

THE IDEALS OF THE RENAISSANCE IN URBAN PLANNING

AN ANALYSIS OF THREE CENTERS OF THE RENAISSANCE

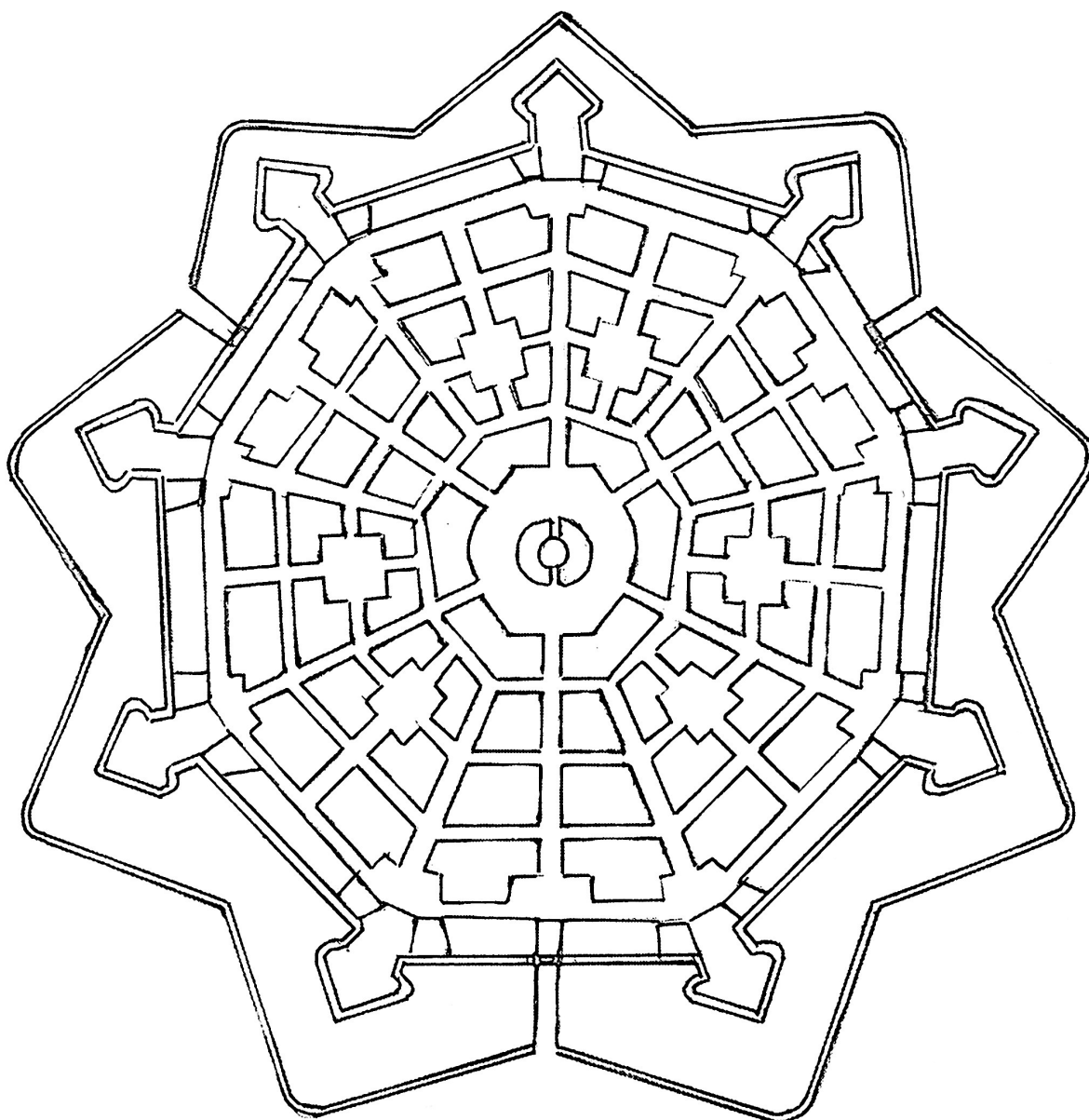


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Abstract

With the Renaissance a new way of thinking emerged that would heavily impact the built environment. Artists started envisioning their ideal cities as ordered and geometrically perfect entities and in urban planning projects more attention was paid to the human experience. Although the cities of Ferrara, Mantua and Sabbioneta are all revered for their Renaissance town planning, the way that the Renaissance has manifested itself in these cities is quite different. The *Addizione Ercolea* of Ferrara does not resemble the typical Renaissance addition as it has a quite irregular layout. However, it is the Humanistic approach to urban development with which the addition was designed that makes Ferrara a true Renaissance city. Also, the urban structures of Mantua don't immediately reveal why the city is so revered for its Renaissance town planning as both the outlines and layout of the city are mostly irregular. For Mantua, it is the way that the ruling Gonzaga family displayed their power that is typical for the Renaissance: they were constantly developing Mantua, as they felt that their own magnificence would be reflected through their city and they created an environment of architects, artists and artisans that established a new artistic language there. Finally, the urban fabric of Sabbioneta is the most literal manifestation of the ideal city of the Renaissance. The entire design of the city is heavily influenced by classical Roman town planning practices and, although the outline of the city and the grid layout seem to be irregular, they are deliberately planned this way through complex calculations.

Introduction

The ideal city of the Renaissance is a concept that not only emerged in famous paintings of the 15th century (fig. 1), but in reality as well. Where artists like Piero della Francesca shaped their ideal cities in paintings, architects like Biagio Rossetti and Bernardo Rossellino sought to implement these new ideas of Humanism in the actual cities of Italy. However, the ways these ideas were realized have differed quite a lot. Ferrara, Mantua and Sabbioneta are cities that are defined by the Renaissance, as they had their most significant developments during this time period. Nevertheless, each of these cities represents the ideals of the Renaissance in a different way. The main question of this thesis will be: **How do the cities of Ferrara, Mantua and Sabbioneta differ from each other in the way they represent they ideals of the Renaissance?** As this research also includes why these cities are regarded as Renaissance cities, we need to understand their urban development during the Renaissance as well and before the Renaissance.

These three cities were chosen for this research because they are all renowned for their urban planning during the Renaissance, although the ideas thereof have manifested themselves in quite different ways. The city of Mantua has continuously been inhabited since the Roman era and therefore has a very long history of urban development. During the Renaissance, the development was very gradual. The urban structure of Sabbioneta on the other hand was established all at once in the second half on the 16th century and the city can therefore be regarded as a single-period city. Lastly, Ferrara has a history that began in the middle ages where the city developed gradually until 1492, when Biagio Rossetti came with his urban plan that would double the area of the city.

The value of the urban structures of Ferrara, Mantua and Sabbioneta is confirmed by UNESCO, which has listed them as world heritage. The fact that these cities are UNESCO world heritage is an advantage for this research, as UNESCO provides a lot of information, including comparative analyses with other Italian cities. A comparison on the representation of the Renaissance ideals between Ferrara, Mantua and Sabbioneta has however not been undertaken yet to my knowledge. Apart from UNESCO resources, such as the ICOMOS reports, also digital maps on these cities will be used for this research, as they facilitate the analyses of the urban structures. Books, articles, and other documents on the urban structures of these cities will be used as secondary sources. As I have lived in Ferrara for half a year, my own experiences can also contribute to this research.

