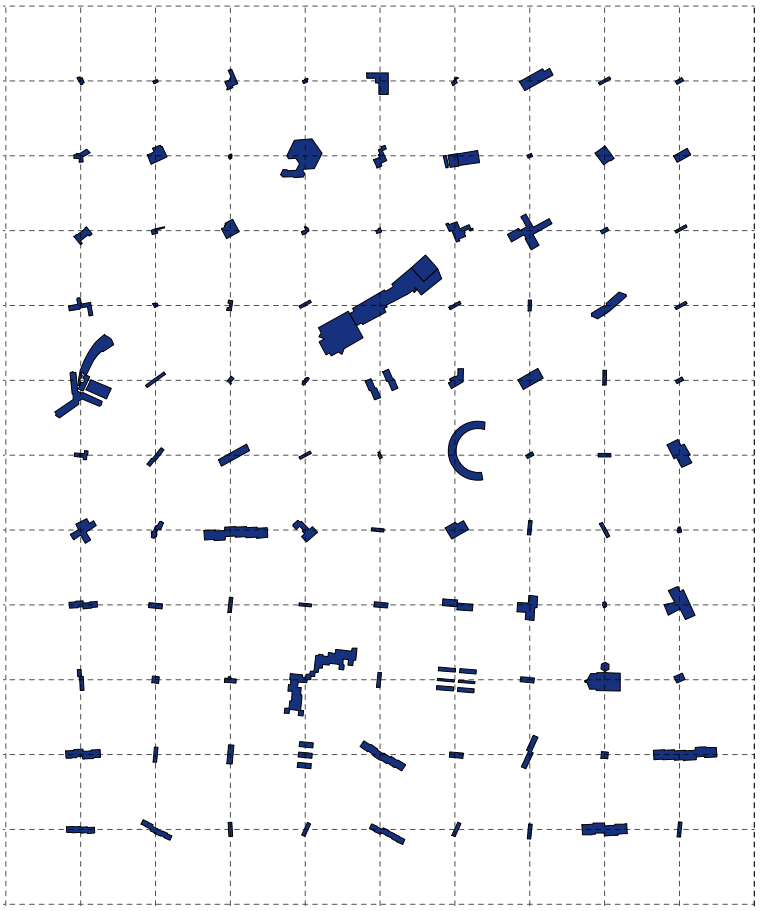
Adaptive Reuse of Marxer Building
in the Industrial Heritage city of Ivrea



The blue line of Ivrea

S313950 IRIN SARA JOY PULIKKOTTIL

Masters Thesis 2025

Politecnico di Torino

Department of Architecture and Design
Msc Architecture for Heritage
Academic year 2022-2023

Masters Thesis

Adaptive Reuse of Marxer Building in the Industrial Heritage city of Ivrea

Tutor : Professor Elena Vigliocco
Co Tutor : Professor Stefano Invernizzi

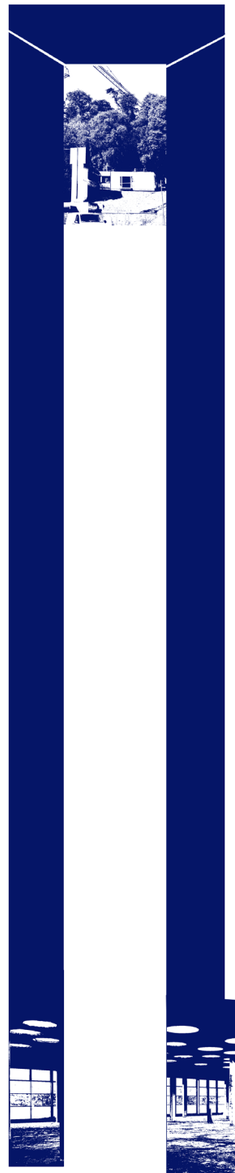
Candidate : Irin sara Joy Pulikkottil

Politecnico
di Torino

ACKNOWLEDGEMENTS

The project is an outcome of collaborative thinking, shaped by the guidance, assistance, and support of many individuals, without whom this work would not have been possible. First and foremost, I extend my deepest gratitude to my thesis guide, Professor Elena Vigliocco, whose invaluable insights, patience, and encouragement have been instrumental in shaping this project. I would also like to express my sincere thanks to my co-guide, Professor Stefano Invernizzi, for his support, thoughtful feedback, and constant guidance throughout the process.

I am profoundly grateful to my parents for their endless love, encouragement, and belief in me. A special thank you to Stalin, whose motivation and presence have kept me grounded and focused. He was there from the beginning—helping me push forward, assisting with timelines, guiding me, and helping me stay on track with the work. I also want to extend my heartfelt thanks to my friends for their support throughout this process.



FOREWORD

The Blue Line of Ivrea

The Blue Line of Ivrea is an urban and architectural initiative aimed at establishing a tangible and conceptual link between the Marxer Pharmaceutical Building and Ivrea's UNESCO industrial heritage sites. Acting as a connective thread, the Blue Line integrates the Marxer building into the city's broader heritage network, enhancing accessibility. This initiative not only strengthens the spatial and cultural relationship but also redefines the Marxer building through adaptive reuse.

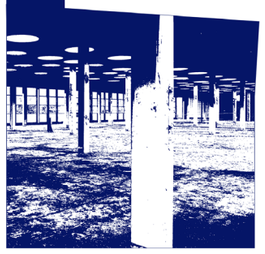


Fig. 01: Illustration by the author

Contents

ABSTRACT

Ivrea, inscribed as a UNESCO World Heritage Site in 2018, stands as a remarkable embodiment of mid-20th-century industrial and architectural innovation, with the Olivetti legacy profoundly influencing its urban landscape. Among the many architectural contributions that shaped Ivrea's identity, the Marxer Pharmaceutical Building occupies a unique place. Located in Loranzè, the structure was designed by architect Alberto Galardi and commissioned by Adriano Olivetti for his brother-in-law, Antoine Marxer. Following multiple changes in ownership and eventual abandonment, it has since fallen into significant disrepair.

Despite the neglect the building is currently suffering, it can still be regarded as an important piece of Italian brutalist architecture. Its angular concrete structure, overhanging sunshades, prominent gargoyles and incorporated water management features are all indications of considerable architectural intention and skill. These features reflect the technical aspirations of the time, as well as the more general Olivetti ethos of combining functionality with expressive form and progressive ideals.

The thesis aims in serving both local residents and visitors by its adaptive reuse, focusing on the architectural value of Marxer building. Rather than just conserving the structure, the thesis aims in reimagining the spatial aspects, maintaining its important architectural character. The project envisions to make site active and relevant by generating income, giving more opportunities and with more community engagement.

In addition to the architectural transformation, the research investigates Ivrea's urban morphology. The study aims to map the distribution of existing heritage sites, highlighting how many historically significant buildings now exist in isolation or disuse.

The inner city industrial structures like Marxer building demonstrates both a challenge and an opportunity. Converting these neglected areas not just preserves cultural memory but contributes to the sustainable evolution of urban fabric.

The thesis conceives the Marxer building not just as a remnant of Industrial history, but as a place of great architectural relevance and uture possibility. By reintegrating the building into the active urban life, the project proposes an example where heritage is a catalyst for urban regeneration and inter-social engagement.

olivetti

“The factory cannot only look at the profit index. It must distribute wealth, culture, services, democracy. I think of the factory for man, not man for the factory, right? We need to overcome the divisions between capital and labour, industry and agriculture, production and culture. Sometimes, when I work late I see the lights of the workers doing double shifts, the office workers, the engineers, and it makes me want to go and say a grateful greeting.”

Adriano Olivetti

INTRODUCTION

Industrialization in Ivrea: The Genesis of a Modern Industrial Landscape

Ivrea, a small yet significant town nestled in Piedmont region of Northern Italy, has long held a unique place in the annals of industrial and architectural history (UNESCO,2018) (Kirk,2005). Its origins as a modest peasant settlement date back to ancient times, where agriculture formed the backbone of its economy (Treccani n.d.). Over centuries, Ivrea evolved, but its early traditions remain vividly alive, most famously embodied in the annual Orange Festival, a vibrant celebration that commemorates the town's medieval history and its spirit of resilience and community (Ivrea n.d.). This unique cultural event, marked by the symbolic battle of oranges, underscores Ivrea's enduring connection to its past even as it embraced modernity (Ginsborg,1990).

Fig. 02: Battle of Oranges festival
Retrieved from : https://www.nytimes.com/2023/03/21/magazine/battle-oranges-italy.html

Fig. 03: Maam project illustration Retrieved from: https://www.anfiteatromoreni-coivrea.it/2018-ivrea-citta-industriale-del-xx-secolo

The town's evolution from these agrarian roots to a center of industrial innovation during the 20th century marks an important chapter in its history. The prime location and the progressive policies that promoted economic growth in the early 1900s is associated to Industrialisation. Ivrea's proximity to Turin, the industrial and automotive center of Italy, and a growing focus on mechanization made it suitable location for industrial expansion (Ginsborg, 1990).

The distinctive blend of architecture, industry, and social philosophy was what really made Ivrea stand out, not just the development of factories and production lines. This synergy, most notably embodied by Olivetti, established Ivrea as a beacon of modernist thought (Kirk,2005). The town became a model for worker-centric urbanism and industrial innovation, embedding in its DNA a commitment to harmonizing technological progress with humanistic values (Kirk,2005). It went beyond utilitarianism, embracing a vision where architecture served as a bridge between functionality and aesthetics, industry and community. The architectural fabric of Ivrea, shaped during this transformative period, reflects this ideology, with modernist structures standing as testaments to the era's ambitions. In 2018, the recognition of Ivrea as a UNESCO World Heritage Site underscored the town's significance, particularly its embodiment of the ideals of the modern industrial city (UNESCO,2018).

The Rise of Olivetti: A Visionary Enterprise

Olivetti, a company that transformed not only typewriting and industrial design but also the larger philosophy of workplace and urban life, is at the core of Ivrea's industrial heritage. Camillo Olivetti founded the business in 1908 as a modest producer of mechanical and electrical equipment (Ginsborg, 1990). The business thrived under the leadership of Camillo's son, Adriano Olivetti, and became a world leader in office equipment and design (Kirk, 2005). Adriano Olivetti's vision extended far beyond the production of cutting-edge typewriters and computers. He envisioned a holistic approach to industrialization that emphasized the well-being of workers, the aesthetic quality of workplaces, and the integration of industry within the urban environment (Astarita,2000). This approach gave rise to a series of architectural masterpieces in Ivrea, ranging from modernist office buildings to residential complexes, schools, and recreational facilities, all designed with the workers' welfare in mind (Kirk,2005). Architects and designers of international repute, such as Marcello Nizzoli, Luigi Figini, and Gino Pollini, were commissioned to shape Olivetti's architectural legacy. Their work embodied the principles of modernism—clean lines, functional design, and innovative use of materials—while reflecting Adriano Olivetti's belief in the social responsibility of industry(Kirk,2005). Olivetti's headquarters, factory buildings, and supporting infrastructure transformed Ivrea into an architectural laboratory, where ideas of form, functionality, and community were continually reimagined" (Astarita,2000). "Olivetti's contributions extended to the cultural and intellectual spheres, fostering an environment of creativity and innovation. This ethos resonated globally, earning the company acclaim not only for its products but also for its corporate philosophy. The inclusion of Olivetti's sites in Ivrea's UNESCO designation underscores their enduring importance as exemplars of the modern industrial city" (UNESCO,2018).

"Olivetti architecture is inspired by the Fordist model of organizing time and space, which required bright, clean, well-ventilated spaces with a rigorous organization of the internal areas of continuous activity. Olivetti, in order to create a diversified architectural complex, entrusted the design of its factories to young architects. Olivetti's factory-city defined itself over time eclectically, offering an image of variability and free aggregation of different cells, rather than that of a rigid schematism."(Astarita,2000)

Fig. 04: Industrial workers at Ivrea
Retrieved from: https://www.theguardian.com/cities/2016/apr/13/story-cities-21-adriano-olivetti-ivrea-italy-typewriter-factory-human-city

The Marxer Building: A Forgotten Gem

Among the architectural and industrial landmarks of Ivrea, the Marxer Pharmaceutical Building stands as an intriguing yet underappreciated symbol of the town's heritage (Perego, 2023) (Bernasconi,1966). "Designed during the mid-20th century, this brutalist structure diverges from the clean elegance of Olivetti's modernist designs, instead embracing the raw, bold aesthetic characteristic of brutalism. Its imposing concrete façade and functional layout reflect a different aspect of industrial architecture, emphasizing pragmatism and durability while still holding its own artistic and historical merit" (Perego,2023).

"The Marxer Building's historical significance lies not only in its architectural style but also in its association with Ivrea's broader industrial narrative. As a pharmaceutical manufacturing facility, the building represents a diversification of the town's industrial economy during a period of rapid modernization" (Ginsborg,1990). "Despite its importance, the Marxer Building has largely been overshadowed by Olivetti's more celebrated contributions, remaining a peripheral player in Ivrea's heritage narrative"(UNESCO,2018).

The goal of this thesis is to re-establish the Marxer Building as an important link in Ivrea's architectural and industrial heritage. Despite being different from Olivetti's modernist philosophy, its brutalist architecture focuses the town's architectural diversity and adds to its industrial heritage story. Additionally, the building's potential for adaptive reuse as a center for culture offers a chance to connect the past and present while focusing to the modern methods of sustainable urban development and heritage preservation. This project intends to expand the town's historical narrative and reveal the Marxer Building's unrealized potential by integrating it into Ivrea's UNESCO heritage cluster. Through thoughtful redevelopment and innovative programming, the Marxer Building can serve as a dynamic space that engages both local communities and global audiences, fostering dialogue on the enduring relevance of industrial heritage in the modern era.

Fig. 05: Interior of Marxer Manufacturing Plant
Photo by Paolo Mazzo

Fig. 06: Collage with the
contextual frames by the author

01| URBAN STUDY OF IVREA

1.1 Evolution of te City

“Ivrea, a picturesque town in northern Italy’s Piedmont region, is nestled in a scenic landscape of rolling hills, rivers, and lakes at the foothills of the Alps. As evidenced by its famous castle from the 14th century and the historic Via Francigena pilgrimage route, it was once a prominent Roman settlement before developing into a prosperous medieval town. Ivre was a part of Canavese region is well-known for its outdoor recreation, cuisine, and vineyards. Ivrea, which has a population of about 23,000, is a place for both cultural exploration and regional economic activity because of its excellent road and rail connections to nearby places, which connect it to Turin, Milan, and the Aosta Valley”(Britannica, 1998).

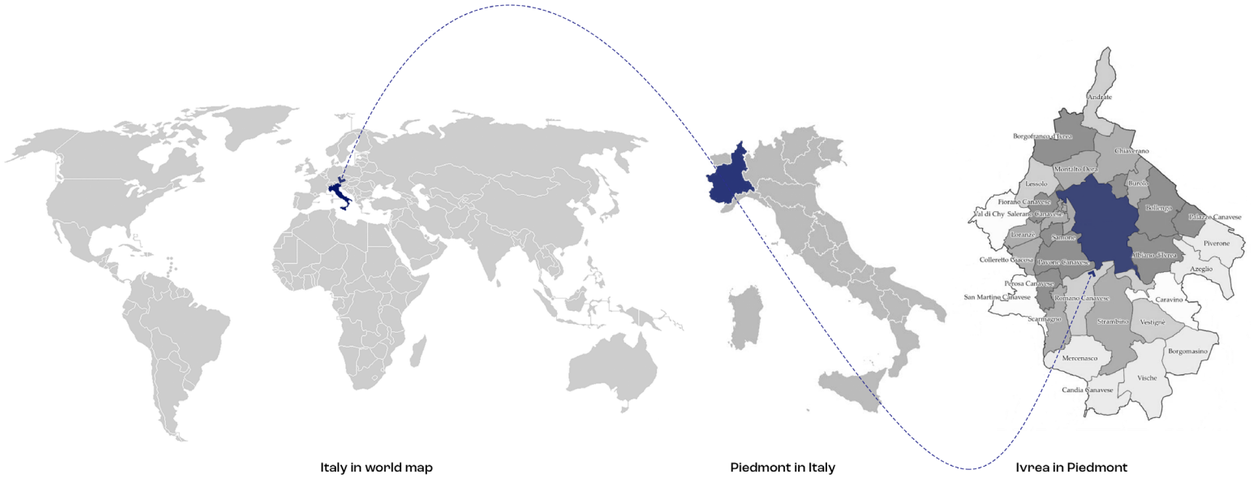
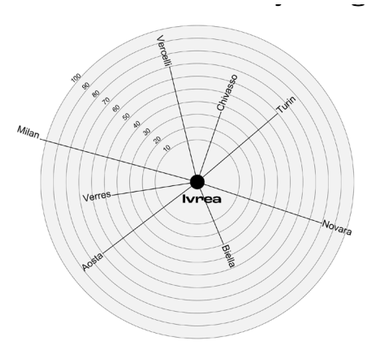


Fig. 07: Geographical location of Ivrea

This picture depicts a scene in Ivrea, Italy, likely from the 19th century. “The drawing showcases the Dora Baltea river flowing through the city, with buildings lining its banks. A bridge spans the river, and a church or tower rises above the rooftops. It also highlights the importance of traditional industries such as fishing and agriculture, which were prominent in the region before the rise of Olivetti’s industrial influence” (Harding,1833).

Fig. 08: “Entrance to Ivrea” by James Duffield Harding (1833)

Fig. 09: Map of the Canavese Region. Retrieved from: https://commons.wikimedia.org



Distances in Kilometers

Fig. 10: Proximity of Ivrea to neighbouring Cities

1.2 General Timeline

1st Century BCE – Roman Era:

Significance: Ivrea, known as Eporedia during Roman times, was founded as a military outpost to control the access to the Alps. The town was primarily agricultural, producing grains, wine, and livestock to supply the Roman army and local communities (Heather,2006)(Treccani n.d.).

Feudal Ivrea’s Ascent in 1000 CE:

Significance: “Ivrea was established as a significant medieval hub by the bishops and counts, including the well-known Count Arduino of Ivrea, who proclaimed himself King of Italy in 1002,. With small-scale artisanal trades complementing agriculture, the region’s economy started to diversify “(Wickham, 2016).

Olivetti was born in 1908:

Significance: Ivrea was transformed from a very small rural town to a centre of technological innovation by the Olivetti company, founded by Camillo Olivetti.The business started by the manufacturing of the typewriters before emerging as a world leader in office supplies, signifying Ivrea’s industrial revolution (Ginsborg, 1990) (Kirk,2005).

Olivetti’s technological zenith in the 1970s:

Significance: Olivetti, who helped create the first personal computers, came to be associated with cutting-edge technology and contemporary design.” Workers from all over Italy helped Ivrea in growing as a cultural and economic hub. Additionally, the town served as a model for creative worker welfare initiatives.(Kirk, 2005; Ginsborg, 1990).

UNESCO World Heritage Designation for 2018:

Significance: “Ivrea, known as the “Ivrea Industrial City of the 20th Century,” was named a UNESCO World Heritage Site as a reward for its contributions to contemporary industrial culture. The designation emphasized Ivrea’s diverse fusion of industrial and architectural innovation, drawing tourists and increasing interest of the past, while Olivetti was in their prime.”(UNESCO, 2018).

1.3 Map of Ivrea

The Ivrea presents a unique urban structure where the historic old town is concentrated along the river in the upper part of the city, emphasizing its medieval and Renaissance origins. The Ponte Vecchio bridge serves as a critical connector, linking this heritage core with the newer urban expansion across the Dora Baltea River, facilitating movement and symbolizing the coexistence of historical and modern urban development.

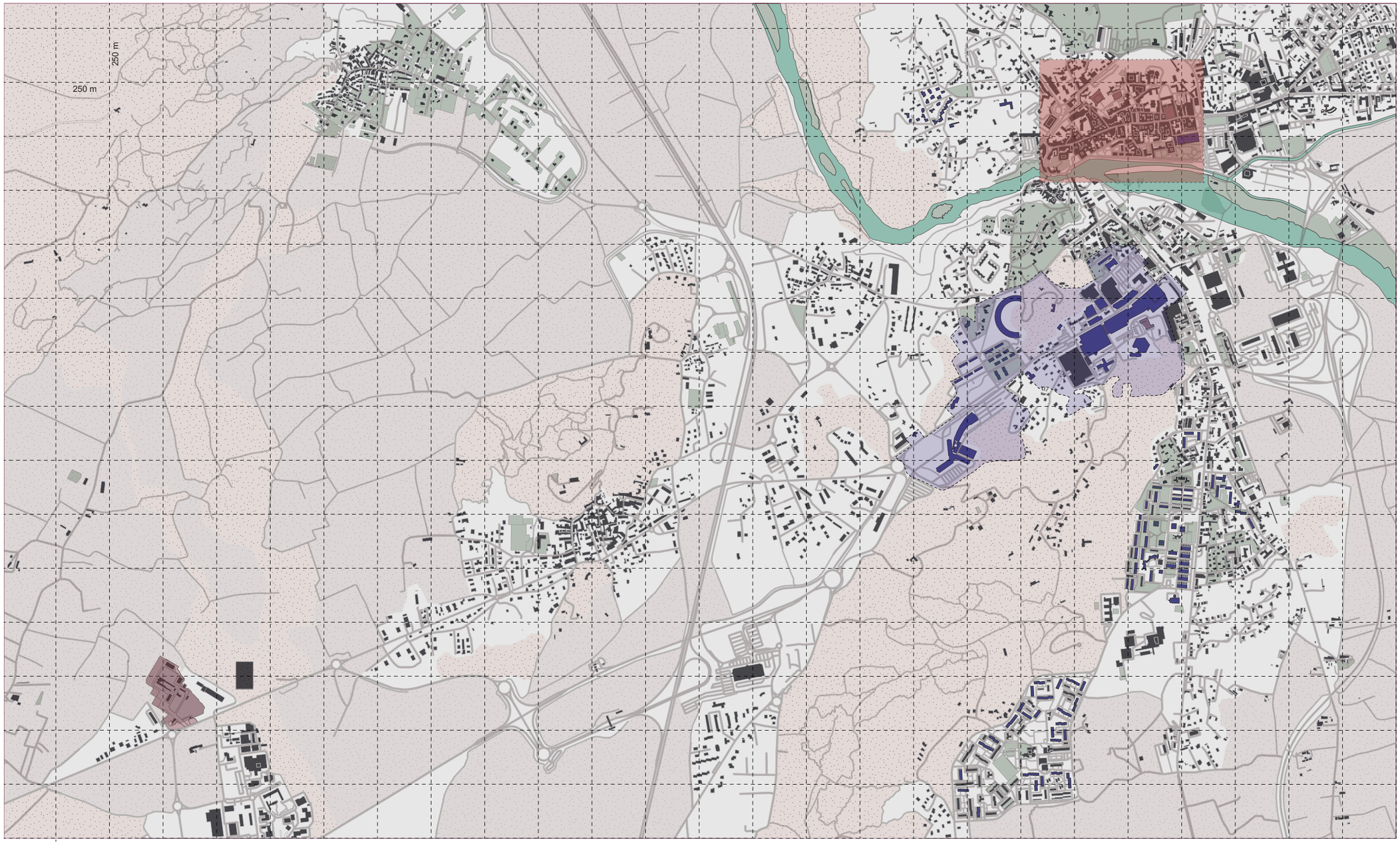


Fig. 11: Map by the author

A well-thought-out transition from historic to modern development is indicated by the spatial contrast between the old town's small medieval layout and the larger, grid-like modern urban extensions. Large agricultural areas on the outskirts demonstrate a distinct urban-rural divide, promising the city's environmental equilibrium while preserving its long-standing agricultural ties. Ivrea demonstrates a well-balanced urban model by preserving a logical relationship between the industrial expansion, the historic core, and the surrounding agricultural lands (UNESCO, 2018).

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

1.3.1 Historic Landmarks in the city

1 castello di Ivrea

Fig 12.
Retrived from : https://www.cittaecattedrali.it

“Castello di Ivrea was designed as both a military fortress and an administrative center. Its square plan features three surviving cylindrical corner towers, with a fourth tower destroyed by lightning in 1676. The castle was a prison for centuries before undergoing restorations to preserve its medieval character. The imposing red-brick structure embodies Savoyard military architecture,with its thick walls and stratergic positions overlooking the town, emphasizing its role in regional defense”(Citta e Cattedrali n.d.)

2 Cathedrale di SantaMaria Assunta

Fig 13.
Retrived from : https://www.cittaecattedrali.it

“The cathedral stands on the remains of a 4th-century paleo-Christian basilica, with major reconstructions in the Romanesque period. Its crypt preserves the foundations of the early church. The Renaissance cloister, Baroque chapels, and 19th-century neoclassical façade illustrate centuries of architectural evolution. The cathedral houses important medieval frescoes,-showcasing Ivrea’s spiritual and artistic heritage”(Citta e Cattedrali n.d.).

3 Piazza Ottinetti

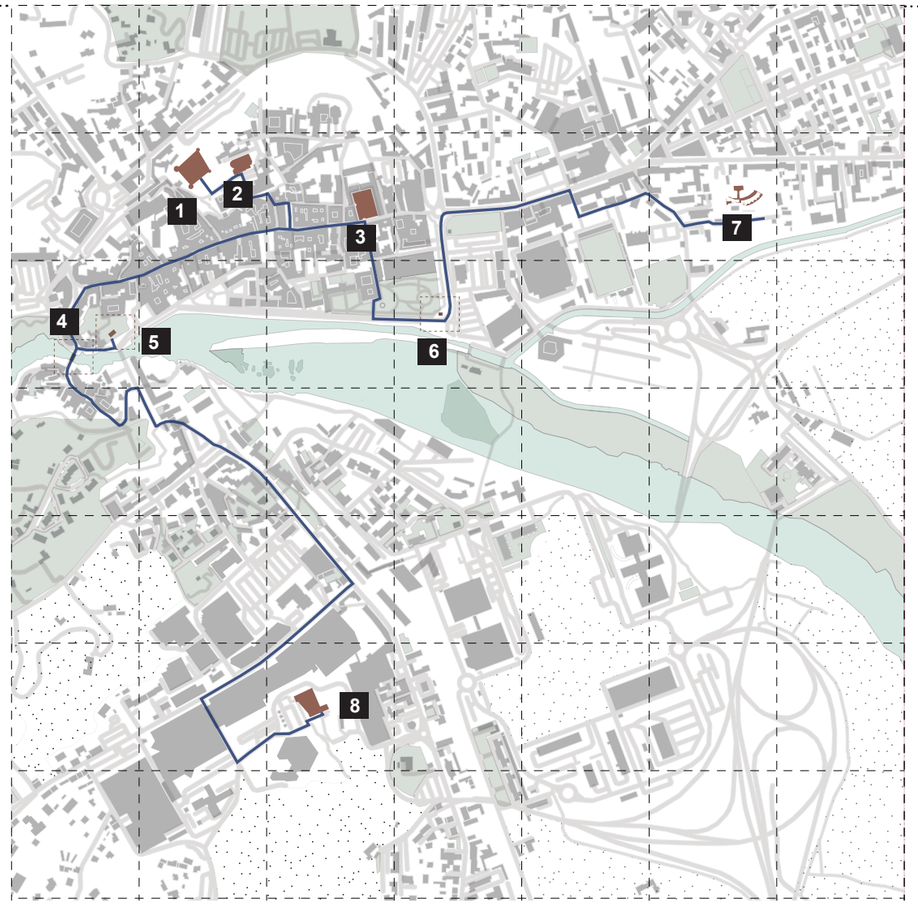
Fig 14.
Retrived from : https://www.artribune.com

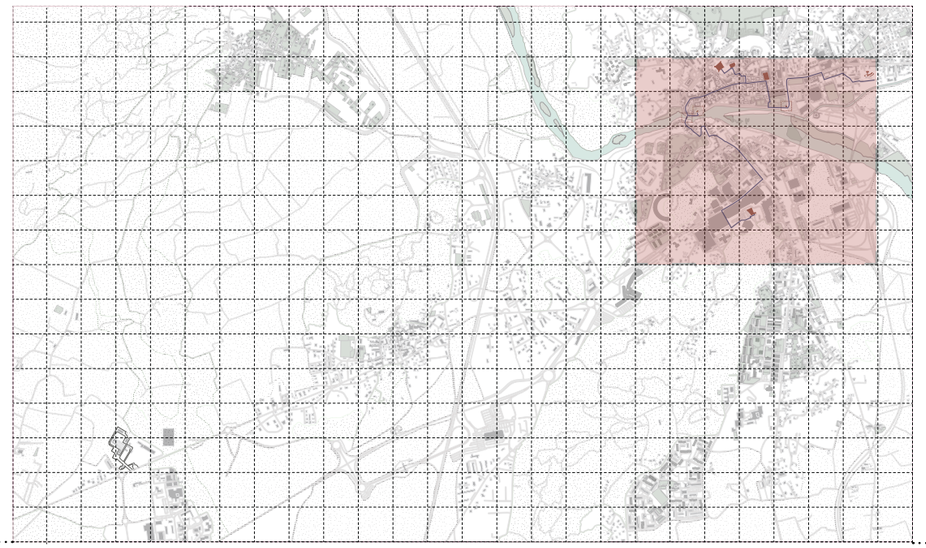
“Originally part of a monastic complex, Piazza Ottinetti was redesigned in the 18th century as a neoclassical civic space. The surrounding porticoes, reminiscent of Turin’s urban planning, reflect Enlightenment-era ideals of public space and commerce. The square remains a focal point for social and cultural events in Ivrea, maintaining its historical significance as a marketplace and gathering place” (Artribune,2022).

4 Ponte Vecchio

Fig 15.
Retrived from : https://catalogo.beniculturali.it

“This stone bridge was constructed in 1716 to replace earlier wooden and medieval stone bridges destroyed by floods. It played a crucial role in Ivrea’s economic and social life, connecting the historic center with expanding districts. It is a key transit route that has shaped the town’s development”(General catalogue n.d.).





Keyplan

5 Fontana Camillo Olivetti

Fig 16.
Retrived from : https://www.giornalelavoce.it

The fountain is an example of modernist architecture which was built to commemorate Camillo Olivetti who is the creator of well-known Olivetti company. The simple geometric lines captures the industrial aesthetics which represents Ivreas development into a centre of technological advancements. It stands out in the urban fabric as a symbol of the town’s industrial heritage and forward-thinking nature (Lamattina, 2022).

6 Torre di Santo Stefano

Fig 17.
Retrived from : https://www.cittaecattedrali.it

“This Romanesque bell tower, which was left over from the old Augustinian monastery, is a reminder of medieval Ivrea. Its octagonal belfry, arched openings, and Lombard-style brickwork highlight verticality, a crucial element of monastic architecture. The tower is still an important historical site even though the nearby monastery was destroyed during the Napoleonic era” (Citta e Cattedrali n.d.).

7 Roman Amphitheatre

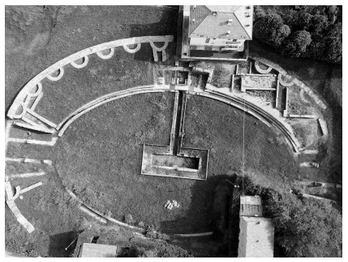


Fig 18.
Retrived from : https://www.uno-case.it

“This amphitheater, which was constructed during the early Roman Imperial era, could hold thousands of people for public performances and gladiatorial contests. Its elliptical structure, which was built using local stone, is designed after the classic Roman design. Its significance in Roman Ivrea’s entertainment life is suggested by archeological research.”(Uno Case Immobiliare, 2020)

8 Chiesa di San Bernardino

Fig 19.
Retrived from : https://torino.repubblica.it

“Founded by the Franciscan Order in 1455, this Gothic-Renaissance church is famous for its fresco cycle by Giovanni Martino Spanzotti, illustrating the Life of Christ with remarkable detail. The church emphasize the Franciscans’ influence in the region” (Cattedrali,2017).

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

1.4 Zonal distribution of Industrial Heritage

“Olivetti’s industrial sites, are strategically placed along Via Jervis and scattered across different parts of the city. This dispersion suggests a decentralized industrial development model, integrating production, administration, and residential areas rather than clustering them in a single district” (Fuso and Giacopilli,2023).

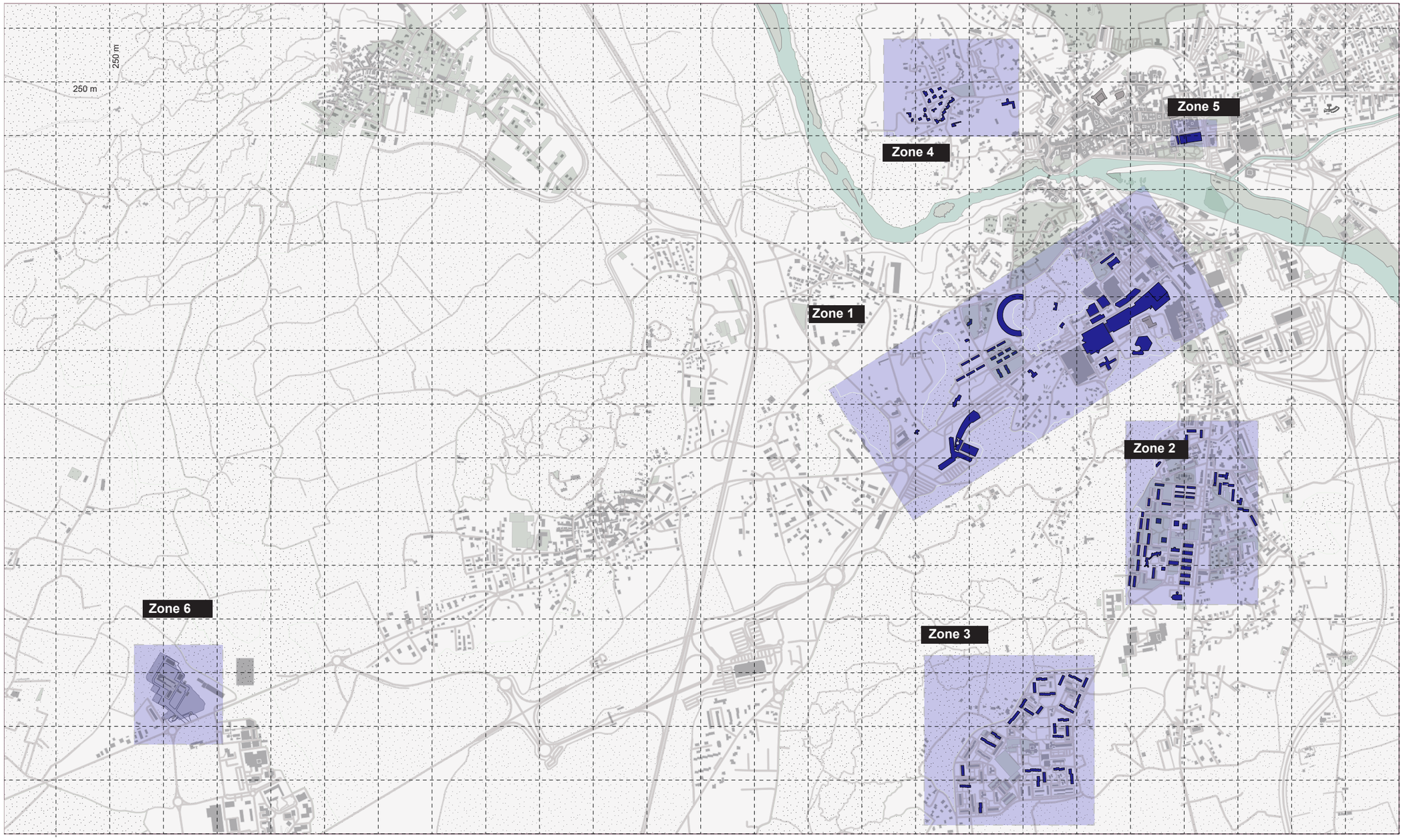


Fig. 20: Map by the author

Zone 1

Core Zone Unesco - Via Jervis

Homes, offices, factories, and services make up the core of Olivetti’s integrated industrial vision. A structural axis of industrial Ivrea is the Via Jervis.

Zone 2

Canton Vesco - La sacca

Display public housing, which was probably constructed to house the labor force and suggests that the industrial development had a social component. The different locations imply planned communities that are a part of the city fabric but distinct from the core.

Zone 3

Bellavista

Public Housing

Zone 4

Crist

Characterized by the single-family homes, which may be an indication of later expansion stages or hierarchical residential patterns. A more suburban character is suggested by the scattered locations.

Zone 5

Centro storico

The addition of a multipurpose building to the historical center emphasizes how Olivetti’s influence extends beyond the nearby industrial areas, implying a mutually beneficial relationship with the existing urban typologies.

Zone 6

Marxer Industries

The existence of an independent manufacturing facility indicates that industrial operations may expand or diversify beyond Olivetti’s primary focus.

1.5 UNESCO Industrial City

“The recognition of Ivrea as a UNESCO World Heritage Site in 2018 highlights its global significance as a model for 20th-century industrial cities. The UNESCO designation particularly emphasizes the architectural and urban contributions along Via Jervis, also known as the Olivettian Decumanus, a term reflecting its central role in the city’s industrial fabric” (UNESCO,2018).

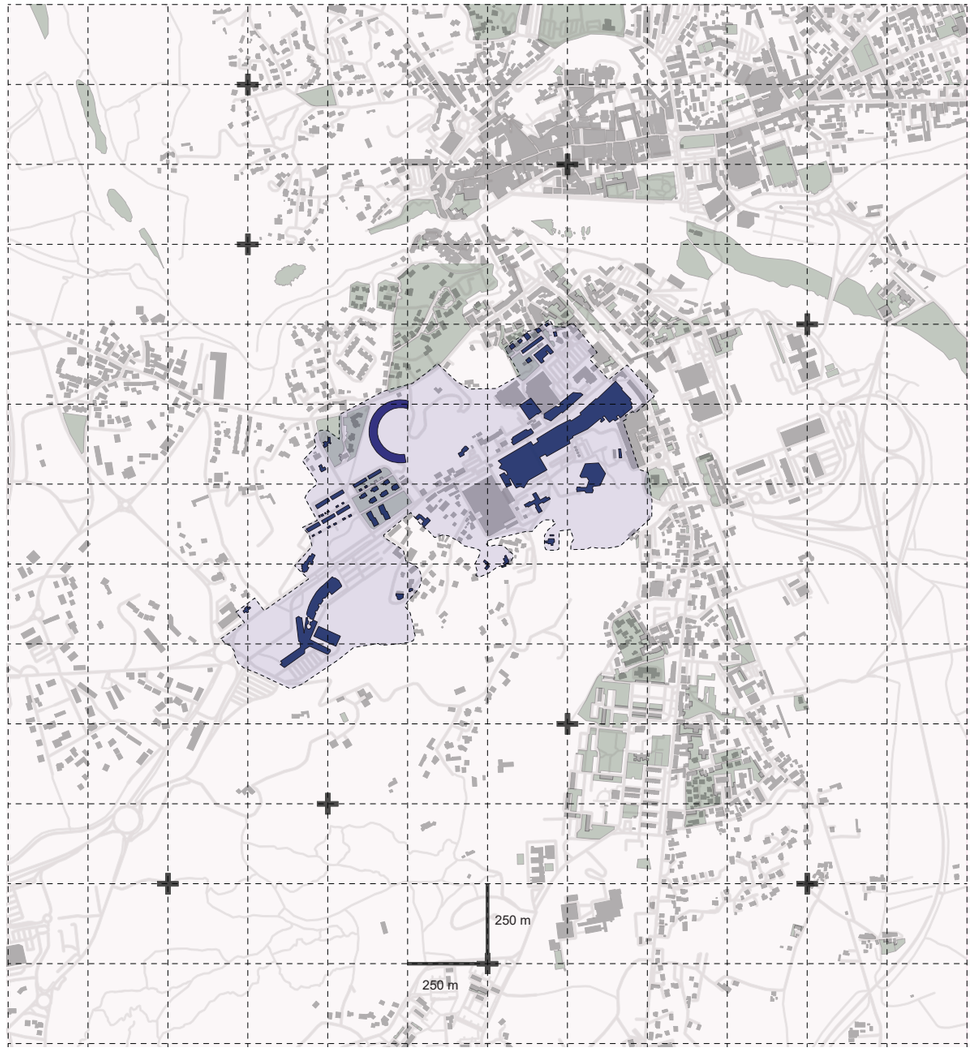


Fig. 21 : Map by the author

“This axis, lined with some of the most innovative modernist structures, represents the core of Olivetti’s urban experiment—a place where industrial production was harmonized with cultural and social life. Within Ivrea, approximately 300 buildings are recognized as part of the modern Olivetti heritage, illustrating the extensive influence of this industrial and architectural movement. Of these, at least 40 structures hold a primary position in the history of modern architecture, reflecting the contributions of renowned architects such as Luigi Figini, Gino Pollini, Eduardo Vittoria, and Marco Zanuso” (UNESCO,2018).

1.5.1 Maam

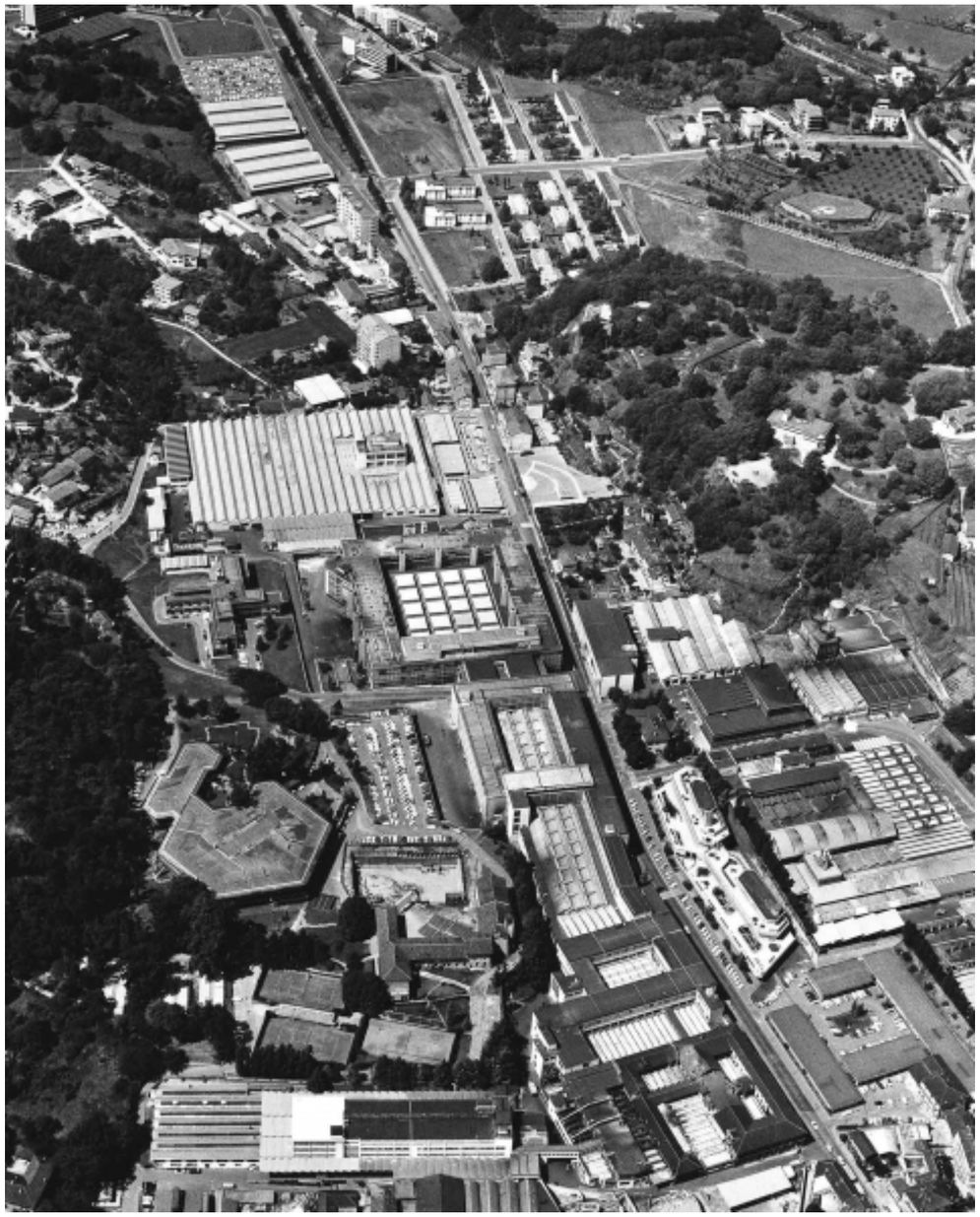


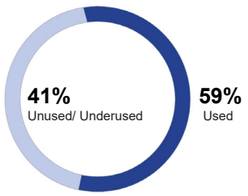
Fig 22. Retrived from : https://journals.openedition.org/insitu/docannexe/image/34980/img-4.jpg

“The Museo a Cielo Aperto dell’Architettura Moderna (MAAM), or Open-Air Museum of Modern Architecture, further reinforces Ivrea’s role as a living museum of industrial modernism. While the broader Olivetti heritage encompasses numerous sites across the city, the UNESCO core zone and MAAM include only the most representative buildings along Via Jervis, carefully selected to highlight the most influential examples of Olivettian architecture and urban planning” (Fuso and Giacopilli,2023).

1.5.2 Current Demographics

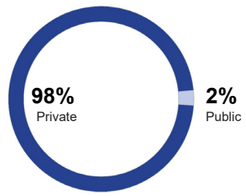
“Maam draws thousands of visitors each year, including architects, urban planners, historians,tourists and students interested in exploring Olivetti’s pioneering vision for industrial urbanism. The experience extends beyond Via Jervis, encompassing the entire network of former Olivetti buildings spread across Ivrea, many of which are located far from the city’s industrial core” (Fuso and Giacopilli,2023).

Fig 23. Gianni Berengo photograph of Olivetti factory Retrived from : https://www.artribune.com/mostre-evento-arte/gianni-berengo-gardin-e-la-olivetti/



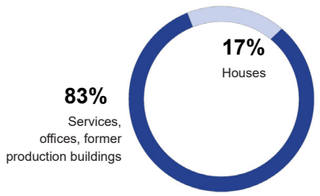
Used Unused

Out of the service, business, and former industrial buildings, 59%, representing 71,709.74 sq m, are used, while 41%, or 49,354.14 sq m, are unused or underused.



Ownership

98% of the listed buildings, covering 145,430.18 sq m, are privately owned, with only 2%, or 1270 sq m, under public ownership.



Uses

83% of the listed buildings, totaling 121,063.87 sq m, are used for services, offices, and former production facilities, while 17%, or 24,216.75 sq m, are houses.

Source : https://www.ivreacittaindustriale.it/nomination-file/nomination-file/2_Ivrea_Management_Plan.pdf

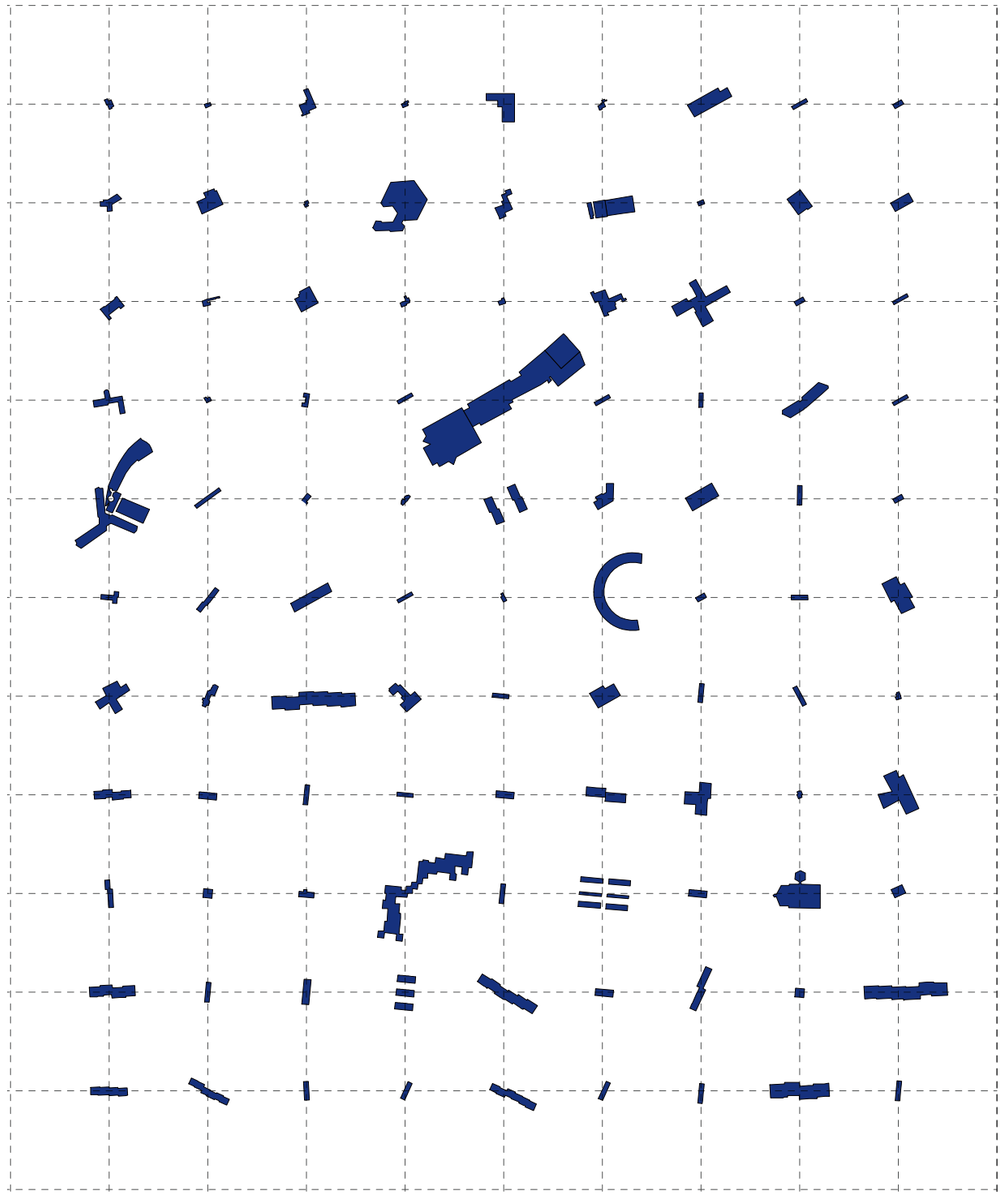


Fig 24. Illustration using the plans of the Olivetti Heritage in Ivrea

In addition to being functional, they were designed with social and aesthetic balance in mind, so they combine to create a unified urban fabric that still influences conversations about sustainable urban development today.Modular design, crisp, clean geometry, and a heavy reliance on glass and reinforced concrete define the architectural language shared by these structures. They were impacted by modernist, functionalist, and rationalist ideas. They also perfectly blend in with their surroundings.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

1.6 Transportation Map of Ivrea

The transport network in Ivrea exhibits a well-structured multimodal system, integrating bus routes, railway lines, and cycling-friendly roads, which contribute to an accessible and sustainable urban framework.

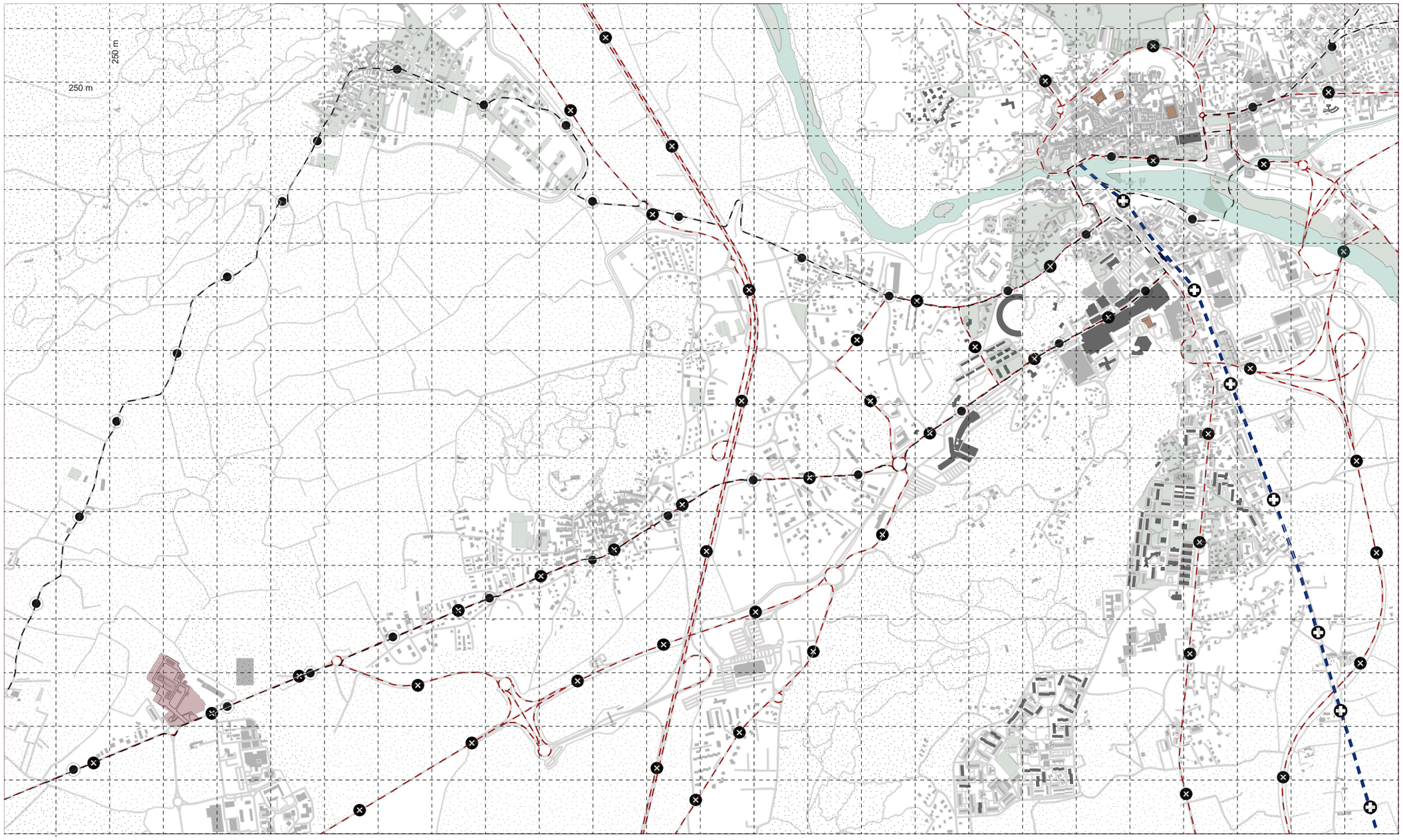


Fig. 25: Map by the author

The Olivetti buildings thoughtful placement within this network is consistent with transit-oriented development (TOD) principles, which prioritize accessibility for both employees and guests. A dedication to non-motorized mobility is shown by the development of cycling infrastructure, which encourages walkability and lessens reliance on cars. Disparities in transportation accessibility between places, especially in rural areas, may draw attention to the necessity of better last-mile connectivity in order to promote urban integration and mobility.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

1.7 Distribution of Open spaces

Ivrea's open space distribution reveals a layered landscape structure, where cultivated land, dense vegetation, and green spaces interact with the built environment.

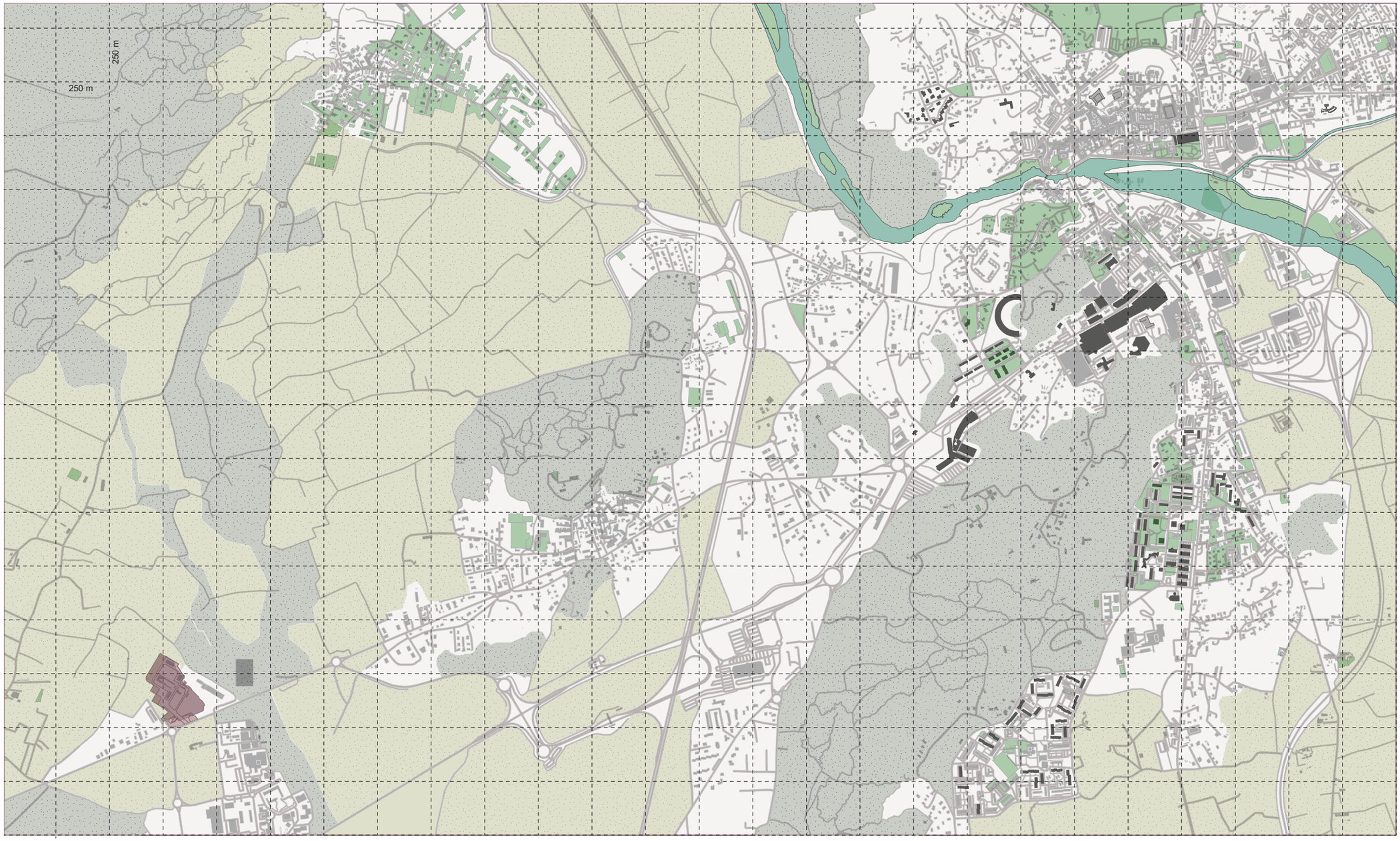


Fig. 26: Map by the author

The urban-rural divide is eliminated as we approach the edge because the spatial typology changes into natural vegetation and agricultural land. The city's environmental resilience is strengthened by this change in the open space typology, which improves ecological continuity and offers a transition from crowded urban areas to the surrounding landscape.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

1.8 Figure Ground Plan of Ivrea

The figure-ground relationship in Ivrea exhibits a compact urban morphology, with a well-defined solid-void structure that emphasizes a coherent built environment.

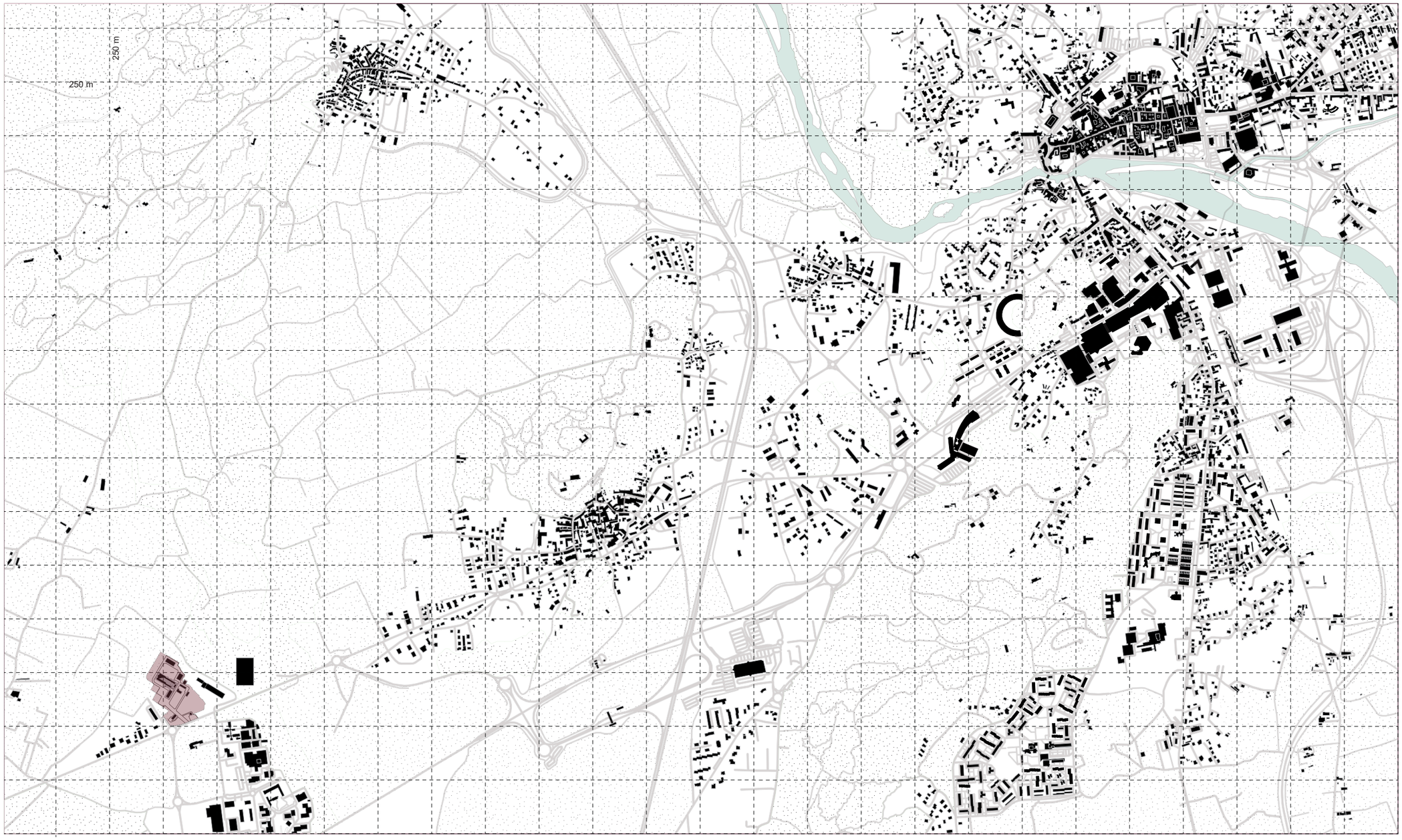


Fig. 27: Map by the author

Legend

Built

Unbuilt

The central areas present a high degree of enclosure, defined street network that enhances spatial legibility and walkability. The urban grain is more scattered in peripheral zones, where larger unbuilt spaces and diversified built forms point to a lower-density fabric with room for public realm improvement.

Movement patterns and the degree of permeability and enclosure that determine the city's spatial experience are influenced by the proportions of built and unbuilt areas.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

1.9 Landuse map of Ivrea

The land use distribution in Ivrea reflects a mixed-use urban framework, where residential, commercial, industrial, and heritage functions coexist to support a diverse and dynamic city structure.

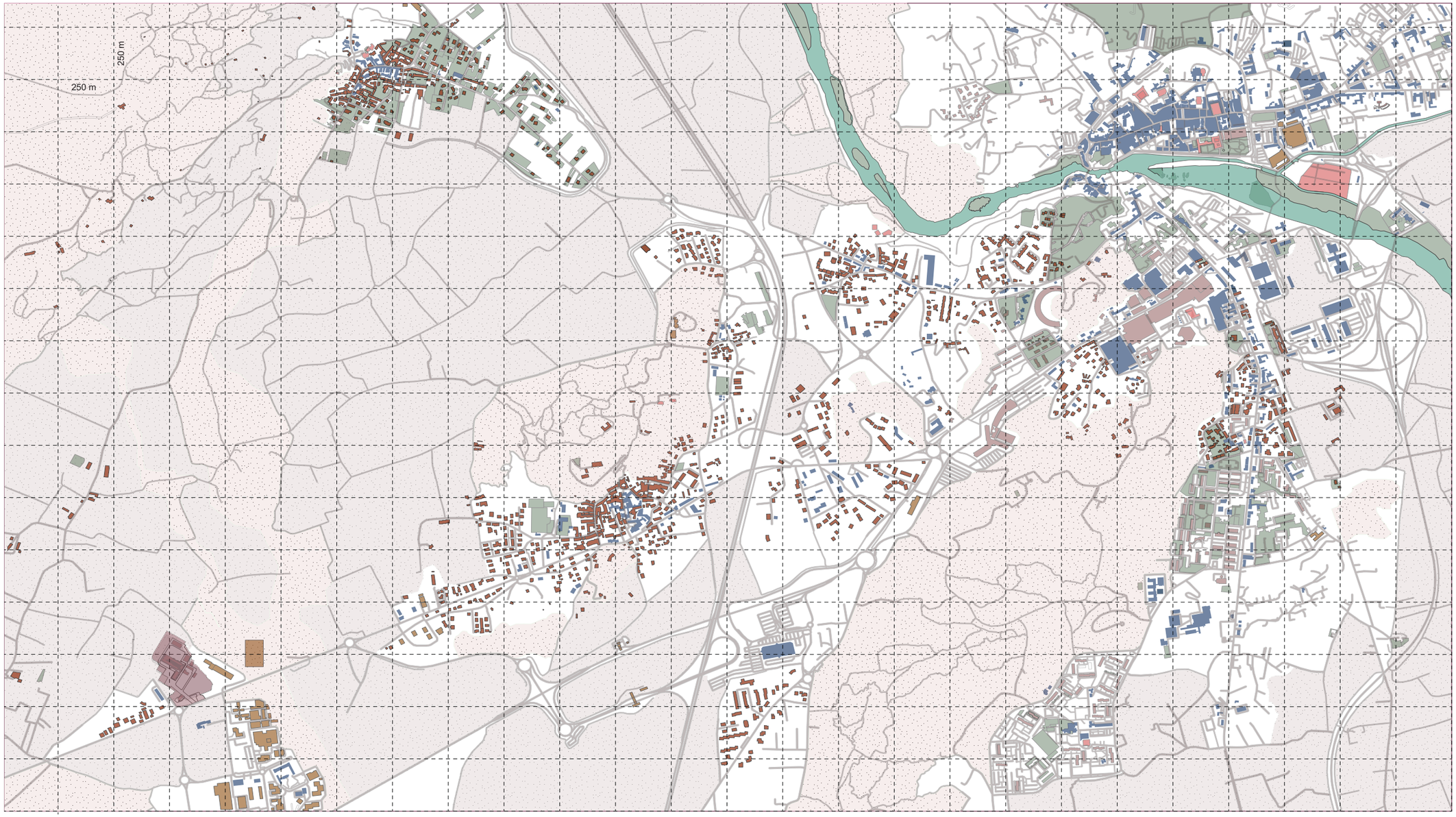


Fig. 28: Map by the author

The concentration of historical and commercial landmarks in the central areas supports the core's function as a busy urban hub. Adaptive reuse strategies that preserve cultural identity while meeting modern urban needs are supported by the integration of residential and commercial zones with industrial heritage sites, such as the Olivetti buildings. Green spaces in the land-use matrix improve public accessibility and urban comfort.

1.10 Analysing the multiple Layers of the city

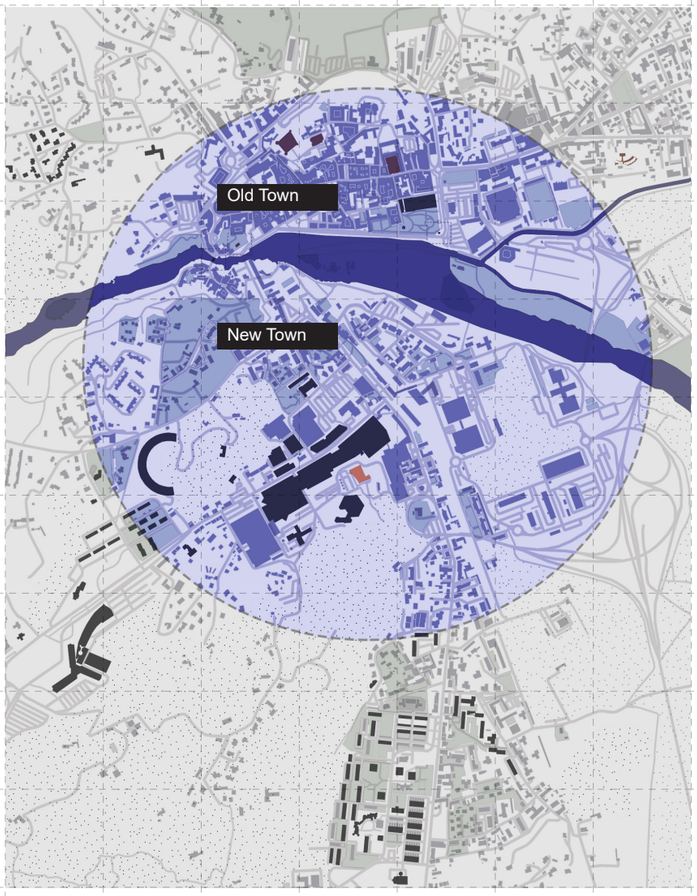


Fig. 29: Map by the author

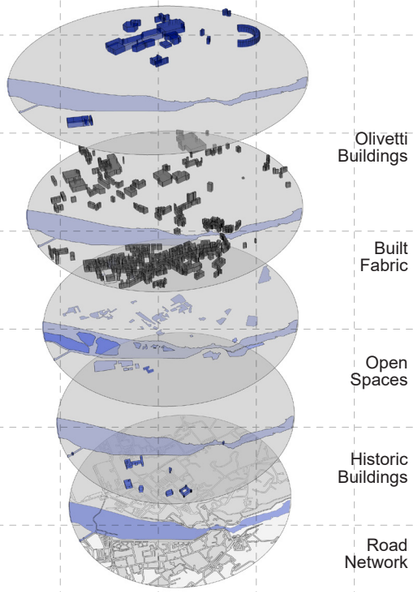


Fig 30: Layers of the urban morphology of Ivrea

Two sides of Dora Baltea

The River Dora Baltea, which serves as a natural barrier between the historic center and the contemporary industrial expansions, creates a clear spatial seperation in Ivrea's urban fabric. A strong sense of place and historical continuity are reinforced by the old town's fine-grained built environment, compact urban morphology, and high concentration of heritage buildings. It also has narrow, pedestrian-friendly streets. This area's dense urban grain promotes high spatial enclosure, resulting in clearly defined public areas that improve walkability and social interaction.

A move toward functional zoning and modernist planning concepts is reflected in the more open spatial structure of the more recent industrial sector across the river, which features greater plot sizes, lower building densities, and expansive industrial footprints. This region mixes mixed-use typologies and promotes a more flexible land-use pattern by merging commercial buildings, residential developments, and industry complexes (UNESCO, 2018) (Piccinini, 2024).

Fig 31: Retrived from - https://www.archiviostoricolivetti.it

"The transition between these two urban conditions highlights varying degrees of permeability and connectivity, where infrastructure networks and bridging elements play a crucial role in linking historical and contemporary urban forms. Additionally, the juxtaposition of green corridors, open spaces, and industrial landscapes contributes to the city's urban porosity, ensuring environmental integration and mitigating the stark contrasts between heritage conservation and industrial modernization" (Piccinini,2024).

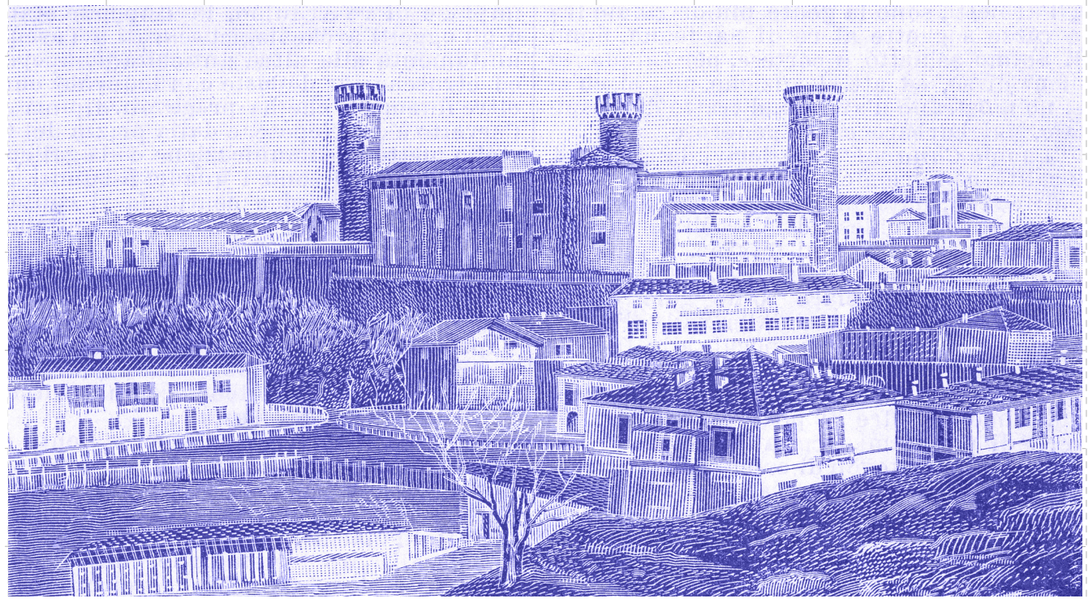


Fig 32 Retrived from : https://commons.wikimedia.org

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

02| OLIVETTI'S BRIEF HISTORY

2.1 General Timeline of Olivetti in Ivrea

1896
The Birth of Olivetti

"Camillo Olivetti establishes C. Olivetti & C. in Ivrea, initially focusing on the production and sale of electrical measurement instruments. This marks the foundation of what would become one of Italy's most innovative industrial enterprises"(Netto n.d.) (Millington,2024)

1908
The First Italian Typewriter

"Camillo Olivetti sets up Italy's first typewriter manufacturing facility inside the Fabbrica Mattoni Rossi (Red Brick Factory). This marks the beginning of Olivetti's success in office machinery and solidifies Ivrea as an industrial hub" (Netto n.d.) (Millington,2024)

1932
The First Olivetti Building on Via Jervis

One of the earliest industrial buildings in Olivetti's architectural legacy is constructed on Via Jervis. This street later becomes a defining feature of Olivetti's urban and industrial expansion, with several modernist buildings designed by renowned architects.

1934-1936
Expansion of the ICO Factory

"Due to increasing demand, the ICO (Ingegner Camillo Olivetti) factory undergoes its first major expansion" (Millington,2024).

1938
Adriano Olivetti Takes Leadership

"Adriano Olivetti assumes control of the company, ushering in a new era of industrial and social innovation. He emphasizes not only technological advancement but also progressive labor policies and urban development, making Olivetti a model of corporate social responsibility" (Netto n.d.).

1943
Death of Camillo Olivetti

Camillo Olivetti, the founder of the company, passes away.

1954
The Creation of I-Rur (Institute for Urban and Rural Renewal)

"As part of his broader vision for sustainable development, Adriano Olivetti establishes the Istituto di Rinnovamento Urbano e Rurale (I-Rur). This initiative promotes socially responsible urban planning and better living conditions for both factory workers and local communities" (Netto n.d.) (Millington,2024)

1955
Construction of the New ICO Factory in San Bernardo d'Ivrea

"To accommodate the company's rapid growth, a new industrial complex is built in San Bernardo d'Ivrea" (Netto n.d.)

