

Pilot implementation

Tourism experience

Atlas

Adriatic Cultural Tourism Laboratories
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Mapping of twentieth century architectural heritage of Ferrara in order to define an itinerary as new tourism experience in the art and the architecture in the years 1920-1940.

The main aim was the valorization of a shared vision of historical and cultural identity, in order to underline the architectonic heritage due to the different totalitarianisms of XXth century. In fact this heritage had a great importance even if connected to a complex and “inconvenient” historical period. From Eclecticism to Rationalism, 20 years of fascist regime profoundly influenced the development of architecture and urbanism in Italy. In Ferrara, the area between the Monumental Acqueduct and Largo Antonioni hosts several buildings which tell this story. So, through this mapping, we realized a new school tourist itinerary which has also some connections with the city, particularly with its stakeholders and its other itineraries.

This new itinerary starts from the 20th century Quadrilateral (Largo Antonioni), the main example of rationalist intervention, and offer visitors the opportunity to cross different architectural styles and design details.

The journey provides 15 stages, in correspondence to each one, some road signs have been permanently arranged, with the task of enhancing the individual urbanistic-architectural nineteenth-century assets and the principal legacy of fascist totalitarianism.

The “Mario Poledrelli” state primary school

G. Savonuzzi (1928)



The school building was designed by Girolamo Savonuzzi, the chief engineer of the Municipality and one of the leading lights in the urban and architectural transformation of early twentieth century Ferrara, in which the dedication of the Jewish Podestà (chief magistrate) Renzo Ravenna played a major role. Erected between January and October 1928 by the company owned by Alessandro Zaccarini, the building was created for use as a school, and has remained such over the years until today.

It is named after Mario Poledrelli, who was born in S. Nicolò (FE) on 17 July 1893 and died on 4 June 1917 in the Battle of the Isonzo.

Harmonious and somewhat severe in appearance, the building has an elegant and highly-symmetrical street-facing façade, characterised by a clearly defined central body framed by two slightly protruding lateral structures of more modest height and width; these alternating volumes lend a touch of lightness and vivacity to the general grandeur of the building.

The façade features clear references to the Ferrara tradition, both in terms of materials and form; indeed, the building can be described as being in the local hybrid style of the early twentieth century, referred to as "neo-estense", enabling the harmonious inclusion of the school and other contemporary buildings in the pre-existing urban environment. The building, together with the annexed caretaker's residence, occupies the corner between Via Poledrelli and Corso Vittorio Veneto, forming one side of the avenue that leads up to the monumental aqueduct.

The monumental aqueduct

C. Savonuzzi (1930-1932)



The monumental aqueduct was designed by Carlo Savonuzzi and built between 1930 and 1932, in collaboration with the municipal designer Enrico Alessandri. His plans replaced the previous design by Adamo Boari, which had remained unfinished following the architect-engineer's untimely death. Savonuzzi took Boari's design and transformed it into the structure that is visible today, completing it with the fountain-statue entitled *Il Po e i suoi affluenti* by the sculptor Arrigo Minerbi. This work of sculpture refers to one of the founding myths of the city and the surrounding region, namely that of Phaethon and Heliades, to which the poplars on either side of the fountain also refer. Chronologically speaking, this was the city's second reservoir, after the one located in the Montagnone park and inaugurated on 8 June 1890, but in terms of importance, Savonuzzi's was of greater significance due to its monumental nature.

The aqueduct serves as the focal point of the Giardino district of Ferrara, and marks the end point of the tree-lined Corso Vittorio Veneto, connecting it to Viale Cavour to stunning visual effect.

The aqueduct is 37 metres high - just like the grooved tower of the "Alda Costa" school, also designed by Savonuzzi and erected between 1932 and 1933 - and 58 metres wide; it can contain more than 2500 cubic metres of water. Created in the twentieth-century style, it is made almost entirely of reinforced concrete; however, despite its size and the materials from which it is built, the structure retains a certain airiness and momentum, setting itself apart from other similar works from the same era that can be found across the country.

The Liberty villas of Viale Cavour

Ciro Contini



Where the Panfilio canal once flowed, one of Ferrara's most important roads now lies: Viale Cavour. The works to bury the canal began in 1861, and lasted twenty years. In 1883, the avenue assumed its current name, immediately taking on great importance within the city both in terms of logistics and status; from this point, it progressively became a showcase of twentieth century architecture in Ferrara. Along this avenue, a number of superb examples of Liberty-style buildings can be seen, among others.

Villa Melchiorri (1904)

This was the first of the residential villas to be built on the new Viale Cavour, on the basis of the plans created by **Ciro Contini**. Designed as a shop-residence, it is characterised by its ornamental features, and in particular by the circle motif which dominates the entrance, accompanied by a similarly prominent floral motif. The decorative elements are made from concrete and shaped by the sculptor **Arrigo Minerbi**; of particular note are the bouquets of sunflowers that echo those found on the wrought iron gate.

Villa Amalia (1905)

This building is an expression of the eclectic aesthetic style that was typical of the "Umbertine" period; it was constructed according to **Contini's** architectural designs in collaboration with the artist and potter **Galileo Chini**. It is named after **Amalia Torri**, the wife of the man who commissioned it. **Villa Amalia** is notable for the refinement of its decorative elements, which can be attributed to the use of a combination of different materials, such as stucco, iron and ceramic.

Villa Masieri Finotti (1907-1908)

Commissioned by **Teresa Masieri**, this villa serves as an expression of the evolution of **Contini's** aesthetic style; from first glance, the façade immediately reveals his allegiance to the Central European **Jugendstil** (also referred to as **Art Nouveau**). Here once again, different materials are used together, and plant motifs feature heavily in the decorative elements, although in a somewhat different incarnation.

The former Casa del Fascio

G. Gandini (1928-1930)



Build between 1928 and 1930, the Casa del Fascio (headquarters of the local Fascist party) was inaugurated on 23 February 1931 in the presence of Italo Balbo, the Podestà (chief magistrate) Renzo Ravenna and high-level representatives of the various local authorities.

The building replaced the former fascist headquarters in Corso Giovecca, which had been deemed inadequate. The move to Viale Cavour, the main road traversing the city which had only recently been built, was spurred by both logistical considerations and the quest for greater prestige.

The building is perhaps the best example of the work of Giorgio Gandini in Ferrara, and is striking for its grandeur. The structure originally contained more than a hundred rooms and was 17 metres high; built around a courtyard, the building had a central body which was destined to be the main Fascist headquarters, along with two wings to the sides, reserved for the workers' and farmers' unions.

In this building, the architect demonstrated his penchant for neo-sixteenth-century forms, expressed here on an imposing and magniloquent scale, through ashlars, balconies, columns and cornices, reflecting the Fascist need for self-celebration - although an almost rationalist dimension can just about be detected in the staircase of the main hall. Over time, the interiors have been subject to a number of changes that have influenced the décor and layout of the building, resulting in the loss of some of the wall decorations and sculptures.

Palazzo dell'Aeronautica

G. Gandini, 1935-1937



The Palazzo dell'Aeronautica (Aeronautics Building) is characterised by a strong rationalist influence, and is one of the most prominent structures in the twentieth-century renovation works implemented in Ferrara; it also contributes to the definition of one of the main roads which traverses the city.

Commissioned by Italo Balbo and built between 1935 and 1937, the Palazzo was designed by the architect and engineer Giorgio Gandini, and is one of his most noteworthy works. Municipal engineer Carlo Savonuzzi was entrusted with directing the build, in collaboration with the Cleto Gamberoni construction company.

The Palazzo, which was initially built as the Istituto Medico-Legale dell'Aeronautica (Aeronautical Forensics Institute), later changed its name to Palazzo dell'Aeronautica. It was constructed as part of the urban and architectural development of Ferrara, which began in the mid-1920s and continued unabated until the end of the 1930s.

The location of the main entrance to the Palazzo on the corner of the intersection between Viale Cavour and Via Ariosto is one of the most characteristic elements of the building. Indeed, the entire building pivots around this rounded corner, which joins the two streets in a "L" shape, at once harmonious and asymmetrical. The Palazzo is lacking in a single truly-representative façade, due to the fact that it was designed to be seen from the perspective of Viale Cavour, a bona fide showcase of modern Ferrara.

Inside, the building features a number of prominent design features, such as the magnificent spiral staircase, while the austere simplicity and elegance of the exterior has been maintained, without alterations distorting its original appearance.