The thesis will be structured in different sections that will all assist in answering the research question. First an overall understanding of urban development in the Renaissance is needed to understand its ideals and characteristics. Then the urban development of each city through the Renaissance is explained, together with in what way they represent the ideals of the Renaissance.



Figure 1: *The Ideal City* (unknown Florentine artist, c 1480)

Chapter 1: Urban Planning in Renaissance Italy

1.1 The emergence of Renaissance urban planning

The cities of Ferrara, Mantua and Sabbioneta have all had their most substantial urban developments during the Renaissance. But to understand these developments, we must first understand the Renaissance itself and how this time could become so remarkably different to what came before. According to Balchin (2008, p. 157), the emergence of Humanism in late medieval Italy was the main reason Classicism would be re-adopted in building design. Renaissance Humanism was a movement in thought, literature, and art, represented by a revival in interest in the classical world which did not focus on religion, as was standard in medieval times, but on what it means to be human. Humanists had a special interest in studying literature and art from antiquity and they believed that poets, writers, and artists could lead humanity to a better way of living. This new way of thinking also heavily influenced architecture.

As stated by Cartwright (2020) Renaissance buildings were designed with elegance, symmetry and functionality and were harmonious with their surroundings, just as they had been in ancient Rome. Above all, buildings displayed the classical ratios of length and height. This application of classical ratios can be attributed to the rediscovery of the most important Roman treatise on architecture and town planning: Vitruvius' *De architectura* (c 27 BC) in 1416. The Vitruvian impact on architecture in the *Quattrocento* was not immediate however. According to Balchin (2008, p. 158) it was only after Leon Battista Alberti (1404 – 72) published his *De re Aedificatoria* in 1452 and Filarete (Antonio Alverino, c 1400 – 69) completed his *Trattato d'architettura* in the early 1460's that the full importance of Vitruvius' work was recognized, at least in much of Italy.

On an urban scale, Pienza was the first city that had its medieval core transformed in an Early Renaissance centre. Between 1459 and 1462 Bernardo Rossellino (1409 – 64) applied the principles of his mentor Alberti to develop the urban plan of Pienza, which would ultimately become the basis for urban planning in Italy throughout the following century and a half. If Pienza would have expanded into a town of some size, it almost certainly would have acquired the grid-iron street pattern that became the norm in much of Early Renaissance development, as it had been throughout much of the Roman Empire (Balchin, 2008, p. 181).

However, this traditional form of development did not go with renowned architect at that time Filarete, who suggested an alternative approach to urban design. In one of his books that was a part of his *Trattato d'architettura* (1460), Filarete set out the attributes of his ideal city which he called Sforzinda (Fig. 2). This city would be based on an eight-point, star-shaped plan within a circle and contain: three central *piazze* with a cathedral and ruler's palace around the main *piazza*; a town hall in the centre of the second *piazza* with a treasury and prison around its edges; and a marketplace and headquarters for the chief of police in the third *piazza*. However, his most innovative proposal was that, instead of a grid-iron pattern of squares and streets, there would be eight radial avenues connecting the *piazze* with the gateways of the outer walls of the city (Balchin, 2008, pp. 179 – 184).

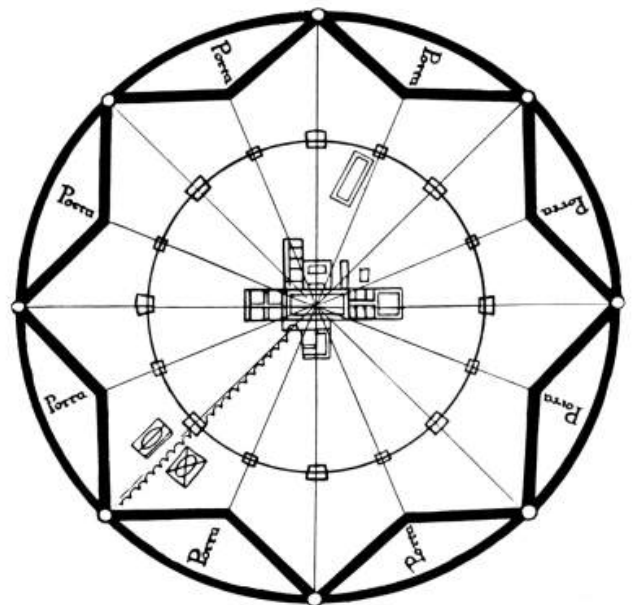


Figure 2: Plan of Sforzinda with its radial avenues (Alverino, 1464)

1.2 The characteristics of Renaissance urban planning

During the Renaissance, many more ideal cities have been envisioned of which very few have actually been realized. Although each design was different, there are certainly particular characteristics to be found in Renaissance city planning. In accordance with the Humanistic way of thinking, the creators were interested in developing ideal living conditions for humanity, for which they turned to the importance of order and organization (Bielas, 2016). However, there was also a political strategy behind this priority for order. According to Bosch (2010), the single most important driving force in the urban renewal of cities was the power and ideals of one man in power who was able to push for order in his particular city. Such men did this as a means of assuring a physical structure that would bring the city even greater influence and growth, to their benefit, and as an expression of what they personally owed the city for their power.

The preference of order and organization translated in the central role for geometric structures in urban plans, whether they be rectangular, circular, or polygonal, and in the desire for symmetry. Likewise, the human scale gained importance, which comes from the Humanistic approach where man is at the center of all things. Hence the idea of a city made for man, to his measure, and which meets his needs in every aspect. (Cocchi, n.d).

Main axes were also essential for Renaissance urban planning, as was the case in Roman city planning. In Roman cities the *Cardo Maximus* was the central north–south-oriented street and the *Decumanus Maximus* was the central east–west-oriented street. Alberti's view on main streets is laid out in his *De re Aedificatoria* (1452): *Within the city, the main street should not be laid out straight, but gently curved. Such a curved street will increase the size of the city. It is also of great significance when a new cityscape emerges at every step for the traveler. Slowly and one by one, the buildings appear in front of him. The street can be widened locally for this purpose. In contrast, a street leading to a listed building must be straight.*¹ Just as Filarete deviated from classical customs by making his city radial, Alberti transforms the straight main street in a curved one to improve the experience of those who walk through. Furthermore, streets became wider and straighter, as governments set the minimum width for streets to increase public safety and wanted to facilitate access to markets, fountains, and important buildings (Balchin, 2008, pp. 88-89).

Below we have an example of a settlement that embodies the characteristics the Renaissance city (fig. 3 and fig. 4). It is the Fortress town of Palmanova, founded in 1596 by the Venetians and one of the few ideal cities that was built from scratch and based on the study of a perfect model with radial symmetry. Palmanova exemplifies the power that an urban design can have: the city was planned to be a 'perfect fortress', but this ambition was never put to the test as its shape was so threatening that nobody dared to attack it.

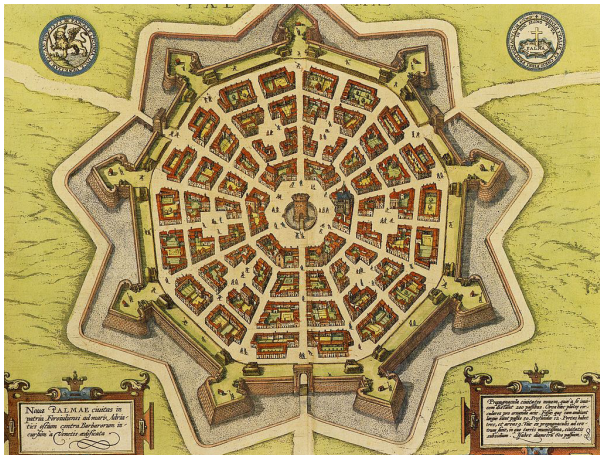


Figure 3: Plan of Palmanova from 17th century (Museo Civico Palmanova, n.d.)



