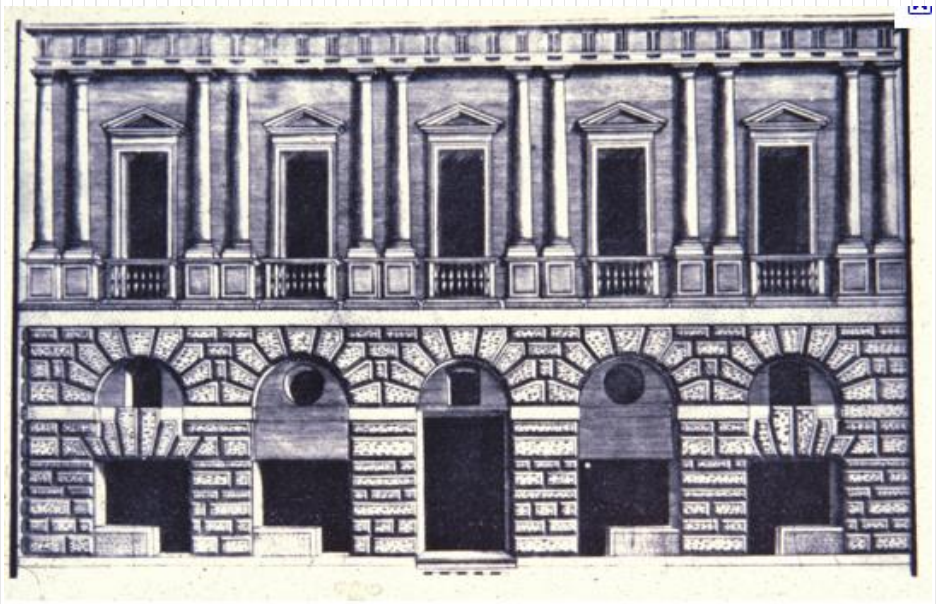
Renaissance Architecture



Outline

- Time and Place
- Map of Italy during the Renaissance
- Socio-Historical Background

- The lessons of Greece and Rome
- New technologies and inventions
- A new way of thinking

- Renaissance Architects and their Works
- The Renaissance in France and England

Time and Place

The **Renaissance** (Italian: *Rinascimento*, from *ri-* "again" and *nascere* "be born") was a cultural movement that spanned roughly from the 14th to the 17th century, beginning in Florence in the Late Middle Ages and later spreading to the rest of Europe.

- App 1400 – 1700AD
- Italy - In the middle ages, was composed of different city-states and fiefdoms eg Florence, Venice, Milan, Mantua.

Florence – is considered as the birthplace of the Renaissance

In Florence, the wealthy wool merchants and bankers sought prestige and status through their patronage of arts and letters, and architects and artists displayed their support through their development of new forms in painting, sculpture and architecture.

What was the Renaissance?

The intellectual transformation that happened during the Renaissance has resulted with this period being viewed as a bridge between the Middle Ages and the Modern era.

The Renaissance in Italy

As a cultural movement, it encompassed a resurgence of learning based on:

- classical sources
- the development of linear perspective in painting
- gradual but widespread educational reform.

Although the Renaissance saw revolutions in many intellectual pursuits, as well as social and political upheaval, it is perhaps best known for its artistic developments and the contributions of such polymaths as Leonardo da Vinci and Michelangelo, who inspired the term "Renaissance man".

Access to the Classical Texts and the Teaching of Humanities

- The key to a new vision of human life and therefore of architecture came from the scholars' access to the classical texts.
- International trading exchanges had helped to disseminate ideas, and a group of teachers of the humanities (grammar, rhetoric, history and philosophy) who acquired the name of Humanists, played a crucial part in their propagation.
- These texts, including eventually about architecture were spread through developments in printing. (Gutenberg invented the movable type in 1450)

The Duke of Urbino. The Duke collected one of the finest libraries in Italy, employing it is said, thirty or forty scribes for fourteen years to copy the great classical and modern texts.

