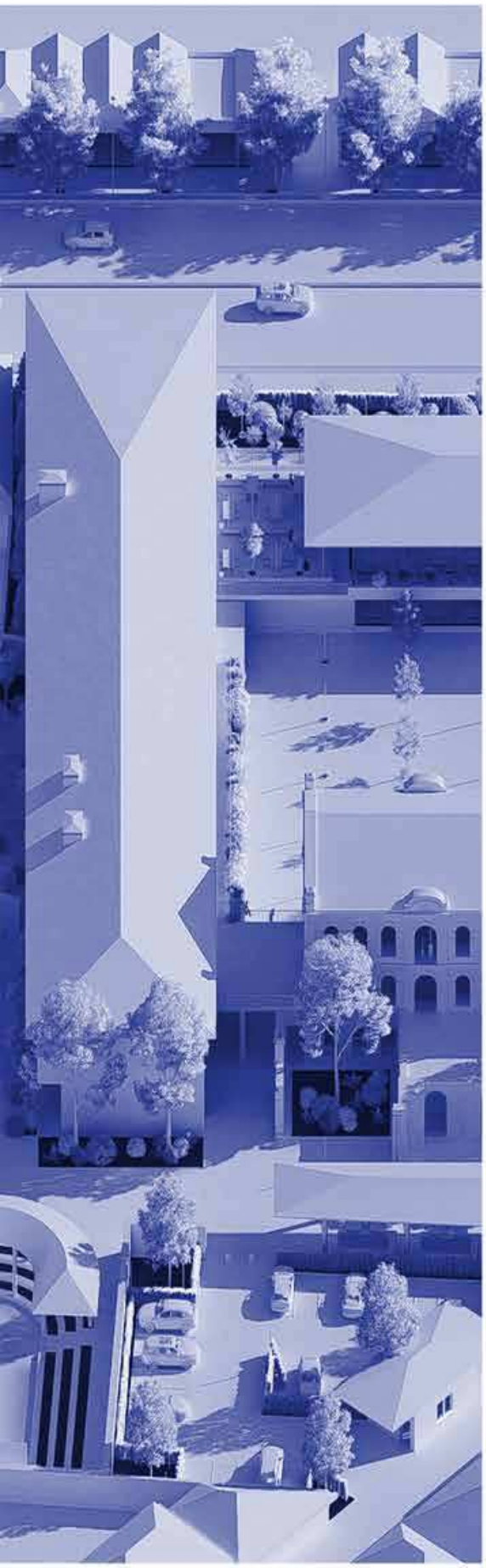


Adaptive Reuse of Industrial Heritage in Iran:
A Sustainable Future for Qazvin's Flour Factory

Master's Thesis
Prof. Matteo Robiglio

Sina Nourmousavi Nasab
Shademan Mohammadtaherkhani

Architecture for Sustainability

Politecnico di Torino

Table of Content

Part I

Introduction

HISTORY OF PASTRY ART IN QAZVIN

The history of pastry art in Qazvin dates back to ancient times, with the origin of the first sweets tracing back to ancient Persia. Lavish[1], a type of sweet baked during the ancient Persian empire in the 7th century AD, gained widespread popularity. Over the centuries, pastry making in contemporary Iran has evolved into a cherished tradition, with various regions, including Qazvin, boasting their own unique sweet specialties, often regarded as souvenirs.

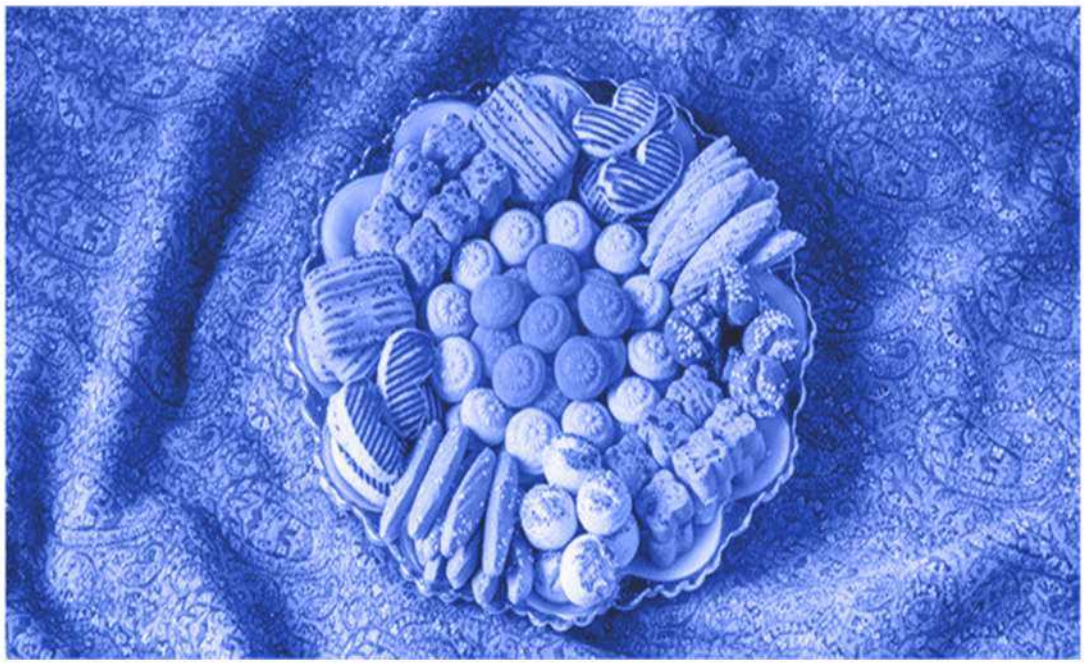
Fig 1.
Lavish[1], a type of sweet baked during the ancient Persian empire in the 7th century AD

Qazvin, particularly notable for its traditional sweets, saw a flourishing of pastry art during the Safavi era when it served as the capital of Iran[2]. The presence of courtiers and the city's prosperity contributed to the growth of culinary arts, including the craft of sweet-making. Qazvin's renowned sweets such as Lozi Baklava, Peach or Rose Baklava, Paderazi, Chickpea, Charkhi, Rice sweets, Atabaki, Walnut sweets, and Pea sweets are celebrated for their exquisite taste and aesthetic appeal[3a].

Fig 2.
Qazvin, as the capital of Iran, during Safavid empire

Crafted from a blend of ingredients such as flour, sugar, almonds, pistachios, honey, rose water, walnuts, grains, hazelnuts, oil, and cardamom, these traditional Qazvini sweets embody the culinary expertise and artistic sensibilities of generations past. Historically, Qazvin pastry chefs selected ingredients that prolonged the shelf life of their creations, ensuring buyers could savor them over an extended period, given the ɹbsence of refrigeration.

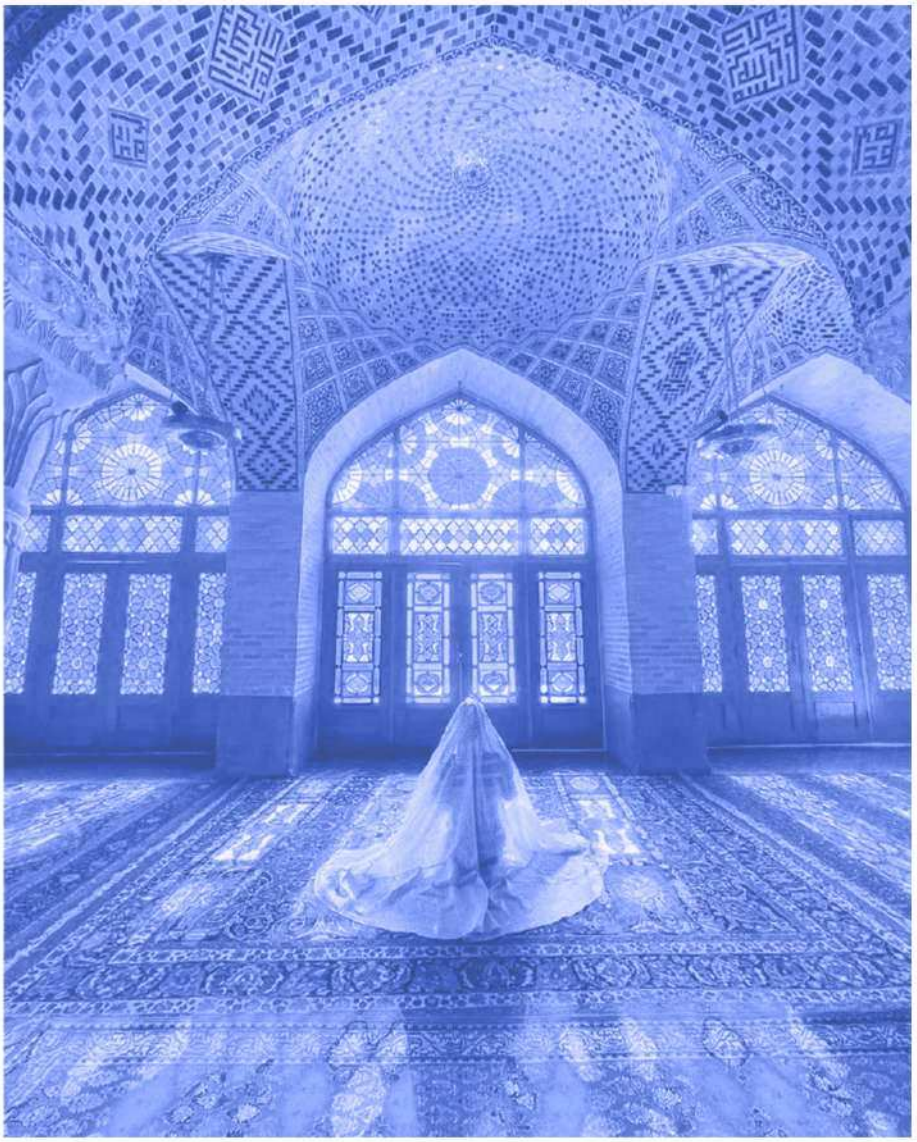
Fig 3.
Traditional sweets of Qazvin



The allure of Qazvin's sweets extends beyond taste, with traditional architectural motifs and geometric3b designs often incorporated into the molds and seals used in their production. Known for their durability, delectable flavors, and moderate sweetness, Qazvin sweets enjoy a devoted following, especially during Nowruz.

Fig 3b.
The allure of Qazvin's sweets extends beyond taste, with traditional architectural motifs and geometric3b designs

Qazvin's Lozi Baghlava



Nasirolmolk Masque, Shiraz, Iran
Repitation of "rhombus" in Persian architecture

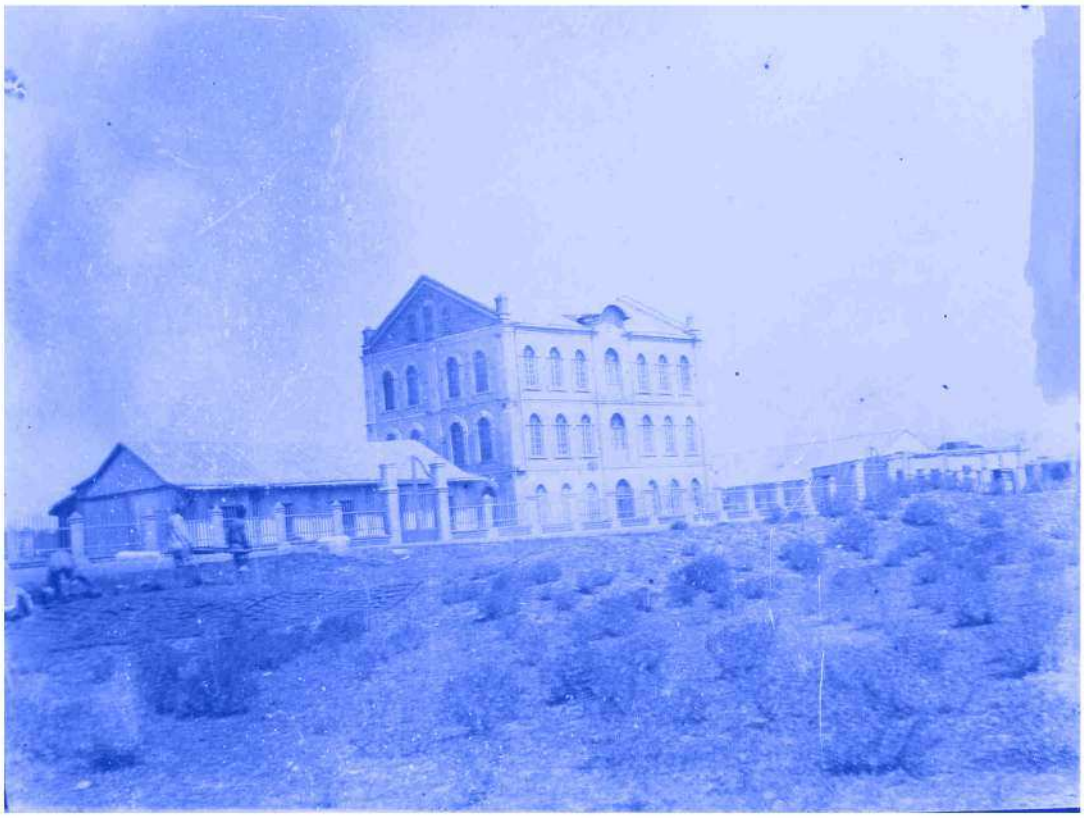
Regrettably, this rich culinary heritage faces the threat of fading into obscurity. Despite the efforts of predecessors to pass down their knowledge, the art of Qazvini sweet-making is at risk, with fewer young people possessing the skills and awareness necessary to preserve and continue this cherished tradition. Unlike a century ago when Qazvini women adeptly prepared and baked these sweets following ancestral instructions, today, such expertise is increasingly scarce.

QAZVIN'S INAUGURAL FLOUR FACTORY[4]

The inception of the flour factory marked a significant milestone in addressing the nation's demand for high-quality flour. Initially established in the bustling Pahlavi port, it swiftly became a crucial player in fulfilling the country's flour import needs. Bolstered by increasing demand and widespread acceptance of its products, couplewd with a burgeoning reputation, the factory expanded its operations to Qazvin, orchestrat ing a comprehensive and complementary organizational setup .

Fig 4.
Qazvin's Inagural Flour Factory, Today

Fig 5.
Qazvin's Inagural Flour Factory, 1932



In 1932, the visionary efforts of "Haj Sadegh Mashin Chian" culminated in the establishment of Qazvin's inaugural flour factory. Housed within a grand three-story edifice, this structure once stood as a pinnacle of architectural magnificence within the city. The genesis of this factory traces back to 1907 when Haji Seyyed Abulqasem Razavi Esfahani pioneered the use of Russian machinery to set up a gas stove outside Darbkoushk gate. This venture laid the groundwork for the subsequent establishment of the "Ard Maschinchian" factory in 1932 by Mr. Sadeq Maschinchian. Situated along the Qazvin road, slightly elevated from Rasht Gate, this factory, equipped with state-of-the-art German machinery, quickly became an emblem of industrial prowess. Its strategic location amidst the vast wheat fields of the Qazvin plain further fueled its productivity, attracting a burgeoning workforce and profoundly impacting the local community .

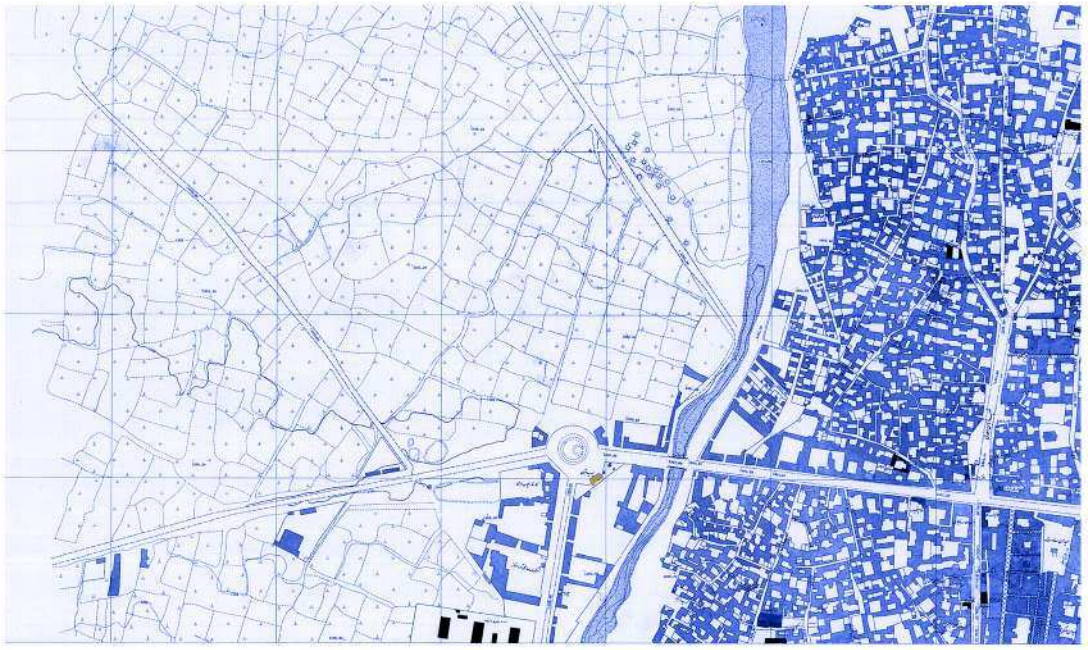


Fig 6.
The Qazvin Flour Factory Urban Location

During its prime, this factory churned out a daily production of 10 tons of flour, solidifying its status as a cornerstone of Qazvin's industrial landscape. However, the subsequent decades saw a gradual decline in output, exacerbated by political and economic upheavals plaguing the nation. Despite its enduring legacy, the factory eventually ceased operations in the aftermath of the First World War, succumbing to a gradual shut down.

Today, remnants of the factory's main building still stand, serving as a poignant reminder of its erstwhile grandeur. These vestiges stand as a testament to the pivotal role the factory played in shaping the industrial fabric of Qazvin and its enduring impact on the lives of its inhabitants[7,8]

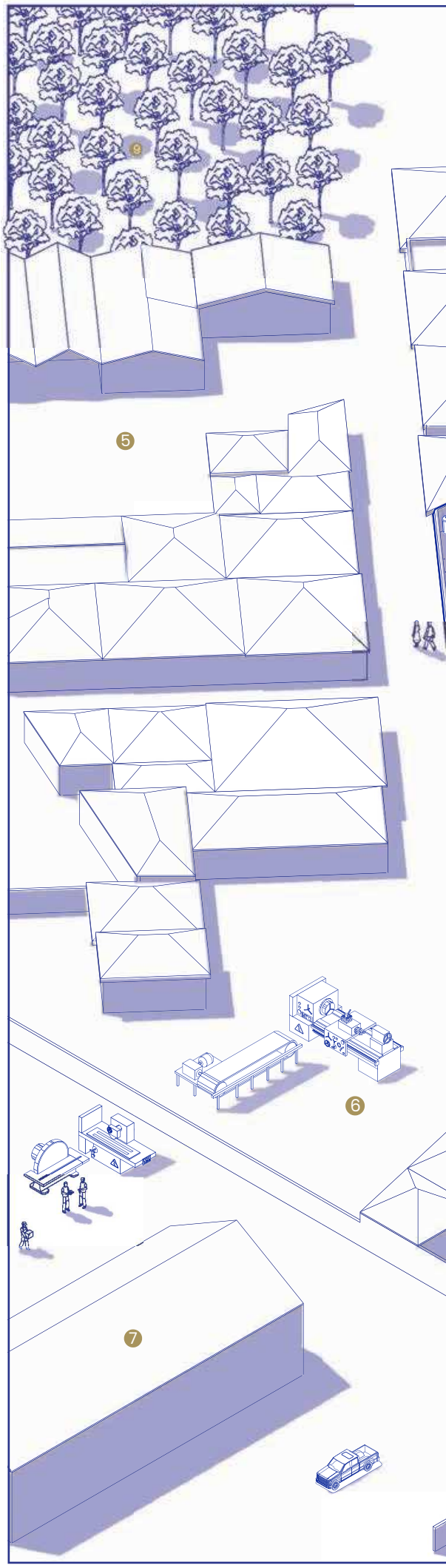
06

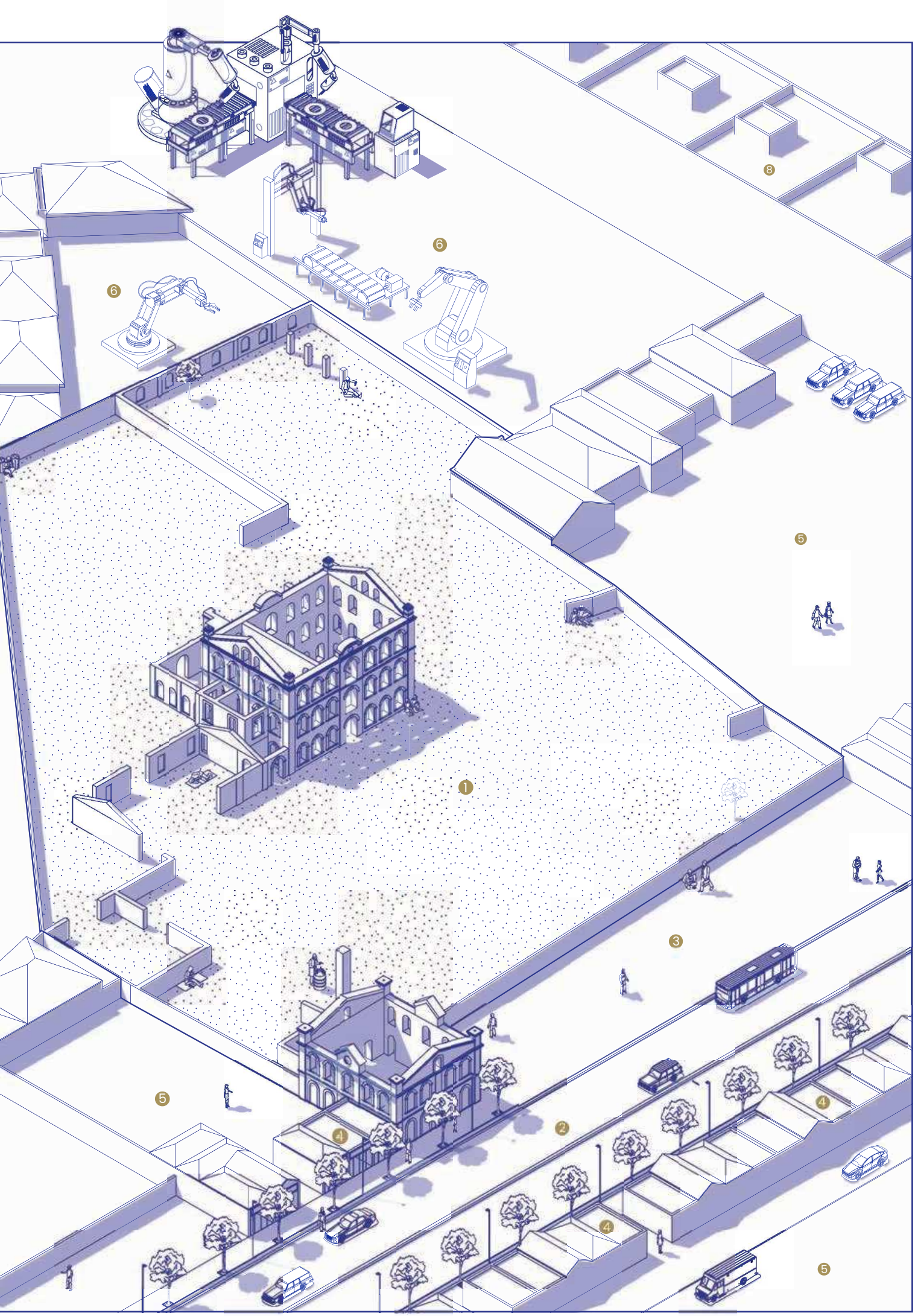
PROPOSAL

ARCHITECTURAL DOCUMENTS

ISOMETRIC

1 Site/Addicted people's Slums
2 Main Access
3 Parking
4 Stores
5 Garages
6 Metal/Car Dismantel
7 Industrial Zone
8 Residential Zone
9 Almond Gardens

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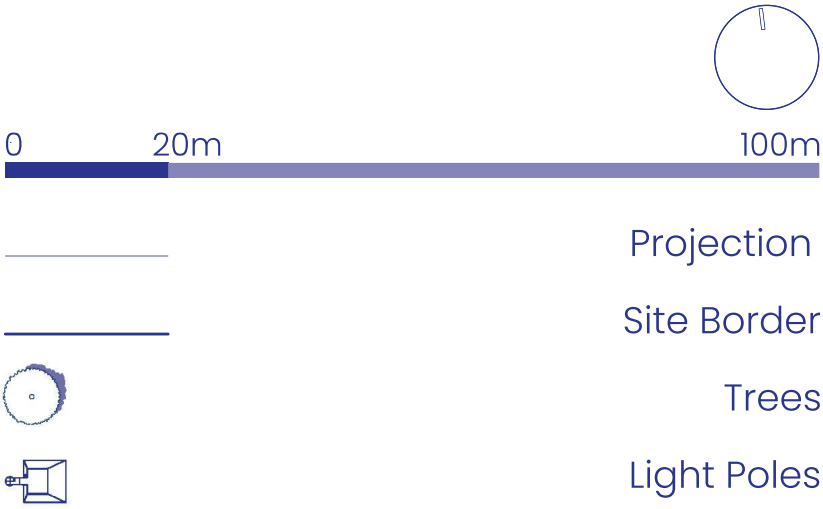
SITE PLAN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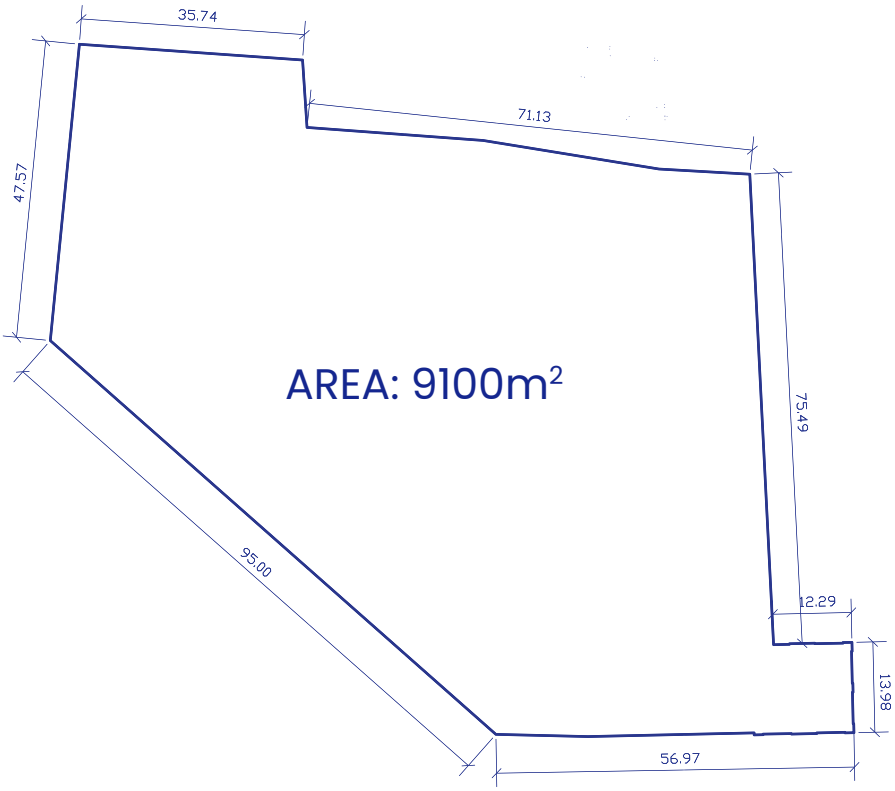
Site Border
Trees
Light Poles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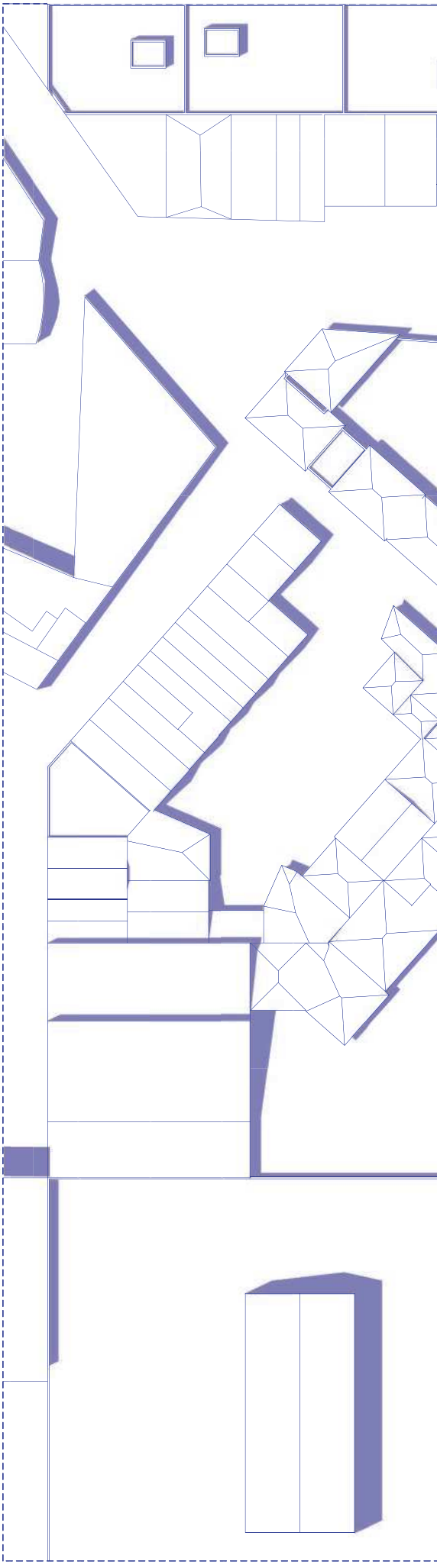
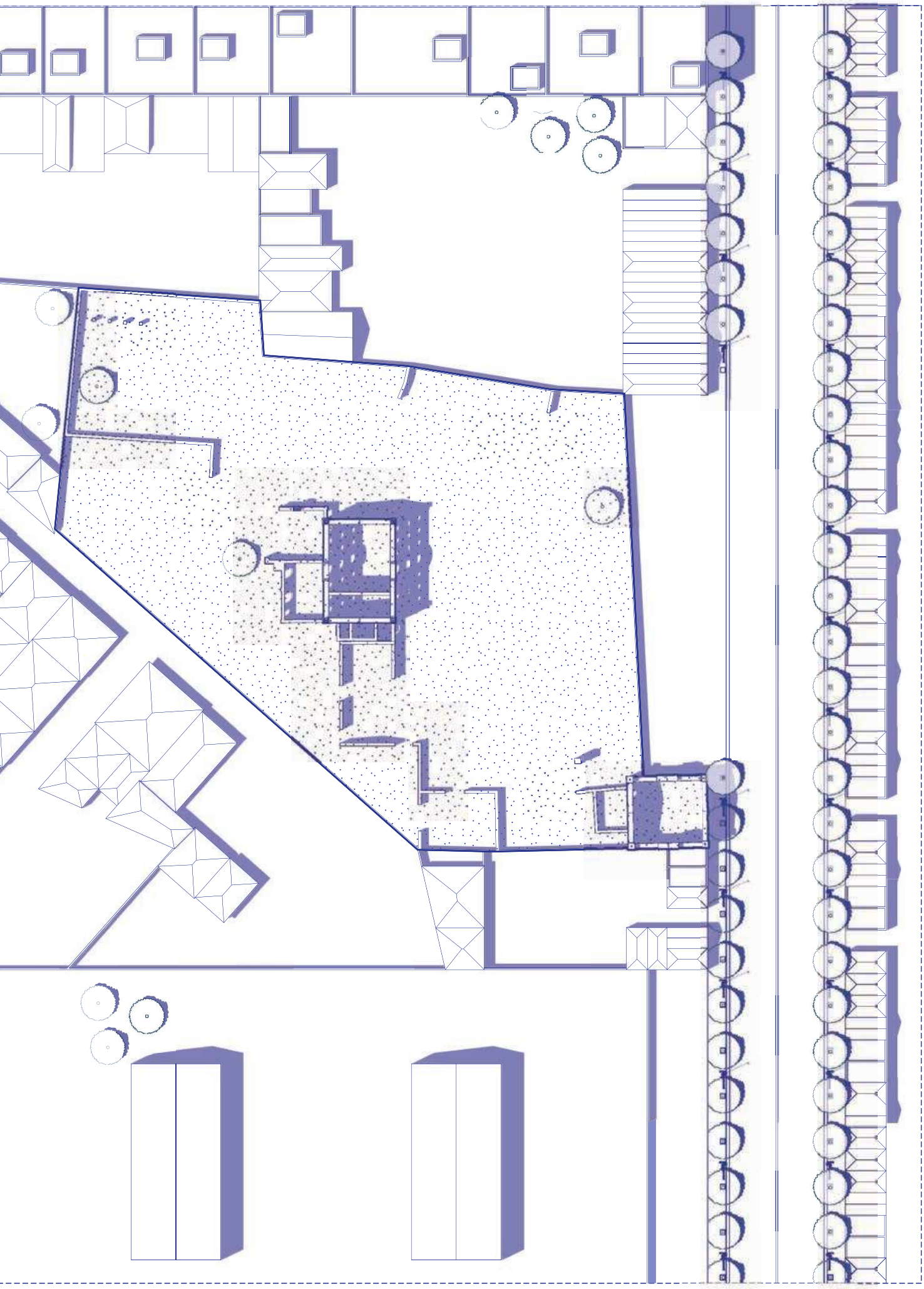
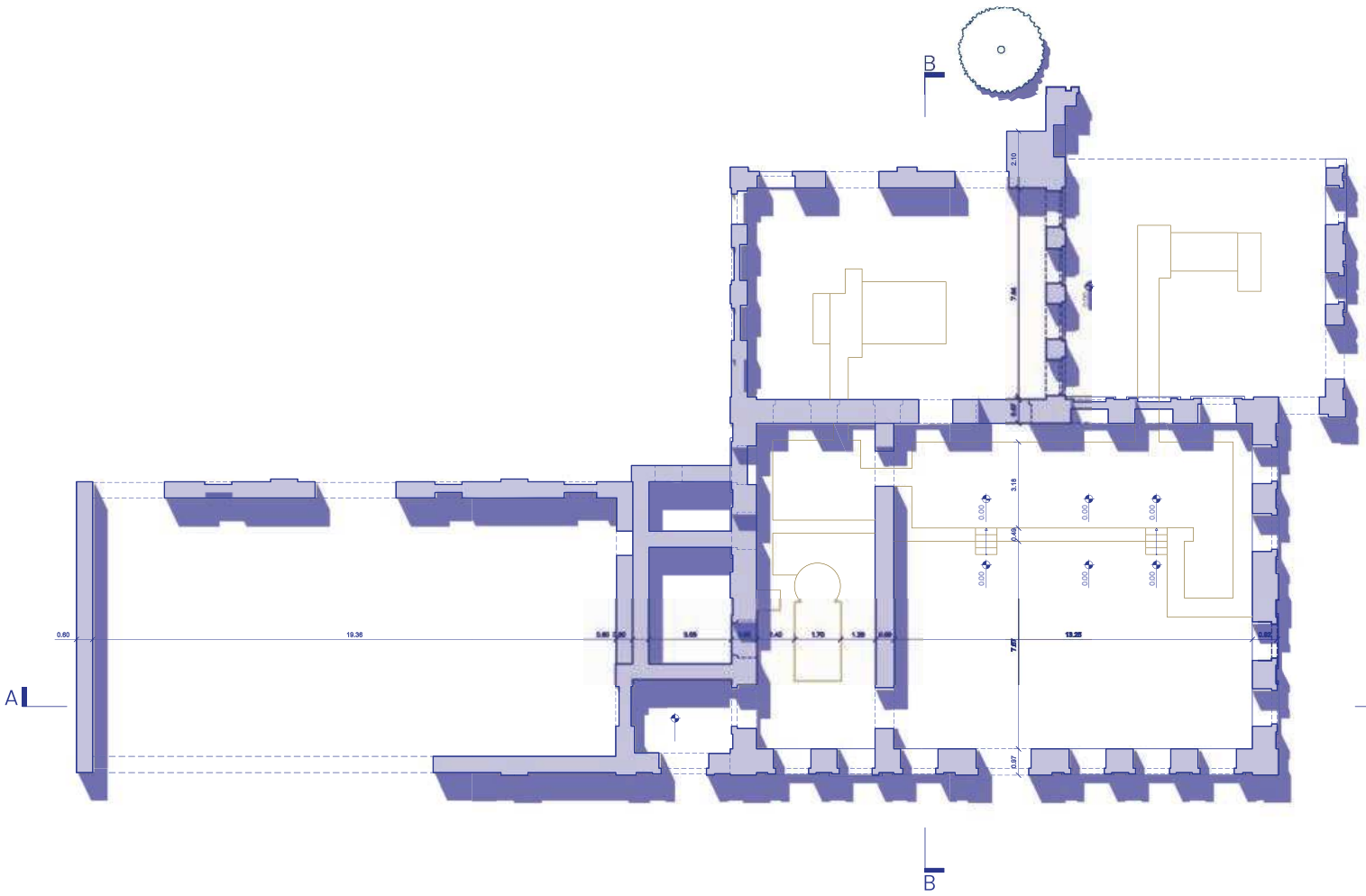




GROUND FLOOR PLAN



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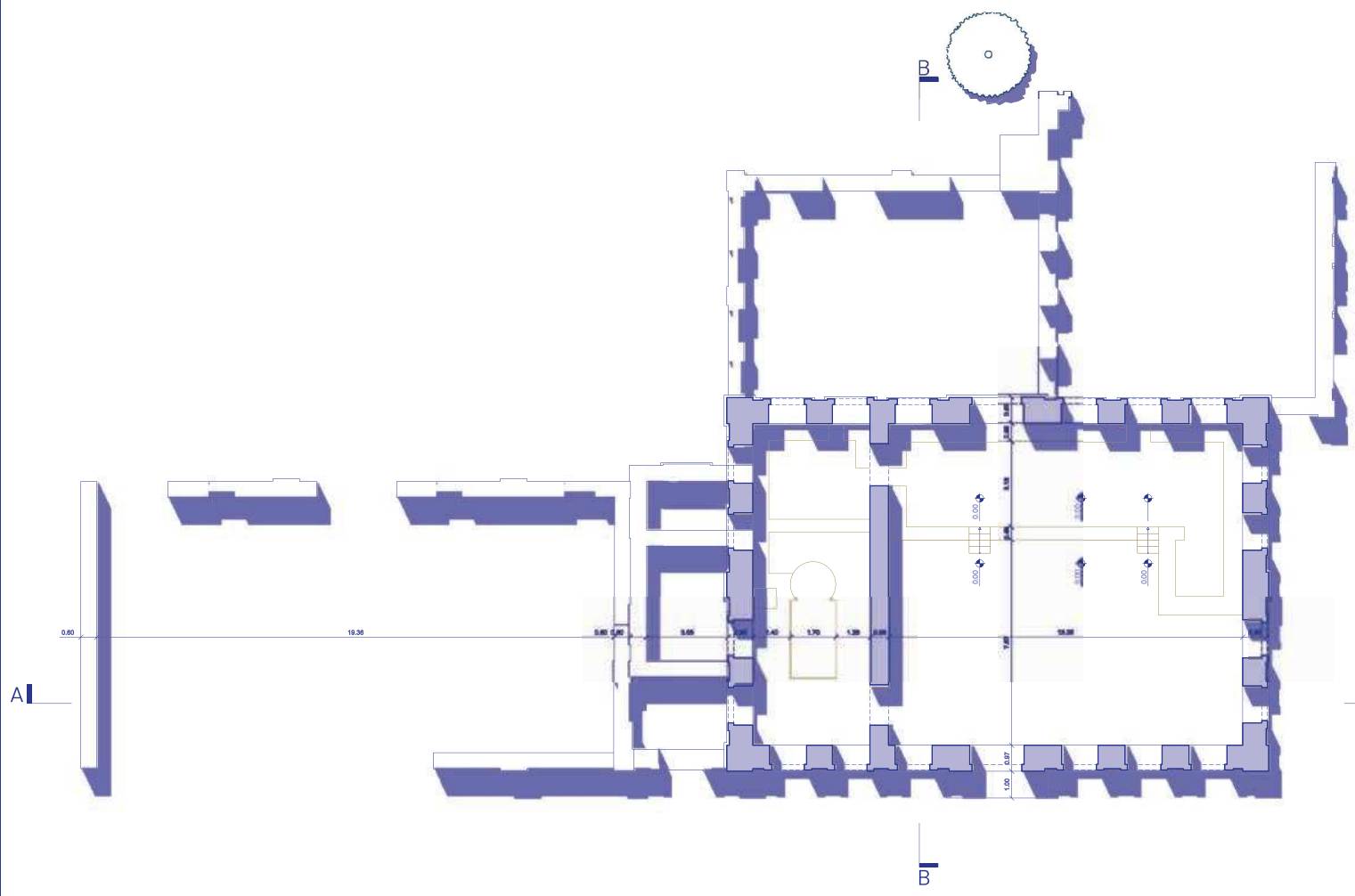
- Projection
- Sectioned Walls
- Section Lines
- Decayed / Ruined
- Earth Line
- 2.00 Diementions
- Cutting Line Views
- Projection Hidden Lines
- Height Code Symbol
- Height Code Symbol (Plan)
- * Not accessible

FIRST/SECOND FLOOR PLAN



PROPOSAL

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- Projection Hidden Lines
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- Height Code Symbol (Plan)
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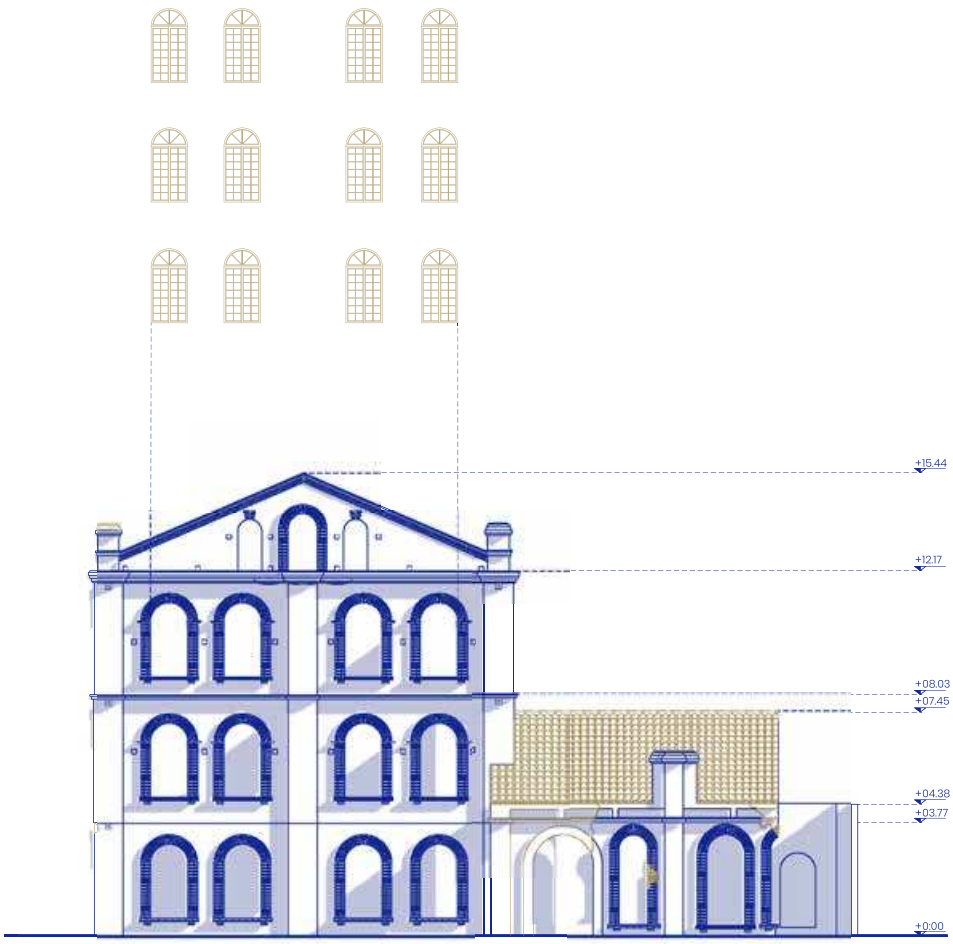
NORTH ELEVATION



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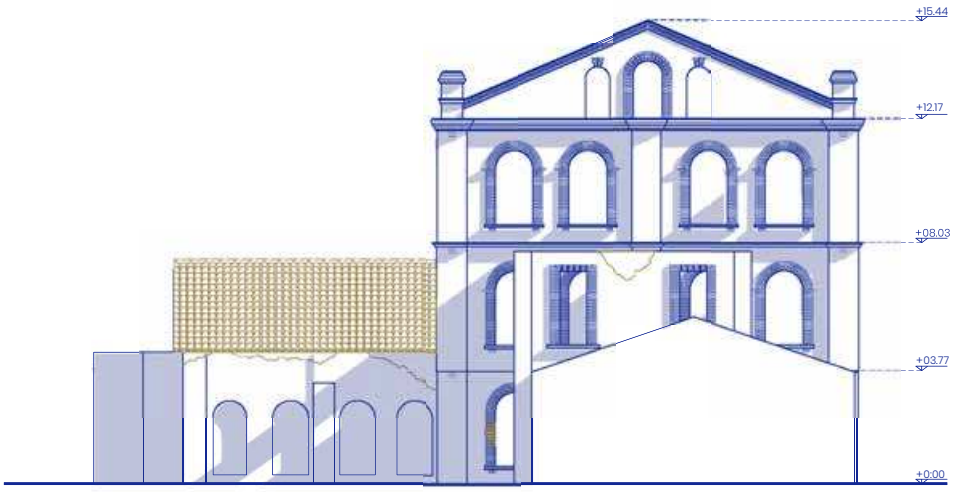
SOUTH ELEVATION



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Sectioned Walls
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Decayed / Ruined
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Cutting Line Views
Projection Hidden Lines
Height Code Symbol
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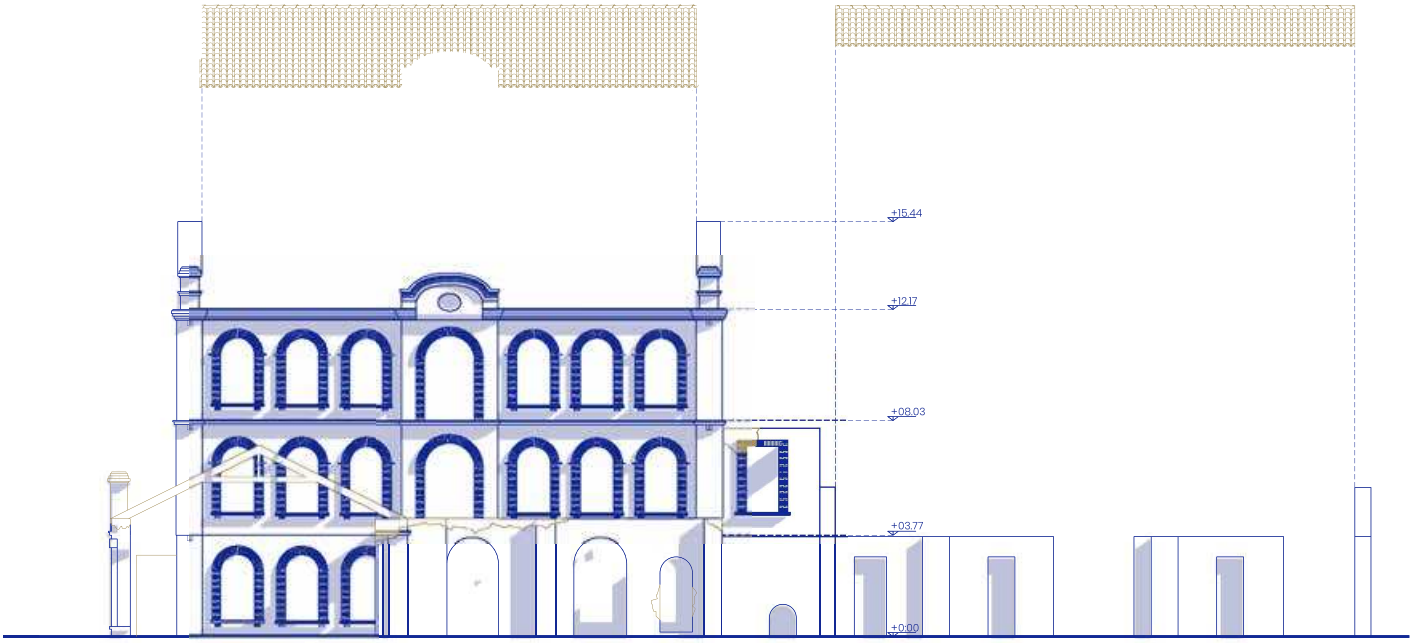
WEST ELEVATION



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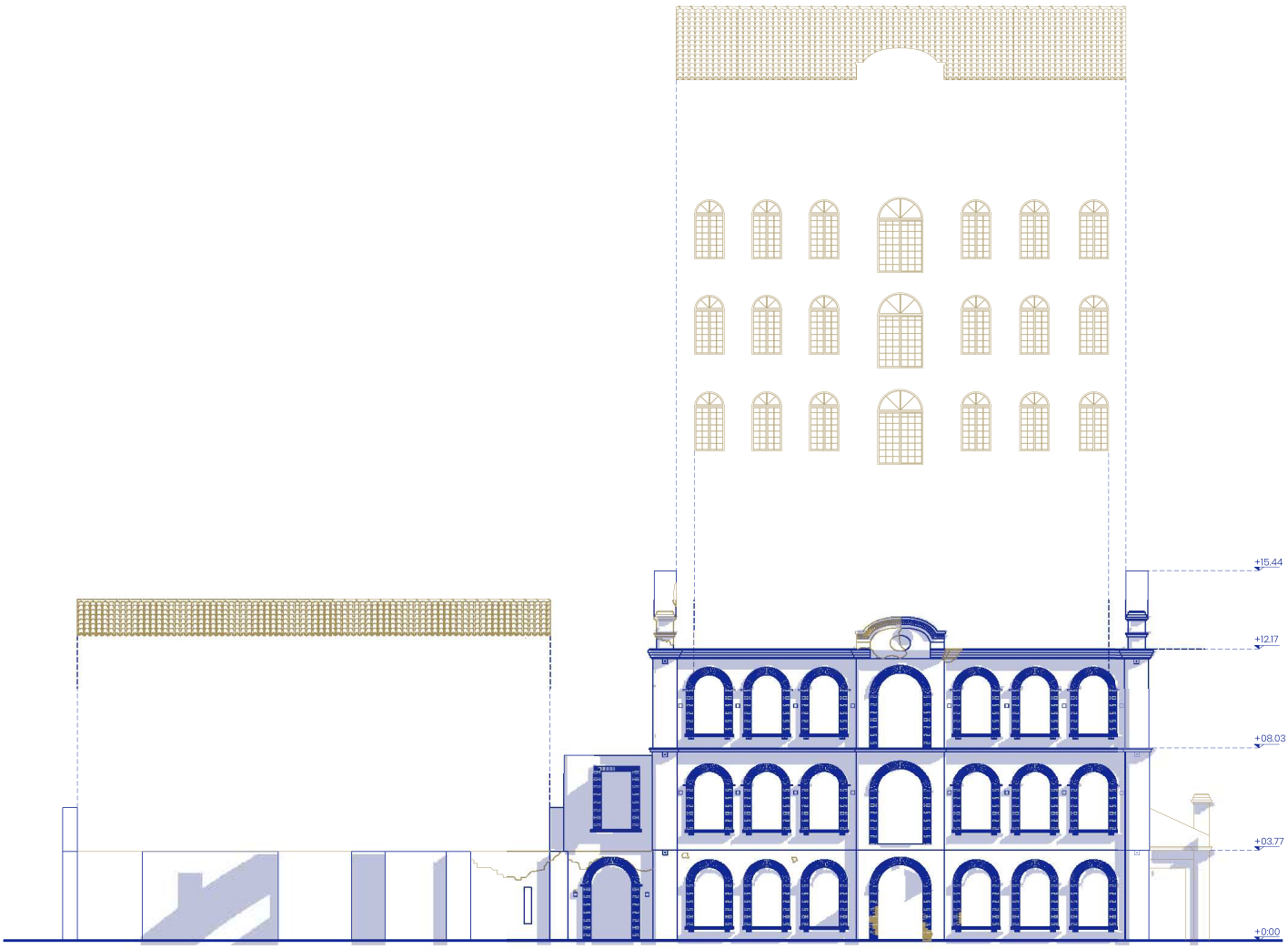
EAST ELEVATION



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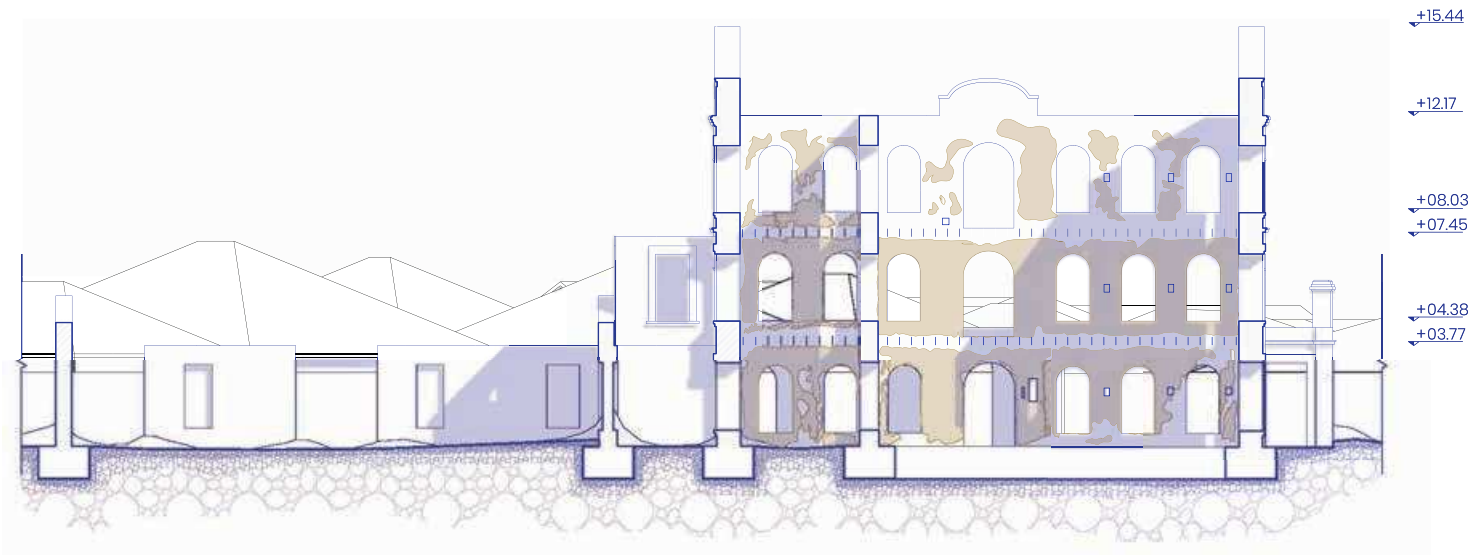
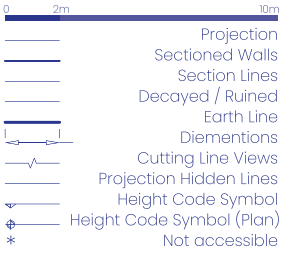
SECTION BB





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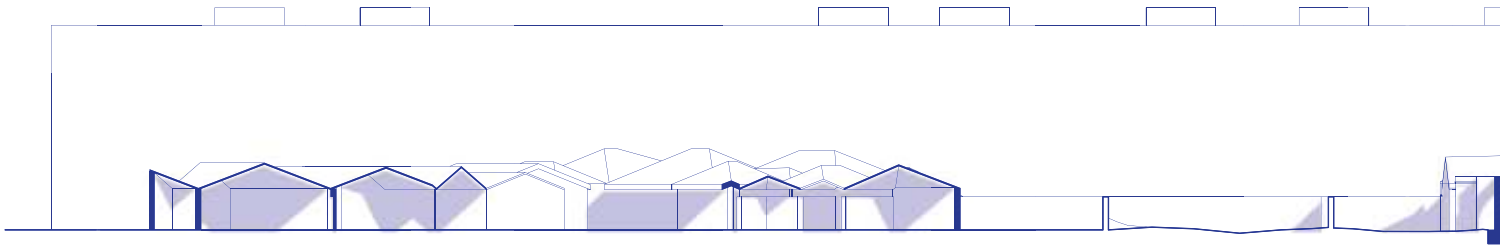

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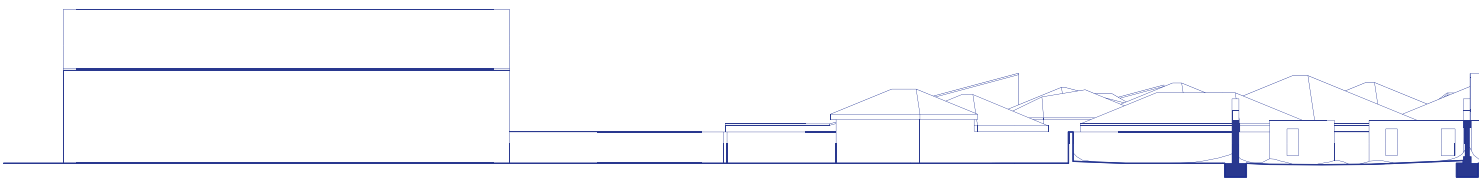

PROPOSAL

SECTION AA

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- Earth Line
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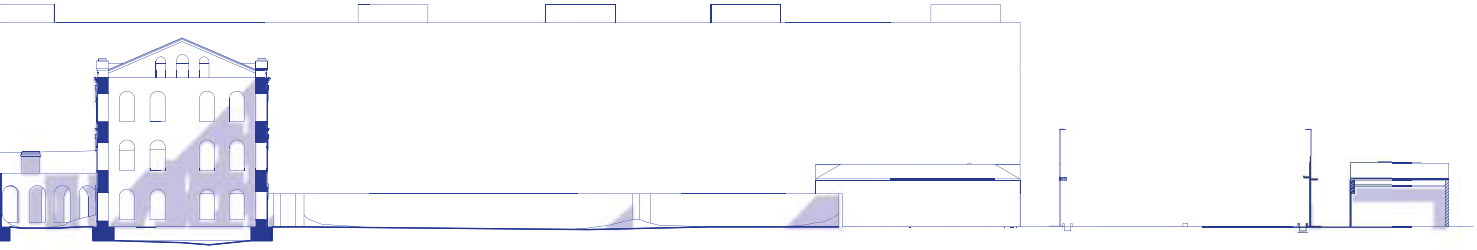
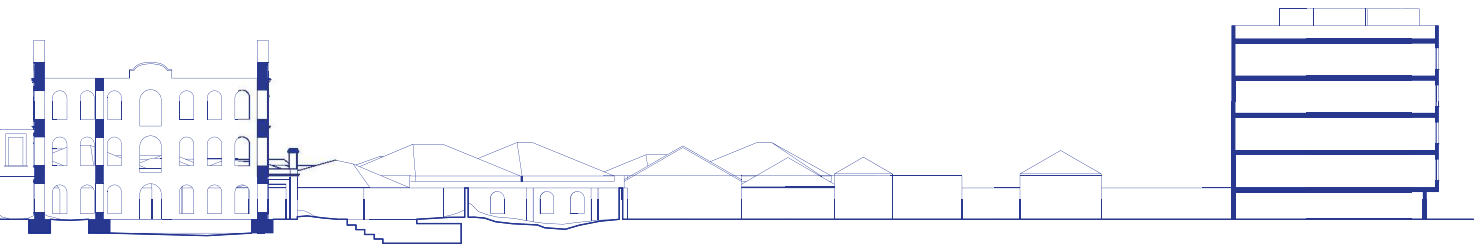
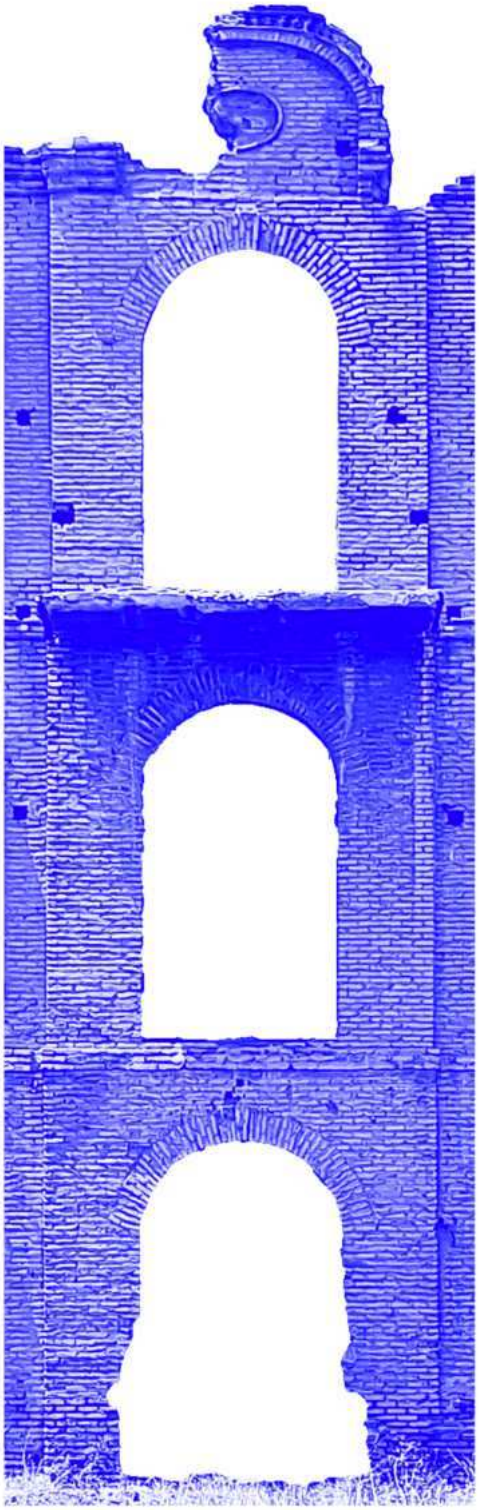
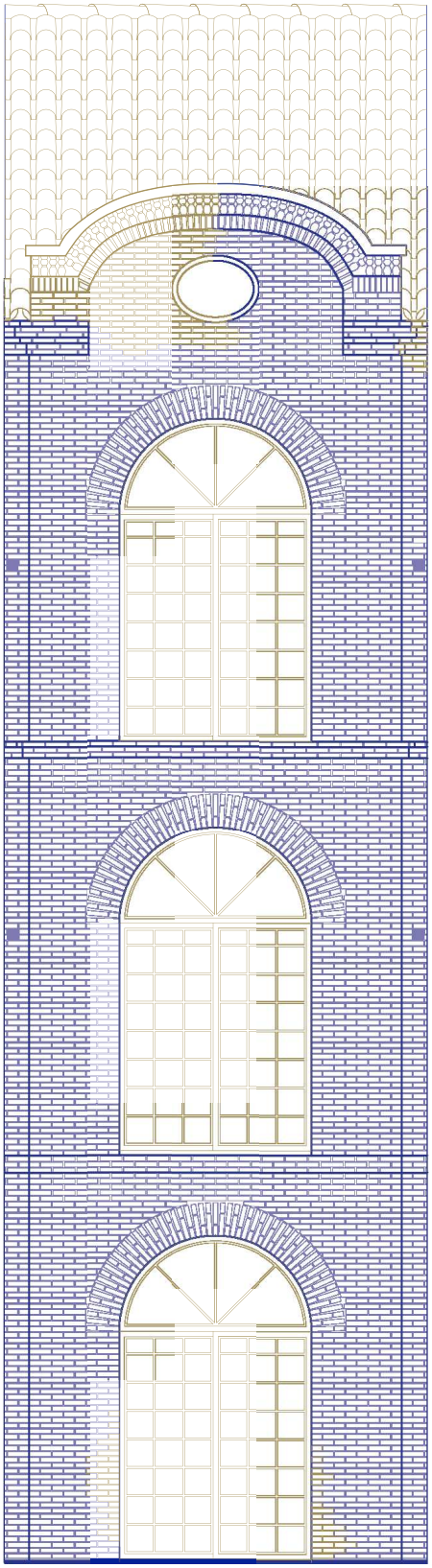








PROPOSAL/
CONCLUSION

PROPOSAL

In light of the imperative to safeguard this time-honored tradition and recognizing the growing interest among young individuals eager to preserve it, yet lacking access to the culinary techniques associated with recipes of these sweets, we have conceived the notion of establishing a museum, school, restaurant and cafeteria dedicated to traditional Qazvin foods and sweets.