Figure 4: Aerial view of Palmanova today (Panoramio, 2018)

To fully comprehend the novelty of the Renaissance view on urban planning, a general understanding of medieval towns is needed. Briefly analyzing the historical centre of San Gimignano (fig. 5) will give an insight of the typical medieval town, as this city has not gone through any urban renewal and therefore has treasured its architectural homogeneity and its original urban layout from the middle ages.

As is visible in fig. 6, the city of San Gimignano does not have an organized, but an organic urban plan. The outline of the city does not follow a specific geometrical structure and the urban plan is in no way symmetrical. This is because the outlines of medieval towns were most often fixed by their city walls and therefore any increase of population had to be solved within these limits. The more important streets of San Gimignano are also a lot narrower than the common main axes of Renaissance cities would be. Unlike the Renaissance, in medieval times the most characteristic display of power was the tower. San Gimignano was and still is an ultimate testimony to this, as the rivalry between two families resulted in the construction of 72 fortified tower houses (fig. 5), of which 14 are still standing (UNESCO, 1989). During the Renaissance, private patrons no longer displayed their wealth and power by erecting towers, but by commissioning sumptuous *palazzi*, religious buildings, and distinctive *scuole* (Balchin, 2008, pp. 231 – 232).



Figure 5: Historic centre of San Gimignano with some of its famous medieval towers (Fruneau, 2008)

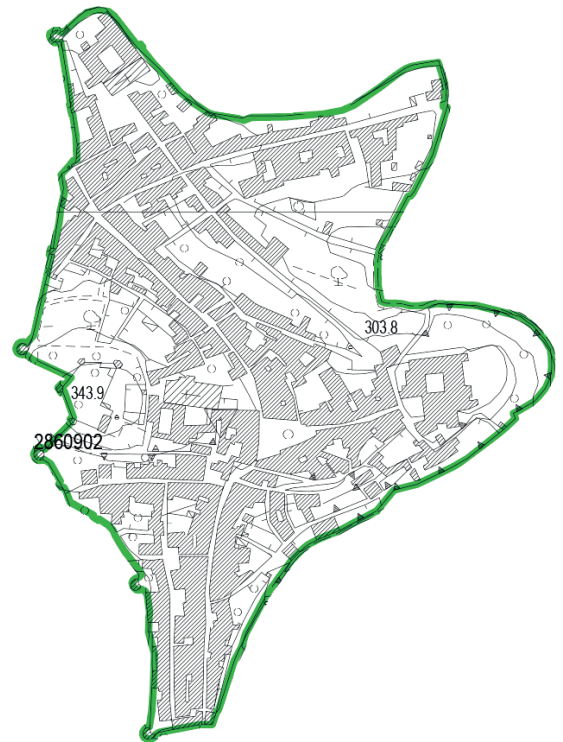


Figure 6: Plan of San Gimignano Historic centre. The organic urban plan and irregular outlines are clearly visible (UNESCO, 2008)

1.3 Ferrara, Mantua and Sabbioneta

Ferrara, Mantua and Sabbioneta (fig. 7) are three Italian cities that had their most significant urban developments during the Renaissance. However, each of these cities represents different aspects of city planning during this period. Ferrara depicts a city that had a radical Renaissance extension but did not alter its existing medieval core. Mantua on the other hand shows a city that gradually expanded during the Renaissance, while also renewing its existing city. And finally, Sabbioneta represents the implementation of the Renaissance's theories about planning the ideal city.

The following chapters will cover the urban developments of each of these cities through the Renaissance, including how these developments came to be and in what way these cities are defined by the ideals of the Renaissance. It is important to note however that although the chapters distinguish urban development until the Renaissance from urban development in the Renaissance, this does not mean that there is a specific moment in time when the Renaissance started in all of Italy. It is generally recognized that the Renaissance started in the beginning of the 15th century and ended at the end of the 16th century, but it differs per city when the Renaissance started to have an impact on the built environment.



Figure 7: Ferrara (dark red), Mantua (bright red) and Sabbioneta (pink) highlighted on the Italian map of 1495. Edited by author. Underlayer (Balchin, 2008a, p. 132)

Chapter 2: Ferrara

2.1 Introduction

Today, the biggest of the three cities is Ferrara (fig. 8 & 9), with more than 130.000 inhabitants. Ferrara is located in the province of Emilia-Romagna and lies in the Po-delta, just a few kilometers south of the river Po. Below the city a branch of this river flows, which has long served as a border. The history of Ferrara is closely linked to the Este family and their rule. The city had been an important medieval center, but only under the Este's would it become an internationally renowned capital with great importance for art, economy, ideology, and religion. In 1995 the city of Ferrara was listed as UNESCO world heritage for its outstanding Renaissance urban structures that are still almost completely intact and the influence that its urban development had on urban planning in the following centuries. In 1999 also the *delizie* of the Este family in the Po-delta were included in Ferrara's nomination on the UNESCO list. Because of its 1492 addition, Ferrara is regarded as the first modern city in Europe (ICOMOS, 1994).



Figure 8: Impression of Ferrara, the spaces along the Cathedral still have its market / shop function (Penna, 2020)

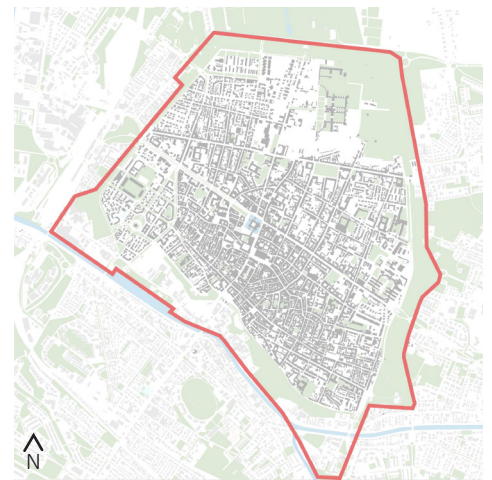


Figure 9: Map of Ferrara today, UNESCO heritage outlined. Edited by author with Milviusmap (n.d.)

2.2 Urban development until the Renaissance

The genesis of Ferrara is unknown. According to legend, the Romans would have settled here and called it *Forum Alieni*, however there is no historical evidence for this. The first time Ferrara is mentioned in literature is in the year 753/754 and it is from here on that the dates in the history of Ferrara begin to be reliable (Zevi, 1960, p. 140). Back then, the urban development of Ferrara was much more controlled by the water, as it was a very marshy environment and great amounts of sand were necessary to form the first roads (ISCO Ferrara, 2017).