Humanism and the Renaissance

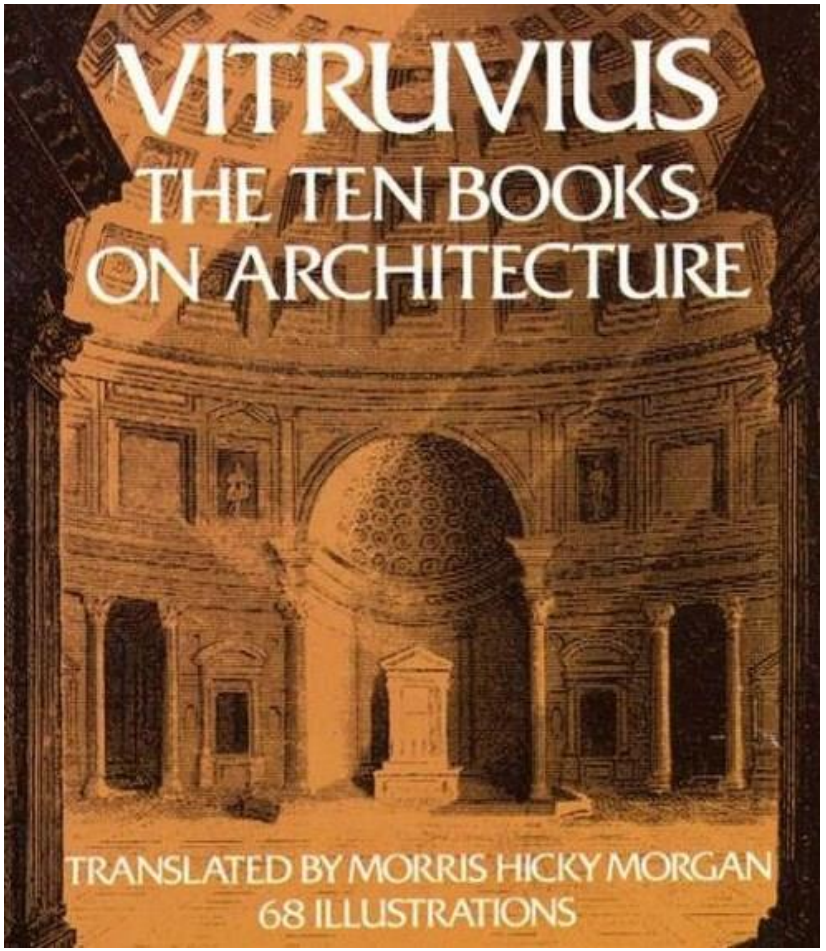
- Humanism was a new world view. It celebrated rationality and mankind's ability to make and act upon empirical observations of the physical world.
- Humanist scholars and artists recovered classical Greek and Roman texts and aspired to create a modern world rivalling that of the ancients. *One of the most important was Vitruvius' text on architecture which had been re discovered in Switzerland.*
- Rather than train professionals in jargon and strict practice, humanists sought to create a citizenry (including, sometimes, women) able to speak and write with eloquence and clarity. Thus, they would be capable of better engaging the civic life of their communities and persuading others to virtuous and prudent actions.
- This was to be accomplished through the study of the *studia humanitatis*, today known as the humanities: grammar, rhetoric, history, poetry and moral philosophy.