Moreover, given the strategic placement of the disused Qazvin flour factory within one of the city's most historic and authentic districts, and notably, the intrinsic character of the building and the ambiance it exudes—having formerly operated as a flour factory supplying bakeries and confectioneries with the ingredients for producing the aforementioned confections—it possesses the inherent potential for repurposing towards the envisaged

RATIONALE FOR A SCHOOL

Our objective transcends merely creating a museum for passive observation and documentation of this forgotten heritage. Rather, our primary impetus is to actively promote and rejuvenate this legacy. The aspiration extends beyond revitalizing a derelict structure to revitalizing a neglected tradition and cultural inheritance

CONCLUSION

Considering the imperative of preserving this overlooked tradition, the community and city's needs, the intrinsic characteristics and historical significance of the building's location, among other factors, we are unequivocally convinced that the abandoned flour factory possesses the requisite potential to be transformed into a museum, school, restaurant and cafeteria celebrating traditional Qazvin foods and sweets.

Part II

ANALYSIS

GEOGRAPHICAL ANALYSIS

URBAN AND ARCHITECTURAL ANALYSIS

HISTORICAL ANALYSIS

SOCIAL AND CULTURAL ANALYSIS

INTERVIEWS

Chapter I

GEOGRAPHICAL ANALYSIS

TEMPERATURE VARIATIONS

SOLAR RADIATION

PRECIPITATION AND HUMIDITY

WIND PATTERNS

HDT AND CDT IN QAZVIN

Heating Degree Time (HDT) in Qazvin

Cooling Degree Time (CDT) in Qazvin

The Balance Between HDT and CDT

Implications for Building Design

THE URBAN HEAT ISLAND (UHI) IN QAZVIN

TOPOGRAPHY OF QAZVIN

SOUND POLLUTION AROUND SITE

AERIAL VIEW OF THE SITE

2.1 Temperature Variations

Qazvin experiences a wide range of temperatures throughout the year. Summers are typically hot and dry, with average temperatures ranging from 30°C to 35°C during the peak summer months of July and August. On some days, temperatures can exceed 40°C, making cooling systems and strategies for passive cooling crucial for maintaining indoor comfort.

In contrast, winters in Qazvin are cold, with average temperatures in January often dropping below freezing, particularly during the night. The lowest recorded temperatures can reach as low as -10°C, necessitating effective insulation and heating systems in buildings. This stark contrast between summer and winter temperatures makes it essential for building designs to incorporate strategies that allow for thermal adaptability.

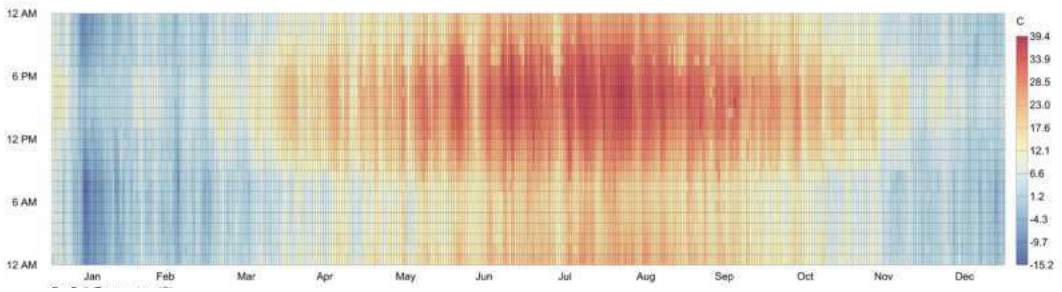


Fig 1.
This figure represents the dry bulb temperature profile for Qazvin across the entire year, from January to December, at different times of day, as visualized on the vertical axis. The color gradient illustrates temperature variations, with cooler temperatures shown in shades of blue and warmer temperatures in red.

2.2 Solar Radiation

As with most cities in Iran, Qazvin receives high levels of solar radiation, particularly in the summer months. The city's location, around 36 degrees north of the equator, ensures that it benefits from a long period of sunshine, with over 2,800 hours of sunlight annually. This makes solar energy a potentially significant resource for buildings, both in terms of passive solar heating during the colder months and photovoltaic (PV) systems for energy generation throughout the year.

However, the intense sunlight also creates challenges, particularly during the summer when overheating becomes a concern. Building designs in Qazvin must take into account shading, window orientation, and reflective surfaces to minimize heat gain during the day while maximizing the benefits of solar energy.

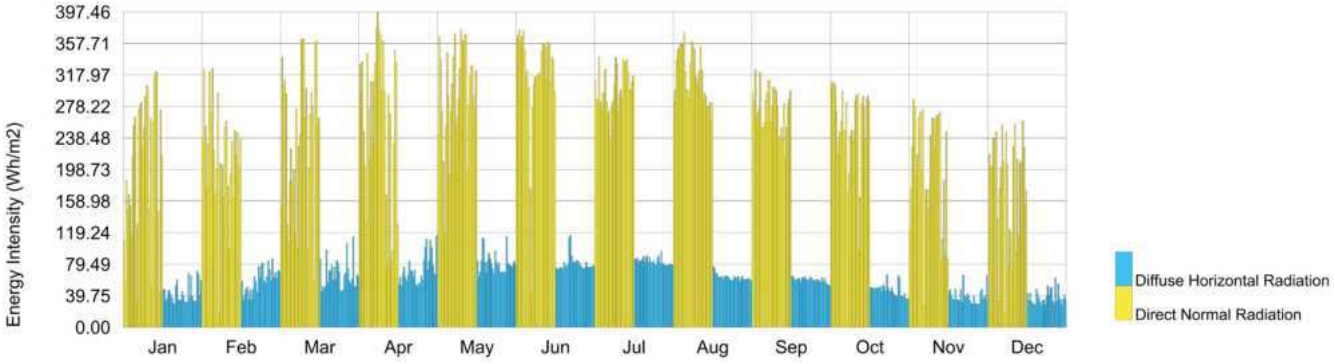


Fig 2.
The data indicates that Qazvin has significant solar energy potential, particularly during the summer months when high direct radiation could be leveraged for energy production. However, the city also receives a steady amount of diffuse radiation throughout the year, which can contribute to more reliable solar energy generation even in cloudy conditions or during winter.

2.3 Precipitation and Humidity

Qazvin has relatively low annual precipitation, with an average of about 300 mm of rainfall per year. The wettest months are typically March and April, while summers are dry, with almost no rainfall. Despite its proximity to the Alborz Mountains, which receive heavier precipitation, Qazvin remains a semi-arid region, and water management is an important consideration in building design.

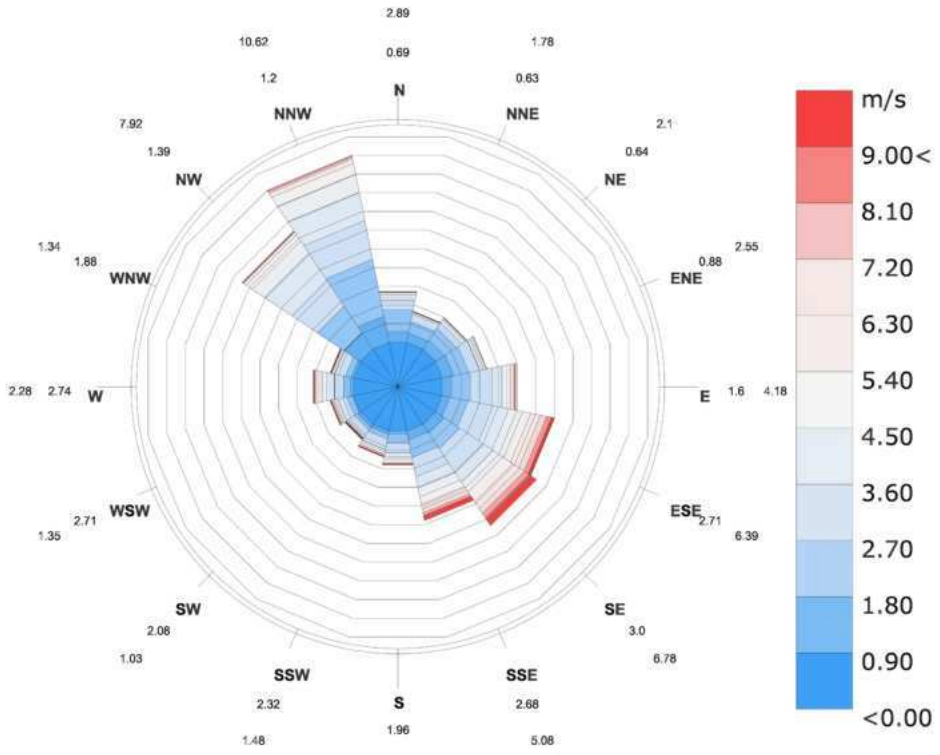
Humidity levels in Qazvin are generally low, averaging around 50% annually. This dry environment influences the materials chosen for building construction, as well as indoor air quality considerations. Low humidity can lead to discomfort and health issues if not managed properly, particularly in terms of indoor air moisture levels.

2.4 Wind Patterns

Qazvin is influenced by the regional wind patterns associated with its location near the Alborz Mountains and the Iranian Plateau. Prevailing winds generally blow from the northwest, with stronger winds occurring in spring and autumn. These winds can have a cooling effect during the summer months, providing an opportunity for natural ventilation to reduce the reliance on mechanical cooling systems.

However, during the winter, cold winds from the mountains can exacerbate heat loss from buildings, making effective insulation and air-tightness critical. Buildings in Qazvin often incorporate windbreaks or use landscape features to reduce the impact of these cold winds.

Fig 3.
This wind rose chart provides a comprehensive overview of the wind patterns in Qazvin throughout the year. It shows the frequency and speed of winds from various directions, measured in meters per second (m/s), giving important insights into the prevailing wind directions and intensities.



2.5 HDT and CDT in Qazvin

Heating Degree Time (HDT) and Cooling Degree Time (CDT) are crucial indicators of the energy requirements for maintaining thermal comfort in buildings. They reflect the amount of time buildings require heating or cooling based on the deviation of outdoor temperatures from a baseline temperature (usually 18°C or 20°C). In Qazvin, where seasonal variations are pronounced, both HDT and CDT play significant roles in shaping building energy demands.

2.5.1 Heating Degree Time (HDT) in Qazvin

Qazvin's climate exhibits extended periods of cold weather, resulting in a high demand for heating, especially during the winter months. HDT is a measure of how much heating is needed when outdoor temperatures drop below a set threshold. In Qazvin, this demand is primarily concentrated between late autumn (November) and early spring (March). The highest heating needs occur in January and February, where average daily temperatures often fall below freezing, causing HDT values to peak.

Throughout this extended cold season, buildings require consistent heating to maintain comfortable indoor conditions. HDT in Qazvin shows that energy-efficient heating systems and good thermal insulation are essential to reduce heat loss and minimize energy consumption. Effective design strategies, such as maximizing solar gain during the winter months and utilizing high-performance insulation, are critical to managing these heating loads.

2.5.2 Cooling Degree Time (CDT) in Qazvin

On the other hand, Qazvin's summers are marked by high temperatures, particularly from June to August, leading to a noticeable demand for cooling. CDT measures how much cooling is needed when outdoor temperatures exceed the comfort threshold. While the cooling season is much shorter and less intense compared to the heating season, CDT is still significant in the peak summer months, particularly in July, when daily temperatures frequently exceed 30°C.

To manage CDT, passive cooling strategies such as natural ventilation, proper shading, and reflective building materials can help reduce the reliance on mechanical air conditioning. Although cooling demands are not as high or prolonged as heating needs, energy-efficient cooling systems are still necessary to maintain comfort during the hottest periods.

2.5.3 The Balance Between HDT and CDT

In Qazvin, HDT dominates the energy demand profile, indicating that buildings must be designed primarily to withstand cold conditions. However, with relatively high temperatures in summer, CDT also becomes important, albeit for a shorter period. This dual requirement means that buildings in Qazvin should be designed with flexibility, incorporating strategies for both heating in winter and cooling in summer.

In conclusion, the overall energy demands in Qazvin are heavily skewed toward heating, with a significant portion of the year requiring HDT, while

CDT is important but less critical during the shorter summer period. Energy-efficient building design in Qazvin should focus on reducing heating loads while also accounting for moderate cooling needs during the hot months.

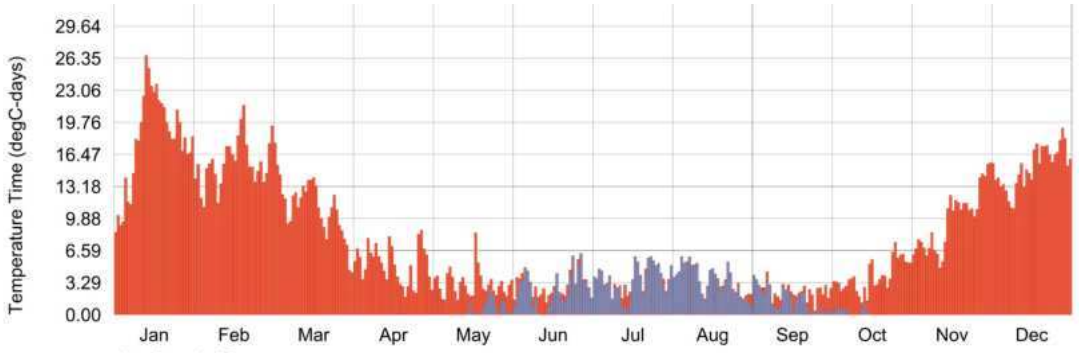


Fig 4.
This graph depicts the Heating Degree Time (HDT) and Cooling Degree Time (CDT) for Qazvin throughout the year, offering a clear view of the seasonal demands for heating and cooling in buildings.

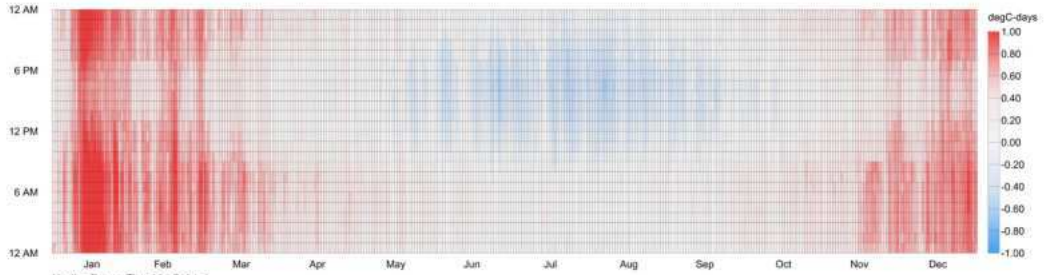


Fig 5.
This image represents the Heating Degree Days (HDD) profile for Qazvin across the year, measured at different times of the day. The color gradient, ranging from red to blue, illustrates the intensity of heating demands in Qazvin, with red indicating higher heating requirements and blue showing periods with lower or no heating demand.

2.5.4 Implications for Building Design

Thermal Insulation: Given the dominant heating demand throughout much of the year, thermal insulation is crucial for buildings in Qazvin. Properly insulating walls, roofs, and floors will help retain heat during the winter months, reducing energy consumption and improving comfort.

Heating Systems: Efficient heating systems are necessary to meet the prolonged demand for warmth in the colder months. These systems should be designed to handle high heating loads, especially in winter, while maintaining energy efficiency.

Cooling Strategies: While the cooling season is shorter, effective strategies are still essential to maintain indoor comfort in summer. Passive cooling techniques, such as natural ventilation and shading, along with air conditioning or evaporative cooling, will help manage the CDT during the hottest months.

2.6 The Urban Heat Island (UHI) in Qazvin

The Urban Heat Island (UHI) effect in Qazvin reveals significant spatial and temporal variations in surface temperatures, driven by factors such as urban density, land use, and the presence (or lack) of vegetation. From the surface UHI map of Qazvin, it is evident that the city center experiences relatively lower daytime surface temperatures during the summer, likely due to urban features that mitigate heat absorption. However, the peripheral areas, particularly those with more exposed land, experience higher UHI intensity, as reflected in orange and red hues on the map, with some areas

surpassing 7.5°C above the surrounding rural temperatures. This indicates that the outlying areas, where there is less vegetation and more heat-retaining materials like asphalt, absorb and radiate more heat during the day.

The seasonal variability graph further highlights the dynamic nature of the UHI in Qazvin. During the summer months, both daytime and nighttime UHI intensities increase, with nighttime UHI showing a higher intensity. This suggests that while daytime temperatures cool faster due to radiation loss, nighttime retains more heat, possibly due to thermal mass in buildings and urban structures, contributing to heat retention after sunset. The graph shows that the highest daytime UHI occurs between May and September, peaking around July, when the sun's intensity is strongest. Nighttime UHI remains consistently higher throughout the year, emphasizing how urban areas struggle to dissipate heat effectively at night, especially during the warmer months.

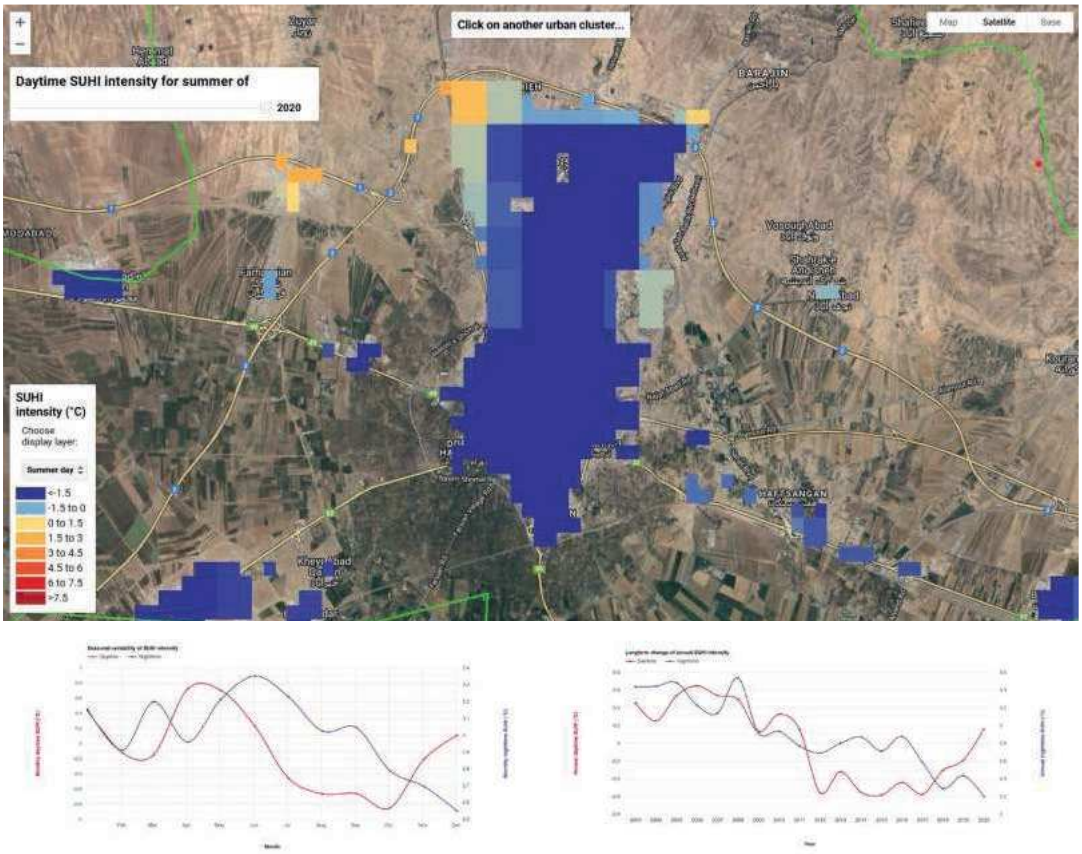


Fig 6, 7, 8.
The Urban Heat Island (UHI) effect in Qazvin is evident through spatial and temporal data visualizations. The daytime SUHI map highlights the city's peripheral areas experiencing higher temperatures in summer due to increased exposure to heat-retaining surfaces. Seasonal variability graphs show a pronounced UHI effect during nighttime, particularly in the summer months, while daytime UHI intensity fluctuates more seasonally. Long-term trends from 2003 to 2020 indicate a steady increase in nighttime UHI intensity, emphasizing the growing impact of heat retention in urban areas. Effective urban design and heat mitigation strategies are essential to addressing these trends.

The long-term change in annual UHI intensity in Qazvin also shows interesting trends. Between 2003 and 2020, the nighttime UHI generally trends higher, peaking around 2008 and remaining elevated into 2020, while daytime UHI has fluctuated more, with noticeable dips and rises. This indicates that while daytime surface temperatures have shown variability, the nighttime UHI effect is becoming more pronounced over time, which could be linked to urban expansion and increased use of materials with high heat retention properties.

Together, these data suggest that Qazvin experiences significant UHI effects, especially at night and in the city's peripheral zones. To mitigate the impacts of UHI, strategies such as increasing urban greenery, implementing cool roofs, and enhancing natural ventilation in urban design could be essential in reducing both daytime and nighttime heat intensity, improving overall urban thermal comfort in the face of rising temperatures.

2.7 Topography of Qazvin

Qazvin, located in the northwest of Iran, boasts a unique and varied topography that significantly influences its climate, agriculture, and urban development. Situated at an elevation of approximately 1,270 meters above sea level, the city lies on the southern slopes of the Alborz Mountains, which form a natural barrier between the Caspian Sea region to the north and the central plateau of Iran to the south. This geographic position gives Qazvin a semi-arid climate with considerable temperature variations between summer and winter, as well as between day and night.

The Alborz Mountains and Northern Highlands

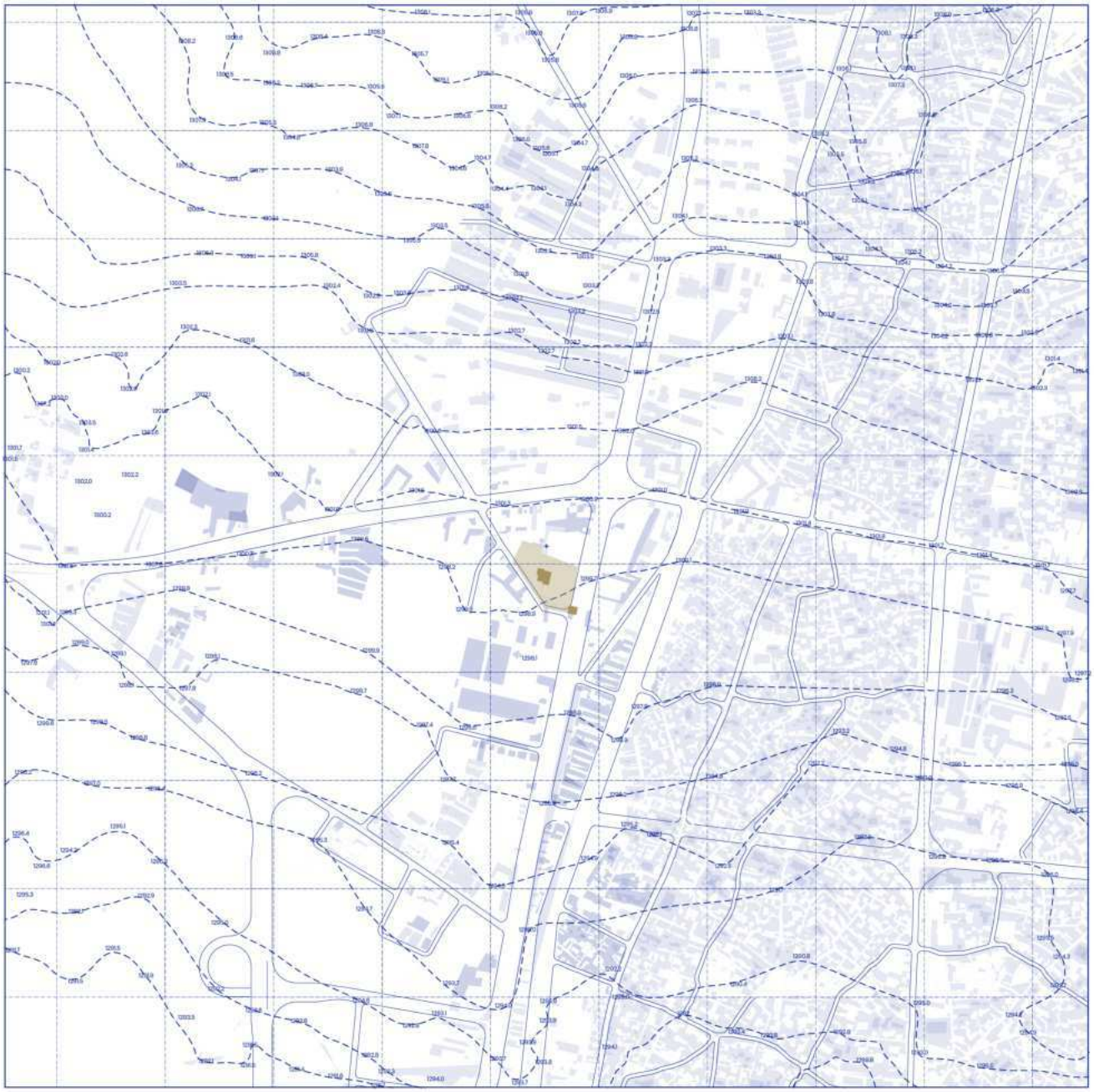
To the north of Qazvin, the towering Alborz mountain range rises dramatically, influencing both the city's weather patterns and its access to water. These mountains act as a shield, blocking moist air masses from the Caspian Sea, which results in less rainfall for the region compared to the northern side of the Alborz. However, the mountain range also provides vital water resources for the city through rivers and streams fed by snowmelt, making irrigation possible for the fertile plains that extend southward.

The foothills of the Alborz create a gently sloping terrain in the northern part of the Qazvin region, leading to more rugged and steep landscapes as one ascends into the mountains. These highlands offer a cooler microclimate and serve as important grazing areas for livestock, as well as being rich in biodiversity.

The Qazvin Plain

South of the city, the topography shifts into the expansive Qazvin Plain, which stretches towards the central Iranian plateau. This plain is a vital agricultural zone, historically known for the cultivation of wheat, barley, grapes, and other crops. The relatively flat terrain and fertile soil, combined with irrigation from mountain-fed water sources, have made the Qazvin Plain an agricultural heartland for centuries. The plain's low-lying areas are susceptible to drought, particularly as Qazvin's semi-arid climate limits the amount of rainfall the region receives annually.

Fig 9.
This topographic map of Qazvin illustrates the city's elevation changes, with a gradient from green (lower elevations) to yellow/orange (higher elevations).




0
200m
1000m
Site
Built Environment
Topography Lines
Roads

2.8 Sound pollution around site

The noise level charts show a clear difference between weekdays and weekends in Qazvin. On working days, noise peaks in the morning and afternoon, driven by “Mechanical Machines” and “Car Repair Shops & Traffic,” which reflect industrial activity and commuter traffic during work hours. These sources make weekdays significantly noisier, especially in urban and industrial areas.

On weekends, noise is generally lower, with “Cemetery Road & Traffic” as the main source, indicating reduced industrial noise and more residential or ambient sounds. This quieter profile on weekends suggests a temporary relief for residential areas from weekday noise, emphasizing the impact of workday activities on overall noise levels in the city.

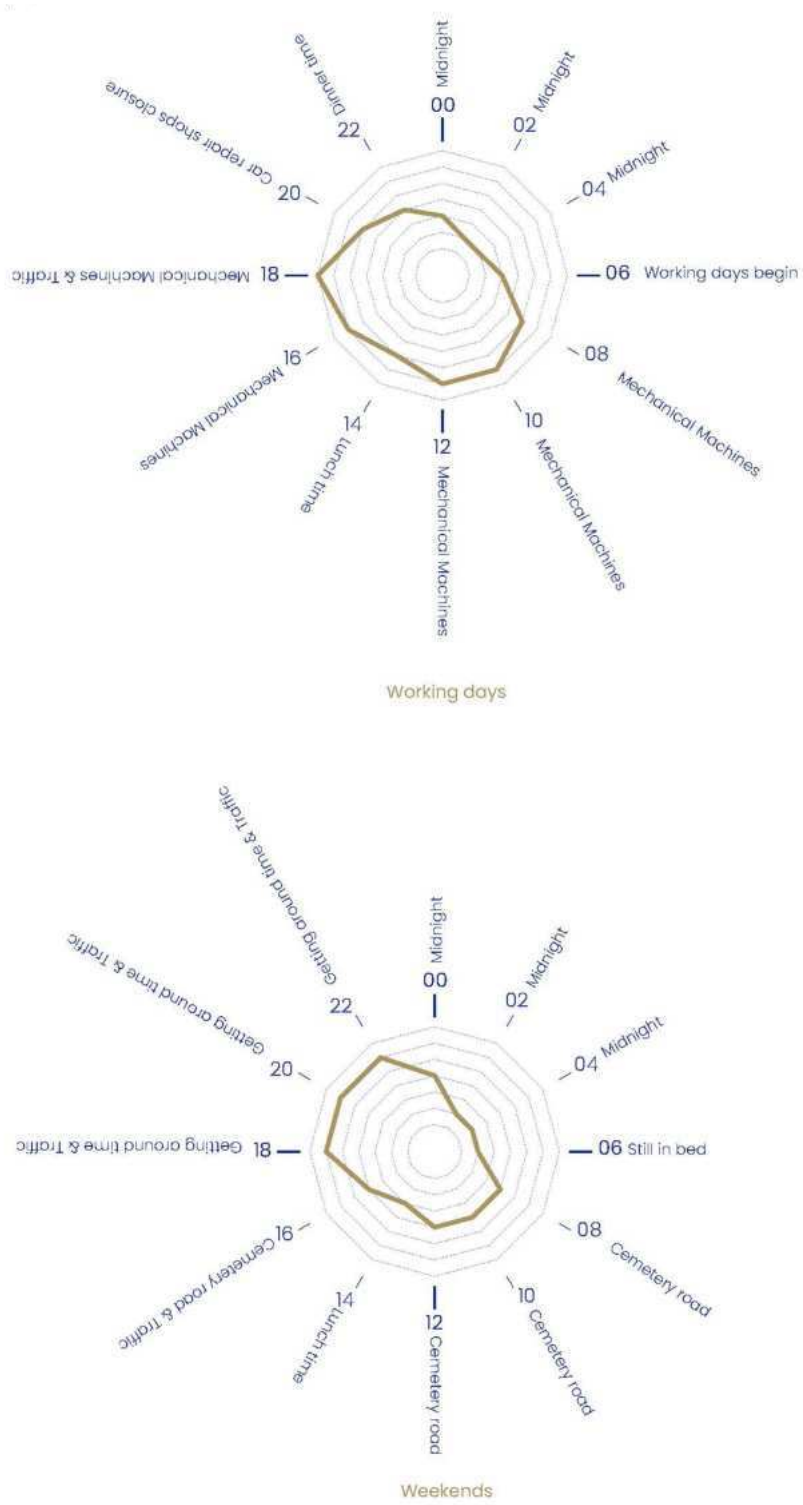


Fig 10.
The noise level analysis for Qazvin shows distinct patterns, with higher noise from mechanical and industrial sources on working days and quieter profiles on weekends. Traffic near the cemetery road dominates weekend noise, reflecting reduced industrial activity and highlighting the impact of weekday work routines on overall urban noise.

These images show the parking lot, the workshop, and the busy street next to our site; as indicated in the noise diagram.

2.9 Aerial View of the Site

Fig 11...
In the earlier images (2011–2016), the site appears as a relatively bare plot with some structural outlines visible. From 2017 onward, there are noticeable increases in surrounding activity, with more defined boundaries and development around the site. By 2020, vegetation or groundwork appears to cover portions of the area, possibly indicating landscaping or preparations for construction. The final images from 2023 and 2024 show a more stable state, with consistent boundaries and structures, suggesting that the site has reached a more permanent state or completion.


2011


2014


2016


2017


2018


2019


2020


2021


2023


2024

Chapter II

URBAN AND ARCHITECTURAL ANALYSIS

URBAN ANALYSIS

Build Environment

Roads

Urban Accessibilities

Public Transportation

Functions

Storey

ARCHITECTURAL ANALYSIS

Phases / Evolution Process

Structure and Materials

Existing Light Level

Vegatation Polygon

In to Out View

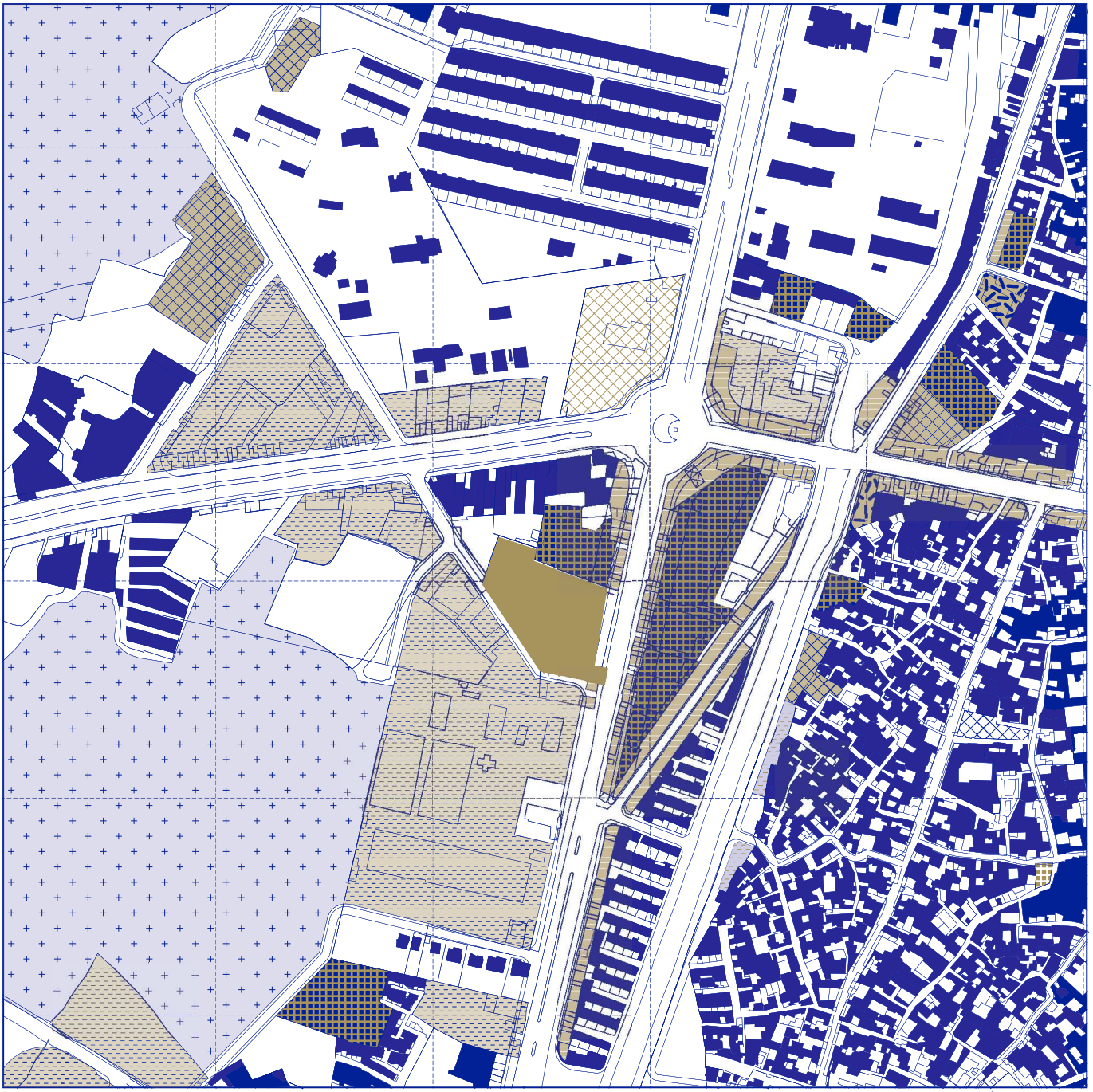
Out to In View

Fig 12.
Asadi Abadi Blvd
Main accessibility to the Site
Images © Shadman Mohammadkhani

Fig 13.
At the moment the forehead space of the site is using for car parks. Whereas in certain traditional architecture, forehead space of public buildings were designed to inject the sense of inhabitation
Images © Shadman Mohammadkhani

Fig 14.
Qazvin's West Terminal
Destinations of these cars are provinces where are located in the north of Iran
Images ⁑ Shadabmehr Mohsen Hadadnejad Kiyani

Fig 15.
Taxi Station
Images ⁑ Shadabmehr Mohsen Hadadnejad Kiyani

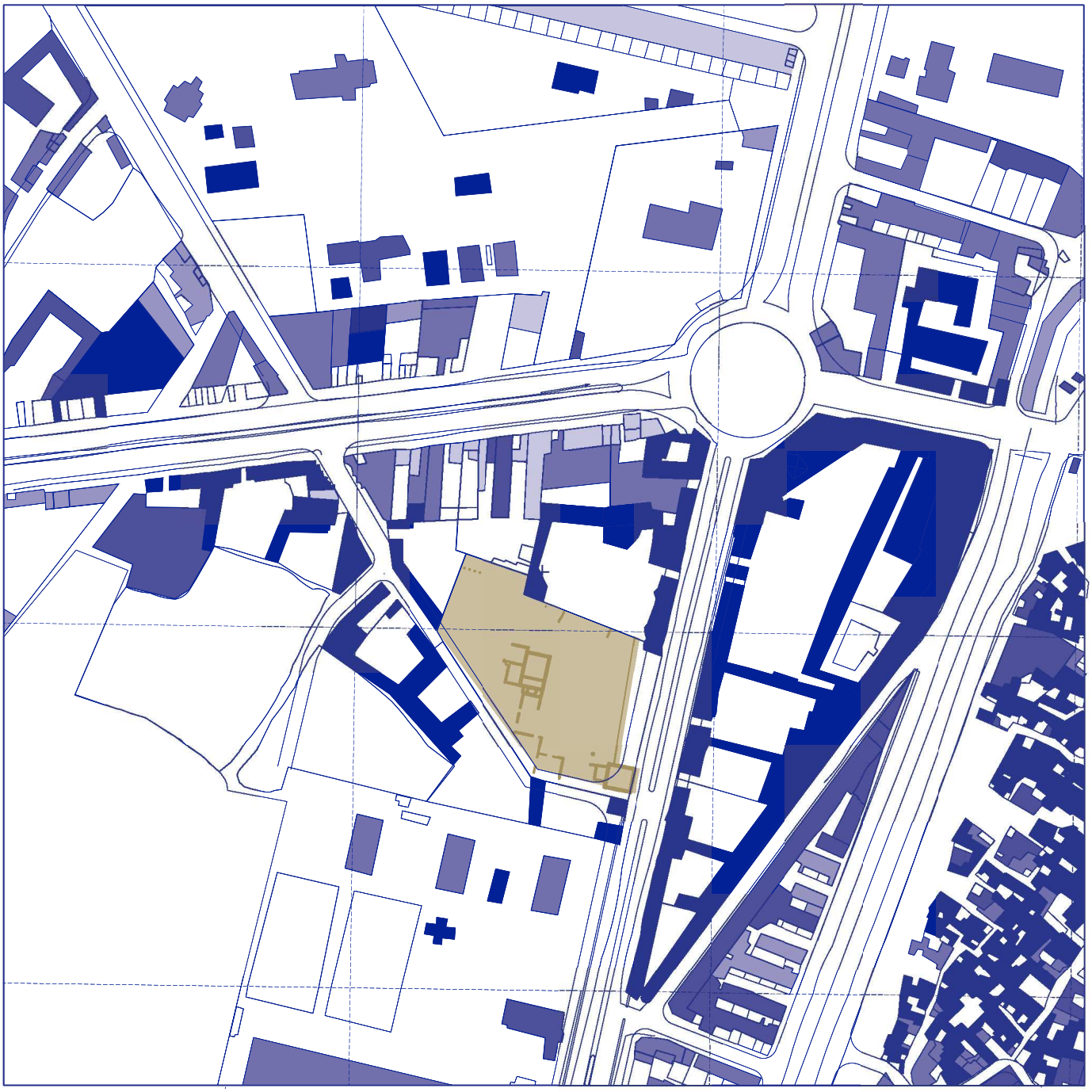


0 100m 500m

Site
Residential
Commercial
Gardens
Industrial
Terminal

Restaurants
Car Garages
Cult Heritage
Educational
Health Care
Parks

BUILDING LEVELS



0 50m 250m

One Story Buildings

Two Story Buildings

Three Story Buildings

Four Story Buildings

Five Story Buildings

Fig 16.
Commercial zone
The majority of stores in the site surrounding includes services like car spare parts
Images © Shademan Mohammadbakhsh

Fig 17.
Car Garages
Images © Shademan Mohammadbakhsh

Fig 18.

Fig 19.

Fig 20.

PHASE III
Date: 1945 AD
By Persian Workers
Area: 2350 m^2
One Storey Buildings

PHASE II
Date: 1941 AD
By Russian Military
Area: 84 m^2
Two Storey Building

PHASE I
Date: 1932 AD
By Russian Military
Area: 1032 m^2
Three Storey Building
Client:
Haj Sadegh MASHINCHIAN

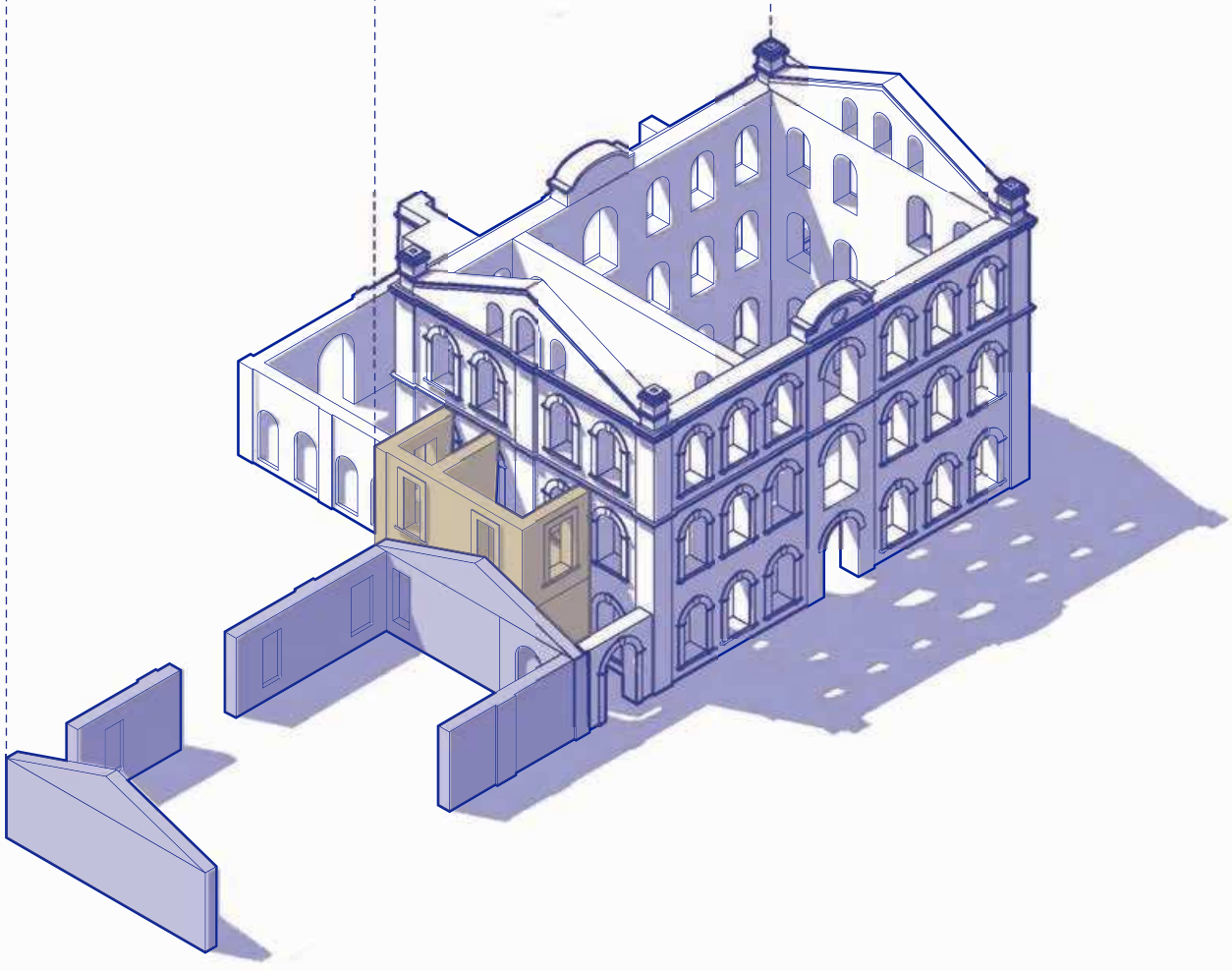


Fig 21 .
PHASE I
Date: 1932 AD
By Russian Military
Area: 1032 m^2
Three Storey Building

Fig 22.
PHASE II
Date: 1941 AD
By Russian Military
Area: 84 m^2
Two Storey Building

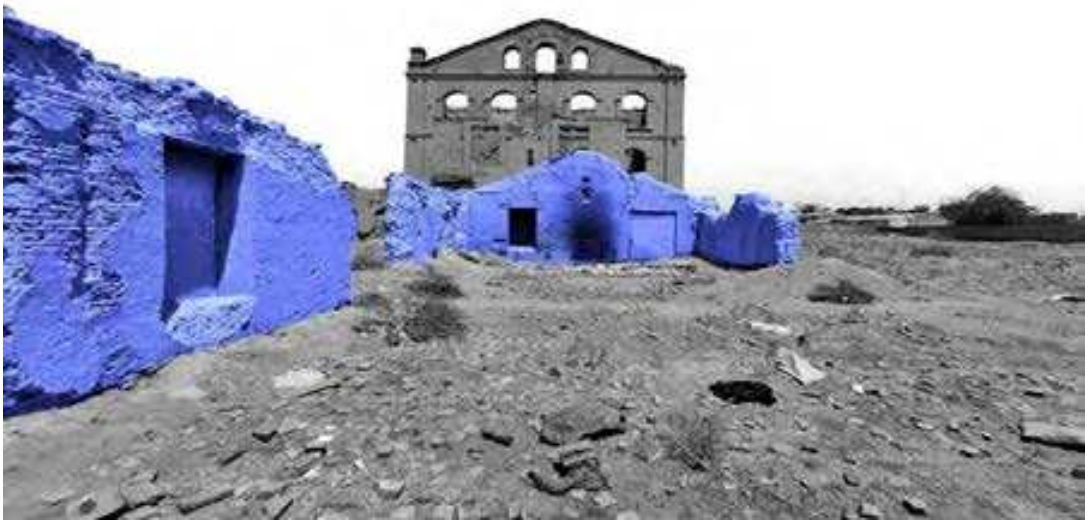


Fig 23.
PHASE III
Date: 1945 AD
By Persian Workers
Area: 2350 m^2
One Storey Buildings

Foundation:

The foundation of the flour factory is typical of Russian industrial buildings from the interwar period, prioritizing durability over sophistication. The foundation is constructed from rubble stone masonry combined with lime-cement mortar, designed to withstand both the freezing-thawing cycles of the region and uneven soil settlement. The rubble masonry extends approximately 40 to 50 cm deep, providing a stable base for the thick brick walls above.

Russian engineers of this period often utilized deep foundation pits filled with gravel and compacted soil, particularly in areas prone to alluvial deposits and unstable soils like Qazvin. This technique helped mitigate the risk of differential settlement, a common issue in industrial buildings of that era.

Load-Bearing Walls:

The walls of the flour factory are massive brick masonry structures, a hallmark of Soviet industrial architecture. Standardized red clay bricks (commonly 25 x 12 x 6.5 cm) are used in the walls, arranged in a Stretcher Bond (Chain Bond) pattern, which provides excellent compressive strength.

The walls are approximately 60–70 cm thick to support the heavy roof structure and machinery inside. The use of lime-cement mortar ensures long-term stability, even in harsh climates. The inner core of the walls may contain reinforcing rubble or broken brick to further enhance load-bearing capacity, a practice seen in Soviet-era factories to reduce construction costs while maintaining strength.

To accommodate large openings, reinforced concrete lintels or steel I-beams are placed above windows and doorways to bear the loads from the masonry above.

Arched Window Openings:

The window and door openings feature segmental arches, a typical element in Russian industrial buildings. These arches are constructed using brick voussoirs, designed to distribute the load around the opening.

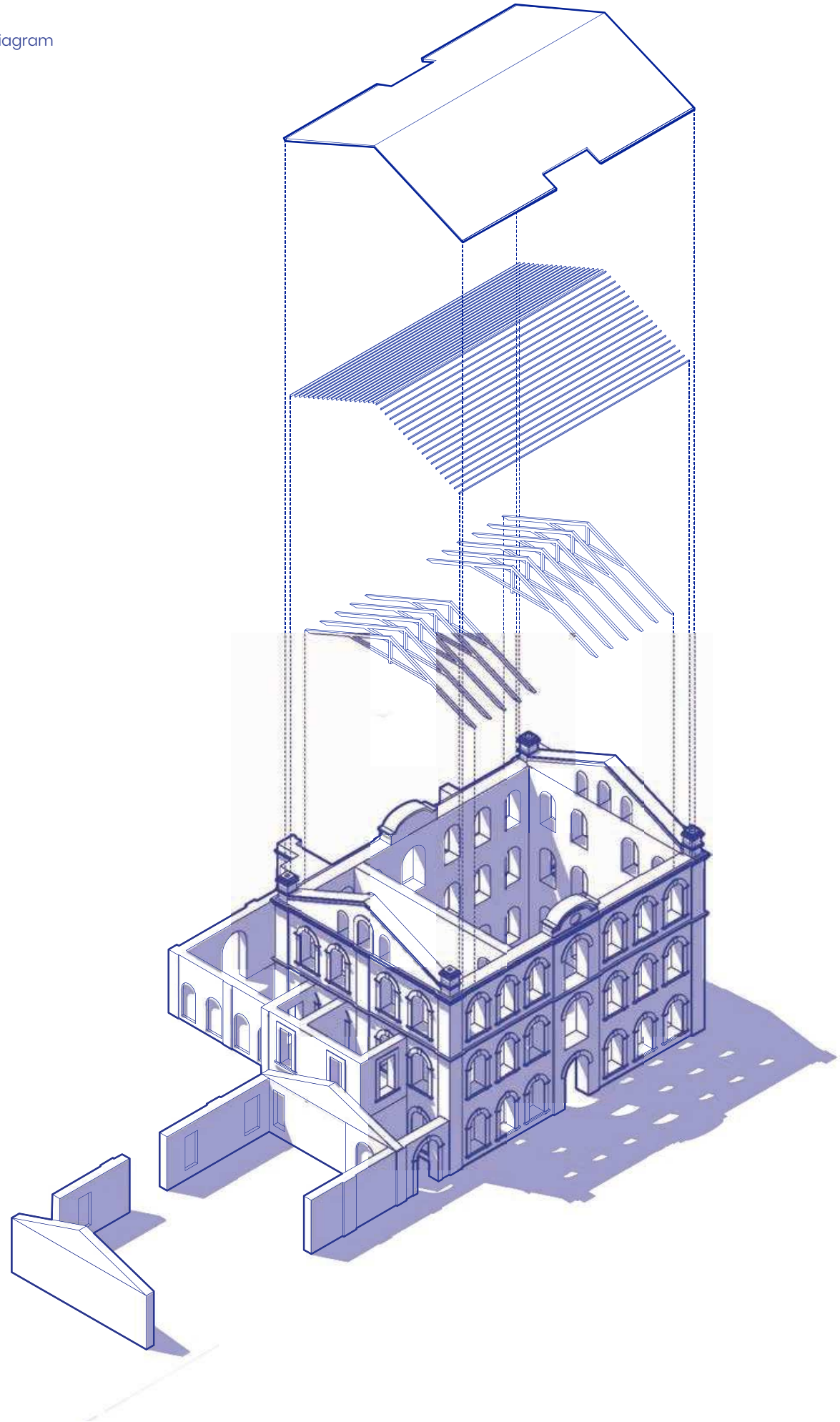
Russian architects during this period favored low-rise arches for window openings to ensure maximum structural stability. These segmental arches have a slight curve, making them easier to construct than full semicircular arches while still efficiently distributing loads.