The city began to develop along the river between two cornerstones : *Castel Tedaldo*, a medieval castle which no longer exists, and the *Castrum Bizantino*, a Byzantine fortress of which the pattern is still visible in the urban layout of Ferrara (fig. 10). As the city began to flourish due to the commercial activities that took place on the river, it expanded northward. In 1135 the city was even prosperous enough to start construction on the cathedral, which thereafter had urban consequences: the pre-existing road-network starts to orient on the cathedral square and new roads headed for the cathedral are formed (Zevi, 1960, p. 141). Figure 11 shows the urban plan of Ferrara in the 13th century. At this point the *Castel Tedaldo* and the *Castrum Bizantino* are still the limits of the city, which is already expanding north. The southern

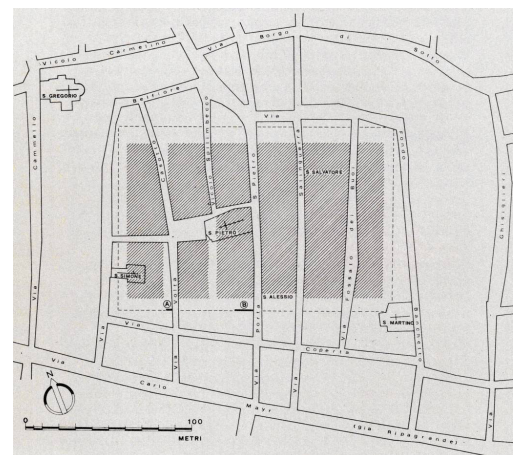


Figure 10: Castrum of Ferrara displayed in the current urban fabric (Ardondi, n.d.)

border of the city is the river, along which the *Via Ripagrande* runs. Nowadays the course of the river has been diverted further south and this street has become an important artery in this part of the city.

The new city center around the cathedral square soon took on religious, political, and commercial functions. Opposite to the cathedral the *Palazzo del Signore* (completed in 1283) was built which would become the home of the Este family. On the market square along the cathedral, the headquarters of the guilds, warehouses and taverns were established (fig. 8). In the second half of the 13th century the urban 'heart' of Ferrara was definitely configured (Zevi, 1960, p. 141).

It is also from this point in time that the Este family gains continuous power over Ferrara, which eventually came to be one of the longest ruling families of Europe. Although Ferrara was a part of the papal states and the Este *Signori* were feudal lords (they had to pay annual dues and owed military service to the pope), in practice they were independent and exercised absolute power over their city (Balchin, 2008, p. 136).

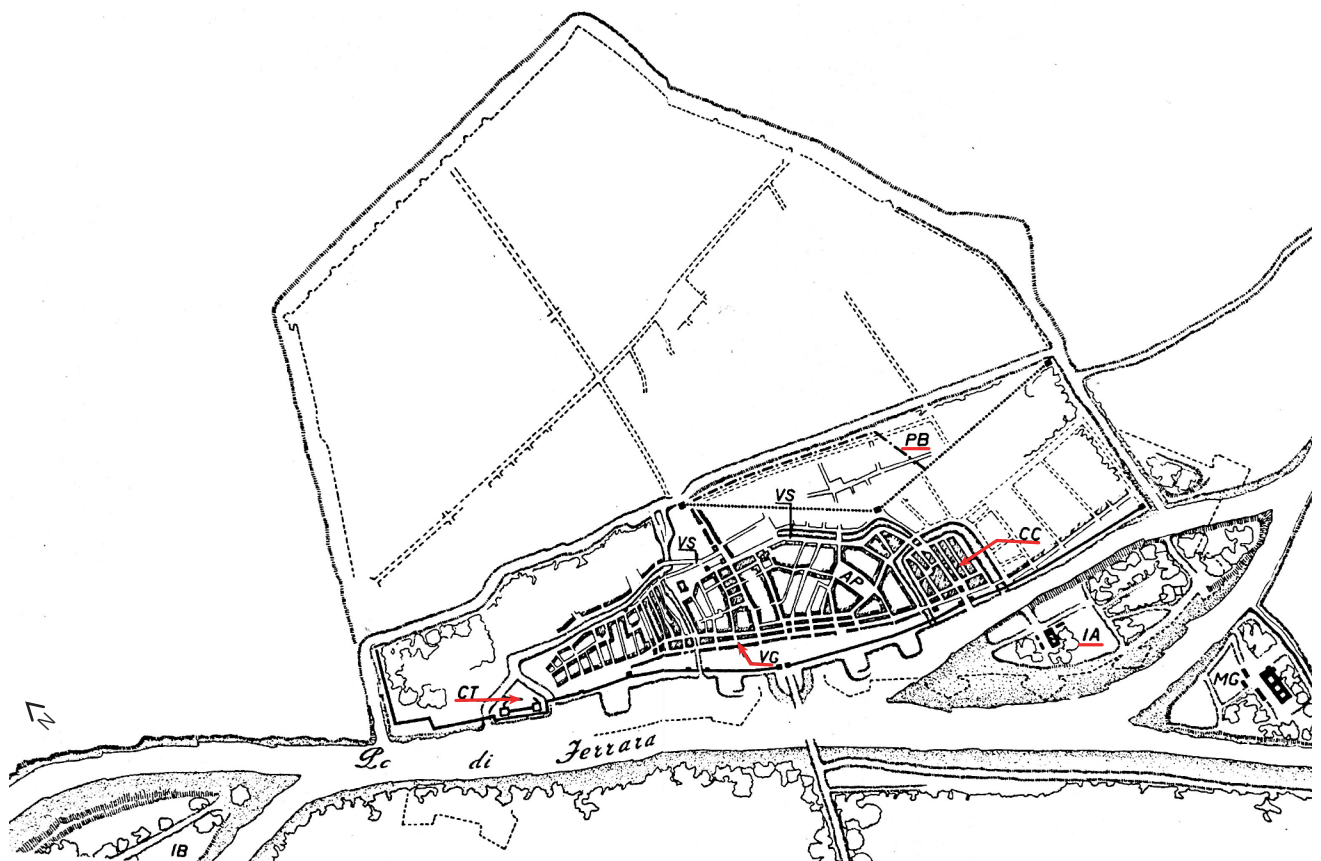


Figure 11: Plan of Ferrara in the 13th century, future additions are visible as well in dashed lines. Relevant spaces: Castel Tedaldo (CT), Via Ripagrande (VG), Pratum Bestiarium (PB), Castello dei Cortesi (where the Castrum Bizantino used to be) (CC) and Sant'Antonio di Polesine (IA). Edited by author (Comune di Ferrara, 1958)

Around 1386 a first addition (fig. 12) is commissioned that, according to the documents compounded by Zevi (1960, p.142), consisted of the construction of a wall to the north because of the rising importance of the cathedral square, and a shift of the urban boundaries towards the north-east. To this location the *Pratum Bestiarium* (fig.11) (place of collection and slaughter of cattle) is moved from the river port, which consequently loses its function (ISCO Ferrara, 2017).

The second addition of Ferrara (fig. 13), commissioned by Borso d'Este (1413 – 71) in 1450, joins the island of *S. Antonio di Polesine* (fig. 11) with the rest of the city. There is also now the *Via Larga* in the north that connects the city with the *Barco* (hunting area and defense outpost), the *Delizia di Belfiore* and other buildings built to the north (ISCO Ferrara, 2017).