1960
Death of Adriano Olivetti

"Adriano Olivetti unexpectedly dies at the age of 58 while traveling by train to Lausanne, Switzerland. His sudden passing creates instability in the company's leadership, leading to future challenges"(Millington, 2024)

1962
Expansion into Scientific Research and New Facilities

"Olivetti diversifies its focus beyond typewriters, establishing the Antonio Marxer Research Institute for Pharmaceutical Chemistry in Loranze. New industrial buildings are also constructed, reflecting the company's growing investment in research and technological development" (Netto n.d.)

1978
The Shift Towards Telecommunications

"As global competition intensifies in the office equipment sector, Olivetti begins to diversify into telecommunications and IT services" (Netto n.d.).

2003
The Official Closure of Olivetti's Industrial Operations in Ivrea

"After more than a century of production, Olivetti's industrial activities in Ivrea come to an end. The closure is driven by financial difficulties, the decline of typewriter and office equipment demand, and competition from global tech companies. This marks the end of Olivetti's physical manufacturing presence in Ivrea" (Netto n.d.).

2008
Ivrea's UNESCO Nomination Process Begins

"Recognizing the architectural and historical significance of Olivetti's industrial heritage, efforts begin to nominate Ivrea as a UNESCO World Heritage Site. This initiative highlights Olivetti's pioneering approach to industrial design and urban planning"(Netto n.d.).

Fig 33 : Collage of The Olivetti Evolution

Typewriter model : M1 (1911)

Typewriter model : Lexikon 80 (1948)

Typewriter model : Praxis 48 (1964)

Typewriter model : Editor 5 (1974)

2.2 Printing in Style: The Graphic Brilliance of Olivetti Posters

M20 Typewriter, 1920

Fig. 34 Source - https://www.storiaolivetti.it/

Lexikon Typewriter, 1948

Fig. 35 Source - https://www.storiaolivetti.it/

Lettera 32, Valentine

Fig. 36 Source - https://www.storiaolivetti.it/

Valentine, 1969

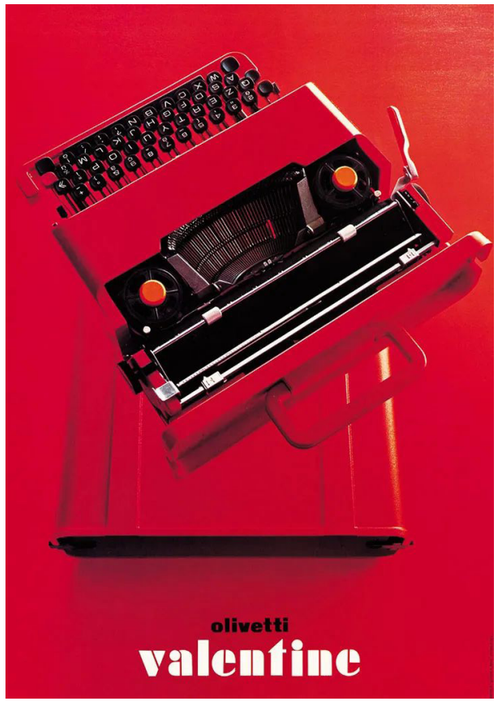


Fig. 37 Source - https://www.storiaolivetti.it/

"The Olivetti posters exemplify a masterful blend of graphic design, industrial aesthetics, and brand identity. Throughout the years, Olivetti has employed some of the most celebrated designers and artists, such as Giovanni Pintori, Ettore Sottsass, and Walter Ballmer, to create advertising materials that were as revolutionary as their typewriters. The posters often feature bold color contrasts, abstract compositions, and dynamic typography, reflecting both the technological sophistication and artistic vision of Olivetti's brand" (Archivi Olivetti n.d.).

"The Lettera 22 poster might showcase streamlined graphics to emphasize its lightweight portability, while the Valentine poster could embrace playful, vibrant hues that evoke a sense of 1960s pop culture. In contrast, the Lexikon 80 or Studio 42 posters would likely focus on precision, craftsmanship, and the harmony of function and form. The overall visual language of Olivetti posters is timeless, continuing to inspire designers and collectors alike for their ingenuity in merging advertising with avant-garde aesthetics" (Archivi Olivetti n.d.).

2.3 Buildings Catalogue

Fig 38

1896

Typology : Industrial

Red Brick Factory

Fig 39

1933 - 36

Typology : Industrial

ICO - I Expansion

Fig 40

1937 - 39

Typology : Industrial

ICO - II Expansion

Fig 41

1939 - 41

Typology : Social Infrastructure

Olivetti Nursery school

Fig 42

1939 - 41

Typology : Housing

Borgo Olivetti Social Housing

Fig 43

1940

Typology : Housing

Houses for large families

Fig 44

1951 - 55

Typology : Research

Olivetti study and research centre

Fig 45

1952 - 61

Typology : Social Infrastructure

Company canteen and Recreational club

Fig 46

1953 - 55

Typology : Housing

Villa Capellaro

Fig 47

1954

Typology : Housing

18-unit building

Fig 48

1954 - 59

Typology : Social Infrastructure

Social Services Centre

Fig 49

1955 - 58

Typology : Industrial

New Ico

Fig 50

1955 - 58

Typology : Industrial

Ex Carpenters Building

Fig 51

1956 - 59

Typology : Industrial

ICO Thermoelectric power plant

Fig 52

1958

Typology : Industrial

Montalenghe Agricultural Coperative

Fig 53

1959

Typology : Housing

Villa Rossi

Fig 54

1959

Typology : Industrial

Bairo bitta factory

Fig 55

1959 - 64

Typology : Administration

Office Building

Fig 56

1961

Typology : Industrial

Building 8640

Fig 57

1961

Typology : Industrial

Suitcase Workshop in Vidracco

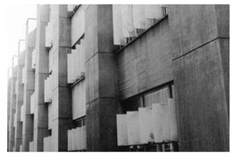


Fig 58

1961 - 63

Typology : Industrial

Sgrelli Building

Fig 59

1962

Typology : Industrial

Marxer Pharmaceutical Building

Fig 60

1962

Typology : Industrial

Canavese Silvervare

Fig 61

1962 - 64

Typology : Industrial

Scarmagno Plants

Fig 62

1964

Typology : Research

Mechanical Technology Research Centre

Fig 63

1968 - 70

Typology : Social Infrastructure

Hotel La Serra

Fig 64

1968 -72

Typology : Administration

Ex SERTEC Building

Fig 65

1968 - 72

Typology : Housing

Unita Residenziale Ovest

Fig 66

1970

Typology : Research

Biomedical Research Centre RBM

Fig 67

1971- 75

Typology : Housing

Villa Girelli

Fig 68

1985

Typology : Industrial

Vidracco Labortary

Fig 69

1985 - 88

Typology : Administration

New Olivetti Office Building

2.4 Olivetti Through Time: Architecture and Innovation

1896

Red Brick Factory

"The first building at the start of Via Jervis, called the Red Brick building, designed by Camillo Olivetti, is part of the original complex consisting of individual buildings located in the JERVIS area around Via Jervis. Part of the first building nucleus housed the OMO (Officina Meccanica Olivetti, 1926) [Olivetti Mechanical Workshop] building which is now part of the fourth extension of the ICO workshops, the former joinery which now hosts the regional environmental offices (ARPA) and the foundry (1922). The "Red Brick building" is a factory block laid out over two floors which are above ground. The load bearing structure followed the Hennebique system with brick walls and is similar to many industrial workshops which characterize the urban scene at the start of the 20th century." (www.ivreacittaindustriale.it)

Fig 70: Red Brick Factory, North front
Retrived from : https://www.ivreacittaindustriale.it/the-properties/ico-workshops/?lang=en

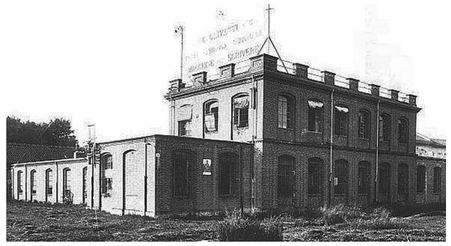


Fig 71: Red Brick Factory
Retrived from : https://www.ivreacittaindustriale.it/the-properties/ico-workshops/?lang=en

1911

Olivetti M1 Typewriter

"The Olivetti M1 was the first industrially produced typewriter in Italy designed by Camillo Olivetti . It apparently resembles a typewriter produced by Underwood , but it contains a long series of improvements and patents that make it particularly original, making it a worthy progenitor of all future Olivetti production. At the 1911 Turin International Exhibition , Olivetti presented the first two Olivetti M1 model machines . In the same year, the company won its first important order for 100 machines for the Ministry of the Navy . In 1912 , it also secured a large order for the Ministry of Posts and Telegraphs." (https://www.storiaolivetti.it/)

Fig 72: M1 Typewriter
Retrived from : https://www.corrierenerd.it/olivetti-m1-la-prima-macchina-da-scrivere-italiana/

1933 - 58

ICO Workshops

"The first extension of the Red Brick nucleus, clearly visible in Via Jervis, was built between 1934 and 1936 to the design of Luigi Figini and Gino Pollini and included the Ufficio Fabbricati Industriali (Industrial Building Office) of the company. The extension includes the construction of a reinforced concrete beam bridge with a service block behind which is a concrete and glazed wall visible from the road. This also signals the location of a large room covered by shed roofs in the rear area which hosts the new workshop. The second extension (1936-1937; and 1937-1939) is a three floor factory block. It features an entrance into the factory and a glass façade consisting of two parall

el glazed walls. The walls are covered by small ceramic grès tiles like the first extension. The exterior glazed walls consist of an iron frame divided into 18 squares, which are repeated in order to cover the surface. The frames are positioned on the horizontal line of the ceiling and run in front of the structural pillars hence, giving the impression of continuous hung wall. The window casements consist of six 3 x 3 frames, the lower ones are fixed whereas the others can be opened with sashes (traces of the opening mechanisms can still be seen in the gaps in the wall). The third extension (1939-1941) designed at a time of pre World War II production is characterized by a new three floor factory block with a basement at an angle to the first one in order to follow the stretch of Via Jervis. The third extension employs many designs for solving the connection and joining problems between the different extensions carried out and for emphasising the modern style of the building. The fourth extension (1955-1958), also named New ICO, is a 4 floor building featuring a closed square layout incorporating the structure of the Olivetti Mechanics Workshops (OMO), which can easily be seen behind the glass curtain of the existing building on the side of the Strada Monte Navale. In the original design by Figini and Pollini the façades have industrially produced frames with wider openings than those in previous extensions. On the glass façades are concrete flower boxes which can still be seen although they are no longer in use. These, together with the yellow and white grès ceramic vertical elements which house the access stairs, goods lifts and service areas, characterise the façade."(www.ivreacittaindustriale.it)

Fig 73: Olivetti Nursery School
Retrived from : https://audio.fondazioneadrianolivetti.it

Fig 74: ICO First Expansion
Retrived from : https://www.ivreacittaindustriale.it

Fig 75: New ICO
Retrived from : https://www.ivreacittaindustriale.it

1939 - 41

Olivetti Nursery School

"This building was constructed between 1939 and 1941 and designed by the architects Figini and Pollini. The interior furnishings were designed by the Olivetti in-house Technical Office in those days managed by the architect Gian Antonio Bernasconi. Hidden by the boxwood hedges which shelter it from the outside, this building is still used today for children's services under the management of the Municipality of Ivrea. Alongside the central building on the nearby hill with its visible diorite rocks and Mediterranean vegetation is the nursery playground which cannot be seen from the road and can be reached over a ramp from the inside courtyard of the nursery. Packed with Le Corbusier quotations and reflections on the classic roots of modern architecture, the nursery is an important step in the research of the two Milanese architects. Together with the ICO workshop block and the first projects for the industrial city of Ivrea, this building soon appeared in publications of magazines such as "Casabella-costruzioni" to promote the debate on modern architecture." (www.ivreacittaindustriale.it)

1939 - 41

Borgo Olivetti Social Housing

“The building was the first to be built in a vast national building programme launched by the Fascist Institute for social housing which in Ivrea saw the active participation of Olivetti. Destined to host 24 families of employees in flats laid out over 4 floors above ground, the building runs along a north-south axis with the living rooms and bedrooms set out on the south side and the bathrooms and stairwells on the opposite side.

The ground floor with service areas is interrupted by the entrance stairs allowing to access the upper storey on which are the front doors to the apartments. The trees in between the social housing and the nursery were part of the original design and appeared in a subsequent project in 1951 by Luigi Figini. The formal composition of the building is in harmony with modern international architecture models from the 1920s and 1930s and can be attributed to simple geometric shapes which in social housing is influenced by the room types and construction as shown in the use of the wood finishes on the balconies and the stairwells which employ solutions adopted in current middle-class buildings.” (www.ivreacittaindustriale.it)

Fig 78: Houses for larger families
Retrived from : https://www.ivreacittaindustriale.it

Fig 76: Borgo Olivetti social Housing
Retrived from : https://www.ivreacittaindustriale.it

Fig 77: Borgo Olivetti social Housing Facade
Retrived from : https://www.ivreacittaindustriale.it

1940

Houses for Large Families

“The design was by Luigi Figini and Gino Pollini (1939 – 1941) and was the result of an exhaustive study of factory worker housing which from 1934 involved the two Milanese architects in exploring a range of designs and studies to shape the industrial city of Ivrea.
The flat roofs and external plastered and painted walls, which today are white, characterise the volume of these buildings clearly inspired by rationalist architectural models. The homes are set out on three floors with the stair blocks and bathrooms connected to the north whilst every house has its own small garden-vegetable garden and since 1951 a small garage. This nucleus of buildings, like the ICO Workshops, is well-known on professional and intellectual circuits where pre and post World War II modern architecture is discussed.” (www.ivreacittaindustriale.it)

1948

Olivetti Lexikon 80 Typewriter

“It was designed in 1948 by the architect and designer Marcello Nizzoli, who had been working with the Ivrea company since 1938, together with the engineer Giuseppe Beccio.
The very first version, released in 1948, was simply marked as M80.The Lexikon (together with its twin M80) was the heir to the Olivetti M40 model , released in 1930 and designed by Camillo Olivetti and Gino Levi Martinoli.Approximately 780,000 units were produced until 1959, when it was replaced by the Diaspron 82. In addition to the typing keys, the basic version included a space bar , a column control bar , two shift keys , a shift-fix key , a return key and a tab key . The decimal tabulator version, on the other hand, instead of the column control bar, had 8 decimal tabulator keys.”
(https://www.storiaolivetti.it/)

Fig 79: Lexikon 80 Typewriter
Retrived from : https://www.storiaolivetti.it/

Fig 80: Lettera 22 1957 Christmas advertisement
Retrived from : https://www.storiaolivetti.it/

Fig 81: Production of the Lettera 22 in Aglié Factory
Retrived from : https://www.storiaolivetti.it/

1950

Olivetti Lettera 22 Typewriter

“The Olivetti Lettera 22 is a portable mechanical typewriter designed by Marcello Nizzoli in 1950 or, according to the company’s current owner Telecom Italia, 1950. This typewriter was very popular in Italy, receiving the Compasso d’Oro prize in 1954. In 1959 the Illinois Institute of Technology chose the Lettera 22 as the best designed product of the last 100 years. The typewriter is about 27x37x8 cm (with the carriage return lever adding another 1–2 centimeters in height), making it quite portable for the time’s standards, even though its 3.7 kg (8.2 lb) weight may somewhat limit portability. The Lettera 22 was rebranded and marketed in the United States as the Sears Courier and Diplomat, with red bodywork and white keys. It was succeeded in 1963 by the Olivetti Lettera 32.”
(https://www.storiaolivetti.it/)

1951 - 55

Olivetti Study and Research Centre

“This building has three floors. With its large terraces it originally hosted training courses for Olivetti mechanical designers, a fundamental item of this company’s industrial and social policies. The architectural design was by architect Eduardo Vittoria (1951-1954) and the structural design by Pier Achille Caponago del Monte. The plan of the building is based on four wings asymmetric in terms of width (from 9 to 12 metres) positioned inside the central access block containing the stairs, goods lifts and service rooms. The floors has different office areas which face on to the terraces and the large rooms destined for draughtsmen. The exterior is distinctive for the contrasting white colour of the horizontal beams and the vertical pillars with the blue gloss klinker covered walls which show off the structure of the building. The red cast iron window casements were changed in the subsequent refurbishing programme for the IDI by Sottsass Jr. The use of colour follows the linguistic style that Vittoria also used in other Olivetti buildings to emphasise the freedom of the architectural research aimed at overcoming functional principles.”
(www.ivreacittaindustriale.it)

Fig 83: Company canteen and Residential club
Retrived from : https://www.ivreacittaindustriale.it

Fig 84: Company canteen and Residential club stairways
Retrived from : https://www.ivreacittaindustriale.it

Fig 82: Study and Research Centre
Retrived from : https://www.ivreacittaindustriale.it

1953 - 61

Company canteen and Residential club

“In the rear area of the workshop complex is the company canteen, a building immersed in the green land and set out on three floors on the north-east side and four floors on the south-east and southwest sides. The building was designed by Ignazio Gardella (1953-1961), with the participation of the production engineer Roberto Guiducci in the design and building phases. The building was destined to receive up to 1,600 people in its common room serving up to 9,000 meals a day. In the large entrance atrium was an open space for hosting a range of recreational and cultural activities which were part of daily work life in the factory. In the upper rooms the areas were destined for other services for the workers, rest and reading areas. The central block of the canteen, completely encircled by large walkable balconies that pass across footbridges and stairs, links up the different levels to give direct access on to the green area of the hill and the recreation and rest area. Along the perimeter of the first floor runs a foundation where one can stop on the balconies and contemplate the landscape just as from the large windows which even if interrupted by the pillars provide a feeling of continuity protected by the balcony eaves.”
(www.ivreacittaindustriale.it)

1953 - 55

Villa Capellaro

“Designed between 1953 and 1955 by Marcello Nizzoli and Giuseppe Mario Oliveri, Villa Capellaro is part of the nucleus of villas designed for the factory executives by the architects already working in Ivrea on jobs commissioned by Olivetti. Villa Capellaro is distinctive for the research done into a special volumetric composition accentuated by the different solutions used for treating the façades (stone and plasterwork). As in the other buildings designed by Nizzoli, many elements of the composition often considered to be secondary take on the role of characterizing the building and in this case we are speaking of the positioning of the open cement and stone masonry of the retaining wall and the horizontal beams with brise-soleil being prominent features of this architecture.” (www.ivreacittaindustriale.it)

Fig 87: Villa Capellaro
Retrived from : https://www.ivreacittaindustriale.it/

1955

Ex Carpentary

“The former joinery is easily recognized by its coloured brise-soleil façade. This façade consists of a triple row of brise-soleil in fins of fibre cement supported by metal frames which depending on their inclination reflect the glazed surfaces of the ICO workshops adding movement to the façades and creating an original perception of Via Jervis. The 1955 design was by Ottavio Cascio, a leading technician then manager of the Olivetti Technical Office, who used the brise-soleil fins on the façade as a composition figure in many of the building architectures in Ivrea such as the Olivetti industrial area in San Bernardo.” (www.ivreacittaindustriale.it)

Fig 85: Social services centre
Retrived from : https://www.ivreacittaindustriale.it/

Fig 86: Ex Carpentary Building
Retrived from : https://www.ivreacittaindustriale.it/

1954 - 59

Social Services Centre

“The building running parallel to the ICO Workshops consists of two blocks joined together by an independent vertical block to allow it to follow the road and by its hexagonal layout seen also in the open structure of the building with three staggered floors. The ground floor is characterised by a portico supported by a hexagonal pillar positioned every two nodes along the structural framework hence, demanding the visible doubling up of the connecting beam. The portico is scattered with light wells and slits in the covering to open up the space to the sky. The varying light and vegetation contribute to an open and transparent architecture to satisfy the public demand. The building can be accessed on all levels from the ground floor using the stairs and raised walkways, from the first floor with its large walkable terrace and from the stair ramps that link the terrace to the solarium and all the areas initially designed to be open to the public.” (www.ivreacittaindustriale.it)

1956 - 59

ICO Thermal power plant

“Located on a podium to circumvent the difference in height of the road, the building is made up of three blocks arranged in a C around a central patio with a transparent lightweight shed roof overhung in iron and glass where the control station is located. Above these are burnished steel plate chimneys arranged in accordance with the three marine type boilers which have now been removed that supplied the necessary power to the whole industrial complex. Every area hosts a special type of machinery used for producing energy which was designed by taking into account the space needed for the internal movements and the loss of heat produced by the plants. From the exterior, similar to the other technical buildings for production design by Vittoria in Ivrea have, over time, become useful design models for the Olivetti Technical Office. The plant worked uninterruptedly from 1959 to 2003, before being replaced with a new cogeneration plant. The building is currently empty and asbestos removal interventions are underway.” (www.ivreacittaindustriale.it)

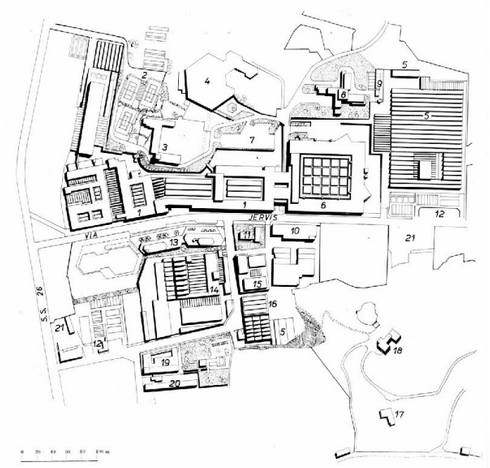


Fig 89: General plan of the Olivetti complex along Via Jervis by the end of the 1950s. Retrived from : https://www.storiaolivetti.it/articolo/44-le-officine-olivetti-a-i-vrea-1896-1958/

Fig 88: ICO Thermal power plant
Retrived from : https://www.ivreacittaindustriale.it/

1959 - 64

Olivetti Office Building

“The building plan is laid out in three blocks, with angles of 120 degrees from one to the other and varying spans from 16 to 20 metres, connected by a central element. The central block is the hub of the building hosting a large majestic staircase similar to many offices built in those years for large industrial groups. The ground floor hosts the C wing to the north-east of the building, a large space destined for presenting Olivetti products. At the end is a large company meeting room which can still be seen today. In the A wing on the south-west is the guest area (designed by Ettore Sottsass Jr., 1968). The use of the façade decorations with the marble sculptures and prestigious finishes inside the building (the landings are covered in boiseries which can still be seen and the marble in a variety of veining and shades was used for the corridors to in the different floors) emphasizes the majestic nature of the building according to the representative standards and the stylistic elements of International style at the end of the 50s. The Data Processing Centre (CED), finished in 1962, is in the area to the rear of the Olivetti Office Building and is currently hidden by the New Olivetti Office Building.” (www.ivreacittaindustriale.it)

1962

Marxer Building

“The complex stands near to Ivrea, on the road to Castellamonte, at the centre of an area designed as a park.The architectural complex is structured into 3 volumes: the production building, the volume used for research,and the animal breeding department. The first three buildings are connected by underground spaces where, in the central zone, there is a garage. All the volumes are made of exposed reinforced concrete.The elevations most exposed to the sun are protected by reinforced concrete screens.The southeast façade of the research institute, requiring more natural lighting, is not screened.” (Galardi,1967)

Fig 92: Marxer Pharmaceutical Building
Photo by the author

1968 - 72

Ex - SERTEC Building

“The former Sertec building housed the engineering of services for civil and industrial construction (from the installation design to structural calculations) founded by Antonio Migliasso, the engineer who followed all Olivetti building sites in Italy and abroad from 1948. The building was notable for its time, both for the function of Sertec as well as for the function of the Tekne company founded by Roberto Guiducci, a leading Olivetti technician and intellectual. ekne is one of the Italian engineering companies, rooted in the technical departments of large industrial groups, which collaborated in many ways and on many different levels to the urban-

Fig 90: Olivetti office Building
Retrived from : https://www.ivreacittaindustriale.it/

Fig 91: Olivetti office Building aerial view
Retrived from : https://www.ivreacittaindustriale.it/

1963

Olivetti Lettera 32 Typewriter

“Designed by engineer Adriano Menicanti, under the guidance of Natale Cappellaro, the bodywork was the work of the architect and designer Marcello Nizzoli and conceived as the heir to the Lettera 22 , the 32 was very popular among journalists and students and had great commercial success throughout the world. With a base of 35 cm, a depth of 34 cm and a height of about 10 cm, the Lettera 32 was very suitable for transport by the standards of the time; its weight (just over 5.5 kg) was also functional in this sense.” (https://www.storiaolivetti.it/)

Fig 93: Olivetti Lettera 32 Typewriter
Retrived from : https://www.storiaolivetti.it/

context construction process and the modernisation of Italy and other countries. Hence, this building became particularly important both for tracking the historic activities of the processes and players rarely explored when constructing an industrial city and for the design by Milanese engineer Ezio Sgrelli (1968), who belongs to the few with 'brutalist' roots in Italy. This building, an extension of a pre-existing building, is set on a hill and is externally distinctive for its visible reinforced concrete vertical lift tower onto which the strongly projecting corridors were grafted and by the strongly jutting concrete projecting roof of the entrance on the ground floor. The inside, with an elegant office crowning the last floor, has an oval staircase leading to the floors set back with respect to the line of the façade, following the contours of the hill on which the building stands. The inside also features graphics and the use of red, in harmony with the pop culture of the time."
(www.ivreacittaindustriale.it)

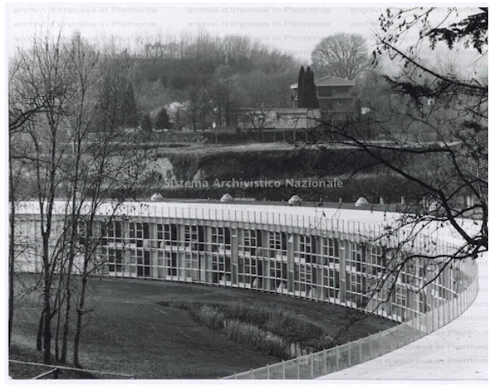


Fig 95: Unita Resideziale Ovest building
Retrived from : https://www.architectural-review.com/

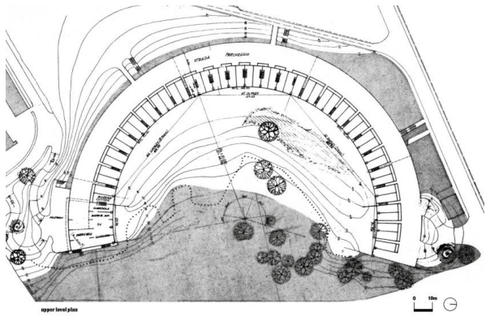


Fig 90: Unita Residenziale Ovest Plan
Retrived from : https://www.architectural-review.com/

Fig 94: EX SERTEC Building
Retrived from : https://www.ivreacittaindustriale.it/

1968 - 72

Unita Residenziale Ovest

"The western residential unit has been designed in 1968 by Roberto Gabetti and Aimaro Oreglia d'Isola. This Western residential unit is better known by the inhabitants and visitors to Ivrea as "Talponia" ("Molehill") and had to provide accommodation for temporarily resident Olivetti employees in Ivrea.

The building was constructed on the edges of the Villa Casana park and exploited the artificially created sloping ground to make a complex on two floors with a semicircular layout. The foundations are completely underground and around 300 metres long. The building hosts 13 duplex apartments and 72 single apartments which are served by a fully covered road which can be identified from the outside by its plexiglas domes. Today the building has been divided up into 81 individual properties. Like the New Olivetti Office Building, it marked the evolution of Ivrea from an industrial city to a service industry city between the 1970s and 1980s." (www.ivreacittaindustriale.it)

1969

Olivetti Valentine

"The Olivetti Valentine is a portable, manual typewriter manufactured and marketed by the Italian company, Olivetti, that combined the company's Lettera 32 internal typewriter mechanicals with signature red, glossy plastic bodywork and matching plastic case. Designed in 1968 by Olivetti's Austrian-born consultant, Ettore Sottsass (father of the Memphis Group), who was assisted by Perry A. King and Albert Leclerc, the typewriter was introduced in 1969 and was one of the earliest and most iconic plastic-bodied typewriters. Believing design should not merely be functional but also sensual and emotionally appealing, Sottsass prototyped his ideas in Moplen (an early trademarked polypropylene), proposing a very basic but boldly colored and highly affordable design: eliminating lower case letters, exposing its ribbon caps and forgoing a bell for the right hand margin. Sottsass lavished cost-effective and attentive details throughout the design, going so far as to carefully resolve in sketch studies, the negative space around each carriage end." (www.ivreacittaindustriale.it)

Fig 97: New Office Building
Retrived from : https://www.ivreacittaindustriale.it/

Fig 96: Olivetti Valentine Printer
Retrived from : https://www.design-museum.de/en/collection.html

1985 - 88

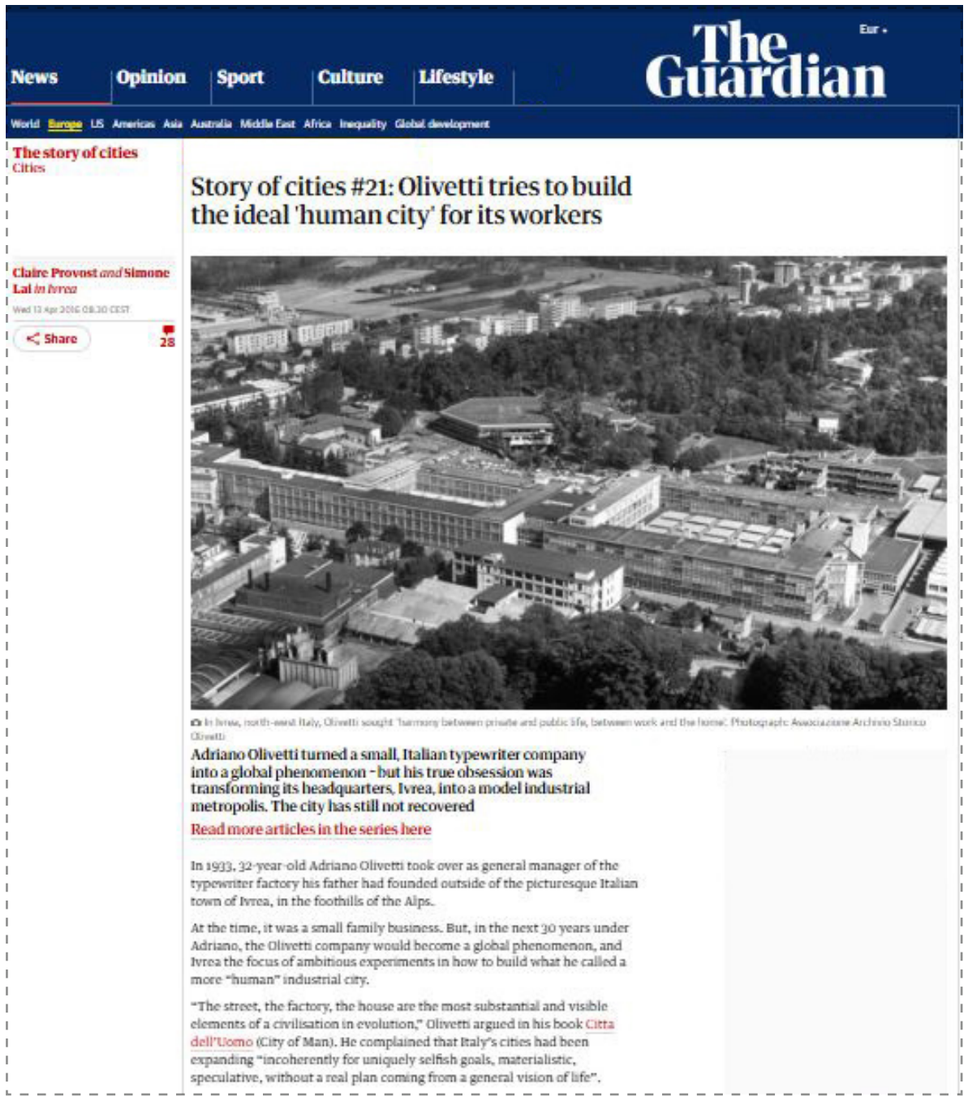
New Olivetti Office Building

"Designed by architect Gino Valle (1985-1988), the whole building can be seen when travelling along Via Jervis to the city centre. It has five blocks creating a wide curve laid back from the road connecting with the Olivetti Office Building.

The building is six floors high and has a façade that alternates long windows – marked by round pillars and a stretch of cement sidewalks – and striped brick masonry. The recessed white PVC windows and screened by pale coloured curtains to protect each glazed module from the sun thus changing the façade depending on the way in which they are opened or closed.

This building completes the construction of the area and the development of Ivrea into a city offering industrial services between the 1970s and 1980s underpinning Olivetti's strong company corporate identity." (www.ivreacittaindustriale.it)

2.5 News Reports on Olivetti Buildings



News | Opinion | Sport | Culture | Lifestyle — The Guardian

World | Europe | US | Americas | Asia | Australia | Middle East | Africa | Inequality | Global development

The story of cities
Cities

Story of cities #21: Olivetti tries to build the ideal 'human city' for its workers

Claire Provost and Simone Lal in Ivrea

Wed 13 Apr 2016 08.30 CEST

Share 28

In Ivrea, north-west Italy, Olivetti sought harmony between private and public life, between work and the home. Photograph: Associazione Archivio Storico Olivetti

Adriano Olivetti turned a small, Italian typewriter company into a global phenomenon - but his true obsession was transforming its headquarters, Ivrea, into a model industrial metropolis. The city has still not recovered

Read more articles in the series here

In 1933, 32-year-old Adriano Olivetti took over as general manager of the typewriter factory his father had founded outside of the picturesque Italian town of Ivrea, in the foothills of the Alps.

At the time, it was a small family business. But, in the next 30 years under Adriano, the Olivetti company would become a global phenomenon, and Ivrea the focus of ambitious experiments in how to build what he called a more "human" industrial city.

"The street, the factory, the house are the most substantial and visible elements of a civilisation in evolution," Olivetti argued in his book Città dell'Uomo (City of Man). He complained that Italy's cities had been expanding "incoherently for uniquely selfish goals, materialistic, speculative, without a real plan coming from a general vision of life".

Fig. 98: Article published in Guardian magazine on 13 April, 2016
Source - https://www.theguardian.com/cities/2016/apr/13/story-cities-21-adriano-olivetti-ivrea-ital

Once symbols of architectural brilliance and industrial innovation, the Olivetti buildings in Ivrea have faced many difficulties since the company's downfall. Many of these famous buildings are now deserted and left empty, as noted in a 2016 article in The Guardian, which reflects a larger effort to conserve and repurpose industrial heritage sites. Similarly, a 2018 report on the World Heritage Site of Ivrea notes that a substantial portion of the former industrial and corporate buildings are vacant or underused, emphasizing the urgency for maintenance and adaptive reuse strategies.

The New York Times

Utopia, Abandoned

The Italian town Ivrea was once a model for workers' rights and progressive design. Now, it's both a cautionary tale and evidence of a grand experiment in making labor humane.

The La Serra Complex in Ivrea, Italy, designed by Ignio Cappai and Pietro Mainardis, opened in 1976; it was a social gathering space for Olivetti employees that included a hotel and movie theater. Nick Belkin

By Nikil Saval
Published Aug. 28, 2019 Updated Sept. 10, 2019

IN THE 1950S, the small town of Ivrea, which is about an hour's train ride north of Turin, became the site of an unheralded experiment in living and working. Olivetti, a renowned designer and manufacturer of typewriters and accounting machines, decided to provide for its employees through retirement. They were given the opportunity to take classes at an on-site sale and trade school; their lunchtime hours would be filled with speeches or performances from visiting dignitaries (actors, musicians, poets); and they would receive a substantial pension upon retirement. They would be housed, if they liked, in Olivetti-constructed modern homes and apartments. Their children would receive free day care, and expecting mothers would be granted 10 months maternity leave. July would be a time of holiday, so that workers with homes in the surrounding countryside could tend to small farms — it was important to the company that workers not feel a division between city and country. Italy's best Modernist architects would be hired to design in the Modernist style: Factories, canteens, offices and study areas would be airy palaces of glass curtain walls, flat concrete roofs and glazed brick tile. It would be a model for the nation, and for the world.

All of this was the initiative of Adriano Olivetti, who had inherited the company from his father, Camillo, who founded it in the early

Fig. 99: Article published in Newyork times on 28 August, 2019
Source - https://www.nytimes.com/2019/08/28/t-magazine/olivetti-typewriters-ivrea-italy.html

Recent efforts have aimed to address these issues through sustainable redevelopment. A European Union initiative proposes retrofitting three emblematic buildings—the Mattoni Rossi factory, the ICO complex, and the Olivetti office building—with advanced environmental technologies. Such initiatives highlight a commitment to revitalizing Ivrea's industrial legacy, balancing historical preservation with contemporary sustainability goals.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

03| UNESCO HERITAGE & MARXER SITE

3.1 UNESCO Heritage and Marxer site

Time for commute

15 Minutes

8 Minutes

17 Minutes

1 Hour

Distance

The Marxer Pharmaceutical Building is located approximately 4.8 km from Ivrea's UNESCO-listed Olivetti industrial heritage sites. The commute time varies based on the mode of transport, with travel durations ranging from 8 to 17 minutes. The proximity of the Marxer site to key Olivetti buildings, such as the ICO Offices, Social Services Centre, and Residential Units, strengthens its connection to Ivrea's industrial heritage.

Accessibility

Accessibility to the Marxer site is facilitated by Provincial Road 222 (Samone-Loranze), ensuring direct connectivity between the pharmaceutical complex and Ivrea's historic industrial district. Public transportation services also operate in the area, with local bus routes providing access between Ivrea's main transit hubs and the Marxer site

List of Buildings

1. Marxer Pharmaceutical Building
2. ICO Offices
3. Study and Research Centre
4. Mensa and Recreational Club
5. Social services Centre
6. Thermal Power plant
7. Nursery school
8. Borgo Olivetti social Housing
9. Villa Casana
10. West Residential Unit
11. Villa Capellaro
12. Four room houses
13. Building 18 Apartments
14. Villa Rossi
15. New Olivetti Office Building
16. Olivetti Office Building

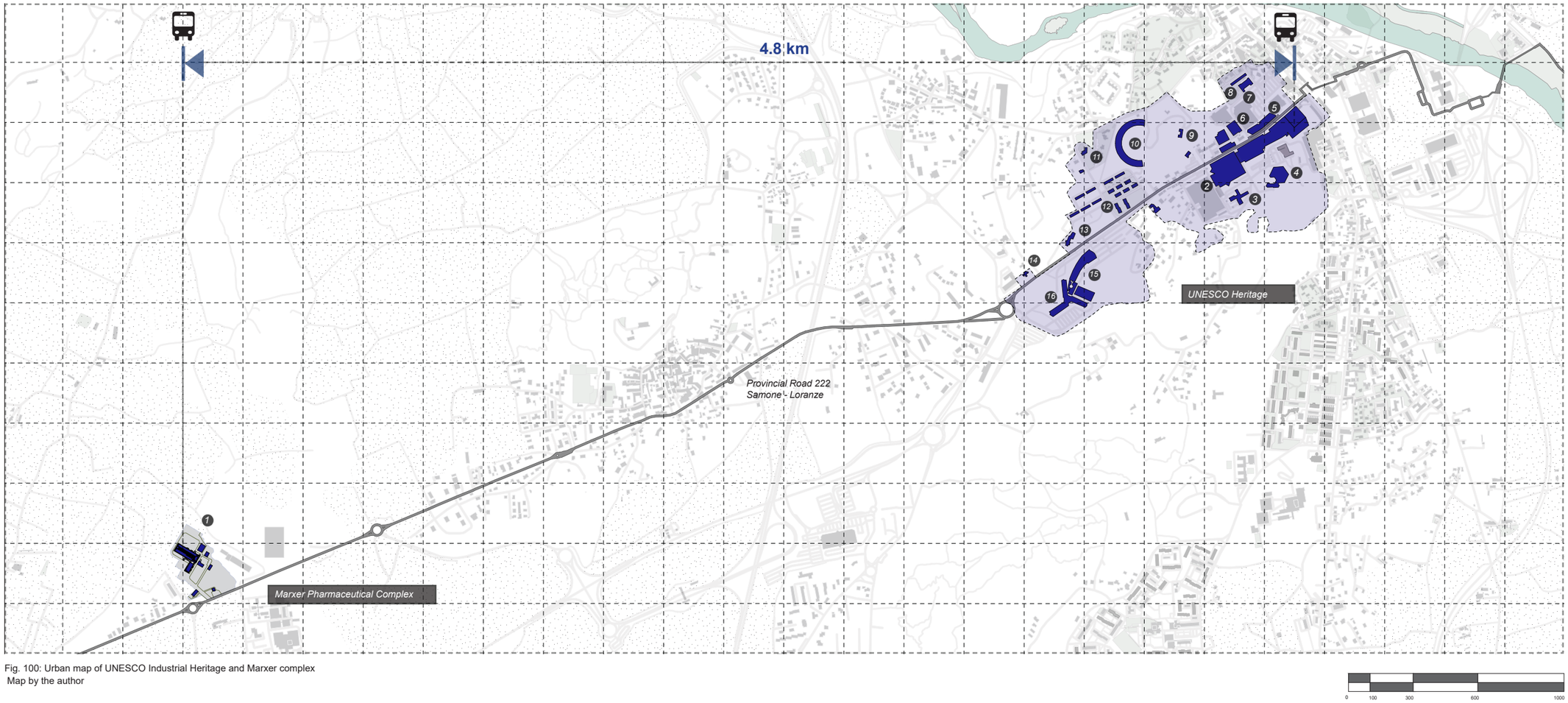


Fig. 100: Urban map of UNESCO Industrial Heritage and Marxer complex
Map by the author

3.2 Typologies of Industrial Heritage

"The buildings within Ivrea's UNESCO industrial heritage zone represent a diverse range of typologies that served distinct purposes during the Olivetti era. These include industrial facilities like the ICO Offices and the Marxer Pharmaceutical Building, administrative spaces such as the Old and New Olivetti Office Buildings, and residential units like the Borgo Olivetti Social Housing and Villa Capellaro. Additionally, the zone contains social infrastructure such as the Mensa (canteen), Social Services Centre, and Nursery School, which highlight Olivetti's progressive vision for worker welfare. The presence of research facilities, including the Olivetti Study and Research Centre, emphasizes the company's commitment to innovation. These varied typologies reflect the integration of industry, administration, and community life in Olivetti's model of urban planning"(UNESCO,2018)

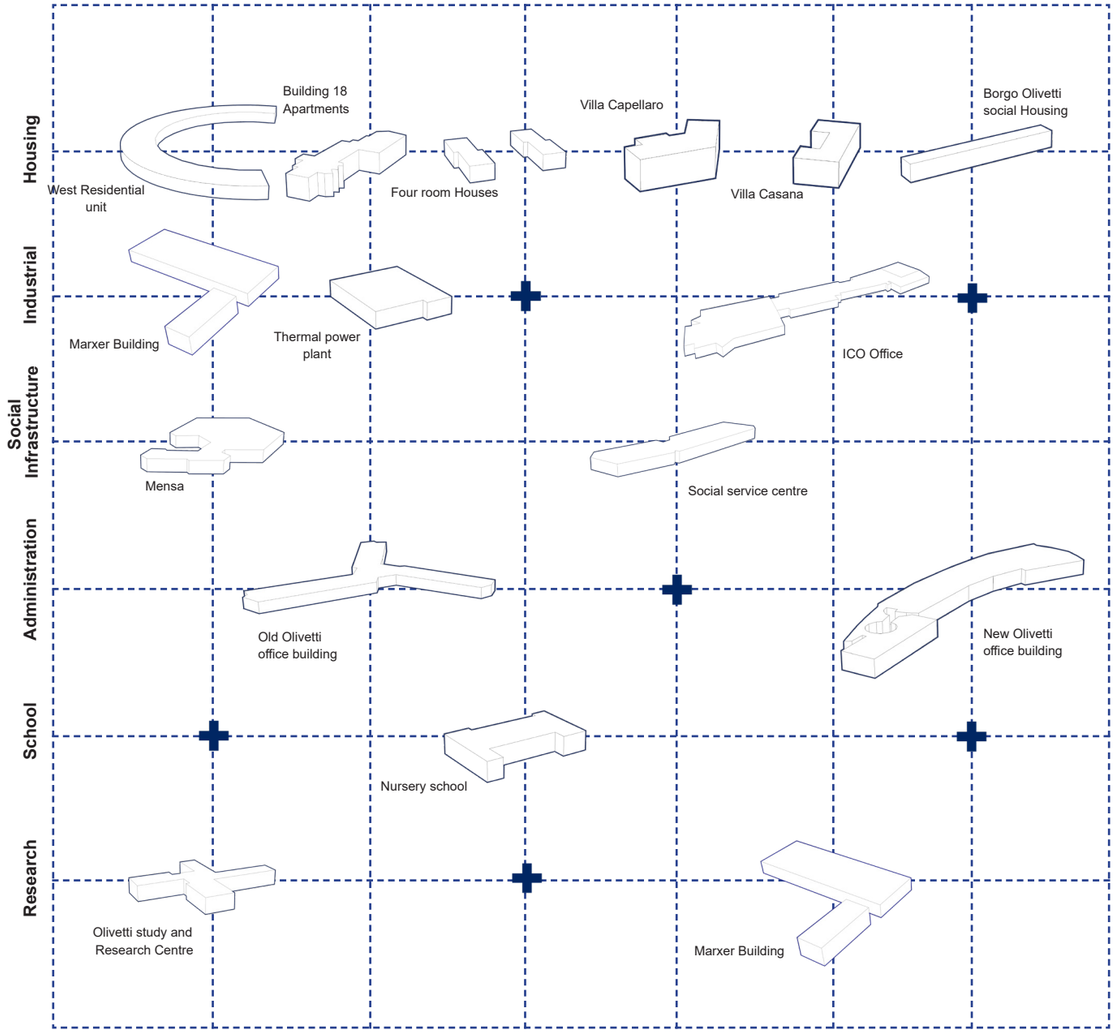


Fig. 101: Typologies of Buildings in UNESCO Zone
Created by author

3.3 Ownership

"The ownership structure of the industrial heritage buildings in Ivrea varies, with some properties remaining under public or institutional management, while others have been acquired by private entities for redevelopment. The Marxer Pharmaceutical Building, for example, has been taken over by the Consorzio Insediamenti Produttivi (CIP), a mixed public-private organization focused on revitalizing industrial areas. Other buildings, such as the ICO Offices and residential units, may still be under governmental or corporate ownership"(Ivrea Management Plan,2023)

Building	Owner	Public		Private	Estimated GFA surface in m²
		Regional	Municipal		
Centro servizi sociali (Social Services Centre)	Private company			x	3.210,00
Asilo Nido di Borgo Olivetti (Nursery school in Borgo Olivetti)	Municipality of Ivrea		x		1.160,00
Casa Popolare di Borgo Olivetti (Borgo Olivetti Social Housing)	Private			x	1.740,00
Centrale termica (Central heating plant)	Investment fund			x	1.860,00
Palazzo Uffici Olivetti (Olivetti office building)	Investment fund			x	31.150,00
CED - Centro Elaborazione Dati (Data Processing Centre)	Private company			x	4.720,00
Nuovo Palazzo Uffici Olivetti (New Olivetti office building)	Private company			x	17.844,00
Brise soleil, Ex Falegnameria (oggi uffici ARPA - facciata) (Brise-soleil, former joinery, now ARPA offices - façade))	Public body	x			3.756,00
Edificio ex Uffici Sertec (Former Sertec office building)	Private company			x	1.399,00
Edificio a 18 alloggi (House with 18 flats)	Private			x	2.654,00
Case per famiglie numerose (Houses for large families)	Private			x	5.943,00
Case unifamiliari per dirigenti (Single family homes for executives)	Private			x	1.380,00
Casa Quattro alloggi (Building with four homes)	Private			x	1.732,00
Case per operai (Borgo Olivetti workers houses)	Private			x	1.339,75
Unità Residenziale Ovest (Talponia) (Western Residential Unit (Talponia))	Private			x	6.816,00
Villa Capellaro	Private			x	242,00
Edificio Mattoni Rossi (Red brick building)	Investment fund				8.100,00
Officine ICO I ampliamento (ICO workshops I extension)	Investment fund			x	39.473,00
Officine ICO II ampliamento (ICO workshops II extension)	Investment fund			x	
Officine ICO III ampliamento (ICO workshops III extension)	Investment fund			x	
Officine ICO IV ampliamento (NUOVA ICO) (ICO workshops IV extension (NEW ICO)	Investment fund			x	
Officine ICO copertura cortile (Officine H) (ICO workshops courtyard (H workshop))	Investment fund			x	
Officine ICO - Università degli Studi di Torino (ICO workshops - University of Turin)	Municipality of Ivrea		x		2.116,66
Mensa aziendale e circolo ricreativo (tribunette) (Company canteen and leisure centre (stand)	Private company			x	9.000,00
Centro studi ed esperienze Olivetti (Olivetti Study and Experience Centre)	Private company			x	2.990,00
Villa Prelle	Private			x	419,00
Condominio Fiò Bellot (Fiò Bellot Condominium)	Private			x	322,00

Fig. 102 Source : https://www.ivreacittaindustriale.it/nomination-file/nomination-file/2_Ivrea_Management_Plan.pdf

3.4

Industrial City of the 20th Century

“Ivrea is known as the “Industrial City of the 20th Century” due to its groundbreaking approach to industrial development, urban planning, and social welfare, largely driven by Olivetti. Under the leadership of Adriano Olivetti, the city became a model of innovation, where technological progress was seamlessly integrated with worker well-being. Unlike conventional industrial towns, Ivrea was designed with modernist architecture, efficient factories, high-quality worker housing, schools, healthcare facilities, and cultural centers, ensuring a harmonious balance between industry and community life. The city’s unique urban model, shaped by renowned architects, set a new standard for industrial settlements worldwide. In 2018, Ivrea was designated a UNESCO World Heritage Site in recognition of its outstanding contribution to 20th-century industrial development and urban planning. The title acknowledges Ivrea’s exceptional integration of industry, architecture, and social welfare, celebrated for its holistic approach to urban design, where factories, housing, and public services were designed to enhance the quality of life for its workers.” (UNESCO,2018).

Fig. 103: Inside Olivetti factories
Source - taccuinodicasabella.blogspot.com/

“The city’s modernist buildings, designed by architects like Luigi Figini and Gino Pollini, remain iconic symbols of progressive industrial design. Ivrea covers approximately 16 square kilometers and has around 25,000 inhabitants, yet its industrial legacy continues to influence urban planning globally. To further preserve and share this history, Ivrea features an Open Air Museum and exhibition spaces that allow visitors to explore the city’s industrial heritage. The city’s goal of fusing modernist architecture with industrial requirements is demonstrated by the Open Air Museum, which provides an immersive experience with Olivetti factory buildings, workers’ residences, and public areas. Along with Adriano Olivetti’s philosophy of fusing technology, design, and social responsibility, the exhibition spaces also showcase Olivetti’s groundbreaking products, such as typewriters and early computers. Ivrea is a potent illustration of how business and society can coexist peacefully, and these cultural sites provide a dynamic, interactive means of comprehending its revolutionary influence on the contemporary industrial landscape. Every year, about 50,000 people visit the Open Air Museum in Ivrea and its exhibition areas.”(UNESCO 2018)

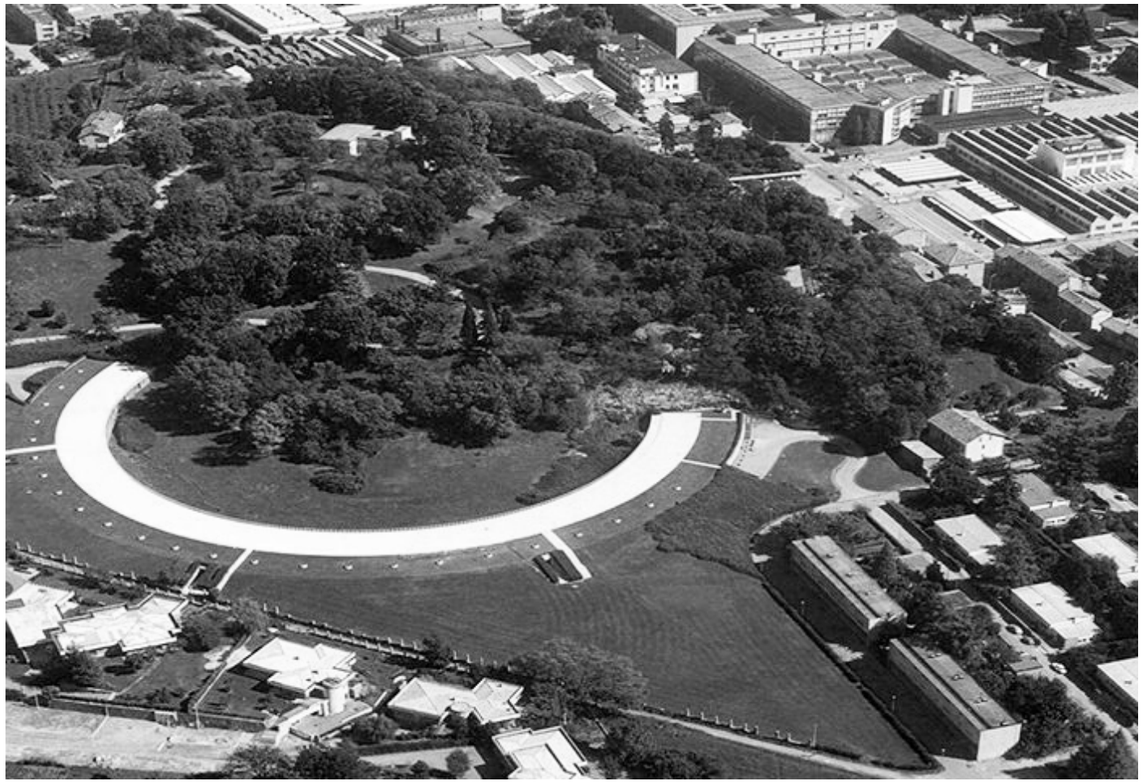
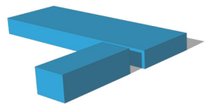


Fig. 104: Talponia aerial view
https://www.inarch.it/ivrea-di-adriano-olivetti-sito-patrimonio-dellumanita/

3.5 State of use Map

01. Marxer Pharmaceutical Building

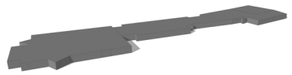
Current state - Abandoned



Closed in 1990. The building is left in an abandoned state from then. The building is surrounded by other industries. The industry close by the Marxer building has same ownership, keeping a watch on the illegal entry inside the building.

02. ICO Offices

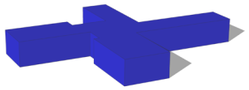
Current state - Exhibition and Event space



These offices are currently in use. They are located in the former Olivetti factories and host cultural events, social initiatives, training courses, and laboratories.

03. Study and Research Centre

Current state - Exhibition and Event space



It is part of the UNESCO zone and the building is accessible to visitors hosting events. There is a big auditorium space which is used till the date.

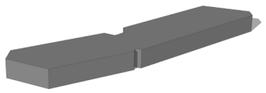
04. Mensa and Recreational Club

Current state - Office space

The head quarters of a start-up company is functioning inside the Ex-Mensa. The spaces inside the mensa are used as office and administration spaces.

05. Social Services Centre

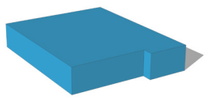
Current state - Multifunctional uses



Co working spaces, Agenzia delle Entrate,dental clinic and a cafe functioning inside the heritage structure. It is one of the most used building within the UNESCO Zone.

06. Thermal power plant

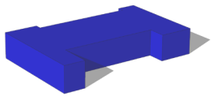
Current state - Abandoned



Designed by architect Eduardo Vittoria and inaugurated in 1959, operated continuously until 2003, providing essential energy to the Olivetti industrial complex. After its decommissioning in 2003, the building has remained vacant.

07. Nursery school

Current state - Proper functioning as per the initial use



Still used today for children's services under the management of the Municipality of Ivrea. The materials and spaces are in good condition supporting the use.

08. Borgo Olivetti social Housing

Current state - Proper functioning as per the initial use

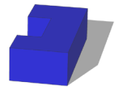
This multi-story building, featuring balcony access, was intended to accommodate 24 families of Olivetti employees. Still used today by the locaals in Ivrea.

Abandoned **Adaptive reuse** **Still in use**

Fig. 105 - 120 Created by author

9. Villa Casana

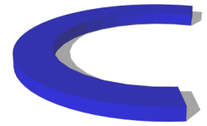
Current state - Exhibition space



Associazione Archivio Storico Olivetti is functioning inside de Villa Csana. Immersed in the greenery of the Villa Casana Park, the Olivetti Historical Archive welcomes the tourist a detailed narrative about the legacy of Olivetti.

10. West Residential Unit

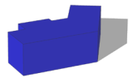
Current state - Residential space



As of the latest available information, Talponia has been subdivided into 81 individual properties. The building has been utilized for residential purposes, including rentals to university students, offering affordable living spaces that harmonize with the surrounding green spaces.

11. Villa Capellaro

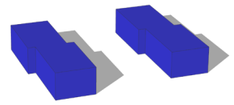
Current state - Proper functioning as per the initial use



As of the latest available information, Villa Capellaro is privately owned and continues to serve as a residential property. The villa is part of Ivrea's UNESCO World Heritage Site designation as an "Industrial City of the 20th Century," underscoring its historical and architectural significance.

12. Four room Houses

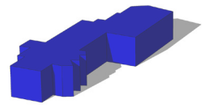
Current state - Proper functioning as per the initial use



These appear to be residential properties, with listings for sale available. They are fit to be used for the accomodation meeting current needs.

13. Building 18 Apartments

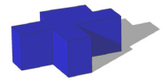
Current state - Proper functioning as per the initial use



An elegantly restored 18th-century building, now offering furnished open-space apartments. This aligns with Ivrea's broader architectural landscape, where many historic residential buildings, including those commissioned by Olivetti, remain in use as private residences.

14. Villa Rossi

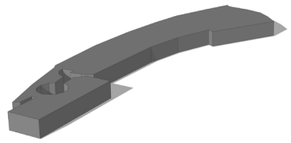
Current state - Proper functioning as per the initial use



"In 2020, after having been the residence of the client's family for over fifty years, Villa Rossi was entrusted to G Studio for a project to adapt it to contemporary needs. The project focused mainly on the conservative restoration of the facades, sunshades, metal parts and the surrounding wall."
(https://www.area-arch.it/)

15. New Olivetti office Building

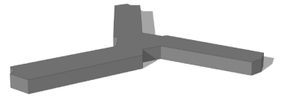
Current state - Multifunctional uses



As of 2018, the building was included in Ivrea's UNESCO World Heritage Site designation. Recent initiatives aim to retrofit this and other emblematic buildings in Ivrea with modern environmental technologies, balancing sustainability with the preservation of historical value.

16. Office Building

Current state - Multifunctional uses



The National Corporate Film Archive, Museum of Technology, various government offices, and part of the University of Turin are now housed in the property.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

Fig. 121: View of the Olivetti housing project for large families and the mountains in the background
Source - https://www.elledecor.com/it/

The Housing Project for Large Families in Ivrea, designed by Luigi Figini and Gino Pollini (1939-1941), was part of Olivetti's vision for worker-centric urban planning. Featuring rationalist architecture with flat roofs and simple geometric forms, the project provided comfortable living spaces with private gardens, reflecting a modern approach to industrial worker housing.

3.6 Services Map

The service map analysis highlights the existing gaps in Ivrea's infrastructure and how the project can provide essential services that benefit both the local community and visitors.

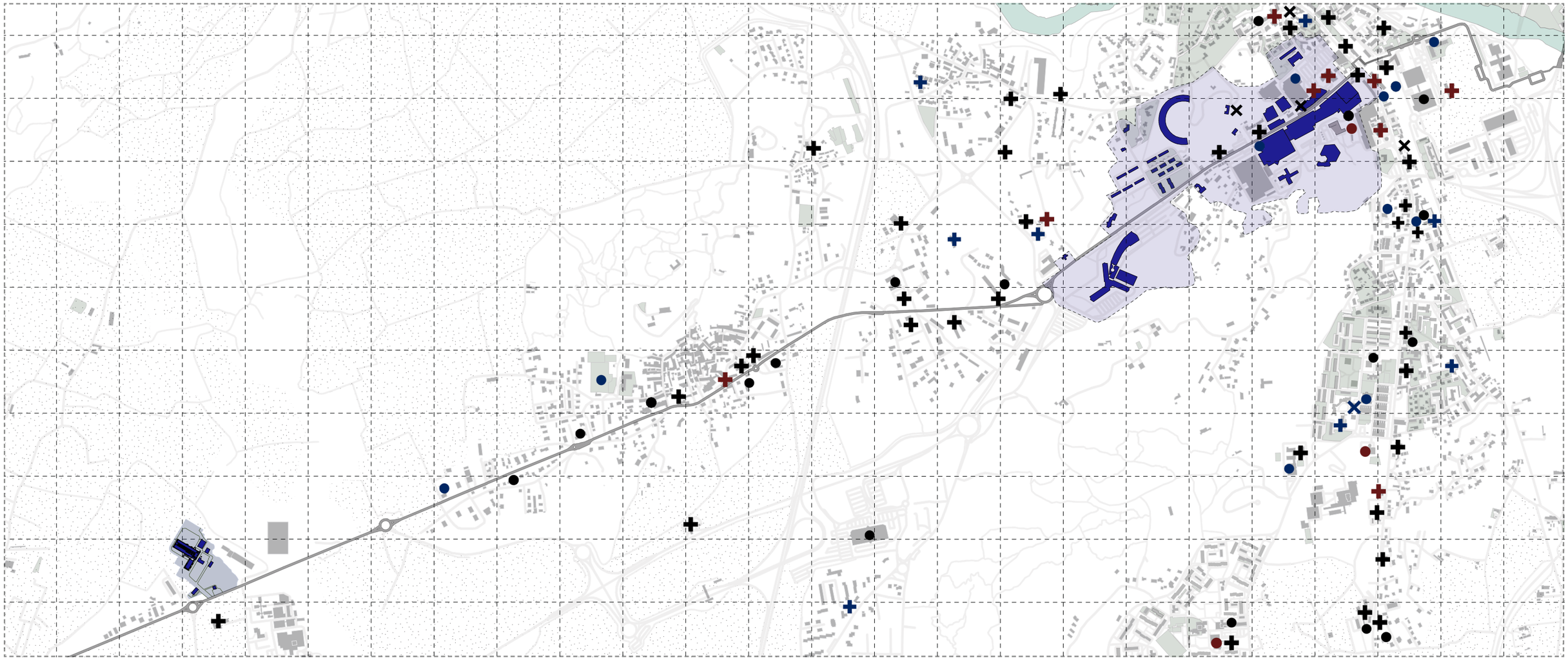


Fig. 122: Map by the author

Legend

- Food and Beverage
- Shopping
- Hotels
- Medical facilities
- Sports/ Gym
- Exhibition spaces/ Libraries
- Religious Buildings
- Movie Theatre

One of the primary problems with Ivrea's service infrastructure that keeps the city from fully utilizing its UNESCO heritage classification is the absence of visitor accommodations. Additionally, the lack of public libraries limits residents' and students' access to cultural and educational resources, which lowers the opportunity for knowledge sharing and community engagement. Another notable disparity is the lack of social and recreational spaces, which lowers public meetings and cultural events. By demonstrating that Ivrea's current amenities are confined to a few regions, the service map draws attention to the need for a more equitable distribution of services. It results in just the periphery being underserved.

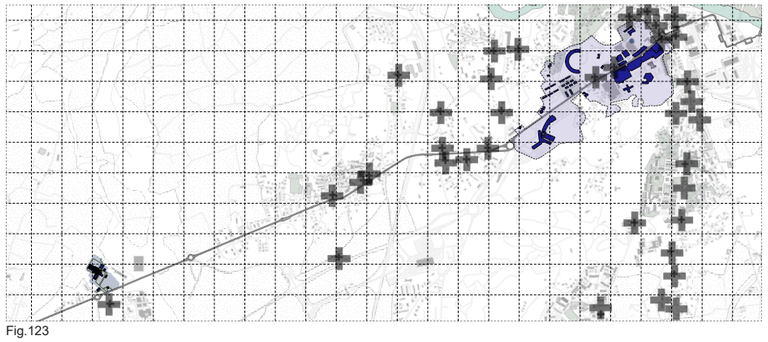


Fig.123

01. Food and Beverage

Ivrea offers a variety of food and beverage options, ranging from traditional Italian trattorias to modern cafés and bakeries. The culinary scene supports both locals and tourists, with restaurants featuring regional Piedmontese dishes. However, expanding diverse dining experiences near cultural and heritage sites could further enhance visitor engagement.

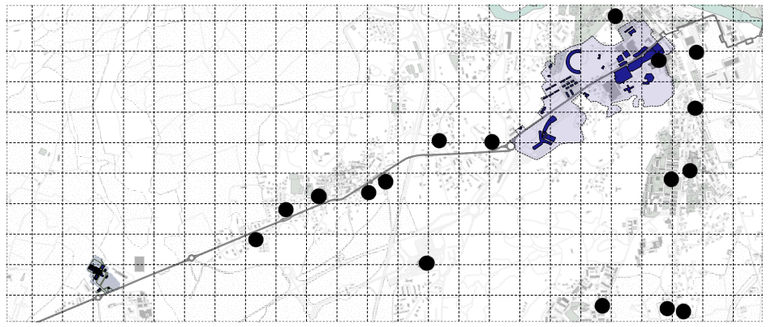


Fig.124

02. Shopping

The city has a mix of small boutiques, local markets, and modern retail outlets that cater to daily needs and tourists looking for unique regional products. While shopping areas are well distributed, strengthening commercial activity near heritage sites can create a more vibrant and economically sustainable urban core.

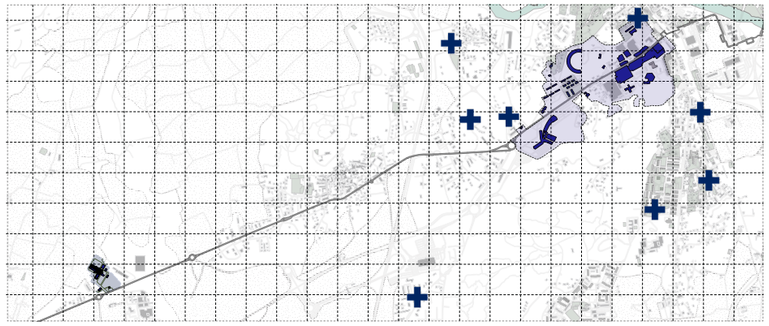


Fig.125

03. Hotels

Accommodation options in Ivrea include a selection of hotels, guesthouses, and B&Bs. However, with the city's growing potential as a cultural and architectural tourism destination, there is a need for more diverse lodging options, including boutique hotels and adaptive reuse of historical buildings for accommodation.

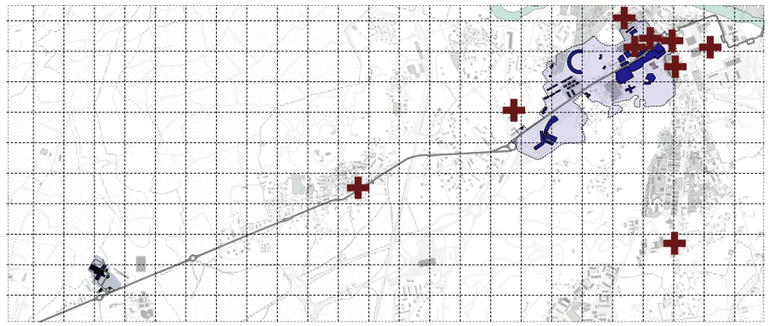


Fig.126

04. Medical Facilities

Ivrea has several medical centers and pharmacies spread throughout the city, ensuring accessible healthcare services. The presence of well-established facilities supports both residents and visitors, reinforcing the city's infrastructure as a livable and tourist-friendly environment.

Fig. 101-105: Maps by the author

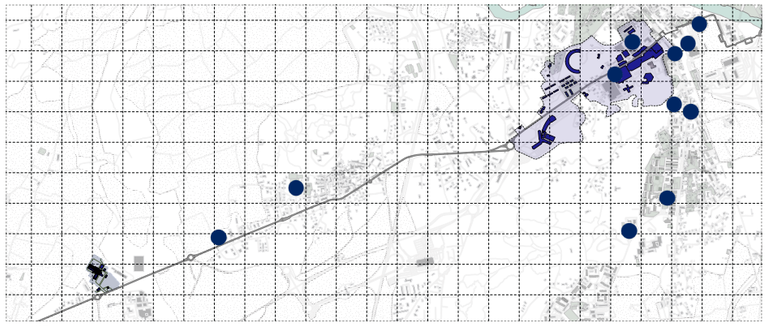


Fig.127

05.Sports/ Gym

Sports facilities, including gyms and recreational centers, provide spaces for fitness and wellness activities. Given the city's proximity to natural landscapes, there is an opportunity to further develop sports infrastructure, including adventure and winter sports, to integrate the urban and natural environments.

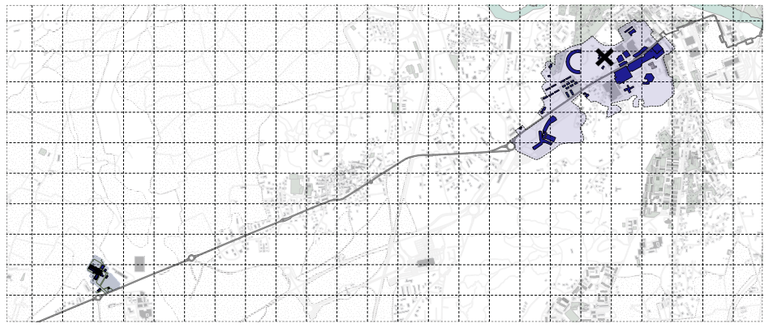


Fig.128

06. Libraries

Libraries in Ivrea are limited, with only a few key institutions serving the city. Considering Ivrea's rich history in industrial design, technology, and literature, expanding library spaces—potentially within adaptive reuse projects like the Marxer Building—could serve both educational and cultural needs.

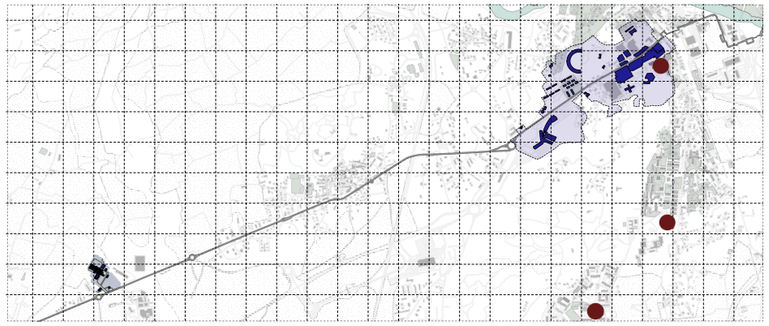


Fig.129

07. Religious Buildings

Ivrea has a number of religious institutions, including historic churches and places of worship that contribute to the city's cultural and architectural landscape. These sites not only serve spiritual functions but also play a role in heritage tourism, attracting visitors interested in the city's historical fabric.

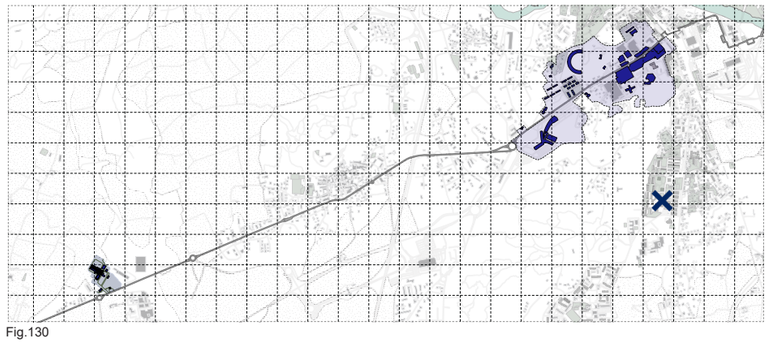


Fig.130

08. Movie Theatre

Movie theatres in Ivrea are scarce, limiting entertainment and cultural programming options. Establishing more screening spaces—especially within repurposed industrial buildings—could enhance community engagement and offer a venue for film festivals, cultural screenings, and public gatherings.

Fig. 123-130: Maps by the author

04| SITE ANALYSIS

4.1 Site Location

Fig 131: Aerial View of Loranze and Marxer site
https://www.google.com/maps

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

“The Antoine Marxer Pharmaceutical Research Institute is located near Ivrea, along the road to Castellamonte, at the center of an area designed as a park. The complex is situated within a park-like setting, reflecting the mid-20th-century emphasis on integrating industrial facilities with natural landscapes.” (https://divisare.com/)
“The surrounding neighborhood comprises a mix of residential areas, cultivated lands, and other industrial buildings. This diverse environment offers scenic views of agricultural fields, providing a harmonious blend of natural beauty and industrial functionality. The site’s proximity to both residential zones and industrial establishments underscores its strategic location within the community, facilitating accessibility while maintaining a connection to the natural surroundings” (Divisare 2017) (Boltri, Maggia and Papa 1998)

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

4.2 Site surroundings

Fig 132: Marxer site plan by author

Fig 133: Key Plan by author

The site encompasses a substantial area of 70,000 square meters (approximately 17.29 acres) “The complex comprises two primary structures: a two-story office and laboratory building totaling 1,800 square meters, and a single-story production plant covering 3,500 square meters. These buildings are interconnected via underground corridors. Additional facilities include an animal breeding area for research purposes, and a gatehouse equipped with a telephone switchboard. The surrounding parkland, measuring approximately 7,000 square meters, features amenities such as a tennis court, football pitch, and bowling area, underscoring the Olivettian philosophy of fostering a human-centric work environment immersed in nature.” (https://divisare.com/)

The site is approximately 5 km from the UNESCO Visitor Center in Ivrea, making it relatively close to the city’s historical and industrial core. It is located in the Loranzè plain, adjacent to the Provincial Road (SP) connecting Loranzè to Ivrea, ensuring good vehicular access. Topography is Predominantly flat, with a gentle slope in some areas.

Legend

Marxer Buildings	Industrial Buildings	Commercial Buildings	Residential Buildings	Cultivation Land	Site Premises

A	B	C	D	E
Manufacturing Plant	Research Lab	Chimney	Animal Breeding Department	Service Block

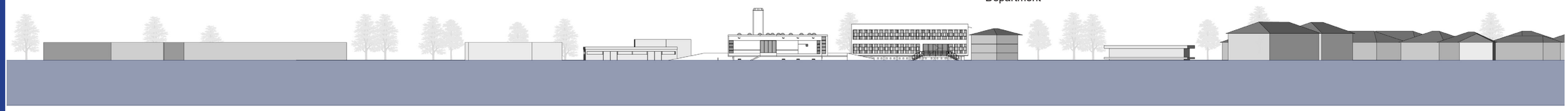


Fig 134: North west Elevation of the site

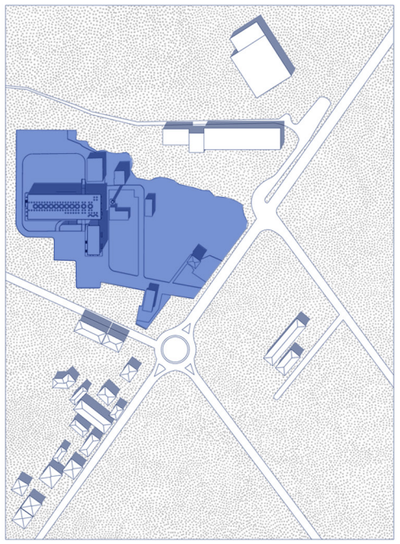


Fig 135

01. Site

The site spans 17.29 acres (70,000 m²) and was originally designed for pharmaceutical research and production. It is characterized by two main buildings—a research and office block and a manufacturing plant, connected by an underground corridor. The surrounding landscape consists of cultivated land, residential areas, and industrial structures.

