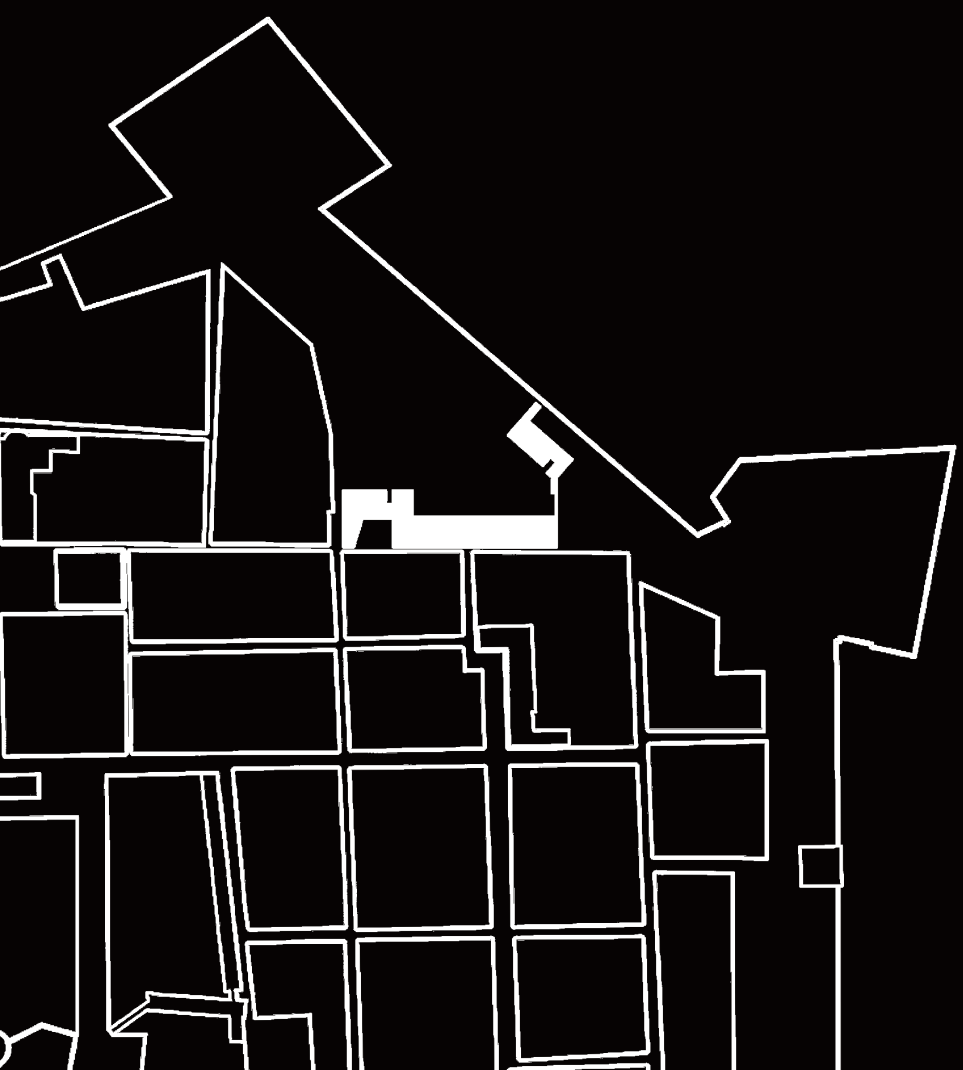


REGENERATION OF MARGINAL SPACE

A HOUSING COMPLEX IN SPALTO BRESCIANI

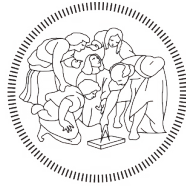


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POLITECNICO
MILANO 1863



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TESI DI LAUREA MAGISTRALE
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POLITECNICO DI **MILANO**
SCUOLA DI **ARCHITETTURA URBANISTICA INGEGNERIA DELLE COSTRUZIONI**
POLO TERRITORIALE DI **MANTOVA**

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ABSTRACT

The site of this project is in Sabbioneta, a UNESCO-listed Italian town. The city is also known as the ideal city of the Renaissance, but as the years have passed, although most of the buildings are well preserved, the city has increasingly lost its vitality, the structure of its inhabitants tends to age, and a significant portion of the city's architecture and landscape with its characteristic fortifications are in an unused state.

Spalto Bresciani is a huge green space between the city and the bastion area, adjacent to the Palazzo Forti (now a library and workshop and part of the internal accommodation). The design focuses on the possibility of using the urban marginal space. By analyzing the original urban structure and characteristics, we try to use architectural methods to intervene in the revitalization and utilization of the urban marginal space, hoping to improve the whole function and urban structure of Sabbioneta, in order to activate the old city.

GENERAL INFORMATION OF SABBIONETA



i. Introduction



Figure 1 Aerial photo of Sabbioneta

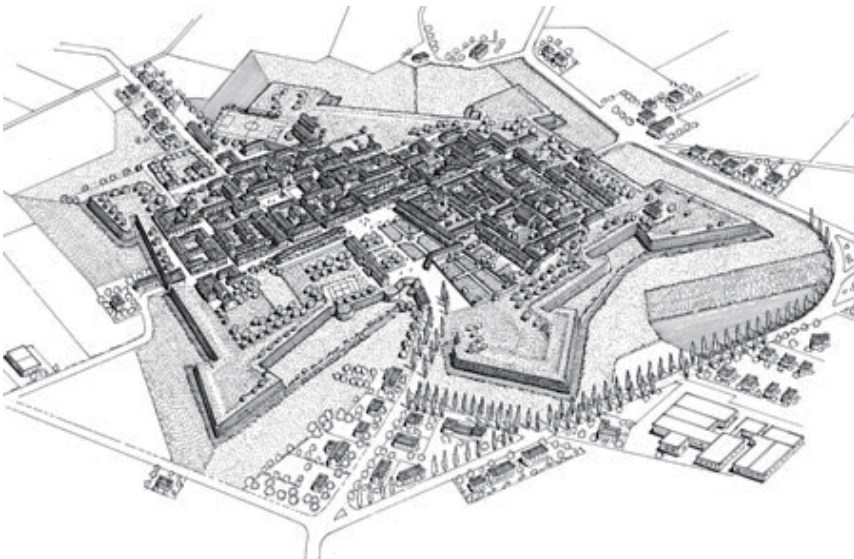


Figure 2 Old map of Sabbioneta

The construction of the fortifications of Sabbioneta, ordered by Vespasiano Gonzaga, began during the second half of the 16th century. The intent of the future duke was to provide the capital of his fief with a modern defensive system, consisting of bastions and embankments able to withstand the artillery attacks.

An extended wall in the shape of an irregular hexagon was therefore designed, about six to seven meters high compared to the ground level, composed of an external brick lining supported by buttresses and by a mass of earth behind it and backfill, sloping down towards the inside and surrounded on the outside by a large moat. Six pentagonal bastions (San Nicola, San Giovanni, San Giorgio, Sant'Elmo, San Francesco, Santa Marta) are planned at the corners, connected by straight lines. The walls also include the pre-existing castle of medieval origin and its moat, along the perimeter of the circuit in the stretch between the bastions of San Francesco and Santa Maria. The layout of the fortifications is finally completed with the opening of two doors in the shape of triumphal arches, to the south-east Porta Imperiale and north-west Porta Vittoria) of the walls.

In addition to the walls, the defensive system was progressively improved even after the death of Vespasian through a series of complementary works, with ravelins, lunettes and a road sheltered by embankments, which together form a second star-shaped wall outside the hexagon of the walls.

ii. History of Sabbioneta City

/ Timeline of Sabbioneta City

Early history of Sabbioneta

AD 759

The early history of Sabbioneta was determined fairly accurately by local historians, despite the paucity of documentary sources. According to A. Grandi, "In 759 AD Desiderius, the last king of the Lombards, donated Cicognara to the nuns of Santa Giulia in Brescia and also he founded the monastery of Benedictine monks of Leno. To these donations Emperor Charlemagne added Sabbioneta.

AD 770-800

This donation is attested by the diplomas of some kings who succeeded him in the lordship of Italy, even if the year of the donation is uncertain. Perhaps it was made between 770 and 800 AD, when, after the capture of Pavia, Charlemagne obtained the kingdom of the Lombards" .

AD 924

Regarding the early Middle Ages, it is a bit difficult to establish reliable data about Sabbioneta. However, the information provided by the "Codice Diplomatico Cremonese" confirm the hypothesis of local historians: "The County of Brescia is crossed by the Oglio river and it reached Cremona, extending up to Sabbioneta [...] Here there was the Royal Court of Sabbioneta, which was sold in 924 AD by King Rudolf to the Bishop of Parma, and later it passed to the Monastery of Leno and, starting from the eleventh century until the thirteenth century, it was ruled by a line of counts of Germanic law settled in Brescia."

AD 958

The "Codice Diplomatico Cremonese" adds that "A. F. Zaccaria (6) spoke of the possessions of the Abbey, stating that in 958 AD King Berengar II and Adalbert confirmed Sabbioneta to the Monastery.

AD 1034

In the 11th century we find Bosone as Count of Sabbioneta , and his son Ugo in 1034" .

Medieval Sabbioneta

The medieval history of Sabbioneta appeared, especially to historians of the past, rather difficult to trace. The main reason for so many uncertainties derived, ultimately, not so much from an absolute lack of documents as from the fact that, after the fall of the Carolingian Empire, there was the rise of the power of Bishops and especially of many feudal lords called "capitanei" linked to the bishops of the Italian cities who, under the protection of the bishops, divided the country among themselves and governed a myriad number of personal property, which are extremely difficult to define.

11th Century

Among the various feudal lords who ruled over Sabbioneta, the family of the Da Dovara, linked to the bishop of Cremona, played an extremely important role. According to studies by F. Menant, the family of the Da Dovara became very powerful with Buoso Da Dovara, and it was one of the "most powerful noble families of Cremona, where they arrived at the beginning of the eleventh century, obtaining episcopal estates.

AD 1246

G. A. Zanetti wrote that, coming to Cremona, the Emperor Frederick II (1194-1250) knew especially Buoso Da Dovara as the most loyal of his party, and he invested him with Sabbioneta, with a diploma given January 2nd, 1246, already preserved in the Royal Archive.

AD 1267

After the fall of Buoso (1267), the Da Dovara were banished from the city, and they lost all political influence, whilst retaining much of their feudal possessions ... augmented by numerous purchases (that we know especially since the 13th century), which extended mainly in the eastern part of the diocese, along the Po and Oglio rivers.

Recent History Of Sabbioneta

The history of Sabbioneta, as it is today, began with the cadet branch of the Gonzaga of Mantua, and, above all, with Vespasiano Gonzaga (1531 - 1591), a Renaissance Prince, a learned man and a true lover of ancient Greek and Roman art and antiquity. Vespasiano Gonzaga was the son of Luigi Gonzaga called "Rodomonte" (1500-1532, killed in battle), a man at arms belonging to a cadet branch of the Gonzaga family, and of Isabella Colonna (1513-1570). In 1540 Vespasiano inherited Sabbioneta from his grandfather Ludovico Gonzaga (1481-1540).

AD1554-1556

During the years 1554 and 1556 Vespasiano began to transform the old medieval village, with the fortress, the circuit of the walls and providing various residences, decorated with antique pieces and frescoed with images evoking myths and history of Rome.

Second Half Of The 16th Century

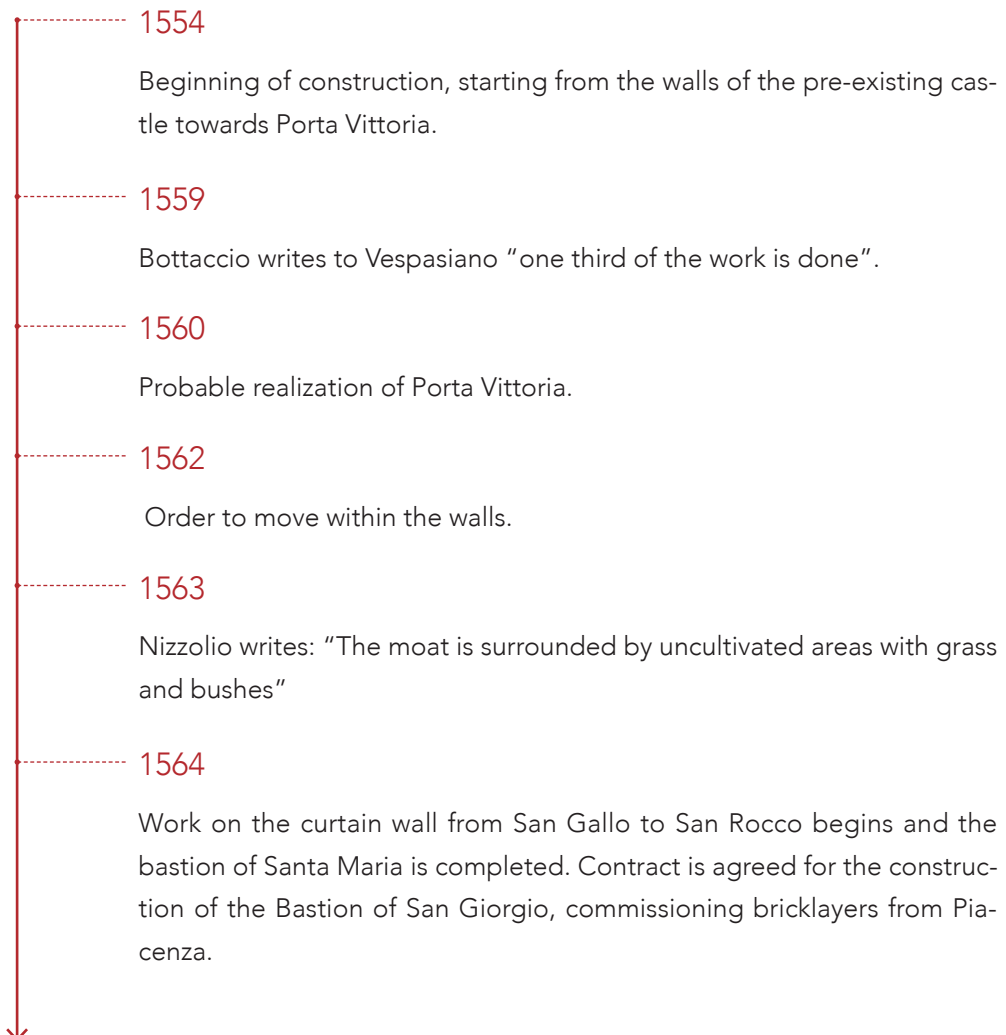
The construction continued throughout the second half of the 16th century with "Palazzo Ducale", "Galleria degli Antichi", "Palazzo del Giardino", and "Teatro all'Antica" .

18th Century

The numerous purchases and inventories of Buoso and some of his relatives suggest that the Da Dovara earned an impressive private income from this territory" (10). Also some historians of the 18th century were fully aware of the importance of Buoso Da Dovara, who had Sabbioneta in fief by the great Frederick II of Swabia.

/ Timeline Of Sabbioneta City Wall

The following timeline illustrates the main phases of construction and transformation of the walls of Sabbioneta from the sixteenth to the nineteenth century, as well as how these are documented on the basis of reconstructed historical information from the library of the State Archives of Mantua.



1568

Five bastions are constructed.

1578

Completion of the sixth bastion (San Francesco).

1578-1579

Completion of the Porta Imperiale (memorial plaque) and the curtain wall between the Bastion of Sant'Elmo and San Francesco.

1589

De Dondi writes: "In the month of April 1589 his excellency the Duke had poplars planted on all the bastions that surround the city of Sabbioneta and replaces all those that had gone missing behind the curtain walls".

1590

The covered road is finished.

XVII sec.

The ravellin of Porta Vittoria is built, the Porta Imperiale is walled up and the corresponding bridge is demolished.

1703

The Austrians reopen the imperial gate and sell the state properties.

1794

Demolition of the castle.

1914-1919

Wall demolition project.

1921-1924

Demolition of the ramparts between the bastions of the San Nicola and San Giovanni, as well as the ramparts between the bastions of the San Francesco and the remains of the castle.

/ Old Map of Sabbioneta



1. The city is represented complete with roads and outlines of buildings, even if the walls are represented as simple lines. The city walls are surrounded by a large moat, which also encloses the castle. Inside the moat, there are two ravelins in front of the doors and a lunette between the bastions of San Giorgio and San Giovanni. The external embankments are very articulated and reinforced at various points by counterguards.



2. The map is from before the demolition of the castle in 1794. The drawing takes up where the Theresian Cadastre left off, but at the bottom it shows the original facade of Porta Imperiale, identical to that of Porta Vittoria and with references to the Porta di San Zeno (San Zeno gate) in Verona, by Paolo Sanmicheli. You can also see the two ravelins on the other side of the gates.



3. The map shows the drawing of the Theresian Cadastre.



4. It is a map of the Theresian period, which can be dated between 1774 and 1786. It represents the buildings inside the walls (including the castle) and the fortified structures inside (walls) and outside (embankments), highlighting the slopes with a handwriting style that emphasizes the survey. In addition to both ravelins, there is a lunette between the bastions of San Giorgio and San Giovanni.



5. It is a simplified map that recreates the municipal territory as a union framework. The representation of Sabbioneta is summarized, in particular by merging the buildings inside the same blocks, but still entirely consistent with the Theresian cadastre with regard to fortifications, moat and external layout.



6. The city, the walls and the external embankments follow the conformation represented in the Theresian Cadastre, with the only significant exception of the castle, identified as an outline left uncoloured as it was demolished. The fortifications are depicted not with simple lines, but through the highlighting of the thickness of the wall covering.



7. Due to the updates made in the first decades of the twentieth century, the cadastral planimetry already illustrates the opening of the breaches to the south-west and north-east of the walls. However, there are some elements that recall the original design that was gradually destroyed, with particular reference to the moat, still attached to the bastion of San Nicola and characterized by parallel channels along the site of the ancient river bed (outside the bastion of San Giovanni, the Bresciani ramparts and the bastion of San Giorgio).



8. The cadastre of 1956 shows a similar picture to that documented in the hydraulic redevelopment project of 1968, with the two openings to the north-east and south-west further consolidated the moat, which was re-outlined as a result. Even if the external fortifications already appear to be all destroyed, the star-shape that was spreading in the surrounding territory is still partially legible in the structure of the farm estates round the walls.



9. The 1970 cadastre does not provide any further information compared to 1956, representing in fact a picture similar to the current one. To the north-east of the walls there are still elements of the hydraulic system, which in the following decades were further simplified.

iii. Development of Sabbioneta City

/ Demolition of the city wall and the expansion of the city



Figure 3, Demolition project of the walls of Sabbioneta, Town General Plan

In 1914 in Sabbioneta the administration proposed a project for the complete demolition of the walls for sanitary reasons and to encourage the expansion of the city along radial lines. The interventions are implemented only in small part, with the demolition of sections of the ramparts to the east between the San Giovanni bastion and the San Nicola bastion (1921) and to the west between the San Francesco bastion and the remains of the castle (1924).

/ Changes of Land Use

In the 18th century, the walls gradually lost their military function and the internal embankments were used for agricultural purposes. Already the Theresian cadastre (1774) confirms its use as a meadow with mulberry trees. Despite the lack of information about the Lombardy-Veneto period, it can be assumed that, when Sabbioneta was no longer a strategic position, the agricultural uses were further explored. The twentieth-century cadastre show that the ramparts and bastions were generally used for agricultural purposes (meadows, vineyards, orchards, etc.). Agricultural uses survived at least until the middle of the 20th century.



Figure 4 Theresian Cadastre 1774

The Theresian cadastre certifies the transformation of the embankments to agricultural uses: most of the time, a field with mulberries (morus). The surrounding moat, which was probably only partially filled in, was instead used for grazing.

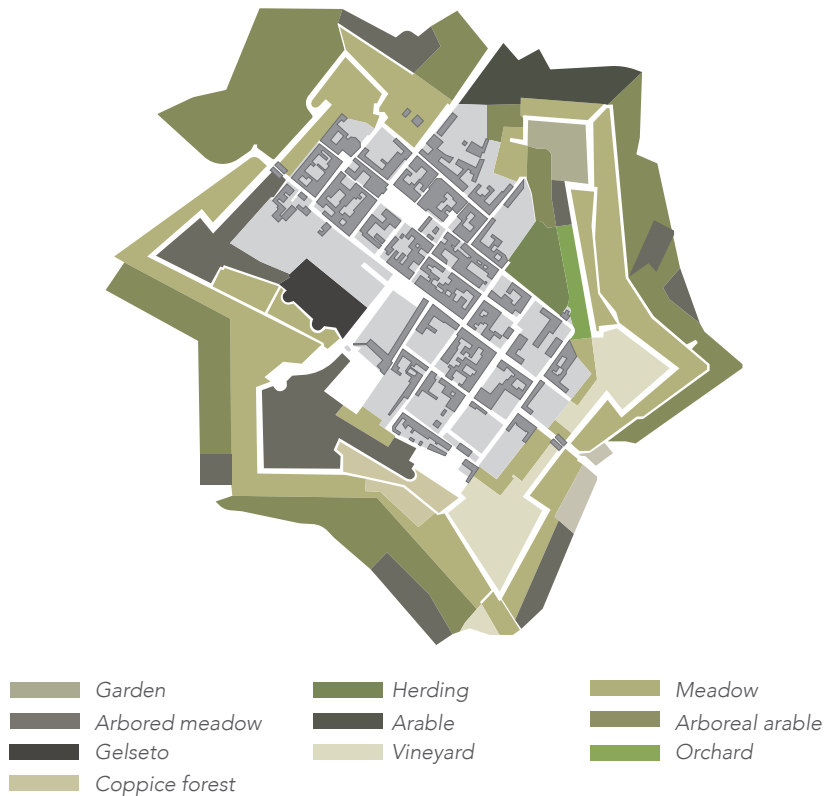


Figure 5 Post-Unification Cadastre (Early 20th Century)

The cadastre of the early twentieth century attests to the rein of agricultural uses, with mainly arboreal crops: especially vineyards and meadows planted with trees on the bastions (except the bastion of San Giovanni, used as a vegetable garden), orchards (the Bresciani ramparts), mulberry trees (area of the former castle) and even meadows with trees. Subsequent updates to the cadastral survey tables also show a progressive and further spread of vineyards towards the end of the twenties.

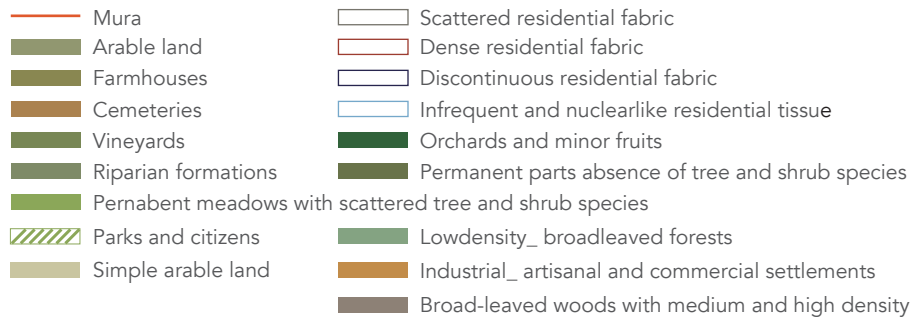


Figure 6 DUSAF(Historic land use and cover) 1954

In 1954 some bastions were converted to parks or gardens (bastions of San Giovanni, San Giorgio, San Francesco), while others were still used for agricultural purposes, with particular reference to tree-covered arable land (San Nicola) and simple arable crops (Santa Maria), as well as orchards (Sant'Elmo). The area of the Bresciani ramparts was partly used as a permanent field and partly as wooded arable land.

iv. General Layout And External Works

Giulio Faroldi, Vespasiano Gonzaga's biographer and contemporary, states that the construction of the walls began in 1541.