The windows themselves were often double-glazed wooden frames, designed to retain heat in cold weather, reflecting the practical needs of Soviet industrial buildings.

Roof Structure:

The roof structure is a sloped gable roof supported by wooden trusses,

Fig 22.
Structure diagram



with steel tension rods used for reinforcement. Russian engineers often used prefabricated wooden trusses to speed up construction, with standard designs that could be adapted to various building sizes.

The trusses are connected using metal plates and bolts, a method that ensures both strength and flexibility in the roof structure. Diagonal bracing within the trusses prevents lateral movement and enhances the building's stability under wind and snow loads.

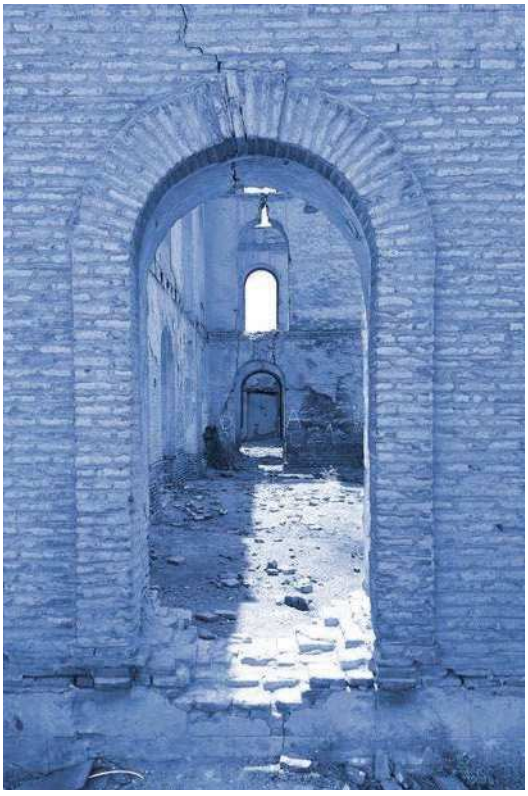
The roof's slope is designed to facilitate snow and rain drainage, critical in Russian-influenced architecture, where buildings needed to withstand heavy precipitation. The roof covering is likely corrugated metal sheets or asbestos-cement tiles, both commonly used in Soviet industrial buildings for their durability and affordability.

Steel Reinforcements:

In line with Russian construction practices of the period, the building incorporates steel reinforcements in key structural elements.

Steel I-beams are used for lintels above wide openings and as horizontal supports within the roof trusses.
Steel tension rods are used to strengthen wooden trusses, ensuring they can bear both vertical and lateral loads.
Steel plates are employed at joint connections in wooden elements to prevent splitting and improve overall stability.

The hybrid use of wood and steel reflects a transitional period in Soviet construction, where traditional materials were enhanced with modern techniques to improve performance.



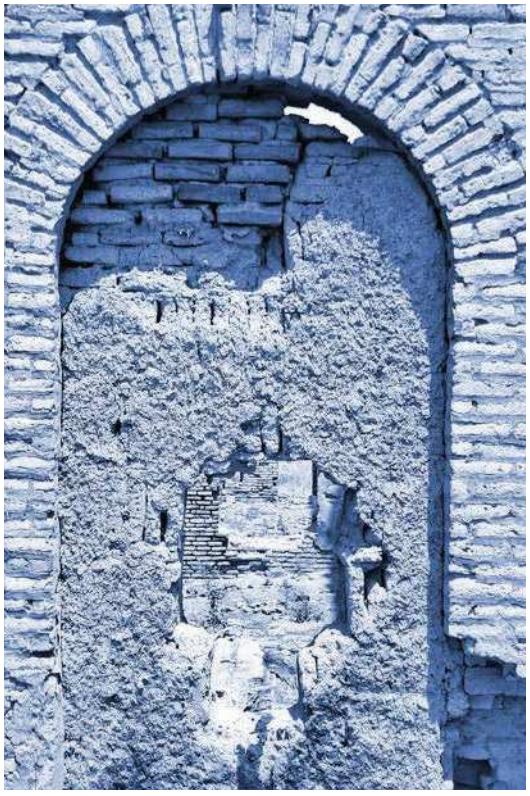


Fig 23, 24.
Bricks and different types of erosion

Roof Covering and Insulation:

The roof covering consists of corrugated metal sheets, a typical material in Russian industrial construction due to its lightweight, weather-resistant, and cost-effective properties. Beneath the metal covering, bitumen or tar paper acts as a waterproof membrane, with a layer of straw or wood shavings used for insulation.

To further improve thermal performance, gravel and clay mixtures were sometimes applied beneath the roof surface, a method known as “Shtukaturka”, which helped regulate indoor temperatures and protect against moisture.

Structural Stability:

The flour factory’s structural stability is achieved through a combination of thick masonry walls, reinforced arches, and a robust roof structure. The use of diagonal bracing in both walls and roof trusses enhances lateral stability, a crucial consideration in Russian industrial buildings to withstand seismic forces and harsh weather.

Fig 25.
Window arches view

The building’s modular design is another hallmark of Russian engineering, allowing for efficient construction and easy maintenance. The repetitive use of standardized elements such as brick sizes, truss designs, and window openings reflects the influence of state-driven industrialization policies that prioritized speed, cost-effectiveness, and durability.

Material Analysis

The primary construction material used in the flour factory is brick masonry, which appears to have been laid using mud mortar or lime-based

mortar, typical of early 20th-century industrial buildings in Iran influenced by traditional construction methods.

Brick (Primary Material)

The dominant building material is fired clay bricks. The bricks are hand-made and vary slightly in size and shape, indicating traditional kiln-firing methods. The surface of the bricks shows signs of wear and weathering, which suggests exposure to the elements over an extended period. This type of brick is solid and provides excellent thermal mass, keeping the building cool during the hot summers and retaining warmth during colder months.

Brick Size: The bricks appear to be similar to standard modular bricks used in traditional Middle Eastern architecture. Their size is consistent with locally made bricks from the region.

Brick Quality: The bricks seem to have been fired at moderate temperatures, resulting in a reddish-brown color. They exhibit good durability, though some bricks show signs of spalling (flaking), likely due to moisture infiltration and freezing-thawing cycles over time.

Fig 26.
Wooden beam

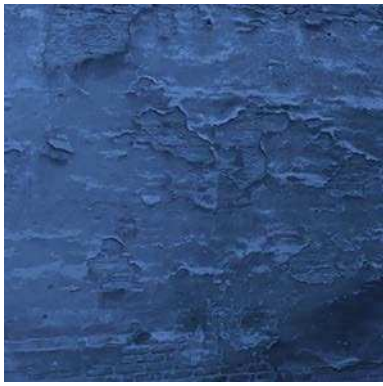
Mortar (Binding Material)

The binding material used between the bricks is likely mud mortar or lime-based mortar, which was common in traditional Iranian construction.

Mud Mortar: Mud mortar was a practical choice in regions where lime was expensive or hard to obtain. It was made from local clay, sand, and water, and it provided adequate binding strength for non-load-bearing walls.

Lime Mortar: There may be sections of the building, particularly load-bearing piers or archways, where lime mortar was used for better structural integrity. Lime mortar has the advantage of being more flexible and resilient to minor movements or settlements in the structure.

Fig 27.
Finishing



Plaster or Mud Coating (Finishing Material)

There are visible traces of plaster or mud coating on the interior walls, which would have been used for weatherproofing and insulation.

Interior Plaster: The inner walls seem to have been coated with a layer of mud plaster to protect the brickwork and reduce dust inside the factory.

Exterior Coating: On the exterior, lime-based or gypsum plaster might have been applied to improve water resistance and provide a smooth finish.

Wooden Elements (Roof Structure)

Although not always visible, based on historical construction practices, it is highly likely that wooden beams were used to support the sloped roof structure.

Timber Selection: The wood would have been locally sourced, most likely pine or cedar, known for their strength, resistance to pests, and ease of availability in the region.

Connection Methods: The wooden beams were likely connected with metal plates, bolts, or nails, a method influenced by Russian and European construction techniques.

Material Condition

The current condition of the materials indicates significant wear and deterioration:

Brick Spalling and Cracks: Many bricks show spalling (surface flaking) due to moisture and freeze-thaw cycles. Additionally, horizontal and vertical cracks in the masonry walls suggest settlement issues and stress over time.

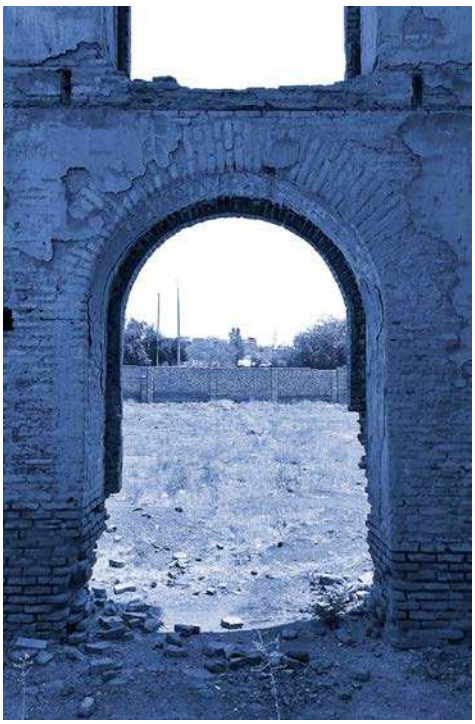
Mortar Erosion: The mortar between bricks has eroded in many places, reducing the binding strength of the walls.

Arch Damage: The arches above the windows and doorways have cracked or partially collapsed, indicating that reinforcement may be required to preserve these openings.

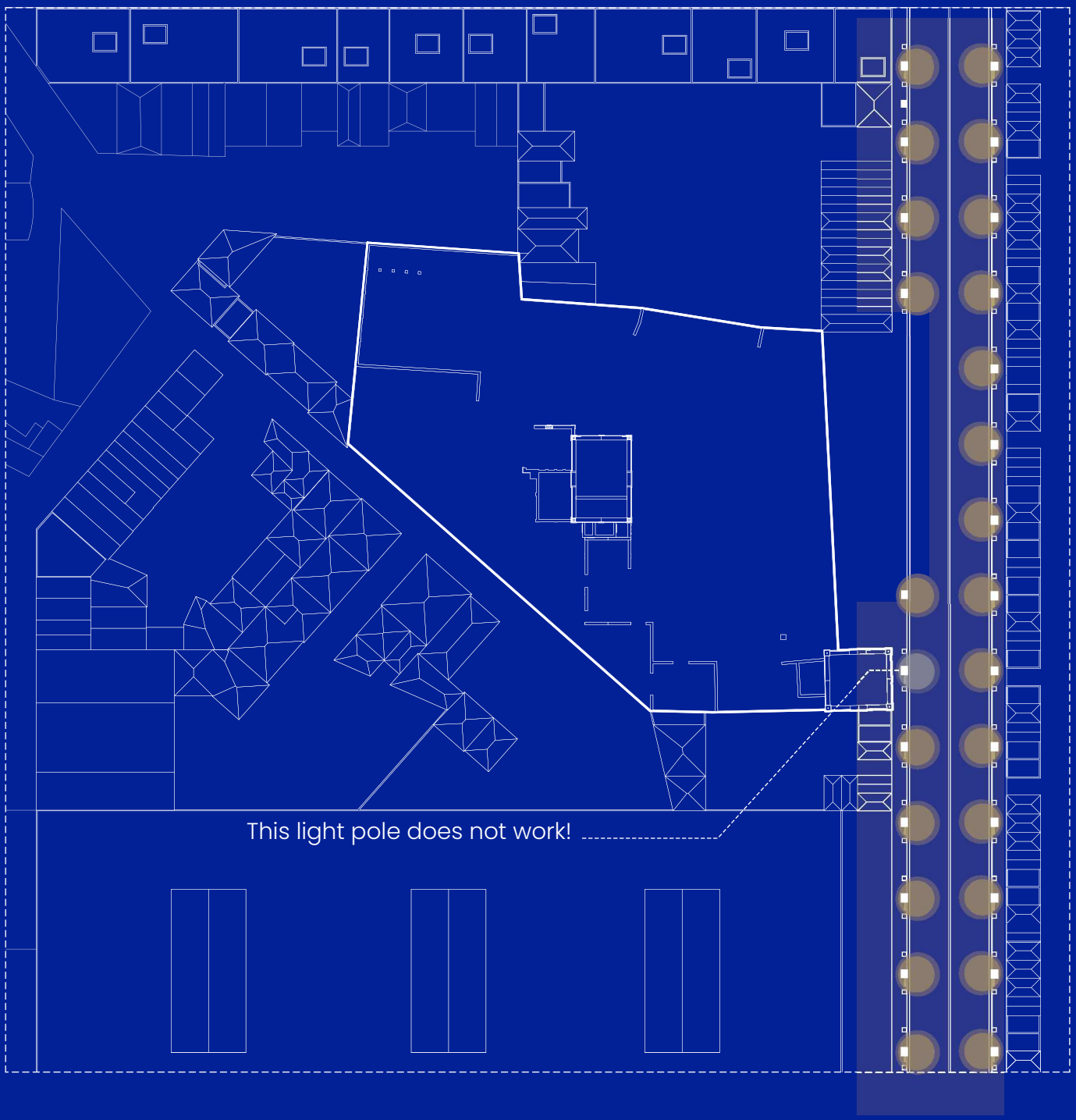
Construction Influences

The materials and construction techniques suggest a blended influence of traditional Iranian craftsmanship and European industrial design, particularly Russian methods from the early 20th century.

This hybrid approach reflects the region's access to local materials like clay and mud, while incorporating modern industrial techniques brought by foreign engineers during the early modernization period.

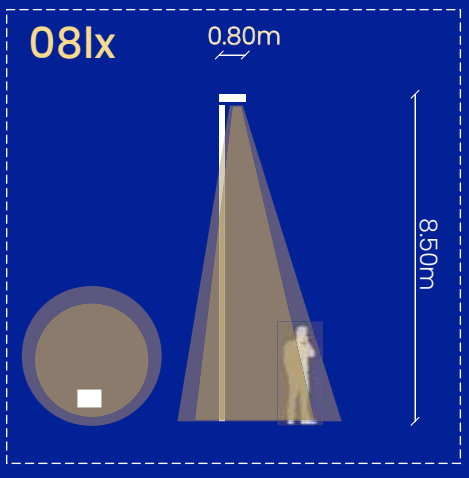


MAP OF EXISTING LIGHT LEVEL

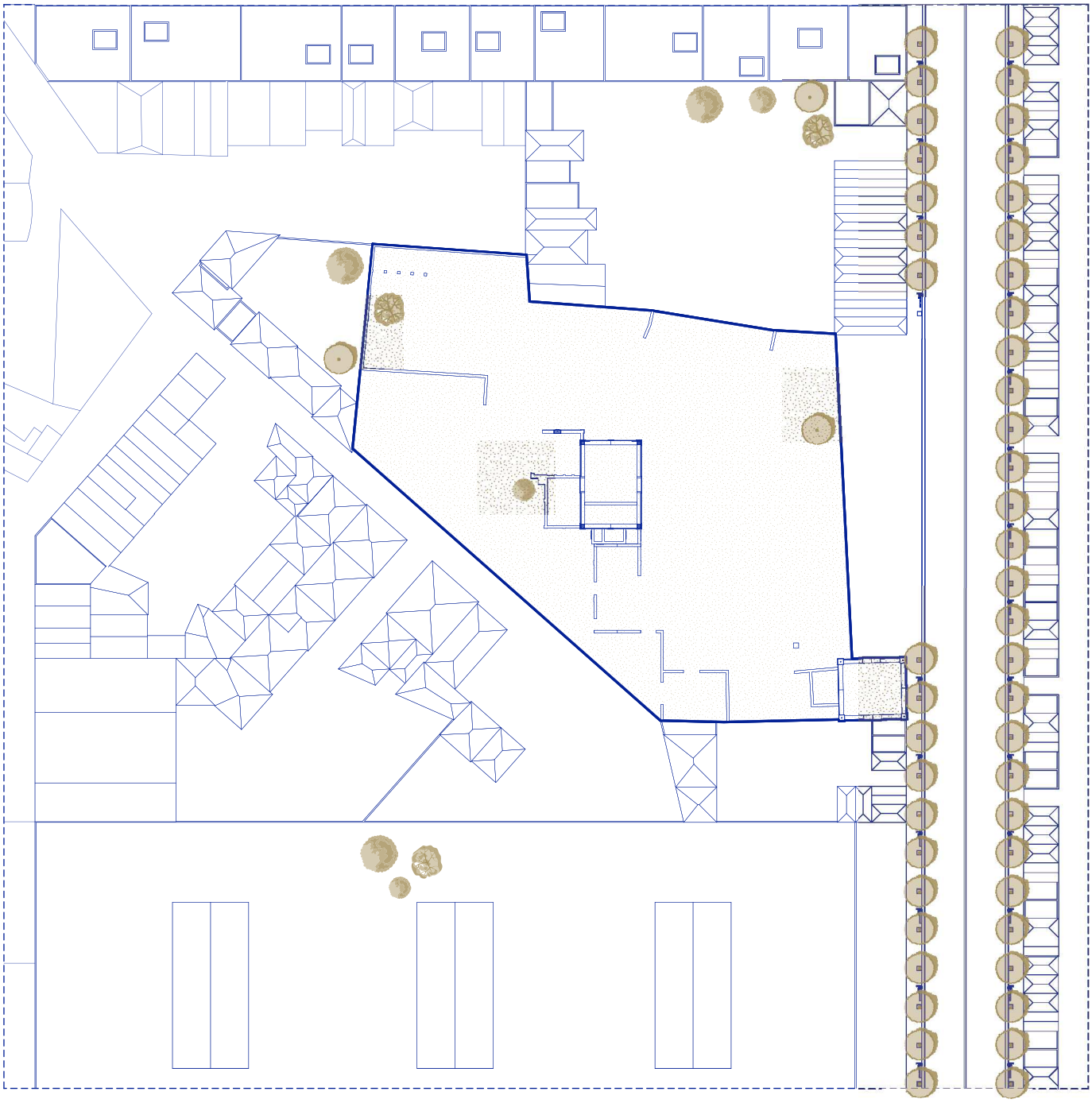


URBAN ANALYSIS

The area is poorly lit, with only a few streetlights providing light. Most of these streetlights have low-intensity bulbs, making the neighborhood feel unsafe, especially at night. The designated site itself has no lighting, and the lights from nearby shops and stores are so dim they don't make any noticeable difference. This lack of proper lighting makes it easy for homeless people to use the site without any monitoring or control.



EXISTING VEGETATION POLYGON



0 20m 100m

Plane Trees

Elm Trees

Weeping Willow Trees

Weed

URBAN ANALYSIS

Fig 26.
Site main street at night
Images © Shaderman
Mohammadtaherkhani

Fig 27.
Site main street at night
Images © Shaderman
Mohammadtaherkhani

Fig 28.
Linear Vegetation on Valiasr Blvd
Images © Shadiehman Mohammadalikhani

Fig 29.
Navab River that located next to the site usually is dried out during summer times
Images © Shadiehman Mohammadalikhani

Fig 30.
Whole of the terrain of the site is covered with weed
Images © Shabbir and Mohammadbhaikhan

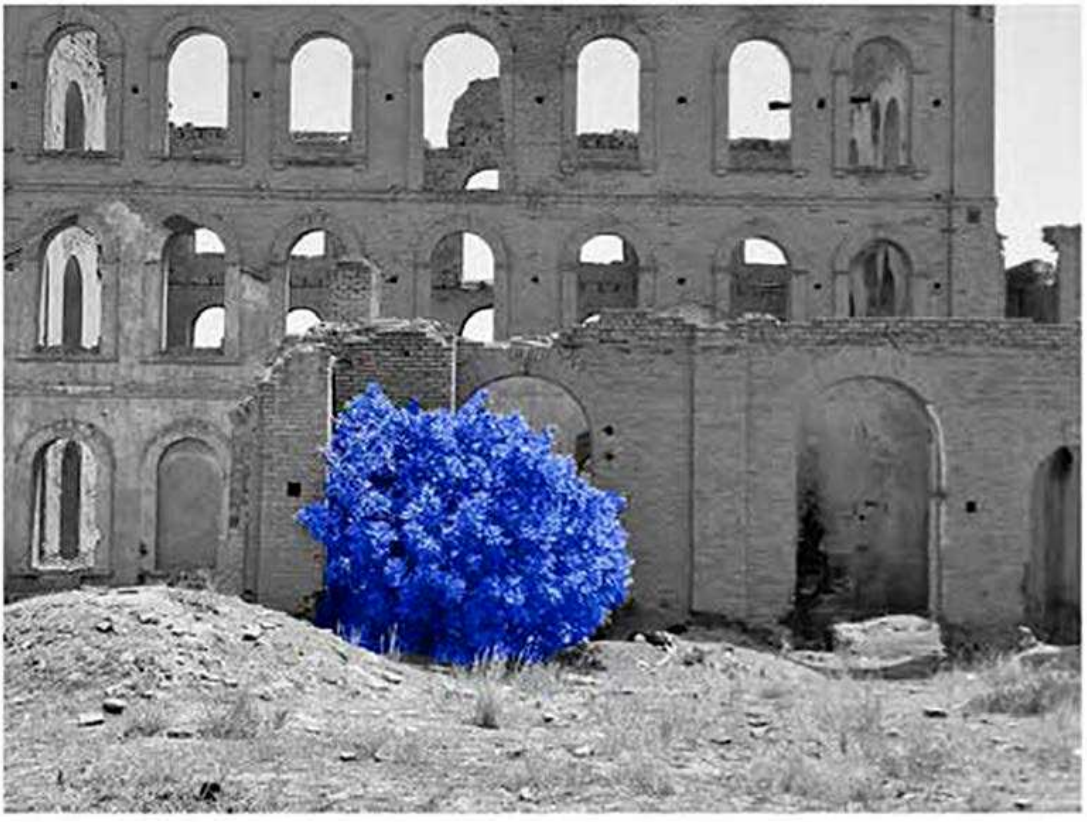


Fig 31.
Elm tree which is grown next to the flour factory
Images © Shabbir and Mohammadbhaikhan

FAUNA POLYGON

Mammals

Dog

Cat

Rat

Reptiles

Beetle

Lizard

Snake

Scorpion

Ant

Birds

Crow

Pigeon

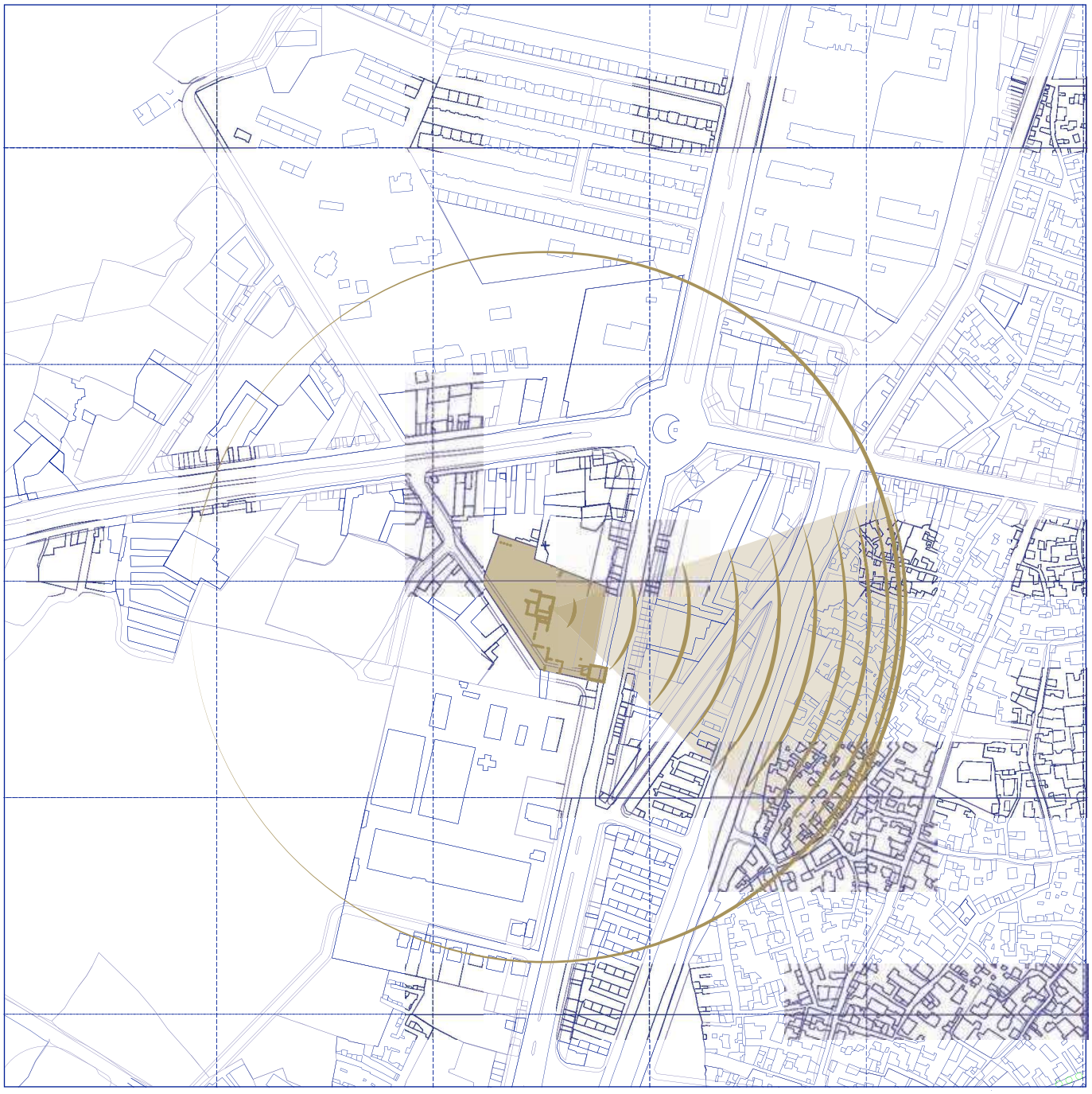
Sparrow

IN TO OUT VIEW

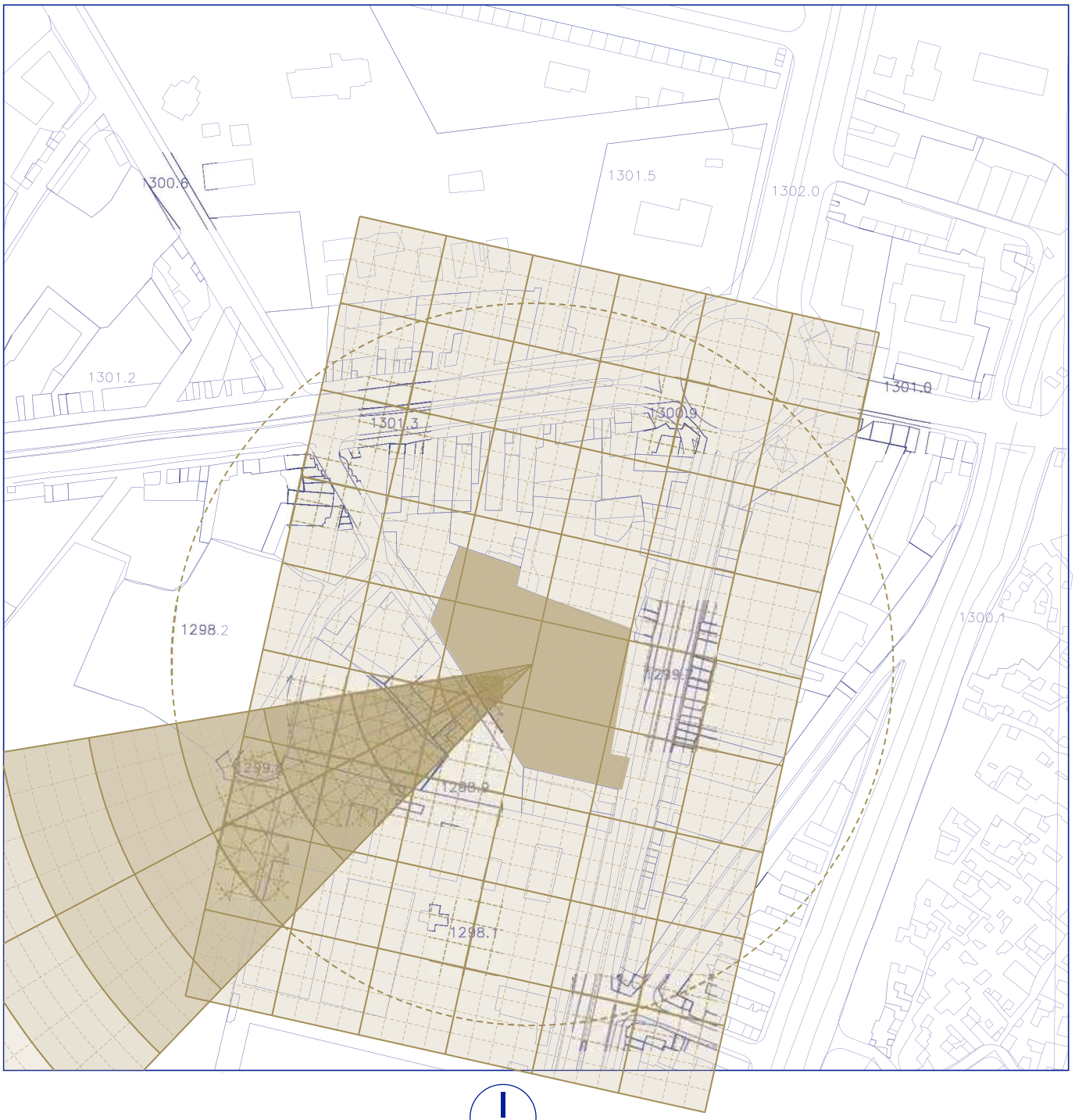
Eye Pleasing View - Almond Gardens

OUT TO IN VIEW

As the site is surrounded by industrial/commercial lands, the main view that can be experienced from outside is from the street.



DOMINANT AXES



0 50m 250m

Site

Main Access Axe

Garden Angle View

Chapter III

HISTORICAL ANALYSIS

QAZVIN'S HISTORY

History of Qazvin: From Ancient Persia to Modern Iran

Foundation and Early History (Pre-Islamic Era)

Islamic Conquest and Early Islamic Period (7th–10th Century)

Qazvin Under the Seljuk Empire (11th–12th Century)

The Mongol Invasion and Ilkhanid Period (13th Century)

Qazvin as the Capital of Persia (Safavid Era: 1555–1598)

Qazvin During the Qajar Era (19th Century)

Occupation Periods: Afghan and Russian Invasions

HISTORY OF FLOUR IN IRAN

From Ancient Times to the Modern Era

The Impact of Flour Factories on Iranian Cities

Urban Expansion and Infrastructure Development

Economic Growth and Employment Opportunities

Flour Factories and Urban Food Security

Social and Political Influence of Flour Factories

The Modern Legacy of Flour Factories

Qazvin: A Flour Hub in Iranian History

History of Qazvin: From Ancient Persia to Modern Iran

Qazvin is one of the most historically significant cities in Iran, having served as a strategic military base, a cultural hub, and even the capital of Persia during the Safavid dynasty. Its location on the ancient Silk Road made it a vital link between different civilizations, and its history is marked by conquests, periods of prosperity, and cultural achievements that continue to shape its identity today.

Foundation and Early History (Pre-Islamic Era)

The origins of Qazvin trace back to the Sasanian Empire, one of the most powerful Persian empires before the advent of Islam. The city was founded by Shapur I (r. 240–270 CE), a prominent Sasanian king, who established it as a fortified settlement to defend against nomadic invasions from the northern plains. The city was initially known as Shad Shāhpūr, meaning "Happy City of Shapur." It was strategically positioned to protect the empire's northwestern borders and serve as a military base, reflecting its early importance as a defensive outpost. The city's fertile plains also supported agricultural production, making it a vital economic center.

The region's importance grew due to its location along trade routes connecting Persia to the Caucasus and Central Asia, particularly the Silk Road. This geographic advantage brought merchants and travelers to Qazvin, turning it into a bustling trade hub even before the Islamic conquest.

Islamic Conquest and Early Islamic Period (7th–10th Century)

Qazvin played a pivotal role in the early Islamic conquests of Persia. After the Battle of Nahavand in 642 CE, which marked the decisive defeat of the Sasanian Empire, Qazvin was conquered by Muslim Arab forces in 644 CE. It quickly became a key military outpost for Arab armies advancing further into northern Persia and the Caucasus.

During the Abbasid Caliphate (750–1258 CE), Qazvin's importance as a military and administrative center increased. The caliphs ordered the construction of fortifications around the city to protect against attacks from Deylamite tribes from the northern mountains. These fortifications turned Qazvin into a garrison town, with soldiers stationed there to protect the borders of the Islamic empire.

In the 9th and 10th centuries, Qazvin began to grow culturally, becoming a center of Islamic learning and theology. It attracted scholars, religious figures, and poets, many of whom contributed to the development of Islamic jurisprudence and literature.

Qazvin Under the Seljuk Empire (11th–12th Century)

Under the Seljuk Empire (1037–1194 CE), Qazvin continued to flourish. The Seljuks, originally from Central Asia, established one of the most powerful empires in the Islamic world, with Qazvin serving as an important stop on their trade and military routes. The Seljuk rulers constructed madrasas (Islamic schools), mosques, and other public buildings, contributing to the city's ar-

chitectural and educational development.

The Mongol Invasion and Ilkhanid Period (13th Century)

The Mongol invasion of Persia in the 13th century had a devastating impact on Qazvin, as it did on much of the region. Genghis Khan's forces destroyed many Persian cities, including Qazvin. However, under the Ilkhanid dynasty (a Mongol successor state that ruled Persia), Qazvin was rebuilt and regained some of its prominence. The Ilkhanids fostered cultural and artistic development, which led to the construction of new mosques and public buildings in the city.

Qazvin as the Capital of Persia (Safavid Era: 1555–1598)

One of the most significant periods in Qazvin's history came during the Safavid dynasty (1501–1736 CE). In 1555, Shah Tahmasp I, the second Safavid ruler, chose Qazvin as the capital of Persia, moving it from Tabriz. The decision was made to protect the capital from Ottoman invasions, as Qazvin's location was considered more secure and central.

During its time as the capital, Qazvin underwent a cultural renaissance. The Safavids built palaces, gardens, mosques, and bazaars, many of which remain important historical landmarks today. The Chehel Sotoun Palace (not to be confused with the one in Isfahan) was constructed during this period, symbolizing the city's political and cultural importance.

In 1598, Shah Abbas I moved the capital to Isfahan, marking the end of Qazvin's status as the capital. However, the city remained an important regional center throughout the Safavid era.

Qazvin During the Qajar Era (19th Century)

In the 19th century, under the Qajar dynasty (1789–1925), Qazvin regained some of its importance as a strategic military base. The city served as a key gateway to Tehran, the Qajar capital, and played a role in protecting the northern borders of Persia.

Fig 32.
Russian soldiers in streets of Qazvin during the occupation

During this period, Qazvin became known for its traditional arts and crafts, including calligraphy. It earned the title of the calligraphy capital of Iran, a reputation it still holds today.

Occupation Periods: Afghan and Russian Invasions

Throughout its history, Qazvin experienced foreign occupations during times of political instability. In 1722, Afghan forces invaded and occupied the city during the decline of the Safavid dynasty. The city also endured Russian occupation

during World War I (1914–1918) and again during World War II (1939–1945). These occupations had significant impacts on the city's social and economic fabric.

History of flour in Iran

The history of flour in Iran is closely tied to the broader history of agriculture and food production in the region. As one of the ancient centers of civilization, Iran has a rich tradition of cultivating grains, particularly wheat, which has been a staple food for thousands of years. The production of flour, essential for making bread, the most common food across Iranian culture, has evolved over millennia in both technology and significance. This chapter will explore the history of flour production in Iran and will then focus on the city of Qazvin, highlighting its contributions to this essential aspect of Persian life.

Early History of Flour in Iran

The History of Flour in Iran: From Ancient Times to the Modern Era

Flour production in Iran is deeply rooted in the country's ancient agricultural practices. Iran, as one of the cradles of early human civilization, has long been a center for the cultivation of grains such as wheat and barley. The development of flour milling techniques over thousands of years reflects the broader societal, technological, and economic changes in the region. As Iran transitioned from traditional hand-milling to industrial flour production, cities like Qazvin played an important role in supporting the nation's food supply. This chapter will explore the evolution of flour in Iran from ancient times through the 20th century, with a particular focus on the rise of flour factories and their impact on Iranian cities.

Ancient Origins of Flour Production

Iran's agricultural history dates back to the Neolithic era when early inhabitants domesticated wild grains. Archaeological evidence suggests that by 8000 BCE, early Iranians were cultivating wheat and barley and grinding these grains into flour using stone tools. Flour was a critical part of daily life, used to make bread, which became a staple in the Persian diet.

As civilizations flourished in the region, particularly during the Achaemenid Empire (550–330 BCE), flour production became more organized and widespread. Grains were stored in vast silos, and flour mills began to emerge in key cities and agricultural hubs. In this era, bread not only served as a primary source of sustenance but also as a symbol of abundance and community. The process of grinding grain into flour was labor-intensive and typically done by hand or with the help of animals.

Flour in the Islamic Golden Age

By the Islamic Golden Age (7th to 13th centuries), flour production in Iran experienced significant advancements. Water-powered mills were introduced, making the process of grinding grains faster and more efficient. These mills, often built along rivers and streams, became essential to local economies, particularly in grain-rich regions such as Qazvin, Esfahan, and Shiraz. The availability of flour in greater quantities allowed for the development of various types of bread, which became an integral part of Persian cuisine.

The production and distribution of flour became a vital part of urban life. Iranian cities grew and flourished in part because of their ability to efficiently supply their populations with staple foods, especially bread. As cities expanded, so did the need for more advanced flour milling techniques. Flour and Flour Factories in the 1900s

The 20th century brought about profound changes in flour production in Iran. The industrial revolution and the advent of new technologies led to the mechanization of flour production. By the early 1900s, Iran began to see the development of modern flour factories, particularly in major urban centers. These factories used steam and later electricity to power mills, dramatically increasing the volume of flour produced.

With the rise of flour factories, cities like Tehran, Mashhad, and Qazvin became key centers for flour production and distribution. In particular, Qazvin, with its agricultural strength and access to trade routes, played a significant role in feeding the population. The establishment of flour mills in these cities allowed for the mass production of bread, which was essential to feeding growing urban populations during the Pahlavi era (1925–1979).

In the 1930s and 1940s, the Iranian government began to recognize the importance of industrializing food production to ensure food security. Flour factories became central to this effort. By the mid-20th century, many traditional water-powered mills had been replaced by large-scale industrial factories. The move toward industrialized flour production had a profound impact on Iran's cities, transforming them into centers of economic activity and helping to modernize the nation's food supply system.

The Impact of Flour Factories on Iranian Cities

The industrialization of flour production in the early 20th century marked a significant turning point for urban development and socio-economic changes in Iran. Flour factories not only revolutionized food production but also became engines of urbanization, economic growth, and infrastructural development. This transformation was especially impactful in major cities, where the demand for food, particularly bread, grew as populations expanded rapidly.

Urban Expansion and Infrastructure Development

The establishment of flour factories in Iranian cities required a robust network of infrastructure to support the entire supply chain, from grain procurement to flour distribution. This spurred the development of modern roads, railways, and storage facilities. Cities like Tehran, Qazvin, Esfahan, and Tabriz became central hubs where grain was brought from rural areas, processed in modern factories, and then distributed to local markets and beyond.

The construction of flour factories often necessitated the building of specialized facilities, such as large grain silos and warehouses for flour storage. In Qazvin, for example, the development of these industrial sites spurred the expansion of the city's transportation network. Roads that linked Qazvin to surrounding agricultural regions were improved to facilitate the movement of raw materials and finished products, and the rail network was extended to allow for faster and more efficient transport to other cit-

ies in Iran.

This infrastructural expansion wasn't limited to the transportation of goods. Cities with flour factories also needed better energy resources, leading to the development of electric grids to power the new industrial sites. This industrialization created ripple effects, modernizing not only flour production but also the overall urban landscape.

Economic Growth and Employment Opportunities

Flour factories became important economic drivers for Iranian cities, as the industrialization of food production provided new opportunities for employment and business growth. Flour production was labor-intensive, requiring workers for various roles, including mill operators, engineers, laborers, transporters, and administrative staff.

Many cities saw an influx of rural populations moving into urban areas to seek employment in these factories. For instance, in Qazvin, a city historically rooted in agriculture, the development of modern flour mills shifted the local economy toward industrialized food production. As a result, more jobs were created in the city, attracting workers not only from Qazvin's surrounding rural areas but also from other parts of Iran. This migration contributed to urban population growth and increased demand for housing and services in these cities.

The economic impact of flour factories extended beyond the factory walls. Supporting industries, such as packaging companies, transportation businesses, and bakeries, also grew around these factories. Cities like Tehran and Mashhad, home to some of Iran's largest flour mills, became centers for related industries. The success of flour production boosted the local economy by encouraging the growth of small businesses and increasing commerce in urban areas.

Flour Factories and Urban Food Security

One of the most critical roles of flour factories was in ensuring food security for Iran's growing urban populations. As cities expanded, particularly during the reign of the Pahlavi dynasty in the early to mid-20th century, the demand for bread, the primary food staple in Iran, surged. Flour factories allowed cities to produce enough flour to meet this demand and ensure a steady supply of bread to the population.

Before the industrialization of flour production, bread shortages were a common problem in Iran, especially in times of drought or political instability. Traditional mills, dependent on water or animal power, could not produce enough flour to sustain large populations. With the advent of mechanized flour mills, production increased exponentially, helping to stabilize the supply of flour and, by extension, bread.

During World War II, when Iran faced food shortages due to global disruptions in trade, flour factories played a crucial role in feeding the population. The Iranian government implemented rationing programs, with flour being one of the most tightly controlled commodities. Factories ramped up production to meet the needs of urban centers, and the ability to produce flour locally reduced the country's dependence on imported grain

and flour.

This focus on food security was not just a wartime issue. Flour production continued to be a cornerstone of urban sustenance through the 20th century, particularly in the face of Iran's rapid urbanization during the 1960s and 1970s. The ability of cities like Qazvin, Tehran, and Shiraz to produce their own flour and distribute it efficiently was critical in maintaining stability, as bread remained a staple food in every household.

Social and Political Influence of Flour Factories

Flour, as a basic food commodity, held a powerful socio-political significance in Iran. The price and availability of bread directly influenced the political landscape, particularly during periods of economic hardship. Flour factories, as key producers of this essential good, were often caught at the intersection of politics and society.

For instance, during the reign of Mohammad Reza Shah Pahlavi, the government subsidized flour and bread production to keep prices low and maintain social stability. Bread riots had occurred periodically throughout Iranian history when flour prices spiked or bread became scarce, so controlling flour production and distribution became a priority for the state. Flour factories were thus not just industrial entities; they became essential components of the state's ability to maintain control over urban populations.

The importance of flour was also evident in times of political unrest, particularly during the Islamic Revolution of 1979. As the political situation deteriorated, the availability of basic goods like flour became a point of contention. Factories, which were often symbols of the Shah's push for modernization and industrialization, were both vital to the population and targets of revolutionary action. Flour production and distribution were critical issues in the lead-up to the revolution, as ensuring the people had access to food became a matter of both survival and political power.

The Modern Legacy of Flour Factories

Today, flour factories continue to play an important role in Iranian cities, although they have undergone significant modernization. Many of the large industrial mills that emerged in the mid-20th century have been upgraded to keep up with advances in milling technology and the increasing demands of a growing population. In cities like Qazvin, flour production remains an integral part of the local economy, with modern mills exporting flour to other regions of Iran and even internationally.

Qazvin: A Flour Hub in Iranian History

Qazvin, located northwest of Tehran, has been a significant city throughout Iran's history. Known for its strategic location along important trade routes, including the Silk Road, Qazvin has played a key role in agricultural production, including the cultivation of grains and the production of flour. The city's fertile plains, irrigated by rivers from the Alborz mountains, made it an ideal place for growing wheat and other grains. By the Safavid era (16th–18th centuries), Qazvin had become the capital of Iran and a center of trade, culture, and agriculture. Flour production was integral to the city's

economy, as local farmers harvested wheat and brought it to mills within and around the city. These mills were often powered by the abundant water sources of the region.

Qazvin's history as a breadbasket for Iran can be traced through its numerous traditional bakeries and local bread varieties, many of which rely on flour produced from locally grown wheat. The city is particularly famous for its high-quality "Sangak" bread, a type of flatbread baked on hot stones, which has been a staple food for centuries. The careful production of flour in Qazvin was essential to making the dough that would create this beloved bread.

In the modern era, Qazvin remains an important center for flour production. Industrial flour mills have replaced many of the traditional water-powered mills, but the region's deep connection to grain cultivation and flour production continues. The flour produced in Qazvin is used in a wide variety of foods, from everyday bread to regional pastries and sweets.

Chapter IV

SOCIAL AND CULTURAL ANALYSIS

CULTURAL AND SOCIAL IMPACT

The site, once a thriving industrial hub, carried the pulse of a diverse working-class community. Flourishing with activity, it embodied the spirit of productivity, drawing workers from various backgrounds, each contributing to the city's economic and cultural fabric. Over time, however, the once-bustling complex fell into disuse, becoming a silent remnant of a bygone era. With its machinery stilled and its purpose forgotten, the site gradually decayed into a shadow of its former self—an abandoned shell standing in stark contrast to the vitality it once held.

In its abandonment, the site transformed into a refuge for society's most vulnerable. By night, it shelters at least fifty individuals—homeless people and addicts—who seek solace in the underground storage spaces once used for flour reserves. These forgotten spaces, now resembling subterranean cavities, provide temporary shelter, though they also embody the harsh reality of urban neglect. The very architecture that once stored essential provisions has become a place of survival for those on the margins of society.

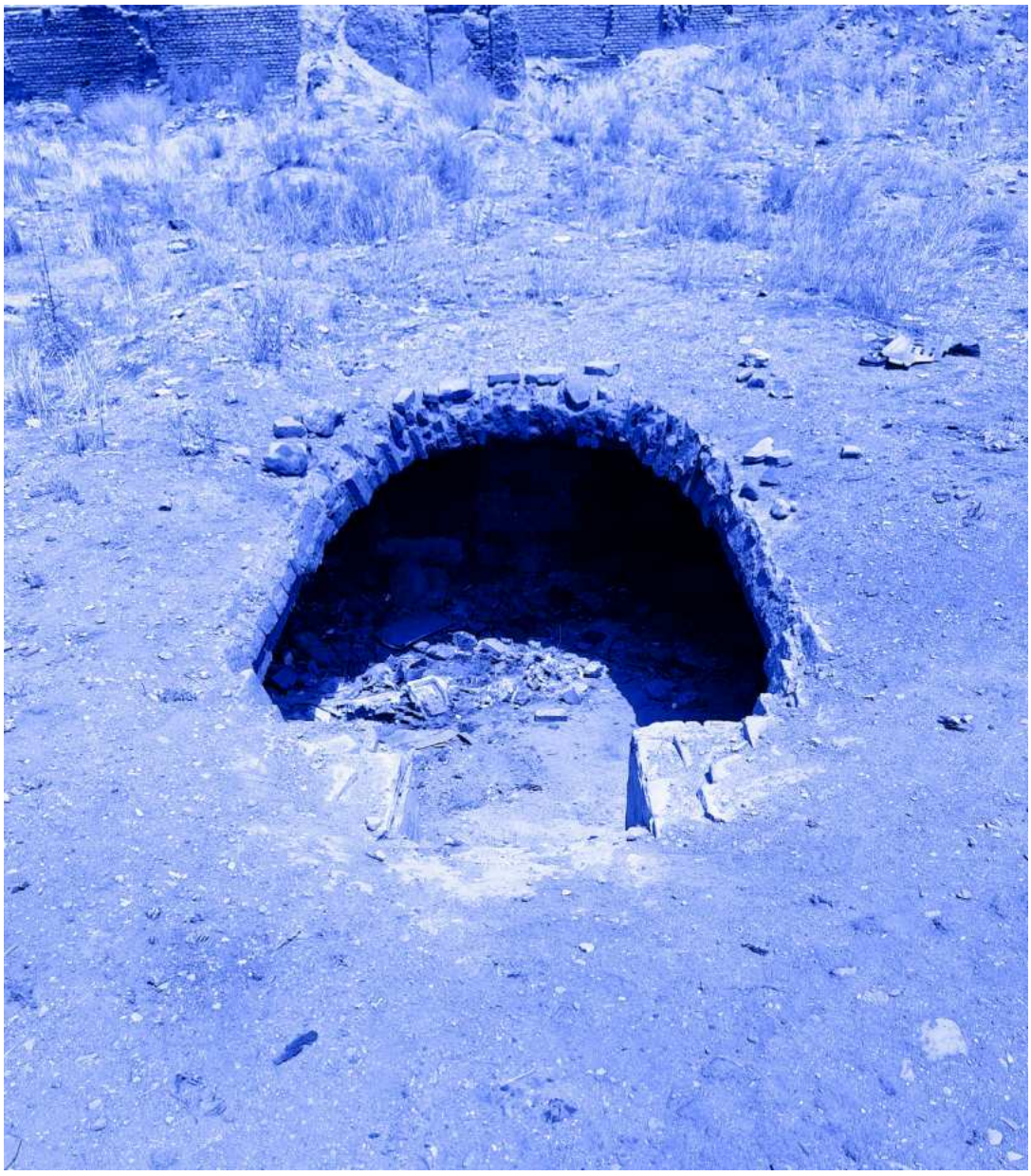


Fig 33.
Underground storage spaces

Fig 34.
A homeless addict, standing near the only damaged enterance of the site

Efforts to secure the site have turned it into a fortified exclusion zone. Glass barriers, barbed wire, and other obstacles have been erected around its perimeter, turning the once-open industrial grounds into a defensive no-go zone. However, these measures have proven insufficient. Persistent attempts to breach the barriers have led to the creation of access points where the fortifications have been damaged or destroyed. The site, despite being officially sealed off, remains permeable to those determined to enter—a striking commentary on the city's ongoing struggle with

Fig 35.
Used needles and other dangerous substances

marginalization and displacement within the urban fabric.

The social composition of the area further reflects the broader cultural and economic dynamics at play. The district is predominantly male-dominated, with numerous workshops, car repair garages, and mechanical services lining the streets. The heavy presence of industrial trades reinforces a culture where the majority of daily activity revolves around traditionally male-dominated labor. Roughly 80% of the passerby population consists of men, while women and children are significantly less visible in the area. This gender imbalance creates a stark atmosphere, one that feels harsh and unwelcoming to those outside of the prevailing industrial culture. It is not merely a function of space but also a cultural expression—where visiting workshops and mechanics remains a largely male-oriented practice

due to longstanding social norms.

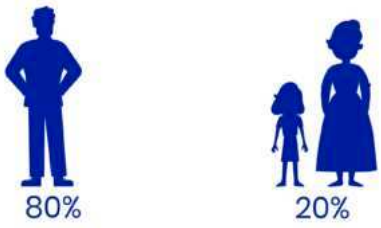


Fig 36.
Passerby diagram

Surrounding the site, the residential landscape paints a picture of economic disparity. The adjacent neighborhoods consist primarily of older,

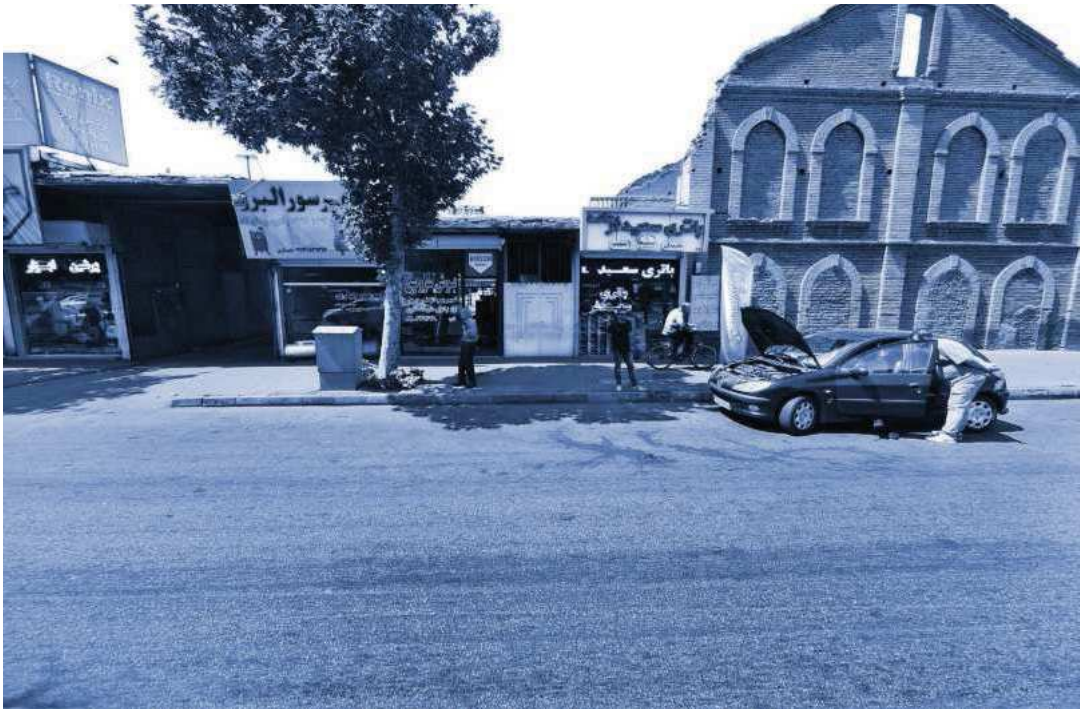


Fig 37.
Mechanic shops

Fig 38.
A dried-out rive/water canal that is full of garbage and homeless people

low-cost housing stock, reflective of a socioeconomic profile dominated by lower-income families and immigrant communities. These aging buildings, often in disrepair, provide affordable housing options for those with limited means. The architecture of these residential units—simple, utilitarian, and devoid of aesthetic refinement—tells a story of survival rather than prosperity. This lack of investment in the built environment further underscores the area's marginal status within the broader urban context.

In essence, the site and its surroundings highlight the intersection of architectural abandonment and social neglect. The decay of industrial heritage, combined with the socio-economic struggles of the surrounding commu-

Fig 39.
Overlooked urban plannig has exacerbated the chaotic situation

nity, has transformed this once-vibrant area into a contested space—a place that oscillates between forgotten history and harsh contemporary realities. The juxtaposition of crumbling structures, defensive barriers, and underground shelters creates a layered narrative of exclusion, survival, and resilience within the evolving urban landscape. The challenge lies in how to reintegrate such spaces into the city's cultural and social life, transforming them from zones of exclusion into places of opportunity and human dignity.

Chapter V

INTERVIEW AND SURVEY

INTERVIEW:

Maryam Sarrafha

Renowned Pastry Chef | Culinary Educator | Co-founder of Armani Restaurant

SURVEY:

Public Survey

Interview with Maryam Sarrafha

Renowned Pastry Chef | Culinary Educator | Co-founder of Armani Restaurant

Interviewer: Thank you for your time, Ms. Sarrafha. To begin, how would you describe the current atmosphere of Qazvin, especially when it comes to cultural life and opportunities for the younger generation?

Sarrafha: It's my pleasure. I would say Qazvin is at a crossroads. We have a rich history, but sometimes that feels hidden behind industrial decay and missed opportunities. The younger generation here is talented, but many feel they have to leave the city to grow, especially in creative fields. That's something we need to change if we want to protect our culture.

- Do you think there's been enough effort to preserve Qazvin's historic identity in recent years?

- There have been good intentions, but maybe not enough structured action. Some buildings get restored, but often, it feels disconnected from community needs. Preserving identity isn't just about restoring facades, it's about giving these spaces life again, with a purpose that resonates today.

- What role do you believe abandoned industrial sites, like the old Flour Factory, could play in the city's future?

- I believe they are hidden opportunities. These structures carry the memory of the city's working class and industrial story. If we only let them decay, we lose part of that identity. But if we're careful, if we use them in ways that serve people, they can become cultural anchors again.

- Qazvin has always been known for its culinary traditions. How do you see the relationship between food and the city's cultural identity?

- They are inseparable. Food is history you can taste. In every pastry, every dish, there's a story about our land, seasons, and people. But food culture only survives if people experience it, not just as consumers, but as part of daily life and education.

- Are there aspects of Qazvin's gastronomy you feel have been overlooked or are at risk of disappearing?

- Definitely. Our traditional sweets, like Noghli or Baqlava Qazvini, risk becoming souvenirs instead of living traditions. If young people don't see these crafts as viable careers, they fade. Some recipes have already been lost, which is heartbreaking.

- As someone deeply involved in culinary education, do you feel there are

enough spaces to pass on this knowledge?

- Honestly, no. We have passionate individuals, but not enough structured platforms. Culinary schools exist, but very few focus on regional heritage. We need spaces where tradition meets modern education, where we can teach both technique and history.