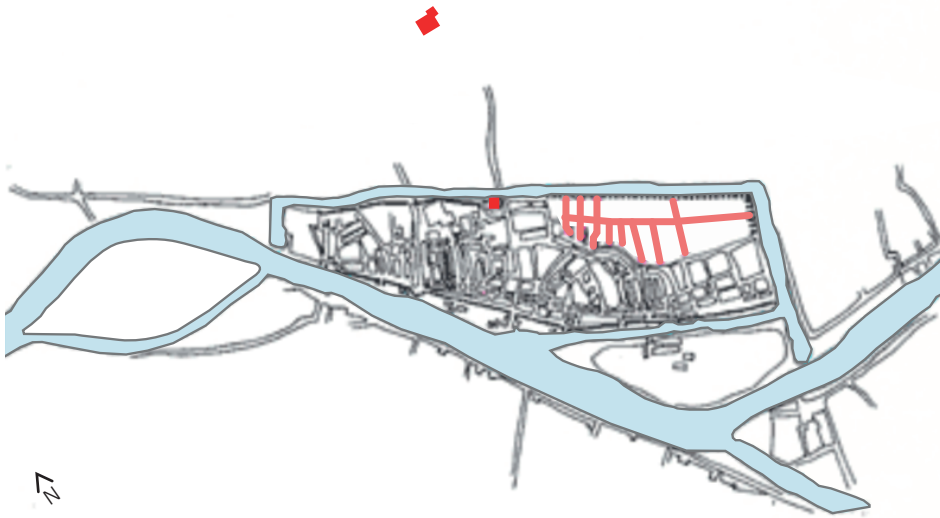


Figure 12: First addition of Ferrara (c 1386). As the map shows, there is much more water than in the current situation. The pink lines show the added roads to which the Pratum Bestiarium is moved. Upper red figure: Delizia di Belfiore. Lower red figure: Castello Estense (1385), which now forms the center of the city. Edited by author. Underlayer (ISCO, 2017b)



Figure 13: Second addition Ferrara (c 1450). The pink lines show the addition and the Via Larga. The red figure shows the most important palazzo built during that time: Palazzo Tassoni (today the university department of architecture). Edited by author. Underlayer (ISCO, 2017c)

2.3 Urban development in the Renaissance

Despite the preceding planned urban projects, it is only from the *Addizione Erculea* of Biagio Rossetti (c. 1447 – 1516), commissioned by Ercole I d'Este (1431 – 1505) in 1492 that we can speak of urban planning in a modern sense, as the former expansions did not have an intimate artistic link, but reflected political, military, and economic events in the development of the city. Walking through Ferrara, it becomes clear that the *Addizione Erculea* is phenomenologically different from the medieval town, as it is now the urban plan that gives meaning to the architecture instead of the other way around (Zevi, 1960, p.143).

The *Addizione Erculea* derived from a multitude of reasons. Firstly, a military one, as the residencies above the northern wall had been defenseless during the war with Venice (1482- 84). Secondly, from a political and economic point of view, *Signore* d'Este wanted to facilitate a severe demographic growth for the large group of Jews that had recently fled to Ferrara, to ultimately make Ferrara a city with a numerically strong economy of exchange. He wanted Ferrara to be able to rival other cities that were enriching themselves with splendid churches and sumptuous *palazzi*, and the noble families did not want to live anymore in the narrow and twisted streets of the medieval mesh (Zevi, 1960, p.144).

The addition of Biagio Rossetti more than doubled the area of the existing Ferrara. Just like the Romans, he implemented 2 main axes (fig.14), the *cardo* (north-south) and the *decumanus* (east-west). Whereas Alberti suggested these axes to be slightly curved, Rossetti made them straight, but he did this without narrowing the street scenes by alternating the buildings along the street with green open spaces. With this tool he was able to create impressive perspectives, which was a concept that was just reinvented by Brunelleschi (1377 – 1446) in the beginning of the *Quattrocento*. Rossetti also made sure to merge the old roads into the new ones at as many places as possible so there would not be a clear distinction between the old and the new city.



Figure 14: *Addizione Erculea* (1492). The pink lines show the new roads that were created, which connect with the existing city at several points. The *decumanus* runs exactly from east to west, but the *cardo* is not placed orthogonally on the *decumanus*. The red figure shows the Piazza Ariosteia, which was designated to be the new marketplace. Edited by author. Underlayer (ISCO, 2017a)

The outline of Ferrara can be regarded as a pentagon, although it is by no means a perfect geometric shape. This is because Rossetti determined the outline based on the places that needed to be included, instead of letting the spaces within the city be determined by a perfect geometrical shape. He decided to include portions of the countryside within the urban core, which is another fundamental reason why Ferrara can be regarded as the first European city: it has an open plan. And even the walls that surround this city were progressive, as these are part of the perspectives by not abruptly ending like they do from the outside (fig. 16), but by fading into greenery (fig. 15), which adds to their human scale (fig. 17). Finally, Rossetti did not create any hierarchy between rich and poor neighborhoods in his plan and he made sure that the minor roads added to the clarity of the major roads (Zevi, 1960, p.147).



Figure 15: The walls of Ferrara from the inside. Greenery enhances human scale of the walls. (Google Streetview, 2016)



Figure 16: The walls of Ferrara from the outside, which are higher and end abruptly (Google Streetview, 2019)

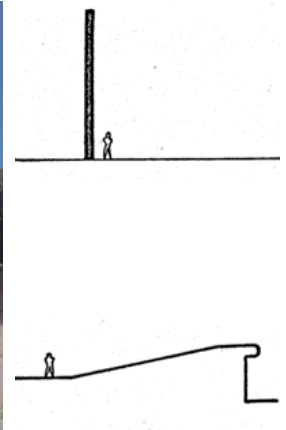


Figure 17: Explanatory drawing of the human scale of the Ferrara walls (Zevi, 1960, p. 157)

2.4 Ferrara the Renaissance city

Analyzing the urban structure of Ferrara, it is clear that the structure does not resemble the typical ideal city of the Renaissance. Not just because it has a medieval area, but because the addition does not have a simple geometrical outline or a clear rigid scheme. But it may be because of this defiance to follow the schemes of the theocratized ideal cities that Ferrara's urban structure becomes truly Humanistic. This is what architect Zevi (1960, p.145) has to say about Rossetti's decisions as urban planner:

Which Renaissance architect would have had the humility and the courage to give up linking his name to a city with a rigid scheme, a star, an octagonal perimeter, or a regular checkerboard? All treatises of the time aimed at these ideological schemes, graphically elementary and memorable such as to make text, to be handed down, repeated, praised for generations and generations. Rossetti owes his immortality to the great refusal to adopt one of the ideal cities theorized and promulgated in his time, and to the commitment to invent a real one.²

In my view, it is not necessarily the characteristics of Ferrara that make it a true Renaissance city, but the Humanistic idea behind it, as Rossetti he gave up his own fame to create a city that was created for the people, not for the ruler. Instead of focusing the plan on the central castle or favoring the interests of the nobility, he constructed a city without class-hierarchy and focused on human-scale. It is this Humanistic approach that makes Ferrara the first modern city of Europe.

Chapter 3: Mantua

3.1 Introduction

Quite smaller is the city of Mantua (fig. 18 & 19) with about 50.000 inhabitants. Mantua is located south-eastern Lombardy in the marshy territory of the Mincio river. Mantua was one of the main centers of the Renaissance in Europe under the reign of the Gonzaga family and although its traces stem from the Roman period, it is the development during the Renaissance that got the city listed as UNESCO heritage.



Figure 18: Impression of Mantua. View on the Palazzo Ducale from the Mincio (Lloyd, 2020)



Figure 19: Map of Mantua today. UNESCO heritage outlined. Edited by author with Milviusmap (n.d.)

3.2 Urban development until the Renaissance

Like Ferrara the origin of Mantua is uncertain, but it is known that Mantua has continuously been inhabited since the Roman era. During this time, Mantua was not a city of great importance, as it was overshadowed by neighboring cities like Verona and Cremona. However, a recent archaeological discovery in *Piazza Sordello*, namely the floor of a sumptuous Roman *domus* from the 1st or 2nd century AD (fig. 20), seems to re-evaluate the importance of the Mantua in the Roman era (MLO, n.d.).