The first phase of construction ended in 1568: on that date five out of six bastions were built (with the exception of San Francesco), in addition to the first part of the Duke Palace and Porta Vittoria. This configuration is attested by a heraldic image dated 1564-1577. During this phase, the moat was also excavated, with a water surface up to 35 meters wide.

As Faroldi reports, between 1578 and 1579 the second phase took place, with the construction of the last bastion and Porta Imperiale.

With the third and final phase, conducted by Bassano Tussardi between 1584 and 1600, the connection of the new bastion (San Francesco) and the bastion of Sant'Elmo was completed.

Between 1640 and 1690, Gaspare Beretta, military engineer of the Duke of Milan, built the "new covered road" (the walkway outside the moat and protected from embankments), as well as various upgrades to the warehouses and districts. With the aim of improving the external defences, he also promoted the enlargement of the moat. The system of fortifications was also completed during the 17th century with two half-moon ravelins, one in front of Porta Vittoria and the other in front of Porta Imperiale.

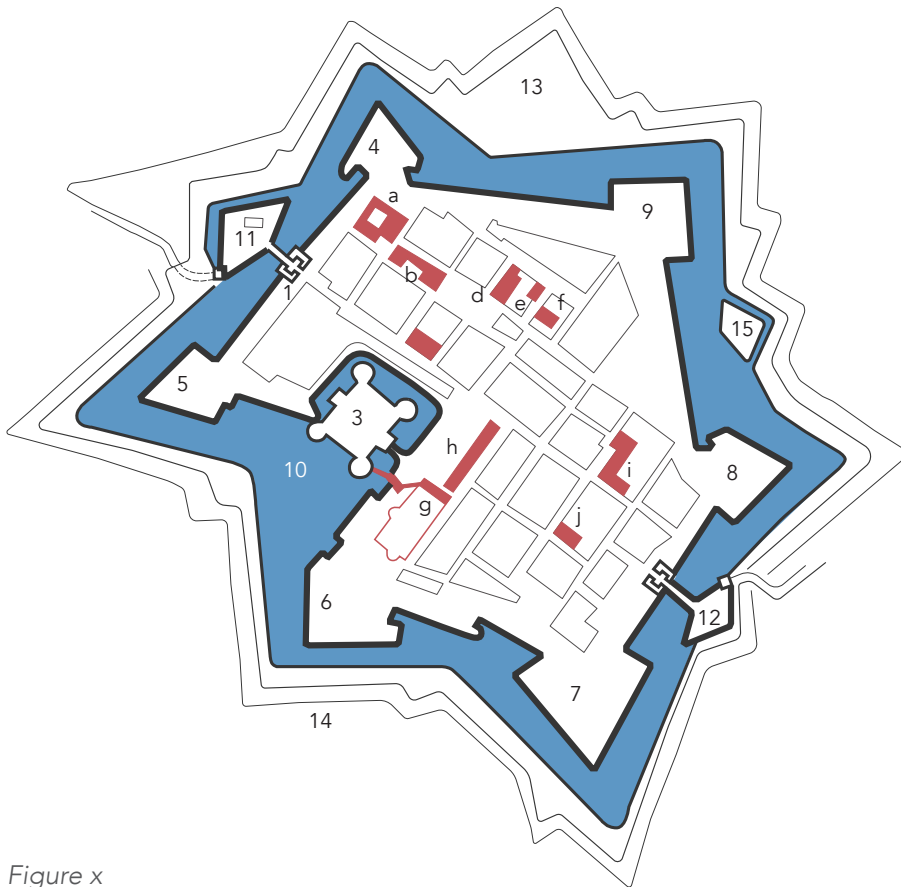


Figure x

Fortifications

1. Porta Vittoria
2. Porta Imperiale
3. Castello
4. Baluardo San Nicola
5. Baluardo Santa Maria
6. Baluardo San Francesco
7. Baluardo Sant'Elmo
8. Baluardo San Giorgio
9. Baluardo San Giovanni
10. Fossato
11. Rivellino nord
12. Rivellino sud
13. Strada coperta
14. Terrapieni esterni
15. Mezzaluna

Monumental buildings

- a. Chiesa dell'Incoronata
- b. Palazzo Ducale
- c. Teatro all'Antica
- d. Chiesa dell'Assunta
- e. Chiesa di San Rocco
- f. Sinagoga
- g. Palazzo Giardino
- h. Galleria degli Antichi
- i. Palazzo Forti
- j. Chiesa della Madonna del Carmine

Figure 7 DUSAF(Historic land use and cover) 1954

In 1794 the castle was demolished, as shown by the evolution of the Theresian cadastre (1774) to the nineteenth-century cadastre (1854). In the 1920s, the municipal project of the demolition of the walls, promoted in 1914 and approved in 1919, was partially implemented. The passages to the north-east (via Pesenti) and south-west (via Giulia Gonzaga) were built, with the opening of wide breaches between the bastions of San Nicola and San Giovanni (1921) and between the bastion of San Francesco and the castle ruins (1924).

Between the nineteenth and twentieth centuries the moat was progressively reduced and diverted. If up to the Lombard-Venetian cadastre (1854) it was still represented in its original size, in the post-unification cadastre (cartography of 1923) it was already downsized, in a configuration similar to the current one. The same project for the demolition of the walls (1919) depicts it as a canal limited to the space immediately at the foot of the fortifications. Finally, the 1956 cadastre and a 1968 hydraulic redevelopment project prove further modifications, in particular with the shifting of the moat outside the perimeter of the San Nicola bastion and the ground on which stood the adjacent curtain wall demolished in 1921.

With the expansion of the building sector in the twentieth century, external defence works were gradually obliterated. In particular, construction was first carried out along the expansion routes of Via Giulia Gonzaga, Via Pesenti and Via Borgofreddo, and then in the area leading to the Panguaneta, while the old covered road was cancelled and replaced by the local and/or sliding road network, with the partial exception of the north-east front, where the weaving of the fields and the farm road network still partly follows the design of the earthen fortifications.

Thanks to the new rules introduced by Bottai laws, the walls surrounding Sabbioneta were finally protected by an open legislative restriction. In 1975, even the immediate surroundings of the walls were finally protected by a specific landscape restriction.

In the Seventies, the first Town General Plan became the expression of these requests for protection, drawing outside the walls a star-shaped area, where there is a building ban as well as required maintenance of green areas, only allowing for restoration and maintenance of the existing structure and its surroundings. In the following decades, through initiatives undertaken by the Council of Sabbioneta in cooperation with the National Office for Archeological Heritage, the walls underwent a series of conservation works and partial restorations.

In 2008 Sabbioneta and Mantua were recognized by UNESCO as world heritage sites. The urban planning council then introduced further and specific protections, beyond the landscape and the walled city, to create a wider “buffer zone” on the basis of an agreement stipulated with the Ministry of Cultural Heritage. The 2016 Territorial Plan of the Government reaffirmed and consolidated this plan.

1_G. Faroldi, Vita di Vespasiano Gonzaga Colonna Duca di Sabbioneta, manuscript preserved at the Accademia Nazionale Virgiliana di Mantova, written around 1587, transcribed and published in E. Marani, Sabbioneta e Vespasiano Gonzaga, Sabbioneta, Pro Loco, 1977, p. 55.



Figure 8 General layout of Sabbioneta

Fortifications

1. Porta Vittoria
2. Porta Imperiale
3. Resti del castello
4. Baluardo San Nicola
5. Baluardo Santa Maria
6. Baluardo San Francesco
7. Baluardo Sant'Elmo
8. Baluardo San Giorgio
9. Baluardo San Giovanni
10. Fossato
11. Percorso al piede delle mura
12. Fortificazioni demolite

Monumental buildings

- a. Chiesa dell'Incoronata
- b. Palazzo Ducale
- c. Teatro all'Antica
- d. Chiesa dell'Assunta
- e. Chiesa di San Rocco
- f. Sinagoga
- g. Palazzo Giardino
- h. alleria degli Antichi
- i. Palazzo Forti
- j. Chiesa della Madonna del Carmine

After the eighteenth century the walls lost their military function and were gradually abandoned, undergoing changes of use, alterations and partial demolition. Nonetheless, the fortifications built by Vespasiano survive today almost in their entirety and constitute a cornerstone of the UNESCO World Heritage Site of Mantua and Sabbioneta., added in 2008.

Thanks to their excellent conservation, the walls of Sabbioneta also offer an extraordinary testimony to the military architecture of the late Renaissance, whose principles are expressed in the treatises of the time. By comparison and because of their geographical proximity, the fortifications of Sabbioneta are closely related not only to the defensive works realized in the nearby Gonzaga fiefdoms, but more generally to the other walled cities of the Po Valley.

v. Chapter Summary

In this chapter, we present information about the location and the history of Sabbioneta, which dates back to the eighth century and has evolved over a long period of time to become one of the most characteristic towns in Italy today. Throughout the development of the town, the main urban structures and architectural functions have not changed dramatically. Most of the city's bastion is well preserved, although some of it has been destroyed, but evidence of its existence can still be found in the urban structure.

Through the comparative analysis of historical maps, we can clearly observe that the most well-preserved parts of the city are the road structure and the block structure of the residential areas, while some important buildings and public spaces such as the theater, the church, the ducal palace and the square continue to play an overarching role in the structure of the city.

The analysis of the historical evolution of Sabbioneta helps us to better understand the character of the city. Likewise, this historical information helps us to think about the problems that exist in Sabbioneta today, in order to propose strategies to solve them.

CURRENT SITUATION OF SABBIONETA



i. Location of Sabbioneta



Figure 9 Geographical relationship of Sabbioneta and Mantova

Sabbioneta is located in the heart of the Po Valley, almost halfway between Mantova and Parma (both about thirty kilometers away), at an altitude of 18 m a.s.l. The river Po flows not far from the municipal area. It borders the province of Cremona and is located a few kilometers from Emilia-Romagna (provinces of Parma and Reggio Emilia). The town is crossed by the 45th parallel, the equidistant line between the North Pole and the Equator.

The territory of the small state of Sabbioneta was mainly concentrated in the eastern extremity of the diocese of Cremona and it represented a necessary crossroads both for trade midway along the Po and for communications between the lowlands of Brescia and Emilia Romagna. The most prosperous period in the history of this city was

in its reconstruction years, in which it was under the dominion of Prince Vespasiano I Gonzaga, which also became his residence. Sabbioneta has been honored with the “orange flag” eulogy of the Touring Club of Italy.

Located on an alluvial plain between the Oglio and Po rivers, Sabbioneta was inhabited since the bronze age. The first organized settlement dates back to the 1st century b.C., perfected in oppidum by the Byzantines, in castrum by the Carolingians and eventually in medieval curtis. In the 11th century, the Benedictine monks start a reclamation process. During the 16th century, after the split of the marquisate at the death of Ludovico II (1478), the Gonzaga family take root in the county through the cadet branches. From this moment the Gonzaga territory is characterized by a multiplicity of small states belonging to the same family while being autonomous from each other instead of the dominion of one seignory: this phenomenon has singular impacts in the territorial settlement structure. A mosaic of “separate lands” results, where the personality of the rulers is set to deeply influence the destiny of the places. Based on the example of Mantua, in the new collateral states to the main one, boroughs and lands like Bozzolo, Gazzuolo, San Martino dall’Argine, Rivarolo, Pomponesco, acquire a noble city structure with its core in the colonnaded square. Such a phenomenon continues throughout the 16th century with exemplary outcomes in Sabbioneta and Guastalla. Of these numerous urban experiments, Sabbioneta is the most striking and accomplished, the only city that was really preserved over time, almost a splinter of the 16th century which has reached our days. Inherited in 1544 by Vespasiano Gonzaga, the small medieval borough changes, in a very short time, into a state-of-the-art stronghold and refined cultural and architectural centre. The superb project of the duke replaces the traces of previous centuries to found a new, fortified, modernly designed city.

ii. Territorial Reading

/ Population Structure

In Sabbioneta live one thousand, six hundred and twenty-four people: seven hundred and seventy-seven are males and eight hundred and 47 are females. There are six hundred and 44 singles (three hundred and thirty-one males and three hundred and thirteen females). There are seven hundred and seventy-four people married, and twenty-two people legally separated. There are also thirty-five divorced people and one hundred and forty-nine widows and widowers.

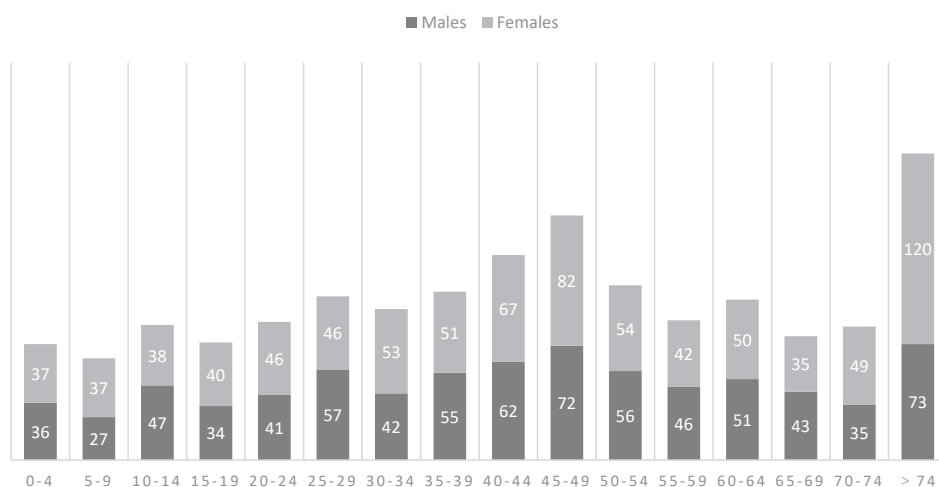


Figure 10 Population Living In Sabbioneta

There are in Sabbioneta 775 people aged 15 years or more. 726 are employed and 35 were previously employed but now are unemployed and seeking for a new job. There are 438 males aged 15 years or more, 421 are employed and 14 were previously employed but now are unemployed and seeking for a new job. There are 337 females aged 15 years or more, 305 are employed and 21 s were previously employed but now are unemployed and seeking for a new job.

/ Slow Mobility

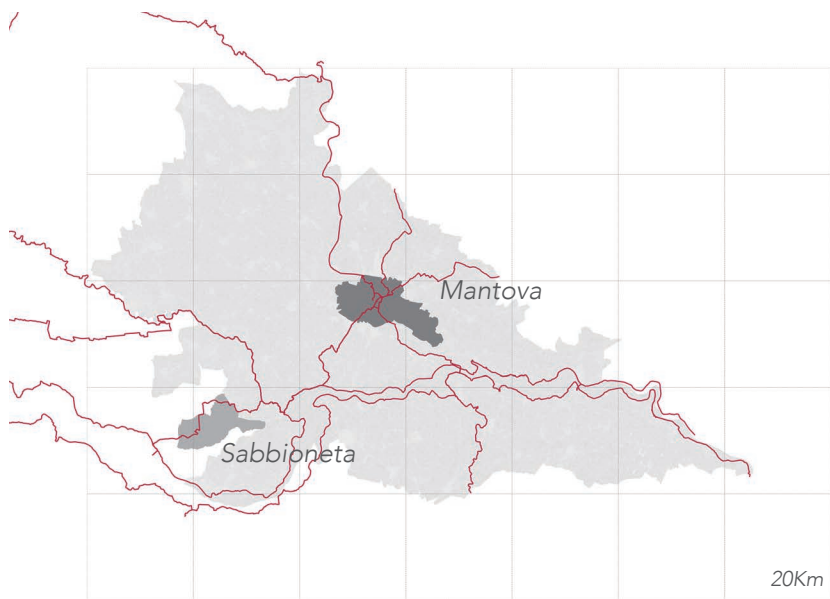


Figure 11 Bicycle paths between Sabbioneta and Mantova

In 2010, in collaboration with the cycling office of the Province of Mantua, a connecting route between Mantua and Sabbioneta was studied. The cycle path, made up of sections of cycle path and sections with mixed traffic but with low vehicular traffic, offers an opportunity for a slow visit, enhancing the historical, cultural and landscape aspects of the area. The route, about 47 kilometers long (from 3 to 4 hours of pedaling), is part of the wider existing cycle circuit that crosses the cities of Mantua or Sabbioneta (Euro Velo 7 and 8, Ciclovía del Sole and Tirrenica). In 2016, with the Mantova & Sabbioneta Biking project, improvements were started on directional and tourist signs, equipped areas for parking and identified further possible variations to the route itself.

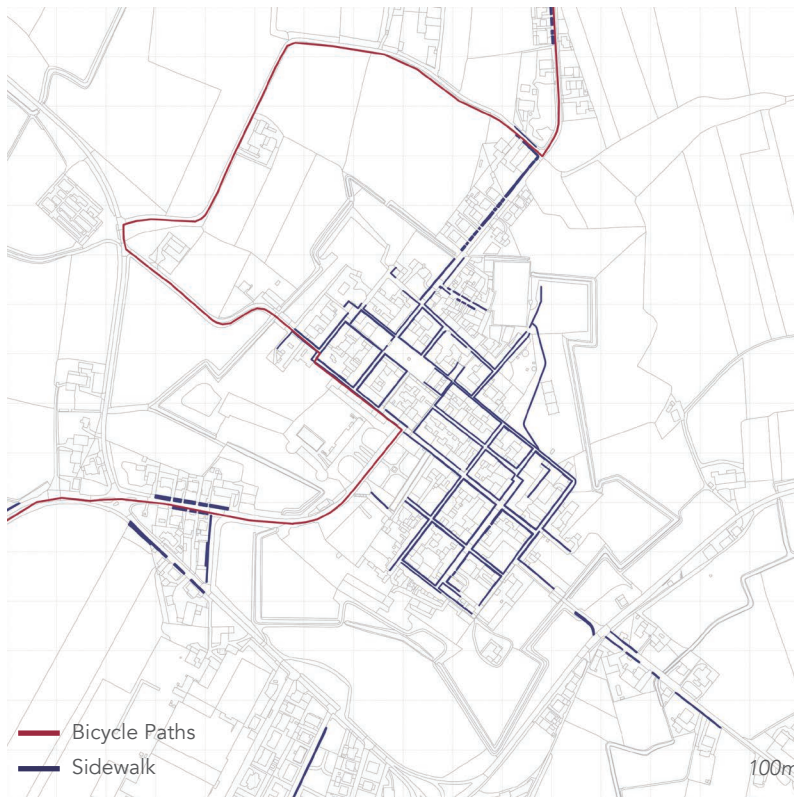


Figure 12, Bicycle paths and Sidewalk in Sabbioneta

The city of Sabbioneta is dominated by pedestrian roads and paved roads. But since gravel and brick paved roads are not suitable for riding. Almost every block is connected by pedestrian paths, and at the same time, the traffic flow of motor vehicles in the city is small, which is suitable for walking. It is worth noting that although there are walking paths within the block, they are rarely connected to the surrounding landscape and the bastion. This also results in low accessibility to landscaped green spaces on the urban fringe.

/ Hospitality Ability Of Sabbioneta

There are 4 main hotels and B&B accommodation as well as 8 bars and restaurants within the sabbioneta urban area. These accommodations can provide dozens of rooms, but they are not suitable for dealing with a large number of tourists or researchers during a concentrated period of time. At the same time, there are relatively few bars and restaurants in the city. As a tourist city, it is difficult to provide tourists with a choice of catering services.



Figure 13 Hospitality ability mapping of sabbioneta

The accommodation offer of the Province of Mantua, with as many as 236 hotel and non-hotel facilities and over 4,700 beds in 2005 has recorded, after the nomination and inscription of the Site in the World Heritage List, a remarkable growth rate of facilities located in the territory and particular non-hotel facilities.

As for the two cities of the site, a clear difference in the trend is noted, especially as concerns the trends of hotel facilities, basically positive for Mantova and negative for Sabbioneta. In the city of Sabbioneta, always compared to the values of 2005, decreases in the tourist accommodation capacity of the hotel facilities (-33.3%) have been recorded, as opposed to, however, a significant increase in non-hotel facilities (+100%), with a total number of 89 beds

in 2017. The average number of beds of hotel facilities in Sabbioneta, on the other hand, record a lower average number of beds (33.5) than the national regional and provincial averages.

The comparison of the current tourist accommodation offer of Sabbioneta versus 2006 shows the remarkable growth in the field of non-hotel facilities (especially Bed and Breakfast facilities) compared to tradition hotel facilities.

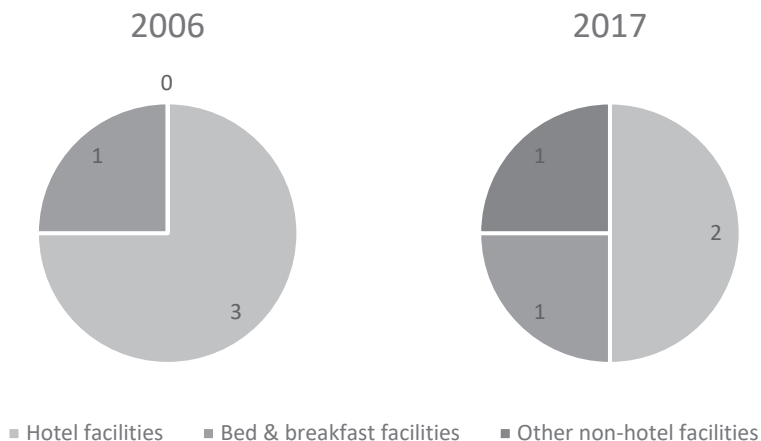
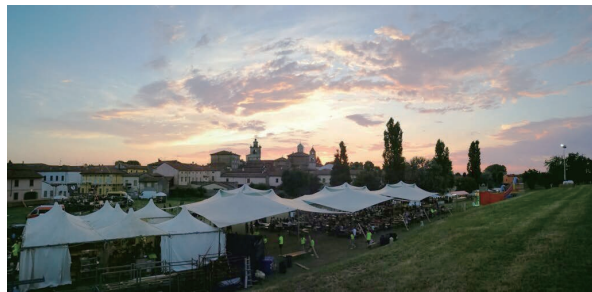
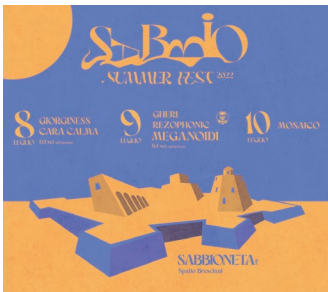


Figure 14 Accommodation

/ Events And Activities in Sabbioneta





Youth Association For Cultural Promotion

Date of birth: summer of 2005, when a group of friends from Sabbioneta undertakes to organize a rock music marathon involving seven bands from the area. Thus, spontaneously, the first edition of the “Sabbio Summer Rock” comes to light, a success beyond all expectations.

