CATTEDRALE DI SAN GIUSTO MARTIRE

SUSA

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CATTEDRALE DI SAN GIUSTO MARTIRE, SUSA

Strategies for the enhancement and adaptive reuse
of architectural heritage

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ABSTRACT

This Master's thesis is dedicated to the adaptive reuse of the 13th century Church Cattedrale di San Giusto Martire in the small Alpine town of Susa, 50 kilometers from Turin. The building has a rich history and has been rebuilt many times. It is a reflectionof art that combines various architectural and cultural styles of several historical centuries.

Many historical sites in small Italian towns are losing their relevance and function. This often happens with medieval towers and sacred spaces, mainly due to the design features of structures that do not comply with modern safety standards. All this makes it difficult to use the architectural object on a daily basis, which is why it collapses over time.

The main problem of the Cattedrale di San Giusto bell tower is a long-term abandoned condition. Inside it has accumulated a vast quantity debris and many structural objects, such as: stairs, the height of ceilings and ceiling beams, and narrow passages have become unusable. They do not fully fit the interiors of the bell tower and it cannot be opened to tourists, respectively. In addition, the proceeds funds from ticket sales cannot cover the following contents of the facilities: several ancient frescoes, interior and exterior decoration elements, various fragments of the building, and stones that have fallen from the walls have also been preserved inside the bell tower. All of them has historical value, but at the moment they are just a pile of garbage scattered throughout the premises.

The main task of the architect in this case is to create a modern, interesting space inside, open to both locals and tourists.

It is important to convey to visitors the value of the cathedral for modern society. For this purpose, it was decided to create various interactive exhibitions on all floors of the bell tower. The ground floor will contain general information about the facility, its location, architectural features, and a bit of history. This floor will be fully equipped for sedentary groups of the population. Unfortunately, the building's construction does not provide for the possibility of installing an elevator.

The subsequent floors will contain expositions, recreation areas, a gift shop, and necessary office space. Historical decorative elements and fragments will serve as parts of exhibitions, will be aesthetically laid out on special podiums behind glass. This solution will help to avoid vandalism and damage to objects. The end of the tourist route will be a viewing platform on the 8th level of the building, under the roof. From there, one can observe life on the streets of Susa, enjoy the medieval architecture of the city and the Alps.

To turn the idea into a project, it was necessary to visit the city and the cathedral building several times to collect materials on the history of the object and the city itself. As well as taking photos and making 3D scans of the interiors and exteriors in order to further use them for dimensional drawings and 3D models. In return they served as the basis for interior design renderings.

While exploring the city of Susa and its surroundings, several historical sites were identified in addition to the Cattedrale di Santa Giusto, which together can make up a beautiful and interesting tourist route. The tourist flow will provide an opportunity to ensure the preservation of architectural heritage monuments, in particular the Cattedrale di San Giusto, for future generations.

VARSUS

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INTRODUCTION

INTRODUCTION

Architectural heritage is an important part of society's cultural identity and requires the constant intervention of specialists in the field of restoration and preservation of historic buildings and structures. However, over time, many of these buildings lose not only their original function but also thir relevanc within contemporary society. This problem is particularly acute in small Italian towns, where a lack of funding, attention, and regular use leaves architectural heritage in a deplorable state.

One of the most effective methods for preserving such structures is adaptive reuse, which involves assigning a new and relevant function to a historic building. This approach allows for the effective integration of a historic building into modern life without losing its cultural value, and also facilitates the development of new public and tourist functions.

The subject of this Master's thesis is the Cattedrale di San Giusto Martire in the small Alpine town of Susa. Despite the exceptional historical value of the cathedral, the bell tower is currently not in use, hidden from both tourists and locals. The aim of the project was to adaptively transform the bell tower space into a modern cultural and exhibition space, while preserving the historical authenticity and architectural character of the interiors.

Special attention was paid to creating a route for museum visitors that would connect the main sights of the city and unobtrusively invite visitors to enter the cathedral tower. A comprehensive exhibition complex was created inside, dedicated not only to the church, but also to the city of Susa itself. This method will improve the accessibility and development of Susa as a potential tourist destination.

The project is aimed at carefully preserving, adapting and repurposing a historical site for modern use that meets the needs of society, demonstrating the possibility of transforming it into a significant public space without losing its unique character.

01

ARCHITECTURAL AND HISTORICAL ANALYSIS OF CATTEDRALE DI SAN GIUSTO DI SUSA

1.1 HISTORICAL FRAMEWORK OF VAL DI SUSA

Val di Susa is a stunning valley in Piedmont, tucked among the Graian and Cottian Alps in northwestern Italy. It has been a key path over the Alps since historical times, linking Italy with France and other parts of Europe. The valley has an elongated shape. In the Middle Ages, the Val di Susa region became part of the Turin March, which was under the control of the Holy Roman Empire. From the late eleventh century to nearly 850 years later, it was controlled by the Savoy Dynasty, except for a brief period during the Napoleonic Wars when it became part of the French Empire.

At the heart of this valley lies the ancient city of Susa, which has deep ties to the region's history. Susa became the main center of the Celto-Ligurian tribe of the Cottii in the 7th-6th centuries BC. Its location at the intersection of trade and maritime routes made it an important strategic point. Toward the end of the first century BC, King Cottius and his tribesmen decided to ally with the Romans, and Susa became a Roman city known as Segusium.[1]

Before Roman rule, the Alpine region was home to diverse populations with a complex and often unclear ethnic history. Two main ethnic groups have been identified, one of which is the Euganei, inhabiting the northern Italian plain and the Alpine foothills, and the Raeti, located in the valleys of Trentino and Alto Adige.

In addition to these, there were numerous smaller groups, many of which appear to have been part of the early Golasecca culture. These generally fell under the umbrella of either the Euganei, Raeti, or the coastal Ligurians. The Ligurians gradually expanded their presence into the Alps from the south and also extended their influence significantly westward along the Mediterranean coast.

During the period preceding and contemporary with the Roman Republic, the Ligurian people inhabited Italy's northwest. Their region largely aligned with the contemporary Liguria region, extending westward into the portion of Piedmont situated south of the River Po, and even reaching the modern French Provence-Alpes-Côte d'Azur. It's possible that, before the onset of Roman influence, their territory included northern Tuscany and crossed the Pyrenees into Catalonia. [3]

The 1st century BC historian Livy documented the initial Celtic migration into Italy through the western Alps, dating this event to approximately 600 BC. Subsequent continuous waves of Celts followed this route over the next two to three centuries, leading to a substantial Celtic presence across the northern Italian plain. This expansion not only displaced the previously dominant Etruscans (through at least partially documented conflicts) but also likely pushed the other main Ligurian groups, particularly those in the western Alps, who are thought to have gradually assimilated into Celto-Ligurian identities as the more powerful Celtic newcomers asserted their dominance. More powerful Ligurian populations to the north were confined to the Alpine foothills (known as the Lepontii), possibly integrating with a Raeti influx. Meanwhile, the Vindelici were situated on the opposite side of the Alps.

Individual Celto-Ligurian tribes are sparsely documented, but by the 1st century BC, they comprised a multitude of small groups. This fragmentation was likely a result of the fragmented landscape of the western Alpine region, with its numerous valleys and passes that would have fostered the development of relatively independent communities.

Augusta Taurinorum
(Taurasia)
Hasta
Pollentia
Alba Pompeia
Forum Germanorum
Forum Vibii
Caburrum
Mt. Vesulus
Mt. Matrona
[Mt. Genevre]
Mt. Caenia
Mt. Iovenio
[P.d. Grevi]
Industria
Quadratae
Rigomagus
Ticinum
(Pavia)
Laumellum
Dertona
Aquae Statiellae
Ad Fines
Ingauni
Albingaunum
Portus Maurici
Portus Delphini
Vada Sabatia
Savo
Genua
(Genua)
Segesta Montia
Pedo
Celia
Calamicum
Criria
Ad Turres
Ad Publicum
Ad Lunam
Ad Aquas Statiellas
Ad Fines
Ad Pullum

Emperor Augustus (Figure 2), born as Gaius Octavius, went down in history as the first and perhaps the powerful Roman emperor, ending the turbulent era of the Roman Republic and laying the muse for the empire's centuries-long rule. His reign, which began in 27 BC and lasted until 14 AD, marked the start of the famous Pax Romana, a period of unparalleled peace, stability, and prosperity. Having inherited energy after the assassination of his adoptive father, Julius Caesar, Augustus (after defeating Mark Antony) skillfully maneuvered, officially keeping republican establishments, but without a doubt concentrating all energy in his hands within a unique system referred to as the principate. He has carried out significant reforms in the navy, the price segment, and provincial governments, significantly strengthening the country and expanding its borders. In addition to authorities' reforms, Augustus became an avid consumer of the humanities; such literary giants as Virgil and Horace flourished at his court, and Rome itself turned from a city built of brick into a city of marble. After his death, Augustus became deified, which became a crucial part of the imperial cult and ideology, cementing his reputation as one of the best figures of antiquity.

A portion of western Alpine tribes eventually became constituents of the Cotti Regnum during the 1st century BC, a minor Roman client state. Among the Celtic tribes that could potentially be categorized as 'Celto-Ligurian' are the Acitavones, Caturiges, Ceutrones, Graioceli, Medulli, Nantuates, Salassi, Seduni, Segovellauni, Segusini, Tricastii, and Veragri.

Numerous tribes from this period are documented on the 'Trophy of the Alps', a Roman monument inaugurated in 5 BCE at La Turbie. This structure was built to commemorate the Roman conquest of the Alps and the subjugation of forty-four Ligurian tribes during Emperor Augustus's military campaigns spanning 25 BCE, 16 BCE, and 15 BCE. Furthermore, it designated the frontier between Roman Italy and Gaul. While the original inscription on the monument has significantly deteriorated, its content, detailing a dedication to Augustus, was preserved through Pliny's record in his Natural History. [2]

Figure 3. Augustus of Prima Porta, 1st century
source: wikipedia.org

1.2 ANCIENT ERA

The earliest permanent settlements in the Susa Valley date back about to the fifth millennium BCE, as evidenced by means of archaeological findings. However, the most obvious and well-preserved signs and symptoms of human presence in this territory belong to the 6th and 5th centuries BCE. These include cup marks carved into rocks, several engravings, and rock inscriptions found extensively all through the valley. These artifacts suggest an advanced tradition and religious practices among the ancient population of the area.

From an anthropological and ethnological perspective, the Susa Valley is considered an contact zone among transalpine Celtic tribes and the local Celto-Ligurian peoples. Some studies agree that this region turned into the site of cultural interplay and mixing, even as others argue that Celtic influence turned into minimal and restrained, to sporadic contact.[1]

During the Roman Republic, the alpine passes of the Susa Valley won strategic military importance. It is thought that in 218 BCE, Hannibal's army, during its well-known crossing of the Alps, in all likelihood passed through either the Monginevro or Moncenisio passes, establishing a path into Italy from the north. Later, in 61 and 58 BCE, Julius Caesar, during his compaigns in Gaul, reached an agreement with the nearby ruler Donnus, permitting him safe passage via these mountainous territories. In his Commentarii de Bello Gallico (Book I, Chapter X), Caesar notes that the border between Cisalpine and Transalpine Gaul ran via the decrease valley, close to the ancient agreement of Ocelum, west of today's Drubiaglio di Avigliana.

A major event was the alliance formed between the Romans and the local population around 13-12 BCE. This alliance was established between King Cottius, son of Donnus, and Emperor Augustus. To commemorate this alliance, the Arch of Augustus changed into erected in Susa, adorned with a frieze celebrating the peaceful integration of the region into the Roman Empire. The street passing through the valley became named Via Cozia (Via Cottia) and has become an important transport artery connecting Italy with the western provinces.[4]

After 3 centuries of relative peace and prosperity, a period of instability has been a key path over the Alps since historical times, linking Italy with France and other parts, related to the weakening of Roman central authority and growing internal conflicts. In 311 CE, Emperor Constantine the Great besieged Susa, allying with his rival Maxentius. During this time, relations between neighborhood government and the Roman government grew increasingly number of disturbing, and the first barbarian invasions started, sooner or later main to major changes within the political and social shape of the place.[5]

Figure 4. Susa Valley, Susa, Graziane Baths, or two doors, southern elevation.
Photo by Mario Gabino, 1901

1.3 MEDIVAL ERA

The early Middle Ages

After the fall of the Western Roman Empire, the Susa Valley was ruled by numerous peoples and powers. Initially, the Goths managed the rgion from around 490 to 530 AD, observed by way of the Byzantines approximately among 530 and 570 AD. In the lower valley, the Lombards held sway from approximately 570 until 774 AD. The border between the Lombard and Frankish kingdoms lay just a few kilometers upstream from the Roman settlement and became heavily fortified and militarized. This boundary bcame known as the Clusae Longobardorum - the Lombard Locks.

In 726 AD, the Abbey of Novalesa was founded at the foot of the Mont Cenis pass, serving as a Frankish outpost above the border. Between 773 and 774 AD, Charlemagne's army descended into Italy via the Mont Cenis bypass and defeated the Lombards. His son, Louis the Pious, established the Mont Cenis hospice at the eponymous hill to aid travelers crossing the mountains.

Following Charlemagne's death, the valley suffered invasions from Hungarians (circa 900–950 AD) and Saracens (circa 890–970 AD). Arduino Glabrione, having liberated the now-deserted valley, began its restoration. Between 983 and 987 AD, the impressive Sacra di San Michele della Chiusa monastery was founded on the mountain overlooking the valley entrance by a nobleman from southern France returning from a pilgrimage. The monastery was established within the way of life of hermits who had previously lived on the nearby Mount Caprasio under the guidance of Saint John Vincent. [5]

The Abbey of San Michele, constructed at the end of the tenth century, combines architectural elements reminiscent of Byzantine style and quickly became an essential religious and cultural center within the area. According to legend, its foundation is connected to an vision by means of Archbishop John Vincent, who was commanded by the Archangel Michael to build the sanctuary. Benedictine monks inhabited the monastery, providing a haven and assistance to pilgrims traveling to Rome. Over the centuries, the abbey evolved into an enlarged and fortified structure, becoming an image of Piedmont's spiritual energy. [12]

Figure 5. Susa Valley, Susa, Arch of Augustus, Southern elevation, view from above. Photo by Mario Gabinio, 1901

The late Middle Ages

In the many years main up to the year a thousand, the Susa Valley experinced a power vacuum because of Saracen raids. In 1001, Emperor Otto III officially confirmed Alderico Manfredi's authority over a "third part of the valley." Alderico, nephew of Arduino Glabrione, founded the Abbey of San Giusto di Susa in 1029, generously donating the most of his lands to the institution. [5]

A significant alliance was fashioned in 1046 when Adelaide, daughter of Alderico Manfredi, married Oddone, son of Umberto Biancamano, thereby uniting the Arduini and Savoy households. After Adelaide died, the Upper Valley came under the influence of the Dauphins, while the Lower Valley remained dependent on the House of Savoy. Along the major pilgrimage rout Via Francigena, numerous religious institutions flourished, inclusive of Novalesa, San Michele della Chiusa, San Giusto di Susa, the provostery of San Lorenzo di Ulx, and Sant'Antonio di Ranverso - founded in the late 12th century as a hospital following outbreaks of the "Sacred Fire" epidemic. Other important institutions included the Certosa di Montebenedetto, which in 1197 housed priests from Certosa della Loza, in addition to San Francesco in Susa and several hospitals in San Jorio di Susa and Chiomonte.

Figure 6. Wedding of Countess Adelaide di Susa and Oddone di Savoia
source: https://www.laboratorioaltevalli.it

During the 13th century, agricultural production became abundant and trade flourished, particularly through the Moncenisio Pass, which was revitalized. Agricultural practices had been regulated, and some cities, together with Susa and Avigliana, were granted formal statutes. Many castles developed from defensive structures, into fortified residences for feudal lords. The 14th century was marked by aristocratic rivalry and ongoing conflict between the House of Savoy and the Dauphin. In 1349, Dauphin Umberto II ceded his fortresses to the King of France and agreed that the French heir could bear the title of "Dauphin," resulting in the French border running halfway up the valley, near the Savoy holdings of Amadeus VI, known as the "Green Count."

By the 15th century, the abbeys began to show clear signs of decline: the monastic population declined, and important abbeys such as Sacra di San Michele and Novalesa came under the control of abbots-commandants. The Certosa di Montebenedetto was eventually abandoned in favor of the Banda monastery.[6;9]

Figure 7. View on Countess Adelaide's castel in Susa

1.4 MODERN ERA

The Susa Valley has long served as a vital crossroads connecting the Italian Peninsula with northwestern Europe. Throughout the sixteenth century, the valley was contested by the armies of Charles V and Francis I of France. This period was marked by giant religious conflicts that mirrored the wider European wars of faith. Fierce struggles took place right here between Catholic forces and the Huguenot and Waldensian communities resisting the Reformation. Between 1526 and 1533, Colombano Romea excavated a 500-meter tunnel known as the Pertus underneath the Cross of the Four Teeth in Chiomonte, channeling water to irrigate the fields of the villages of Cels and Ramat. This episode was later described by the author Alessandro Perissinotto in his book La canzone di Colombano.[7;12]

In the 17th century, the region became a battleground at some stage in the wars between France and Spain. From April 21 to 25, 1610, the Treaty of Bruzolo was signed - a military and matrimonial alliance between emissaries of Henry IV of France and Duke Charles Emmanuel I of Savoy. However, the treaty quickly collapsed following the assassination of Henry IV by François Ravaillac on May 14, 1610, and its subsequent annulment by Queen Marie de' Medici. In 1622, the Abbey of Sacra di San Michele was closed. An intense famine struck in 1628, followed by way of an epidemic outbreak in 1629. During this time, French troops under Cardinal Richelieu occupied the decrease valley, advancing from the Upper Susa Valley, a territory traditionally a part of the Dauphiné and later the Kingdom of France.[7]

Figure 8. Forte Exilles
source: forteexilles.it

Figure 9. Forte Exilles
source:.forteexilles.it

In 1689, the villages of Jallogne and Salbertrand witnessed the very last clashes of the Glorious Return, which allowed the Waldensians, exiled to Switzerland, to reclaim their valleys. The following year, Victor Amadeus II, bolstered with the aid of his new alliance with the Waldensians, joined a league opposing Louis XIV. This provoked the deployment of General Catinat's troops, who caused sizable devastation. By the Treaty of 1697, the lands of Susa were restored to Savoy.[9]

Figure 10. Portrait of King Luis XIII
source: wikimedia.org

After the Battle of Susa Pass - now in the municipality of Gravere and then a border region - King Louis XIII (Figure 10) of France himself stayed in the Castle of Susa for about a month. Fort Exilles (Figure 9) became increasingly strategic and was expanded. According to legend, between 1681 and 1687, the mysterious figure known as the "Man within the Iron Mask" was imprisoned there, a tale later popularized via Alexandre Dumas.

The 18th century saw the valley embroiled in the European Wars of Succession. Piedmont's conquest of the Upper Valley in 1708 became formalized with the aid of the Treaty of Utrecht in 1713. Fort Exilles was restored, and the huge Fort Brunetta was built in Susa to replace the outdated Fort Santa Maria. On July 19, 1747, in the course of the War of the Austrian Succession, a large battle took place on the watershed close to the Val Chisone - the Battle of Assietta. The latter half of the 18th century became marked by way of a length of relative peace in the valley.

Starting in 1794, the progressive French invasions of Piedmont prolonged into the Susa Valley. Napoleon's military successes led to the Armistice of Cherasco, and in 1798 King Charles Emmanuel IV abdicated the throne, setting the valley under French control till the end of the Napoleonic era in 1814. Rather than relying on the old mule track known as the "Royal Road," Napoleon commissioned the construction of a carriage avenue over the Mont Cenis Pass - one of the first roads to move through the Alps suitable for wheeled cars. Following the restoration, the Susa Valley was returned to Piedmont under King Victor Emmanuel I. In 1836, King Charles Albert restored the Abbey of Sacra di San Michele. On May 22, 1854, the Turin-Susa railway was inaugurated, followed by the opening of the Fréjus railway tunnel in September 1871. Remarkably, the events of World War I largely unaffected the Susa Valley. In the following period, significant army fortifications were built along the western border the Alpine Line, which was actively used during the conflicts with France. The region became a center of partisan conflict, especially at some point in the summer of 1944.

In 1973, the Abbey of Novalesa turned into restored after being received by way of the Province of Turin, thanks to the efforts of Senator Sibilla and the cultural association Segusium. [8]

Figure 11. View on Mont Cenis
source: routedesgrandesalpes.com

1.5 HISTORICAL FRAMEWORK OF SUSA

Following a period of instability and the eventual decline of Roman authority, the place underwent significant ameliorations in its political and social landscape, paving the way for the development and eventual emergence of Susa.

It is difficult to establish the period when the city was first inhabited, and what population inhabited it. Of course, there were Ligurians among them, and later the Celts arrived (around 500 BC), who merged with the first populations.

At that time, the town, known as Segusium, served as the capital of the Kingdom of the Cottii, located within the province named the Cottian Alps. Under Augustus's established administrative structure, and by Latin law, Cottius, as the prefect of the province of the Cottian Alps, maintained his residence there. Cottius had previously led these Alpine tribes. Later, during the reign of Emperor Nero, with the end of the Cottii dynasty, the city transitioned to become the seat of the province's governor (praeses). [17]

The son and heir of Donnus, Marcus Julius Cottius (fl. 60 BCE - 10 CE), occupied a unique position, acting as both the King of the Cottii over the Ligurian tribes inhabiting the Cottian Alps and the Roman prefect of the same provincial territory.

Relations between the local population and the Romans grew increasingly more strained after Caesar's death and the following Roman civil conflict. However, Donnus and later Cottius were careful not to obstruct the Roman passage to Gaul. During this tumultuous period, many Gallic tribes capitalized on the possibility of rebellion in opposition to Roman management, but Cottius selected a reserved direction of movement.

Figure 12. Susa Valley, Susa, Porta Savoia, vista dall'interno col basamento del campanile della Cattedrale. Photo by Mario Gabinio, 1901

With the restoration of imperial power under Caesar Augustus, the rebellions were brutally suppressed (as was the case with the Salassi). However, Cottius and his men not only survived but also strengthened the alliance that existed between them around 13-12 BC. To commemorate this event, a few years later (between 9 and 8 BC), an arch was erected in Susa, the unveiling of which was attended by the emperor himself.

Cottius adopted the Latin name Marcus Julius Cottius. He was appointed præfectus civitatis and granted Roman citizenship. This gesture highlighted the Romans' intention to forge a strong connection with the communities situated near the Monginevro Pass, which was then the sole route into Gaul.

The agreement also entailed a significant reduction in the territory of Cottius's dominion. However, this was counterbalanced by the autonomy he retained over a region that was prospering due to trade between Gaul and Italy. The capital, Segusium (modern-day Susa), consequently began to expand and acquire public monuments.[13]

The exact date when Segusium received the status of a Roman municipality and was incorporated into the Quirinus tribe is unknown. Segusium was in an advantageous position to control the valley and the passage along the great Imperial road, which led from Turin through the Montgenev pass (Montgenevre) beyond the Alps. Despite the abundance of archaeological finds, the general layout of the Segusium settlement during the Empire period remains poorly understood. Segusium remained an open city until the end of the III - beginning of the IV century, when the threat of barbarian invasions forced it to be hastily surrounded by defensive walls.

In the Middle Ages, the city shared the fate of other parts of Italy that were subjected to barbaric invasions. During the Gothic War, a certain Sisygius, whose name was later Latinized as Sisinius, the leader of the Goths in the Susa Valley, found itself between the Franks on the one hand and the Byzantines on the other, and entered into negotiations with the latter. He formally recognized their authority, but continued to rule as an independent lord, despite the title of magister militum (military commander) assigned to him by the Greeks to command this military district of the Cottian Alps, designed to protect the border from external attacks.

His reign continued under the same conditions even after the conquest of Italy by the Lombards. The latter tried to expel him during one of the expeditions against the Franks, but were defeated by Mummolus, the son of a noble Provencal killed by the Lombards in a previous campaign, and retreated to Susa. However, Sisigiu managed to get them to leave.

After his disappearance, Susa and the valley were occupied by the Franks, who had advanced almost as far as Avillana. It formed a single diocese with Moriana until, at an unspecified period during the last Carolingian period, it was separated from the county of Moriana and annexed to the county of Turin. In the 10th century, the valley was ravaged by Saracens from Frassineto and possibly Hungarians.

Susa, which became part of the Arduini domain, also had Countess Adelaide among its rulers. Later, it became an integral part of the possessions of the Counts of Savoy, who established a mint there during the reign of Pietro I after the closure of the mints in Egbel and San Giovanni di Moriana. In 1174, the city was burned down by Frederick Barbarossa, who, however, ordered the house of the Count of Savoy to be preserved. In the subsequent divisions of the Savoy possessions, Susa always remained part of the territory directly subordinate to the Count of Savoy, starting in 1235, when Amadeo IV transferred Piedmont south of Avigliana to Tommaso II; thus, the princes of Acaia had no influence there.

In 1536, Susa came under French rule and remained so until 1559. Throughout history, the city witnessed the passage of armies and important figures through the Montcenici Pass on their way to Italy. According to the Treaty of Paris in 1796, Victor Amadeus III agreed to demolish the city's fortifications. Later, when Piedmont was annexed by France, Susa remained under French rule until the restoration.

Susa is a historic city renowned for its rich architectural heritage. There are monuments of different eras and patterns.

Ancient Roman style: the Arch of Augustus is a monumental triumphal arch erected in honor of Emperor Augustus, the Porta Savoia Gate is a preserved town gate, the Roman Amphitheater, the Roman aqueduct.

Medieval architecture: the Castle of Susa, Cattdrale di San Giusto, Susa's primary religious edifice, was constructed in the 12th century in the Romanesque style.[15;16]

Figure 13. Susa Valley, Susa, il Castello, particolare con una torre angolare. Photo by Mario Gabinio, 1901

Figure 14. Susa Valley, Susa, Veduta di un vicolo con la città sullo sfondo.
Photo by Mario Gabinio, 1901

Figure 15. Susa Valley, Susa, Edificio con loggiato a bifore tamponate, Via Palazzo di Città.
Photo by Mario Gabinio, 1901

Figure 16. Susa Valley, Susa, Prospetto di edificio barocco con figure affrescate.
Photo by Mario Gabinio, 1901

Figure 17. Susa Valley, Susa, Panorama della città da ovest coi campanili di Santa Maria Maggiore e di San Giusto.
Photo by Mario Gabinio, 1901

Figure 18. Susa Valley, Susa, Veduta della città dal ponte della Chiesa del Ponte, verso ovest.
Photo by Mario Gabinio, 1901

02

GEOGRAFICAL AND SOCIAL ANALYSIS OF SUSA

2.1 INTRODUCTION

Susa, a town on the western Piedmont of Italy at the foot of the Cotta Alps in the Valley of Susa, represents a remarkable example of historical occupation where Roman heritage, medieval architecture, and a modern urban environment coexist. The city's strategic position on the ancient Transalpine road connecting Italy and Gaul through the passes of Montgennevre and Mont Cenis has determined its importance for more than two millennia.

Cattedrale di San Giusto Martire, overlooking Susa's historic center, is not just a city's religious landmark, but also an architectural witness to its rich history. The Romanesque bell tower of the cathedral, dating from the 11th and 12th centuries, is a great example of Piedmont's medieval architecture and requires an integrated approach to preservation and adaptive reuse in the context of the city's modern needs.

The aim of this research is to develop strategies for the conservation and adaptive re-use of San Giusto Cathedral's building heritage, taking into account the geographical, socio-economic and touristic features of Susa. The project's relevance stems from the need to integrate historical monuments into the modern life of small towns that have to deal with the challenges of depopulation, changing tourist flow, and needs of sustainable territory development.

Figure 19. View on Val di Susa

2.2 LOCATION

Susa is located in western Piedmont, specifically in Province of Turin. It's nestled in the lower part of the Val di Susa, on approximately 503 meters above sea level. It's situated where the Dora Riparia River meets the Cenischia stream. This strategic location has made Susa important for travel between Italy and France for centuries. Its coordinates are 45°08'N 7°03'E.

The area of Susa is approximately 13 km2. The town extends from east to west, following the valley's shape. The the Cotta Alps peaks range from 1,000 to 3,000 meters high. It's about 53 km west of Turin, an under an hour drive on the A32 highway, traffic permitting.

Val di Susa shows a classic Alpine glacial valley - carved by old glaciers into a U shape. The ground consists of schists, gneisses, and limestones. These materials served as the main ones for construction in these places.

The weather in Val di Susa is a mix of mountain and continental. January usually has a freezing temperature around 0°C. and snowy weather from December to March. Autumn is the wettest season of the year: 800-900 mm a year. July - pleasant weather, from 20-22°C. [19]

Another geographical feature of Susa is the Dora Riparia River that flows through the town, providing water, powering old mills, and separating neighborhoods. The Dora Riparia is a stunning alpine river that stretches for 125 kilometers and serves as a left-bank tributary to the Po. Interestingly, just about 5 kilometers of it runs through France. It originates in the Cottian Alps near the Col de Montgenèvre, where it goes by the name Piccola Dora. It picks up the name Dora Riparia after merging with the Ripa in the Argentera Valley and the Thuras de Bousson near Cesana Torinese. [20]

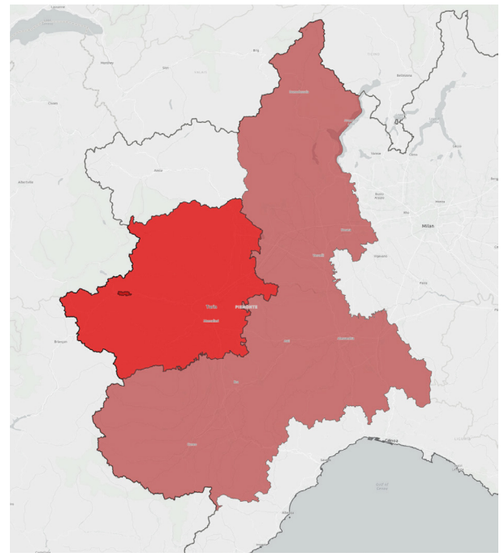

Figure 20. Location of Susa, map of Piedmont
source: openstreetmap.com

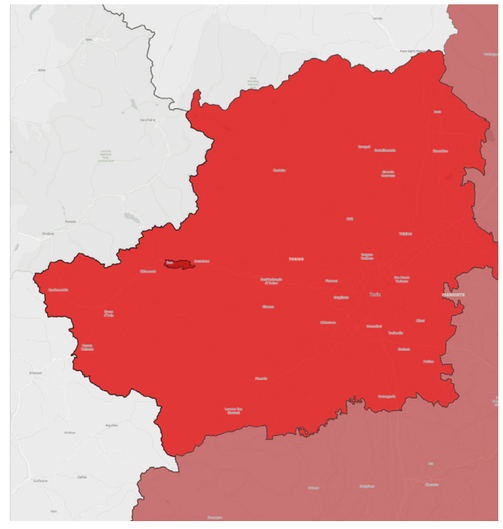

Figure 21. Location of Susa, map of Turin
source: openstreetmap.com

2.3 DEMOGRAPHIC ANALYSIS OF SUSA

The city of Susa is located in the Piedmont region, in the Val di Susa valley, and is a small center with a rich historical and cultural heritage. However, like many small towns in Northern Italy, Susa is experiencing demographic trends typical of the region - a decrease in the birth rate, an aging population and a higher proportion of women in older age groups.

The analysis of the age and gender structure of the population of Susa allows us to assess the current demographic state of the city and identify the main trends affecting its socio-economic development. These indicators play a key role in the planning of urban infrastructure, health and social security systems.

According to the data for 2024, the population of the commune is about 5,900 people. The study examines the main age categories, the structure of the population by gender, as well as the ratio between the child, able-bodied and elderly populations. This approach makes it possible to comprehensively assess the demographic situation and identify the characteristic feature inherent in the modern stage of development of Susa.

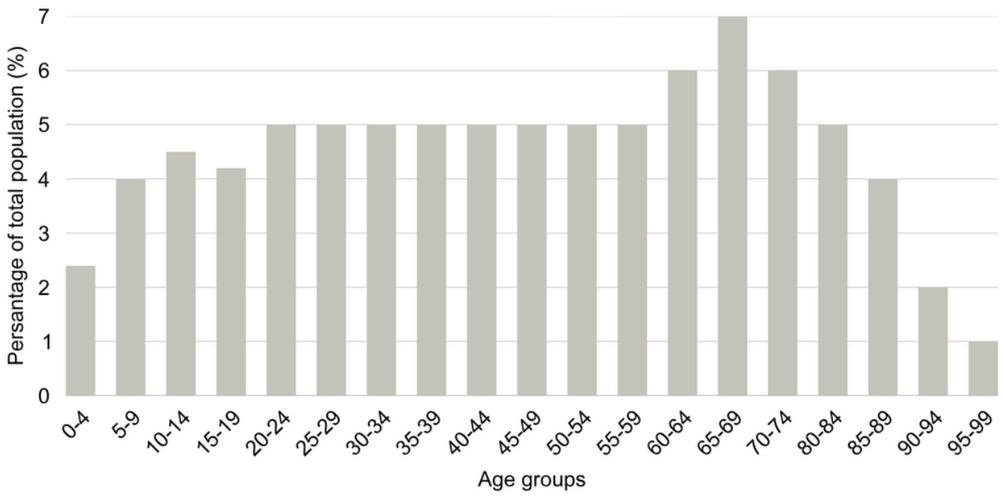

Figure 22. Detailed age distribution of Susa population (2024)
source: istat.it

The average age of the city's population is approximately 49.2 years.

In the child and adolescent groups, the gender distribution is approximately the same, but starting from the elderly (75 years old), the proportion of women becomes significantly higher due to a longer life expectancy.

The working-age group (15-64 years old) accounts for almost 60% of the total population. The burden on this group increases every year due to the high proportion of elderly residents. The proportion of children is approximately 11%, a typical regressive situation for small towns in northern Italy, leading to an aging population.

