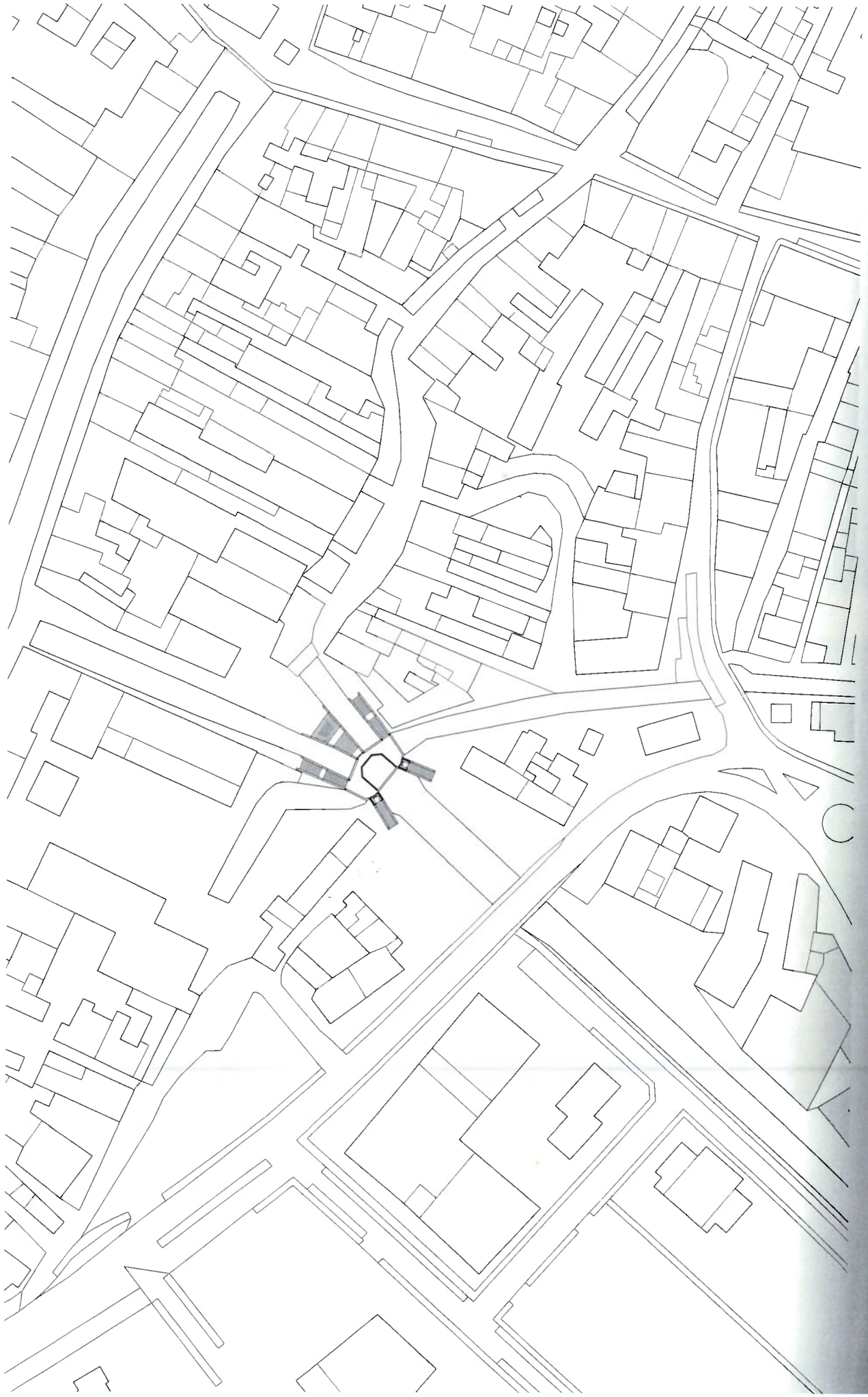


Trepponti Bridge, Comacchio, 1634

354–365

The Trepponti bridge, also known as Ponte del Teatro, is a work of engineering along the old navigable Pallotta Canal that led to the Adriatic Sea. The bridge constituted the fortified gate of the city.

The structure which connects the two banks of the canal through a detailed system of routes is an original urban device that can be interpreted as a simple bridge, but also an access gate, an outdoor theater, or a raised square.

The complex was built in 1638 by order of the Cardinal Giovanni Battista Maria Pallotta, based on a design by an architect from Ravenna, Luca Danese. Due to the direct involvement of Pope Urban VIII, Luca Danese worked at length on the renewal of the lagoon-front town of Comacchio, considered to be of strategic importance in the context of the improvement of Adriatic port facilities. Based on an orderly plan of public works of his own preparation, the architect designed the new waterway—canale Pilotta—connecting the city to the seas, and many projects created to regenerate local civil and economic vitality. These included the many canals and bridges, including the "pentarch" bridge, namely the Ponte dei Trepponti.