What we are: an ideal container to give space to the ideas of our members and to make all young people who want to commit themselves to Sabbioneta protagonists.

What we do: musical, cultural, artistic and aggregation events.

Objective: to become a point of reference for the new generations and to be able to infect everyone with the desire to do and get involved.

iii. Deconstruction Of Sabbioneta

/ Present Sabbioneta Urban Structure

Through this deconstructed analysis of urban structure Sabbioneta, we can clearly identify what it is and how it is composed. In the city of Sabbioneta, the most basic structural elements, buildings, are usually in the form of dwelling groups or individual important buildings (for example Palazzo Ducale) that make up the blocks in the urban fabric. These blocks composed of buildings or walls constitute urban squares and roads while dividing the various areas of the city.

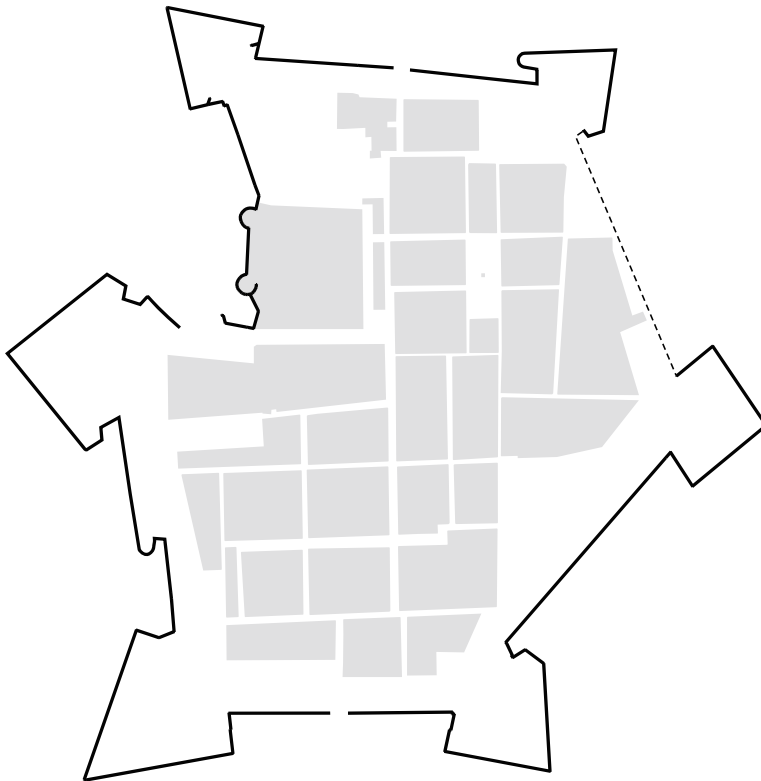


Figure 15 Urban block of Sabbioneta

It is difficult to say whether there was a linear road system in Sabbioneta's initial urban planning, and then formed blocks; or whether different blocks spontaneously formed continuous roads. But it is worth studying that the division of streets and blocks in the whole city exists in a nearly regular grid pattern without any curve elements. This horizontal, vertical and linear gridded urban structure is a very important feature of the city of Sabbioneta. In contrast to the structure of some other cities of Gonzaga family, there is no such apparent gridded system.

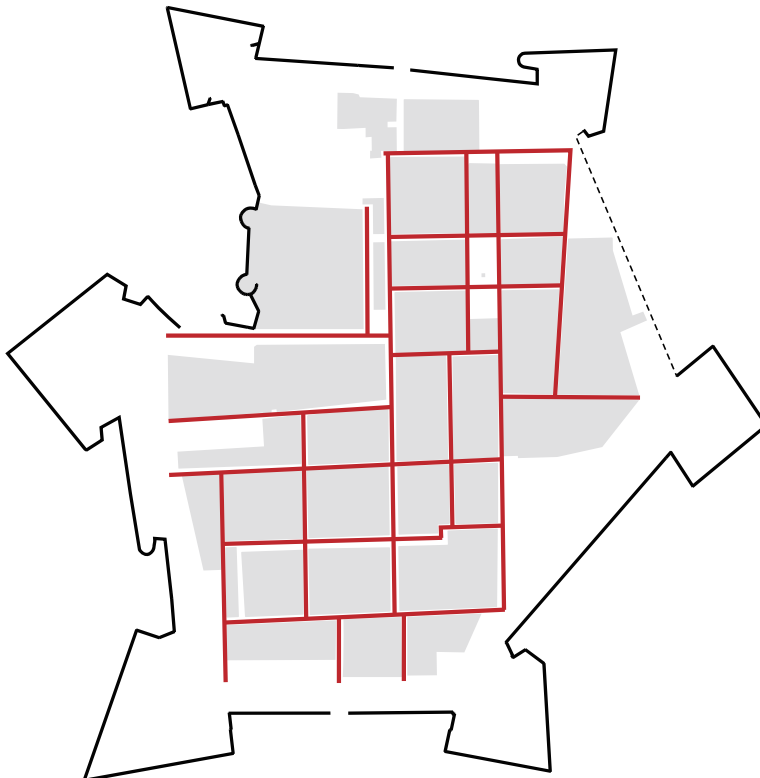


Figure 16 Road system of Sabbioneta

This highly gridded block road system constitutes another important street feature of Sabbioneta: almost all linear road ends form a T-shaped ending, which is due to the fact that these rectangular blocks are not completely relative to each other. A continuous linear structure, but staggered from each other. This makes the end of the road show either the facade of the building, the wall, or some natural landscape. When people are in the city, this T-shaped street structure forms a kind of viewfinder interface. The enclosed street space keeps the city streets from being endless at a glance, making the city a more complete individual.

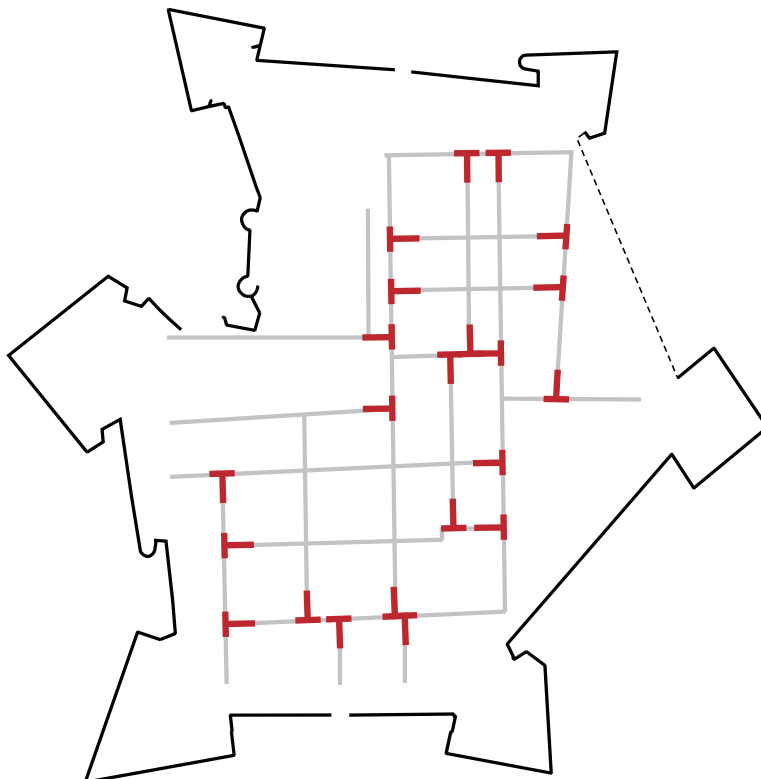


Figure 17 Visual relationship of shading of road system

/ Function of Present Building in Sabbioneta

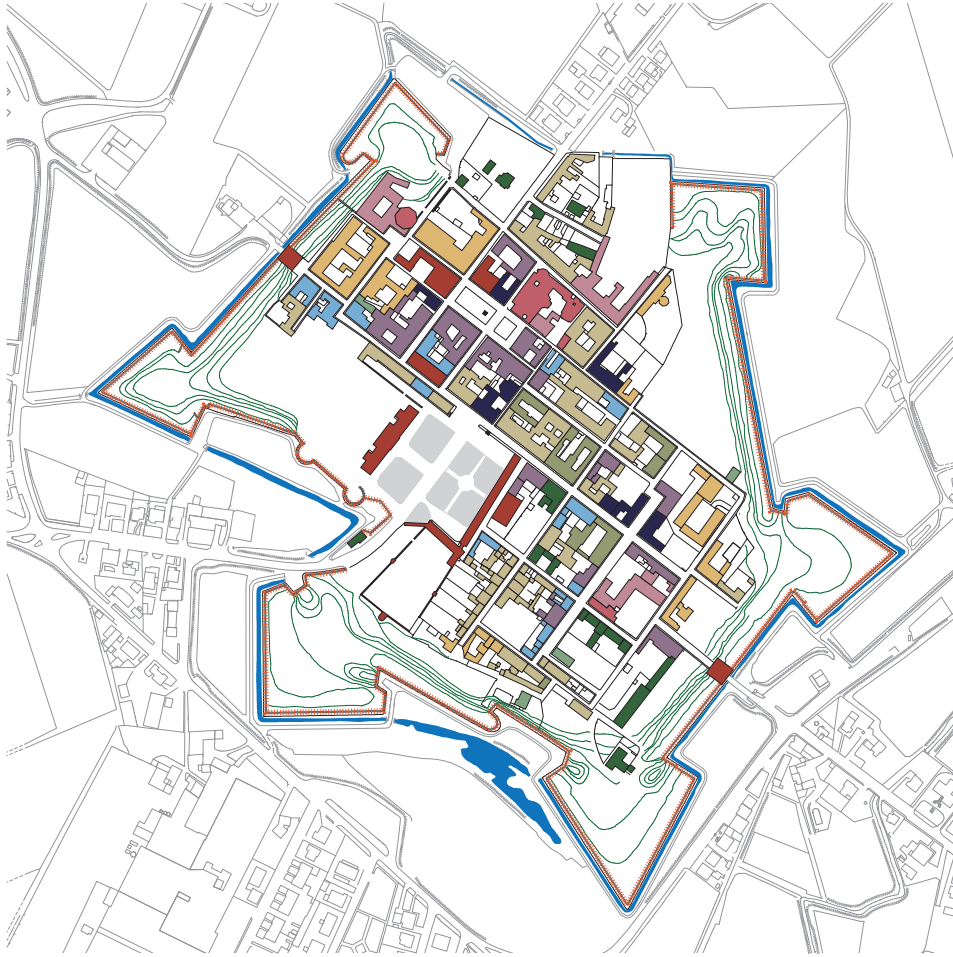














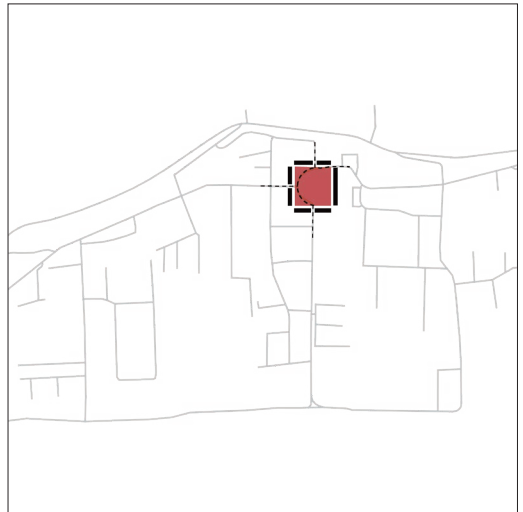


Figure 18 Function of Present Building in Sabbioneta

- | | |
|--|--|
|  City wall |  Courtyard houses |
|  Special civil buildings |  Basic architecture highlighting the word "a cortina" |
|  Special Religion buildings |  Buildings of rural origin |
|  Churches |  Masonry buildings with traditional architectural style features |
|  Palace |  Masonry buildings with different features from traditional buildings |
|  Palace type 1 |  Water |
|  Palace type 2 |  Contour lines |

iv. Comparison of Four Gonzaga City / Plans Showing Squares and Streets



City: Pomponesco

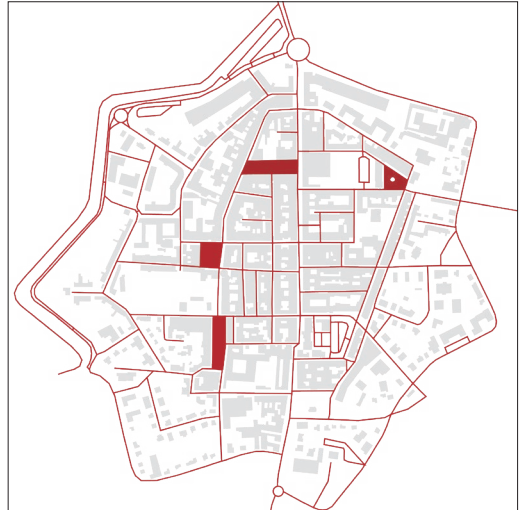
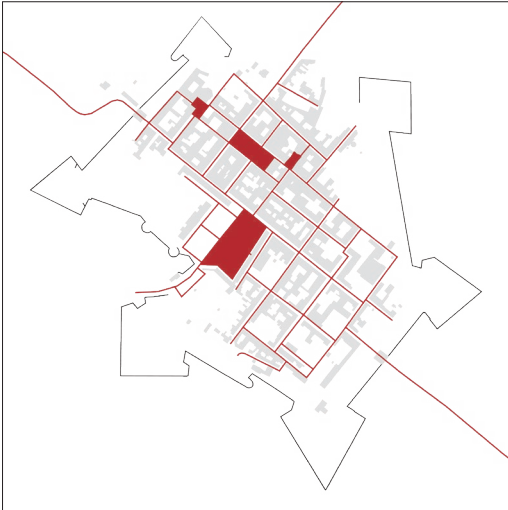
Number of squares: 1

Description: The square of Pomponesco city is a rectangular square surrounded by buildings on three sides, and one end of the square is connected to the landscape outside the city.

City: Gualtieri

Number of squares: 1

Description: It is surrounded by a square plaza enclosed by buildings, with lanes and pedestrian plazas in the plaza.



City: Sabbioneta

Number of squares: 4

Description: Rectangular or irregular in shape, squares of different scales, mostly in front of important urban buildings, are public open spaces enclosed by buildings and roads.

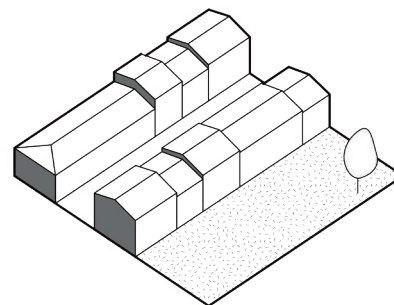
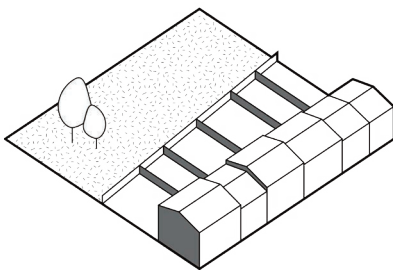
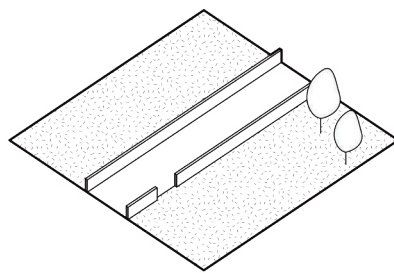
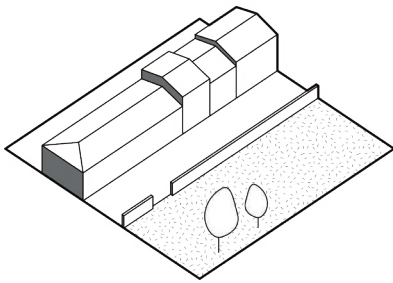
City: Guastalla

Number of squares: 4

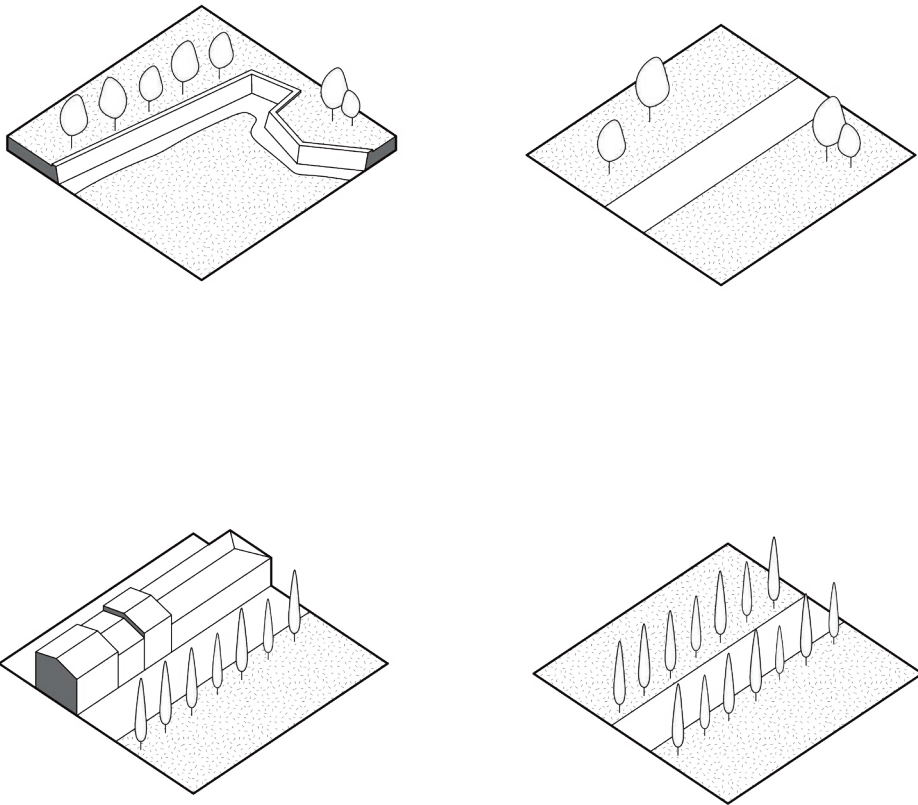
Description: Most of them are trapezoidal squares with similar scales and surrounded by buildings.

/ Boundary Between Historic City And Landscape

Sabbioneta is a city where architecture and natural landscape are combined. Although many conditions have changed in the past century, we can still clearly see the relationship between the city and the natural landscape today. When we analyze the structure of a city, we often choose building texture, roads, rivers and greenery as the main analysis objects. Meanwhile, these elements form boundaries between each other while composing the city and the urban landscape.



Through the analysis of the urban and natural landscape structure of Sabbioneta and the other three Gonzaga cities (Guastalla, Gualtieri and Pomponesco), we summarize 8 basic natural landscape and urban boundary forms, which can be divided into two types: open and closed types. For example, under the common boundary form of Sabbioneta shown in the figure below (Figure X-X), the building and the wall constitute the main boundary between the natural landscape and the city. The continuous, linear entity cuts off the direct connection between the landscape and the city, severely reducing the accessibility of the landscaped area. Most of these landscape elements are not open to the public, either as private gardens or as abandoned



sites. Due to the closed building facades and walls along the street, people cannot perceive the urban natural landscape behind.

Compared with the boundaries formed by buildings and walls, the boundaries of the other four types (Figures X-X) are relatively more open and free, and it can even be said that the boundaries are blurred. The biggest feature of these types is that the non-closed boundaries are formed by plants or paving. There are no obstacles in terms of accessibility and vision, and people can perceive and reach the landscape area more easily. But at the same time, there are common problems with the four kinds of boundaries mentioned above. In Sabbioneta, the natural green space is often located at the edge and peripheral space of the city, and is in a state of abandonment. When we discuss boundaries, it cannot be ignored that in addition to physical boundaries, we must also consider psychological boundaries, and this marginalized urban green space has naturally become an area that people do not want to reach. This is the historical city and landscape. the psychological boundaries that exist in. How to re-protect and utilize the marginalized landscape space and eliminate the psychological boundaries in people's hearts will be the topics we continue to discuss in the project.

v. Unesco Documents

/ Mantova and Sabbioneta

Mantua and Sabbioneta are located in the Po Valley, in northern Italy, and represent the two main urban forms of the Renaissance: the transformation of an existing city and the newly founded city, based on the concept of an ideal city. Together, they constitute two significant stages in the territorial planning and urban interventions undertaken by the Gonzagas in their domains, between the first half of the 14th century and the early years of the 18th century.

In both cities the Gonzagas wanted to realize the ideals of the Renaissance city, seeking the perfect urban form that testified to the greatness of the family and calling for their construction some of the greatest artists in Italy: Leon Battista Alberti, Luca Fancelli, Andrea Mantegna and Giulio Romano in Mantua, Vincenzo Scamozzi and Bernardino Campi in Sabbioneta.

Mantua is an extraordinary example of transformation of the existing city, of Etruscan-Roman origin and modified during the Middle Ages, which intervened by the Gonzagas between the 15th and 16th centuries with hydrogeological engineering works and refined urban and architectural interventions. It has always been a city linked to water and the complex and powerful hydraulic planning of Alberto Pitentino (1187) dates back to the period in which it was a free medieval municipality. the latter dried up starting from the 18th century.

Sabbioneta was built as a new city in the second half of the 16th century, supplanting a small medieval village and, under the orders of a single person, it was transformed in a very short time into an

avant-garde stronghold and refined cultural and architectural center.

Its walls with a star-shaped plan, the checkerboard plan of the streets and the role of public spaces and monuments contribute to making it one of the best examples of an ideal city built in Europe. In Sabbioneta there is one of the jewels of the history of theater in Europe: the Teatro all'Antica built by Vincenzo Scamozzi, the first theatrical building built in Italy with an original factory and not as an adaptation of rooms or interiors of pre-existing buildings.

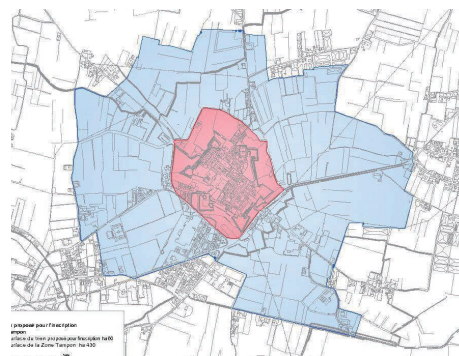
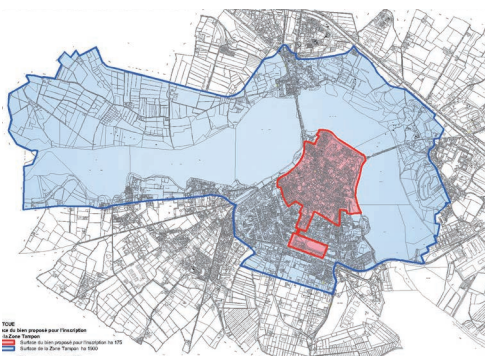
Mantua and Sabbioneta have been references for most of the subsequent city building experiences up to the modern era, playing a fundamental role in the dissemination of the Renaissance culture inside and outside Europe.