- One of our ideas is to include a culinary school and a shop for local products. How do you personally feel about bringing together education, production, and commerce in such a historic industrial space?

- I love the concept. It respects the building's legacy, I mean from flour production to food education, there's continuity. Combining a school, a shop, and real production in one space makes it more than symbolic, it becomes functional.

- Do you believe integrating traditional crafts, like pastry-making, into such a school would strengthen their future?

- Absolutely. If young chefs learn these crafts within a professional, respected setting, they take it seriously. It's no longer "old-fashioned", it becomes part of contemporary gastronomy. That's how we keep traditions alive without turning them into museum pieces.

- How could a project like this influence Qazvin's image, both for residents and visitors?

- It can reshape perceptions. For residents, it's a source of pride, showing that our culture has economic value. For visitors, it positions Qazvin not just as a stop on the way to somewhere else, but as a culinary destination. And honestly, our city deserves that.

- Some worry that transforming historic spaces into commercial or educational hubs might dilute their character. How can we balance that?

- It's a fair concern. The key is authenticity. Don't erase the building's story. Highlight it. Keep architectural elements visible. Use materials and narratives that connect to the past. And make sure the project serves locals first, tourists second.

- How do you see a project like this supporting small producers and artisans in Qazvin?

- If done right, it becomes a platform. A shop selling local pastries, nuts, saffron, it gives small producers access to steady demand and visibility. Plus, students graduating from the school can partner with artisans, creating a stronger local food ecosystem.

- What do you think motivates younger people to stay in Qazvin and invest in food-related careers?

- They need to see potential, not just in passion, but in stability. If they know they can learn, grow, and earn here without leaving for Tehran or abroad, they'll stay. Projects like yours can send that message loud and clear.

- Is there a risk that such projects become tourist-centered and leave locals behind?

- There's always that risk. That's why the foundation has to be community-driven. Locals should access training, events, and products first. Tourists are welcome, but the heartbeat has to be for and by Qazvin's people.

- Would you personally consider collaborating with the project, perhaps through workshops, mentorship, or product development?

- I would be honored. It aligns with my life's work, protecting and evolving Qazvin's food culture. Teaching young chefs, sharing knowledge, even experimenting with how traditions can meet modern demands. I'd love to be involved.

- Finally, what is your hope for the future of Qazvin's culinary scene, and how could this project play a role?

- My hope is for Qazvin to be known not just for its past, but for how it honors that past in the present, through food, craft, and creativity. Your project can be a catalyst. It shows that with respect and vision, tradition isn't something we archive, it's something we live.

Fig.
Images from Instagram @ maryam_sarrafha

Community Survey

As part of the preliminary research for the adaptive reuse of the old Flour Factory in Qazvin, we conducted an online community survey to gather public opinions and expectations regarding the project. The main purpose of the survey was to understand how residents perceive the current state of the area and to collect their feedback on proposed functions, including a culinary school, local food shop, and cultural spaces.
The survey also aimed to identify potential concerns and priorities from the local community to ensure the project serves both cultural preservation and social needs.
The questionnaire was distributed primarily through social media platforms as well as through personal networks and friends to reach a broad, diverse group of participants familiar with the neighborhood or interested in the future of Qazvin.

In total, the survey gathered approximately 60 responses.

1. How would you describe the current state of the neighborhood around the Flour Factory?
Active and lively
Average, nothing special
Quiet, neglected, or abandoned
No opinion

2. Do you believe restoring and activating the old Flour Factory can have a positive impact on the neighborhood?
Yes, definitely a strong positive impact
Yes, but the impact might be limited
No, it won't make much difference
I'm not sure

3. In your opinion, how useful would it be to have a culinary school located in this space?
Very useful
Somewhat useful
Not useful
No opinion

4. Do you think a shop selling local food products would help support the neighborhood's economy?
Yes, absolutely
Maybe, it depends
No, it wouldn't help
I'm not sure

5. How interested would you be in participating in programs, classes, or events at this new space? (for example: cooking workshops, exhibitions, community events)
Very interested
Somewhat interested
Not interested
It depends

6. In your opinion, what should be the main focus of this project?
Culinary education and food-related skills
Creating job opportunities for local people
Attracting visitors and boosting the economy
Preserving the historical identity of the building
Other:

7. What potential challenges or problems do you think this project might create for the neighborhood?
(Open answer)

8. If you have any suggestions or additional comments about this project, please share them:
(Open answer)

The online survey aimed to gather public opinions regarding the revitalization of the old Flour Factory into a culinary school, local food shop, and cultural space. The survey received 60 valid responses from residents, neighbors, and interested community members.

Key Findings:
Neighborhood Perception:
52% described the area around the Flour Factory as neglected or abandoned, while 35% said it was average, and only 13% found it active and lively.

Impact of the Project:
75% of participants believe the project will have a strong positive impact on the neighborhood, while 18% expect a limited impact, and 7% were unsure.

Culinary School Value:
rated the idea of having a culinary school as very useful, 15% found it somewhat useful, and 5% expressed doubts.

Local Shop for Products:
83% agreed that a shop for local food products would support the neighborhood economy, 12% were unsure, and 5% felt it wouldn't help.

Participation Interest:
65% are very interested in joining classes or events, 25% are somewhat interested, and 10% said it depends on the details.

Focus Areas (Multiple Choice):
70% voted for culinary education and preserving food traditions
65% emphasized job creation for locals
50% selected preserving historical identity
40% supported attracting visitors and boosting the economy

Challenges Noted:
Main concerns included risk of over-commercialization, and ensuring accessibility for locals.

Part III

CASE STUDIES

CASTELLO DI RIVOLI

JACOBY STUDIOS

HEDMARK MUSEUM

BÉLAIR-MONANGE WINERY

ONCE AGAIN, HOME

MEHMAN KHANEH QĀ'ELI

Castello di Rivoli

Architects: Ascanio Vitozzi, Carlo and Amedeo di Castellamonte, Filippo Juvarra, Andrea Bruno
Location: Rivoli, Metropolitan City of Turin, Italy

Area: The castle complex includes several components, notably the Manica Lunga wing, which spans over 140 meters.

Construction Date: The castle's origins date back to the 9th–10th centuries, with significant expansions in the 16th, 17th, and 18th centuries. The adaptive reuse project was completed in 1984.

Introduction to Adaptive Reuse

The Castello di Rivoli stands as one of the most remarkable examples of adaptive reuse in architectural history, especially within the context of Northern Italy. What makes this project particularly unique is its ability to narrate the history of the region through its evolving architectural layers, while simultaneously embracing a contemporary function. Once a medieval fortress, the castle was reborn as Italy's first museum dedicated to contemporary art, the Museo d'Arte Contemporanea di Rivoli, through an ambitious adaptive reuse process led by Andrea Bruno in the late 20th century. This transformation preserves the building's layered past while enabling it to serve a dynamic cultural role in the present.

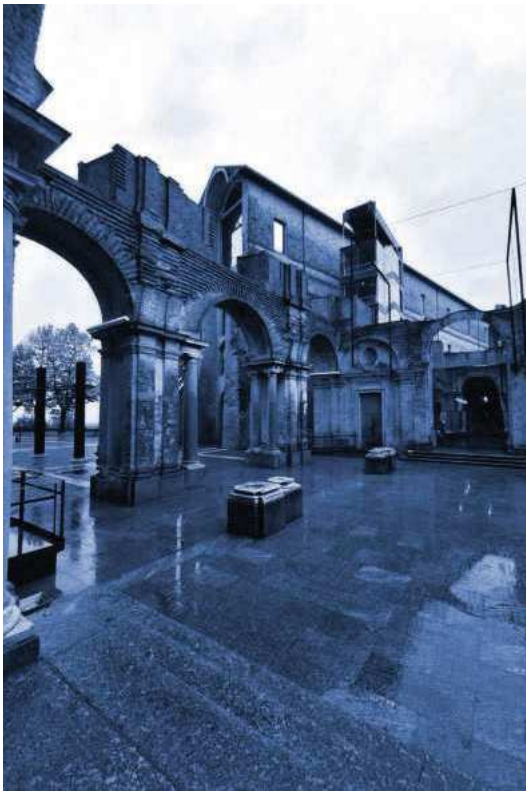
The adaptive reuse of the Castello di Rivoli exemplifies a thoughtful balance between conservation and innovation, addressing the evolving needs of the building while maintaining its historical significance. The castle's reuse as a museum highlights the potential of architecture to serve both as a vessel of memory and a space for contemporary societal needs.

Historical Context

Fig 1.
Birdeye view
Image © Laurian Ghinitoiu

The Castello di Rivoli has undergone multiple phases of construction and transformation throughout its long history. Originally a medieval fortress, it was mentioned as early as 1159, serving defensive and strategic purposes. However, during the 16th century, the castle began its transformation into a noble residence under Duke Emanuele Filiberto of Savoy, marking the start of its architectural evolution. The architects Ascanio Vitozzi and later Carlo and Amedeo di Castellamonte contributed to the castle's redesign, giving it a

Fig2, 3.
Images © Shademan Mohammadtaherkhani



Renaissance character and expanding it to accommodate royal functions.

During the 18th century, Filippo Juvarra, one of the most renowned architects of the Baroque era, was commisszioned to give the castle a monumental form, reflecting the ambitions of the House of Savoy. Juvarra envisioned grand facades, opulent interiors, and a striking unfinished atrium, which remains a signature feature of the building today. However, Juvarra's plans were never fully realized, leaving the castle in a state of partial completion.

By the 19th century, the castle fell into decline, serving various utilitarian roles, including as military barracks. It was left neglected for much of the 20th century until a bold adaptive reuse project brought it back to life.

Adaptive Reuse Process

The restoration and adaptive reuse of the Castello di Rivoli began in 1961 under the guidance of Andrea Bruno, an architect known for his expertise in the conservation of historical buildings. His approach to adaptive reuse was rooted in respecting the historical layers of the building while introducing modern elements that would allow the castle to function as a museum.

One of the most significant aspects of the adaptive reuse process was Bruno's decision to retain the castle's unfinished Baroque features, such as Juvarra's incomplete columns and the open-air atri-

um. Rather than erasing the building's history, Bruno allowed these features to remain visible, emphasizing the narrative of incomple-

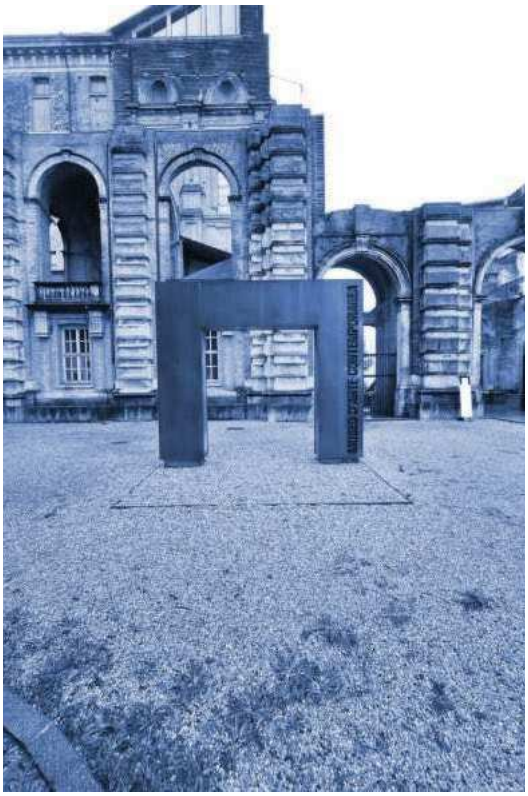


Fig 4, 5.
Images © Shademan Mohammadtaherkhani

tion and transformation that defines the castle's architectural identity.

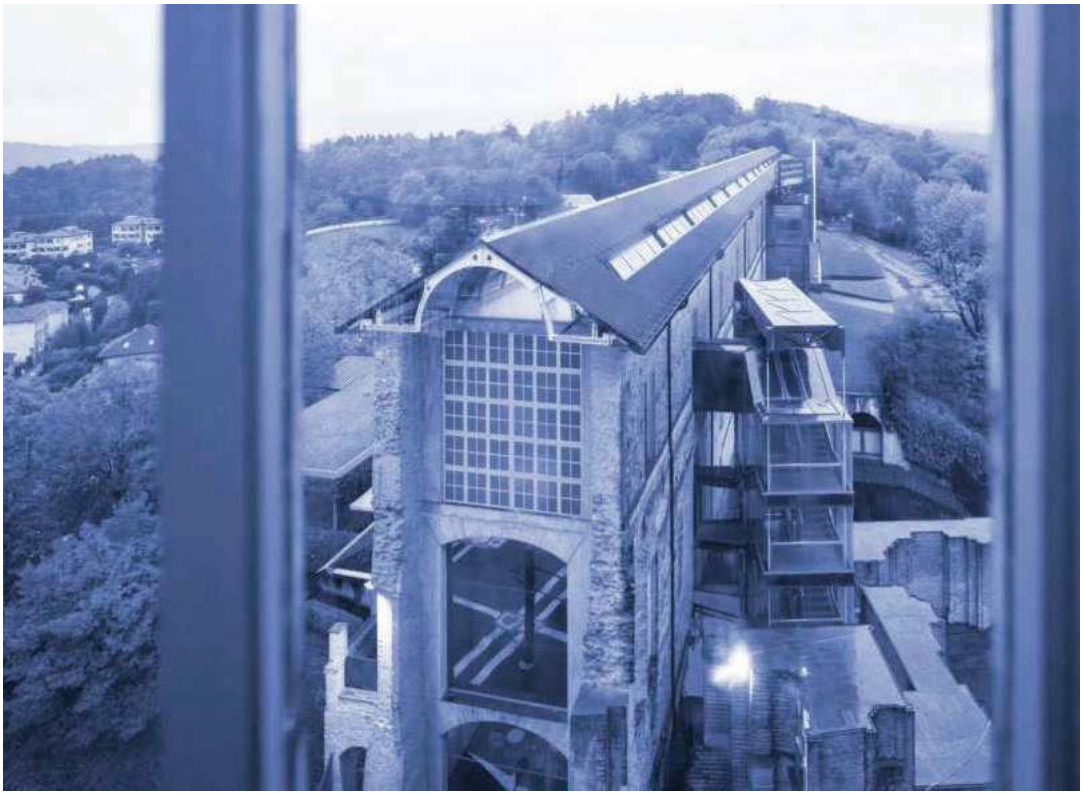


Fig 6
Image © Laurian Ghinitoiu

Bruno introduced modern interventions that complemented the historic fabric of the building. These included the installation of new gallery spaces, modern lighting systems, and facilities necessary for a contemporary

museum. His interventions were subtle yet effective, ensuring that the new functions did not overpower the historic character of the building.

The museum was officially inaugurated in 1984, marking a new chapter in the castle's history. It became a space where contemporary art could be showcased within a historical setting, creating a dialogue between past and present.

Architectural Integration

A key challenge in the adaptive reuse of the Castello di Rivoli was integrating modern museum functions within a centuries-old structure. Andrea Bruno approached this challenge by adopting a conservative restoration philos-

Fig 7.
Image © Shademan Mohammadtaherkhani

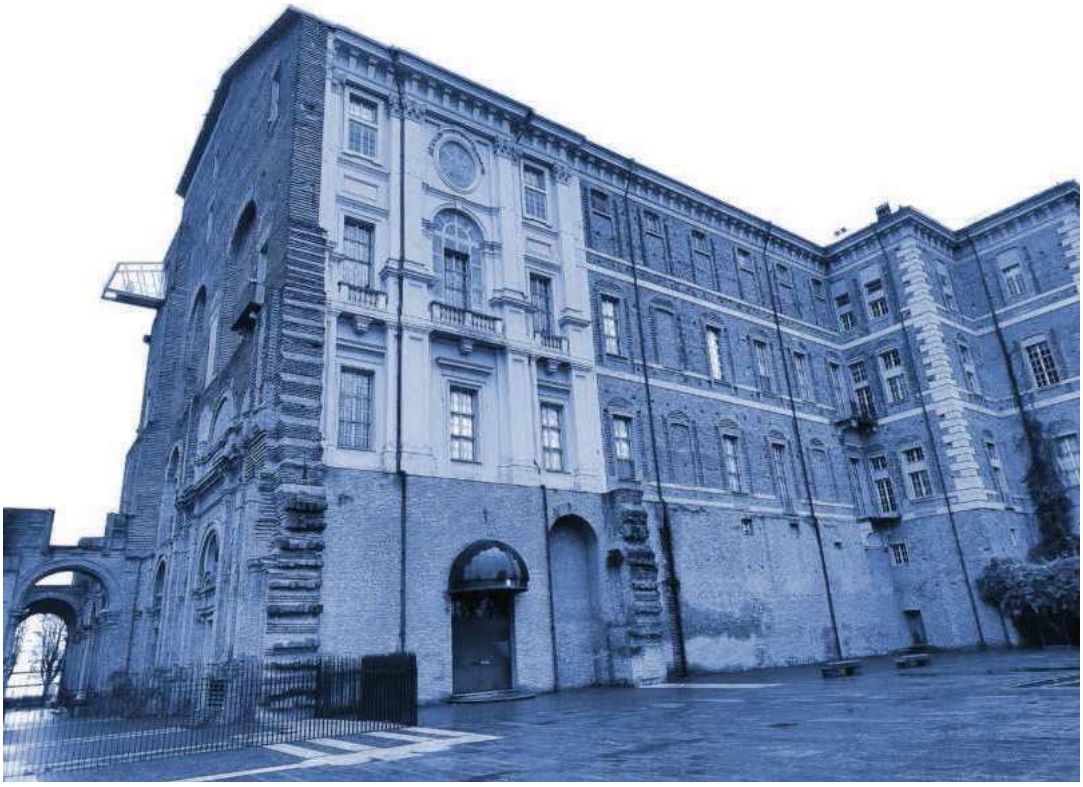


Fig 8.
Interior
Image © Shademan Mohammadtaherkhani

ophy, which prioritized the preservation of the building's historical layers.

Bruno's design interventions were carefully planned to ensure that the new additions would be reversible and respectful of the original structure. For example, the Manica Lunga, a long wing originally intended as a gallery by Carlo di Castellamonte, was adapted to house contemporary art exhibitions. The wing's original proportions and layout were preserved, while modern infrastructure was discreetly integrated to support the needs of a museum.

The castle's unfinished atrium, a dis-

tinctive feature left by Juvarra, was transformed into a striking open-air space that serves as both a symbolic and functional centerpiece of the museum. Rather than completing Juvarra's original design, Bruno chose to embrace the unfinished state as a testament to the building's evolving history.

Fig 9.
Exterior
Image © Shademan Mohammadtaherkhani

Cultural and Social Impact

The adaptive reuse of the Castello di Rivoli has had a profound impact on the cultural and social landscape of the region. By transforming a neglected historical building into a contemporary art museum, the project has revitalized the town of Rivoli and positioned it as a cultural destination.

The museum has played a significant role in promoting contemporary art in Italy, offering a platform for both established and emerging artists. Its unique setting within a historical castle creates a powerful juxtaposition between past and present, allowing visitors to experience art in a context that highlights the continuity of human creativity.

Moreover, the museum has contributed to cultural tourism in the region, attracting visitors from around the world and generating economic benefits for the local community. It has also become a space for education and cultural exchange, hosting exhibitions, workshops, and events that engage the public and foster a deeper appreciation of both contemporary art and historical architecture.

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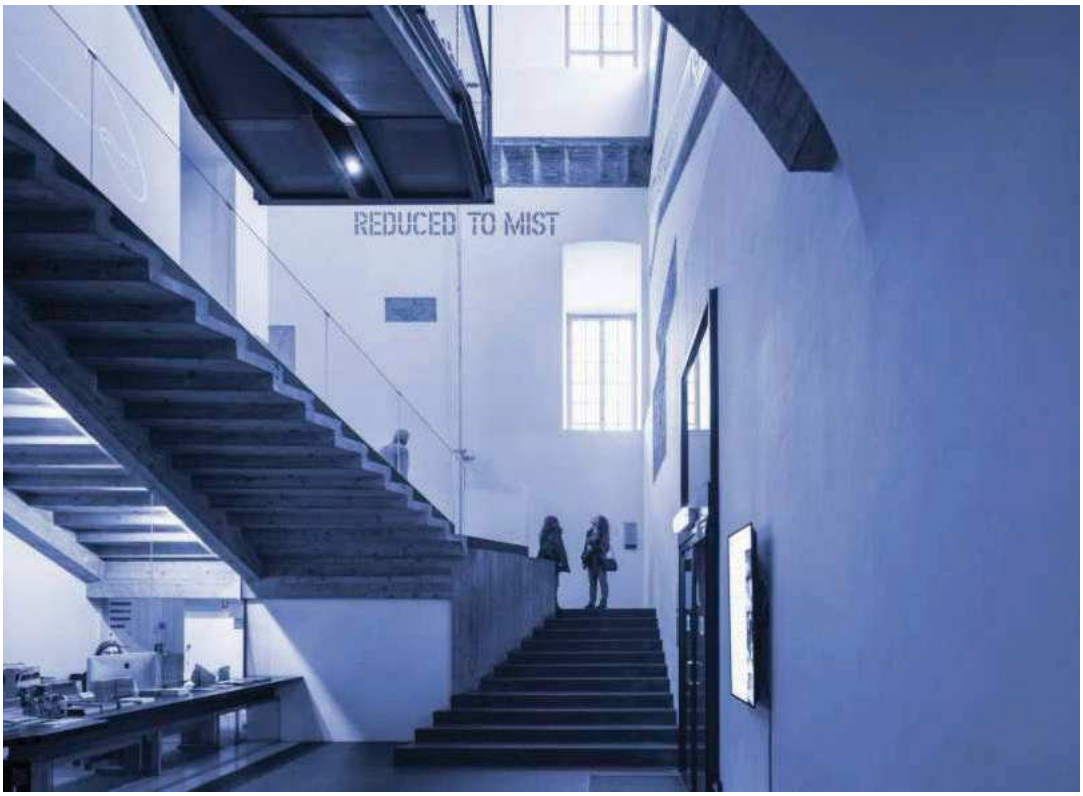
Fig 10.
Stairway
Image © Laurian Ghinitoiu



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Jacoby Studios

Architect: David Chipperfield Architects Berlin

Location: Paderborn, Germany

Area: 12,500 square meters

Construction Dates: Project initiation in 2014; construction commenced in 2017; completion in 2020

Introduction to Adaptive Reuse

The Jacoby Studios in Paderborn, Germany, is a significant example of adaptive reuse in contemporary architecture. Designed by David Chipperfield Architects Berlin, the project revitalized the historic St. Vincenz hospital complex, which itself has a long and multifaceted history dating back to the 17th century. The transformation of this site into the corporate headquarters of the textile company, Jacoby, demonstrates a thoughtful balance between preserving historical elements and introducing modern, functional spaces.

Fig 11.
Exterior
Image © Simon Menges

The adaptive reuse process at Jacoby Studios was not merely about restoring old structures but about breathing new life into them by accommodating modern-day functions while respecting the past. The project exemplifies how architecture can serve as a bridge between history and the present, with the resulting design reflecting a dialogue between the site's original monastic roots and its new role as a modern workspace.

Historical Context

The site where Jacoby Studios now stands has a rich historical narrative. Originally established in the 17th century as a Capuchin monastery, the complex played an important role in the religious and social life of Paderborn. In 1841, the monastery was converted into St. Vincenz hos-

Fig 12.
Image © Simon Menges

pital, which served the community for over 150 years. During this time, the complex underwent numerous changes, including post-war reconstructions and modern additions that altered its original character.

By the early 21st century, the hospital had ceased operations, leaving the historic complex vacant and in need of a new purpose. The building's layers of history presented both challenges and opportunities for the architects. On the one hand, there was a need to respect the building's heritage and preserve significant historical features; on the other hand, there was a requirement to modernize the space to meet contemporary needs. The adaptive reuse process thus involved carefully balancing these considerations to ensure that the complex could be both functional and respectful of its historical identity.

Fig 12.
Image © Simon Menges

The adaptive reuse of Jacoby Studios was guided by the principles of conservation and modern functionality. David Chipperfield Architects Berlin approached the project with a commitment to retaining the historical essence of the site while making necessary modifications to support its new use as a corporate headquarters.

Fig 13.
Image © Simon Menges

One of the first steps in the reuse process was the removal of post-war additions that were incongruous with the original architecture. These later additions detracted from the site's historical integrity and were removed to reveal the underlying structure of the monastery and hospital. Key historical elements, such as the chapel façade, cloister, east wing, and the 17th-century cellar, were preserved and restored.

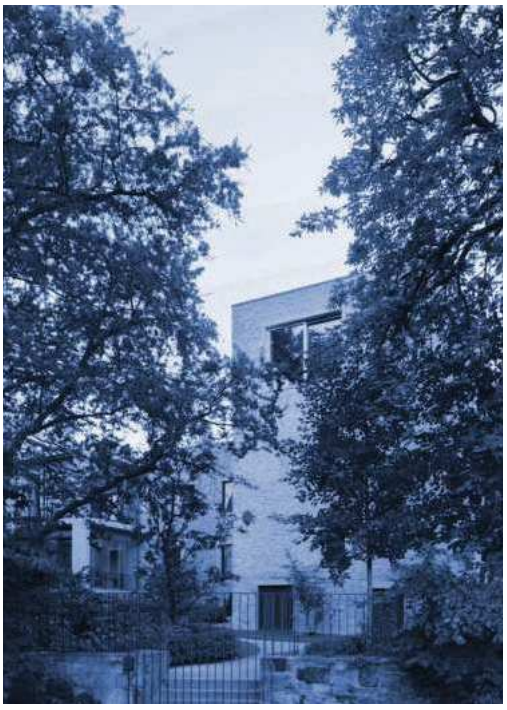


Fig 14.
Image © Simon Menges

New structures were introduced in a way that respected the site's historical context. The architects added two- and three-story extensions that aligned with the existing orthogonal layout of the site. These new additions were designed to complement the historical architecture without overshadowing it. The material palette, proportions, and architectural language of the new structures were carefully chosen

to harmonize with the historic elements.

The project also included significant landscape design work, undertaken in collaboration with Wirtz International. The gardens and outdoor spaces were designed to enhance the overall aesthetic of the site while providing a pleasant environment for the building's occupants. The

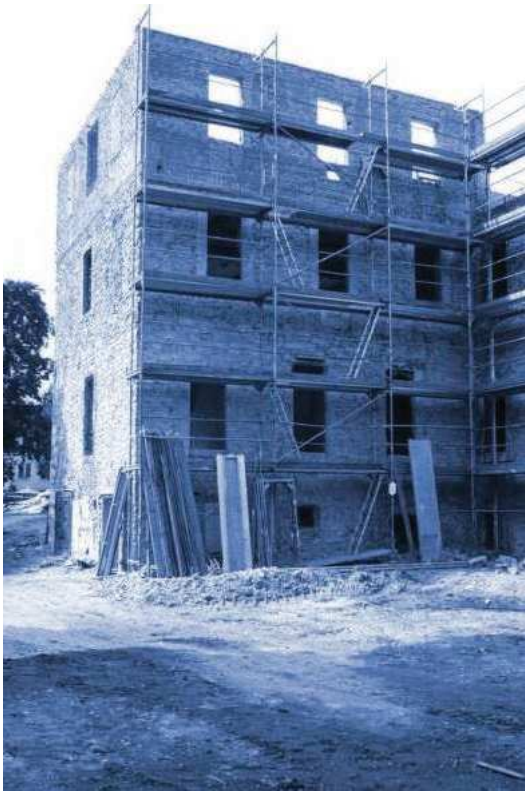


Fig 15, 16.
Under renovation and exterior
Image © Simon Menges

landscaping was an integral part of the adaptive reuse process, helping to create a cohesive and inviting space that connects the past and the present.

Architectural Integration

The integration of historical and modern architectural elements was a key challenge in the Jacoby Studios project. David Chipperfield Architects Berlin adopted a conservative restoration philosophy, which prioritized the preservation of the site's historical layers while introducing modern interventions in a respectful manner.

The preserved cloister serves as the central organizing element of the complex. This feature, which dates back to the monastery's original construction, connects the different parts of the building and provides a symbolic link to the site's monastic past. The cloister is not only a functional space but also a powerful architectural statement, reinforcing the idea of continuity between the past and the present.

The new wings and extensions were designed to integrate seamlessly with the existing structures. The architects used a restrained material palette, focusing on natural stone, wood, and glass, to create a visual harmony between old and new. The careful attention to detail in the design of the new additions ensures that they complement rather than compete with the historical elements.

The layout of the interior spaces was also carefully considered to maximize functionality while respecting the historical character of the building. The offices, conference rooms, showrooms, and communal areas are organized around the preserved cloister, creating a sense of continuity and coherence throughout the complex. The result is a workspace that is both highly functional and deeply connected to the building's history.

Fig 17.
Interior
Image © Simon Menges

Cultural and Social Impact

The adaptive reuse of Jacoby Studios has had a significant cultural and social impact on Paderborn. By revitalizing a historic site that had fallen into disuse, the project has contributed to the preservation of the city's architectural heritage and enhanced the urban fabric of the medieval town center.

Jacoby Studios has become an important cultural landmark in Paderborn, attracting visitors and fostering a sense of pride in the community. The project demonstrates how adaptive reuse can play a vital role in preserving local history while providing new opportunities for economic and social development.

The project also serves as a model for sustainable urban development. By repurposing an existing structure rather than constructing a new building, the project conserved resources and minimized environmental impact. The preservation of historical buildings like Jacoby Studios contributes to the cultural identity of a place and helps to create a more sustainable and resilient urban environment.

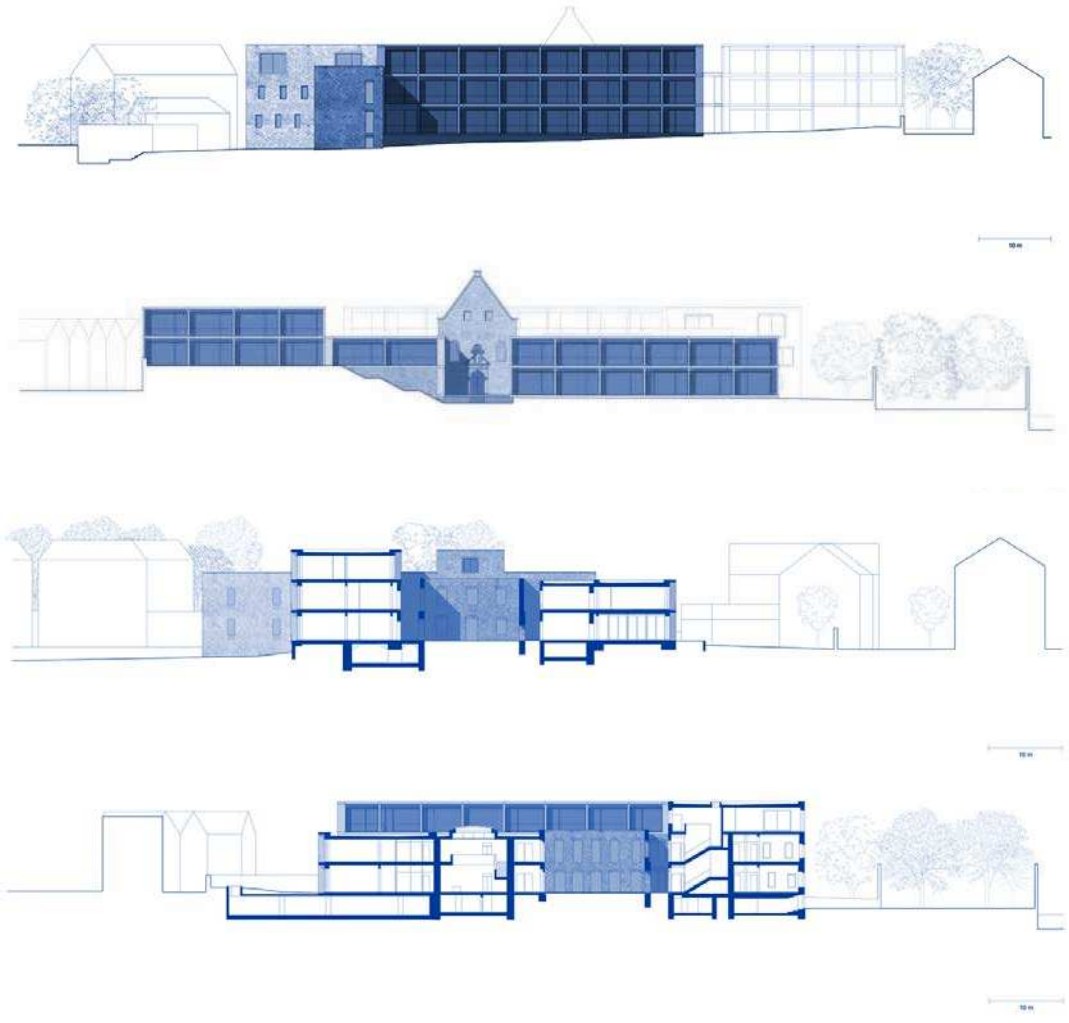
Sustainability Considerations

Sustainability was a key consideration in the adaptive reuse of Jacoby Studios. The project demonstrates several important principles of sustainable architecture, including resource conservation, energy efficiency, and the promotion of biodiversity.

By repurposing an existing structure, the project conserved building materials and reduced the environmental impact associated with new construction. The architects also incorporated modern building services and lighting systems designed to improve energy efficiency, reducing the operational energy consumption of the complex.

The landscape design by Wirtz International further enhanced the sustainability of the project. The gardens and outdoor spaces were designed to promote biodiversity and create a pleasant, ecologically valuable environment. The integration of sustainable practices into the design and construction of Jacoby Studios reflects a commitment to creating buildings that are environmentally responsible and socially beneficial.

Fig 18, 19, 20, 21.
North Elevation
South Elevation
Section CC to East
Section DD to North



Hedmark Museum

Architect: Sverre Fehn

Location: Hamar, Norway

Area: Approximately 2,500 square meters

Construction Dates: Design initiated in 1967; primary construction completed between 1969 and 1973; additional pavilions completed in 2005

Introduction to Adaptive Reuse

The Hedmark Museum, situated in Hamar, Norway, stands as a testament to the innovative integration of contemporary architecture within a historical context. Designed by the esteemed Norwegian architect Sverre Fehn, the museum is renowned for its seamless fusion of modern design elements with the remnants of a 13th-century Episcopal fortress. This project exemplifies adaptive reuse by repurposing ancient structures to serve as a regional cultural center, thereby preserving historical narratives while introducing new functionalities.

Fig 22.
All images and documents © Hélène Binet, © Caroline Vaussanvin, and © Sverre Fehn

Fehn's approach to the museum's design reflects a profound respect for the site's historical significance, coupled with a commitment to creating spaces that resonate with modern sensibilities. His work on the Hedmark Museum has been celebrated for its ability to create a dialogue between the past and the present, allowing visitors to experience history through the lens of contemporary architecture.

Historical Context

The site of the Hedmark Museum is steeped in history, encompassing layers that span several centuries. Originally, it housed a 13th-century Epis-

Fig 23.
Exterior

copal fortress, serving as a significant religious and administrative center. Over time, the site underwent various transformations, including its use as a barn in the 17th century, known as Storhamarlåven. By the mid-20th century, archaeological excavations unveiled the rich historical tapestry of the area, revealing ruins that bore witness to its medieval past.

These discoveries underscored the site's cultural and historical importance, prompting initiatives to preserve and repurpose the existing structures. The decision to transform the site into a museum was driven by a desire to protect its historical remnants while making them accessible to the public. This endeavor required a delicate balance between conservation and innovation, ensuring that the new interventions would honor the site's legacy

Fig 24.
Exterior

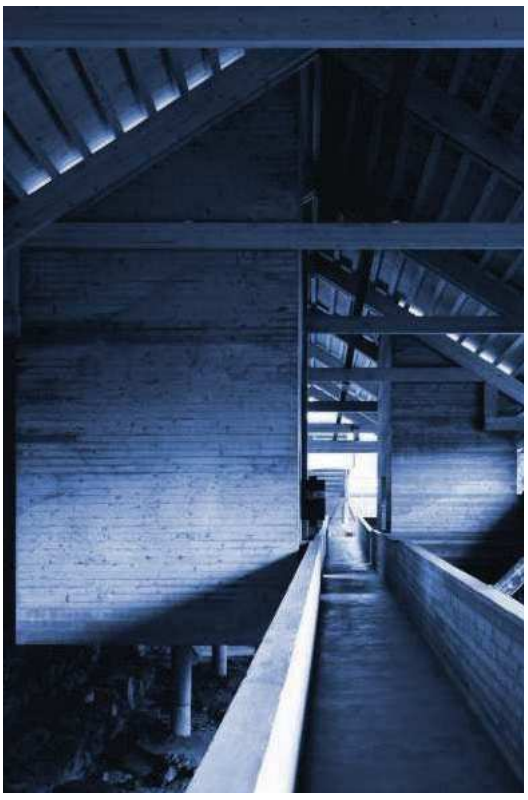
while providing contemporary utility.

Adaptive Reuse Process

Sverre Fehn's involvement with the Hedmark Museum began in 1967, following the completion of archaeological excavations. Commissioned by Per Martin Tvengsberg, a former student of Fehn and then-director of

Fig 25.

the museum, Fehn embarked on a design journey that would span several decades. The construction process commenced in 1969, with the barn completed in 1971 and the south wing, including an auditorium, finalized in 1973. Exhibitions were developed throughout the 1980s, and



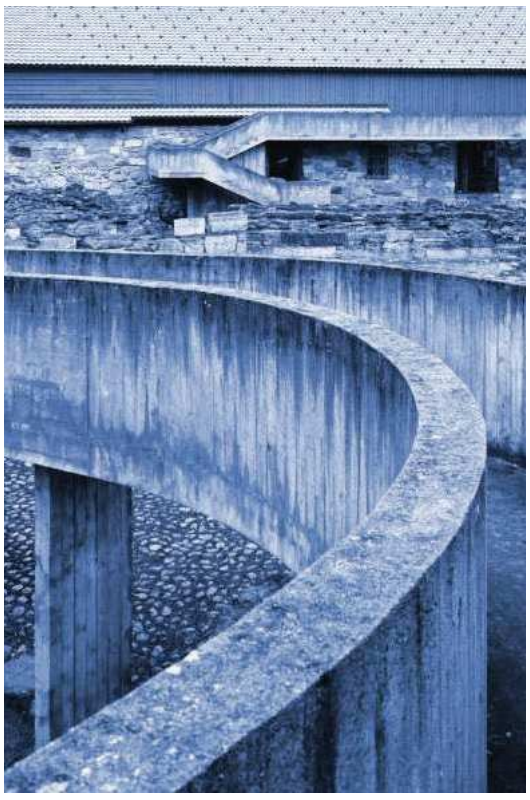


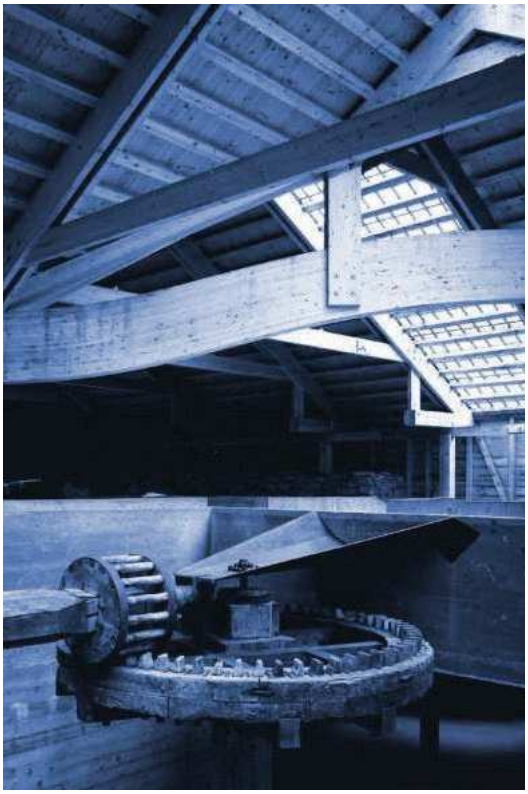
Fig 26, 27.

additional pavilions in the castle courtyard were completed in 2005.

Fehn's design philosophy centered on creating a harmonious rela-

tionship between the old and the new. He introduced modern materials such as concrete, wood, and glass, which contrasted yet complemented the existing medieval stone structures. A notable feature of his design is the sweeping concrete ramp that meanders through the museum, facilitating a fluid visitor experience and symbolizing the passage of time. The ramp's form references historic fortifica-

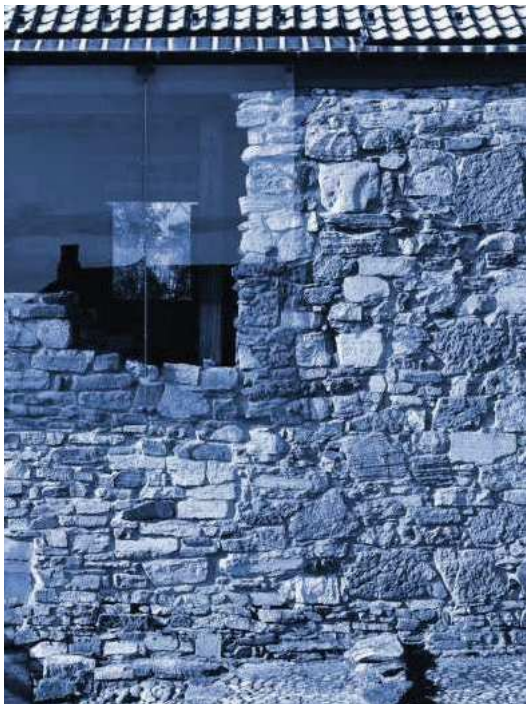
Fig 28, 29.
Interior



tion walls, establishing a visual and conceptual link to the site's past.

Fehn's interventions were characterized by a light touch, ensuring that the new elements did not overshadow the historical structures but rather highlighted their significance. His approach has been described as "gentlemanly," reflecting a deep respect for the existing architecture and its historical context.

Fig 30.
Glass panel



Architectural Integration

The architectural integration within the Hedmark Museum is marked by a thoughtful interplay between light and materiality. Fehn employed a laminated timber roof that spans both the modern concrete additions and the ancient stone walls, creating a cohesive canopy that unifies the disparate elements. The timber columns are subtly elevated on steel brackets, imparting a sense of lightness and allowing the structure to hover above the ground. This design

choice enhances the visual continuity between the old and new components.

Fehn's masterful manipulation of light further enhances the visitor experience. In certain areas, traditional clay roof tiles are replaced with glass, introducing a diffused, ethereal light that illuminates the interior spaces. Suspended concrete rooms within the museum house artifacts displayed in glass vitrines, appearing to glow due to the carefully orchestrated natural light.

Fig 31.
Glass panels on opening

This interplay of light and shadow not only accentuates the architectural features but also creates an atmosphere conducive to reflection and appreciation of the historical artifacts. Fehn's design encourages visitors to engage with the space on multiple sensory levels, fostering a deeper connection to the site's history.

Cultural and Social Impact

The transformation of the Hedmark Museum has had a profound cultural and social impact on the region. By preserving and repurposing the historical structures, the museum serves as a custodian of local heritage, offering insights into Norway's medieval past. It has become a significant cultural landmark, attracting visitors both domestically and internationally, thereby contributing to the local economy and promoting cultural tourism.

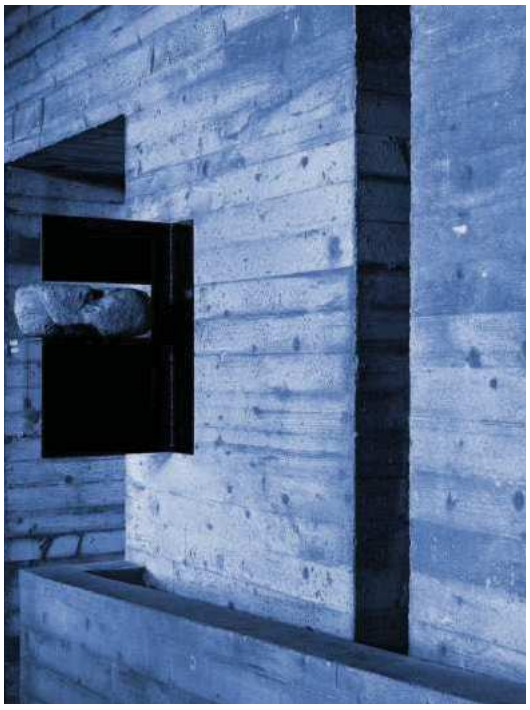


Fig 32.

The museum's design facilitates an educational journey through time, allowing visitors to experience the evolution of architectural styles and building techniques. This immersive experience fosters a greater appreciation for historical preservation and the narratives embedded within architectural forms.

Moreover, the museum provides a venue for various cultural events and exhibitions, serving as a hub for community engagement and cul-

tural exchange. Its presence has revitalized the area, transforming it into a vibrant cultural precinct that celebrates both history and contemporary creativity.

Sustainability Considerations

The adaptive reuse of the Hedmark Museum embodies principles of sustainability by conserving existing structures and materials. Fehn's design minimized the need for new construction, thereby reducing the environmental impact associated with material production and transportation. The use of locally sourced materials and the preservation of the medieval stone walls further contribute to the project's sustainability credentials.

Additionally, the design incorporates passive environmental control strategies. The thoughtful placement of glass roof tiles allows natural light to permeate the spaces, reducing reliance on artificial lighting. The substantial thermal mass of the stone walls aids in regulating indoor temperatures, enhancing energy efficiency.

These considerations reflect a holistic approach to sustainability, encompassing environmental, cultural, and economic aspects.

Bélair-Monange Winery

Architects: Herzog & de Meuron

Location: Saint-Émilion, France

Project Duration: 2016–2023

Construction Period: 2019–2023

Introduction to Adaptive Reuse

The Bélair-Monange Winery, nestled in the historic wine region of Saint-Émilion, France, exemplifies the seamless integration of contemporary architecture within a heritage context. Designed by the renowned Swiss firm Herzog & de Meuron, the project revitalizes a 19th-century stone house and introduces new facilities to meet the evolving needs of modern winemaking. This endeavor reflects a harmonious blend of tradition and innovation, preserving the site's historical essence while accommodating state-of-the-art production and reception areas.

Fig 33.
Wide-angle shot
Image © Iwan Baan © Christoph Röttinger

Fig 34.
Interior
Image © Iwan Baan © Christoph Röttinger

Historical Context

Saint-Émilion, a medieval town recognized as a UNESCO World Heritage Site since 1999, boasts a rich history of viticulture dating back to Roman times. The region's architectural landscape is characterized by monolithic stone churches and ancient quarries, contributing to its unique cultural tapestry. The Bélair-

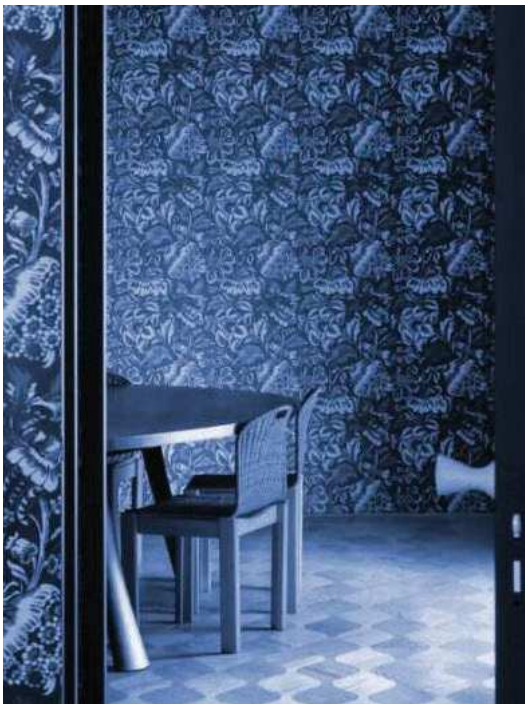
Monange estate itself is situated on the clay-limestone plateau of "Croix Gaudin," approximately one kilometer southwest of Saint-Émilion's historic center. The existing stone house on the site, constructed in 1845, stands as a testament to the area's longstanding architectural traditions.

Fig 35.
Image © Iwan Baan © Christoph Röttinger

Adaptive Reuse Process

Herzog & de Meuron's approach to the Bélair-Monange Winery involved a meticulous balance between preservation and innovation. The original 1845 stone house was conserved, with most of its openings subtly infilled to enhance its sculptural presence. New windows were strategically introduced to align with the updated interior layout. Adjacent to the historic structure, new cellar facilities were constructed as a slightly buried concrete monolith, chosen for its thermal properties essential for wine production. The ochre hue and textured surface of the concrete establish a visual dialogue with the existing stone house, fostering a cohesive aesthetic. A new roof extends from the old house over the cellars, creating a unified architectural ensemble that respects the site's heritage while introducing contemporary functionality.

Fig 36.
Image © Iwan Baan © Christoph Röttinger



Architectural Integration

The design of the Bélair-Monange Winery draws inspiration from the mineral architecture of Saint-Émil-

Fig 37.
Image © Iwan Baan © Christoph Röttinger

ion, notably its quarries and monolithic stone churches. The winery comprises four symmetrical quadrants flanking a central alley, which serves as the main circulation route and pays homage to the region's subterranean structures. The walls and ceiling of this textured concrete passage feature motifs inspired by Albrecht Dürer's 1504 engraving "Joachim and the Angel," a design element that also appears on the winery's labels. This artistic integration reinforces the connection between the architectural design and the winery's branding. Natural light permeates the facility through carefully positioned horizontal and vertical slits, enhancing the spatial experience while maintaining the requisite environmental conditions for winemaking.

Fig 38.
Image © Iwan Baan © Christoph Röttinger

Fig 39.
Image © Iwan Baan © Christoph Röttinger

Cultural and Social Impact

The revitalization of the Bélair-Monange Winery contributes significantly to the cultural landscape of Saint-Émilion. By preserving historical structures and introducing thoughtfully designed modern facilities, the project enhances the region's architectural heritage. The winery serves as both a production site and a venue for cultural exchange, hosting events and tastings that attract visitors and wine enthusiasts from around the world. This dual function supports the local economy and reinforces Saint-Émilion's status as a premier wine tourism destination.

Sustainability Considerations

Sustainability is a cornerstone of the Bélair-Monange Winery's design. The adaptive reuse of the existing stone house minimizes the environmental impact associated with new construction. The new concrete structures provide excellent thermal mass, ensuring stable indoor climates conducive to wine production and reducing energy consumption. The integration of natural light through strategically placed openings decreases reliance on artificial lighting, further enhancing the building's energy efficiency. These sustainable design strategies demonstrate a commitment to environmental stewardship while maintaining the high standards required for winemaking.

Fig 40.
Birdeye view of the model
Image © Iwan Baan © Christoph Röttinger

Architect: LP Office (Elham Geramizadeh, Ehsan Hosseini, Niloofar Moosavi, Shirin Sharif)

Location: Jolfa District, Isfahan, Iran

Area: 760 square meters

Construction Date: Completed in 2022

Introduction to Adaptive Reuse

"Once Again, Home" is an exemplary adaptive reuse project that transforms a traditional central courtyard house in the historic Jolfa District of Isfahan, Iran, into a modern, contextually sensitive residence. Designed by LP Office, the

Fig 41.
All images and documents © DID Studio (Ali Gorjian) © LP Office

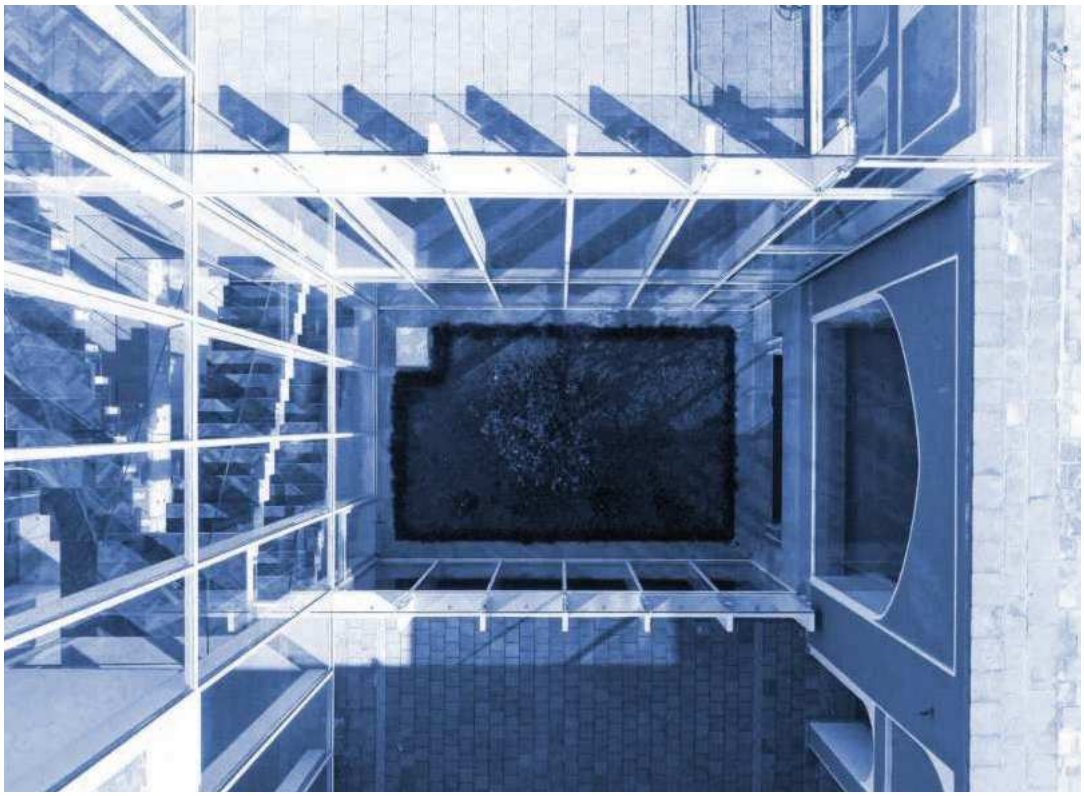
project embodies the intersection of cultural preservation and contemporary architecture, demonstrating how historic structures can be revitalized to meet the needs of modern living while maintaining their original character.

The architects approached this project with a deep respect for the historic fabric of Jolfa, a district known for its Armenian heritage and unique architectural identity. Over the past century, urbanization and the increasing presence of automobiles have led to significant changes in neighborhoods like Jolfa. Traditional courtyard houses, once a hallmark of the area, have been fragmented, neglected, or repurposed as accommodations and restaurants. This project seeks to counteract these trends by restoring the original function of a courtyard house while introducing innovative design solutions that reflect contemporary living standards.

Historical Context

The Jolfa District of Isfahan holds immense cultural and historical significance. Originally established as a settlement for Armenian immigrants in the early 17th century, the district is renowned for its churches, traditional houses, and distinctive urban fabric. Jolfa's architecture is characterized by courtyard houses that promote privacy, passive cli-

Fig 42.



mate control, and social interaction within enclosed family spaces.

However, over the past century, Jolfa has undergone substantial urbanization. The introduction of modern infrastructure and the dominance of automobiles have fragmented the once-cohesive neighborhoods, leading to the subdivision of traditional houses and the erosion of their communal spirit. Many historic homes have been demolished or repurposed for commercial use, diminishing the residential character of the district.

Fig 43.

The house selected for the "Once Again, Home" project reflects this broader narrative of change. Once a vibrant family residence, the house had fallen into disrepair due to neglect and changing urban dynamics. The architects saw an opportunity to breathe new life into

this historic structure by adapting it for modern use while preserving its cultural essence.

Adaptive Reuse Process

Fig 44.

The adaptive reuse process for “Once Again, Home” centered on balancing preservation with innovation. The architects retained key historical features of the original courtyard house while introducing modern interventions that enhanced the functionality and aesthetics of the space.

One of the most significant design strategies was the elevation and lowering of the courtyard levels. This dynamic sectional approach created a sense of movement and spatial variation within the house, revitalizing the traditional layout. By manipulating the courtyard levels, the architects were able to introduce new perspectives and connections between different parts of the house, enhancing its spatial complexity.

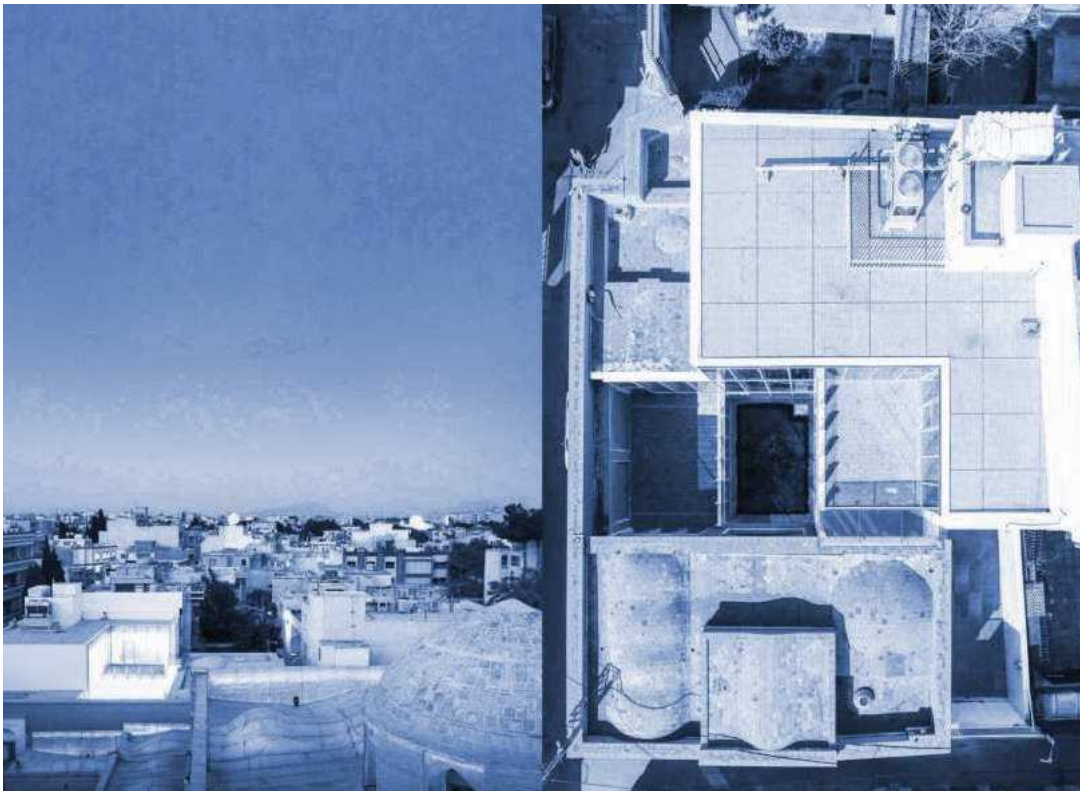
Fig 45.