Roman Mantua (fig. 20) was only a small section of current Mantua, located in the north-east part of the city. Until the 18th century, the area that is now the *Giardini di Piazza Virgiliana* used to be part of the *Lago Mezzo*, so the Roman settlement was flanked by water from three sides. The only edge that did not border water had a wall to protect the city. Some traces of the Roman walls and the Roman lay-out can still be found in today's urban fabric, such as the original Roman *cardo* and *decumanus*, which are the current *Via Cairoli* and street from *Voltone de San Pietro* (Fallini et al, 2007, p. 93).

During the urban development of Mantua, its city walls have been expanded three times; thus, we speak of the three rings of development. The first ring (fig. 21), which corresponds with the area of the Roman city, was established around the year 1000 when the demolished city walls were rebuilt. However, the city soon developed further as Mantua became one of the most sacred places in the Christian world because the city housed the presumed *blood of Christ* (Fallini et al, 2007, p. 93).

The second ring (fig. 22) was established when in the 13th century a canal (the Rio) was dug south of the city and this new border commenced a rapid surge in building activities. As Mantua had become a republic in 1115, these developments were focused on satisfying the needs of the citizens, so municipal buildings and squares were created, which became the new heart of the city (Balchin, 2008, p. 30).



Figure 20: Traces of Roman Mantua over map of today. Arrows: decumanus and cardo. Red figure: Roman domus. Pink line: Roman city walls. Pink area: current Giardini di Piazza Virgiliana that used to be water (and therefore a natural border). Edited by author with Milviusmap (n.d.)

The republican era did not last however, as in 1272 the Bonacolsi family seized power and in 1328 the Gonzaga family staged a coup that would leave them in power for centuries. Under the signorial government the type of construction work changed: new town halls and their like were superseded by castles and sumptuous *palazzi* as centers of urban power and spaces that formerly belonged to the *popolo* were gradually bought over and transformed by the *signori* (Fallini et al, 2007, p. 97). Due to a rise in agricultural productivity and trade the city gained more wealth and at the end of the 14th century the territory expanded to a new waterway: the *Fossa Magistrale*, which became the border of the third ring of Mantua (fig. 23). It is during this period that Francesco I Gonzaga (1388 - 1407) produces a vast series of religious and secular works and buildings, which began to characterize the urban planning and further architectural development of the city (Fallini et al, 2007, p. 99).



Figure 21: First ring of development: city walls (dark red) built on the place of the Roman walls. Building activities take place outside the walls (arrows). The map shows waterstructures of the Renaissance. Edited by author with Milviusmap (n.d.)



Figure 22: Second ring of development: the Rio is dug (pink) and new city walls are established (dark red). Red figures show the new municipal buildings and squares. The map shows waterstructures of the Renaissance. Edited by author with Milviusmap (n.d.)



Figure 23: Third ring of development: the Fossa Magistrale (pink) is founded and new city walls are established (dark red). Construction works towards the South begin. The map shows waterstructures of the Renaissance. Edited by author with Milviusmap (n.d.)

3.3 Urban development in the Renaissance

In contrast to Ferrara, the borders of Mantua did not alter during the Renaissance; it was within the city limits that the developments took place. The rule of Gianfrancesco Gonzaga (1395 - 1444) prepared the way for the Renaissance as he brought in new ideas through Humanist studies from Brunelleschi and Alberti. During his rule, the famous Humanist boarding school *Casa Giocosa* was established, which was an unusual institute as they educated girls along with the boys and offered education to the poor.

In the 1430s Gianfrancesco started a period of urban renewal, with the planning of urban spaces as a way of organizing the city, and urban development in the new area to the south. Although the architecture lingered on a Gothic language, the idea of using town planning as a rationalization of space brought Mantua to the forefront in the development of Renaissance town planning. In comparison, projects to renew urban fabric are mentioned in Rome (1447), Pienza (1459), Urbino (1447 – 65), Ferrara (1451 – 91), Padua (1453), and Brescia (1492) (Fallini et al, 2007, p. 101).

It was not until the second half of the *Quattrocento* however that Mantua, under the rule of Ludovico Gonzaga (1412 – 78), gained a premier role in the Renaissance; architects, artists and artisans arrived in the city and established a new artistic language (ICOMOS, 2008, p. 176). Ludovico attended the *Casa Giocosa*, where he was educated with Humanist ideals that would influence him for the rest of his life. During his rule he was dedicated to improving the city, much like the other small Renaissance cities of northern Italy who wanted to promote the prestige of their small courts as rivals to the more powerful states. In the lesser principalities such as Mantua, as they were constantly overshadowed by larger and predatory neighbours, there was often even a greater need to construct imposing edifices as symbols of absolute power and authority (Balchin, 2008, p. 138).

Whereas signorial patronage in Mantua continued rapidly throughout the *Quattrocento*, in Ferrara this practice was far more moderate. Almost the only building of note to be constructed through d'Este family was the *Palazzo Schifanoia* (commissioned by Borsa I in 1462). In Mantua on the

other hand, the Gonzaga commissioned many buildings of architectural importance, particularly the two Alberti churches of *San Sebastiano* (c 1460) and *Sant'Andrea* (1472) (fig. 24 & 25). The works of Alberti in Mantua became very influential and based on his works a new classical architectural language developed in Mantua that spread to the rest of Italy (ICOMOS, 2008, p. 178).

Especially during the 1460s and 70s there was a big surge in urban development in Mantua after the visit of Pope Pius II (1405 - 64) for the great church congress of 1459, which was a political triumph for the Gonzaga: many new *palazzi* and other buildings were erected and alterations were made to the old ones to transform them to the Renaissance style. Streets and open spaces were paved, a new sewer system was established, and a central axis was created through the city to the south (fig. 26), which transformed the urbanistic and symbolic orientation of the city so that it was no longer founded on the older network of Roman and medieval roads, but instead followed the monumental points of signorial power. The axis began with the Gonzaga court and the *Castello di San Giorgio* in the north, then followed with the Alberti churches and the *Palazzo della Ragione* further south and ended with the enormous suburban villa *Palazzo Te*. Together with these ambitious building projects, the improvement of urban infrastructure in the second half of the century (achieved by paving the streets and installing a new sewer system) reveals the constant attention paid by the Gonzaga to the image of their city (Lazzarini, 2002, p. 319).



Figure 24: Alberti church of San Sebastiano (Sailko, 2017)



Figure 25: Alberti church of Sant' Andrea (Sokolovsky, 2012)

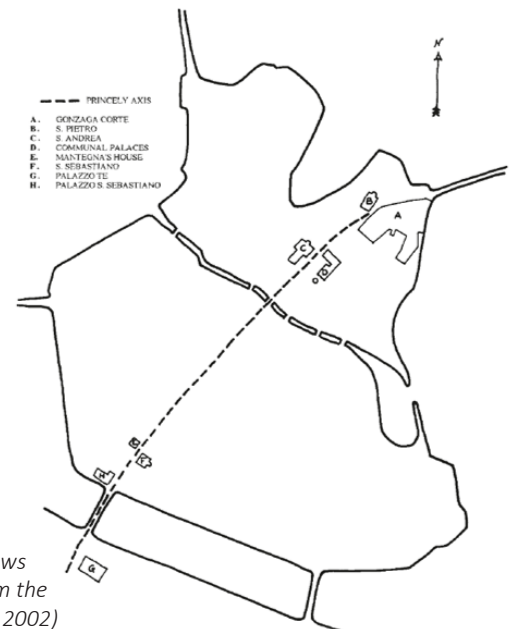


Figure 26: The main urban axis of Mantua follows the monumental points of signorial power: from the Gonzaga court (A) to Palazzo Te (G). (Lazzarini, 2002)

3.4 Mantua the Renaissance city

Like Ferrara, analyzing the urban structures of Mantua doesn't immediately reveal why the city is so revered for its Renaissance town planning. The outline of Mantua is mostly determined by the natural borders of the water and therefore does not resemble a geometrical shape, and the layout of the city is mostly irregular with only some regular parts. To recognize the influence of the Renaissance in Mantua we must look on a smaller scale: the urban fabric of Mantua is not the result of one overarching urban plan, but of a gradual transformation through many ambitious building projects.