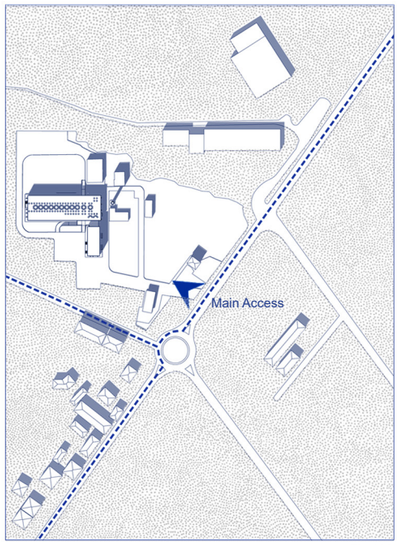


Fig 136

02. Access

The site is strategically positioned along the Provincial Road (SP) connecting Loranzè to Ivrea, ensuring direct vehicular access. It has two main entry points, one serving the office and laboratory section, and another providing access to the production facility. Internal circulation is facilitated by wide roads and an underground service corridor.

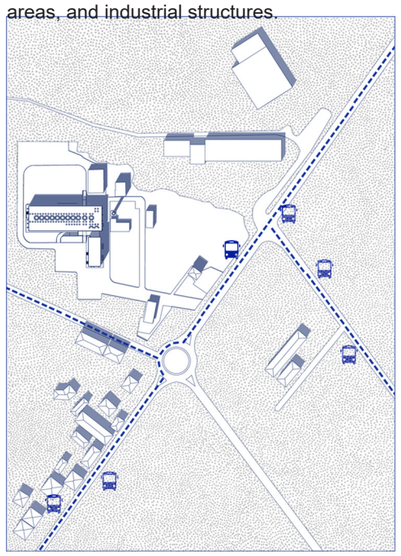


Fig 137

03. Public Transport

The nearest railway station, Ivrea Train Station (6 km away), connects to major cities like Turin and Milan. Bus services operate between Ivrea and Loranzè with moderate frequency.

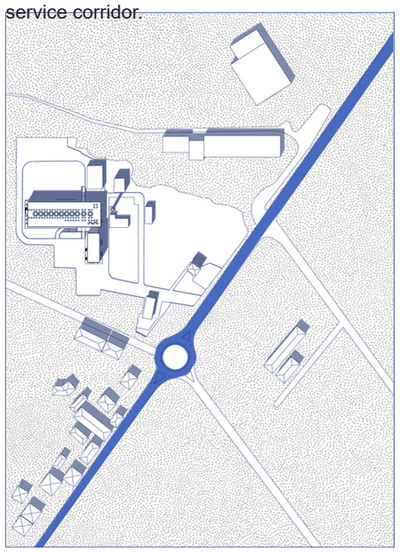


Fig 138

04. Bicycle ways

The surrounding region has small-scale cycling routes used by locals. Less traffic flow and wide roads provide favourable situation for cycling enthusiasts.

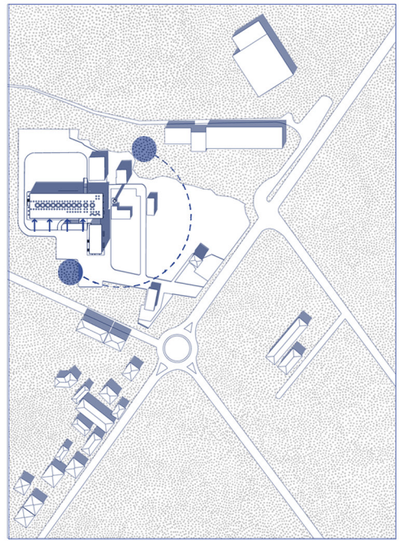


Fig 139

05. Sun Path

The Marxer site follows an east-west orientation, allowing ample natural daylight into the structures. The office and laboratory building has large windows, optimizing daylight usage.

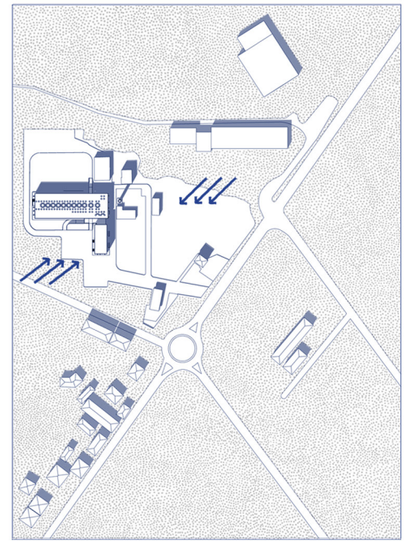


Fig 140

06. Wind Direction

In northern Italy, winds often come from the northwest (Alps) or the southwest (Mediterranean influences). Winter Winds: Cold winds from the Alps, mostly north or northwest. Summer Winds: Warmer winds from the Mediterranean, usually south or southwest.

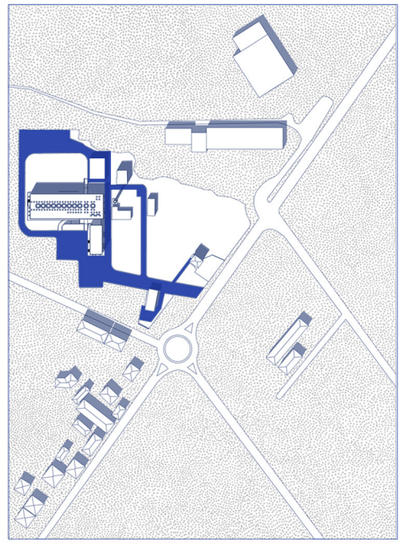


Fig 141

07. Site Circulation

Wide roads allow easy movement for service vehicles and staff. The underground service corridor linking the two main buildings was originally designed for internal transport and storage.

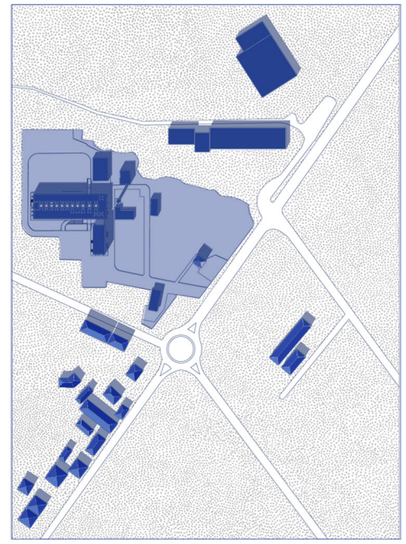


Fig 142

08. Figure Ground

The site features a low-density built environment, with structures occupying only a small portion of the total land area. The open spaces are largely green areas and cultivation land, presenting opportunities for landscape enhancement.

4.3 Site Photographs

Building B - Research Lab

Fig 143: Nort west facade of Research Centre
Retrieved from : https://primailcanavese.it

Building A - Manufacturing Plant

Fig 144: Manufacturing Plant
Retrieved from : https://divisare.com

C - Chimney

Fig 145: View of the chimney
Retrieved from : https://divisare.com

Aerial View

Fig 146: Aerial View of Marxer site
Retrieved from : https://divisare.com

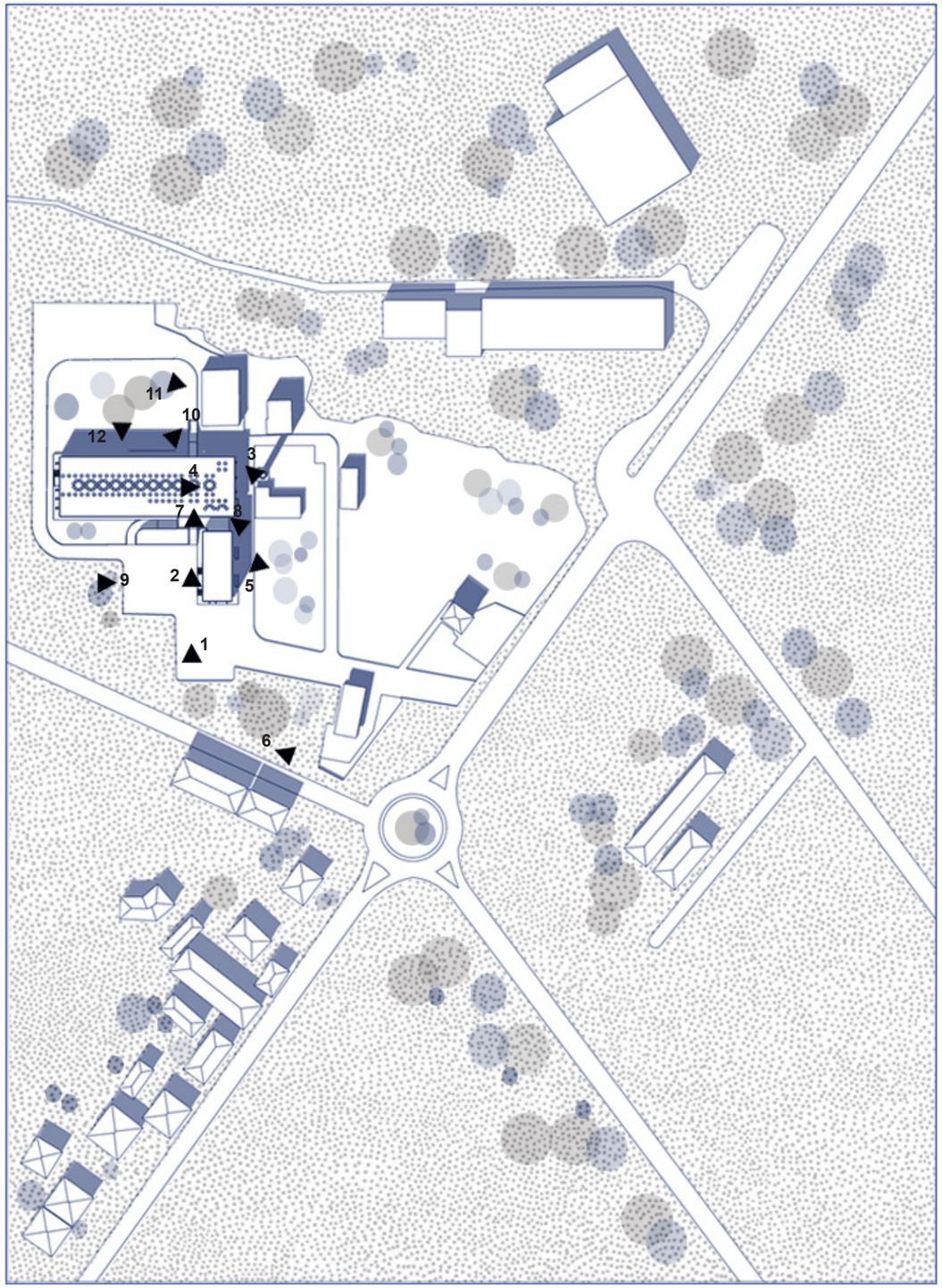


Fig 147: Map by the author

Fig 148 - 159 Photographs by the author

05| BUILDING ANALYSIS

5.1 Overview

“The complex is composed of two main buildings: the building dedicated to office and research activities and the factory. The first is composed of two floors above ground and one underground for a total of 1800 m2 and housed nine laboratories dedicated to biological, chemical and pharmaceutical research. The production plant instead has only one floor above ground and its total surface area measures 7000 m2. The two buildings are connected to the underground floor by underground corridors whose dimensions allowed the passage of motor vehicles. The complex also included a stable, an area for breeding and observing animals useful for research purposes, which, together with the synthesis department plant room, measured 600 m2. The eastern space of the production building housed the bathrooms and changing rooms for the staff, while to the west the terminal space was used as a warehouse communicating with the outside. The gatehouse, on two floors, also housed a telephone switchboard and the transformation cabin, for a total of 600 m2. Finally, there was a pre-existing building on three levels with a surface area of 350 m2 in which the canteen and kitchen were inserted. The surrounding park, whose presence was fundamental to the industrial life philosophy promoted by Adriano Olivetti, measured approximately 7000 m2 and included numerous facilities including a tennis court, a football pitch and a bowls court.” (Boltri, Maggia and Papa,1998)

Fig 160
Retrived from - https://www.domusweb.it/en/

“The primary structure of the two main factory buildings is based on a system of reinforced concrete beams and pillars. The floors of the production plant are made of reinforced concrete and designed with crossed ribs that rest on thick beams in both directions. The pillars are positioned following a structural framework of 7 x 7 meters with a peripheral overhang of 3.5 meters. The floors of the research center are also made of reinforced concrete with parallel frames having a span of 7.6 by 4.2 meters. The pillars of this building are spaced 4.3 meters apart and the peripheral overhang is 4.3 meters. In the annexed concrete buildings the floors are made of concrete with flat beams.” (Boltri, Maggia and Papa,1998)

5.2 Brutalism Influences in Architecture

“During the late 1950s and 1960s, Italy experienced a notable wave of Brutalist architecture, particularly in the context of post-war reconstruction and industrial expansion. This movement, though rooted in the broader international trend of Brutalism, developed a distinct Italian character, blending rationalist principles from earlier modernist traditions (like those of Giuseppe Terragni) with the expressive materiality and formal experimentation characteristic of Brutalism.” (Perego, 2023)(Domus, 2018)

5.21 Key Features of Brutalism

1. Use of raw concrete (béton brut)

"Like its British counterpart, Italian Brutalism embraced exposed reinforced concrete, but often incorporated fine craftsmanship and regional construction techniques." (Domus,2018)

2. Emphasis on structure and volume

"Brutalist buildings in Italy highlighted structural clarity and bold geometric forms—sometimes monumental, yet human-scaled." (Domus,2018)

3. Functional zoning and modularity

"Influenced by both Le Corbusier and Olivetti's industrial philosophies, many buildings featured clear spatial hierarchies, open floor plans, and modular systems." ((Domus,2018)

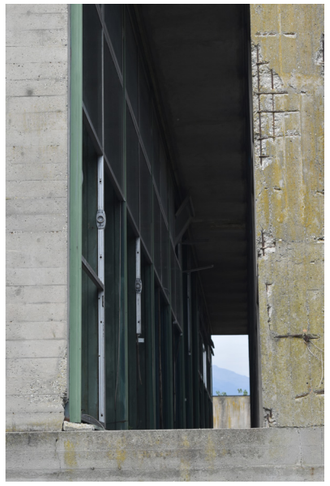


Fig 161
Photograph by the author

Fig 162
Photograph by the author

Fig 163
Retrived from - https://www.domusweb.it/en/architecture/

“Brutalism in Italy was thus not merely an import but a local adaptation, shaped by Italy’s social conditions, industrial optimism, and deep architectural heritage. Projects often responded to Italy’s varied topographies, blending massive forms with sensitive site integration.The Marxer Pharmaceutical Laboratory is emblematic of this Italian Brutalist wave. It combined: Exposed concrete frame and surfaces reminiscent of Le Corbusier’s Mill Owners’ Building; A modular, rational layout supporting scientific workflows; Austere but refined detailing, showing both industrial rigor and architectural sophistication”(Fondation Le Corbusier, 2016)

"The dominant theme is in fact exposed concrete, used in various forms by exploiting its different properties, to characterise in various ways all the facades of the Institute. From the very beginning it is clear that the main reference is to Le Corbusier, who the architect, by his own statement, took inspiration from for the forms, volumes and materials of his building. Galardi has certainly treasured in many ways, in this work, the teachings of Le Corbusier, but in an intelligent and coherent way, reworking some of the most vital themes and ideas of the great builder. The exposed concrete has a notable spirit and is used moderately with synthetic simplicity where it expands on considerable surfaces (in the ends of the factory buildings) to the extent that it can enhance its properties, and be able to create a clear and balanced layout, which reflects the internal structure. The reference to the Swiss architect, naturalized French, besides being a natural consequence of the architect's training, is clearly visible not only in the mere use of béton brut, but in the design of the element that perhaps more than any other has strongly characterised, and still characterises, the elevations of the complex: the solar radiation screening systems, which characterise the western front of the research building and the eastern and southern fronts of the factory building. Galardi's idea for these elevations was to superimpose a sunshade grid in exposed concrete over the perimeter windows." (Corradini and Cremaschini,2024)

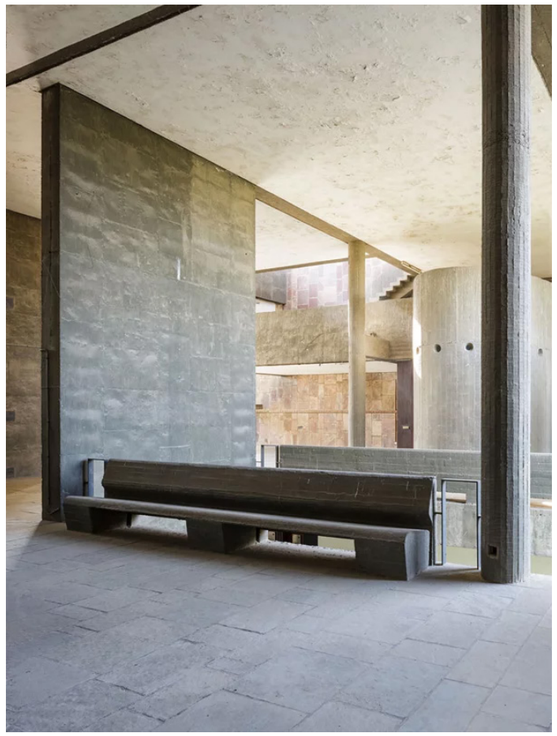


Fig 164 - Mill owners Bulding, Ahmedabad
Retrived from - https://www.fondationlecorbusier.fr

Fig 165 - Mill owners Bulding, Ahmedabad
Retrived from - https://www.fondationlecorbusier.fr

This period also saw other Brutalist projects like:

"**BBPR's Torre Velasca in Milan** (1958), which merged Brutalist massing with historicist references;
Aldo Rossi's early works, which, while later evolving into Neo-Rationalism, showed Brutalist tendencies;
University and hospital buildings across Italy that prioritized public infrastructure, often designed by architects like Vittorio Gregotti." (Corradini and Cremaschini,2024)

Fig 166 - The Torre Velasca, Milan
Retrived from - https://atlantearchitetturacontemporanea.cultura.gov.it

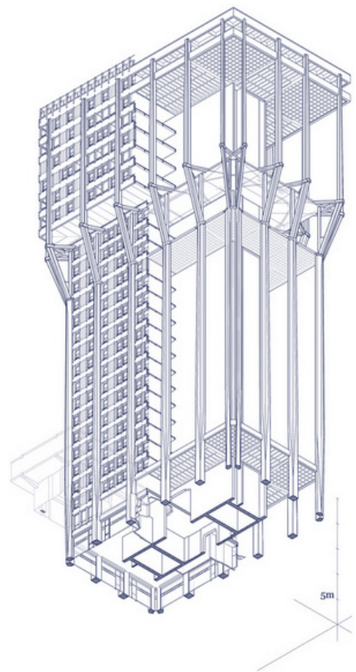


Fig 167 - Velasca tower Axonometric view by G. Capurso
Retrived from - https://informesdelaconstruccion.revistas.csic.es

Fig 168 - Monte Amiata Housing Complex , Milan
Retrived from - https://atlantearchitetturacontemporanea.cultura.gov.it

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

5.3 Geometery of Marxer complex

"The cornerstone of the project was in fact to aim for a place where the two hundred workers, the twenty-five employees and the twenty researchers could work happily, in a human-scale environment completely surrounded by nature. The garden therefore did not separate itself from the natural greenery that characterized the Loranzè plain, on the contrary it tried to extend it and bring it into the environments of daily life."(Boltri, Maggia and Papa,1998)

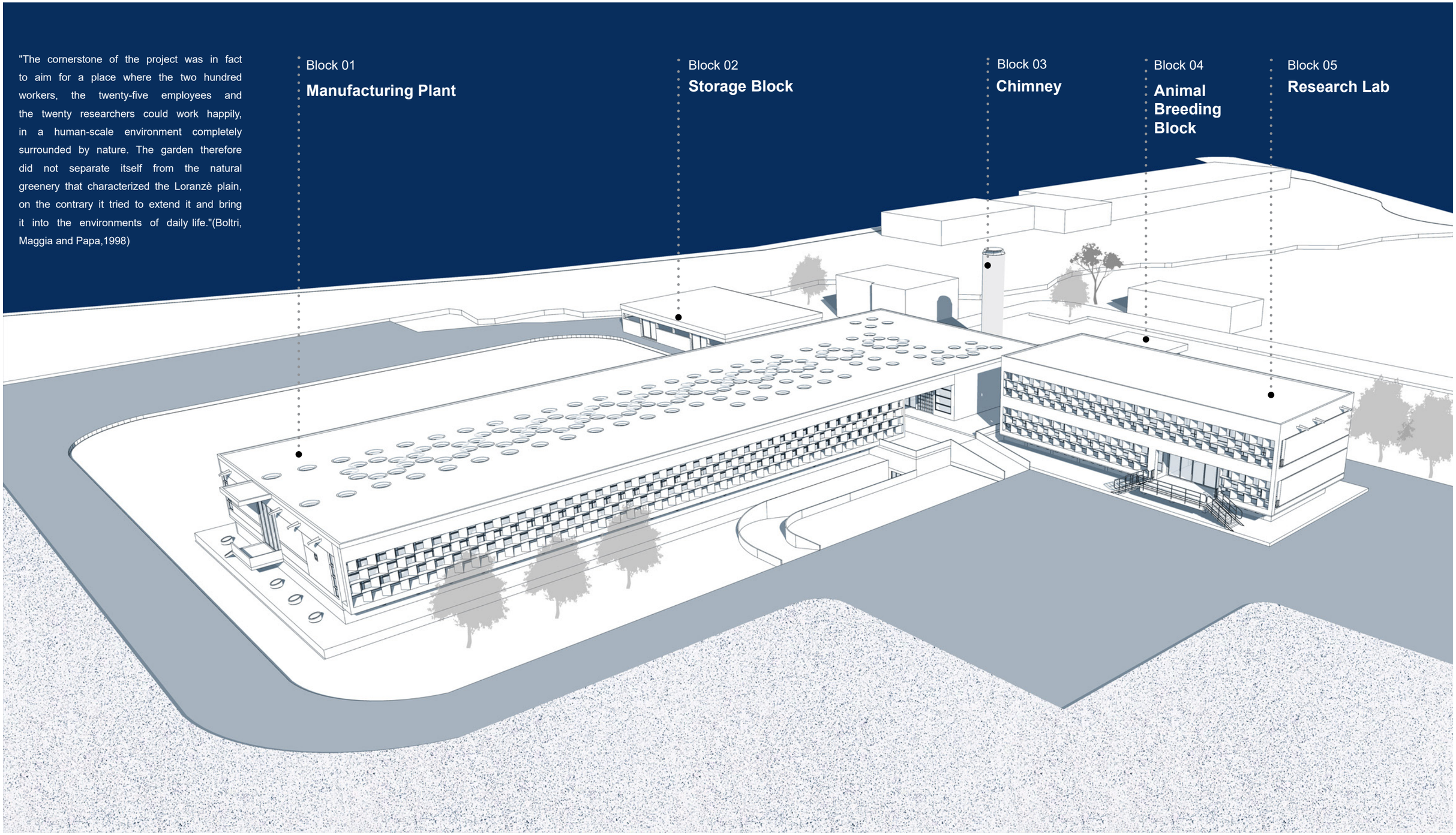


Fig 169 - Axonometery of the Marxer site
Created by the author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

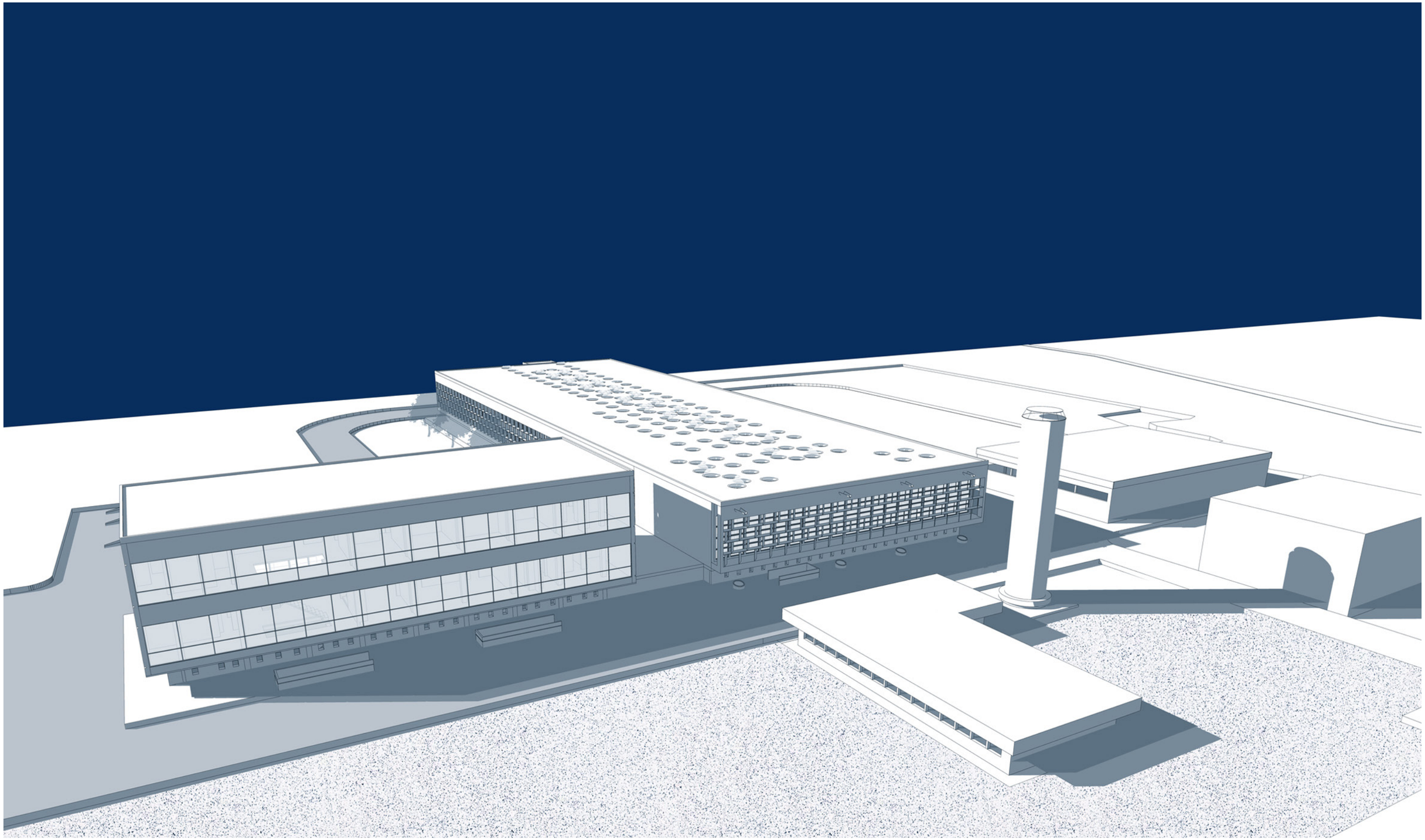


Fig 170 - Axonometery of the Marxer site
Created by the author

5.4 Basement Floor Axonometery

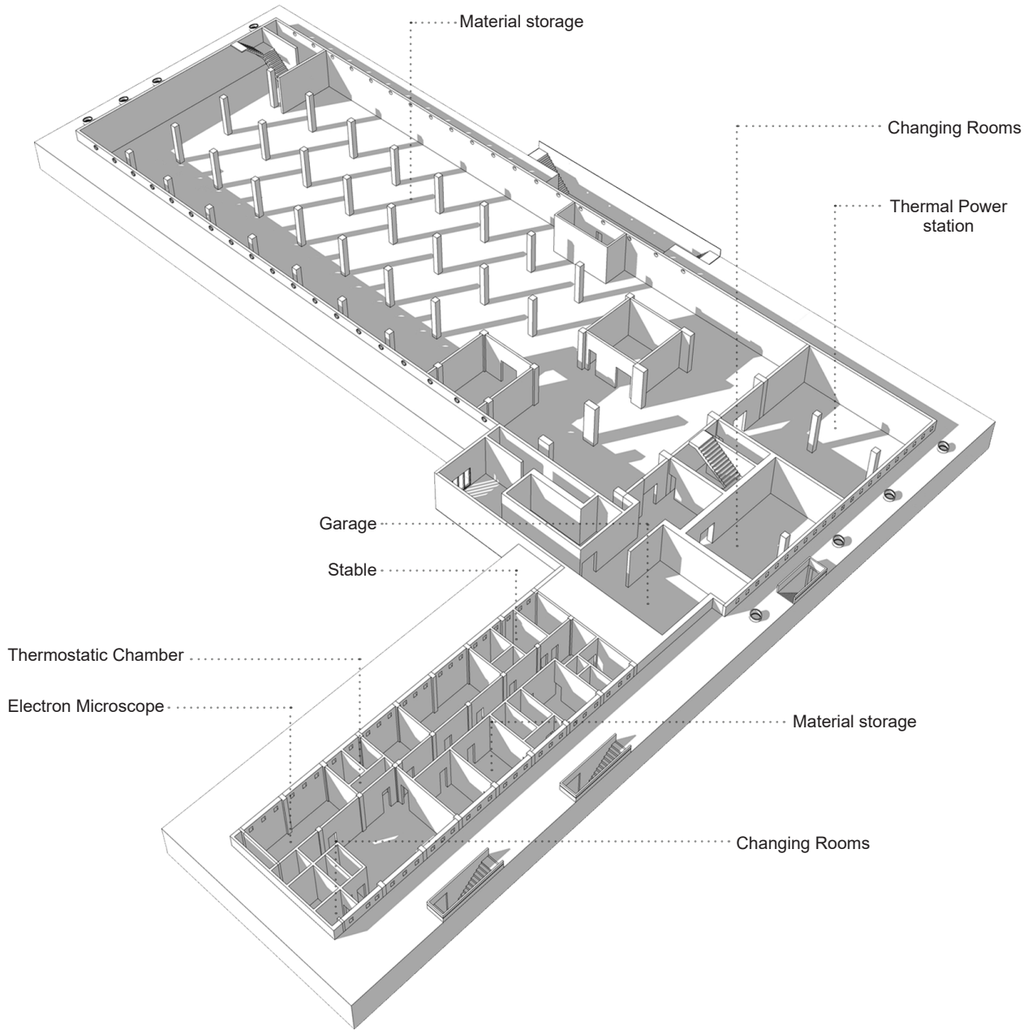


Fig 171 - Axonometery of the basement floor
Created by the author

5.5 Ground Floor Axonometery

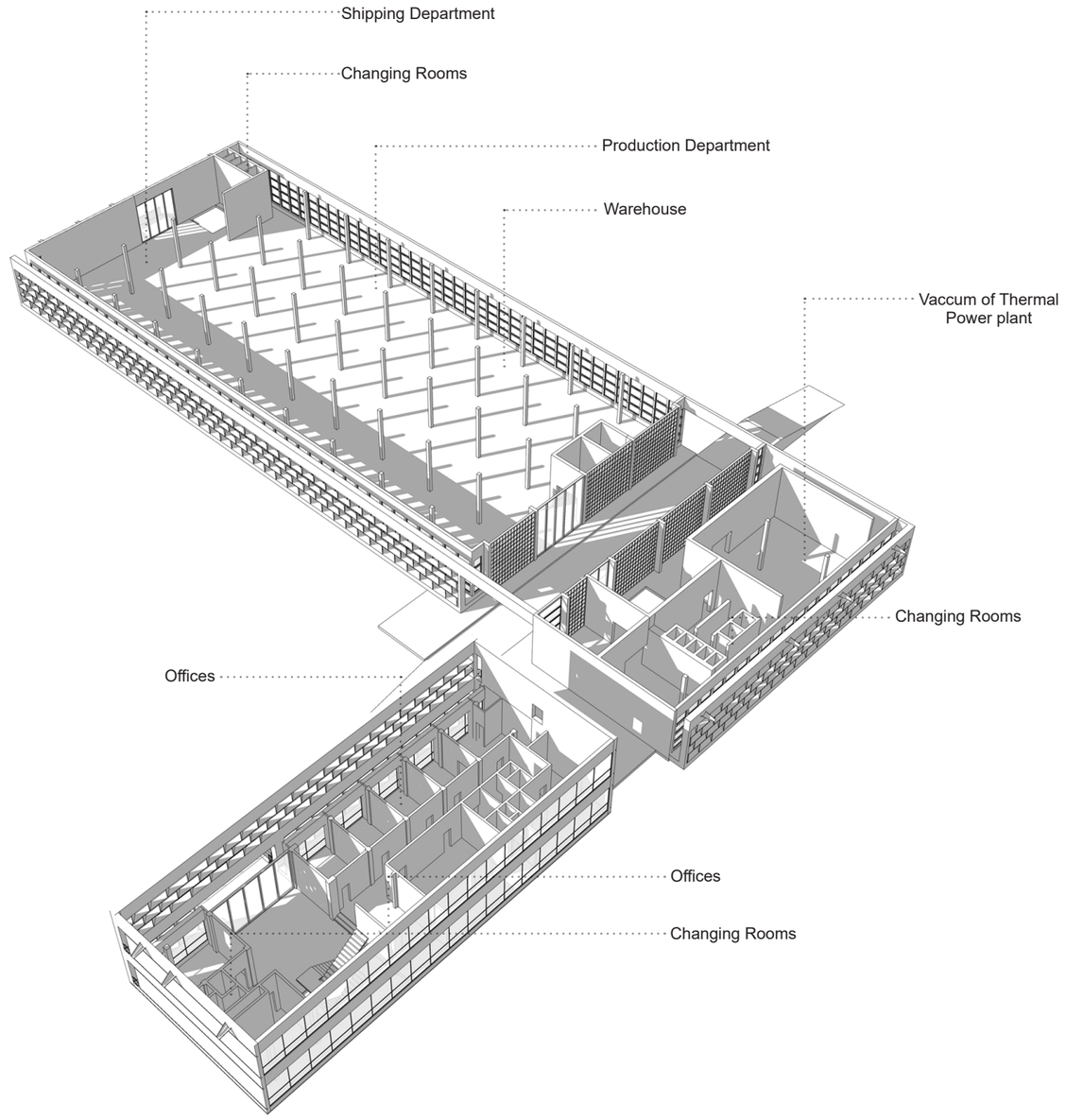


Fig 172 - Axonometery of the Ground floor
Created by the author

5.6 First Floor Axonometery

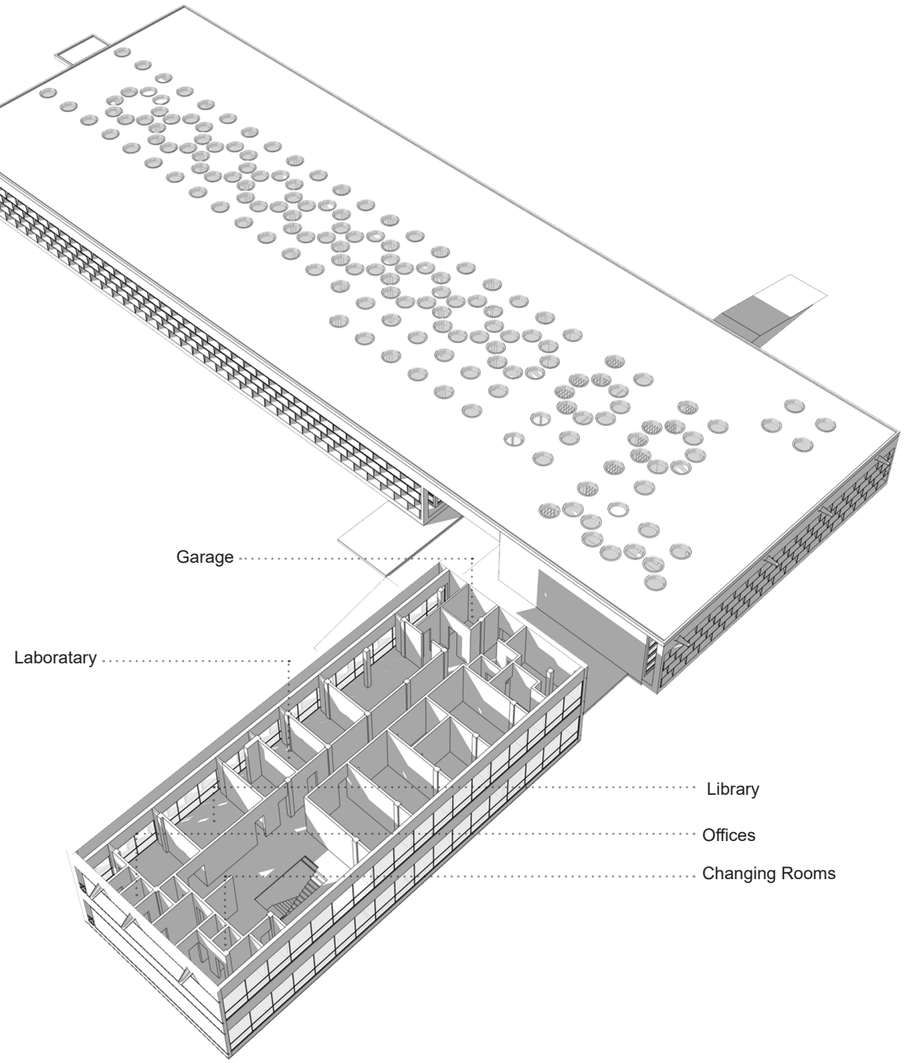


Fig 173 - Axonometery of the Marxer site
Created by the author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

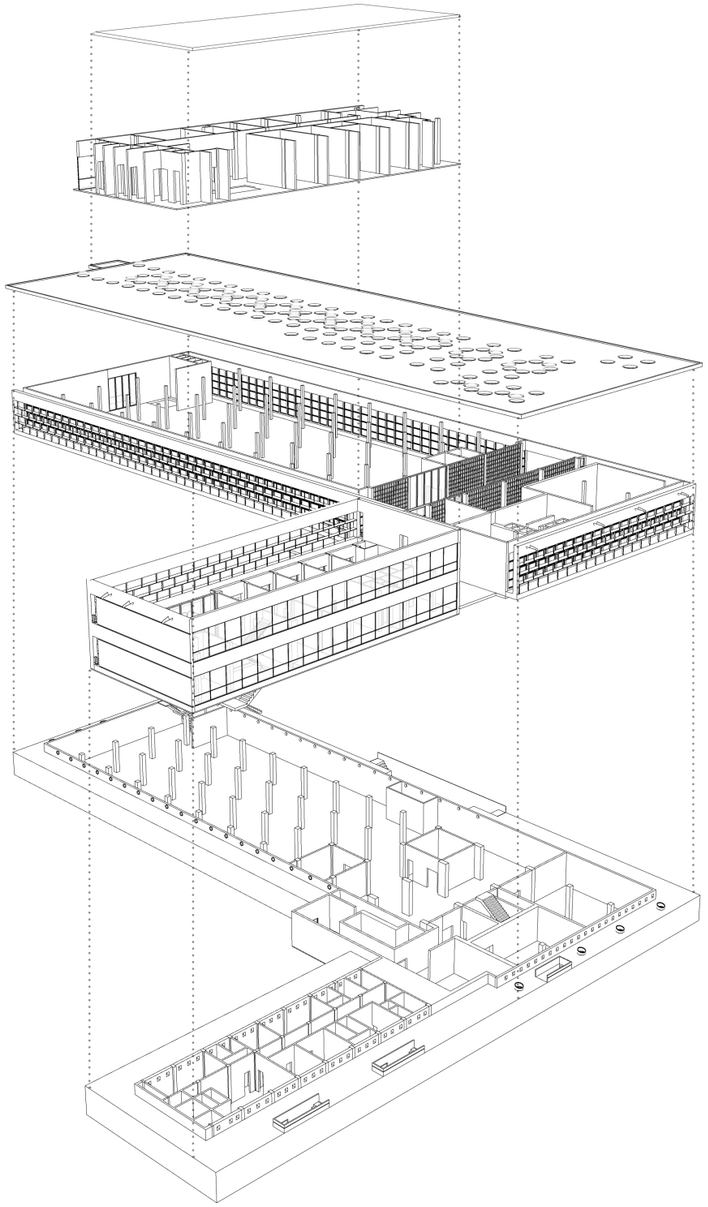


Fig 174 - Axonometery of the Marxer site
Created by the author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

5.7 Elevations

5.7.1 South West Elevation

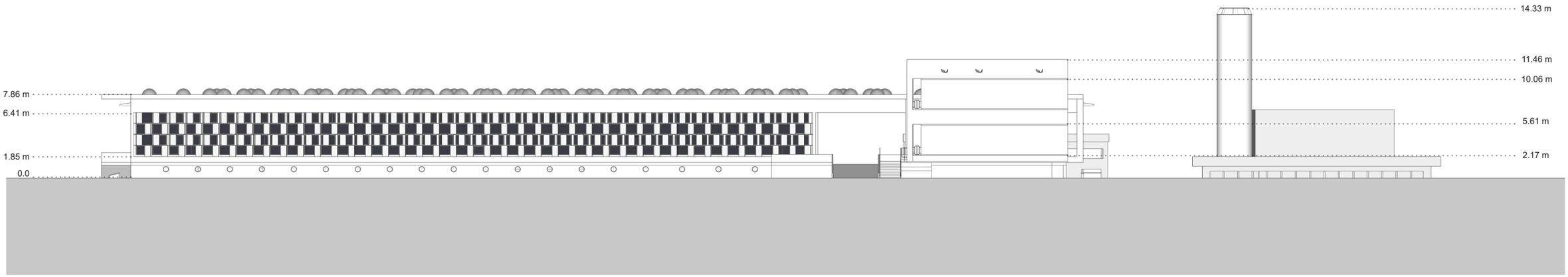


Fig 175 - Created by the author

5.7.2 North East Elevation

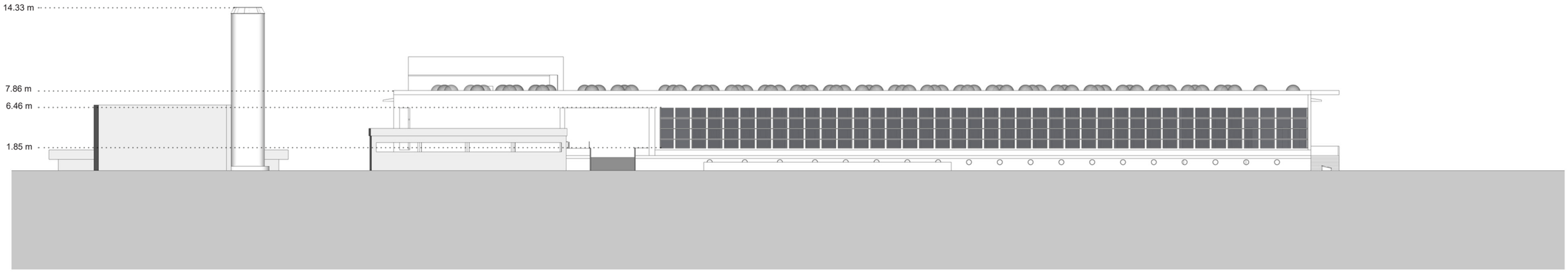


Fig 176 - Created by the author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

5.7.3 North West Elevation

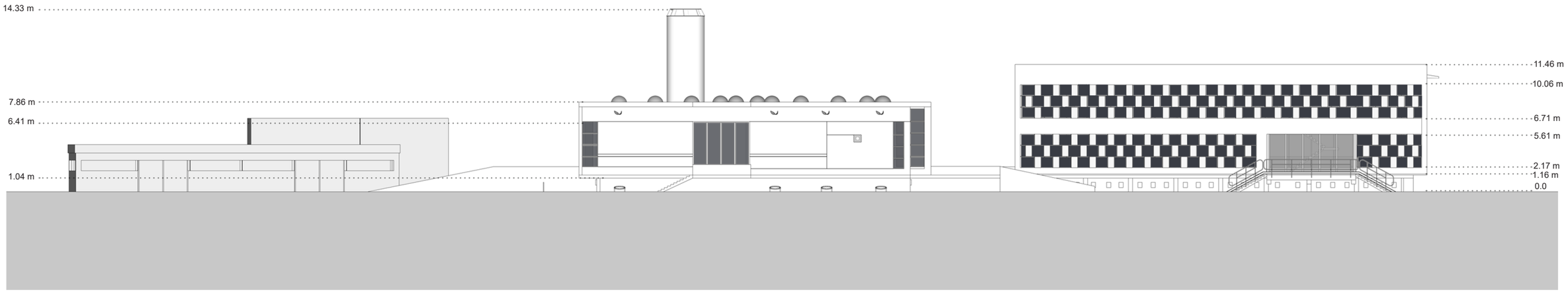


Fig 177 - Created by the author

5.7.4 South East Elevation

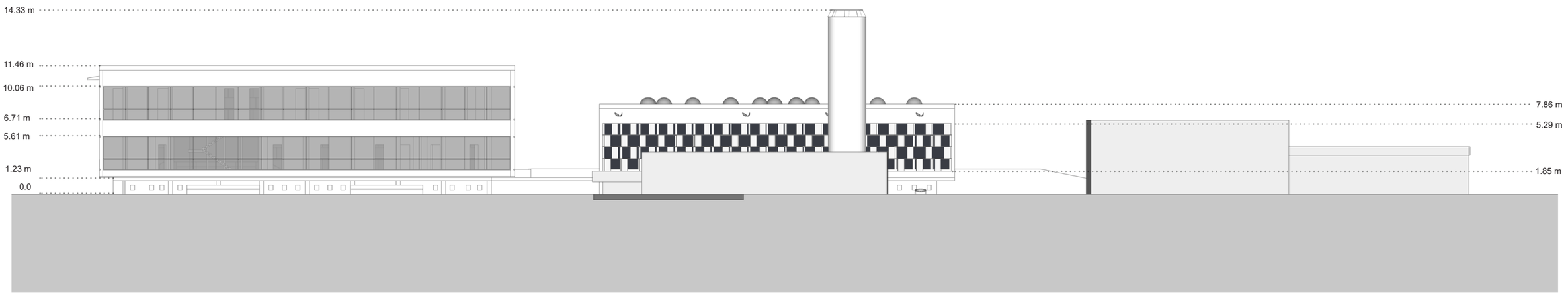
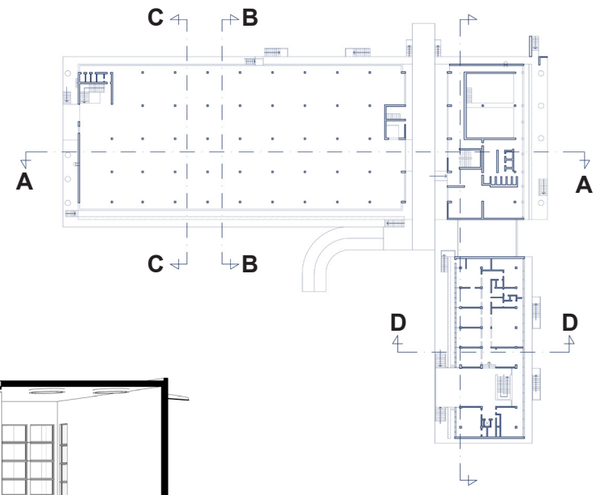


Fig 178- Created by the author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

5.8 Sections



5.8.1 Section AA

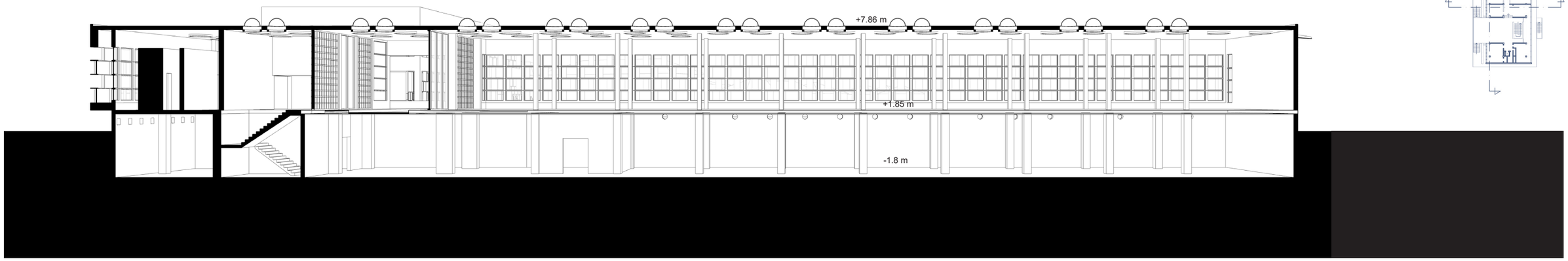


Fig 179 - Perspective section of Manufacturing Block
Created by the author

5.8.2 Section BB

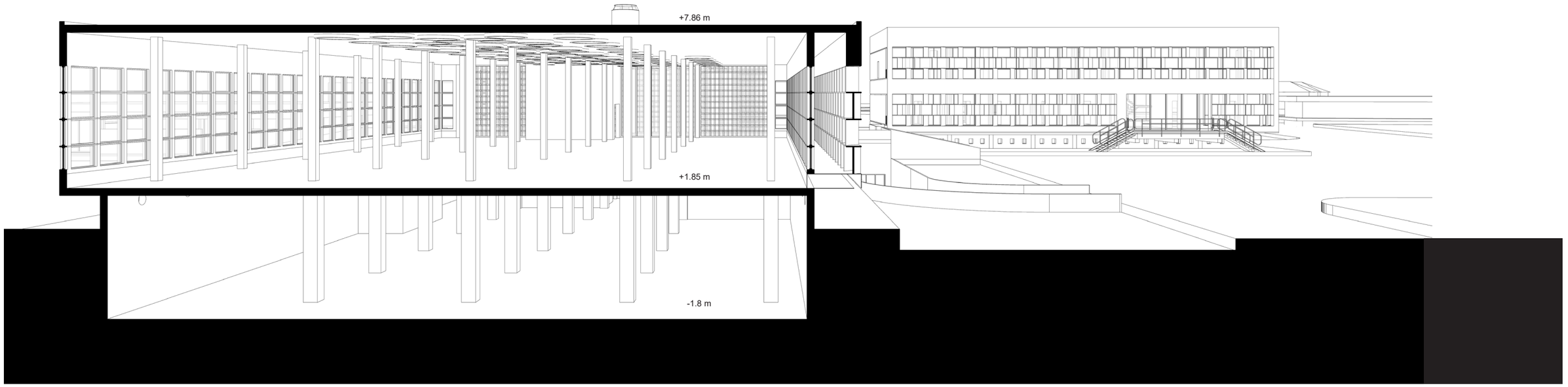
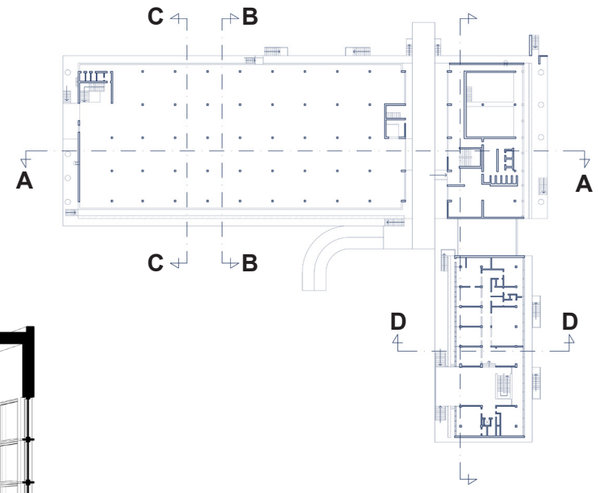


Fig 180 - Perspective section of Manufacturing Block
Created by the author



5.8.3 Section CC

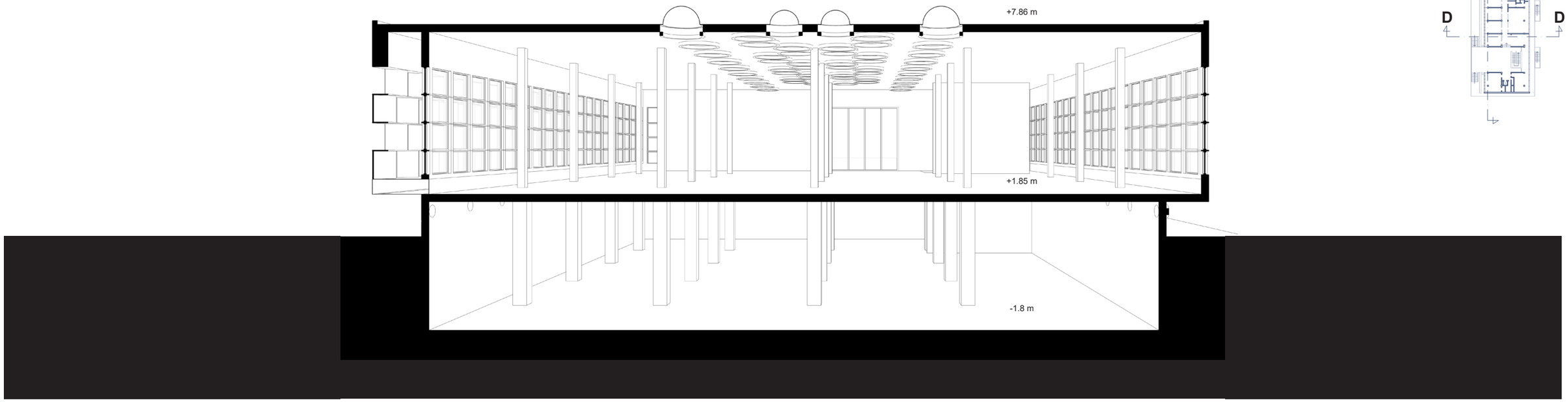


Fig 181 - Perspective section of Manufacturing Block
Created by the author

5.8.4 Section DD

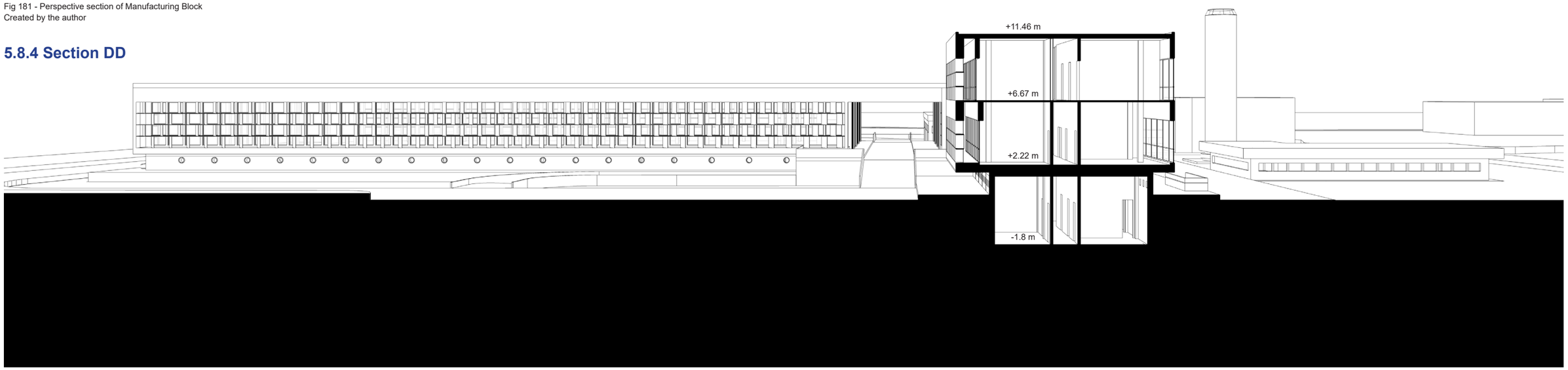


Fig 182 - Perspective section of Research Block
Created by the author

5.8.5 Perspective Section of Research Block

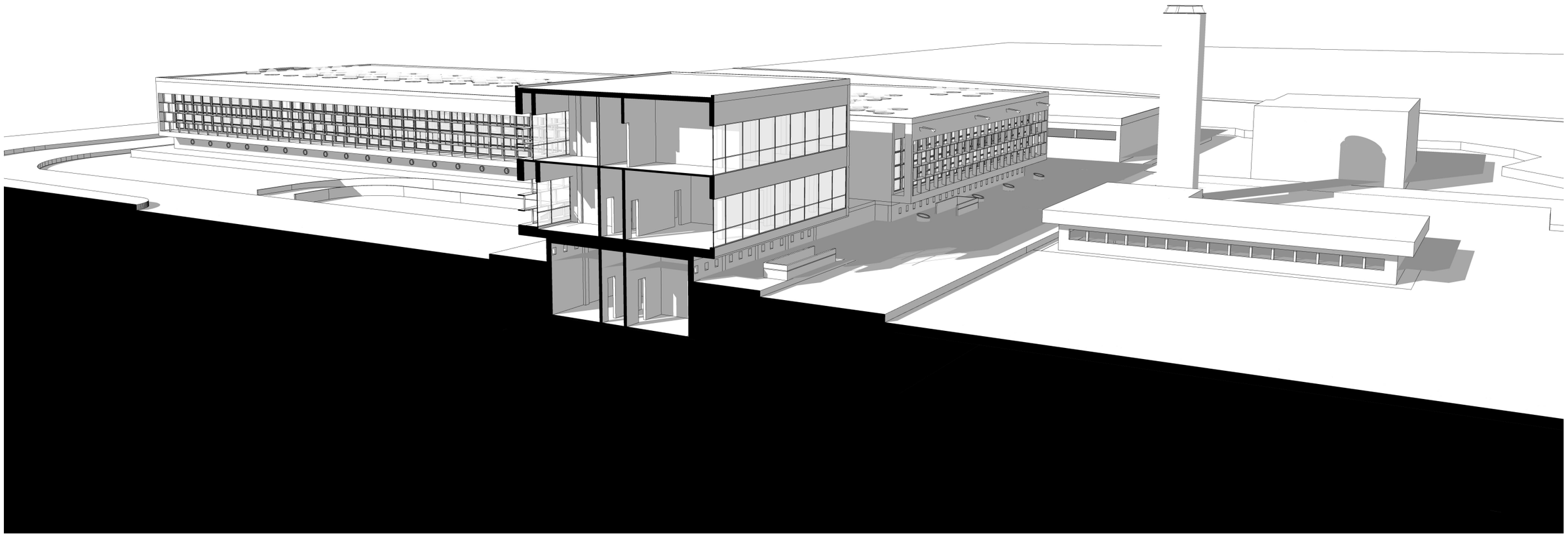


Fig 183 - Axonometery of the Marxer site
Created by the author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

5.8.6 Perspective Section of Manufacturing Block

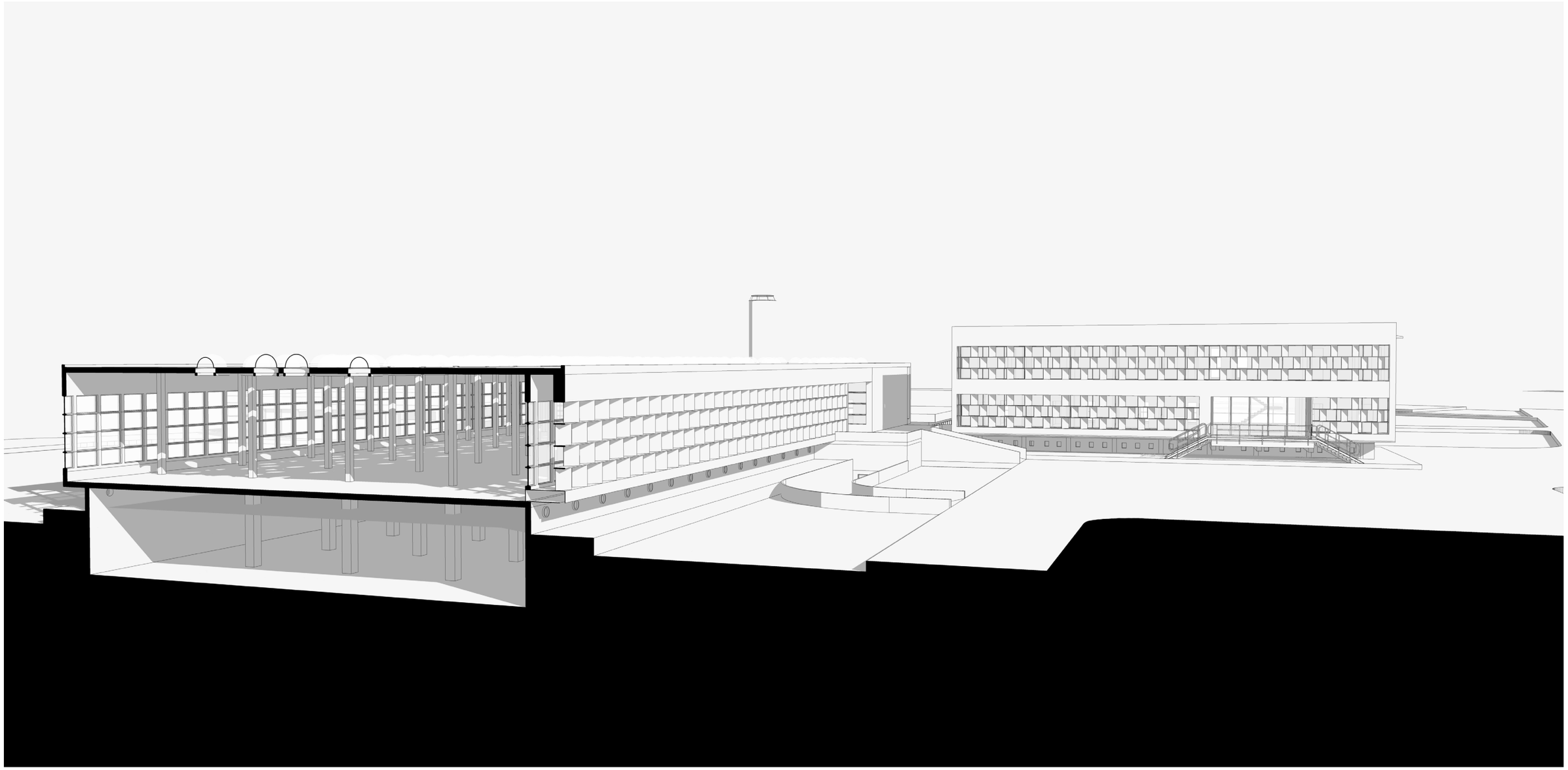


Fig 184 - Axonometery of the Marxer site
Created by the author

5.9 Architectural Elements

“The entire complex of the Institute is built following the principles of contrast. In fact, if the development is horizontal, it is equally true that there were no attempts to mask the volume or hide it. Galardi actually underlines the frankness of these parallelepipeds emphasizing it with an overhang between the floor level of the park and that of the ground floor, showing all the materials mainly used: concrete, aluminum and glass. The dominant theme is in fact exposed concrete, used in various forms . The buildings that may have most influenced Galardi’s design, with inclined sunshade elements, are the Mill’s Owner’s Association Building, built in 1954 in Ahmedabad, the Palace of Assembly, built in 1955 in Chandigarh, and, finally, the Highcourt building, built from 1956 onwards in Chandigarh. Matching its different properties, to characterise in various ways all the facades of the Institute. In addition to the grille with brise soleil, there are other prefabricated exposed concrete elements that make the structure of the Marxer Institute even more distinctive. These are the rainwater collection tanks, which have a diameter of 1.10 m and a height that varies from 30 cm to 80 cm.” (Corradini and Cremaschini, 2024)

5.9.1 Foundation

“The design of the foundations presented particular difficulties since the ground was predominantly clayey and did not allow for the reach a sufficient resistance and consistency, not even developed diving deep. In fact, various analysis of the soil were carried out through load tests and the use of probes, understanding the stratigraphy of the soil in the first 4.5 m, the presence of moist sandy clay was found, followed up to 8.5 m by gravel. Between 8.5 m and 10.5 m, grey clay and lignite were found, followed by coarse sand for 1.5 m. The lignite then reappeared between 11.5 m and 12.5 m, to give way to compact clay, which was found daily up to a depth of 27 m. The foundations are characterised by a brick crawl space approximately 80 cm high, and by underground walls inclined at 45 degrees. These walls, in order not to place excessive strain on the foundation brackets themselves, were made so that they rest partially on the ground, unloading part of their weight directly onto the ground. Between the slab and the ground there is a layer composed of 6 cm of gravel, 6 cm of concrete, 1 cm of asphalt and 2 cm of mortar. To block humidity, waterproofing was carried out on both the foundation slab and the floor slab placed over the crawl space, and a practicable cavity was created along the perimeter of the buildings, which was also used for the installation of the pipes for the technical systems.” (Casabella Editorial Team,1962)

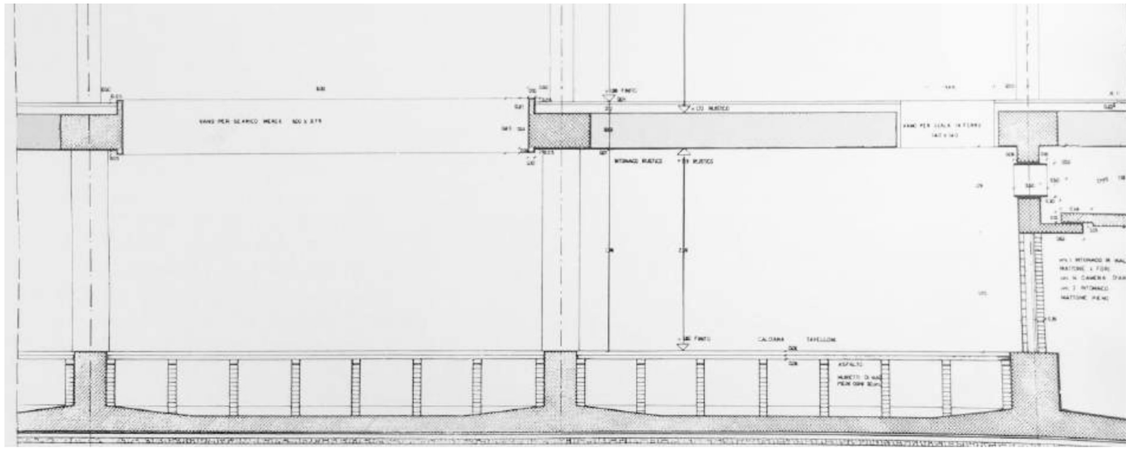


Fig 185 - Foundation details of the Manufacturing block
Retrieved from : Casabella Edition No:297,1962

“Overall, the excavation works for the construction of the foundations required the movement of 25,000 cubic metres of earth” (Casabella Editorial Team,1962)

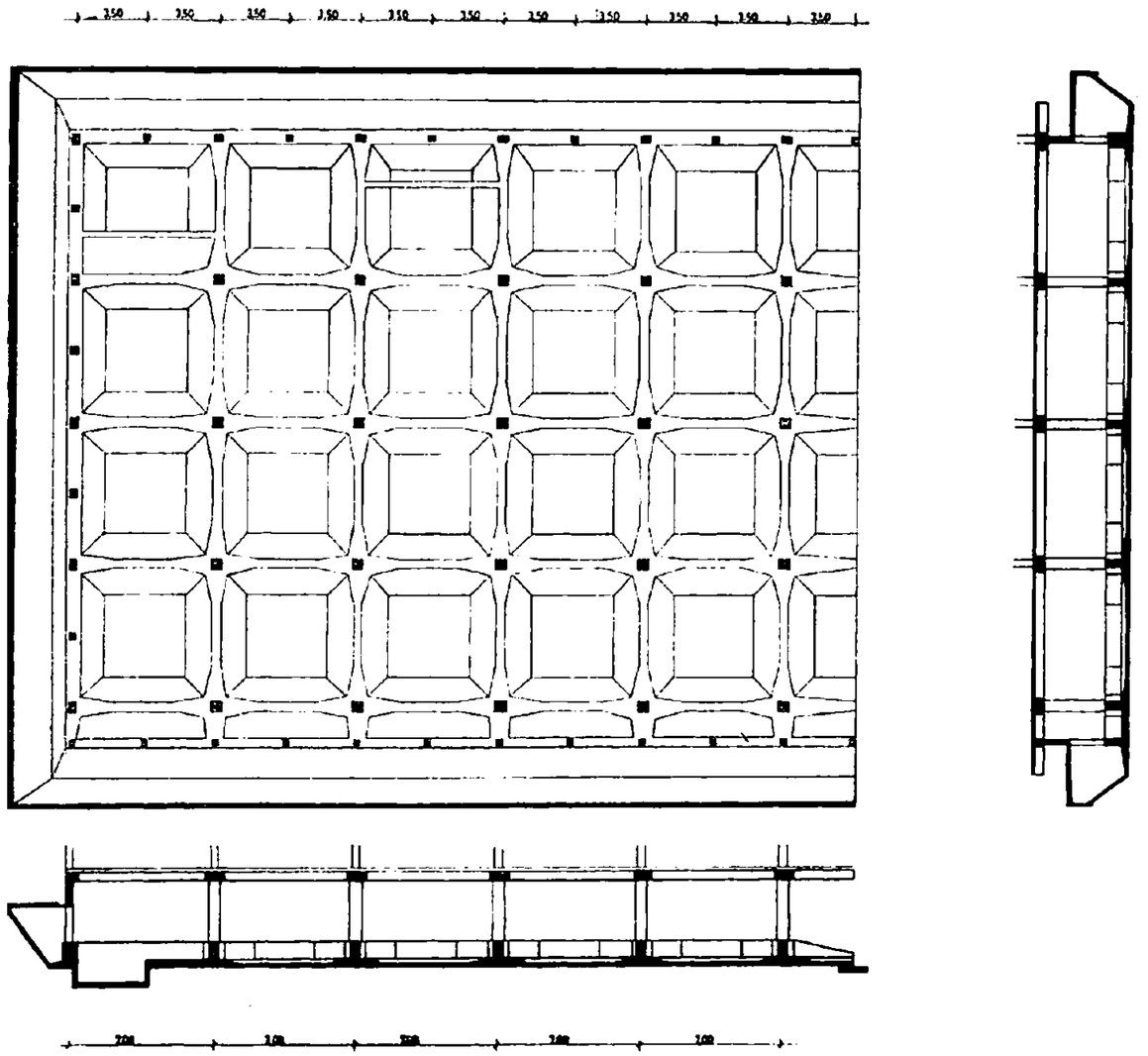


Fig 186 - Foundation drawing
Retrieved from : Casabella Edition No:297,1962

5.9.2 Vertical Screens

“The sunshade structure is a grid made up of horizontal partitions, slightly inclined towards the outside, and vertical partitions, arranged at 45 degrees with respect to the windows, which create rectangles with sides equal to 1 m and 1.61 m. The sunshades, cast with formwork superficially treated with water repellent, occupy the entire north-west facade of the laboratories and the south-west facade of the factory and constitute a solution to the problem of excessive sunlight. This grid is spaced approximately 90 cm apart so as to create a practicable space to allow for maintenance of the windows and also ensure better circulation of external air for effective ventilation of the facades. Furthermore, it houses small vents on the ground that allow the rainwater drainage; on the ground floor the water flows directly to the ground, taking advantage of the overhang of the floor with respect to the floor level of the courtyard, on the first floor, however, the small drainage channels end on the facade, characterizing the elevation. It is precisely from these modular sunshade elements that this project can be connected with some projects by Le Corbusier, who, a few years before Galardi’s project in Loranzè, which began in 1959, was dedicated to buildings that presented this element in different ways.”(Locatelli,2020)

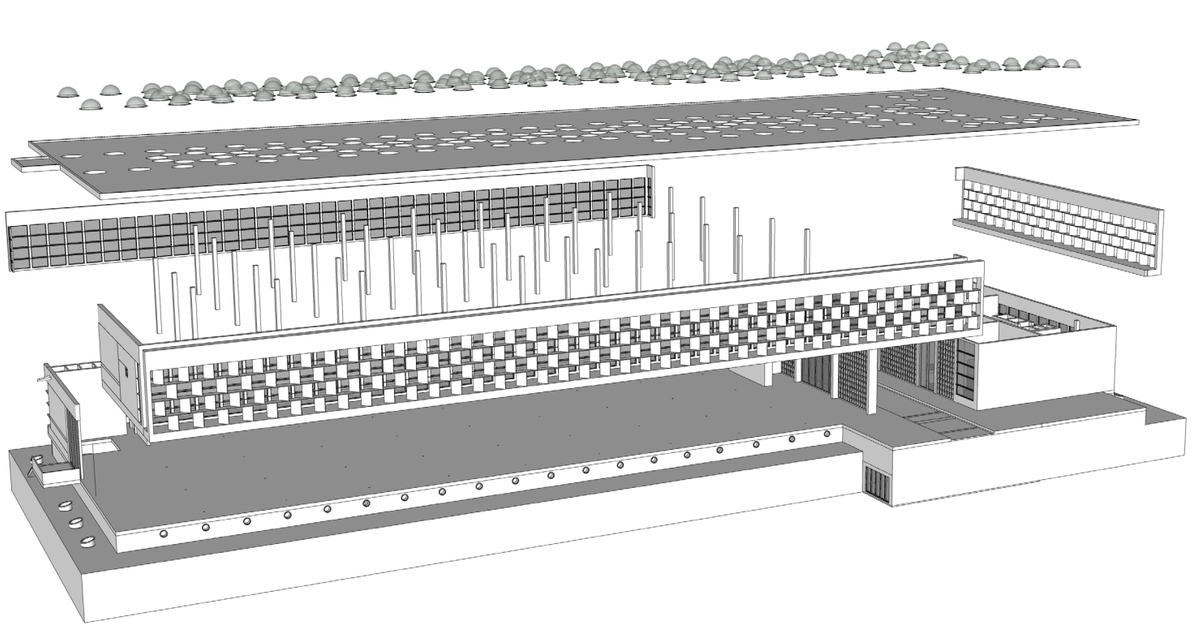


Fig 187 - Building Axonometery
Created by the author

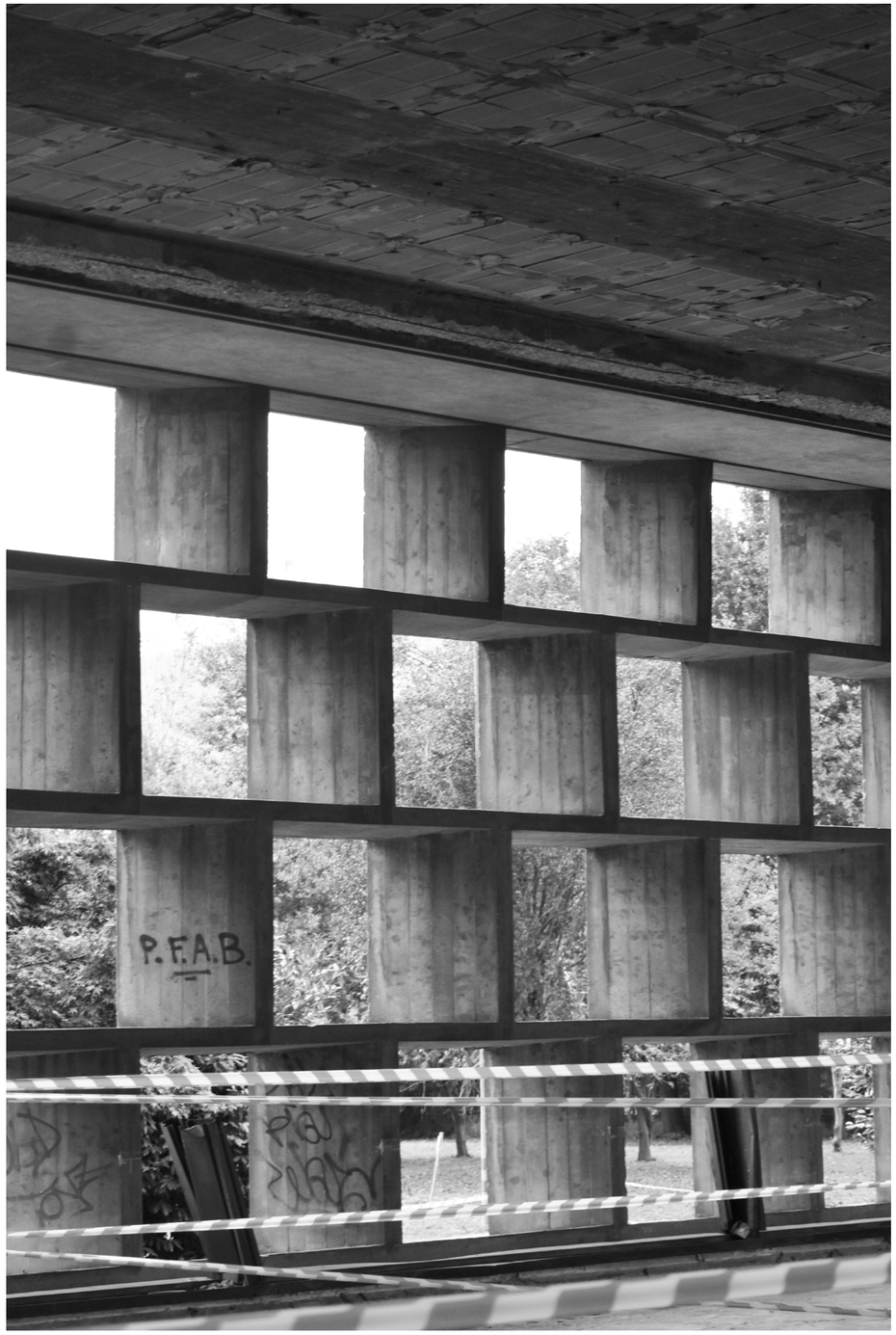


Fig 188 - Sunshade screens
Photograph taken by the author

5.9.3 Gargole

“The gargoyles and the underlying rainwater collection tanks are made of prefabricated reinforced concrete elements, created in a single casting using plaster matrices. The plastic forms of the gargoyles themselves, obtained through multiple combinations of ellipses, protrude orthogonally from the elevations generating, in particular lighting conditions, long, thin shadows on exposed concrete surfaces. The plastic shapes of the gargoyles, protruding orthogonally from the elevations, create, in particular lighting conditions, long, thin shadows on the exposed concrete surfaces.” (Locatelli,2020)