Palazzo delle Poste

A. Mazzoni (1927-1929)



The Palazzo delle Poste e dei Telegrafi (Post and Telegraph Building) was built between 1927 to 1929 according to the plans by Angiolo Mazzoni, an architect and engineer employed by the Ministry of Communications. It is one of the most interesting buildings of twentieth-century Ferrara, despite the fact that on its inauguration, the design was condemned as being heavy handed, with little consideration of the local architectural and decorative traditions. An important hub within the city of Ferrara, the building is remarkable not only from an architectural perspective but also with regard to its decorative features, from the tall "Venetian-style" metal street lights which flank the main entrances to the two-tone tile flooring inside. The influence of Napoleone Martinuzzi, who contributed to the building as interior designer, modeller and sculptor, is translated into interiors that are characterised by an extraordinary operational capacity, expressed through the quality of the materials used and the design of the decorative elements, with a distinctly Art Deco flavour. This aesthetic also dominates in the elegant bas-relief stucco work above the entrance to the public hall, depicting the mythological figure of Phaethon, dear to Ferrara. The statue of Saint George represents another reference to the myths upon which the city is founded; another work by Martinuzzi, it is juxtaposed against the white marble to picturesque effect, on the corner of the portico that connects the building between Viale Cavour and Via Fausto Beretta. Also of note is the pictorial decoration depicting St. Christopher, the patron saint of the post and of telegraphs, positioned on one of the walls of the directional staircase. This figurative work is by the painter Giannino Lambertini, as are those found in the external "sacellum" chapel located at the western end of the building.

Camera di Commercio

S. Boari (1928-1929)



The Camera di Commercio (Chamber of Commerce) was designed by the architect Sesto Boari on the site that was previously occupied by the city's first cinema, the Edison. The building was part of the urban redevelopment of the "Salita del Castello" area. The first phase of the design envisaged a brick construction, which made reference to the city's Teatro Comunale (Municipal Theatre), but the definitive project was in fact a very different proposition: more sumptuous, and even majestic.

It extends over two levels: the continuity of the ground floor is punctuated by arched doorways, beyond which lie spaces for shops and offices; the first floor is similar in layout, but with the addition of windows atop which sit decorative triangular tympana, with additional smaller windows above these, in this instance with an essentially rectangular frame. The main entrance stands out at the centre of the façade, jutting out slightly from the main perimeter of the building. This feature is further highlighted by the four columns that support the first-floor balcony, and the door that opens onto it is embellished with sculpted figures: these are the symbolic representations of the Po and Reno rivers, created by the Enzo Nenci. The name of the building can be read above these figures. The overall effect of the building makes clear reference to the architectural models of sixteenth-century classicism.

The interiors of the Camera di Commercio were fully renovated between 1959 and 1964 by the architect Ico Parisi; the bronze door by Romano Rui also dates from the same period.

Palazzo delle Assicurazioni Generali

F. Forlati, A. Berlese (1925-1926)



Around the time of the First World War, the so-called "Salita del Castello" area of the city was subject to a series of restoration works, and the corner between Via Borgo dei Leoni and Corso Giovecca is undoubtedly a key location within this quarter. In the 1920s, the historic Italian insurance company Assicurazioni Generali bought most of the area, and entrusted the design of the Palazzo that would bear its name to Paduan architect Ferdinando Forlati and to Paduan engineer Augusto Berlese, commissioning a monumental symbol of the expansion of the company's activities in the city.

The "Venetian" character that distinguishes this imposing building can therefore be attributed to the aforementioned client and architects, and prompted Girolamo and Carlo Savonuzzi, of the city's Public Works Office, to request the suspension of construction in May 1926, due to the failure of the foregoing parties to adapt the plans to meet the requests of the Building Commission, designed to ensure greater harmony with the local architecture. Nevertheless, work continued, bringing the lion of Venice - the symbol adopted by Assicurazioni Generali that stands between the building's large entrance door and the corner balcony - to the heart of Ferrara, along with the Vicenza limestone ashlar and neo-Palladian references that characterise the façade, with windows that are almost Art Deco in style, and the wrought iron decorations on the internal staircase.

Former Palazzo INA

G. Cipriani, Forlati, Machin (1934)



The former Palazzo INA (National Social Security Institution) building is located opposite the western ravelin of the Castello Estense, where in ancient times the ducal stables and legates were based. In the 1930s, this was transformed into a new building complex, joining Largo Castello, Viale Cavour, Via Frizzi and Via della Luna, in accordance with the designs of engineer Girolamo Savonuzzi.

Originally intended for use by the Istituto Nazionale delle Assicurazioni (National Social Security Institution), after which the building is named, this multi-purpose building is characterised by its imposing structure: 25000 cubic meters of offices, shops, garages and on the first floor, apartments.

Built by the engineer Gino Cipriani in collaboration with architects Forlati and Machin, the exterior of the building showcases a harmonious combination of materials, which, as is typical of twentieth century Ferrarese architecture, includes local stone bricks - in this case the "ceppo comune" (stock bricks) and "ceppo policromo" (coloured bricks) from the clay of Lake Iseo. The inside of the building is characterised by its functionality and comfort, as well as by its aesthetic appeal. Indeed, both from a functional and a decorative perspective, no detail has been overlooked, and this is evident both in terms of the choice of materials and of the forms in evidence here.

Torre della Vittoria

G. Savonuzzi, 1925-1928



The Torre della Vittoria (Tower of Victory) is a newer structure built on the site of the original tower, designed by Rigobello, which partially collapsed during the earthquake that struck the city in the 16th century. The reconstruction of the tower was initiated at the behest of Italo Balbo, founder of the Fascist Party of Ferrara and under-secretary to the Ministry of Aeronautics at the time, and by his great friend Renzo Ravenna, who was Podestà (Chief Magistrate) of Ferrara from 1926. A public subscription was launched for its construction, and received contributions from 4,000 people. On 1 November 1928, the Torre della Vittoria was inaugurated in the presence of King Vittorio Emanuele III and high-level representatives of the various local authorities. The tower, which is neo-Medieval in style, is 57 metres high. The structure consists of a reinforced concrete skeleton, clad with the typical pink bricks fired in the kilns of Ferrara, interspersed at regular intervals by angle bars in Istrian stone on the corners of the building. The tower is crowned by Ghibelline crenellations and supported by barbicans, and in 1928, a bell made by melting down the bronze from Austrian cannons was mounted inside a wooden cage. A decree by the Podestà declared it the "civic" bell of the city. Supported by six eagles, it is decorated with the emblems of the Municipality and the local Fascist Party, with the commemorative inscription "Mentem sanctam, spontaneam Honorem Deo et Patriae liberationem", and images of the patron saints of Ferrara, Saint George and Saint Maurelius.

In the lower part of the tower, there is a shrine dedicated to the citizens of Ferrara who died in World War I. The square space measures 8 metres by 8 metres, with a groin vault decorated in the fourteenth-century style. At its heart is a tall pedestal made from red porphyry base, upon which the gilded bronze *La Vittoria del Piave incatenata* stands, a work by Ferrarese sculptor Arrigo Minerbi (1928).

Largo Antonioni - Quadrivio del Novecento



Largo Antonioni is the square that stands at the heart of the so-called "Quadrilatero Novecentista" ("Twentieth-century Quadrilateral") of Ferrara, also referred to as the "Quartiere razionalista" or "Quadrivio del Novecento" ("Rationalist Quarter" or "Twentieth-century Crossroads" respectively). On 29 September 2012, it was named after Michelangelo Antonioni, his city's homage to the famous film director on the hundredth anniversary of his birth.

The plans of the square and of the buildings that frame it date back to the 1930s: it was part of the redevelopment project designed to redefine the space previously occupied by the former city hospital, before it was moved to the site on Corso Giovecca in 1927, where it remained until 2012. This initiative focused on the restoration of the existing crumbling structures and on urban planning aspects, overseen by Girolamo Savonuzzi - who was chief engineer of the Municipality - and his brother Carlo, in 1931. Carlo was also responsible for the design of the buildings, for which he chose to adhere to rationalist precepts. The four important buildings that overlook the square and the roads which serve as its four sides - Via Previati, Via De Pisis, Via Boldini and Via Mentessi - were part of the same urban planning project, and serve to delineate the perimeter of the Largo. As is customary in the rationalist school of architecture, the area was conceived to bring together the main socio-cultural focal points of the Fascist regime for the benefit of Ferrara's citizens, through their respective buildings/ centres: music (the "Girolamo Frescobaldi" Conservatory and Auditorium), the sciences (The Istituto di Storia Naturale, now the Museo di Storia Naturale, or Natural History Museum), school (the "Umberto I" school, renamed "Alda Costa") and the recreational building, designed as a meeting place and cultural space (formerly the Dopolavoro Provinciale Fascista, and now the Complesso Boldini).