Along the urban axis we find architectural masterpieces that were heavily influential throughout Italy and that consolidated Mantua as a Renaissance center of great prestige. The Gonzaga were constantly developing their city not only by adding to it, but also by improving the existing parts and their urban renewal projects in the beginning of the *Quattrocento* brought Mantua to the forefront in the development of Renaissance town planning. After all, the Gonzaga felt that their own magnificence would be reflected through the state of their city and because of this attitude, as Hollingsworth explains (2014, p.235), *the Gonzaga achieved a level of distinction for their city out of all proportion to its size.*

Chapter 4: Sabbioneta

4.1 Introduction

The last Renaissance town that will be discussed is Sabbioneta (fig. 27 & 28), which is located in southern Lombardy and only has around 4000 inhabitants. Sabbioneta was built between 1556 and 1591 by order of Vespasiano Gonzaga (1531 – 91) on the location of a former town that was demolished for it. Because there are no remains of this prior town, Sabbioneta is considered to be the first completely newly founded city in the Renaissance. Sabbioneta can also be described as a single-period city as it was entirely created in the second half of the *Cinquecento* and is one of the few constructed ideal cities that is truly preserved over time (ICOMOS, 2008, p. 178) .



Figure 27: Impression of Sabbioneta, aerial view (Borghi, n.d.)



Figure 28: Map of Sabbioneta today. UNESCO heritage site outlined. Edited by author with Milviusmap (n.d.)

4.2 Urban development in the Renaissance

During the Renaissance the Gonzaga family did not only rule the city of Mantua, but the whole province of Mantua (fig. 7). In 1478 the territory was, however, divided into several small independent states to be ruled by different branches of the Gonzaga family, the area of Sabbioneta being one of these. When Vespasiano Gonzaga (1531- 91) came into power of this state, he wanted to build a new capital for it. According to tradition, Vespasiano designed the plan of the city himself with the help of military experts. He had studied the writings and theories on ideal city planning and wanted to combine this knowledge with creating an impregnable fortress as the city held a position of great strategic value with its control over an important trade route (Comune di Sabbioneta, 2019).

Vespasiano's design for Sabbioneta was heavily influenced by Roman city planning. Unlike Sforzinda or Palmanova, the urban plan was not radial but a right-angled grid layout, which was commonly used by the Romans. Although this grid seems irregular, it is entirely based on geometry and astronomy. Sabbioneta's outline, which can be described as an irregular starshaped hexagon, is exactly inscribed into a square, whose corners point exactly towards the four compass points, so that the diagonals run exactly from north to south and from west to east (fig. 29). This square can be divided into a grid of 34x34 smaller squares of which the measurements are based on the Roman foot. Gonzaga emphasized the ideal center of the city, which was found on the *decumanus* of the city, by placing a *Palladium* (column with the statue of the Greek goddess Athena) on

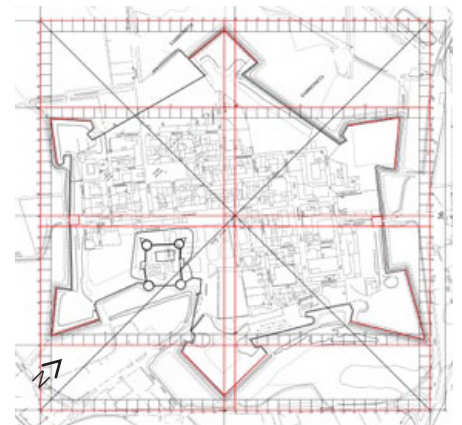


Figure 29: Design of Sabbioneta, outline is determined by the square grid (Pieper, 2012b)

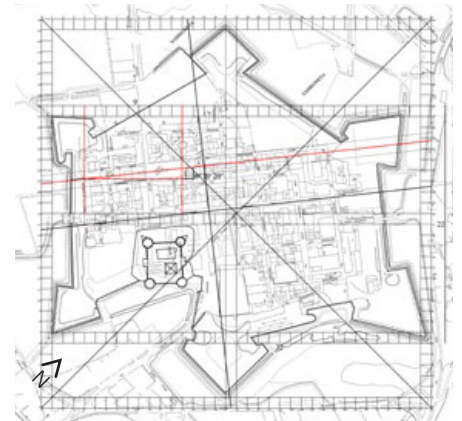


Figure 30: Design of Sabbioneta, the axes have a slight inclination (Pieper, 2012b)

that location. Using Roman techniques, they could define this point to the millimeter (Pieper, 2012).

Besides the outline of the city, the grid also determines the location of all the major buildings such as the *Palazzo Ducale*, the churches, the theater, the gallery, and the city gates and, most importantly, defines the directions of the main axes of all streets and squares. However, these axes are not aligned with the measuring shape of the 34x34 squares, but have a slight inclination (fig. 30): 308,46° degrees from the astronomical north-south direction, which is the south azimuth of the sunrise on the 6th of December. Vespasiano Gonzaga, being born on this exact day ‘shortly after sunrise’, hereby directed the internal structures of the entire city towards his birthday; a practice which was common for Roman city founders (Pieper, 2012).

Gonzaga also applied the theory of perspective to his plan by varying the width of the streets so that the two rows of houses were not perfectly parallel but tended to meet. This way he could make the streets of this small city seem longer and make the city appear larger than it actually was (Comune di Sabbioneta, 2019).

Sabbioneta is polycentric; there are 2 main squares that are located in an asymmetrical and decentralized position and around which the most representative buildings arise (fig. 31). Firstly, there is the *Piazza d’Armi* which was the center of the lord’s private life. Here the *Palazzo del Giardino* can be found, which fits the typology of a suburban villa (like Mantua’s *Palazzo Te*), but here is established within the city walls. The fortress of Sabbioneta was also located here, but this has since been demolished. The *Piazza Ducale* was instead the centre of political, administrative, and religious life and housed the marketplace of Sabbioneta. The square is perfectly rectangular in shape and is surrounded by three important buildings: the *Palazzo Grande* (seat of the political and administrative commitments), the *Palazzo della Ragione* (seat of the two city councils, the Rural and the Civilian) and the church of *Santa Maria Assunta* (ICOMOS, 2008, p. 175).

Although Sabbioneta was certainly equipped with an elaborate defense system (there were barracks, stables, hangars, and granaries to get through any possible siege), the city was above all in the perspective of its lord a place of politics, intellectuality, and representation of power (Fallini et al, 2007, p. 140). Through several cultural and scientific institutions, it becomes clear that Vespasiano aspired for his city to be a Humanistic center; an academy of the Greek and Latin languages was established, as well as a printing house and, most extraordinary of all, the *Teatro all’Antica*. This theater, designed by the renowned architect Vincenzo Scamozzi (1548- 1616) who would later design the city of Palmanova, was the first example of a modern era theater built from scratch and not bound in the structure to pre-existing buildings. Sabbioneta therefore houses one of the jewels of European theater history (Fallini et al, 2007, pp. 117- 118).