The juxtaposition of new and old materials is a defining feature of the project. Transparent materials such as glass were used to highlight the contrast between historical masonry and contemporary additions. This approach creates a visual dialogue between the past and the present, underscoring the harmony between tradition and modernity.

Furthermore, the house was designed to serve as a metaphorical “curtain” that reflects the memories of the old courtyard and the nearby church across the alley. This conceptual layer adds depth to the project, transforming the house into a vessel of cultural memory and a symbol of continuity within the evolving urban fabric of Jolfa.

Architectural Integration

Fig 46.



The architectural integration within “Once Again, Home” is marked by a thoughtful balance between preservation and innovation. The architects carefully preserved the original courtyard house’s layout and key historical features, such as brickwork and arches, while introducing modern elements that enhance the functionality and aesthetics of the space.

One of the most notable integrations is the treatment of the courtyard, which remains the focal point of the house. The elevation changes introduced within the courtyard create dynamic spatial relationships, enhancing the house’s sense of depth and movement. This intervention revitalizes the traditional courtyard layout, making it more engaging and adaptable to contemporary living.

Modern materials and technologies were also integrated into the design to improve the house’s functionality and comfort. Glass walls and skylights were introduced to bring natural light into the interior spaces, creating a bright and welcoming atmosphere. The use of glass also emphasizes transparency and connection between different parts of the house, reinforcing the project’s theme of continuity between past and present.

Cultural and Social Impact

The "Once Again, Home" project has had a profound cultural and social impact on the Jolfa District and beyond. By restoring a traditional courtyard house and adapting it for modern use, the project demonstrates how historic structures can be preserved and revitalized to meet contemporary needs without losing their cultural essence.

The project serves as a model for sustainable urban development in historic neighborhoods. It shows that adaptive reuse can be a powerful tool for preserving cultural heritage while promoting modern living standards. The project has also contributed to the cultural vibrancy of Jolfa by maintaining the district's residential character and preventing further commercial encroachment.

Fig 47.
New and old entrance

The recognition of "Once Again, Home" at the 23rd Memar Prize in 2023 highlights the project's significance within the architectural community. The award underscores the importance of adaptive reuse in preserving cultural heritage and promoting innovative architectural practices.

Sustainability Considerations

The adaptive reuse of "Once Again, Home" reflects a commitment to sustainability in both environmental and cultural terms. By repurposing an existing structure, the project reduces the environmental impact associated with new construction. The use of locally sourced materials and traditional building techniques further enhances the project's sustainability credentials.

The design also incorporates passive environmental control strategies. The central courtyard provides natural ventilation and daylighting, reducing the need for mechanical systems. The elevation changes within the court-

yard enhance air circulation, contributing to the house's thermal comfort. In cultural terms, the project promotes sustainability by preserving the district's architectural heritage and preventing the loss of historic structures. By demonstrating that traditional courtyard houses can be adapted for modern use, the project encourages the preservation of Jolfa's unique urban fabric.

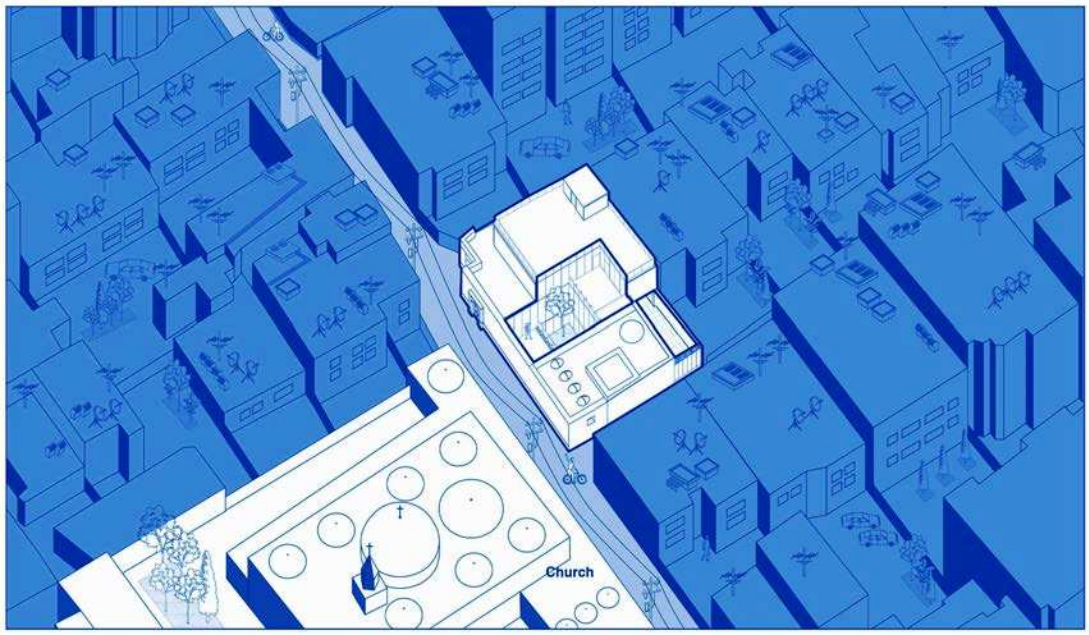


Fig 48.
3D Model

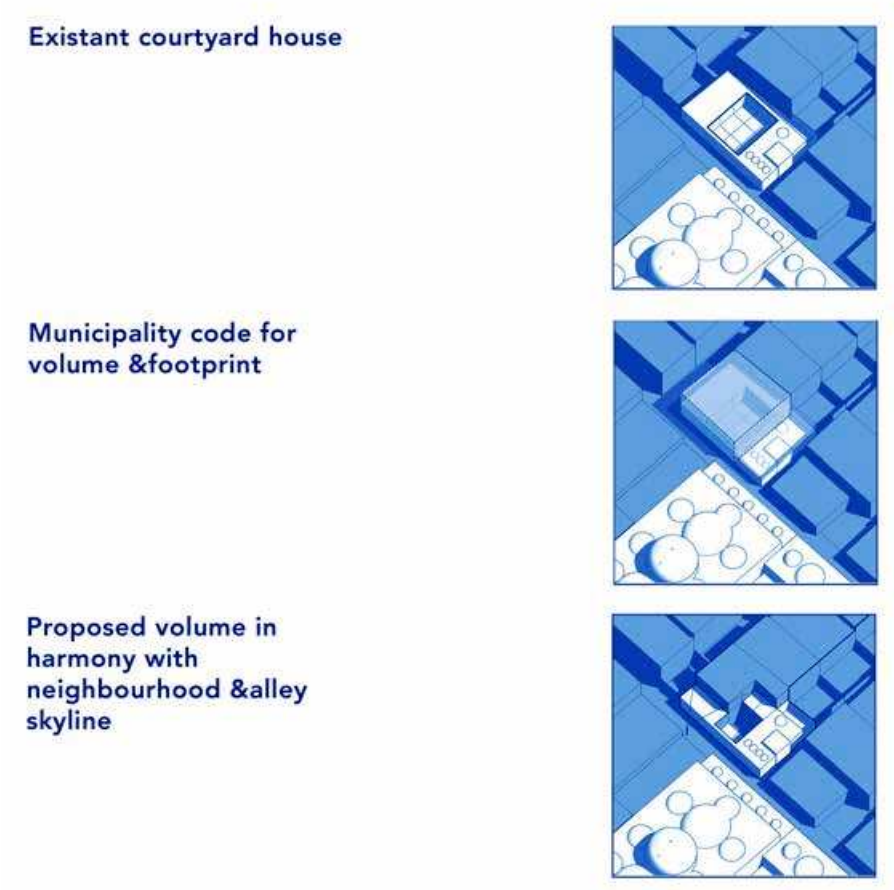


Fig 49.
Diagram

Project Name: Mehman Khaneh Qā'eli (Guest House Renovation)

Design Team: Mohammad Arab, Ehsan Hajirasooliha, Elham Haji Danayi, Milad Alidoosti, Mobina Moinodini

Location: Jolfa District, Isfahan, Iran

Introduction to Adaptive Reuse

The Guest House Renovation in the historic Jolfa District of Isfahan stands as a thoughtful response to the pressing issue of preserving cultural heritage

Fig 50, 51.
Image © Ehsan Hajira-sooliha

in the face of modern urbanization. The project sought to revitalize a neglected historic building while preserving its architectural and cultural essence. With an emphasis on retaining the character and historical layers of the structure, the project transformed a traditional courtyard house into a dynamic, multifunctional guest house that serves both tourists and locals.

Jolfa, known for its rich Armenian heritage and historical buildings, has witnessed significant changes over the years due to urban expansion and modern developments. Many traditional houses in the district have either been demolished or repurposed. The Guest House Renovation project addresses this challenge by restoring the building's historical value while adapting it for contemporary use.

Historical Context

The Jolfa District of Isfahan is a culturally significant neighborhood established in the early 17th century to house Armenian immigrants. The district is renowned for its unique architectural style, charac-

Fig 52.
Ruined
Image © Ehsan Hajirasooliha

terized by traditional courtyard houses that promote privacy and social interaction. However, with the rapid pace of urbanization, many of these historic buildings have been subdivided, neglected, or demolished, leading to a gradual erosion of the district's cultural fabric.

The building selected for the Guest House Renovation project exemplifies the traditional architecture of Jolfa. It features a central courtyard, a hallmark of Persian residential architecture, designed to provide natural light, ventilation, and a communal gathering space. Over time, the building had fallen into disrepair due to neglect and changing urban dynamics. The renovation project aimed to restore its original function while introducing modern amenities to meet contemporary needs.

Fig 53.
Image © Ehsan Hajirasooliha

Adaptive Reuse Process

The adaptive reuse process for the Guest House Renovation was guided by principles of conservation and innovation. The design team approached the project with a deep re-

spect for the building's historical fabric, ensuring that key architectural elements were preserved and highlighted.

One of the most significant interventions was the elevation and modification of the central courtyard. By adjusting the levels of the courtyard, the architects created a dynamic spatial relationship that revitalizes the traditional layout. This sectional approach enhances the spatial complexity of the building and creates new visual connections between different parts of the house.

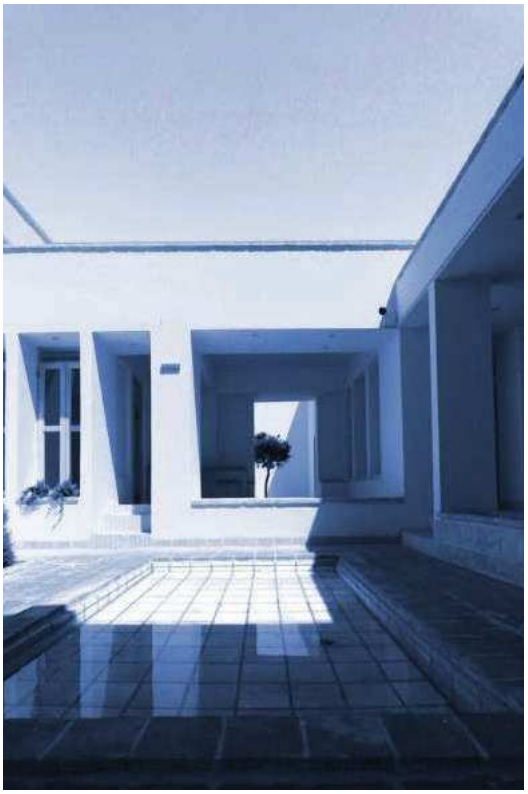


Fig 54, 55.
Image © Ehsan Hajirasooliha

The use of contrasting materials is another defining feature of the renovation. The architects introduced modern materials such as glass and steel, which were juxtaposed with the building's original masonry. This contrast highlights the dialogue between the past and the present, emphasizing the building's historical layers while introducing contemporary design elements.

The building's façade was also carefully restored to maintain its historical character. The architects retained the original proportions and details while incorporating modern interventions to improve functionality and accessibility. The result is a harmonious blend of tradition and modernity that respects the building's heritage while making it suitable for contemporary use.

Architectural Integration

The architectural integration within the Guest House Renovation project is marked by a thoughtful balance between preservation and modernization. The architects retained key historical features such as the central courtyard, traditional arches, and decorative brickwork, while introducing modern elements to enhance the building's functionality.

The courtyard remains the focal point of the house, serving as a communal space that connects different parts of the building. The architects introduced new openings and skylights to bring natural light into the interior spaces, creating a bright and welcoming atmosphere. This integration of natural light enhances the building's aesthetic appeal while reducing the need for artificial lighting.

Fig 56.
Image © USE Studio

Fig 57.
Image © USE Studio

The interior spaces were reconfigured to accommodate modern functions, such as guest rooms, communal areas, and service facilities. The architects carefully considered the flow of

movement within the building, ensuring that the new layout respects the original spatial hierarchy while improving functionality.

The design also incorporates passive environmental control strategies, such as natural ventilation and shading, to improve the building's energy efficiency. These strategies reflect a commitment to sustainability and

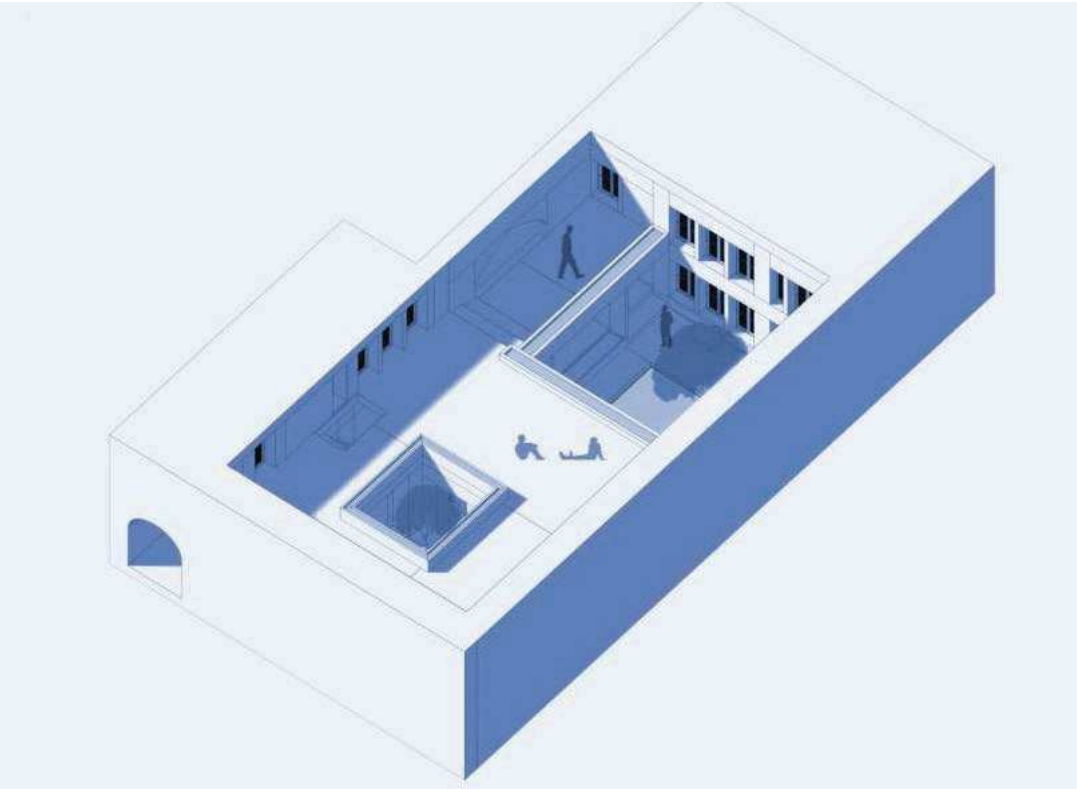


Fig 58.
Image © USE Studio

environmental stewardship, ensuring that the building remains comfortable and energy-efficient in the long term.

Cultural and Social Impact

The Guest House Renovation project has had a significant cultural and social impact on the Jolfa District. By preserving and revitalizing a historic building, the project contributes to the preservation of the district's architectural heritage and reinforces its cultural identity.

The guest house serves as a cultural hub that attracts tourists and locals alike, fostering a sense of community and promoting cultural exchange. It provides a space for visitors to experience the unique architectural and cultural traditions of Jolfa, while also supporting the local economy through tourism and hospitality.

The project also serves as a model for sustainable urban development in historic neighborhoods. It demonstrates how adaptive reuse can be a powerful tool for preserving cultural heritage while meeting the needs of modern society. By revitalizing a neglected building and adapting it for contemporary use, the project highlights the potential of architecture to contribute to cultural preservation and social well-being.

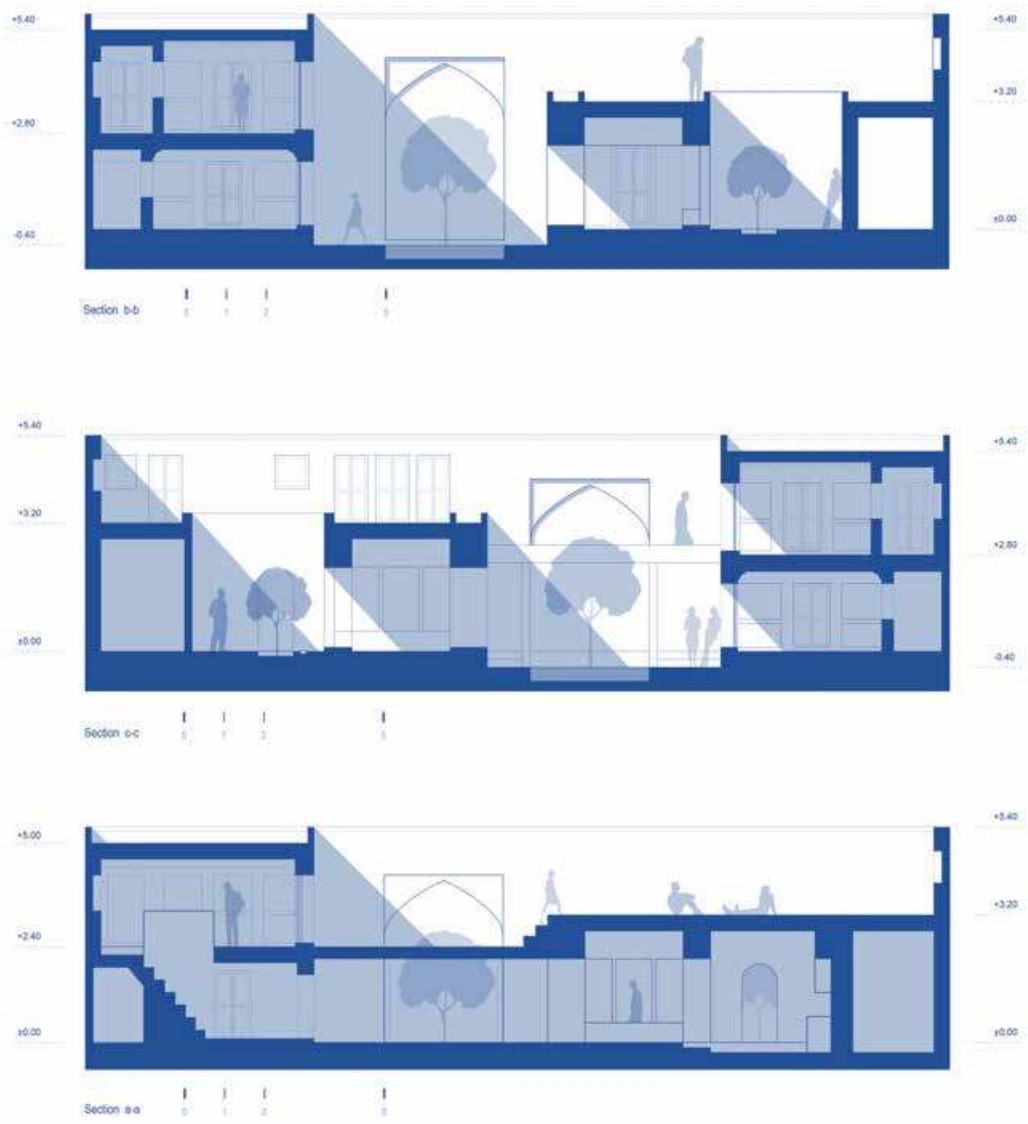
Sustainability Considerations

The adaptive reuse of the Guest House reflects a commitment to sustainability in both environmental and cultural terms. By repurposing an existing structure, the project reduces the environmental impact associated with new construction. The use of locally sourced materials and traditional building techniques further enhances the project's sustainability credentials.

The design incorporates passive environmental control strategies to improve energy efficiency. The central courtyard provides natural ventilation and daylighting, reducing the need for mechanical systems. The elevation changes within the courtyard enhance air circulation and create a comfortable indoor environment.

In cultural terms, the project promotes sustainability by preserving the district's architectural heritage and preventing the loss of historic structures. By demonstrating that traditional courtyard houses can be adapted for modern use, the project encourages the preservation of Jolfa's unique urban fabric.

Fig 59, 60, 61.
Section BB to North
Section CC to South
Section AA to North



Part IV

INSPIRATIONS

TYPOLOGY

DIAGRAM

CONCEPT SIMILIARITY

The central courtyard, or 'Hāyāt Markazi,' is a defining feature of traditional Iranian architecture, particularly in residential buildings. This architectural element not only serves aesthetic purposes but also plays a critical role in the social, cultural, and environmental contexts of Iranian life. Its significance is rooted in centuries of architectural evolution, reflecting the ingenuity of Persian builders who balanced functionality with cultural values.

Historical Context

The origin of the central courtyard in Iranian architecture can be traced back to ancient Persia, with examples found in the Achaemenid and Parthian periods. The earliest known courtyards were designed to provide light, ventilation, and security in the harsh climate of the Iranian plateau. During the Islamic era, particularly from the 7th century onwards, the courtyard became integral to residential architecture, aligning with Islamic principles of privacy and modesty. The Safavid dynasty (1501-1736) marked the zenith of courtyard architecture, with Qazvin serving as the first capital of Safavid Persia. This era saw the construction of grand mansions with elaborate courtyards that catered to both the functional needs and aesthetic aspirations of Persian households.

Design and Functionality

The Hāyāt Markazi, or central courtyard, is a masterclass in passive environmental design, deeply rooted in the climatic and cultural context of Iran. Beyond its social and aesthetic roles, it functions as the environmental core of the house, optimizing natural light, ventilation, and thermal comfort throughout the year. Its effectiveness is the result of a sophisticated interplay between architectural elements and environmental forces.

Sun Orientation and Seasonal Zoning

One of the most deliberate design decisions in central courtyard homes is the north-south orientation. South-facing rooms (commonly referred to as zemestan-neshin, or winter quarters) are positioned to capture the low-angle winter sun, allowing maximum solar gain during the colder months. These rooms often have larger windows and are thermally insulated to retain heat. Conversely, north-facing rooms (tabestan-neshin, or summer quarters) remain shaded and cool during the intense summer sun, offering a retreat from the heat. The courtyard serves as the transitional core between these two thermal zones, enabling the household to shift usage seasonally without mechanical systems.

Natural Ventilation and Cooling Mechanisms

Central courtyards are often equipped with windcatchers (badgirs), tall ventilation towers that harness favorable breezes. These towers direct air downward into the living spaces and sometimes even into basements (sardabs), where temperatures remain naturally lower due to thermal inertia. As shown in the diagram, this airflow displaces warmer indoor air up-

ward and outward through strategically placed higher roofs or vents, effectively creating a stack effect that promotes continuous air circulation.

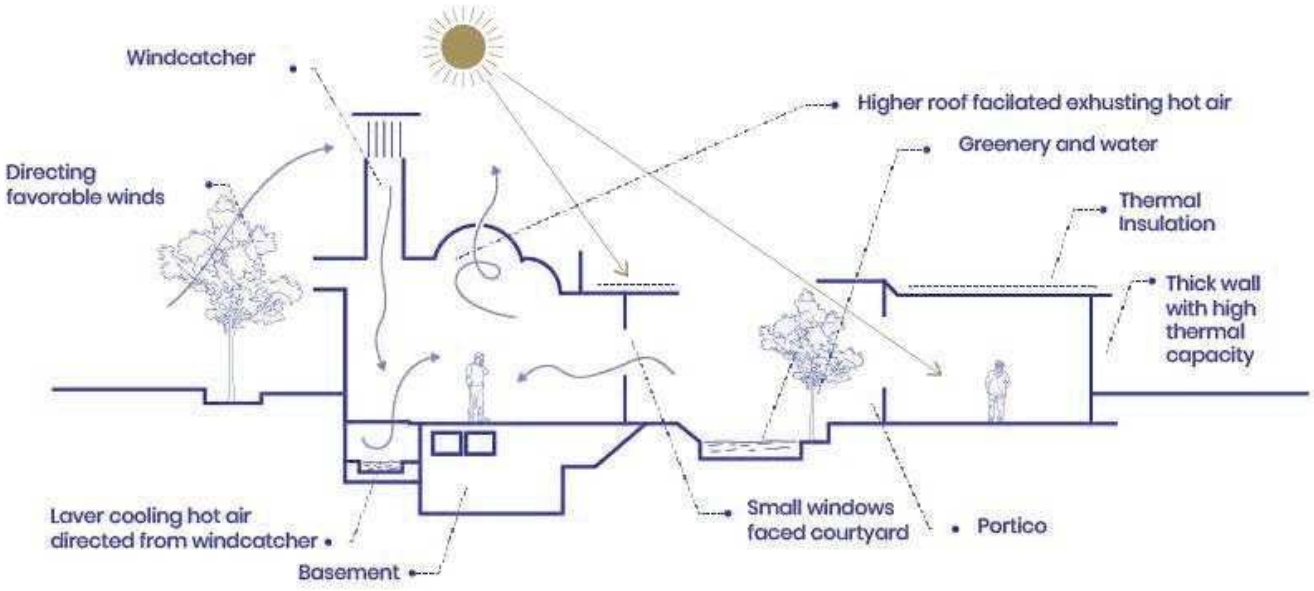


Fig.
A typical Hayat Markazi diagram

The use of greenery and water pools within the courtyard further enhances the microclimate. Evaporation from these features cools the air, which then moves into adjacent rooms, improving indoor comfort levels. This passive evaporative cooling is a hallmark of courtyard architecture in arid climates.

Thermal Mass and Insulation
Thick walls made from adobe or stone act as thermal buffers, absorbing heat during the day and releasing it at night when temperatures drop. This natural moderation of indoor temperature reduces reliance on artificial heating and cooling systems. The diagram also highlights the use of thermal insulation in the roof construction, further enhancing energy efficiency.

Light Management and Shading
The courtyard ensures controlled daylighting, preventing harsh direct sunlight from entering rooms while allowing diffused light to penetrate deep into the interior. Small windows opening to the courtyard limit solar exposure, protecting interiors from overheating, yet still provide enough light and visual connection to the outside. Porticos and arcades around the courtyard create shaded walkways and seating areas, making outdoor use feasible even during peak summer heat.

Integration with Daily Life

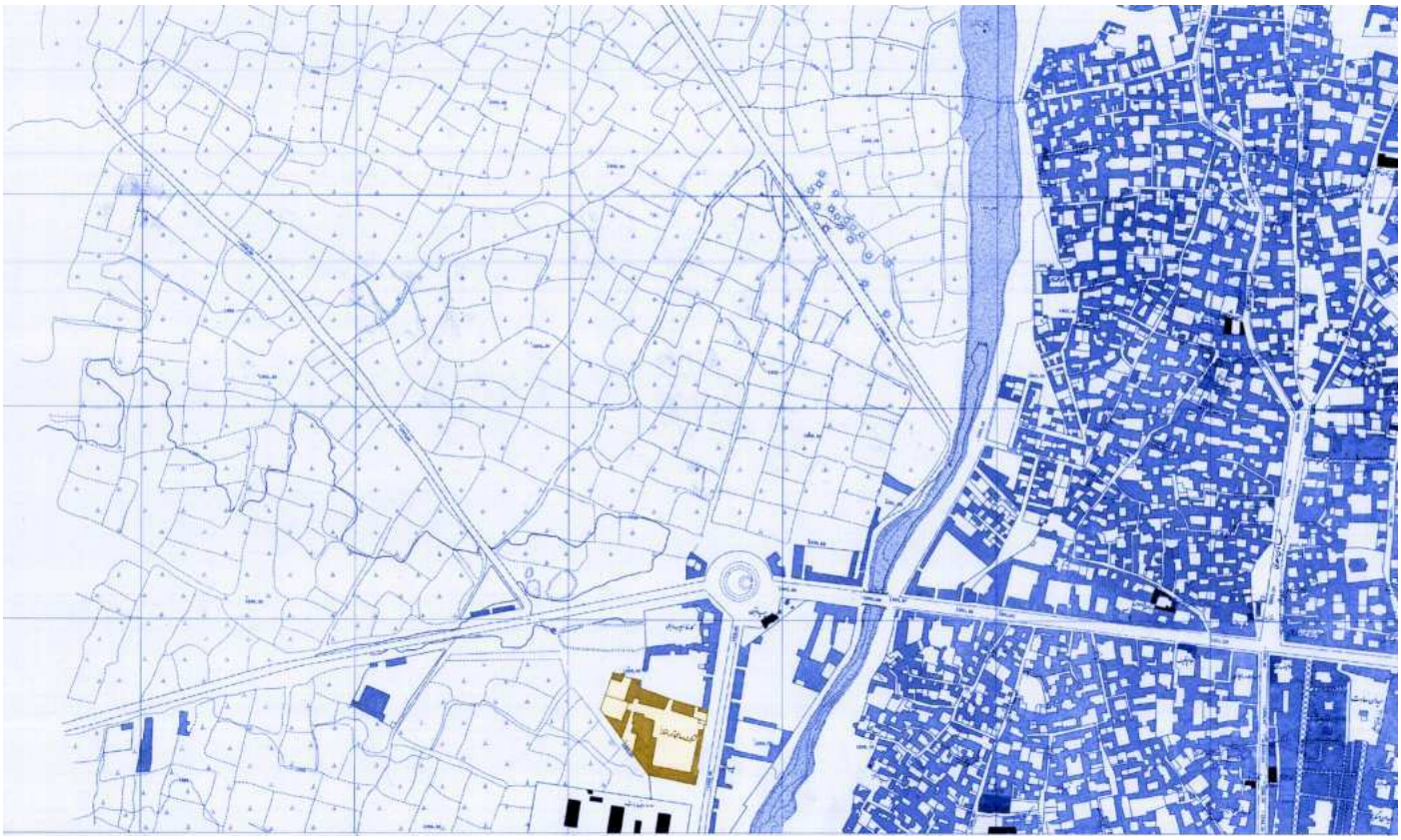
Beyond its environmental benefits, the central courtyard is designed as an extension of the home's functional and emotional life. It accommodates daily routines, religious practices, and family gatherings. The spatial fluidity between indoors and outdoors—facilitated by shaded entrances, open verandas, and cross-ventilated rooms—creates a living environment that is responsive, adaptable, and harmonious with nature.

Social and Cultural Impact

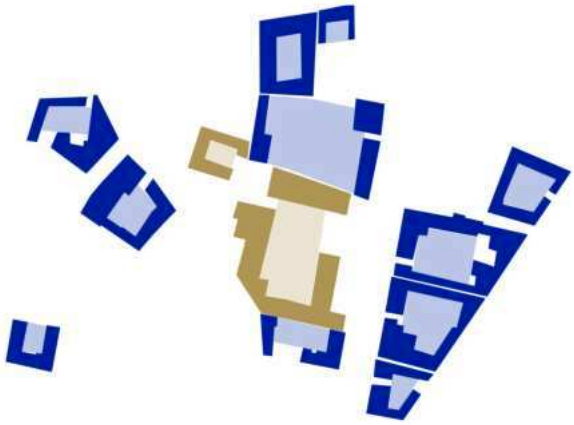
The Hāyāt Markazi is more than an architectural feature; it is the social heart of the home. It facilitates family gatherings, celebrations, and daily interactions while ensuring privacy from the outside world. In cities like Qazvin, the central courtyard reflects cultural values such as hospitality, community, and familial bonds. The design promotes a communal lifestyle where multiple generations often live together, fostering strong family ties. The Aminiha House in Qazvin, with its spacious courtyard and intricate decorations, exemplifies the importance of this architectural feature in promoting social cohesion and cultural expression.

Adaptive Reuse and Modern Relevance

In contemporary times, many historical buildings in Qazvin with central courtyards have been repurposed into cultural centers, boutique hotels, and museums. This adaptive reuse not only preserves the architectural heritage but also integrates it into modern urban life, attracting tourists and fostering cultural appreciation. Modern architects draw inspiration from the Hāyāt Markazi, incorporating courtyards into contemporary designs to promote sustainability, natural ventilation, and communal living spaces, thereby bridging the past with the present.

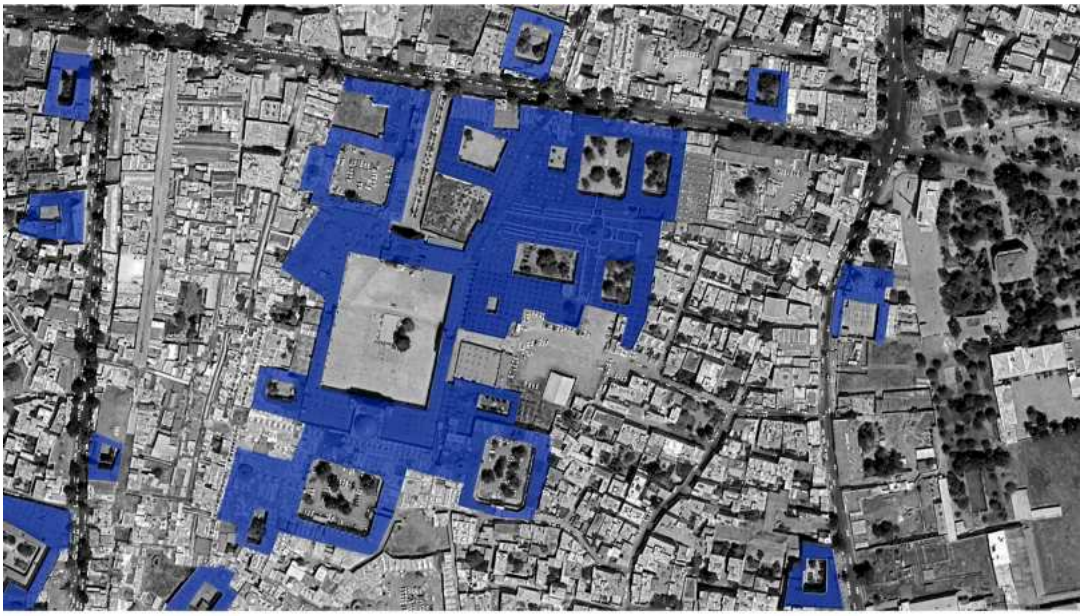


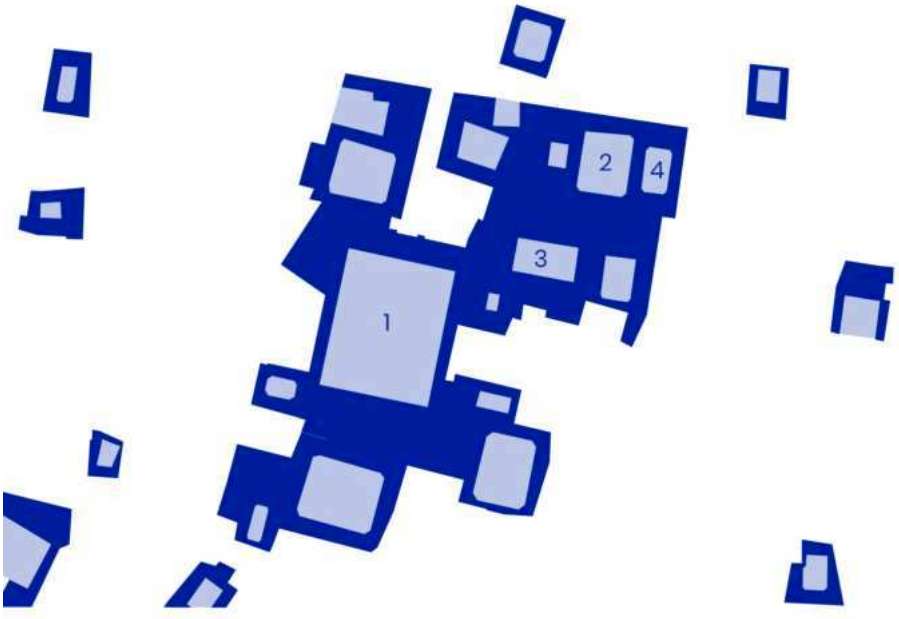
In the context of our specific site and its surrounding neighborhood in Qazvin, a detailed analysis reveals that the central courtyard (Hāyāt Markazi) design remains a prominent feature, albeit to varying degrees. This enduring presence highlights the architectural tradition that continues to shape the urban fabric of the city, demonstrating a seamless blend of historical design elements with contemporary urban development.



The central part of Qazvin remains a remarkable testament to the city's rich architectural history, with much of its historic fabric still intact and largely unrenovated. This preservation provides a unique window into the past, showcasing the prevalent use of the Hāyāt Markazi (central courtyard) design in various types of buildings, including residential structures, educational institutions, and religious sites such as mosques.

The map of Qazvin's central area highlights that many buildings continue to reflect their original architectural forms, dominated by introverted layouts that prioritize privacy and climate control. The Hāyāt Markazi approach is evident not only in grand caravanserais like Saraye Sa'd-o-Saltaneh but also in traditional schools (madrasas) and mosques, where courtyards serve as multifunctional spaces for learning, gathering, and worship.

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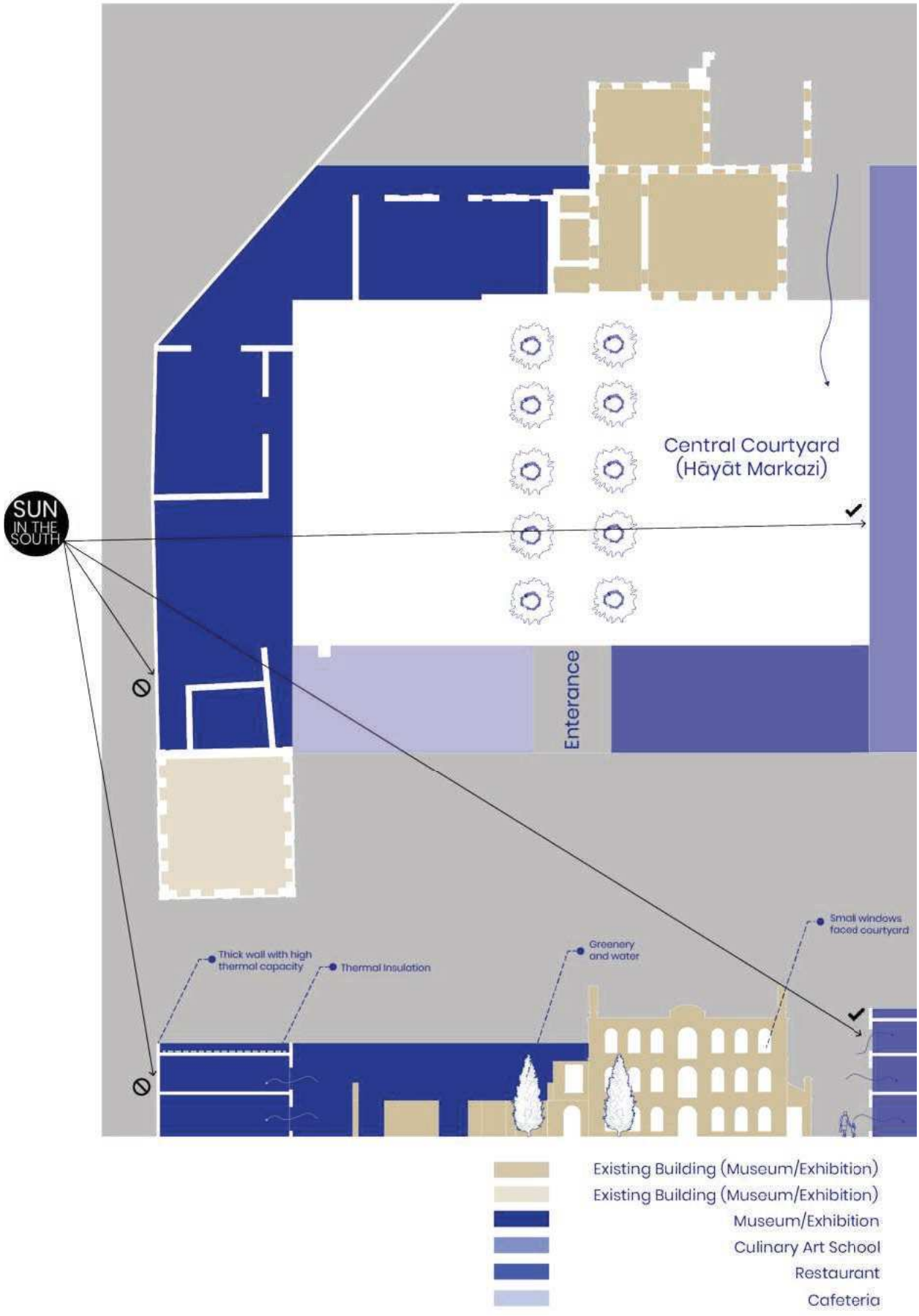

SUN IN THE SOUTH
Central Courtyard (Hāyāt Markazi)
Enterance
Thick wall with high thermal capacity
Thermal Insulation
Greenery and water
Small windows faced courtyard
Existing Building (Museum/Exhibition)
Existing Building (Museum/Exhibition)
Museum/Exhibition
Culinary Art School
Restaurant
Cafeteria

The al-Nabi Mosque

The al-Nabi Mosque, also known as the Soltani Mosque, is one of the largest and most significant mosques in Qazvin, built during the Qajar era in the

early 19th century. Its central courtyard is a prime example of traditional Iranian mosque architecture, featuring a large open space surrounded by arcades and iwans. The courtyard serves as a serene gathering place for worshippers, offering a tranquil environment for prayer and reflection. The mosque's north-south orientation ensures optimal sunlight and ventilation, enhancing the comfort of those within its walls. The central courtyard of the al-Nabi Mosque reflects the architectural principles of symmetry, balance, and functionality, while also serving as a social hub for the community.

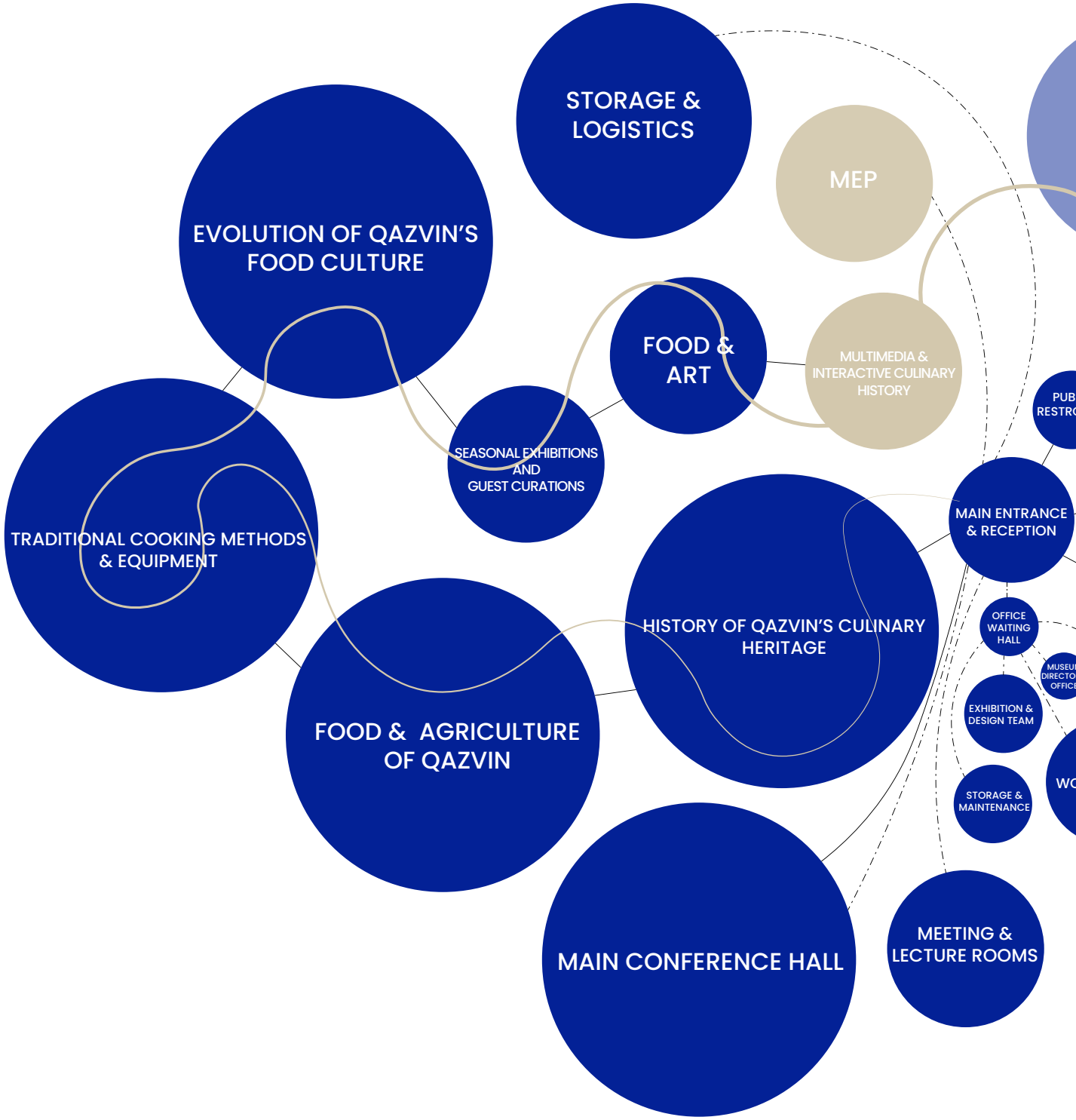
Saraye Sa'd-o-Saltaneh

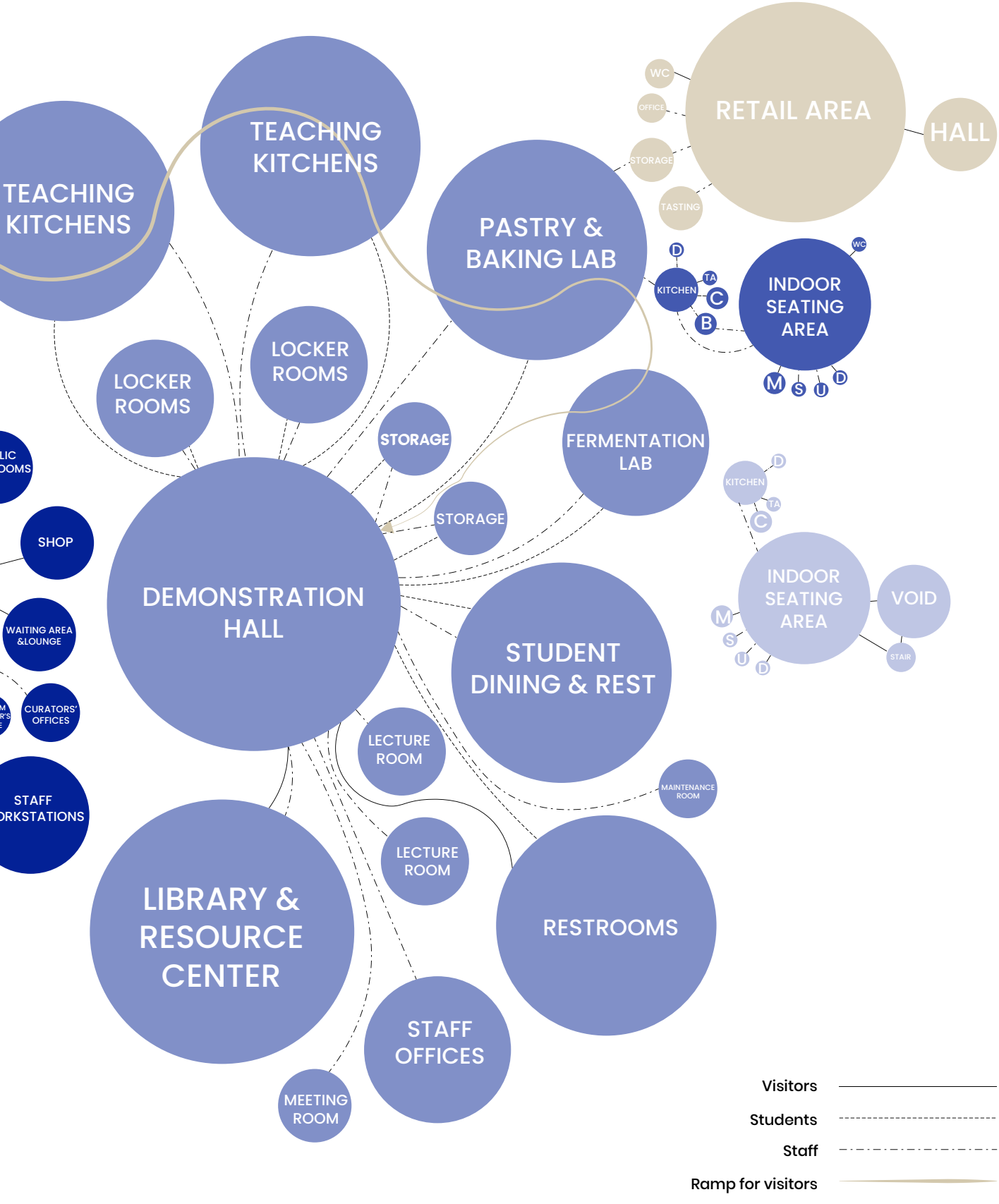
Saraye Sa'd-o-Saltaneh, a grand caravanserai from the Qajar period, is another iconic example of central courtyard architecture in Qazvin. This historical complex was designed to accommodate travelers and merchants, offering them shelter, storage, and market facilities. Its central courtyard is expansive, surrounded by numerous rooms, shops, and warehouses, all connected by covered passageways. The courtyard facilitated commercial activities, social interactions, and cultural exchanges, making

it a vibrant center of trade and community life. The architectural design, with its high arches, intricate brickwork, and symmetrical layout, emphasizes functionality while providing a welcoming and secure environment. The Saraye Sa'd-o-Saltaneh's central courtyard continues to serve as a cultural and commercial space, hosting events, exhibitions, and markets in modern times.

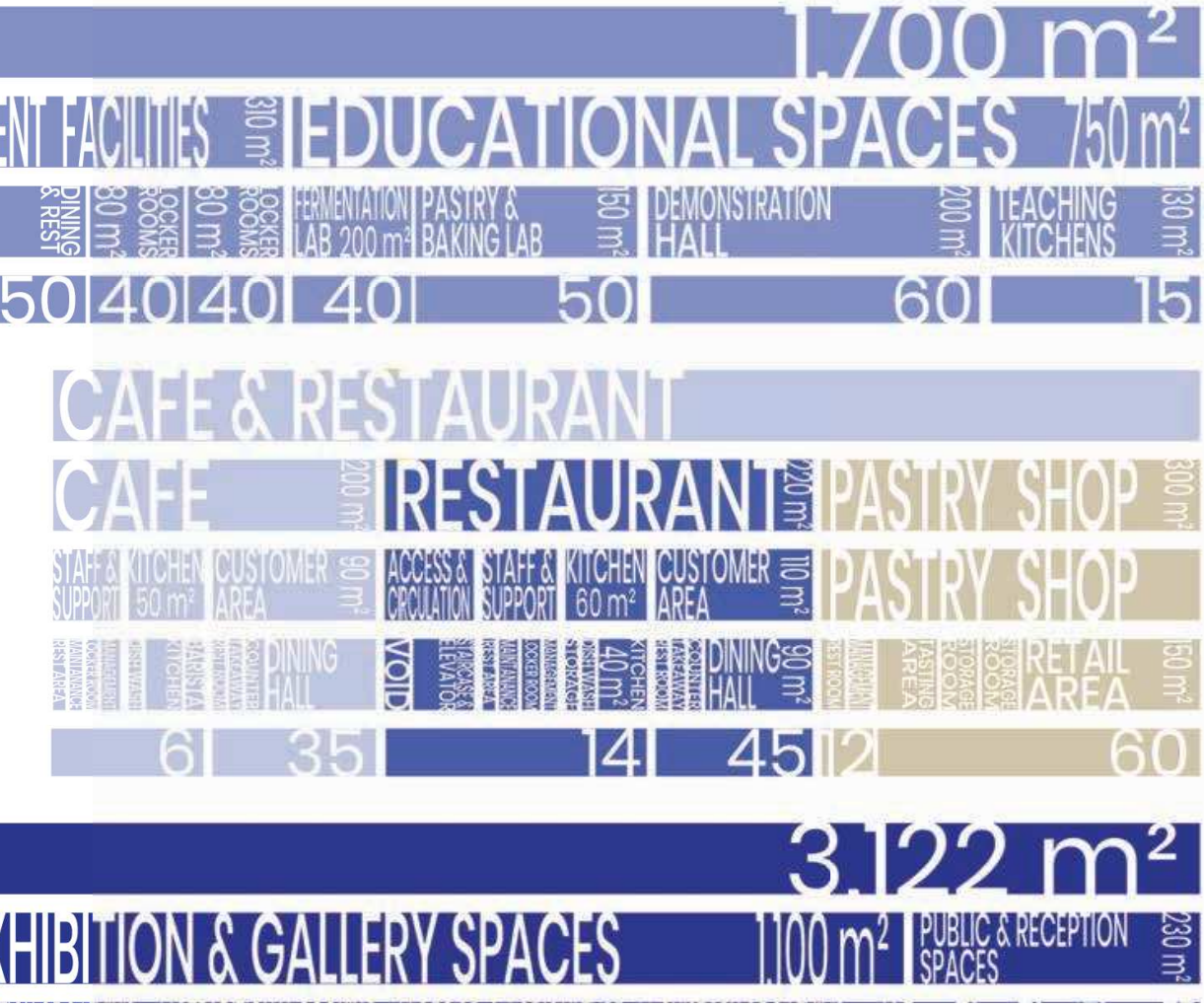
An aerial photograph taken by Russian surveyors in 1924 offers a remarkable glimpse into the architectural and urban fabric of central Qazvin during the early 20th century. This historic image prominently features the Jame Mosque of Qazvin, one of the oldest and most significant mosques in Iran, as well as Sepah Street, known as the first designed and planned street in the country.