Complesso Boldini

C. Savonuzzi (1935-1939)



Construction of the Complesso Boldini building began in 1935 and was completed in 1939. The building is located on the site that was previously occupied by the westernmost part of Sant'Anna hospital men's ward; founded in 1443, the institution was expanded over the course of the following centuries, enveloping the majority of the block to the north-east of the Castello Estense (Este Castle). The remains of the hospital are still visible in the so-called "Grotte del Boldini", the fifteenth-century cellars with groin-vaulted ceilings which can still be seen today, and are used for cultural initiatives.

As per the plans, on completion, this building immediately became the Provincial Recreational Association, and was home to a hall for performances. Indeed, this space continues to serve its original function and is still used as a cinema and theatre, as well as a space used to host exhibitions, conferences and other cultural and recreational events.

The building, the external walls and the turret are all painted orange, with the exception of the horizontal finishes, where the cement has been left exposed. The shapes and colours of the Complesso Boldini ensure that the building is in functional harmony with the so-called "Quadrilatero Novecentesco" ("Twentieth-century Quarter"), the area composed of this building and its neighbours - the "Alda Costa" state primary school, the Museo di Storia Naturale (Natural History Museum) and the "G. Frescobaldi" state music conservatory. Indeed, the Complesso Boldini creates a compelling dialogue with the structures that surround it, helping to define Largo Antonioni as a cultural and urban space.

The “Girolamo Frescobaldi” state music conservatory

C. Savonuzzi (1935-1937)



The complex was designed by the engineer Carlo Savonuzzi and built between 1935 and 1937, using the pre-existing structures which belonged to the former Sant’Anna hospital until 1927 as its base.

The main body of the Auditorium extends along Via Boldini. The large concert hall, designed to seat three hundred, was designed on the footprint of the former church of Sant’Anna; standing in the small square dedicated to the saint, the building retains the original façade with its open staircase and pronaos, where the cell of the poet Torquato Tasso has also been preserved. Nine large church-style windows spanning a little more than a metre in width and 9 in height illuminate the hall, ensuring excellent natural lighting.

The front of the building looks out over Via Boldini, an example of “talking architecture” with its own story to tell. In 1939, three statues were placed above the nine vertical windows; these patinated bronze allegories were created by three artists from Ferrara: from the left, we have *La Musica* by Giuseppe Virgili, *Il Genio dell’Arte* by Ulderico Fabbri and *Il Canto* by Gino Colognesi.

In similar style to the Natural History Museum, the façade overlooking Largo Antonioni is more traditional in structure, and is constructed around the symmetrical axis created by the main entrance, characterised by a composite gateway made from natural stone. Atop this gateway is a statue of the Ferrarese composer Girolamo Frescobaldi, after whom the conservatory is named, made from Carrara marble by the sculptor Giuseppe Virgili in 1942 and erected in 1948.

The “Alda Costa” state primary school

C. Savonuzzi (1932-1933)



The school, together with the other buildings that can be found in the so-called rationalist quarter, was built in the early 1930s, a result of the need to redevelop the area previously occupied by the city hospital. Carlo Savonuzzi designed the building as part of his contribution to the urban redevelopment of the area, supervised by his brother and chief engineer of the Municipality Girolamo Savonuzzi. The construction of the building, meanwhile, was entrusted to the Quintilio Forti construction company, who erected it between 1932 and 1933.

Originally christened in honour of the "re buono" ("good king") Umberto I, after the Second World War, it was renamed in order to pay homage to Alda Costa, the famous socialist leader and anti-Fascist teacher. The structure is composed of a collection of solid elements, parallelepipeds and semi-cylinders, with the shape and volumes of each component carefully balanced with one another, streamlining the building as a whole and lending it a feeling of movement and a sense of strength and harmony. The grooved tower is a particularly characteristic feature of the building, and serves as the end point of the perspective axis of Via Giovanni Boldini: once again designed by Carlo Savonuzzi, the tower is 37 metres tall - the same height as the aqueduct reservoir - and was built between 1930 and 1932.

The typical Ferrarese brickwork is a central detail, and courtesy of this choice of material, the building blends perfectly into the existing urban and architectural surroundings, despite having been modified. The bricks are skilfully alternated with cement, stone, glass and the iron of the clock, all of which are characteristic of rationalist architecture.

Museo di Storia Naturale

C. Savonuzzi, 1935-1937



The Museo di Storia Naturale (Natural History Museum) was constructed between 1935 and 1937 on the basis of the plans created by Carlo Savonuzzi, who was in charge of the project for the renovation of the entire area that was formerly home to the Sant'Anna hospital. It was built on part of the area that was previously occupied by the men's ward. The roof and perimeter walls of the old hospital building were kept, and were clad on the outside with a brick curtain wall. By demolishing the vaults of the hospital basement, Savonuzzi succeeded in creating space for three floors: the first two floors are 4 and 3.90 metres in height respectively, and the third (intended for secondary purposes) stands at 3 metres. The main façade of the Museum, which is directly opposite that of the "Girolamo Frescobaldi" conservatory, lies on the axis of symmetry of the main entrance. This entrance is composed of a grey stone gateway, which despite its simple style - typical of twentieth century architecture - is in fact an echo of the classic composite portals, including the large entrance door which lies below a balcony which can be accessed from the large window above. A secondary entrance is located on Via Boldini. The actual museum spans around 400 square metres across two floors, connected by a rationalist-style marble staircase featuring a decorative wooden scroll, which is judiciously repeated along the handrail. The old pitched roof of the hospital is hidden by a high masonry mansard, crowned by a grey stone cornice that frames the façades of the Museum in a similar way to those of the conservatory opposite.

A second mapping was related to attractions of the "Mura route" in Ferrara, in order to create a tourist route along the historic walls of Ferrara. Nine kilometres of defensive walls surround the

heart of Ferrara, delimiting the old city. Designed and built mainly as fortifications starting in the early seventh century, today they are expansive gardens enjoyed by locals and visitors during their time off, and so much more.

Over the centuries, they've evolved into what we see now, having undergone varying degrees of modifications, decay and rebuilding. They were decisively restored in the late twentieth century, ensuring that they are fully valued and enjoyed, returned to anyone and everyone who is lucky enough to visit them.

The journey provides 18 stages and, also in this case, in correspondence to each one, some road signs have been permanently arranged.

Torrione del Barco



With an external diameter of 21 metres, the Torrione del Barco (Barco Tower) is the largest circular defensive tower of those constructed by Biagio Rossetti and Bartolomeo Tristano along the fortified perimeter of the historic Addizione Erculea (Erculean Addition) area of Ferrara, and stands at its north-western vertex. Built from 1493 onwards, the structure of this relic is of great interest, both within the context of historic military architecture in Ferrara and beyond. The large barrel vault of the blockhouse, probably derived from the inventions of the engineer Francesco di Giorgio Martini, who hailed from Siena, divides the platform from the lower area of the structure, from which the guns were lowered using a hoist. The main vault was flanked by a short ravelin with an enclosed staircase, which provided access to the shooting positions inside the blockhouse, as well as to the open field. Other hatches for observation and shooting are still visible today. The embrasures at the sides of the platform (which in turn once featured a parapet, now missing, supported by discharging arches) were built after the original structure, and modifications also include the curtain wall in the area that faces the Porta di San Benedetto, to the south, which was renovated between 1514 and 1521.

In the connecting walls between the protruding parallel structure and the curtain wall, two embrasures can be seen, inside which heavy artillery was positioned, protecting and defending the entrenchment from the direction of the Porta Catena salient further south.

The northern Rossettian Walls (from the Torrione del Barco to the Porta degli Angeli)



Built between 1493 and 1505 by Biagio Rossetti, Alessandro Biondo and Bartolomeo Tristano, the walls of Ferrara mark the transition from vertical defences (from which projectiles could be dropped on the enemy) to horizontal bastion defences from which firearms were fired, and represent one of the most famous examples in Italian military architecture of this "transition" to a later defensive system. A water moat, which though shallow was very wide (between 35 and 80 metres) made any attempt to approach the crenellated curtain wall exceedingly difficult; the wall also featured a batter base demarcated by a braided brick stringcourse.