Vitruvius' Ten Books of Architecture

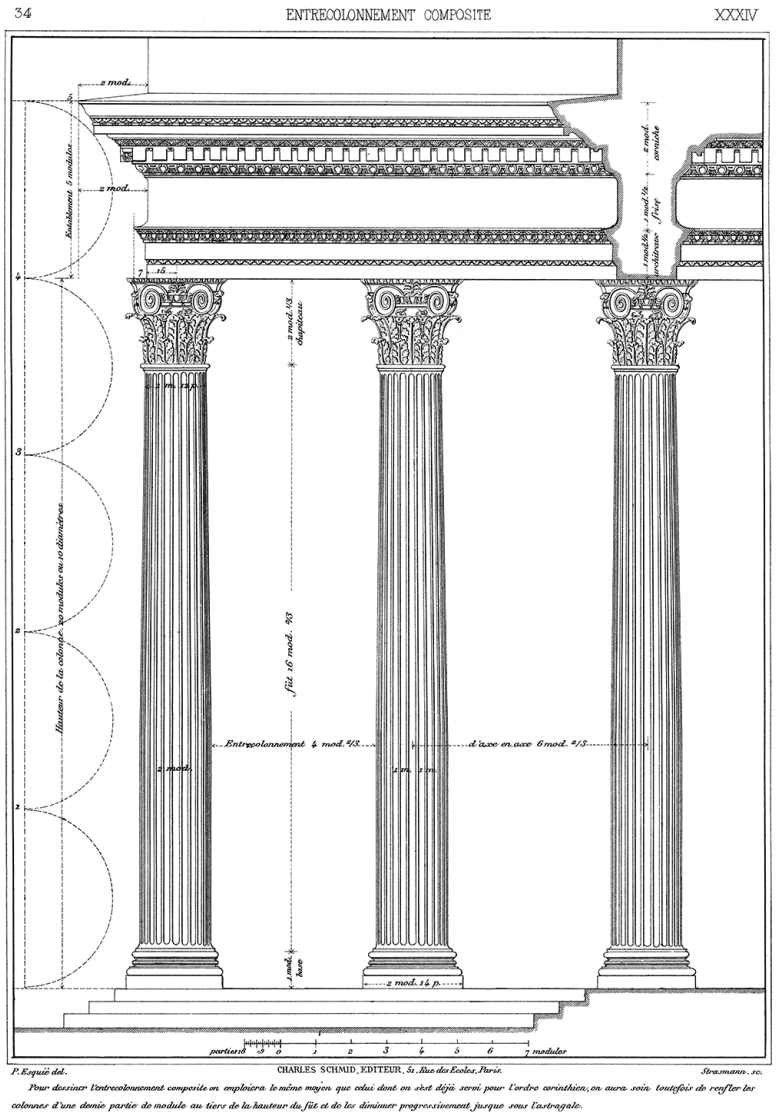
In 1487 the ancient text of Vitruvius was one of the first books printed. The impact of printing was tremendous.

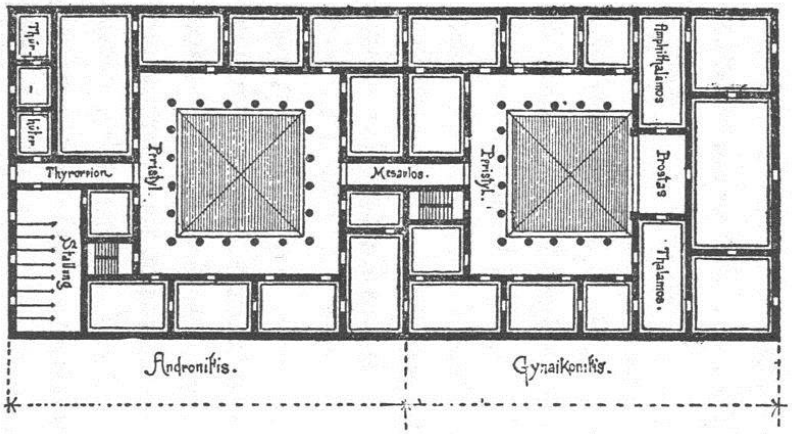
The architectural theorists of the revived antique style – Alberti, Serlio, Francesco de Giorgio, Palladio, Vignola, Guilio Romano – all wrote treatises that owed something to Vitruvius. These men were no longer master masons, however brilliant, they were scholars.

Architecture was no longer the continuation of a practical tradition, handed on through mason's lodges; it was a literary idea. The architect was not just putting up a building; he was following a theory.