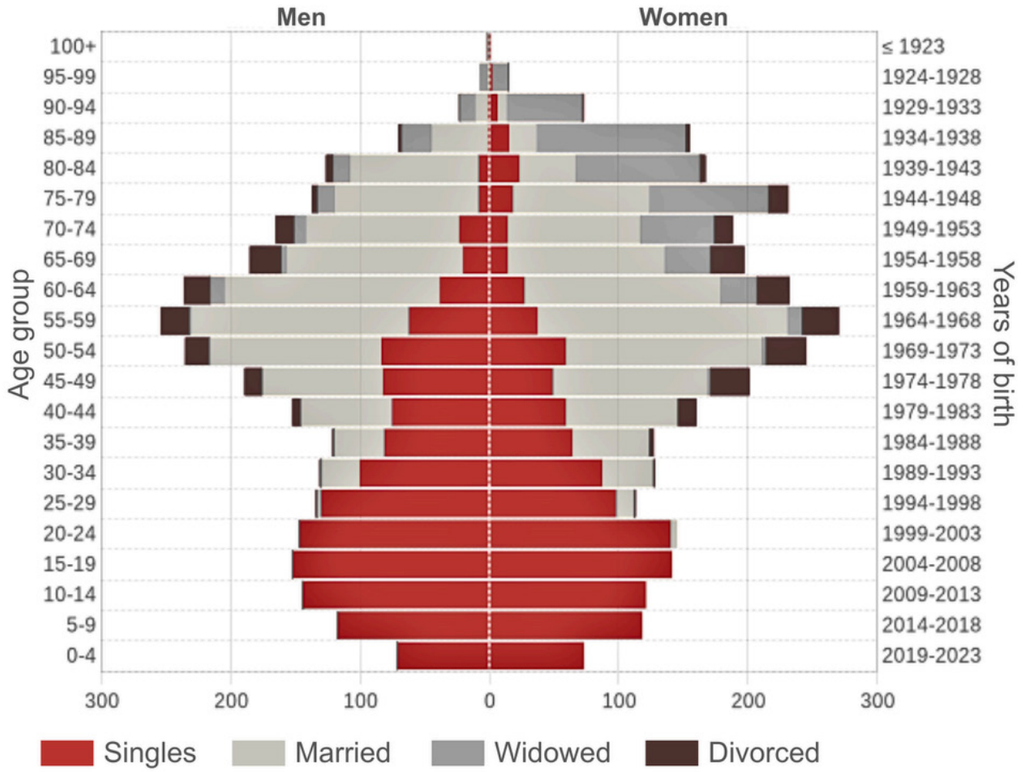

Figure 23. Population by age, gender and marital status (2024)
base: istat.it

Based on the graph, it can be concluded that the city's population structure reflects the typical demographic trends of small Italian cities with a pronounced aging population. The data indicate that younger age groups (under 30) are underrepresented, while the number of middle-aged and elderly people is gradually increasing. The proportion of women in the older age groups is particularly high, due to their higher life expectancy.

The majority of middle-aged residents are married, while single people predominate among the younger age groups.

A significant increase in widowed people is observed in the older age groups, especially among women. The number of divorcees remains relatively small, but it is more noticeable in middle-aged generations.

Overall, the demographic structure of Susa reflects a stable yet progressively aging population, with a predominance of women and a declining birth rate. This creates a tendency towards a gradual reduction in the number of the younger generation and an increase in the need for social and medical services for older residents.[21]

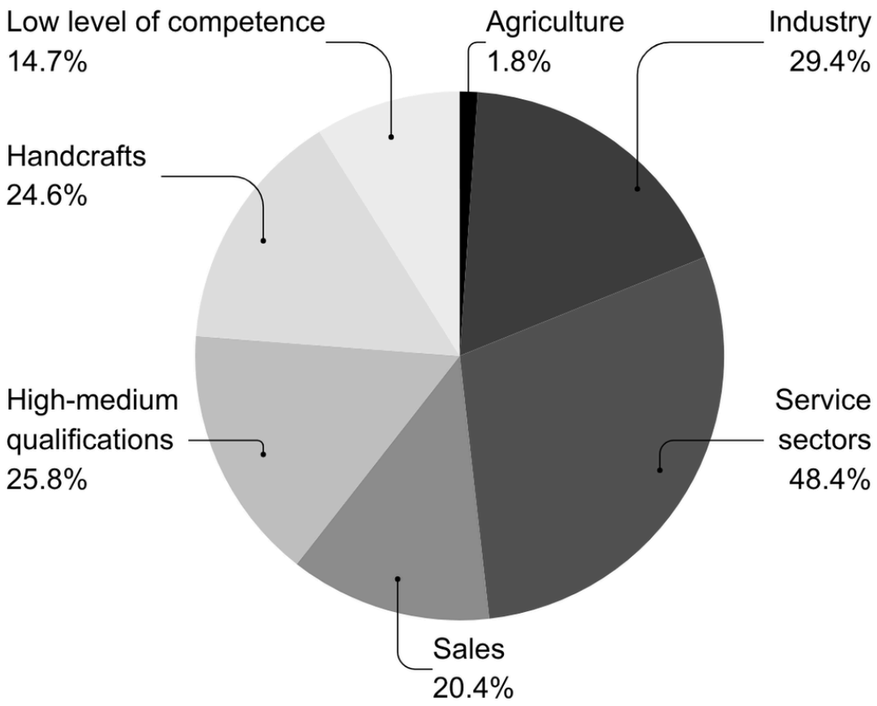

Figure 24. The professional structure of employment of the population source: istat.it

The data confirm that the economic structure of Susa is shifted away from agriculture towards industry and services. Agriculture plays a relatively minor role in the local economy (less than 2%). Industry remains an important sector, accounting for about a third of the employed.

The service sector dominates in local economy: almost half of the employed work in services outside the trade sector. This is typical of regions where the industrial base remains, but a shift towards a service-oriented economy is already underway.

The high proportion of people employed in medium-skilled and unskilled professions (24.6% +14.7%) indicates a significant part of the workforce with limited growth prospects without a higher education or specialized qualifications. This may indicate the need to develop retraining and competency-building programs.

Also, the share of professions with high to medium qualifications (~25.8%) is slightly lower compared to some regional and national benchmarks, which may indicate a lower proportion of high-tech or managerial positions in the economy of Susa.[22]

Conclusions

The data collected on the age and professional structure of the population of Susa are important for substantiating the rationale of the restoration project of the Cathedral of San Giusto. They allow you to align architectural solutions with the needs of local residents.

Firstly, demographic indicators show that Susa is a small city with an aging population and a declining proportion of young people. This situation highlights the need to create public and cultural spaces that can improve urban life and attract visitors of all ages. In this context, the restoration of the tower and the creation of new exhibition and public spaces becomes particularly important as a tool for revitalizing the historic environment and creating a new attraction.

Secondly, the occupational structure of the population, dominated by services, crafts, and industry, points to the potential participation of local residents in the restoration and operation of the site. This provides an opportunity to integrate traditional craft skills into the project, strengthening the connection between heritage and modernity, and facilitating the development of tourism and small businesses.

Furthermore, the identified demographic structure - with a high percentage of elderly people - highlights the need to create accessible, inclusive, and age-appropriate spaces. Thus, an architectural concept can become not only part of a heritage conservation strategy, but also a means of improving the quality of urban life.

In general, the use of real statistical data allows us to show that the project is based not only on artistic and historical considerations, but also on deep social prerequisites. This reinforces the scientific reasoning of the work and demonstrates its relevance to the modern development of Susa.

2.4 STRATEGIC ACCESSIBILITY OF SUSA

The city of Susa has always been a part of historical roads. For example, the Via Domitia, the first ancient Roman road in Galia (modern France), passed through it. It connected Italy and Spain through the Alps. It was also associated with Via Francigena near Susa, one of the most famous roads for pilgrims heading to Rome. Along the way, they built many monasteries, hospices, and markets.

Figure 25. Gide of Via Francigena
source: macrolibrarsi.it

In the Middle Ages, it was also used to connect northern Europe with Italy.

Via delle Gallie - Roman Imperial Road built in 13 BCE connecting Turin and Lyon ran through Susa, which made the city one of the main Ancient Roman arteries in the Eastern Alps.

The Montgenèvre Route was used by Hannibal, the Roman Legions and further by Napoleon's army. This route went from Susa to Cesana Torinese, then to Montgenèvre, then to Briançon. Thus combining the Ancient Roman and Napoleonic road network.

Napoleon Bonaparte reconstructed part of the ancient Alpine roads for the convenience of the army.

Later in the 19th century, Susa became a key point for the Turin-Modane railway, which we use to this day. [23]

The fastest way to get to Susa today is by car from Turin. The 61 km road will take approximately 50 minutes. The A32 highway goes from Turin to Bardonecchia, through Susa. The train from Torino Porta Nuova station can be used as public transport. The journey will take about an hour.

From Milan by car - about 200 km and 2.5 hours by car.

It will take 3 hours and 250 km by car from Genoa to Susa.

You can also get from Geneva in 3 hours.

The nearest airports to Susa:

1. Turin-Caselle Airport
2. Milan Malpensa Airport
3. Genoa Airport
4. Geneva Airport [24]

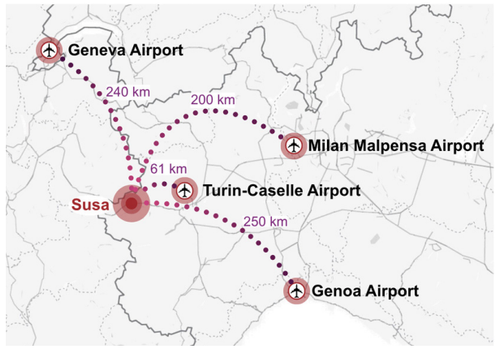

Figure 26. Routs to Susa from nearby airports
source: google.com/maps

2.5 TOURISM TRENDS IN VAL DI SUSA

Figure 27. Estimated Tourist Flow in Val di Susa (2019–2025) shows tourism trends in Val di Susa over a seven-year period. The graph shows two key factors: tourist arrivals and overnight stays, reflecting both the number of tourists in the region and the length of their stay. Together, these indicators help determine the region's suitability for tourism and its importance to Piedmont.

In 2020, a significant decline in tourism was observed, from 115,000 visitors in 2019 to 70,000 in 2020, while the number of overnight stays decreased from 360,000 to 220,000. This is directly related to the Covid-19 pandemic, which imposed travel and mobility restrictions for safety reasons.

In 2021, the situation improved slightly, with the number of tourists rising to 95,000 and the number of nights to 290,000. We expect an even greater increase in 2022, with the number of tourists and nights increasing by another 30,000 and 110,000, respectively. This increase is due to the gradual reopening of entertainment venues, museums, and public spaces, both outdoors and indoors.

From 2023 to 2025, tourism in Val di Susa will experience more stable growth. During this period, the number of tourists increased by a noticeable 10,000 and the number of nights by 40,000. This increase is driven by people not only wanting to visit Val di Susa but also wanting to stay longer, which positively impacts the region's economy through hotel accommodations, meals, entertainment, and activities.

Based on this graph, we can conclude that the valley attracts attention with its natural landscapes, Alpine atmosphere, and historical, religious, and cultural sites. Seasonal activities include summer hiking and winter sports, attracting tourists year-round.

The graph demonstrates a steady increase in tourism after the decline during the pandemic. This confirms the importance of Val di Susa in Italy's tourism sector. These trends provide an opportunity to preserve and restore the vast number of historical sites in the area and adapt them to modern needs, increasing the flow of visitors and extending their stay in the region.[25]

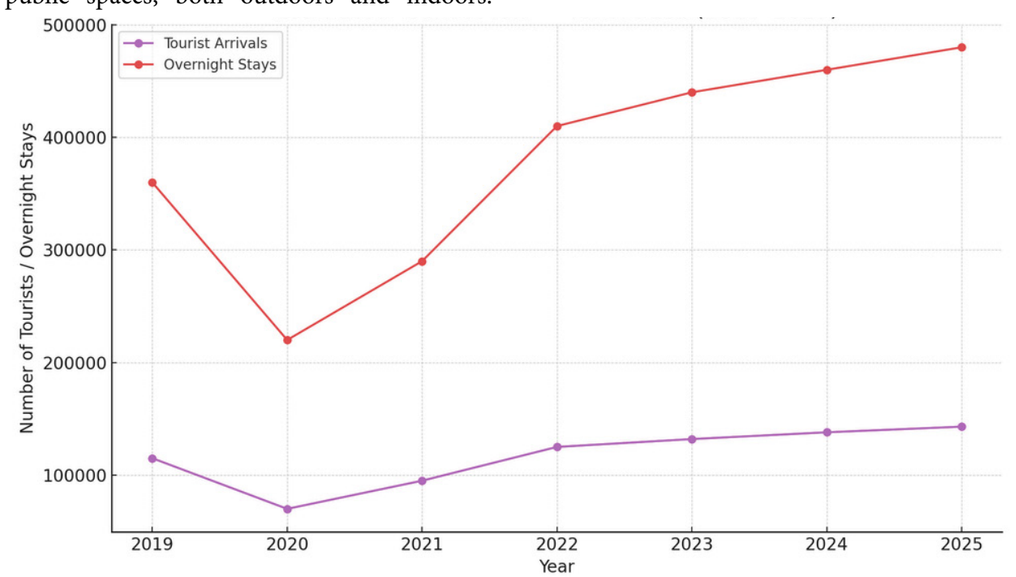

Figure 27. Estimated tourist flow - Val di Susa (2019-2025)
source: evv.it

2.6 CULTURAL AND NATURAL SITES OF THE REGION

Mountains such as **Rocciavrè (3081m) and Rocciamelone (3538 m)** attract a huge number of tourists. Rocciamelone is one of the highest mountains in the Val di Susa (not the highest, as many mistakenly believe, given that this primacy belongs to Punta Roncia, located on the watershed between the Val di Susa and Maurienne). Despite its considerable hight, Rocciamelone does not present significant technical difficulties for experienced hikers and able to manage the exposure of the last stretch. [26]

Figure 28. Monte Rocciamelone (3538 m) from Cima Fraiteve (2689 m).
Photo by Roberto Ferrari

Figure 29. Rocciamelone (3081 m)
source: cuneotrekking.com

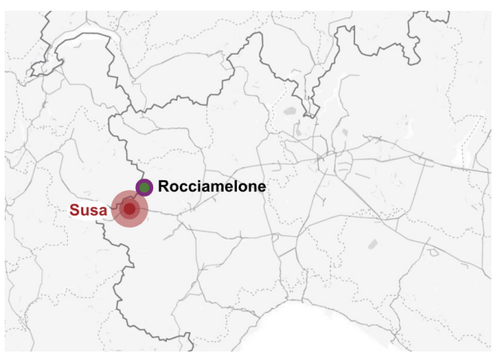

Figure 30. Location of Rocciamelone mountain
source: google.com/maps

Val Troncea Natural park is 30 km from Susa. It is home to a rich variety of Alpine flora and typical Alpine fauna. Archeological evidence indicates that the area was inhabited by shepherds and hunters before the rise of the Roman Republic. There are 22 walking paths in the park that are marked and signposted. Each designated path leads through different environments in the park. In the winter months, the park also offers cross-country skiing on groomed trails.[27]

Figure 31. Parco Naturale della Val Troncea
source: peakvisor.com

Figure 32. Parco Naturale della Val Troncea
source: peakvisor.com

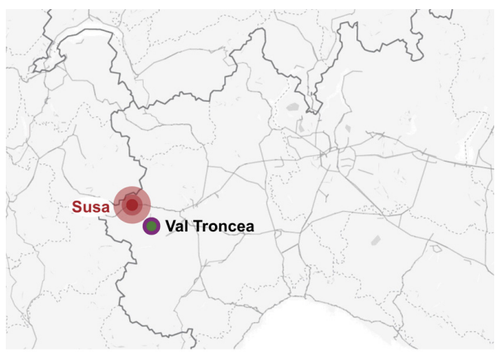

Figure 55. Location of Parco Naturale della Val Troncea.
source: google.com/maps

Laghi di Avigliana is a picturesque lake in the mountains in a beautiful small alpine town. The Lago Grande di Avigliana is also a popular spot for a great variety of activities, including walking, cycling, and birdwatching. The lake is surrounded by a network of well-maintained trails that lead through lush greenery and offer stunning views of the water and the surrounding landscape. The lake is also a popular spot for fishing, and its serene environment makes it an excellent location for photography, particularly with the backdrop of the Susa Alps. In the winter, the nearby mountains offer opportunities for skiing and snowboarding, making the area a yearround destination for outdoor activities. [28]

Figure 33. Lago di Avigliana
source: italyreview.com

Figure 34. Location of Lago di Avigliana
source: google.com/maps

The Sacra di San Michele evokes admiration, charm and a sense of mystery that has surrounded it since its foundation between 983 and 987 AD. This majestic abbey, defying the laws of physics, stands on Mount Pirchiriano at the entrance to the Susa Valley.

This amazing and spiritual place was originally guarded by Benedictine monks, and since 1837 it has been under the care of the Rosminian Order. The history, spiritual significance and picturesque landscape surrounding the abbey inspired the writer Umberto Eco to create the bestseller “The Name of the Rose” and made Sacro di San Michele one of the most attractive sights in Europe.[29]

Figure 35. Sacra di San Michele
source: viefrancigene.org

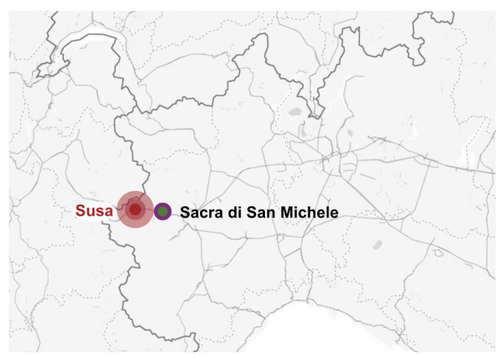

Figure 36. Location of Sacra di San Michele
source: google.com/maps

2.7 CITY LAYOUT

The historical center of Susa is located on the right bank of the Dora Riparia River under medieval defensive structures. The city has retaind its Roman grid since the Ancient Roman period, but there are also medieval streets near the Cathedral of San Giusto, and modern districts have been built on the outskirts of the city.

San Giusto Cathedral is located in the historical center of the city and is the main point of attraction. It is also part of the architectural ensemble together with Porta Savoia, part of the ancient defensive fortress.

Figure 37. Porta Savoia (25.20.2025)

Nearby there is a beautiful park where we can also find historical attractions such as the Arco di Augusto, a Roman triumphal arch constructd in 8 BC, dedicated to Emperor Augusto and now the most protected site in Piedmont, and the ruins of Graziane Baths. The park on the west side is framed by the Castello della Contessa Adelaide, a medieval castle. Walking a little to the south, you can find the ancient Roman amphitheater (1st -2nd century AD) - Anfiteatro Romano di Susa.

Of the modern ones in the city, there is the Museo Civico e Diocesano di Arte Sacre, a museum displaying sacred art including sculptures, liturgical objects from local churches and abbeys, and other religious art.

Figure 38. Arco di Augusto (25.10.2025)

Figure 39. Castello della Contessa Adelaide (25.10.2025)

Thus, the city of Susa represents a multilayered historical space, organically blending elements of the ancient, medieval, and modern periods. A clear Roman planning structure underpins the medieval development of the historic center and the modern districts on the outskirts. The Cathedral of San Giusto and the surrounding architectural ensemble constitute the city's key urban and cultural landmark, while periodic archaeological remains from a Roman arch and baths to an amphitheater and castle underscore the unique historical value of the area. Museums and public spaces make Susa not only a must-see for a Piedmontese cultural heritage site but also a vibrant city whose history continues to actively interact with contemporary urban life. [30]

Figure 40. Ruins of Graziane Baths and Roman aqueduct (25.10.2025)

Figure 41. Anfiteatro Romano di Susa (25.10.2025)

Figure 42. Museo Decenzano (25.10.2025)

Figure 43. Tourist route and cultural attractions in Susa shows a map of the main tourist routes connecting the city's attractions, including monuments, churches, museums, fortifications, and public spaces. The Cattedrale di San Giusto occupies a strategic position along the route as a key point. The high concentration of heritage allows for a long-lasting experience exploring the historic city center.

Figure 44. Tourist infrastructure and accommodation facilities in Susa - a map focusing on the accessible location of the Cattedrale di San Giusto in terms of accommodation. Many hotels and transport hubs are located in close proximity to the cathedral, guaranteeing accessibility not only for local residents but also for out-of-town visitors. The presence of hotels and the necessary infrastructure demonstrates Susa's ability to support tourist activities year-round.

To better understand the spatiality of the city for visitors, a study was created along the main tourist route connecting Susa's main attractions. The sketches in Figure 45. Selected views of the historic urban landscape show key points of the pedestrian route through the historic city center. The architectural character of the streets, squares, and monuments that represent the city's cultural identity is demonstrated here. Viewpoints reveal a rich and diverse urban landscape, where medieval buildings coexist harmoniously with more recent ones. Emphasis is placed on the visual connections leading to the Cattedrale di San Giusto and its bell tower, which dominates the cityscape. This analysis confirms the cathedral's important role in the cultural and visual fabric of Susa.[31]

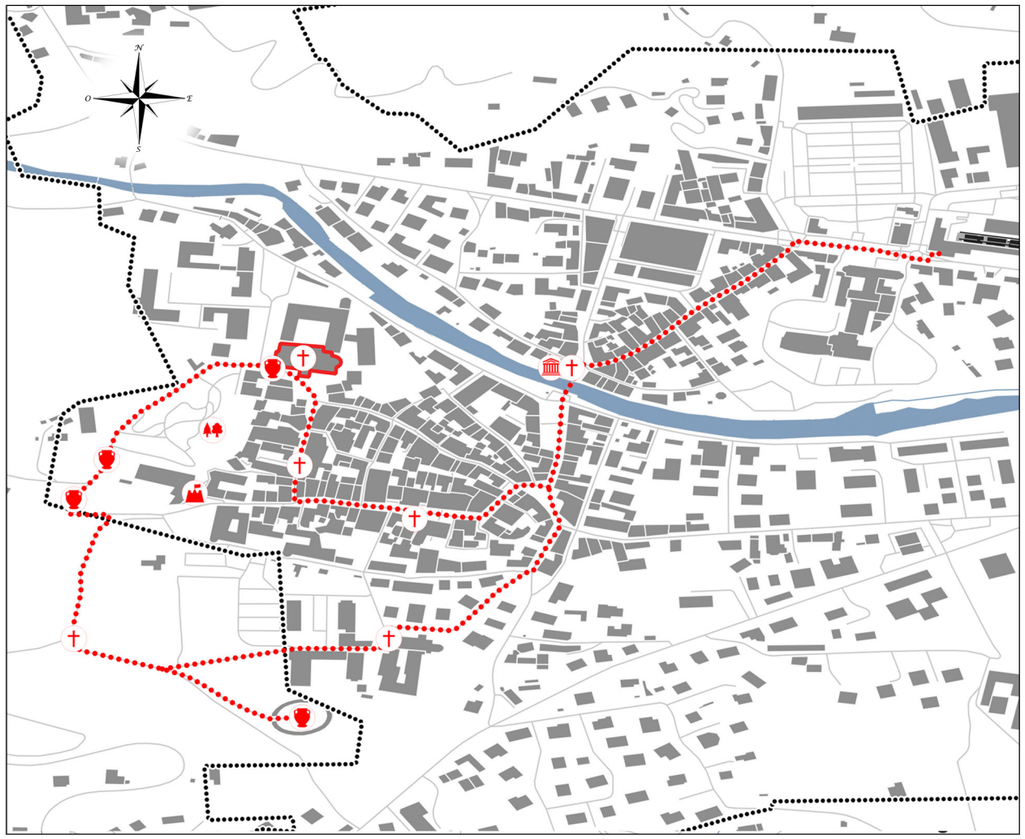

Figure 43. Tourist route and cultural attractions in Susa

source: opnstreetmap.com

Legend

- Park of August
- Churches and Oratories
- Monument
- Castles and Fortifications
- Museum
- Touristic path
- Cathedral of San Giusto
- Susa borders
- Buildings
- Railways
- Roads

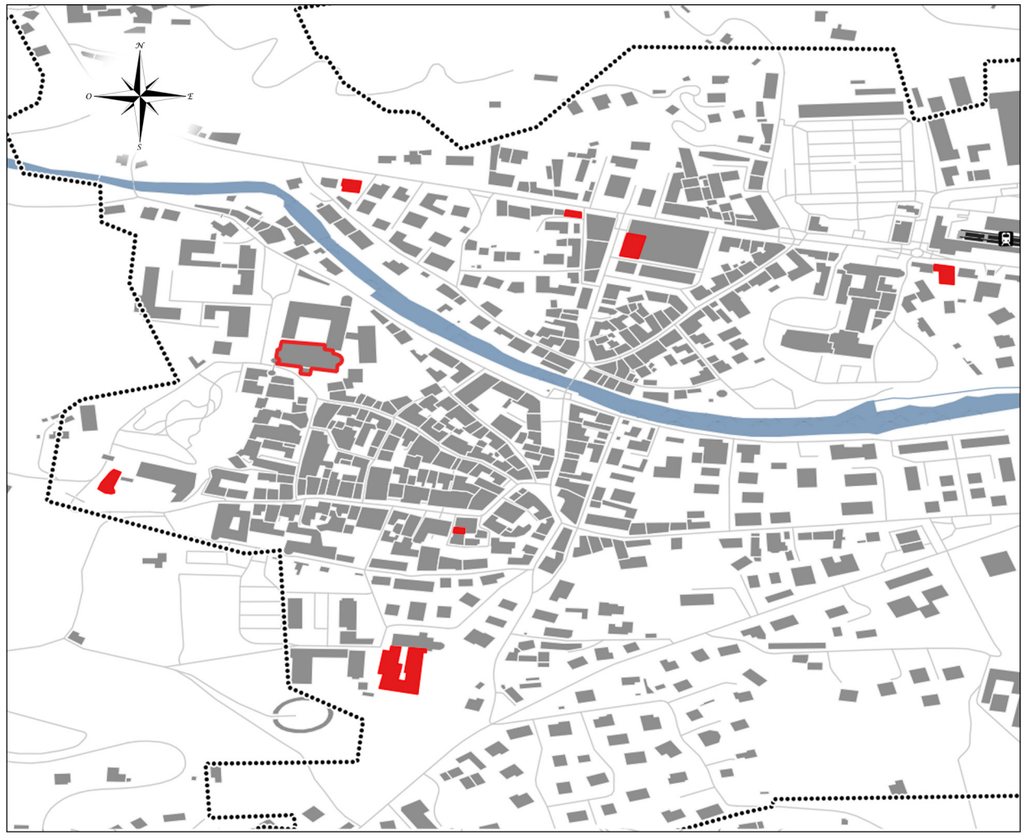

Figure 44. Tourist infrastructure and accommodation facilities in Susa

source: opnstreetmap.com

Legend

- Cathedral of San Giusto

Transport

- Railway station - Susa
- Susa borders
- Hotels
- Buildings
- Railways
- Roads
- Water

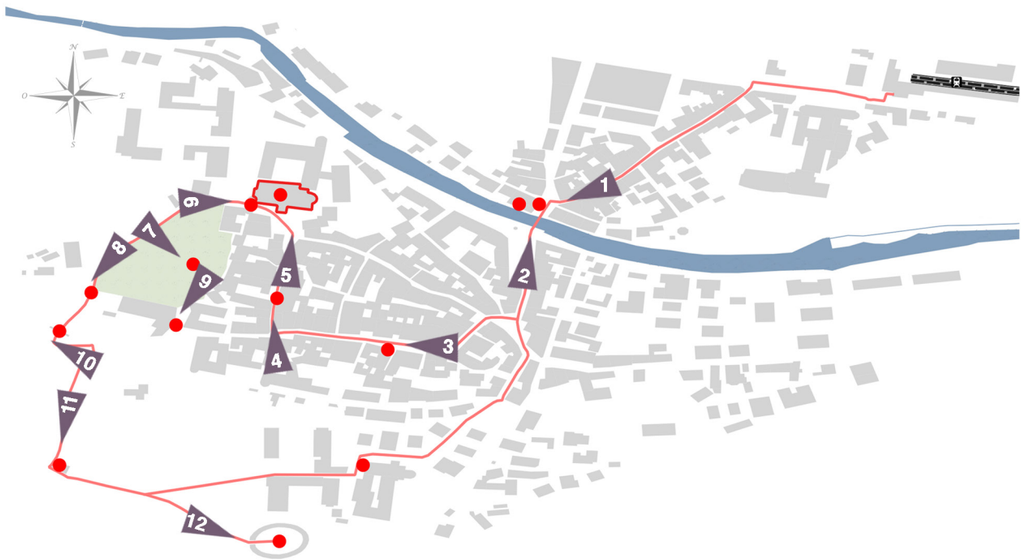

Figure 45. Selected views of the historic urban landscape

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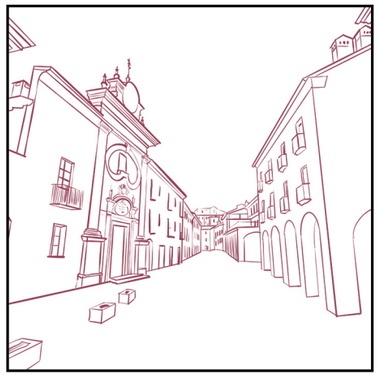

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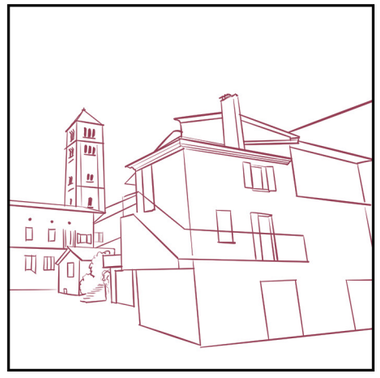

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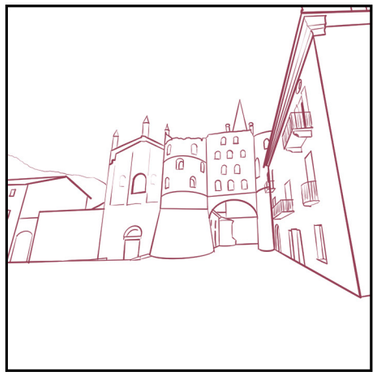

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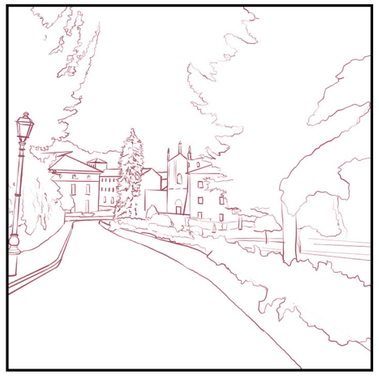

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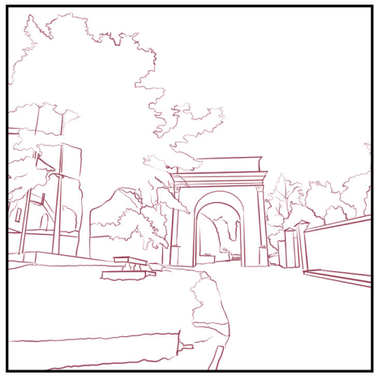

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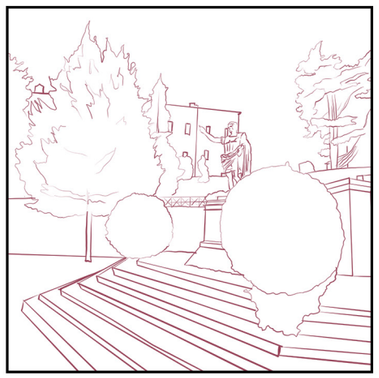

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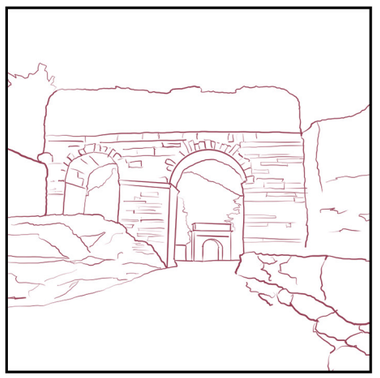

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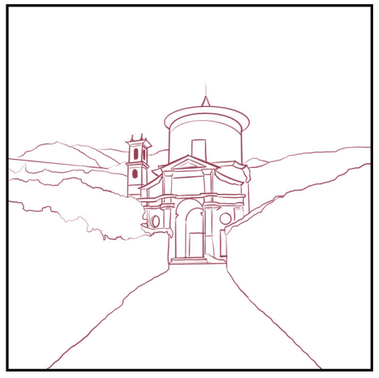

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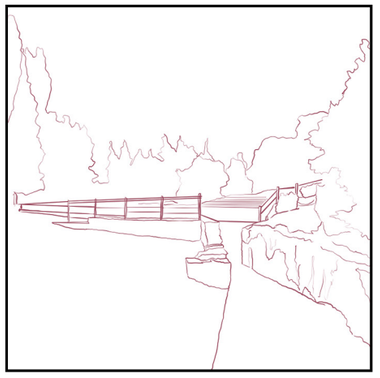