The bridge is composed of five ample brick staircases—three on one side and two on the other—that converge on a terrace over the water in Istrian stone. The largest staircase with a trapezoidal plan has 28 steps divided into two ramps, and reaches the level shared by the other ramps of 5.5 meters. The two staircases at the sides of the Pallotta Canal are specular, composed of 24 consecutive steps and 4 steps placed inside the turrets.

Salara, Sant'Agostino, Borgo, and San Pietro. Across the centuries the bridge has been altered in various ways, above all for aesthetic reasons, as in the addition of the two guard turrets at the top of the two rear staircases, and of six small pillars placed at the top of the three frontal staircases. Both fortified towers bear plaques that display two significant quotations for the city of Comacchio.

The bridge on the Brenta River, known as Ponte Vecchio or Ponte degli Alpini, is a wooden covered bridge with five spans, whose original design dates back to Andrea Palladio.

The proportions of the structure and the trussed roof supported by slender pillars make this bridge an urban device that goes beyond its merely functional nature: it can be interpreted as a linear square, a terrace on the river or a covered passageway.

The first wooden bridge of Bassano dated back to 1209; various documents bear witness to its history of repairs or reconstruction of the original structure over the centuries, due to the intrinsic fragility of the material and the powerful force of the river. Extraordinary flooding of the Brenta in 1567 caused yet another collapse, leading to the commission assigned to Andrea Palladio for the design of a new structure. The first proposal was that of a stone bridge with three arches, based on a Roman model, but it was rejected by the city council, which asked the architect to create a bridge that would not differ too much from the original structure.

The wooden construction designed by Palladio lasted almost 200 years, undergoing its first collapse in 1748; after reconstruction based on the original project by Bartolomeo Ferracina, it collapsed a second time—again due to flooding—in 1813. The present structure, resulting from a third reconstruction after destruction in 1945 caused by an explosion, still complies with the original design.

The bridge, with a length of 64 meters and 8 meters in width, has five spans of about 13 meters, formed by large wooden beams with oblique crosspieces resting on four intermediate pylons and two lateral abutments. The four wood

Built starting in 1321 and completed in the mid-1300s, Piazza Grande in Gubbio is one of the largest elevated squares in Italy. Besides being one of the most modern and ambitious projects of urban transformation of the Middle Ages, it is also the result of exceptional engineering.

Piazza Grande is an urban device that is hard to classify: it is simultaneously a terrace from which to view the surrounding landscape, a square faced by the most important buildings in the city, and the roof of a system of spaces and substructures.

In the wake of the economic and administrative growth of Gubbio during the 13th century, the municipal government decided to create a new town center, in a position lower than the old settlement and closer to the increasingly lively and thriving productive community. It was decided to make the new center at the point of convergence of the city's four districts—Sant'Andrea, San Giuliano, San Martino, and San Pietro—to symbolically mark the point of union of the entire city.

The project was extremely ambitious for its time, calling from the outset for a large raised piazza around which to place the main buildings of the municipal administration: the Palazzo dei Consoli and the Palazzo del Podestà. The construction began under the supervision of the architect Angelo da Orvieto in 1332, and continued until the mid-1300s.

The end of communal independence, with the advent of the lordship of the Gabrielli (1350), also marked the interruption of the work: the Palazzo Pretorio (Podestà) remained unfinished, while the four great arches acting as the substructures of the piazza were not completed until 1482.

In the 16th century a loggia was built on the southwestern side of the square, a feature

To construct the project it was necessary to alter the natural state of the land in the higher zone, starting with the formation of an embankment, while towards the valley the raised square is supported by a system of buttresses, with 12 lower and 12 upper compartments. The wall towards the valley that supports the piazza is about 17 meters in height from the street below, and contains four large barrel-vaulted spaces with a structural role.

Steps of Ara Coeli, Rome, 1348 274–285

One of the most important urban projects of 14th century Rome, the Ara Coeli steps connect the slopes of the Campidoglio with the basilica of Santa Maria in Ara Coeli.