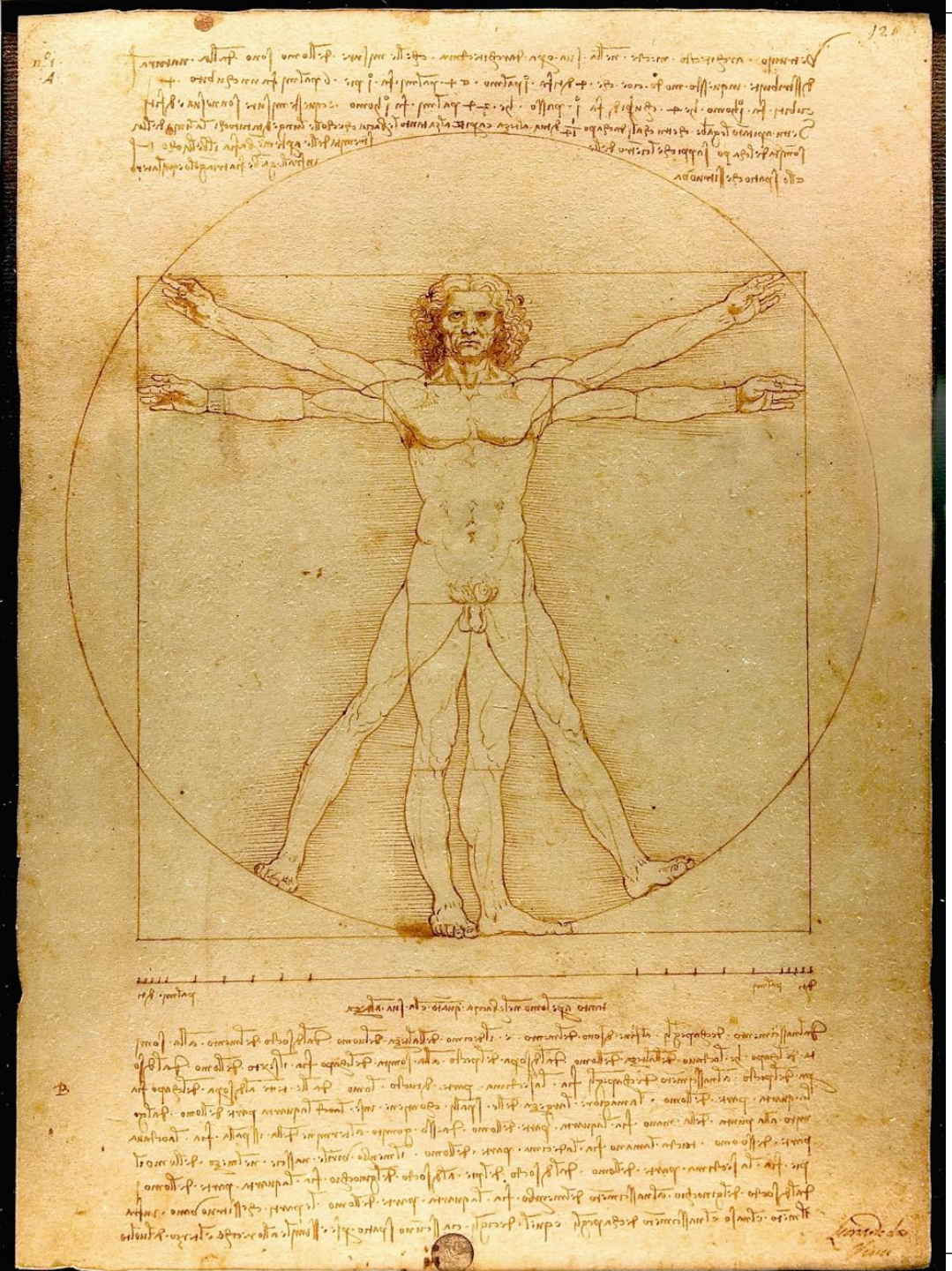
De Architectura ("On Architecture")





Marcus Vitruvius Pollio (born c. 80–70 BC, died after c. 15 BC) was a Roman writer, architect and engineer, active in the 1st century BC. He is best known as the author of the multi-volume work *De Architectura* ("On Architecture").

Vitruvius is famous for asserting in his book *De architectura* that a structure must exhibit the three qualities of *firmitas, utilitas, venustas* – that is, it must be solid, useful, beautiful. These are sometimes termed the **Vitruvian virtues** or the **Vitruvian Triad**.