/ Management Plan

As a serial property including two different cities located 30 km away, the World Heritage site of Mantua and Sabbioneta faces increased challenges for its coordinated management. There are three authorities in charge of the property: the Municipality of Mantua, the Municipality of Sabbioneta, and the Italian Ministry of Culture.

In 2008, the two Municipalities signed a memorandum of understanding to enhance the joint management of the serial property. In 2008, a central World Heritage management office was created, which allowed for the permanent coordination between the two components. The management office aims to enhance the single identity of the serial property, preserving, promoting, and raising awareness about its Outstanding Universal Value (OUV) through the implementation of the Management Plan, coordinated policies and initiatives.

The Management Plan was updated in 2020 following the Historic Urban Landscape approach, taking into consideration the different layers of the city, including the wider social and cultural values which are linked to the urban areas.



The new Management Plan has four key areas of action:

- Knowledge and documentation: including GIS mapping, photographic documentation of the state of conservation, establishment a central knowledge centre for the site, and the development of historical studies and heritage inventories
- Protection and conservation: including the adaptation of local and regional planning instruments, developing an environmental risk reduction plan, and a guidance for physical conservation actions in the historical fabric.
- Enhancement: a number of initiatives aim to improve the liveability of the cities and promote the development of sustainable tourism through landscape interventions, rehabilitation of public spaces, touristic routes, transportation and mobility plans, and tourism initiatives.
- Education and communication: including the creation of a heritage interpretation centre, cultural festivals and events, awareness-raising initiatives and educational projects with schools.

By setting up a central management office and management plan, Mantua and Sabbioneta aim to enhance their joint identity as a serial property, enabling the cities to develop their tourism potential and harness the capacity of cultural heritage to contribute to local development and livelihoods.

v. Chapter Summary

In this section, we analyze the current situation of sabbioneta and identify existing problems in the city with a view to finding solutions. Through the existing road system in sabbioneta, we find that the city is well suited for walking and cycling as a mode of slow transportation. The demographic analysis also showed that the city's population is very old and that the city's capacity is not sufficient, with a low percentage of restaurants and accommodations.

Sabbioneta is listed as a UNESCO cultural heritage and is a very touristic city, but its tourism support implementation is insufficient. In addition, we have analyzed the existing urban structure of sabbioneta in the hope of providing a basis for its design.

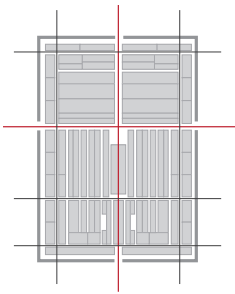
READING OF SABBIONETA

IV

i. Urban Space

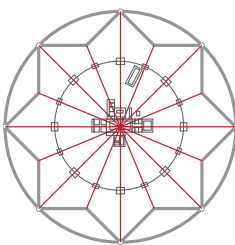
/ Plans Showing The ideal city

The ideal city is the concept of an urban settlement (designed or only imagined, and only rarely put into practice) whose urban design reflects rational and functional abstract criteria and principles according to a predominantly geometric scheme, or scientific method, often accompanied by a characteristic of ideal and philosophical tension, or a strong utopian impulse.



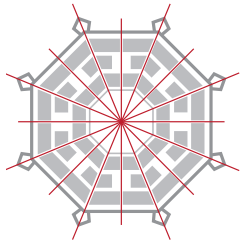
The Roman army lived in fortified camps in a stable or temporary form. It was rectangular in shape and a moat was almost always dug around it to protect it. Within the camp there were two main streets orthogonally distributed and leading through the courthouse and to the four gates of the camp.

Figure 19 Diagrams of Roman Castrum according to Hyginus 3rd century AD



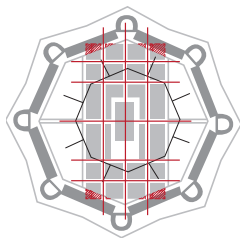
Sforzinda is an imaginary city. The city is developed on an eight-pointed plan, obtained by superimposing two squares rotated 45° respectively, perfectly inscribed in a circle, which represents the moat. The star shape corresponds to the city wall, which anticipates the definition of the bastioned front that will be developed a few decades later to adapt to the development of military weapons. A tower is placed at each tip of the star, while each basin corresponds to one of the eight gates. All access to the city is through large portals. From each gate and tower starts a straight roadway that reaches the center of the city, where a square surrounded by buildings opens up. A crown of smaller squares is located about halfway along the sixteen street axes.

Figure 20 La città ideale. Filarete, Trattato di Architettura, 1460/1465



Francesco di Giorgio Martini proposed a repertoire of symmetrical and rigorous forms, combining radiocentric and checkerboard layouts and taking into account the new requirements of bastioned defense from artillery. It was precisely the evolution of fortification techniques “alla moderna,” due to the introduction, starting in the 15th century, of firearms, that will give, to the Renaissance idea of the radiocentric city, the possibility of materializing in concrete achievements.

Figure 21 *La città ideale*. Francesco di Giorgio Martini, *Trattato di Architettura*, 1476-1485



The ideal city described by Vitruvius combines the fortifications of the radial scheme with the block distribution of the orthogonal scheme, inevitably making it hard to abandon the full rectangular form of some blocks.

Figure 22 *La città ideale secondo Vitruvio*. Daniele Barbaro, *Vitruvio, De architectura*, 1556

In the 16th century realizations, some of them resorted to the traditional orthogonal scheme, without resorting to a centralized form. In particular, Sabbioneta, built at the end of the 16th century, harmonized a layout based on orthogonal axes with a polygonal perimeter, at the request of Vespasiano Gonzaga.

In fact, the theoretical studies on the shape of the city, following the example of Francesco di Giorgio Martini, rapidly moved towards a geometric definition of the urban form, entrusted to a defensive perimeter, which in turn, after the defensive studies of the so-called modern style, became polygonal, towards increasingly complex shapes, until the star configuration. The geometric and utopian ideals of the Renaissance city were transposed into the technology of the fortification, thus existing as a form rather than a symbolic image, linked to precise functional needs. Many schemes represent attempts to reconcile the radial center scheme with the orthogonal scheme, in which the polygonal defensive perimeter determines the shape of the city, which, however, presents an orthogonal layout internally. There were also many new walls equipped with ramparts and polygonal shapes to defend the existing city.

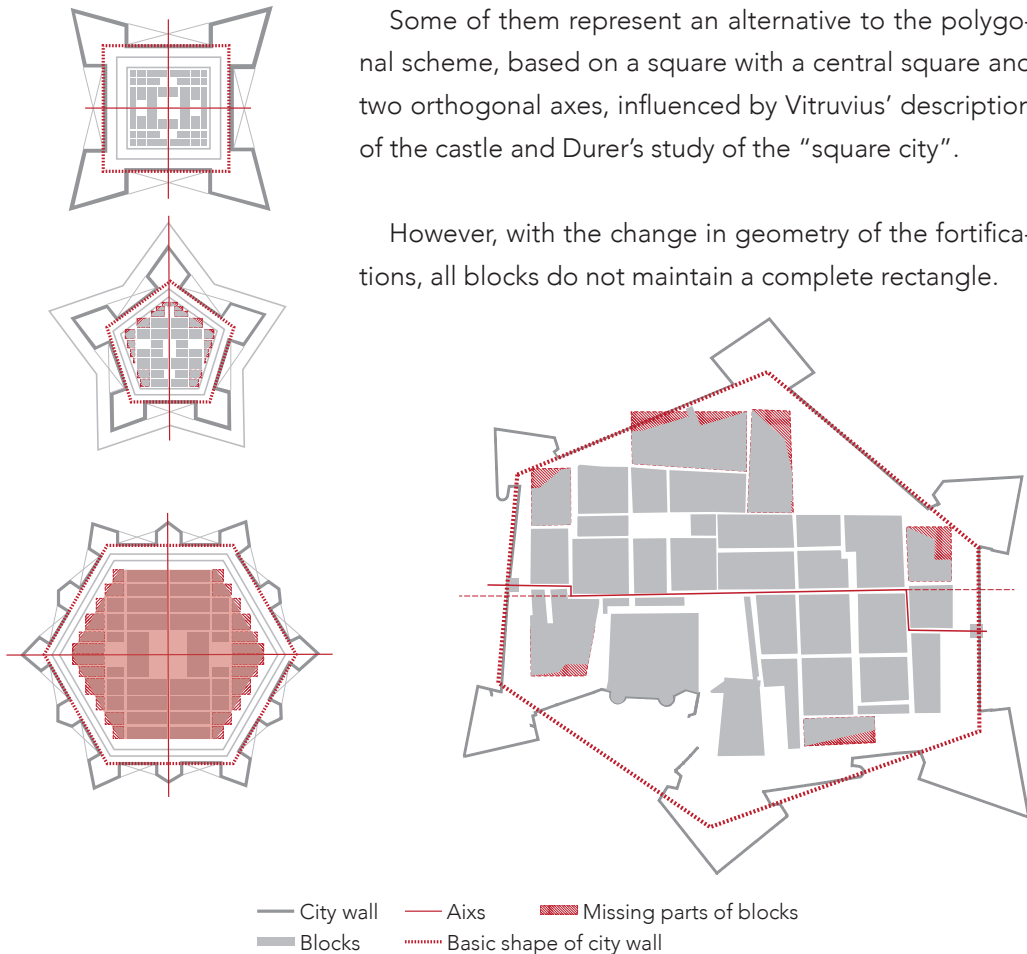


Figure 23 *La città ideale*. Filarete, *Trattato di Architettura*, 1460/1465

The urban form of Sabbioneta is still geometrically defined, it is more like a deformed hexagon. However, instead of a perfectly symmetrical distribution of internal blocks, there is a main axis running through the two gates, and the axis possesses two corners, which enhances the fortifications even more.

In the same hexagonal form of the city, the ideal city model on the left treats the blocks in relation to the walls as a positive hexagon parallel to the walls, so producing all trapezoidal or triangular blocks instead of all rectangles. In Sabbioneta, however, it is difficult to determine an exact treatment of the blocks, so there is no clear relationship between the city blocks and the walls.

/ Creation and Occupation of Blocks

The Sabbioneta consists of 34 blocks, all different from each other. The most regular examples are almost squares, or elongated rectangles. Their orientation is also unclear, the blocks are arranged mainly in an east-west direction, but sometimes they also take a north-south orthogonal orientation. The periphery, close to the walls, tends to lose its definition and geometry, deforming diagonally according to the defensive walls, or taking an open and random shape on the side facing the defensive terraces. In most cases, the internal organization of the blocks consists in dividing them into two equal parts, parallel to the longest side, in order to arrange the houses in two rows, each facing a main street.

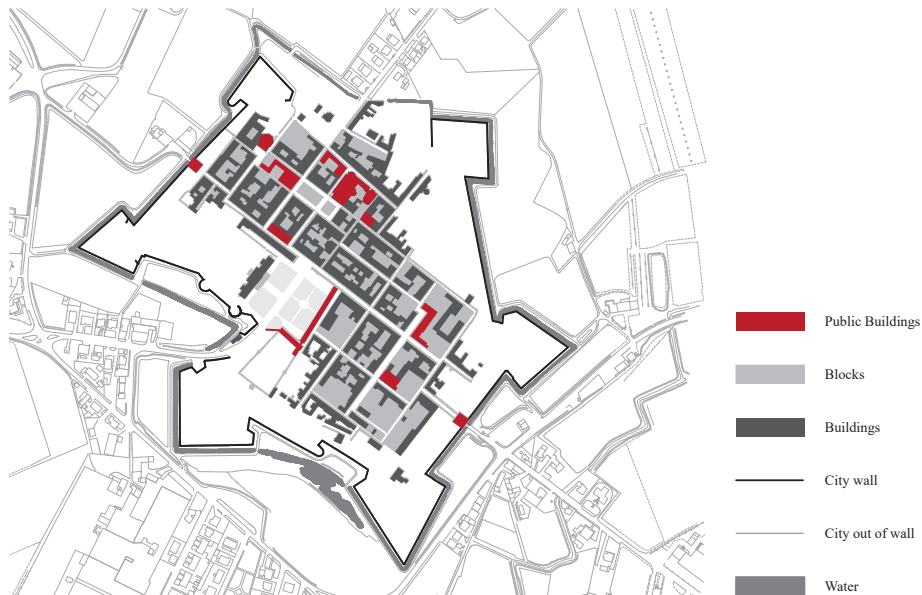


Figure 24 Creation and occupation of blocks

In Sabbioneta, the blocks are complete and distinct, enclosed by houses or high walls, with public buildings appearing from a continuous fabric of residences, while the Palazzo Ducale is the only isolated public building that occupies a complete block.

/ Formation of public square

In Sabbioneta, houses are neatly arranged one by one to form blocks, roads and squares. The houses build the streets, while the public buildings stand back to produce the urban space creating the squares.

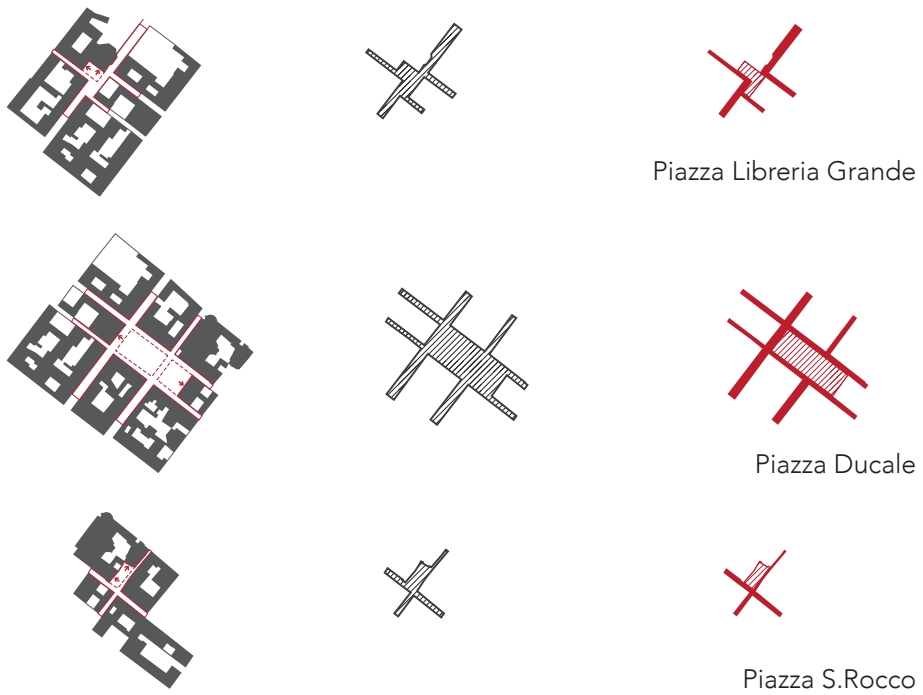


Figure 25 Formation of public square Type 1

Generally, the square is integrated with the road to assume the function of traffic, but sometimes the square is divided in two because the main city road has to pass through vehicles, like Piazza D'Armi.

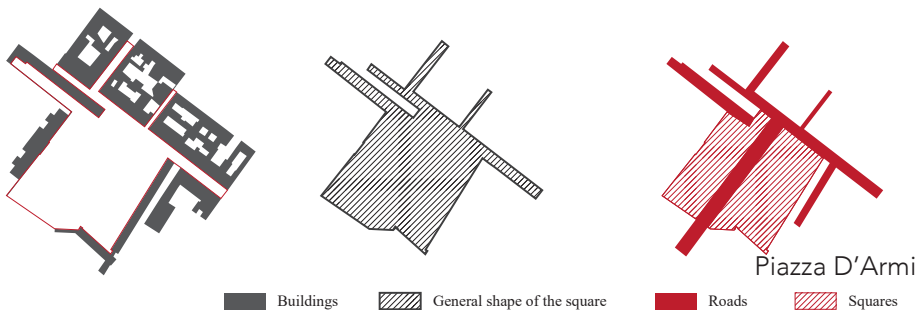


Figure 26 Formation of public square Type 2

/ Tower On The Public Square

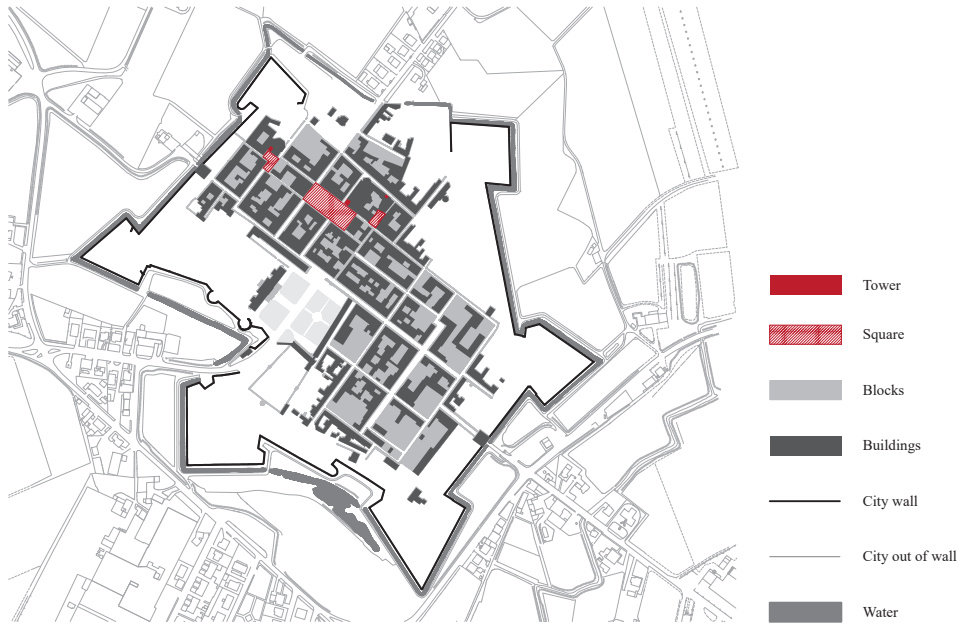


Figure 27 Plan showing the squares and towers

Piazza Libreria Grande



Piazza Ducale



Piazza S.Rocco



Figure 28 Images showing the squares and towers

As mentioned before, every square has a special relationship with public buildings, and in the same way, every square has a tower that belongs to a public building that leads the whole square. It is like a tag, no matter where you are in Sabbioneta, if you see a tower-shaped building, it means that there is a public building and public space.

ii. Urban Building

/ Entrance To The Courtyard Of The Building

Generally, the blocks are in rectangular shape and the buildings are arranged one by one to form a courtyard or garden, with a large, centrally located entrance hall at ground level that connects the street to the inner courtyard.



Figure 29 Plan showing the entrance to the courtyard of the building

/ The Proportion Of Typical Residence

The Renaissance drew the plan of the ideal city, where the regular structure of the blocks played a decisive role in ensuring equality, balance and harmony in the layout of the city. From the regularity of the blocks, the regularity of the buildings follows, and when these buildings are defined in a distributed scale, a number of building types are insisted on, fixing the residential structure by repetition. In Sabbioneta, there is no specific precise rule for buildings, but there is a general ratio in many urban buildings, which are almost always arranged 1:1:1.



Figure 30 Plan showing the proportion of typical residence

We choose a building arranged according to this scale as an example, its plan follows 1:1:1, is distributed at 8 meters intervals, it is also about 8 meters high, and the façade follows a 1:2:2 format.

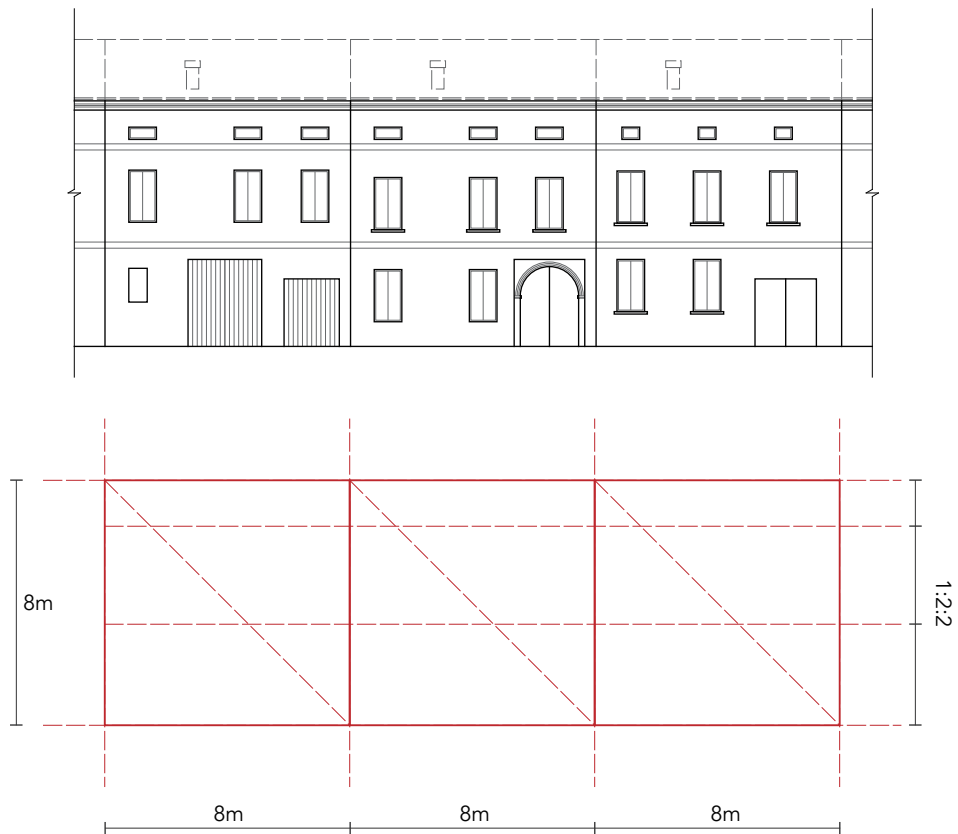


Figure 31 Scale of the facades

We can see that the layout of the building facade is almost square, 8 meters high and 8 meters wide, with three openings arranged on each floor. On the ground floor there is an entrance door and two rectangular windows, and on the upper floor there are three windows of greater height. Finally there are three small openings in the attic.

/ The Forms Of Traffic Space In Buildings

In the layout of the building plan, the staircase rooms connecting the upper and lower floors are usually arranged next to the passage connecting the street to the inner courtyard and combined with some room distribution. Generally, the rooms on the ground floor of the building are used for work or kitchen, and the rooms on the upper floors are used for living space.