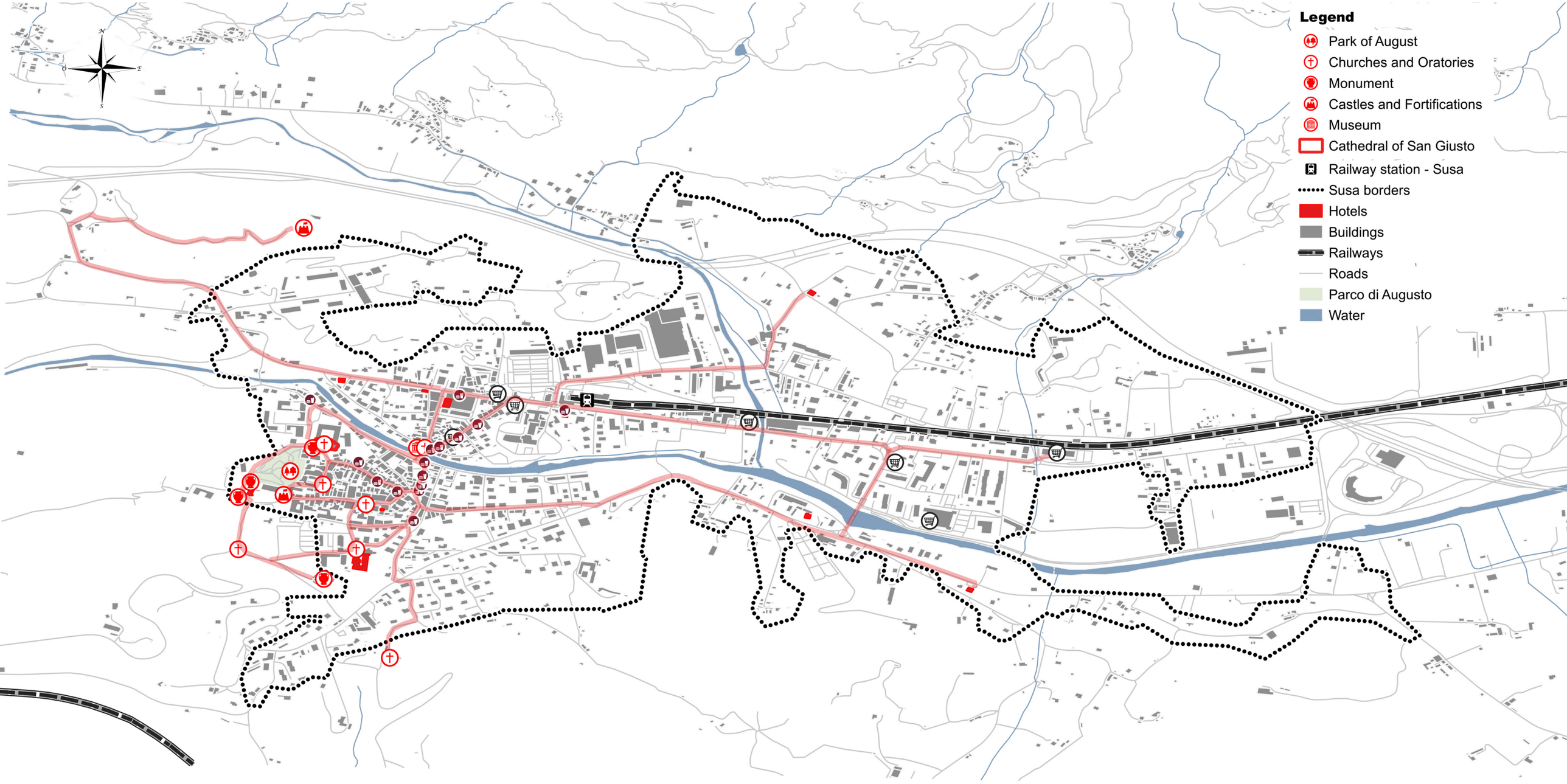


Figure 46. Tourist destination map

source: opnstreetmap.com

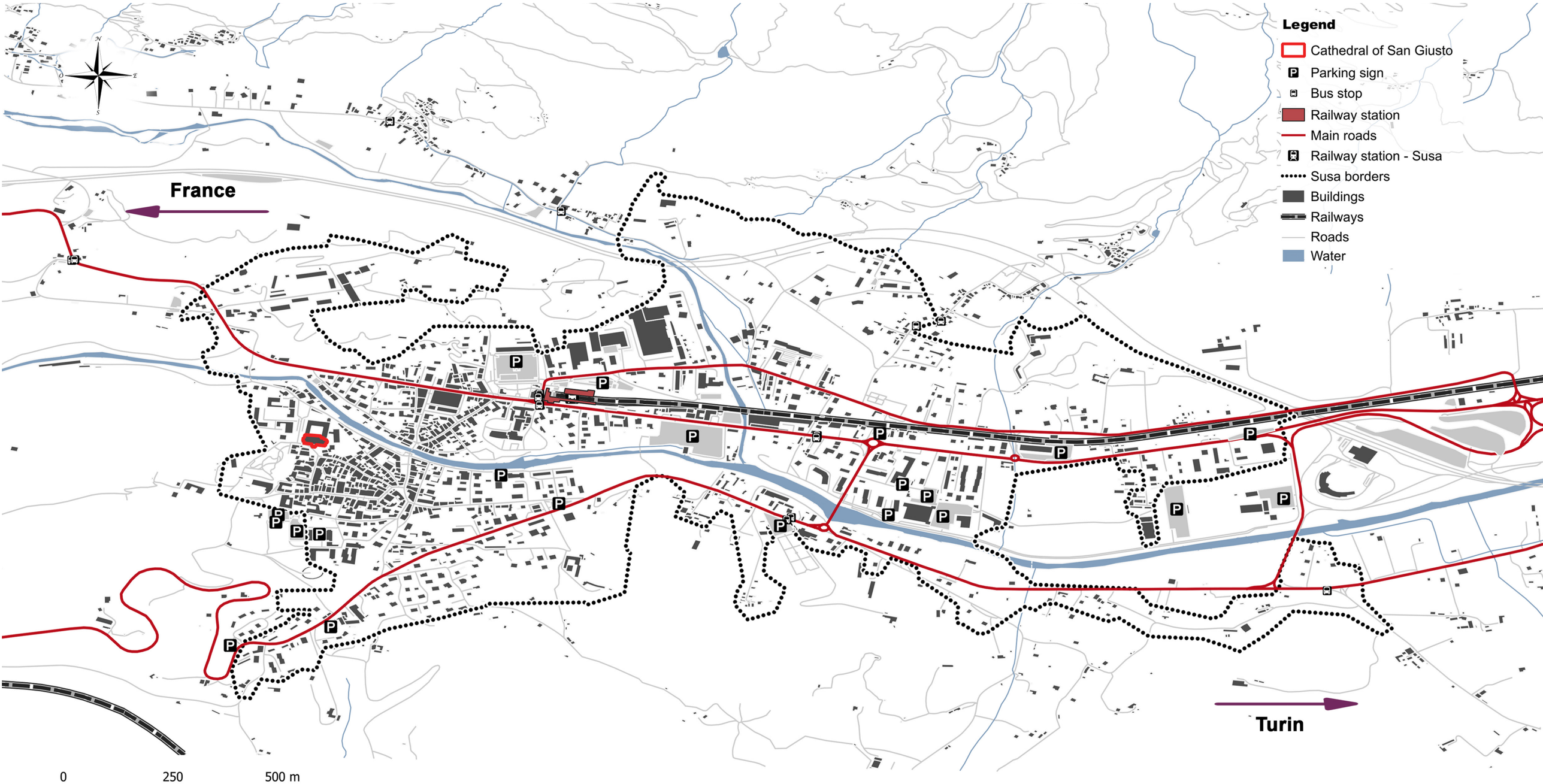


Figure 47. Transportation map

source: opnstreetmap.com

03

HERITAGE VALUES AND PRESERVATION STRATEGIES

3.1 HISTORY OF CATTEDRALE DI SAN GIUSTO

Cattedrale di San Giusto has a long complex history closely linked to the development of Susa. Built in the early 11th century, the use of Roman fortifications as a base shows how crucial the town has been over the years. The cathedral has long passed through diverse architectural patterns, beginning with Romanesque and later adapting to Baroque modifications. Inside, you will find vintage frescoes and particular altars that give a glimpse into the religion and creative talent evolved over the years. Today, San Giusto Cathedral is not simply an area to worship; it is a cultural landmark that tells the tale of Susa's wealthy history.[32]

Originally, the Cathedral of San Giusto in Susa was the church of the Benedictine monastery of the same name, founded in 1029 by order of Marquis Alderico Manfredi. It is associated with the Benedictine Order, one of the oldest monastic orders in the Catholic Church for men and women who follow the Rule of Saint Benedict. Established in 529, they represent the most ancient religious order throughout the Latin Church.

Marquis Arduin Manfredi (also known as Olderico Manfredi II), a prominent feudal lord of early eleventh-century Northern Italy, belonged to the distinguished Arduinici family of Lombard descent. Holding the name of Marquis of Turin and Susa, he governed substantial territories at some stage in the Piedmont region. Arduin Manfredi was instrumental in strengthening his circle of relatives' political influence and fostering the development of ecclesiastical structure. During his reign, several religious complexes were founded or restored, including the Abbey of Novalesa and the Cathedral of San Giusto. These endeavors not only contributed to the spiritual development of the surrounding area but also increased its strategic and cultural importance. After his death in 1034, his lands and titles passed to his daughter, the famous Adelaide of Susa. She became one of the most influential women in medieval Italy, and her reign, through her marriage to Oddone di Savoia, laid the foundation for the rise of the House of Savoy.

San Giusto is the patron saint of the city of Susa, and there may be a version that he may be the equal San Giusto, as from the abbey of Novalesa, or any other saint with the identical name, given that in the early Christian lifestyle, there were numerous saints named Justus.

According to the first version, the relics of San Giusto were moved from the abbey of Novaleza to Susa in the 9th century at some stage in the Saracen raids to keep them from destruction. After that, they were kept inside the Cathedral of San Giusto in Susa, which reinforced the cult of the saint at this location.

The question of the structures that existed on the site of the modern church of San Giusto remains a subject of discussion and hypothesis, since there is still little reliable archaeological data. According to the researchers, there could be Roman baths on this site, known as the baths of Graziane. This version is confirmed by the results of excavations conducted in the 1960s and 1970s, during which numerous underground corridors and channels were discovered both inside and outside the cathedral. Their location and shape suggest that they were used to drain thermal waters.

The characteristic semicircular shape of the apse, typical of a caldarium room, suggests that the building could eventually change its purpose and be adapted to a Christian church. Similar examples are known, for example, in Rome, where the baths of Diocletian were converted into a church and monastery of Santa Maria degli Angeli.

It is believed that the first Christian church on this site could have been dedicated to Saint Mauro, a local martyr. This hypothesis was supported by archaeological discoveries made in the 1950s in the area of today's Piazzetta del Viscovado, where the remains of a wall with a semicircular interior surface, similar in orientation to the modern apse, were found. Archaeologists also discovered ancient column bases and elements oriented east-west, indicating continuity between early Christian and subsequent architectural traditions.

During excavations in 1985 under the Chapel of St. The Sacrament apparently remained in its original location. In addition, underground passages were discovered that served as channels for water flow and, judging by the type of brick, date back to the Roman period.

Studies have shown that under the modern building there is a fragment of an ancient road oriented along the east-west axis, with a drainage system dating from the 1st-2nd century A.D. Probably, its construction was accompanied by the demolition of earlier buildings with a lime floor. Other archaeological excavations have revealed numerous traces of ancient buildings and the foundations of Roman columns within the current church complex.

At the beginning of the 20th century, traces of two distinct construction phases were found in the area of today's San Giusto. The square. The earlier structures were oriented north-northeast-southwest, while later buildings were oriented east-west. This indicates a change in the urban planning structure in the late Roman period.

Current archaeological research conducted by the Piedmont Archaeological Department is focusing on the study of the side chapels of the apsidal area. Their results will help clarify the stages of Roman and Early Medieval construction, thereby allowing for a more accurate reconstruction of the evolution of the San Giusto complex.[33]

Figure 48. Susa Valley, Susa, City view.
Photo by Mario Gabinio, 1901

3.2 SIGNIFICANCE IN REGIONAL HERITAGE

The Cathedral of San Giusto in Susa stands as a pivotal architectural and ancient landmark in Piedmont, profoundly enriching the vicinity's cultural and non-secular landscape. Careful study is crucial for understanding the historical and architectural development of Susa and the region as a whole, as well as for promoting the renewal and popularization of its fascinating historical past. This structure not only reflects the centuries-old history of Susa but also embodies the religious and cultural identity of the local people.

Historically, the Cathedral of San Giusto was built in the early 11th centuryon the site of part of a Benedictine monastery.This monastery was established on the behest of Marquis Olderico Manfredi with the number one purpose of housing the relics of San Giusto, the town's patron saint. This act underscored the cathedral's critical function as a spiritual and pilgrimage site. Its association with Saint Justus imparts unique significance past of Susa, because the saint's cult is linked to the records of Novalesa Abbey, certainly considered one of Piedmont's oldest monasteries. The theory suggests that San Giusto's relics had been moved to Susa in the 9th century during Saracen incursions, for this reason protecting them from destruction and bolstering the cathedral's sacred prominence.

Architecturally, San Giusto Cathedral serves as a prime example of the Romanesque style, characterized by its massive walls, semicircular arches, and precise geometric design. Concurrently, over its long history, the shape went through several alterations and additions, including Baroque changes, resulting in a unique blend of architectural periods. Its bell tower, crowned with a pyramidal roof, is in particular noteworthy, performing as a notable detail inside the metropolis's skylineand a testament to historical continuity. The cathedral's interior is covered by historic frecoes and decorative features that vividly paint the innovative traditions and spiritual sensibilities of the medieval generation.

The significance of the Cattedrale di San Giusto is no longer limited solely to its architectural value. It continues to serve as a center of spiritual devotion, deeply interwoven with community identification and historic narratives. The cathedral often hosts liturgical events and cultural activities, making itself a dynamic player within the city's current existence even as it concurrently gratifies its position as a repository of historical memory.

Furthermore, the Cathedral of San Giusto plays an important role in the historical and cultural heritage of Piedmont, exemplifying the interplay of several cultural and spiritual traditions that shaped the surrounding area. Its site, on the site of historic Roman fortifications, symbolizes the uninterrupted continuity from antiquity through the Middle Ages to the present day. This makes it an indispensable object for complex interdisciplinary research in the fields of archival materials, archaeology and art history.

3.3 DESCRIPTION OF THE CATHEDRAL

Figure 49. View on Piazza San Giusto (25.10.2025)

The cathedral di San Giusto with a bell tower is located in the northwestern part of the historical center of Susa, near the border of the ancient Roman fortifications, next to the tower located north of the Savoy Gate, also known as the Porta del Paradiso. The main western facade of the building rests on the remains of a late Roman fortress wall. On the north side, the church faces the courtyard of the former Episcopal Seminary, which in the past served as the cloister of the monastery of San Giusto, and the southern facade overlooks the modern Piazza San Giusto, the former Market Square, where a massive bell tower stands. The east-facing apse is separated from the opposite Bishop's Palace by a small rectangular space called the Piazzetta del Vescovado.

The layout of the building is a three-nave basilica with a protruding transept, clearly forming a cross composition. The central nave ends with a choir with a Gothic apse, polygonal from the inside and semicircular from the outside. The northern nave ends with a small semicircular apse of irregular polygonal shape, and the southern one ends with a flat apse.

Adjacent to the south of the building is a chapel with two cross-vaulted rooms and an apse with a semi-dome, which houses the baptistery.

On the north side, along the wall, there are five chapels in succession, projecting towards the courtyard of the seminary. On the south side there are two chapels, of which only one is visible from the outside, as the second is hidden between the church and the bell tower.

The interior of the church is divided into six spans supported by five T-shaped pillars. On the side of the central nave, they are flanked by semicolons carrying blind arcades. All three naves are covered with cross vaults: in the central one they are rectangular, and in the side ones they are square. The exception is the western aisle, which is wider than the others and forms a kind of “prednef” common to the entire basilica.

The main facade was built on the basis of an ancient Roman wall, in which a portal was cut through, which allowed entering the temple directly from the outside of the city fortifications. Additional entrances are located to the south, from the side of Piazza San Giusto: the western entrance leads to the area of the nave, and the eastern one leads through the chapel with the baptistery and is the main one in our time.

The transept is not a single transverse volume, but consists of two lower rooms protruding at the ends of the side aisles. They are connected to the central nave by arched openings. The wings of the transept are covered with cylindrical arches and connected to the central nave by arches supported by twin columns.

At the intersection of the transept and the presbytery, the vaults of the central nave have pointed arches and cylindrical ribs. The rib section gradually increases from the base to the keystone, taking the shape of a croissant. Above the choir, the vault assumes an “umbrella” structure with strongly protruding ribs.

The columns are supported by pointed arches, and their capitals are decorated with floral and anthropomorphic ornaments. In the area of the transept and the presbytery, the main columns are accompanied by two smaller ones.

The exterior of the central nave, towering over the side ones, is distinguished by decorative niches separated by towers and decorated with rows of hanging arches - a typical element of Romanesque architecture. In the niches there are arched double-beveled windows, filling the nave with light from above. Even higher are smaller windows - lancet or three-lobed, illuminating the attic space.[33]

Figure 50. Recent masterplan

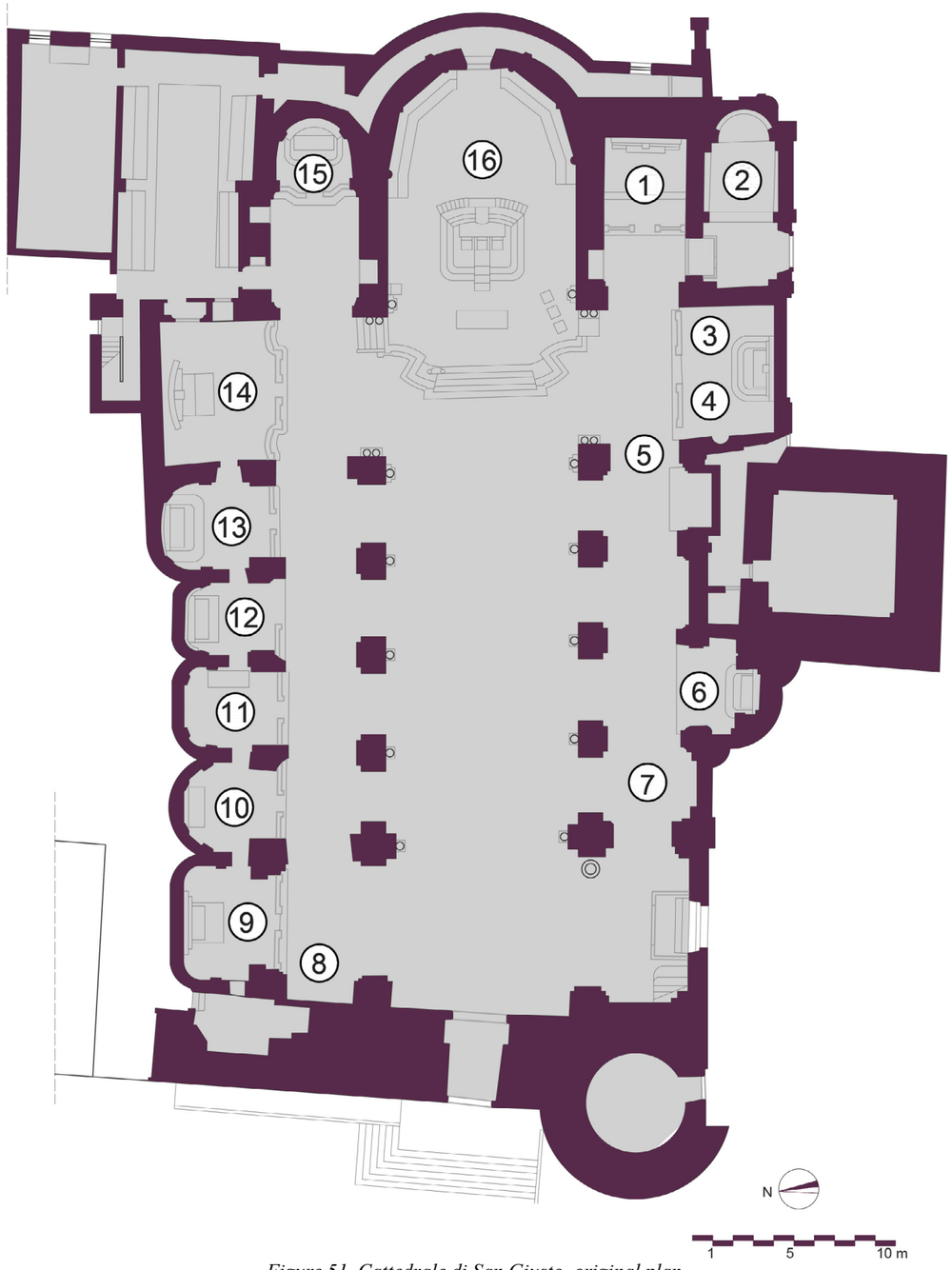


Figure 51. Cattedrale di San Giusto, original plan

Legend

1. Chapel of the Madonna of Rocciamelone - Dedicated to the Madonna venerated on Mount Rocciamelone, a local pilgrimage site.
2. Baptistery Chapel - Small chapel used historically for baptisms.
3. Chapel of the Relics - Houses sacred relics, possibly including bones or items of saints.
4. Triptych of the Madonna with Child and Saints Hugh of Lincoln and Hugh of Grenoble - A medieval altarpiece featuring the Madonna and two important saints.
5. Statue of Adelaide of Susa - Sculpture of the city's historical figure, influential in church and politics.
6. Chapel of Saints Lawrence and Lucy - Dedicated to two early Christian martyrs known for their sacrifice.
7. Bas-relief of Blessed Amedeo of Savoy - Relief sculpture honoring a nobleman and religious figure of the region.
8. Sorrowful Madonna with the Shroud - Image of the Virgin Mary mourning Christ, possibly referencing the Shroud of Turin.
9. Chapel of the Madonna of Mount Carmel - Dedicated to a popular Marian devotion with Carmelite origins.
10. Chapel of Saint Honoratus - Honors a lesser-known early Christian saint and bishop.
11. Chapel of Saint Anne and Saint Anthony - Celebrates Mary's mother (Anne) and Saint Anthony, patron of lost things.
12. Chapel of the Madonna of the Rosary - Devoted to the Virgin Mary in her role as giver of the Rosary.
13. Chapel of Saint Joseph and the Souls in Purgatory - Dedicated to Jesus's earthly father and prayer for the dead.
14. Chapel of the Blessed Sacrament - Houses the Eucharist; central to Catholic worship.
15. Chapel of Monsignor Rosaz - Commemorates a local bishop or church leader important to Susa.
16. Presbytery - Area around the main altar reserved for clergy.

Under the roof there is a ceramic cornice with a triple profile and a number of pointed arches under it. This decorative motif is repeated in the apse, above the three lancet windows of the choir. The lower part of the apse is surrounded by a semicircular corridor connecting it to the sacristy.

The eastern wall beneath the roof of the central nave terminates with a tympanum with profiled rosettes and a row of arches topped by two octagonal pinnacles on the sides and a square turret in the middle. This turret, known as the “campaniletto of the canons”, is decorated with three-lobed openings and an arcature on all sides.

The main western facade is crowned by a triangular tympanum with an arcature of ceramic arches and three octagonal pinnacles. Below is a large arched window located above the main entrance and illuminating the central nave in the organ area.

Figure 52. Cattedrale di San Giusto, exterior, westrn elvation (25.10.2025)

Figure 53. Cattedrale di San Giusto, interior (02.06.2025)

Figure 54. Cattedrale di San Giusto, exterior (02.06.2025)

Figure 55. Cattedrale di San Giusto, interior (02.06.2025)

Figure 56. Cattedrale di San Giusto, exterior (02.06.2025)

3.4 DESCRIPTION OF THE BELL TOWER

Figure 57. Cattedrale di San Giusto, exterior, vie on the tower, southern elevation (02.06.2025)

The bell tower is located on the south side of the church, facing Piazza San Giusto. It is located approximately on the axis between the fourth and fifth arches of the cathedral and is slightly deviated from the main orientation of the temple.

The exact date of the bell tower's construction is unknown, as written sources documenting its construction have not been preserved. Judging by the architectural features, the tower was built shortly after the completion of the church. This is indicated by a more precise elaboration of decorative elements - arcature belts and hanging arches, made with greater harmony and rhythmicity.

The bell tower is one of the most authentic parts of the original structure, which has hardly undergone any changes. The lower tiers, with their strict proportions and symmetry, emphasize the clear rhythm of the composition, giving the impression of stability and monumentality. This slender character is softened by the chiaroscuro play that occurs due to the gradual increase in window openings - from narrow biphores to trifores and quadrifores. Lizens, cornices and sawtooth elements enhance the dynamics of perception and visually facilitate the array of the tower.

The upper part of the structure differs from typical Romanesque designs. It has a tall octagonal steeple roof with protruding ribs, surrounded by four smaller spires of the same shape. All of them are supported by corner pinnacles decorated with twisted brick ornaments. The terracotta balustrade crowning the tower has a complex relief and delicate decoration.

This superstructure was completed in the 15th century as part of the restoration work, during which the bell tower and the church were renovated and partially rebuilt.

An interesting feature of the upper tier are the four drainage gargoyles located at the corners. These are stone sculptures in the form of bearded and winged creatures, typical motifs of medieval symbolism. Such images are often found in the religious architecture of the period and served both decorative and functional elements.

Originally, the tower probably stood separate from the south nave and transept, connected to them by a narrow passage that led to the altar containing the relics. Traces of this compound have been preserved to the present day. At the beginning of the 19th century, the passage was laid, and a sculpture was installed in the resulting niche.

The northern facade of the bell tower is carefully decorated, which indicates the presence of a passage between it and the church in the past. In the lower floors, the walls do not have arches and paintings, but they are covered with plaster. At the level of the attic floor, the right corner wall is interrupted by a wall connecting the tower to the main building, which indicates the later addition of this element.

In the lower two tiers, on all sides except the north, there are two arched windows, now laid. Their unusual placement, as well as the use of antique stone blocks in the masonry, suggest that the base of the tower dates back to the Roman fortifications erected in Susa in the 2nd-3rd centuries.

The arches of the first floor, characteristic of Romanesque architecture, indicate that the division of the room into two levels already during the construction process. Later, the base of the tower was reinforced with a high plinth of large stone blocks, which can be dated to the 18th century.

Figure 58. Tower. Ground floor (02.06.2025)

Figure 59. Tower. Ground floor (02.06.2025)

During the 20th century restoration, traces of an ancient plinth lined with stone were found at the base of the bell tower. This confirmed that the foundation of the tower is older than the adjacent chapels and that at that time it was not yet connected to the basilica.

Fragments of frescoes have been preserved in the room at the foot of the tower. Despite their damage, the remains of richly painted draperies and scenes depicting a warrior on horseback are discernible. Schematically executed figures of people, animals and fantastic creatures are visible on the ochre background of the fabric. The paintings are executed with free brushstrokes, featuring a contrasting combination of light and dark tones. Stylistically, they belong to the early Romanesque period.

The tower has a square plan and consists of six visible floors, beneath which are hidden two lower levels, partially sunken into the retaining wall. On the three lower, visible tiers, the facades are divided by a central cornice and decorated with rows of six arches on each side. At the upper levels, the central lysene disappears, and the number of arches between the angular lysenes gradually increases, reaching fifteen in the uppermost belt.

On the lower floors there are narrow monophore windows, the size of which increases upward. On the higher tiers, each side is pierced by window openings of different shapes - biforae, triforia, or quadriforae with a double profile, decorated with simple, undecorated capitals. All visible tiers are covered with wooden beams, and the hidden lower rooms are covered with cross vaults.

The ground floor room is of particular value: its walls are painted with frescoes dating from about the 1030s, one of the rare examples of early Medieval wall paintings in the Susa Valley.

The upper part of the tower ends with an elegant terracotta balustrade connecting four sharp pinnacles surrounding a tall spire on an octagonal base with a three-pitched roof. At the junctions of the pinacles with the facades, there are four drainage gargoyles in the shape of fantastic animals. A decorative belt with a fresco depicting leaves and fruits runs under the balustrade.

Inside the tower, at the triforium level, there is a room with bells - a bell chamber. Above it is the base of a wooden frame supporting the central spire.[33]

Figure 60. Tower. 4th floor (02.06.2025)

Figure 61. Cattedrale di San Giusto, interior, remains of painted walls (02.06.2025)

Figure 62. Cattedrale di San Giusto, interior, remains of painted walls (02.06.2025)

Figure 63. Cattedrale di San Giusto, interior, view point (02.06.2025)

Figure 64. Cattedrale di San Giusto, interior, remains of antient arch (02.06.2025)

Figure 65. Cattedrale di San Giusto, interior, roof (02.06.2025)

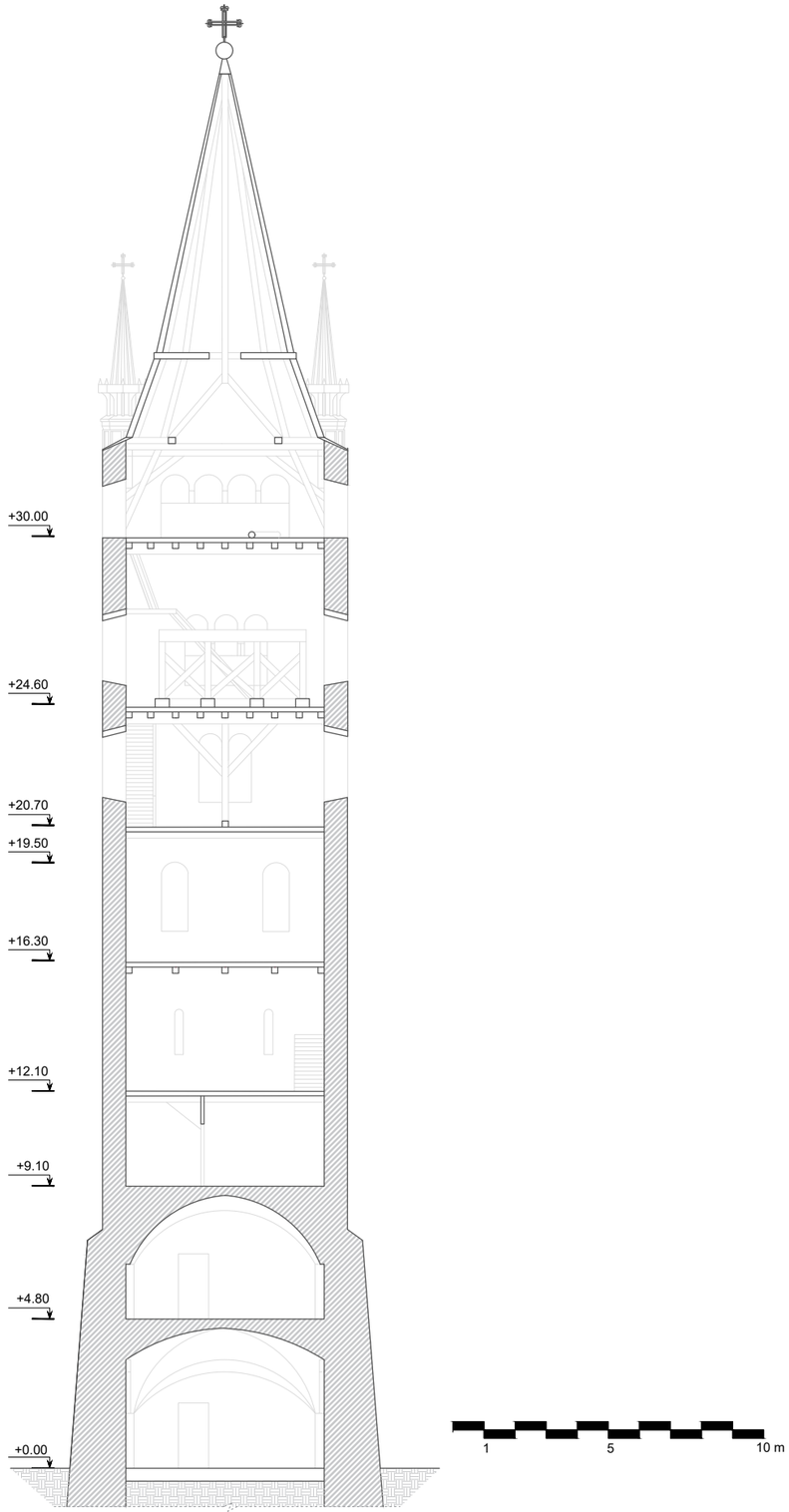


Figure 66. Cattedrale di San Giusto, section A-A'

