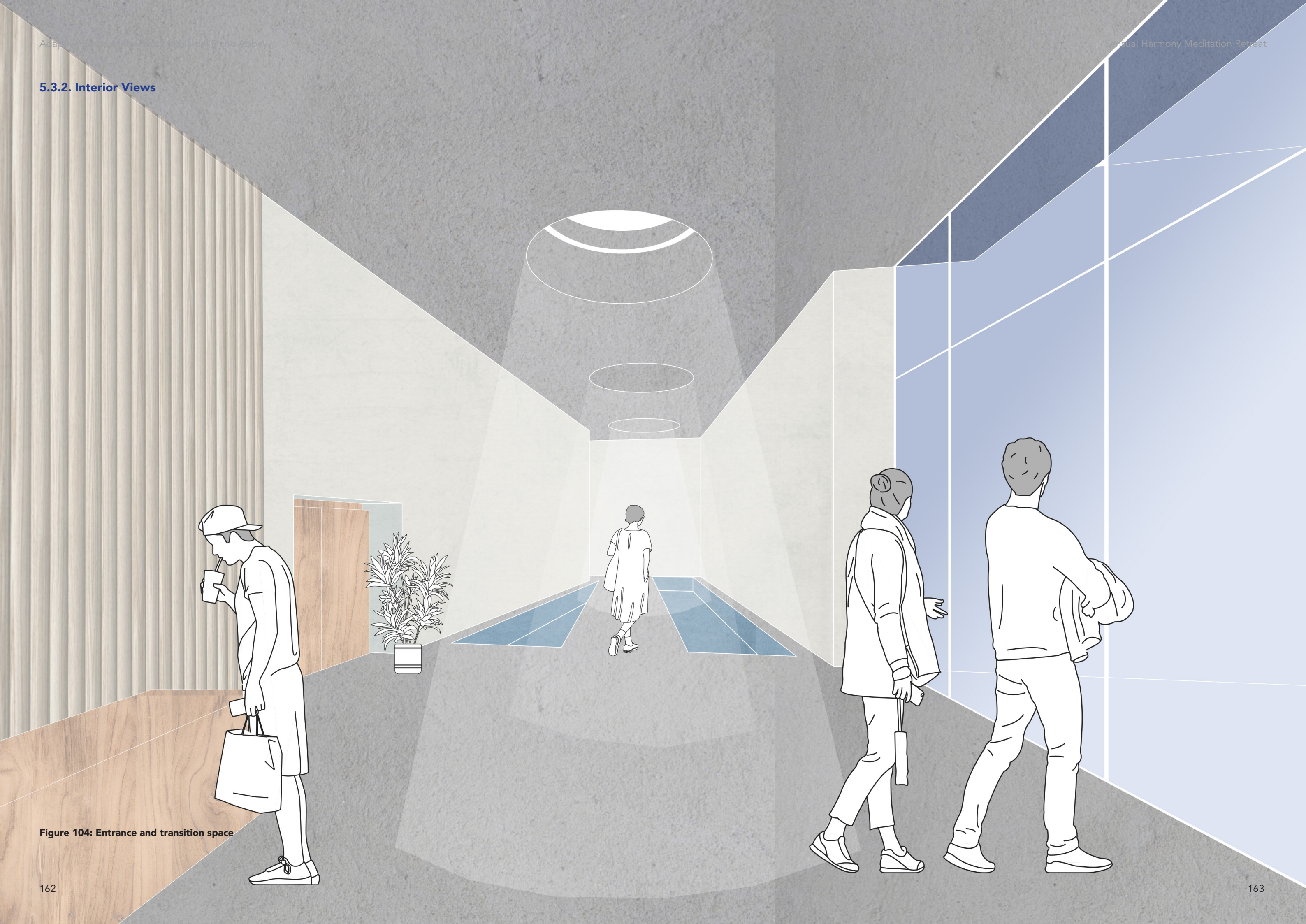


Figure 104: Entrance and transition space



This area visually encourages stillness through contemplation. A shallow pool can visually stimulate light reflection and motion. The gently moving surface of water soothes the mind and fosters a meditative atmosphere, calming users through visual tranquility.

Figure 105: Reflection pool

This chamber employs a combination of diffuse and directed light that enters from the reflection pool room through the curtains. This combination creates a rich visual environment while also enhancing the soft tactile experience on the skin. The intention is to foster awareness of presence via light, warmth, and the playful interaction of shadows, guiding one's attention toward mindfulness meditation centered on bodily sensations and sights.