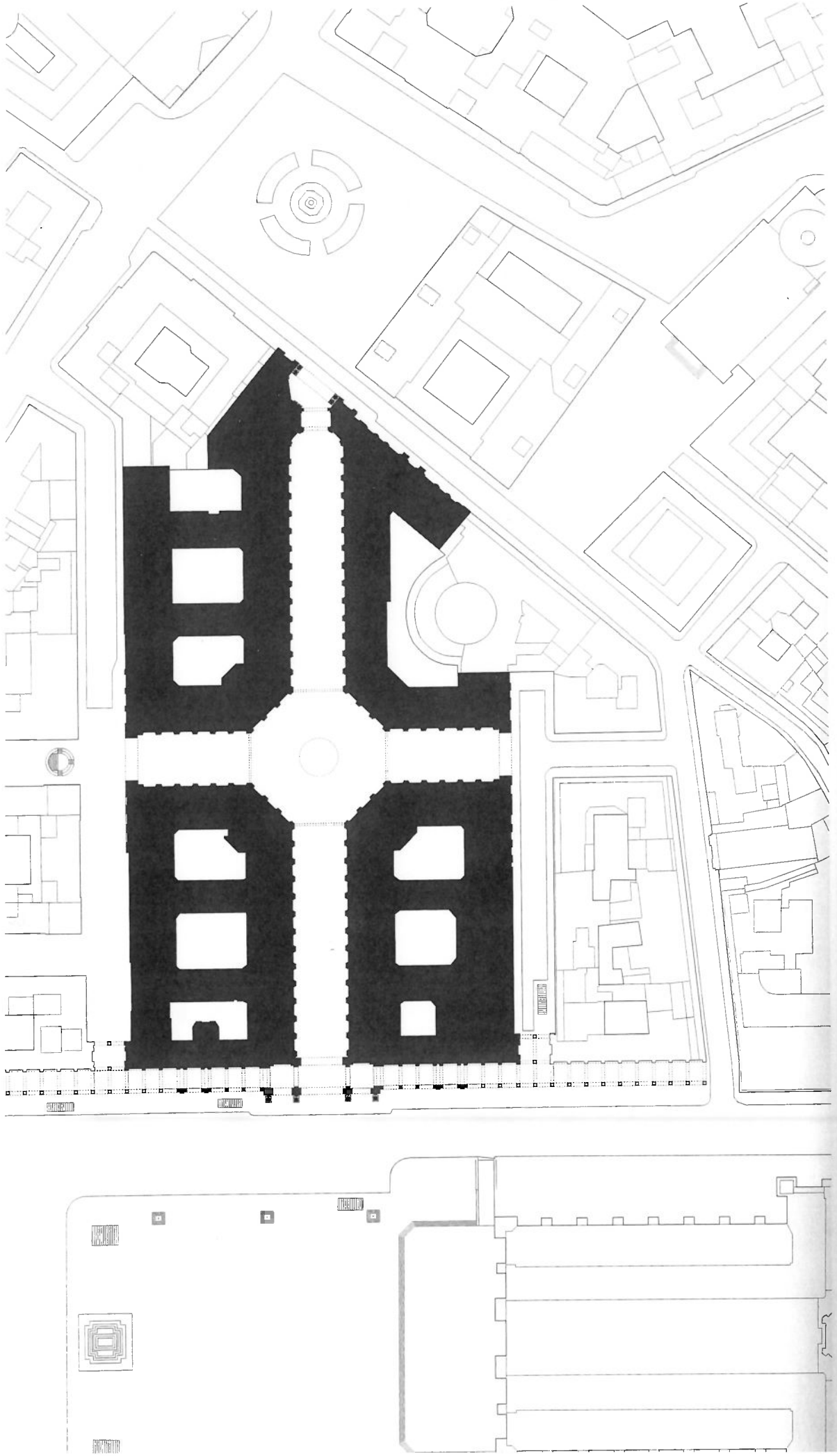
Given its size and monumental presence, the flight of Ara Coeli steps soon became a place of vivid symbolic value, a distinctive urban landmark capable of changing the physiognomy of the northern margin of the Capitoline Hill.

The flight of steps was built in a dark period in Roman history, as a votive offering to the Virgin to mark the end of the plague of 1348; the site was inaugurated that same year, according to legend, by the Tribune of Rome Cola di Rienzo. At the time of construction, the Franciscans, to whom Popo Innocent X had assigned ownership, altered the orientation of the church at the top, no longer facing towards the Forum but instead towards Christian Rome. They also completely changed its image through refurbishing in Roman-Gothic style. Built by Lorenzo di Simone Andreozzi, the steps were perceived at the time as a true *scala sancta*, ascended by the faithful on their knees in the hope of miraculous events. The name Ara Coeli—the "altar of heaven"—stems from the legend of the apparition to the emperor Augustus of a virgin on an altar, later interpreted as a pre-Christian sign of the birth of the church.

In 1546 the construction of the ramp of access to the summit of the Capitoline Hill, designed by Michelangelo, led to the cutting of the southwestern corner of the staircase.

The flight spans a level shift of 21 meters with 124 marble steps, salvaged from the remains of the Temple of Sarapis on the Quirinal Hill, grouped in 12 ramps with a variable number of steps: the first three ramps have 20, 15, and 14 steps, respectively, while the others have 7 steps each. The dimensions are impressive: 53 meters in length and 14 meters in width.

access to the church and to the terrace of the Victor Emmanuel II Monument. This space, at the conclusion of the long staircase, also becomes a factor of geometric connection between the longitudinal axis of the Basilica and that of the steps, rotated by 7 degrees.