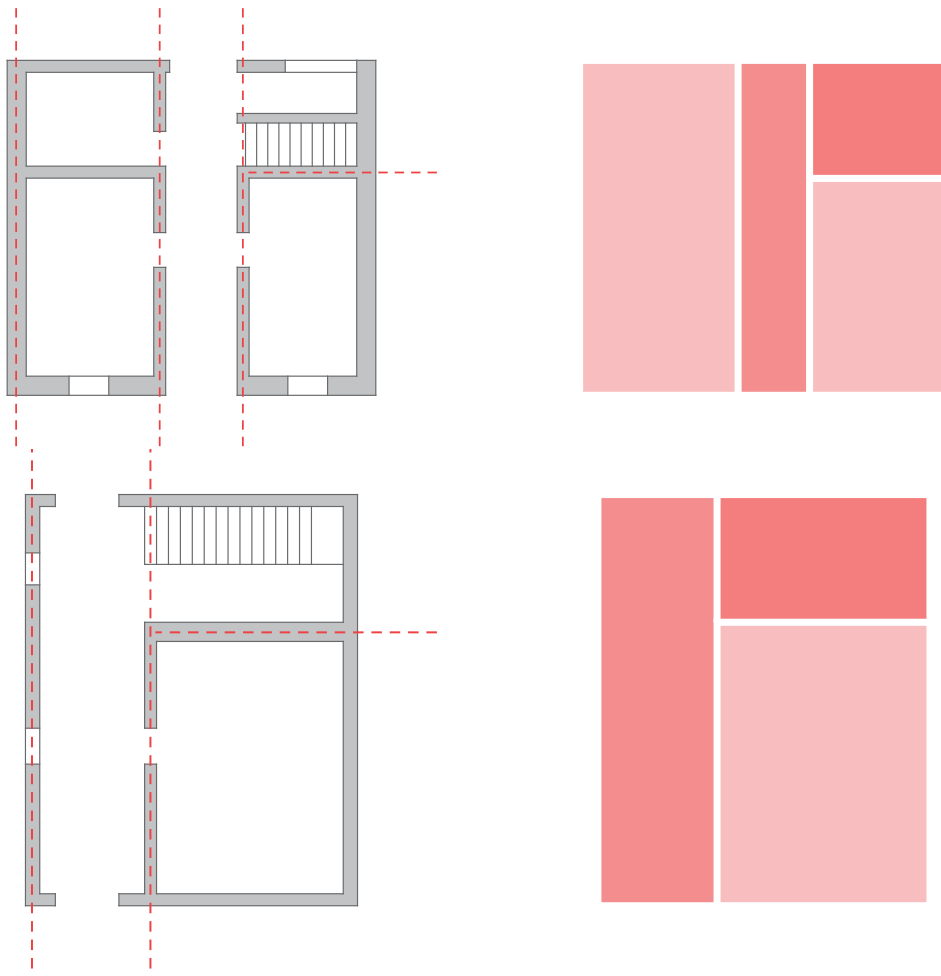


Figure 32 Typical floor plan for residence

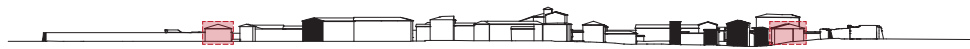
iii. Embankment

/ Green Space Inside The City Wall Of Sabbioneta

In Sabbioneta, beyond the old walls there is a buffer zone defined by UNESCO, while inside the walls and between the city there is a circle of green space that is like a transition between the walls and the cultural center of the city.



Figure 33 Plan showing green space inside the city wall of sabbioneta



SECTION 1-1



SECTION 2-2



SECTION 3-3

Figure 34 Sections showing green space inside the city wall of sabbioneta

It is clear from the section that there are always buildings between the green space and the city road, and the layout of the city spreads out slowly from the cultural center to the residential buildings, while there is a green space transition between the buildings and the old city walls.

/ Laws On The Embankment

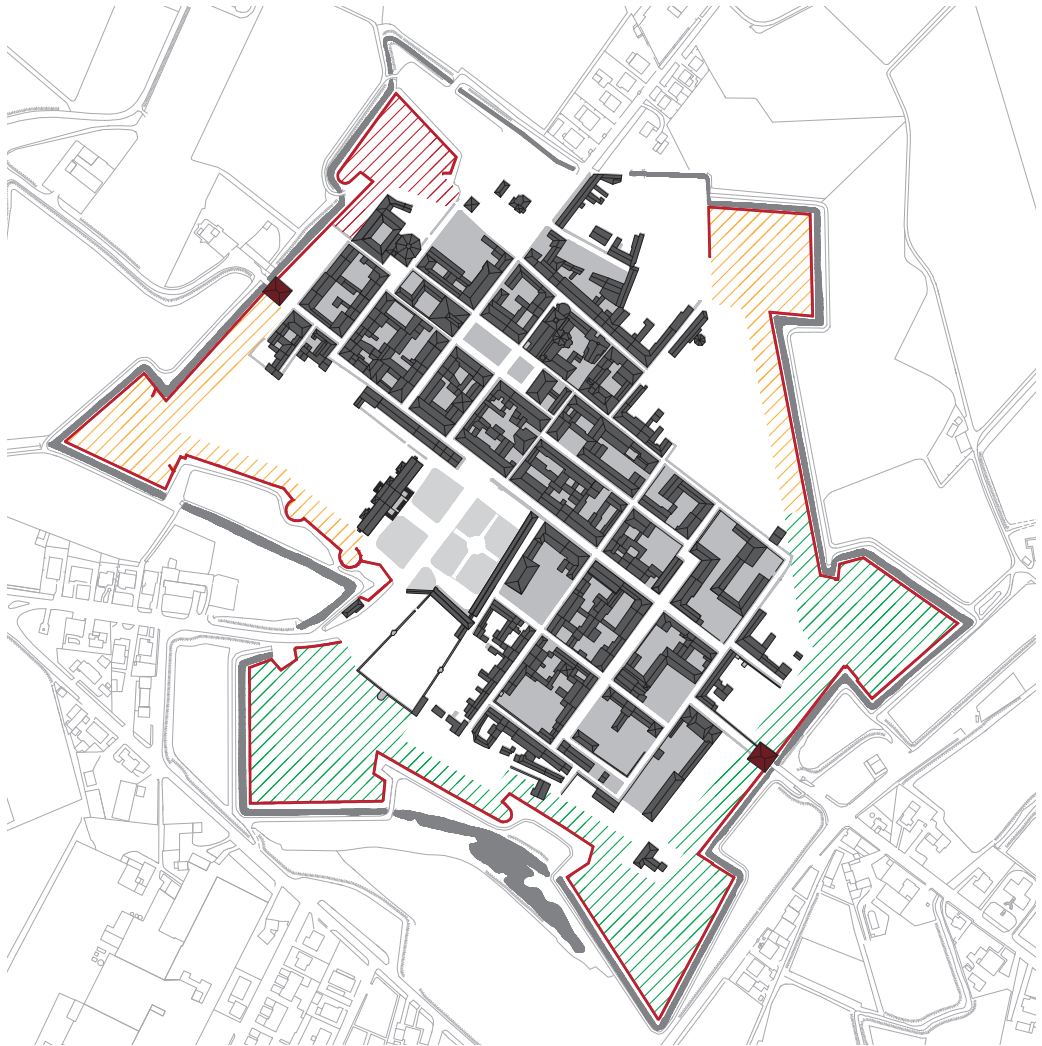
Monumental constraint ope-legis and decreed

The face of the walls, as public property, is bound ope legis thanks to the discipline of the Bottai Law of 1939, now implemented by Article 10, paragraph 5, Legislative Decree 42/2004.

As far as this constraint is concerned, protection also extends to all publicly owned embankments, which are considered an integral part of the property as a whole. One can also reasonably assume an extension of the constraint also to the building structures supporting the embankment, such as buttresses, shoulders and foundations, according to a geometry not easily determinable in the absence of precise archaeological documentation regarding the elements not visible above ground.

In addition to these ope legis constraints there is the monumental constraint decreed on 21.10.2003 on the complex of the ex-convent of the Servants of Mary, now the property of the Isabella Gonzaga Foundation, which in addition to the building also extends to the related embankment, corresponding to the St. Nicholas bastion.

For the remaining part, the private embankments are not subject to specific constraints, even if the protocol of understanding signed in 2007 between the Municipality of Sabbioneta and the Ministry of Cultural and Environmental Heritage during the candidacy of the UNESCO site of Mantua and Sabbioneta is applied. By virtue of this protocol within the walled city (and therefore also on the private embankments) there is an authorization procedure that implies the expression of an opinion of the Superintendence according to the same procedures provided in case of landscape constraints.



- Ope-legis constraint on the outer wall face of the Magistral Walls of Sabbioneta, municipal property
- Ope-legis constraint on Porta imperiale and Porta Vittoria of municipal property
- ▨ Ope-legis constraint on inner embankments and underground buttresses of municipal property
- ▨ Constraint decreed on 21/10/2003
- ▨ Privately owned areas pertaining to the constrained part of the walls, corresponding to the still existing inner embankments and underground buttresses

Figure 35 Plan showing land ownership

/ Intervention Projects On The Embankment

The project, funded by the Lombardy Region within the framework of the 2018 UNESCO Call for proposals for site enhancement (LR 25/2016), aims to upgrade the wall line, in particular to restore the Bresciani spall and the first section of the hilltop walkway of San Giovanni bulwark.

The project is closely aligned with the "Wall Single Plan", financed by the Cariplo Foundation in the project "MuraNet". 'Le mura non sono muri' (the wall is not a wall), with the aim of creating a master plan for the use of the wall circuit at the foot and on the terrace. These plans follow a long series of interventions by the municipality of Sabbioneta to protect and strengthen the wall circuits.

In relation to the participatory process provided for in the project MuraPerTe and the request by the Superintendence of Cremona, Lodi and Mantua to verify the availability of the owners of the private terraces of the walls of Sabbioneta regarding a possible public use of the land they own in order to create a continuous path along the terraces themselves, following the official convocation by the City of Sabbioneta at 11.2019, the first meeting was held with the owners.

The first conclusions that can be drawn from the participatory process are as follows:

Given the positions of the owners, the section of wall from Baluardo Sant'Elmo to Baluardo SanGiorgio is unlikely to be involved in a summit path design.

Although with different nuances, the owners of the section between St. Nicholas Bastion and Porta Vittoria and of the section between St. Francis Bastion and St. George Bastion express positions that are not incompatible with the creation of a continuous pathway over the long term, moreover such that it can be put in system with publicly owned sections.

The figure followed represents a possible long-term position regarding the condition of the embankment.

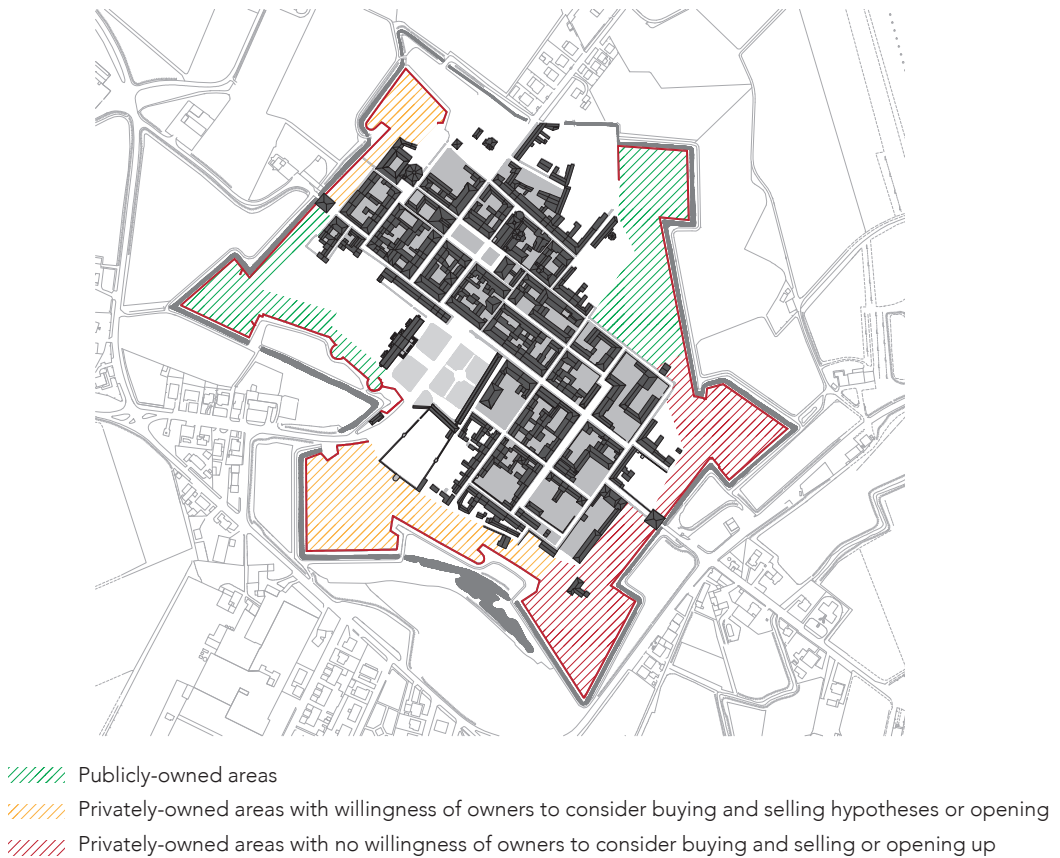


Figure 36 Plan showing land ownership

iv. Chapter Summary

In this section, by studying the distribution of blocks of the idea city and urban spaces of Sabbioneta, we propose to arrange the buildings along the roads in the site to make the blocks more complete and to make the boundaries of the roads clearer. There is an approximate 1:1:1 ratio in the plan of some of residential buildings in Sabbioneta, as well as a pathway that always connects the city road to the courtyard.

On the outside of historic walls there is a UNESCO-defined buffer zone, also on the inside there is a embankment forming the boundary between the city and the walls, and there are always buildings separating the embankments from the city roads. Some of these embankments are still privately owned, and the government plans to build a path along the wall on the embankment to improve accessibility to the wall, thereby improving accessibility for people and stimulating tourism.

CASE STUDY



i. Case Study

/ Combination Of Old And New Buildings

/ Arquipélago Contemporary Arts Centre, Portugal, 2014

The project is an art center designed by João Mendes Ribeiro and Menos é Mais Arquitectos in Ribeira Grande is an interdisciplinary project whose mission is to disseminate, create and produce emerging culture: a space of exchange and interface between people, knowledge and events. Its design maintains the overall industrial character and highlights the dialogue between the existing building (former alcohol/tobacco factory) and the new building (art and cultural center, storage facilities, multipurpose hall/performing arts, laboratory), artist studios).

The Arquipélago Contemporary Art Center acquires its identity through the quiet change between the pre-existing building and the two new buildings. The containment strategy implemented by the facility improves the spatial efficiency and hierarchical function of the different areas of the existing factory complex. The new building absorbs the required functions with special conditions that are incompatible with the spatiality of the existing building.

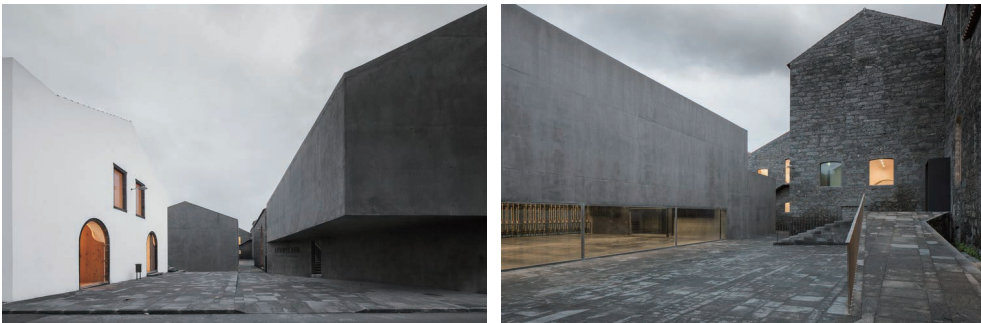


Figure 37 Perspective view of the building

Arquipélago's project does not exaggerate the differences between the old and new buildings. Rather, it attempts to unify the different scales and eras of its various parts through a graphic treatment of the building's form and materiality - the existing building is marked by volcanic stone masonry, while the new building is characterized by abstract forms that, without any reference to or allusion to language, employ local basalt inert built-in concrete constantly with various surface textures and roughnesses that work together to complement the building's massing with an empty patio.

The design is committed to the quality of what exists, showing a change in typology - the new building is placed next to the existing one in a serene way - emphasizing the architectural memory of the specific period and the added building without destroying or subverting the constructive structure of the space and the whole. Context and continuity contribute to the autonomy of the object.

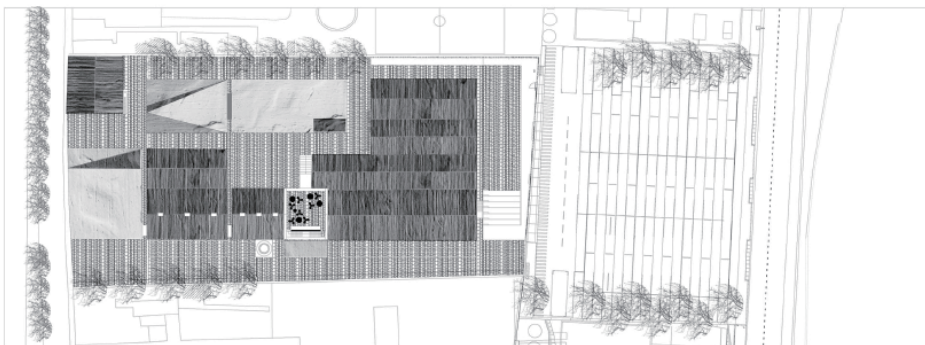


Figure 38 Master plan of the project

/ Combination Of Old And New Buildings

/ Torre de Palma Wine Hotel, Portugal, 2014

In the large lowland landscape of the Alentejo region, the Torre de Palma estate designed by João Mendes Ribeiro comprises a large area of farmland and a group of considerable buildings confined to the south-eastern side of the estate. The project for the installation of a wine hotel in this particular setting aims to respond to the new functional program while respecting the architectural and morphological character of the complex and its surrounding landscape. Interventions include the restoration and renovation of the old farm buildings and the construction of a new set of buildings from scratch, based on a precise gesture that respects the specific characteristics of the land.



Figure 39 Perspective view of the building

In the reconstruction of the pre-existent structures, the general configuration of each building was kept, comprising only a few minor changes in the interior spaces and the insertion of new openings when needed. Wherever necessary, structural elements, roofs or coatings were also replaced.

The new constructions had two different natures: entirely new buildings that were placed outside of the original built aggregate and new buildings that replaced old constructions – degraded and with no historic or architectonic interest – with a new common material identity: concrete structure, masonry walls and concrete slabs roofs. In general, the land kept its original features with subtle variations according to the specificity of each area of the estate.

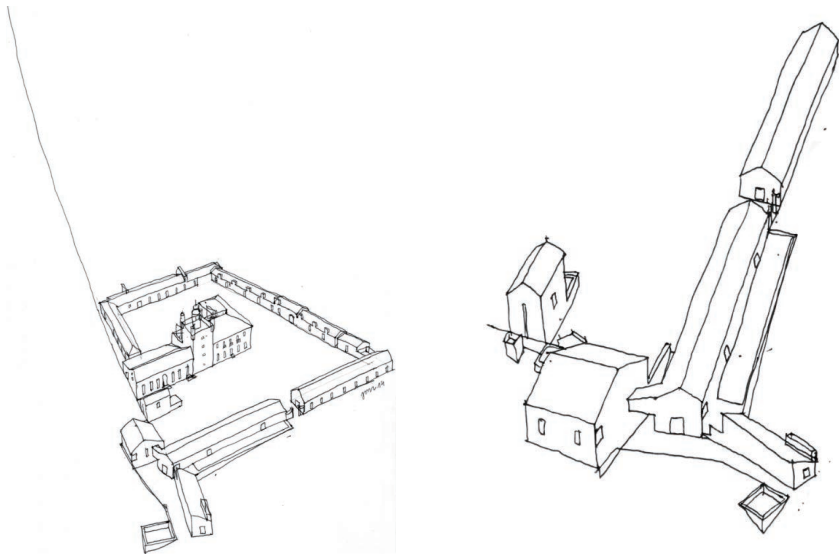


Figure 40 Sketch of the project

/ Modular Housing

/ Social Housing Project SAAL Bouça, Portugal, 1973-77

Located on an infill site in a slum in central Porto, the Bouça development was envisaged by Siza as a new type of social housing that would provide homes for the law clerks who worked in the Porto courts. With their spacious internal dimensions, the duplex homes were seen as a radical solution.

Similarities to the Dutch and German parliamentary housing programs of the 1920s can be attributed to the height of the buildings and the proximity of the apartments, resulting in duplex row houses.

Siza learned a lot from his previous study of Bruno Taut's buildings in Berlin, copying the deep red color Taut used in the upper part of the building. He was also heavily influenced by Jacobus Johannes Pieter Oud from Rotterdam. These modern architectural prototypes are combined with a perfect collection of local architectural elements, such as the staircase leading to the apartments overlooking the courtyard. Siza's art here lies in perceiving lifestyle influences and reinterpreting them by adding a few individual features.



Figure 41 Perspective view of the building

The main feature of the project is a massive wall and four sets of buildings against it. This wall separates the area from the noise of the busy road above. All services are at the roadside, on the farthest side across the block, and form the ultimate feature of the terraces that head the composition. The green courtyard opens between them, on one side.

Siza's design was to stack two-storey homes on top of one another, with the uppermost homes set back to provide outdoor space. Rows faced one another, with long planted courtyards in between to provide community space for occupants.

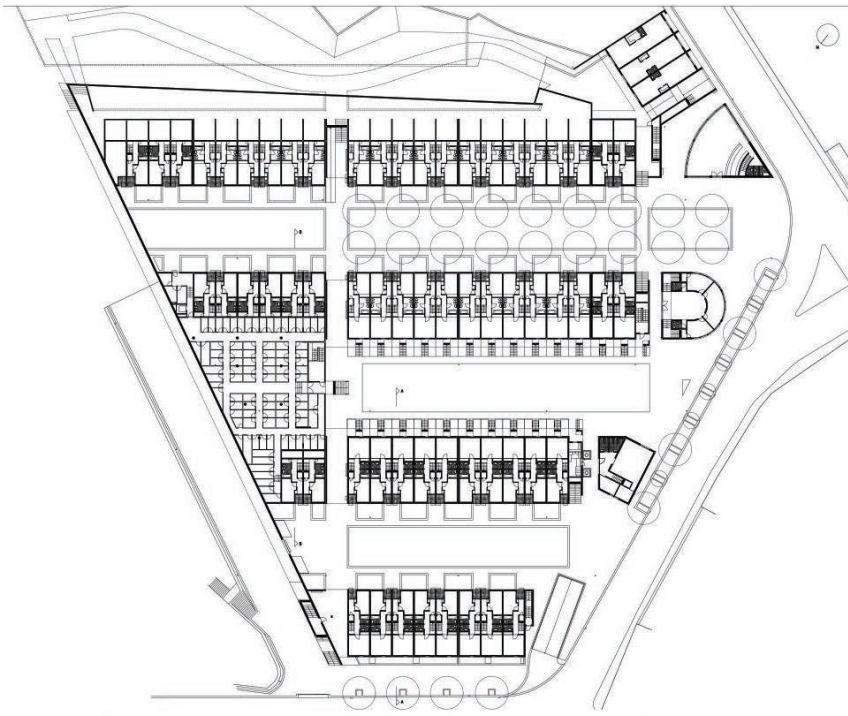


Figure 42 Typical plan of SAAL Bouça

/ Modular Housing

Vassall Road Housing & Medical Centre / Tony Fretton Architects

The project is located at the corner of Holland Grove and Vassall Road in Lambeth, central London. It is a mixed use development completed by Tony Fretton Architects. The 1490 sqm building is a hybrid development comprising ten apartments for sale and a medical centre, which occupies the entire ground floor.