Fig 189 - Gargole on South west Elevation
Photograph taken by the author

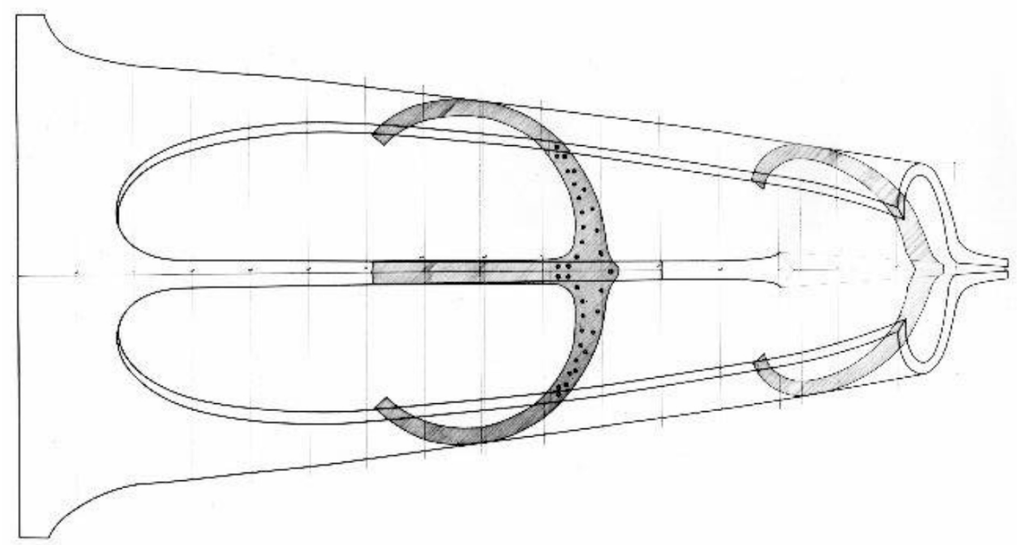


Fig 190 - Gargole drawing
Retrieved from : Casabella Edition No:297,1962

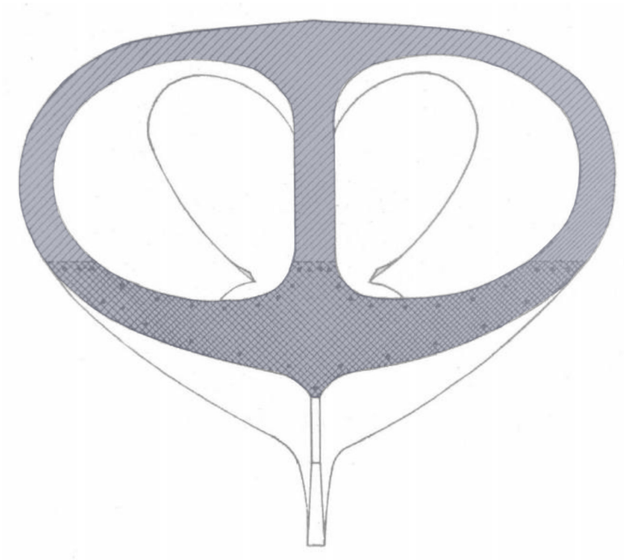


Fig 191 - Gargole drawing
Retrieved from : Casabella Edition No:297,1962

“Exposed concrete requires great attention to the casting methods and wooden formwork, the latter made with fir boards, planed and smoothed to a thickness of 25 mm. They were kept constantly moist and treated with a formrelease soap, and after their removal the surface of the elements was treated with water-repellent materials. In addition to the grille with brise soleil, there are other prefabricated exposed concrete elements that make the structure of the Marxer Institute even more distinctive.” (Corradini and Cremaschini,2024)

5.9.4 Rainwater collection Tank

“The rainwater collection tanks, with a circular plan, with a raised edge towards the side of the building, have a diameter of 1.10 m and a height that varies from 30 cm to 80 cm. There are eight of them in total and they have been filled with stones to cushion the fall of the water on the surface. The architrctural rigidity of the entire complex is contrasted by the plasticity of the gargole and the rainwater colection tank elements. Here, rainwater made up of prefabricated elements in reinforced concrete created in a singular casting using plaster matrices. The gargole structures protruding orthogonally from the elevations create in particular conditions long and thin shadows on the surface of exposed concrete.” .” (Locatelli,2020)

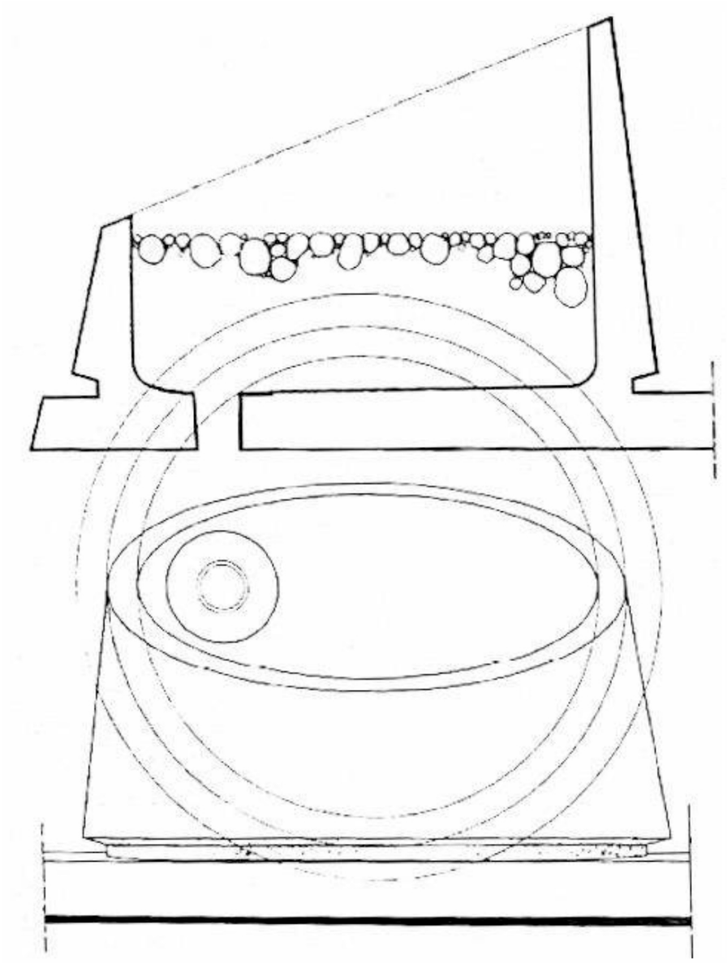


Fig 192 - Rainwater collection Tank drawing
Retrieved from : Casabella Edition No:297,1962

Fig 193 - Gargole and Rainwater collection tank
Photograph taken by the author

5.9.5 Roof system and Domes

“The production plant building also features a zenith entrance for natural light. In fact, in the 3500 m2 of the roof, two hundred domes mounted on prefabricated cylindrical elements in lime ostrich, of a height such as to avoid direct sunlight inside even in the summer; at the base of the skylights there is a circular neon lamp, with the aim of simulating natural lighting in the absence of external light. These domes, with a diameter of 1.14 m, are called Lanterplex and are made from an acrylic material called perspex. This material was used because it has several advantages: returns resistance to breakage, higher than that of glass; lightness, a skylight weighs approximately 10 kg/m2; elimination of condensation through the shape tion of the walls and the collection channel at the base. in this way the condense that forms on the internal surface is brought to the outside avoiding any dripping; high light output, transmitting up to 92% of solar radiation into internal environments; low maintenance, rain is enough to keep the skylights clean; low cost, thanks to the ease of installation, no maintenance and longevity.”(Locatelli,2020)

Fig 194 - Rooftop Domes
Retrieved from : Casabella Edition No:297,1962

“The roofing of the laboratories is made with the stimip system, that is, inverted pots and upper slabs with a total thickness of 50 centimeters. The whole is covered with insulating materials with a layer of ruberol, then cement paste and pumice cement on which bituminous cardboard and layers of asphalt are placed. The whole is protected by concrete slabs with a total thickness of about 100 centimeters. On the intrados there is a ceiling made of painted metal modular elements with an air gap of 18 centimeters for the technical systems.”(Locatelli,2020)

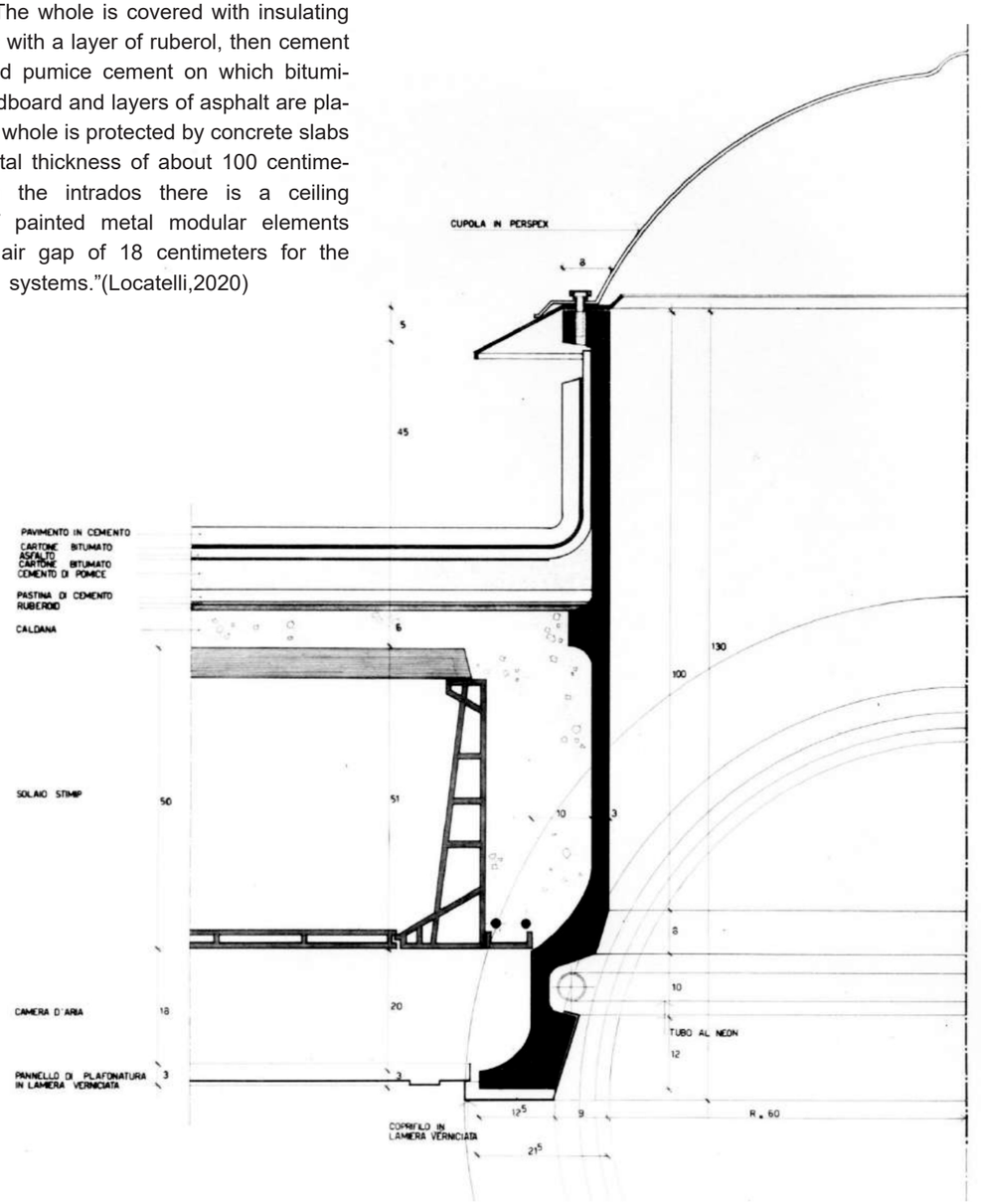


Fig 195 - Rooftop Domes detail
Retrieved from : Casabella Edition No:297,1962

5.9.6 Windows

“The windows and doors used in the complex were made of a light anodized aluminum alloy, a material used both for the perimeter glass frame and for the non-opaque internal partitions. Overall, it is estimated that 450 m2 of glass surface were installed. The windows, produced by Officine Meccaniche Ratti srl of Milan, had different opening modes. The smaller modules were characterised by a horizontal pivot opening that could be operated using remote cranks; other glass panels, for example in the office building, could instead rotate on the vertical axis, allowing for an exchange of optimal air.”(Corradini and Cremaschini,2024)

5.9.7 Chimney

“The chimney cylindrical in shape also built in prefabricated reinforced concrete elements; in the base of the chimney which extends to the basement, a staircase is built that descends to the base of the chimney, allowing periodic cleaning operations to be carried out indoors.” (Locatelli,2020)

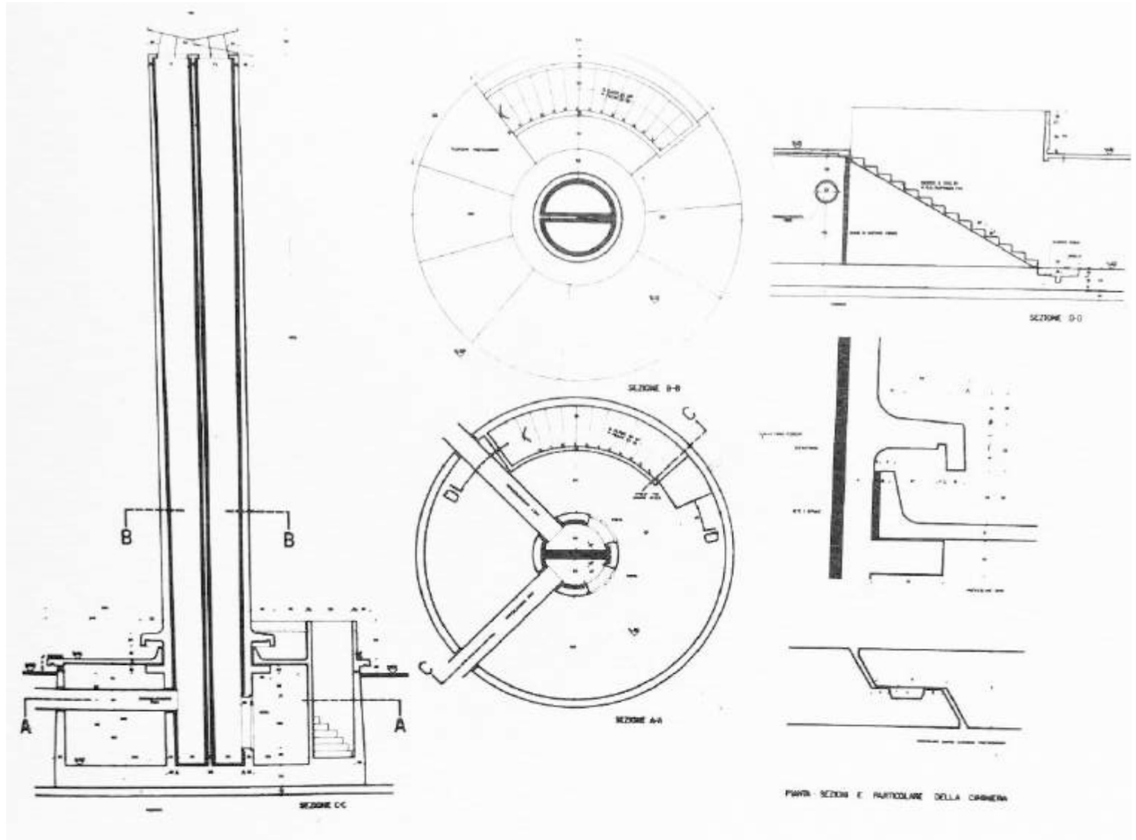


Fig 196 - Drawings of the Chimney
Retrieved from : Casabella Edition No:297,1962

Fig 197 - Chimney
Photograph taken by the author

5.10 Functionality and Use

“The main building is divided into two distinct buildings, rectangular plan buildings, orthogonal to each other and connected only in the underground part. The first is made up of two floors above ground and underground for a total of 1800 m2 and housed nine laboratories dedicated to biological, chemical and pharmaceutical functions. The research laboratories were located on the first floor, which also housed a library and a workshop for maintenance and repair of equipment. On the ground floor, there were the management and administrative offices, the secretariatria and the office for scientific relations, while in the basement there were rooms for virological studies. The various floors of the building are connected to each other by a self-supporting double flight staircase, linked only at the ends with an intermediate landing. The building perpendicular to the laboratories was the production plant. A building with only one floor above ground with a total surface area of 7000 m2. On the mezzanine floor the building is cut by a carriage passage which facilitated the loading and unloading of goods. On one side of the passage there is still today a thermal power station. In this area there are also toilets and womens changing rooms. On the othe side was the production area, once divided for two thirds of its length, by a long corridor, on the sides of which were the various production departments, seperated by floor to ceiling glass walls. At the end of the building were the packaging and shipping departments.” (Locatelli 2020)

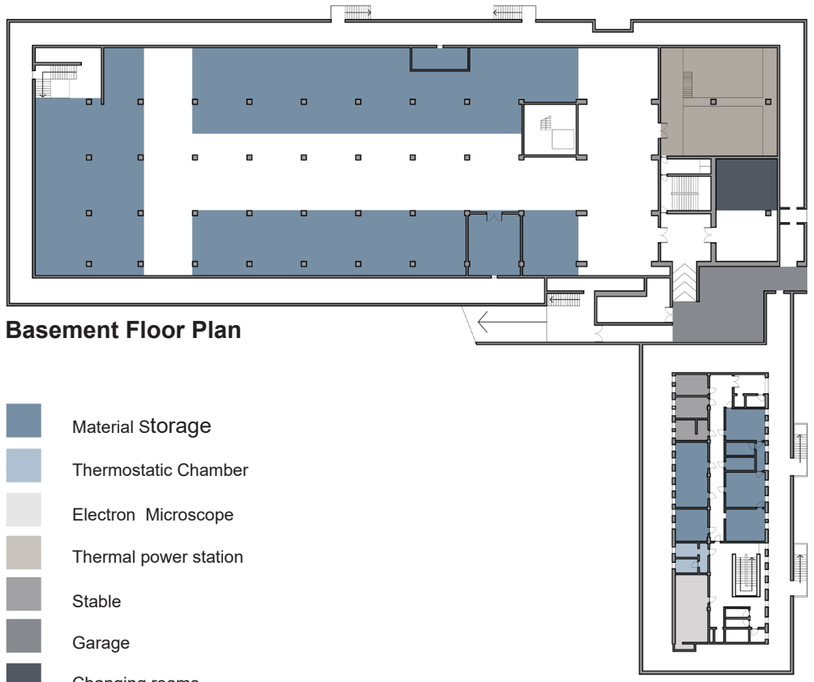


Fig 198 - Functionality map of basement floor
Created by author

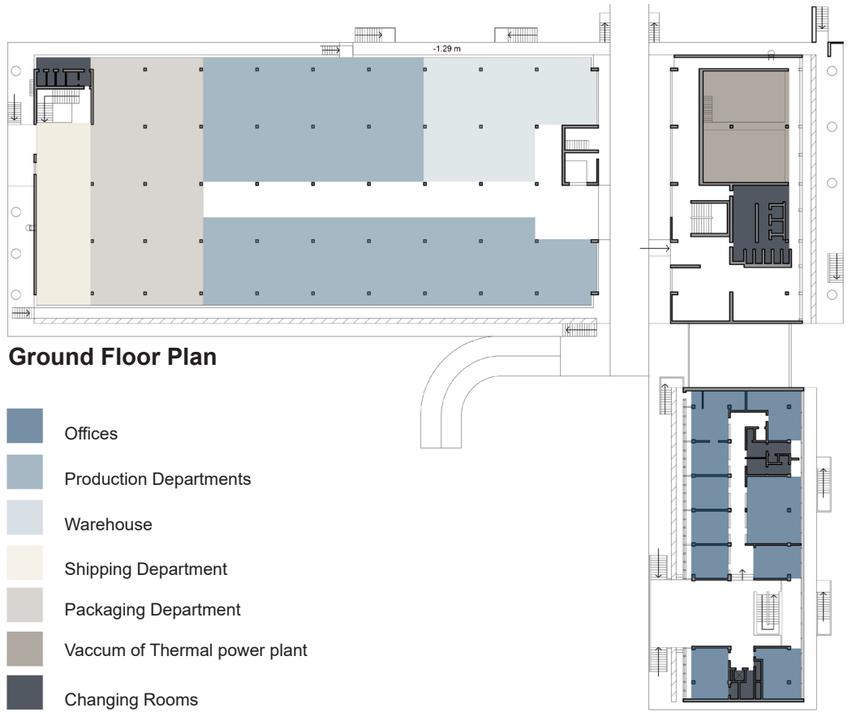


Fig 199 - Functionality map of ground floor
Created by author

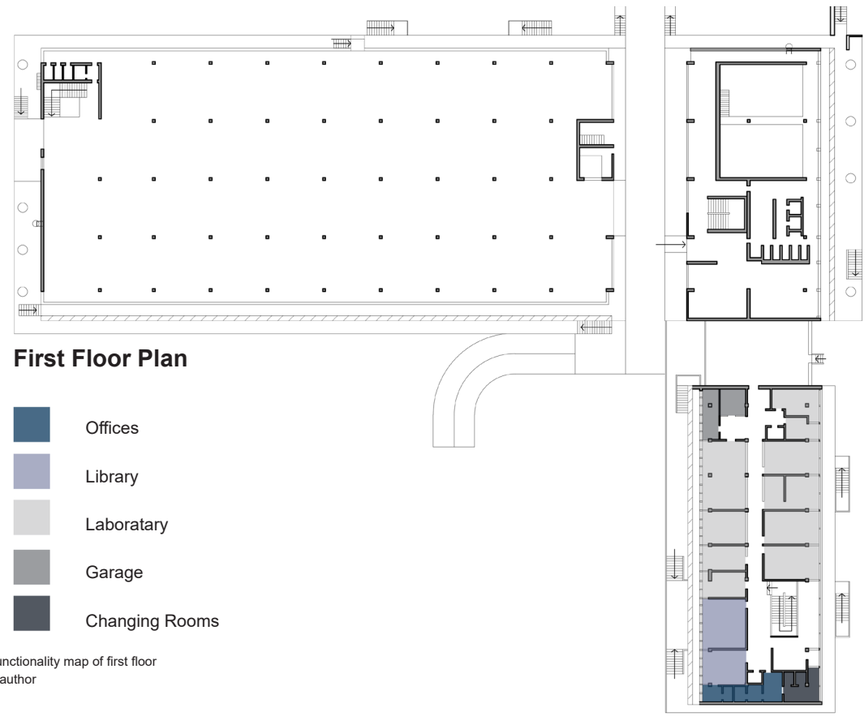


Fig 200 - Functionality map of first floor
Created by author

5.11 Structural System Analysis

“The vertical structure of the building is made up of columns that are arranged in a regular grid. The columns in the research block are separated by 4.3 meters, while the columns in the manufacturing building are approximately 7 meters by 7 meters. The imposed weights are carried down to the foundation by these columns as well as perimeter walls made of brick and reinforced concrete. Although floor systems differ throughout the complex, they are generally made up of concrete slabs and cross-ribbed bricks held up by beams oriented in two orthogonal directions, which reduce deflection and increase stability. The foundation system, which was developed in response to difficult soil conditions found during the initial site excavations, receives the loads fromthesevertical structural elements.” (Corradini and Cremaschini, 2024)

7.11.1 Exploded view of the structure

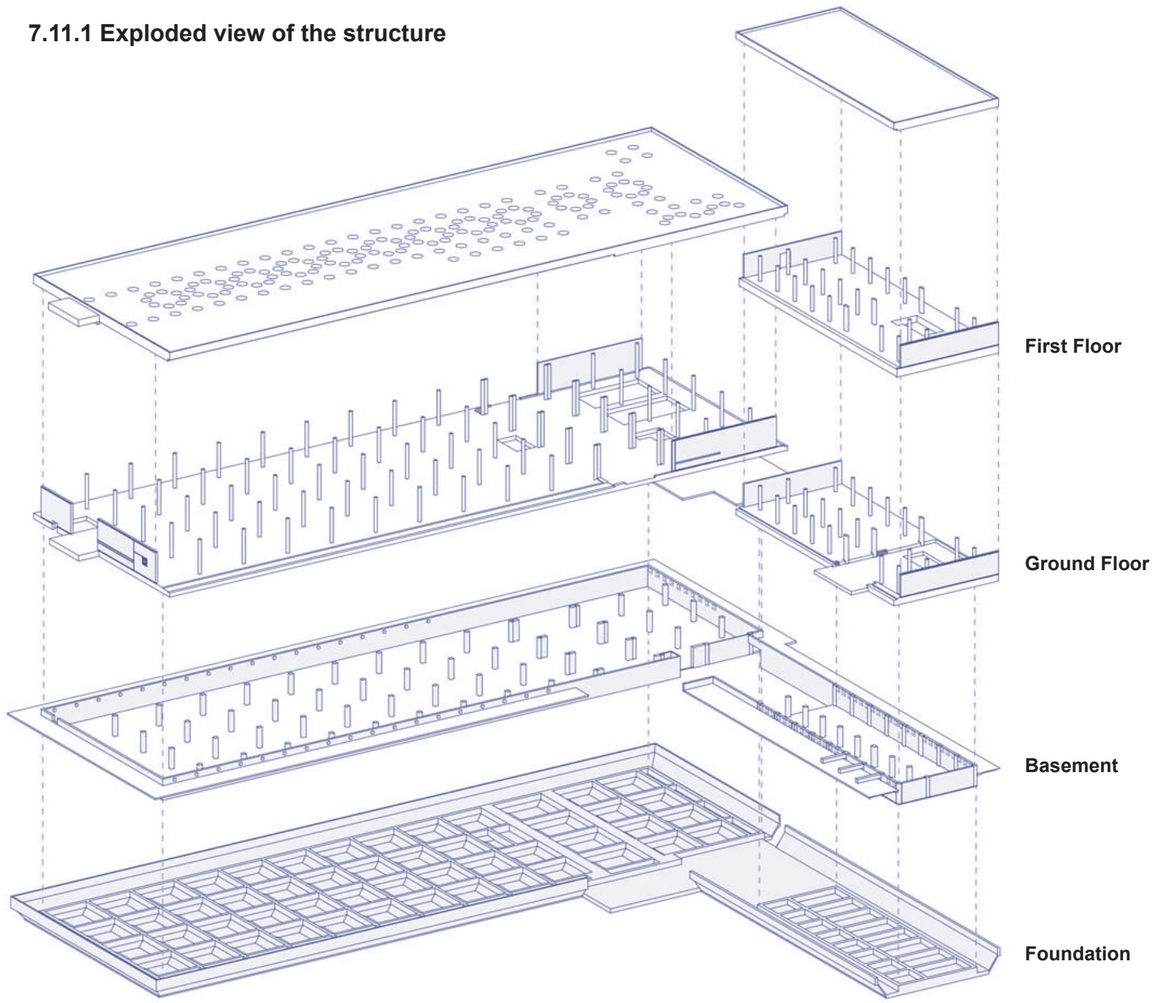


Fig 201 - Exploded view of structural system
Retrieved from : https://www.archilovers.com

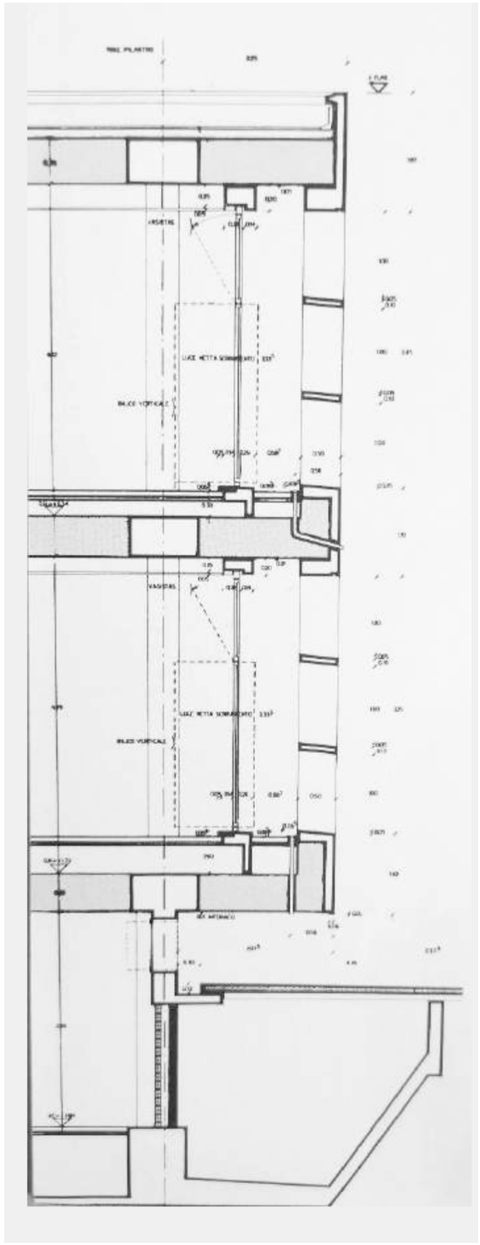


Fig 202 - Cross section of the Research block
Retrieved from : Casabella Edition No:297,1962

“The structural system of the Marxer Pharmaceutical Building is designed to efficiently transfer vertical loads through a framework of columns and supporting walls, which bear the weight of the floors and roof.” (Massari,2018)

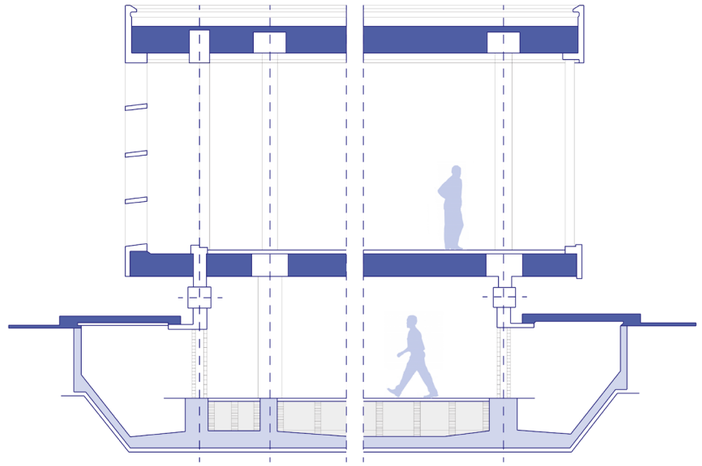


Fig 203 - Cross section of Production Building
Redrawn from Casabella Edition No:297,1962

“Initial geotechnical investigations revealed that the soil beneath the building site was of poor quality, with very low resistance in the upper layers. Detailed surveys, including penetrometric and load tests extending to 30 meters in depth, showed a stratigraphy characterized by moist sandy clays in the top 4.5 meters, followed by layers of gravel, clay, lignite, and eventually compact clay. Importantly, the first 3 meters provided almost no structural support, with soil bearing capacity increasing significantly below 9 meters and reaching optimal conditions at 14 meters.

To prevent uneven stress distribution from the underground perimeter walls, which could exert load on the cantilevered foundation brackets without upper support, the walls were inclined at 45 degrees. This design not only stabilized the wall system but also supported the perimeter sidewalk, which connects structurally to the first floor. The foundation included a ventilated crawl space made of solid brick walls spaced 90 cm apart. All foundation elements were waterproofed to resist ground moisture, and a service cavity was included around the perimeter for utility installation.” (Massari,2018)

5.12 Structural Details

5.12.1 Basement Floor Plan

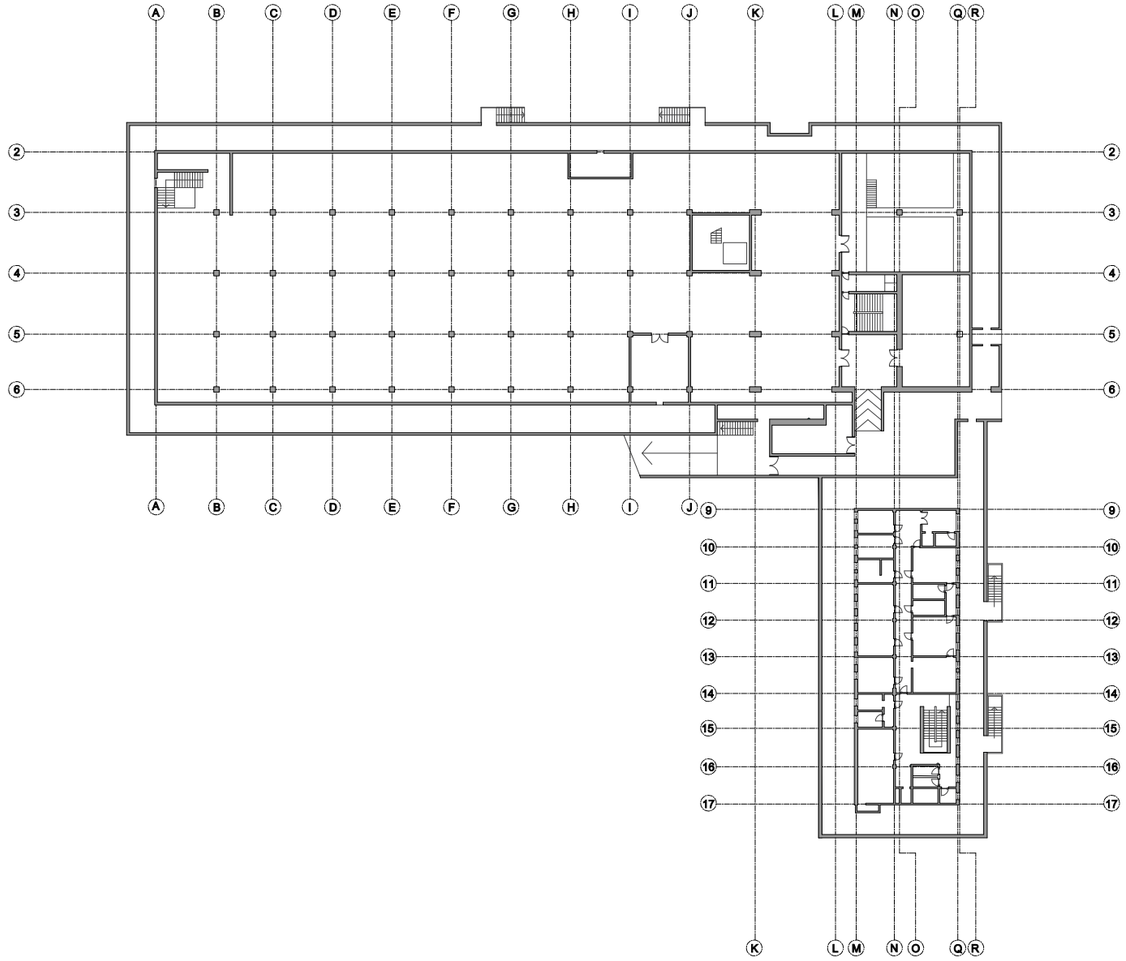


Fig 204 - Basement floor Plan
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

5.12.2 Ground Floor Plan

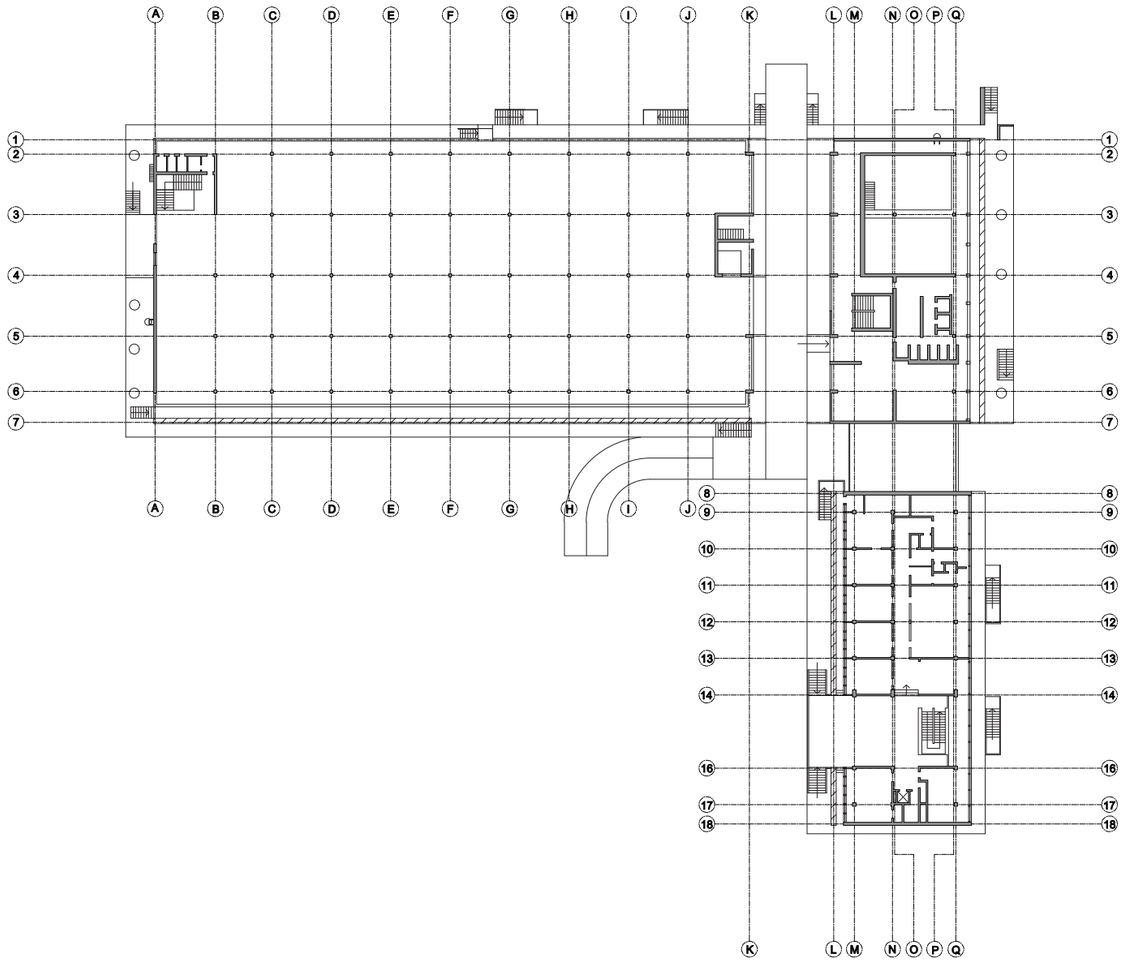


Fig 205 - Ground floor Plan
Created by author

5.12.3 First Floor Plan

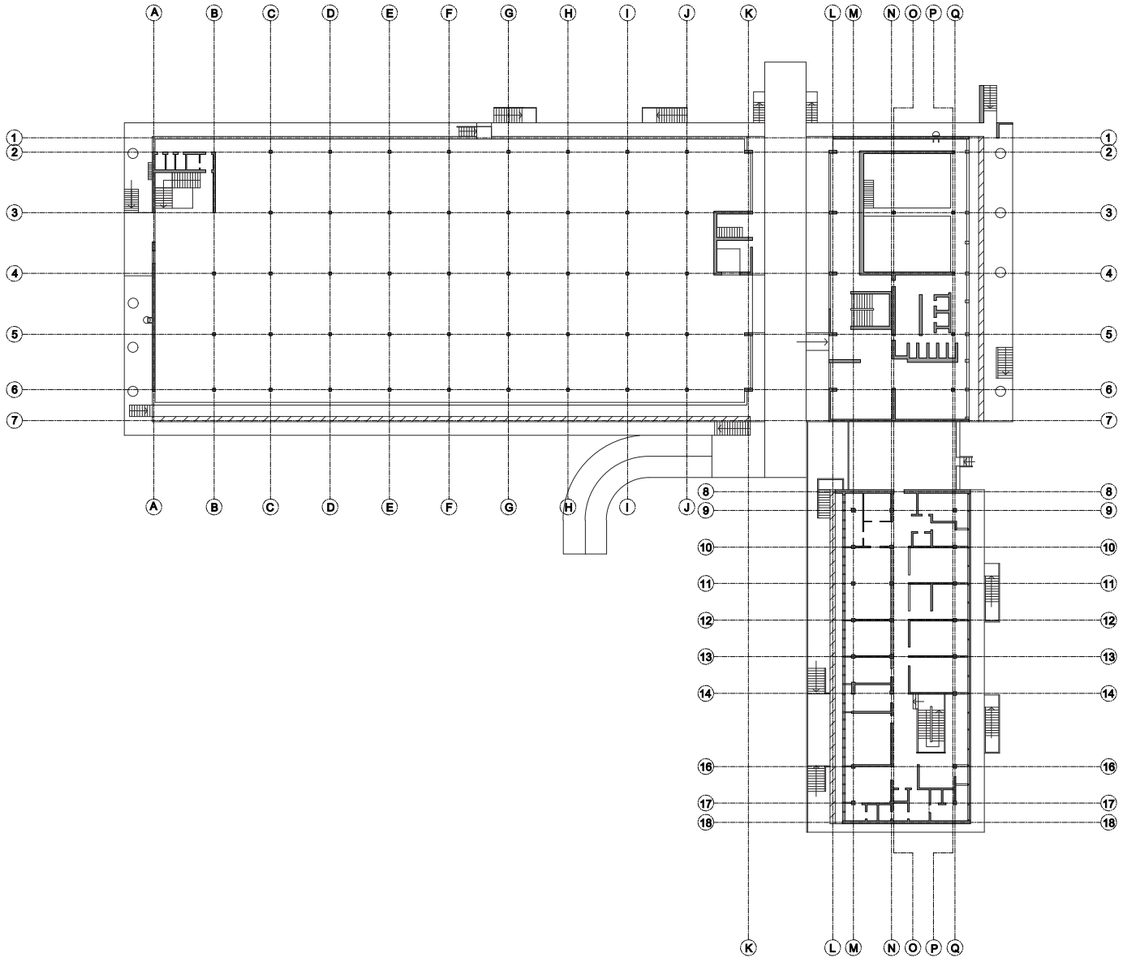


Fig 206 - First floor Plan
Created by author

5.12.4 Roof Plan

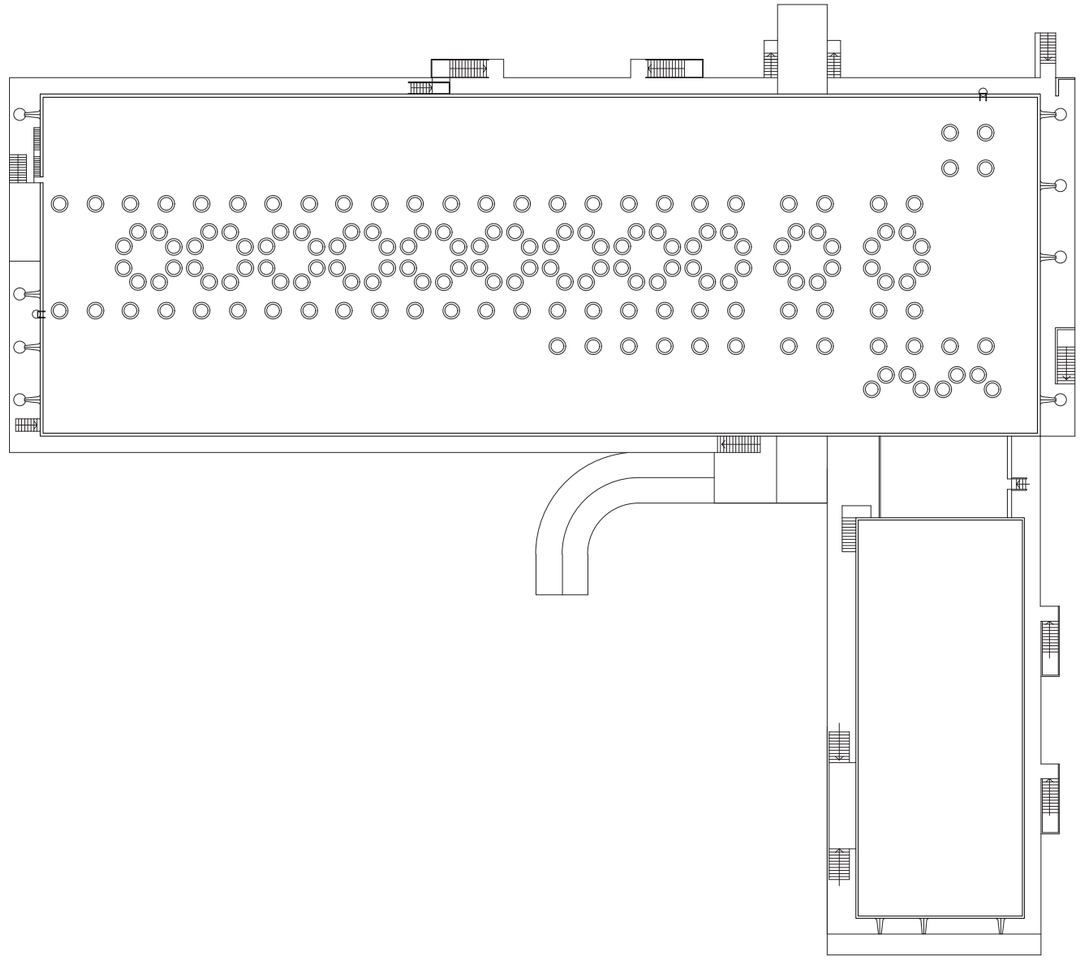


Fig 207 - Roof Plan
Created by author

5.12.5 Basement floor Column Layout

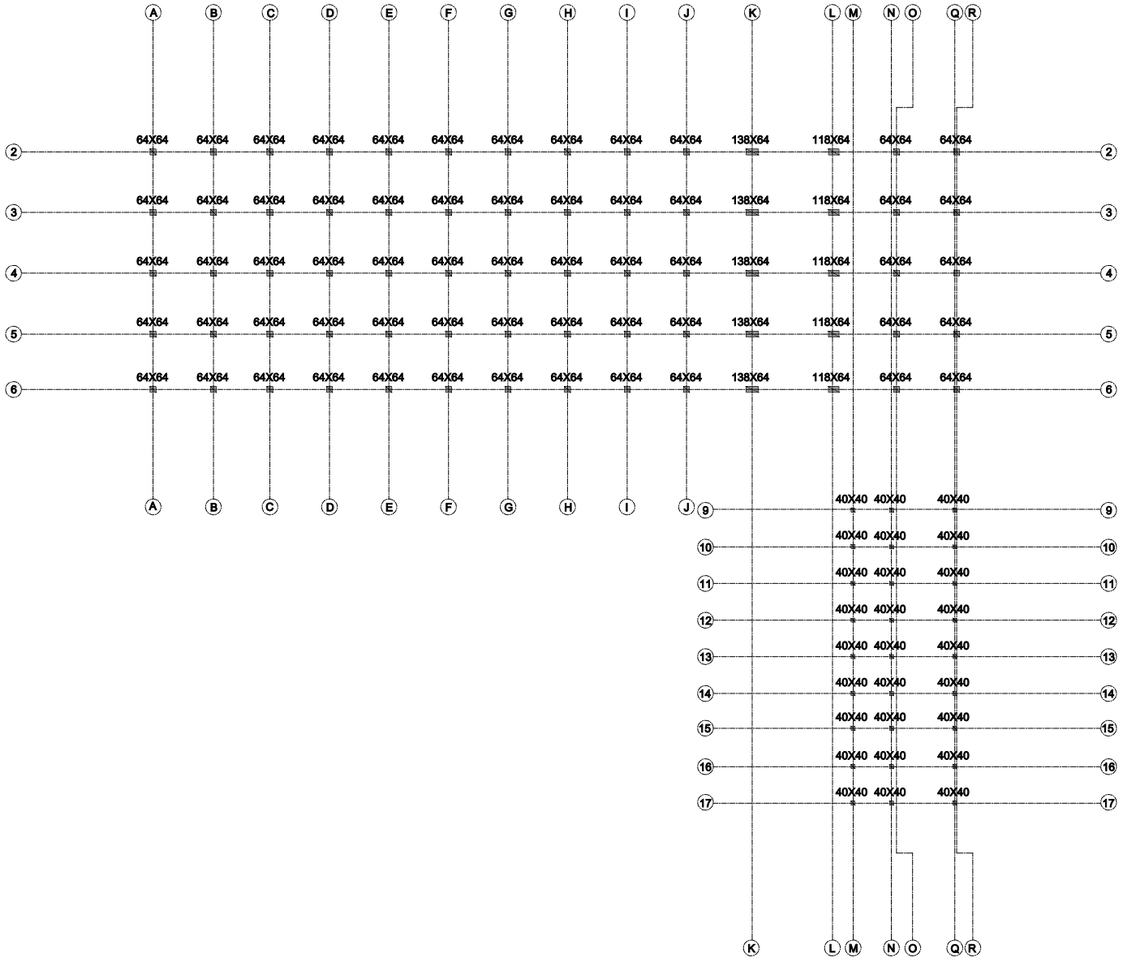


Fig 208 - Basement floor column layout
Created by author

5.12.6 Ground and first floor Column Layout

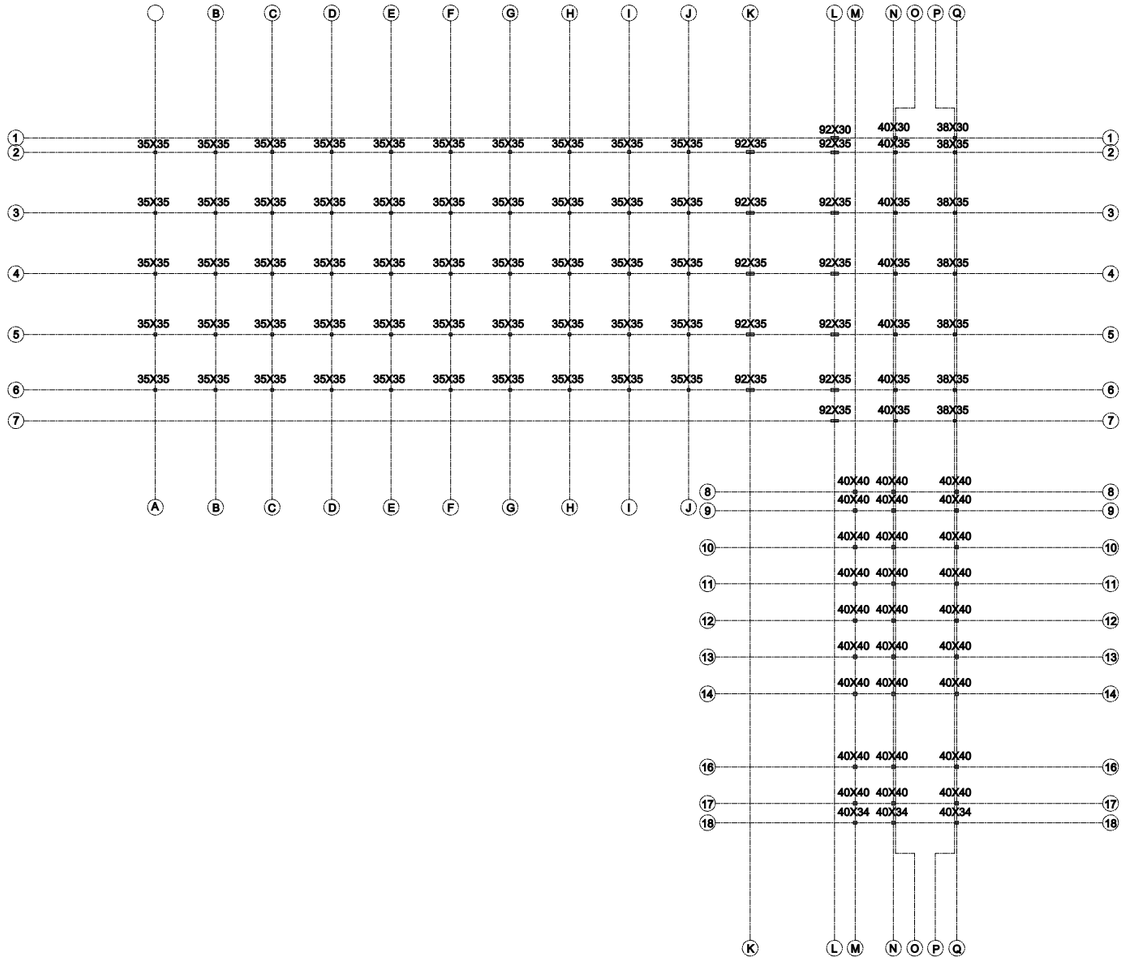
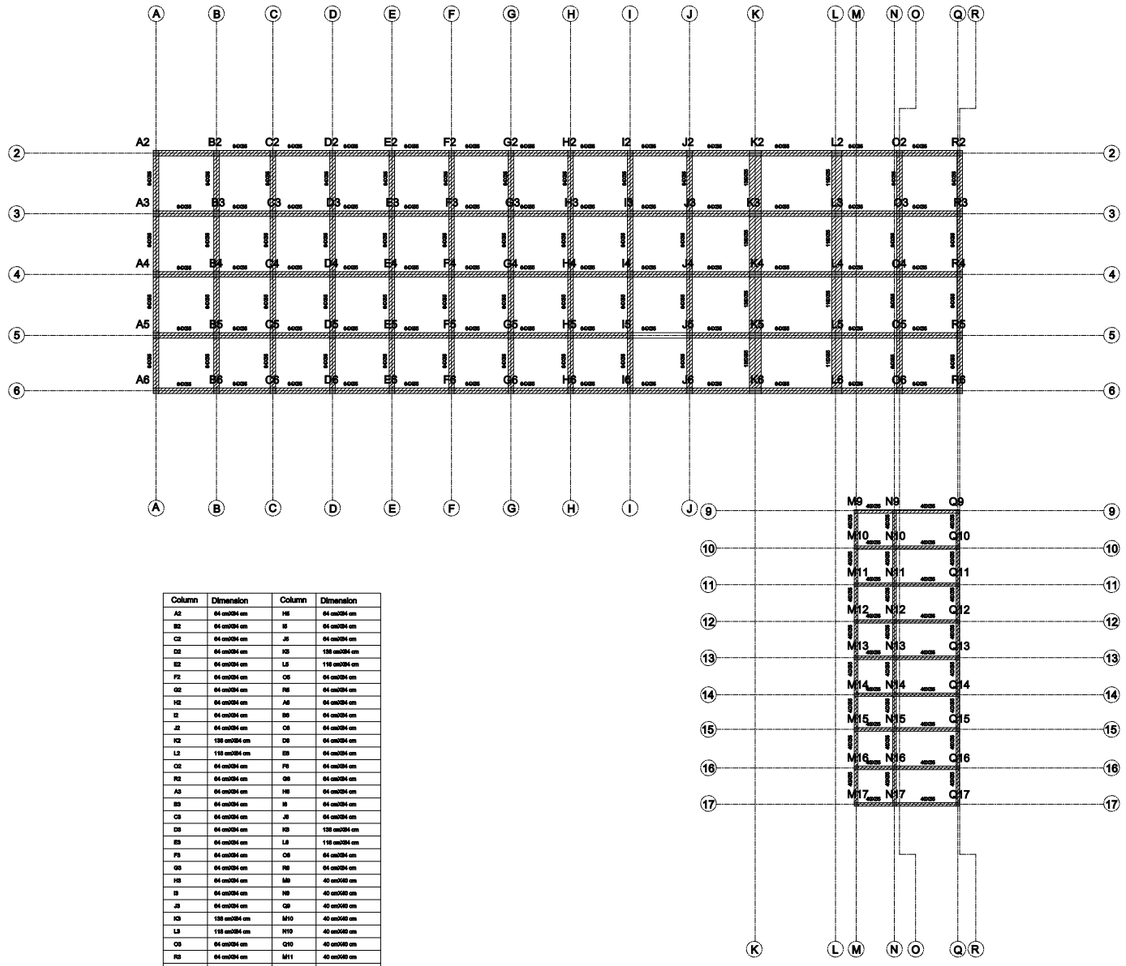


Fig 209 - Ground and first floor column layout
Created by author

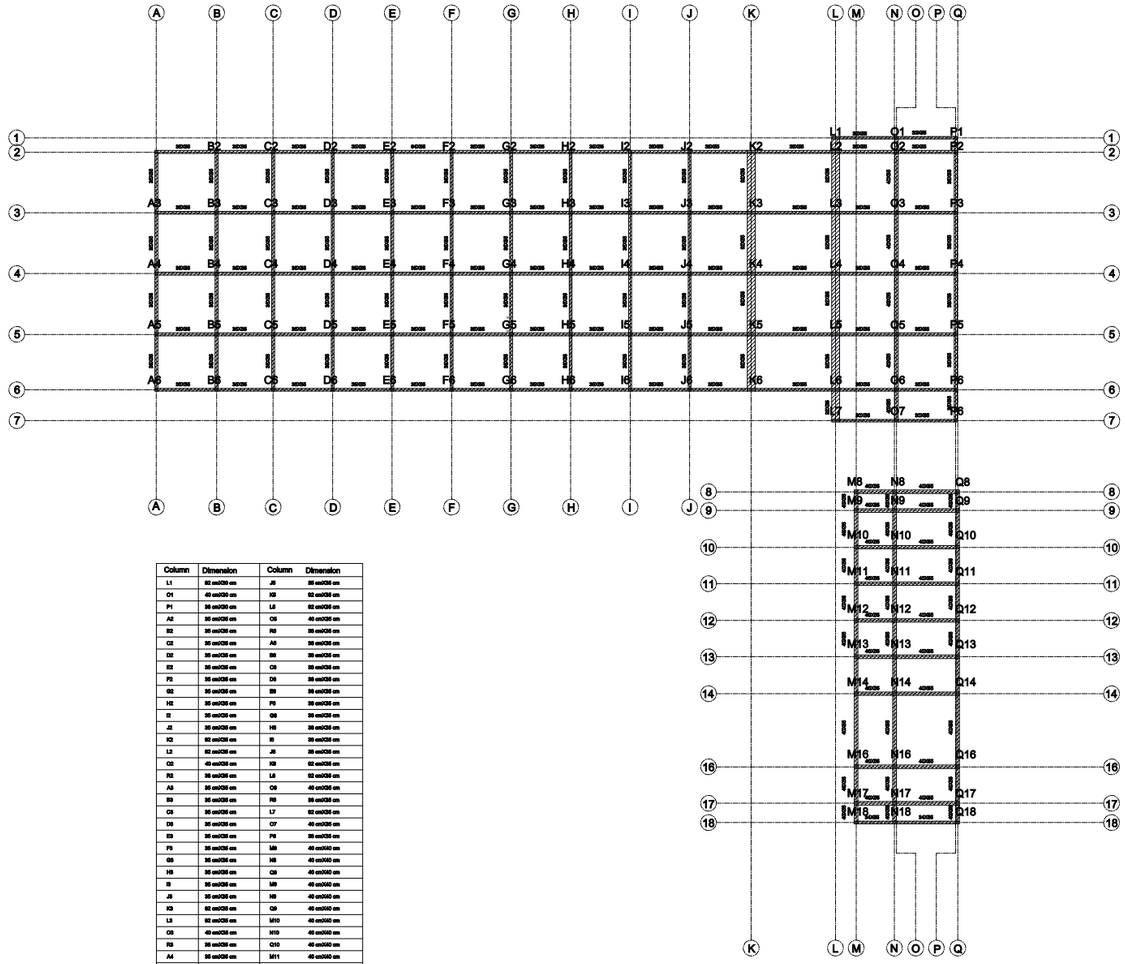
5.12.7 Basement floor beam Layout



Column	Dimension	Column	Dimension
A2	64 cm/264 cm	H6	64 cm/264 cm
B2	64 cm/264 cm	I6	64 cm/264 cm
C2	64 cm/264 cm	J6	64 cm/264 cm
D2	64 cm/264 cm	K6	138 cm/264 cm
E2	64 cm/264 cm	L6	116 cm/264 cm
F2	64 cm/264 cm	O6	64 cm/264 cm
G2	64 cm/264 cm	R6	64 cm/264 cm
H2	64 cm/264 cm	A8	64 cm/264 cm
I2	64 cm/264 cm	B8	64 cm/264 cm
J2	64 cm/264 cm	C8	64 cm/264 cm
K2	138 cm/264 cm	D8	64 cm/264 cm
L2	116 cm/264 cm	E8	64 cm/264 cm
O2	64 cm/264 cm	F8	64 cm/264 cm
R2	64 cm/264 cm	G8	64 cm/264 cm
A3	64 cm/264 cm	H8	64 cm/264 cm
B3	64 cm/264 cm	I8	64 cm/264 cm
C3	64 cm/264 cm	J8	64 cm/264 cm
D3	64 cm/264 cm	K8	138 cm/264 cm
E3	64 cm/264 cm	L8	116 cm/264 cm
F3	64 cm/264 cm	O8	64 cm/264 cm
G3	64 cm/264 cm	R8	64 cm/264 cm
H3	64 cm/264 cm	M9	40 cm/240 cm
I3	64 cm/264 cm	N9	40 cm/240 cm
J3	64 cm/264 cm	Q9	40 cm/240 cm
K3	138 cm/264 cm	M10	40 cm/240 cm
L3	116 cm/264 cm	N10	40 cm/240 cm
O3	64 cm/264 cm	Q10	40 cm/240 cm
R3	64 cm/264 cm	M11	40 cm/240 cm
A4	64 cm/264 cm	N11	40 cm/240 cm
B4	64 cm/264 cm	Q11	40 cm/240 cm
C4	64 cm/264 cm	M12	40 cm/240 cm
D4	64 cm/264 cm	N12	40 cm/240 cm
E4	64 cm/264 cm	Q12	40 cm/240 cm
F4	64 cm/264 cm	M13	40 cm/240 cm
G4	64 cm/264 cm	N13	40 cm/240 cm
H4	64 cm/264 cm	Q13	40 cm/240 cm
I4	64 cm/264 cm	M14	40 cm/240 cm
J4	64 cm/264 cm	N14	40 cm/240 cm
K4	138 cm/264 cm	Q14	40 cm/240 cm
O4	64 cm/264 cm	M15	40 cm/240 cm
A5	64 cm/264 cm	N15	40 cm/240 cm
B5	64 cm/264 cm	Q15	40 cm/240 cm
C5	64 cm/264 cm	M16	40 cm/240 cm
D5	64 cm/264 cm	N16	40 cm/240 cm
E5	64 cm/264 cm	Q16	40 cm/240 cm
F5	64 cm/264 cm	M17	40 cm/240 cm
G5	64 cm/264 cm	N17	40 cm/240 cm

Fig 210 - Basement floor beam layout
Created by author

5.12.8 Ground and first floor beam Layout



Column	Dimension	Column	Dimension
L1	82 cm/230 cm	J6	80 cm/236 cm
O1	40 cm/230 cm	K6	82 cm/236 cm
P1	80 cm/230 cm	L6	82 cm/236 cm
A2	80 cm/236 cm	O6	40 cm/236 cm
B2	80 cm/236 cm	R6	80 cm/236 cm
C2	80 cm/236 cm	A8	80 cm/236 cm
D2	80 cm/236 cm	B8	80 cm/236 cm
E2	80 cm/236 cm	C8	80 cm/236 cm
F2	80 cm/236 cm	D8	80 cm/236 cm
G2	80 cm/236 cm	E8	80 cm/236 cm
H2	80 cm/236 cm	F8	80 cm/236 cm
I2	80 cm/236 cm	G8	80 cm/236 cm
J2	80 cm/236 cm	H8	80 cm/236 cm
K2	82 cm/236 cm	I8	80 cm/236 cm
L2	82 cm/236 cm	J8	80 cm/236 cm
O2	40 cm/236 cm	K8	82 cm/236 cm
P2	80 cm/236 cm	L8	82 cm/236 cm
A3	80 cm/236 cm	O8	40 cm/236 cm
B3	80 cm/236 cm	R8	80 cm/236 cm
C3	80 cm/236 cm	L7	82 cm/236 cm
D3	80 cm/236 cm	O7	40 cm/236 cm
E3	80 cm/236 cm	P8	80 cm/236 cm
F3	80 cm/236 cm	M9	40 cm/240 cm
G3	80 cm/236 cm	N9	40 cm/240 cm
H3	80 cm/236 cm	Q9	40 cm/240 cm
I3	80 cm/236 cm	M9	40 cm/240 cm
J3	80 cm/236 cm	N9	40 cm/240 cm
K3	82 cm/236 cm	Q9	40 cm/240 cm
L3	82 cm/236 cm	M10	40 cm/240 cm
O3	40 cm/236 cm	N10	40 cm/240 cm
R3	80 cm/236 cm	Q10	40 cm/240 cm
A4	80 cm/236 cm	M11	40 cm/240 cm
B4	80 cm/236 cm	N11	40 cm/240 cm
C4	80 cm/236 cm	Q11	40 cm/240 cm
D4	80 cm/236 cm	M12	40 cm/240 cm
E4	80 cm/236 cm	N12	40 cm/240 cm
F4	80 cm/236 cm	Q12	40 cm/240 cm
G4	80 cm/236 cm	M13	40 cm/240 cm
H4	80 cm/236 cm	N13	40 cm/240 cm
I4	80 cm/236 cm	Q13	40 cm/240 cm
J4	80 cm/236 cm	M14	40 cm/240 cm
K4	82 cm/236 cm	N14	40 cm/240 cm
O4	40 cm/236 cm	Q14	40 cm/240 cm
A5	80 cm/236 cm	M15	40 cm/240 cm
B5	80 cm/236 cm	N15	40 cm/240 cm
C5	80 cm/236 cm	Q15	40 cm/240 cm
D5	80 cm/236 cm	M17	40 cm/240 cm
E5	80 cm/236 cm	N17	40 cm/240 cm
F5	80 cm/236 cm	Q17	40 cm/240 cm
G5	80 cm/236 cm	M18	40 cm/240 cm
H5	80 cm/236 cm	N18	40 cm/240 cm
I5	80 cm/236 cm	Q18	40 cm/240 cm

Fig 211 - Ground and First floor beam layout
Created by author

“The floors are made with the Sti-mip system, a model patented by Fornacia RDB of Piacenza. Here the pignatte are composed of 4 distinct elements placed successively in place. At the ends of the beams, two Lshaped bricks are first positioned. A lower board is then placed between these two beams and a higher board is placed on top. The latter closes the whole and guarantees the stability of the whole, replacing the concrete slab. Once these boxes have been made, the reinforcements can be arranged, along 1 or 2 axes, and finally the beams are cast. Like the floors, the roof is also made with the Stimip system, with bricks with an overall thickness of more than 50 centimeters and reinforced concrete mesh. This mixed set is covered with insulating materials with a layer of ruberol, then cement paste and pumice cement, on which bituminous cardboard and layers of asphalt are placed. The whole is protected by concrete slabs with an overall thickness of about 100 centimeters. On the internal side, a ceiling is arranged made of painted metal modular elements with an 18 centimeter air gap for the technical systems.” (Corradini and Cremaschini,2024)

“The static behaviour of Stimip-type floors is based on the principle that the terracotta which forms the upper part of the holes (pignatte) is called upon to perform a real static function, completely replacing the ordinary cement slab.”
(The use of bricks in the Italian Architecture of late 1930s: references and evocations to Ancient Rome ,2014)

5.12.9 STIMIP Slab Detail

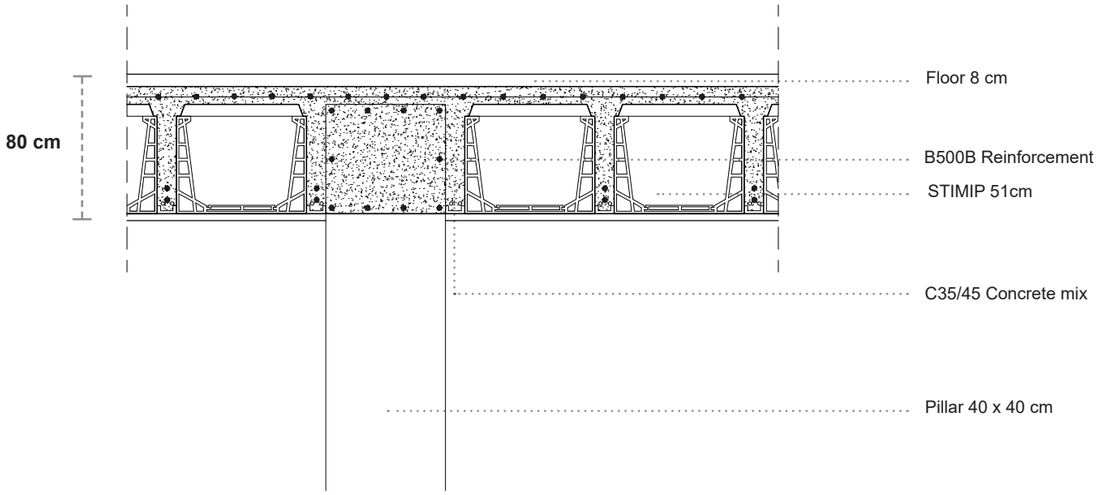


Fig. 212 - Stimip Slab Detail
Created by author

5.12.10 Skylight Detail

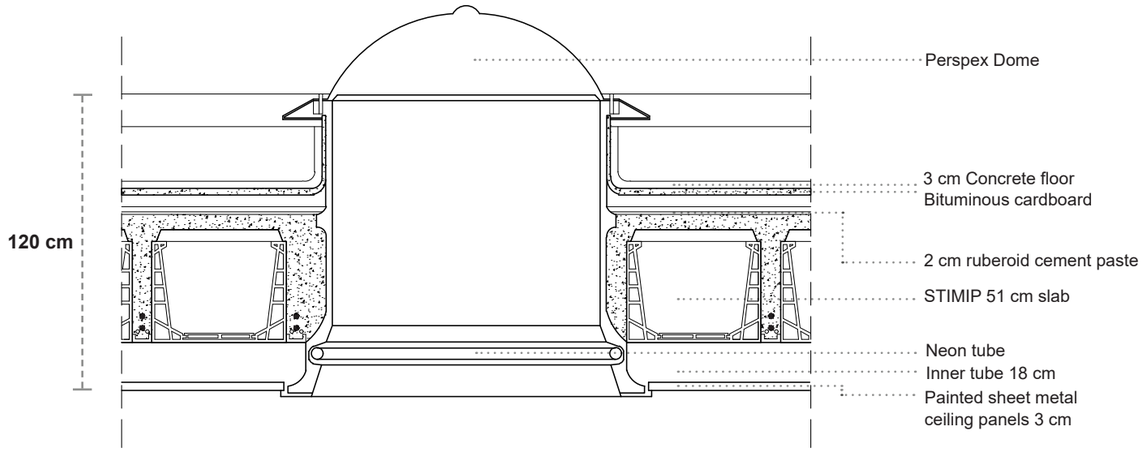


Fig. 213 - Skylight Detail
Created by author

5.12.11 Foundation

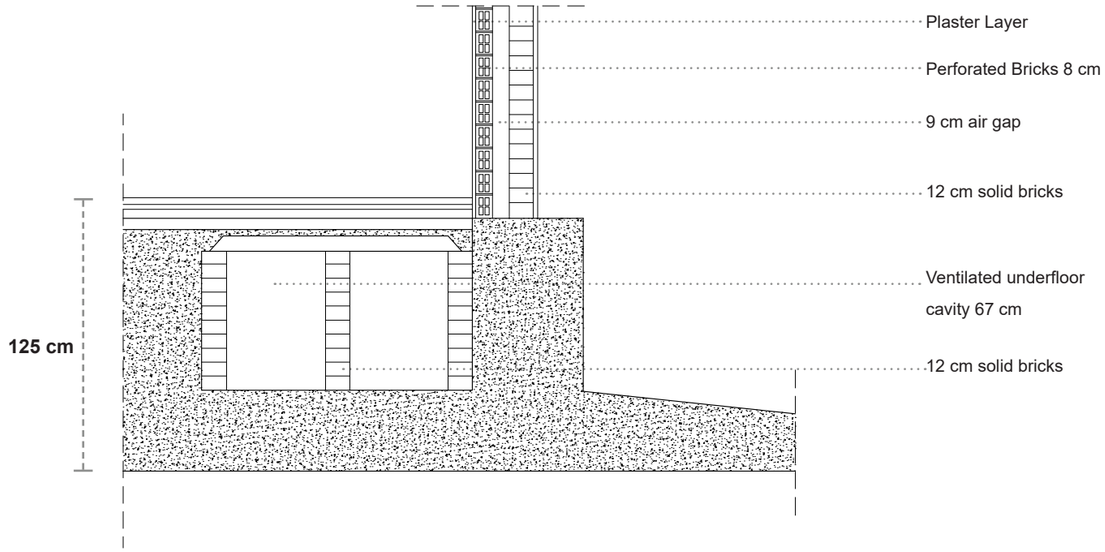


Fig. 214 - Foundation Detail
Created by author

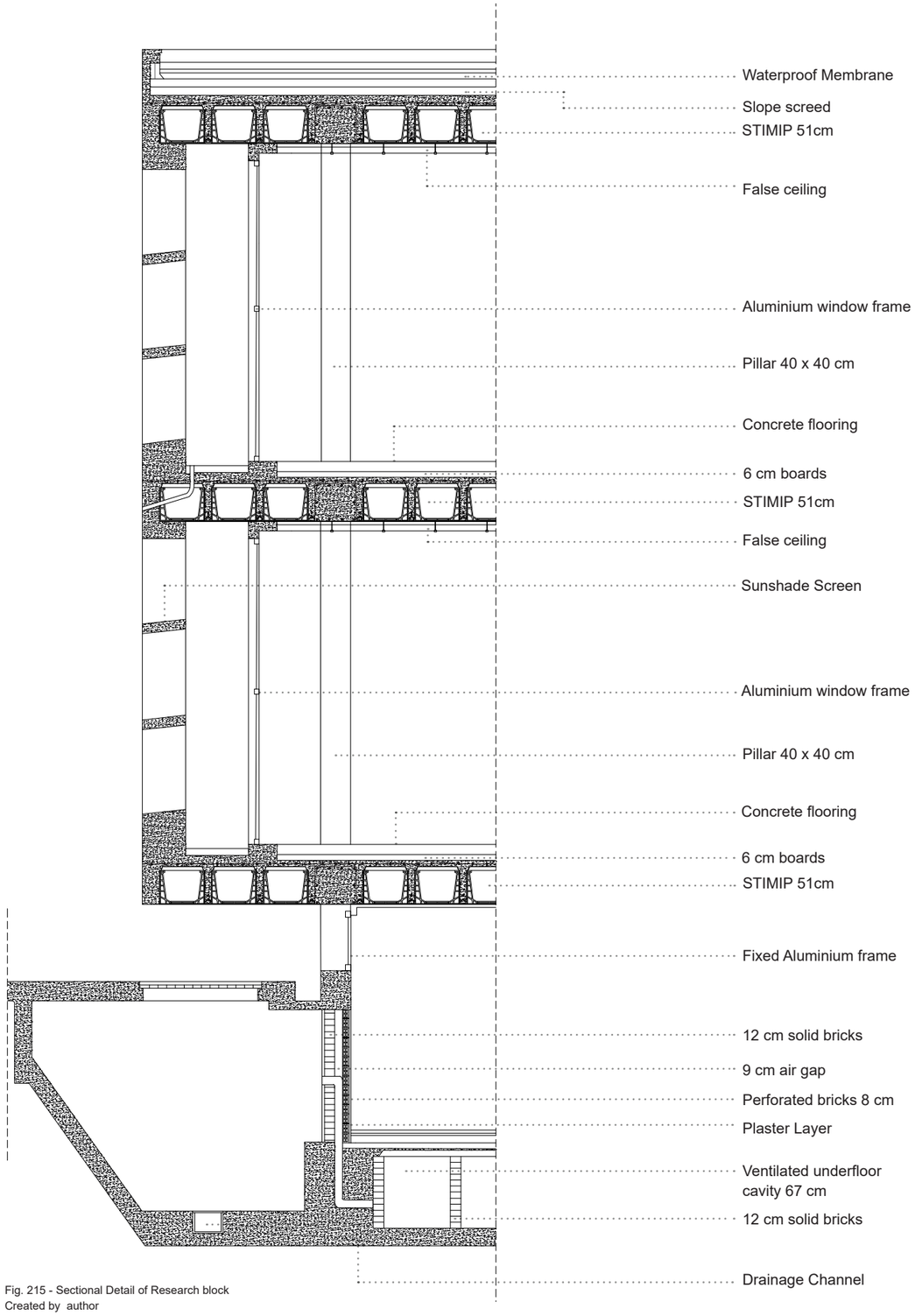


Fig. 215 - Sectional Detail of Research block
Created by author

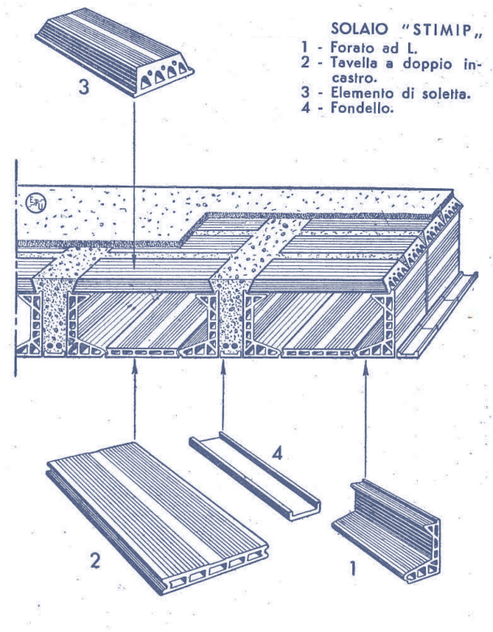


Fig. 216 - Stimip system
Retrieved from : https://www.tecnaria.com

“STIMIP FLOORING – Patented and manufactured in Italy (Fornaci R.D.B. of Piacenza). The principle on which its static behavior is based is as follows:

The concrete that constitutes the upper part of the hollow blocks is called and has a true and proper static function, completely replacing the ordinary cement slab, which for these types of floors has been eliminated. The replacement of the upper concrete slab with cement, in addition to being allowed by current legislation, meets the technical and physical requirements of the two materials. In fact, the modulus of elasticity was found to be almost the same for both the concrete and the brick, while the adhesion between the two materials proved to be very significant. The compressive strength of good quality brick is very high, and in some cases exceeds 1000 kg/cm². The advantages of replacing one material with another:

Maximum utilization of the material and greater economic convenience.
Lower specific weight, lower overall slab weight, and therefore less iron required.” (Piacenza n.d.)