Galleria Vittorio Emanuele II, Milan, 1865–1877

246–257

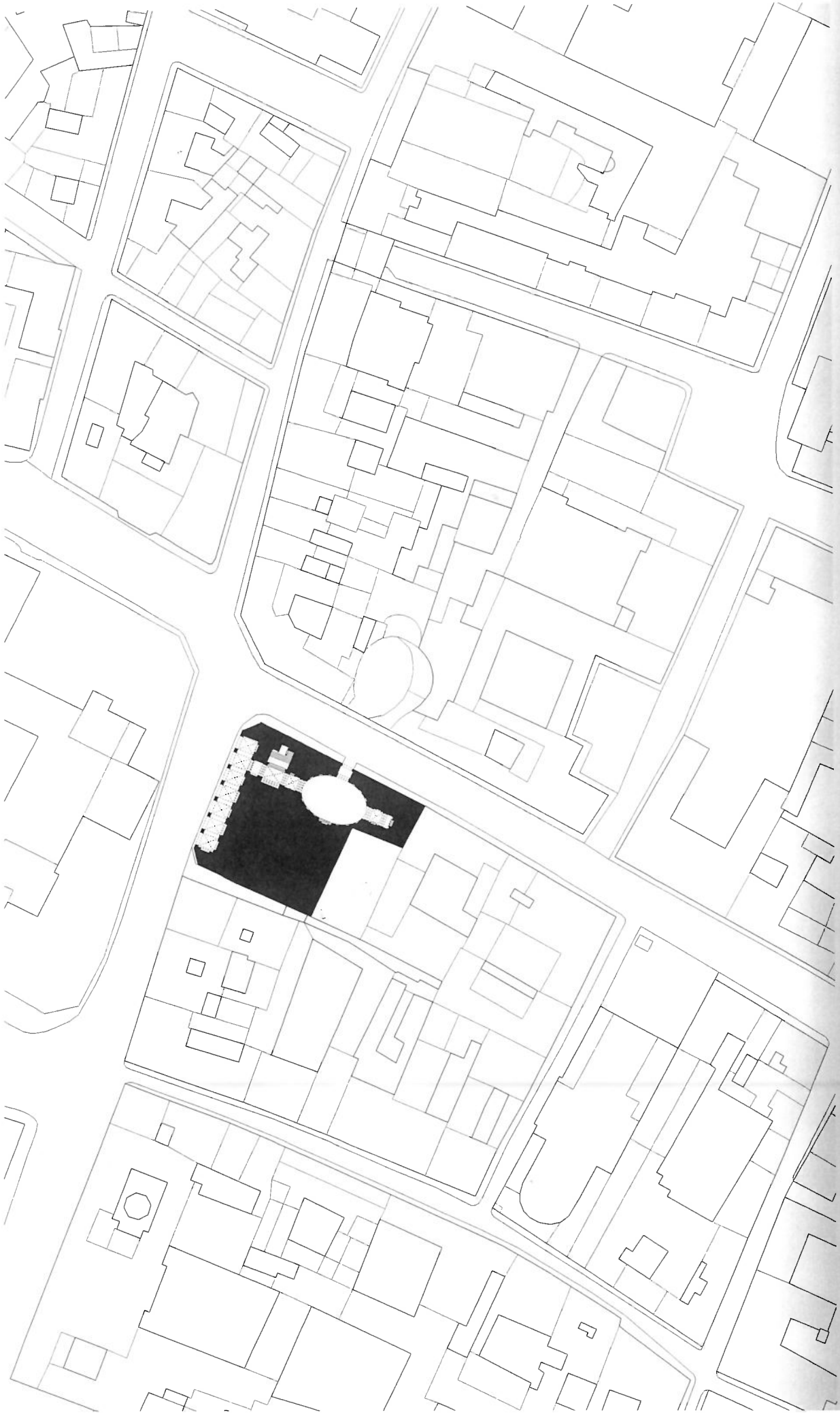
Built from 1865 to 1877, Galleria Vittorio Emanuele II in Milan is one of the largest covered pedestrian streets in Europe; a walkway of almost 200 meters that connects two of the most important places in the city: the Duomo (cathedral) and Teatro alla Scala.

With respect to the archetype of the passages of London, Paris, and Brussels, Galleria Vittorio Emanuele stands out for its monumental size, making it a prototype of reference for the galleria typology all over Europe; a place set aside for shops, strolling and leisure, the rites of the new bourgeois class during its period of origin.

The idea of a route connecting Piazza Duomo and Piazza della Scala arose in the wake of one of the many debates taking place in Milan at the time, regarding the refurbishing of the piazza in front of the cathedral, which was smaller than it is today, irregular in form, and deemed by many to be unsuitable in its role as the square in front of the cathedral. After two competitions without winners, held in 1860 and 1861, the project was assigned to Giuseppe Mengoni, as the result of a third competition held in 1863; the definitive project was completed in 1864, and construction began in 1865. The work, excluding the building of the central entrance archway and the northern porticos of Piazza Duomo, lasted only three years, leading to an initial inauguration in 1867. Full completion of the project, however, came only in 1878.

The galleria is perfectly oriented on the cardinal axes and has a cruciform layout with four arms of different lengths: on the north-south axis it has a length of about 196 meters, while the east-west axis measures about 105. At the intersection there is a large internal piazza with an octagonal form. The planimetric structure is obtained by repetition—92 times—of the same modular span: 14.5 meters in width and 32 meters decorated in Lombard Neo-Renaissance style. The modules are separated by Ionic pilasters on high pedestals, with a second order of caryatids and telamons. The forceful vertical rhythm is softened by two protruding trabeations that form the balcony and the upper cornice that conceals the roof supports.

A barrel vault with a height of 29 meters, entirely in iron and glass, covers the arms of the galleria, while the crossing is protected by a glass dome reaching a level of 47 meters from the floor, with a diameter of 39 meters, inspired by the drawings of the Crystal Palace of New York. The ends of each arm are underscored by the presence of a monumental portal that creates a theatrical entrance and marks the presence of the gallery seen from the city.