The new 3 and 4-storey development replaces a derelict pub, which originally served residents of the surrounding housing estate. The building is designed to mitigate the disparity between the 1960's brick social housing which has been retrofitted with plastic framed windows and pitched roofs and the more dignified arrangement of eighteenth century suburban villas opposite.

In design the building presents itself as a formal terrace within a railed garden, consisting of the doctors' surgery as a base, a row of seven maisonettes and three single-storey flats arranged in a tower configuration on the corner of the development. Windows and balconies at the first floor are a response at a smaller scale to the villas opposite, and the red brick facades have been lightly over-painted with black mineral paint to simulate the aged quality of the brickwork in the locale.

The rear elevation is stepped back and the area of ground between the scheme and Healy House is laid out as a planted communal terrace. While the doctors surgery has its own entrance on Vassall Road the apartments are accessed through a private lobby on Holland Grove which leads up to an open air walkway at first floor level, providing "street" access to the maisonettes and creating space for private terraces and external storage space.

All of the apartments have 2 bedrooms and are scaled to appeal equally to small families, retired couples or single people working from home. Reception spaces in the maisonettes and flats are south facing and feature generous balconies facing south over the garden and into the trees, giving connections to the wider neighborhood.



Figure 43 Plans of Vassall Road Housing & Medical Centre



Figure 44 Perspective view of the building

ii. Chapter Summary

In this section, we focus on two main themes, Combination of old and new buildings and Modular Housing. Since our site is located in a Renaissance town and adjacent to the Palazzo Forit, the historical context and architecture are aspects that we must consider. In the first two cases, we learned about roof forms and the influence of materials on old and new buildings. The sloping roof form used in this case is based on the original local building type and transformed. At the same time, the choice of materials echoes the original historical buildings.

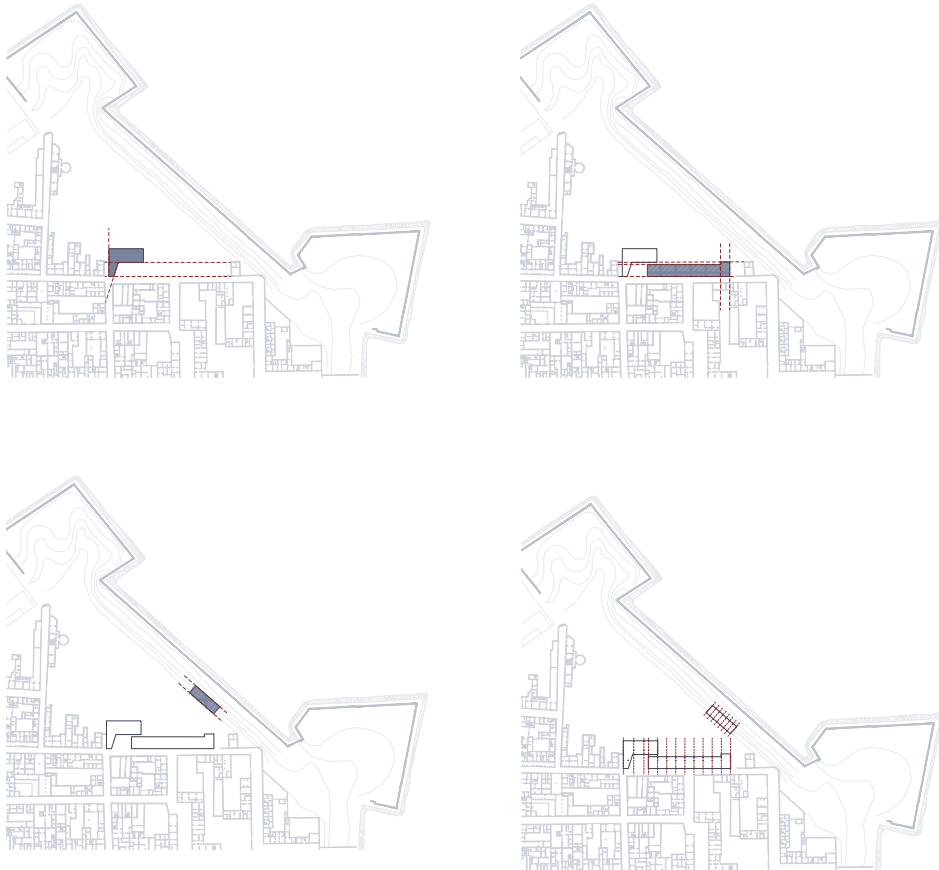
The study of the modular house is based on the function of our design project. With regard to residential buildings in Sabbioneta arranged in a 1:1:1 scale as mentioned in the previous section, we also studied some residential buildings arranged according to modalities, which is a good way to deal with residential areas, which can generate more possibilities for residential spaces and more connections with external spaces. As well as exploring the multiple spatial possibilities of residential architecture through the study of residential complex cases.

Sabbioneta is a city rich in history, and there are many worthwhile historical buildings in the city. It is important to build a new building in the old historical city to create a harmonious relationship with the city, for example, using the same materials or materials of similar color with the surroundings, keeping similar roof forms with the city buildings, keeping a similar rhythm of openings with the city building facades, etc.

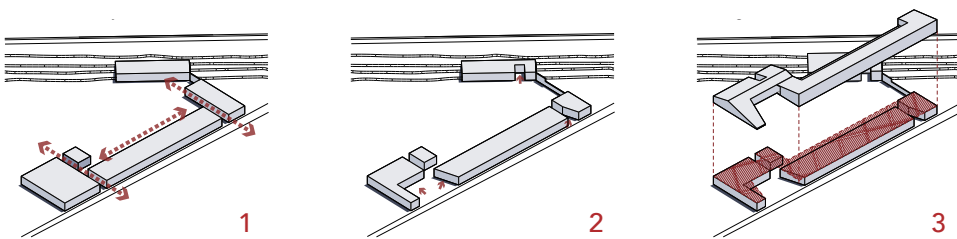
THE PROJECT

VI

Control Line Of The Project



Generation Of The Building

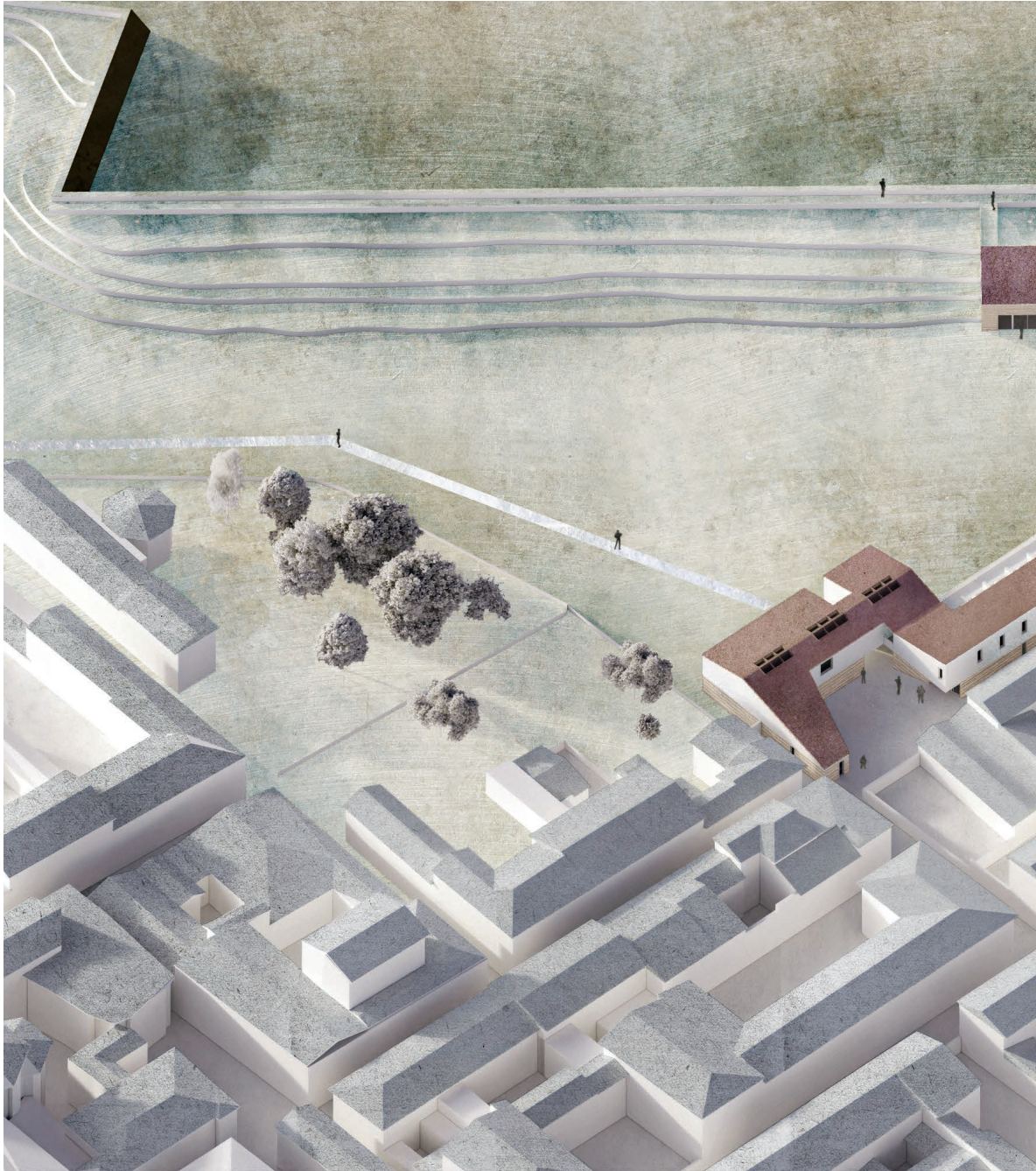


1. Connect the city with the old walls
2. Setback of the block
3. Transformation of the block





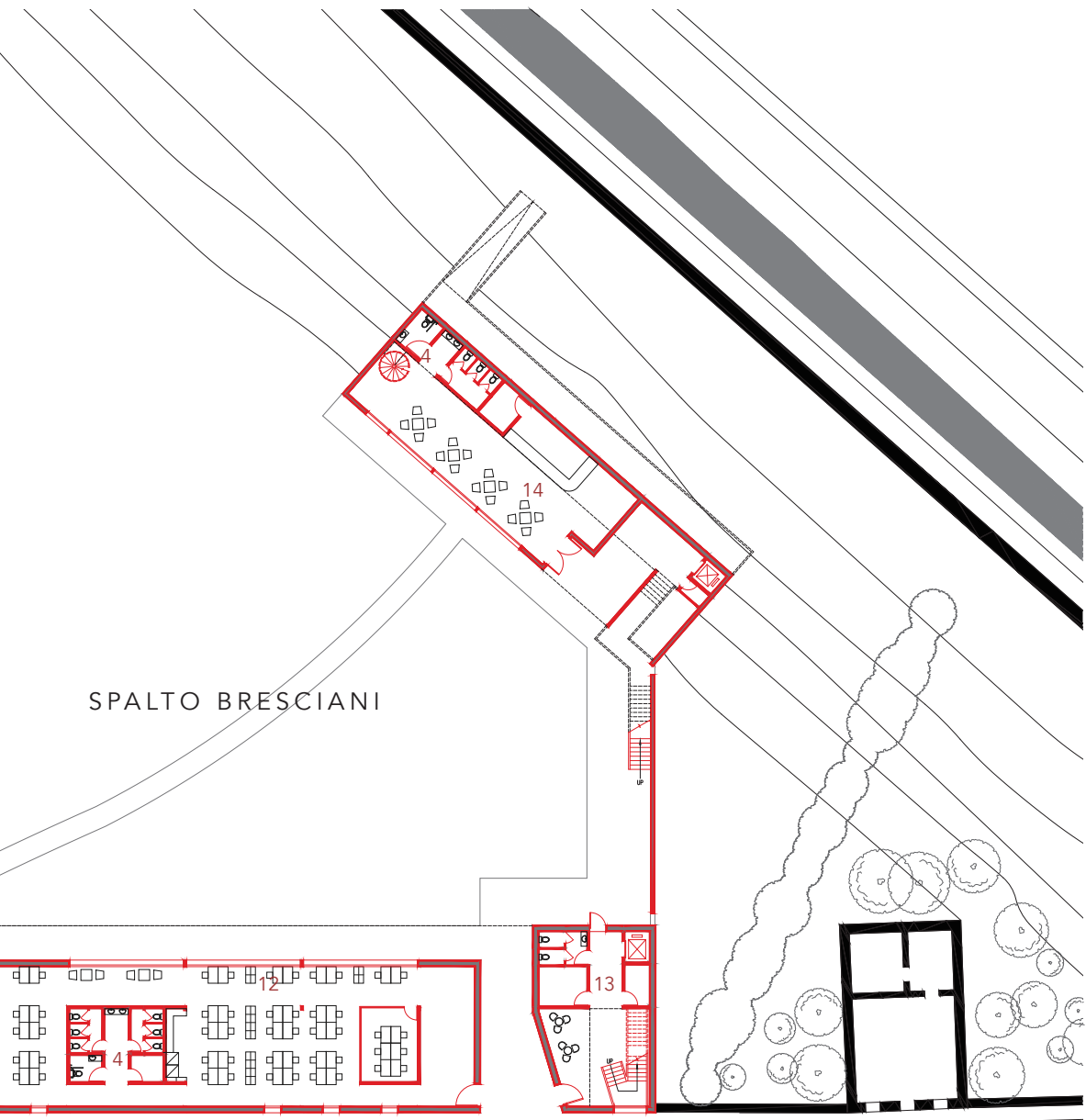
Master Plan In City Scale

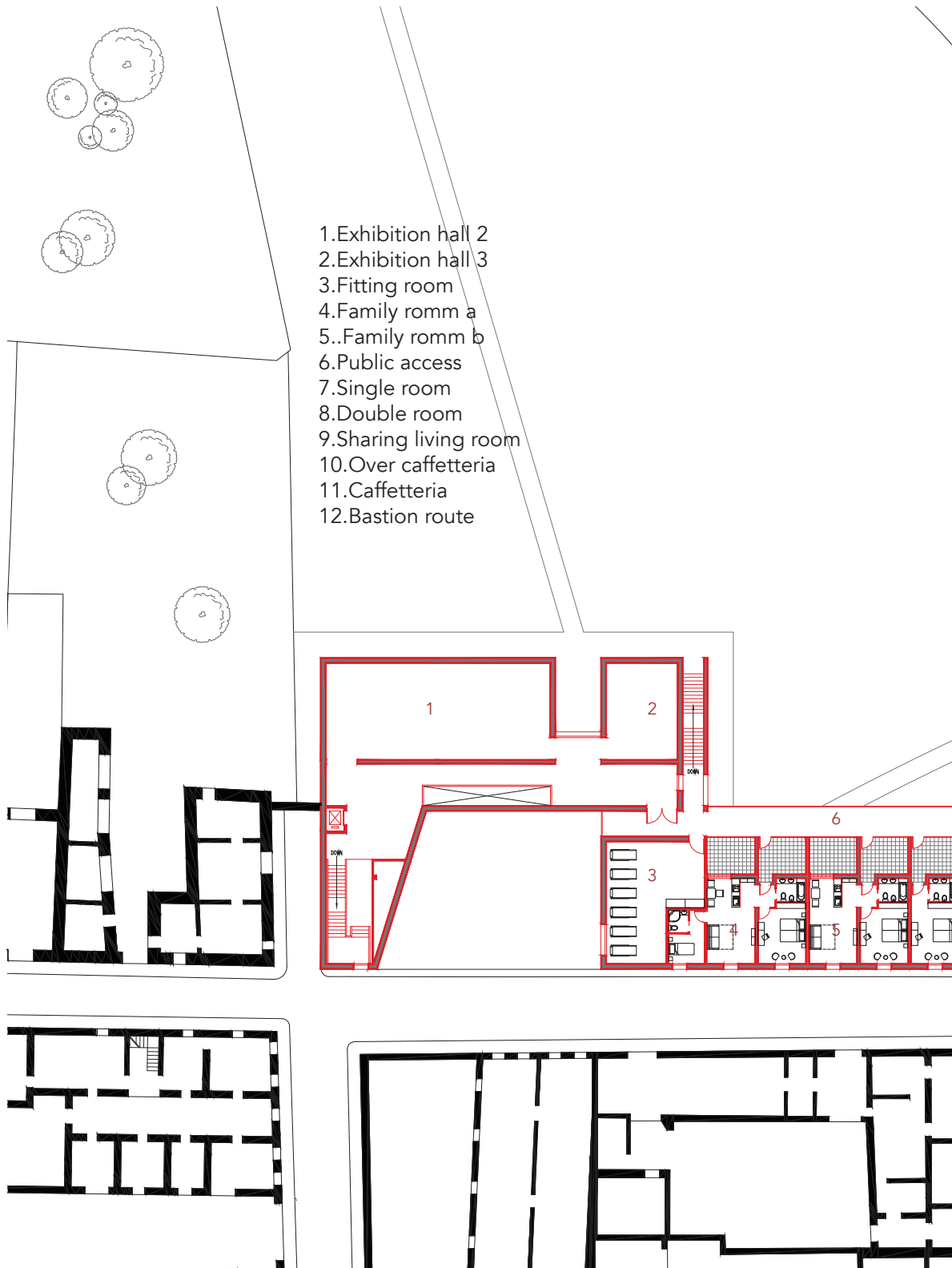


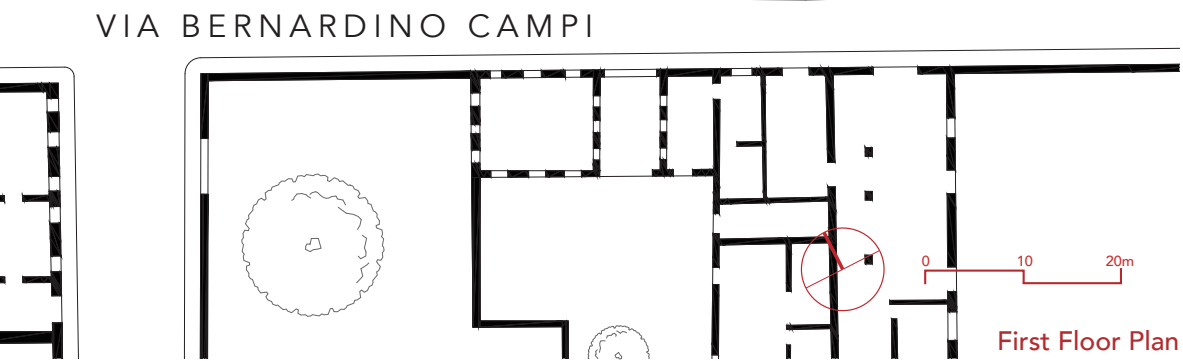
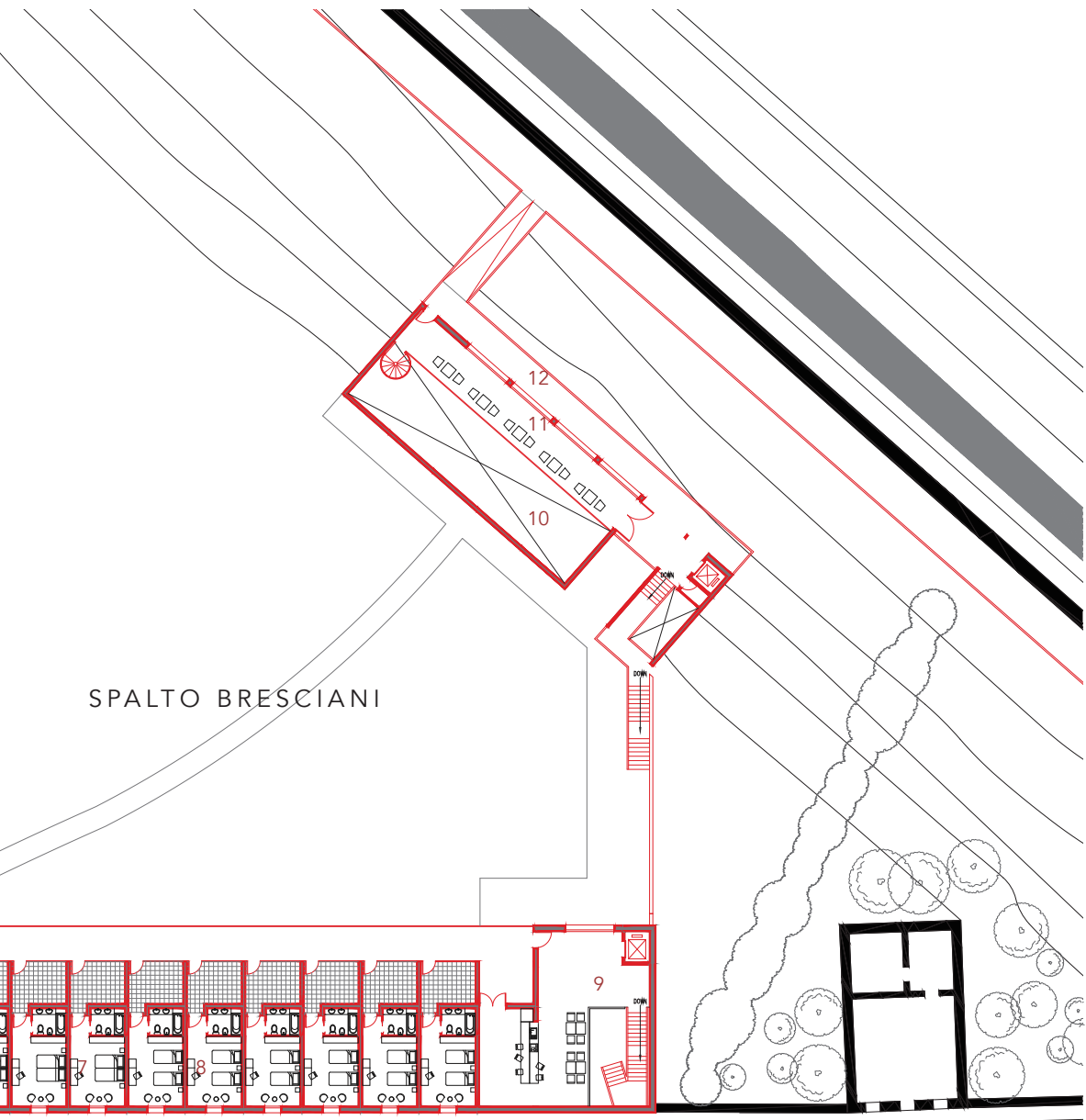