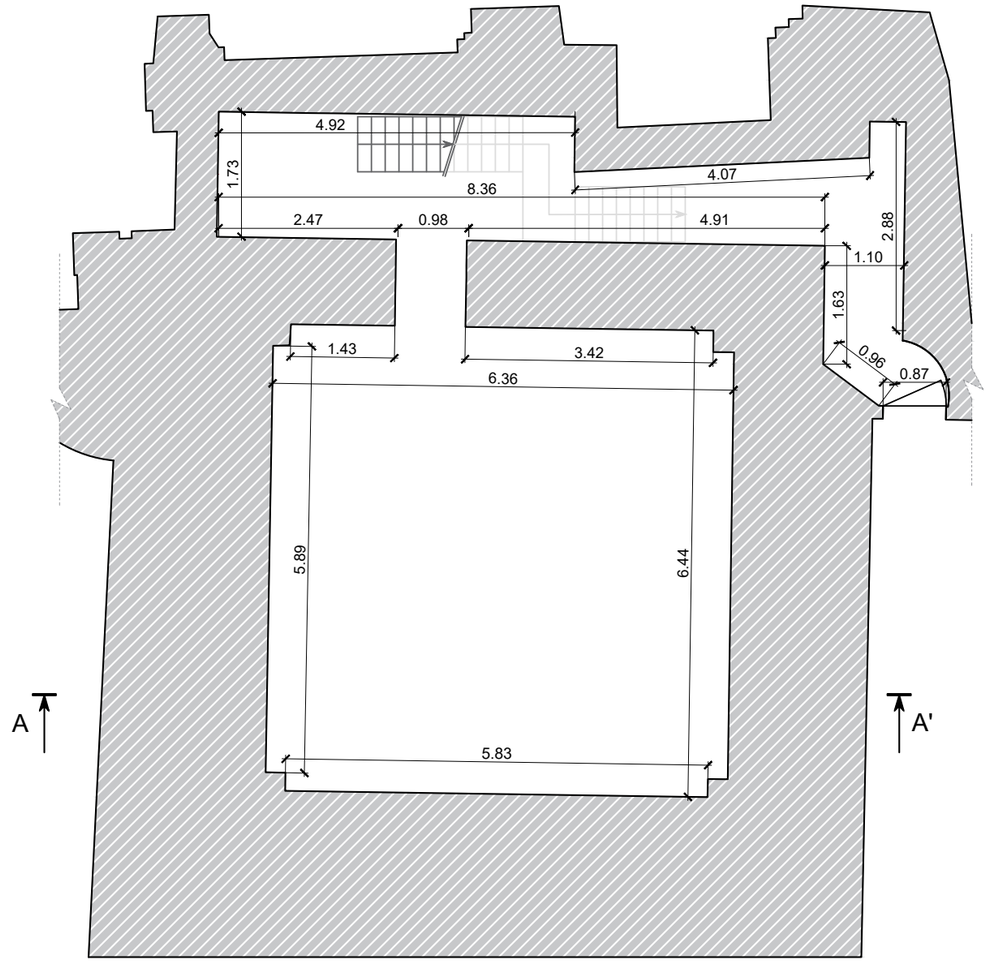


Figure 67. Cattedrale di San Giusto, recent plan, ground floor
sc 1:200

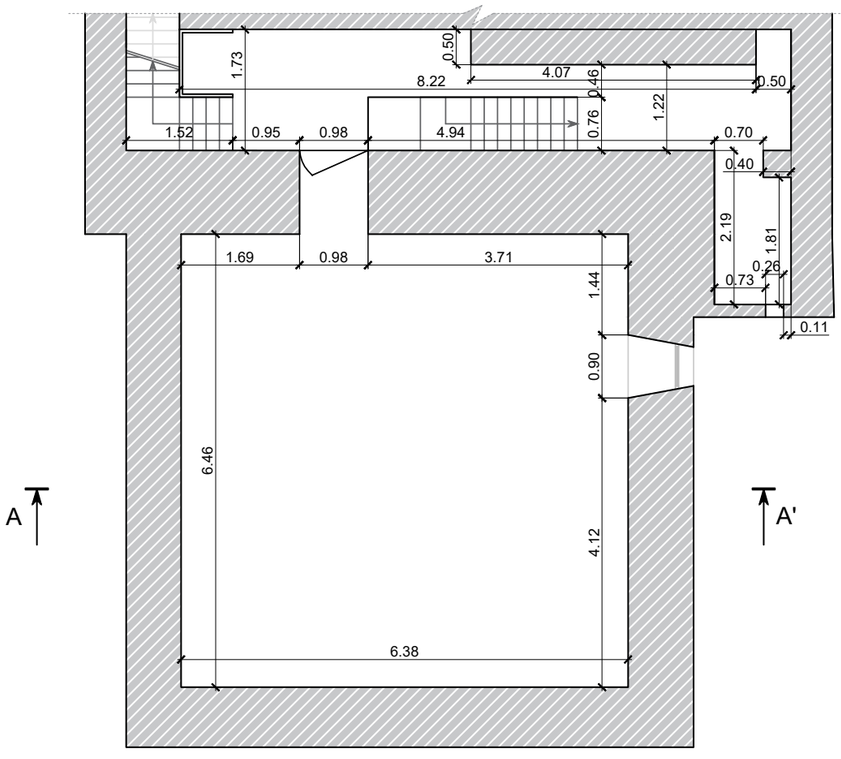


Figure 68. Cattedrale di San Giusto, recent plan, 1st floor
sc 1:200

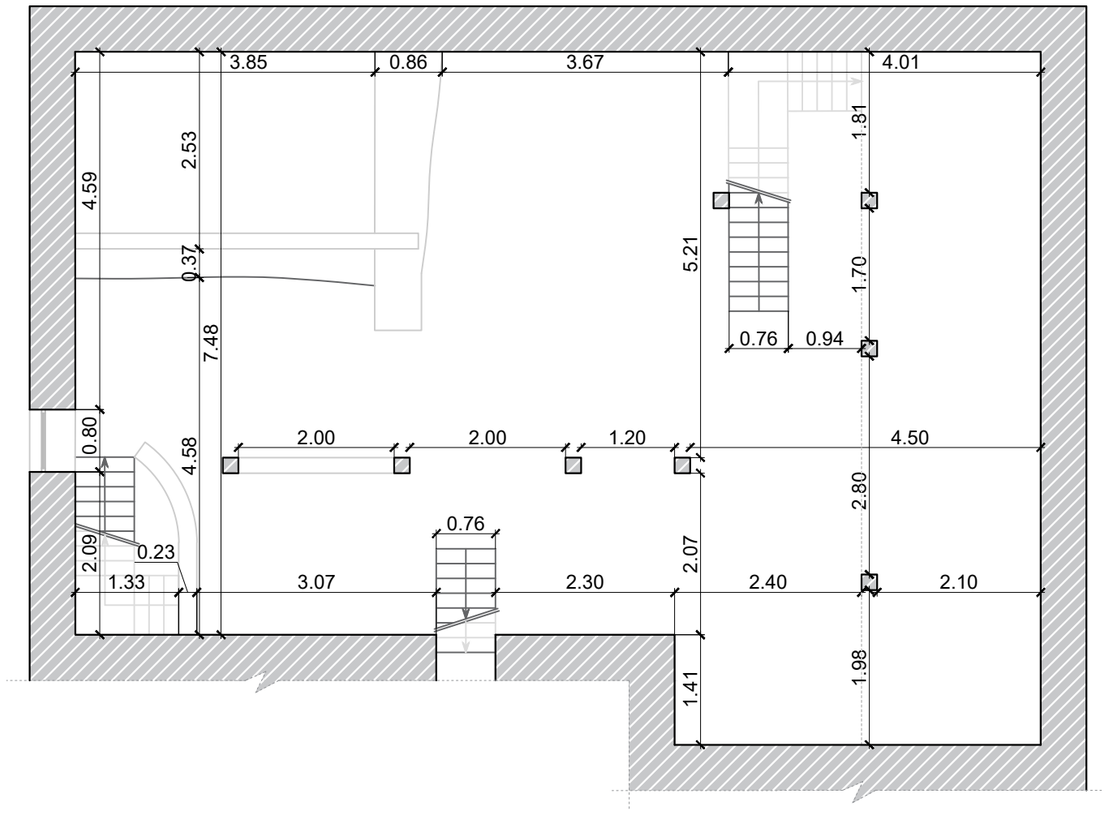


Figure 69. Cattedrale di San Giusto, recent plan, 2nd floor
sc 1:200

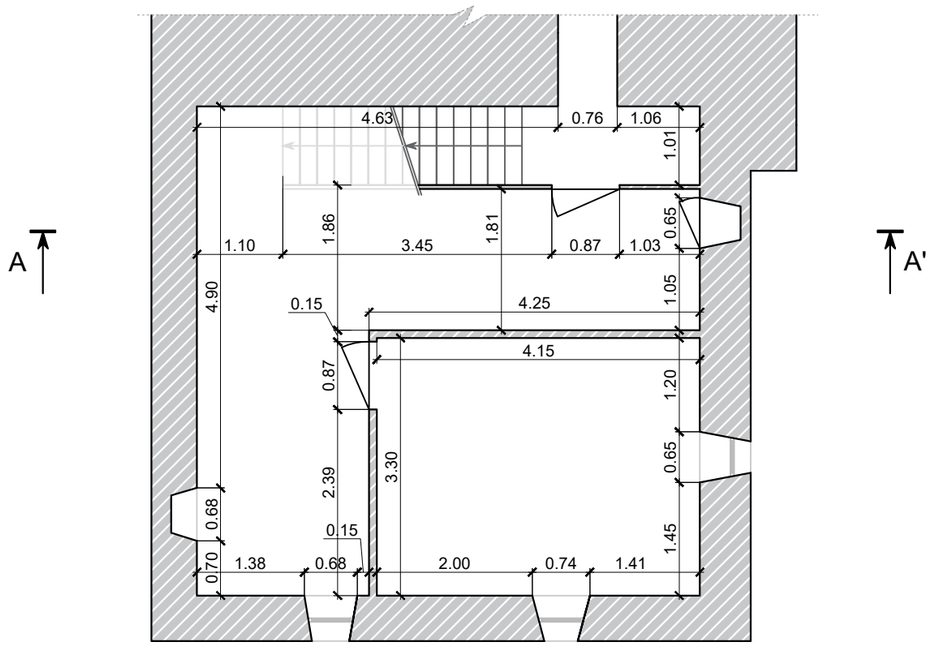


Figure 70. Cattedrale di San Giusto, recent plan, 3rd floor
sc 1:200

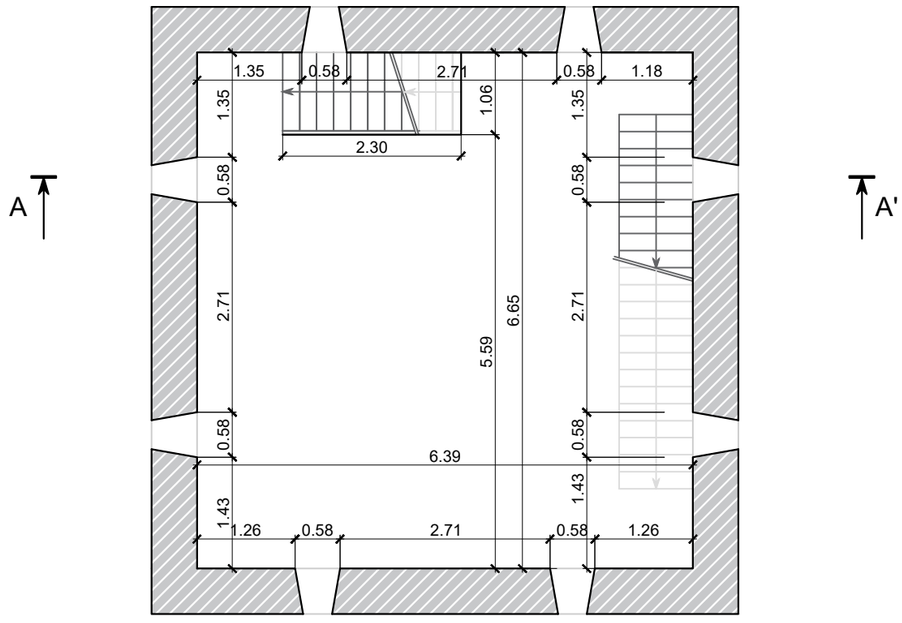


Figure 71. Cattedrale di San Giusto, recent plan, 4th floor
sc 1:200

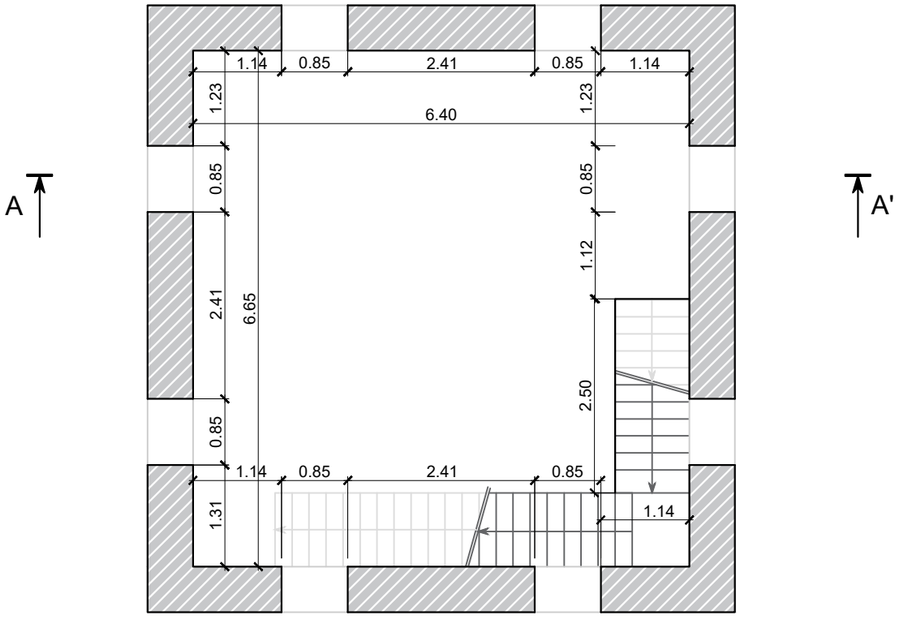


Figure 72. Cattedrale di San Giusto, recent plan, 5th floor
sc 1:200

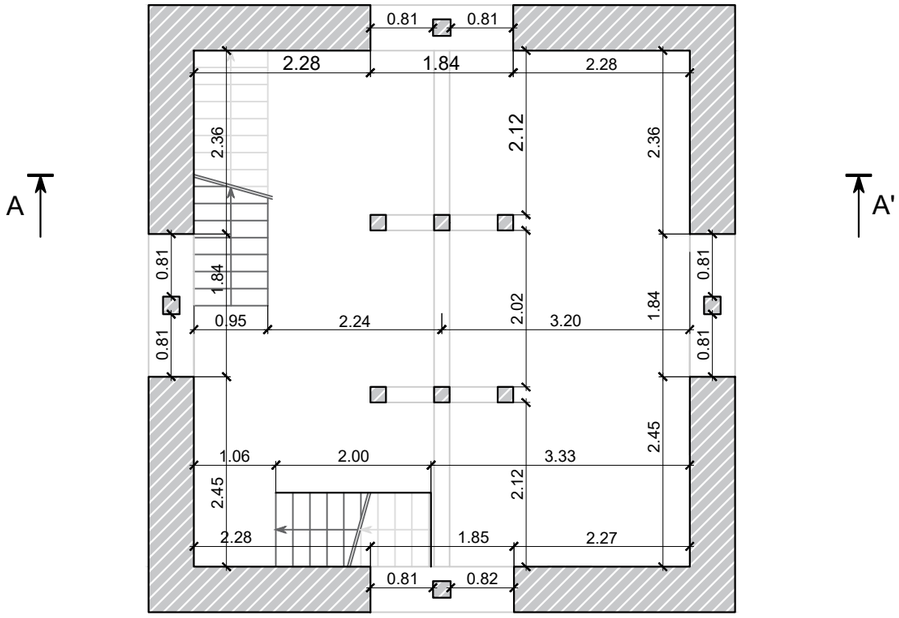


Figure 73. Cattedrale di San Giusto, recent plan, 6th floor
sc 1:200

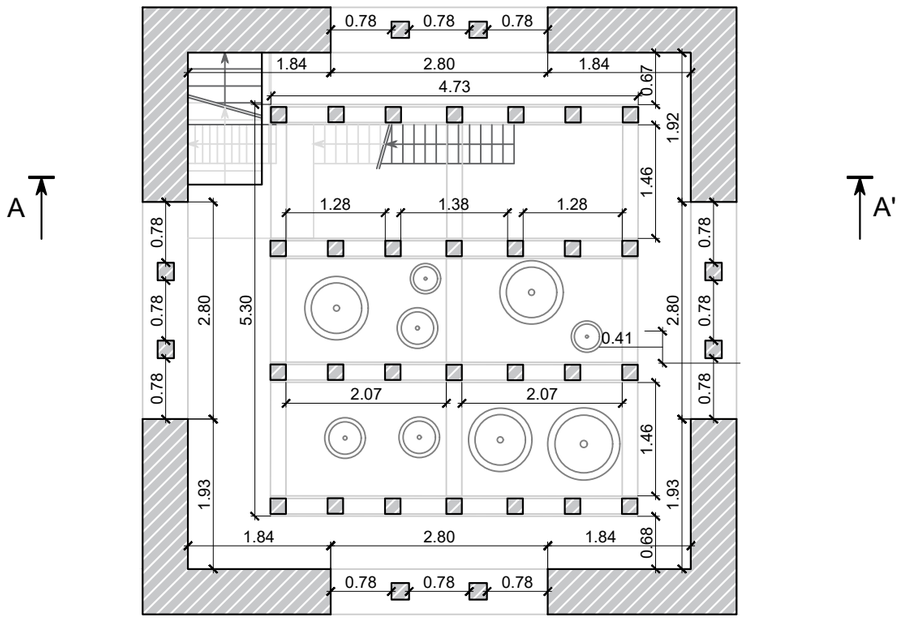


Figure 74. Cattedrale di San Giusto, recent plan, 7th floor
sc 1:200

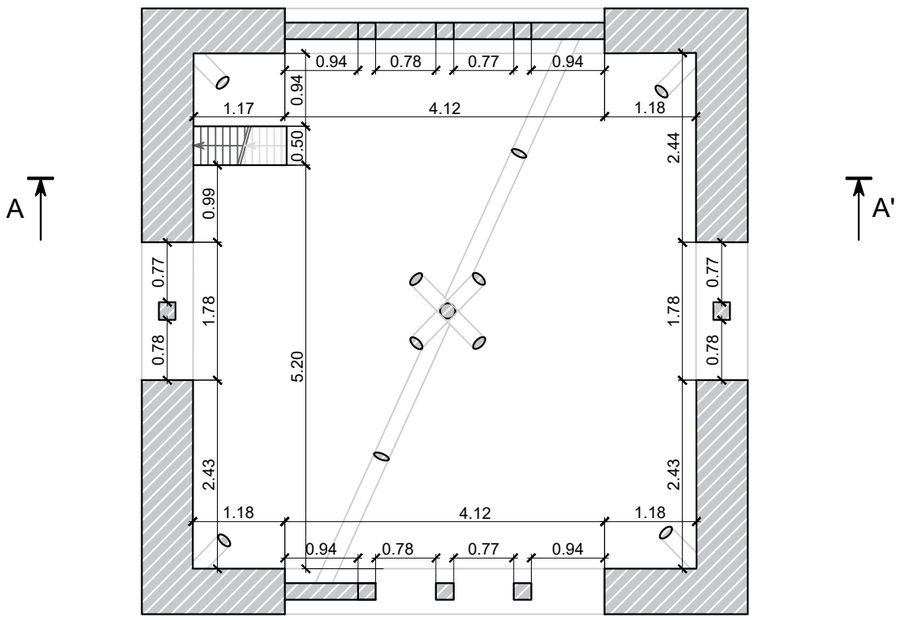
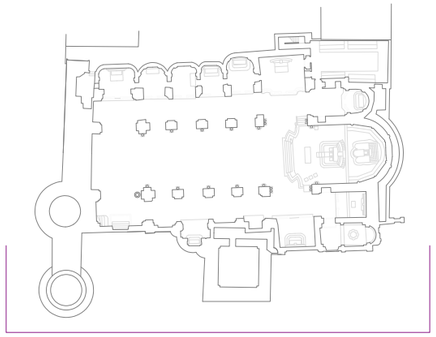


Figure 75. Cattedrale di San Giusto, recent plan, 8th floor
sc 1:200

Figure 76. Cattedrale di San Giusto, southern elevation



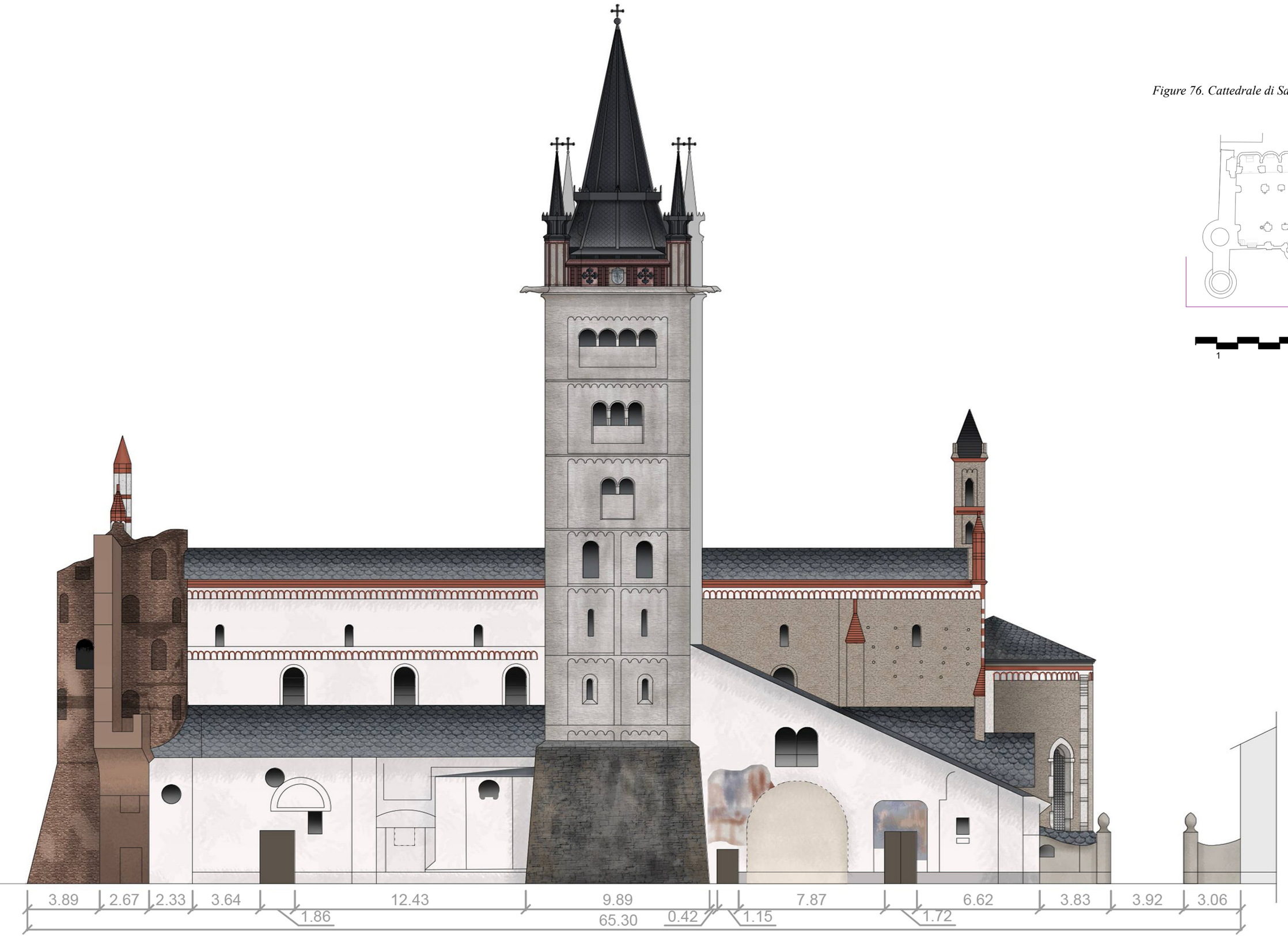


Figure 77. Cattedrale di San Giusto, eastern elevation

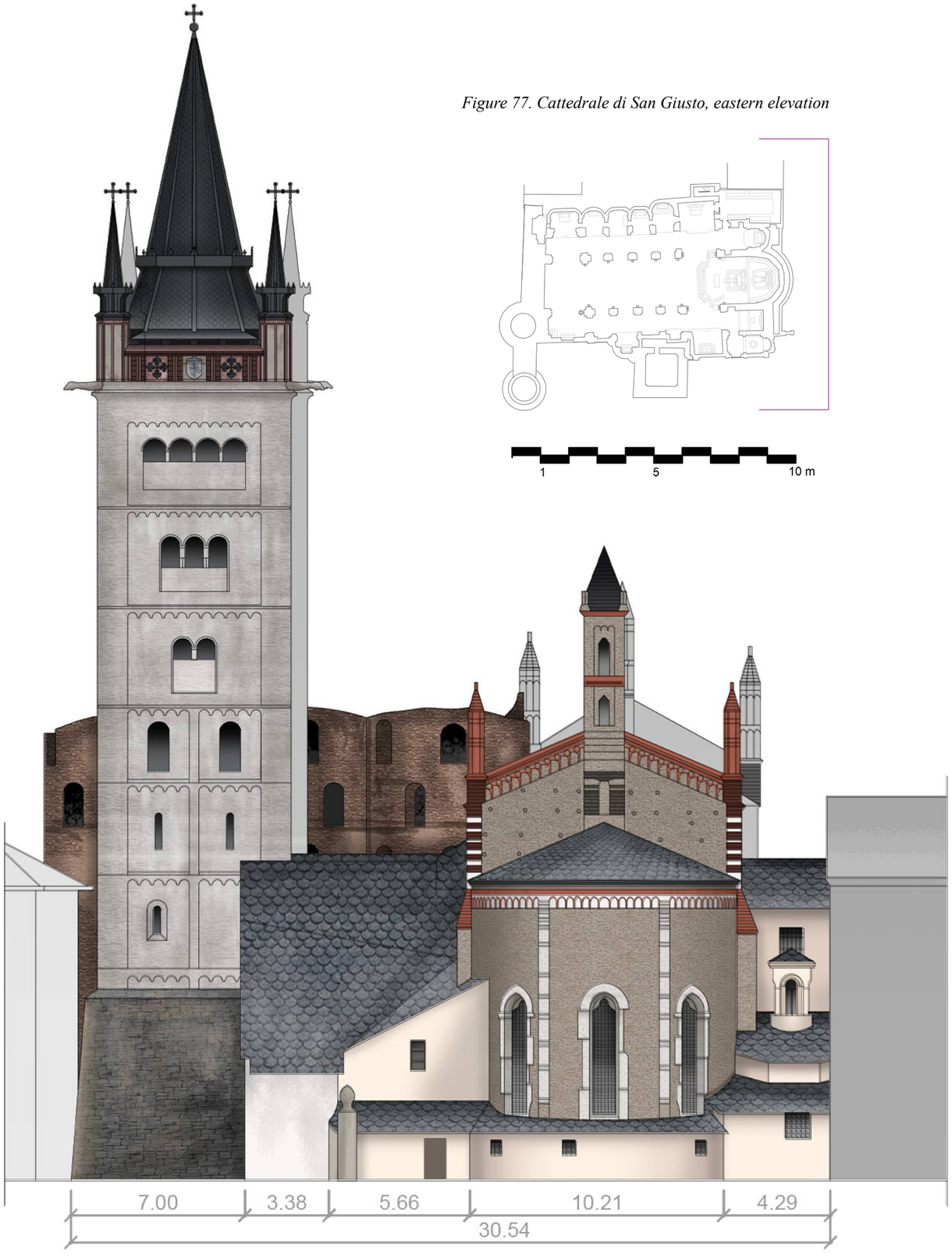


Figure 78. Cattedrale di San Giusto, western elevation

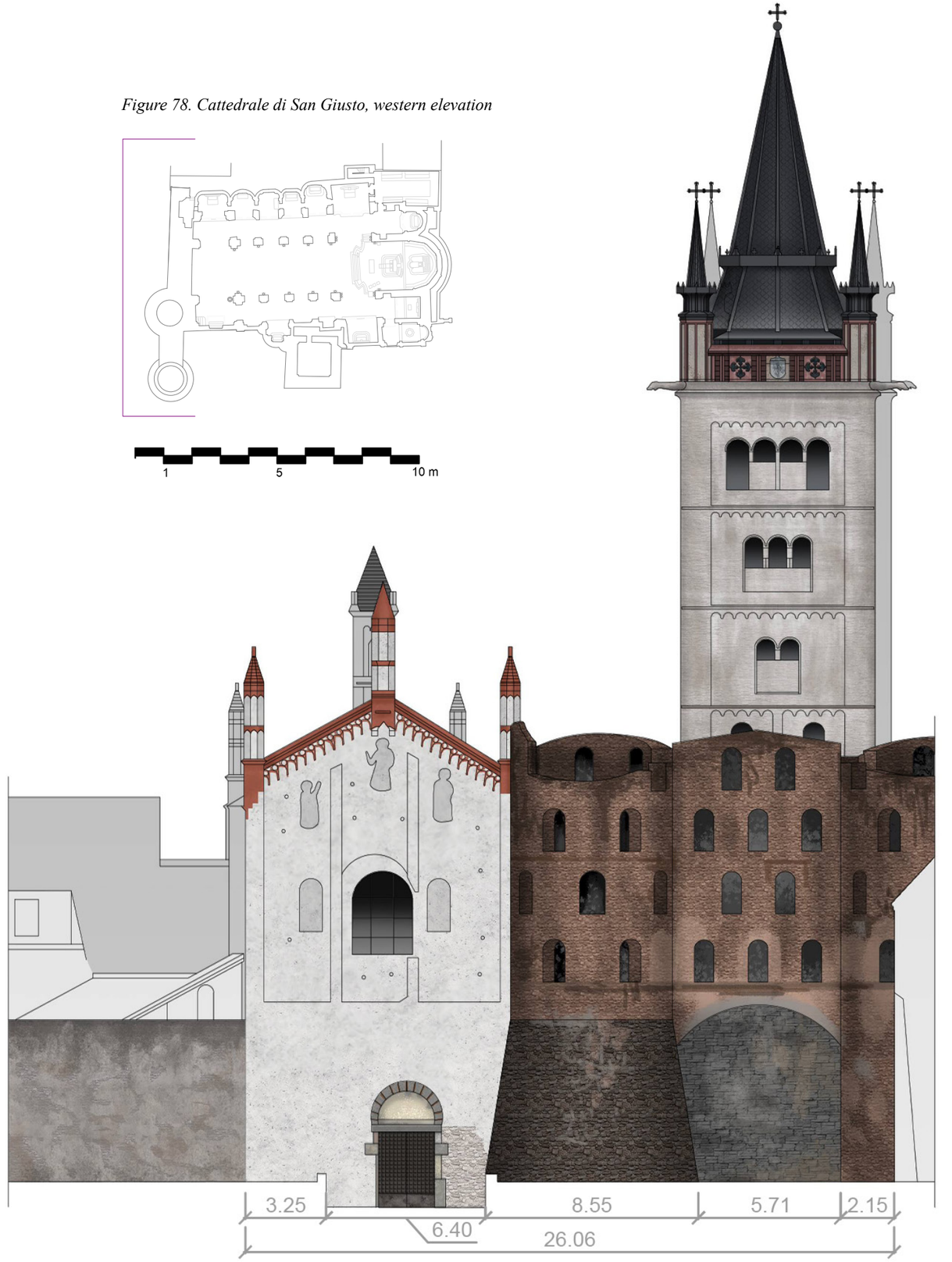
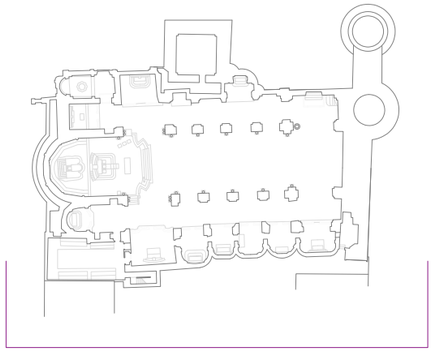
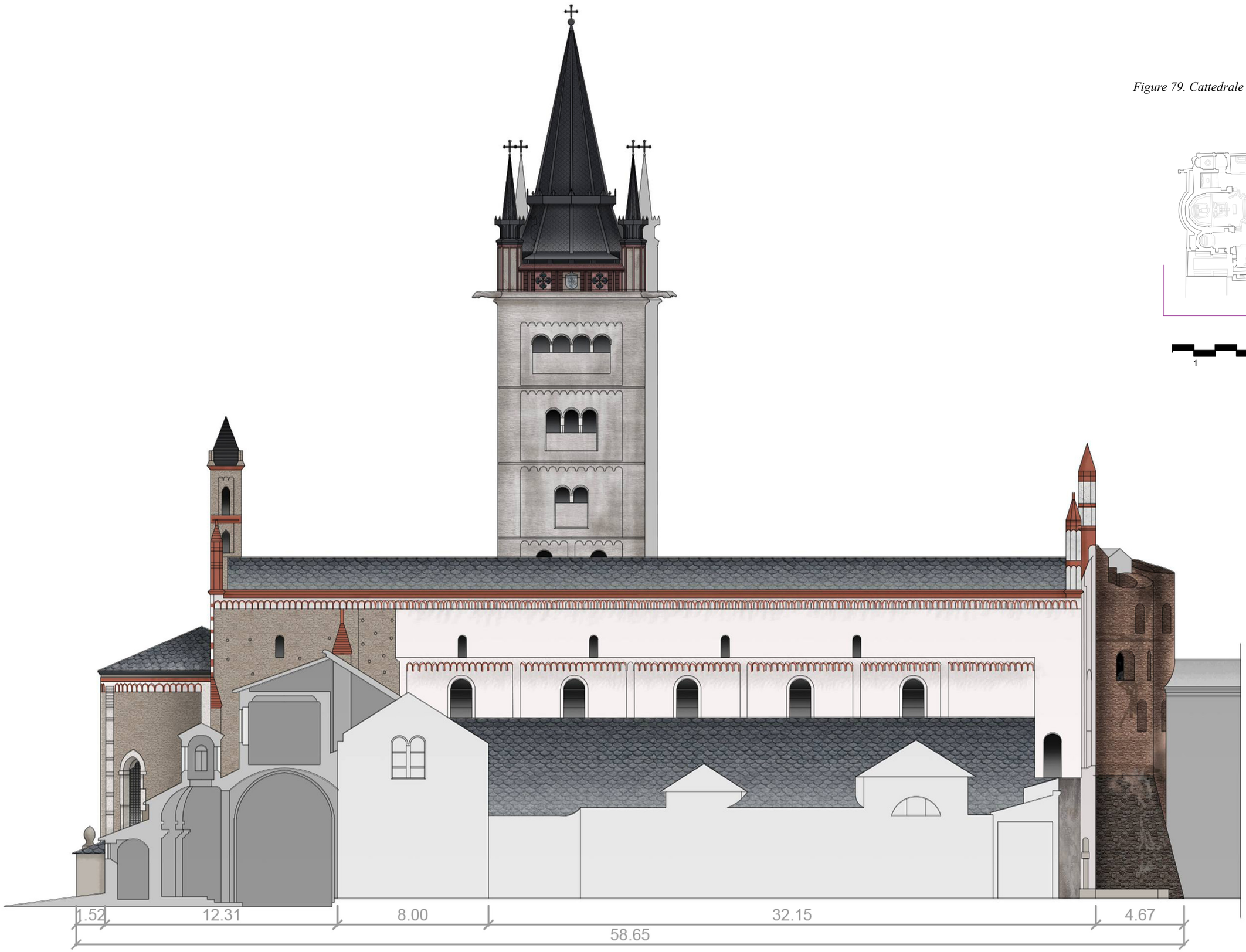


Figure 79. Cattedrale di San Giusto, nothern elevation





S
STRENGTHS

The object's architectural and historical importance
The bell tower is a crucial component of the cathedral ensemble and a significant example of Susa's mediaeval architectural heritage.