The Vitruvian Man

- Rather than using the complex, geometric transformations of medieval master masons, Renaissance architects favoured simple forms such as the square and the circle.

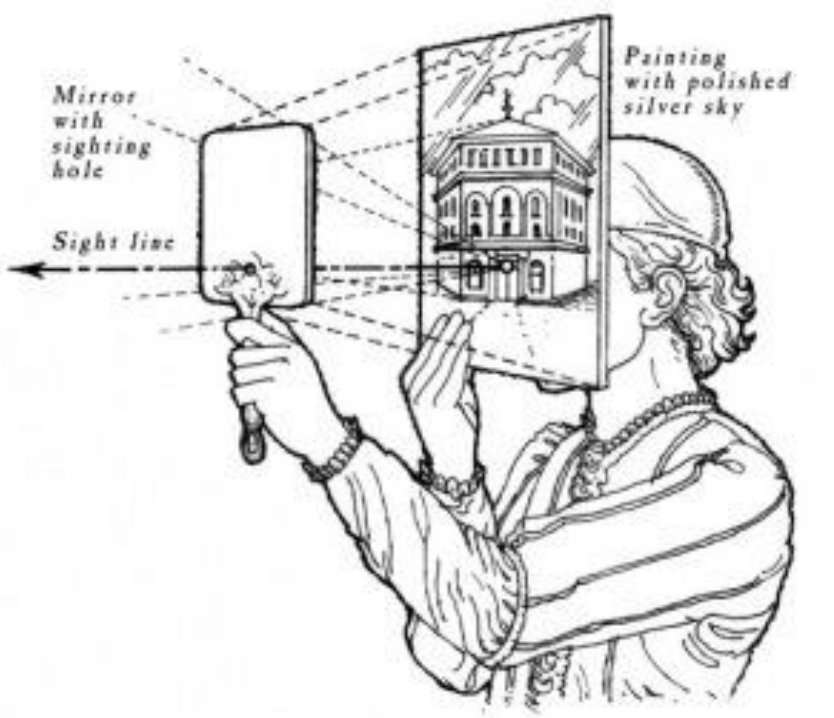
- They made drawings of the human figure inscribed within the basic outline of the circle and the square, thereby demonstrating that the human proportions reflected divine ratios.

Left: The Vitruvian Man by Leonardo da Vinci
an illustration of the human body inscribed in the circle and the square derived from a passage about geometry and human proportions in Vitruvius' writings

Brunelleschi's Discovery of Perspective

Filippo Brunelleschi (1377-1446)

A Florentine goldsmith, Brunelleschi moved to Rome and visited the ancient ruins. Brunelleschi codified the principles of geometrically accurate linear perspective, making possible the exact representation of a 3-dimensional object on a 2-dimensional surface.