The semicircular towers (each measuring 6 metres in diameter) are positioned at a distance (about 80 m) that is equal to half the range of light weapons. These towers served to defend the walls through crossfire from crossbows and small artillery, and as such, were equipped with merlons (which are now no longer visible) and side slits positioned on two levels, the upper of which was accessed via wooden scaffolding. Soldiers could move internally from one tower to another either via an allure on the walls, or via a counter-trench at the foot of the embankment, on whose upper part other guns were placed.

From the mid-1980s onwards, the walls of Ferrara underwent a ten-year restoration funded by the state: a fully-fledged Monumental Town Plan that enabled Ferrara to preserve the urban identity of the Renaissance city.

Porta degli Angeli



Located at the end of the ancient Via degli Angeli, this Porta was the only gateway in the fortified walls that provided access from the north, and which were built between 1493 to 1505 around the large "Terra Nova" - the area of urban expansion better known as the Addizione Erculea (Erculean Addition) in honour of Duke Ercole I of Este.

The original quadrangular tower was changed a number of times between 1519 and 1526, and these modifications continued over the course of the centuries in accordance with its changing functions: it went from defensive structure to toll barrier during the 18th century, before becoming a slaughterhouse for pigs in 1820 (the small external well from this era is still visible). Subsequently, it served as a gunpowder room, and then from 1894 it was used as a private dwelling until the early 1980s.

The restoration work conducted between 1984 and 1991 revealed the building's ancient forms and structures, including the southern entrance arch (which, along with the northern arch, was walled up in the 19th century), the trachyte stone threshold marked by the grooves of cart wheels, the sixteenth-century flooring which features Euganean trachyte paving stones and bricks laid edge-on, as well as traces of battlements on the external wall of the building next to the tower, used as the gatehouse.

The excavation works carried out in the entrenchments (which were once flooded) uncovered a number of large piles from the wooden bridge that had long since disappeared (the current bridge is made of metal), and which connected the Porta to the opposite arrow-shaped ravelin built in the sixteenth century; having been demolished in 1859, it has since been restored.

The northern walls with embrasures

Before the restoration work carried out in the 1980s and 1990s, this stretch of wall was completely covered with weeds; it was only after these were removed that it became possible to recognise the architectural characteristics of the structure, which are clearly different from those found along the path which connects the Torrione del Barco and the Porta degli Angeli.

In this section, the curtain wall was unified and moved backwards in the mid-sixteenth century, and the semicircular defensive towers were demolished; later, in the first thirty years of the 18th century, further rectification work was carried out up to the Punta della Montagnola. In addition to the traces of the demolished towers, restoration work in this area also uncovered 12 stationings for heavy artillery inside the buttresses incorporated into the embankment, 4 metres apart from each other and seven linear metres deep. The barrel vaults that supported the embrasure platform where the guns were rested can still be seen in the buttresses.

It was deemed unfeasible to fully reopen all of the gun stationings, since this would have required the plantation of trees behind the structure to be cut down, which gave shape to the tree-lined boulevard on the embankment. Accordingly, the embrasures were partially restored to a depth of about 2 metres; 2 metres of the “shoulders” of the openings were also recovered, and an infill wall was built inside, making them visible from the entrenchment. The original herringbone brick flooring has also been preserved.

Punta della Montagnola

Located at the north-eastern vertex of the fortified wall built between the end of the fifteenth and the beginning of the sixteenth centuries, the Punta della Montagnola or Punta di Francolino (the name of the town on the banks of the Po towards which it faces, a few kilometres away) endured significant structural modifications in the 1730s, specifically to the stretch of wall between the Torrione di San Giovanni and the Porta degli Angeli. The surveys, documents, maps and drawings recovered from the period between 1724 and 1738 show that the condition of the walls was seriously compromised and very precarious, mainly due to the subsidence of the foundations and the collapses caused by the erosion of the water in the trench, which served to undercut the walls. As a result, several of the circular towers that were beyond rescue were knocked down, in order to reinforce the structure of the wall using piles; the section of the curtain wall directly in contact with the embankments was then rebuilt, further back than the original line of the foundations.

The restoration work carried out in the 1980s and the archaeological excavations of the early 1990s revealed traces of the demolished towers (including that of the Punta di Francolino, which had been razed to the ground in the early seventeenth century), along with dozens of arrow slits or loopholes from several different eras and allures that had remained buried by weeds until that point. In addition, the mantel that supported the sentry box built on the Punta is still clearly visible.

The Montagnola del Barchetto or La Rotonda

There is mention of the Montagnola (“mound”) in documents dating as far back as 1529; this knoll of earth (originally pentagonal in shape) was used to guard the so-called Rotonda, the residence commissioned by Ercole II d'Este in 1550, using the walls of the ancient Punta di Francolino in the new structure. Inside the tower was the Duke’s bedroom, octagonal in shape with a vault decorated with frescoes by Camillo Filippi; meanwhile, a stairway running along the slope of the internal embankment led to the courtyard which was bordered by a loggia spanning more than twenty metres in width (decorated with landscape paintings by Flemish painter Luca d’Olanda, or Lucas of Holland), in front of a series of other noble buildings.

The residence was set within a highly structured natural landscape, consisting of geometrical gardens, streams, paddocks for ostriches and enclosures for herons and cranes. Above all in summer, the coolness and secrecy of the site attracted the courts of the Este princes and their guests, who indulged in long banquets, musical feasts and literary-inspired knights’ tournaments: near the area of higher ground, the mouth of one of the many ice-houses used to conserve snow right into the spring months can still be clearly seen; these spaces were also used to refrigerate food and wine. The Rotonda was destroyed in 1616.

On climbing to the top of the hillock and looking towards the Castello Estense (Este Castle), a view of the extensive green pastures which have remained untouched since the time of the Addizione Erculea (Erculean Addition, which dates from 1492) can be enjoyed.

Walls with loopholes

Between the end of the 15th century and the first decade of the 16th, nine semicircular towers were built along the eastern of the walls (from the Punta della Montagnola to the Torrione di San Giovanni tower); of these, three are still standing: the foundations of the other six were restored during the work carried out in the 1980s and 90s. At the time of the restoration, the structure and layout of this fortified system was almost impossible to discern, due to the large amounts of earth that had accumulated in the inner counter-trench, up against the curtain wall and the towers. The excavation works uncovered the allure (characterised by numerous gaps created using both new and recovered bricks) and more than 213 loopholes (or arrow slits), built between the seventeenth and nineteenth centuries, positioned at a distance of 2.5 to 3 metres from one another. Three types of loophole were identified, and for each of these, the original structure and brickwork was redesigned and restored.

The operations on the embankment returned this to its ancient form, with works to dig out the counter-wall and reshape the slopes in particular. The area which connects the embankment and the defensive

towers (which was not emptied, but instead left full of earth) benefited from the construction of a rampart, within which stands a trapezoidal figure inspired by the historical iconography found during the restoration: the rampart constitutes the inner part of the embankment of the walls, and is raised above the main defensive line.

Torrione di San Giovanni Battista

Built between 1493 and 1497, this fortified tower kept watch over the Porta (gateway) of the same name, at the eastern end of the long decumanus road of the Addizione Erculea (Erculean Addition) urban area. The remnants of the twisted stringcourse at street level bears testament to the progressive burial of the structure, which was originally exposed, over time: in 1518, Duke Alfonso I d'Este decided to cover the tower with a conical roof set atop an enormous solid column, while the original battlements were filled in during the first half of the nineteenth century (they are still clearly visible in the upper part of the external surface of the structure).

After the French occupation of 1796, the gate was named "Porta Mare", and the entire complex was subject to the first in a series of functional modifications: in 1827, the ravelin of the entrenchment opposite that had served as a toll-house was demolished, and from 1848, the building was used as a gunpowder magazine until 1861, when it was transformed into a kennels. Later, in 1908, the Porta was demolished entirely, to widen the road and facilitate vehicular access to the outskirts of the city. The works, which also included the construction of a new "office" (now the municipal pharmacy), were terminated in 1909.

At the base of the inner embankments, towards the north, the various entrances to the underground tunnels built in 1942-43 as air-raid shelters for Ferrara's citizens can still be seen.

Since February 1999, the Torrione di San Giovanni has been the home of the Ferrara Jazz Club; each year, the club's concert season receives glowing reviews at national level.