BUBBLE DIAGRAM

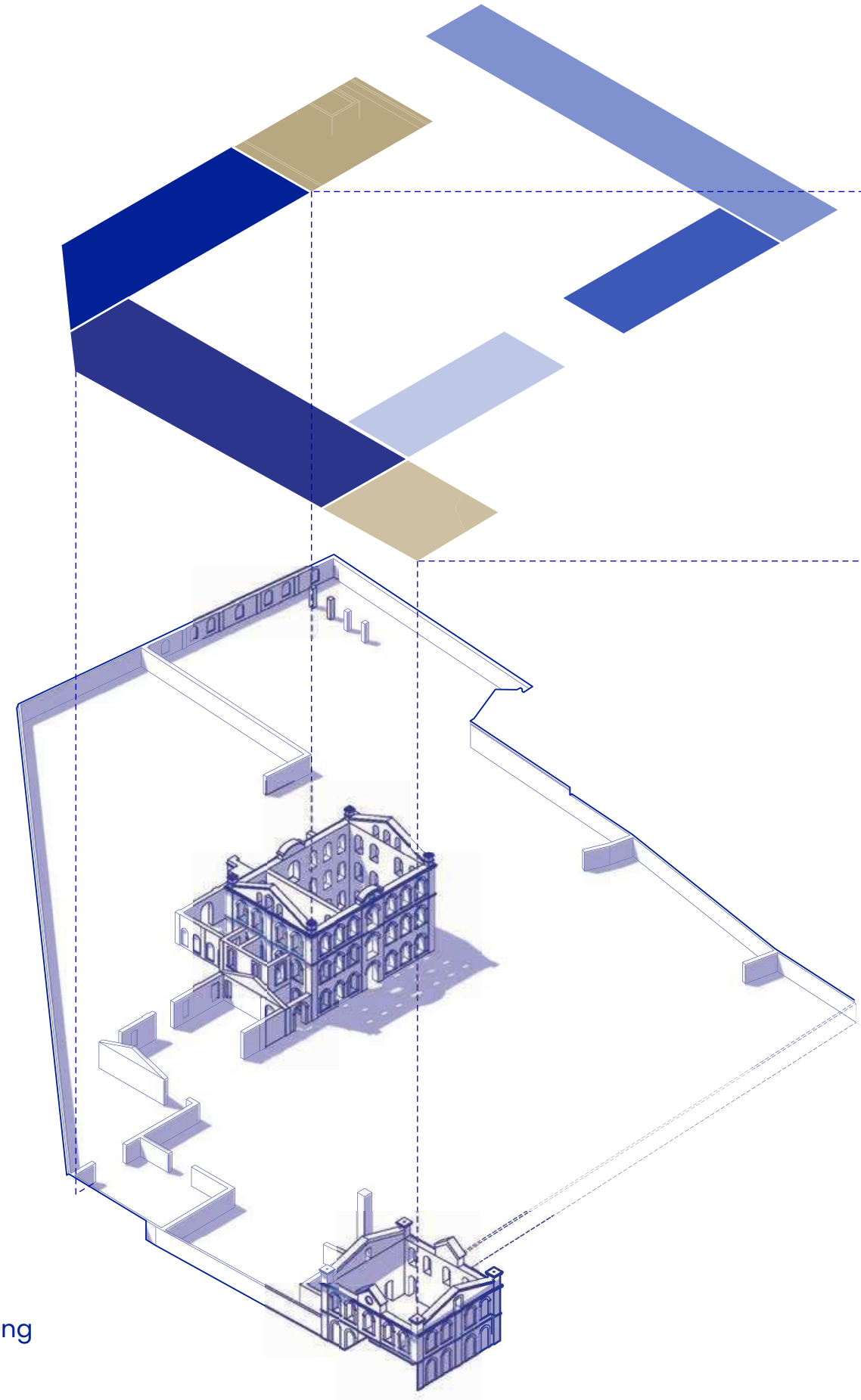



TEACHING KITCHENS
TEACHING KITCHENS
PASTRY & BAKING LAB
RETAIL AREA
WC
OFFICE
STORAGE
TASTING
HALL
D
KITCHEN
TA
C
B
INDOOR SEATING AREA
WC
M
S
U
D
LOCKER ROOMS
LOCKER ROOMS
STORAGE
FERMENTATION LAB
STORAGE
KITCHEN
D
TA
C
INDOOR SEATING AREA
VOID
STAIR
M
S
U
D
SHOP
WAITING AREA &LOUNGE
CURATORS' OFFICES
DEMONSTRATION HALL
STUDENT DINING & REST
LECTURE ROOM
MAINTENANCE ROOM
LECTURE ROOM
LIBRARY & RESOURCE CENTER
RESTROOMS
STAFF OFFICES
MEETING ROOM
Visitors
Students
Staff
Ramp for visitors

PHYSICAL PROGRAM

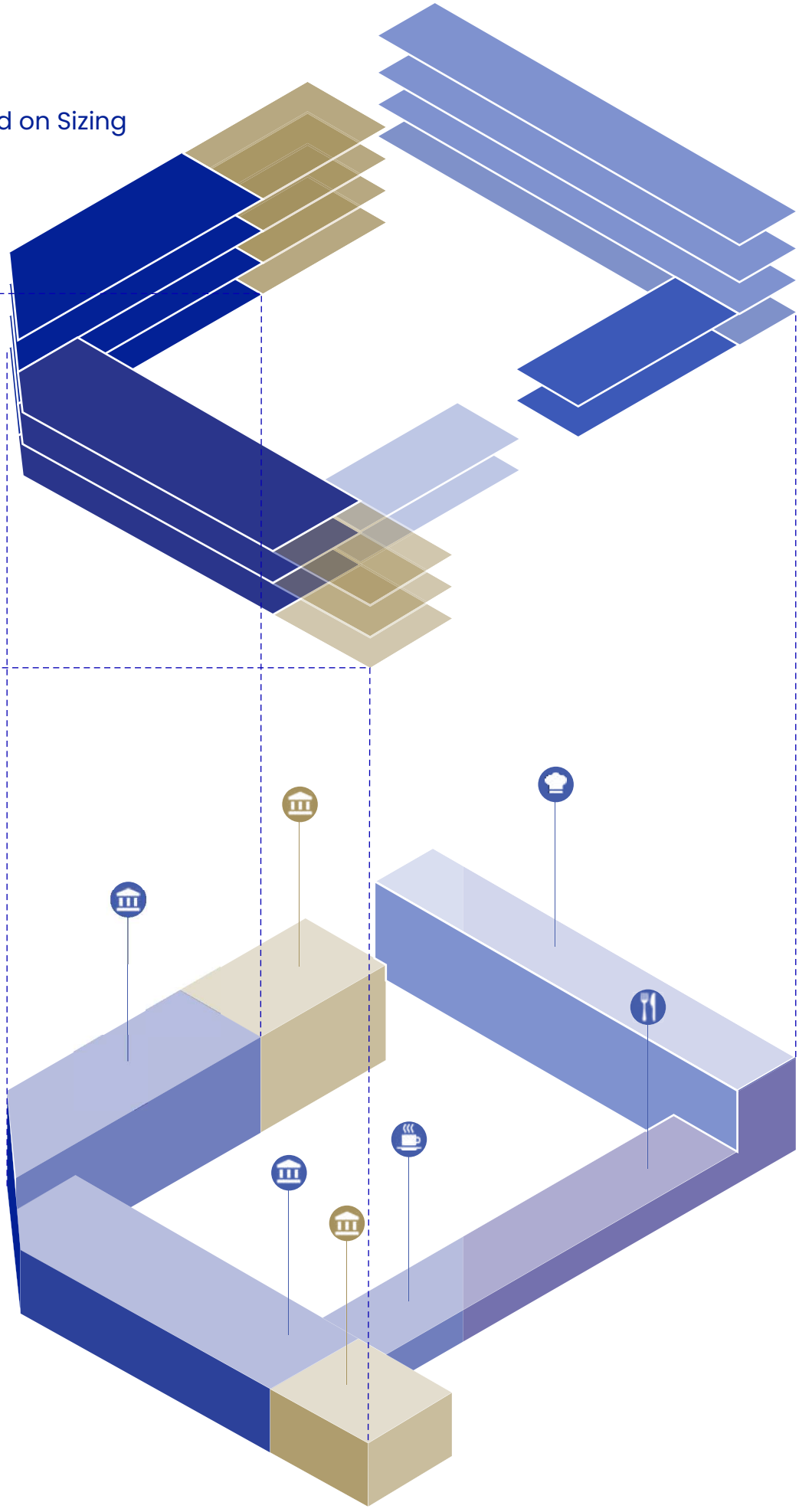

1,700 m²
ENT FACILITIES 310 m²
EDUCATIONAL SPACES 750 m²
DINING & REST 80 m²
LOCKER ROOMS
80 m²
LOCKER ROOMS
FERMENTATION LAB 200 m²
PASTRY & BAKING LAB 150 m²
DEMONSTRATION HALL 200 m²
TEACHING KITCHENS 130 m²
50
40
40
40
50
60
15
CAFE & RESTAURANT
CAFE 200 m²
RESTAURANT 220 m²
PASTRY SHOP 300 m²
STAFF & SUPPORT
KITCHEN 50 m²
CUSTOMER AREA 90 m²
ACCESS & CIRCULATION
STAFF & SUPPORT
KITCHEN 60 m²
CUSTOMER AREA 110 m²
PASTRY SHOP
DINING HALL
VOID
DINING HALL 90 m²
TASTING AREA
STORAGE ROOM
STORAGE ROOM
RETAIL AREA 150 m²
6
35
14
45
12
60
3,122 m²
EXHIBITION & GALLERY SPACES 1,100 m²
PUBLIC & RECEPTION SPACES 230 m²

II. Loyalty to the Traditional Typology



I. Existed Building

III. Required Area Based on Sizing



Project: Five Shadows Residence
Architect: CLB Architects
Location: Jackson Hole, Wyoming, USA
Completion Date: 2018

Introduction

The Five Shadows Residence by CLB Architects demonstrates an exceptional architectural strategy, seamlessly integrating the built environment with the surrounding natural landscape. The design distinctly employs strategic openings and framing techniques to guide viewers' attention outward, enhancing the connection between interior spaces and their natural context.

Conceptual Similarity

Both the Five Shadows Residence and our adaptive reuse of the flour factory employ careful architectural strategies at entrances to direct viewers' attention outward, framing selected views of the natural landscape. This approach not only enriches spatial experiences but also reinforces the connection between architecture and its surroundings.

View Framing in Five Shadows Residence

At the Five Shadows Residence, the architects strategically positioned windows and openings to capture specific landscape elements, creating deliberate visual frames. As visitors approach and enter the residence, their gaze is consistently guided toward curated vistas of the surrounding natural environment, particularly emphasizing the dramatic Teton Range backdrop.

The residence employs minimalistic forms and a refined material palette to amplify the contrast and harmony with nature, enhancing visitors' sensory and spatial experiences. Each window and opening functions as a deliberate framing device, strengthening the interaction between indoors and outdoors and highlighting nature as a core part of the residence's identity.

Fig.
Photo by Matthew Millman

View Framing in Our Project (Flour Factory Adaptive Reuse)

Our project's entrance is deliberately designed to direct visitors' visual focus toward carefully framed views of the outdoor landscape. Employing axes and guiding lines, the design ensures that the first encounter with the building highlights the surrounding natural elements, such as the courtyard gardens, thus seamlessly connecting the built environ-

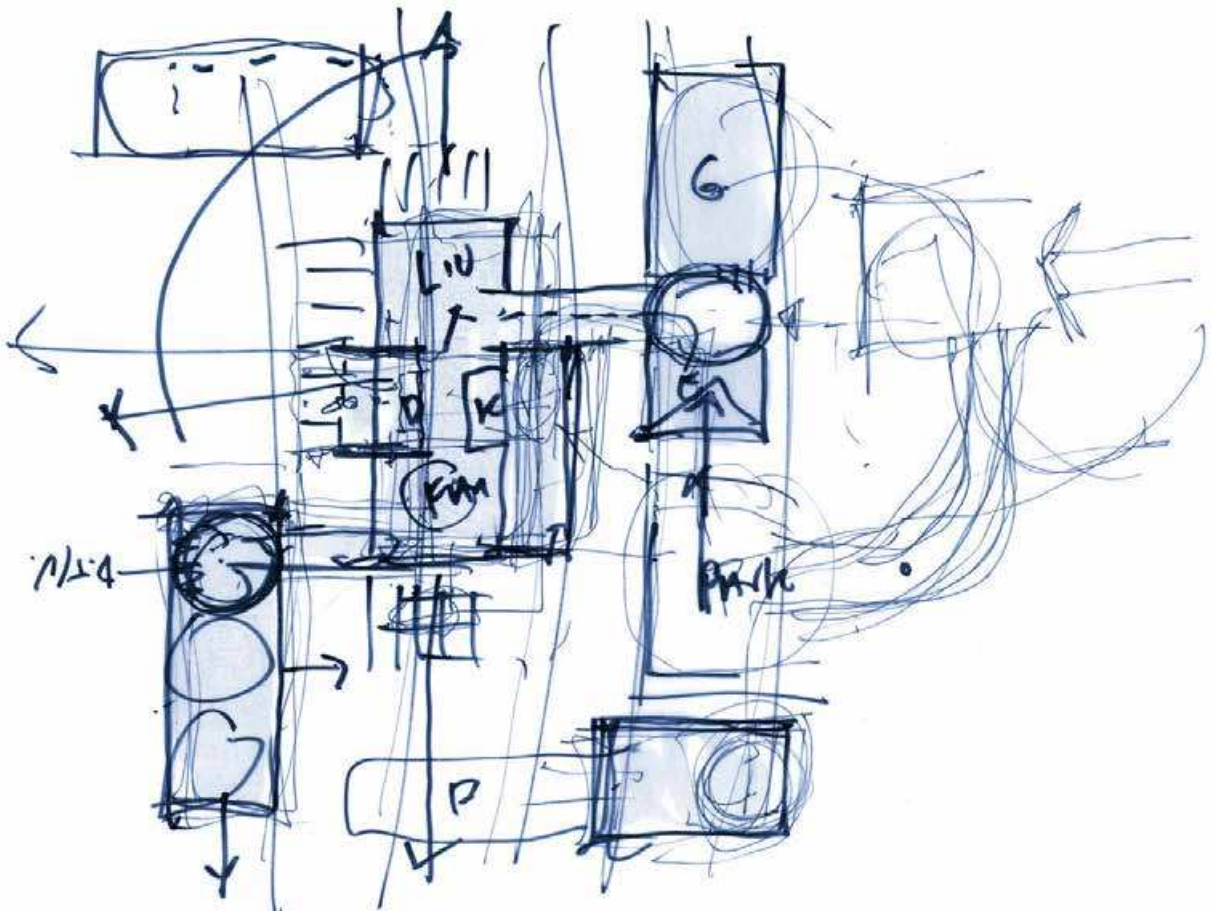
ment to the landscape.
This framing technique enriches visitors' spatial experiences and provides immediate visual clarity upon entry. It establishes a tranquil and inviting atmosphere, connecting visitors emotionally and visually with nature from the very first moment.

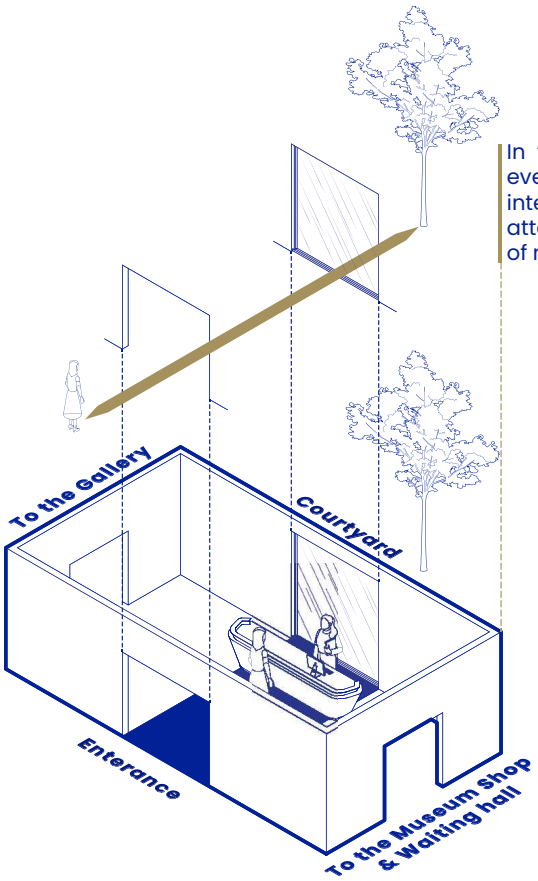
Comparative Architectural Analysis
Both projects demonstrate the profound impact of framing views as a design strategy:

- Deliberate Visual Connections: Employing architectural forms and openings to actively engage visitors with the surrounding environment.
- Enhanced Spatial Experience: Utilizing framing to intensify visitors' appreciation of natural landscapes, making the architecture feel interconnected with its surroundings.
- Harmony and Contrast: Balancing built elements and natural scenery to create an integrated and harmonious visitor experience.

By incorporating these insights, our adaptive reuse project effectively creates meaningful spatial narratives that emphasize the essential role of natural elements within architectural experiences.

Fig.
Sketch from CLB Architects





In the design of the complex, every axis and guiding line is intended to direct the viewer's attention toward framed views of nature and the landscape.

Integrating Movement and Exhibition Spaces through Ramps

Project: Carpenter Center for the Visual Arts
Architect: Le Corbusier
Location: Cambridge, Massachusetts, USA
Completion Date: 1963

Introduction

The Carpenter Center, designed by Le Corbusier, exemplifies modern architecture through its innovative combination of form, function, and movement. The project distinctly utilizes a continuous ramp that not only connects diverse spaces but also acts as an exhibition area itself, creating dynamic interaction and enhancing visitor experience.

Conceptual Similarity

A core similarity between Le Corbusier's Carpenter Center and our project, the adaptive reuse of the flour factory, lies in the strategic use of ramps. Both projects employ ramps not merely as functional elements for vertical and horizontal movement, but as integral parts of the experiential and exhibition strategies.

Le Corbusier's Carpenter Center Ramp

The Carpenter Center's ramp originates from the exterior public realm, smoothly transitioning visitors through multiple levels of the building. Its open and transparent nature allows for continuous visual interaction with internal activities and exhibitions. The ramp creates a promenade architectural experience—an essential Le Corbusier concept—where movement and perception are intertwined, making the visitor part of the architectural and artistic dialogue.

The ramp passes through interior and exterior spaces fluidly, showcasing artworks and encouraging incidental encounters among visitors, students, and staff. Its strategic placement blurs the boundaries between public and private, educational and recreational, becoming a space of convergence and social interaction.

Ramp in Our Project (Flour Factory Adaptive Reuse)

In our adaptive reuse project, the ramp serves as a pivotal spatial element, linking the galleries to the culinary art school. It begins within the galleries, descends through a suspended, transparent structure showcasing temporary exhibitions, and concludes in the educational and interactive environment of the culinary art school. The transparent nature of our ramp invites visitors to actively engage with displayed exhibits, fostering a direct visual and experiential connection to the ongoing activities in the spaces below.

Analysis of Shared Architectural Strategy

Both projects utilize the ramp beyond its utilitarian role, transforming it into a narrative device that enriches visitor experience. Le Corbusier's approach informs our design choices, encouraging fluid movement and interaction, fostering transparency, and establishing an inviting atmosphere that integrates various functional spaces.

Key lessons from Carpenter Center's ramp design include:

- Spatial Continuity: Ensuring the ramp seamlessly integrates different building functions and enhances user orientation.
- Experiential Journey: Making movement through the ramp an engaging and informative experience rather than merely transitional.
- Social Interaction and Visibility: Designing transparent and open ramps to promote interaction and visibility among visitors and diverse activities.

By adopting these insights, our project enhances its spatial narrative, making the architectural journey through the adaptive reuse of the flour factory meaningful and memorable.

Fig.
Section from Archdaily

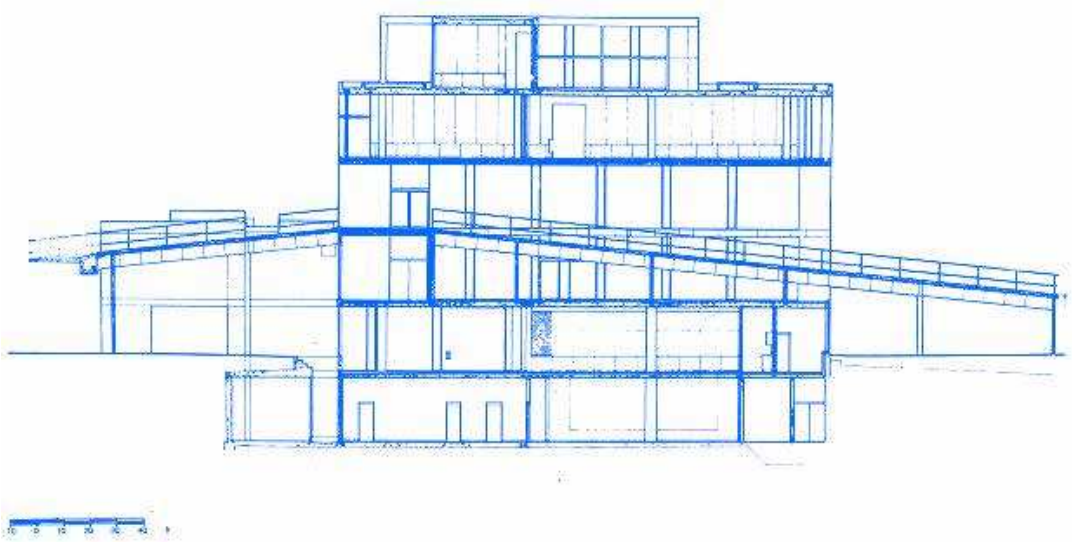
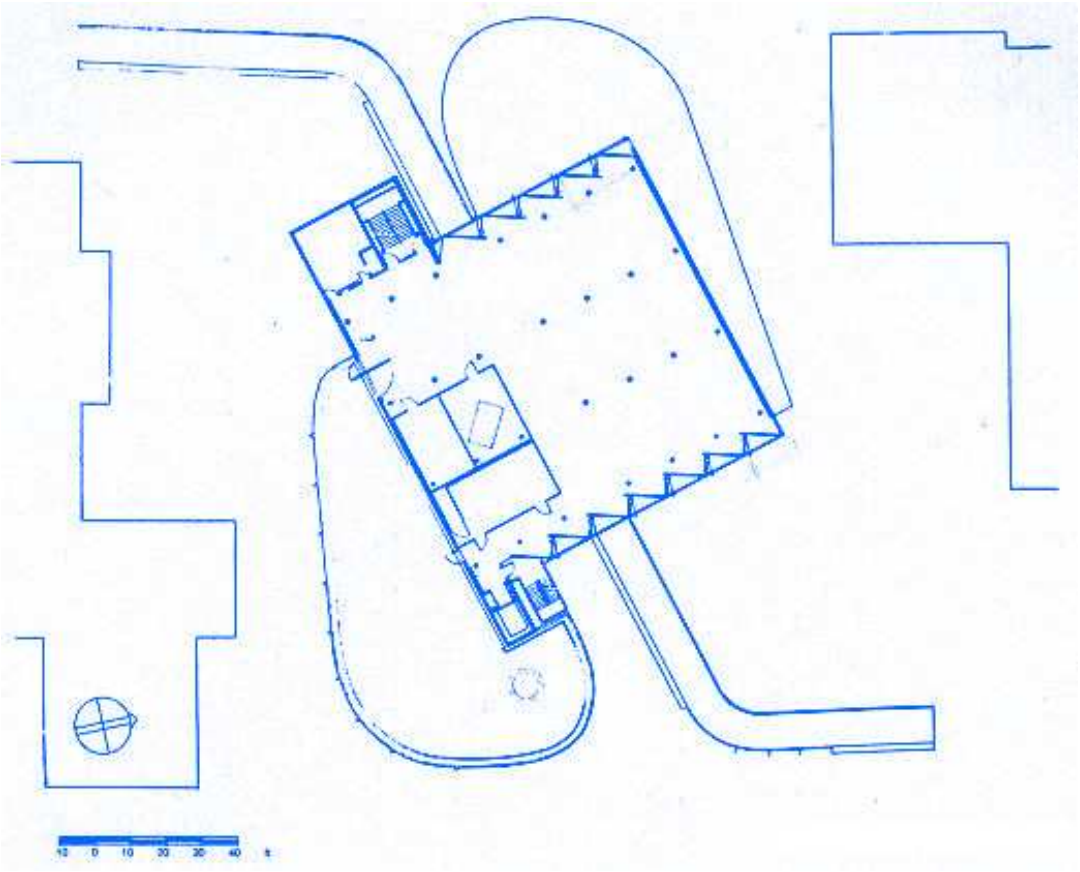
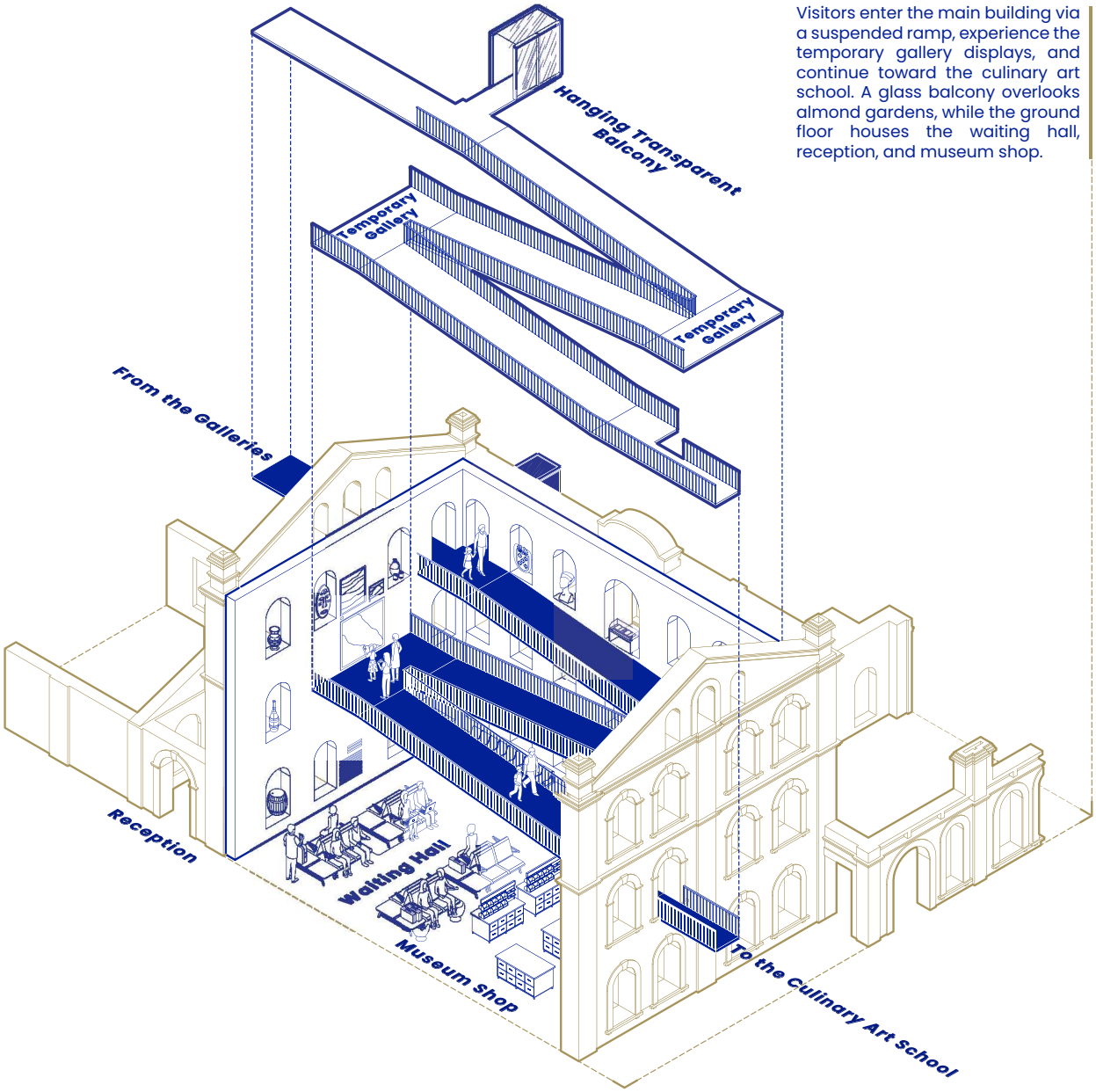


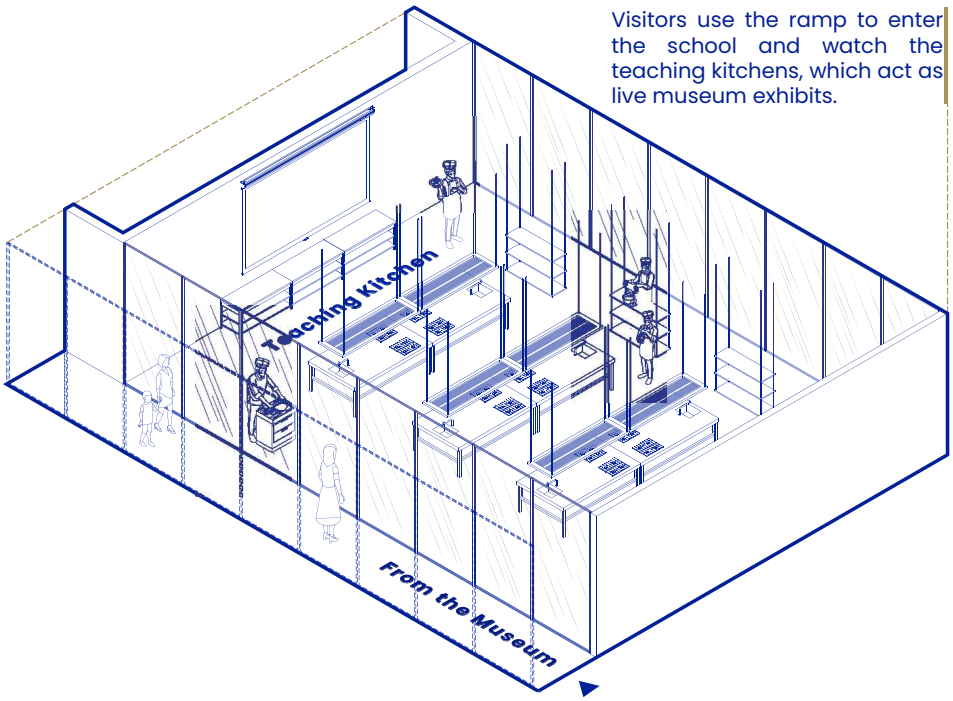
Fig.
Plan from Archdaily



Visitors enter the main building via a suspended ramp, experience the temporary gallery displays, and continue toward the culinary art school. A glass balcony overlooks almond gardens, while the ground floor houses the waiting hall, reception, and museum shop.



Kitchen



Visitors use the ramp to enter the school and watch the teaching kitchens, which act as live museum exhibits.

Project: The Why Factory Tribune
Architect: MVRDV
Location: Delft, Netherlands
Completion Date: 2009

Introduction
The Why Factory Tribune, designed by MVRDV, represents an innovative approach to vertical circulation and social interaction within architectural spaces. A prominently designed staircase serves multiple functions, providing both circulation and social spaces that foster spontaneous interactions and community building.

Conceptual Similarity
Both The Why Factory Tribune by MVRDV and our adaptive reuse flour factory project prominently feature staircases that extend beyond mere functional vertical circulation. These staircases are intentionally designed as social platforms, encouraging people to interact, rest, and engage in communal activities.

Staircase as Social Space in The Why Factory Tribune
The Tribune at The Why Factory is designed as a monumental staircase that acts as an auditorium, seating area, and social gathering space simultaneously. Its stepped form provides informal seating and encourages spontaneous interactions, creating a dynamic environment for meetings, lectures, and casual gatherings.
The staircase significantly shapes the interior spatial experience by fostering community interactions and collective activities. Its central location within the facility ensures high visibility and accessibility, turning it into a vibrant hub of social and intellectual engagement.

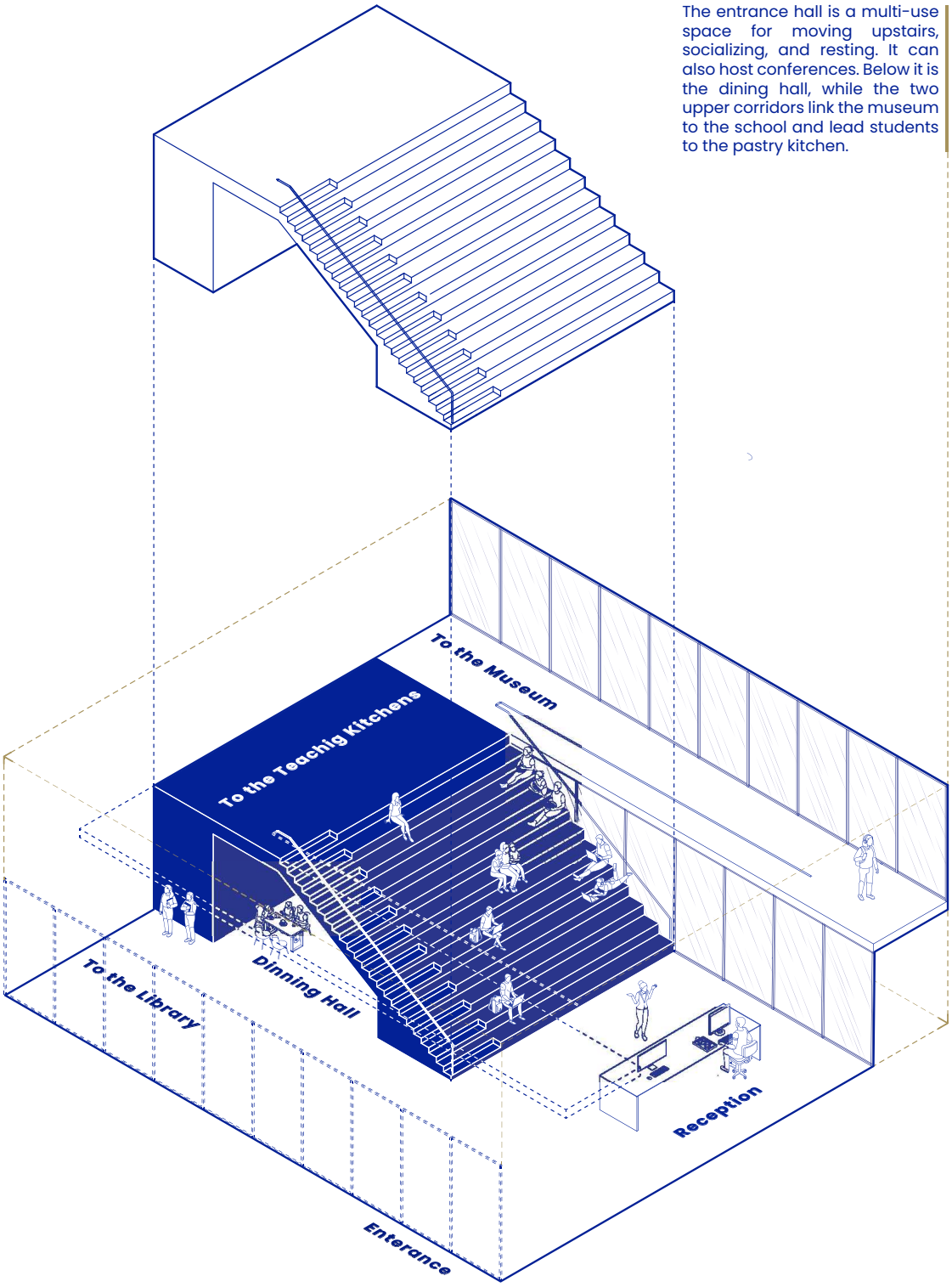
Staircase as Social Space in Our Project (Flour Factory Adaptive Reuse)
In our adaptive reuse project, the entrance hall staircase functions similarly as a versatile social area. This staircase connects the dining hall, teaching kitchens, library, and museum, while also serving as informal seating and gathering space. It accommodates various social functions, including casual interactions, rest, and small events.
The open and welcoming design of the staircase in our project enhances connectivity between visitors, students, and staff. It supports flexible uses, encouraging spontaneous and planned gatherings, significantly contributing to the project's social dynamism.
6. Comparative Architectural Analysis
Both projects illustrate how staircases can enhance social interaction and community engagement:
- Multifunctionality: Designing staircases to serve multiple purposes, including seating, gathering, and circulation.
- Social Activation: Encouraging informal gatherings and interactions by strategically placing and designing the staircase.
- Central Positioning: Ensuring the staircase is prominently located to maximize social interaction and accessibility.

By adopting these strategies, our project successfully integrates social

connectivity with architectural functionality, creating inviting and vibrant communal spaces.

Fig.
Perspective views from MVRDV Studio

The entrance hall is a multi-use space for moving upstairs, socializing, and resting. It can also host conferences. Below it is the dining hall, while the two upper corridors link the museum to the school and lead students to the pastry kitchen.



Project: Inagawa Cemetery Chapel and Visitor Centre
Architect: David Chipperfield Architects
Location: Hyogo Prefecture, Japan
Completion Date: 2017

Introduction
The Inagawa Cemetery Chapel and Visitor Centre by David Chipperfield Architects represents a serene and contemplative architectural approach, skillfully integrating nature into the spatial experience. The project's design specifically emphasizes the visual connection with the surrounding landscape from multiple perspectives, enhancing the introspective atmosphere of the building.

Conceptual Similarity
Both the Inagawa Cemetery Chapel and Visitor Centre and our adaptive reuse flour factory library adopt a design strategy that prominently features natural views on both sides, creating immersive and tranquil environments for visitors and users. This design philosophy prioritizes harmony with nature, significantly impacting the emotional and spatial quality of the interior spaces.

Nature Integration in Inagawa Cemetery Chapel and Visitor Centre
David Chipperfield's design for the Inagawa project prioritizes visual permeability and direct engagement with the natural environment. Large glass façades and carefully positioned openings on both sides of the structure frame tranquil views of gardens and distant landscapes, contributing to the meditative and serene atmosphere essential to the building's purpose.
The symmetrical placement of views and the sensitive use of materials like concrete and timber further accentuate the building's harmony with its natural surroundings, reinforcing the spiritual and contemplative character of the space.

Nature Integration in Our Project (Flour Factory Library)
In our project, the library is specifically designed to provide visitors with a reading experience immersed between two distinct gardens. Large windows and transparent walls enable continuous visual connections with nature, creating a peaceful and enriching environment ideal for contemplation and learning.
The dual garden views offer users a constant presence of greenery and natural light, enhancing the comfort and attractiveness of the library. This approach contributes significantly to the overall sense of tranquility and well-being within the space, fostering deeper engagement and focus.

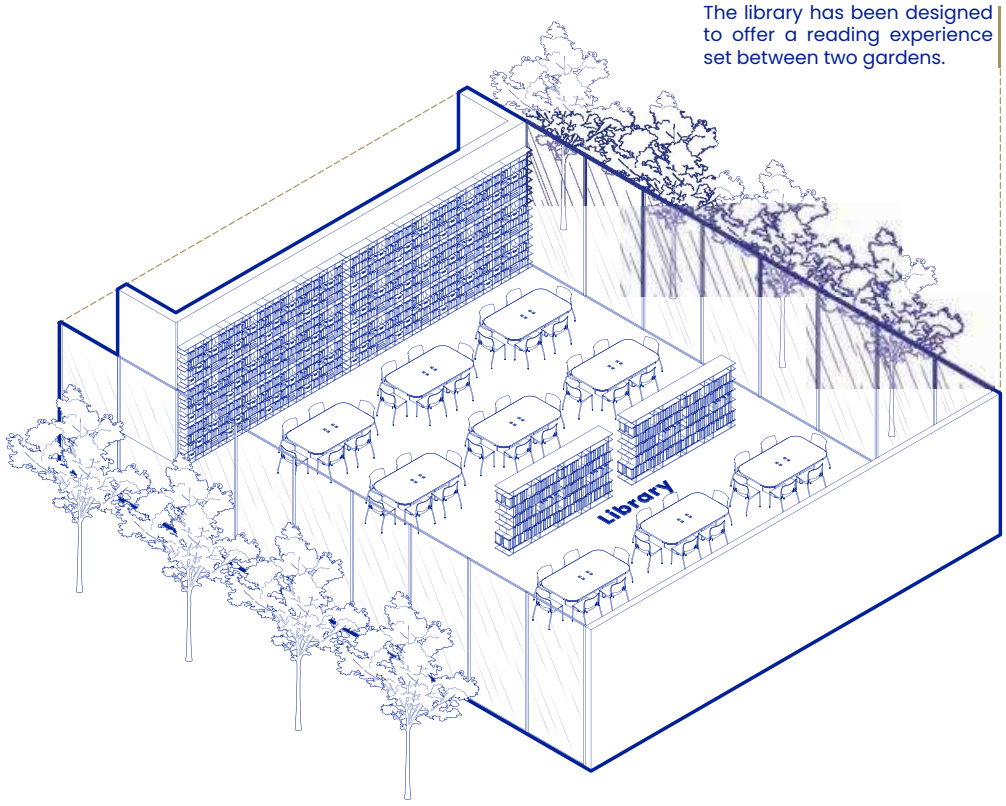
Comparative Architectural Analysis
Both projects showcase the powerful impact of dual natural views in architectural design:
- Symmetry and Balance: Utilizing symmetrical views to achieve visual harmony and enhance spatial quality.
- Emotional and Sensory Experience: Creating spaces that profoundly affect users' emotional states through consistent visual connections with

nature.

• Material and Spatial Coherence: Selecting materials and spatial layouts that reinforce the integration of interior and exterior spaces.

By adopting these key design principles, our library successfully merges functionality with natural beauty, creating an environment that deeply resonates with visitors and encourages meaningful interactions with both literature and nature.

Fig.
Perspective view from David Chipperfield Architects


The library has been designed to offer a reading experience set between two gardens.
Library

Project: Carpigiani Gelato University
Location: Bologna, Italy

Introduction
Carpigiani Gelato University exemplifies a unique integration of culinary education and commercial practice, creating a dynamic learning environment where students' creations are directly marketed and sold, providing practical business experience.

Conceptual Similarity
Both Carpigiani Gelato University and our adaptive reuse project emphasize integrating educational culinary spaces with commercial venues. This concept not only enhances educational value but also provides real-world business experiences to students.

Commercial Integration at Carpigiani Gelato University
At Carpigiani Gelato University, students gain hands-on experience in gelato-making while their creations are showcased and sold to the public in a dedicated gelateria. This approach enhances the educational curriculum by integrating practical commercial exposure, allowing students to test their products in a realistic business environment, receive customer feedback, and understand market dynamics.

Fig.
Photo courtesy of Carpigiani Gelato University

Commercial Integration in Our Project (Flour Factory Culinary School)
In our culinary school, student-made pastries are similarly showcased and sold through a dedicated commercial space. This practice not only enriches student education through practical experience but also invites public interaction, bridging the gap between education and commerce.

Comparative Architectural Analysis
Both projects highlight the importance of practical commercial experience in culinary education:

- Educational and Commercial Synergy: Blending learning and commercial activities to enhance educational outcomes.
- Real-world Exposure: Offering students opportunities to experience market dynamics and customer interaction directly.
- Community Engagement: Utilizing commercial spaces to foster community participation and feedback, enriching educational experiences.

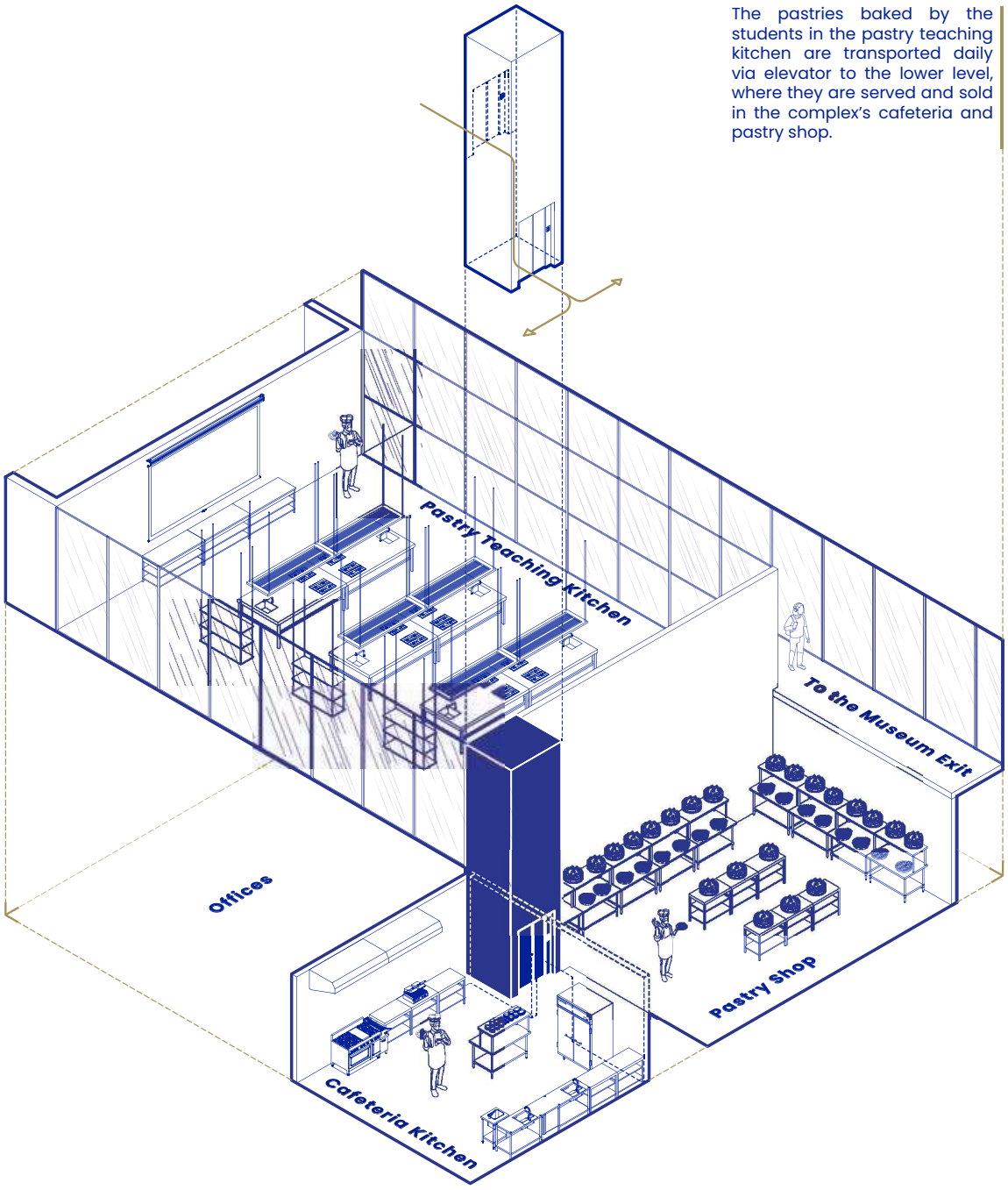
By adopting this integrative approach, our project creates a robust educational model that effectively prepares students for re-

al-world culinary entrepreneurship.

Fig.
Photo courtesy of Carpigiani Gelato University

Fig.
Photo courtesy of Carpigiani Gelato University

The pastries baked by the students in the pastry teaching kitchen are transported daily via elevator to the lower level, where they are served and sold in the complex's cafeteria and pastry shop.



Project: Solomon R. Guggenheim Museum
Architect: Frank Lloyd Wright
Location: New York, USA
Completion Date: 1959

Introduction
Frank Lloyd Wright's Guggenheim Museum represents an iconic shift in museum architecture, where the ramp itself functions as a continuous gallery space. This innovative design transforms traditional gallery viewing into an experiential, continuous journey, profoundly impacting museum design practices worldwide.

Conceptual Similarity
The Guggenheim Museum and our adaptive reuse project of the flour factory share a common concept: the integration of ramps as primary gallery spaces. This architectural strategy goes beyond mere circulation, enriching visitor experiences by merging movement and exhibition into a single, cohesive architectural narrative.

Ramp as Gallery in Guggenheim Museum
The Guggenheim Museum's spiral ramp uniquely shapes the museum experience. Visitors ascend via elevator and gradually descend along a continuous, gently inclined ramp, viewing artworks displayed along its walls. This spiral form enables uninterrupted circulation and seamless engagement with exhibitions, fostering an immersive interaction between visitors, architecture, and art.
The ramp's design intentionally alters traditional perceptions of museum spaces, turning the act of viewing art into a fluid, uninterrupted experience. The curved walls and open central atrium enhance visibility, allowing visitors to perceive the museum space dynamically from multiple vantage points.

Ramp as Gallery in Our Project (Flour Factory Adaptive Reuse)
In our flour factory project, the gallery ramp forms a strategic transitional space, connecting the main building to auxiliary functions. The gallery on the ramp hosts temporary exhibitions, offering visitors an interactive journey as they move between different areas. The ramp gallery's placement and transparency encourage visual connectivity and fluidity, fostering an interactive and dynamic environment that enriches visitor engagement with displayed artworks.

Comparative Architectural Analysis
Both projects utilize ramps to transform passive gallery experiences into dynamic journeys, breaking traditional static museum conventions. Key insights gained from the Guggenheim's architectural approach include:
- Continuous Exhibition Flow: Designing ramps to provide uninterrupted visual and experiential flow, enhancing narrative coherence.
- Immersive Visitor Experience: Crafting spaces that engage visitors physically and visually, amplifying their sensory and intellectual involvement.

• Spatial Integration: Employing ramps to unify disparate functional spaces, creating seamless transitions between exhibition zones and other activities.

By integrating these architectural principles, our project successfully creates a memorable and meaningful experience, transforming movement into an integral part of the museum's narrative.

Fig.
Plan from Archdaily

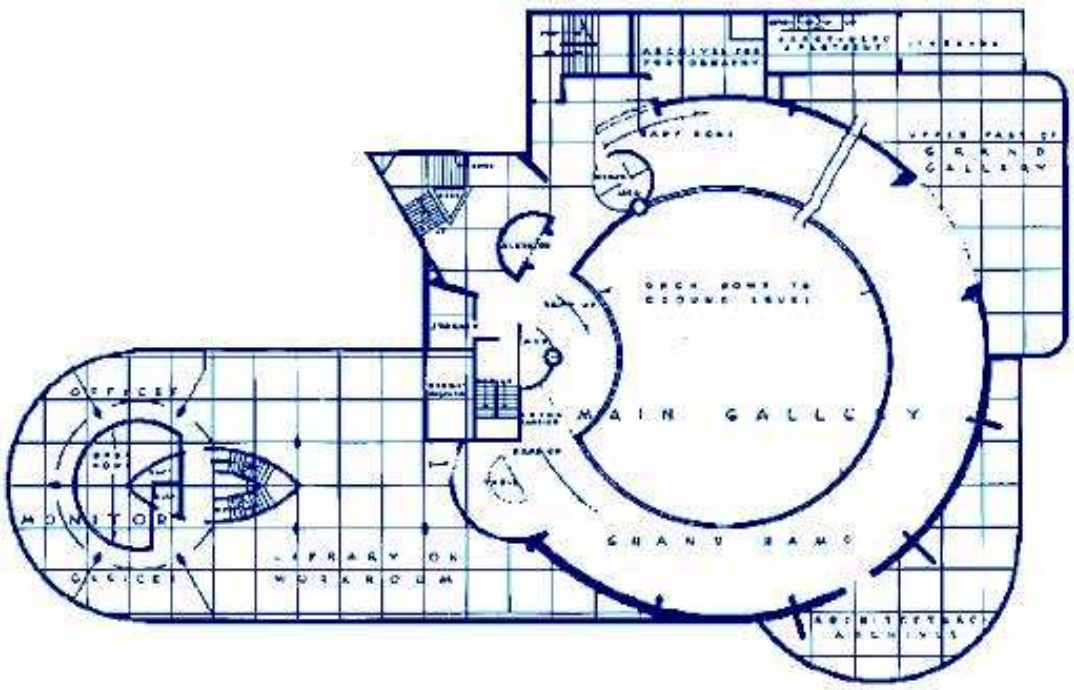
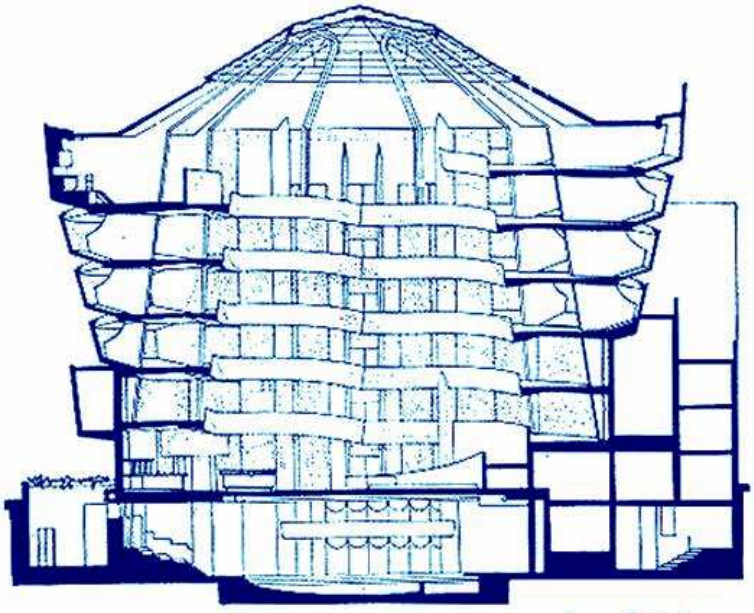
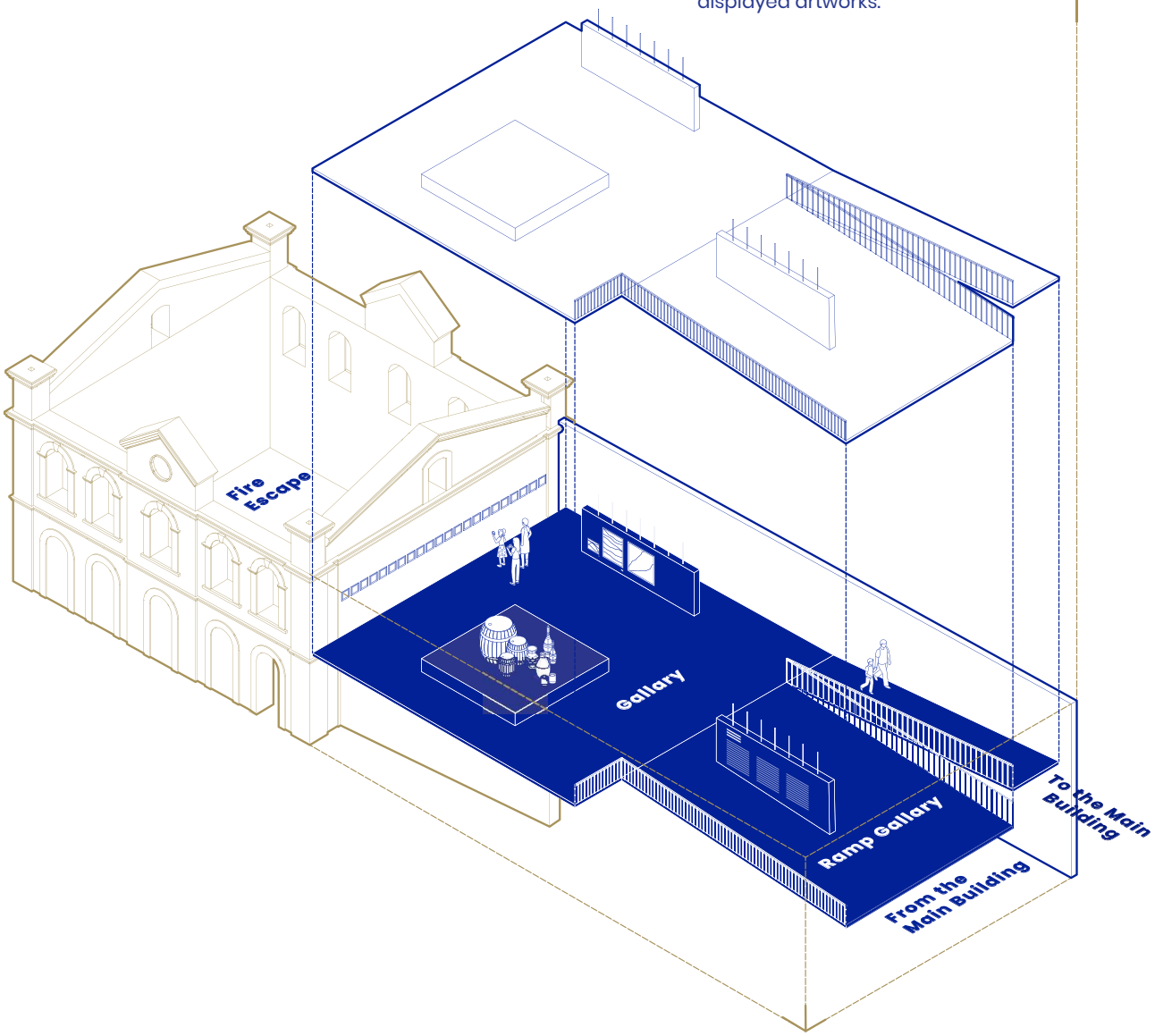


Fig.
Section from Archdaily



The ramp gallery's position and transparency promote visual connections and a sense of flow, creating an interactive and dynamic atmosphere that enhances how visitors engage with the displayed artworks.



Project: 476 Bélair-Monange Winery
Location: Saint-Émilion, France
Architect: Herzog & de Meuron
Completion Date: 2014

Introduction
The 476 Bélair-Monange Winery by Herzog & de Meuron exemplifies an innovative architectural approach by integrating existing roof structures with contemporary interventions. This careful combination of preservation and modern techniques ensures both historical continuity and architectural innovation.

Conceptual Similarity
Our adaptive reuse project mirrors the concept utilized by Herzog & de Meuron at Bélair-Monange Winery, strategically retaining and extending existing roof structures while introducing modern construction methods and materials to achieve seamless integration.

Roof Integration at Bélair-Monange Winery
At Bélair-Monange, Herzog & de Meuron retained the existing traditional roof structure and artfully integrated contemporary architectural elements. The approach respects historical elements, using modern methods and materials subtly yet distinctively, ensuring both structural and aesthetic harmony.

Roof Integration in Our Project (Flour Factory Adaptive Reuse)
In our project, the original roof structure is similarly maintained and enhanced with a new contemporary addition. The modern attachment employs advanced construction techniques and materials, clearly distinguishing yet harmonizing with the original fabric. This method respects historical authenticity while introducing innovative structural and aesthetic solutions.

Comparative Architectural Analysis
Both projects highlight critical design strategies for integrating historic structures with contemporary architecture:

- Respectful Preservation: Maintaining and celebrating original architectural elements.
- Innovative Techniques: Using contemporary construction methods to enhance structural integrity and aesthetic quality.
- Visual and Structural Harmony: Achieving balance and cohesion between old and new architectural components.