06| SWOT ANALYSIS

6.1 Swot Analysis - Strengths

Urban Scale Point of View

Historical Significance
The building has a great significance in Ivrea's industrial heritage, with the city's Olivetti-era and unesco zone.

Addressing Urban Deficiencies
Ivrea has a shortage of cultural and public spaces, and repurposing the building for uses like a library, gathering spaces, and a movie theatre can meet these needs. The proximity of building to residential areas, can give potential for community oriented adaptive approach.

Proximity to Mountains for Winter Sports
Since the building is near to mountain, it offers possibilities for the construction of winter sports facilities and lodging options for visitors who come to Ivrea for the ski season.

Transportation Access
With roads and infrastructure that can handle more traffic, the location offers convenient access to transportation.

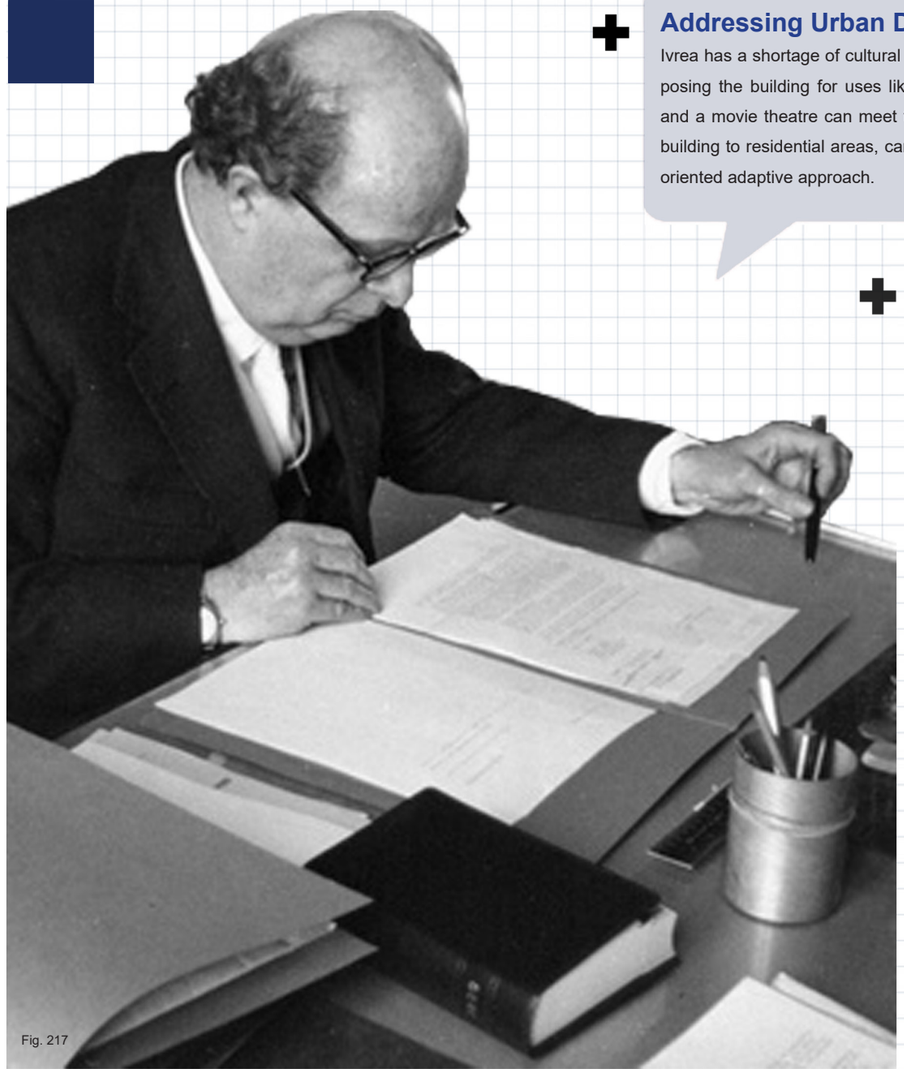


Fig. 217

Strengths

Imaginary conversation between Adriano Olivetti and a factory worker

Architectural Scale Point of View

Architectural Diversity
Its brutalist design contrasts with the surrounding rationalist Olivetti buildings, adding to Ivrea's architectural variety.

Structural Robustness
The reinforced concrete and modular layout make the building adaptable for various new functions.

Land Availability
The project's flexibility is increased by the availability of expansive surrounding land, which provides flexibility for future additions or outdoor facilities.

Fig. 218

SWOT ANALYSIS

6.2 Swot Analysis - Weakness

Urban Scale Point of View

Distance from City Center
The building is 4.8 km away from the city center, which may reduce its accessibility and appeal to visitors.

Lack of Urban Programming
The absence of surrounding urban activities or functions means that the building currently does not act as an active, vibrant node in the city.

Seasonal Tourism Fluctuations
Summer and winter tourism fluctuations can cause many of operational issues, which needs careful planning to guarantee year-round participation.

Ongoing Transformation of Ivrea
Ivrea is still in the process of transitioning from an industrial hub to a cultural and recreational destination, which could delay public perception of the building's new role and purpose.

Fig. 219

Weakness
Imaginary conversation between Ivrea residents

Infrastructure Modifications Needed
Significant infrastructure changes are required to accommodate new functions, which may be costly, complex, and challenging due to the building's original design.

Architectural Scale Point of View

Limited Visibility and Recognition
Notwithstanding its historical significance, the building might not be as well-known or visible as other nearby iconic buildings, which could reduce its capacity to draw interest and tourists.

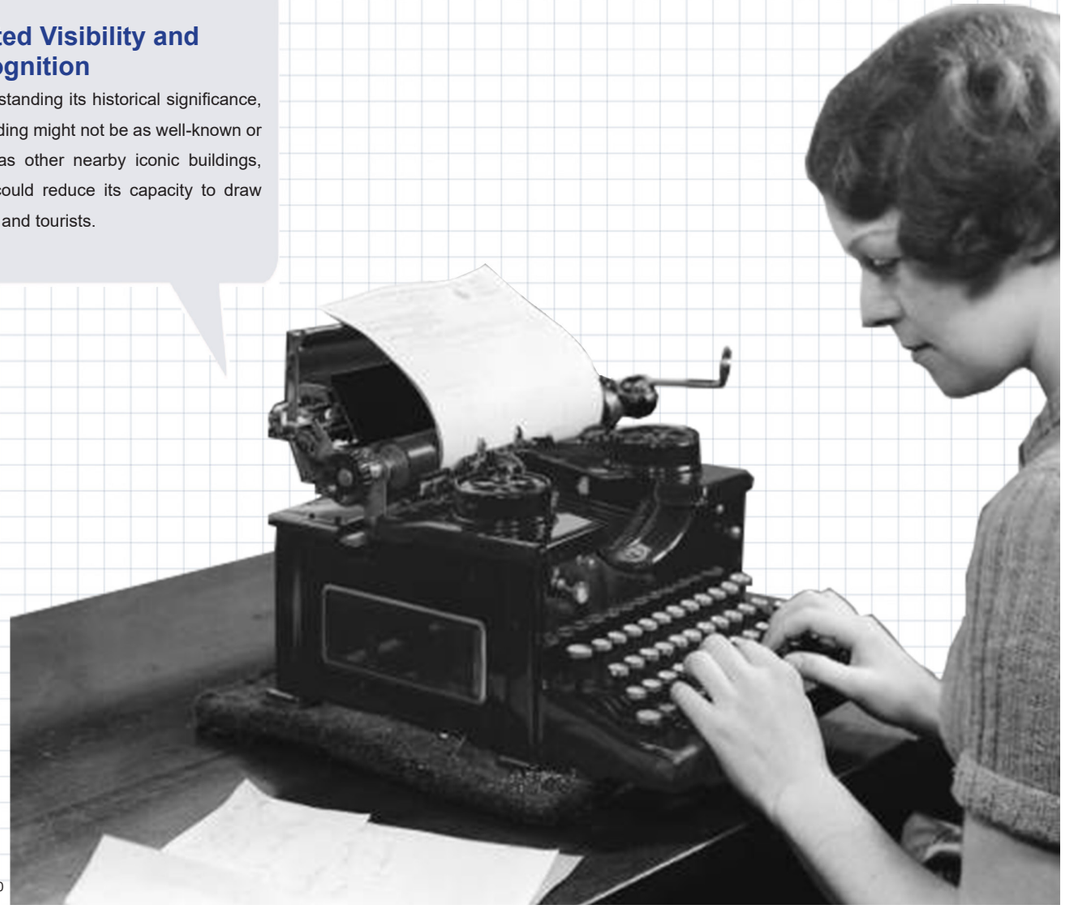


Fig. 220

SWOT ANALYSIS

6.3 Swot Analysis - Opportunities

Urban Scale Point of View

Urban Regeneration Case Study

Ivrea has the potential to become a leading example of industrial heritage and urban regeneration, attracting students, professionals, and architects interested in adaptive reuse.

Reviving the Olivetti Community Legacy

Ivrea's industrial history, particularly the Olivetti company's commitment to community and workers, can be carried forward through the development of social spaces within the Marxer Building. This would create areas where people can gather, collaborate, and engage with the site, re-establishing the community focus that Olivetti once stood for, even after the site's abandonment.

Accommodation Demand

With Ivrea facing a shortage of accommodation, the repurposed Marxer Building could provide hotel or serviced apartment options, addressing a key urban need.

Support for Outdoor Tourism

In order to promote year-round adventure tourism, the surrounding natural landscape presents opportunities for the development of support facilities for outdoor pursuits like hiking, skydiving, and winter sports.

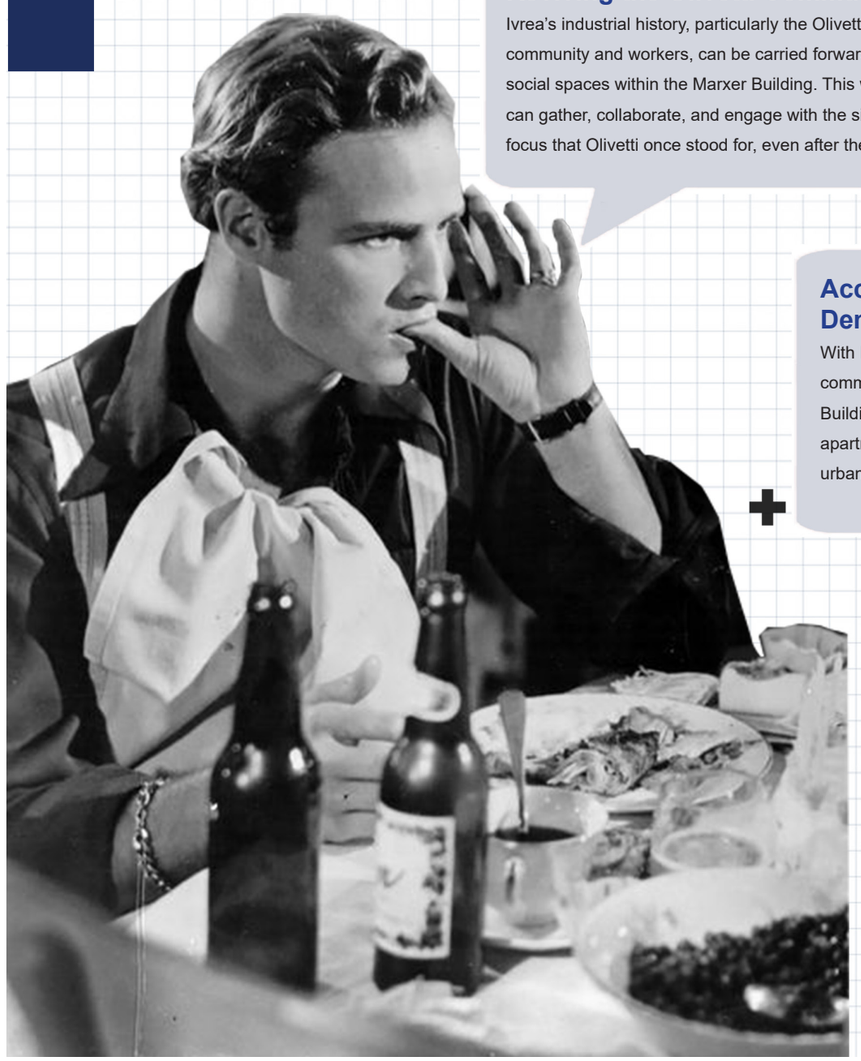


Fig. 221

Opportunities

Imaginary conversation between Ivrea residents

Architectural Scale Point of View

Adaptive Reuse Model

The structure might be used as an example of adaptive reuse for industrial sites, giving example of how industrial heritage can be maintained while incorporating the contemporary uses.

Increased Architectural Tourism

By providing sufficient accommodation options, the project could encourage visitors to stay for longer, allowing them to explore both the historical and modern parts of Ivrea. This will increase the flow of architecture enthusiasts who want to experience Ivrea's rich architectural heritage, from Olivetti's modernist buildings to the newly revitalized spaces.

Cultural Venue Potential

A movie theater or other performance space could be built out of the subterranean areas, expanding Ivrea's cultural offerings and making the building into a more desirable community center.

Fig. 222

SWOT ANALYSIS

6.4 Swot Analysis - Threats

Urban Scale Point of View

Competition from Other Cities

Ivrea faces competition from larger cultural destinations like Turin and Milan, which could limit its ability to attract visitors, particularly if the project isn't effectively marketed.

Risk of Underutilization

The project's success as a cultural and tourism core hub may be diminished by low visitor numbers and underutilization if public awareness and marketing strategies are poorly implemented.

Fig. 223

Threats

Imaginary conversation between Ivrea residents

Architectural Scale Point of View

Financial Viability

Given the high amount of money needed, it could be difficult to obtain the required public or private investment for such a large-scale adaptive reuse project.

Long-Term Maintenance and Operational Costs

To guarantee financial sustainability after the renovation phase, the building's long-term maintenance and operating expenses need to be carefully planned.

Fig. 224

SWOT ANALYSIS

6.5 Swot Analysis - Conclusion

Overview

The Marxer Building offers a singular chance for cultural, social, and economic revitalization by fusing industrial heritage with modern urban needs. To ensure accessibility and usage, issues arising from its remote location and insufficient infrastructure must be resolved. Active community involvement, long-term financial viability, and creative reuse techniques will all be necessary for long-term relevance.

Fig. 226

Adding flexible spaces for tourism, public services, and creative enterprises could make Ivrea's urban landscape more dynamic. However, because of the possibility of underutilization and the close proximity of larger cultural centers, strong branding and high-quality programming are essential. A comprehensive approach that respects its historical significance while adding modern components will be necessary for its transformation and long-term survival.

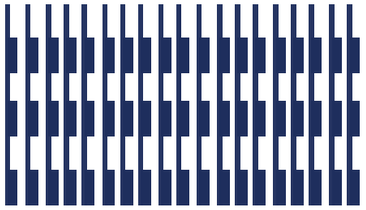


Fig. 228

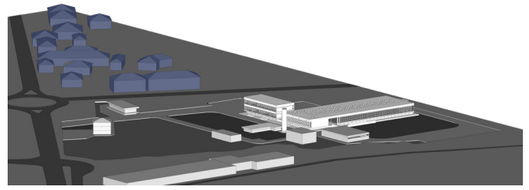


Fig. 225

Strengths

As an active component of Ivrea's industrial past, the Marxer Building has significant historical and architectural significance. Its brutalist architecture adds diversity to the urban fabric by standing in sharp contrast to the rationalist Olivetti buildings. Its modular design and reinforced concrete structure provide structural flexibility for a range of new uses. Furthermore, there are chances for community-focused redevelopment and possible growth due to its proximity to the residential areas and the availability of nearby land.

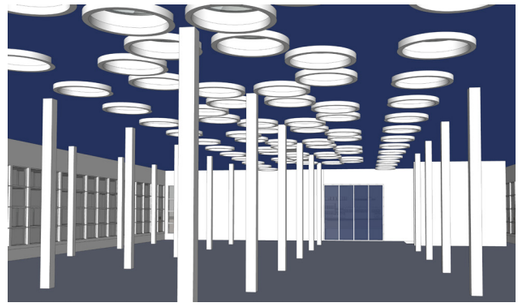


Fig. 227

Weakness

Even though the building is significant architecturally and historically, its accessibility and popularity may be limited by its 4.8-kilometer distance from Ivrea's city center. Additionally, the absence of nearby metropolitan activity lessens its liveliness. There are operational issues brought on by seasonal variations in tourist, and the infrastructural changes necessary for repurposing may be expensive. Furthermore, visitors may be less interested in the building because it is less visible than more famous locations.

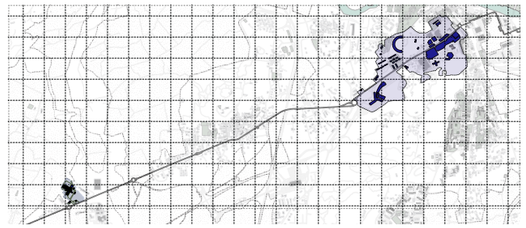


Fig. 229

Fig. 230

Opportunities

The site's proximity to the Alps not only offers scenic views but also positions it as an ideal location for wellness tourism through the development of **thermal spaces** and sports facilities. These additions could diversify the site's appeal, catering to both locals and tourists seeking leisure and recreation. Located just 5 km from Ivrea's city center, the site maintains convenient accessibility while benefiting from a tranquil, natural setting conducive to outdoor and wellness-oriented activities

Fig. 234

Fig. 231

Threats

More well-known cultural centers like Milan and Turin may pose a threat to Ivrea's ability to attract tourists. Without effective marketing and proactive public engagement, the building may be underutilized. Financial sustainability is another important concern because it will be crucial to get funding for renovations and ensure continued maintenance. Additionally, if operational expenditures are not carefully planned, it may damage the building's ability to function as a space.

Fig. 232

Fig. 233

The project has the potential to be a driving force behind cultural revitalization and urban renewal. If properly repurposed, it could support the tourism, public services, and creative industries while also adding to Ivrea's changing identity. However, to avoid underutilization and financial strain, long-term sustainability will rely on obtaining investment, strategic marketing, and operational efficiency.

Fig. 235

07| HISTORY OF THERMAL BATHS

7.1 Photo Essay of Evolution of Thermal Baths

Throughout human history, water has served as more than a means of cleansing—it has been a ritual, a medicine, a communal experience, and an architectural driver. From the monumental baths of ancient Rome to the serene onsens of Japan, thermal bathing has evolved across cultures and centuries, shaped by geography, technology, belief systems, and aesthetics. This photo essay traces the global lineage of thermal architecture, exploring how societies have designed for heat, healing, and human connection. Each site represents a moment in time when water met culture, creating spaces that reflect both our physical needs and spiritual aspirations.

7.1.1 Great Bath of Mohenjo-daro

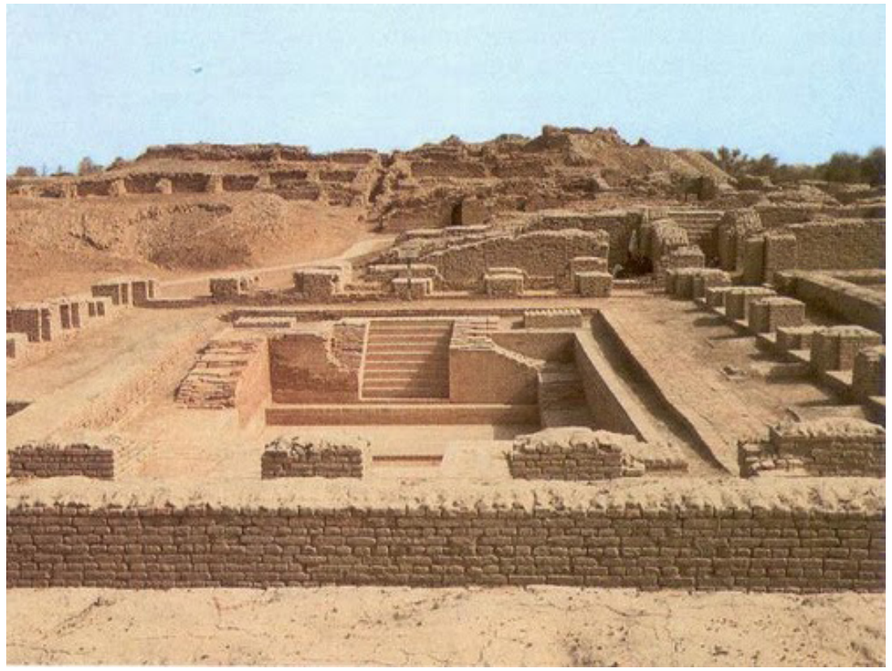


Fig. 236
Retrieved from : httpscivilupdatesgcek.blogspot.com

c.2500 BCE – Sindh, Pakistan

This sunken brick pool is one of the world's earliest ritual bathing structures, reflecting the civic and spiritual life of the Indus Valley Civilization. Its watertight construction and central placement suggest a communal focus on purification and ceremony.

7.1.2 Baths of Caracalla

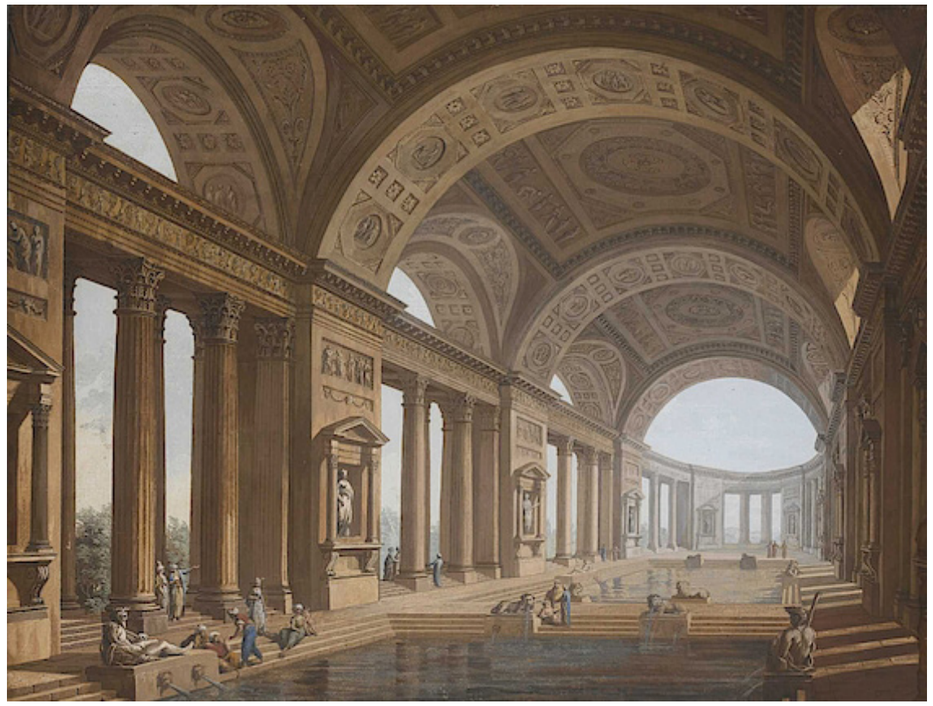
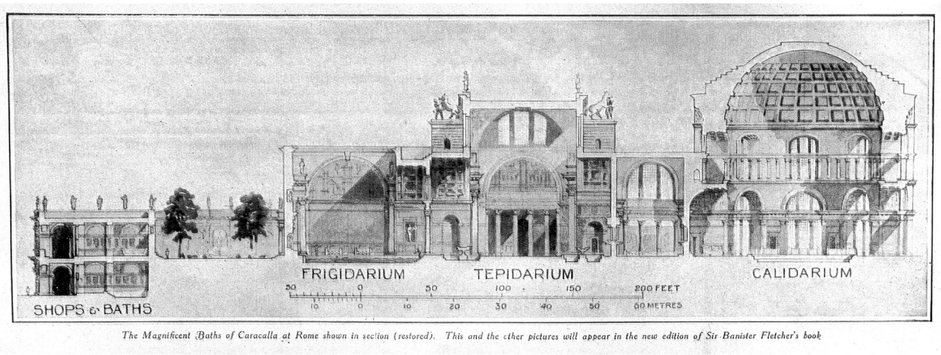


Fig. 237
Retrieved from : https://commons.wikimedia.org



The Magnificent Baths of Caracalla at Rome shown in section (restored). This and the other pictures will appear in the new edition of Sir Banister Fletcher's book

Fig. 238
Retrieved from : https://pixels.com

c. 216 CE – Rome, Italy

This impressive Roman thermae, which spanned 25 hectares and could house up to 1,600 bathers, was a prime example of Rome's social and technical achievements. It was an opulent civic experience with marble pools, vaulted halls, and underfloor heating.

7.1.3 Baths of Diocletian

Completed c. 306 CE
Rome, Italy

The largest of all ancient Roman baths, designed to accommodate over 3,000 people, showcasing advanced engineering and grandeur. Now partly repurposed as churches and museums, it reflects how monumental thermal spaces endure through adaptive reuse.

Fig. 239
Retrieved from : https://colosseumrometickets.com

7.1.4 Roman Baths in Bath

1st–4th century CE
Bath, England

Built around a natural hot spring, this complex blended Roman bathing rituals with native Celtic traditions. Its elaborate system of lead pipes and plunge pools continues to influence spa culture today.

Fig. 240
Retrieved from : https://www.romanbaths.co.uk/

7.1.5 Hammam al-Andalus (Alhambra)

13th century
Granada, Spain

This Islamic bathhouse in the Alhambra integrated hygiene, relaxation, and social ritual within a geometric, domed architecture. Filtered light through star-shaped openings evokes serenity and divine reflection in steam-filled spaces.

Fig. 241
Retrieved from : https://granadaconventionbureau.org

7.1.6 Çemberlitaş Hamamı

1584 – Istanbul, Turkey

Designed by Mimar Sinan during the Ottoman Empire, this hammam offered gender-separated bathing under a domed caldarium. Its heated marble platform, known as the göbek taşı, became the heart of social life.

Fig. 242
Retrieved from : . https://www.flickr.com

7.1.7 Al-Qarawiyyin Hammam

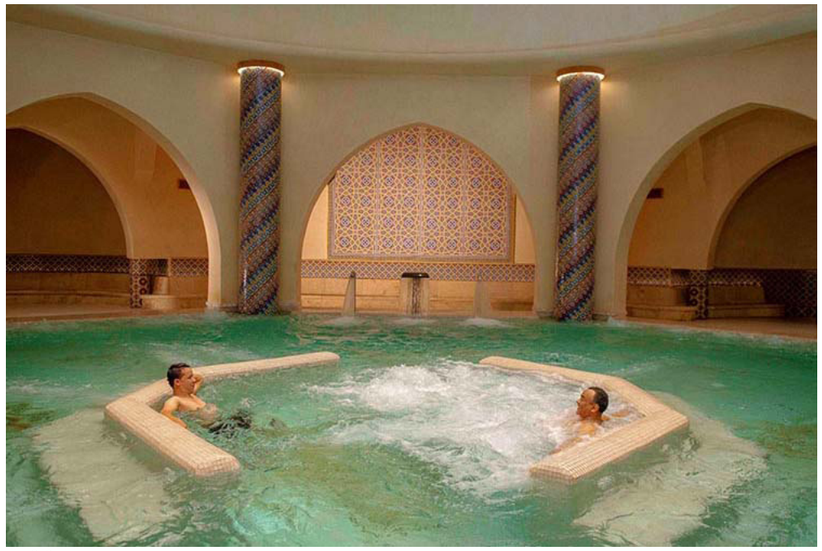


Fig. 243
Retrieved from : https://dardif.com/moroccan-hammams

14th century – Fez, Morocco

Located within one of the world's oldest universities, this hammam reflects the integration of spiritual, educational, and bodily cleansing. Moorish arches and zellij tiles framed an enduring cultural tradition of communal bathing.

7.1.8 Dōgo Onsen Honkan

Fig. 244
Retrieved from : https://japantravel.navitime.com

Rebuilt 1894 (Origins c. 600 CE)
Matsuyama, Japan

Among Japan's oldest hot springs, Dōgo Onsen merges Shinto purification and volcanic geothermal bathing. Its multi-tiered wooden structure inspired settings in Studio Ghibli's Spirited Away.

7.1.9 Sukayu Onsen (Bath of a Thousand Bathers)

Fig. 245
Retrieved from : https://www.nippon.com

Established 1684
Aomori Prefecture, Japan

Famous for its vast 248-square-meter mixed-gender bath (Sennin-buro), Sukayu Onsen represents the rustic, communal spirit of Japanese hot spring culture. Surrounded by snow-covered forests, its acidic spring waters have drawn bathers seeking healing for centuries.

7.1.10 Valsugana Roman Baths (Terme di Levico)

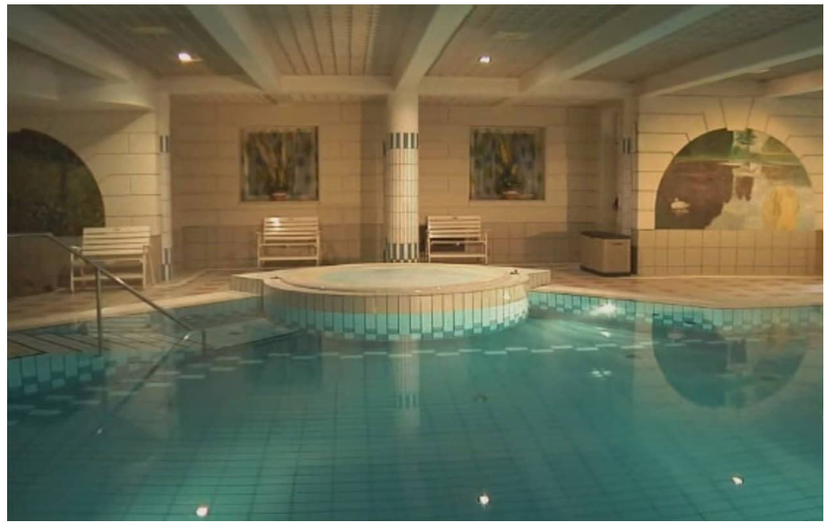


Fig. 246
Retrieved from : https://cascate-del-mulino.info/trentino/terme-di-levico

1st century CE; Reused in 19th century – Trentino, Italy

Originally a Roman spring site, later revived as a 19th-century spa destination for arsenic-ferruginous water therapy. It reflects continuity between ancient hydrotherapy and European health tourism.

7.1.11 Gellért Baths

Fig. 247
Retrieved from : https://www.panoramatours.com

1918 – Budapest, Hungary

Built atop mineral-rich springs used since the 13th century, this Art Nouveau complex is a symbol of Budapest's "City of Spas" identity. Ceramic mosaics, stained glass, and warm waters offer both healing and opulence.

7.1.12 Blue Lagoon

Fig. 248
Retrieved from : https://www.footstepsontheglobe.com

Established 1992
Grindavík, Iceland

A by-product of a geothermal power plant, this man-made lagoon became a world-famous spa through sustainable reuse. Silica-rich waters and volcanic landscapes redefine wellness in post-industrial settings.

7.1.13 Tamina Therme

Fig. 249
Retrieved from : https://www.archdaily.com

Redesigned 2009 Bad Ragaz, Switzerland

Fed by a natural spring discovered in 1242, this modern spa integrates alpine purity with sleek architectural design. Its curvilinear spaces evoke both glacier flow and hydrotherapy science.

7.1.14 Therme Vals by Peter Zumthor

Fig. 250
Retrieved from : https://www.domusweb.it

Completed 1996
Vals, Switzerland

Built directly atop thermal springs, this stone-clad retreat merges with the mountain, evoking primal bathing rituals. Zumthor's sensory architecture invites slowness, silence, and elemental connection.

7.1.15 Termas Geométricas

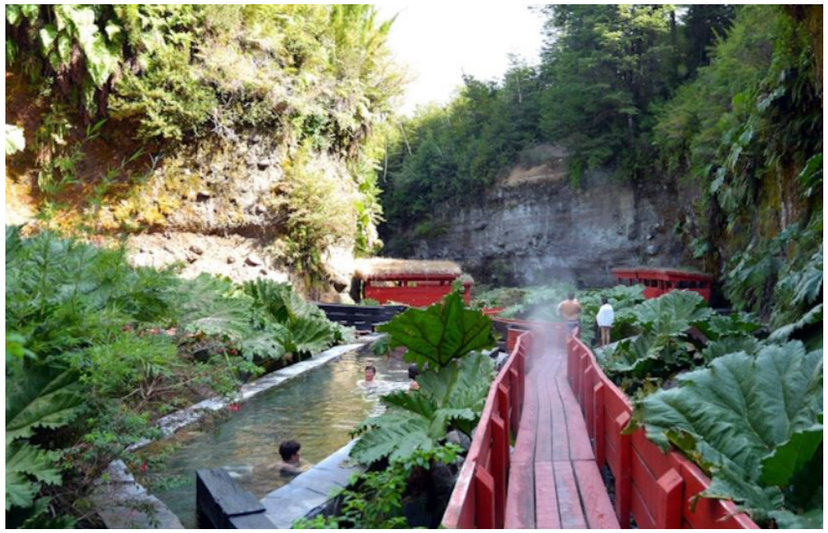


Fig. 251
Retrieved from : https://www.denomades.com

Completed 2004 – Pucon, Chile

Nestled in a volcanic ravine, wooden walkways and bold red geometries guide visitors through 17 thermal pools. Architect Germán del Sol designed it to harmonize with geothermal energy and natural mist.

7.1.16 Sky Lagoon

Fig. 252
Retrieved from : https://theprivatetraveller.com

Kópavogur, Iceland

Blending Icelandic turf house traditions with modern design, this oceanside spa celebrates ritual bathing through a seven-step experience. Infinity pools and sunset vistas expand the sensory horizon of thermal immersion.

7.1.17 Hasle Harbour Bath – White Arkitekter

Fig. 253
Retrieved from : https://www.archdaily.com

Completed 2013
Hasle, Bornholm, Denmark

A contemporary coastal bathing facility that revitalizes a historic fishing harbor into a communal wellness space. Floating timber platforms and sculptural stair towers offer layered access to the Baltic Sea, blending modern design with traditional Nordic bathing culture.

7.1.18 Espai CEL – Thermal Baths

Fig. 254
Retrieved from : https://www.archdaily.com

Completed 2017 – Caldes de Montbui, Spain

Built within 250-year-old thermal water reservoirs, this contemporary intervention reveals hidden spaces once used solely for storage and treatment. Arquetipus projectes preserved centuries of layered history—stone walls, water stains, and thermal rituals—transforming them into a sensory experience of mineral-rich calm.

08| CASE STUDIES

8.1 Therme Vals - Switzerland

8.1.1 Introduction

“Located in the remote Swiss Alps, The Therme Vals by Peter Zumthor is a poetic exploration of the relationship between architecture, nature, and the human senses. Completed in 1996, Zumthor’s minimalist yet monumental design has since garnered global acclaim for its seamless integration into the landscape and its ability to create a meditative space of relaxation and contemplation. As one of Zumthor’s most iconic works, the Therme Vals exemplifies his design philosophy: a synthesis of materiality, atmosphere, and place that elevates the everyday architecture experience.” (Archeyes,2024)

Architect - Peter Zumthor

Location - Vals,Graubünden, Switzerland

Gross floor Area - 5,600 m²

Completion year - 1996

“Submerged into a hillside, the spa and hotel complex is faced in slender pieces of quartz stone that lend the walls a layered appearance like a slice through a rock formation. Water piped from the area’s mineral springs fill a network of baths in the base of the complex. The complex has been renamed 7132 Thermal Baths.”
(Dezeen 2016)

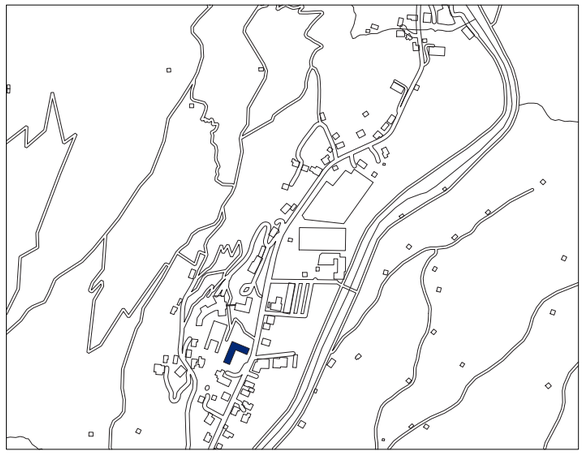
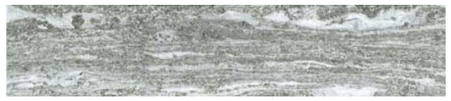


Fig 255 - Site plan of the Therme Vals complex
Created by author

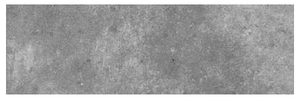
8.1.2 Materials

Valser Quartzite



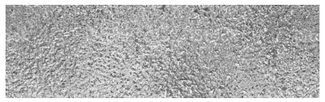
“The primary material used is locally quarried Valser quartzite, a greenish-grey stone native to the region. Approximately 60,000 slabs were meticulously cut into three specific heights—31mm, 47mm, and 63mm—to create a layered masonry effect that echoes the geological strata of the surrounding mountains.” (Wikiarquitectura n.d.)

Concrete



“Structural elements, including the cantilevered roof slabs, are constructed from concrete. The concrete surfaces are left exposed, contributing to the building’s monolithic appearance and enhancing the tactile experience.”
(Archeyes ,2024)

Glass



“Narrow glass skylights are strategically placed between roof slabs, allowing natural light to penetrate the interior spaces and create dynamic patterns that change throughout the day.” (Dspoke,2010)

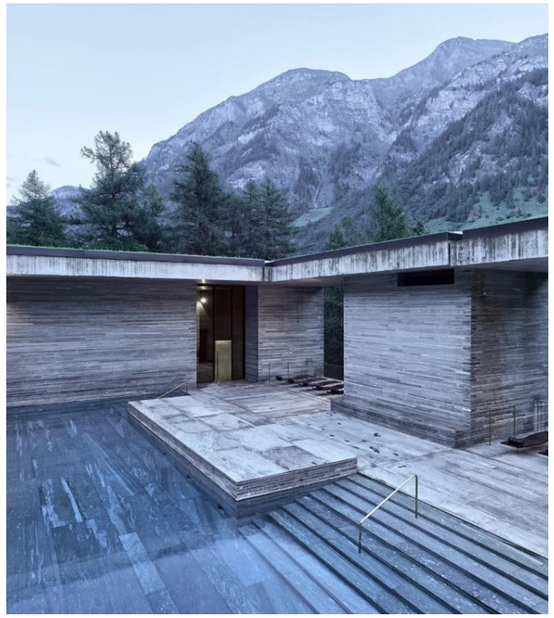


Fig 256 - Therme Vals complex interior
Retrived from - https://archeyes.com

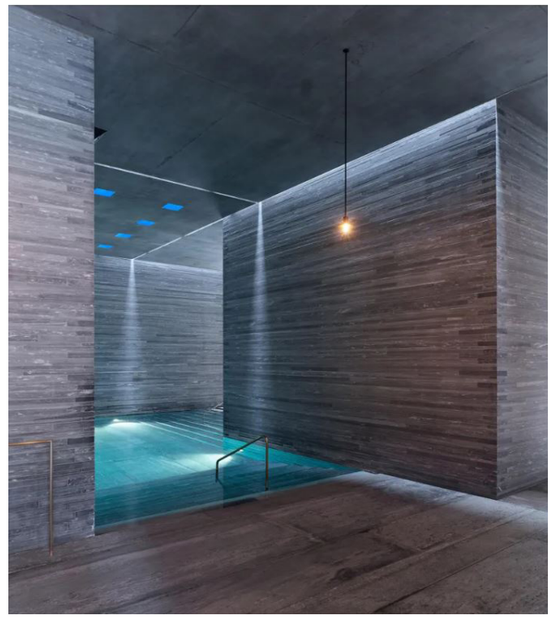


Fig 257 - Therme Vals complex interior
Retrived from - https://archeyes.com

Fig 258 - Therme Vals complex interior
Retrived from - https://archeyes.com

8.1.3 Key Strategies

Use of Local Materials

“By sourcing Valser quartzite from a nearby quarry, the project supports local industry and ensures material compatibility with the environment. The stone’s natural variations contribute to the building’s aesthetic richness.” (Archeyes,2024)

Minimalist Detailing

“The design avoids unnecessary ornamentation, focusing instead on the inherent beauty of materials and the purity of form. This minimalist approach enhances the timeless quality of the architecture.” (The New Yorker,2009)

Environmental Responsiveness

“The building’s thermal mass, achieved through thick stone walls and concrete structures, contributes to passive heating and cooling, demonstrating an environmentally conscious design approach.” (Wikiarquitectura n.d.)

8.1.4 Spatial Organization and Design

Peter Zumthor's design for Therme Vals is a masterful combination of the natural surroundings and architecture. The facility is partially set into the hillside, which lessens the visible effect and strengthens the sense that the spa is an extension of the surrounding scenery. Its grass-covered roof blends in seamlessly with the surrounding meadows. Fifteen rectangular stone blocks, each measuring three to five meters in width and six to eight meters in length, are set in a grid arrangement inside.
The complex design of these blocks promotes investigation and reflection. They are connected by open areas and slender hallways and clustered around a central pool. The facility's layout is thoughtfully planned to lead guests through several areas with different sizes, lighting styles, and atmospheres. Each section provides a unique sensory experience, and the progression is intended to evoke a sense of journey. (Caspar Schärer, 2006)

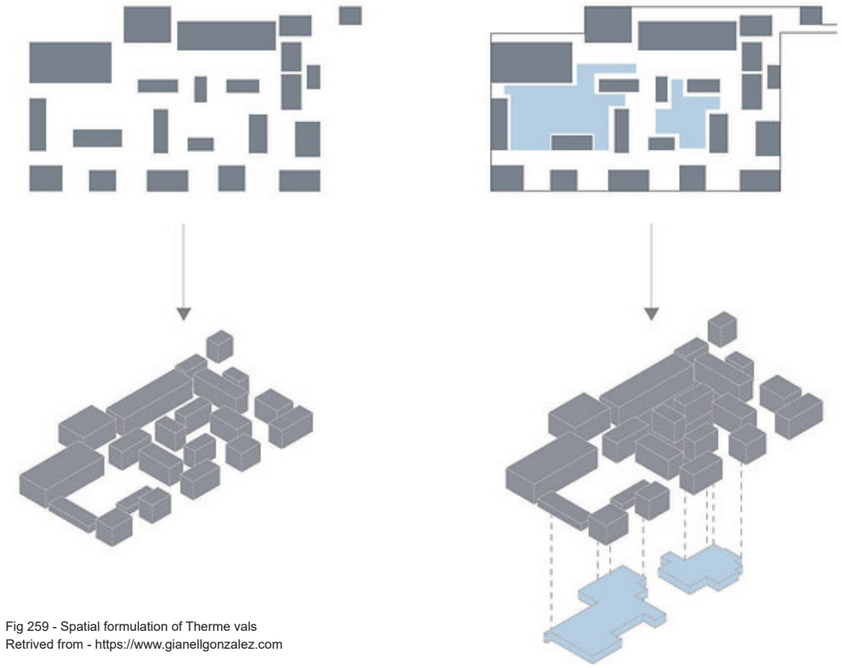


Fig 259 - Spatial formulation of Therme vals
Retrived from - https://www.gianellgonzalez.com

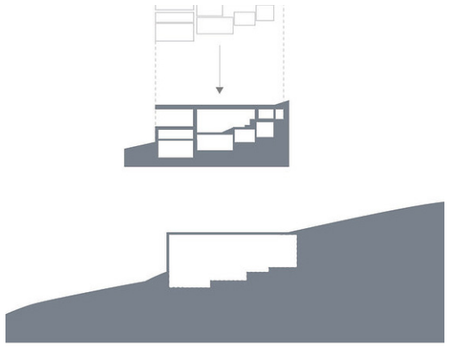


Fig 260 - Site of Therme vals
Retrived from - https://www.gianellgonzalez.com

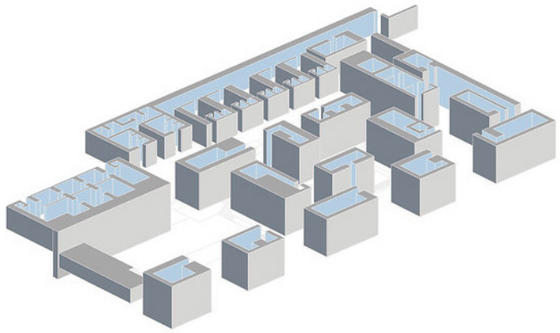


Fig 261 - Spatial segments
Retrived from - https://www.gianellgonzalez.com

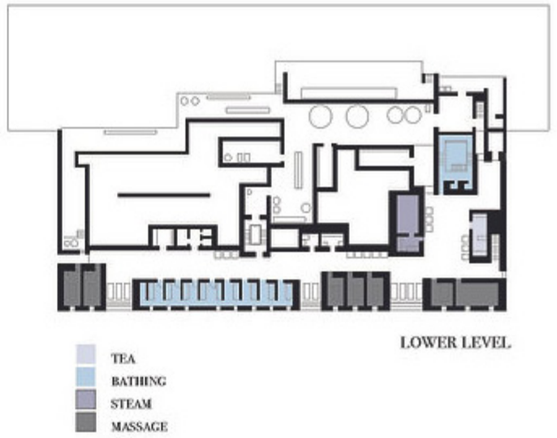


Fig 262 - Floor Plans
Retrived from - https://www.gianellgonzalez.com

8.1.5 Pool Temperatures and Experiential Features

Therme Vals features a variety of pools, each with specific temperatures and sensory characteristics designed to provide a diverse and immersive bathing experience.

Central Pool

Temperature - 32°C

"Located at the heart of the facility, the central pool is illuminated by sixteen skylights made of blue Spanish glass, creating a serene and contemplative atmosphere." (Dspoke,2010)

Fire Bath

Temperature - 42°C

"This pool is characterized by its red-colored concrete walls, which heighten the perception of warmth. Submerged benches along two sides allow bathers to relax while experiencing the intense heat." (Dspoke,2010)

Ice Bath

Temperature - 14°C

"A small, high-walled room with blue-green concrete walls, the ice bath offers a stark contrast to the warmer pools. The cold water provides an invigorating experience, stimulating circulation and refreshing the senses." (Dspoke,2010)

Sound Bath

Temperature - 35°C

"A tall, square room where the acoustics are carefully designed to amplify and reflect sounds, creating a unique auditory experience that complements the act of bathing." (Dspoke,2010)

Drinking Stone

Temperature - 29.8°C

"A designated area where visitors can drink the naturally warm, ferrous-rich spring water directly from brass cups, emphasizing the purity and therapeutic qualities of the source." (Dspoke,2010)

Outdoor Pool

Temperature - 36°C

"Accessible via a passage from the interior, the outdoor pool opens onto a terrace with panoramic views of the surrounding valley. The experience of bathing outdoors amidst the alpine landscape adds a profound connection to nature." (Dspoke,2010)

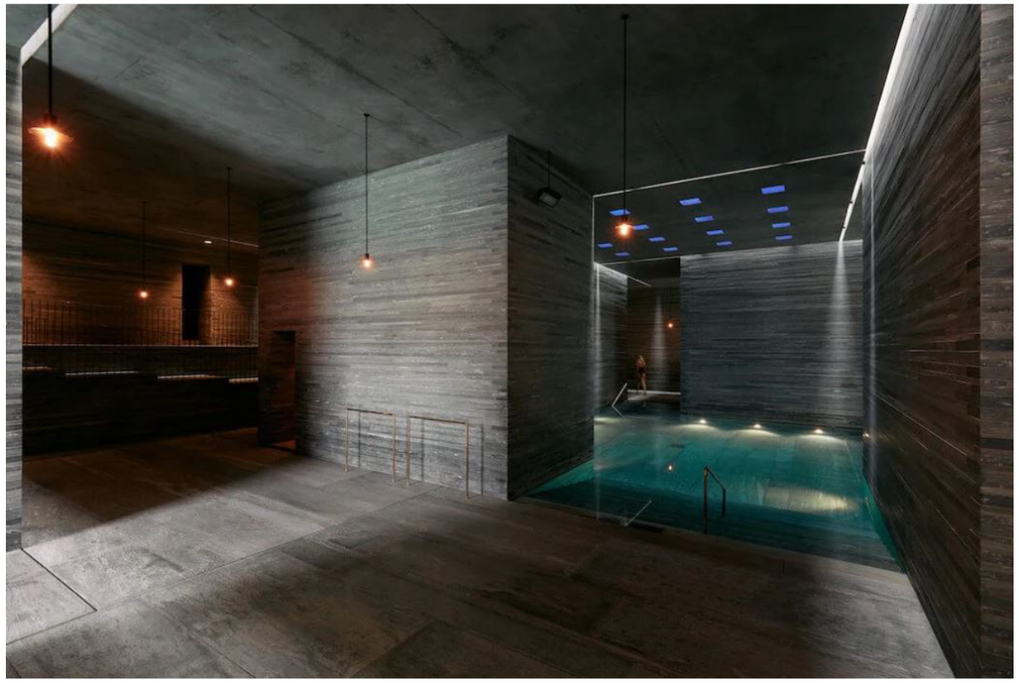


Fig 263 - Therme Vals complex interior
Retrived from - https://www.dezeen.com

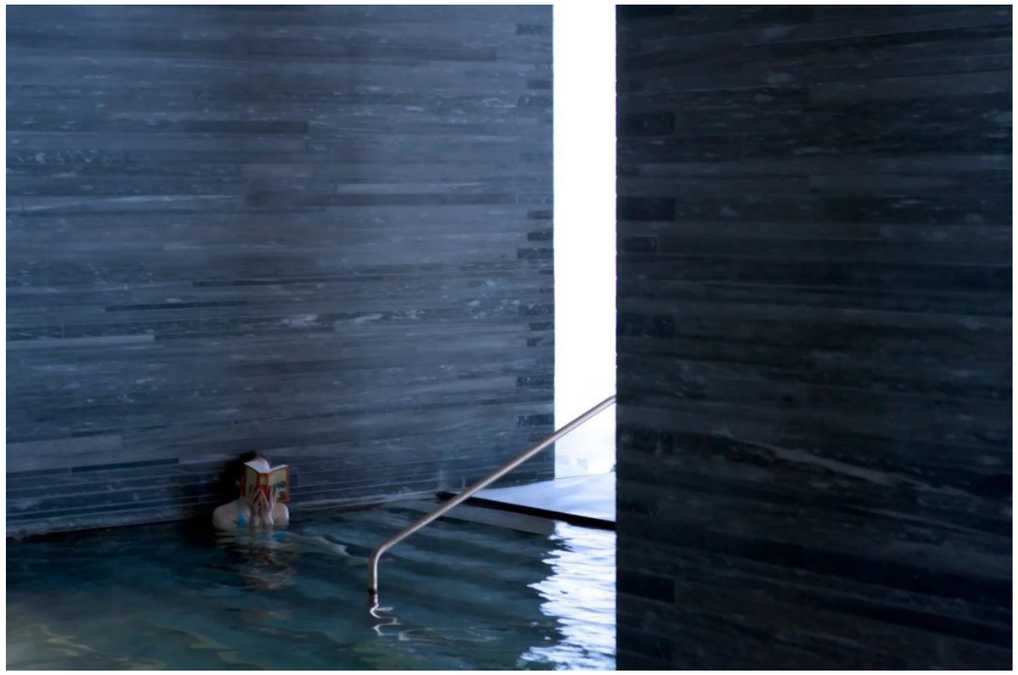


Fig 264 - Therme Vals complex interior
Retrived from - https://hellogoodland.com

Fig 265 -Temperature variations of the pool
Retrived from - https://www.gianellgonzalez.com

Fig 266 -Sections
Retrived from - https://www.gianellgonzalez.com

8.1.6 Sensory Experience and Architectural Elements

“Zumthor’s design philosophy emphasizes the importance of sensory engagement in architecture. At Therme Vals, this is achieved through meticulous attention to materials, lighting, acoustics, and spatial sequencing.

Materials: The use of locally quarried Valser quartzite stone provides a tactile and visual connection to the surrounding landscape. The stone’s varying textures and colors are accentuated by the interplay of light and water.

Lighting: Natural light filters into the baths through narrow gaps between roof slabs, casting dynamic patterns that change throughout the day, enhancing the atmosphere and guiding movement.

Acoustics: The design of each space considers the acoustic properties, from the echoing sounds in the Sound Bath to the muffled tranquility of the relaxation areas, contributing to the overall sensory experience.

Spatial Sequencing: The progression through various pools and rooms is designed to evoke a ritualistic journey, encouraging introspection and a heightened awareness of the senses.” (Archeyes,2024)

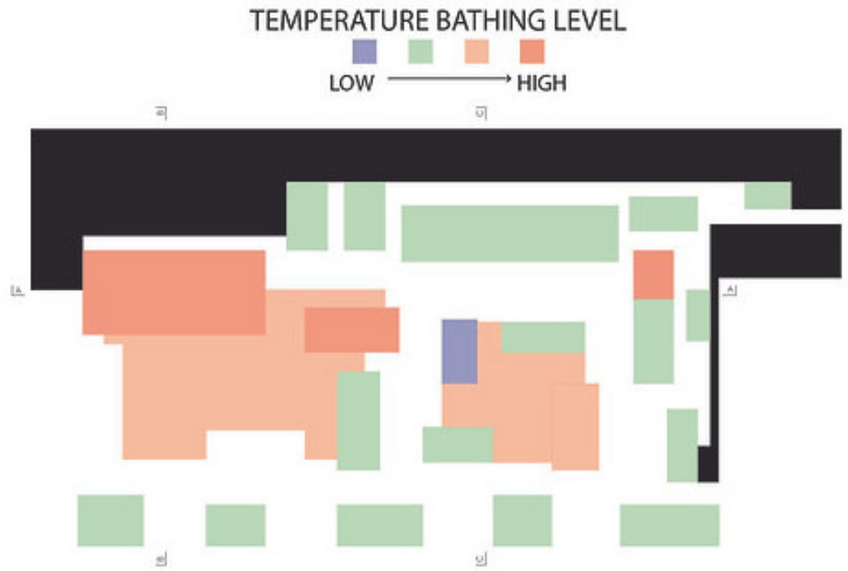


Fig 267 -Pool Temperatures
Retrived from - https://www.gianellgonzalez.com

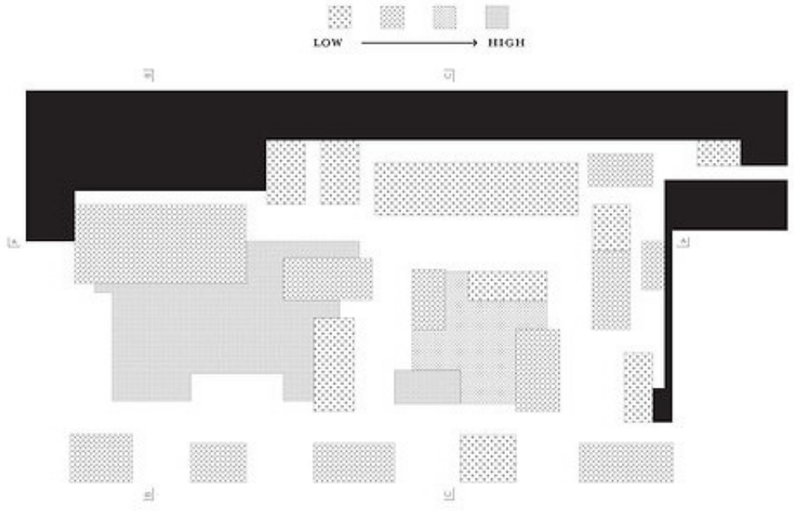


Fig 268 - Sound variations
Retrived from - https://www.gianellgonzalez.com

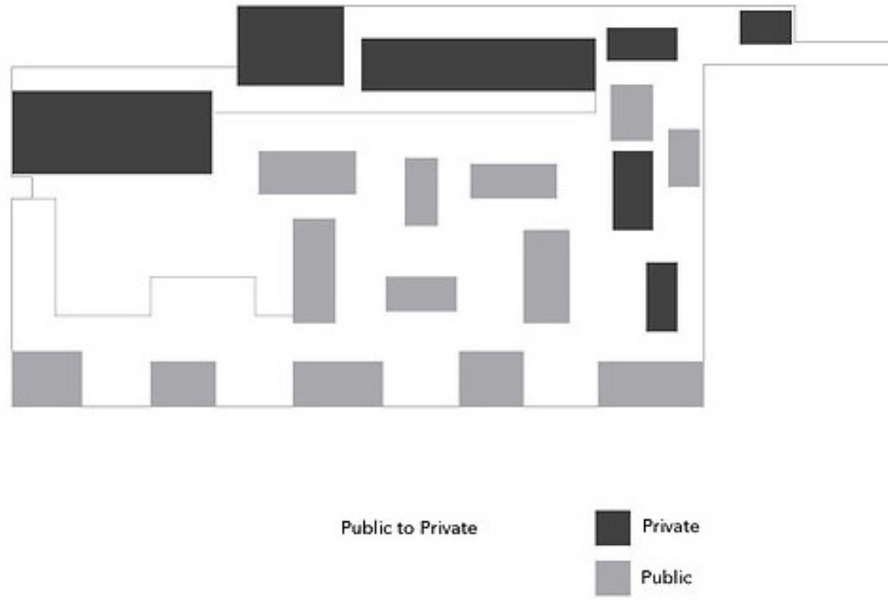


Fig 269 - Private and Public zoning
Retrived from - https://www.gianellgonzalez.com

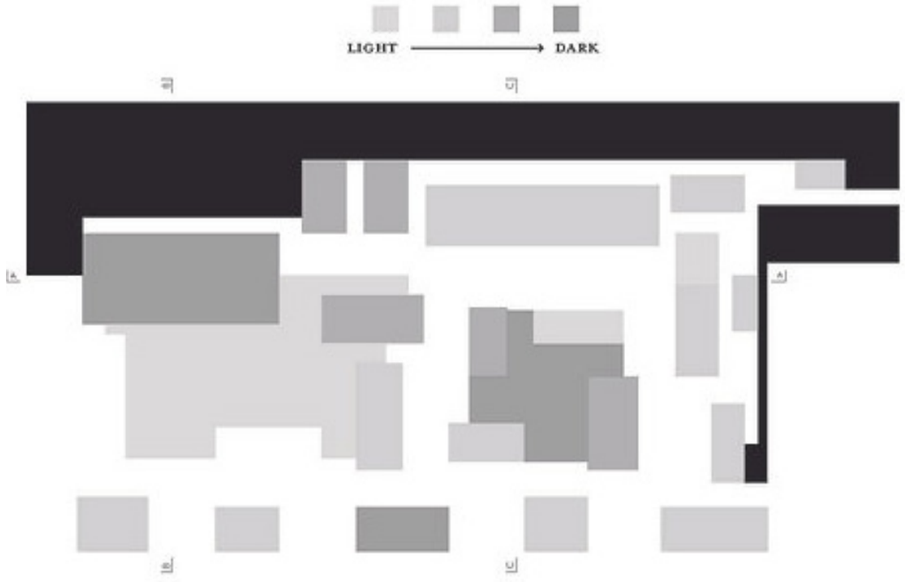


Fig 270 - Light variations
Retrived from - https://www.gianellgonzalez.com

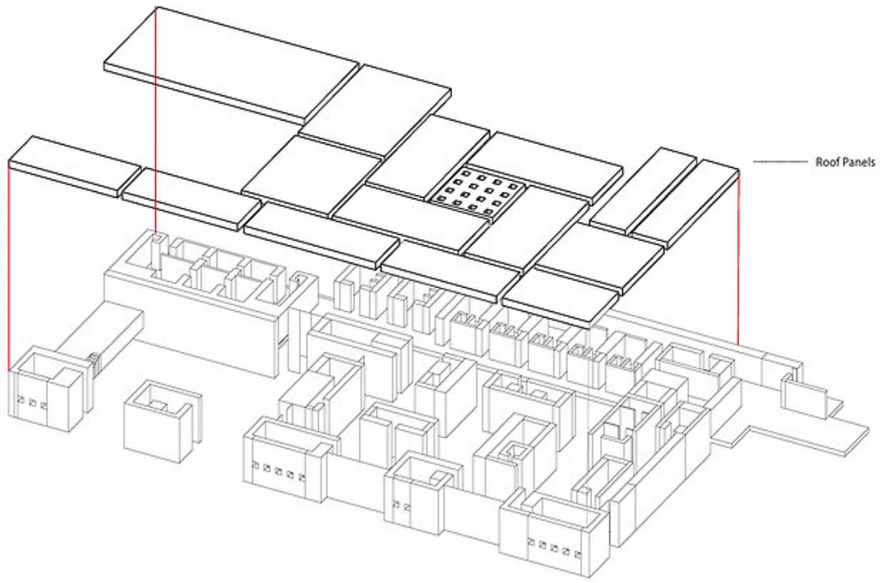


Fig 271 - Roofing system
Retrived from - https://www.gianellgonzalez.com

Fig 272 - Therme Vals complex interior
Retrived from - https://www.thisispaper.com

8.1.7 Takeaways

Contextual Design

Therme Vals serves as a paradigm for designing architecture that is deeply rooted in its context, both physically and culturally.

Material Authenticity

The project emphasizes how crucial material choice and craftsmanship are to producing memorable architectural experiences.

Sensory Engagement

The user experience will be improved using variety if senses and transforming architecture into an immersive setting rather than just a work of visual art.

8.2 QC Therme - Torino

8.2.1 Introduction

QC Terme Torino is a significant illustration of adaptive reuse in the heart of an Italian metropolis. Housed in Turin's famous Palazzo Abegg, a 19th-century noble palace, this spa complex expertly blends historic architecture and contemporary thermal culture.

First constructed in the late 1800s, the structure honors the grandeur and beauty of Piedmontese domestic architecture with its symmetrical façade, neoclassical embellishments, and lavish interiors. The transformation of Palazzo Abegg into a thermal wellness center did not require drastic demolition or structural overhaul; instead, it celebrated the existing fabric while inserting new, sensorially rich functions into its framework. It sets a precedent for reimagining existing urban typologies—such as villas, palazzi, or even industrial buildings—as sanctuaries of health and well-being. The concept of wellness here goes beyond hydrotherapy: it is about creating a retreat-like environment in the heart of the city, using historical memory as a backdrop to a multisensory experience of water, heat, and rest.

Fig 273 - Site plan of QC Therme, Torino
Created by author

8.2.2 Adaptive Reuse and Architectural Design

The transformation of Palazzo Abegg into QC Terme Torino involved meticulous restoration and adaptation to accommodate modern spa facilities while preserving the building's historical essence. The design integrates the original architectural elements with new constructions, creating a harmonious balance between old and new.
The spa spans multiple levels, each thoughtfully designed to offer distinct wellness experiences:

Basement Level: Features water-centric amenities, including hydro-massage pools, hydrojets, waterfalls, Kneipp therapy paths, chromotherapy areas, and steam baths.

Ground Floor: Houses the reception area, a bar, and access to the outdoor garden, which includes hydro-massage pools and a sensory pool with underwater music.

First Floor: Contains themed relaxation rooms inspired by elements such as the sky, forest, water, and cycling, providing diverse environments for rest and introspection.

Second Floor: Dedicated to various saunas and the salt relaxation room, offering different thermal experiences.

Third Floor (Attic): Offers additional relaxation spaces, completing the vertical journey through the spa's offerings.

Fig 274 - QC Therme external pool deck

8.2.3 Materials

The design emphasizes the use of materials that complement the historical character of Palazzo Abegg while enhancing the sensory experience. The integration of these materials fosters a serene environment that respects the building's heritage.

Wood

The saunas' scented Alpine woods, such as larch or spruce, enhance the olfactory experience and evoke the traditions of mountain wellness.

Glass elements

Huge windows let in filtered sunlight and frame views of the garden. In order to soften light and maintain privacy, textured and frosted glass is used in showers and steam rooms.

Natural stone

Natural stone provides tactile grounding, permanence, and earthiness. It is used for feature walls, pool edges, and flooring in damp areas. Slate and porphyry are examples of dark-hued stones that are chosen for their visual depth and non-slip texture. In certain places, polished inserts contrast with rough-cut stone to highlight haptic contrasts.

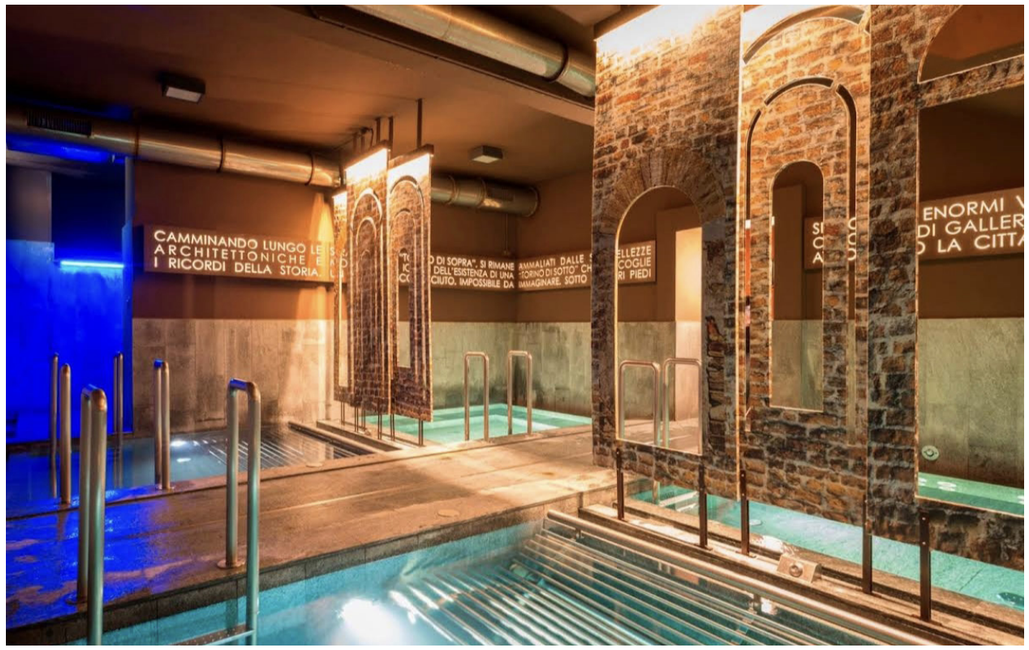


Fig 275 - QC Therme Interior

Fig 276 - QC Therme Interior

8.2.4 Basement Floor Plan

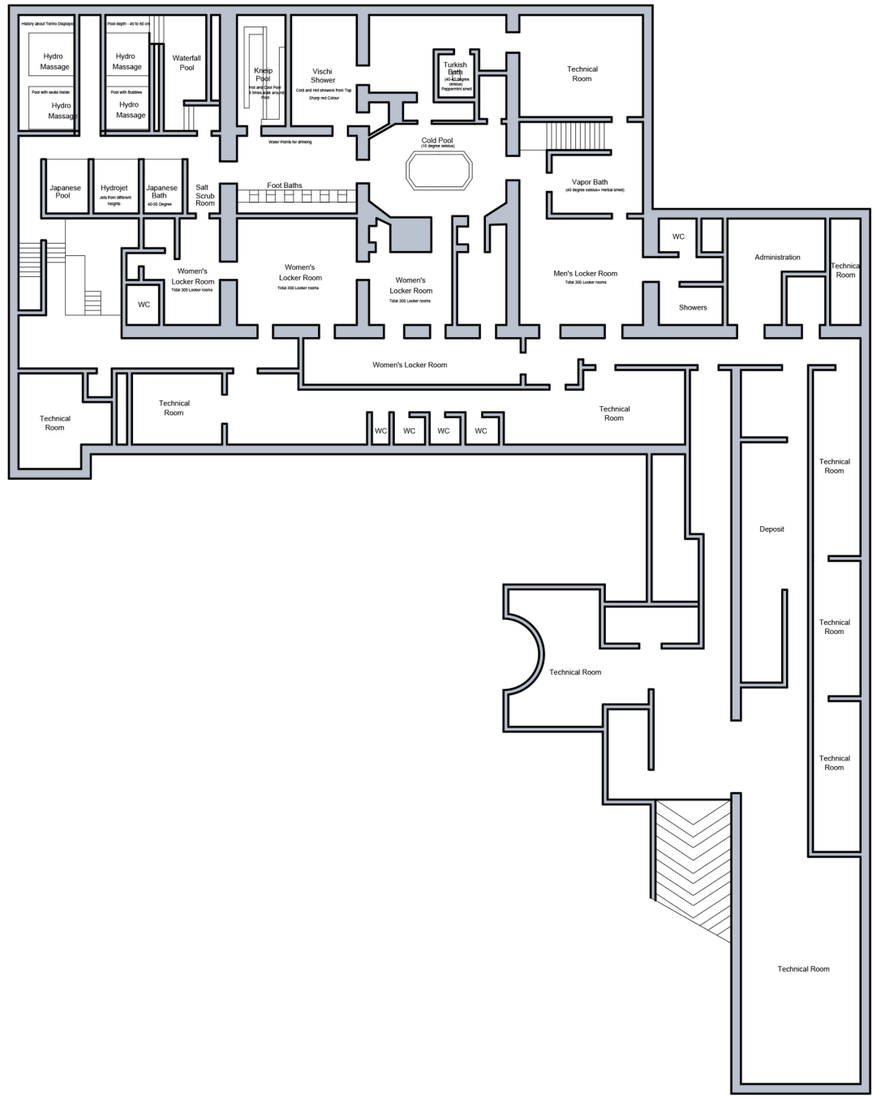


Fig 277 - QC Therme Basement floor plan
Created by author

8.2.5 Ground Floor Plan

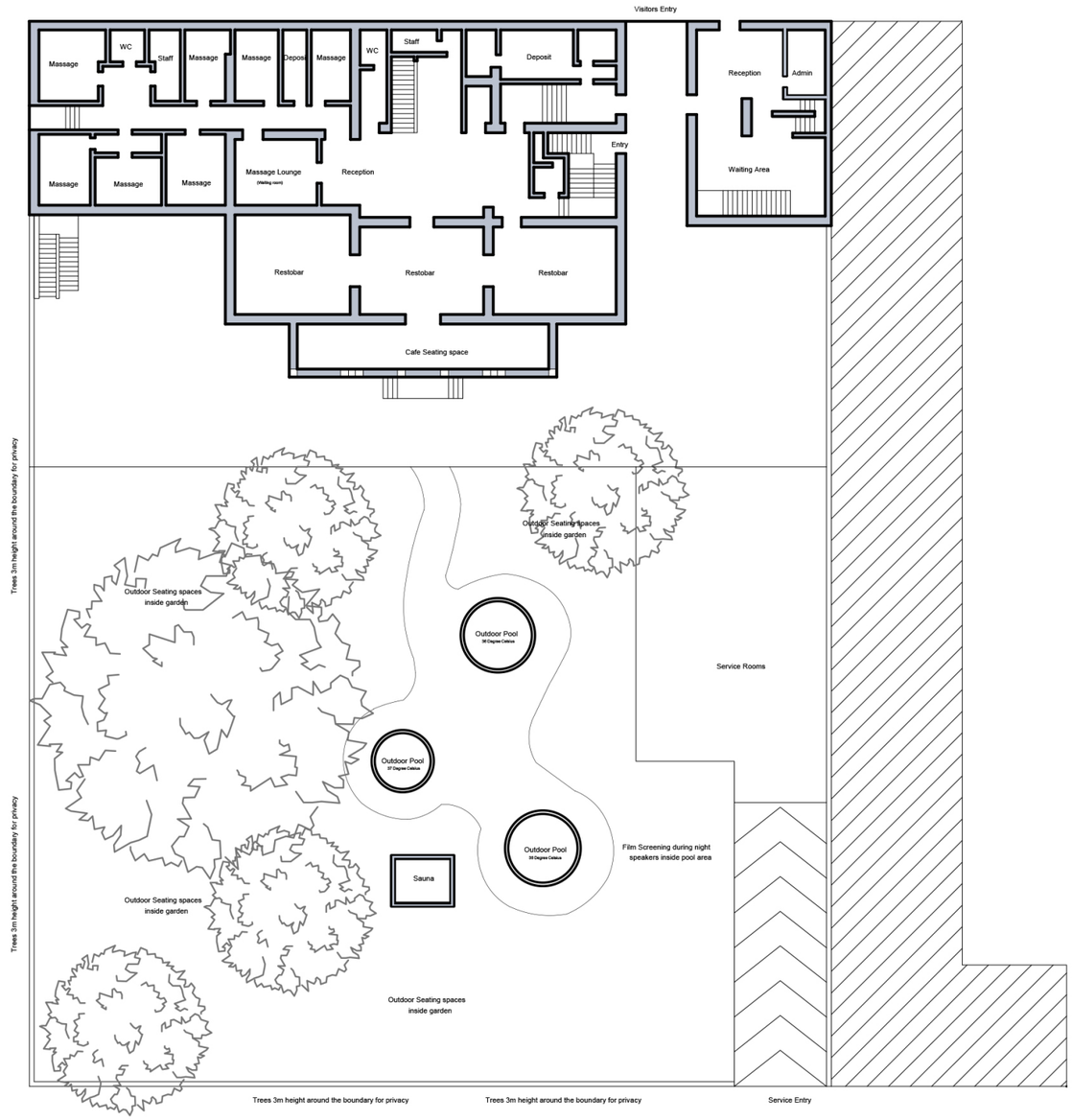


Fig 278 - QC Therme Ground floor plan
Created by author

8.2.6 First Floor Plan

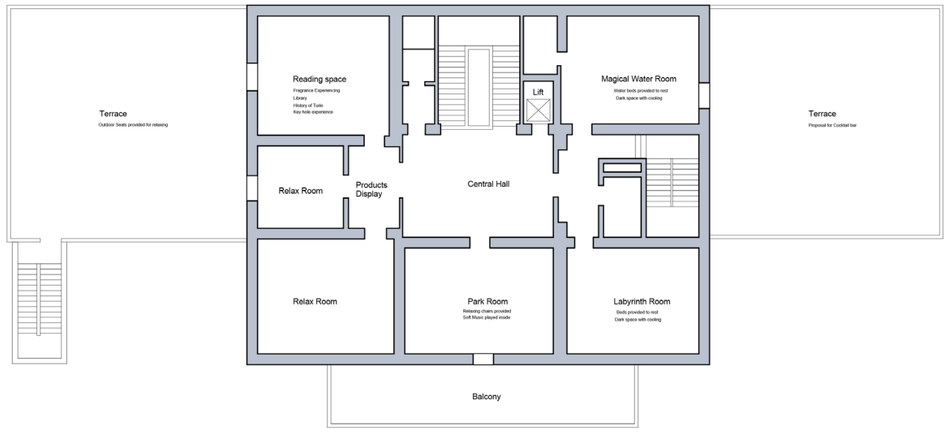


Fig 279 - QC Therme first floor plan
Created by author

8.2.7 Thermal Facilities and Experiential Pools

Facility	Estimated Temperature	Key Features
Hydro-Massage Pools (Indoor & Outdoor)	34–37°C	Jets, bubbles, neck showers for muscle relaxation
Kneipp Path	18°C (cold), 36°C (hot)	Alternating pools to improve circulation
Finnish Sauna	80–90°C	Dry heat for detoxification
Biosauna	60–65°C	Mild humidity, often infused with herbs
Steam Bath (Hammam)	42–45°C, 100% humidity	Eucalyptus or lavender-scented steam
Salt Room	Ambient	Passive halotherapy through salt aerosols
Sensory Showers	Varying	Alternating warm/cold water with aromas and colored lighting
Outdoor Barrel Sauna	Wood-fired	With panoramic garden views
Relaxation Pools with Underwater Music	34–36°C	Immersive soundscapes under water

8.2.8 Adaptive Reuse and Design Strategies

The architects and designers preserved its structural identity and ornamental language while modifying Palazzo Abegg. The renovation is carried out emphasising on reversibility, making it possible to undo most of the interventions without damaging the original shell of the building. Among the crucial design techniques were:

The vertical zoning with every floor having a distinct purpose, such as relaxation sleeping lounges above and hydrotherapy below the ground.