The former Baluardo di San Rocco

The largest triangular bastion of the city (measuring around 200 x 100 metres), the Baluardo di San Rocco featured a steeply-angled cyma moulding, long oblique façades and squared, rear-slanting sides to accommodate the embrasures. Construction began in July 1523 under the supervision of Paduan engineer Sebastiano Bonmartini, and the structure was already complete by the end of 1524, decorated with a stringcourse made from Istrian stone and three shields of Veronese marble bearing the ducal insignia on the three vertices. The bastion stood alongside the grounds of the former Dominican convent of San Rocco, from which it took its name.

In 1862, the municipality decreed that it should be demolished; this occurred in several stages, and was only completed in 1872. The bricks recovered were used in various public works in the city, and the earth taken from the bastion was largely used to widen the internal road on the ramparts of the walls, as well as in the area beneath the walls, to fill the trench. In the section that connected the embankment with the walls, an arched structure was built to fill in the gap, interrupting the continuity of the curtain wall. Not far from the site of the former bastion, the remains of the eighteenth-century “doccile” of San Rocco, a sort of canal or duct that stands alongside the pumping station which was built in 1927 to keep the entrenchment drained; here, a number of poplar groves were planted in the intervening years until 1978. Archaeological excavations conducted in 1979 exposed the buried foundations of the bastion, and hedges were planted in order to mark its perimeter.

Punta della Giovecca

In 1936, the municipal authorities decided to open the two supporting archways which marked the Punta della Giovecca (Giovecca Point), the eastern semi-bastion which overlooks the imposing road of the same name, which was finished and paved in the mid-16th century.

The opening of these two passages triggered an extremely heated political and cultural debate that extended beyond the confines of the city of Ferrara. The issue under discussion was the proposal to connect the city with the new road to Tresigallo, towards the sea, thus creating a gap in the walls surrounding Ferrara. The debate ranged between those who wanted to safeguard the artistic and architectural integrity of the walls, proposing instead to direct traffic through the former Porta di San Giovanni further north, and those who were in favour of opening up the walls in line with Corso Giovecca, which would also destroy the picturesque “Prospettiva” arch dating back to 1703 and the staircase behind it: some of the Kingdom’s senators, caught up in a modernist fury, even called for the demolition of the entire system of fortifications, condemning these as “the trappings of the past”. In the end, they reached a compromise, deciding that two underpasses would be opened in order to keep the walls and the staircase behind the arch intact. Among the main opponents of the “pickaxe party” were Pietro Niccolini, Vittorio Cini and above all Giuseppe Agnelli, president of the worthy Ferrariae Decus association, which he founded in 1906 with a view to safeguarding the “beauty and decorum” of the city of Ferrara.

Baluardo di San Tommaso and “doccile”

The Baluardo di San Tommaso (Bastion of San Tommaso) takes its name from the neighbouring church of San Tommaso (which was destroyed in 1836), located within the walls where the present-day Via Sant'Andrea and Via Formignana roads cross. With a typical “arrow” shape and with no rounded

“orecchioni” ramparts on its sides, the bastion was built at the end of the second decade of the sixteenth century, when the Duke Alfonso I d'Este decided to reinforce the defences of the south-eastern area of the city: after having ordered the Pioppa suburb to be knocked down, the military engineer Sebastiano Bonmartini from Monselice oversaw the construction of the new walls, reusing the building materials from the old curtain walls and monasteries located in the village.

The structure was created to protect the northern side of the larger Baluardo della Montagna, and its military function can be deduced from the presence of the large interior blockhouse (the entrance to which was enlarged at a later date, and is today covered by a metal grate), although the gun firing positions in the upper perimeter of the wall are no longer visible.

A short distance away is the eighteenth-century “doccile” of San Tommaso, a sort of canal or duct that was built in 1524 with a vaulted ceiling, in order to convey the waste from the city’s sewers to the Naviglio di Baura canal.

From the outside, the walls and entrenchments stretch towards the north into an extensive natural environment, recovered after felling a grove of poplars, and following other reclamation works towards the end of the 1970s.

Baluardo della Montagna

The quadrangular towers and fifteenth-century curtain walls of the original structure were demolished, and between 1518 and 1522, the new wall was built between the Porta di San Giorgio and the Baluardo di San Tommaso (Bastion of San Tommaso), reusing the materials recovered from the demolition. In 1518, the military engineer Sebastiano Bonmartini designed the large arrow-shaped Baluardo della Montagna, a bastion complete with embrasures, described by Ferrante Gonzaga in 1520 as “the most splendid fortress in the world”. An enormous mountain (called the Montagna di San Giorgio or di Sotto), was created on top of the bastion with the earth from the excavations, which served as a cavalier upon which the powerful artillery of Duke Alfonso d'Este was installed, famed throughout Europe for its technological advancement. During their sojourns in Ferrara between 1526 and 1529, Michelangelo and Antonio da Sangallo also visited the structure, expressing their appreciation of its original architecture.

Defending the Baluardo della Montagna on either side, in a pincer-like position, the Baluardo di San Tommaso was built to the north, and the Barbacane di San Giorgio (Barbican of San Giorgio) to the south; the latter was partially demolished at the end of the nineteenth century.

When looking at the bastion from below the walls, the upper firing positions for the guns can still be seen, while towards the end of the structure is a marble cornerpiece engraved with the name of Cardinal Giovanni Battista Pallotta, Legate of Ferrara from 1631 to 1634.

Bagni Ducali and Montagnone

The enormous artificial mound of earth known as the “Montagnone” was created during the second decade of the 16th century, when Duke Alfonso I d'Este decided to rebuild the entire south-eastern wall of the city. Originally intended to serve a strictly military function, the hillock soon became one of the natural attractions of the Delizia della Montagna, as the recreational residence built by the Duke Ercole II d'Este on top of the site of the tower of the same name was referred to. Constructed in 1541 according to the plans drawn by Terzo Terzi, the external façades of this small, simple palace (a miniature of the Palazzo Te palace in Mantua) featured frescoes by Battista Dossi, Girolamo da Carpi, Camillo Filippi and Garofalo.

The fame of the residence (now known as the Bagni Ducali, or Ducal Baths), however, was linked to the unique environmental backdrop in which it was set, with waterways brought to life by complex hydraulic devices which flowed around the vine and flower-covered mountain, at the foot of which stood a fish pond of more than 200 metres in length (now Viale Alfonso I d'Este). The mound of earth also hid two underground caves built in 1545-1549 according to the designs created by Girolamo da Carpi, decorated with sea shells, gold leaves, painted landscapes and ornamental mirrors; these ornate spaces were further enhanced by boxwood labyrinths and enclosures containing lions, ostriches, dwarf donkeys, monkeys and peacocks. The caves unfortunately fell into ruin in the early seventeenth century with the exile of the Este dynasty from Ferrara, and have remained this way since.

The mountain is also home to the structures that housed the city's first reservoir, which captured the waters from the fountains of Castelfranco Emilia and was inaugurated in 1890.

The Barbacane or Baluardo di San Giorgio

Since the end of the fourteenth century, the historical documentation contains references to a particular fortified structure that guarded the branch of the Po di Volano just after it forked near the village of San Giorgio: the Barbacane di San Giorgio (Barbican of San Giorgio), facing the village itself, where the church of the same name stands.

The term “barbican” is derived from the medieval Latin *barbacanis* or from the Arabic vernacular *bar-al-baqara*, literally “livestock enclosure”, indicating a buttress, a walled reinforcement designed for defensive purposes.

Between 1521 and 1525, Alfonso I d'Este ordered major modifications to the old structure, transforming this into a bastion equipped with embrasures to protect both the new Baluardo della Montagna and the fifteenth-century Porta di San Giorgio, which was also rebuilt in 1521. Subject to further works in 1557 by order of Duke Ercole II (with marble blocks placed at a slant along the edges), the bastion-barbican was

partially destroyed in 1893 in order to create the toll barrier, before being torn apart once again between 1952 and 1958 to enable vehicle access to Via Ravenna.

The structure benefited from some repair work when Cardinal Giulio Sacchetti (1627-1630) was Legate of Ferrara, as evidenced by the engraved marble angle bar placed atop the eastern edge of the building; meanwhile, the cylindrical gate above is the only evidence of the dozens of sentry boxes built during the 17th and 18th centuries right along the walls of the city.