Fig.
Perspective from herzog-demeuron.com

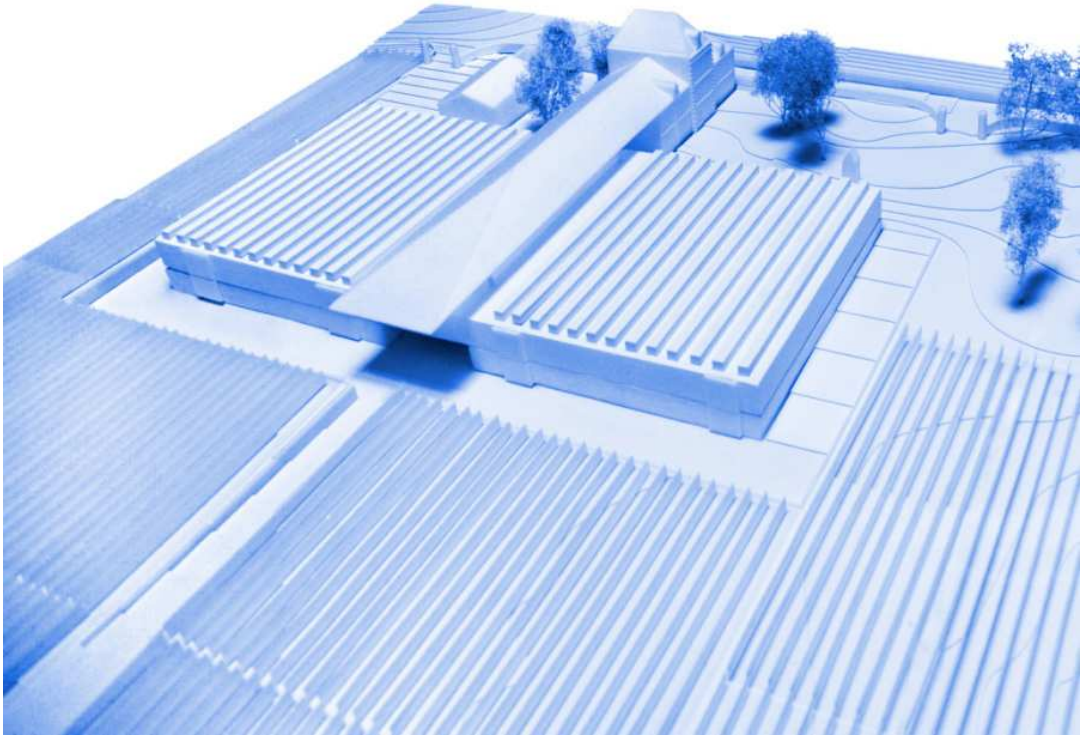


Fig.
Model from herzogde-meuron.com

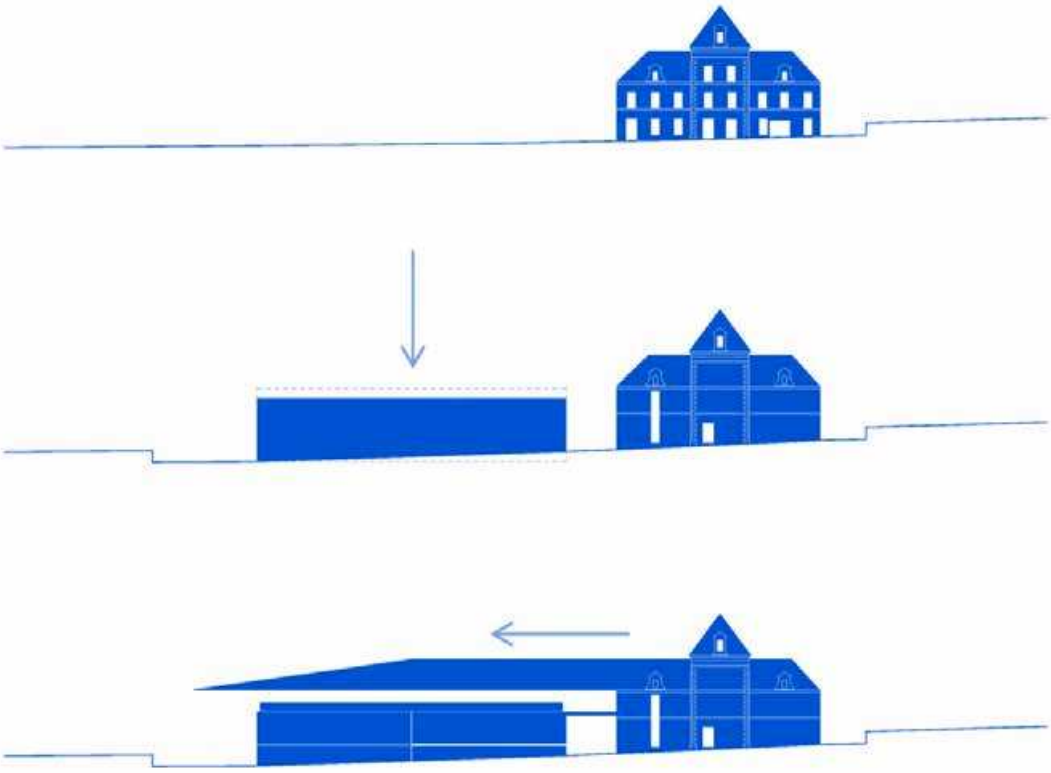


Fig.
Elevation Scheme from herzogdemeuron.com

Inspiration Source: The Old Oak (2023) - Directed by Ken Loach

Introduction
Inspired by the film "The Old Oak," this case study explores the integration of charity into architectural spaces, specifically focusing on weekly food distribution initiatives designed to strengthen community bonds and provide practical support.

Conceptual Similarity
The charity-driven concept in our adaptive reuse project closely aligns with the community-centric initiative portrayed in "The Old Oak," where food sharing activities foster social cohesion and mutual support within the community.

Charity and Community in "The Old Oak"
In "The Old Oak," weekly communal food sharing serves as a pivotal mechanism for fostering solidarity and support among community members facing economic and social challenges. The practice transforms food distribution into a meaningful, communal event, deepening relationships and social networks.

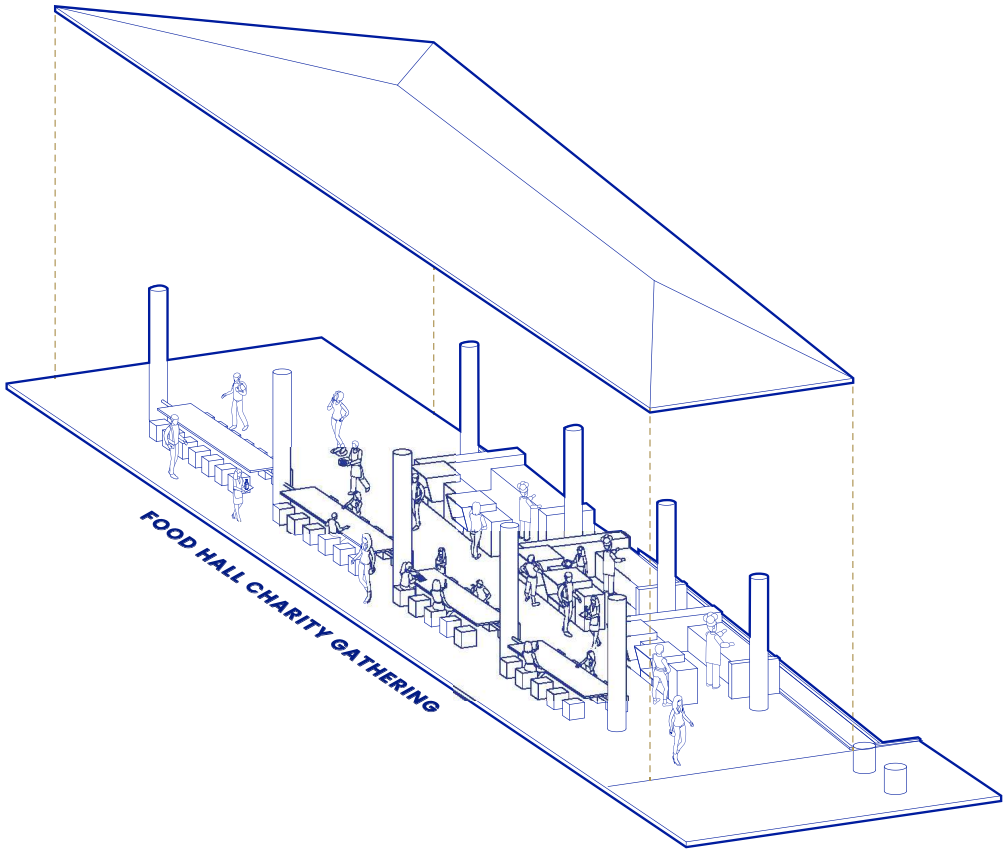
Charity and Community in Our Project (Flour Factory Adaptive Reuse)
Similarly, our project incorporates a dedicated weekly food distribution initiative, utilizing pastries and other culinary products prepared by students. This charitable activity supports local community members, enhancing social interaction and creating a sense of solidarity and care.

Fig.
The Old Oak Movie Poster

Comparative Architectural and Social Analysis
Both projects illustrate the potential for culinary spaces to serve broader social and charitable purposes:

- Social Engagement: Strengthening community ties through regular communal activities.
- Economic Support: Providing practical assistance to community members through food distribution.
- Community Empowerment: Encouraging active community participation and support networks.

By incorporating these values into our architectural and educational strategy, our project promotes meaningful community connections and social resilience.



This "Food Hall Charity Gathering" is designed to facilitate the distribution and consumption of food for those in need, focusing on both practical functionalities and a sense of community. The layout implies volunteers and staff manage the food distribution, direct people, maintain cleanliness, and potentially offer additional support or resources. The open spaces around the tables, populated by standing figures, indicate areas for people to gather before or after receiving food. This could serve as a waiting area, a place for informal interaction, or a space for volunteers to guide beneficiaries.

Project: Piazza del Campidoglio
Architect: Michelangelo Buonarroti
Location: Rome, Italy
Completion Date: 1654 (final realization)

Introduction
Michelangelo's Piazza del Campidoglio masterfully demonstrates how the thoughtful addition of new buildings can redefine existing urban spaces, creating vibrant communal areas. The architectural ensemble transforms into a cohesive piazza, enhancing social interactions and civic identity.

Conceptual Similarity
Similar to Michelangelo's approach, our adaptive reuse project employs architectural additions to form a central courtyard (Hayat Markazi). This courtyard strategically uses spatial characteristics to promote communal interaction and cultural activities, echoing the communal spirit of Piazza del Campidoglio.

Architectural Integration at Piazza del Campidoglio
Michelangelo's design unifies existing structures by adding a new building, creating a harmonious urban space. The design strategically reorients and frames surrounding buildings to define a central piazza, significantly enhancing its civic importance and social utility.

Architectural Integration in Our Project (Hayat Markazi)
Our project's central courtyard (Hayat Markazi) similarly emerges from the integration of existing and new structures. The resultant communal space encourages social gatherings, cultural events, and fosters a strong sense of community identity, mirroring the inclusive urban spirit captured by Michelangelo.

Comparative Architectural Analysis
Both projects illustrate essential architectural strategies for creating impactful communal spaces:

- Urban Cohesion: Integrating new architectural elements with existing buildings to form cohesive social spaces.
- Enhanced Social Interaction: Designing spaces that naturally encourage public gatherings and interactions.
- Cultural and Civic Significance: Elevating the importance and usability of communal areas through thoughtful architectural interventions.

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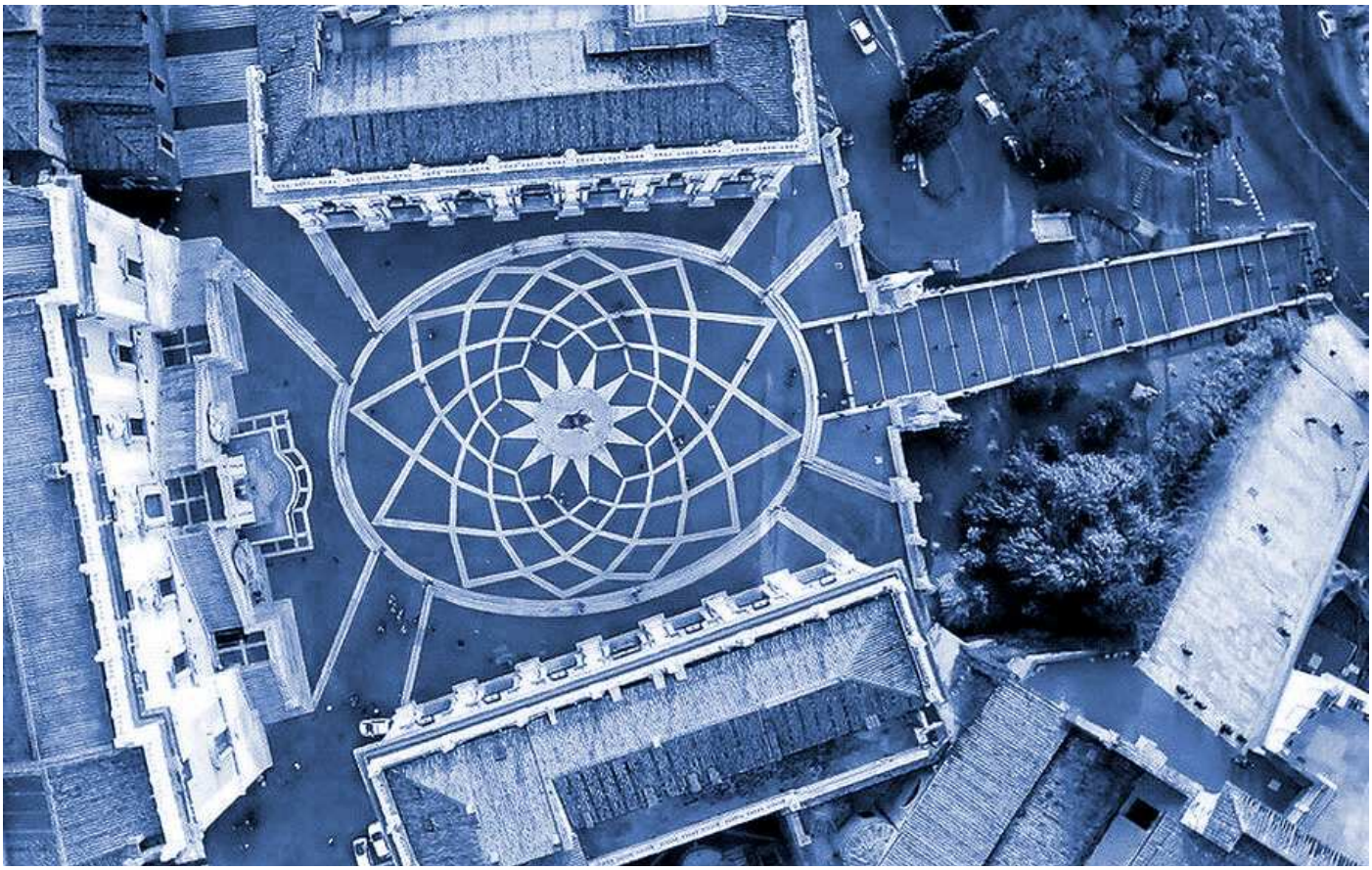
Fig.
Image from walksinrome.com



Small Amphitheatre in Parque Vidalta
Architect: JSa Arquitectura
Location: Mexico City, Mexico
Completion Date: 2017

Introduction
The small amphitheatre in Parque Vidalta by JSa Arquitectura demonstrates how a modestly scaled open-air gathering space effectively supports community events and performances, encouraging social interaction and community participation.

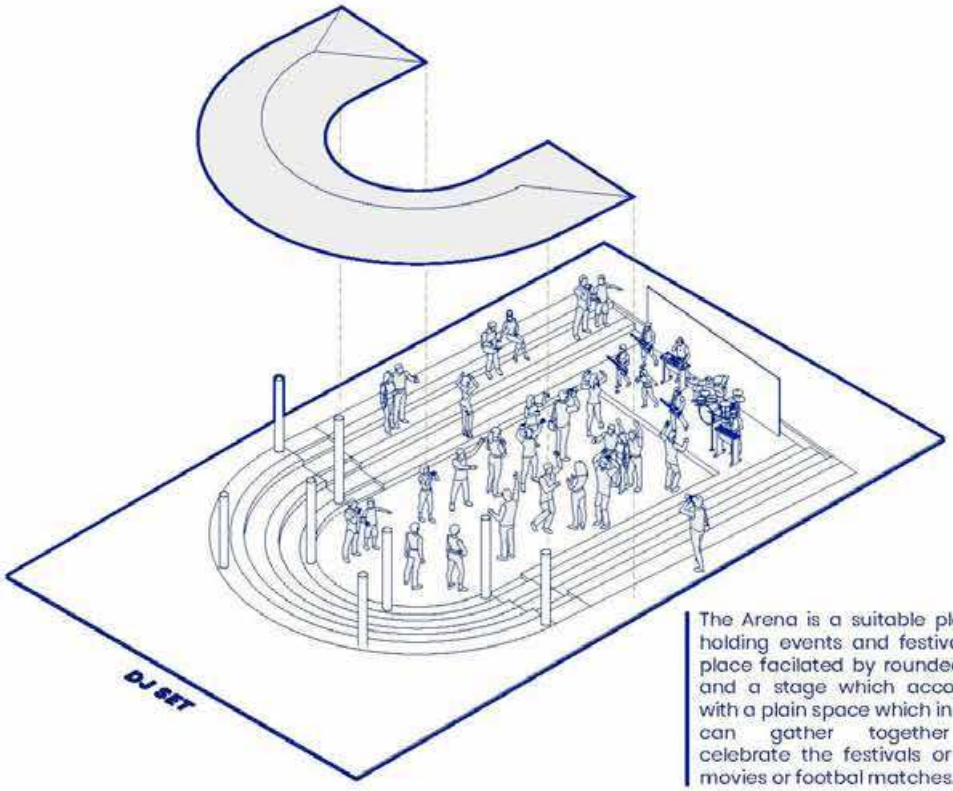
Conceptual Similarity
Similar to the design presented in our adaptive reuse project, the amphitheatre in Parque Vidalta integrates a rounded seating arrangement and a clearly defined stage area, suitable for various community gatherings such as performances, film screenings, and small festivals.

Architectural Features of Parque Vidalta Amphitheatre
This amphitheatre features an intimate setting facilitated by curved seating arrangements around a central stage area. The spatial layout emphasizes visibility, accessibility, and comfort, effectively promoting community engagement during events.

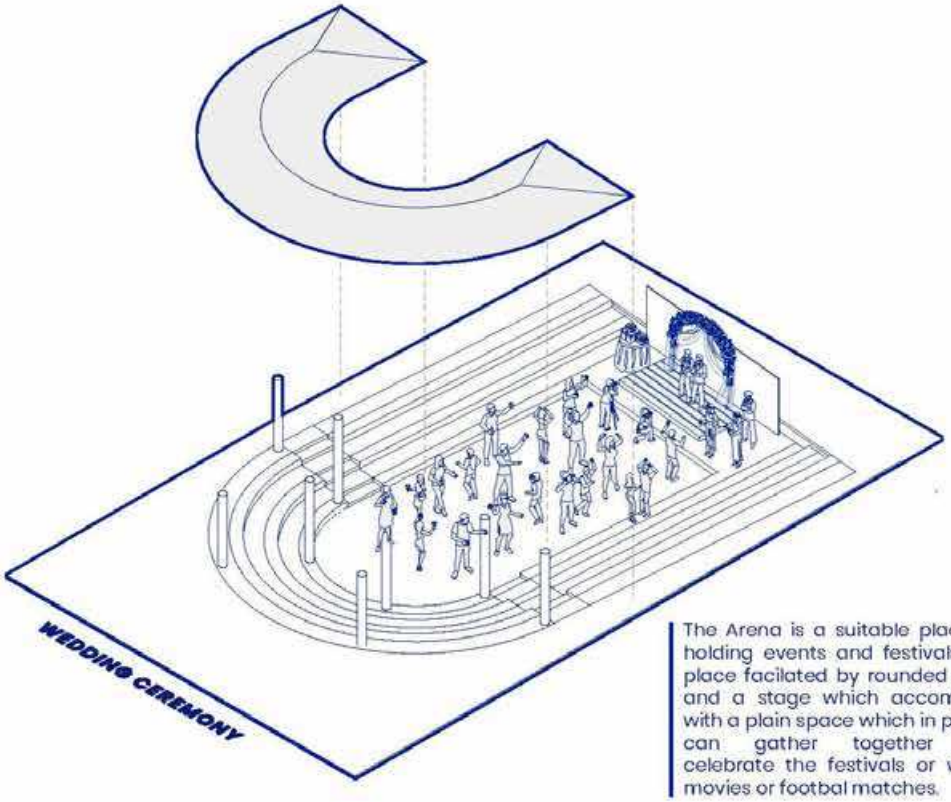
Architectural Integration in Our Project (Arena)
Our project's open-air arena similarly includes rounded seating, a dedicated stage, and central open space, designed specifically to accommodate community events and social gatherings. It serves as a flexible space that enhances community interaction and cultural activities.

Comparative Architectural Analysis
Both arenas emphasize the following design principles:
- Compact and Efficient Layout: Designing for optimal viewing and interaction in smaller gatherings.
- Flexibility for Multiple Uses: Supporting diverse event types through versatile spatial configurations.
- Accessibility and Engagement: Creating inclusive and easily accessible communal spaces.

Adopting these design strategies effectively fosters community spirit and cultural engagement in both projects.



The Arena is a suitable place for holding events and festivals, this place facilated by rounded seats and a stage which accompany with a plain space which in people can gather together and celebrate the festivals or watch movies or footbal matches.



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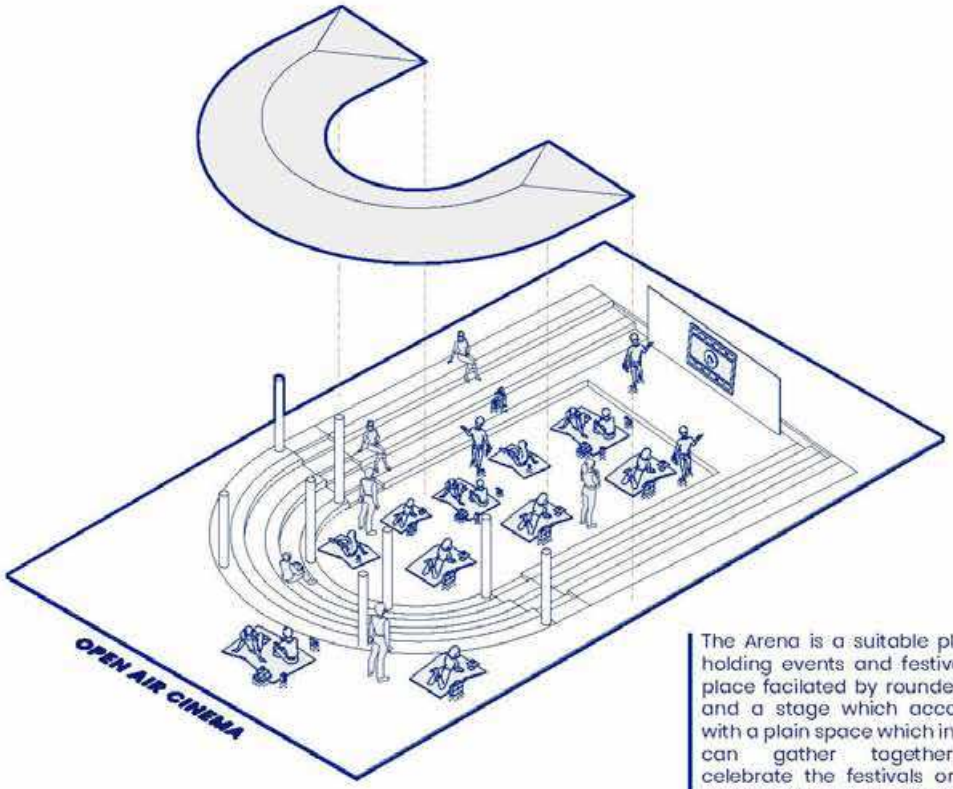


The Arena is a suitable place for holding events and festivals, this place facilated by rounded seats and a stage which accompany with a plain space which in people can gather together and celebrate the festivals or watch movies or footbal matches.

Modernizing Modularity Inspired by Historical Architecture

Project: James-Simon-Galerie Museumsinsel
Architect: David Chipperfield Architects
Location: Berlin, Germany
Completion Date: 2019

Introduction

The James-Simon-Galerie by David Chipperfield represents a sensitive balance between respecting the historical architectural context and introducing a contemporary architectural language. This delicate intervention preserves the rhythm and modularity inherent in Berlin's Museumsinsel, responding directly to its historical surroundings with a modern clarity that enhances, rather than disrupts, its heritage context.

Conceptual Similarity with Our Project

In our adaptive reuse project, we adopted a similar philosophical approach. Inspired by the existing historical building characterized by its distinct rhythm and modular arches, we retained the essential geometry but reimagined its structural logic and visual representation. By converting historically structural arches into simplified rectangular openings, we paid homage to the original modularity while distinctly marking our contemporary intervention. Crucially, this modular transformation is locally contextualized, drawing inspiration from traditional Iranian architectural modules, thus situating our modern response firmly within the cultural and historical specificity of our context.

Architectural Integration at James-Simon-Galerie

The architectural language of James-Simon-Galerie distinctly references the rhythmic pattern of columns and porticos present in classical buildings on Museumsinsel. David Chipperfield achieves this through minimalist modular forms, clearly abstracted from the classical language yet firmly respectful of historical proportions and alignments. By employing these modern forms of historical modularity, the new building achieves a harmonious dialogue with its surroundings, creating an architectural narrative that is coherent yet distinctly contemporary.

Architectural Integration in Our Project

Similarly, our project utilizes modularity derived from historical precedent as a unifying architectural device. Initially isolating the arches, we identified their rhythmic modularity and subsequently abstracted them into contemporary rectangular shapes. This allowed us to maintain visual and proportional continuity with the historical structure, while clearly distinguishing the contemporary additions. The result is a clear dialogue between past and present, reinforcing the historical narrative through a subtle, modern interpretation.

Comparative Architectural Analysis

Both projects underscore essential commonalities:

- Contextual Modularity: Respectfully preserving and abstracting histori-

cal rhythms into modern visual languages.

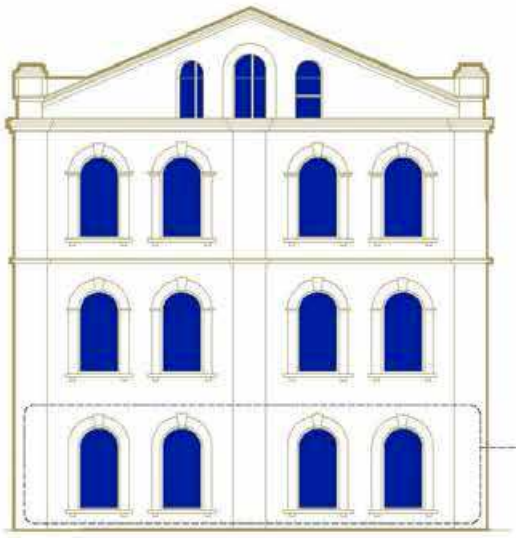
Local Historical Reference: Integrating culturally and historically specific elements into new designs to maintain architectural continuity.

Modern Structural Expression: Transforming historically structural forms into contemporary aesthetic features to signify modern interventions clearly yet respectfully.

This thoughtful application of modular abstraction enhances the historical narrative, enriching both architectural coherence and the cultural dialogue between old and new elements.

Fig.
Image from David Chipperfield Architects

Fig.
Image from David Chipperfield Architects

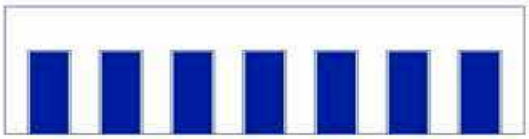


The old building contains unique form of windows which was common in the era of the construction in this city.

By selecting a row of the window in lower level of the building and conducting studies regarding the form and cause of positioning of windows we descided to maintain the form for further design process.

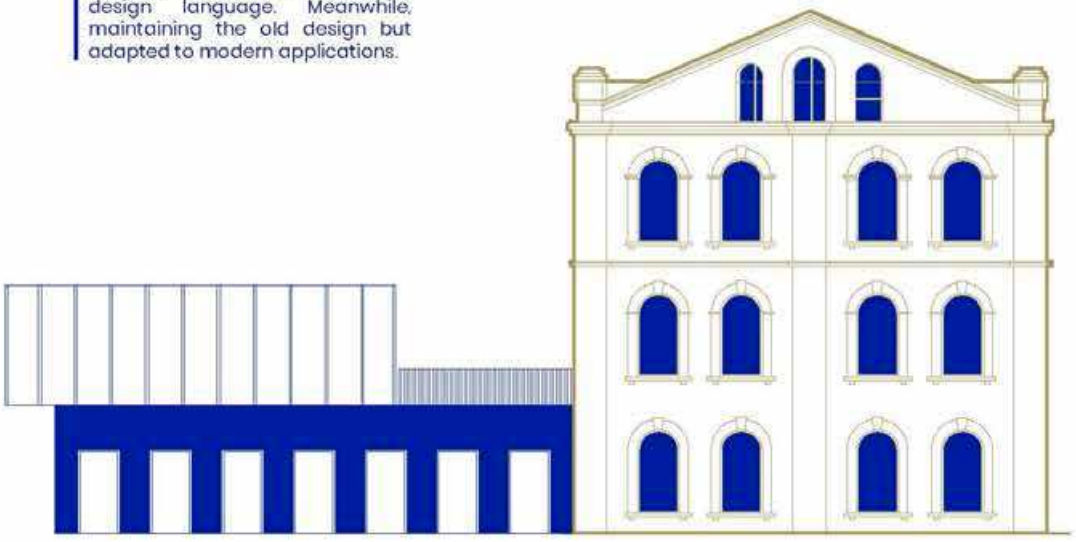
Isolating the widnows in solo form made it easy to manupilate it in more modern and contomprary language design.

regenerating and the reforming the shape of the windows to rectangular formation.



These modern formed windows are shaping the modern porticos and windows of new constructed buildings. This shape became the unique language of design process of this complex.

The old and new building live in hamony by applying the same design language. Meanwhile, maintaining the old design but adapted to modern applications.



PART V

BRINGING IT ALL TOGETHER

MICROCLIMATIC INTERVENTION

DESIGN PROCESS AND FINAL PROPOSAL

WHAT IFS

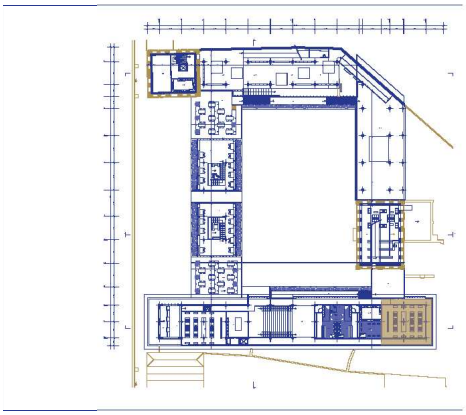
BEYOND THE PROJECT

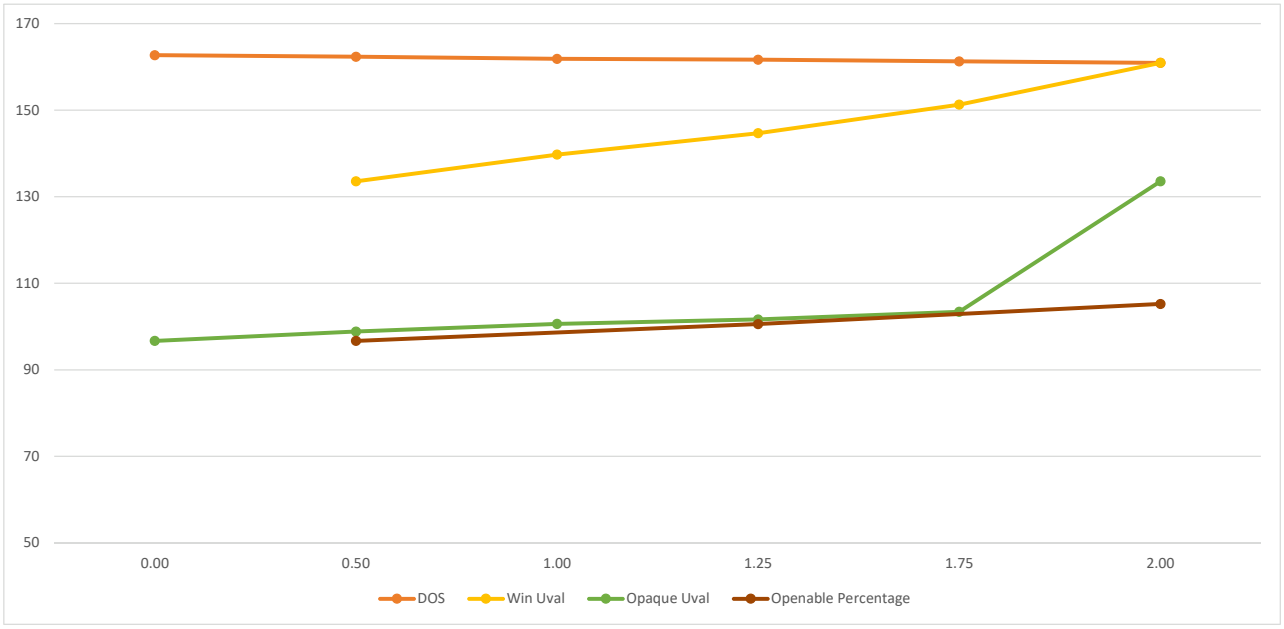
ARCHITECTURAL DOCUMENTS

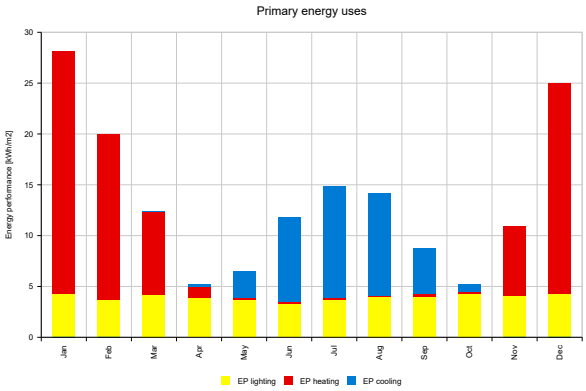
In one part of the project, we strategically designed the circulation around it to act as a passive shading buffer. By wrapping the space with a transitional circulation zone, we created an additional layer between the exterior environment and the occupied interior. This circulation not only facilitated movement but also helped reduce direct solar exposure to the core space, enhancing thermal comfort.

To complement this, we carefully selected opaque and transparent elements in the building envelope surrounding that zone. Opaque sections provided solid protection against excessive heat gain, while transparent surfaces were introduced selectively to ensure daylight access without compromising energy performance. The transparent areas used high-performance glazing to control solar radiation and glare.

Although this approach was implemented only in a specific part of the project, the results were significant. By using circulation space as a buffer and optimizing the envelope design, we achieved a noticeable reduction in energy consumption for that area, contributing to the project's overall sustainability performance.






Primary energy uses
Energy performance [kWh/m2]
30
25
20
15
10
5
0
Jan
Feb
Mar
Apr
May
Jun
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Aug
Sep
Oct
Nov
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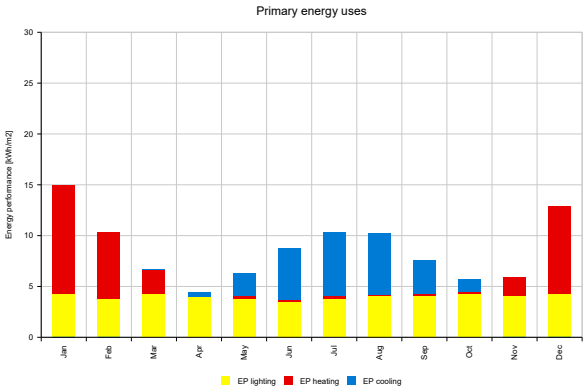
EP lighting
EP heating
EP cooling


Primary energy uses
Energy performance [kWh/m2]
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25
20
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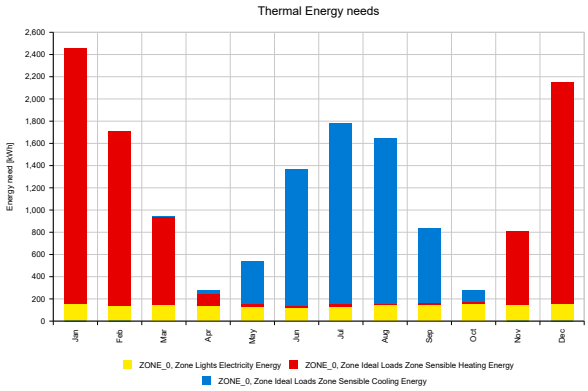
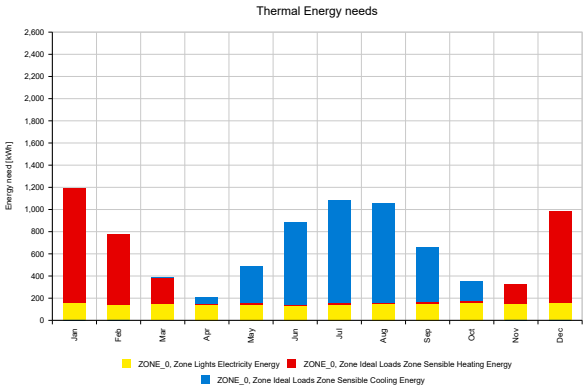
EP cooling


Thermal Energy needs
Energy need [kWh]
2,600
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
ZONE_0, Zone Lights Electricity Energy
ZONE_0, Zone Ideal Loads Zone Sensible Heating Energy
ZONE_0, Zone Ideal Loads Zone Sensible Cooling Energy


Thermal Energy needs
Energy need [kWh]
2,600
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
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Dec
ZONE_0, Zone Lights Electricity Energy
ZONE_0, Zone Ideal Loads Zone Sensible Heating Energy
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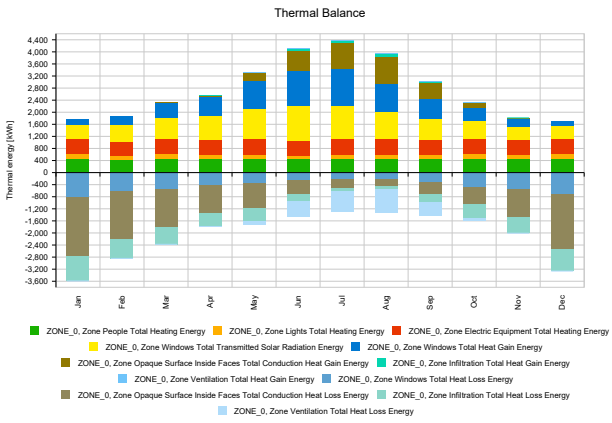
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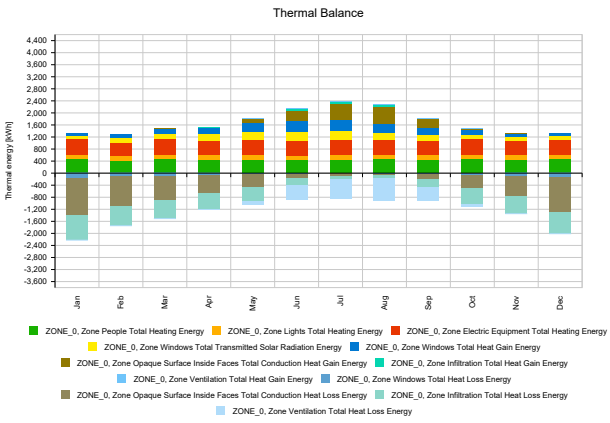
Thermal Balance
Thermal energy [kWh]
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Typological Approach and Contextual Basis

The foundation of our design process began with a thorough analysis of the architectural typology of Qazvin. Historical evidence, satellite imagery, and urban studies confirm that the Hayat Markazi (central courtyard) typology is the dominant and most efficient form in the city. Beyond its historical significance, this courtyard-centered configuration demonstrates exceptional climatic performance, providing natural ventilation, thermal regulation, and protected outdoor spaces suitable for Qazvin's environmental conditions.

Our project site, originally home to an industrial building, once exhibited characteristics aligned with this tradition. Based on historical documentation and physical remnants, the structure followed a U-shaped configuration, a derivative of the Hayat Markazi typology. Thus, one of the first decisions in our design process was to respect and reinterpret this spatial logic, grounding the project within its cultural and urban fabric while ensuring climatic efficiency.

Developing the Physical Program

The determination of the project's functions was not arbitrary but emerged through extensive research, expert interviews, and community engagement. From the beginning, the project was envisioned not as a singular-function space but as a multi-purpose complex, capable of serving diverse users of different age groups and social backgrounds. This reflects both the site's historical role as a place of production and gathering, and its potential for fostering community cohesion today.

The Physical Program was carefully crafted to balance functional needs with regulatory constraints, respecting maximum allowable built area percentages and preserving the site's openness where appropriate. Each space was meticulously allocated based on its purpose, projected occupancy, and the broader ambition of creating inclusive, educational, cultural, and commercial zones.
Following this, a bubble diagram was developed to translate the program into spatial relationships. This diagram illustrates the connection between spaces, the flow of users, and their interaction zones, serving as a conceptual map for circulation and functional zoning.

Primary Spatial Configuration and Design Logic

Building upon the bubble diagram and respecting the site's historical axis and existing entrances, we proposed an initial volumetric configuration. The design intentionally retains the primary access axis, utilizing it without imposing unnecessary alterations. In this way, the entrance remains prominent yet seamlessly integrated into the broader spatial narrative.
The layout ensures that users experience visual connections to nature at key moments throughout their movement within the complex. Whether turning within circulation spaces or occupying static zones, views towards landscaped areas or pocket gardens enrich the spatial quality, enhancing user comfort and mental well-being.
The project also adheres to universal accessibility principles, a core feature being the architectural ramp. Starting from the museum reception area, this ramp ascends through the galleries, eventually integrating into the main building. Here, it transforms into a lightweight, suspended temporary gallery, embodying both movement and exhibition in one fluid gesture. The ramp culminates within the Cu-

linary School, where it allows visitors to observe live cooking classes, a deliberate act of transforming culinary education into an engaging, living museum experience. This journey ends at the designated exit, reinforcing the idea of continuous exploration with motivational experiences at each level.

Key Spatial Qualities and Public Zones

Beyond circulation, several spaces within the project were designed to enhance interaction, learning, and community use:

Staircase Platform in the Main Hall: Above the dining hall, an integrated platform offers seating, gathering, and informal study areas for students. This flexible space can accommodate events, presentations, or film screenings, while panoramic views on both sides frame the natural landscape, reinforcing a strong inside-outside dialogue.

Library with Double-Faced Natural Views: The library was strategically positioned to offer nature views on both sides, creating a tranquil environment that promotes focused learning in a nature like environment.

Product Integration Across Spaces: Culinary School products, ranging from food items to bakery goods, can seamlessly transfer to the café and retail spaces via dedicated vertical circulation (a service lift), strengthening the relationship between production, education, and consumption within the site.

Roof Form and Materiality: In homage to the existing industrial structure and the surrounding neighborhood, the new roof continues the traditional sloped silhouette. However, we opted for a minimalist execution using simple concrete, stripped of excessive detailing, allowing the historic building's character to remain the focal point.

Preservation of Courtyard and Axial Continuity

Central to the proposal is the retention of an unobstructed Hayat Markazi, preserving its spatial purity and function as the project's social and environmental heart. The courtyard is intentionally shaped to facilitate natural ventilation, tree planting, and daylight penetration, enhancing the microclimate and fostering social interaction.

The spatial axes and rhythms from the surrounding buildings continue through the courtyard, generating a cohesive visual and structural language. Aligning these axes across parallel structures presented considerable technical challenges, yet it ensures modularity, visual order, and simplified construction processes, echoing both historic practices and contemporary efficiency.

Community and Flexible Outdoor Spaces

At the rear of the site, a pocket garden extends the project's community-oriented spirit. This adaptable space accommodates various uses, such as:

A charity zone, where food donations can be shared with those in need.

A multi-purpose arena, designed to host diverse events, including public film screenings, sports broadcasts, cultural ceremonies, weddings, or music performances like DJ sets. Flexibility remains central, allowing the space to evolve according to the community's changing needs.

Architectural Language and Material Expression

The final design consciously bridges past and present. The ground floor maintains the modularity and rhythm expressed by the site's original arches, not through literal replication but via a contemporary reinterpretation. On upper floors, the language evolves into a distinctly modern expression, ensuring the project feels rooted in its historical context yet progressive and forward-looking.

The design embodies a holistic response to context, history, community needs, and contemporary architectural values. It respects Qazvin's climatic wisdom through the Hayat Markazi typology, revives the industrial heritage with minimal, respectful interventions, and transforms the site into a vibrant, multi-functional civic space. Through inclusive circulation, educational opportunities, cultural exhibitions, and community gathering areas, the project redefines the site as a living museum and a catalyst for urban regeneration.

What Ifs and Future Impact

Every architectural project inherently raises a series of "what if" questions, uncertainties that challenge the limits of design and open the door to future possibilities. In this project, several such considerations emerged, reminding us that architecture is never static; it evolves with its users, community, and the city itself.

What if the project becomes more than its physical boundaries?

The initial vision was to create a space that serves multiple age groups and diverse functions, but architecture has the potential to transcend its programmatic limits. Over time, we envision this space evolving into a true urban landmark; an educational, cultural, and social catalyst where individuals from all walks of life come not just to consume services but to actively participate, co-create, and exchange knowledge.

What if this project sparks a new wave of adaptive reuse in Qazvin?

Our approach highlights the hidden potential within the city's industrial ruins and forgotten structures. By respecting the existing building, reinterpreting the Hayat Markazi typology, and integrating contemporary architecture, we set a precedent for sustainable development rooted in heritage. This could inspire other stakeholders, architects, policymakers, and local communities, to reconsider neglected sites as opportunities for social and cultural renewal.

What if the Culinary School transforms perceptions of food?

By making food production a public, visible, and educational act, the project can elevate culinary traditions from private or commercial spheres to shared cultural heritage. The live demonstration of tools, recipes, and craftsmanship has the potential to reconnect people with local food culture, stimulate interest in traditional knowledge, and promote healthier, more sustainable consumption habits.

Potential Social and Cultural Impact

The long-term success of this project will not be measured solely by architectural quality but by the community outcomes it nurtures:

Stronger Social Bonds: By providing multi-purpose spaces for interaction, learning, and events, the project aims to strengthen community ties and encourage intergenerational exchange.

Economic Empowerment: Through the integration of culinary production, retail spaces, and educational programs, local artisans and food producers can find new markets, promoting economic sustainability.

Cultural Continuity and Innovation: Preserving spatial rhythms, material simplicity, and courtyard typologies fosters continuity with Qazvin's architectural heritage while allowing for modern reinterpretation, a dialogue between old and new that can enrich the city's evolving identity.

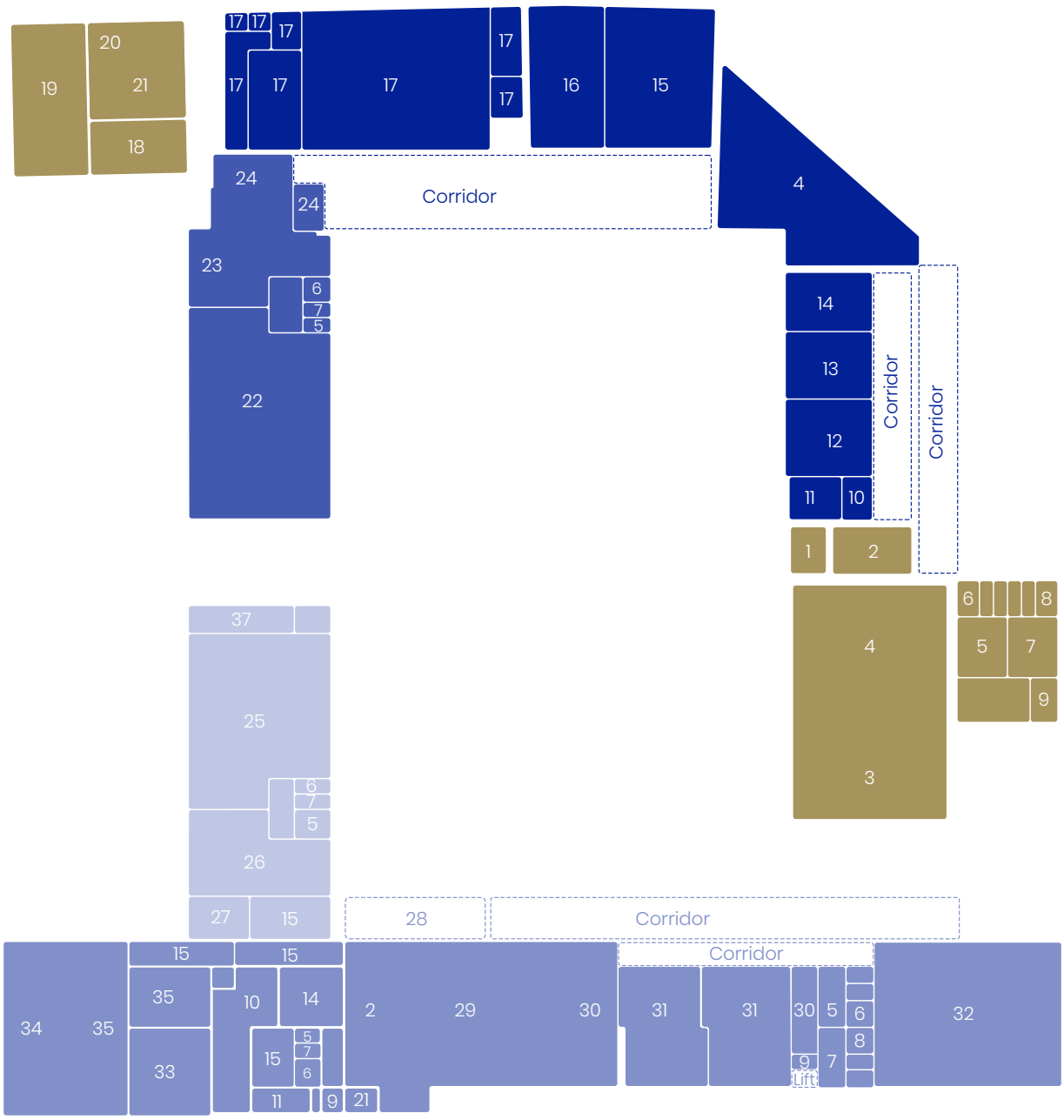
Inclusive Public Realm: With accessible design strategies like the ramp system and diverse gathering spaces, the project embodies inclusivity, ensuring that individuals of all physical abilities feel welcome and empowered to explore.

Beyond the Project

Ultimately, the true value of this project lies not only in its physical realization but in its role as a prototype for future urban regeneration. By blending heritage preservation, community engagement, and sustainable design, it offers a model for cities like Qazvin seeking to reconnect with their history while embracing contemporary needs.

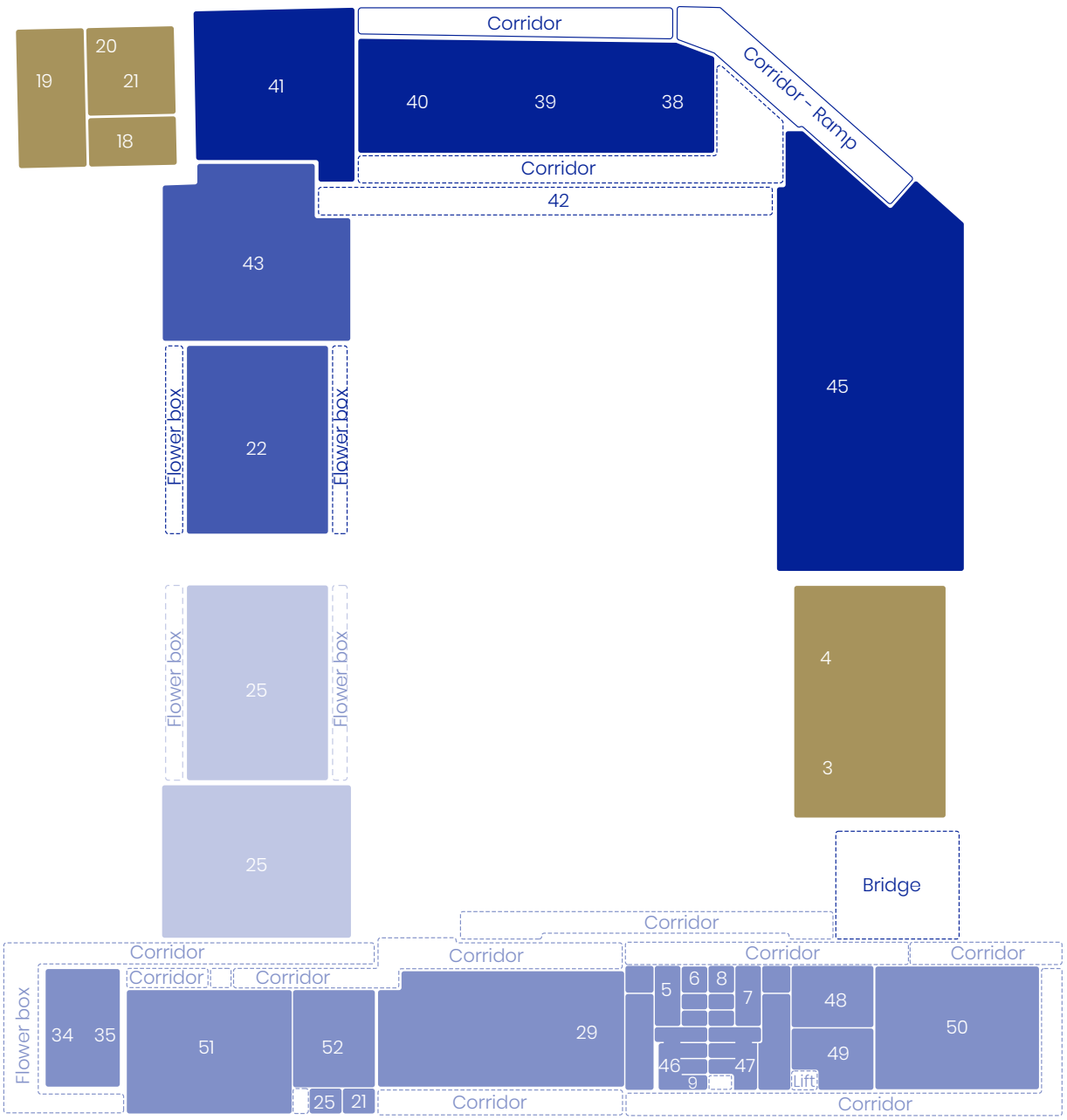
What follows is an open question: How will the community claim, reshape, and redefine these spaces over time? That answer belongs not to the architects, but to the people themselves, the real authors of the city's future.