The garden integration help in creating the therme as a green hub cocooned inside the busy city with lots of greens. Every room is arranged around a sensory theme such as sky, forest, movies which help in fostering thematic diversities.

Through the use of stairs, hallways, and secret doors, spatial transitions are arranged to giving importance to visitors interest and progressively transporting them to a carefully crafted experience of sound, smell, temperature and texture.

Fig 280 - QC Therme Sauna room
Photograph by author

Fig 281-284 - QC Therme Interior
Photographs by author

8.2.9 Takeaways

To maintain the urban architectural legacy by implementing contemporary initiatives.

The vertical spatial organization utilised to diversify experiences without increasing footprint.

Incorporating a material palette that promotes historical textures and help in engaging the senses.

Create a multisensory thermal experience with carefully planned spatial curation and themed micro-environments.

Making wellness approachable and emotionally impactful by providing an urban retreat inside city boundaries.

09| STRUCTURAL RETROFIT

9.1 Application of strengthening Techniques

In the context of adaptive reuse, especially where the existing building undergoes a significant change in usage, the structural integrity of the original system must be critically reassessed(Mehta and Monteiro, 2014). In this project, the conversion of a brutalist-style pharmaceutical facility into a thermal wellness center introduces new concentrated live loads, particularly from water-based installations like pools and baths. These changes necessitate the implementation of structural strengthening strategies to ensure the safety, durability, and functional integrity of the building(Neville, 2011). Common drivers for strengthening include material degradation (e.g., corrosion, spalling concrete), increased live and dead loads,change of use and spatial reconfiguration, exposure to aggressive environmental conditions(Bertolini et al., 2013). Following extensive review and consultation, this project focuses on five key strengthening techniques: FRP wrapping, concrete jacketing, slab thickening, anti-corrosive coatings, and the addition of new walls and columns. These strategies were selected for their compatibility with reinforced concrete structures and efficiency in improving capacity without drastically altering the building's geometry or function (FIB, 2006).

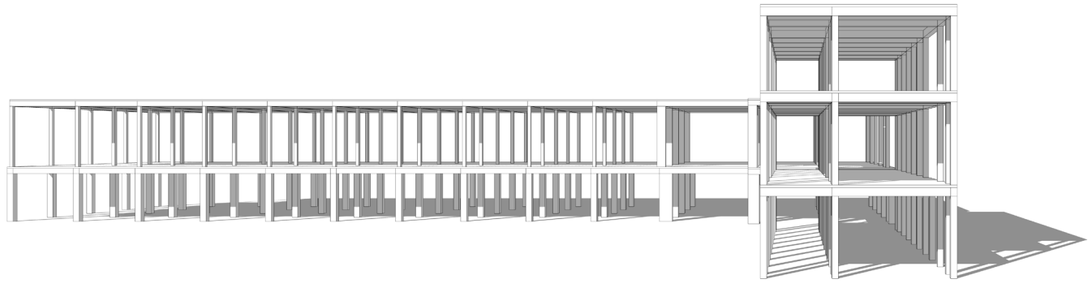


Fig 285 - Column beam layout
Created by author

9.2 Fibre Reinforced Polymer (FRP) Wrapping

FRP wrapping is an efficient method used for strengthening structural concrete components without appreciably changing their size or appearance. High-strength fiber fabrics, like carbon, glass, or basalt, are externally bonded to pre-existing surfaces using epoxy resins that have been specially formulated. The flexural strength, shear resistance, and ductility of structural elements like beams, columns, slabs, and joint zones are greatly increased by these composite materials action as a tension reinforcement layer. (Pacheco-Torgal and Jalali, 2011).

Compared to conventional techniques, FRP systems have a lot of advantages.
They have outstanding tensile qualities, they are lightweight, corrosion-resistant, and quick to install. Because of their minimal thickness (typically less than 5 mm), the building's architectural profile is well maintained, which is particularly advantageous when retrofitting historic or architecturally sensitive structures (Mapei, 2024).
Specified enhancement of stressed zones within a building is achieved through FRP wrapping such as slab undersides or the faces of columns. It is also very efficient in seismic zones or the adaptive reuse typologies where load distribution can be altered without structural replacement.

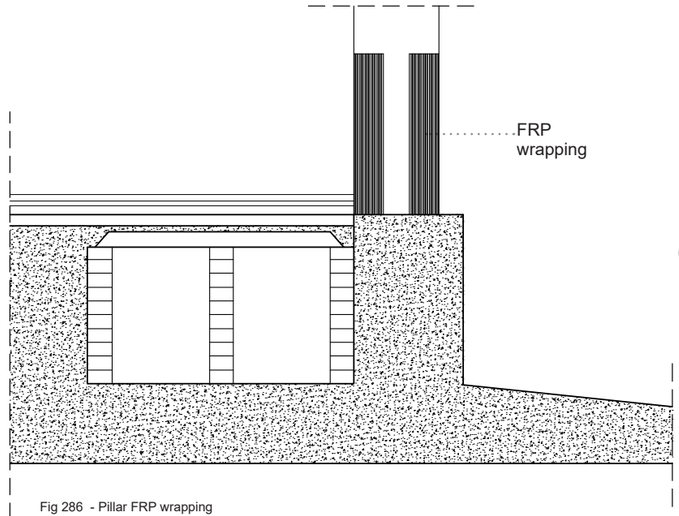


Fig 286 - Pillar FRP wrapping
Created by author

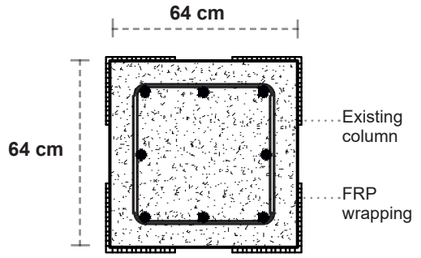


Fig 287 - Pillar plan with FRP wrapping
Created by author

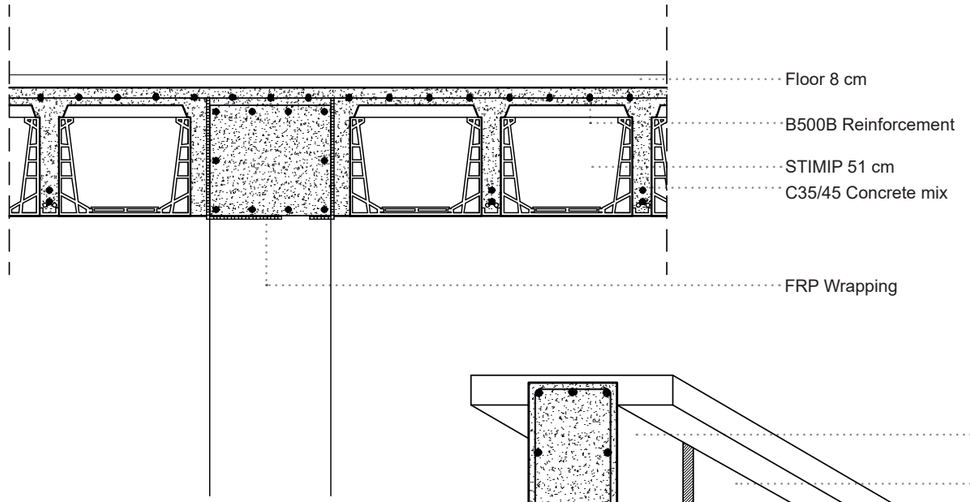


Fig 288 - Beam FRP wrapping
Created by author

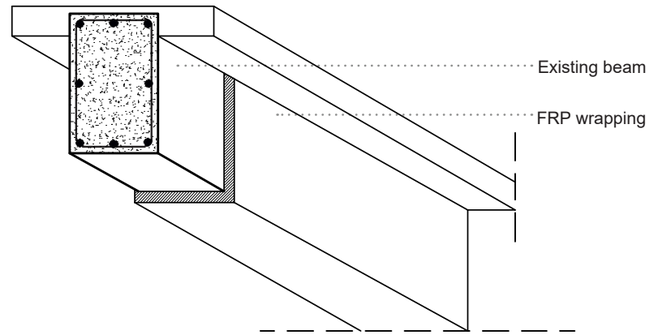
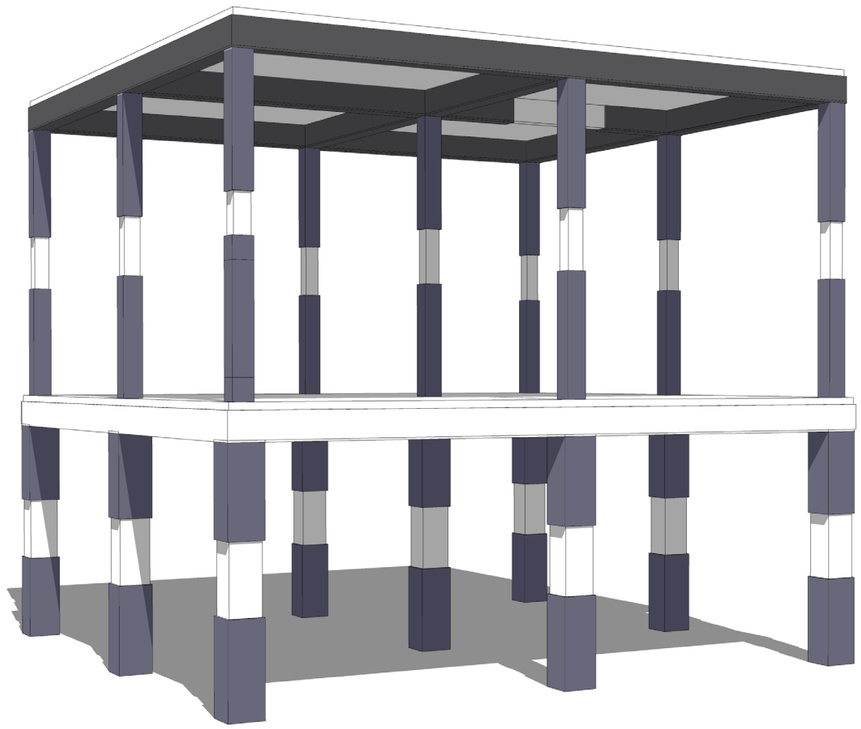


Fig 289 - Beam FRP wrapping sectional view
Created by author

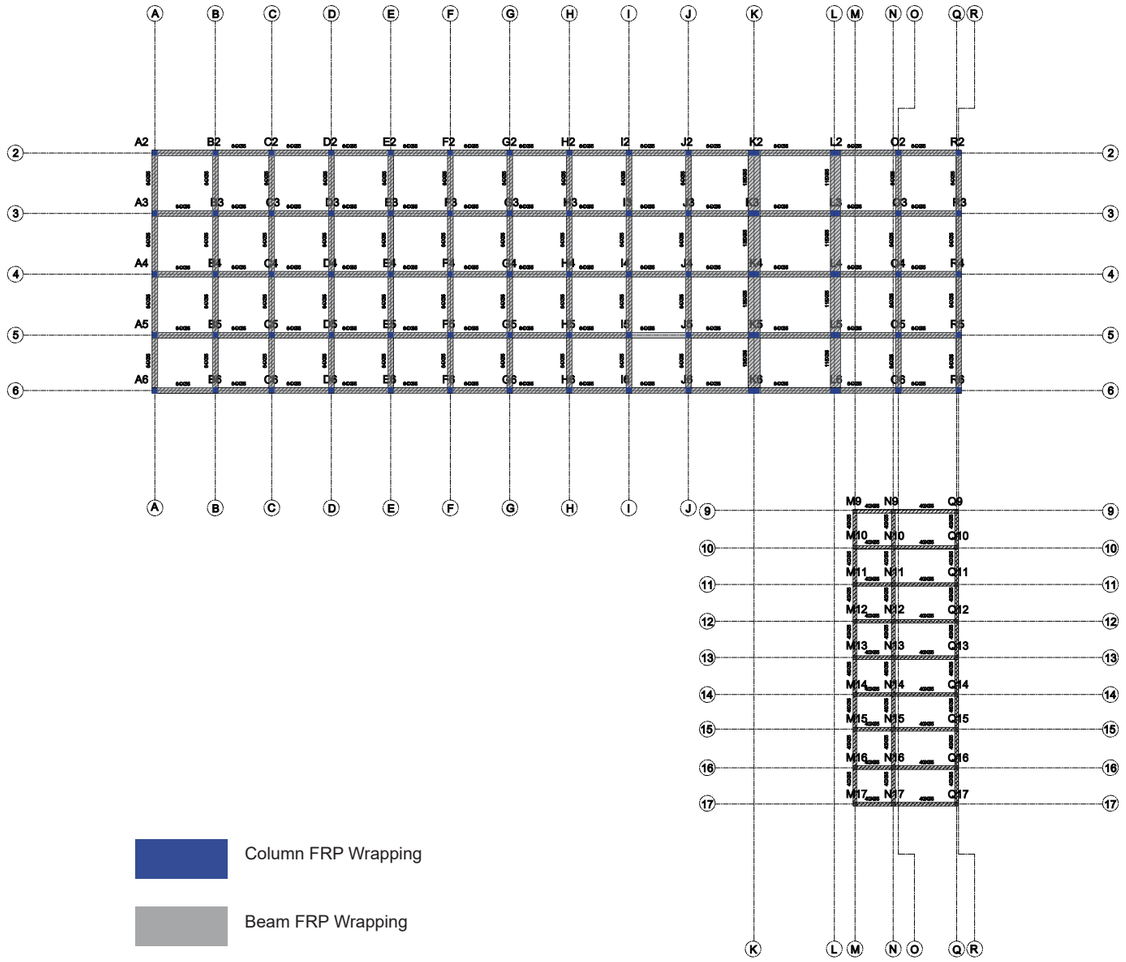


Column FRP Wrapping

Beam FRP Wrapping

Fig 290 - Coulmn- Beam FRP wrapping
Created by author

9.2.1 Basement Floor Layout



Column FRP Wrapping

Beam FRP Wrapping

Fig 291 - Basement floor FRP layout
Created by author

9.2.2 Ground Floor Layout

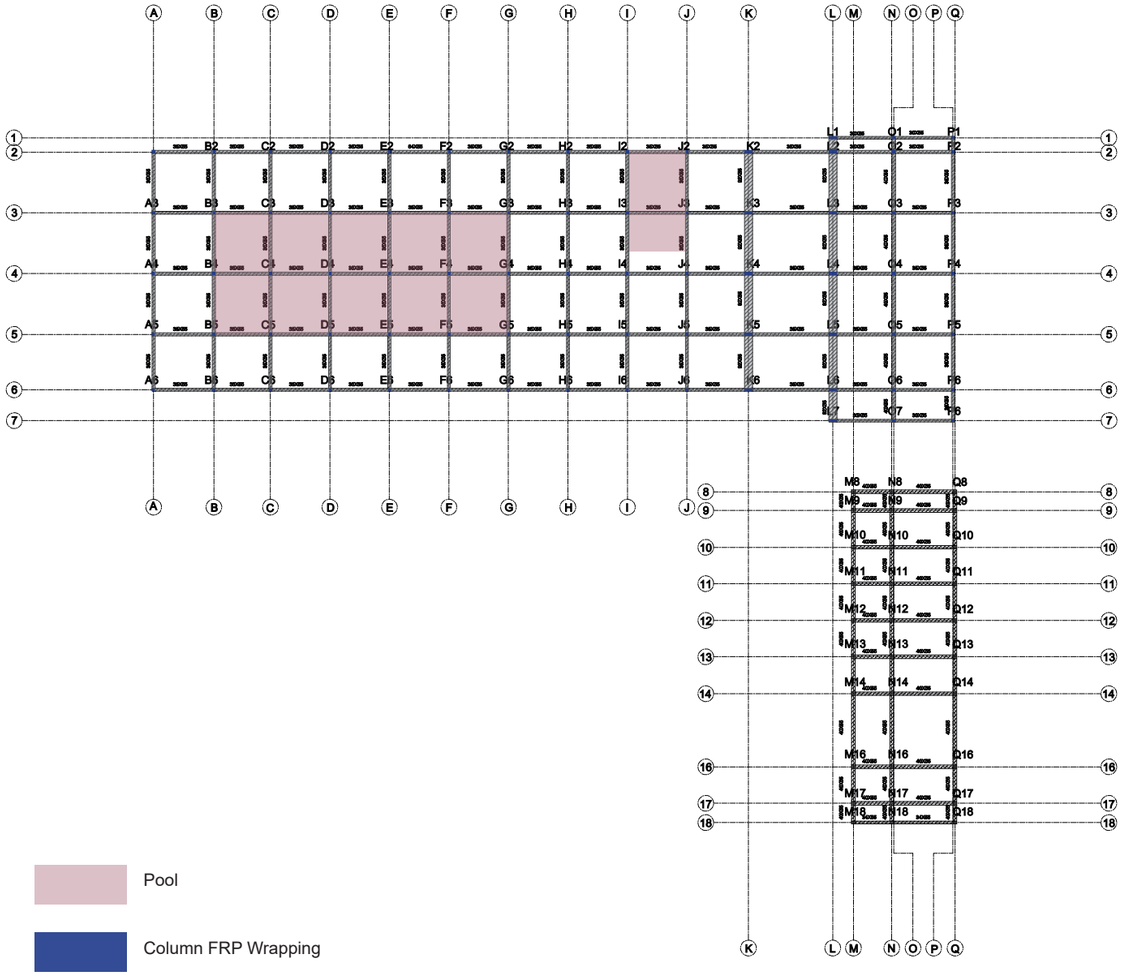


Fig 292 - Ground floor FRP layout
Created by author

9.2.3 First Floor Layout

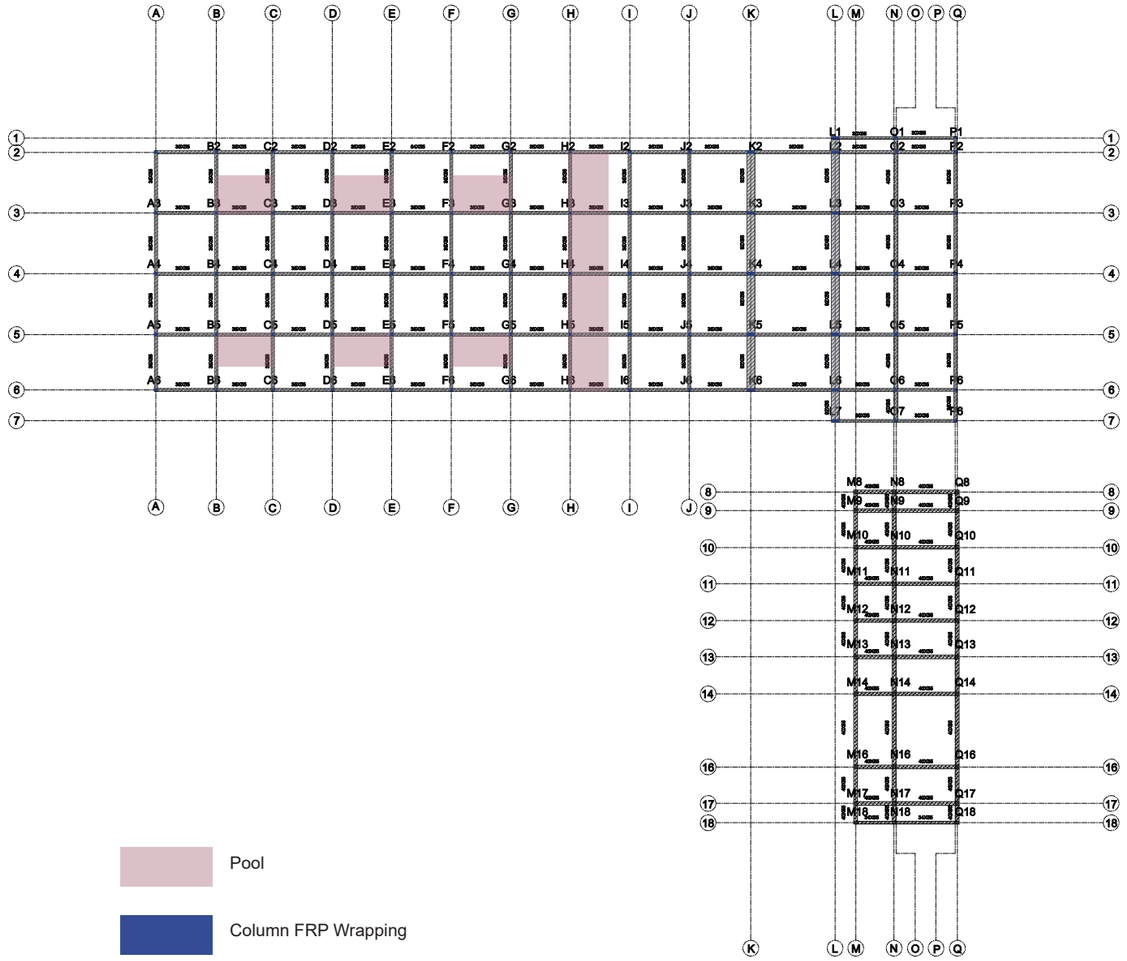


Fig 293 - First floor FRP layout
Created by author

9.3 Concrete Jacketing

Concrete jacketing is a traditional yet highly effective method for structurally upgrading beams, columns, and shear walls (Mehta and Monteiro, 2014). It consists of encasing existing structural members with a new layer of reinforced concrete, complete with additional steel bars (longitudinal and stirrups), which are securely anchored into the existing structure. It consists of encasing existing structural members with a new layer of reinforced concrete, complete with additional steel bars (longitudinal and stirrups), which are securely anchored into the existing structure. This method is particularly advantageous when significant increases in axial load-bearing capacity or shear strength are needed (Bertolini et al., 2013). Concrete jacketing improves stiffness, strength, and ductility and provides better confinement to columns under seismic loads. It is also beneficial in buildings suffering from material degradation or damage from aging, corrosion, or environmental exposure (Andrade and Gulikers, 2004). In your thermal facility project, concrete jacketing is used in the basement and ground floor columns and beams near pool areas, where water loads and changing use demand robust vertical support. This method not only strengthens the element but also improves fire and corrosion resistance when applied with the right protective coatings. “Jacketing with high-performance cementitious mortars increases both the resistance and ductility of members, while also enhancing their durability in aggressive environments” (Mapei, 2024)

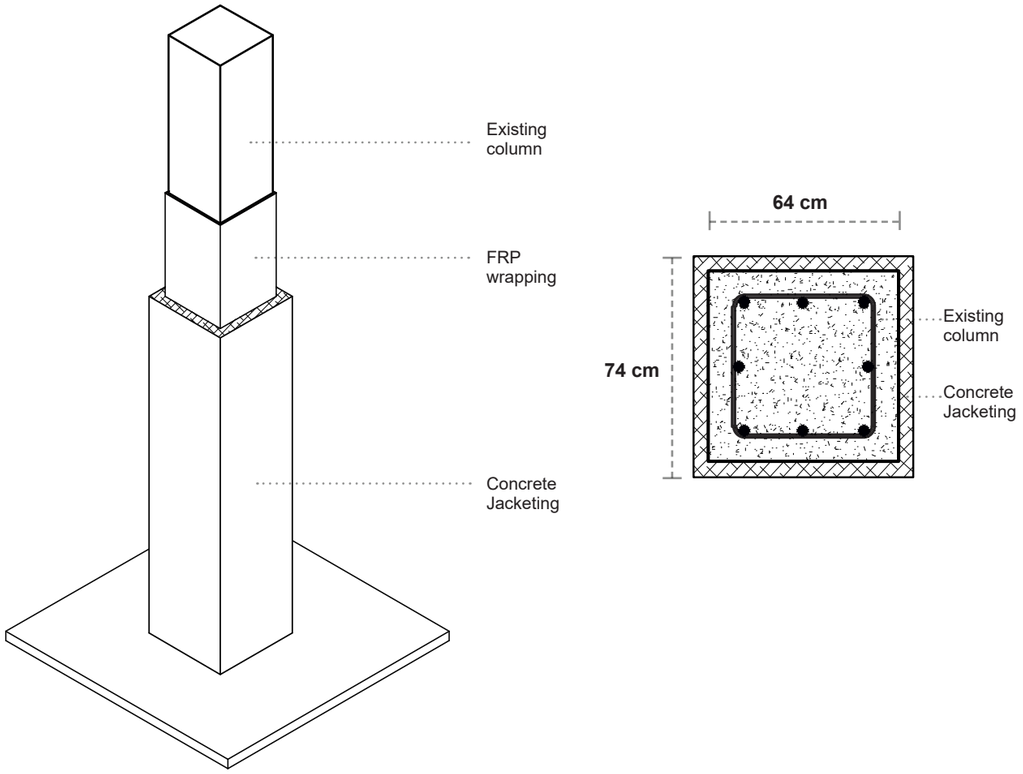


Fig 294 - Pillar Jacketing
Created by author

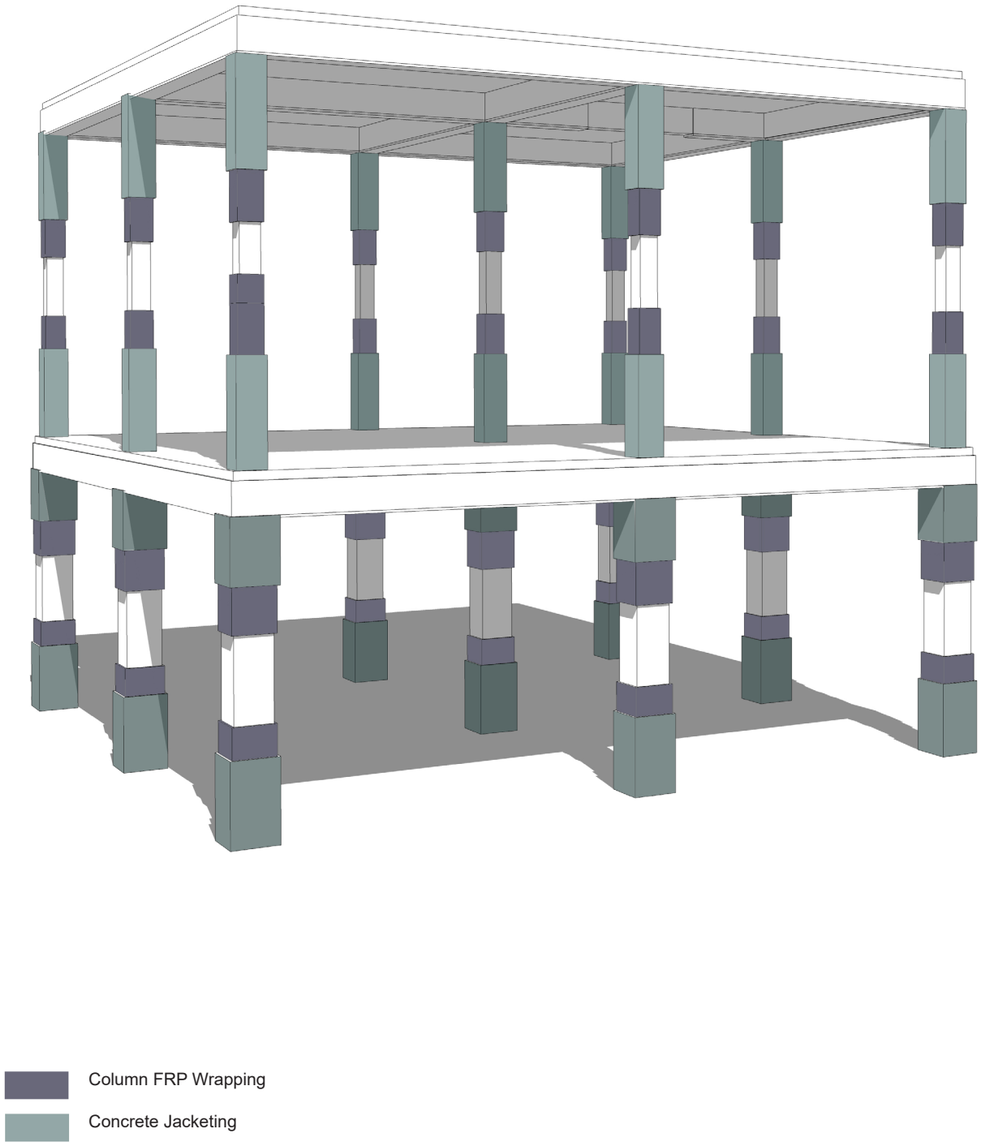


Fig 295 - Ground floor FRP layout
Created by author

9.3.1 Basement Floor Layout

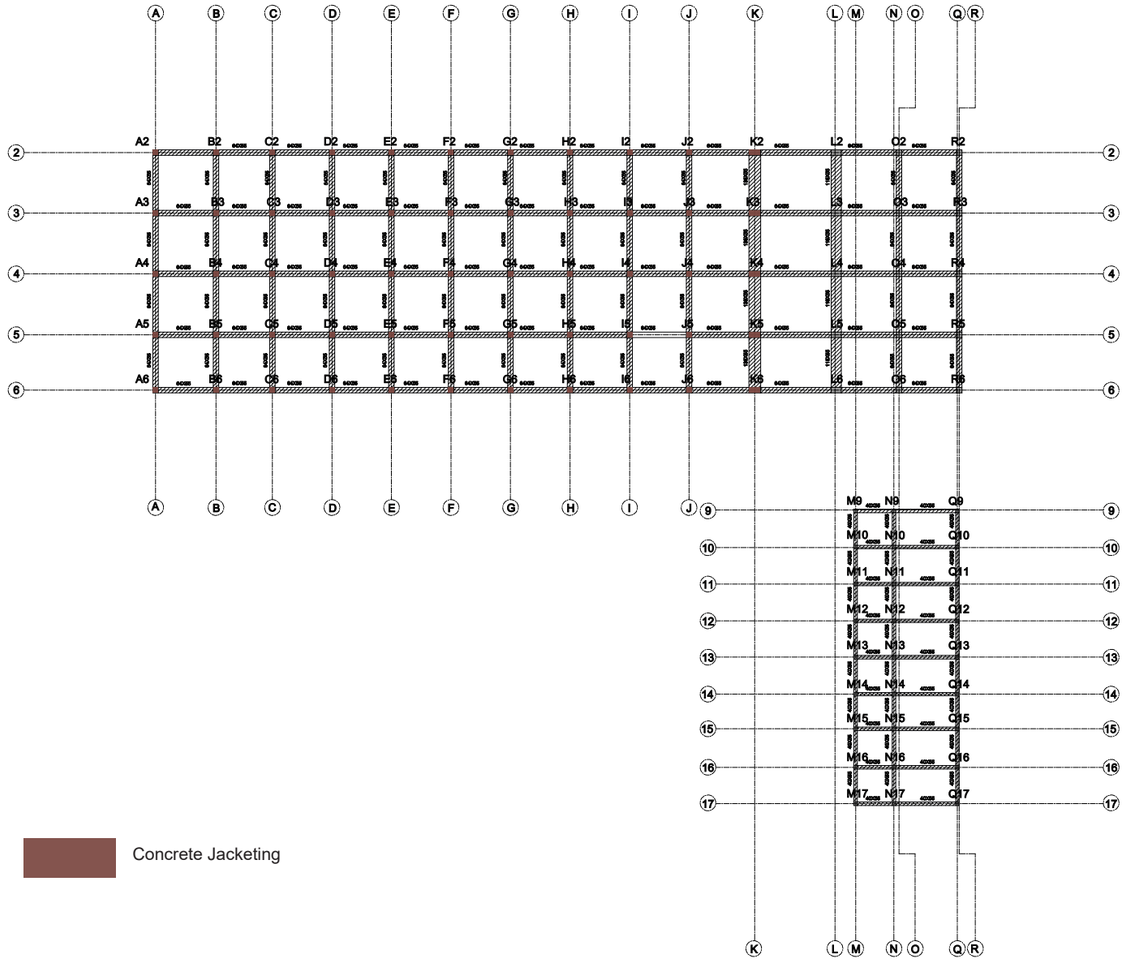


Fig 296 - Basement floor concrete Jacketing layout
Created by author

9.3.2 Ground Floor Layout

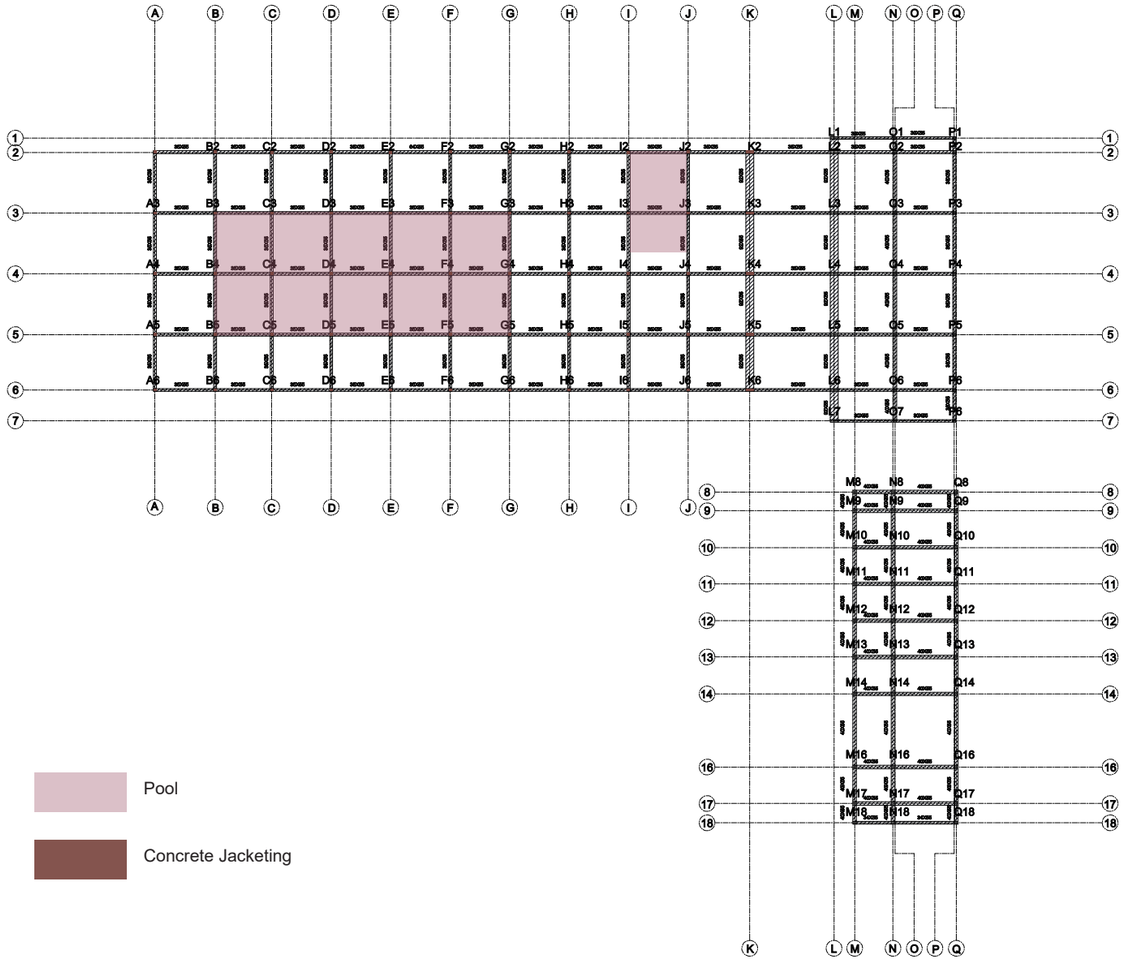


Fig 297 - Ground floor concrete jacketing layout
Created by author

The methos of concrete jacketing helps in making the building fire resistant and more efficient to accomodate the new uses. An additional dimension of 5 cm is added to all the sides of the existing column after the FRP wrapping. Concrete jacketing technique is mainly adopted in the areas where thermal activities are distributed. This helps in effectively reinforcing the structure to accomodate the extra water loads that has been introduced to the themal areas.

9.3.3 First Floor Layout

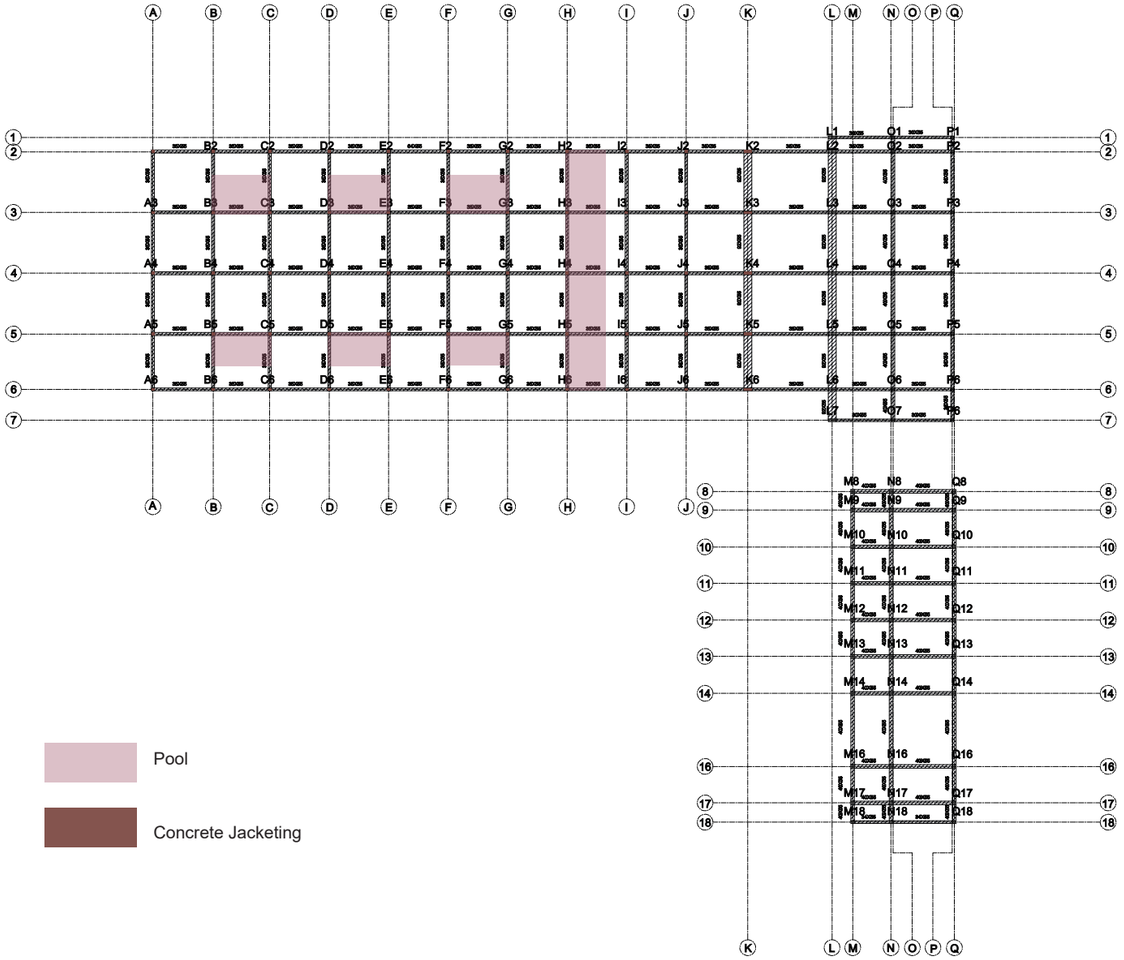


Fig 298 - First floor concrete jacketing layout
Created by author

9.4 Addition of walls and columns

When existing structural layouts are too open, and the load from new uses cannot be redistributed efficiently, it becomes necessary to introduce new vertical load-bearing elements. These include reinforced concrete shear walls, stub columns, or transfer piers, which help redistribute loads and improve both gravity and lateral resistance (Neville, 2011). This method enhances the load path continuity, minimizes floor deflection, and in seismic contexts, increases the torsional rigidity and lateral capacity of the building (Mehta and Monteiro, 2014).

9.4.1 Basement Floor Layout

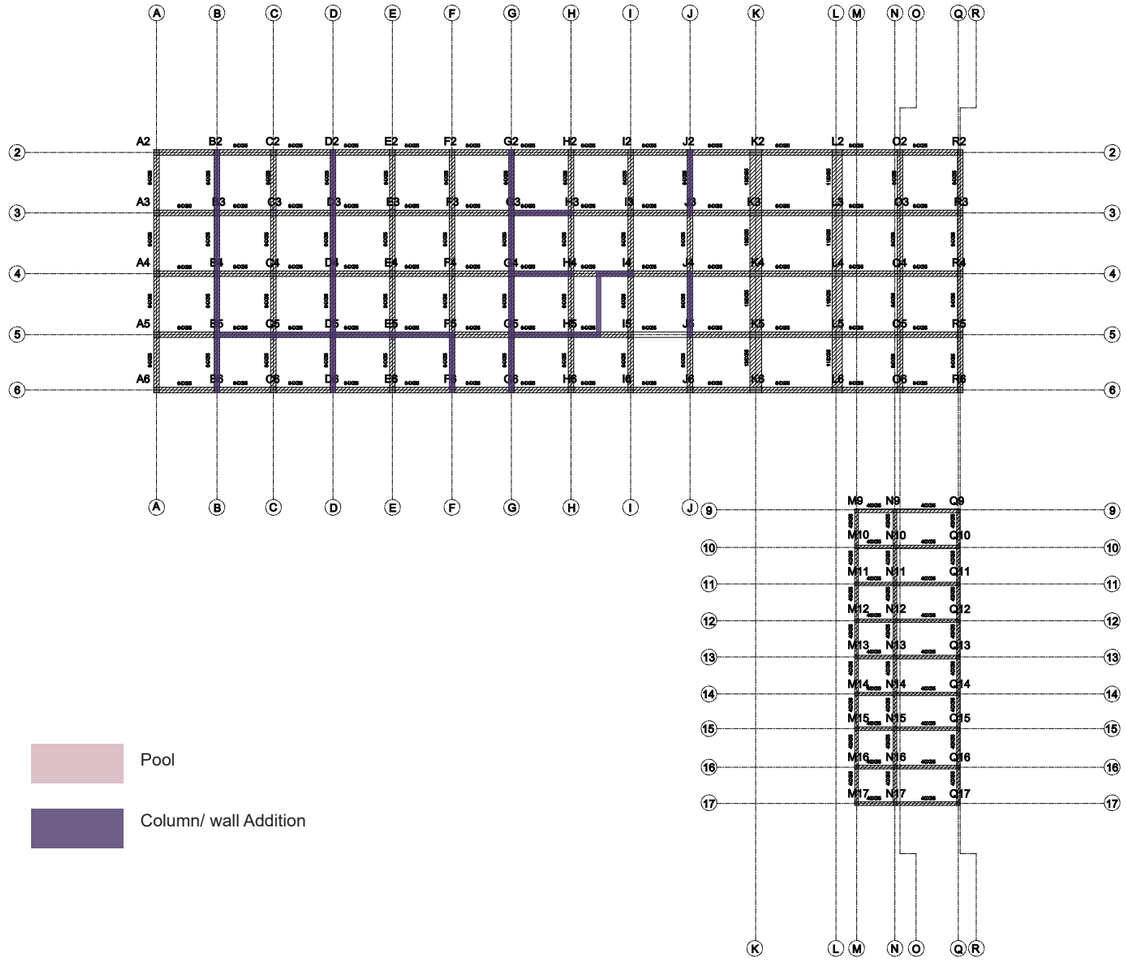


Fig 299 - Basement floor column/wall addition layout
Created by author

9.4.2 Ground Floor Layout

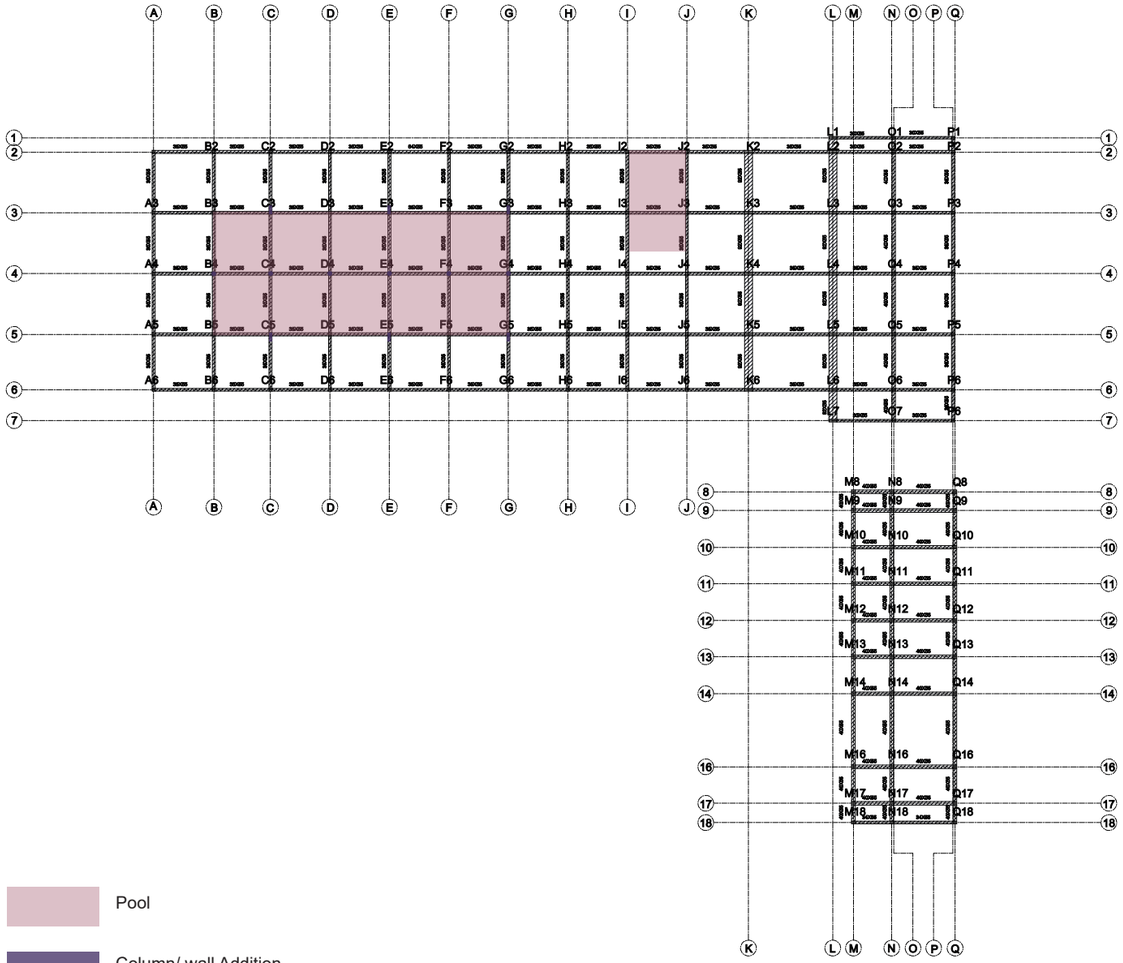


Fig 300 - Ground floor column/ wall addition layout
Created by author

9.4.3 First Floor Layout

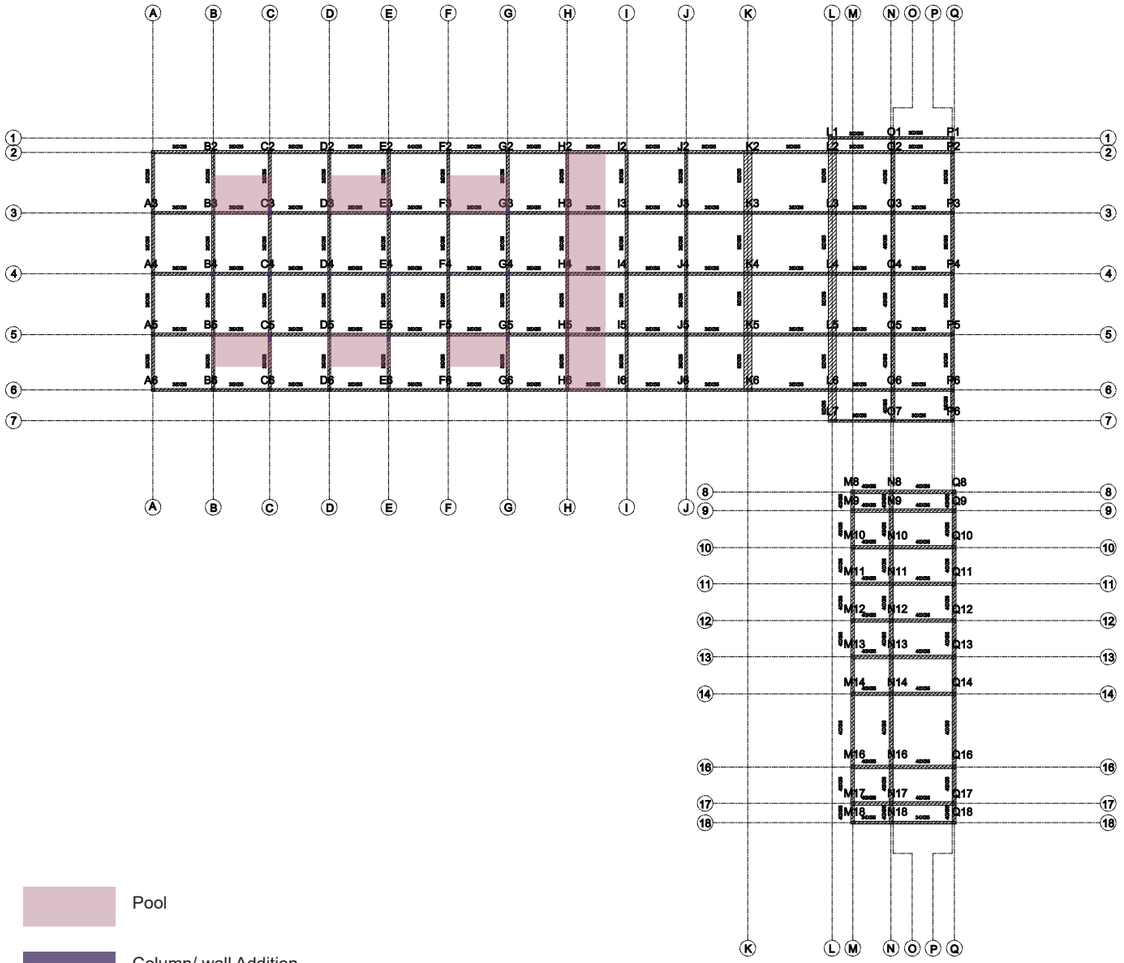


Fig 301 - First floor column/ wall addition layout
Created by author

9.5 Anti corrosive Treatments

The transformation of the Marxer Pharmaceutical Building into a thermal wellness facility places new environmental demands on its existing brutalist concrete structure. With increased humidity, exposure to heat, and potential chemical interaction from mineral-rich water, corrosion becomes a significant threat—particularly to embedded reinforcement bars. Among the most effective preventative strategies is the application of protective coatings, which serve as a barrier against these aggressive agents without compromising the original architectural character (Bertolini et al, 2013).

Protective coatings are specially formulated to shield concrete surfaces from water penetration, chloride ingress, and vapor diffusion—all primary contributors to corrosion of embedded steel (Andrade and Gulikers, 2004). Choosing the appropriate coating is crucial in thermal environments, where high moisture content and temperature are very common. While keeping out moisture from the outside, a breathable yet waterproof membrane permits vapor to escape from within the concrete (Pacheco-Torgal and Jalali, 2011). This dual purpose prevents corrosion-causing agents from getting to reinforcement and lowers the chance of cracking due to internal vapor pressure.

To ensure that coatings adhere to the porous concrete matrix, surface preparation is the first step in the application process. This includes cleaning, repairing, and possibly micro-sandblasting (Mehta and Monteiro, 2014). Mineral-based coatings (like silane/siloxane treatments), polymer-based coatings (like epoxy or polyurethane), or hybrid solutions are all possible. Mineral coatings are frequently preferred in thermally active zones because they are better suited to concrete's thermal expansion behavior (Neville 2011). According to Basheer, Courard, and Mindess (2017)

These materials provide durability without flaking under heat stress because they penetrate the surface rather than just form a film.

Protective coatings eventually act as diagnostic layers as well; any blistering or discoloration indicates underlying problems like carbonation or trapped moisture (FIB 2006).

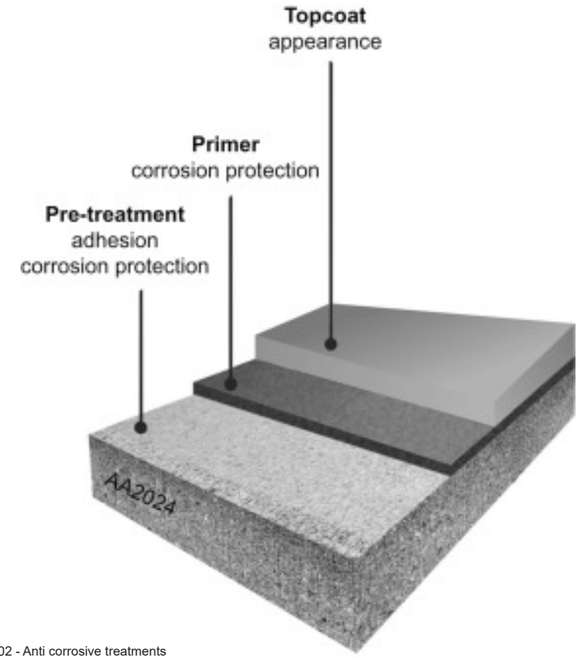


Fig 302 - Anti corrosive treatments
Source - https://www.sciencedirect.com/

9.6 Slab Thickening

Slab thickening helps to increase overall depth of floor slabs to improve their load carrying capacity. This is attained by covering the slabs with high performance concrete or with the help of FRP plates or laminates to strengthen the underside.

The slab's increased thickness results in a greater moment of inertia, which lowers deflections and increases flexural capacity. When point loads are added to areas that were not intended for them, like machinery rooms or pool decks, the technique is especially helpful. Slab thickening has been applied selectively to the mechanical floor zones and pool deck areas in this thesis project, which helps safely redistribute heavy water loads to the supporting structure (Andrade and Gulikers, 2004).

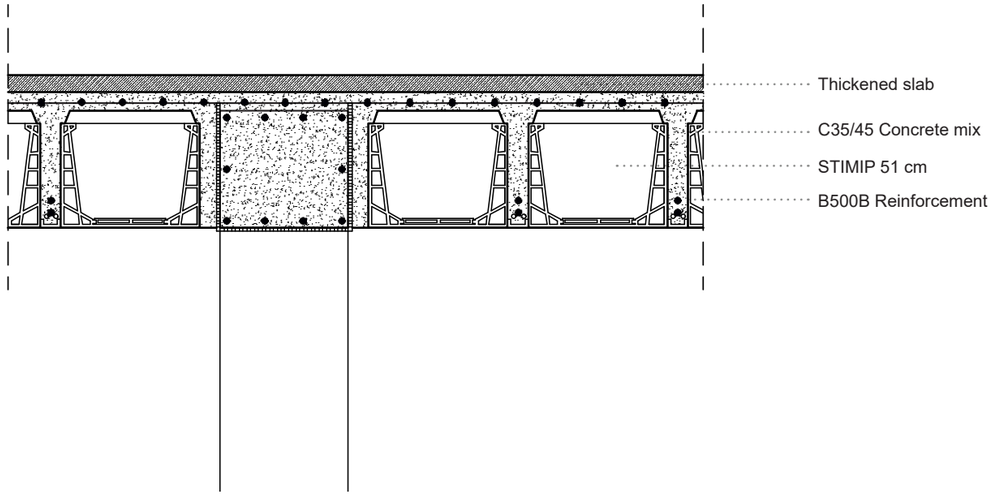


Fig 303 - Slab Thickening section
Created by author

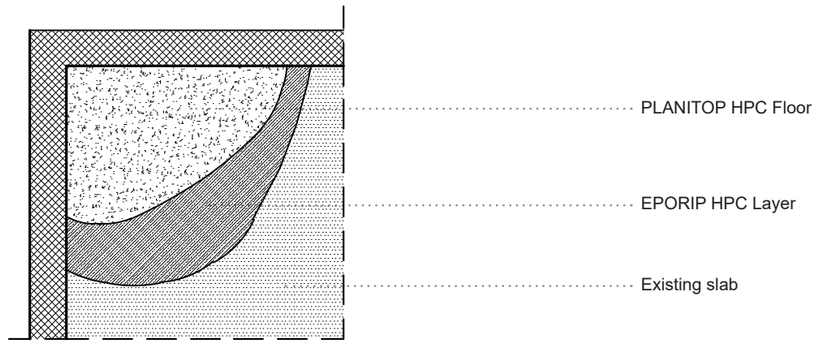
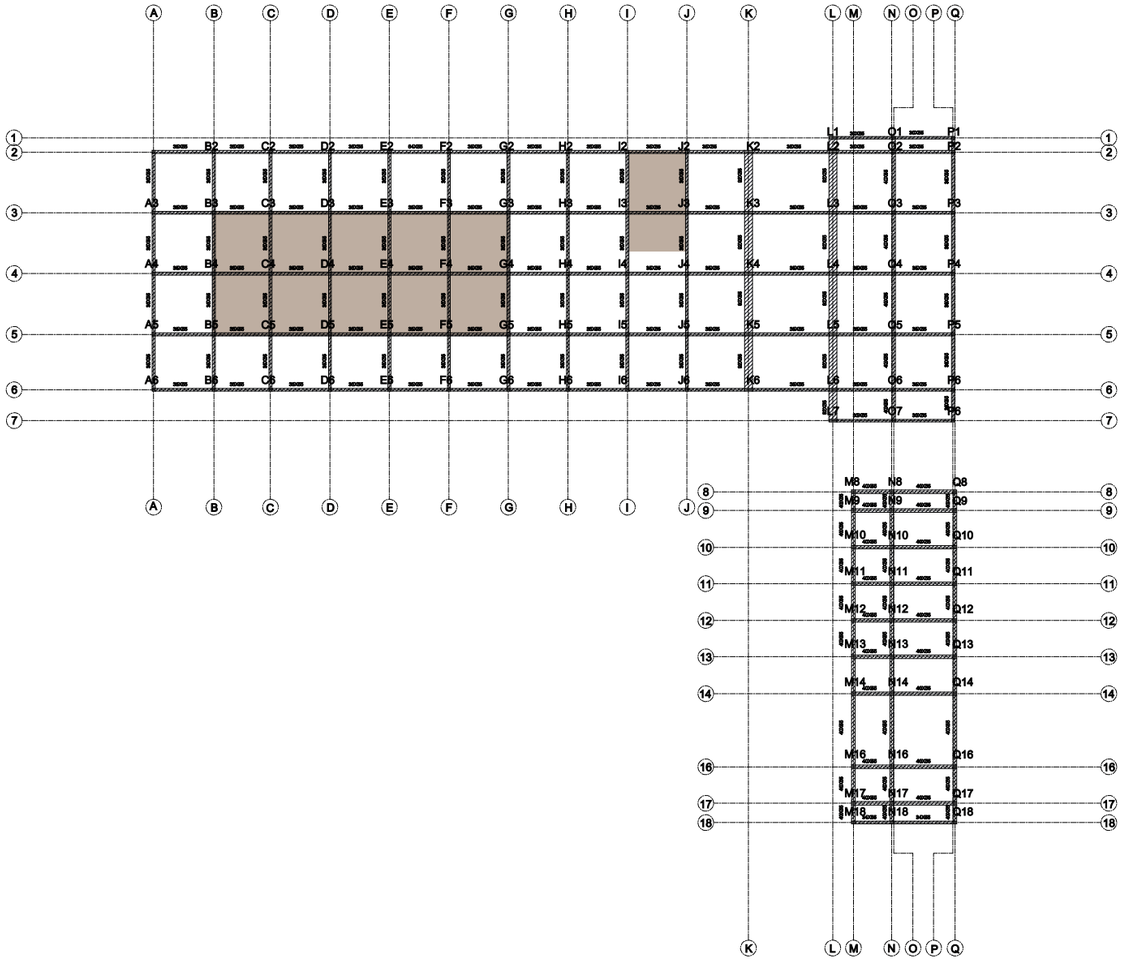


Fig 304 - Slab Thickening Plan
Created by author

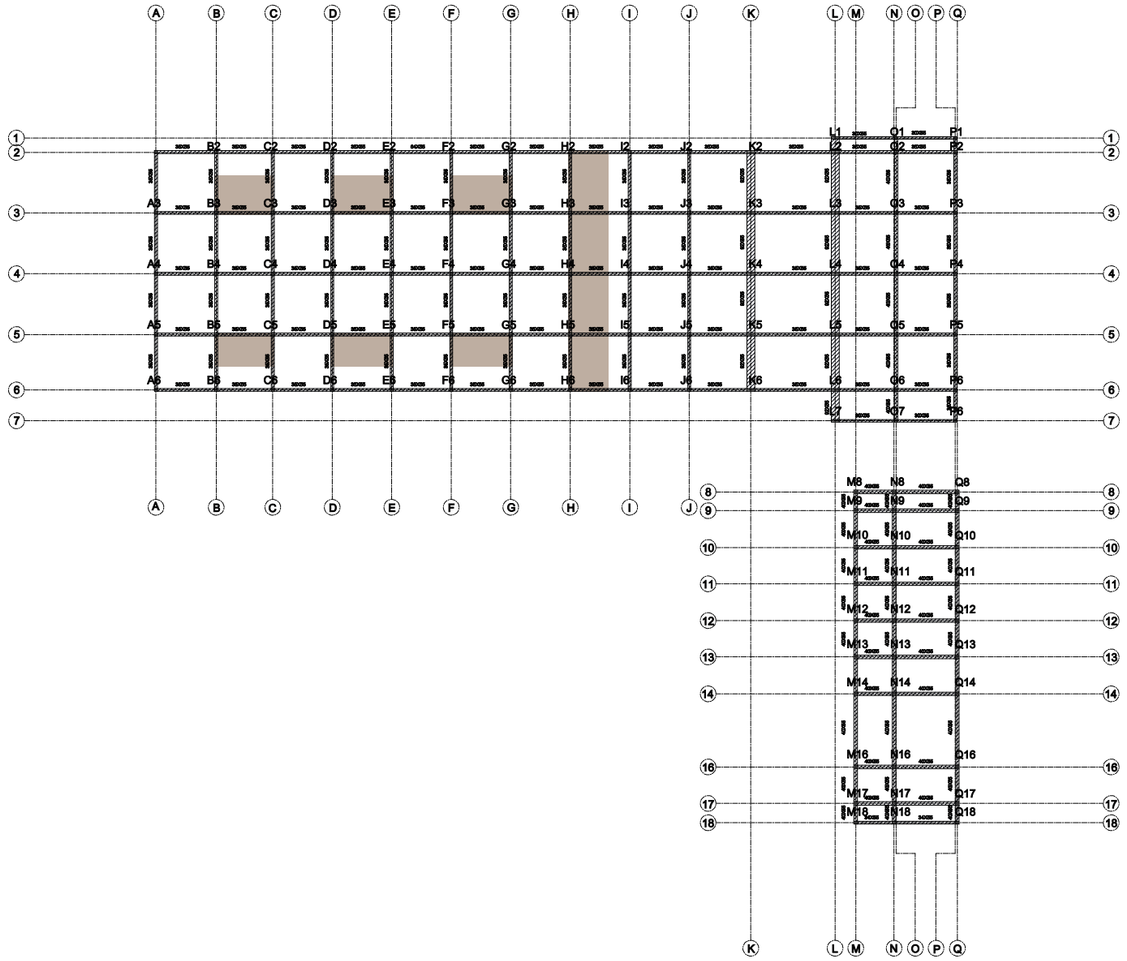
9.6.1 Ground Floor Layout



Slab thickening

Fig 305 - Ground floor slab thickening layout
Created by author

9.6.2 First Floor Layout



Slab thickening

Fig 306 - First floor slab thickening layout
Created by author

10| STRUCTURAL STABILITY

10.1 Two way STIMIP B Slab system

The two- way Stimip slab has orthogonal ribs spanning in both the directions. They are supported by beams and columns in the intersection areas in the grid. The two way slab system is very efficient for rectangular floor plates with equal spans on both the directions. Because this helps in reducing deflections and internal stresses. In the two way slab used in Marxer building, the ratio of longer span to shorter span (L/S) is 1.0, which is optimal. This cause the slab to bend in both of the directions simultaneously.
As an outcome of this behavior,
- Dish-like deformation happens under loading
- Both orthogonal directions have moment distribution
- More load-carrying capacity compared to one-way systems

Fig 307 - The slab system of manufacturing block
Photograph by author

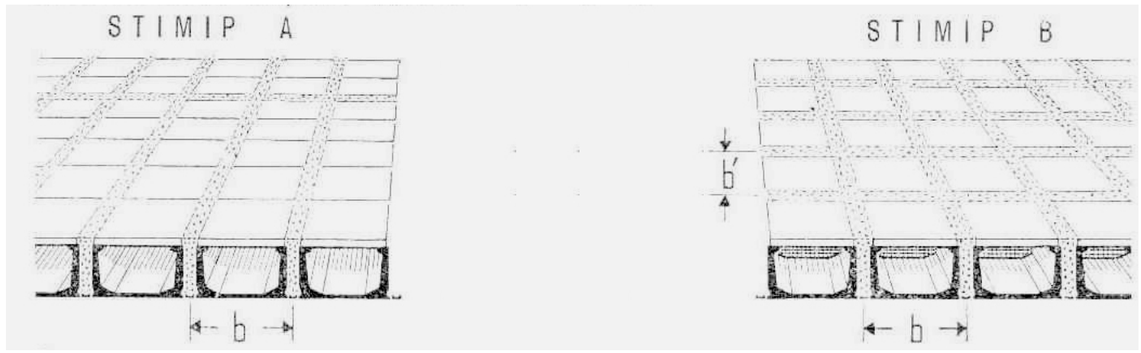


Fig 308 - One way slab

Fig 309 - Two way slab

TIPO SOLAIO	Altezza solaio H	Portate massime: Luce netta l	Portate massime: MOMEN. MAX DI SERVIZ.	Spess. soletta s	Interasse nervature b	Interasse nervature b'	Spess. medio nervature b_0	Spess. medio nervature b'_0	Larghezza dei fondelli	Volume congl.	Peso: Laterizio	Peso: Solaio in opera	Altezza utile h	Altezza utile h'	Braccio di leva coppia resistente β	Braccio di leva coppia resistente β'	CARATTERISTICHE DELLA SEZIONE LARGA 1 M CONSID. TUTTA REAGENTE: Distanza asse baricentr. dal bordo compr. x_c	Distanza asse baricentr. dal bordo compr. x'_c	Area della sezione A_c	Area della sezione A'_c	Momento d'inerzia baricentrico J_c	Momento d'inerzia baricentrico J'_c	Resistenze termiche: Calore dall'alto al basso r_1	Resistenze termiche: Calore dal basso all'alto r_2
	cm	m	Kgm	cm	cm	cm	cm	cm	cm	lt mq	Kg mq	Kg mq	cm	cm	cm	cm	cm	cm	cm^2	cm^2	cm^4	cm^4	$\frac{m^2\,h\,^oC}{kcal}$	
STIMIP A	26	6,50	1670	5	70	—	10	—	9	47	72	185	22,2	—	20,9	—	7,05	—	785	—	33285	—	0,41	0,47
	29	7,25	2160	5	70	—	10	—	9	52	76	201	25,2	—	23,7	—	8,05	—	829	—	54429	—	0,43	0,50
	34	8,50	3100	5	70	—	10,2	—	9	59	79	220	30,1	—	28,3	—	9,91	—	909	—	88857	—	0,45	0,52
	38 + 2	10,00	4400	7	71	—	11,3	—	10	90	83	299	36	—	33,8	—	11,71	—	1210	—	158450	—	0,48	0,57
	43 + 2	11,25	5700	7	71	—	11,5	—	10	99	86	323	40,9	—	38	—	13,65	—	1299	—	227465	—	0,49	0,58
	50 + 3	13,25	8000	8	72	—	12,5	—	10	126	91	379	48,8	—	45,4	—	16,70	—	1564	—	321667	—	0,52	0,59
	63 + 5	17,00	13800	10	83	—	13,5	—	12	162	96	485	63,6	—	58,9	—	21,12	—	1928	—	798795	—	0,58	0,70
STIMIP B	26	7,80	1670	5	70	65	10	10	9	77	71	236	22,2	20,6	20,9	19,5	7,05	6,93	785	792	33285	36462	0,38	0,43
	29	8,70	2160	5	70	65	10	10	9	85	77	281	25,2	23,6	23,7	22,2	8,05	7,95	829	838	54429	50154	0,39	0,45
	34	10,00	3100	5	70	65	10,2	10	9	99	83	320	30,1	28,3	28,3	26,6	9,91	9,76	909	915	88857	84308	0,42	0,48
	38 + 2	12,00	4400	7	71	66	11,3	10,2	10	136	88	414	36	34	33,8	32	11,71	11,22	1210	1179	158450	143939	0,45	0,52
	43 + 2	13,50	5700	7	71	68	11,5	11	10	154	93	463	40,9	38,7	38	35,9	13,65	13,08	1299	1275	227465	205588	0,47	0,53
	50 + 3	16,00	8000	8	72	69	12,5	11	11	188	103	554	48,8	46,4	45,4	43	16,70	15,39	1564	1470	391667	330435	0,51	0,57
	63 + 5	20,00	13800	10	83	74	13,5	13	12	250	118	718	63,6	60,8	58,9	56,2	21,12	20,58	1928	1949	798795	697297	0,58	0,66

NOTA - I numeri in carattere piccolo (H 26-29-34) si riferiscono alle strutture di produzione parzialmente sospesa.

Fig 310 - Technical information of two way slabs

10.2 Design Loads and Structural Behavior

The total design load (q) for the slab system is given as:

$$q = 554\,\mathrm{daN/m^2} + 1200\,\mathrm{daN/m^2} = 1754\,\mathrm{daN/m^2}$$

where:

554 daN/m² represents the dead load (self-weight plus finishes).

1200 daN/m² represents the imposed live load for the building's intended use.
(depth of the pool considered as 1.2 m; weight imposed by water in pools and hot tubs = 1200 daN/m²)

10.3 Structural Assessment

To assess the feasibility of the proposed change of destination of the building, the bending moment in the floor ribs is calculated, approximately as follows:

$$M = \frac{1}{8} q_r l^2$$ (safe estimate assuming simple supports at the beam extremities)

Where:

q_r is the distributed load on the rib; obtained multiplying q times the rib spacing i.

i = 0.72 m is the rib spacing

l the rib span =7 m

as a result:
M=7736 daN.m < 8000 daN.m
(maximum serviceability bending moment according to RDB technical sheet)

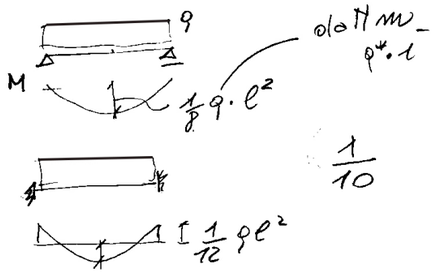


Fig 311 - Structural diagram

10.4 Conclusion

Although in site actual mateial properties should be measured and more accurate actions and stress-strain states should be calculated, it appears that the proposed change of use is feasible, and it is expected that the proposed strengthening methodology could be put in place easily, effectively and at a reasonable cost.

Fig 312 - Manufacturing block Interior
Photograph by author

Fig 313 . Created by author

11| DESIGN

The design proposes the adaptive reuse of an abandoned pharmaceutical building into a thermal facility, nestled near the Alps and located just 4.8 km from the industrial heritage of Ivrea. The project aims to revitalise the brutalist structure while celebrating its architectural identity by retaining its original raw concrete expression and structural features. This new thermal complex offers a range of immersive thermal experiences, designed as a retreat where visitors can spend one or two days relaxing or working. Co-working spaces and accommodation facilities are integrated into the scheme, allowing flexibility for individuals, corporate groups, or for organising large events such as conferences. The heritage of Olivetti is woven throughout the site—reflected in both the landscape elements and interior interventions—creating a meaningful dialogue between the past and the present. While the therme is reserved for private use, the design also includes publicly accessible areas such as exhibition spaces and an outdoor movie screening plaza, giving back to the local community and enhancing the experience for tourists. The overall intent is to preserve and elevate the existing structure through thoughtful programming and minimal architectural intervention—transforming it into a place of well-being, work, and cultural exchange within a historically significant context.

11.1 Development Stratergy

The design development begins with the structural retrofitting of the existing brutalist blocks to accommodate new spatial programs while preserving the architectural character. The site's proximity to the Alps and its location away from the dense urban fabric presented an opportunity to introduce a wellness retreat that responds to the growing demand for thermal and recreational spaces. Initial contextual analysis and swot analysis revealed significant potential to integrate thermal, co-working, and hospitality functions that not only serve visitors but also contribute to the local economy and cultural landscape. The phased intervention starts with the transformation of the manufacturing block into a therme facility making use of the double-height spaces to organise a series of vertical thermal experiences. The basement of thermal block accommodates services, a gym, and recreational functions, while the ground and mezzanine levels have different bathing typologies.