The Porta Romana or Porta di San Giorgio

The current ruins are all that remains of the architectural complex that until the end of the sixteenth century overlooked the main southern entrance of the city, situated in front of the church of San Giorgio (Ferrara's first cathedral). Beyond the Po di Volano, the ruins can be reached via a bridge: originally made from wood, this was centred in line with the Porta and rebuilt a number of times - first in brick in 1682 and then in iron between 1891 and 1894, when it was also moved further to the east. Partially destroyed in the bombings of 1944, the Porta was rebuilt once again in 1950 in reinforced concrete, and the surviving statues depicting the city's holy saints were positioned on top of it: Giorgio, Maurelio, Rocco and Filippo Neri, created in 1786 by the Veronese sculptor Gaetano Cignaroli.

In order to protect the fifteenth century Porta di San Giorgio gate (known as Porta Romana from 1798 onwards), between 1557 and 1563, the dukes Ercole II and Alfonso II d'Este ordered the construction of a new bastion, which was partially destroyed in 1893 before being torn apart once again between 1952 and 1958.

The Porta was transformed into the monumental "Prospettiva" arch in the 1780s, and was further embellished in 1847 in order to render its axial centrality with the bridge even more appealing. However, the changes and the disasters that befell the structure at the end of the nineteenth century led to the functional decentralisation of the building, resulting in architectural damage; in place of the bridge, the current Via Daniello Bartoli was constructed.

Baluardo dell'Amore

Built onto the curtain wall constructed by Duke Borso d'Este in the mid-fifteenth century, the Baluardo dell'Amore (literally the Bastion of Love) as we see it today - with its typical "ace of spades" shape, complete with deep re-entrant sides - was actually added more than a century later: indeed, it was Alfonso II d'Este who commissioned a major series of works to strengthen the southern fortifications near the Po between 1578 and 1585, according to the plans drawn by engineers and military specialists such as Cornelio Bentivoglio, Marcantonio Pasi, Giulio Thiene and Giovanni Battista Aleotti.

After the demolition of the nursery school built on top of it (in 1936), the archaeological excavations and restoration work carried out between 2007 and today have unearthed a veritable palimpsest of military architecture: the remains of the quadrangular turreted gateway and adjacent gatehouse (both destroyed and covered up in 1630), as well as the traces of the small triangular bastion built in 1557 on the orders of Ercole II d'Este to defend the ancient gate have been found, along with an internal blockhouse with barrel vault, ancient flooring, a small oratory and additional openings in the sides of the bastion. At the very end of the outer edge of the structure, there is a hook originally designed to hold a marble shield with heraldic emblems: during the nineteenth century, this was used as a lamp holder, one of the many positioned along the wall for the border guards active until 1930.

Baluardo di Sant'Antonio

Located at the Benedictine monastery of Sant'Antonio in Polesine, this bastion is the central element of the southern system of bastion defences behind the banks of the river Po, which was almost completely buried at the end of the 16th century. Together with the bastions of San Pietro and Amore, this structure was also built according to the will of Duke Alfonso II d'Este between 1578 and 1585.

The vast area opposite the bastions occupied by the wall is of particular interest, and was once flooded. The external defences, including a counter-scarp, a covered path and a glacis sloping down to the banks of the Po di Volano were clearly visible even just after the Second World War: the area beneath the wall was cultivated with poplar trees, shielding the fortified works from view, while the embankments were significantly reduced in 1967 in order to widen the internal road behind the residential area (Via Baluardi, which is still there today).

The tunnels and blockhouses of the great southern bastions were used as air-raid shelters between 1943 and 1945, and towards the end of the war, these also served as shelters for poor and displaced citizens: although these are now walled up, traces of the entrances to these areas can still be clearly seen.

The “new wall” of Borso d'Este

The gradual drying up of the Po distributary which skirts the southern edge of Ferrara (in the riverbed which corresponds with today's Via della Ghiara and Via XX Settembre roads) led to the establishment of the urban settlement on the island of Sant'Antonio in Polesine that once stood in the middle of the river, between the end of the 14th and the first half of the 15th century. The Marquis Nicolò III d'Este (1383-1441) was responsible for ordering the first steps towards building a defence for the urban dwelling, including the construction of the Castel Nuovo (literally “New Castle”) by the engineer Giovanni da Siena between 1425-28 (in the area where the Teatro Verdi theatre currently stands). This fortress was later

demolished between 1562 and 1572 to make room for the Baluardo di San Lorenzo (Bastion of San Lorenzo).

The further drying up of the Po river led Leonello d'Este (1407-1450) and above all his successor Borso (1413-1471) to order new walls to be built in order to protect the entire southern area between Castel Nuovo to the south-west and the Barbacane di San Giorgio (Barbican of San Giorgio) to the south-east, entrusting the construction of these walls to the architect Pietrobono Brasavola in 1442, who was succeeded by Cristoforo della Carradora, Benvenuto dagli Ordini and his son Pietro. In 1451, along the Mura Nuove ("New Walls"), the three gateways of Porta San Pietro, Porta dell'Amore and Porta San Giorgio were constructed, before being walled up and/or modified in the two centuries following this date.

Once adorned with painted battlements, the straight red curtain walls commissioned by Borso still retain their batter base and significant portions of the brick stringcourse; in some places, the traces of the walls of the high quadrangular towers - demolished in the second half of the sixteenth century - can still be seen.

The Baluardo and Porta di San Pietro

Approaching from Porta Paola, the Baluardo di San Pietro (Bastion of San Pietro) is the first of the state-of-the-art fortifications built by Alfonso II d'Este between 1578 and 1585, in order to modernise and strengthen the pre-existing fifteenth-century walls of Borso d'Este, still characterised by the vivid colour of the bricks used and the presence of the braided stringcourse of fired stone. These mighty bastions, with embrasures, rounded "orecchioni" ramparts, embankments and walls with batter base were designed to provide an effective defence against the increasingly powerful artillery that could easily demolish the old medieval walls with their jutting towers and vertical walls, largely ineffective against new offensive technologies and tactics.

During the period in which the bastion was being built, in 1582-1583 the merlons of the fifteenth-century walls were demolished and the tower that stood at the Porta, which was largely flattened, was completely knocked down. In 1583, a new marble arch was built over the Porta San Pietro, designed by Giovan Battista Aleotti: incredibly, in 1630, this marble structure was also dismantled and reinstalled at the main entrance to the papal fortress; the opening of the Porta di San Pietro was definitively walled up.

The restoration work carried out by the Municipality of Ferrara in 2001-2002 revealed the arch of the ancient Porta from the interior embankments, as well as the remains of a paved road and other areas with bricks laid edge-on.

Baluardo di San Lorenzo

The Baluardo di San Lorenzo (Bastion of San Lorenzo) stands on the site of the ancient Castelnuovo bastion, the name of which is derived from the Este ducal fortress of the same name built by Giovanni da Siena from 1427 onwards near the river Po, and dismantled between 1562 and 1572.

Built in 1583 and renovated in the papal period (during which it was also referred to as the Baluardo di Sant'Agnese - Bastion of Sant'Agnese - defending the Porta of the same name), along with the previous Baluardo di San Paolo (Bastion of San Paolo) this structure constitutes part of the defensive system built to protect the Porta Paola gate, which lies between the two and was built in 1612. At the beginning of the twentieth century, the top of the bastion was used for the weekly market, and was commonly known as the "horse market": even today, markets are held here (on Mondays), and the space is also used as a car park.

Unlike the bastions of San Pietro, Sant'Antonio and dell'Amore, the Bastion of San Lorenzo does not feature protruding rounded ramparts at the sides (often referred to as "orecchioni"), and only has salients. Inside the embankment there are a number of long tunnels located just above the level of the ground outside; these are connected to a shooting platform overhead by stairs and vents or trapdoors: in the past, these recessed areas (also known as "blockhouses" or "camattoni" in the local vernacular) were inhabited by the poor, and used as air-raid shelters during the Second World War.

From 2011 to 2018, the entire Baluardo di San Lorenzo underwent major structural reinforcement work, both externally, to counteract the deformational forces exerted by the weight of the earth inside the structure, and internally, on the underground walls.