The function of urban planning and landscape
By creating a panoramic of the city and spatial links with the other landmarks, the building serves as a landmark and visual dominating.

High degree of authenticity
From the perspective of restoration theory, the object's worth is increased by the preservation of the original volumes, materials, and design solutions.

Easy recognition and symbolic significance
The bell tower is seen as a symbolic component of the communal and holy urban area.

W
WEAKNESSES

Constructive and material problems
Natural ageing of masonry, possible cracks and weakening of load-bearing elements require a comprehensive inspection and conservation measures.

Functional maladaptation
The lack of secure vertical connections, lighting and evacuation solutions limits access and use of the facility.

Spatial constraints
The vertical structure and small area of internal levels make it difficult to introduce new functions.

Strict security regime
Regulatory restrictions significantly narrow the possibilities of intervention and require high design accuracy.

O
OPPORTUNITIES

Adaptive adaptation with minimal intervention
Possibility of integrating light, reversible elements (stairs, decks, fences) that do not affect the historical substance.

Strengthening the cultural and educational function
Use of the bell tower as an interpretative space associated with the history of the cathedral, the city and restoration methods.

Increasing the tourist and social value of the object
Inclusion of the bell tower in the cultural route of the historical centre with controlled access.

Application of modern monitoring technologies
Use of non-invasive systems for monitoring the condition of structures and microclimate.

T
THREATS

Seismic risk
Regional seismicity increases the requirements for structural security and can complicate design decisions.

Climate impact
Moisture, frost cycles and biological overgrowth accelerate the degradation of materials.

Risk of functional conflict
The inconsistency of the new function with the sacred and memorial nature of the object may cause cultural and institutional contradictions.

Financial and managerial uncertainty
Limited resources can affect the completeness and quality of the project implementation.

3.5 HISTORICAL IMPORTANCE OF THE CATHEDRAL

The Cathedral of San Giusto in Susa stands as a pivotal architectural and ancient landmark in Piedmont, profoundly enriching the vicinity's cultural and non-secular landscape.

Historically, the Cathedral of San Giusto traces its origins to the early 11th century, based on a part of a Benedictine monastery. This monastery was established on the behest of Marquis Olderico Manfredi with the number one purpose of housing the relics of Saint Justus, the town's patron saint. This act underscored the cathedral's critical function as a spiritual and pilgrimage site. Its association with Saint Justus imparts unique significance past of Susa, because the saint's cult is linked to the records of Novalesa Abbey, certainly considered one of Piedmont's oldest monasteries. The theory suggests that Saint Justus's relics had been moved to Susa in the 9th century during Saracen incursions, for this reason protecting them from destruction and bolstering the cathedral's sacred prominence.

Architecturally, San Giusto Cathedral serves as a prime example of the Romanesque style, characterized by its massive walls, semicircular arches, and precise geometric design. Concurrently, over its long history, the shape went through several alterations and additions, including Baroque changes, resulting in a unique blend of architectural intervals. Its bell tower, crowned with a pyramidal roof, is in particular noteworthy, performing as a notable detail inside the metropolis's skyline and a testament to historical continuity. The cathedral's interior is covered by historic frescoes and decorative capabilities that vividly paint the innovative traditions and spiritual sensibilities of the medieval generation.

The appearance of San Giusto Cathedral is crucial, now not entirely from an architectural point of view, but additionally as a critical problem of the vicinity's religious life. It persists as a hub of spiritual devotion, deeply interwoven with community identification and historic narratives. The cathedral often hosts liturgical events and cultural activities, making itself a dynamic player within the city's current existence even as it concurrently gratifies its position as a repository of historical memory.

Furthermore, San Giusto Cathedral has an essential function for Piedmont's historic and cultural heritage, exemplifying the interplay of several cultural and spiritual traditions that have shaped the vicinity. Its area on the site of historical Roman fortifications symbolizes an unbroken continuity from antiquity via the Middle Ages to the present. This makes it an invaluable challenge for complete interdisciplinary research throughout records, archaeology, and art history

3.6 CASE STUDY - CIVIC TOWER, BERGAMO

The adaptation of historic towers has become a strategically important solution in preserving architectural heritage in a constantly changing urban environment. One of the best examples of such adaptation is the Civic Tower of Bergamo, known as the Campanone, located in the historic center of Bergamo. This case study offers numerous excellent examples of building adaptation that can be used in the design of the Cattedrale di San Giusto di Susa. Both projects aim to preserve the historic vertical structure and update the building to attract visitors, while respecting the site's context and enhancing its cultural significance.

The Civic Tower of Bergamo is one of the city's most significant landmarks. Throughout its history, it has served multiple functions, including defense, religious, and symbolic. The nearly 53-meter-tall tower dominates the city skyline and is visible from all corners of the city. Rather than simply serving as a historical monument, the bell tower is perfectly integrated into Bergamo's tourist network thanks to its sensitive restoration and adaptation.

A particularly important aspect of the project was the transformation of the tower into a public cultural attraction. Visitors can ascend to the top via a carefully designed vertical route, from where they can enjoy incredible views of the historic city center and the Alpine foothills. This project demonstrates how a historic tower can be revitalized, creating a meaningful experience for tourists without compromising the building's architectural authenticity. The addition of a viewing platform increases interest in Bergamo and encourages visitors to stay longer, stimulating the region's economic growth.

Another key feature of the project is the implementation of modern accessibility techniques within the building. A well-designed glass elevator integrates seamlessly into the historic interior without compromising its integrity. The use of lightweight and reversible structures ensures accessibility for visitors while preserving its historical authenticity. This experience is particularly significant for the Cattedrale di San Giusto bell tower project, as one of the key objectives is to create a new circulation route within the tower by installing a modern staircase and creating a safe visitor system.

Figure 80. The Civic Tower of Bergamo (05.04.2021)

Equally important is the urban planning aspect. The Civic Tower is not simply a stand-alone structure, but is connected to other churches, museums, and piazzas in Bergamo, united into a single, continuous tourist route. A similar situation is evident in Susa, where the Cattedrale di San Giusto tower is located in close proximity to other historic landmarks of the city, including Porta Savoia, Arco di Agosto, the Roman Theatre, and other cultural heritage sites. As a result, the adapted bell tower can serve as an additional attraction for tourists.

The Bergamo example demonstrates the possibility of combining preservation, education, and cultural interpretation. A visit to the bell tower is accompanied by an exploration of the history of the city and the building itself, transforming it from a mere observation deck into a fully-fledged cultural destination. A similar approach is being applied in the Susa project, which proposes creating a museum and exhibition space dedicated to the history of the cathedral, the city, and the region as a whole.

Thus, the Civic Tower in Bergamo represents a valuable reference for the adaptive adaptation project of the bell tower of the Cattedrale di San Giusto di Susa. It is an ideal example of combining the preservation of the historic environment with the sensitive integration of modern technologies and design elements. Bergamo's experience confirms that historic towers can be given new life and integrated into contemporary life, while remaining authentic bearers of history and important elements of the city's identity.[34]

Figure 81. View from The Civic Tower of Bergamo (05.04.2021)

3.7 PRINCIPLES OF HERITAGE PRESERVATION

The theoretical part of the adaptive reuse project is based on the world-renowned restoration doctrines developed by ICOMOS and those supporting the main charters of restoration. These documents demonstrate the ethical and methodological principles that guide intervention within historical buildings, ensuring the preservation of heritage for future generations while remaining relevant for use.

Among the most influential documents is the International Charter for the Conservation and Restoration of Monuments and Sites, commonly known as the Venice charter (1964). Approved at the second International Congress of Architects and Technicians in Venice, the charter remains the main theoretical pillar for restoration practice worldwide.

The Venice Charter identifies historical sites as works of art and historical documents, emphasizing the importance of preserving their uniqueness and cultural significance. The Charter condemns the use of stylistic restoration and calls for respect for original materials, historical evidence, and differences between different periods. It also describes several principles applicable in this project, such as: minimum intervention, contemporary additions, reversibility of interventions, and the preservation of historical stratification.

One of the most important is article 3 of the Venice Charter, which sets out the main purpose of restoration and conservation of historical monuments. It requires the preservation of heritage as both a work of art and historical evidence - a document of the era. Any actions should be aimed at preserving both qualities. The article also prohibits sacrificing the historical value of an object for the sake of improving its appearance. The unique appearance of the bell tower of San Giusto is expressed in the presence of the original masonry walls, structural parts, spatial organization and visible centuries-old aging. These elements attest to the long life and evolution of the building.

Article 5 of the Venice Charter defines the rules for the use of historical monuments. Encourages the adaptation of objects to modern needs without interfering with their appearance. This is the main objective of the Cattedrale di San Giusto di Susa tower adaptation project. Recreational exhibition areas with a vertical route ending in a viewing platform form the basis of the building's long-standing cultural function while preserving its original value.

The principle of distinguishability contains another important aspect of design. Article 12 of the Venice Charter states that the elements replacing the missing ones in a historic building must be distinguishable from the original environment and harmoniously fit into it. Any changes in appearance should not falsify the historical environment. Therefore, the design proposal should contain modern materials such as commonly used steel structures, glass elements and modern exhibition facilities. Instead of competing with historical architecture, additions create a wonderful dialogue between the present and the past.[35]

The project is also informed by the ICOMOS charter for the interpretation and presentation of cultural heritage sites (Ename charter, 2008). While the Venice Charter focuses mainly on the conservation of physical fabric, the Ename charter emphasizes the link between the preservation of cultural value and the importance of creating an understandable and accessible environment for the public on the site of the monument. Together with broader ICOMOS conservation doctrine, it provides the basis for the following heritage prservation principles applied in this project.

Among these principles are:

Authenticity

Preservation of the original environment, architectural character of the object, historical evidence and their cultural significance. In the future, you must preserve the authenticity of the monument, respect the heritage and be adapted to modern needs.

Minimum intervention

Any interference with a historical site should be strictly limited to what is necessary. The idea is to minimize the loss of historical material.

Distinguishability

All new interventions should be clearly read as modern and at the same time fit into the historical context. New architectural elements should not repeat, falsify, or imitate historical forms.

Reversibility and retreatability

The new elements should be easily disassembled for further demolition or replacement without damaging the monument. This principle provides an opportunity for changes in future conservation and technological improvements.

Compatibility

The modern materials used in the design should be comparable in their physical and chemical properties to historical existing materials.

Respect for historical stratification

Historical monuments have been transformed not once for many years or centuries. Conservation must preserve and respect all visible periods, rather than giving preference to one time period.

Sustainable use and adaptive reuse

Long-term conservation of cultural heritage sites is often ensured through the introduction of appropriate modern functions. New uses should take into account the architectural character of the monument and contribute to its preservation, accessibility and social significance.

Documentation and research

All important decisions in the design process should be based on relevant historical, architectural, materials research and through an understanding of the monument itself. Clearly constructed documentation is very important before and after the design.

Interpretation and accessibility

The project should be understandable to the public, explaining the importance of the cultural heritage site for future generations.

Together, these documents provide the necessary basis for a project proposal for the restoration and adaptation of the tower of the Cathedral of San Giusto.[36]

3.8 CULTURAL AND URBAN IMPACT

The bell tower of the Cathedral of San Giusto in Susa is a site of high scientific and design significance due to its multilayered historical structure, structural complexity, and expressive spatial potential. The building was formed over various historical periods, making it a clear example of an architectural palimpsest, combining ancient foundations, medieval construction phases, and later interventions.

The site is particularly valuable for restoration and adaptation, as the bell tower retains the distinctive authenticity of its materials, structures, and spatial logic, yet remains functionally isolated from modern urban life. This creates a unique opportunity to explore the balance between preserving the historical substance and introducing new, compatible functions.

The building is striking for its vertical organization of space, the succession of levels and passages, and the presence of narrow, semi-dark zones that create a powerful spatial and emotional experience. In particular, the lower levels of the bell tower, with their massive walls, vaulted ceilings, and traces of structural transformations, offer significant potential for museum and interpretive use, allowing the history of the building itself to be revealed as an exhibit.

Additionally interesting is the contrast between the heavy historical shell and the potential for the introduction of lightweight, reversible modern elements - stairs, exhibition structures, and lighting - making the structure an ideal venue for design in accordance with the principles of minimal intervention, reversibility, and leggibilità del nuovo.

Thus, the San Giusto bell tower is not only an architectural monument but also an active research tool, allowing restoration to be viewed as a process of interpretation, and the project as dialogue between history and modernity.

04

DESIGN PROPOSAL

4.1 OVERALL DESIGN CONCEPT

When designing and adapting the tower's interiors, it was important to adhere to the principles of sustainability, compatibility, and reversibility, as well as other principles described above.

The ground floor is fully accessible.

All visitors can enter the facility with tickets purchased on the museum's website and using a QR code scanner, eliminating the need for additional staff.

Thematic exhibitions are located throughout the tower's vertical route.

On the fourth and fifth floors, the previously installed window screens were removed and replaced with new, modern aluminum-frame windows (Figure 86) to protect the installed exhibition from precipitation. From the sixth to eighth floors, the window screens were also removed and replaced with glass railings (Figure 87), ensuring visitor safety while still allowing unobstructed views from the bell tower.

Ventilation on the lower floors is provided by open openings on the higher floors, allowing for constant air circulation.

Figure 82. Axonometrical scheme

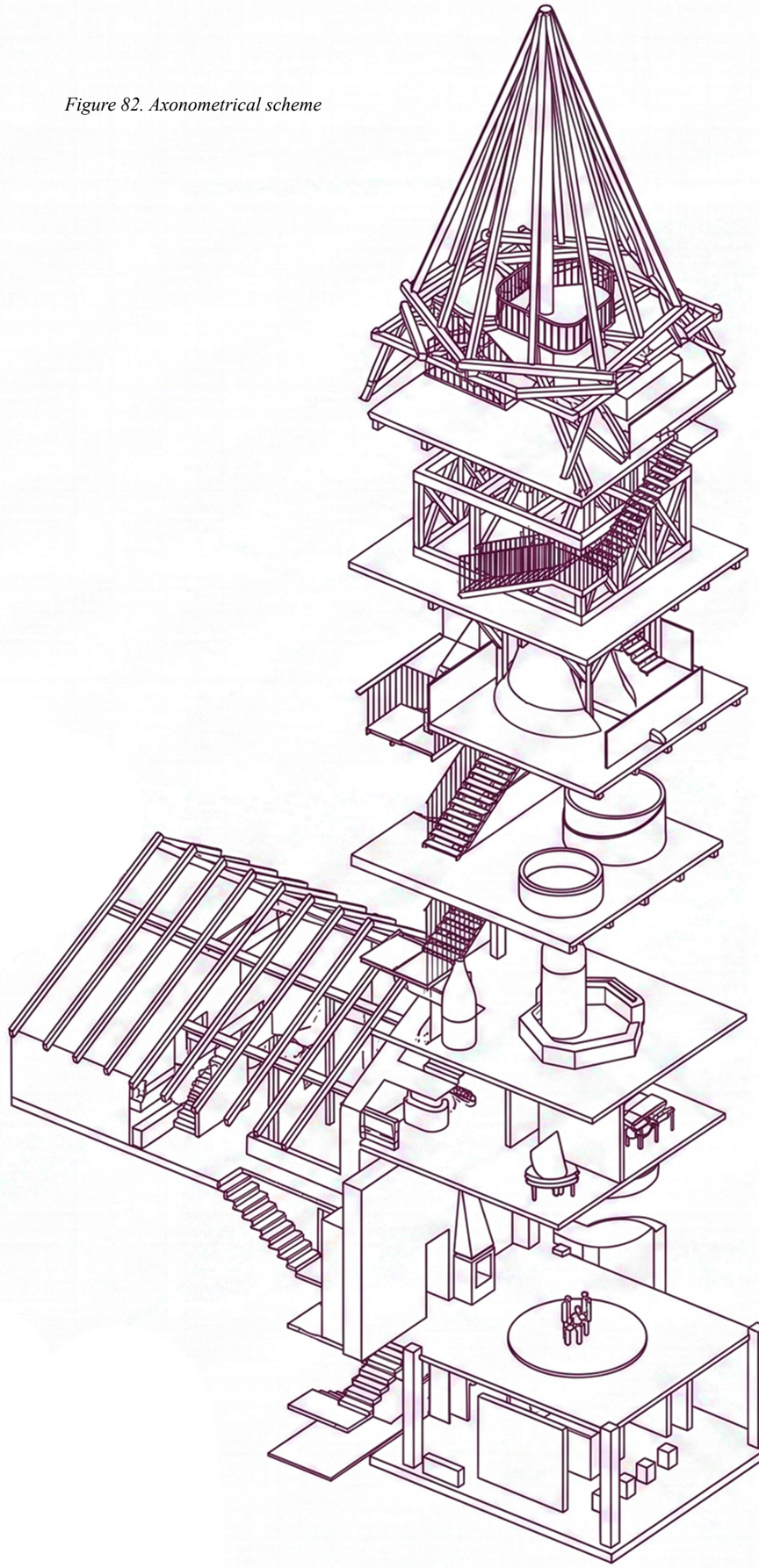
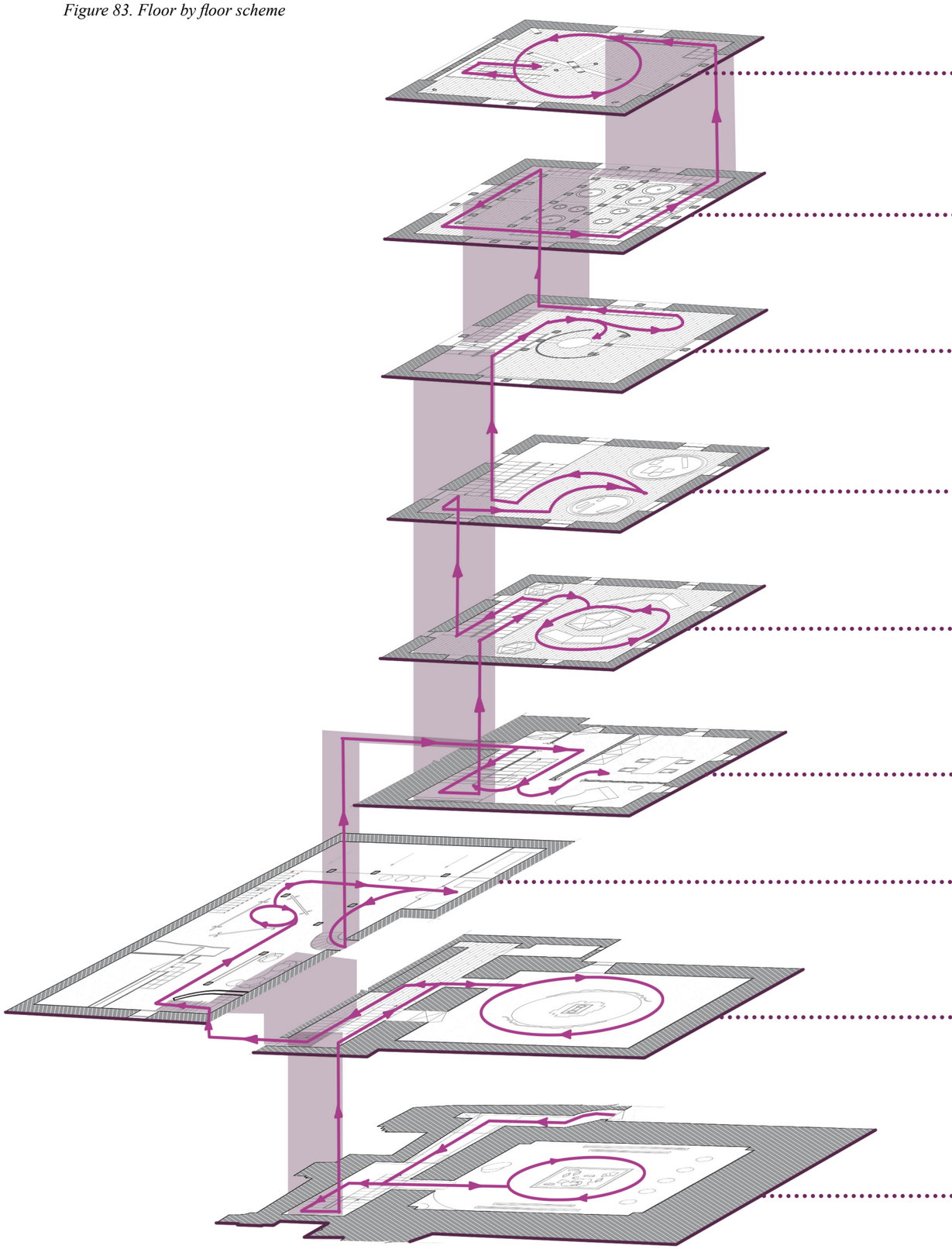


Figure 83. Floor by floor scheme



8 VIEW POINT

7 BELL ROOM

6 BELL SOUND EXHIBITION

5 DECOR ELEMENTS EXHIBITION

4 CRISTALL ROOM

3 RECREATIONAL AREA

2 MULTITASKING SPACE

1 SAVOY HISTORY ROOM

0 INTRODUCTIONAL AREA

Figure 84. New staircase (0 - 3rd floor)

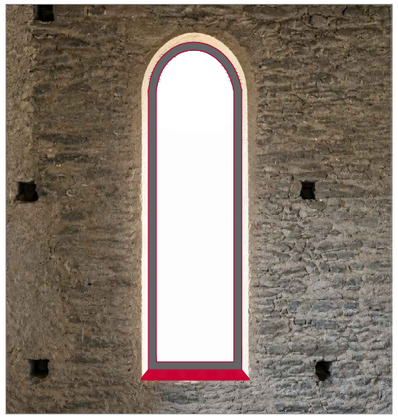
This staircase connects the ground floor to the fourth level of the building. Since this staircase lacks a clear, consistent structure on each floor, it was decided to make it a single, opaque structure made of steel and coated with a rust-effect finish. Like the main staircase, it boasts excellent strength and durability, but its design differs to visually connect the lower levels, which lack a clear, vertical structure, with the higher levels.

Figure 85. New staircase (4th - 8th floor)

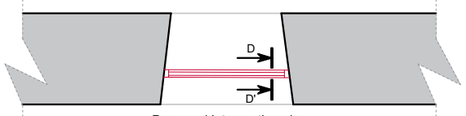
The main staircase is constructed of a lightweight steel structure that provides vertical circulation while minimizing damage to the historic masonry within the tower. This design adheres to international restoration principles based on reversibility, compatibility, and minimum intervention. The steel structure was chosen for its durability and strength. Its design helps connect the floors with limited contact points with the historic elements. The color was chosen to blend seamlessly with the medieval building’s ambiance.

Existing condition
sc 1:100

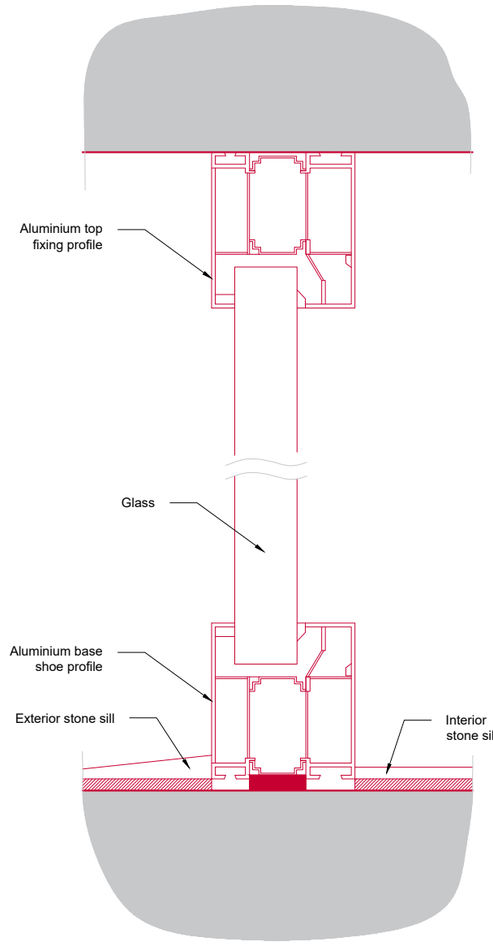
Existing condition plan
sc 1:100



Proposed intervention
sc 1:100



Proposed intervention plan
sc 1:100

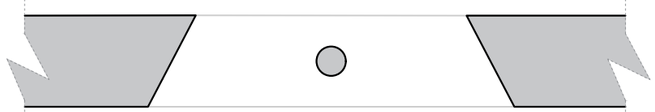


Section DD' through the proposed glazing window
sc 1:5

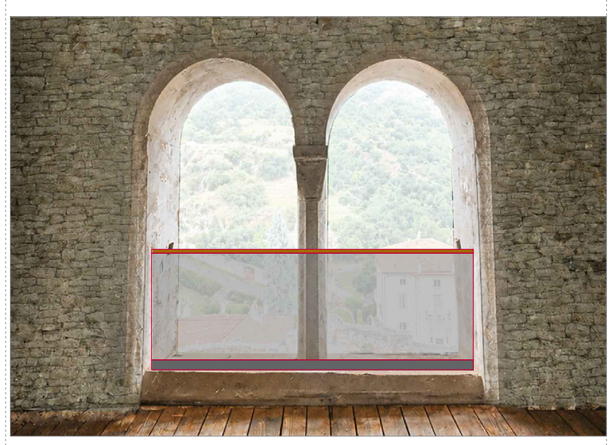
The tower's existing arched windows play a central role in the adaptation strategy. Rather than creating new openings in the historic masonry, the project envisions preserving and enhancing the original window openings, transforming them into an equipped observation deck. Historically, these techniques were intended to bring light into the tower, provide ventilation, and visually connect it to the city. In this project, each window becomes a unique way for visitors to observe the city and other landmarks.

Figure 86. Existing window analysis and proposed glazing intervention

Existing condition
sc 1:100

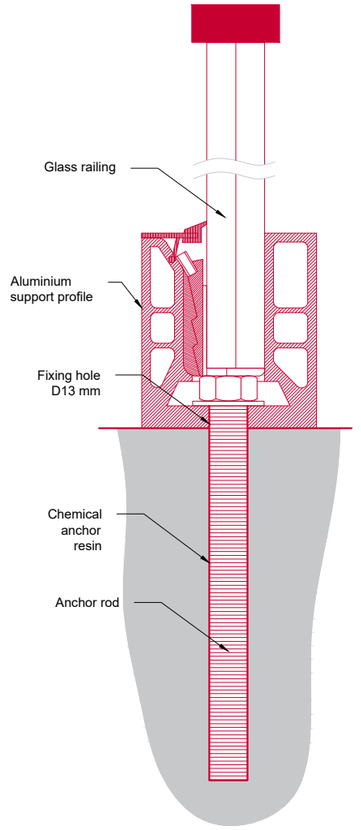


Existing condition plan
sc 1:100



Proposed intervention
sc 1:100

Proposed intervention plan
sc 1:100



Section CC' detail of the glass balustrade fixing systemrod
sc 1:5

To improve safety and ease of use while preserving the historic fabric, glass balustrades were proposed. The transparent structure maintains a continuous view from the inside to the outside and allows daylight to enter. This strategy helps minimize artificial lighting during the day and emphasizes the authenticity of the historic structures. As visitors ascend the tower's vertical route, new perspectives of the surroundings, architectural complexes and natural landscapes open up to them. This solution helps to emphasize the vertical structure of the building, but at the same time do not obstruct views at ground level.

Figure 87. Existing condition and proposed glass balustrade intervention

4.2 CONCEPT - GROUND FLOOR

The ground floor is a welcoming area that marks the beginning of a vertical route through the bell tower of the Cathedral of San Giusto di Susa.

A special additional floor covering, consisting of a metal frame and plywood, helps create a museum-like atmosphere. The flooring structure is covered with black microcement. The microcement creates a monolithic, seamless, uniform surface.

Concealed warm-colored lighting runs along the perimeter of the podium, enhancing the museum-like atmosphere. All wiring is conveniently concealed within the flooring. The podium can be easily disassembled and removed if necessary.

The corridor is framed by arches made of a metal frame and black-painted plasterboard. The arches echo the motif of the church's vaults and serve as information boards introducing the cathedral's history, its location, and interesting facts.

At the end of the corridor, we are greeted by a metal staircase with a decorative rust-effect coating. To bring the staircase as close to modern standards as possible, its position had to be adjusted and moved to the end to ensure visitors can safely ascend to subsequent levels. The staircase's lightweight structure will blend seamlessly with the historic interior without creating a pseudo-historical appearance to the tower.

To the right of the staircase is the entrance to a large room with large interactive glass panels on either side, illuminated and engraved with text and graphics. Contour lighting creates the effect of floating exhibition screens. The overall concept of the space is the contrast between the rough, authentic texture of the stone walls and the modern, minimalist interior elements. The ceiling in the room is finished in smooth white plaster, with accent lighting highlighting the geometry of the vaults. The walls will be left untouched to preserve the original paintings, abrasions, and remnants of old layers. All this creates the atmosphere of an archaeological space.

The central display case is made of clear glass, and the frame is black metal. A large, interesting floor lamp, positioned against the wall as additional decor, illuminates the visitor bench. Other seating areas are minimalist stainless steel cylinders.

This entryway concept for the bell tower project feels fresh and contemporary. The "new" visitor route is like a contemporary exhibition within a historical shell. The materials are calm and understated, yet complement the stone and vaulted ceilings. The soft texture of the walls complements the dark, modern materials and warm lighting.

Figure 88. Tower interior. Ground floor (02.06.2025)

Figure 89. Tower interior. Ground floor, ceilings (02.06.2025)

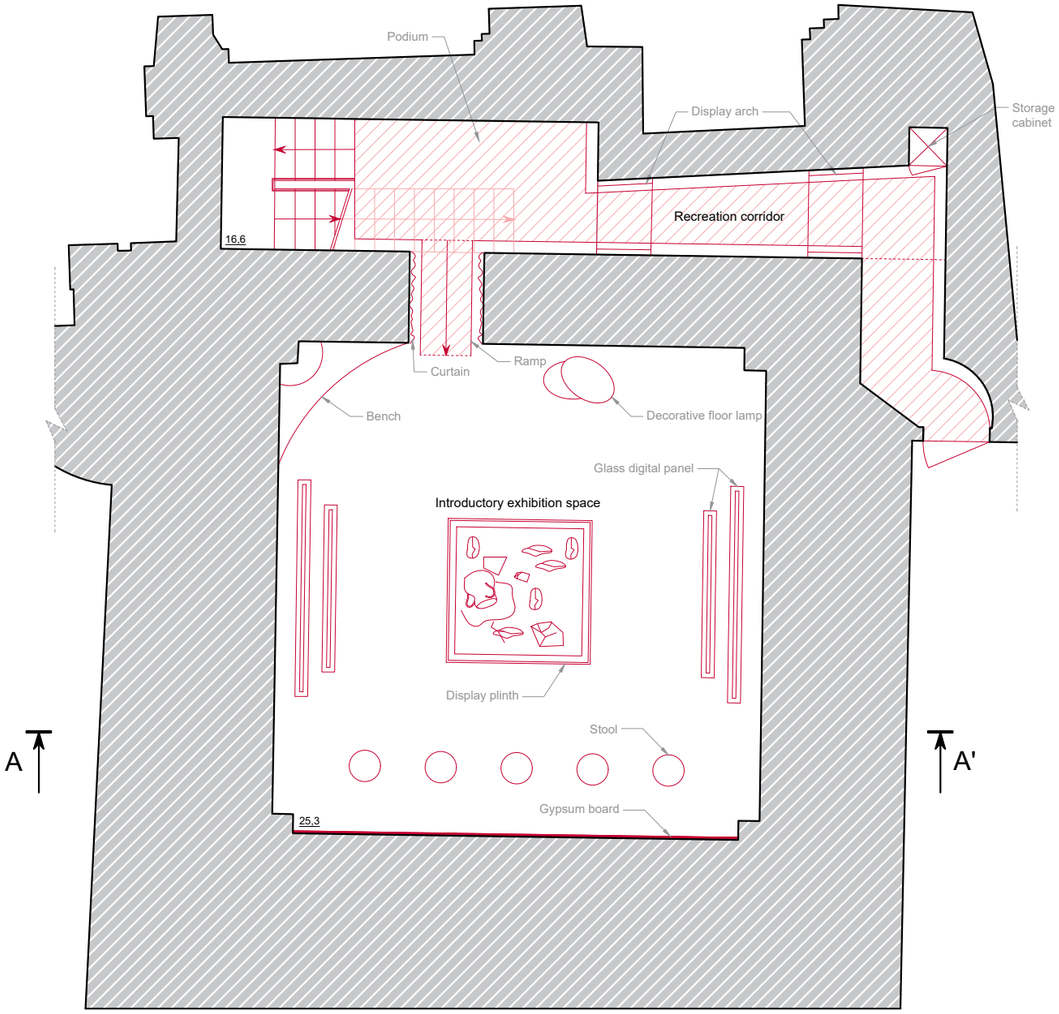
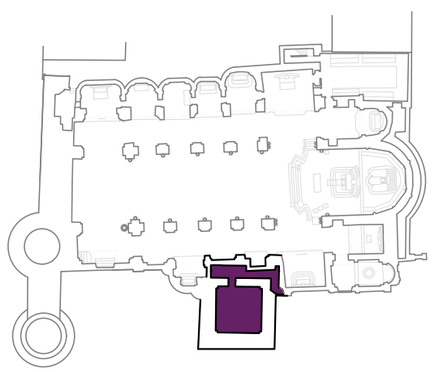


Figure 90. Ground floor - project plan

sc 1:200

Legend

- Existing walls
- New volume
- New plywood floor with microcement finish
- New plywood display podium supported by a steel structure



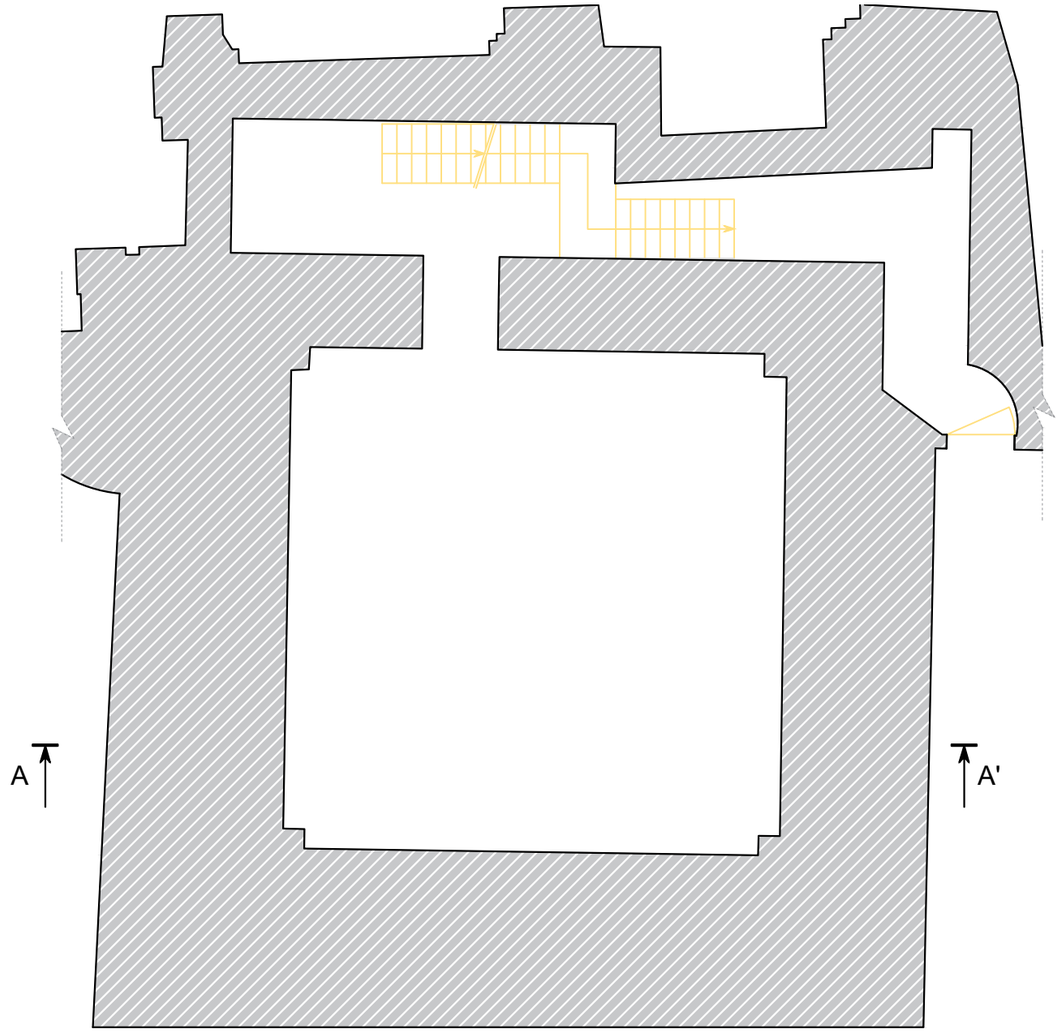


Figure 91. Ground floor - demolition plan

sc 1:200

Legend

- Existing walls
- Demolition

Figure 92. Tower Ground floor corridor. Render

Figure 93.Tower Ground floor corridor. Render

Figure 94. Tower Ground floor. Room render

Figure 95. Tower Ground floor. Room render

4.3 CONCEPT - 1st FLOOR

Due to the change in the structure of the staircase, the entrance to the room on the first floor had to be relocated. This is a more emotional and theatrical part of the tour route. The walls are painted brick-colored over smooth plaster, and the vaulted ceiling is dark brown. The color scheme of the room is built on warm terracotta and dark brown tones, referencing historical interiors and materials of the era. A special place on the wall on the left in the picture is allocated for an antique wall fresco.