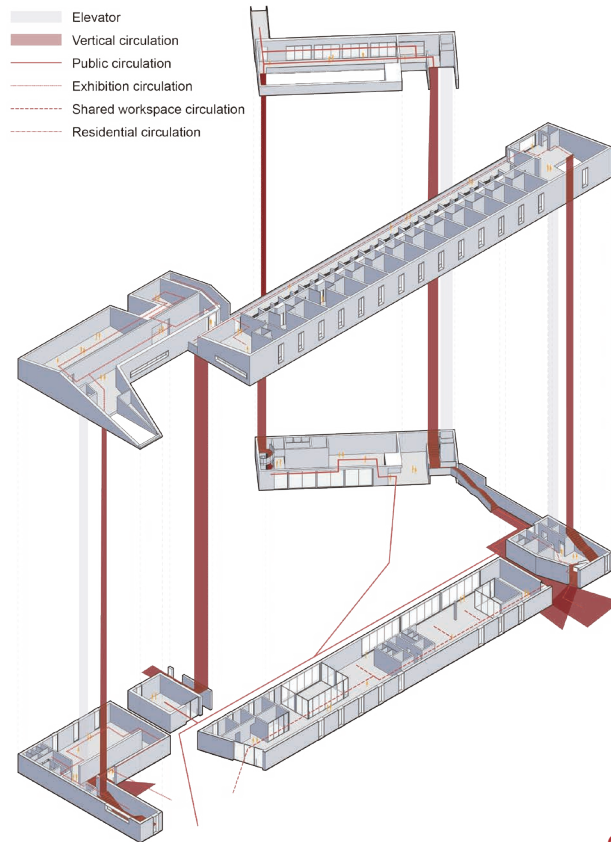
Axonometric Rendering With Contexts





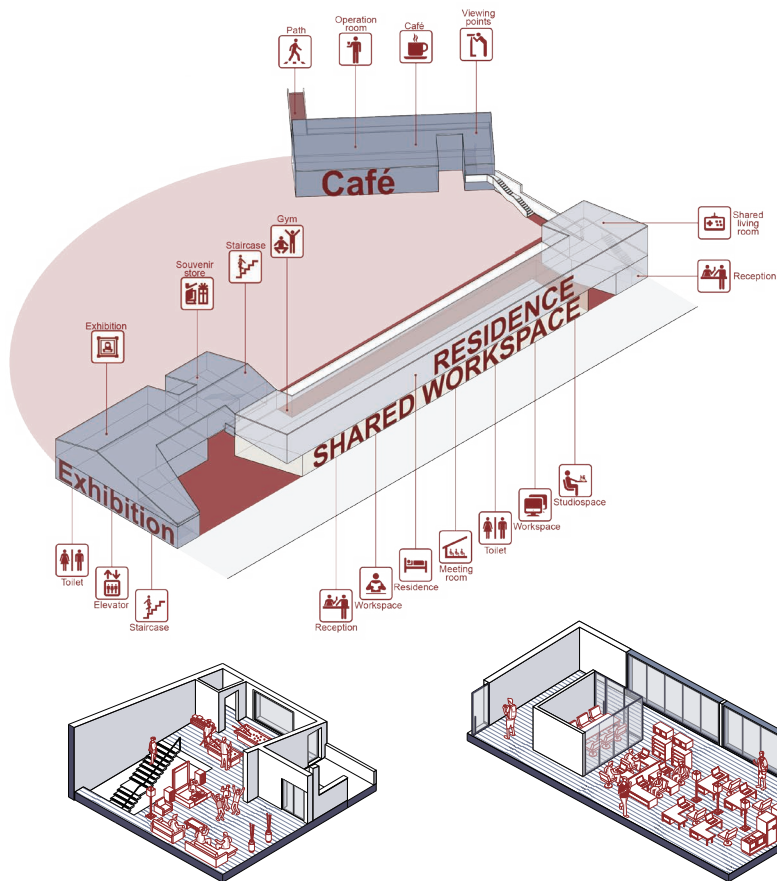






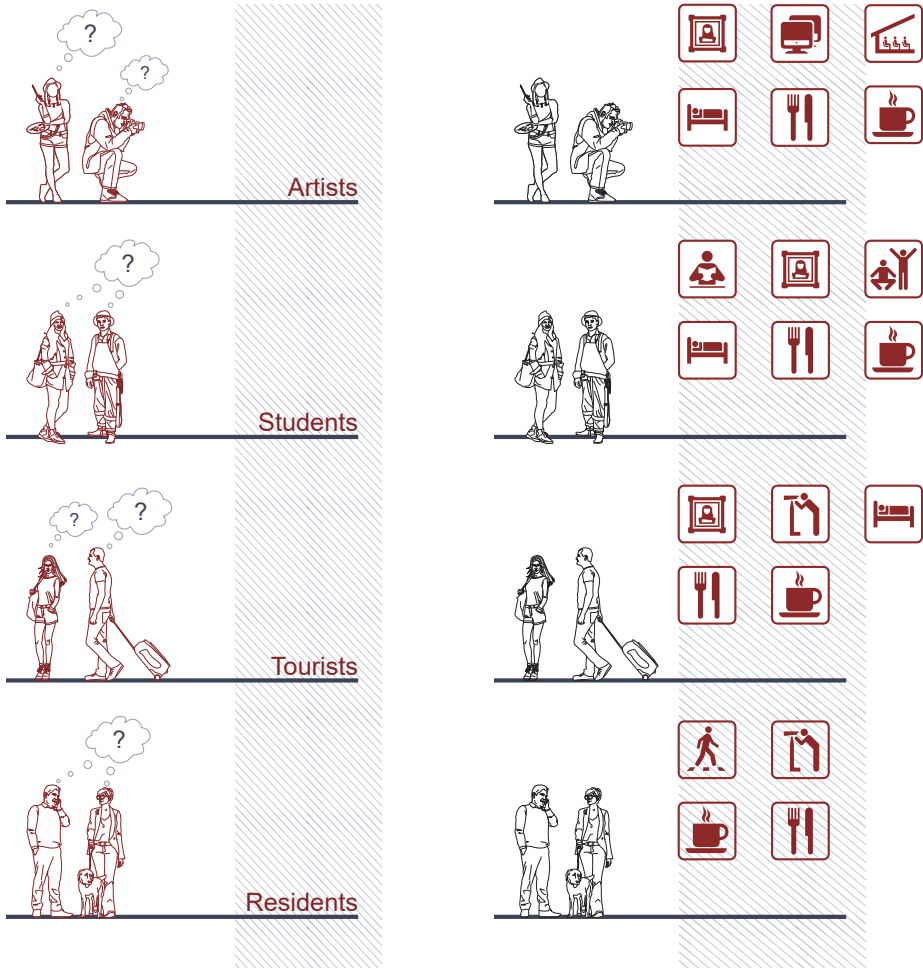
Circulation

The building has three entrances: the entrance to the exhibition space, the entrance to the workspace and the entrance to the residential space. The building has two levels, and on each level a horizontal semi-open corridor connects the various functions of the building, existing in the building like a road in the city. Five vertical traffic spaces connect the square with the exhibition space, the exhibition space with the green space, the lobby with the residential space, the green space with the landscaped path, and the café with the landscaped path.



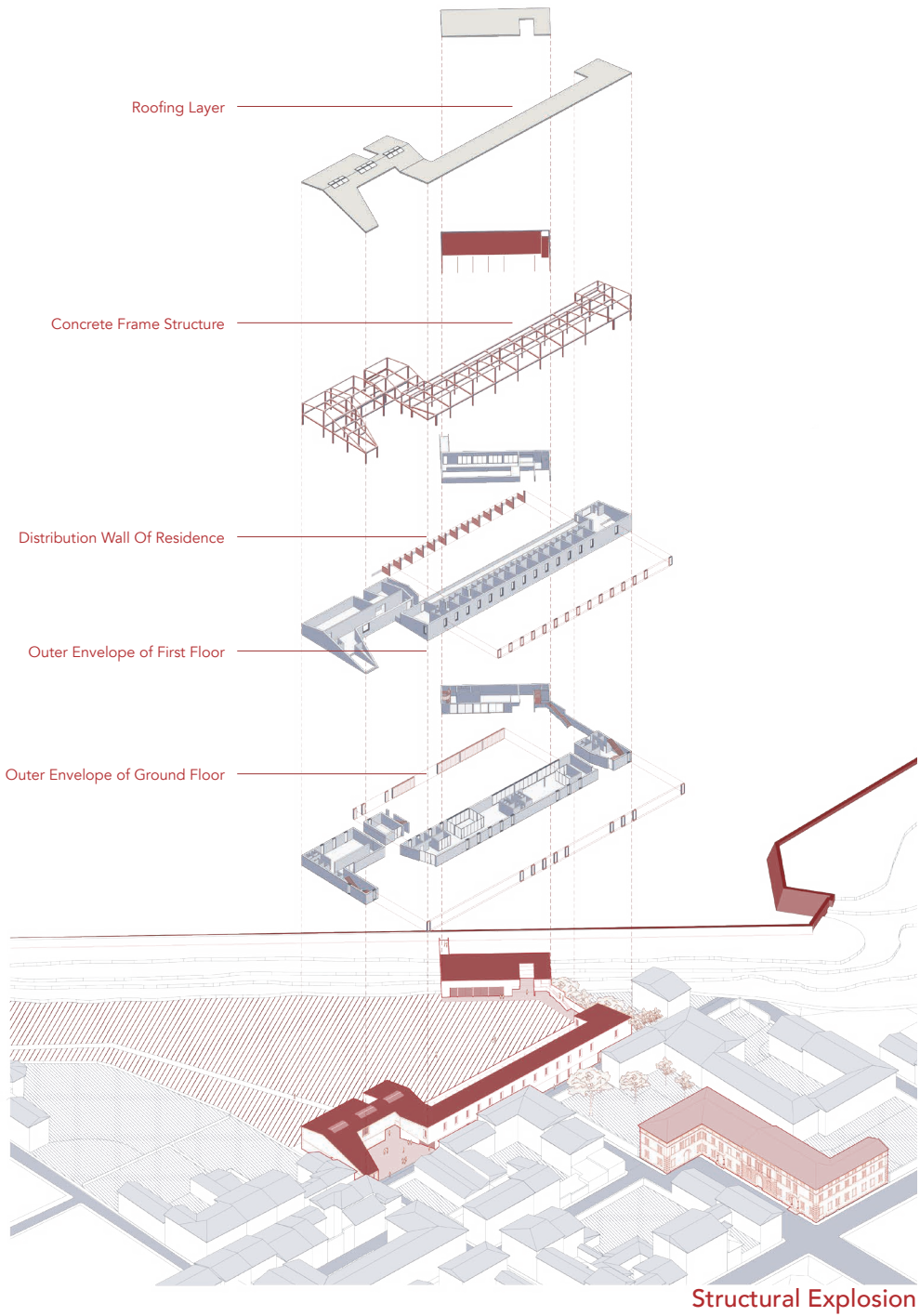
Fuction Distribution

The exhibition space has a complete two-story block, and a shared workspace along the street at the ground level, which can serve the artists who come to hold exhibitions, and the students who attend workshops. At the end of the street, a independent hall is arranged for the first-floor residential space, which separates the flow of people and the open area from the private area, and the shared living room above the hall becomes the transition between the relatively open hall space and the private residential space, which is only available to the guests staying here. And there are restaurants along the walls, which connect a path to visit the walls.

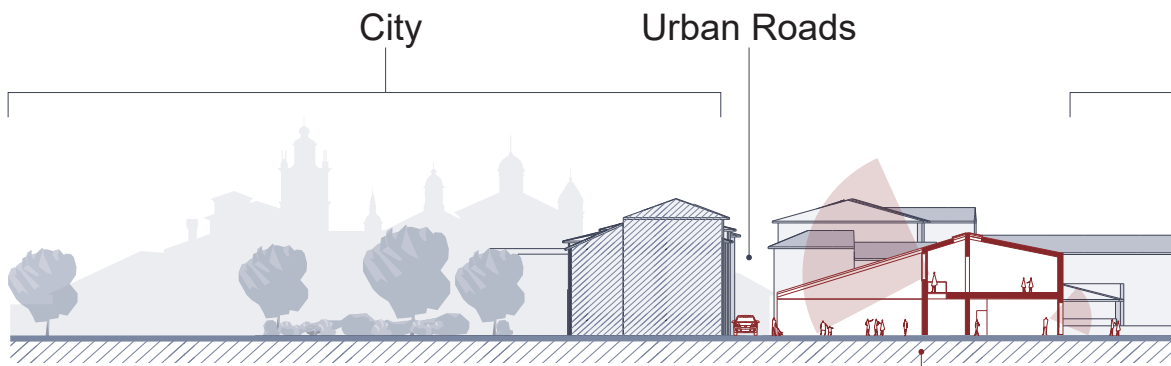
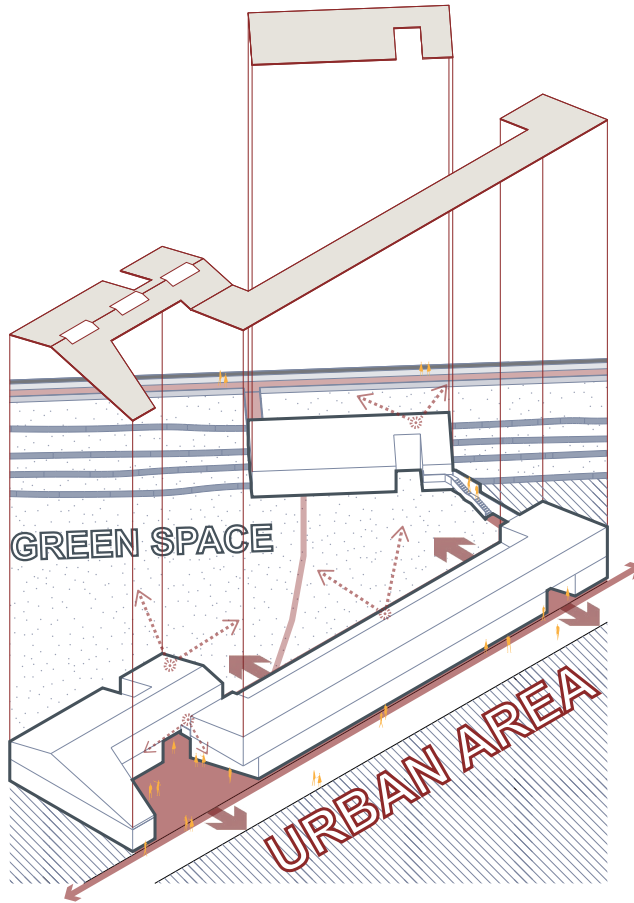


Population Served

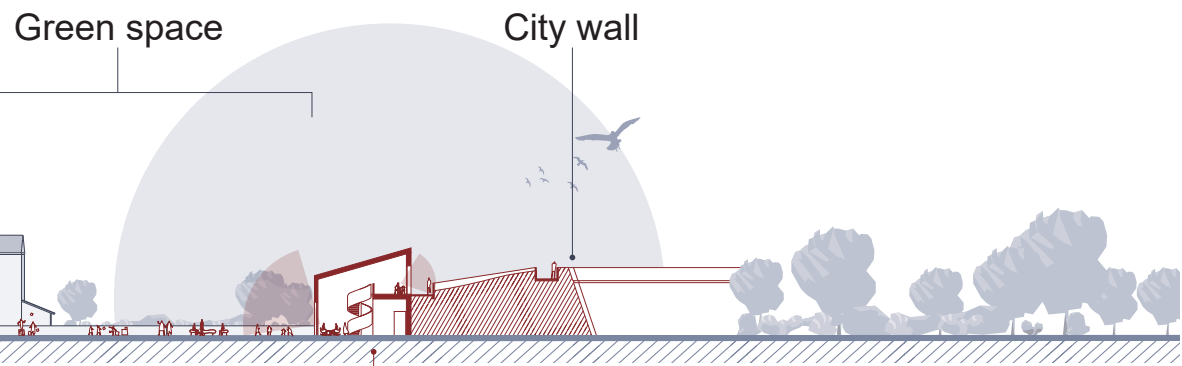
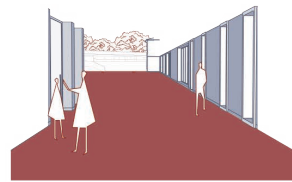
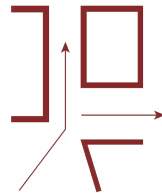
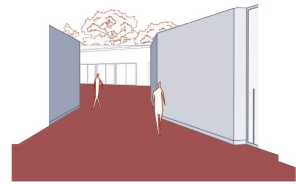
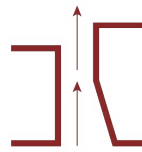
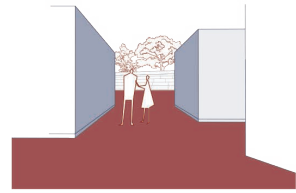
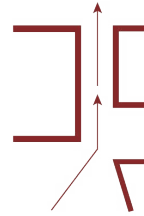
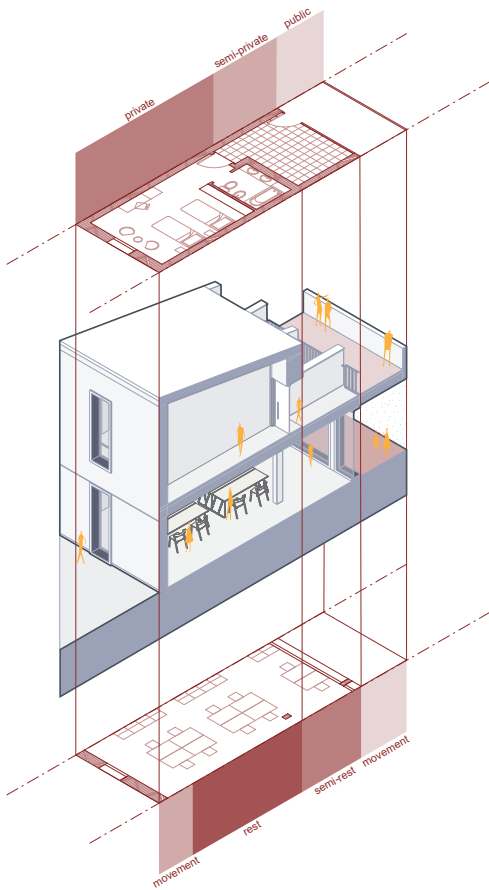
Our design is aimed at artists, students and tourists, serving all three groups while also serving the local residents. The building acts as a link between the city and the old city walls, the maintained green space remains open to the public, and a pathway along the walls provides accessibility for visitors.