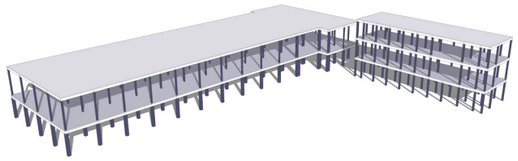


Fig 314
Created by author

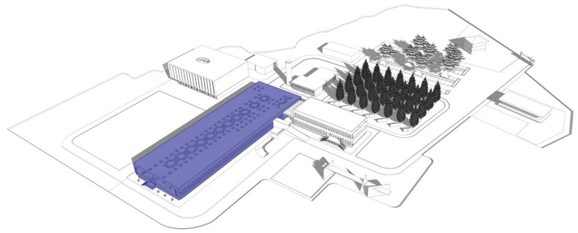


Fig 315
Created by author

01 - Structural retrofitting of existing blocks

The process begins by strengthening and retrofitting the existing structural system. All major brutalist features are retained to preserve architectural authenticity. This phase ensures readiness for accommodating new programmatic requirements.

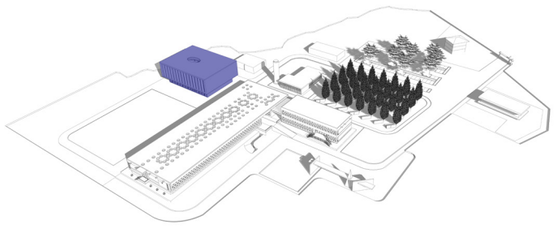


Fig 318
Created by author

02 - Conversion of manufacturing block to Therme

The main manufacturing block is converted into a thermal bath facility. The double-height volume is used to structure layered thermal experiences. Basement spaces support the program with gym and wellness-related services.

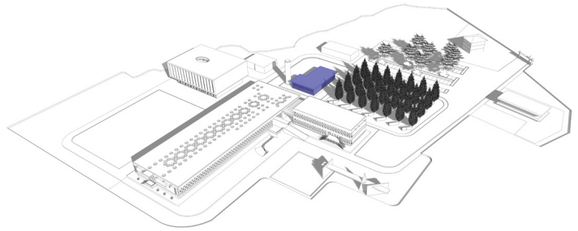


Fig 319
Created by author

05 - Addition of two floors to the service block for accommodation

To meet the demand, two new floors are added to the service block. The extension offers 47 additional rooms, raising total capacity to 150 guests. The new construction respects the language of the existing brutalist form.

06 - Conversion of other service block to an exhibition space

Another service block has been transformed into an administrative and semi-public exhibition space. Functional independence from the theme is ensured by the space's independent access. This preserves privacy in wellness areas while enabling public participation in the public zones of the project.

The adjacent research block is adapted into visitor accommodation, and due to growing capacity requirements, two additional floors are added to the service block. This extension increases accommodation to host up to 150 guests. The other service block is adapted into a semi-public exhibition and administrative space with independent access. Interstitial spaces between the main blocks are activated with seating and outdoor film screening areas. The landscape draws inspiration from the Olivetti heritage through a curated grid of 28 trees—each paired with a seating wall and a display referencing a historic Olivetti typewriter model.

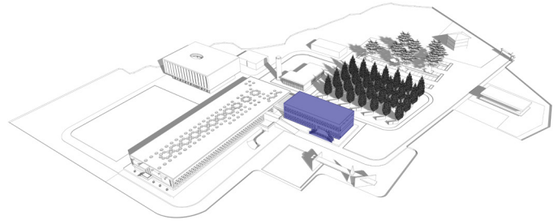


Fig 316
Created by author

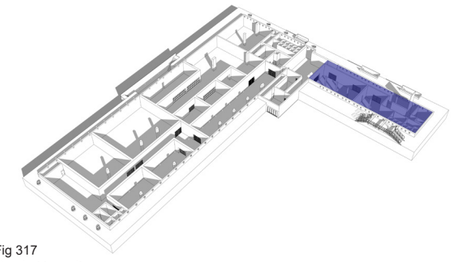


Fig 317
Created by author

03 - Providing accomodation facilities

The old research building has been converted into accommodation spaces for the guests. With only minor structural adjustments, its internal grid layout can accommodate rooms. Additionally, this block has facilities designed for longer stays.

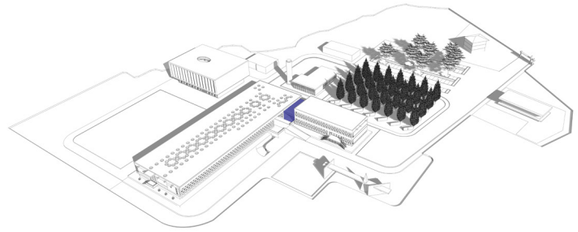


Fig 320
Created by author

04 - Integration of co-working spaces in the basement

Co-working spaces have been added to the accommodation block's basement. To facilitate meetings and brief conferences, an event space has been incorporated. This enables business groups or professionals to work while taking advantage of the thermal retreat overlooking the Alps.

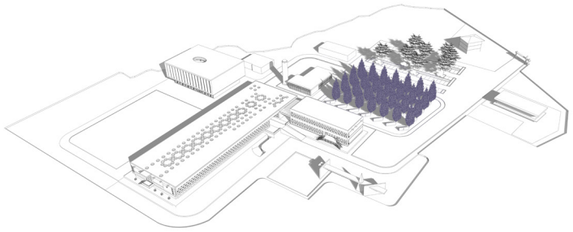


Fig 321
Created by author

07 - Providing external seating spaces in between blocks

The areas in between blocks are designed to serve as gathering places. These improve the social element and include outdoor seating and screening areas. It promotes communication between tourists, residents, and other users.

08 - Adding a layer of contextual history as a landscape element

Twenty-eight famous Olivetti typewriter models are represented by a landscape grid of twenty-eight trees. Every tree has a stone wall describing about an Olivetti typewriter and a seating. This action connects the project to Ivrea's industrial and cultural heritage.

11.2 Concept

Recreation
Therme

Work + Accomodation
Accomodation + Co-working spaces

Contextual Element
Garden of Memories

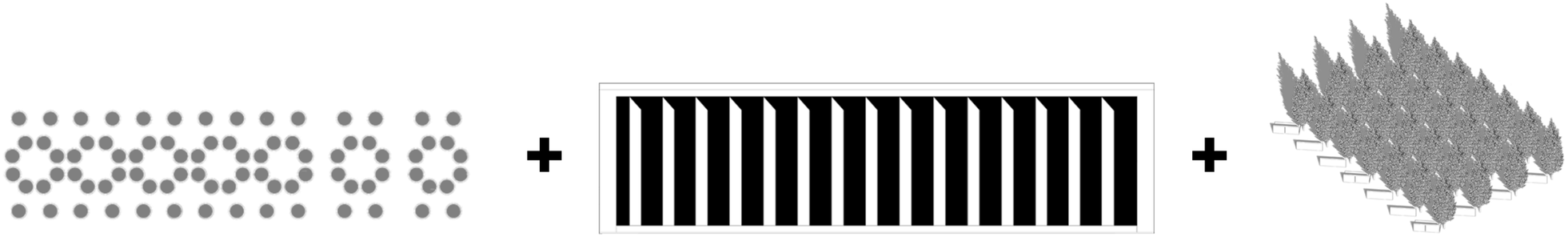


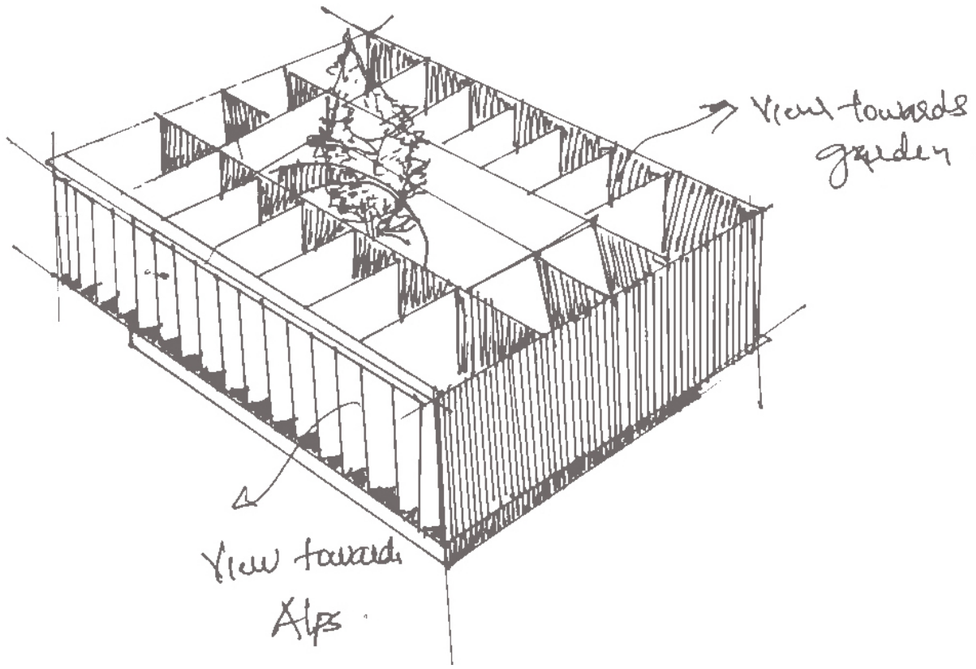
Fig 322
Created by author

Olivetti’s principle of work-life balance

Rooted in Olivetti’s philosophy of work-life balance, the project envisions the therme as a place of pause—a retreat from the relentless pace of modern life. Through thoughtfully chosen spatial experiences, it provides a moment of silence during which the body and mind are soothed. In order to create an immersive, the design places a high value on sensory richness. It pays particular attention to materiality, temperature, scent, and sound. In this case, the material transforms into the atmosphere rather than just the surface. Each step of the ritualistic journey evokes a stronger sense of self and place. These phenomenological layers engage all five senses—sight, touch, smell, taste, and hearing—transforming architecture into a complete sensory narrative. After the thermal sequence, users are welcomed into calm, functional spaces where work or reflection can continue in balance. This fusion of wellness and productivity captures the essence of a life lived mindfully. The project tries to construct a sequence of emotions—each space an invitation to slow down, reflect, and reawaken the senses that are often dulled by routine and speed. In doing so, the architecture becomes not only a vessel for function but a medium for inner transformation, allowing individuals to momentarily disconnect from the demands of the external world and reconnect with a quieter, more essential rhythm within themselves.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

10.2.1 Concept Sketches



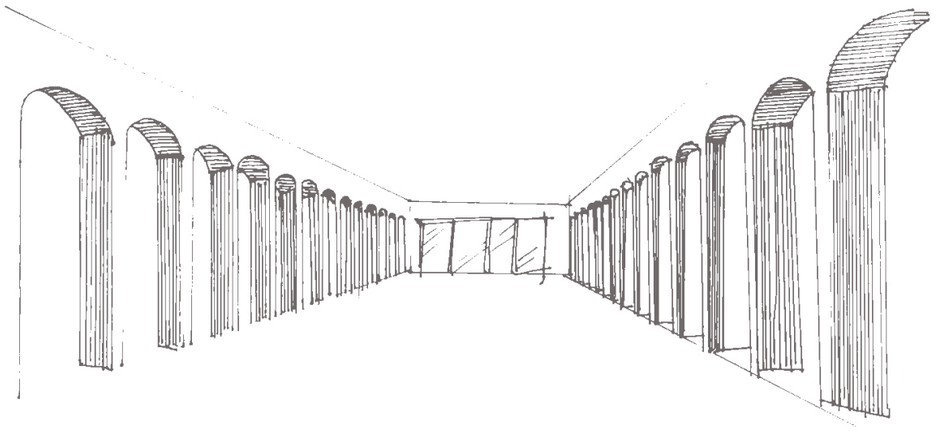
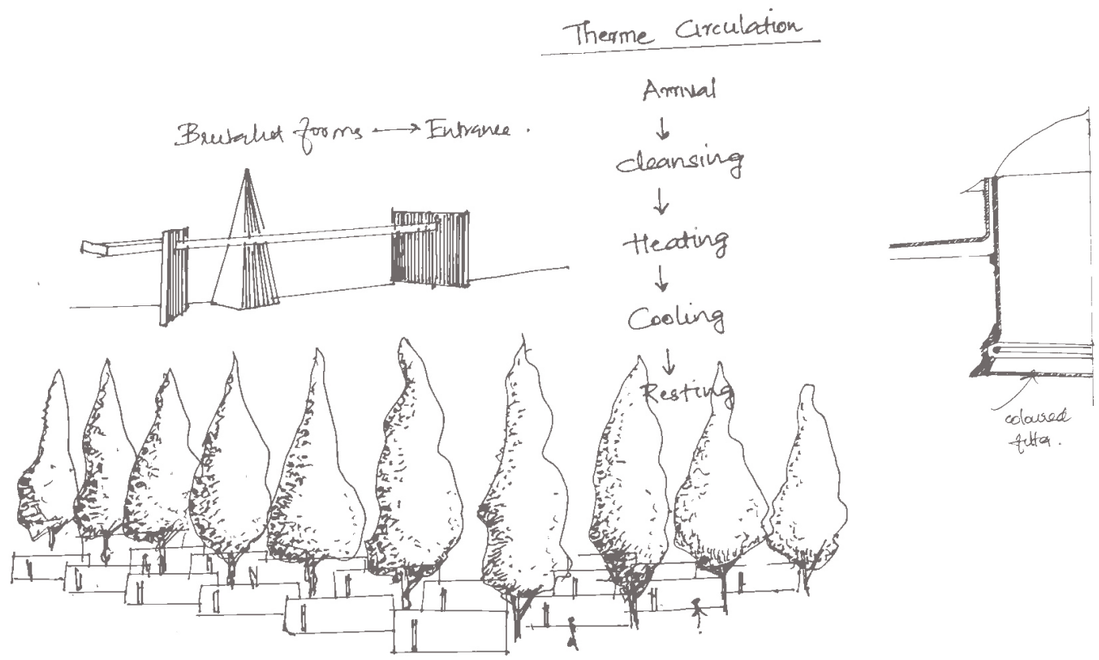
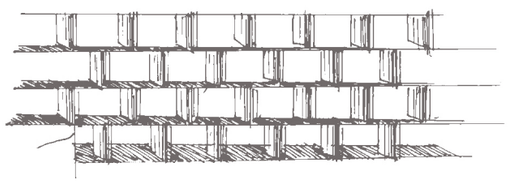
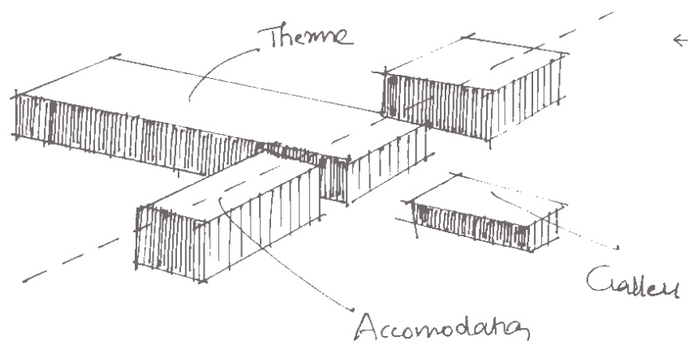
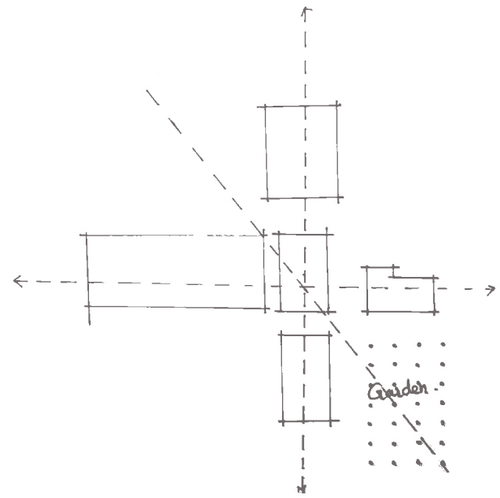


Fig 323
Created by author









11.3 Site Zoning

The site is strategically divided into seven functional zones to balance privacy, accessibility, and community engagement. Private zones (01, 03, and 04) accommodate the core wellness functions, including the therme, indoor recreational areas, accommodation, and co-working spaces. Semi-public zones (02 and 05) integrate supportive programs like the restaurant, gym, exhibition, and administration areas, allowing limited visitor interaction. Public zones (06 and 07) with a garden, open-air theatre, and waterbody serve as shared community spaces, encouraging cultural and social exchange beyond the confines of the thermal facility.

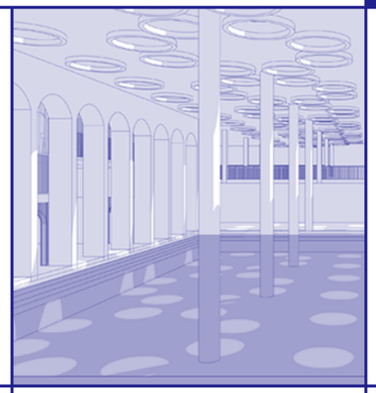
Private Zone

Semi public Zone

Public Zone

Private Zone

Zone
01

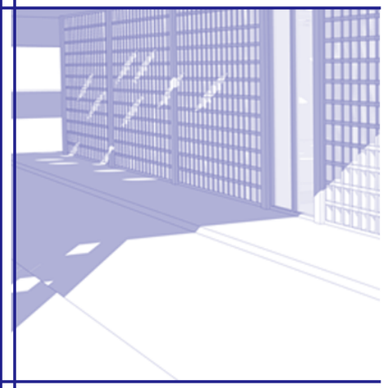


Therme
Indoor Games
Service

Semi Public Zone

Zone
02

Restaurant
Gym



Private Zone

Zone
03

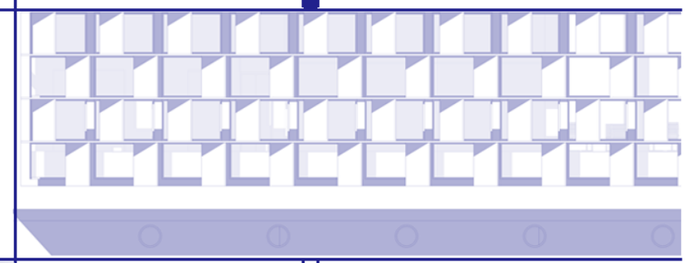
Accomodation

Fig 324
Created by author

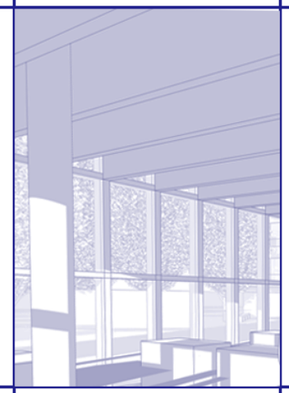
Private Zone

Zone
04

Accomodation
Co-working spaces



Semi Public Zone



Zone
05

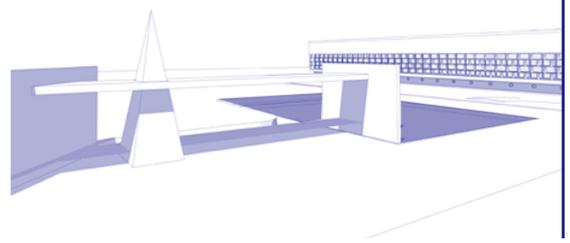
Exhibition Gallery
Admin Block

Zone
06

Garden

Public Zone

Public Zone



Zone
07

External waterbody

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

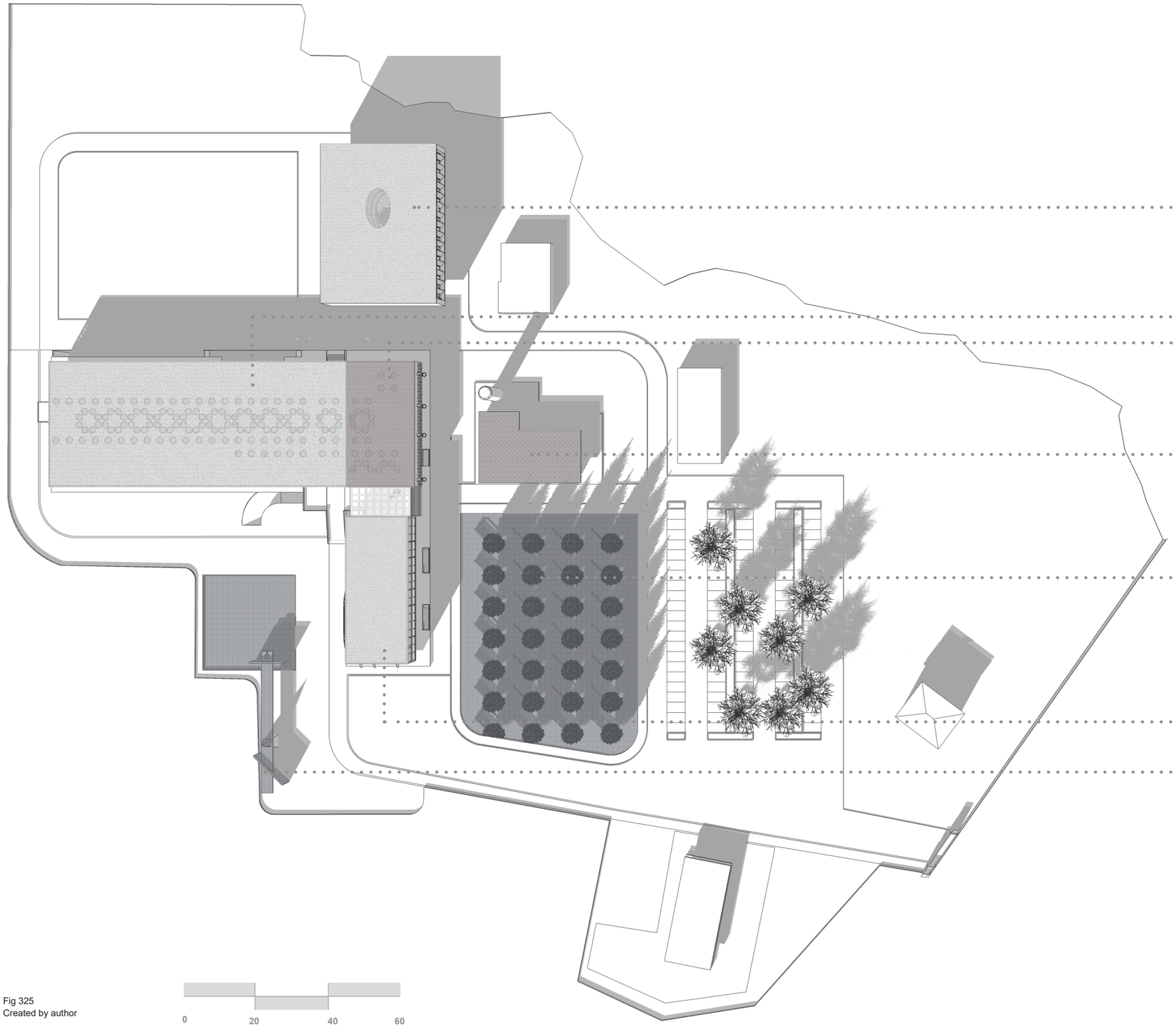


Fig 325
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.4 Site Axonometery

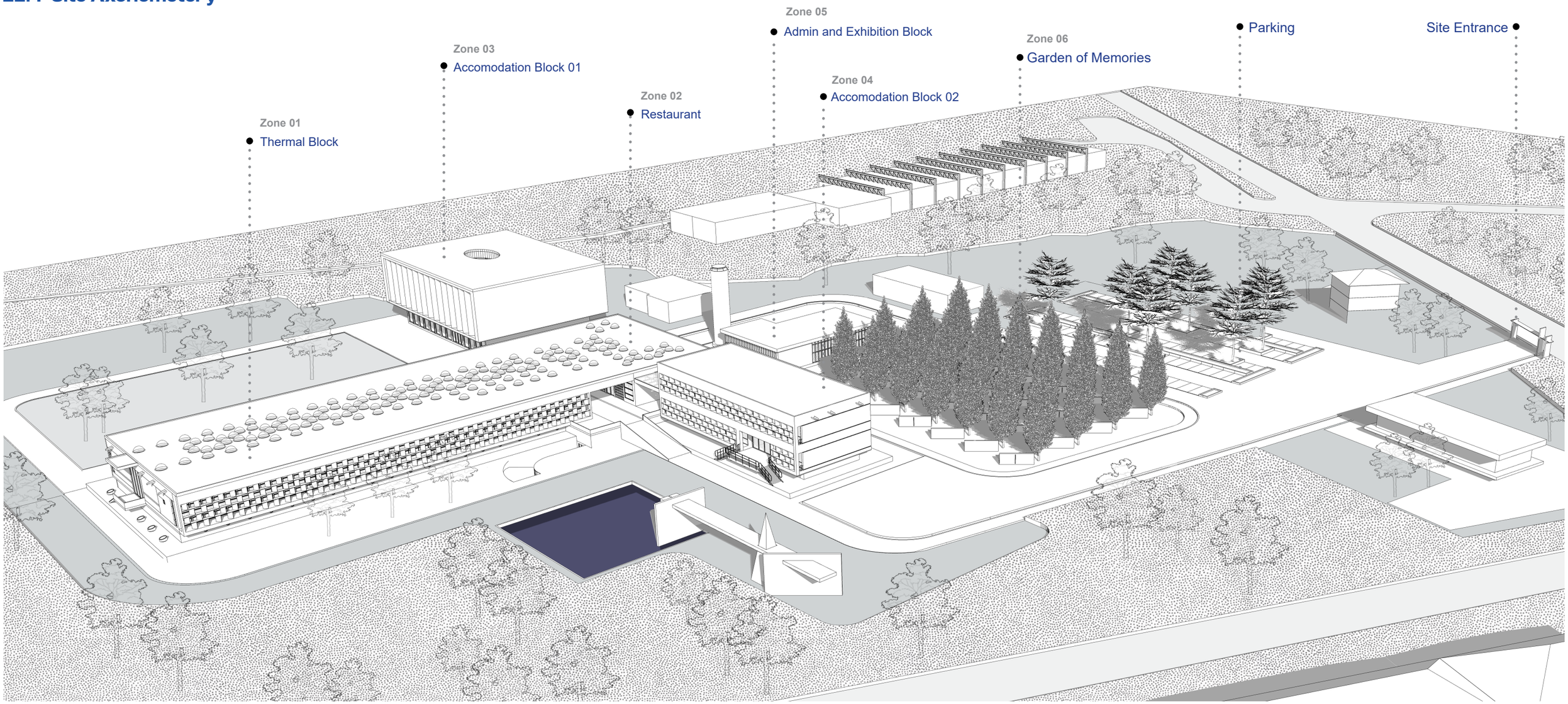


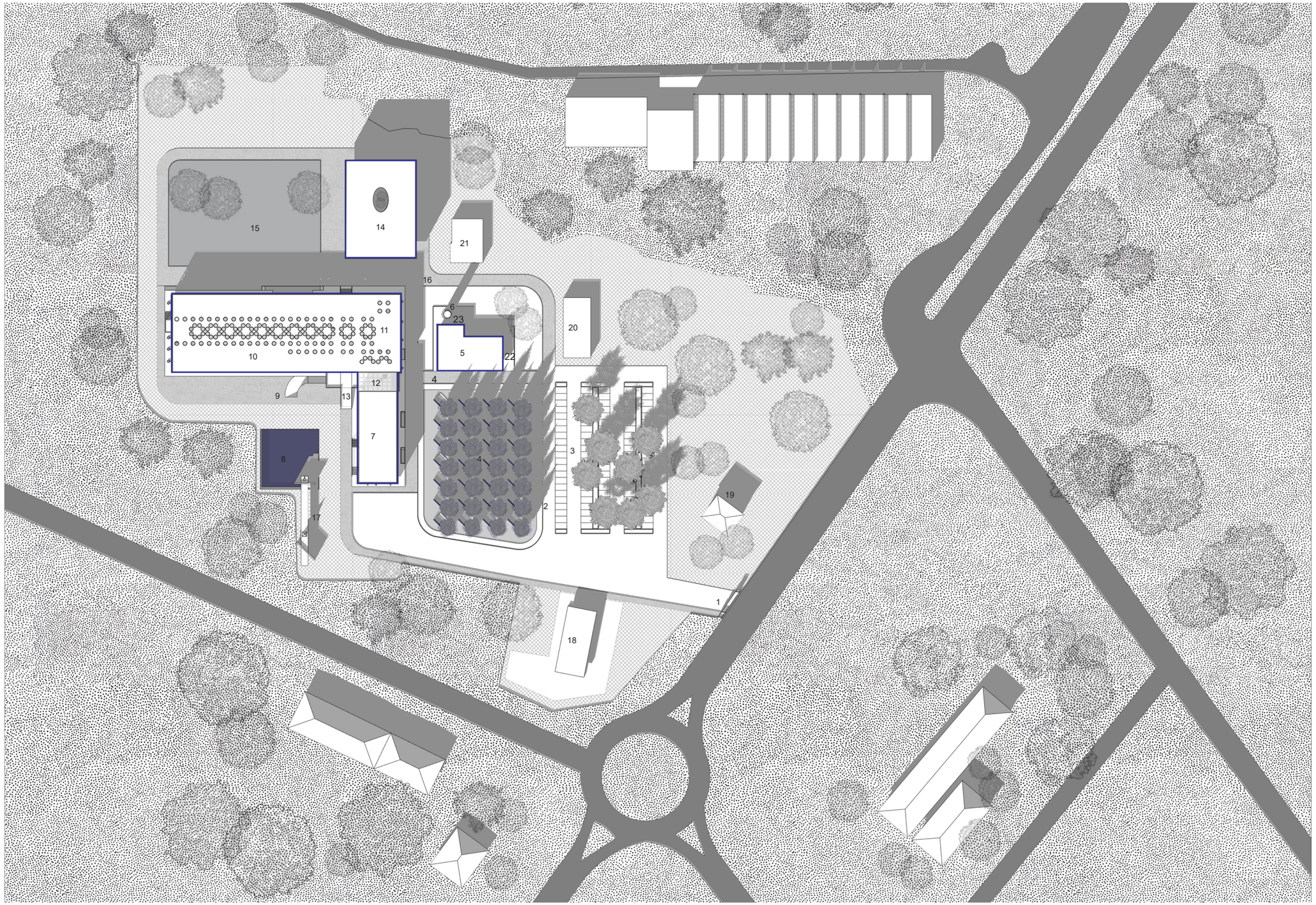
Fig 326 - Axonometric view of the proposed Marxer site
Created by author

Marxer Therme design Proposal

With only minor additions that respects the original architectural language, the site adheres to a distinct rectilinear geometry established by the brutalist structures that are still standing. With views of the garden and the far-off Alps, the main intervention consists of two extra floors that have been added above the current service block to increase the number of rooms. The visitors are welcomed by an entrance axis with a waterbody and brutalist art installation which serves as a visual focal point. Parking is zoned near to the entrance. A separate service route is provided for the maintenance requirements of the accoodation and other buildings. The site boundaries are lined with trees and shrubs to ensure privact in the thermal spaces. The industrial chimney serves as a symbolic anchoring point preserving the physical connection to the historical context. The public and semi-public zones—including the garden of memories, outdoor installation, restaurant, and exhibition space—are carefully zoned to remain distinct from the private areas of the therme and residential wings. The landscape is designed not only as circulation and buffer, but as an experiential layer that reflects the memory of the place, particularly through the “Garden of Memories” featuring 28 trees—each representing a milestone in Olivetti’s design legacy.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.5 Master plan



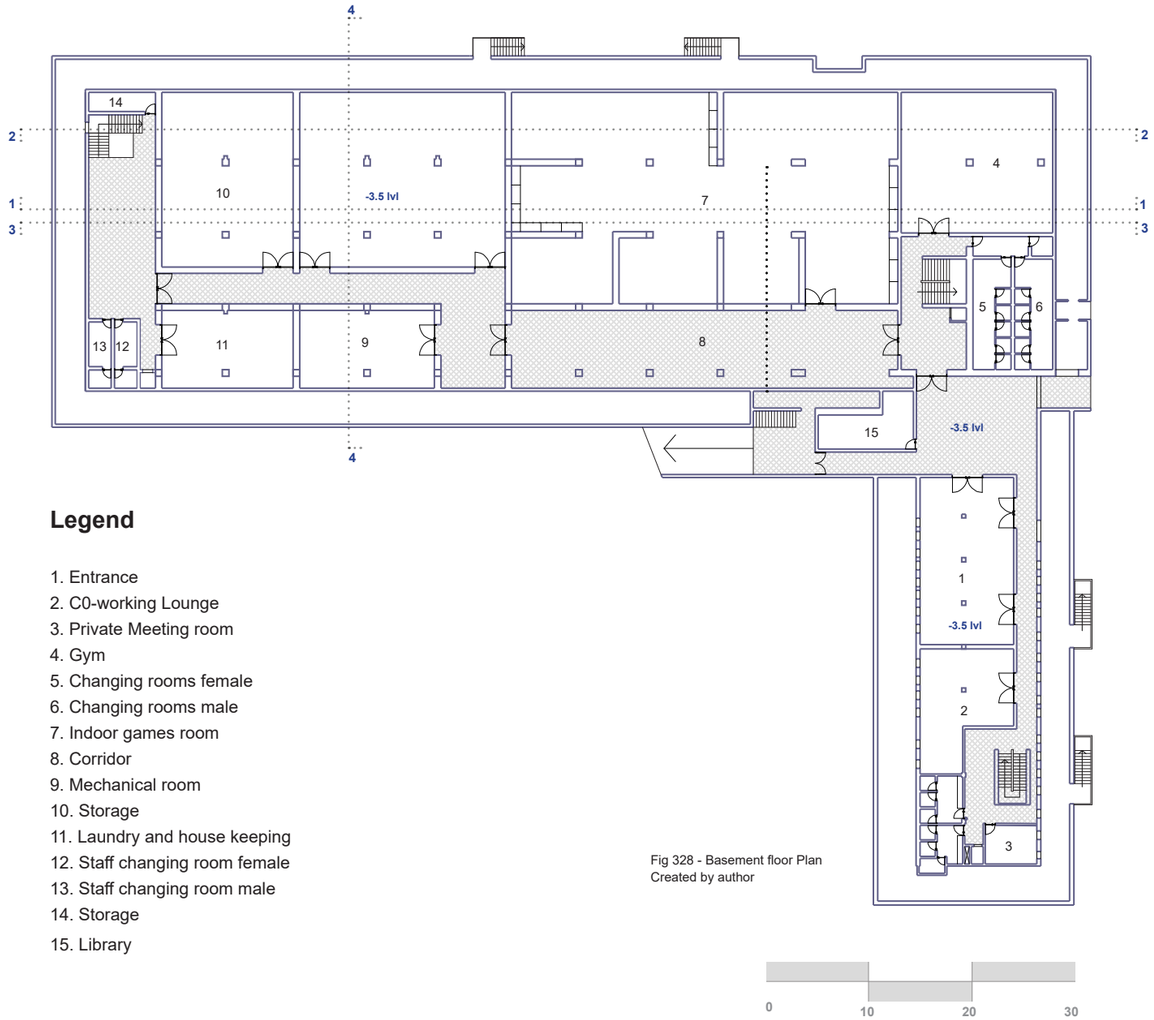
The original geometry of the buildings are maintained while responding sensitively to the site's broader natural and industrial context. The spatial arrangement encourages gradual movement through varying degrees of privacy, offering moments of pause, reflection, and engagement.

Legend

1. Site Entrance
2. Garden Entrance
3. Parking
4. Garden of memories
5. Admin and Exhibition Block
6. Chimney
7. Accomodation Block 01
8. Water Body
9. Basement entry from outside
10. Thermal Block
11. Restaurant
12. Seating space/ outdoor Theatre
13. Acess way between blocks
14. Accomodation Block 02
15. Garden and seating spaces
16. Service Entrance
17. Entrance installation
18. Service Block 01
19. Existing Guesthouse
20. Existing Warehoue
21. Service Block 02

Fig 327 - Proposed Master Plan
Created by author

11.6 Basement Floor plan



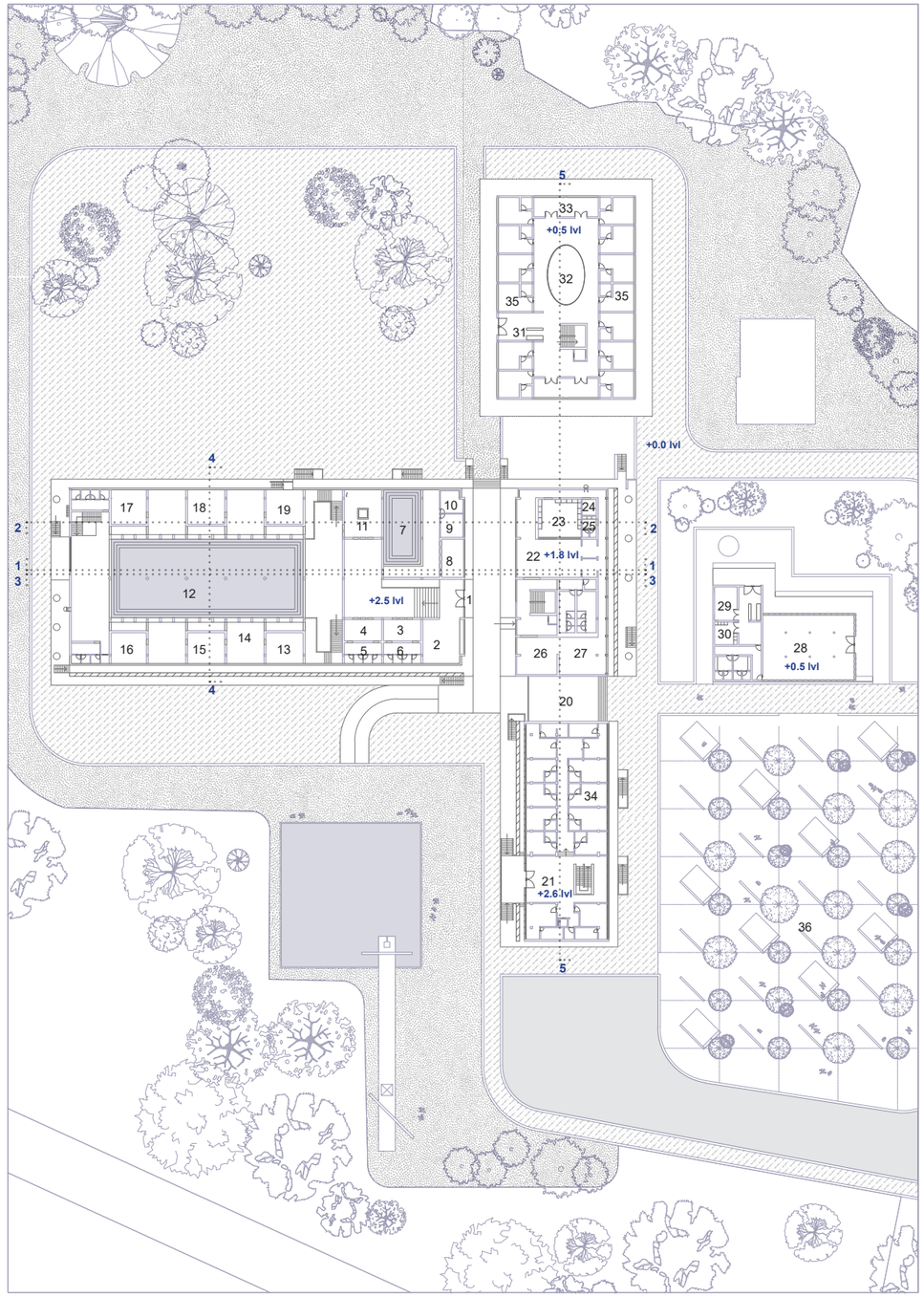
Legend

1. Entrance
2. C0-working Lounge
3. Private Meeting room
4. Gym
5. Changing rooms female
6. Changing rooms male
7. Indoor games room
8. Corridor
9. Mechanical room
10. Storage
11. Laundry and house keeping
12. Staff changing room female
13. Staff changing room male
14. Storage
15. Library

Fig 328 - Basement floor Plan
Created by author

The basement floor is accessible via an external ramp as well as internal staircases. It connects the lower levels of both the thermal and accommodation blocks, allowing seamless circulation. All essential service rooms are located here to support the building's operations. In addition to services, the basement accommodates an indoor gaming area, a gym, co-working spaces, and a multi-purpose event hall. A private meeting room is also provided for focused work or discussions. Three internal staircases—spanning both the thermal and accommodation blocks—ensure vertical connectivity between the basement and the ground floor.

11.7 Ground Floor plan

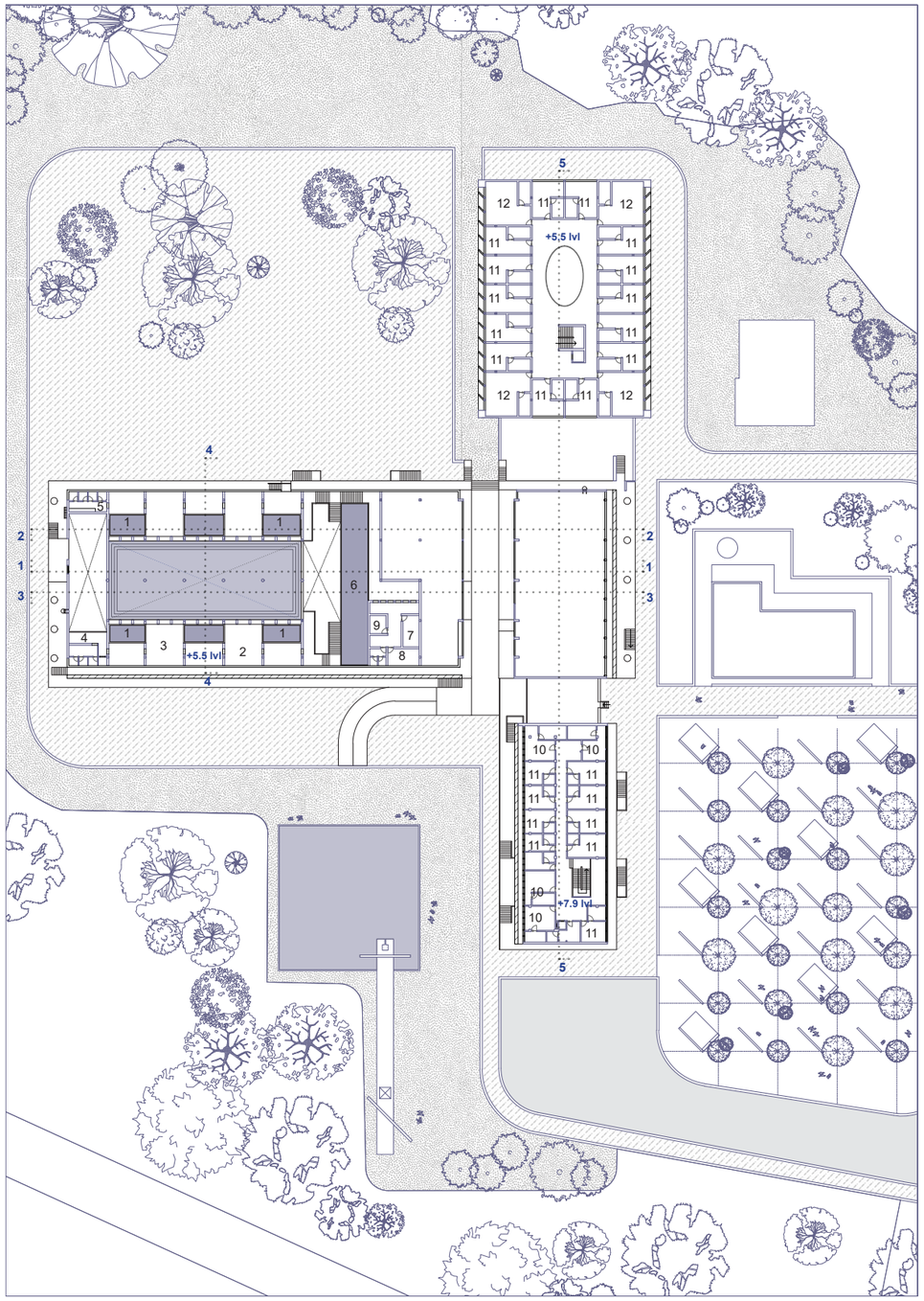


Legend

1. Entrance
2. Reception
3. Locker room male
4. Locker room female
5. Changing room female
6. Changing room male
7. Hot bath
8. Rest room
9. Shower room male
10. Shower room female
11. Water installation
12. Plunge pool
13. Bath 01
14. Resting Lounge
15. Bath 02
16. Bath 03
17. Hydrotheraphy
18. Sauna room 01
19. Sauna room 02
20. Seating space
21. Reception
22. Dining space
23. Kitchen
24. Storage
25. Staff room
26. Bar
27. Restobar
28. Exhibition gallery
29. Staff workstations
30. Managers office
31. Reception
32. Courtyard
33. Storage
34. Double Room stay
35. Single Room stay
36. Garden of memories

Fig 329 - Ground floor Plan
Created by author

11.8 First Floor plan



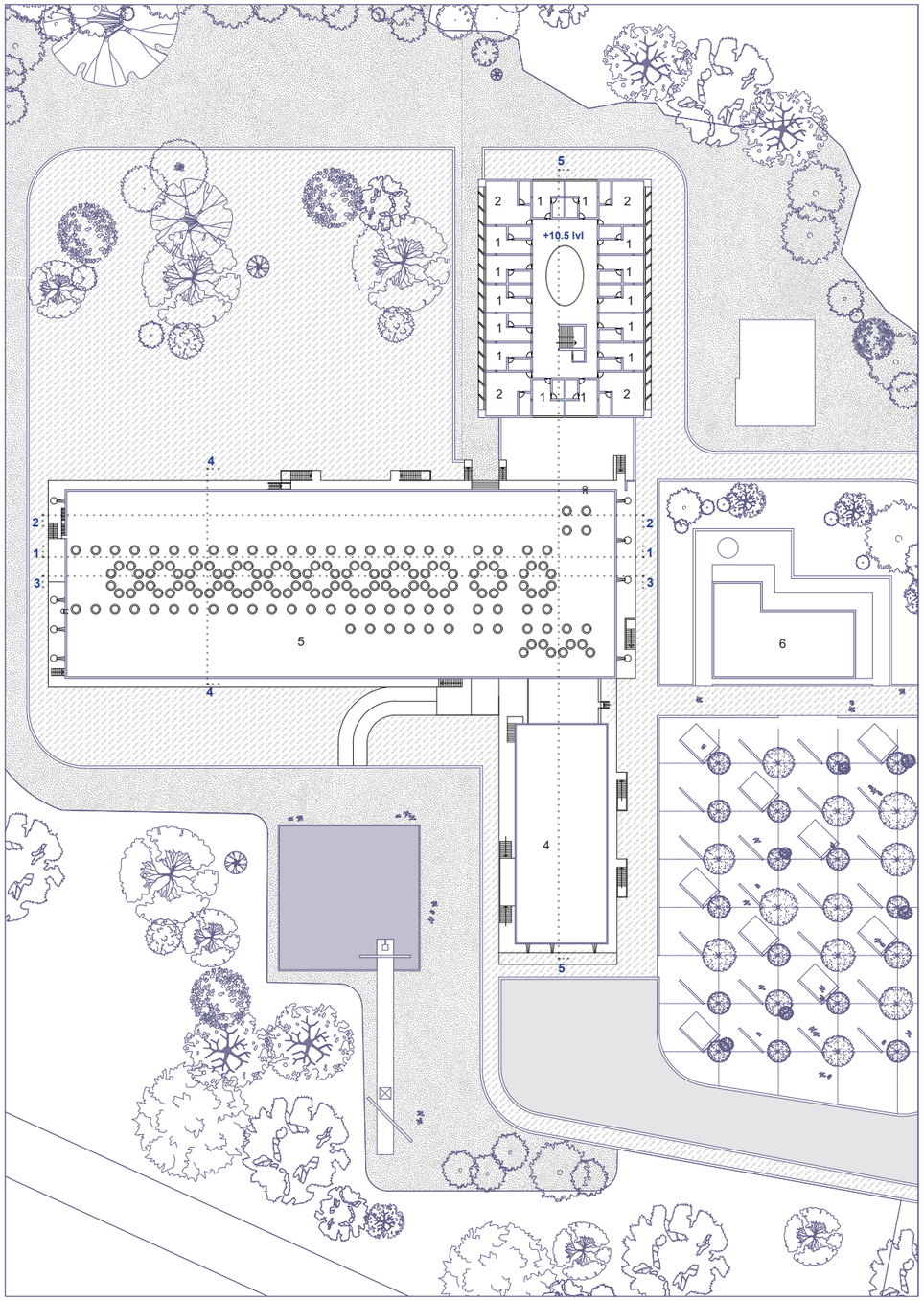
Legend

1. Bar Pool
2. Bar Counter
3. Resting Lounge
4. Male wash room
5. Female wash room
6. Still Bath pool
7. Massage room 01
8. Massage room 02
9. Massage room 03
10. Luxury room stay
11. Double room stay
12. Triple room stay

0 20 40

Fig 330 - First floor Plan
Created by author

11.9 Second Floor plan



Legend

1. Doublr room stay
2. Triple room stay
3. Cut out space
4. Accomodation block 01
5. Thermal block
6. Admin & Exhibition block

0 20 40

Fig 331 - Second floor Plan
Created by author

11.10 North West Elevation

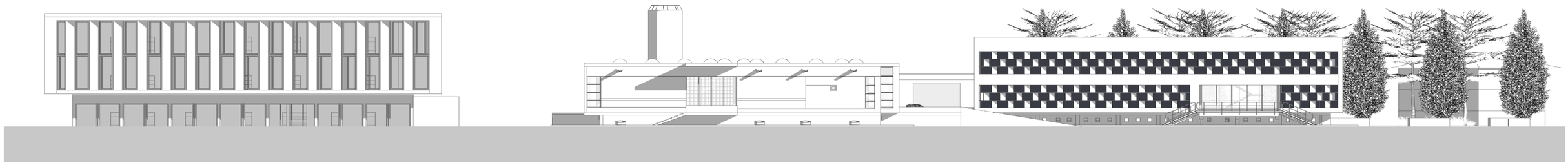


Fig 332 - North west Elevation
Created by author

11.11 South East Elevation

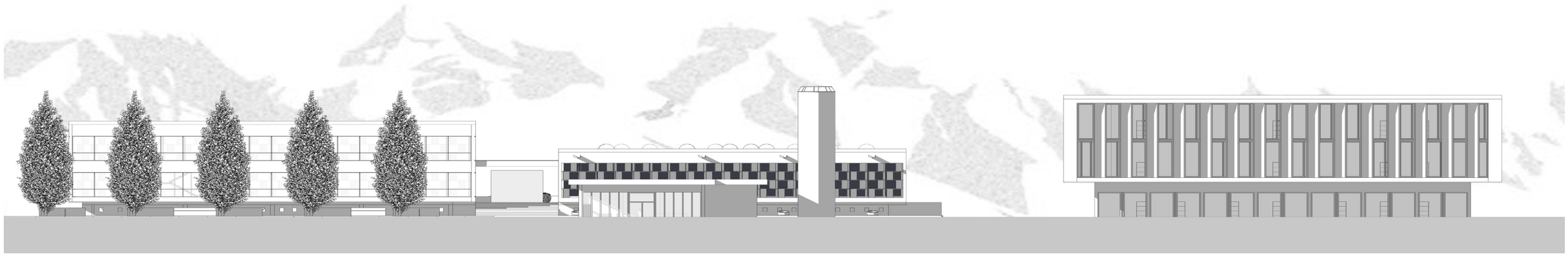


Fig 333 - South east Elevation
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.12 South west Elevation

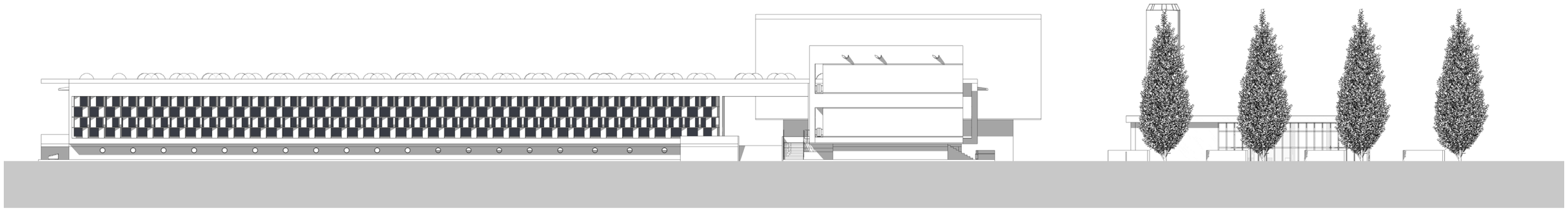


Fig 334 - South west Elevation
Created by author

10.13 North East Elevation

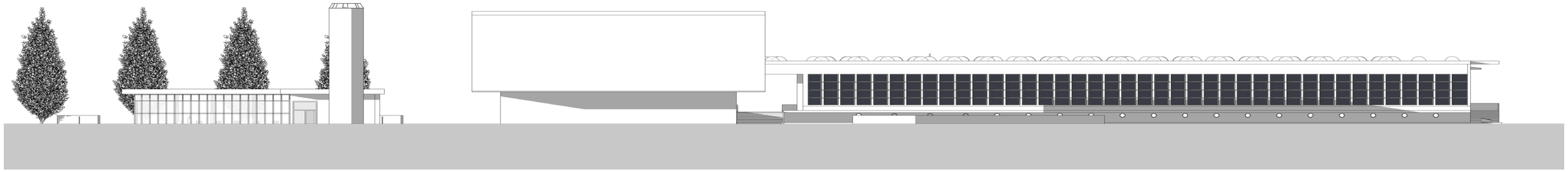


Fig 335 - North east Elevation
Created by author

11.13 Design Interventions

Seating Space and Movie Screening Area

The area between the restaurant and accommodation block to is semi-public. It has view towards the garden of memories provided with seating spaces. This space can be also used for movie screening and for community focused activities like organising workshops. The space helps in informal interactions and acts as a transitional area between the public and private zones.

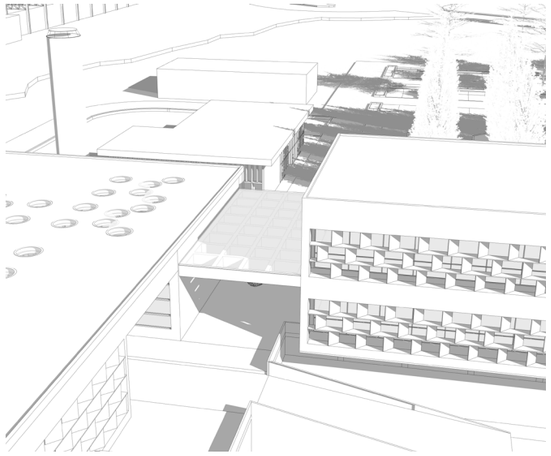


Fig 336 - View of the seating space in between blocks
Created by author

Accommodation Block 02

This block is adapted from one of the original service structures by adding two additional floors above the base. The upper floors are cantilevered and surround an elliptical green courtyard, offering natural light and a serene view to residents. A total of 47 rooms are provided, including a mix of single, double, and triple occupancy options. The interior design uses a restrained palette of concrete and blue tones, reflecting continuity with the site's brutalist identity. The form and materiality maintain coherence with other structures, while creating a calm retreat for guests.

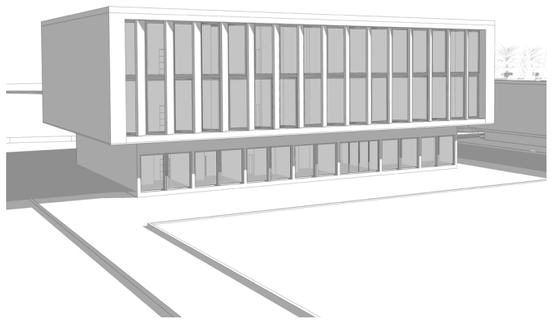


Fig 337 - Accomodation block 02
Created by author

Exhibition Space

A semi-public interface is created within the project by converting the second service block into an administrative space and exhibition gallery. The exhibition area, which is situated close to the preserved industrial chimney, serves as a hub for cross-cultural dialogue and interaction. Local guests can experience the area without going into the private wellness areas because it is directly accessible from the garden. The building's original character is maintained through adaptive reuse, which also adds flexibility to interior spaces for rotating displays.

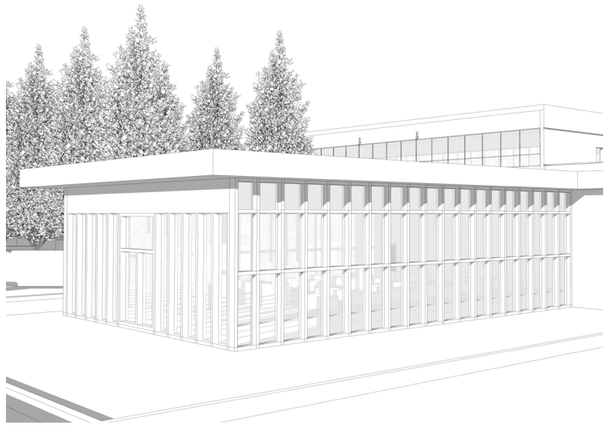


Fig 338 - Exhibition space
Created by author

Garden of Memories

The Garden of Memories is a public green space designed to evoke both reflection and legacy. It features 28 trees arranged in a precise grid, each representing a landmark typewriter model by Olivetti. Near every tree, a seating element and wall detail display information about the corresponding model, combining landscape with interpretation. This garden becomes a living archive—where industrial heritage is remembered not in static form, but through movement, rest, and interaction. Framed by nature and order, the garden offers a quiet yet powerful tribute to the past within a contemporary wellness context.

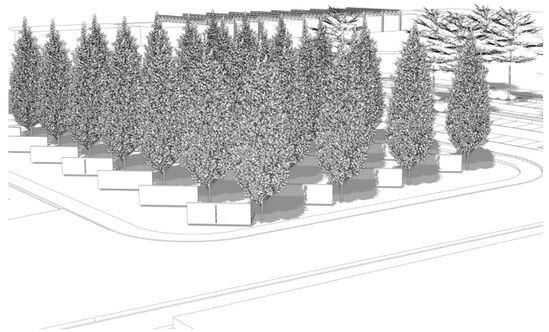


Fig 339 - garden of memories
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.14 Thermal Interior design Process

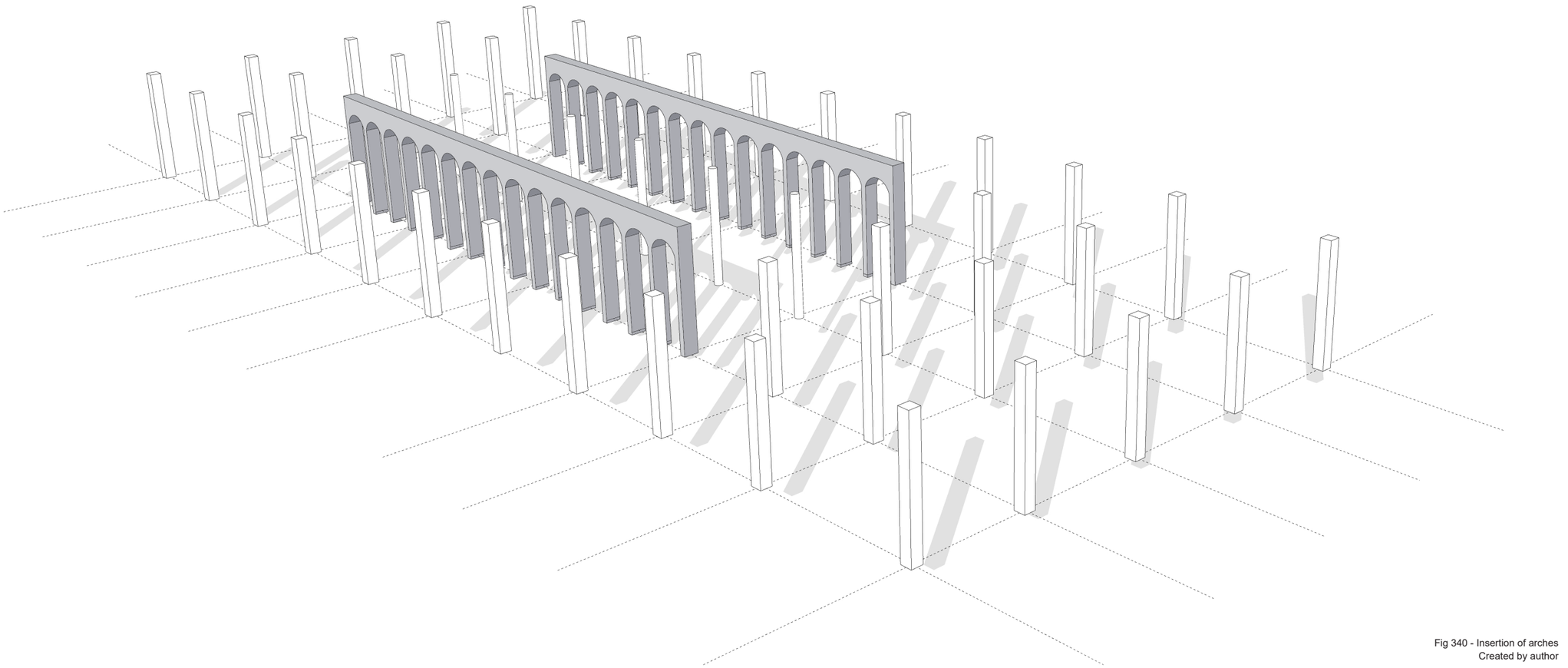


Fig 340 - Insertion of arches
Created by author

01. Insertion of Arches to the existing grid

A series of arches are added to the existing grid system. It helps in defining the water area from the other spaces. It gives clear demarcation and helps in emphasizing the main pool. It also adds structural stability to the structure. Some columns go to the basement for load distribution. The arches also reference ancient Roman bath architecture. Their repetitive nature resembles the overall design language of the Marxer complex.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

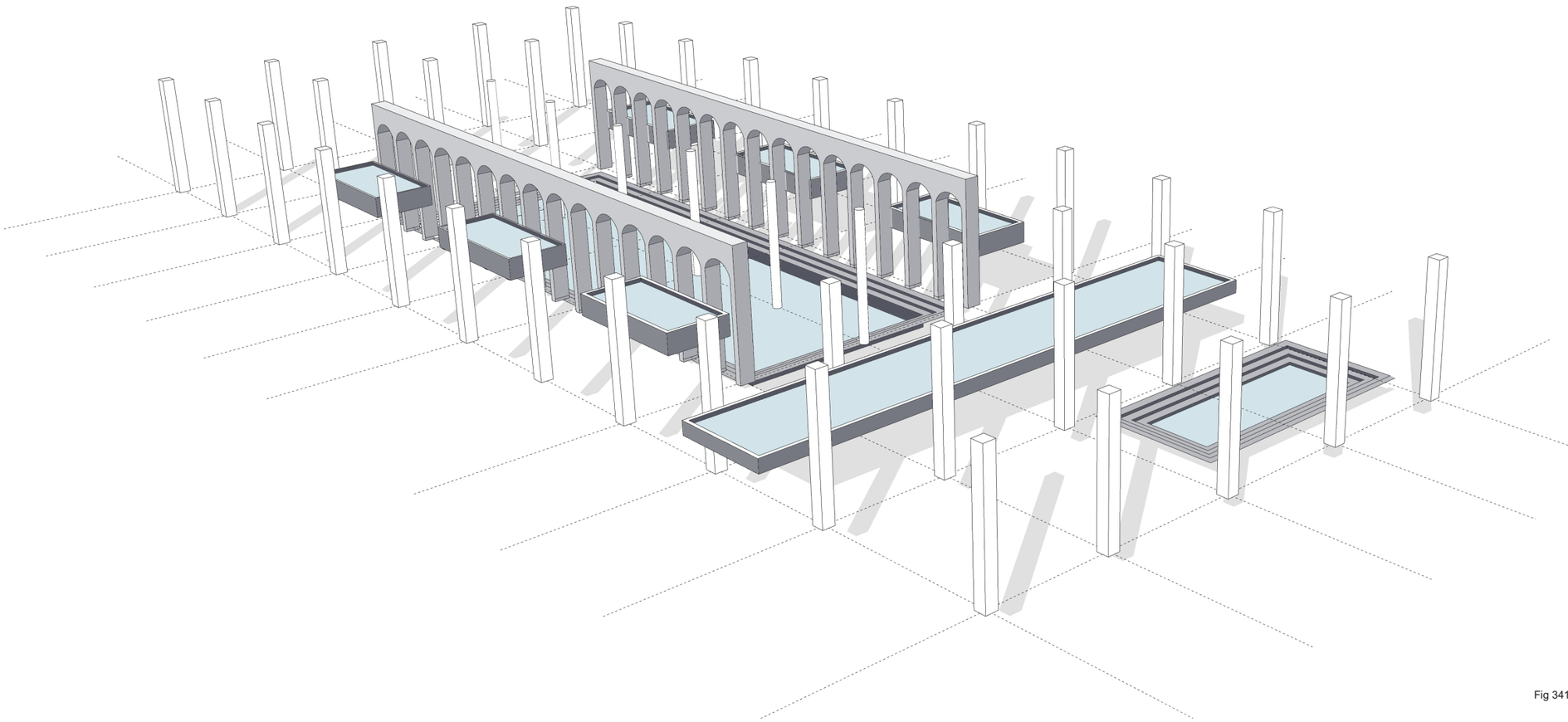


Fig 341 - Volumes of Pools within buildscape
Created by author

02. Inclusion of Pools within buildscape

There are mainly nine volumes of water in the Marxer Therme: the main plunge pool and the hot bath on the ground level, a series of six bar pools on the upper level, and a long still bath pool positioned at a height between the plunge pool and the six bar pools. These water bodies are connected to the resting spaces overlooking the plunge pool. The design focuses on visual proximity between the pools. A hierarchy of privacy is also achieved through the varying sizes of the pools.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

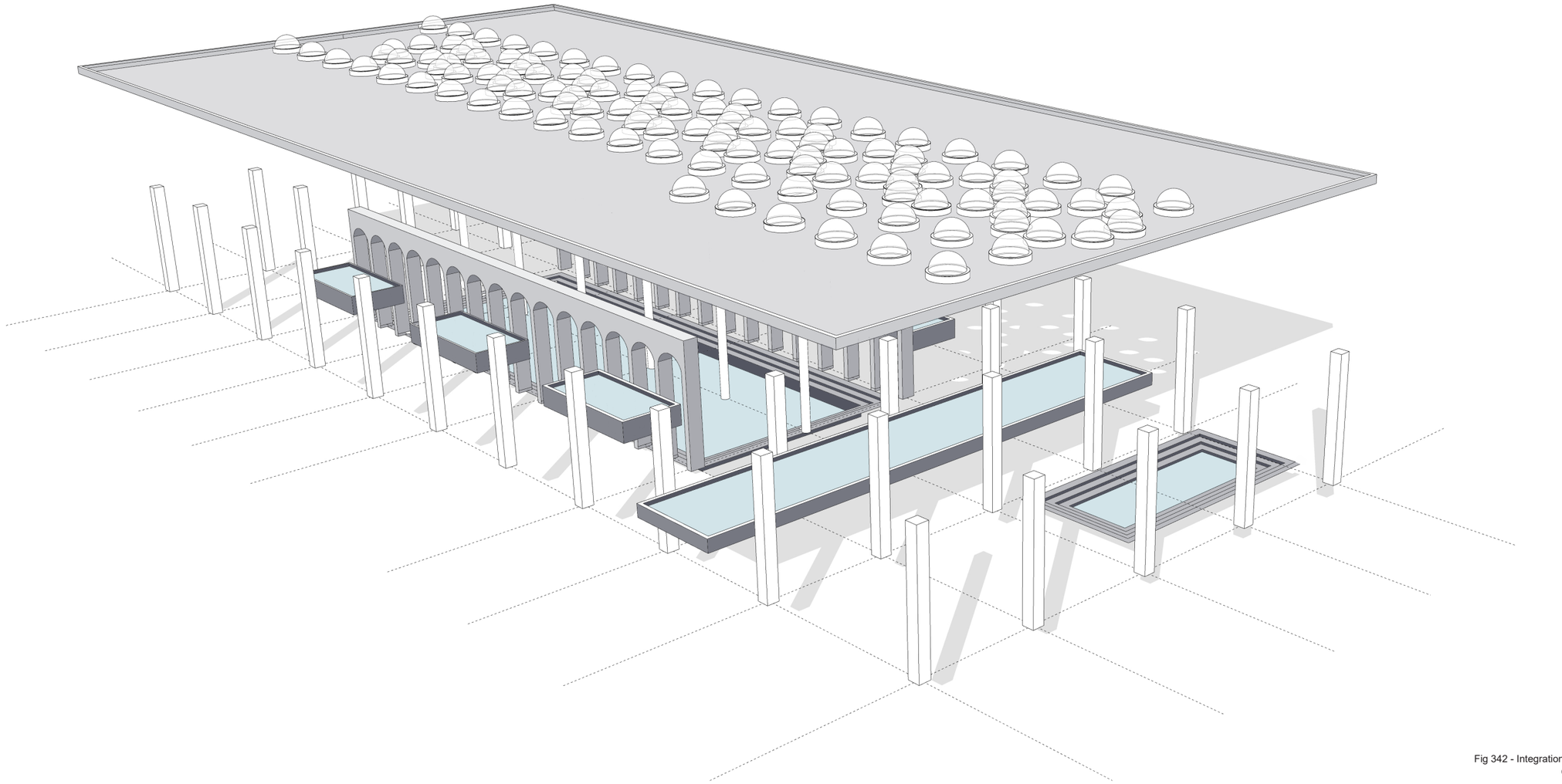


Fig 342 - Integration with existing roof
Created by author

03. Integrating with existing roof

The final part of the design focuses on integrating the existing roof with the interior spaces. The series of domes adds more visual depth to the architectural narrative. The roof detail is only revealed when a person enters inside the hot bath, which create a sense of surprise for visitors and enhance the overall experience through architectural elements. In the corridor spaces near to the plunge pool, the roof height is kept relatively low contrasting to the big volume central space.