The concept of the space is linked to the Savoy dynasty, which has a direct connection to the history of the Cattedrale di Santa Giusto di Susa. The exhibition hall is an immersive exhibition space. The central element of the interior is a circular podium framed by white translucent tulle hanging from the ceiling, highlighting the model of the Porta Savoia, a visual boundary that creates the feeling of a sacred object or historical scene. It stands on a geometric dark wood pedestal.

The effect of floating fabric around the podium is created by circular lighting on the ceiling. Also, thanks to the spotlights directed at the model, the space is perceived not as a traditional museum hall, but as a contemporary, aesthetically pleasing exhibition space.
The entire exhibition combines a historical narrative dedicated to the legacy of the Savoy dynasty with contemporary interior design.

Figure 96. Tower 1st floor. Corridor render

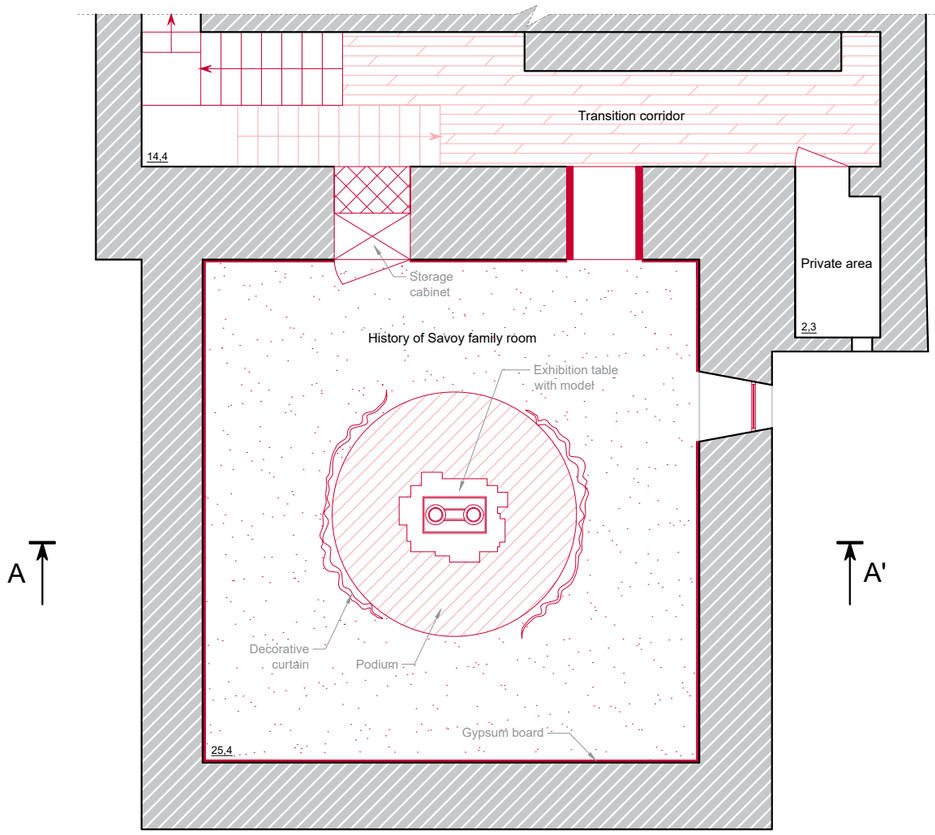


Figure 97. 1st floor - project plan

sc 1:200

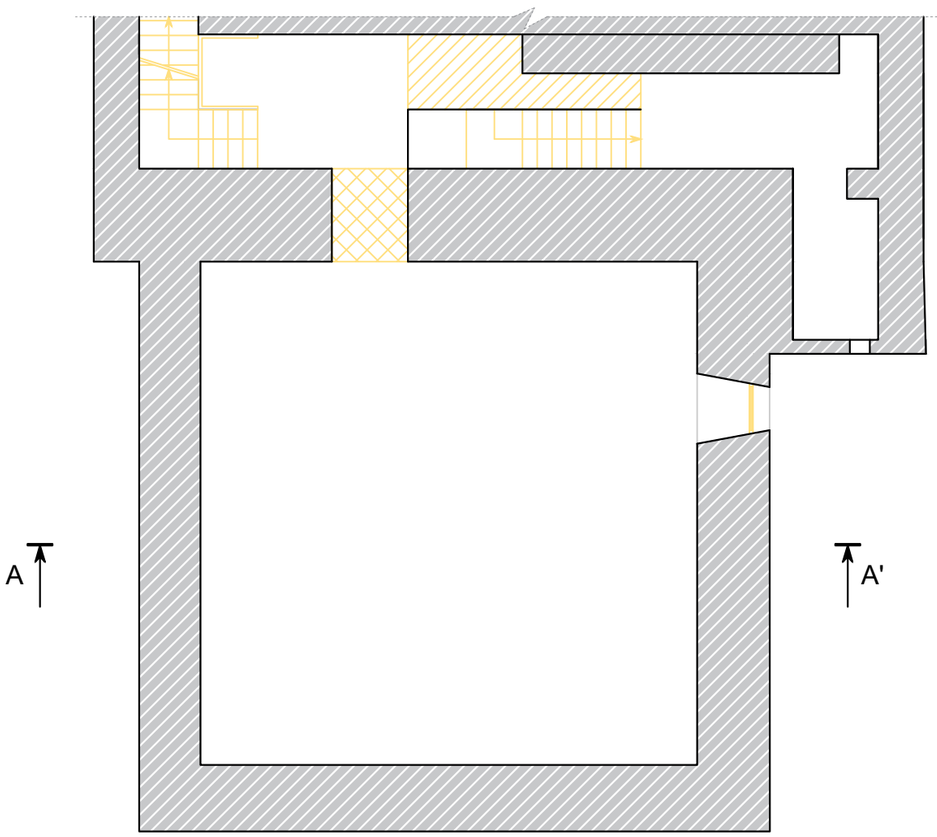
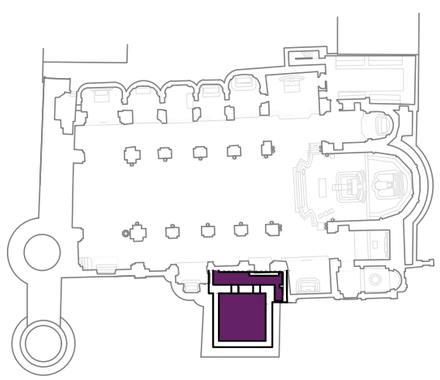


Figure 98. 1st floor - demolition plan

sc 1:200

Legend

- Existing walls
- New volume
- New plywood floor with microcement finish
- New plywood display podium supported by a steel structure
- New wooden paviments
- Closure of existing opening
- New opening



Legend

- Existing walls
- Demolition
- Demolition of existing opening
- Demolition of existing wooden floor

Figure 99. Tower 1st floor. Room render

Due to the change in the structure of the staircase, the entrance to the room on the first floor had to be relocated. This is a more emotional and theatrical part of the tour route. The walls are painted brick-colored over smooth plaster, and the vaulted ceiling is dark brown. The color scheme of the room is built on warm terracotta and dark brown tones, referencing historical interiors and materials of the era. A special place on the wall on the left in the picture is allocated for an antique wall fresco.

The concept of the space is linked to the Savoy dynasty, which has a direct connection to the history of the Cattedrale di Santa Giusto di Susa. The exhibition hall is an immersive exhibition space. The central element of the interior is a circular podium framed by white translucent tulle hanging from the ceiling, highlighting the model of the Porta Savoia, a visual boundary that creates the feeling of a sacred object or historical scene. It stands on a geometric dark wood pedestal.

The effect of floating fabric around the podium is created by circular lighting on the ceiling. Also, thanks to the spotlights directed at the model, the space is perceived not as a traditional museum hall, but as a contemporary, aesthetically pleasing exhibition space.

The entire exhibition combines a historical narrative dedicated to the legacy of the Savoy dynasty with contemporary interior design.

4.4 CONCEPT - 2nd FLOOR

This level resembles an archaeological space with modern exhibits and finishing materials. Visitors are treated to information boards detailing the history of Susa, city maps, and historical context relating to ancient Rome, the Middle Ages, and modern times.

A distinctive feature of the space is the preservation of the historical wall materials and wooden roof beams, providing an excellent backdrop for the modern exhibition space.

The central part of the space is occupied by three large, light-colored panels with graphic images depicting the development of Susa through maps and historical materials. Depending on the various temporary exhibitions and events, the placement of the panels, their presence or absence, and the graphics on them may change.

The technical rooms for museum staff are located behind plasterboard walls covered in thin sheets of stainless steel. To the right of the elevator to the third floor is a small souvenir shop with a glass display case. The elevator itself is also clad in stainless steel and features a short spiral staircase. This material was chosen to complement the walls of the utility rooms. The steel texture has reflective properties, helping to visually expand the space.

The cylindrical seating echoes the ground floor seating, but the light color complements the exhibition panels, and beyond them, a service staircase leading to the attic space above the cathedral's central nave. The staircase also has a rust-effect finish, like the previous levels.

Thus, the space harmoniously blends the historical environment with contemporary museum exhibition solutions. The space preserves the building's authentic atmosphere through careful use of the existing materials. Thanks to the flexible structure of the panels, the space is not a static museum, but a vibrant cultural venue with multiple functions.

Figure 100. Tower 2nd floor (02.06.2025)

Figure 101. Tower 2nd floor (02.06.2025)

Figure 102. Tower 2nd floor (02.06.2025)

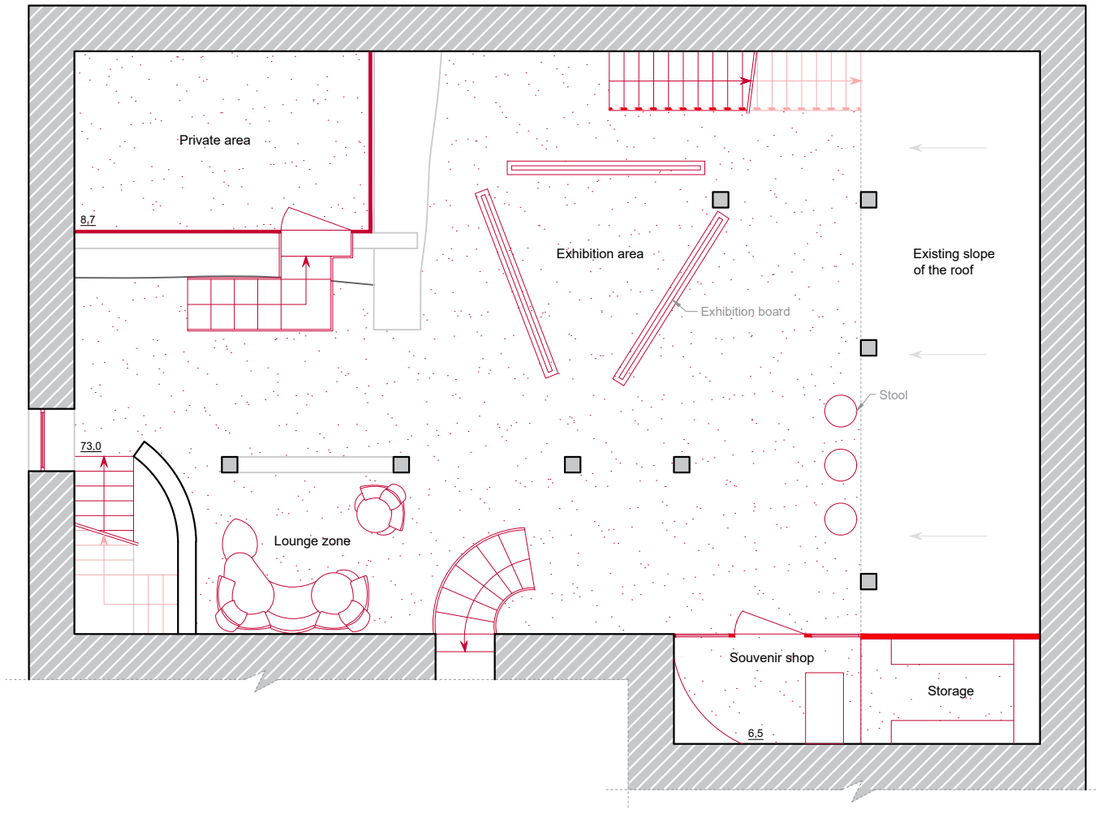


Figure 103. 2nd - project plan
sc 1:200

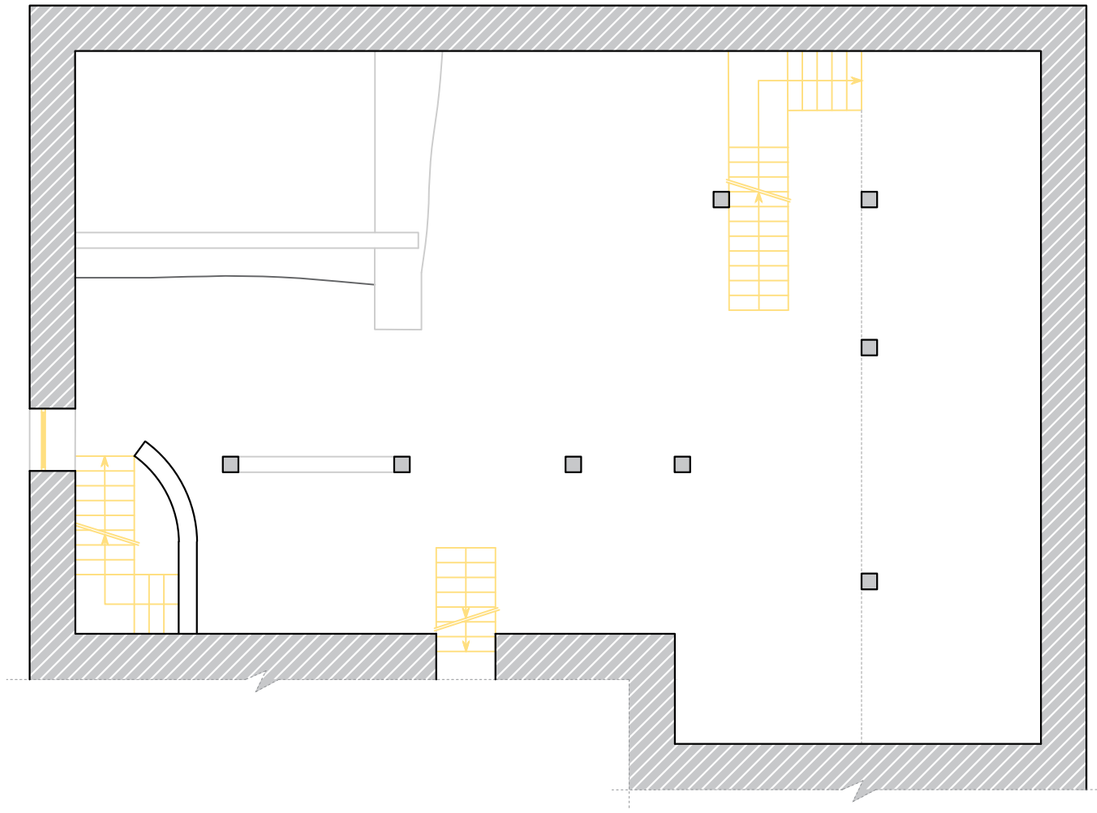
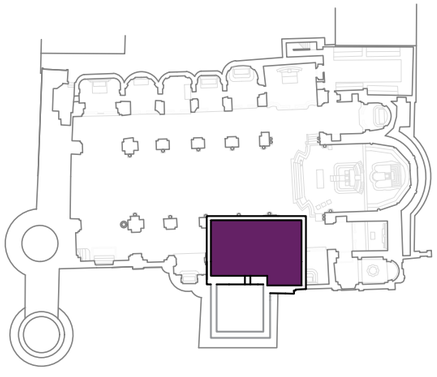


Figure 104. 2nd floor - demolition plan
sc 1:200

Legend

- Existing walls
- New volume
- New plywood floor with microcement finish



Legend

- Existing walls
- Demolition

Figure 105. Tower 2nd floor. Room render

Figure 106. Tower 2nd floor. Room render

Figure 107. Tower 2nd floor. Room render

Figure 108. Tower 2nd floor. Room render

4.5 CONCEPT - 3rd FLOOR

The third level is not a traditional museum, but rather a hybrid consisting of temporary exhibitions, a lounge area, a music and cultural space, and an atmospheric route inside the tower.

Upon entering, we are greeted by modern images of Susa on the wall and a staircase ascending to the fourth floor. Below it is a small TV area with a sofa, where visitors can enjoy a short film about the history of the Cattedrale di Santa Giusto. The shade in this area is perfect for watching TV, and textile draperies create the atmosphere of a small cinema and conceal the unsightly part of the staircase.

The flooring throughout the entire floor is made of micro-cement, creating a seamless, seamless surface that beautifully offsets the walls, is discreet, yet very tactile. The ceiling with its original historical beams was preserved but painted white to enhance the height of the space. Concealed lighting emphasizes the geometry, creating a calm and cozy atmosphere. Dark burgundy curtains in the doorways help separate the functional zones.

The musical and cultural functions are supported by a white grand piano, open to the public, making it possible to host chamber concerts, lectures, and other events. The light-colored instrument contrasts well with the dark interior finishes.

One of the key features of this level is the mini-library space, where visitors can pick up a historical book, sit at a table, and enjoy it; the large table allows for this. Dark wood, a ladder for accessing the upper shelves, and a warm color scheme create the atmosphere of a historical archive or private library.

Returning to the corridor, you can ascend to the next floors by stairs and continue the fascinating museum tour.

Figure 109. Tower 3nd floor (02.06.2025)

Figure 110. Tower 3nd floor (02.06.2025)

Figure 111. Tower 3nd floor (02.06.2025)

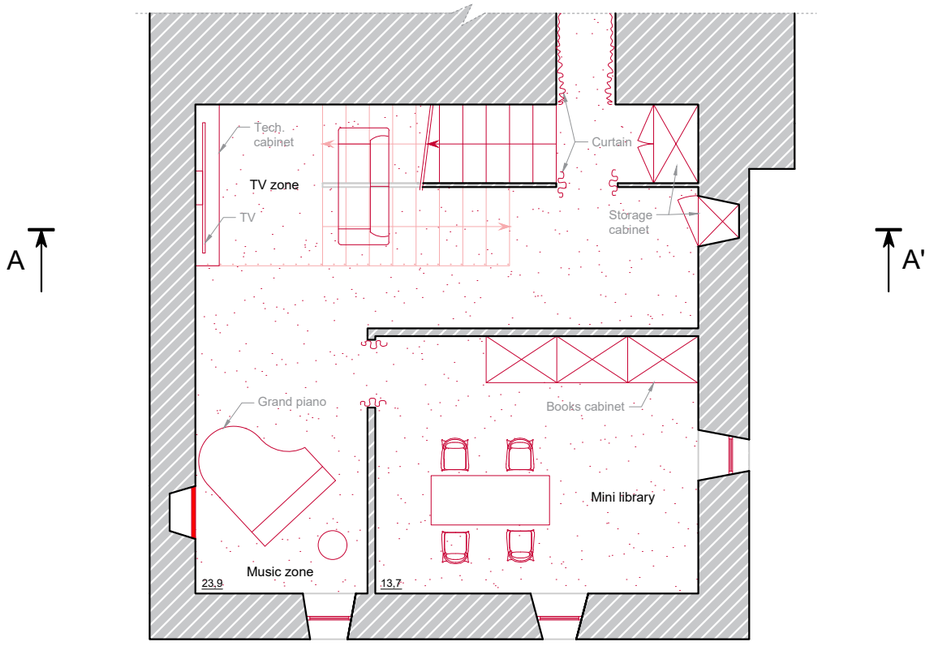


Figure 112. 3rd floor - project plan

sc 1:200

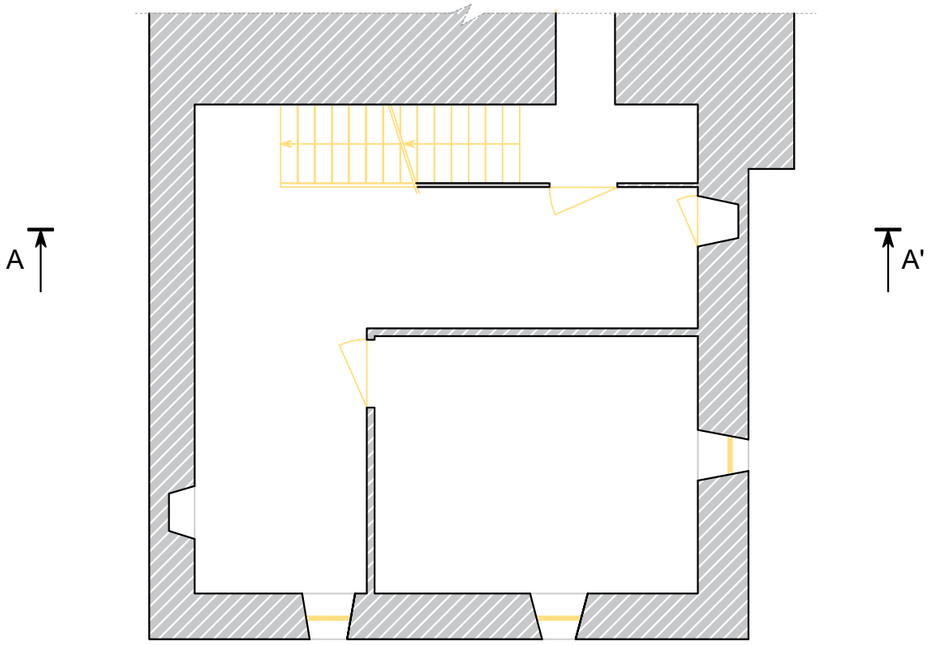


Figure 113. 3rd floor - demolition plan

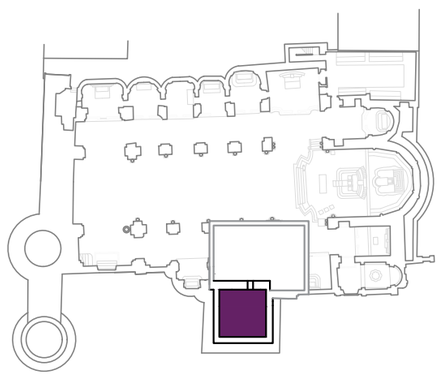
sc 1:200

Legend

Existing walls

New volume

New plywood floor with microcement finish



Legend

Existing walls

Demolition

Figure 114. Tower 3rd floor render

Figure 115. Tower 3rd floor render

Figure 116. Tower 3rd floor render

Figure 117. Tower 3rd floor render

Figure 118. Tower 3rd floor render

4.6 CONCEPT - 4th FLOOR

The tower's fourth level is an atmospheric exhibition space dedicated to artifacts found inside the bell tower. These include decorative elements, cornices, old wooden crosses, and stone fragments.

The concept behind the space is to transform this floor into a contemporary art space, featuring display cases shaped like large crystals. Such grandiose objects are sure to attract tourists. Built-in lighting within the display cases creates the effect of the exhibits floating, highlighting their value.

The floor is covered with a new, smooth wood covering. The ceiling has been darkened a few shades, but the texture of the historic beams and pillars is still clearly visible.

Starting from the fourth level, the staircase takes on a slightly different appearance; it becomes lighter, made of thin metal slats, giving it a light and airy appearance.

The center of the space is lined with minimalist, dark-colored sofas, creating a small lounge area for visitors to relax and contemplate the exhibition.

The dark color scheme of the interior enhances the atmosphere of the space and helps focus visitors' attention on the exhibition.

Figure 119. Tower 4nd floor (02.06.2025)

Figure 120. Tower 4nd floor (02.06.2025)

Figure 121. Tower 4th floor render (02.06.2025)

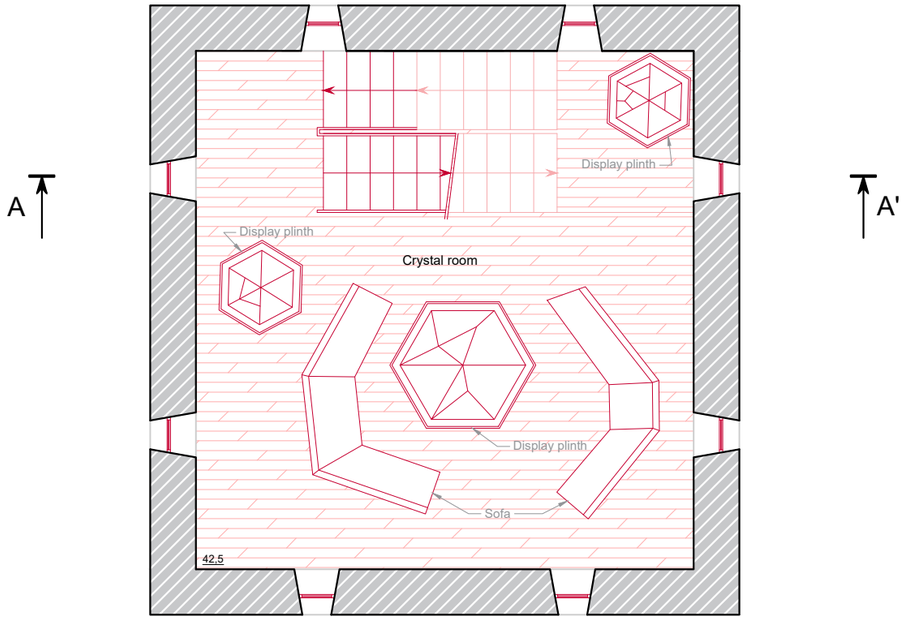


Figure 122. 4th floor - project plan

sc 1:200

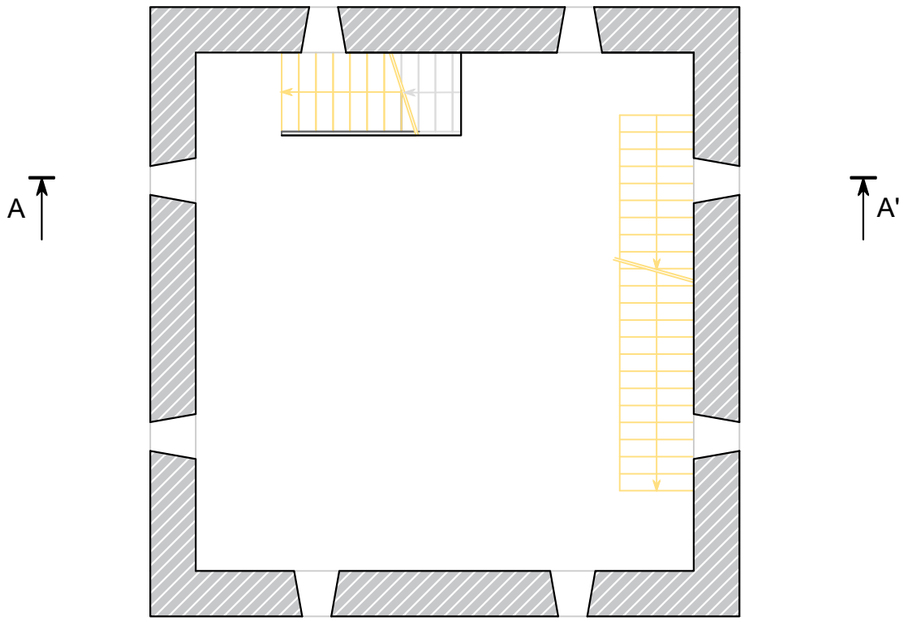
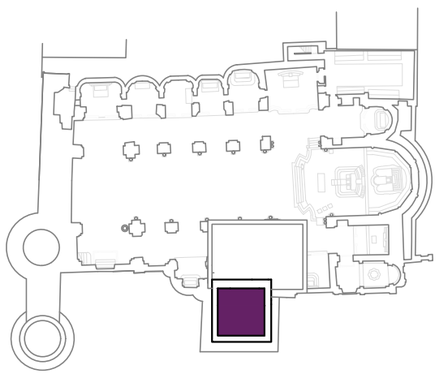


Figure 123. 4th floor - demolition plan

sc 1:200

Legend

- Existing walls
- New volume
- New plywood floor with microcement finish
- New wooden paviments



Legend

- Existing walls
- Demolition

4.7 CONCEPT - 5th FLOOR

The next level can be described as the final section of the archaeological route, focusing on the cathedral's authentic historical artifacts and material heritage.

The floor itself is a minimalist museum space, where historical architectural fragments and other artifacts related to the history of the Cattedrale di San Giusto di Susa are displayed on intriguing cylindrical plinths.

The interior carefully preserves the tower's authentic character: large arched windows and exposed stonework, but the flooring and wood tone on the ceiling have been updated to give the space a fresher look.

The central focus of the exhibition is modern, organically rounded display cases with transparent glass railings. Inside, fragments of stone carvings, decorative elements, architectural details, and other finds uncovered during research and restoration work are displayed. The minimalist design of the display cases allows visitors to focus on the exhibits without being distracted by excessive decorative elements.

As a result, an archaeological route has appeared inside the medieval tower, and the exhibitions are perceived as true art objects, thanks to their unusual forms and interesting design.