Spatial Structure Analysis

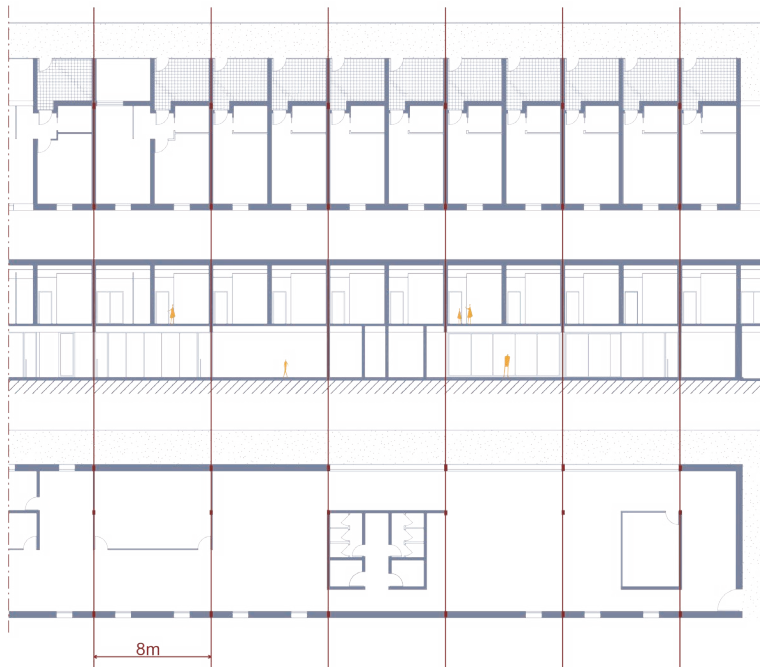


- Define a boundary between
- Create a connection between

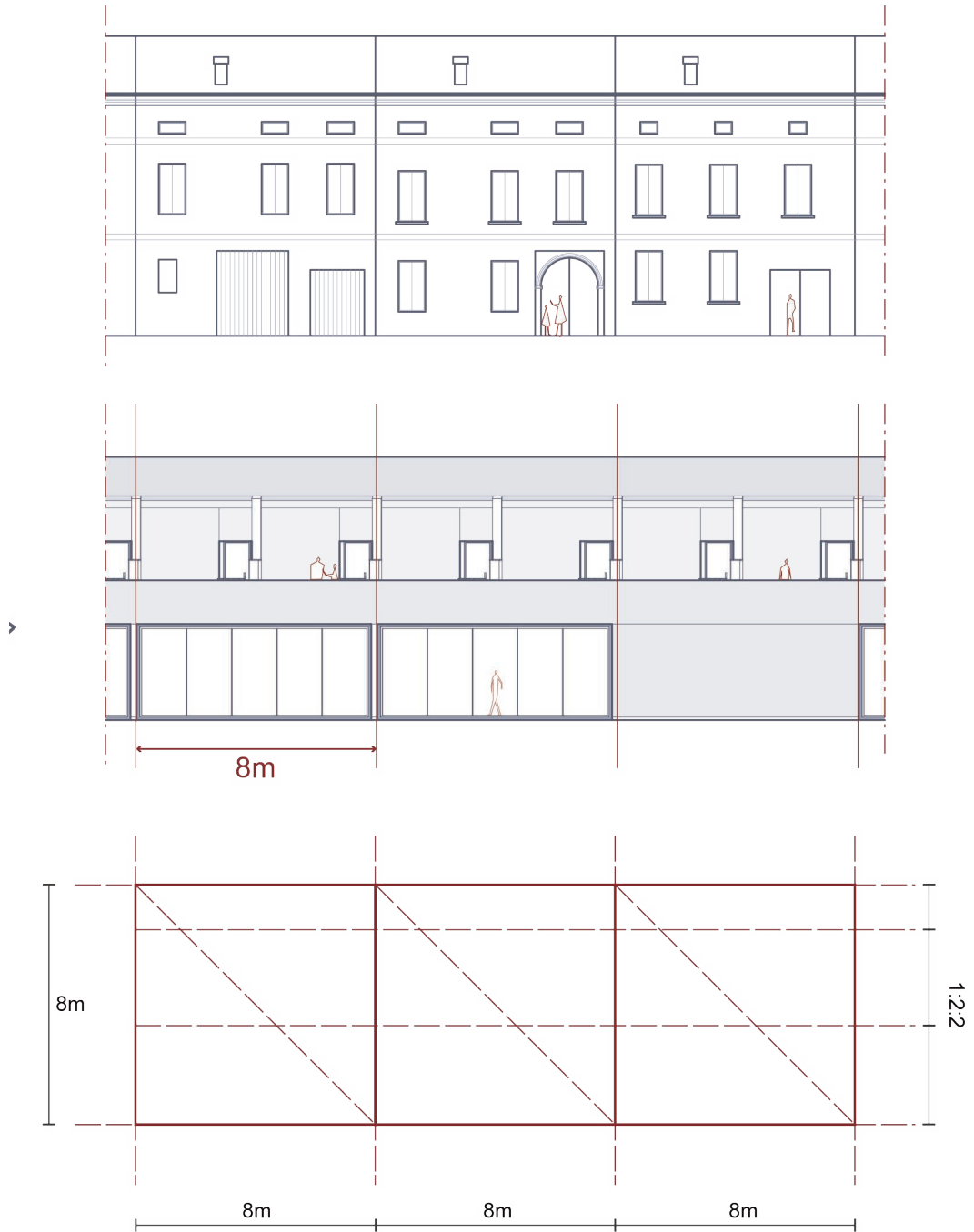


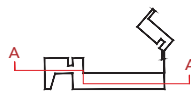
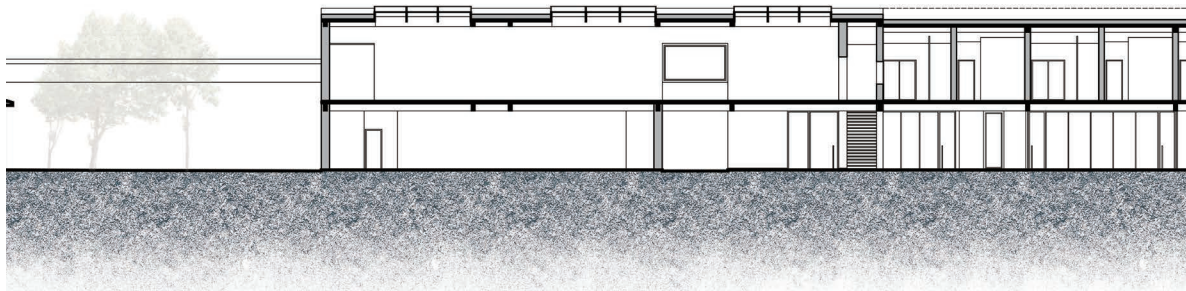
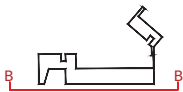
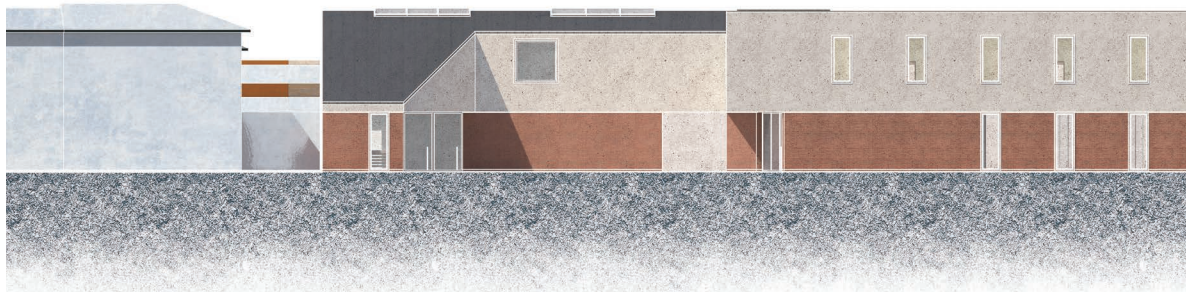
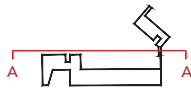
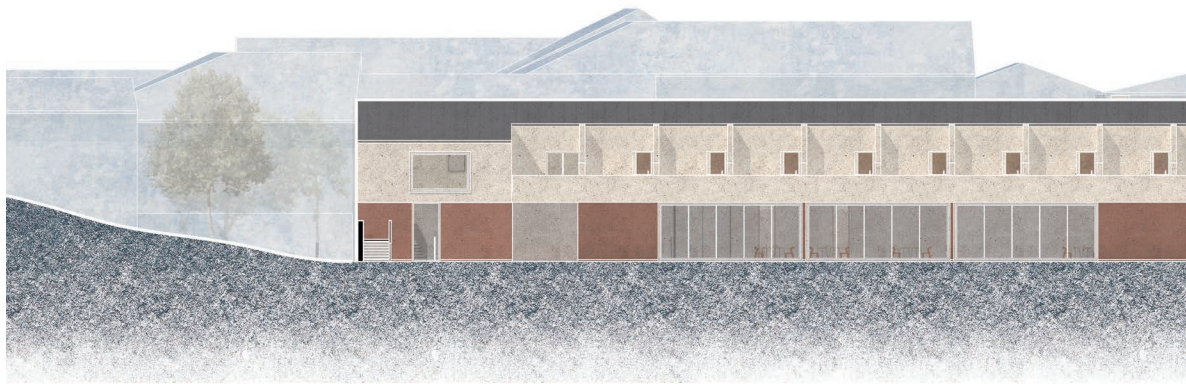
between green space and urban roads
between the city walls and the city

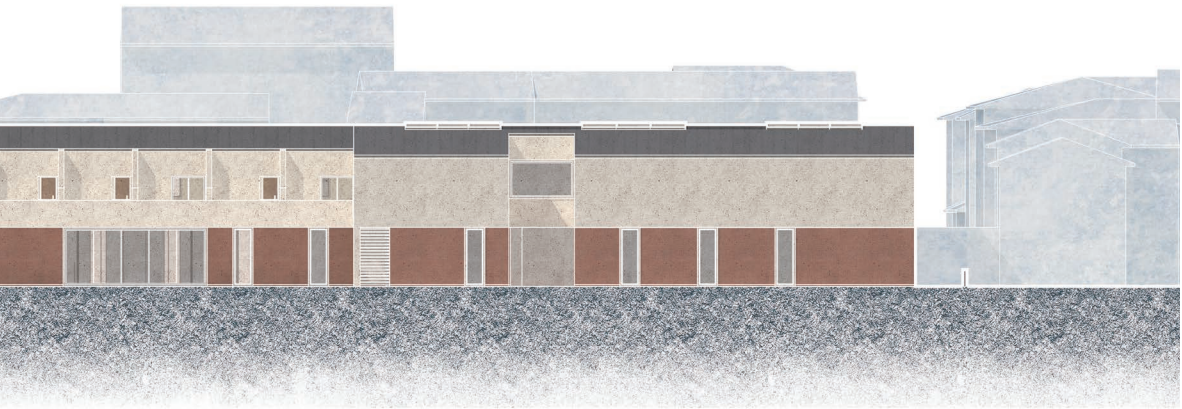
Scale Analysis Of In Plan



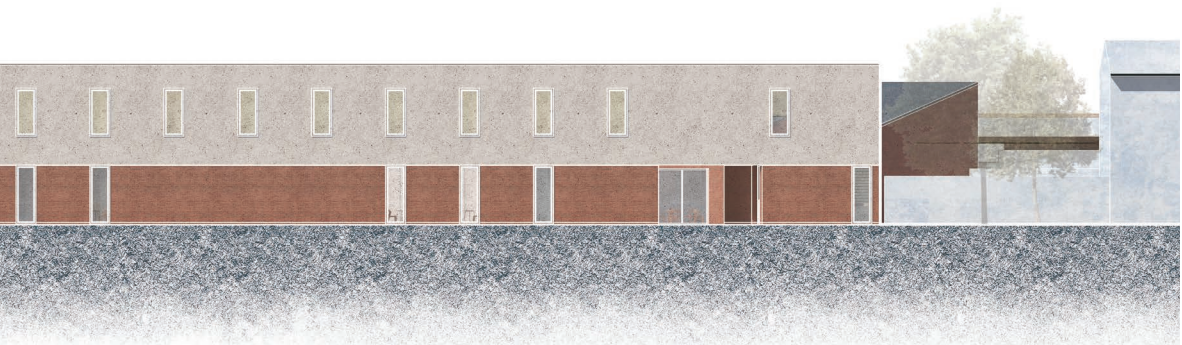
Scale Analysis In Facade



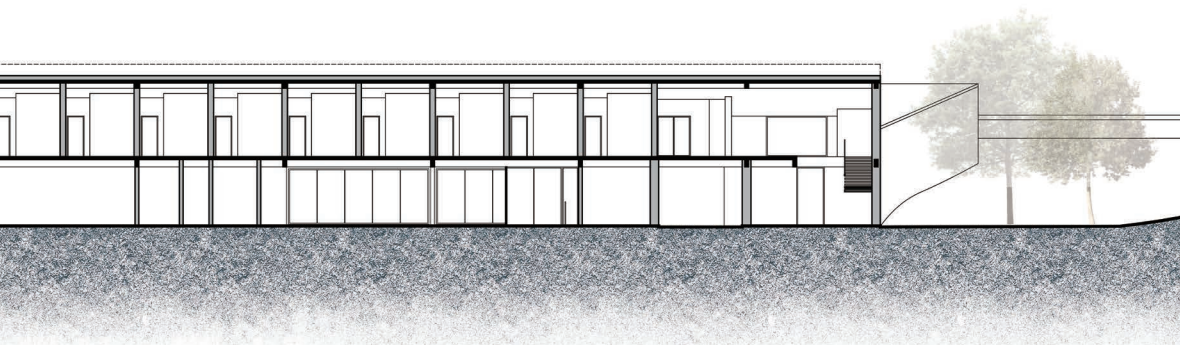




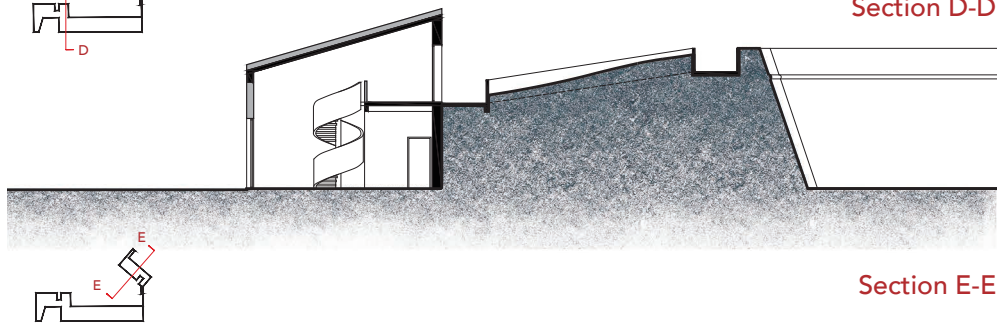
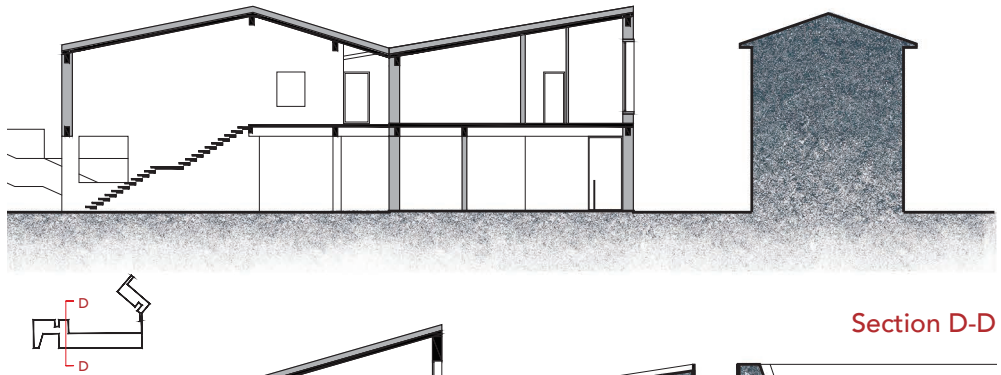
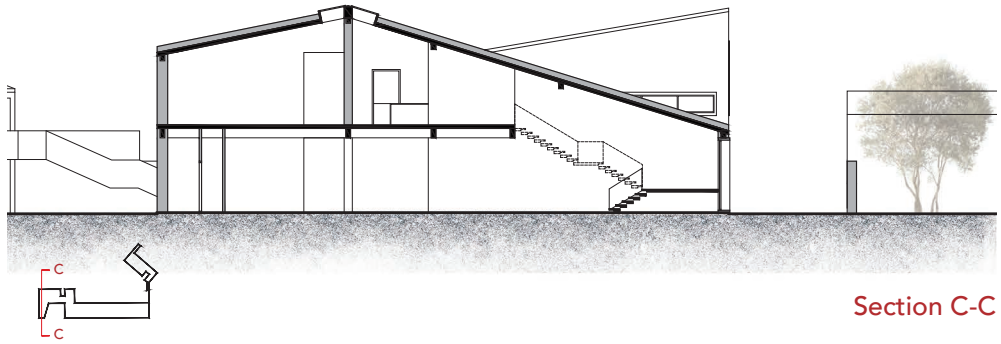
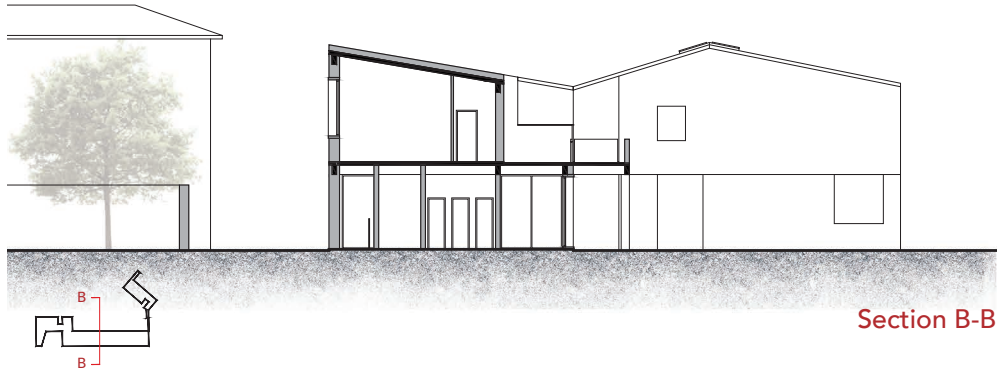
Elevation A-A



Elevation B-B

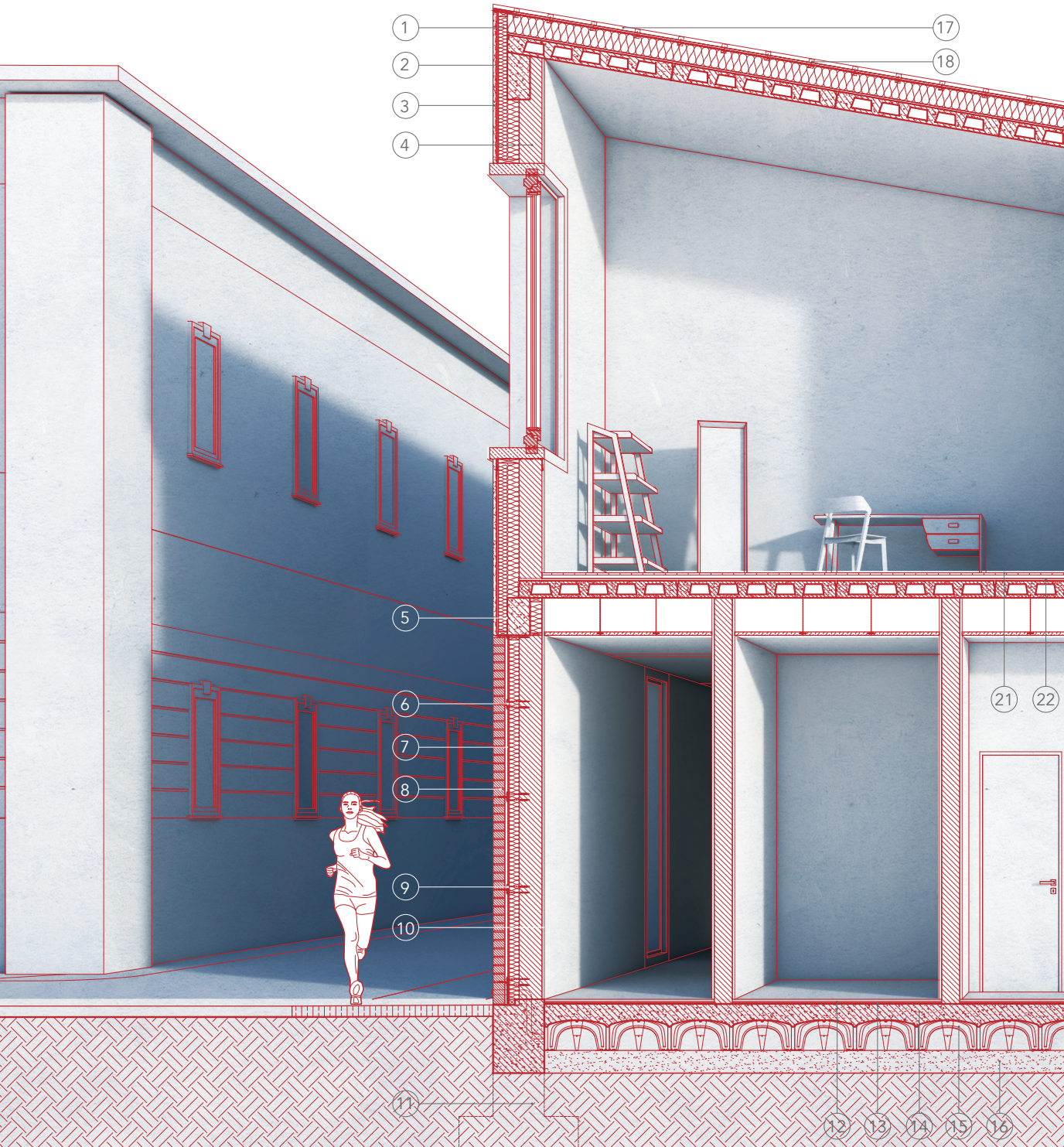


Section A-A



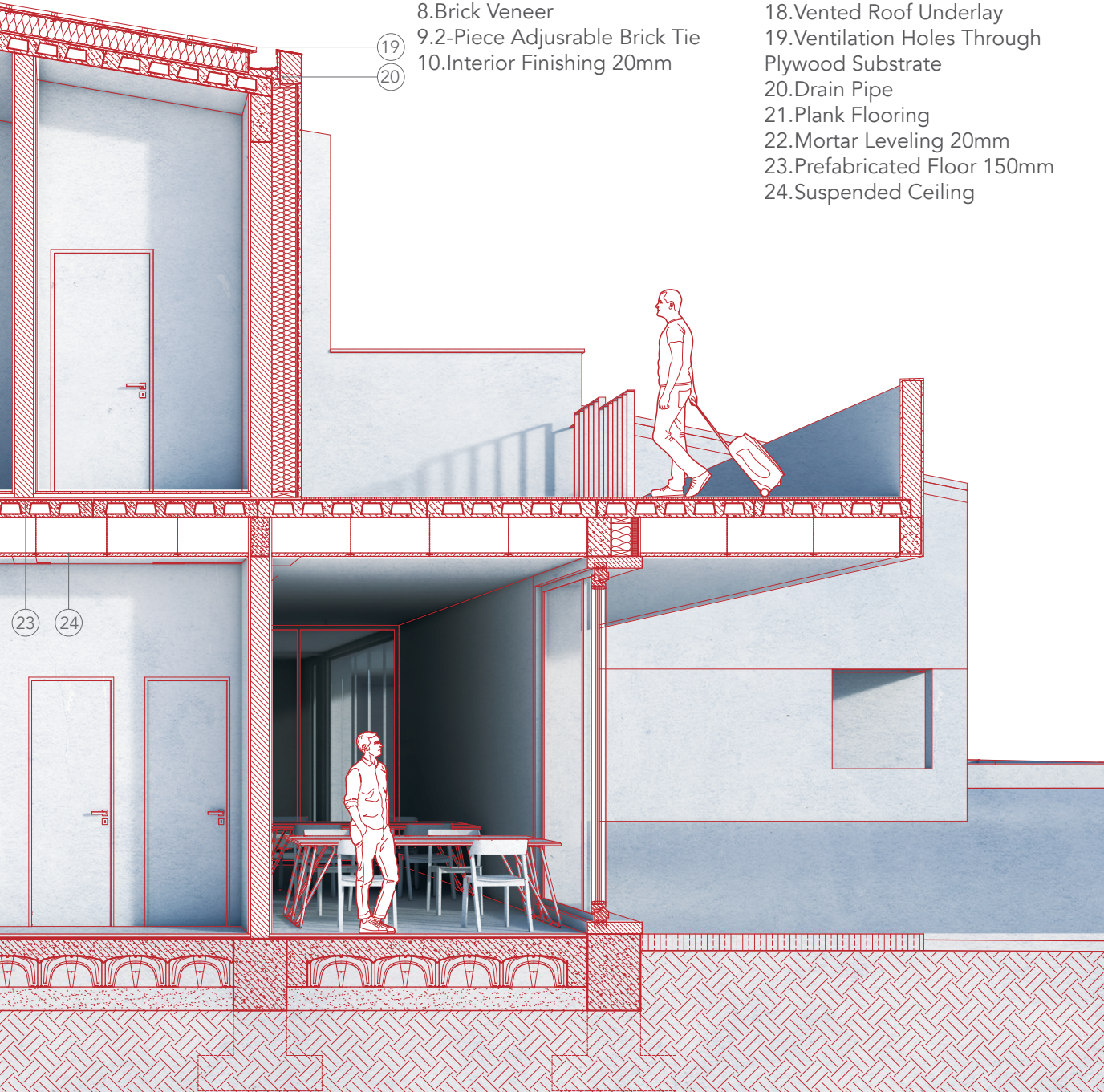


Detail



1. Cavity Insulation
(Thickness: Lower Wall 100mm;
Upper Wall 185mm; Roof 165mm)
2. Self-Furring Metal Lath 5mm
3. External Plaster Finishing 12mm
4. Hollow Brick Wall 200mm
5. Reinforced Concrete Beam
325mm×200mm
6. Rigid Insulation 10mm
7. Cavity 27mm
8. Brick Veneer
9. 2-Piece Adjustable Brick Tie
10. Interior Finishing 20mm

11. Independent Foundation
12. Terrazzo Floor 20mm
13. Mortar Leveling 20mm
14. Reinforced Concrete Floor
150mm
15. Ventilated Floor, Unit
150×150×26mm
16. Cement Leveling 200mm
17. Double Standing Seam
Cladding Roofing
18. Vented Roof Underlay
19. Ventilation Holes Through
Plywood Substrate
20. Drain Pipe
21. Plank Flooring
22. Mortar Leveling 20mm
23. Prefabricated Floor 150mm
24. Suspended Ceiling











/Summary Of The Project

The exhibition space has a complete two-story block, and a shared The historical city inevitably encounters problems such as slow mobility. Building a new building in the old city is equivalent to injecting new energy into the city and providing a new opportunity for the city, so the function of the building is by far the most important.

As a historical city Sabbioneta attracts people every year, but the hotel facilities in the city are not very good, so the first function we propose is residential. Secondly, some universities have workshops here during their holidays, so it is necessary to have a working space while already having a residential space. However, considering the use of working space on normal days, the third main function we propose is the exhibition space, which can provide exhibition space for artists as well as working space during the exhibition period. Finally, a cafe is equipped along the city wall to increase the interaction with the old city wall.

The building responds to current new lifestyles by meeting the different needs of different user groups. The proposed shared space

greatly improves the utilization of space and increases communication between people.

The modular treatment of the residential space integrates the concept of the city into the building, while making the relationship between private and open spaces in the building more coherent. The corridor connecting each block can be regarded as a street in the city, which is a public space, while the garden leading to each block is equivalent to the inner courtyard of a building in the city, which is a semi-private space, and each residential unit is a residential building in the city, which is a private space.

The site was originally a public green space with very low utilization and the current situation was not optimistic. The incorporation of the new building does not cut off the public from the green space and the wall, it remains open to the public and the new plaza becomes an entry point to the green space, providing more opportunities for the wall and the green space.

THE APPENDIX

The Appendix

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