11.15 Section 1-1

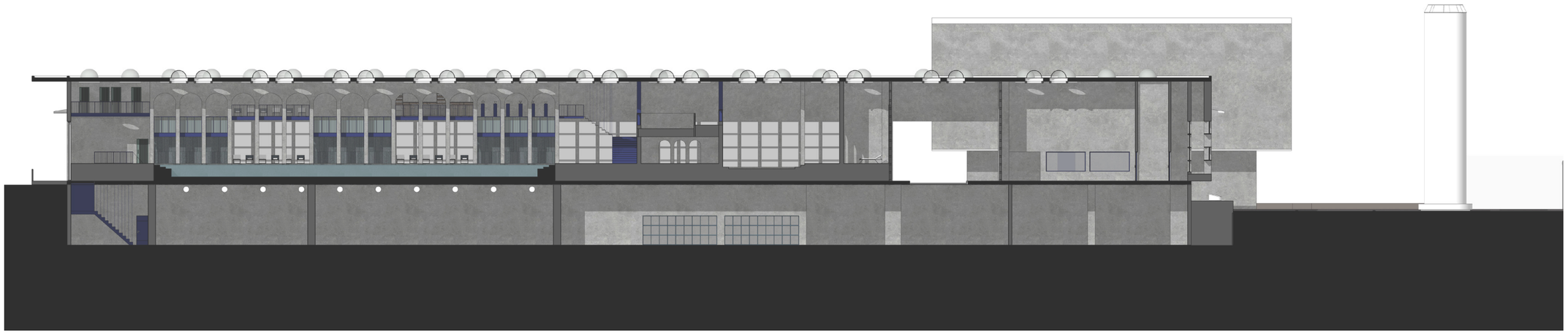


Fig 343 - Section 1-1
Created by author

11.16 Section 2-2

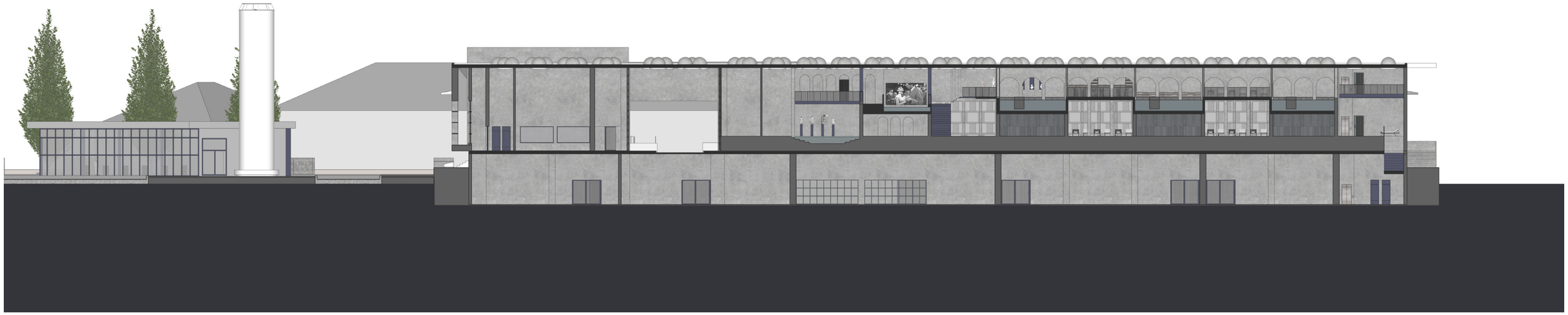


Fig 344 - Section 2-2
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.17 Section 3-3

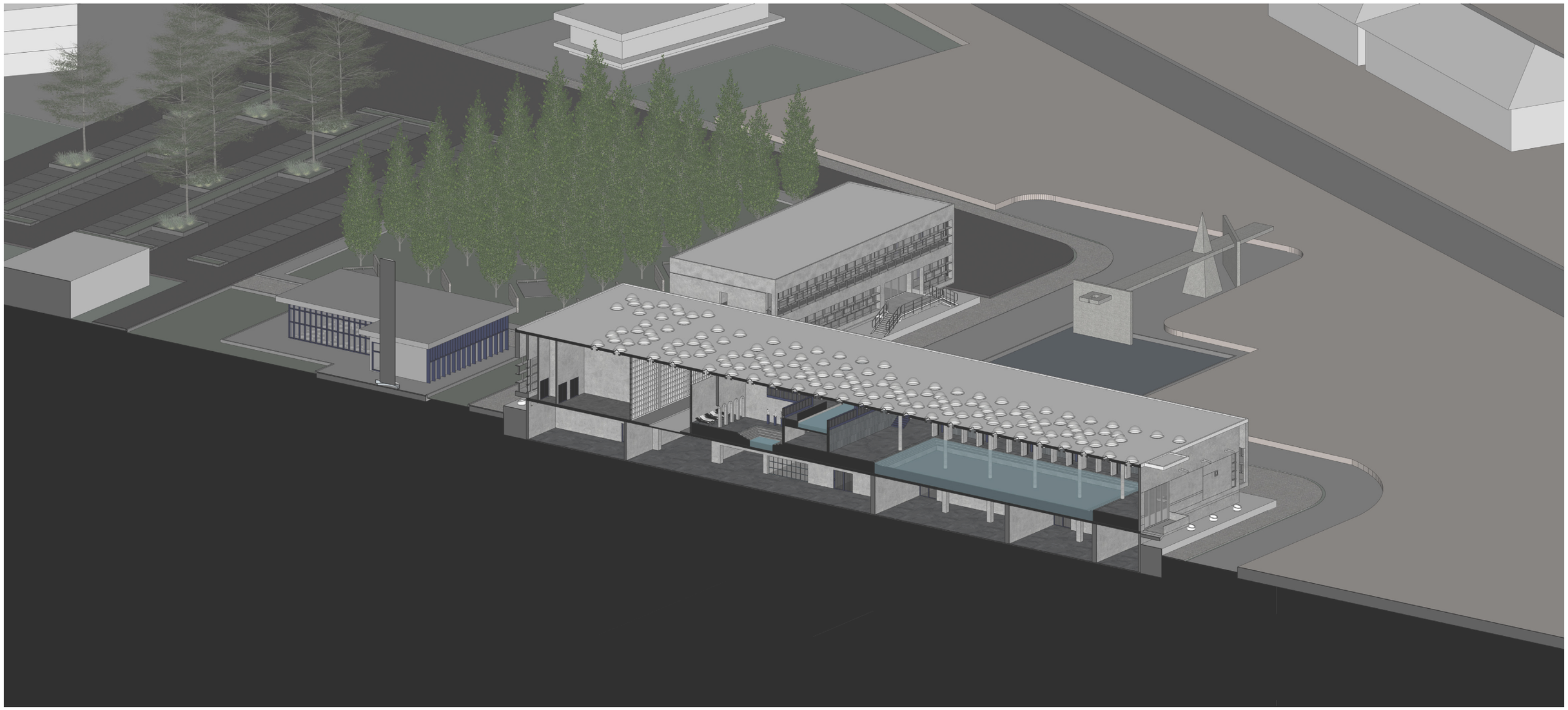


Fig 345 - Perspective section across the blocks
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.18 Section 4-4

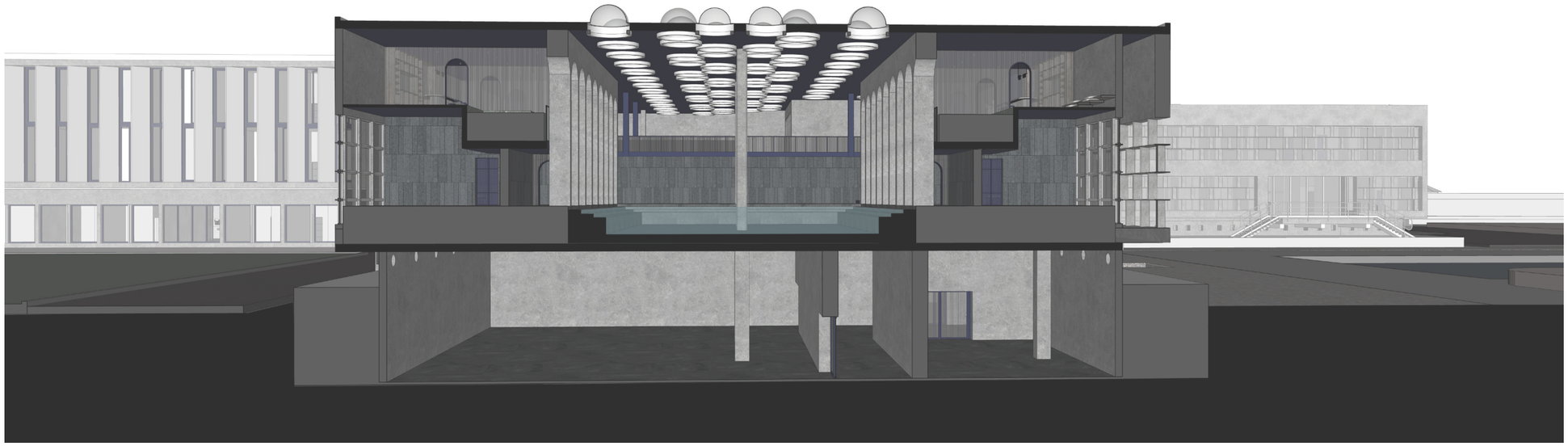


Fig 346 - Section 4-4
Created by author

11.19 Section 5-5

Fig 347 - Section 5-5
Created by author

11.20

Thermal Experience Classifications

.01

Hot Bath
Location - Ground floor

Temperature - *38 - 40 Degree*
Material - *Raw concrete*
Lighting - *Low amber toned lighting*
Smell - *Cedar and hinoki wood*
Sound - *Subtle reverberation of water lapping against stone*

Fig 348 01

.02

Plunge Pool
Location - Ground floor

Temperature - *18- 24 Degree*
Material - *Polished concrete or zinc-lined basin*
Lighting - *Overhead skylights*
Smell - *Wintergreen or pine*
Sound - *Subtle soundscape*

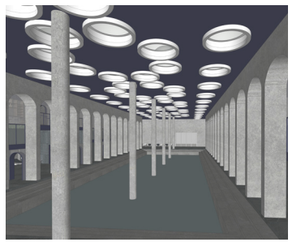


Fig 349 02

.03

Bath 01
Location - Ground floor

Temperature - *37 Degree*
Material - *Polished stone*
Lighting - *Candle style LED nooks*
Smell - *Chamomile + sandalwood*
Sound - *Faint thermal hum*

.04

Bath 02
Location - Ground floor

Temperature - *42 - 45 Degree*
Material - *Marble*
Lighting - *Diffused steam light*
Smell - *Moroccan black soap*
Sound - *Gentle dripping*

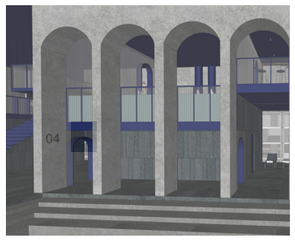


Fig 350 03

Fig 348 - 353
Created by author

Fig 351 05

.05

Bath 03
Location - Ground floor

Temperature - *45 - 48 Degree*
Material - *stone and wood*
Lighting - *Warm*
Smell - *Eucalyptus*
Sound - *Slow steam sound*

.06

Sauna Rooms
Location - Ground floor

Temperature - *85 - 95 Degree*
Material - *Thermo treated cedar*
Lighting - *Low lights*
Smell - *Smoked birch*
Sound - *Fire crackling sound*

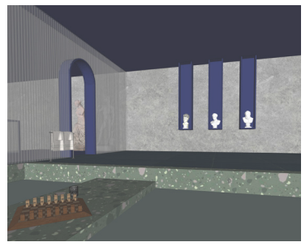


Fig 352 07

.07

Bar Pools
Location - First floor

Temperature - *35 - 36 Degree*
Material - *Polished concrete with mosaic*
Lighting - *Diffused pendants*
Smell - *Citrus zest, mint, cocktail herbs*
Sound - *Jazz-lounge echoes*

.08

Still bath pool
Location - First floor

Temperature - *36 - 38 Degree*
Material - *Timber decking with fiber mats*
Lighting - *Low lights*
Smell - *Cloves and pink peppercorn*
Sound - *Movie screening*

Fig 353 08

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

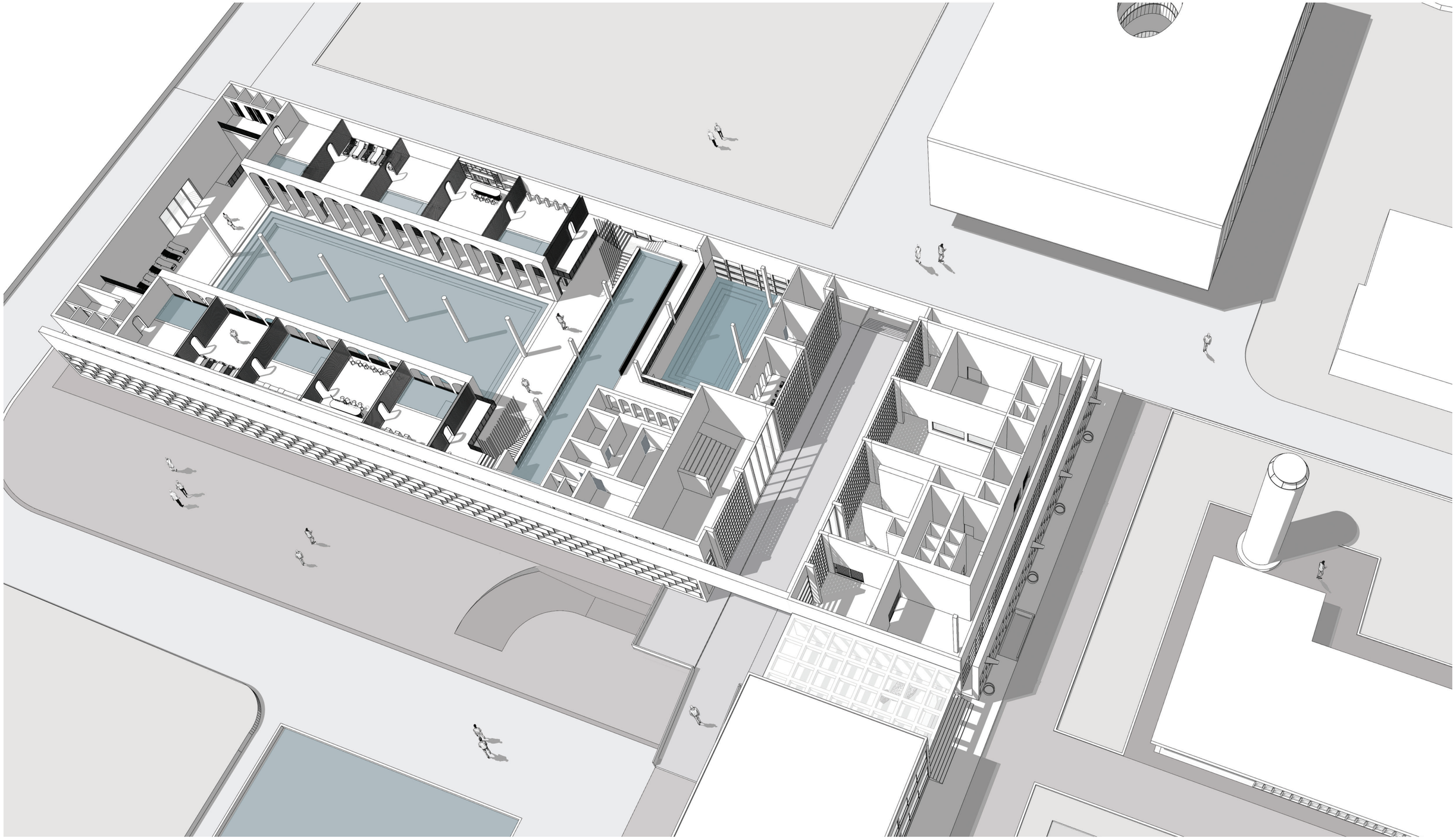


Fig 354 - Interior layout of therme
Created by author

“Let's take a break boys!"

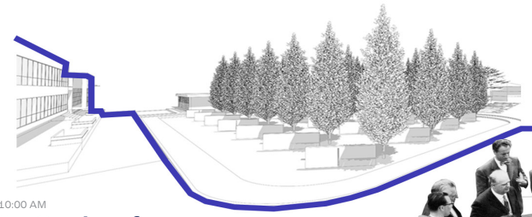
Adriano Olivetti
and his team

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.21| A DAY IN MARXER THERME

In a fictional yet emotionally resonant scenario, imagining Adriano Olivetti—pioneer of human-centered industry—leading a group of his employees on a day-long retreat to the newly transformed Marxer Pharmaceutical Building in Ivrea. Located close to the Alps' foothills, the building-once a brutalist industrial shell is now a haven of architecture, wellness, and memory. Their visit is more than just a vacation from work; it's a return to the principles that Olivetti held dear: beauty, community and innovation. Each corner of the building carries echoes of the past and possibilities of renewal, transforming it into a stage for this imagined reunion of minds and spirits through the spaces.

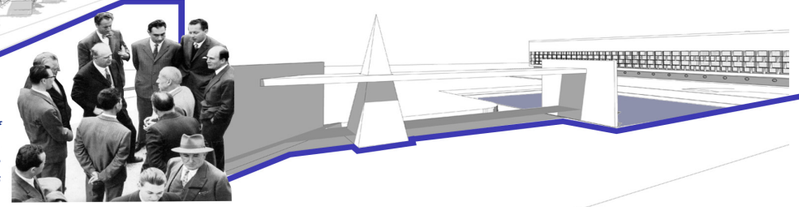
Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea



10:00 AM

01. Garden of memories

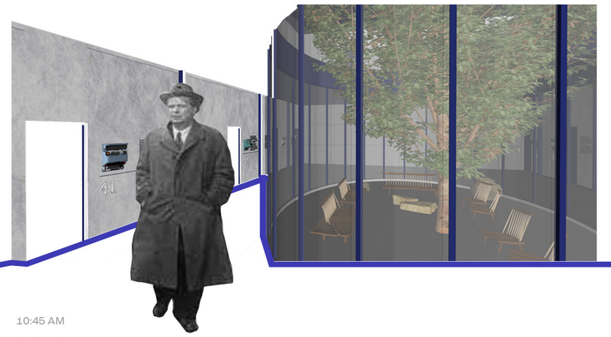
At the threshold of this architectural transformation lies a serene grid of 28 trees—each paired with a typewriter model once created by Olivetti. Benches invite visitors to sit beneath the canopy, while nearby stone walls display the stories of innovation. This garden gracefully bridges industrial heritage with contemplative pause.



10:30 AM

02. Outdoor Water Body

The raw textures of brutalism announce the building's presence with strength and honesty. A sculptural water installation channels rainwater into a reflective pool, capturing the sky and spirit of the architecture. It's a symbolic cleansing before entering—a nod to both climate and ritual.



10:45 AM

03. Accommodation

Employees check into rooms that are not just restful but reverent. Each room carries the name of a typewriter; its story is etched beside the door. The courtyard at the heart of this block becomes a circular gallery of Olivetti's legacy—a lived museum wrapped in memory.

11:15 AM

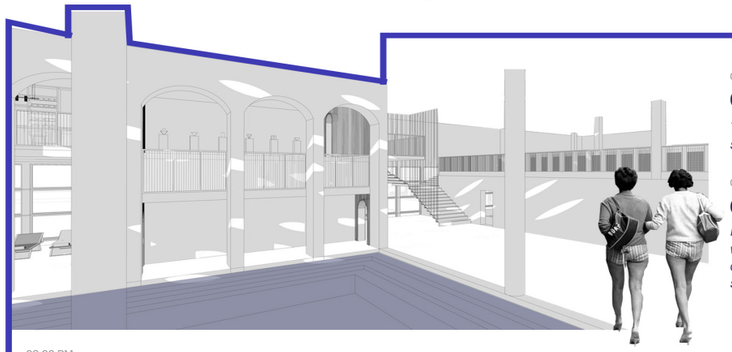
04. Restobar

Before diving into the day's experiences, guests refuel at the restobar. With warm light and curated sounds, it's a place for espresso, snacks, and informal conversations. The atmosphere echoes the social spirit of Olivetti's work culture—where ideas brewed over coffee.

11:45 AM

05. Co-Working Lounge

In the basement, beneath layers of history and design, a co-working hub awaits. Natural light trickles in, and modern desks support spontaneous collaborations. Olivetti's legacy of workplace dignity finds new ground in this fluid workspace.



02:00 PM

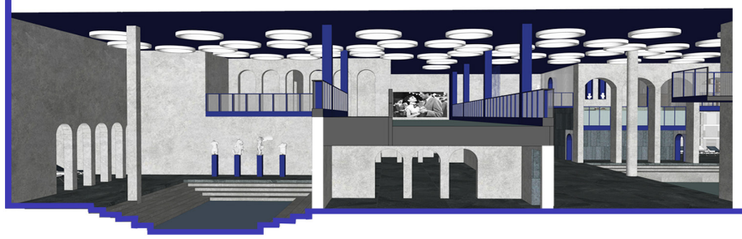
06. Hot Bath Thermal Pool

The thermal journey begins with warmth. At 38–40°C, the hot bath soothes the body and mind, mirroring ancient Roman traditions.

02:30 PM

07. Bath 01

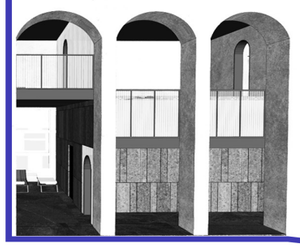
Inside a polished stone cocoon lit by candle-style LEDs, the 37°C water hums gently in the background. The space feels like a quiet breath—timeless, elemental, immersive. A moment of introspection enveloped in vapor and sound.



03:00 PM

08. Hydrotherapy Room

Here, water flows at varying intensities and temperatures (20–38°C) from layered levels. One stands at the center and feels the cascade in rhythm—surrounded by soft stone, tactile light, and the pulse of water as massage.



03:30 PM

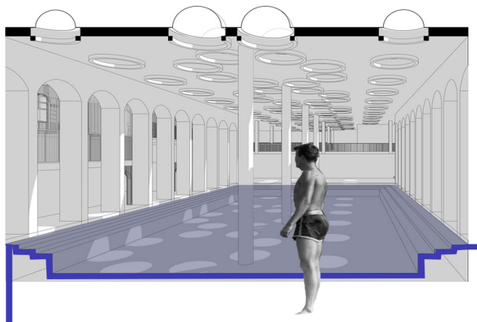
09. Sauna Room

Wrapped in thermally treated cedar, this room radiates between 85–95°C. The low light glows like embers, the scent of smoked birch lingers in the air, and the sound of crackling fire completes the sensory immersion. It's intimate, primal, and restorative.

04:00 PM

10. Plunge Pool

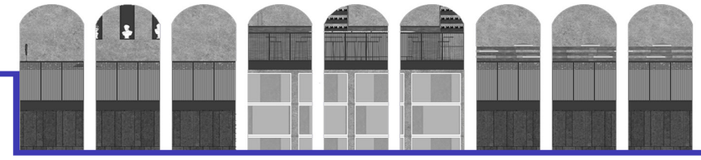
This double-height space is the dramatic core of the thermal journey. At 18–24°C, it invigorates the body post-sauna. Circular skylights above spill shifting sunlight onto the water, while private pools wrap around the upper edge—a sculptural theatre of water.



04:30 PM

11. Bar and Upper Pools

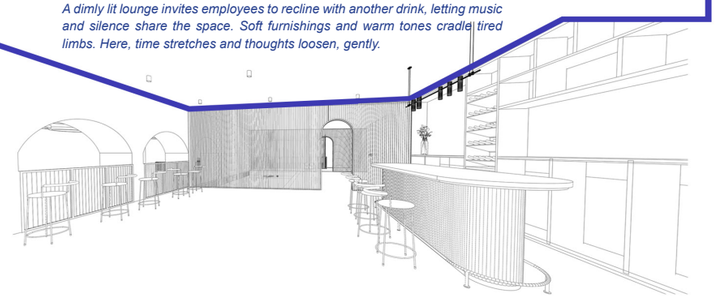
Up the iconic blue staircase, a corridor opens to small private pools overlooking the plunge pool. At the bar nearby, jazz plays softly. Chessboards wait for thinkers, and cocktails are poured with care. It's a blend of leisure, wit, and reflection.



05:15 PM

12. Resting Lounge

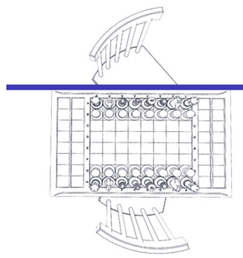
A dimly lit lounge invites employees to recline with another drink, letting music and silence share the space. Soft furnishings and warm tones cradle tired limbs. Here, time stretches and thoughts loosen, gently.



06:00 PM

13. Still Bath – Movie Pool

At 36–38°C, this floating pool becomes a liquid cinema. Classic Italian films are projected onto a large screen, and guests drift in the water while watching. The scene feels surreal—past and present blurring like light on water.



08:00 PM

15. Indoor Games

As evening settles, guests gather in the indoor games zone or recline in the outdoor seating. In the distance, the Alps frame the horizon—ever-present, majestic, and grounding. The day ends as it began: in harmony with landscape, memory, and community..

06:45 PM

14. Exhibition Space

Post-immersion, guests explore a curated exhibition—rotating displays of contemporary art inspired by innovation. As they dine nearby, creativity continues to be the central theme, linking art, work, and rest.

Fig 355 - One day Itinerary
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.22 Therme Interior

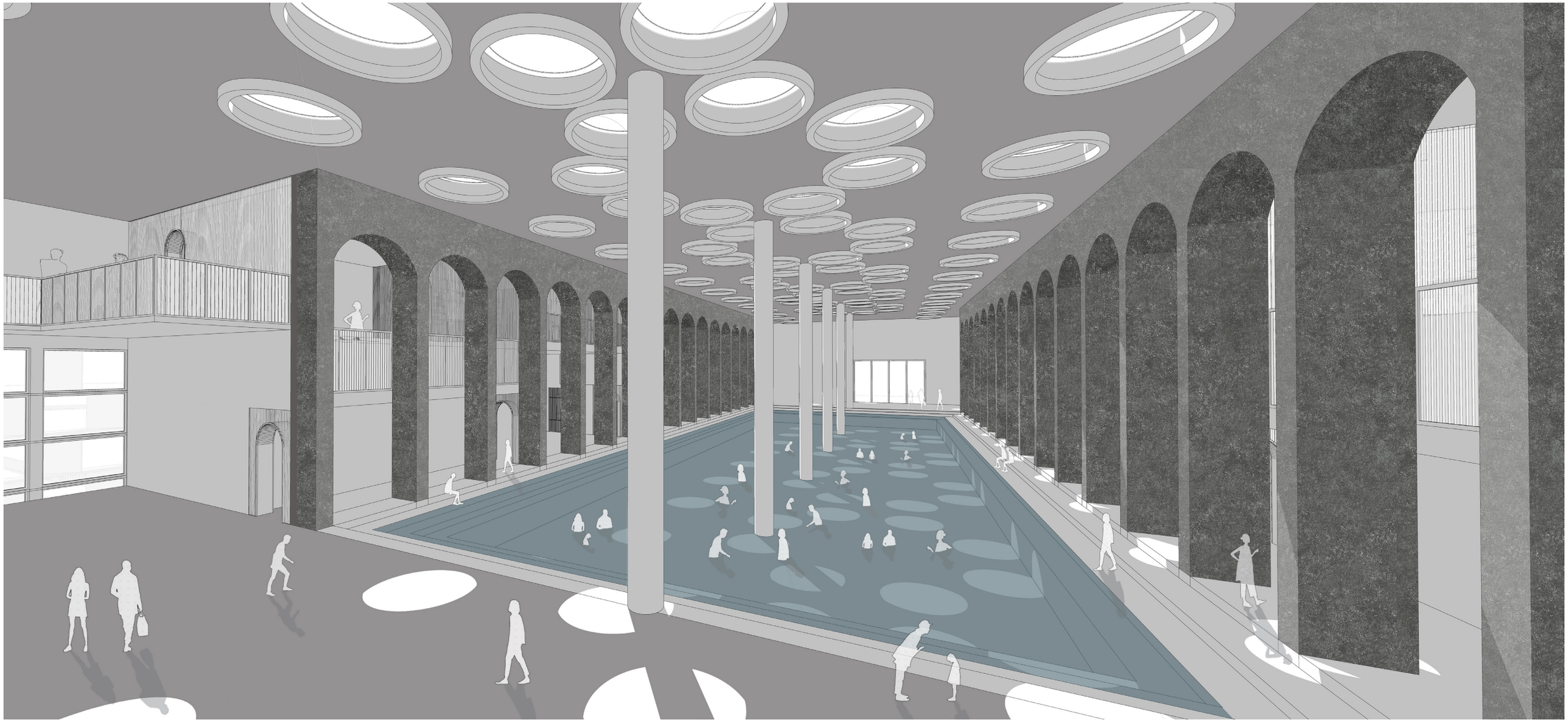


Fig 356
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

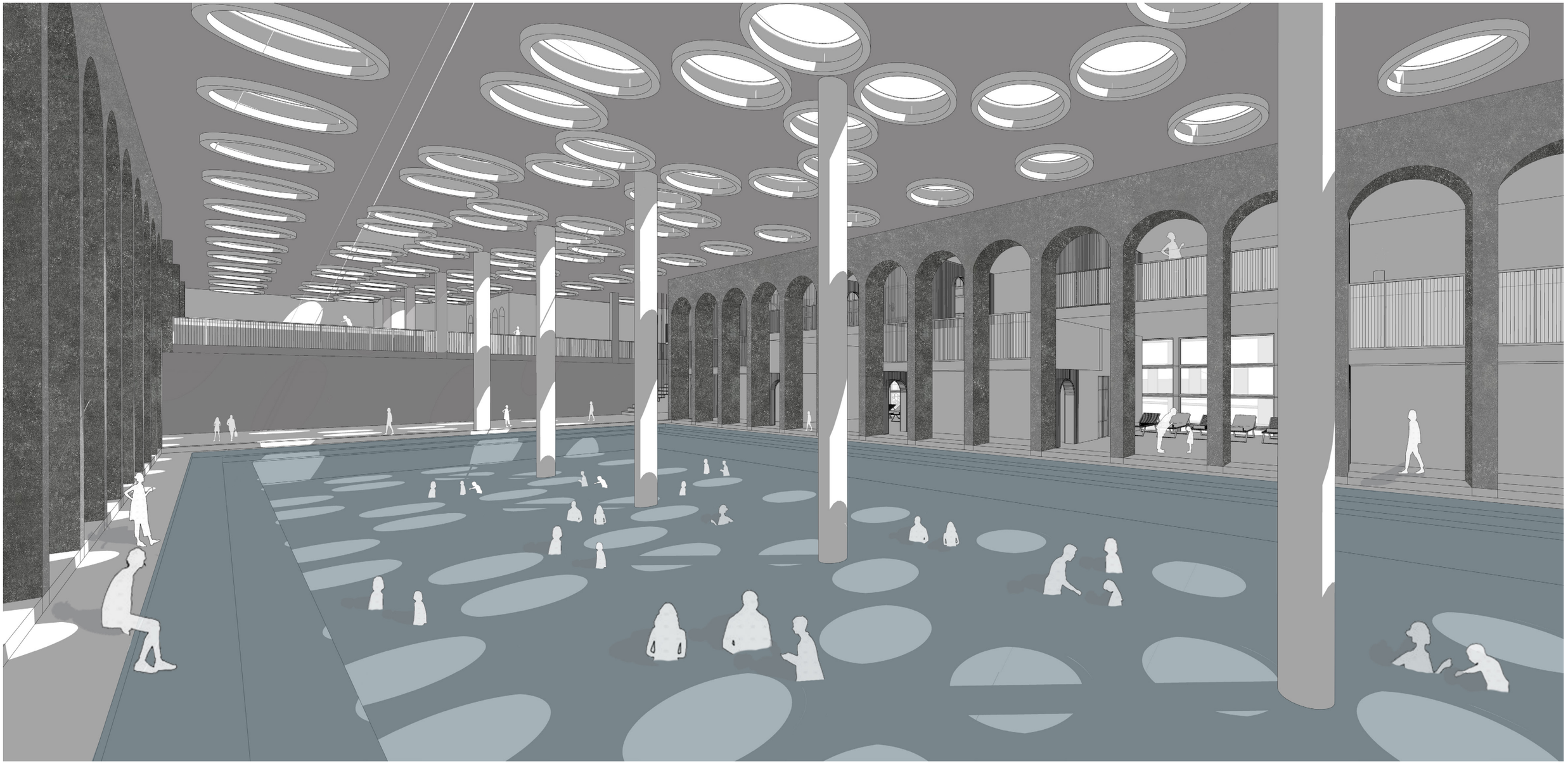


Fig 357
Created by author

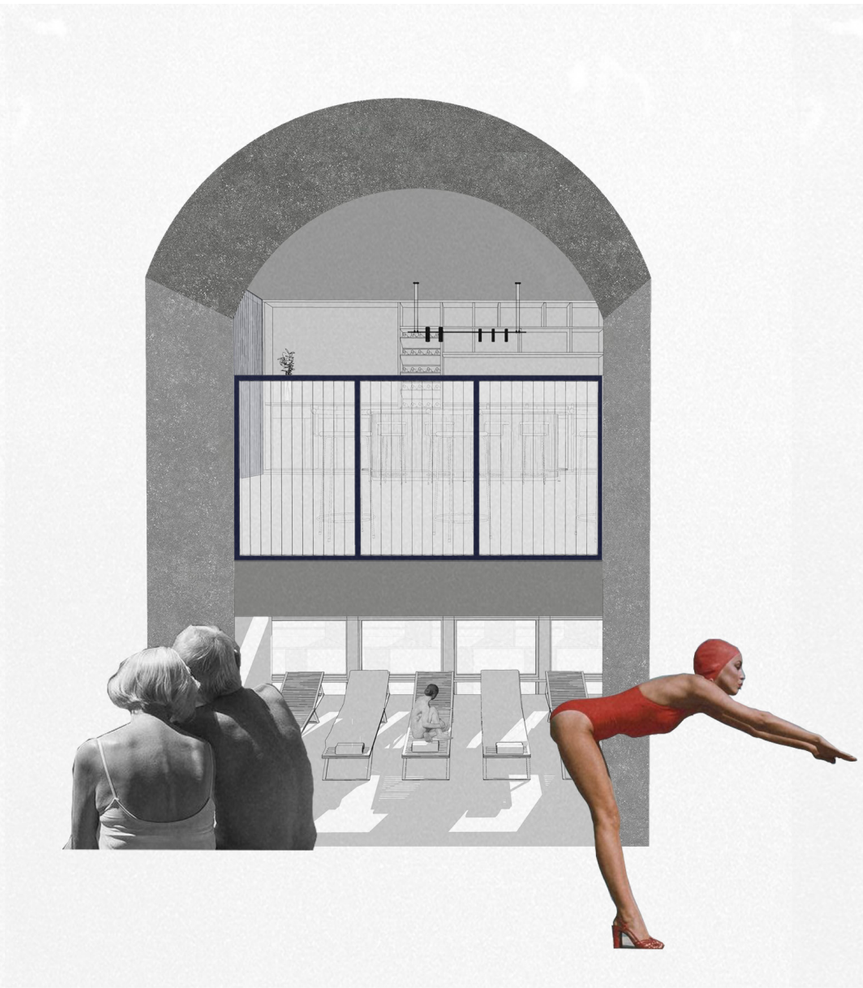
Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

Fig 358
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

Fig 359
Created by author

In the first floor, there are a series of pools near to the bar counter. The visitors can immerge in playing chess inside the pool enjoying a glass of martini in the backdrop of a nice jazz muzic. There is view to the plunge pool from this level. The ceilings are kept lower to maintain a sense of privacy. Blue is used as a theme colour with industrial sections.



The relaxation deck overlooks the plunge pool. The ceiling heights in the relaxation zone is provided lover compared to the huge volume of the pool spaces.

In the first floor level, wood seating is provided in the relaxation area near to the bar. This area has the private pools attached near to it. Upperfloor has a high distribution of private- intimidate private pools contrasting to the bigger pools in the ground floor.

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.23 Accomodation Block 02 Interior

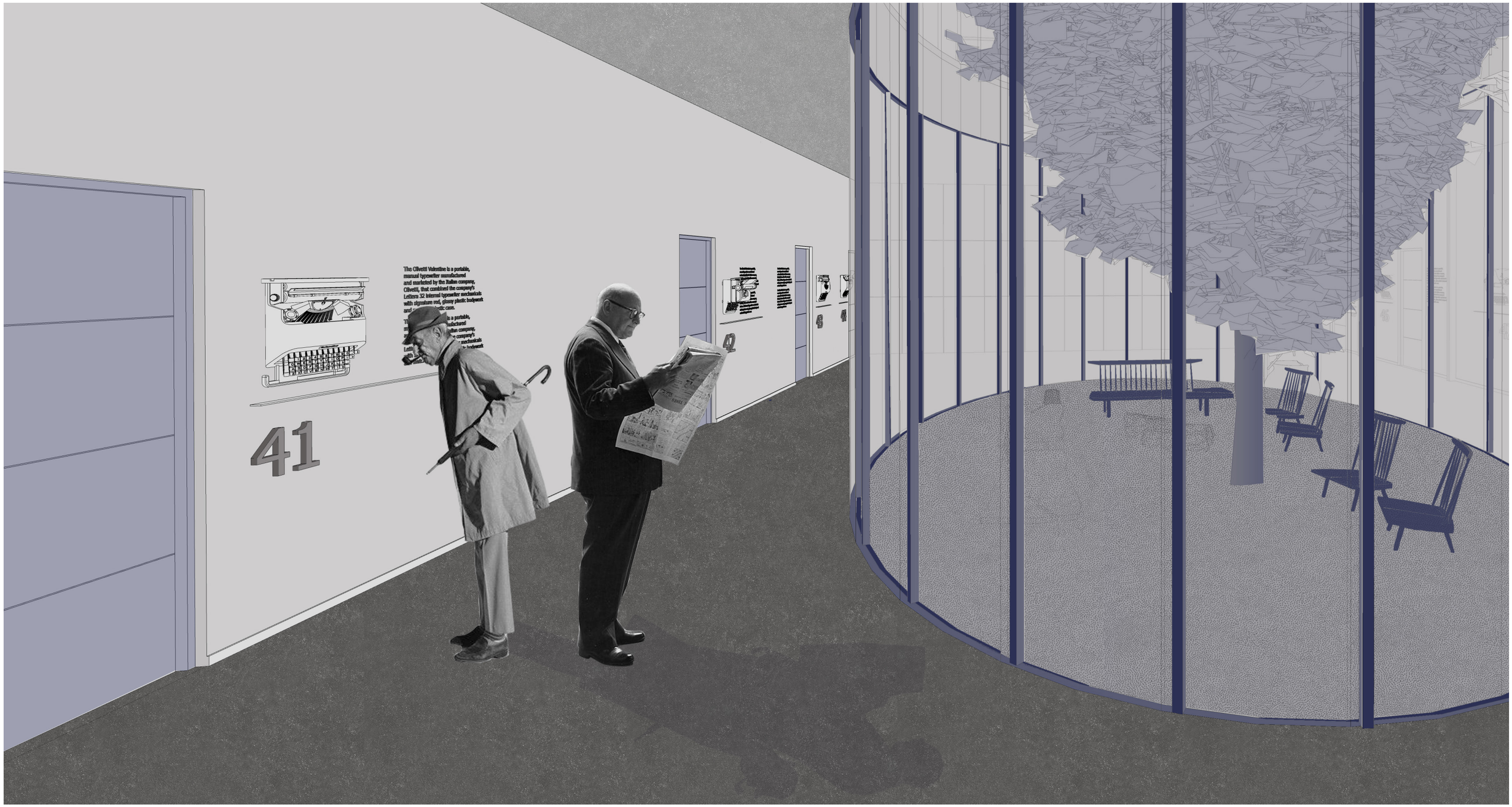


Fig 360
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.24 Outdoor Movie Area

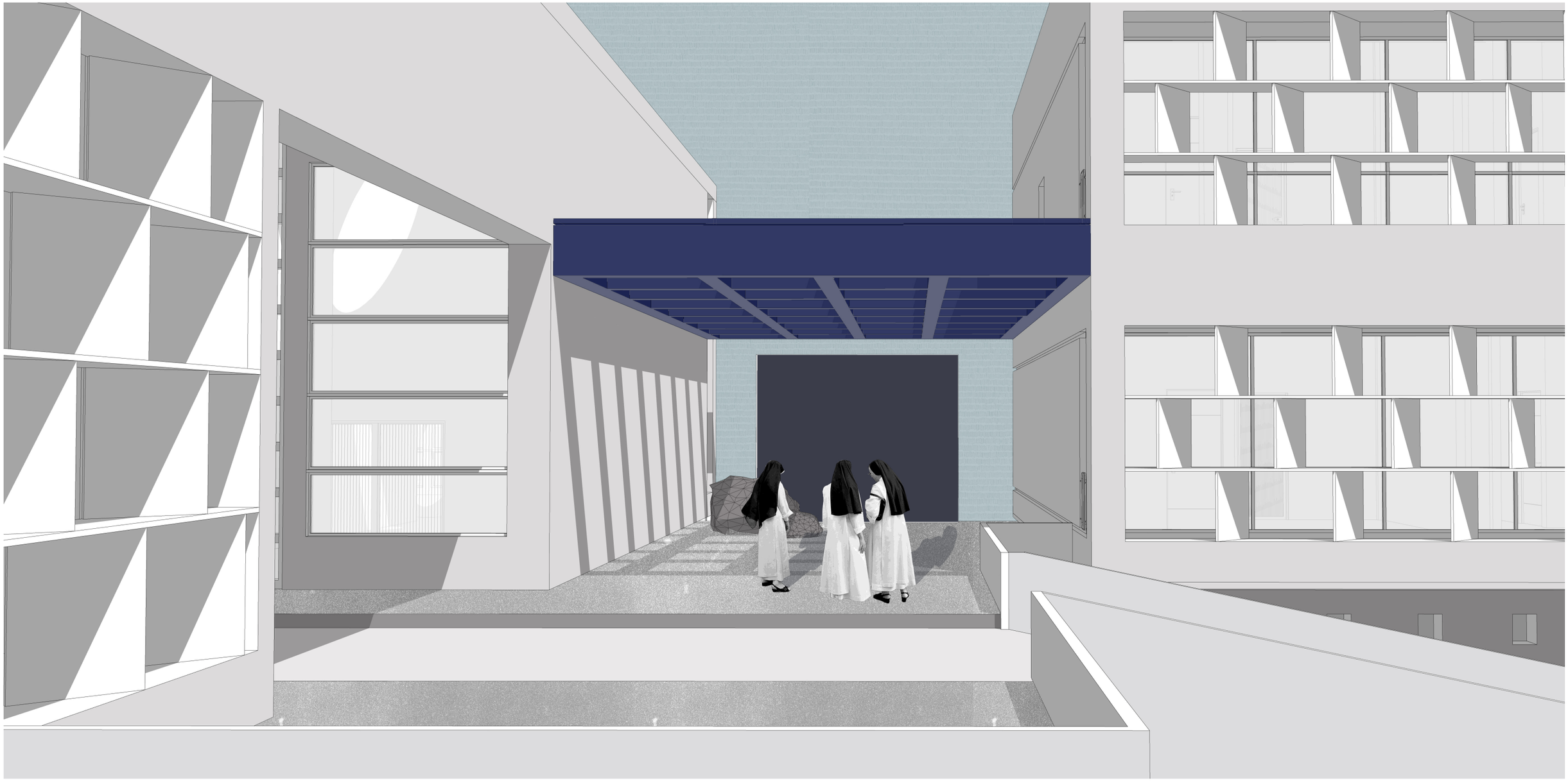


Fig 361
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.25 Exhibition Gallery Interior

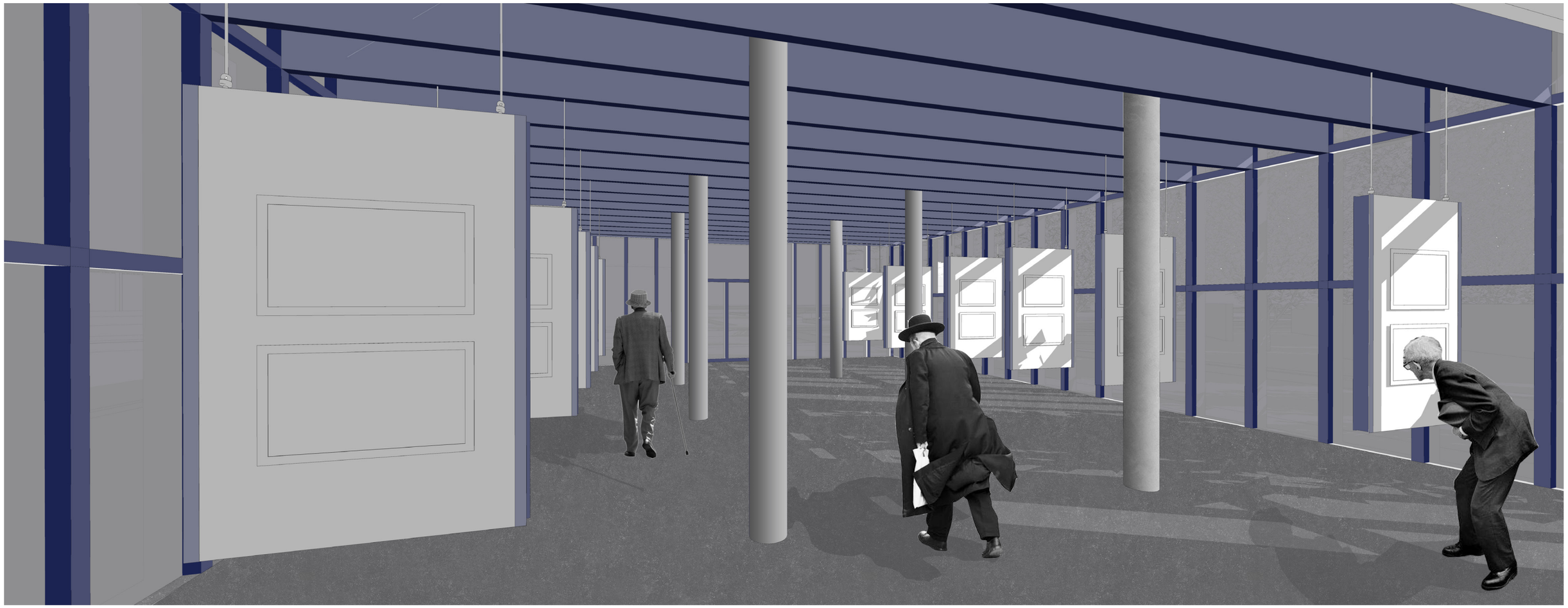


Fig 362
Created by author

11.26 Material Palette

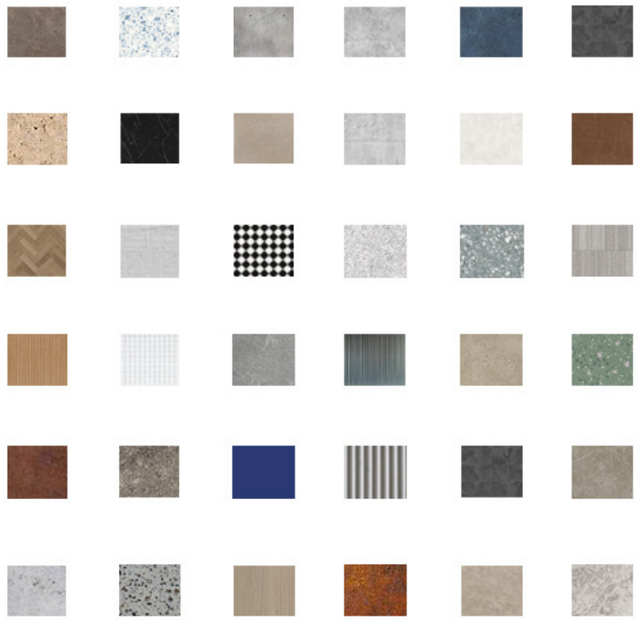


Fig 363 - Material Palette

The material palette of the project is carefully curated to balance the raw honesty of the existing brutalist structure with the warmth and tactility needed for a wellness environment. Raw concrete is retained and celebrated as the foundational material, preserving the industrial character of the original building. This is complemented by blue industrial steel, used in structural additions and interior details, drawing from the Olivetti legacy and reinforcing a visual identity grounded in productivity and innovation. To soften the industrial language, zinc textures and polished stone surfaces introduce a subtle, reflective quality, offering contrast and refinement. Marble accents are incorporated in thermal spaces to enhance the atmosphere of calm and luxury, while thermo-treated cedar and wood finishes bring warmth, scent, and natural texture into resting and accommodation areas. Polished concrete with mosaic inlays is used in transitional spaces and wet zones, referencing traditional bathing cultures while introducing artisanal detail. Altogether, the materials engage multiple senses—sight, touch, and even smell—supporting the project's aim of creating immersive, phenomenological experiences.

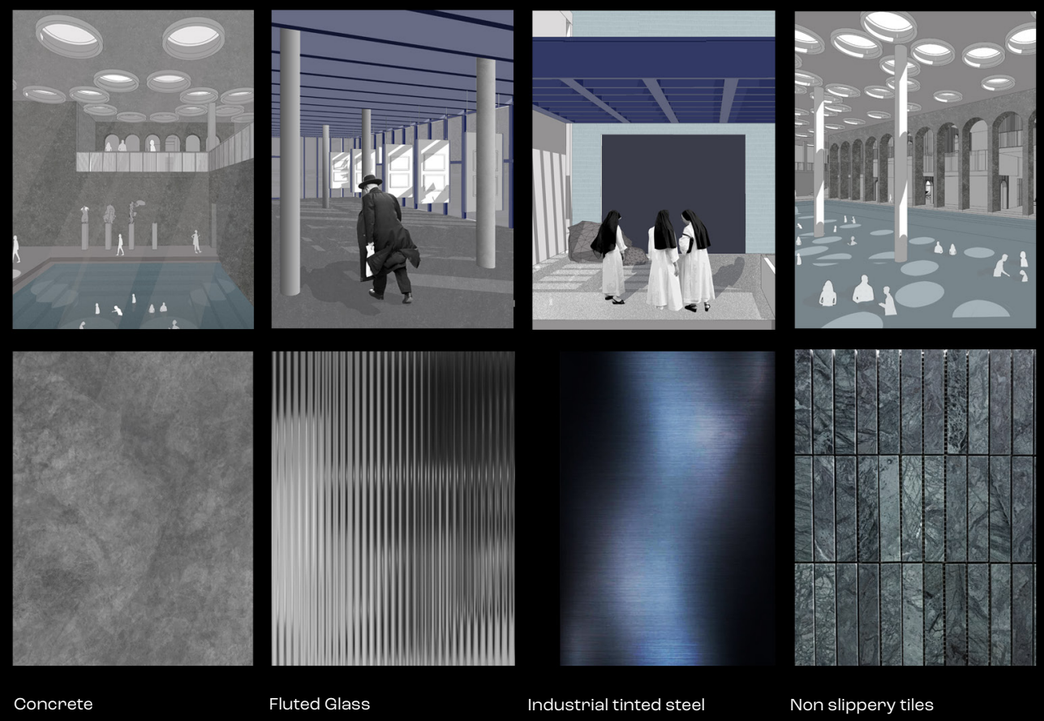


Fig 364 - Material Palette with views
Created by author

Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

11.27 Garden of Memories

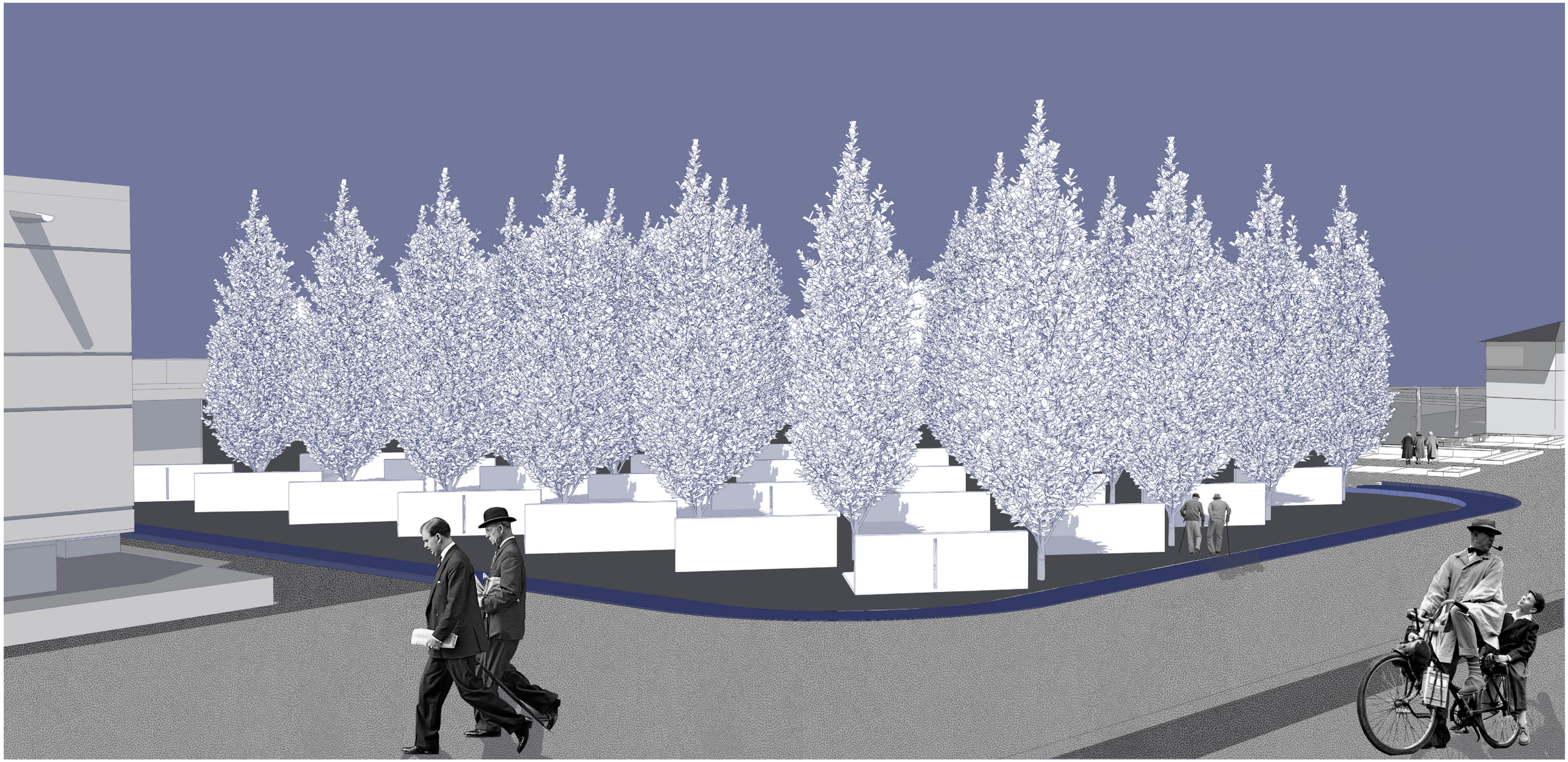
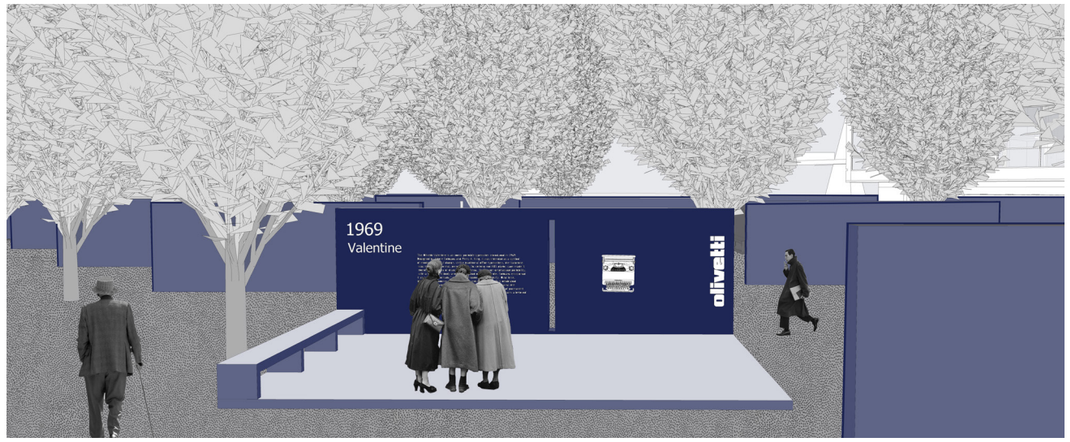


Fig 365
Created by author



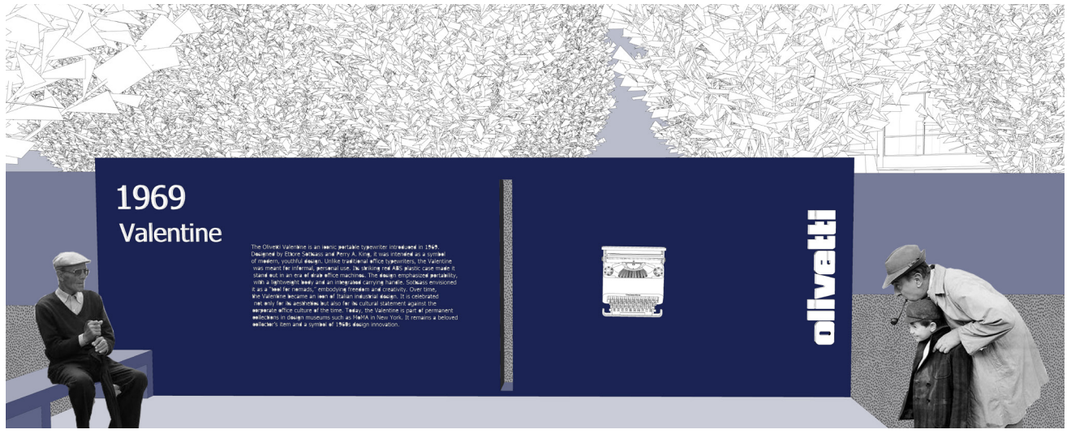
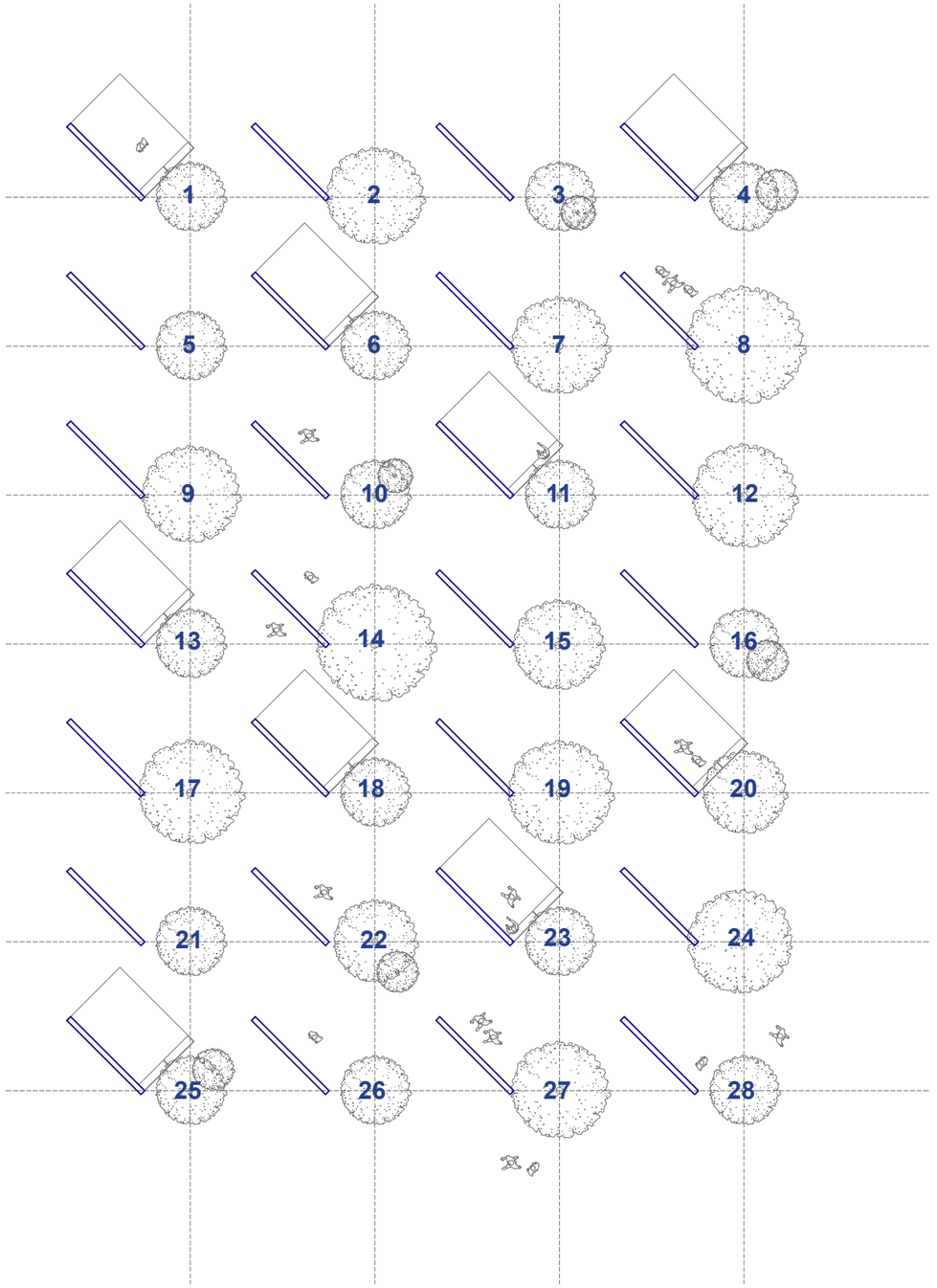


Fig 366 - 368
Created by author



The garden translates typewriters into a sequence of 28 architectural walls, each displaying a popular Olivetti model.

Fig 369
Created by author

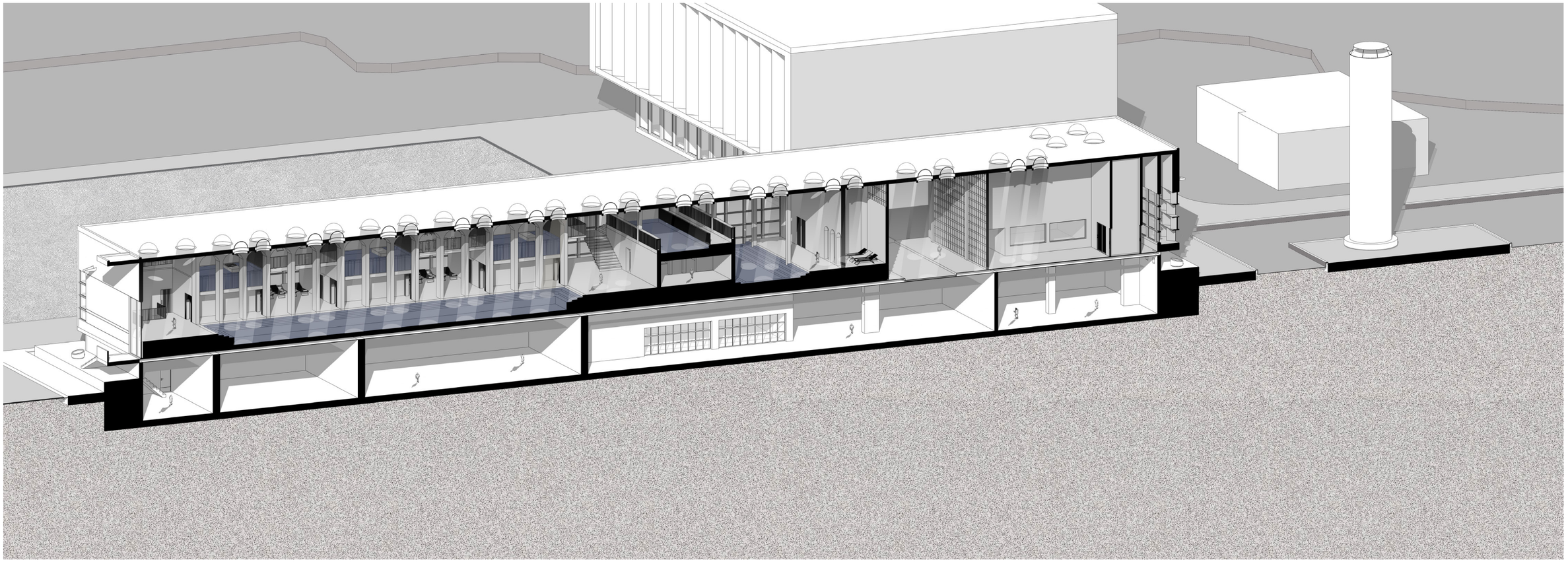


Fig 370
Created by author

11.28 Changes and Impact

The project introduces a transformation of an abandoned pharmaceutical facility into a vibrant thermal and wellness destination, redefining its spatial and functional identity. While preserving the original brutalist architecture, new insertions—such as additional accommodation floors and adaptive reuse of service blocks—create a fresh programmatic layer suited for contemporary use. Existing geometries are respected, with interventions focused on spatial continuity, natural integration, and enhancing experiential quality. Service basements are reactivated with co-working spaces, a gym, and multi-use event areas, while new courtyards, gardens, and light wells animate the built form. By layering modern functions over industrial remnants, the project breathes new life into a once-inactive site, making it architecturally resilient and contextually relevant. Beyond physical transformation, the project generates a meaningful social and cultural impact by fostering a balance between retreat and engagement. It offers private thermal experiences for individuals seeking wellness-focused escapes, while also opening semi-public and public spaces—such as the exhibition area, community garden, and outdoor screening zone—for local participation.

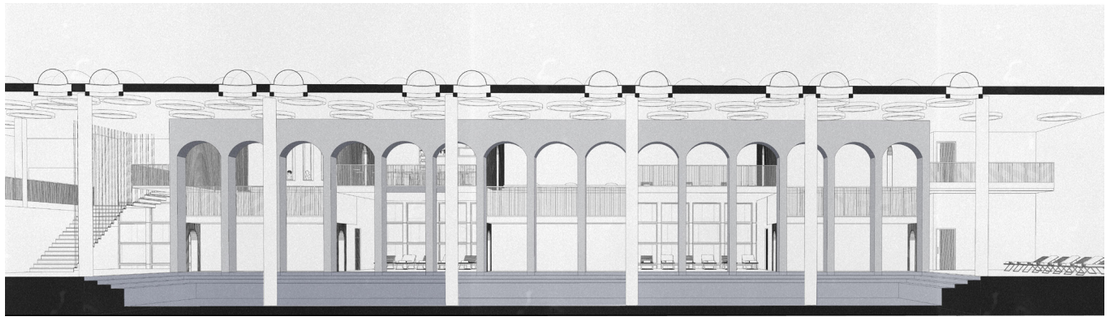


Fig 371
Created by author

A narrative of common language is achieved between the contextual history and the new purpose by incorporating elements of Olivetti's heritage throughout the landscape. The project strengthens sustainable reuse, improving community interaction and promoting tourism under the foothill of Alps.

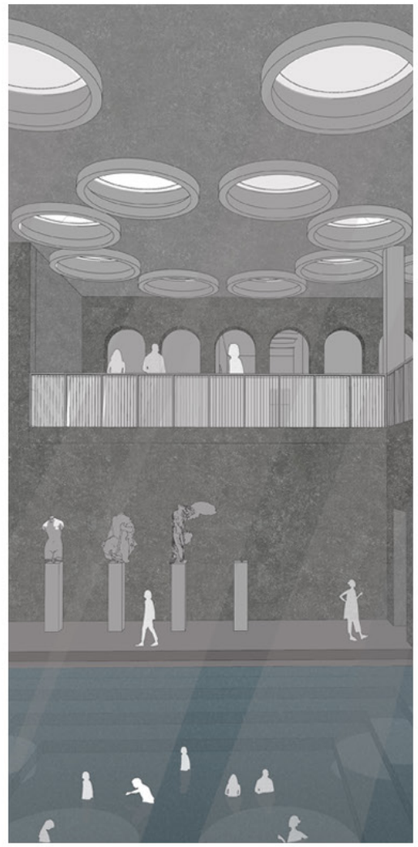
Thesis 2025
Adaptive reuse of the Marxer building in the Industrial heritage city of ivrea

Bridging Past and Future

1. Bringing the rich history of Olivetti into the design narrative

Garden of Memories

2. Revenue generation with respect to suburban location and Alpine views



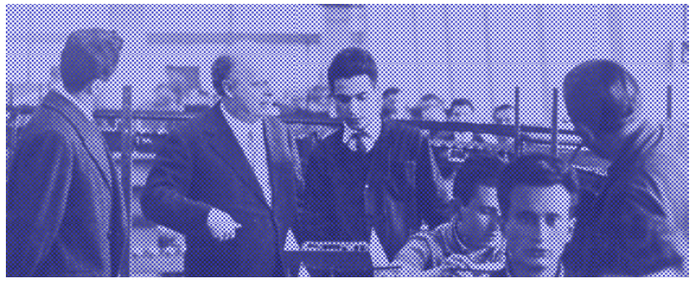
Therme

3. Adressing the tourist accomodation shortage existing in the city

Accomodation Block

4. Community engagement through exhibitions and movie screenings

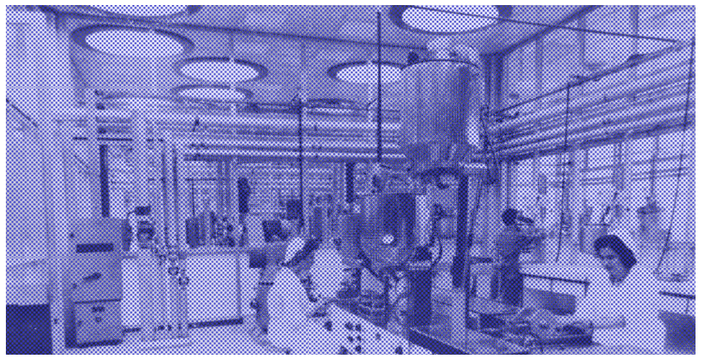
Exhibition Gallery

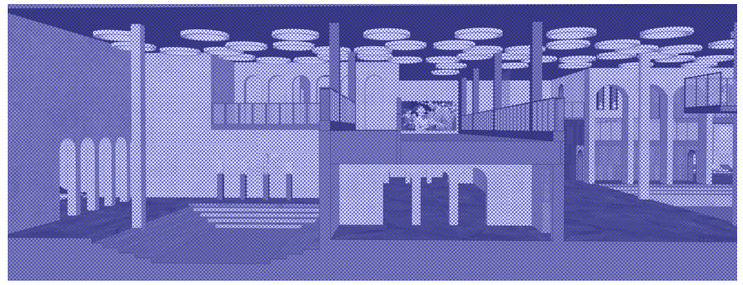


12| CONCLUSION

This thesis explores the adaptive reuse of the Marxer Pharmaceutical Building in Ivrea, proposing its transformation from a brutalist industrial structure into a unique thermal facility that integrates wellness, cultural programming, and hospitality. The project reinterprets the building's original architectural language while introducing new spatial experiences that respond to contemporary needs. By framing the intervention around both memory and renewal, the thesis demonstrates how industrial heritage can be preserved not only as a static monument but as a dynamic framework for modern life.

The design introduces a series of programmatic layers, including thermal bathing areas, short-stay accommodations, and an exhibition space. These new functions aim to serve a diverse range of users—from company groups seeking retreat-like experiences to individual visitors and local residents engaging in public cultural events. The experiential quality of the spaces, shaped by materiality, light, sound, and views of the surrounding Alpine landscape, plays a central role in the architectural strategy.





A critical aspect of the project lies in its structural approach. The existing framework of the building—characterized by exposed reinforced concrete, and large open spans—was studied in detail to assess its capacity to support new functions. Structural interventions were implemented selectively, with the goal of reinforcing key elements while maintaining the integrity of the original design. Additions and modifications were introduced in a reversible and respectful manner, enabling the integration of thermal infrastructure, new circulation paths, and vertical extensions without compromising the building's character.

Through this dual focus on architectural and structural transformation, the project develops a model in which adaptive reuse becomes both a preservation tool and a means of spatial innovation. The intervention respects the building's historical value while expanding its functional relevance, offering a strategy for how abandoned industrial sites can once again contribute meaningfully to the cultural and economic life of a city.

Finally, the thesis situates the project within the broader urban context of Ivrea, acknowledging the shifting urban dynamics and spatial fragmentation that follow industrial decline. By reactivating a neglected architectural landmark, the project contributes to urban regeneration while reinforcing a collective memory associated with the Olivetti legacy. In doing so, it demonstrates how architectural heritage, when engaged through thoughtful reuse and precise structural adaptation, can serve as a foundation for future-oriented, socially engaged design.

BIBLIOGRAPHY

1- Andrade, Carmen and Joost Gulikers. 2004. “Durability Indicators” Materials and Structures.

2- Archeyes. 2024. Archeyes. 06 September. Accessed March 10, 2025. https://archeyes.com/peter-zumthors-therme-vals-sensory-architecture-in-an-alpine-retreat/.

3- Archivi Olivetti. n.d. Archivi Olivetti. https://storiaolivetti.it/.

4- Artribune. 2022. Mitoraj a Ivrea. Mito e letteratura. 07 July. Accessed March 20, 2025. https://www.artribune.com/mostre-evento-arte/mitoraj-a-ivrea-mito-e-letteratura/.

5- Astarita, R. 2000. Gli architetti dell’Olivetti: una storia di committenze industriali. Milano.

6- Bernasconi, Fiocchi and Nizzoli. 1966. Palazzo Della Direzione Olivetti Ad Ivrea. Etas Kompass.

7- Bertolini, Luca, Bernhard Elsner, Pietro Pedeferri, and Robert Polder. 2013. Corrosion of Steel in Concrete: Prevention, Diagnosis, Repair. . Wiley - VCH.

8- Boltri, Daniele, Giovanni Maggia, and Enrico Papa. 1998. Architetture olivettiane a Ivrea. Gangemi Editore.

9- Britannica. 1998. Ivrea. 20 July . Accessed February 2025, 10. https://www.britannica.com/place/Ivrea.

10. Casabella Editorial Team. 1962. Foundation Details of the Manufacturing Block. Casabella.

11- Caspar Schärer, Tages-Anzeiger. 2006. Peter Zumthor Therme Vals. Park Books. https://www.scribd.com/document/406695538/Therme-vals-peter-zumthor-pdf.

12- Cattedrali, Citta E. 2017. Citta E Cattedrali. Accessed April 15, 205. https://www.cittaecattedrali.it/it/bces/671-chiesa-di-san-bernardino.

13- Citta e Cattedrali. n.d. Citta e Cattedrali. Accessed March 10, 2025. https://www.cittaecattedrali.it/it/bces/35-cattedrale-di-santa-maria-assunta.

14- City, Polytechnic University of Turin. Department of Home and. 1984. Environmental cultural heritage in the Municipality of Turin. Turin: Society of Engineers and Architects in Turin.

15- Corradini, Margherita Costanza, and Laura Cremaschini. 2024. “Istituto Marxer. Nuovi usi.” Biblioteche e Archivi.

16- Dezeen. 2016. Dezeen. 25 September. Accessed May 20, 2025. https://www.dezeen.com/2016/09/25/peter-zumthor-therme-vals-spa-baths-photography-fernando-guerra/.

17 - Divisare . 2017. Divisare . 18 December. Accessed February 20, 2025. https://divisare.com/projects/373248-alberto-galardi-paolo-mazzo-the-marxer-pharmaceutical-laboratory-and-research-institute.

18- Domus. 2018. Domus. https://www.domusweb.it/en/movements/brutalism.html.

19- Dspoke. 2010. Dspoke. 19 October. https://dspoke.wordpress.com/2010/10/19/therme-vals-by-peter-zumthor/.

20- FIB. 2006. Retrofitting of Concrete Structures by Externally Bonded FRPs with Emphasis on Seismic Applications. Lausanne: FIB Bulletin 14.

21- 2016. Fondation Le Corbusier. https://www.fondationlecorbusier.fr/en/.

22- Fornari, Davide, and Davide Turrini. 2021. Olivetti Identities. Spaces and Languages 1933–1983. Zurich: Triest Verlag.

23- Fuso, Lucia, and Enrico Giacopilli. 2023. Maam Ivrea Guide. Ivrea: UNESCO.

24- Galardi, Alberto. 1967. Architettura italiana contemporanea. New York: F. A. Praeger.

25- General catalogue. n.d. General catalogue of Cultural Heritage. Accessed February 15, 2025. https://catalogo.beniculturali.it/.

26- Ginsborg, Paul. 1990. A History of Contemporary Italy: Society and Politics, 1943–1988. London : Penguin Books.

27- Harding, James Duffield. 1833. “Entrance to Ivrea”.

28- Heather, Peter. 2006. The Fall of the Roman Empire: A New History. Oxford: Oxford University.

29- 2023. Ivrea Management Plan. Ivrea: UNESCO.

30- Ivrea, Comune di. n.d. Storica Battaglia delle Arance. Accessed June 10, 2025. https://www.storicocarnevaleivrea.it/.

31- Kirk, Terry. 2005. The Architecture of Modern Italy, Volume II: Visions of Utopia, 1900–Present. New York : Princeton Architectural Press.

32- Lamattina, Liborio. 2022. La Voce. 18 December . Accessed June 25, 2025. https://www.giornalelavoce.it/news/ed--ivrea/527905/riaprite-l-acqua-alla-fontana-di-camillo-olivetti-una-petizione-su-change-org.html.

33- Locatelli, Lorenzo. 2020. “Analisi, valutazione, recupero adattivo e riuso del patrimonio olivettiano industriale, terziario e di servizio. Il caso studio “Laboratorio Farmaceutico e Istituto di Ricerca “Marxer” a Loranzè.” Politecnico di Torino.

34- Mapei. 2024. Structural Strengthening Systems.

35- Massari, Giovanni. 2018. “Silenzio e memoria. Verso la conservazione dell’Istituto Marxer a Loranzè, Ivrea.” POLITesi - Archivio digitale delle tesi di laurea e di dottorato.

36- Mehta, and Paulo J.M Monteiro. 2014. Concrete: Microstructure, properties and Materials. McGraw - Hill.

37- Millington, Allie. 2024. Olivetti. Feiwel & Friends.

38- MuseoTorino. n.d. MuseoTorino. Accessed May 15, 2025. https://www.museotorino.it/view/s/af785eedea7d4eccb51032ac493ac701.

39- Netto. n.d. Netto. Accessed May 20, 2025. https://enetto.com/olivetti-history.

40- Neville, Adam M. 2011. Properties of Concrete . Pearson.

41- P, Basheer, Luc Courard, and Sidney Mindess. 2017. Eco-efficient Repair and Rehabilitation of Concrete Infrastructures. Woodhead Publishing .

42- Pacheco, Torgal -, Fernando, and Said Jalali. 2011. Corrosion Protection of reinforcement in Concrete - State of the Art, . Construction and Building materials.

43- Perego, Roberto Conte and Stefano. 2023. Brutalist Italy. Fuel.

44- Piacenza, Fornaci R.D.B. di. n.d. Solaio “STIMIP” – Technical Description and Specifications, Technical brochure. Italy : Solaio.

45- Piccinini, Mario. 2024. Architetture olivettiane: un itinerario da sud a nord. Ivrea: Firenze University Press.

46- Society, Concrete. 2004. TR61: Surface Applied Coatings for Concrete. United Kingdom : Camberley.

47- The New Yorker. 2009. The New Yorker. 14 April . https://www.newyorker.com/news/news-desk/paul-goldberger-peter-zumthors-quiet-power.

48- “The use of bricks in the Italian Architecture of late 1930s: references and evocations to Ancient Rome.” 9th International Masonry Conference 2014. Guimarães. Andreina Maahsen-Milan; Enrico Pietrogrande.

49 - Torino, QC Therme. n.d. QC Terme Torino. https://qc-termetorino.turin-tickets.com/?ci=2&cm=554851432_13051214333087 13_c_o_terme%20qc%20Torino_e_{extensionid}&msclkid=063a06c4c9ed166383986e92352d2c77&utm_source=bing&utm_medium=cpc&utm_campaign=Turin%20-%20QC%20Terme%20Turin%20-%20Other%20Language.

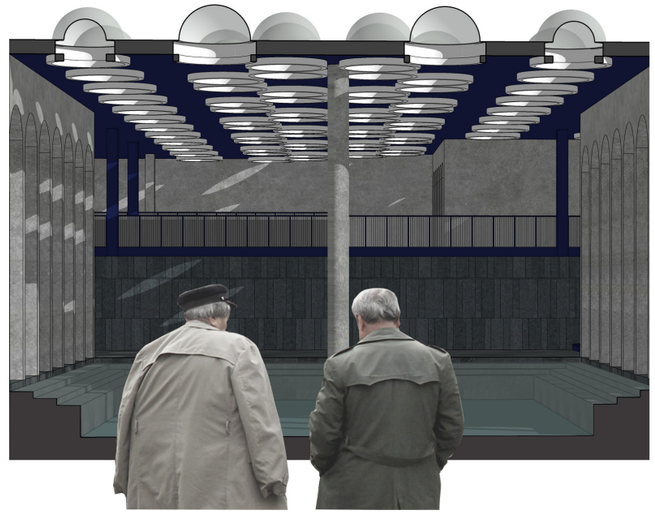
50- Treccani. n.d. Enciclopedia Italiana. Accessed 10 2025, February. https://www.treccani.it/enciclopedia/ivrea.

51- UNESCO. 2018. Ivrea, Industrial City of the 20th Century. https://whc.unesco.org/en/list/1538/.

52- 2020. Uno Case Immobiliare. 13 August. Accessed 04 June, 2025. https://www.uno-case.it/news/5103/anfiteatro_romano_di_ivrea_forse_non_tutti_sanno_che_.html.

53- Wickham, Chris. 2016. Medieval Europe.: A New Haven . Yale University Press.

54- Wikiarquitectura. n.d. Wikiarquitectura. https://en.wikiarquitectura.com/building/thermas-vals/.



The Blue line of Ivrea

Adaptive reuse of the Marxer building