Figure 124. Tower 5th floor render

Figure 125. Tower 5th floor render

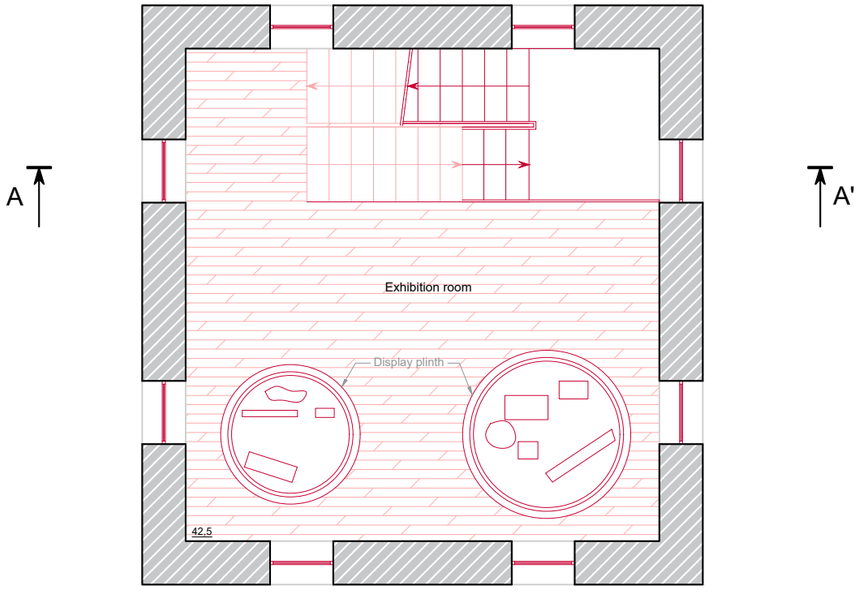


Figure 126. 5th floor - project plan

sc 1:200

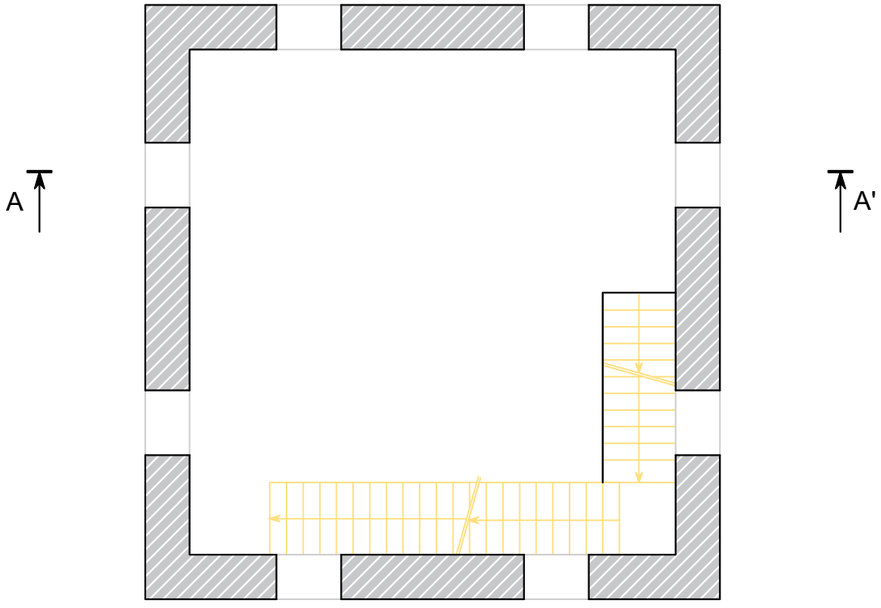
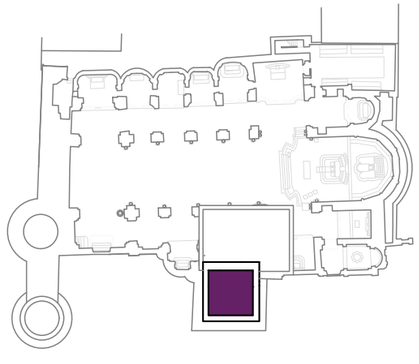


Figure 127. 5th floor - demolition plan

sc 1:200

Legend

- Existing walls
- New volume
- New plywood floor with microcement finish
- New wooden paviments



Legend

- Existing walls
- Demolition

4.8 CONCEPT - 6th FLOOR

The sixth floor space will also include an exhibit explaining the sounds of various bells. It was important to locate this feature on the sixth floor, as the seventh floor houses the existing working bells.

This is a wonderful opportunity for visitors to learn which bells ring at what time and what specific sounds they produce.

This exhibit utilized a bell-shaped capsule, perfectly integrated among the wooden columns and beams.

The structure is made of plasterboard coated with gold plaster to better capture the texture of a real bell.

Existing structures such as beams and posts were painted a darker color to enhance the refined texture of the wood. The floors, as elsewhere, were replaced with new wood flooring. The staircase continues through the sixth level, the staircase itself constructed of metal, with a beige roof.

Figure 129. Tower 6th floor render

Figure 128. Tower 6th floor render

Figure 130. Tower 6th floor render

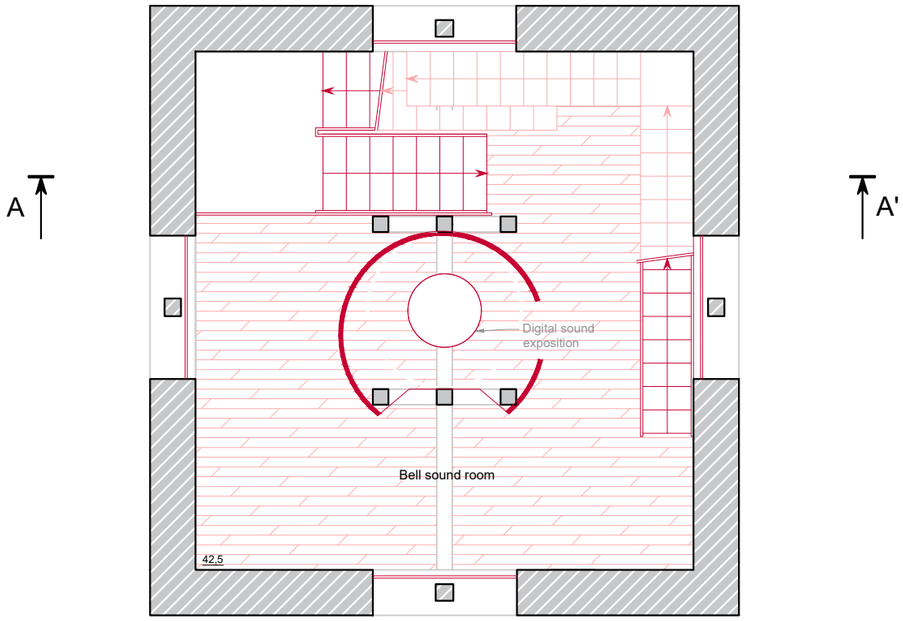


Figure 131. 6th floor - project plan

sc 1:200

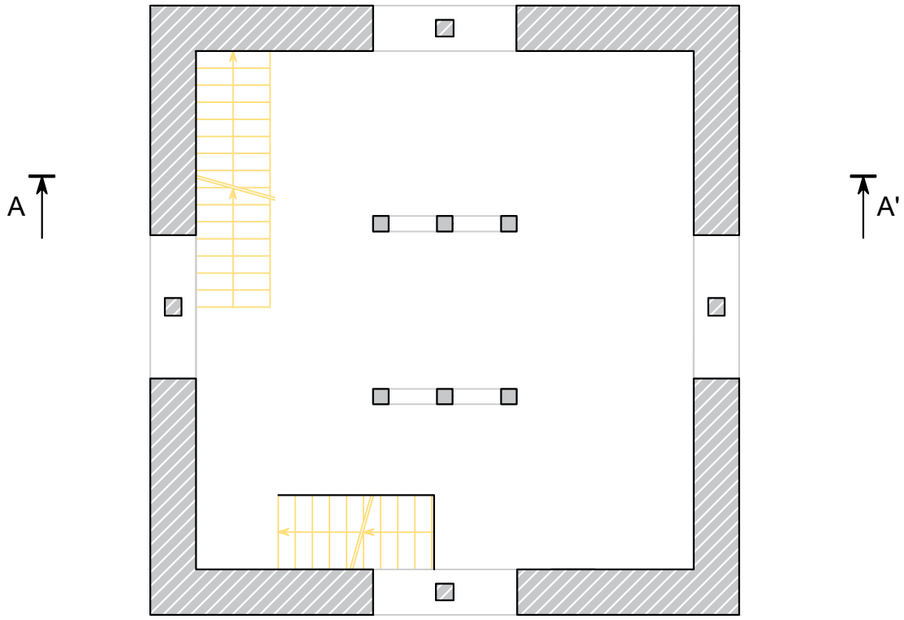
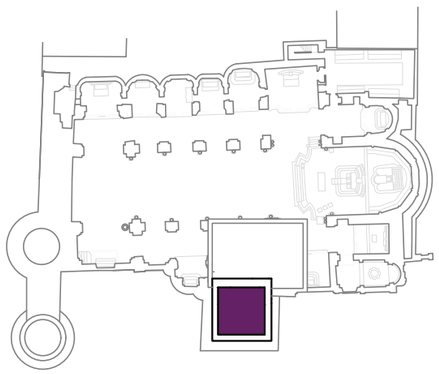


Figure 132. 6th floor - demolition plan

sc 1:200

Legend

- Existing walls
- New volume
- New plywood floor with microcement finish
- New wooden paviments



Legend

- Existing walls
- Demolition

4.9 7th FLOOR

The tower's seventh level is the most authentic part of the route and is dedicated to the bell tower's historical function as a bell-housing space. The project's primary objective here was to preserve the existing architectural and structural system with minimal disruption to the building's historic fabric.

The original bell-housing structure, which has been fully preserved, becomes the centerpiece of the space. The existing bells remain in their original locations, allowing visitors to see them in their authentic architectural context. The wall and floor coverings remain unchanged, with the exception of the flooring, which has been replaced with a new one. The warm wood blends beautifully and harmoniously with the rough texture of the medieval walls.

The only significant change decided upon was the placement of the staircase. The original stairwell did not allow for comfortable movement from floor to floor. As part of the project, it was decided to relocate the staircase to improve circulation and bring it into line with modern safety standards and regulations for comfortable visitor movement. Thanks to its location along the perimeter of the building, tourists will be able to walk around the entire space and view it from different angles.

This sensitive approach allows visitors to enjoy the authentic interior, practically the original view of the tower from the inside. This remote route allows visitors to visit historical sites that were previously hidden from the average person, which will generate unprecedented demand and interest.

Figure 133. Tower 7th floor (02.06.2025)

Figure 134. Tower 7th floor (02.06.2025)

Figure 135. Tower 7th floor render

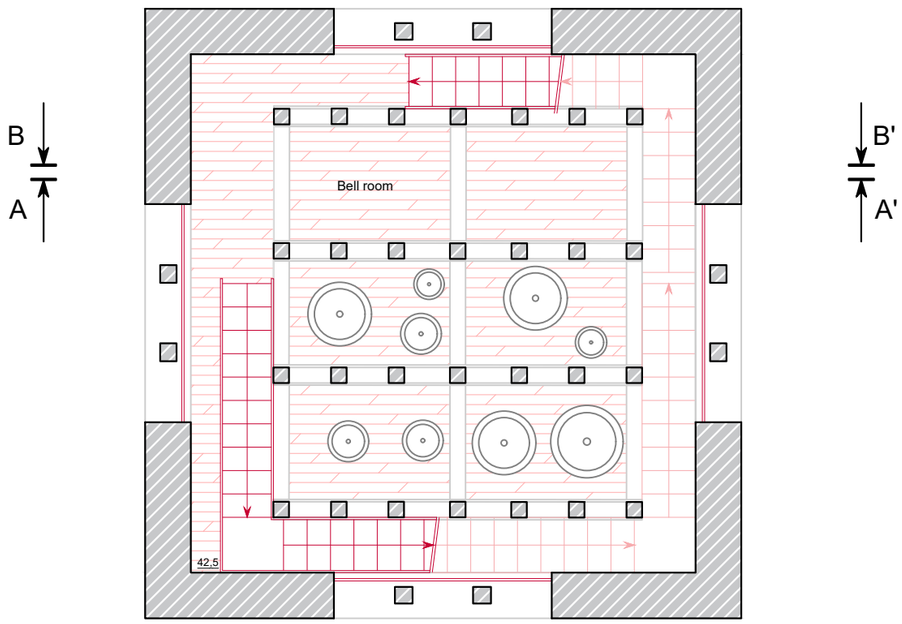


Figure 136. 7th floor - project plan

sc 1:200

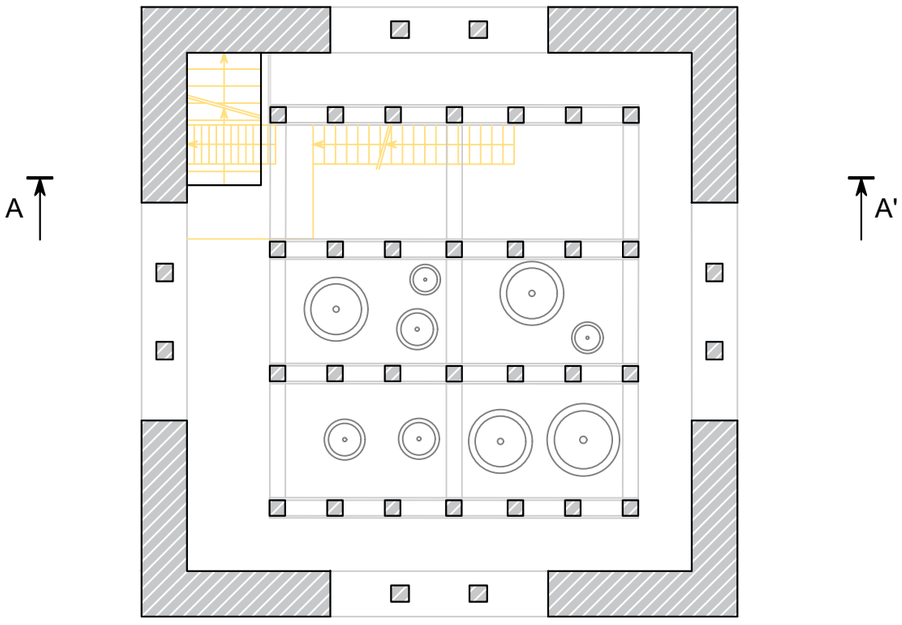
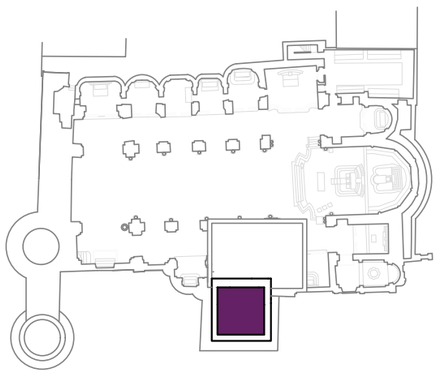


Figure 137. 7th floor - demolition plan

sc 1:200

Legend

- Existing walls
- New volume
- New plywood floor with microcement finish
- New wooden paviments



Legend

- Existing walls
- Demolition

4.10 8th FLOOR

The tower's topmost level is entirely an observation deck. Unlike the previous seven floors, which house the main exhibitions, the focus here has been on preserving the original appearance of the space with only minor modifications.

The original large windows on the 8th level offer visitors a magnificent view of Susa and the surrounding beautiful Alpine landscapes.

When designing the tower, it was decided to preserve as much of the structure and overall medieval atmosphere as possible: the historic stonework and supporting roof system. By slightly correcting the defects that had appeared in the interior over time, the platform acquired a neat appearance.

The staircase leading to the additional level under the roof is proposed to be modified to make it safer and more aesthetically pleasing, and it is also important that it harmonizes with the staircases on the previous levels. Since the staircase is not attached to the wall, lightweight supporting structures are located beneath it, but thanks to the right materials, they do not appear rough or bulky.

The absence of exhibition objects on this floor allows visitors to focus on the tower's architecture and views. This space serves as the final destination for a route that offers a new perspective on the cathedral and the historic center of Susa.

Figure 138. Tower 8th floor render

Figure 139. Tower 8th floor render

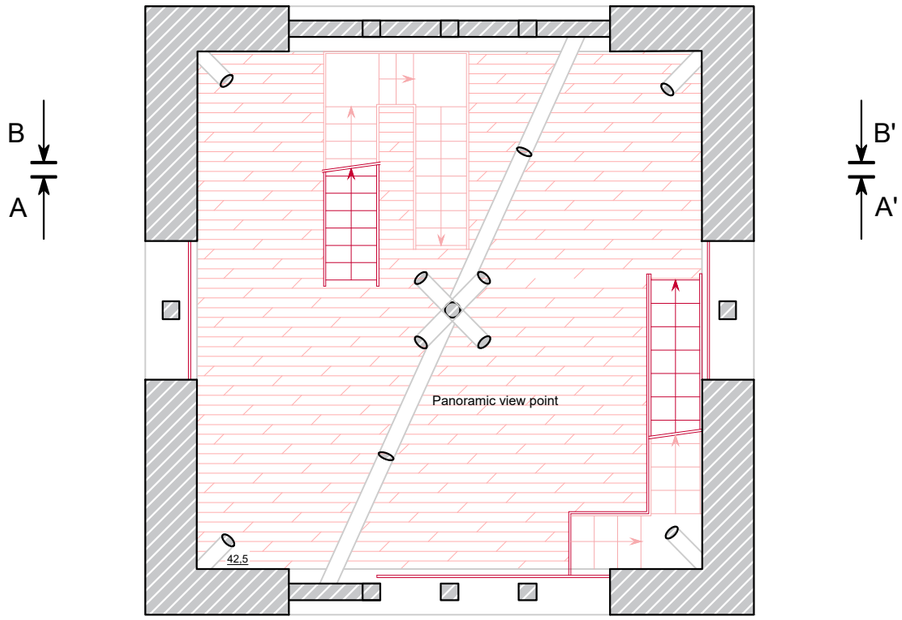


Figure 140. 8th floor - project plan

sc 1:200

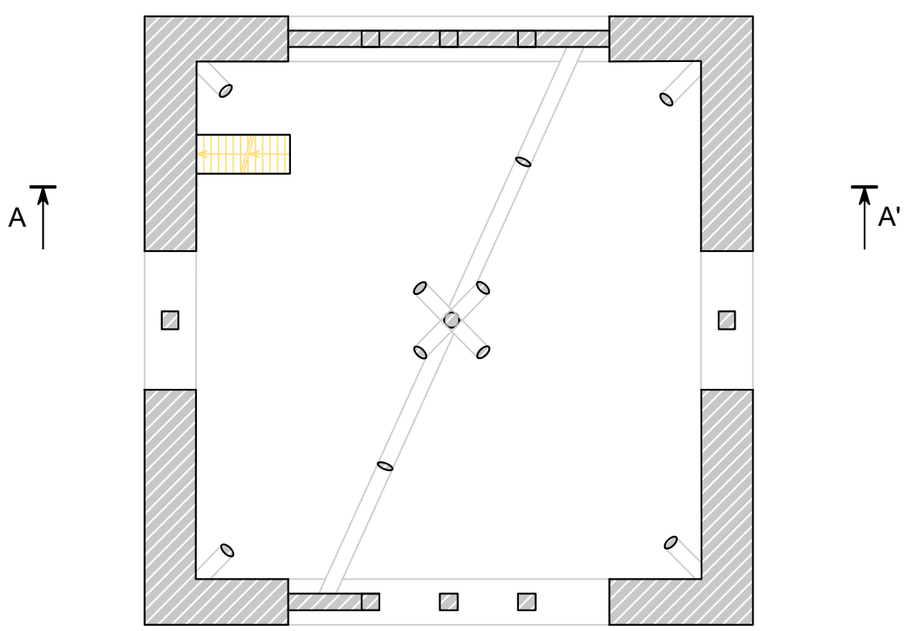


Figure 141. 8th floor - demolition plan

sc 1:200

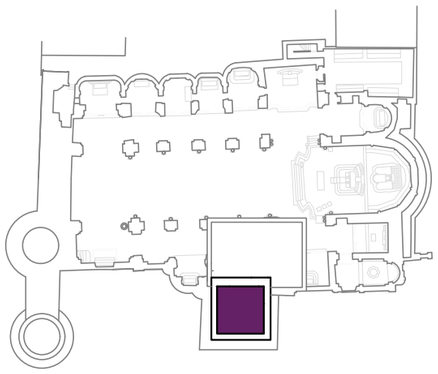
Legend

Existing walls

New volume

New plywood floor with microcement finish

New wooden paviments



Legend

Existing walls

Demolition

4.11 CONCEPT - GROUND FLOOR, CRYPT

Besides the abandoned San Giusto tower, the cathedral has another fascinating site.

From the east side, you can enter a long corridor located in the building's apse. A restroom is conveniently located at the very beginning of the entrance. The corridor leads to the recently discovered ruins of an ancient crypt inside the cathedral.

To facilitate viewing of the historical structures, a special balcony made of sturdy metal structures with transparent glass panels on the floor has been provided for tourists.

All this is well lit by a floodlight from above, allowing for a clear view of every detail.

This room serves as a unique starting point for the route, as it tells the story of the oldest church that stood on the site of the modern cathedral many centuries ago. Then, starting from the ground floor of the tower itself, visitors are introduced to the later period of the San Giusto Cathedral's existence, and as they ascend the vertical route, they learn more and more about the history of the cathedral itself and the city of Susa.

Figure 142. Crypt (02.06.2025)

Figure 143. Crypt (02.06.2025)

Figure 144. Crypt render

Figure 145. Corridor lading to the crypt (02.06.2025)

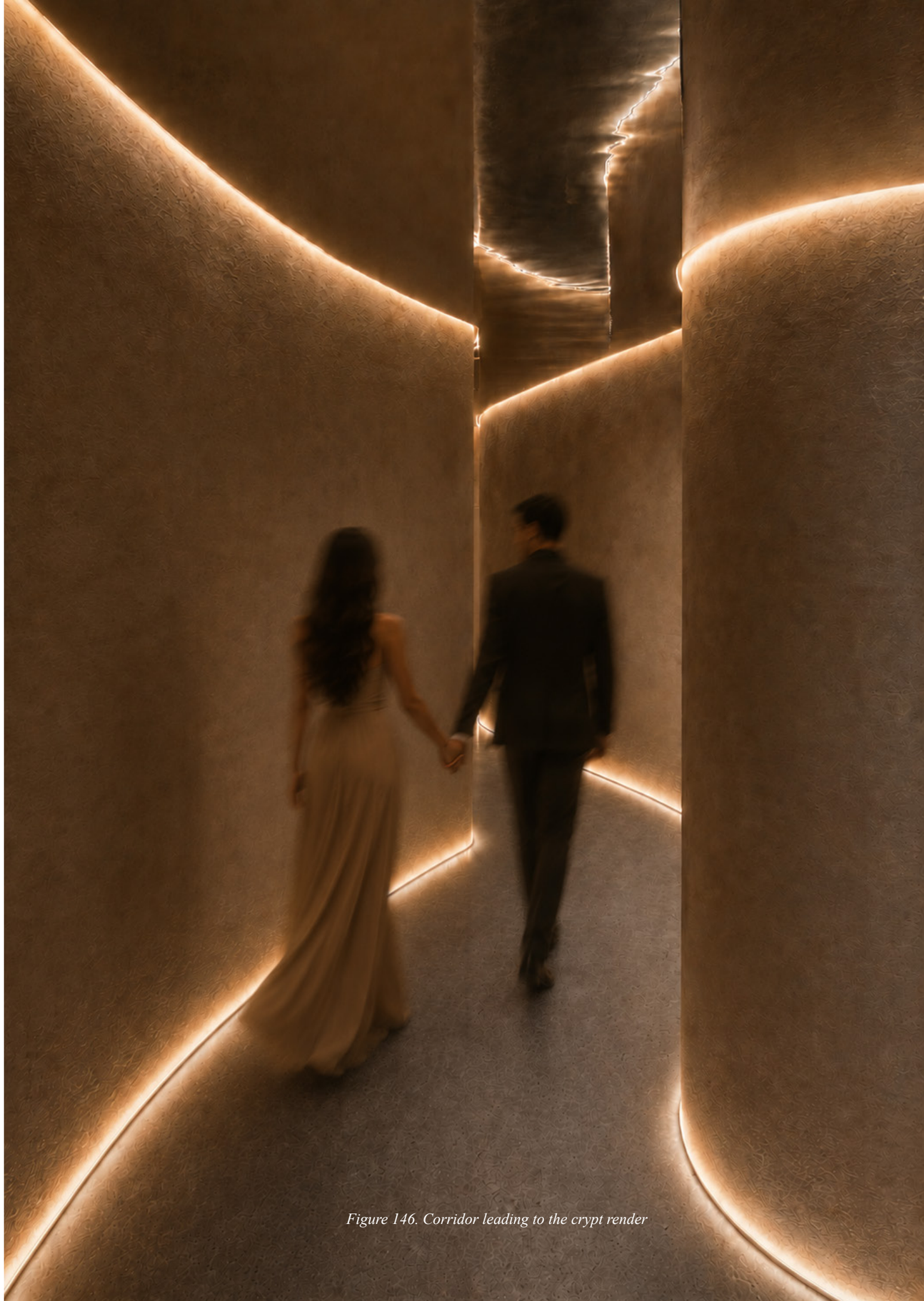


Figure 146. Corridor leading to the crypt render

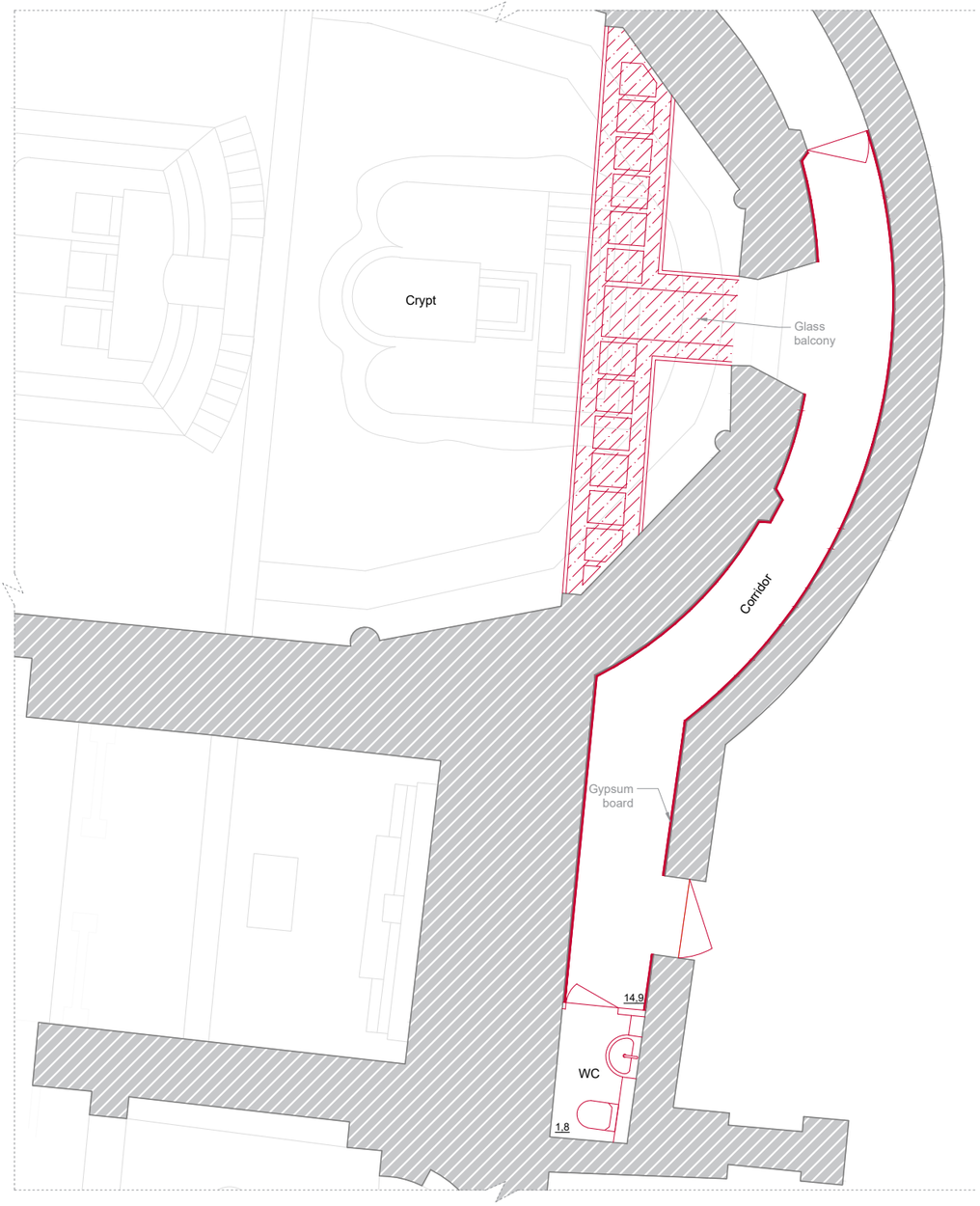


Figure 147. Crypt - project plan

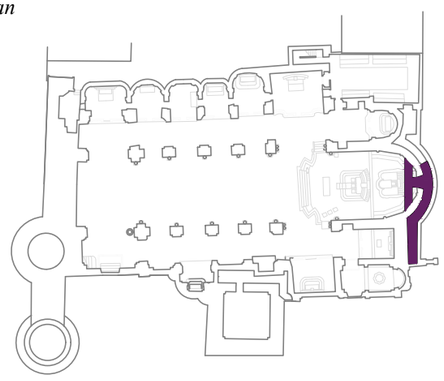
sc 1:200

Legend

Existing walls

New volume

New glass floor



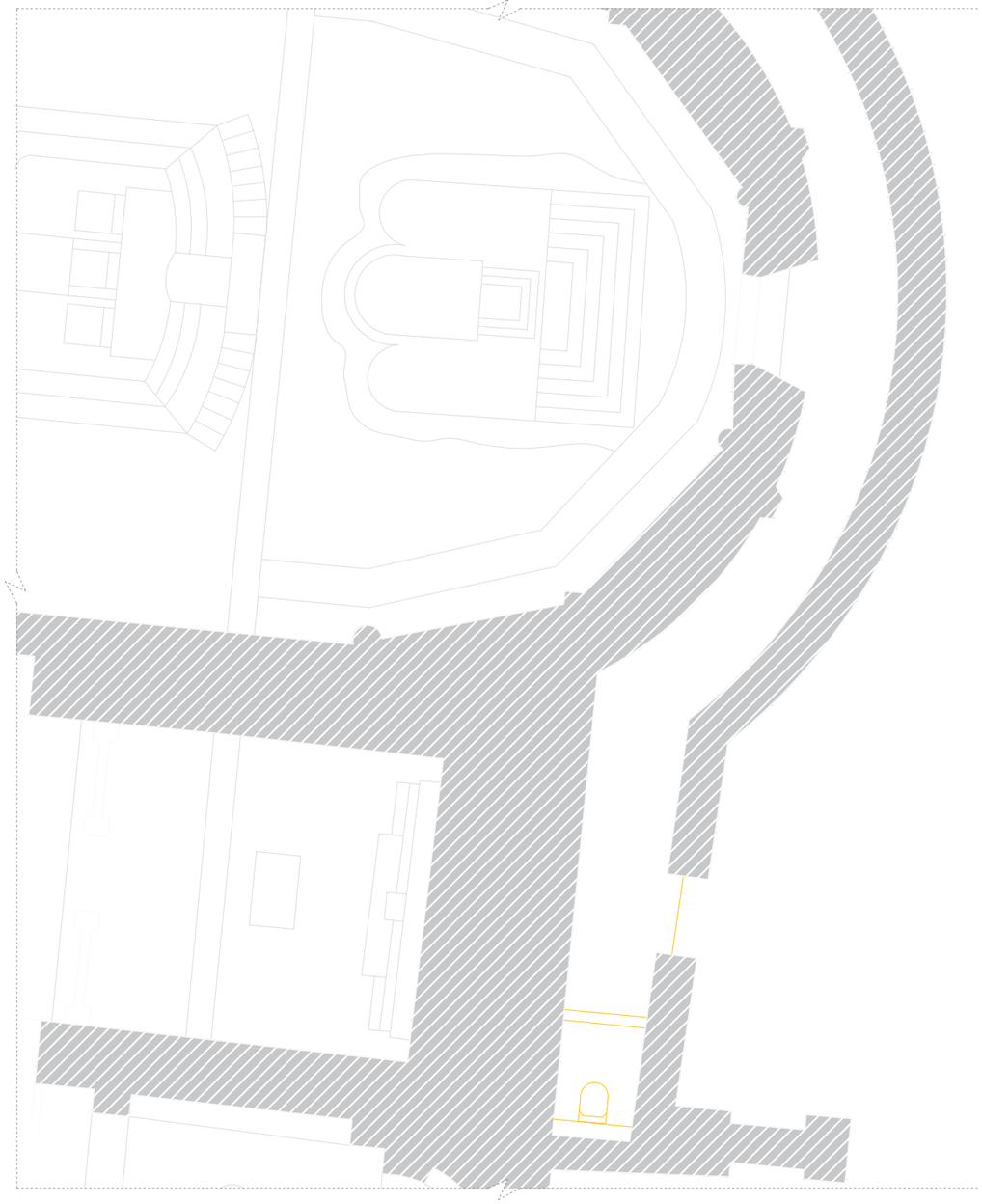


Figure 148. Crypt - demolition plan

sc 1:200

Legend

Existing walls

Demolition

4.12 PROJECT SECTIONS

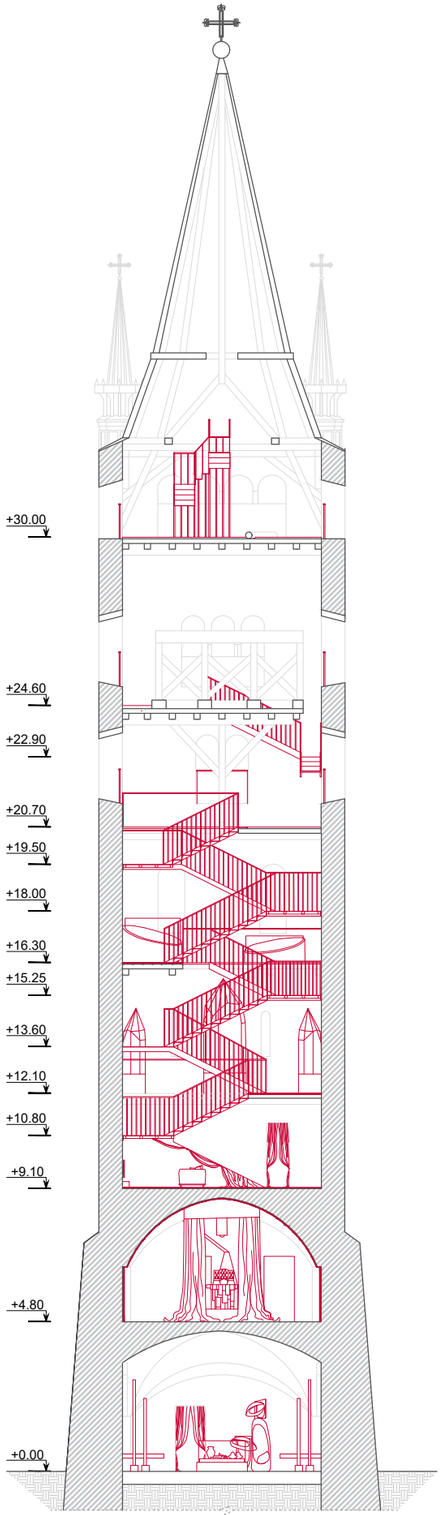


Figure 149. Project section A-A'

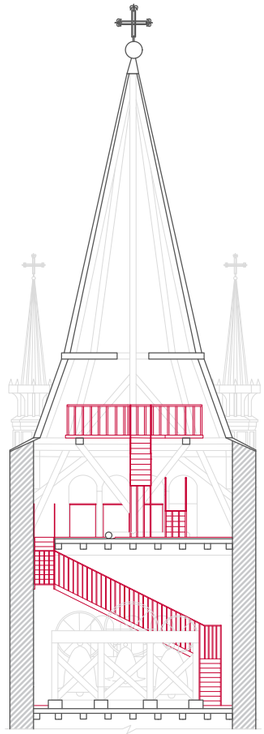
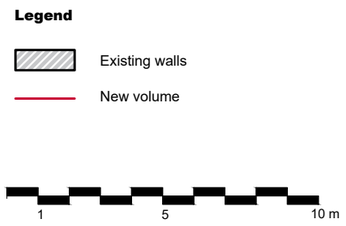


Figure 150. Project section B-B'



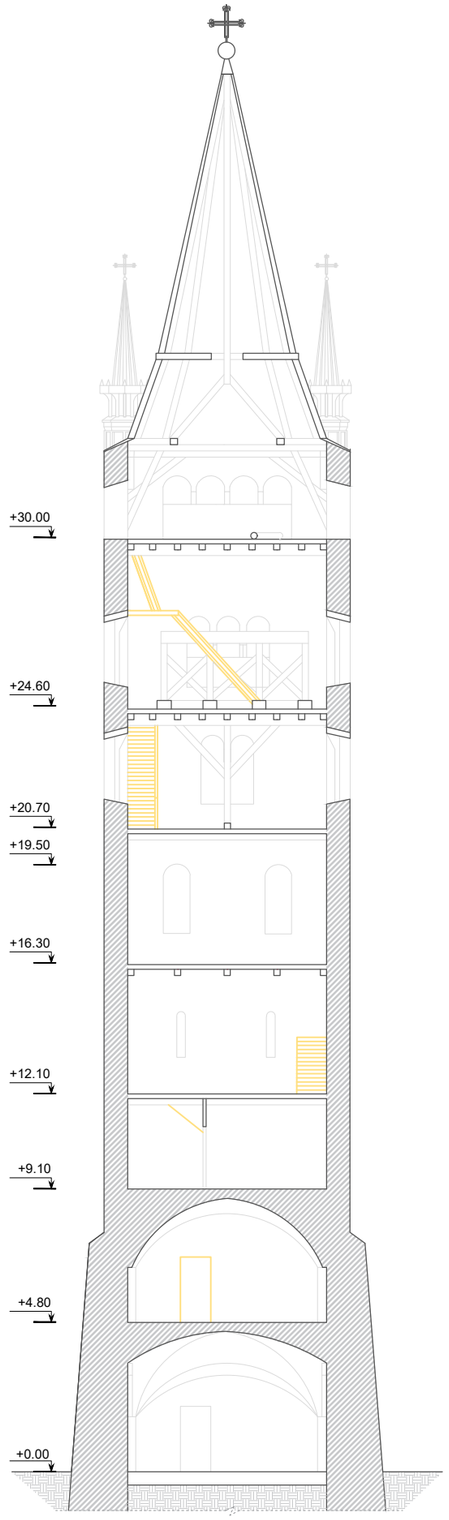
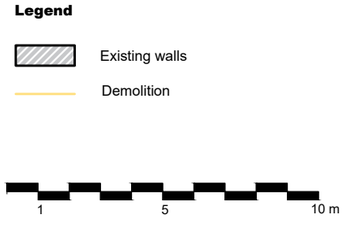


Figure 151. Demolition section A-A'



05

MASTER PLAN

5.1 MASTER PLAN STRATEGY

A carefully thought-out master plan was necessary to create a comprehensive project for the renovation of the San Giusto Cathedral tower. Its goal was to enhance the entrance environment, create functional and convenient areas, and make it more attractive to tourists - a unique point of attraction.