Figure 106: Light meditation chamber

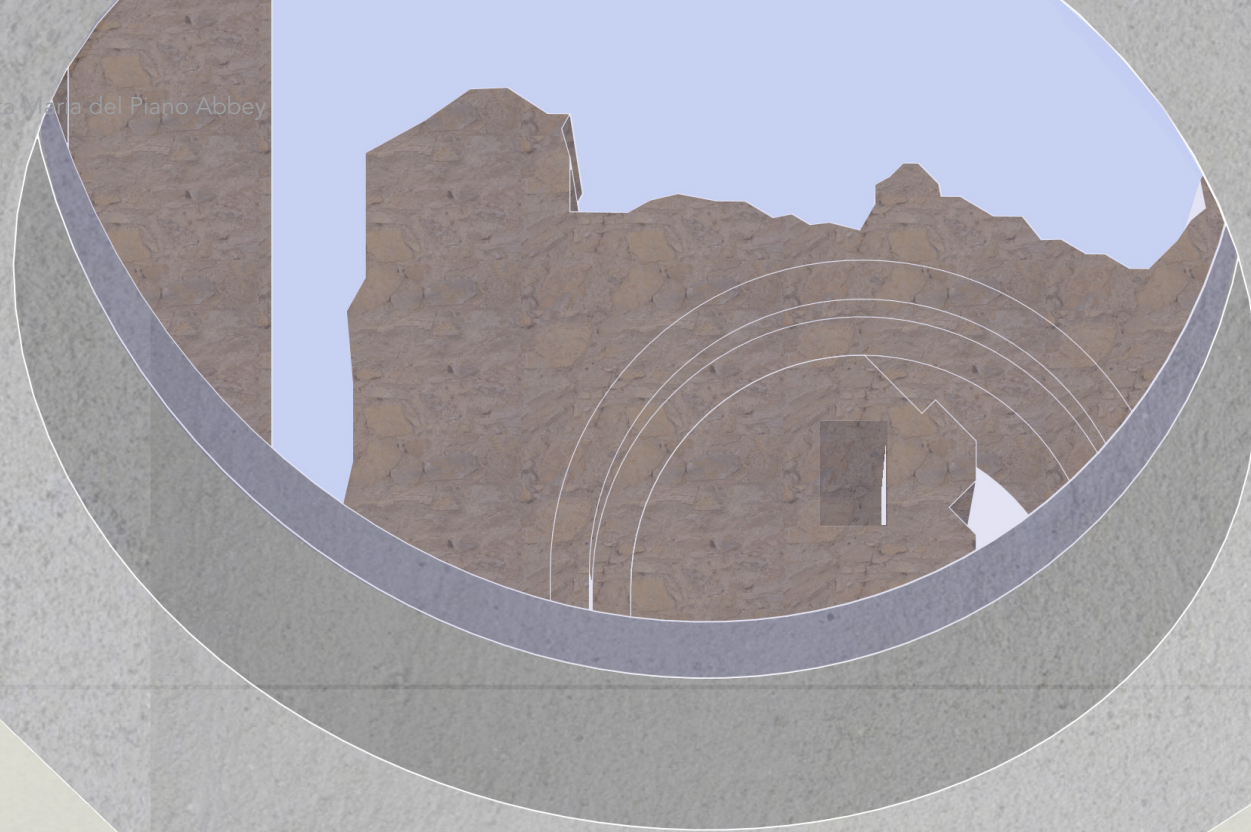
**Figure 107: Sound healing room**

Sound waves with low frequency vibrate the building and the floor, creating an experience for both listening and feeling. The space can also include instruments such as gongs or chimes that produce sounds which aid in self-balance. Such a sound space helps reduce stress and facilitates deep meditation.

The combination of essential oils or herbal infusions creates an engaging, immersive environment. It aims to stimulate recall, feelings processing, and sensory synchronization. This multi-sensory experience blends smell and hearing to bring the mind's focus away from other stimuli.



Figure 108: Sensory immersion room



The last section functions as an anchor by integrating mindful eating. It is a scent and taste sensitive ritualistic area where users are encouraged to consume warm, nourishing food that is simple in nature. Its intention is to create a profound sense of gratitude, presence, appreciation, and awareness of the senses during daily tasks.

Later on, after the meditation journey, the users can go up to the ground floor to explore the ruins.

Figure 109: Dining room



6. Conclusion

This thesis argues that adaptive reuse is more than a practical approach to protect buildings: it is the profound act of architecture as storytelling, memory, and human-centered design. With the proposal of Sensual Harmony Meditation Center, Santa Maria del Piano Abbey serves as a stage for architectural metamorphosis, where once-neglected spaces are revitalized and silence is transformed into an architectural presence.

The works presented in this research affirm that architecture can promote mental and spiritual wellness when only moments beyond form-and-function are taken, when it considers nature's rhythm, light, history's essence, and its introspective inhabitants. The project demonstrates commitment to the existing topographic integration, meaningful ruins preservation, imaginative sensory spatial introduction which attests its belief on respectful revolutionary architecture.

Furthermore, it fosters new declining sacred space cultural narratives. Rather considering it a loss, redefined abandonment as an opportunity for meditative reinterpretation. With empathy, memory, and hope, we might contemplate how to build sensitively and literally through the lens of the final expression of Sensual Harmony Meditation Center which is still a quiet yet evocative proposal.

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