Rotonda Foschini, Ferrara, 1773–1797

206–217

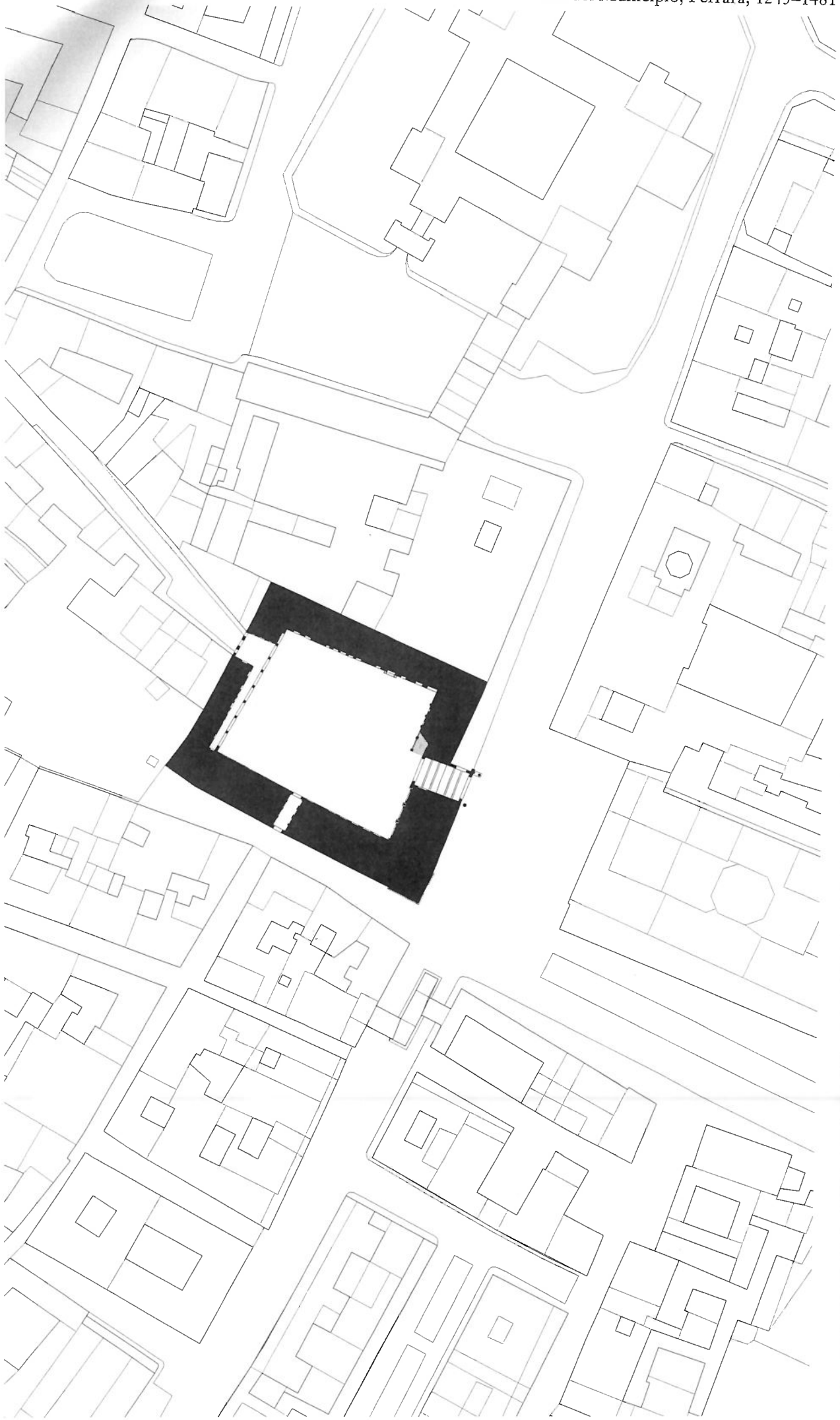
An integral part of the architecture of the Teatro Comunale of Ferrara, Rotonda Foschini is a small oval courtyard connected to the city by two different covered passageways.

In spite of its closed and apparently not very visible geometry, this intimate location full of charm belongs to the public space of the city, thanks to the two vaulted accessways on the main façade of the theater, on Corso Martiri della Libertà and Corso della Giovecca.

The history of the Rotonda is inseparably linked to that of the Teatro Comunale: at the end of the 1700s, with the rise of the bourgeoisie, the necessity emerged to create a new theater of adequate size, in spite of the fact that the city of Ferrara already contained various facilities for the performing arts. In 1773 the cardinal legate Scipione Borghese commissioned Antonio Foschini and Cosimo Morelli to design the new theater, to be built on an already identified area in front of the Este Castle. The construction, after many interruptions and revisions, was completed in 1793.