The design project is guided by the principle of minimal intervention in order to preserve the authenticity of the environment. The focus is not on large new architectural additions, but on ease of use and the visual integrity of the area.

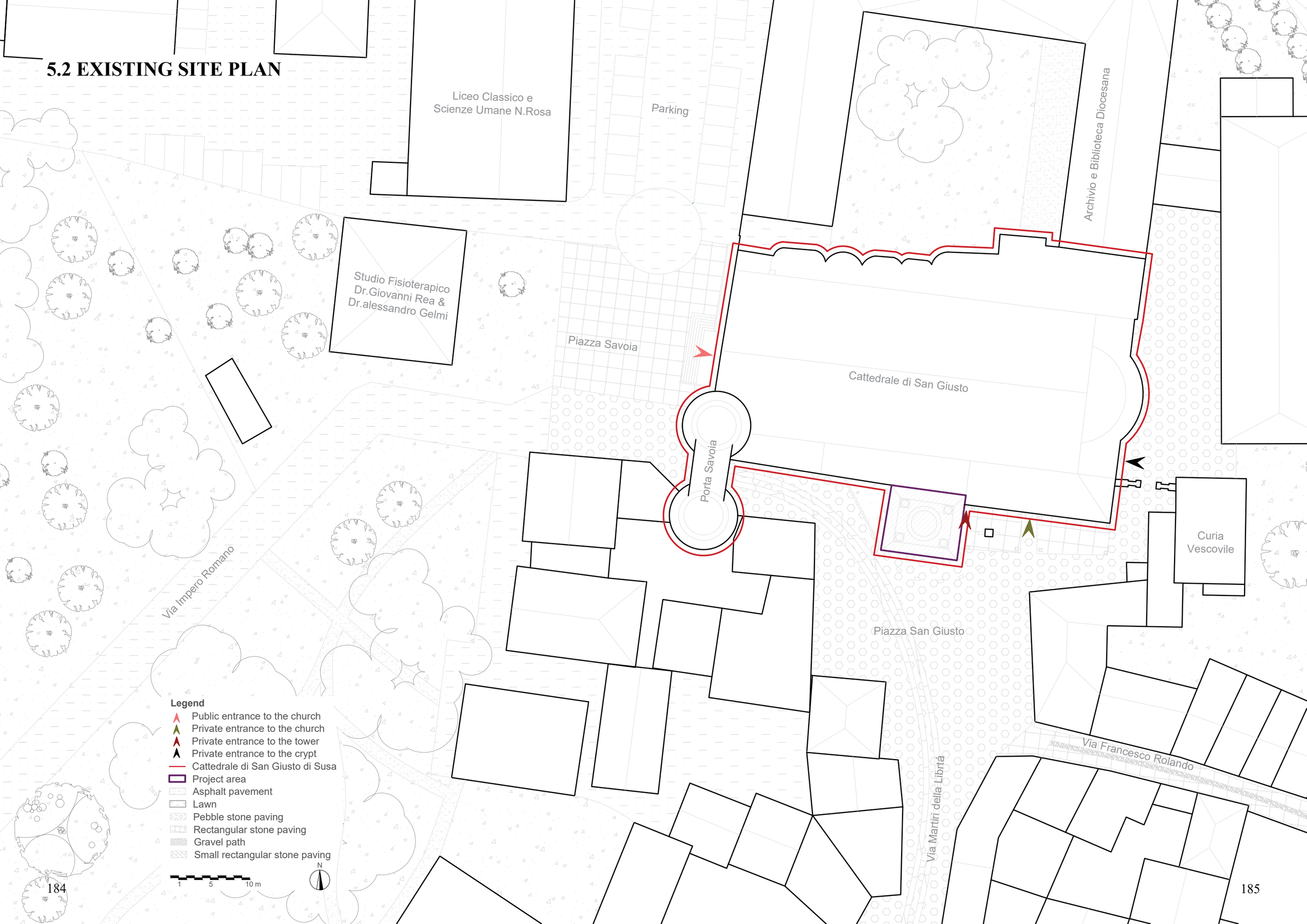
The new solutions are easily distinguishable from the historic structures. The new wooden decks are not only quick and easy to install but also easy to dismantle, leaving no traces or damage to the original materials. They also serve as convenient ramps for those with disabilities, allowing them to ascend to the required level to visit the tower's ground floor. The modern wood is easily recognizable against the historic paving and also serves as one of the distinguishing features of the pedestrian area.

Among the functional areas, a recreation area with modern, interesting designer tables and stools is particularly noteworthy. All of this is connected through logical visitor circulation along well-designed tourist routes.

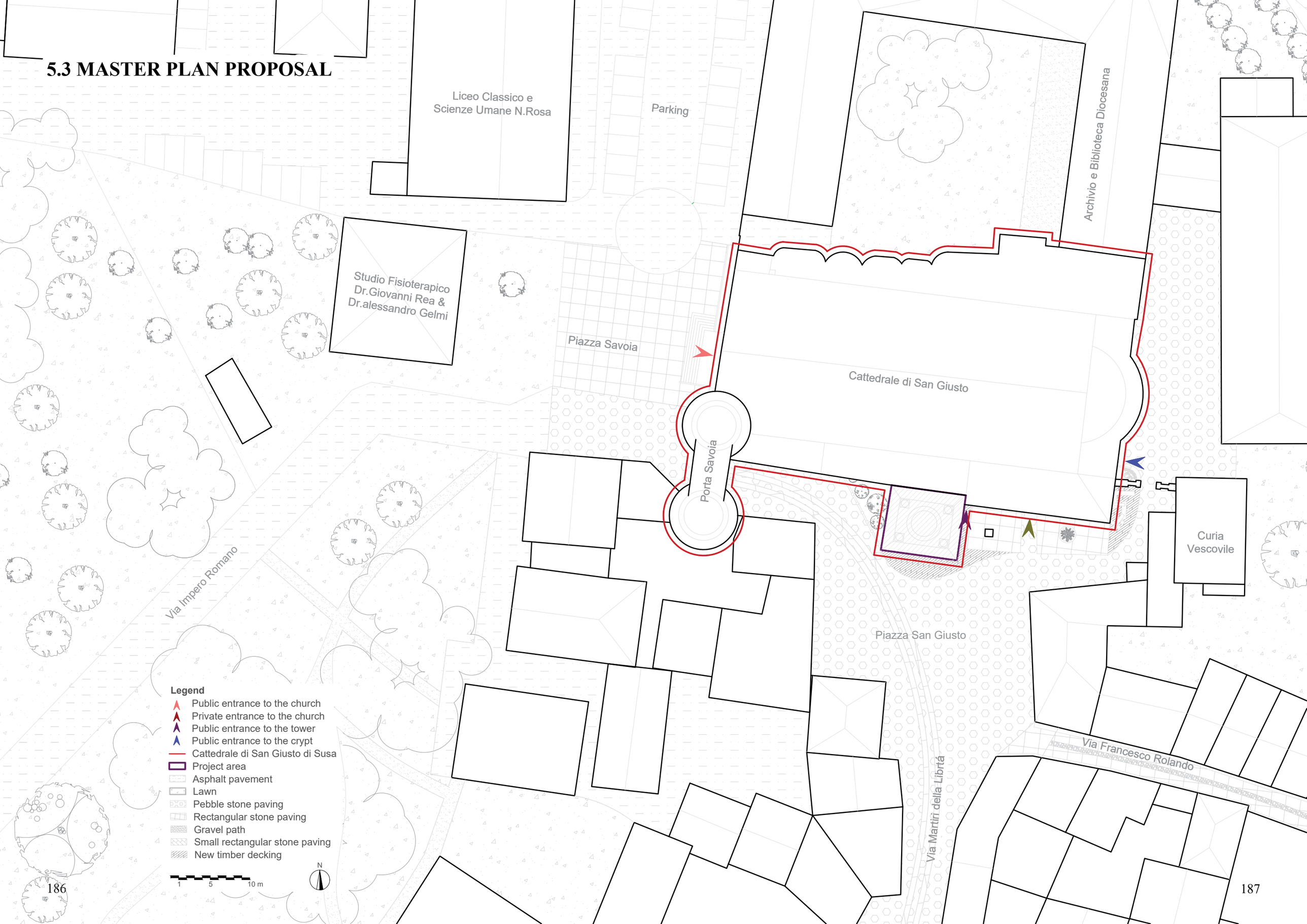
Mobility and accessibility play a central role in the development of the master plan. The design proposal prioritizes pedestrian movement and strengthens the connection between the cathedral complex and other nearby attractions. Existing paths have been better organized, and any barriers that hinder the free movement of people have been removed. The design includes accessible routes and navigation elements that allow visitors of all ages and abilities to comfortably navigate the site.

An electronic ticketing system using QR codes and electronic scanners was proposed. This system eliminates the need for additional staff.

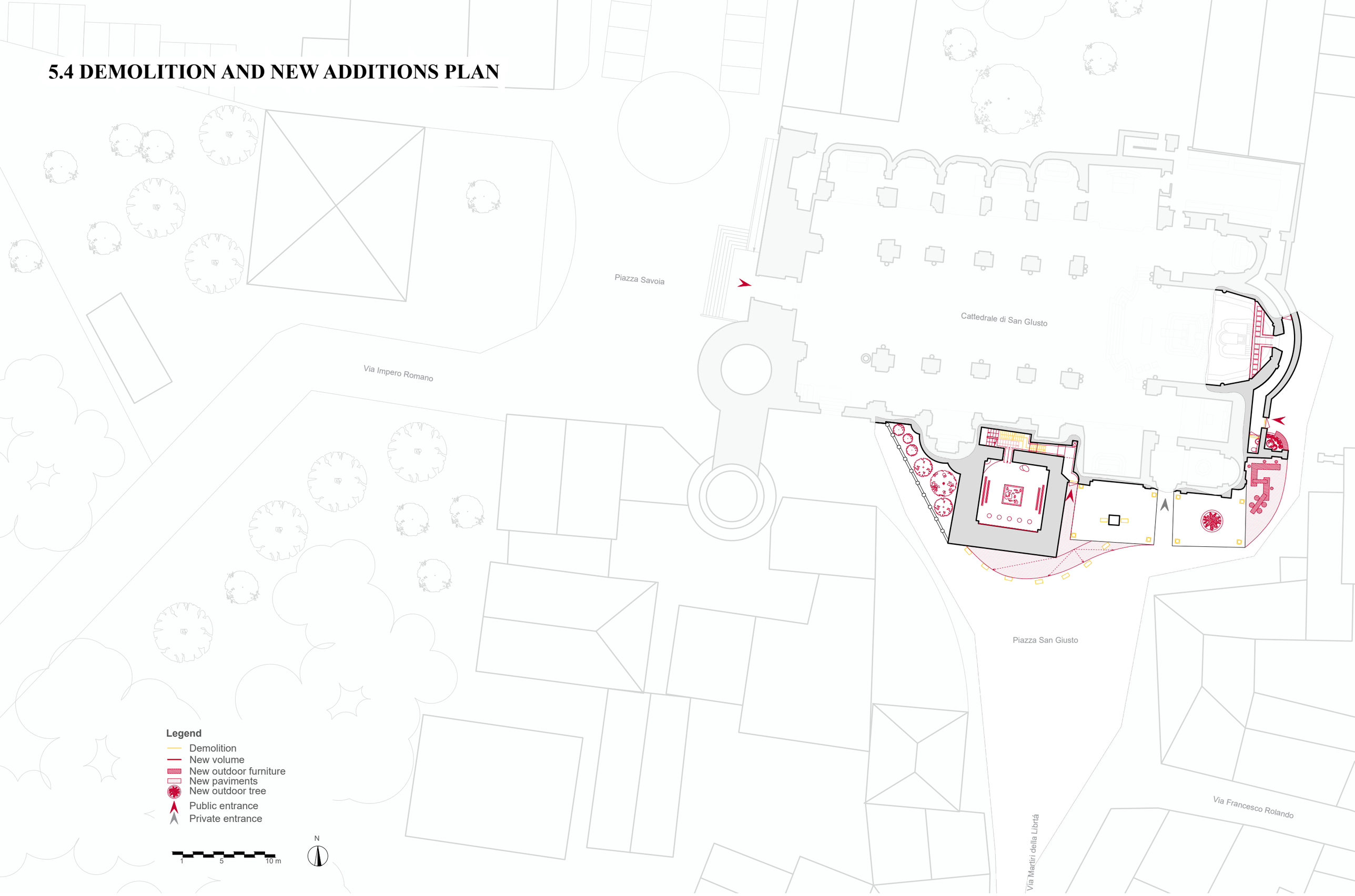
5.2 EXISTING SITE PLAN



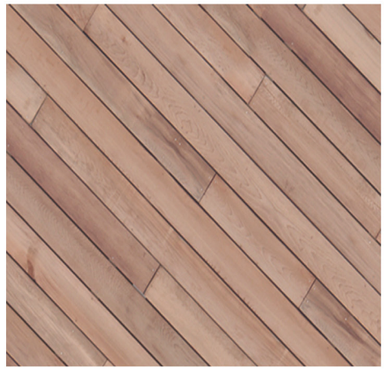
5.3 MASTER PLAN PROPOSAL



5.4 DEMOLITION AND NEW ADDITIONS PLAN



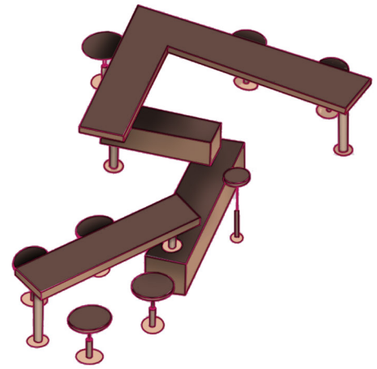
5.5 OUTDOOR DESIGN INTERVENTIONS



New wooden decking made of light-colored boards with a ramp-like slope

New transparent glass door

A live spruce tree in a spcial planter, standing year-round. During the Chrismas season is decorated



New outdoor furniture made of metal construction with wooden covering, consisting of tables and stools connecting to each other

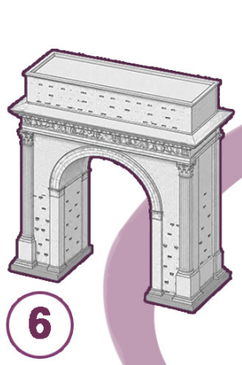
5.6 VISITOR ROUTE PLAN

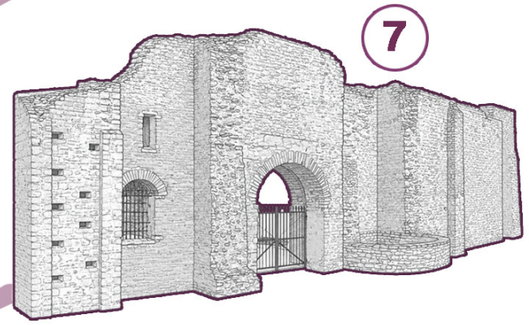
1. Cattedrale di San Giusto Bell tower - panoramic visit and exhibition route
2. Crypt - explore the archeological remains beneath the cathedral
3. Rest area - pouse and enjoy the surrounding public space
4. Porta Savoia - discover the historic city gate and urban connection
5. Cattedrale di San Giusto - visit the cathedral and its heritage spaces

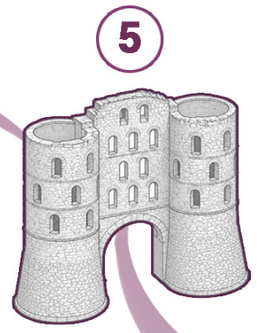
5.7 VISITOR ROUTE PLAN FOR CAR OWNERS

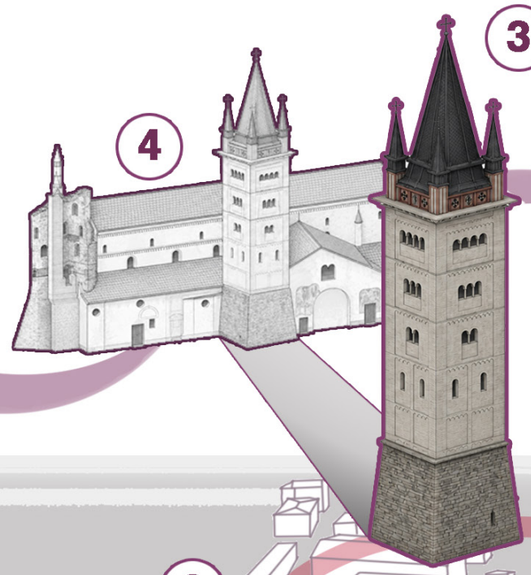
1. Park your car in a convenient place
2. Cattedrale di San Giusto - visit the cathedral and its heritage spaces
3. Porta Savoia - discover the historic city gate and urban connection
4. Cattedrale di San Giusto Bell tower - panoramic visit and exhibition route
5. Crypt - explore the archeological remains beneath the cathedral
6. Rest area - pouse and enjoy the surrounding public space

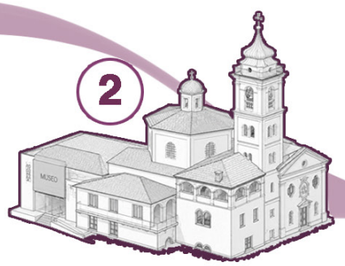
5.8 CITY VISITOR ROUTE PLAN

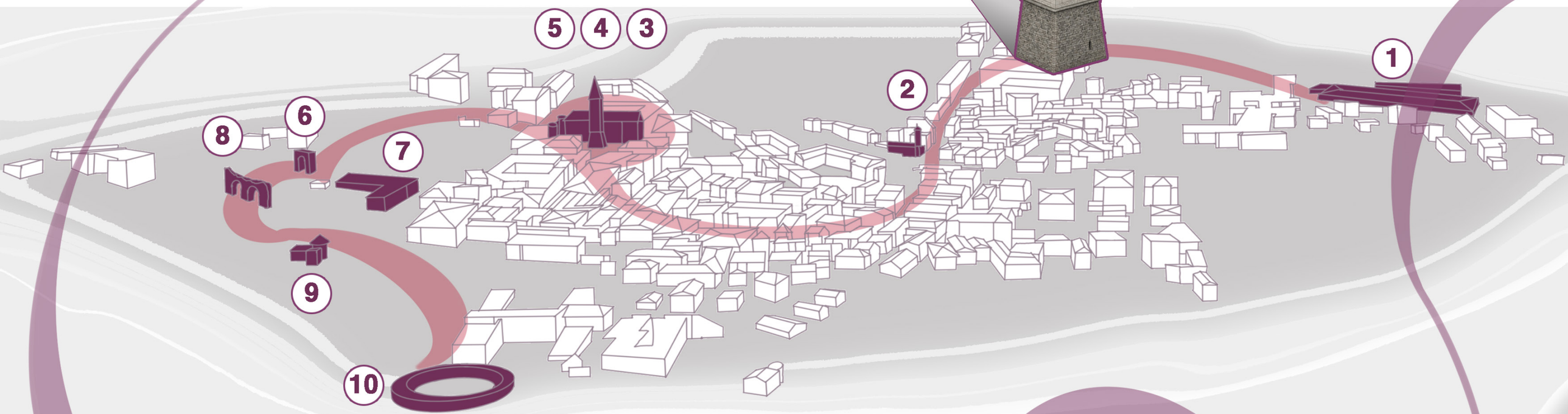


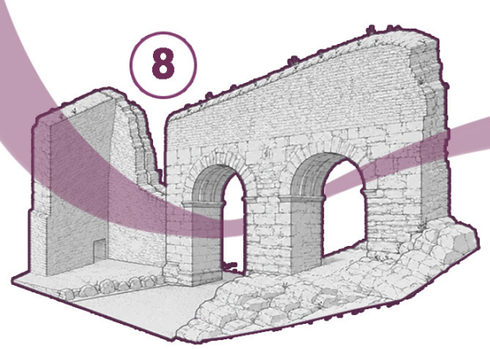


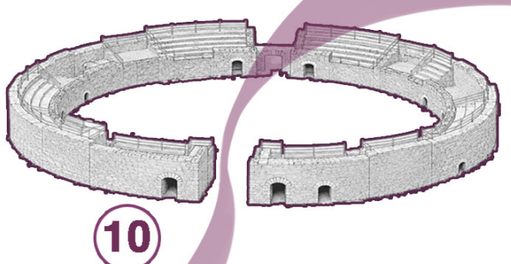












1. Train station - Susa
2. Museo Civico e Diocesano di Arte Sacre
3. Bell Tower - exhibition area
4. Cattedrale di San Giusto
5. Porta Savoia
6. Arco di Augusto
7. Castello della Contessa Adelaide
8. Ruins of Graziane Baths and Roman aqueduct
9. Chiesa Santa Maria delle Grazie
10. Anfiteatro Romano di Susa

CONCLUSIONS

CONCLUSIONS

During the course of this master's thesis, the possibility of using the Cattedrale di San Giusto Martire bell tower in the city of Susa was investigated in order to preserve it, enhance its cultural value and integrate it into the modern life of the city. The conducted research has shown that architectural heritage that has lost its original function can be successfully rehabilitated through delicate adaptation, careful adaptation to modern needs of society while preserving their historical and cultural significance.

The historical analysis of the cathedral and its bell tower revealed the unique diverse character of the territory, which was shaped by centuries of architectural transformations and cultural development. The complex has become an important witness to the history of the region and a reflection of various periods of architectural, religious and artistic evolution. Despite its uniqueness, the bell tower is currently closed to visitors and cannot unleash its full cultural potential and role in urban cultural life. Over the years, while the tower was abandoned, problems appeared with various structural elements, and public interest gradually waned.

The study examined modern approaches to the conservation and adaptive use of cultural heritage sites, as well as international experience in adapting historical towers, religious buildings and museum spaces. The obtained results confirmed that the preservation of the monument cannot be considered solely as a process of preservation by a material structure. To ensure the long-term existence of the historical site, it is necessary to create conditions for its sustainable use, economic viability and public demand.

The proposed design project and its concept create a real cultural and exhibition center from the bell tower, accessible to both locals and visiting tourists. The project is a kind of route that gradually reveals the history of the building, its architectural features and its evolution over time. Each level of the tower has a specific goal. Special attention is paid in this case to the preservation of the interpretation of authentic historical elements including decorative fragments, frescoes, architectural remains and structural materials found inside the tower. Instead of getting rid of these objects, they have become a significant part of the exhibition, which serves as a link between the history and the uniqueness of the territory.

One of the key principles of the project is minimal interference with the historical structure of the building. All new elements are designed in such a way as to preserve the readability of the original architecture and emphasize its value. Modern materials and structures are used as an independent layer that does not imitate the historical environment, but enters into a respectful dialogue with it. This approach allows us to preserve the authenticity of the object and at the same time ensure its compliance with modern safety and comfort requirements.

Accessibility for visitors plays a major role in the project proposal. Despite the fact that the structure of the building itself does not allow for a complete vertical system with access to each floor, the project aims to create as accessible an environment as possible. The ground floor is fully accessible to people with disabilities and contains basic information about the history, architecture and significance of this cathedral complex.

This shows that even people with disabilities will still be able to interact with and read educational content. Interactive expositions, Digital technologies and modern integrations that help develop understanding can be found on any of the floors of the tower.

An important part of the study was the study of the urban context and the tourist potential of the court. An analysis of the territory showed that the cathedral is only one of the many historical sites of the city that can be combined into a single tourist system.

The proposed master plan is aimed at strengthening the links between the main attractions of the city and creating a consistent cultural route. This approach contributes not only to an increase in the tourist flow, but also to the formation of a more holistic perception of the historical heritage of the city.

The research part of the project includes a site visit, photographic documentation, archival research and the development of an electronic model based on 3D scanning. The information collected made it possible to examine and study the condition of the building in detail and served as the basis for the project proposal. The use of modern electronic technologies shows their effectiveness in following the architectural heritage and design.

The results of the work confirm that adaptation can become an effective tool in preserving historical buildings in small towns, where traditional ways of financing restoration are often insufficient. The proposed concept creates prerequisites for the emergence of a sustainable model of the facility's operation, in which the income from tourism activities can be partially used for its further maintenance and preservation.

Thus, the adaptive reuse of the bell tower of Cattedrale di San Giusto Martire project demonstrates the possibility of a harmonious combination of the principles of heritage preservation and modern needs of society. The proposed solution allows preserving the historical value of the monument, revealing its potential to a wide audience and integrating the object into the cultural and tourist life of the city. The project shows that careful adaptation of historical buildings can not only prolong physical existence, but also give them a new meaning in the modern world, ensures the preservation of cultural heritage for future generations.

In the long term, the implementation of such projects can become an effective tool for preserving the historical environment of small towns in Italy.

BIBLIOGRAPHY

BOOKS

4 Bartolomasi, N. Ancient Valsusa. Volume I: The Origins – The Celts – The Romans. Editrice Alzani, 1995

5 Bartolomasi, N. Ancient Valsusa. Volume II: Church – Empire – Barbarians. Editrice Alzani, 1985

6 AAVV. Valle di Susa – Art Treasures – The Artistic Heritage of the Susa Valley. Turin: Umberto Allemandi & C., 2005

7 Bertolo, B. History of the Susa Valley from the 19th Century to the Present Day. Susalibri, 2009

8 Alpine Art and Culture Treasures Project. Alpine Religious Art Itineraries. Susa Valley. Borgone Susa, 2009

9 Alpine Art and Culture Treasures Project. Alpine Culture and Nature Itineraries. Susa Valley. Borgone Susa, 2010

10 Alpine Art and Culture Treasures Project. Itineraries of Alpine Culture and Nature. Valleys of Bardonecchia. Borgone Susa, 2009

11 Alpine Art and Culture Treasures Project. Alpine Culture and Nature Itineraries. Oulx Plain and Cesana Valleys. Borgone Susa, 2013.

13 Lomagno, P. Il Regno dei Cozii. Ivrea: Priuli & Verlucca, 1991

14 Stanford Alpine Archaeology Project. Hannibal in the Alps: Stanford Alpine Archaeology Project, 1994–2006

15 Cavargna Bontosi, M. L'Arco e la forma urbana della città di Susa. Segusium, Anno XXXI, n. 33 bis, October 1994

16 Cavargna Bontosi, M. La strada romana "Per Alpes Cottias". Segusium, Anno XXXVI, n. 38, September 1999

17 Dezzani, L.; Patria, L. Dalla Segusio romana alla villa Secusie medievale: forme urbane, strade e risorse ambientali. Segusium, Anno XLVI, n. 48, September 2009

18 Dezzani, L.; Patria, L. Territorio, strade e città fortificate: tarda antichità e medioevo a cavallo delle Alpi. Segusium, Anno XLVII, n. 49, September 2010

33 Elena MAINA, La Cattedrale di San Giusto di Susa: problemi di conservatori e restauro, Tesi di laurea, Politecnico di Torino, 1993

35 ICOMOS. 1964. International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter). Venice: Second International Congress of Architects and Technicians of Historic Monuments.

36 ICOMOS. The ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites (Ename Charter 2008)

WEBSITES

1 Encyclopaedia Britannica. Ancient Italic People: Other Italic Peoples. Retrieved September 6, 2025, from https://www.britannica.com/topic/ancient-Italic-people/Other-Italic-peoples

2 History Files. The Celto-Ligurians. Retrieved September 6, 2025, from https://www.historyfiles.co.uk/KingListsEurope/BarbarianCelto-Ligurians.htm

3 Wikipedia. Ligures. Retrieved September 6, 2025, from https://en.wikipedia.org/wiki/Ligures

12 Centro Culturale Diocesano della Valle di Susa. Storia della Valle. Retrieved September 6, 2025, from https://www.centroculturalediocesano.it/storia-della-valle.html

19 Il Meteo. (n.d.). Climate averages in Susa. Retrieved December 6, 2025, from https://www.ilmeteo.it/portale/medie-climatiche/Susa

20 Wikipedia. (n.d.). Dora Riparia. Retrieved December 6, 2025, from https://en.wikipedia.org/wiki/Dora_Riparia

21 Tuttitalia. (2024). Population statistics of Susa: age, gender and marital status. Retrieved December 6, 2025, from https://www.tuttitalia.it/piemonte/23-susa/statistiche/popolazione-eta-sesso-stato-civile-2024/

22 Istituto Nazionale di Statistica (ISTAT). (n.d.). Official statistical database. Retrieved December 6, 2025, from https://www.istat.it

23 UNESCO World Heritage Centre. (n.d.). Sacri Monti of Piedmont and Lombardy. Retrieved December 6, 2025, from https://whc.unesco.org/en/list/987

24 Google Maps. (n.d.). Susa, Piedmont, Italy. Retrieved December 6, 2025, from https://www.google.com/maps

25 EVV. (n.d.). Official website. Retrieved December 6, 2025, from https://evv.it

26 Ecobnb. (2013). La sorpresa Rocciamelone. Retrieved December 6, 2025, from https://ecobnb.it/blog/2013/09/la-sorpresa-rocciamelone

27 PeakVisor. (n.d.). Parco Naturale della Val Troncea. Retrieved December 6, 2025, from https://peakvisor.com/park/parco-naturale-della-val-troncea

28 Italy Review. (n.d.). Lago Grande di Avigliana. Retrieved December 6, 2025, from https://www.italyreview.com/lago-grande-di-avigliana

29 Via Francigena. (n.d.). The Sacra di San Michele. Retrieved December 6, 2025, from https://www.viefrancigene.org/it/blog/the-sacra-di-san-michele

30 Turismo Torino e Provincia. (n.d.). Official tourism portal of Turin and Piedmont. Retrieved December 6, 2025, from https://www.turismotorino.org

31 OpenStreetMap. (n.d.). OpenStreetMap geographic database. Retrieved December 6, 2025, from https://www.openstreetmap.org

32 Evendo. (n.d.). Susa Cathedral visitor information. Retrieved December 6, 2025, from https://evendo.com/locations/italy/val-di-susa/landmark/susa-cathedral

34 Visit Bergamo. Campanone – Civic Tower. Retrieved May 16, 2026, from https://www.visitbergamo.net/en/oggetto/campanone-civic-tower/