Porta Paola

Formerly known as Porta San Polo or San Paolo (as a result of its proximity to the church of the same name on what is now Corso Porta Reno), the current structure was built in 1612 in accordance with the plans drawn by Ferrarese architect Giovanni Battista Aleotti, who designed it in honour of the reigning Pope Paolo V Borghese (from which the name Porta Paola derives). Porta Paola is undoubtedly the most prestigious monumental archways in the city of Ferrara, particularly with regard to its late Mannerist and proto-Baroque architectural language, as evidenced in the layout of the southern façade, made from marble with rusticated ashlar crowned by a curved tympanum, split in two through its centre. The east and west elevations were rebuilt at the end of the nineteenth century, while the northernmost face of the Porta, which overlooks Piazza Travaglio, was partially modified at this point, with the addition of marble from Istria.

Flanked by the bastions of San Paolo and San Lorenzo, which were completed in the 17th century, the Porta was further protected by an arrow-shaped ravelin opposite, which was demolished during the

nineteenth century. The two side gates, meanwhile, date back to 1901, when the structure was used as a toll barrier.

During the early twentieth century, the Porta Paola continued to be used to house the excise offices, until the 1970s when it was home to various other tax offices of the Municipality and the local Cassa di Risparmio (savings bank). Restored between 2001 and 2004, this historic building was further reinforced after the 2012 earthquake, and converted into a museum, the site of the Centro di Documentazione delle Mura (Wall Documentation Centre).

Baluardo di San Paolo

Not to be confused with the former fortress of the same name, only the foundations of the Baluardo di San Paolo (Bastion of San Paolo) were laid in 1585, under the supervision of the Ferrarese architect Giovanni Battista Aleotti and Lieutenant Cornelio Bentivoglio.

A long curtain wall joined the pentagonal pontifical fortress to the defensive structures of the Porta di San Paolo: this stretch of wall, built in the seventeenth century and reworked in the nineteenth century, replaced the earlier medieval defences which lay further back; these were demolished when the papal fortress was built at the beginning of the seventeenth century. The curtain wall was still intact at the beginning of the 1930s: at that time, as part of an industrial plan which included extending the urban development towards the south (along Via Bologna), a long segment of the southern walls adjacent to the former fortress was demolished to make way for the construction of the new aqueduct tower and other infrastructures in the Piazza d'Armi area.

In the 1950s the expansion of the Rione Giardino building development towards the Burana canal was completed, resulting in any visible trace of the walls being lost for a stretch of around 450 metres - the largest breach in the entire city boundary. Another hole was torn open in 1967 where the current Via Kennedy begins, while the embankment of the residual stretch of wall to the west was further thinned in 1981, during the works to build the new bus station.

The Baluardo di Santa Maria and the Baluardo of San Paolo della Fortezza

These two “baluardi” or bastions are the only testament to the fortress that was built between 1608 and 1618 under the reign of Pope Paolo V Borghese; the build was managed by Mario Farnese and the Roman engineer Pompeo Targone, working alongside Ferrara native Giovanni Battista Aleotti.

In 1618, the fortress was well equipped, with five “arrow” bastions (including the bastion of San Paolo in the south and Santa Maria in the south west), the barracks, the depositories, the gunpowder magazines, the armouries, the residence of the castellan and the church of Santa Maria dell'Annunziata. Further

structural reinforcements were added in 1629 by the engineer Pietro Paolo Floriani, who built five “mezzelune” - i.e. Ravelins clad in brickwork - between the five bastions.

In 1805, Napoleon decreed that the complex should be partially dismantled, thus weakening most of the bastions. Left abandoned until the fall of the Italian-French government, the fortress was reborn after 1814, when the corps of engineering of the Austrian garrisons restored it to its original layout; it then remained untouched until 1859. Indeed, on 22 June of the same year, the decision was made to demolish the structure once and for all; this was completed in 1865, leaving only the bastions of Santa Maria and San Paolo and the Marian church still standing. These were later destroyed by bombs in the Second World War.

On the embankment of the two bastions, the surviving marble statue depicting Paul V making a sign of blessing is still visible; the work of Giovanni Lucca Genovese, it was placed at the centre of the fortress in 1618.

Baluardo San Benedetto, subsequently Barriere

Completed in 1497, the ancient Porta di San Benedetto overlooked the main western entrance to Ferrara, located at the end of the long decumanus road of the Addizione Erculea (Erculean Addition) urban area. It was modified between 1514 and 1521, with the addition of a triangular bastion in front of it, designed by the engineer Sebastiano Bonmartini from Monselice. This was further transformed in 1582 during the Signoria (Lordship) of Alfonso II d'Este, to protect the gateway of the same name, named Porta Po by the French.

The entire architectural structure was demolished from 1846 onwards in order to make room for the two toll barriers located where the two main roads of the city met: Corso Porta Po and Viale Cavour (both of which are still present today). The latter was built along the route of the ancient water course which flowed from the trenches in the west to skirt the castle, the famous Panfilio canal (named after Pope Innocent X, Giovanni Battista Pamphili), which was rendered navigable in the 1640s and permanently filled in between 1865 and 1880.

Following the damage caused by the bombardments of 1944, the toll barriers were also demolished in 1951, and in the following decade, the entire south-western curtain wall was knocked down in several places to make way for the roads that lead to the railway station: later on - and causing its fair share of controversy - the imposing residential buildings surrounding it led to the most serious blows to the city walls.

Porta Catena and salient

To the south of the Torrione del Barco, the curtain wall was rebuilt at various points immediately after the Second World War. Up to the point at which Corso Porta Po and Viale Cavour meet (which, during the Este era, was occupied by the Porta di San Benedetto), the only structure of note is a trapezoidal salient (not very prominent, it cannot be counted as a true bastion). To the north of this, in 1938, two archways were built (and reconstructed in 1958) - these were known as the Porta Catena, due to the proximity of the access structure of the same name that was entirely razed to the ground by the bombings of 1944. The original Porta Catena (which dates back to the early 17th century) did not open onto the walls, in that it was a river port located at the mouth of the navigable canal that connected the Po in Pontelagoscuro to the Castello Estense (Este Castle) trench: the name can be attributed to the use of the chains (“catene”) which were used to prevent boats from passing through at night, or whenever necessary. In the Casa Romei municipal lapidary, there are still a number of examples of the marble high reliefs that decorated the façades of the Porta Catena, bearing the insignia of Pope Urbano VIII Barberini, Cardinal Antonio Barberini (1631), his nephew, and Cardinal Legate Stefano Durazzo (1634-1637). The above-mentioned canal that connected Ferrara to Pontelagoscuro was referred to as Cavo del Barco until 1645, before being renamed Canale Panfilio in honour of Pope Innocent X Pamphili. It was dredged and enlarged in order to make the section that corresponds with modern-day Viale Cavour navigable, and it continued to be used as a canal until the early 1860s, when it was completely filled in.

Biagio Rossetti (1444-1516)

Biagio Rossetti was born in 1444; the son of a tailor, he was the leading architect in Ferrara during the Renaissance. Having held the position of engineer for the Ufficio Munizioni e Fabbriche della Camera Ducale (Munitions and Factories Office of the Ducal Chamber) since 1483, he was then tasked with overseeing the principle urban and suburban construction sites until the first decade of the sixteenth century, as well as most of the work commissioned in the territories of the Ducal state (including the Garfagnana, Modenese, Reggiano and Polesine regions, the latter of which lies north of the Po). With particular talent and expertise in hydraulics, much of the religious architecture of Ferrara is attributed to Rossetti, including the bell tower of the church of San Giorgio (c. 1485), the basilicas of San Francesco and Santa Maria in Vado (1494-1498) and the apse of the cathedral (1498-1499). Meanwhile, with regard to military and civil structures, his catalogue of works includes the entire city walls (1495-1506), his private residence at no. 152 of the still-existent Via XX Settembre (1490-1498), the Palazzo Costabili (1496-1503), which is home to the National Archaeological Museum, the Palazzo dei Diamanti (1494-1496) and Piazza Ariostea (1494-1495), which is still present today - the heart of the Addizione Erculea (Erculean Addition) area of urban expansion which he supervised as architect-engineer. Numerous sacred, public and noble buildings that no longer exist are also attributed to Rossetti, as well as some for which he may or not have been responsible but which have been credited to him in the

absence of documents proving otherwise (such as the church of the Certosa). He died on 16 September 1516 and was buried at the church of Sant'Andrea; his tomb has been missing since 1878.

Giovanni Battista Aleotti, known as l'Argenta (1546-1636)

Born in Argenta in 1546, Giovanni Battista Aleotti was the principal architect in Ferrara at the turn of the seventeenth century, first in the service of the last Duke Alfonso II d'Este, and then (from 1598) under the Camera Apostolica (Apostolic Chamber) and the Municipality.