Ground Floor Function Plan



1	Main Entrance	14	Staff Workstations	27	Cafe Storage
2	Reception	15	Director Office	28	School Main Entrance
3	Museum Shop	16	Lecture & Meeting Rooms	29	Demonstration Hall
4	Waiting Area	17	Conference Hall	30	Students Dinning Area
5	Public Restroom (Men)	18	Storage & Maintenance	31	Classroom
6	Public Restroom (Disabled Men)	19	MEP Area	32	Library & Resource Center
7	Public Restroom (women)	20	Escape Stairs	33	Professor's Room
8	Public Restroom (Disabled women)	21	Elevator	34	Retail Area
9	Cleaning Area	22	Restaurant Hall	35	Sale Area
10	Secretary Area	23	Restaurant Kitchen	36	Shop Storage
11	Kitchen	24	Restaurant Storage	37	Securaty
12	Curators Offices	25	Cafe Hall		
13	Design Team Spaces	26	Cafe Kitchen		

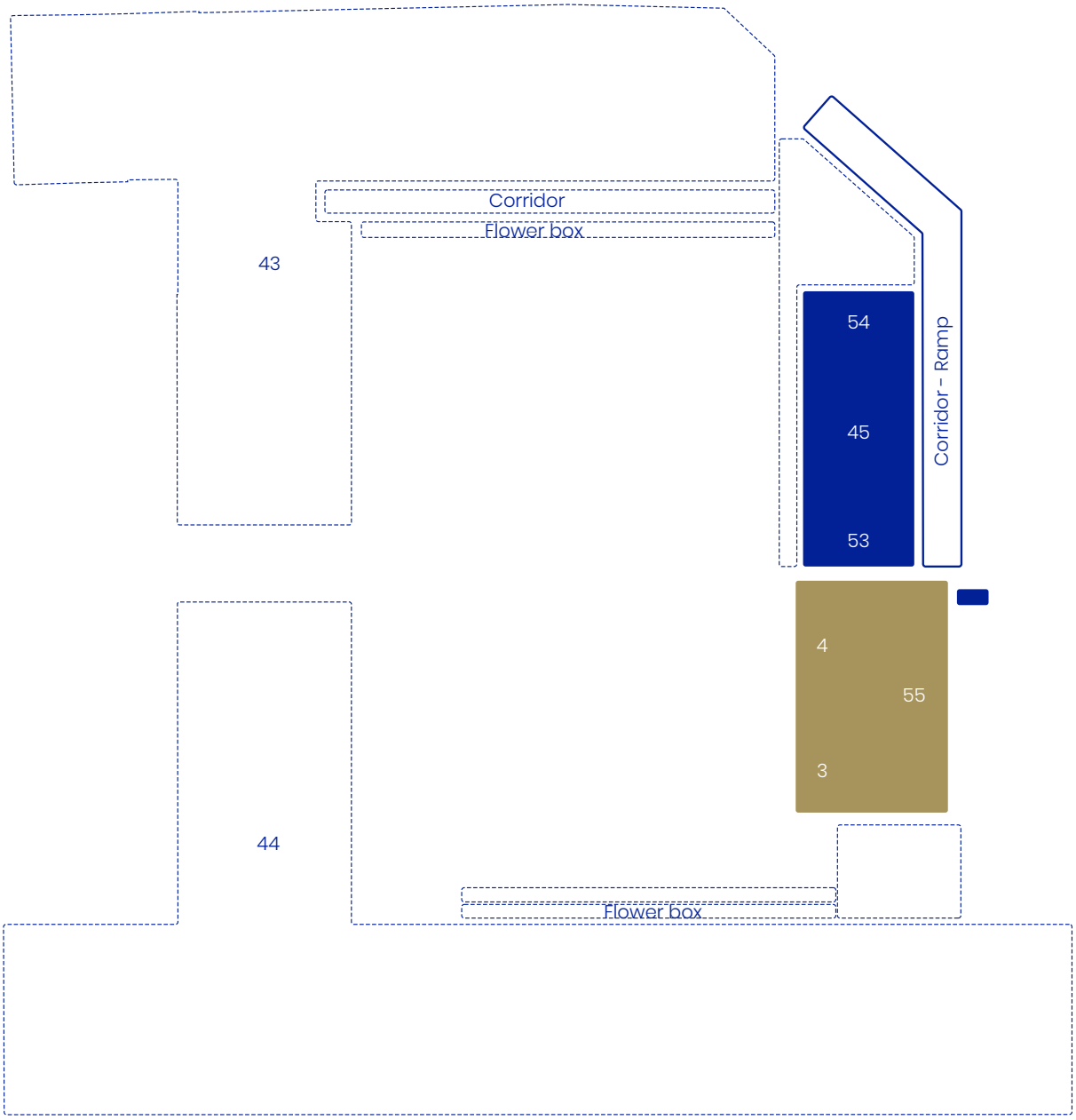
First Floor Function Plan



Bringing It All Together

3		29	Cafe Hall	45	Open Space Gallery
4	Museum Shop	30	Demonstration Hall	46	Changing Room (Men)
5	Waiting Area	34	Retail Area	47	Changing Room (Women)
6	Public Restroom (Men)	35	Sale Area	48	Dry Storage
7	Public Restroom (Disabled Men)	36	Qazvin Culinary History Gallery	49	Refrigerated Storage
8	Public Restroom (women)	37	Food & Agriculture of Gazvin Gallery	50	Teaching Kitchen
9	Public Restroom (Disabled women)	38	Traditional Cooking Methodes	51	Pastry Teaching Kitchen
18	Cleaning Area	39	Gallery	52	Fermentation Lab
19	Storage & Maintenance	40	Evolution of Qazvin Food Culture		
20	MEP Area	41	Gallery		
21	Escape Stairs	42	Balcony		
22	Elevator	43	Restaurant Roof Garden		
25	Restaurant Hall	44	Cafe Roof Garden		

Second Floor Function Plan



3	Museum Sho
4	Waiting Area
42	Balcony
43	Restaurant Roof Garden
44	Cafe Roof Garden
45	Open Space Gallery
53	Food & Art Gallery
54	Multi-Media Gallery
55	Seasonal Exhibitions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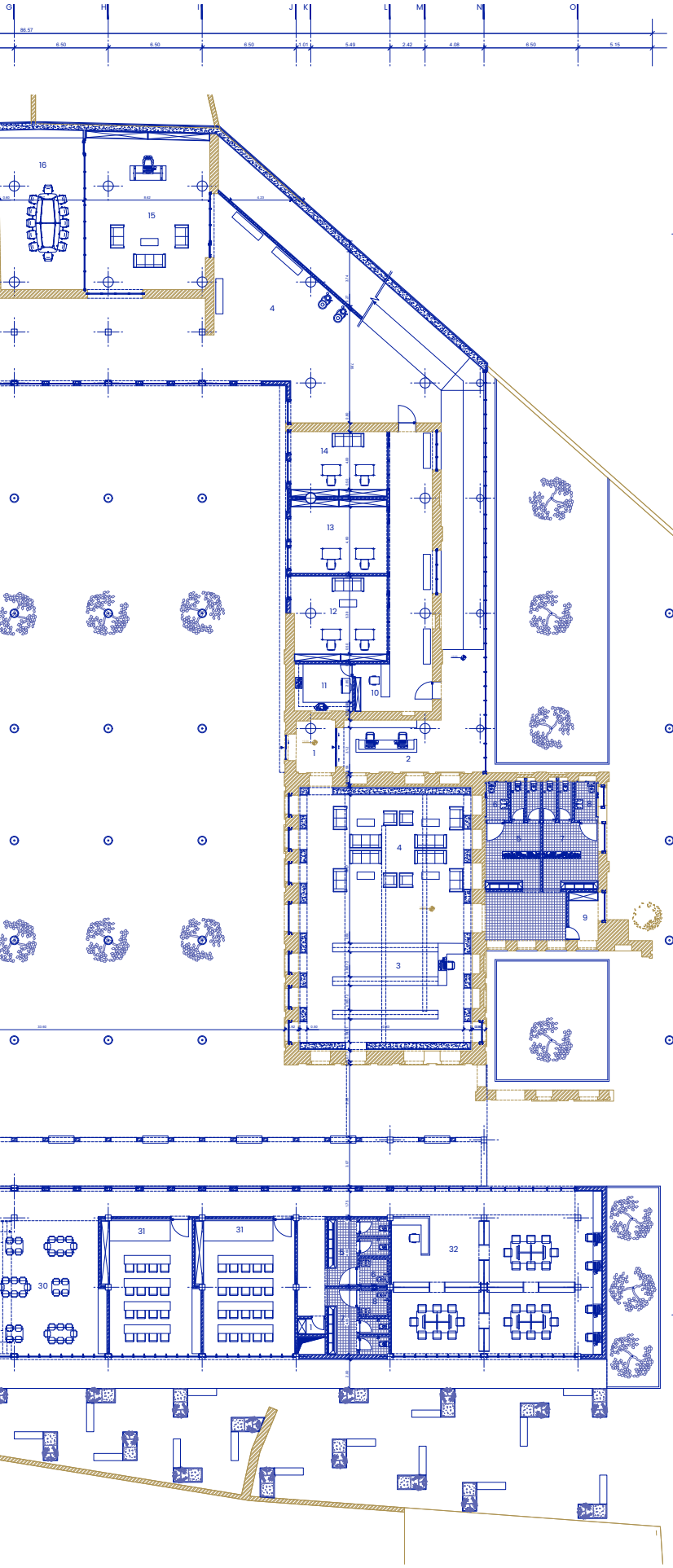

GROUND FLOOR PLAN

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- Projection (Existing)
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- Hidden Lines (Existing)
- Projection (Project)
- Cut Lines (Project)
- Hidden Lines (Project)
- Dimensions
- Cut View Symbol
- Section Line
- Height Code Symbol
- Height Code Symbol

1	Main Entrance
2	Reception
3	Museum Shop
4	Waiting Area
5	Public Restroom (Men)
6	Public Restroom (Disabled Men)
7	Public Restroom (women)
8	Public Restroom (Disabled women)
9	Cleaning Area
10	Secretary Area
11	Kitchen
12	Curators Offices
13	Design Team Spaces
14	Staff Workstations
15	Director Office
16	Lecture & Meeting Rooms
17	Conference Hall
18	Storage & Maintenance
19	MEP Area
20	Escape Stairs
21	Elevator
22	Restaurant Hall
23	Restaurant Kitchen
24	Restaurant Storage
25	Cafe Hall
26	Cafe Kitchen
27	Cafe Storage
28	School Main Entrance
29	Demonstration Hall
30	Students Dinning Area
31	Classroom
32	Library & Resource Center
33	Professor's Room
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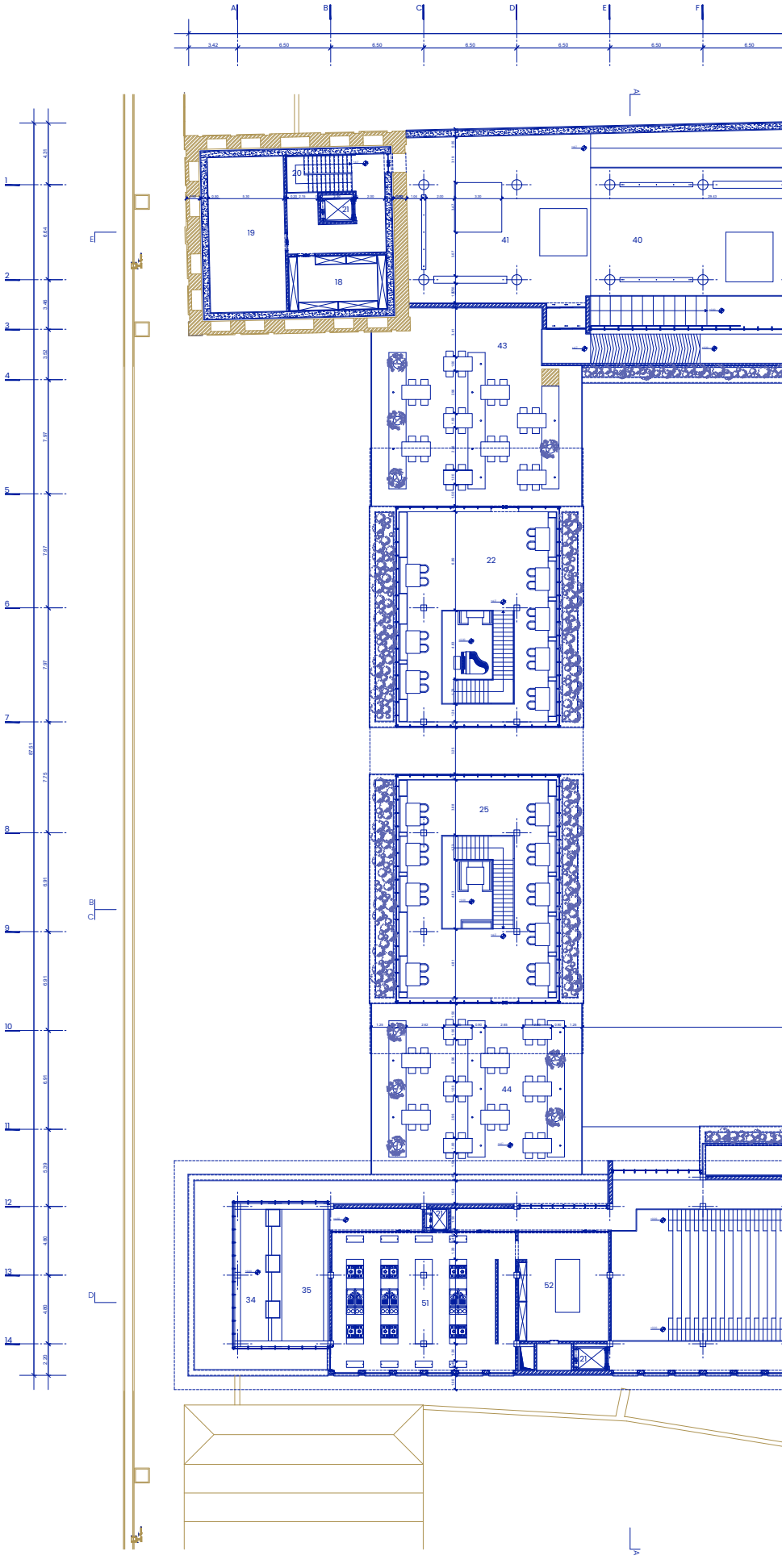
35	Sale Area
36	Shop Storage
37	Securaty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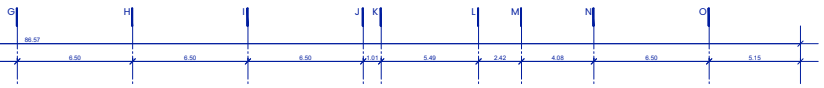
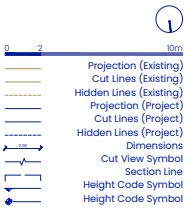
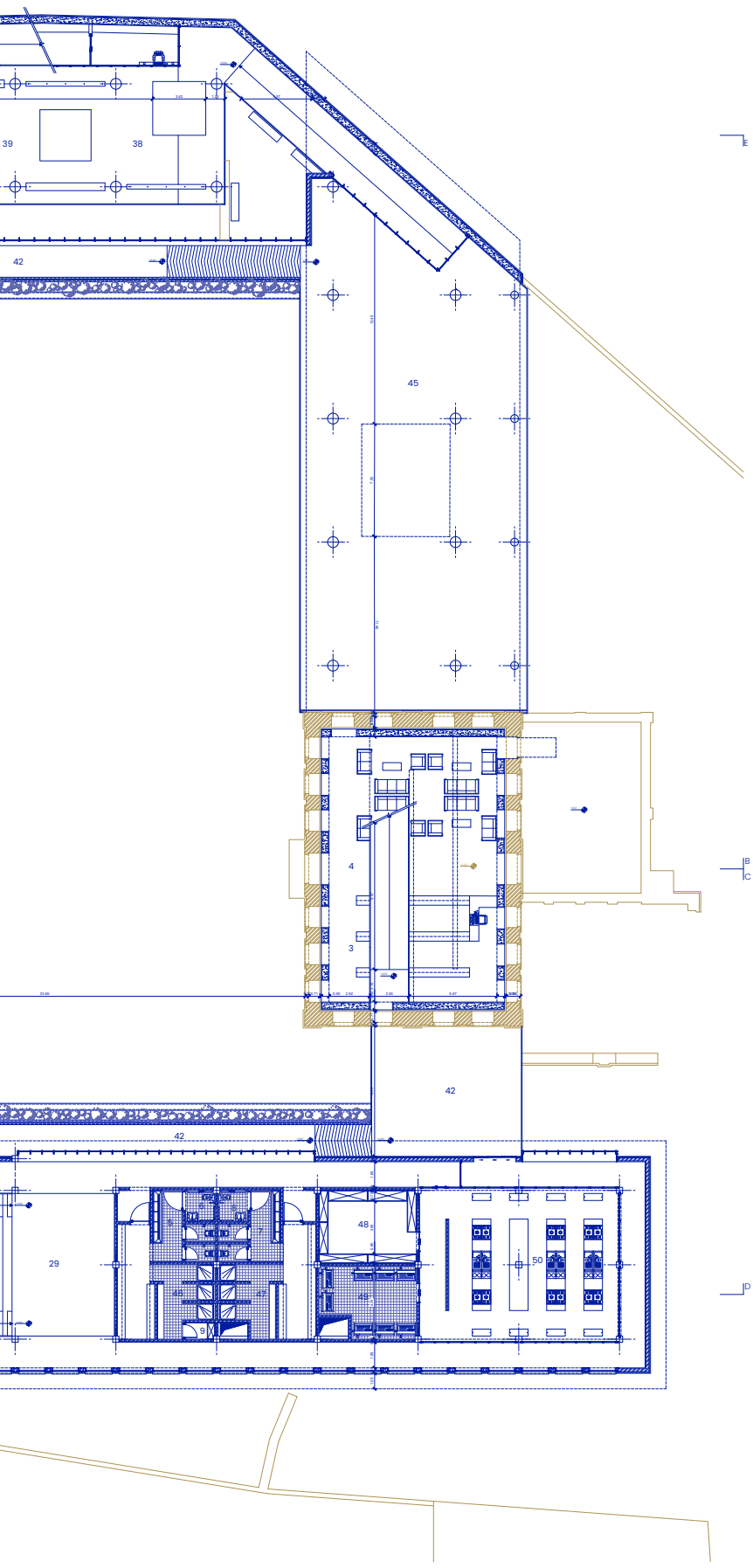


FIRST FLOOR PLAN





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6	Public Restroom (Disabled Men)
7	Public Restroom (women)
8	Public Restroom (Disabled women)
9	Cleaning Area
18	Storage & Maintenance
19	MEP Area
20	Escape Stairs
21	Elevator
22	Restaurant Hall
25	Cafe Hall
29	Demonstration Hall
30	Retail Area
34	Sale Area
35	Qazvin Culinary History Gallery
36	Food & Agriculture of Qazvin Gallery
37	Traditional Cooking Methodes Gallery
38	Evolution of Qazvin Food Culture Gallery
39	Balcony
40	Restaurant Roof Garden
41	Cafe Roof Garden
42	Open Space Gallery
43	Changing Room (Men)
44	Changing Room (Women)
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48	Pastry Teaching Kitchen
49	Fermentation Lab
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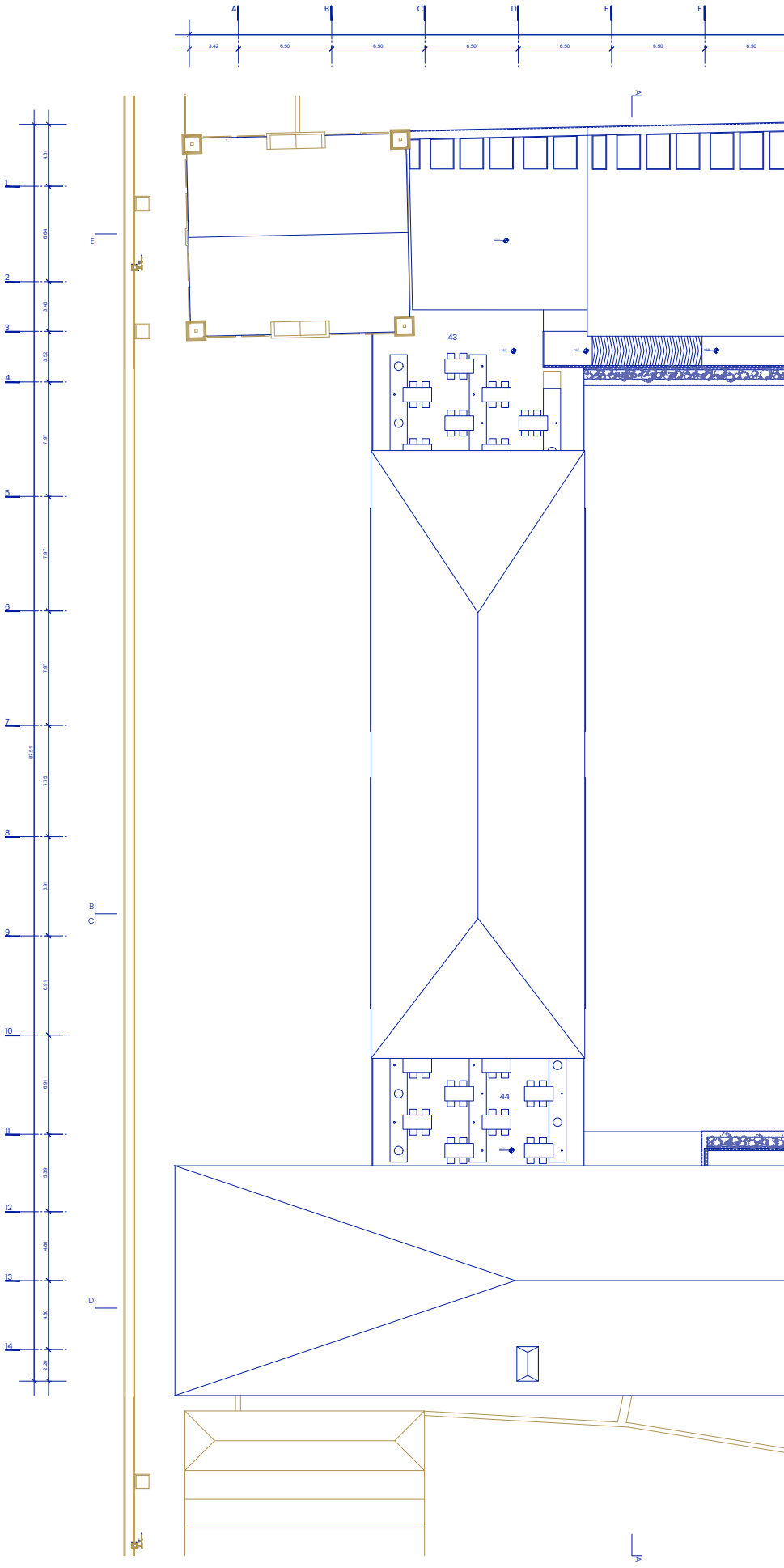
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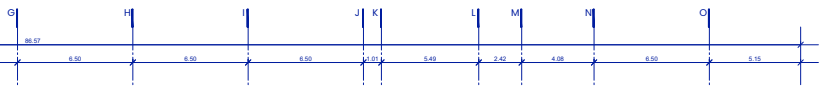

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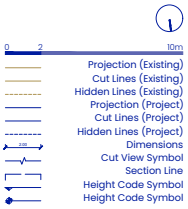

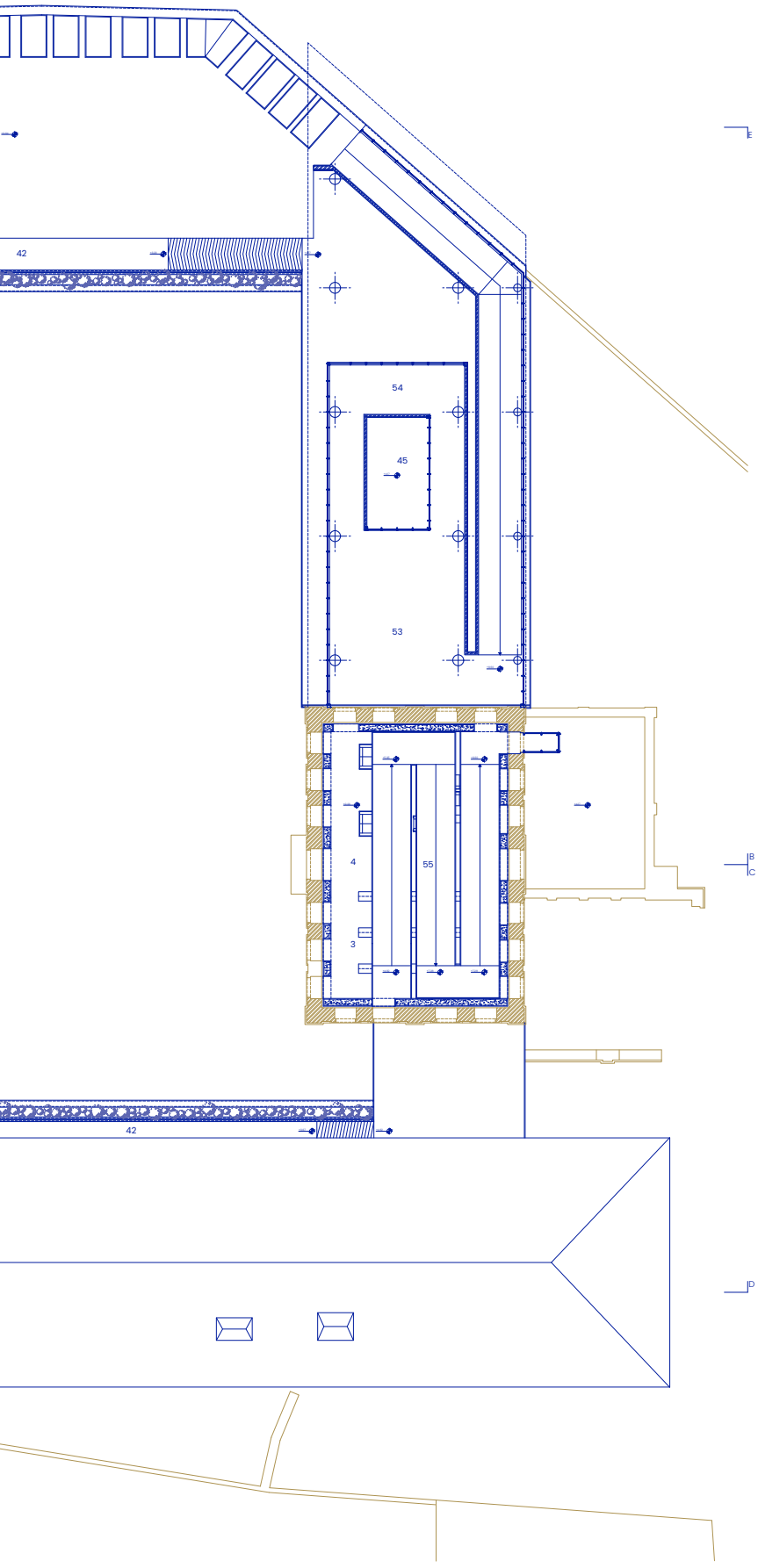

3	Museum Shop
4	Waiting Area
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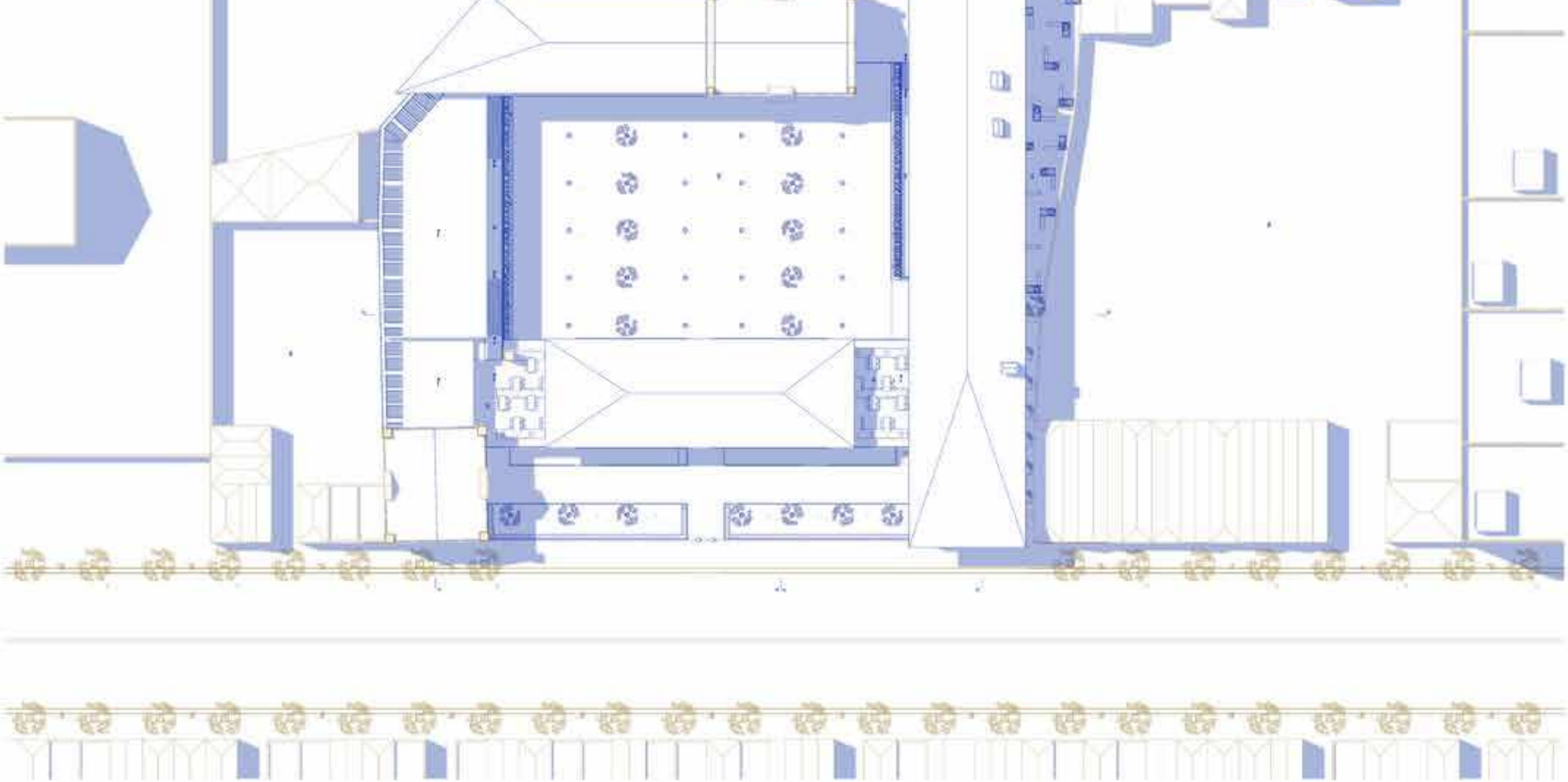
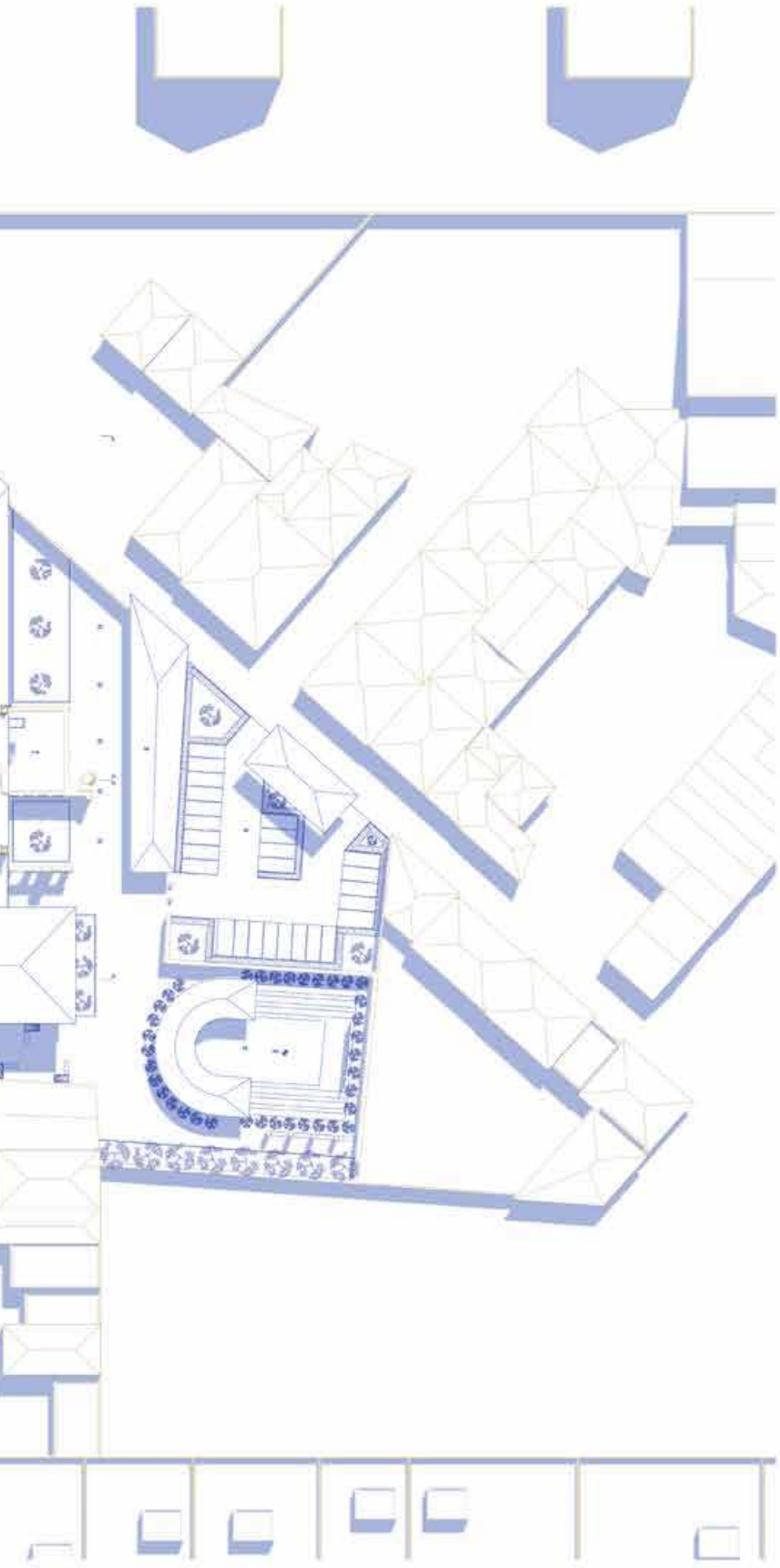
43	Restaurant Roof Garden
44	Cafe Roof Garden
45	Open Space Gallery
53	Food & Art Gallery
54	Multi-Media Gallery
55	Seasonal Exhibitions



SITE PLAN



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Projection (Project)
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Hidden Lines (Project)
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Cut View Symbol
Section Line
Height Code Symbol
Height Code Symbol

1	Museum Shop
2	Waiting Area
42	Balcony
43	Restaurant And Theater
44	Cafe And Garden
45	Open Space Gallery
53	Food & Art Gallery
54	Multi-Media Gallery
55	Seasonal Exhibitions
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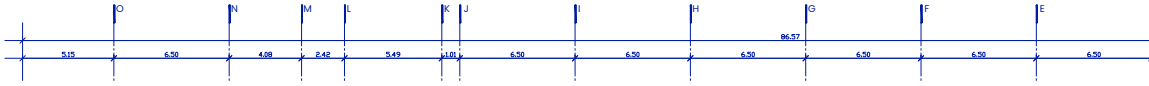
58	Multi-Purpose Areas
59	Classic Neighbors Gardening
60	Parking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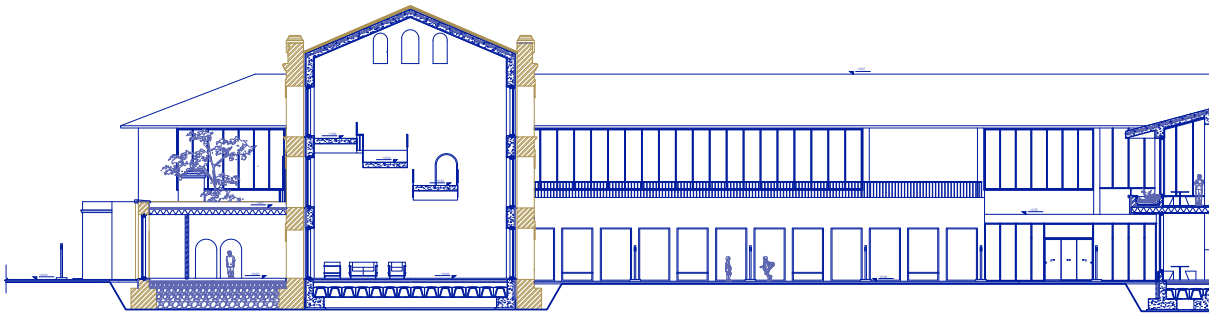

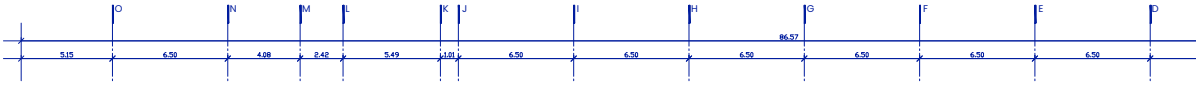
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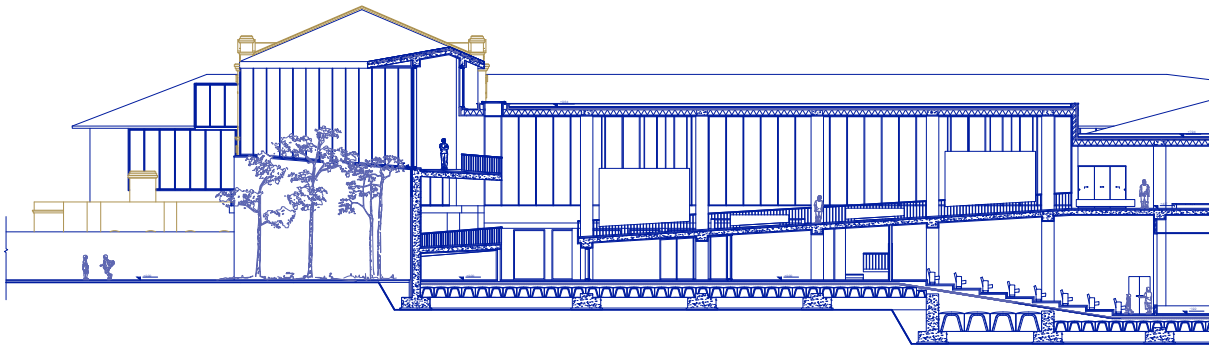

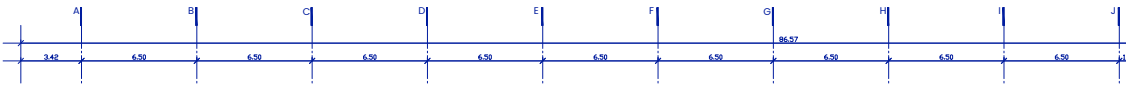
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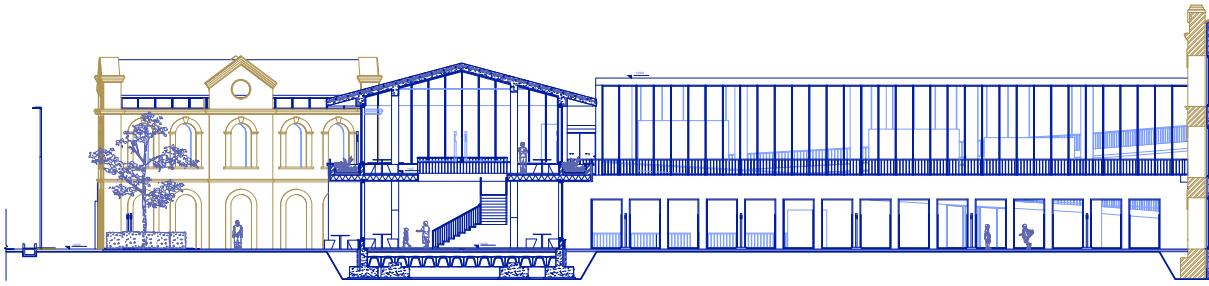

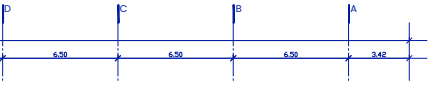

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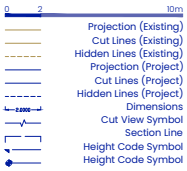
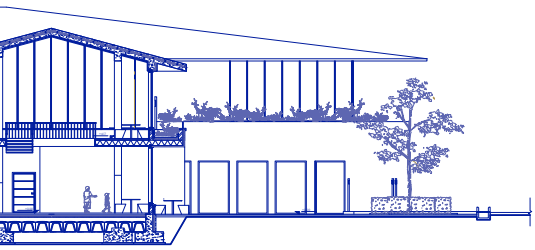
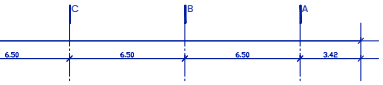
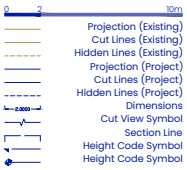
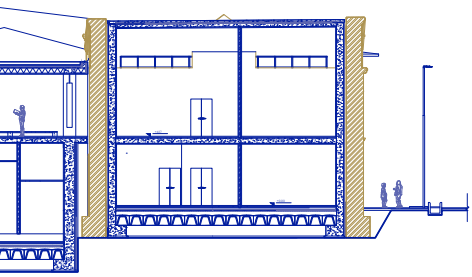


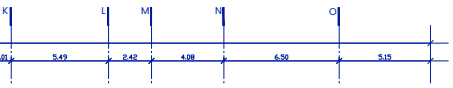




SECTION E-E







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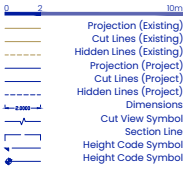
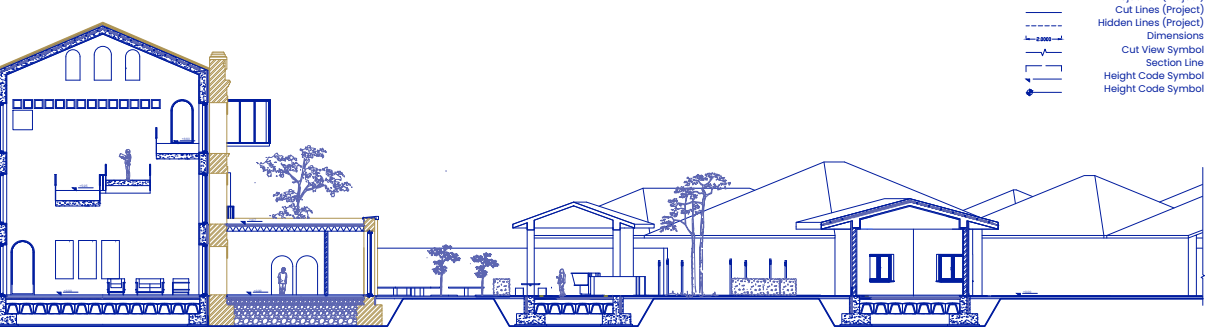




The ramp gallery's placement and transparency encourage visual connectivity and fluidity, fostering an interactive and dynamic environment that enriches visitor engagement with displayed artworks.

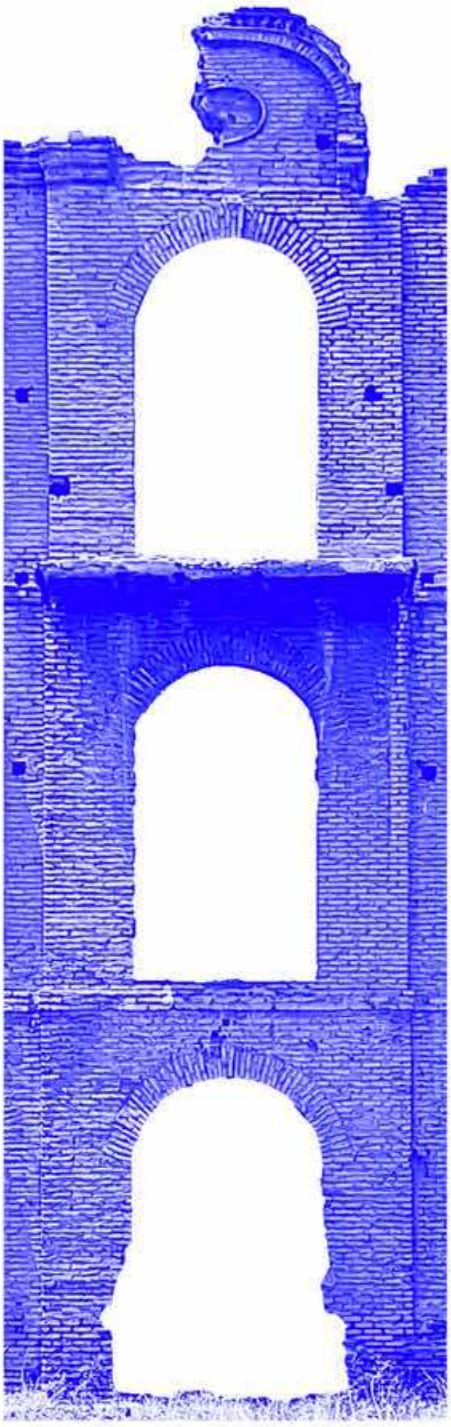
In the design of the complex, every axis and guiding line is intended to direct the viewer's attention toward framed views of nature and the landscape.

Visitors enter the main building via a suspended ramp, experience the temporary gallery displays, and continue toward the culinary art school. A glass balcony overlooks almond gardens, while the ground floor houses the waiting hall, reception, and museum shop.

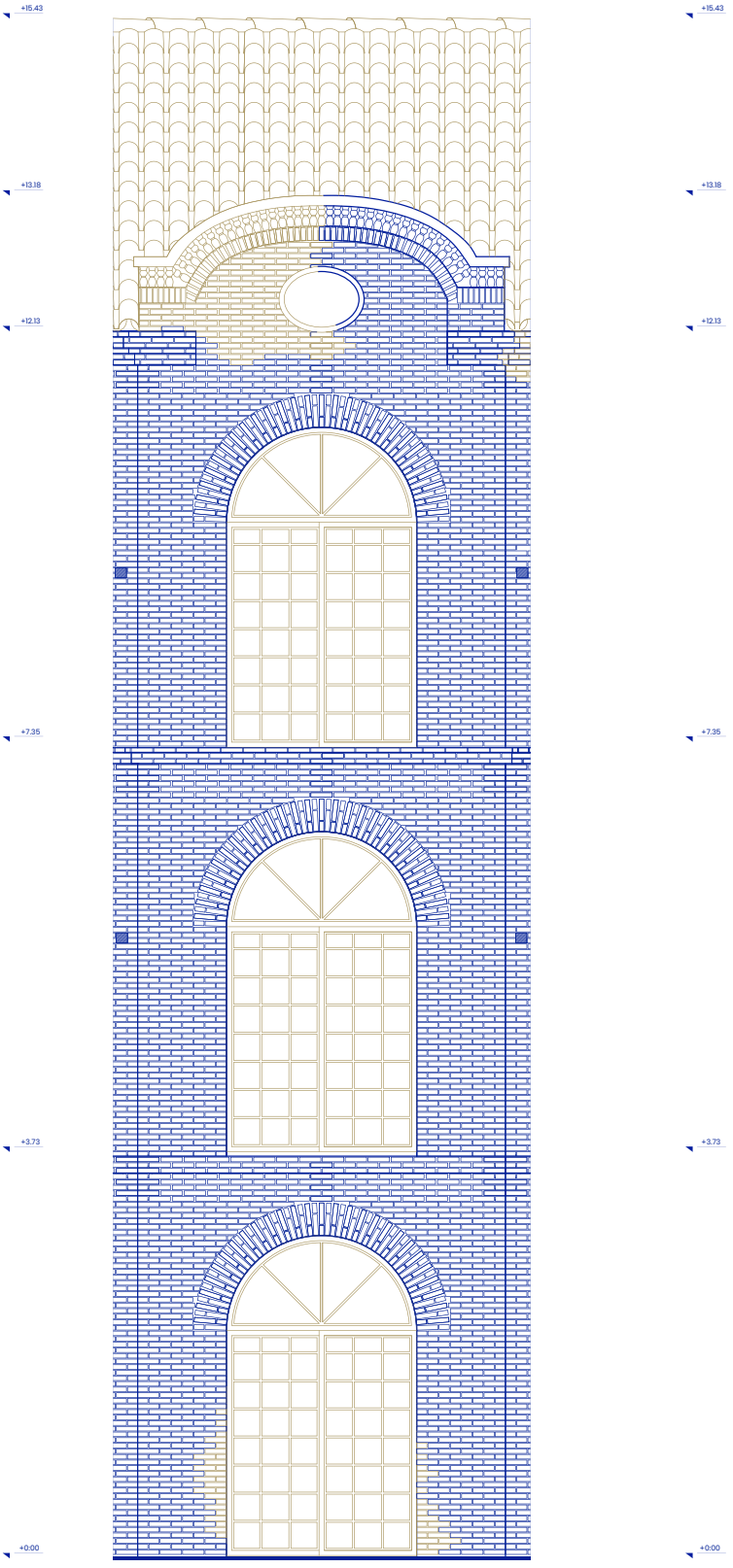
The entrance hall is a multi-use space for moving upstairs, socializing, and resting. It can also host conferences. Below it is the dining hall, while the two upper corridors link the museum to the school and lead students to the pastry kitchen.

SECTION A-A

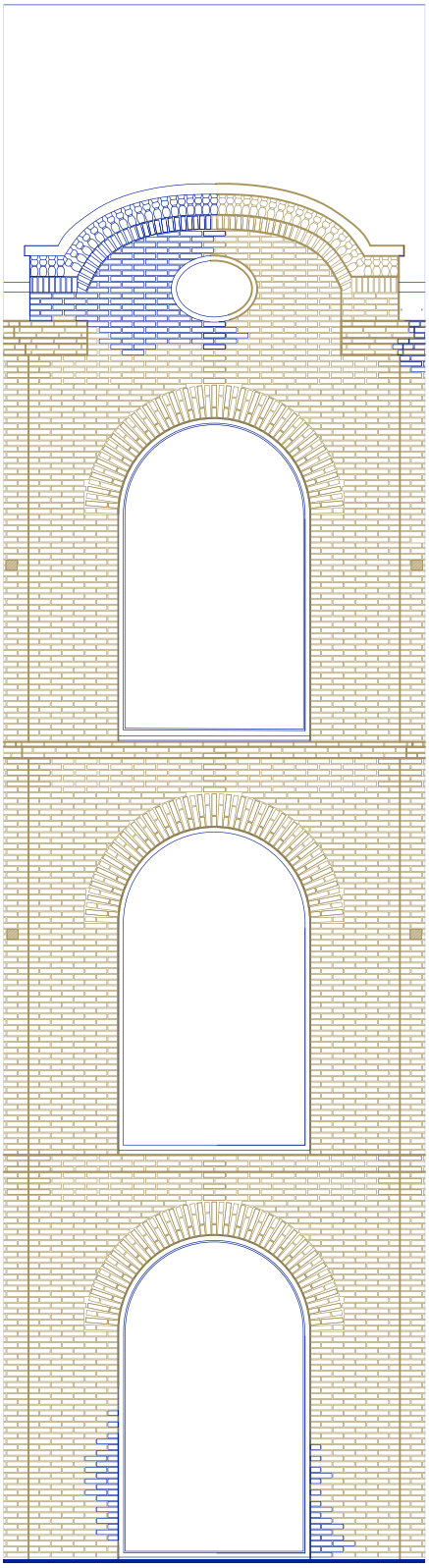
EXISTING SITUATION



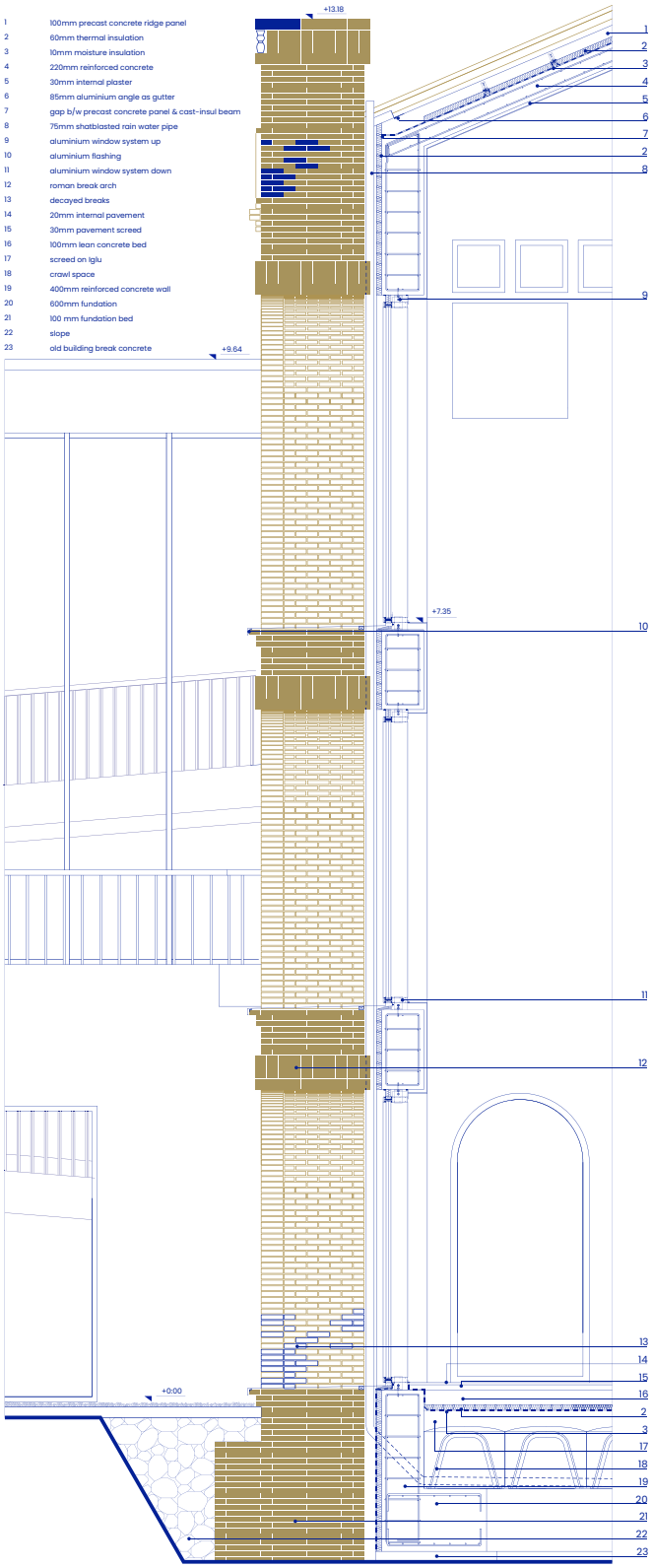
EXISTING ELEVATION WITH DECAYES

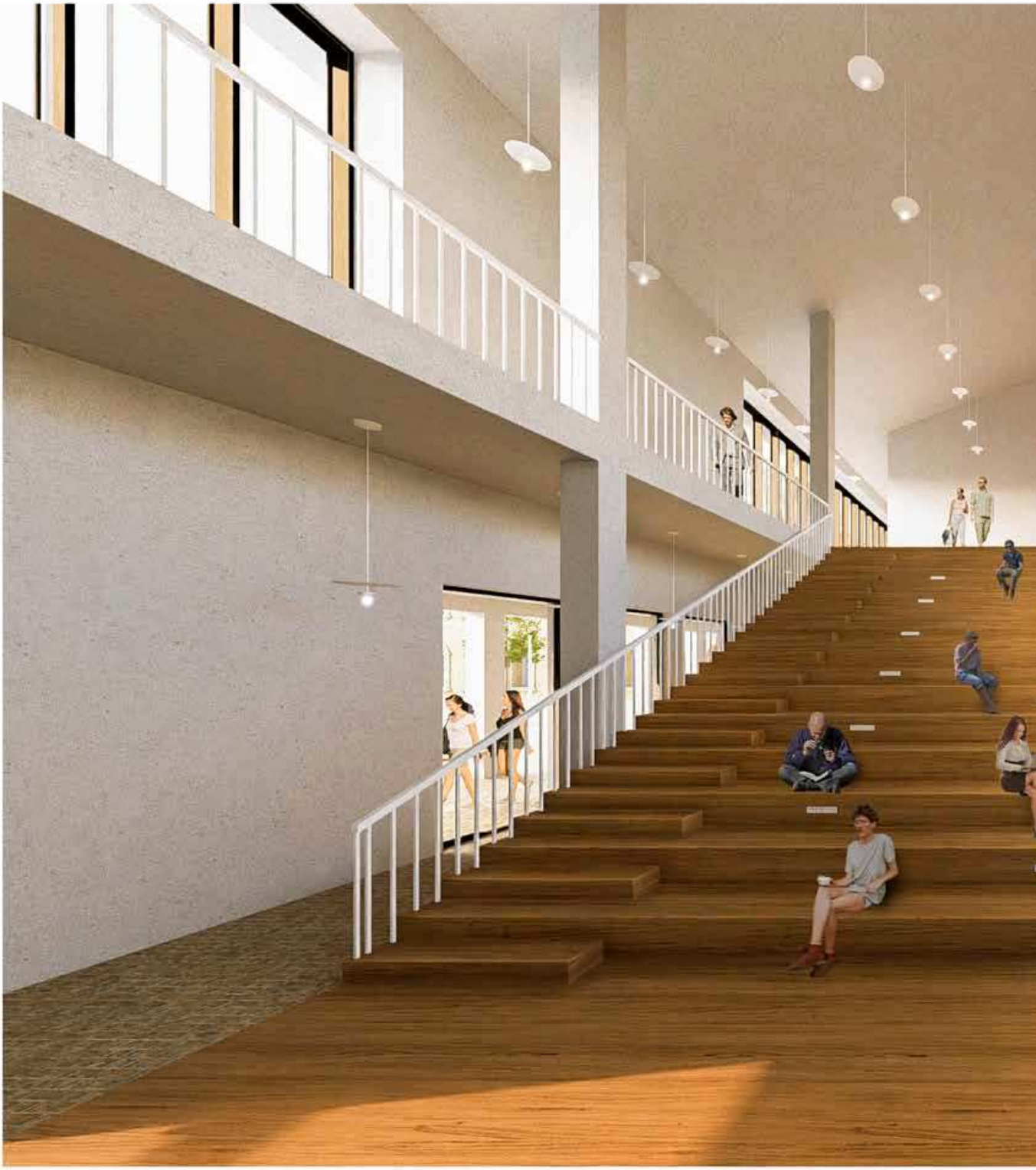


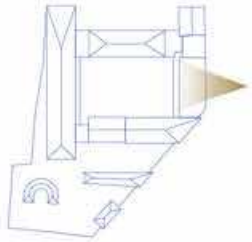
PROJECT ELEVATION

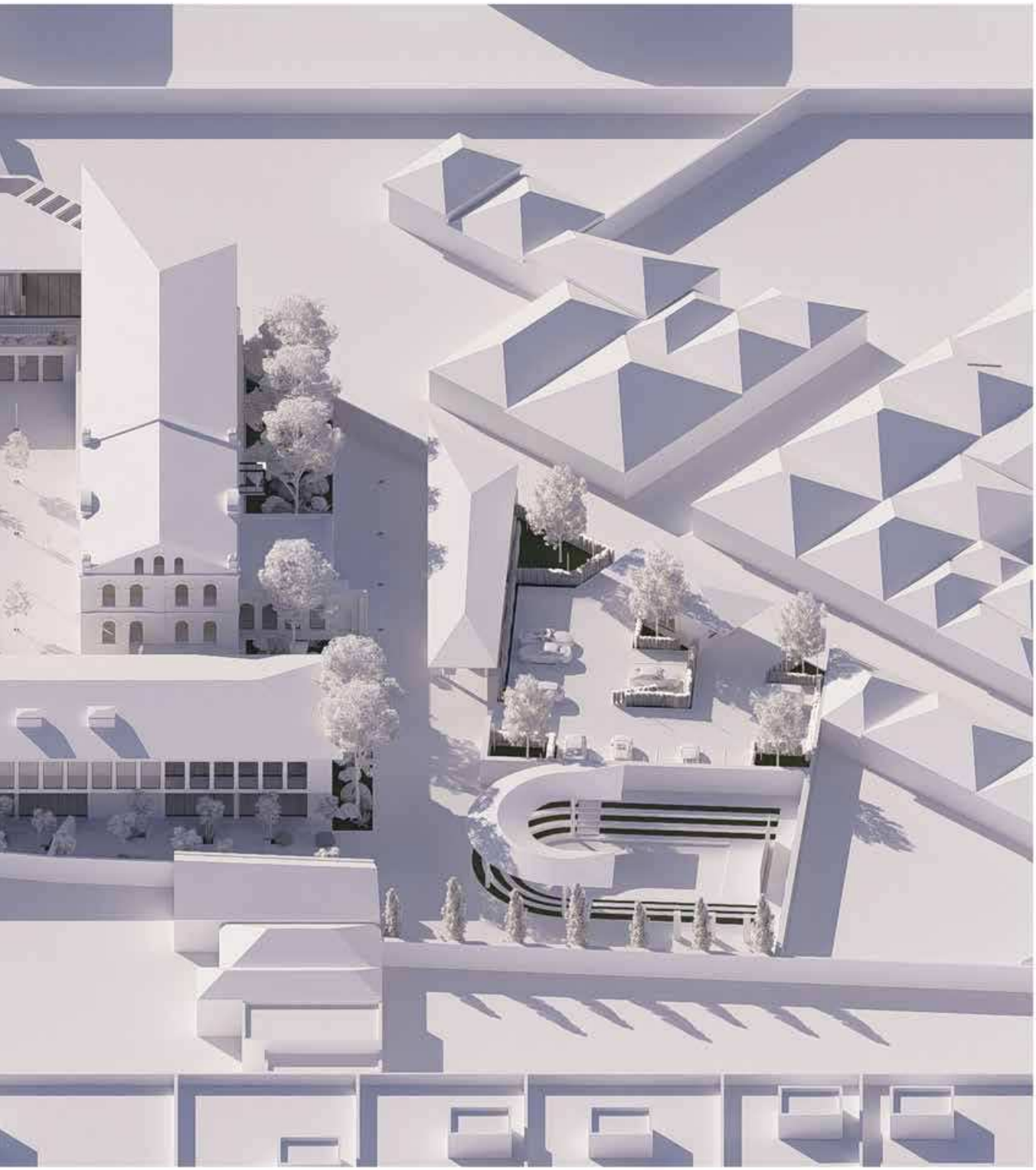


PROJECT WALL SECTION









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