Figure 31: Urban plan of Sabbioneta. Red figures show important buildings. Pink figures show important squares. A: Piazza Ducale. B: Teatro all’Antica. C Piazza d’Armi

4.3 Sabbioneta the Renaissance city

Although Sabbioneta is often portrayed as an ideal city that was the dream of a lord, the city does not fully fit this model because practical reasons for its creation were undoubtedly involved. However, this does not take away from the fact that Sabbioneta is an exceptional testimony to Renaissance city planning with careful consideration for Humanistic interventions such as the use of perspective and the tangible influence of classical Roman city planning methods. The outline of the city and the grid layout seem to be irregular but are actually the result of complex geometrical and astronomical calculations. Because of this, the urban plan of Sabbioneta can be regarded as the urban expression of the Renaissance art concept of *Sprezzatura*, meaning that must be considered as the highest form of art what does not seem to be art at all.

Conclusion

With the Renaissance a new way of thinking emerged that would heavily impact the built environment. Artists started envisioning their ideal cities as ordered and geometrically perfect entities and in urban planning projects more attention was paid to the human experience. Throughout the Renaissance, urban development became a way for rulers to reflect their own magnificence and thus become immortal through the enhancements they made for the city. And for the wealthy and powerful citizens their preferred way of displaying power changed as well; instead of building towers like they did in the middle ages, private patrons now commissioned sumptuous *palazzi*, religious buildings, and distinctive *scuole* to display their power or to confirm their spirituality and social responsibility.

Although the cities of Ferrara, Mantua and Sabbioneta are all revered for their Renaissance town planning, the way that the Renaissance has manifested itself in these cities is quite different. Analyzing the *Addizione Erculea* of Ferrara, it is clear that the urban structures don't resemble the typical characteristics of the ideal city with its irregular layout. However, it is Rossetti's Humanistic approach to urban development that makes Ferrara an exemplary Renaissance city; he sacrificed his own fame to create a city that was created for the people, not for the ruler. In addition, he favored the interests of the citizens over the interests of the nobility by creating a plan without class-hierarchy and he created perspectives and walls fading into greenery to improve the experience of all who would walk through.

Since the Renaissance, the city has undergone some changes; an earthquake in 1570 and a bombardment during WWII have led to the destruction of many historic buildings, but considering the circumstances the city has survived reasonably well. Most importantly, an extensive comparative study from Ferrara's city planning office shows that the urban fabric has maintained all its significant features over the centuries (ICOMOS, 1994, p. 39). Therefore, despite the loss of some historic buildings, the essence of Biagio Rossetti's Renaissance plan can still be experienced throughout Ferrara.

Like Ferrara, the urban structures of Mantua don't immediately reveal why the city is so valued for its Renaissance town planning. The outlines in which developments took place during the Renaissance had already been established beforehand and the layout of the city is mostly irregular with only some regular parts. However, Mantua was a forerunner in urban renewal in the 1430s and the new architectural language that Alberti developed in Mantua heavily influenced Renaissance architecture throughout Italy. In contrast to d'Este family, the Gonzaga commissioned many more buildings of architectural importance throughout the *Quattrocento*. In a true Renaissance manner, they displayed their wealth through constant improvement of their city which ultimately culminated in the development of a main axis that followed the monumental points of signorial power and transformed the urbanistic and symbolic orientation of the city.

Whereas in Ferrara there is a clear distinction between the medieval part and the Renaissance part, in Mantua the Gonzaga also transformed the existing roads and facades to create a Renaissance city. The medieval urban fabric however was mostly left intact, as is still visible in the irregular and compact structures above the Rio (fig. 19). Since the Renaissance, Mantua has preserved its existing urban plan and city has developed even further by demolishing the fortifications, filling up the *Fossa Magistrale* and expanding southward. In some places new buildings have replaced the old ones, but the city still has so many testimonies to the Renaissance that it can be considered to be one of the most prominent capital cities of the Renaissance culture (ICOMOS, 2008, p. 177).

Finally, the urban fabric of Sabbioneta is most clearly of the three cities a manifestation of the ideal city of the Renaissance. The entire design of the city is heavily influenced by classical Roman town planning practices and, although the outline of the city and the grid layout seem to be irregular, they are actually deliberately planned this way through complex calculations, whereas the outline of Ferrara was based on the places that needed to be included and the outline of Mantua was mostly determined by natural borders. With even the urban axes oriented in a way that honours the city's founder, the

entire urban fabric of Sabbioneta can be regarded as a display of power of Vespasiano Gonzaga.

Since its foundation only some negligible changes have been carried out in Sabbioneta. The street pattern is still intact, as well as the squares, the public *palazzi*, and the defense system around the city. Sabbioneta, being one of the best-preserved ideal cities of the Renaissance, can therefore be regarded as an incredible testimony to the *Cinquecento* architecture and ideal town planning (ICOMOS, 2008, p. 177).

Glossary: General and Architectural Terms

Cinquecento- the 1500s or 16th century

Classical- style of architecture derived from ancient Greece or, more commonly, from ancient Rome, as promulgated by the treatises of Vitruvius and Alberti

Delizia (pl. *Delizie*) – a term that the Este court used for their places of leisure (their villa's, gardens, castles, islands or parks)

Domus – ancient Roman dwelling

Fossa – Italian word for ditch, moat

Lago – Italian word for lake

Palazzo (pl. *Palazzi*) – corresponding either to a town house, larger official residence or building of municipal or state government

Palazzo Ducale- Ducal Palace

Palazzo della Ragione- law court

Piazza (pl. *Piazze*) – Italian word for square

Popolo – comprised of merchant and master-artisan interested groups

Quattrocento- the 1400s or 15th century

Scuola (pl. *Scuole*)- Religious confraternity and its headquarters

Signore (pl. *Signori*) – de facto political head of a city's government

Via – Italian word for street

Volta (*Voltone*, big *Volta*) – Italian word for vault, an arched masonry ceiling

Notes

1 *De hoofdstraat moet binnen de stad niet rechtlijnig worden aangelegd, maar zacht gebogen. Zulk een gebogen straat zal de omvang van de stad groter doen schijnen. Verder is het van grote betekenis als voor de reiziger bij iedere schrede een nieuw stadsbeeld opdoemt. Langzaam en stuk voor stuk komen de gebouwen voor hem tevoorschijn. De straat is daartoe plaatselijk te verbreden. Daarentegen moet een straat die naar een monumentaal gebouw leidt, recht zijn.* (Norbruis, 2015)

2 *Quale architetto del Rinascimento avrebbe avuto l'umiltà e il coraggio di rinunciare a legare il suo nome ad una città a schema rigido, a stella, a perimetro ottagonale, o a scacchiera regolare? Tutta la trattatistica dell'epoca mirava a questi schemi ideologici, graficamente elementari e memorabilia, tali da far testo, da essere tramandati, ripetuti, elogiati per generazioni e generazioni. Il Rossetti deve la sua immortalità al gran rifiuto di adottare una delle città ideali teorizzate e promulgate nel suo tempo, e all'impegno di inventarne una reale.* (Zevi, 1960, p.145)

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