The space of the Rotonda was initially designed for the transit and parking of carriages, offering direct access to the theater from Corso Martiri della Libertà and Corso della Giovecca. Today the Rotonda, dedicated to the engineer Antonio Foschini, one of the two designers of the structure but not directly of the Rotonda, which was designed by Cosimo Morelli, is utilized as a pedestrian passage.

The space of the Rotonda, with its oval form, measures 18 meters in length and 12 meters in width, developing vertically with four orders of windows to reach the eaves of the roof at a height of 16 meters.



Palazzo and Piazza del Municipio, Ferrara, 1245–1481

194–205

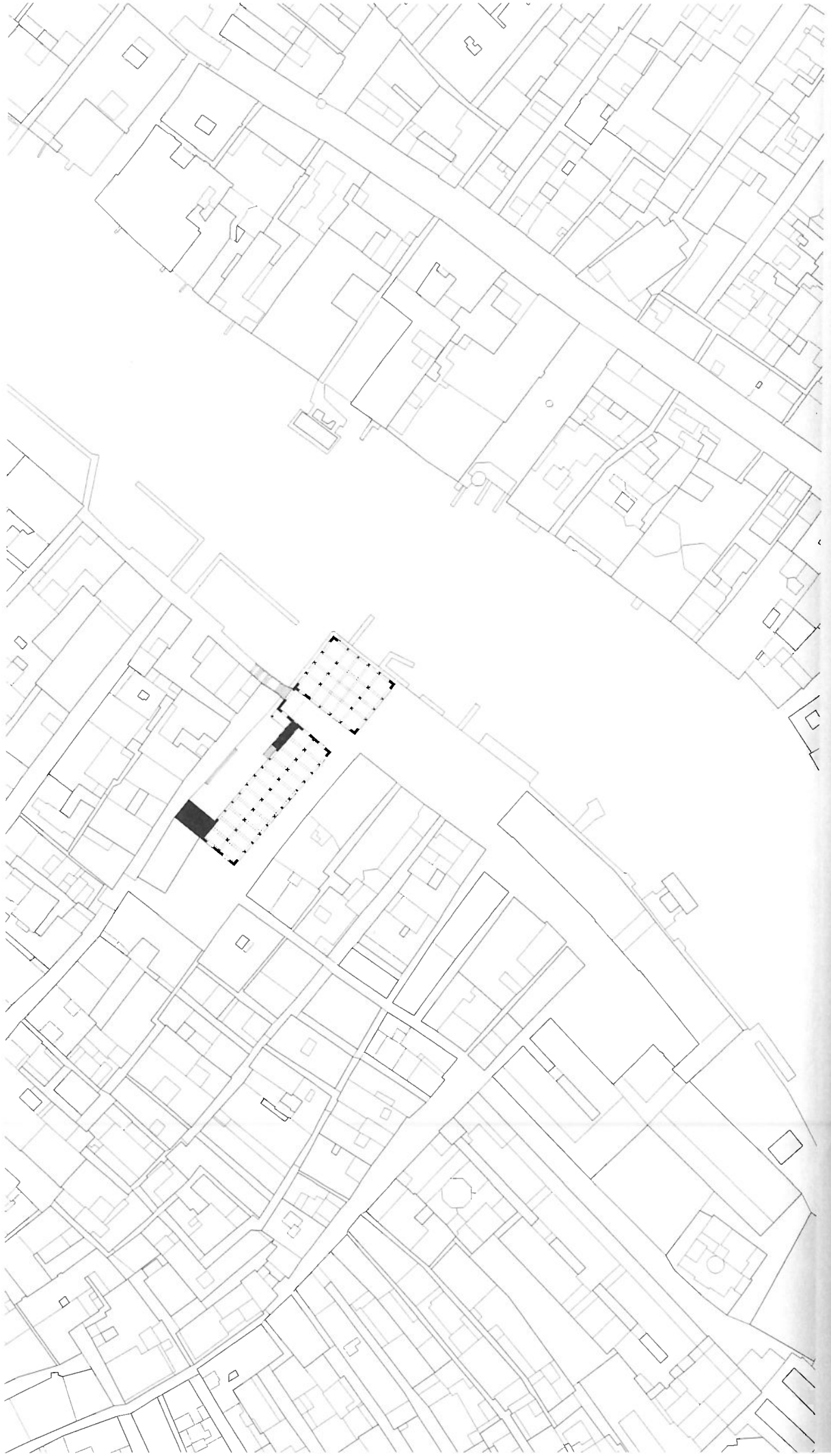
A few meters from the Este Castle, facing the large marble façade of the cathedral, stands the Palazzo Municipale of Ferrara, a ducal residence of the House of Este until the 16th century. A heterogeneous gathering of buildings constructed in successive phases forms a quadrangular urban courtyard of great breadth.

The interesting aspect of this structure does not lie in the specific, individual episodes that give rise to the complex, but in the quality and proportions of the open space, which becomes an element of aggregation between the various buildings and a junction of urban crossing. Through the three passages positioned on three of the four sides of the quad, the courtyard of the palazzo opens to the city, becoming a place of convergence of various flows.