Within the city, between 1582 and 1585 he oversaw the construction of the large bastions with deep, re-entrant sides and rounded “orecchioni” ramparts along the southern curtain walls, while in the early decades of the seventeenth century, he designed the tomb of Ludovico Ariosto (1610), the façade and the tower of Palazzo Paradiso (1610), the churches of Santa Barbara and San Carlo (1610-11) and Porta Paola (1612). In 1618, in his role as military engineer, he oversaw the completion of the papal fortress.

He was active as a theorist, writer and topographer, and also worked as a set designer and stage manager on shows and performances: he built the Teatro degli Intrepidi di Ferrara theatre (1605), which no longer exists, and the Teatro Farnese di Parma (1618) theatre, which still stands today. He also played an important role in works to decontaminate and regulate the water courses in various regions (from Parma to Ravenna and from Ferrara to Polesano).

Aleotti spent time in both Rome and Florence, working simultaneously on the palatial buildings in Gualtieri (in the fief of the noble Bentivoglio family) and Scandiano (with the enormous extension of the citadel on behalf of the Marquis Giulio Thiene).

He died in Ferrara on 12 December 1636 and was buried at the church of Sant'Andrea; his remains were transferred to the Santuario della Celletta (Celletta Sanctuary) in Argenta in 1878.

A spectacular tournament behind the walls: the Isola beata of 1569

In this precise location, in the trench full of water that surrounded the Punta della Montagnola (or Francolino), a famous tournament called L'Isola beata (“The blessed island”) took place. It was the night of 25 May 1569, and Duke Alfonso II d'Este wanted to celebrate the visit of his brother-in-law Charles of Habsburg to Ferrara with a spectacular naumachia (a mock naval battle staged as mass entertainment). This battle was to be focused on the clash over the ownership of an island, between the Witch of Joy and the Witch of Sorrow, with their respective armies of Cyclops, monstrous beasts and armed knights; however, the conflict was interrupted by the arrival of Eros, the messenger of Venus who was tasked with breaking the spell.

Conceived by the ducal secretary Giovan Battista Pigna, the tournament was directed by Lieutenant Cornelio Bentivoglio; the engineer and mathematician Marco Antonio Pasi from Carpi was responsible for constructing the island which would feature an imposing rustic wooden palace, while the Neapolitan Pirro Ligorio designed the sea monsters, boats and elaborate costumes.

The entire field stage was lit by iron fountains which burned with continuous fire so that the dozens of illustrious guests could see the spectacle from their seats on the 80-metre-high platform that was built on stilts against the curtain wall, between the two semi-circular defensive towers.

One of the most important figures in attendance was Battista Verato, who was in charge of directing the actors as well as acting in the show himself; Verato was one of the most famous play-actors of the time, and his talents were extolled by the poet Torquato Tasso.

The memorable banquet of 1574 in honour of the king of France

The various forms of documentation that exist on the subject agree that the spectacular banquet held on the slopes of Ferrara's "mountain" on the evening of 30 July 1574 was nothing short of unforgettable: the guest of honour was none other than the new king of France, Henry III of Valois, who was on his way back from Poland, accompanied by the dukes of Angoulême, Nevers and hundreds of other dignitaries. In order to prepare the stages of the various shows and performances put on for the illustrious guests, a large number of painters, carpenters, architects, tailors and gardeners were assembled in record time. Indeed, the painter Rinaldo Costabili alone created fifty stucco knights which were seated atop as many mechanical horses, part of an army assembled to attack the fairy-tale wooden castle built directly on the water of the great fish pond, which was over 200 metres long (it was filled in 1631, and the Viale Alfonso I d'Este now runs over the site). The castle, designed by Pirro Ligorio and Marco Antonio Pasi, was covered with canvases "painted with fine art" by Giulio Marescotti and Giuseppe Mazzuoli, who was known as "il Bastarolo".

The king was entranced by the pyrotechnic display launched from the towers of the floating castle, until a tragic accident occurred: inside the manor, a number of canvases suddenly caught fire, leading to a blaze that killed many of the those hidden inside who were working on the special effects. This disaster had a profound effect on the superstitious Henry III, who left Ferrara the following day with little further ado.

The Palazzo di Belvedere palace and island

Around a kilometre long, the Isola di Belvedere (Belvedere island) was actually one of the most original leisure destinations in the whole of Renaissance Italy. Situated on the ancient course of the river Po not far from the south-western vertex of the city walls, the ancient site of the island occupied the expansive

area which now lies between the roads of Via San Giacomo, Via Darsena, Via Mulinetto, Via Saragat, Via Arginone and Via Maverna.

The clean, salutary air, the abundance of water and the presence of woods were the main reasons for which Duke Alfonso I d'Este (1476-1534) decided to make this island into an exclusive residential dwelling. Building at the site began in 1513, under the supervision of Biagio Rossetti, and in less than a decade, a complex sprung up comprising geometric gardens, fountains, baths, water displays, menageries for exotic animals and, above all, an intricate system of buildings centred around a great palace. With a longitudinal layout, the palace featured quadrangular towers, a large open courtyard with open galleries and several spaces with rich interior decoration.

Exalted by the leading literary figures of Ferrara in the early sixteenth century (even Ariosto refers to the palace in the third edition of his epic poem *Orlando Furioso*), the Palazzo di Belvedere served as a stage for the great and good of Ferrara for the entire century, and was used to hold a number of important theatrical productions, including Torquato Tasso's *Aminta* (1573).

This earthly Eden was consigned to history between 1608 and 1618, when the island was completely levelled to make way for the new papal fortress.

Michelangelo Buonarroti on the walls of Ferrara

"And so he was sent by the Signoria of Florence to Ferrara to see the fortifications of Duke Alfonso Primo, and his artillery and ammunition": Giorgio Vasari's *Vite* writings are the most authoritative source testifying to the presence of Michelangelo in Ferrara in 1529; he was sent to the city by the authorities of the Florentine Republic to examine the technological features of the defensive walls built by Duke Alfonso I d'Este, one of the most famous prince-architects of early 16th century Europe. Michelangelo stopped off in Ferrara in the months of August, September and November, staying with the student Antonio Mini at the Osteria dell'Angelo, in today's Via Ripagrande. The great Florentine painter-sculptor's attention was drawn by the unique arrow-shaped bastions built between 1518 and 1524 at the eastern and south-eastern side of the city walls, designed by the engineer Sebastiano Bonmartini from Monselice (who was known as "il Barbazza"); indeed, in the autumn of 1528, Bonmartini went to Florence to give advice on the fortifications that were to be built in the city.

In the eyes of the experts, the bastions of San Rocco and la Montagna were the ultimate examples of this type of structure, to be closely studied and imitated: indeed, as early as August 1520, Ferrante Gonzaga described the Baluardo della Montagna as "the most splendid fortress in the world". Meanwhile, during his tour of the Romagna region in 1526 on behalf of Pope Clement VII, Antonio da Sangallo the Younger took drawings of these two works of civil defence in Ferrara.

The "Walls Project" of the Eighties: a work of restoration of national importance

In spite of the recovery work commenced in the period after the First World War, the lack of any form of systematic plan to protect Ferrara's city walls began to be a cause for concern for cultural authorities and bodies both at local and national level in the 1960s and 70s.

The renewed focus on the protection of cultural heritage gained momentum, thanks in part to the opportunities for the implementation of measures enabled by the special FIO funding (Fondi Investimenti Occupazione) made available by the Italian state, and designed to support public investment projects. In 1985, the general programme of interventions for the "Mura e il Parco Urbano" (Walls and Urban Park) project was drawn up, by a design team commissioned by the Municipality of Ferrara and assembled by Professor Romeo Ballardini and the architects Romano Corrieri and Michele Pastore, in collaboration with the Municipal Engineering Offices and with the support of a group of specialist researchers.

Following the presentation of the General Project to the Ministry for Cultural Heritage by the Municipality (in collaboration with the Emilia Romagna Region), in 1988, the FIO awarded funding to the project for a total of 54.5 billion lire, one of largest grants of its kind in Italy. The ten-year project launched between 1988 and 1989 represented a model of integrated urban-environmental restoration, designed to preserve the 9200 metres of one of the most complex and complete military architectures in Italy and to create a large green area extra moenia (outside the walls) to the north, between the city and the Po river, transforming the 1,000 hectares of countryside that were once the hunting grounds of the noble Este family into an area of parkland.