The construction of the palazzo began in 1245 with the erecting of the "L" that faces Via Corso dei Martiri and Via Cortevecchia, recognizable thanks to the high merlons of the Torre della Vittoria. This block, the historic location of the ducal palace, is now a remake done in 1924 in Neo-Gothic style. The courtyard layout visible today took form starting in 1450, with several projects that were part of a systematic program of works ordered by Ercole I d'Este. They include the buildings that enclose the quadrangle to the northwest, the Giardino delle Duchesse and the walkway known as Via Coperta—a protected pathway at the *piano nobile* of the palazzo, supported by five arcades—which joins the northern wing to the Este Castle of Ferrara.

The main entrance to the piazza, known as *Volto del cavallo*, is a coffered atrium bordered by two large slightly depressed arches, on squat pilasters made in masonry; towards the cathedral, this access is flanked by an elegant Renaissance arch attributed to Leon Battista Alberti and b

languages in terms of height, form and number of the windows, and the arrangement of the ground level, clues to the formation of the complex over time. The southeastern side, divided into two halves by the entrance arch, has an impressive flight of steps on one side—designed by Pietro Benvenuto degli Ordini in 1481, with a vaulted roof and cupola supported by five arches on six columns in composite order—and by three arches on marble columns, on the other side, enclosed by filler elements in approximately 1375. The southwestern side features large entrances for the shops on the ground floor, with arches having a very limited rise, topped by three orders of windows with a slightly different rhythm than the openings on the ground floor. Along the northwestern side, eight segmental arches, of which one has been closed, on low columns and with a composite capital of simple form, are topped by an equal number of biforate windows. Finally, on the last side to the northeast, we again find entrances to shops, topped by a double order of windows that create a rhythm interrupted by the portal of the former court chapel, built in 1476. This heterogeneous set of elements is held together by the large paved surface, entirely covered in brick: in a rectangle measuring 34 × 40 meters, indicated by a double row of rectangular granite blocks, squared panels of brick are laid in a herring-bone pattern, following different orientations.



Mercato del Pesce di Rialto, Venice, 1907 166–177

The Rialto Fish Market is composed of two buildings connected by an elevated walkway: the 14th-century sheltered market of the Stalon dei Querini, and the Pescària, the neo-Gothic building constructed in 1907.

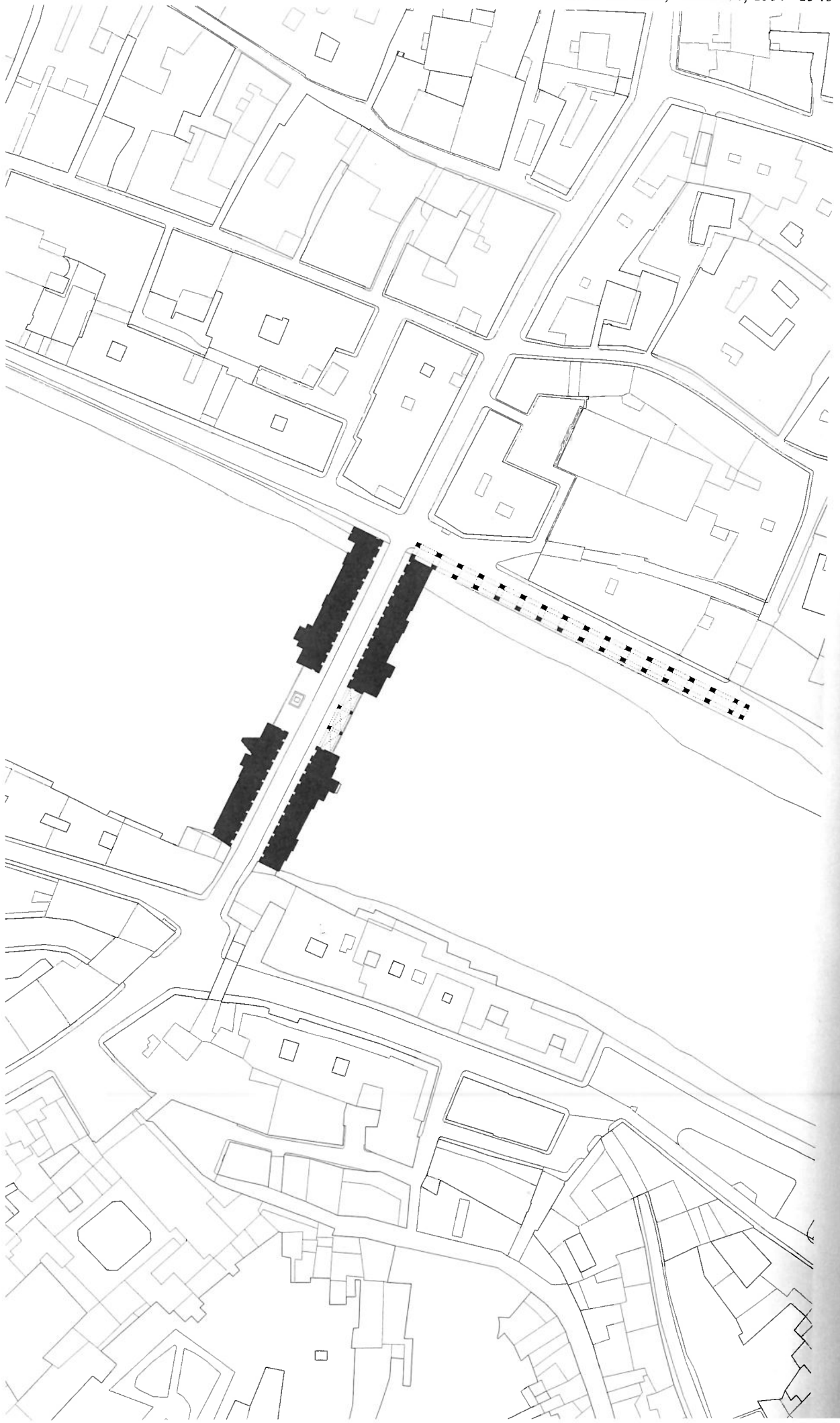
This complex is of interest not only for the architecture of the individual buildings, but also for the urban character of the whole and the ability to form an articulated system of open spaces in continuity with the surrounding urban fabric; a junction of commercial activities and a place for socializing.

Rialto is one of the oldest areas of settlement in Venice, together with the districts of San Marco and San Polo. The name comes from the Latin *rivus altus*, or "deep canal" in reference to today's Canal Grande, of which the islands of Rialto formed the banks. Already prior to 1097, the year of the market's relocation, the Rialto zone had always been a place of trade, a vocation that has continued into the present. Over the centuries the market has expanded, for both retail and wholesale trade, thanks to the construction of warehouses and storage facilities. In the 1500s a vast campaign of construction was begun, which would redesign the areas of the market in their present form: in 1525 construction began on the Palazzo dei Camerlenghi and the Fabbriche Vecchie, while the Fabbriche Nuove, designed by Jacopo Sansovino, are only slightly more recent (1553), like Palazzo dei Dieci Savi. In 1551 a competition was announced which led in 1591 to the opening of the present Ponte di Rialto. Inside this long process of development, the Pescària, one of the two buildings that form the fish market, was not built until 1907, based on a project by the architect Domenico Rupolo and the painter Cesare Laurenti.

The Pescària, organized on a quadrangular plan of 18 × 21 meters, has a completely open

of 3.6 meters, and brick pillars at the four corners of the building. The first floor is faced in brick with three-mullion windows and a large loggia facing the Grand Canal. The Pescària is connected by an elevated walkway to the Stalon, a previously existing structure for which the new building constitutes the continuation towards the Grand Canal.

The Stalon, whose architectural language is replicated by the Pescària, was a slaughterhouse in the 1300s, then transformed into a market whose present configuration is the result of major reconstruction carried out at the end of the 19th century. The space on the ground floor is organized as a large hall with a rectangular form of 12 × 41 meters, subdivided into two spans by a central row of 12 free columns with a height of about 6 meters, supporting a wooden deck. The building opens outward through a series of pointed arches, 12 on the long side and 8 on the short side.



Ponte Vecchio, Florence, 1339–1345

366–377

Ponte Vecchio, the oldest bridge in the city, was built from 1339 to 1345 in the point where the banks of the Arno River are closest to each other, which was originally the location of a ford.

The presence of craftsmen's shops on both sides of a central piazza facing the river make Ponte Vecchio an architectural structure that can be interpreted as a fragment of the surrounding urban fabric, raised over the Arno.

The first crossing of the Arno, in a position not so different from today's, dated back to the Roman era. The bridge in its current configuration, built from 1339 to 1345, is attributed to one of two different figures: Taddeo Gaddi (as reported by Giorgio Vasari) or Neri di Fioravante (due to the fact that in those years he held the position of the city's master builder).

Unlike the bridges created until that time, which were based on Roman models with round arches and short spans, Ponte Vecchio was built with segmental arches that permitted a reduction of the number of piers in the riverbed, extending the size of the spans. This new solution—the first of its kind for a bridge in Europe—left more space for the river to flow, thus limiting its resistance to the current.

The original bridge featured four linear buildings placed at the four corners, with a small central plaza; over the roof of the buildings there was an upper walkway accessed through four doors placed in the central part and at the ends. The arcades of the lower level gradually filled up with small buildings on both sides. These constructions, already existing in a different form in the 1300s, were set aside in 1442 by the municipal administration as shops for greengrocers and butchers, where the latter could discard scraps from meat cutting into the river. Over [illegible] the "corridor" for Cosimo I, bearing the latter's name, with the aim of connecting the political and administrative center of Palazzo Vecchio with the private residence of the Medici at Palazzo Pitti. The elevated corridor, about 760 meters long and built in just five months, extends on the eastern side of the bridge above the shops and along the Lungarno degli Archibusieri in a sequence of 14 arches with a height of 8.5 meters.

About 96 meters long, with an average width of 24 meters, of which only 8.7 form the width of the pedestrian walkway, the bridge is divided into four blocks of shops topped by small apartments. The portions of the bridge with buildings are interrupted at the center, where the space widens on both sides to form a piazza overlooking the river; the southern side of the piazza is bordered by a loggia with three round arches that supports Vasari's corridor.