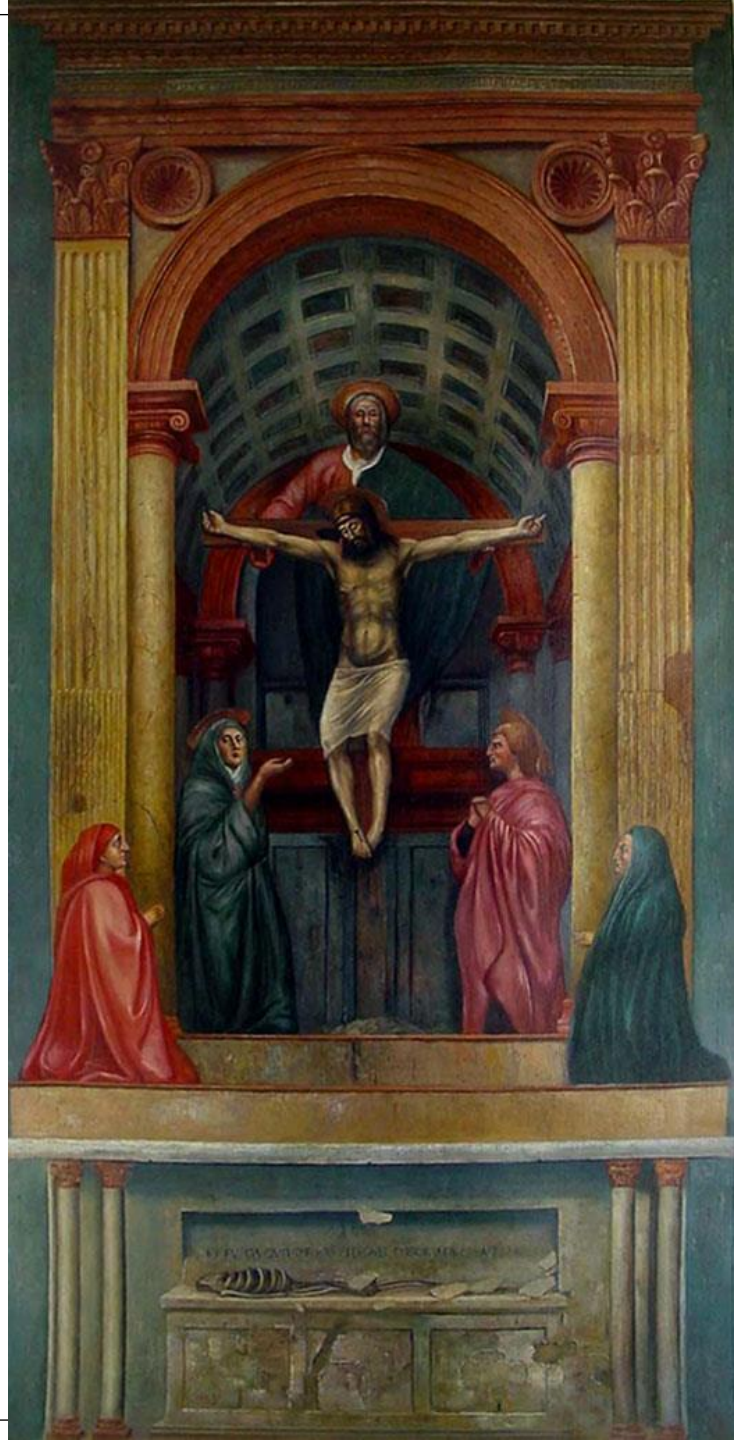
In making careful drawings of such repetitive elements as the arches of aqueducts, he realized that parallel horizontal lines converge at a point on the horizon and that elements of like size diminish proportionally in the distance.

This discovery had a profound effect of art, architecture and civic design during and after the Renaissance.

Among the cultures of the ancient world, only the Greeks and the Romans had spacial depth in art figured out. That is to say, they understood how to create an image with convincing depth and a painted or sculpted illusion of 3 dimensional space.

Brunelleschi observed that with a fixed single point of view, parallel lines appear to converge at a single point in the distance. Brunelleschi applied a single vanishing point to a canvas, and discovered a method for calculating depth.

Right: "The Trinity," Masaccio (1427-28)



Other Developments

- Gunpowder changed the nature of warfare and therefore relations among nations.
- The invention of the compass and the development of new techniques in shipbuilding made it possible to expand the limits of the known world into China, the East Indies, India and America.
- Banking, no longer frowned upon by the Church, began to play a central role in society.
- The hereditary nobles of feudal times were ousted by a new class of merchant princes – the Medici, the Strozzi, the Rucellai, the Pitti – whose commercial empires spread throughout Europe.
- Merchant princes and the artists to whom they extended financial patronage became the new universal men of the Renaissance.

The Periods of the Renaissance

- **Early Renaissance**
  ca. 1400-1500

  Brunelleschi, Alberti

- **High Renaissance**
  ca. 1500-1525

  Bramante

- **Late Renaissance**
  ca. 1525-1600

  Palladio

Renaissance Architecture

- Renaissance architecture tends to feature **planar classicism** (i.e. "flat classicism"). In other words, the walls of a Renaissance building (both exterior and interior) are embellished with classical motifs (e.g. columns, pediments, blind arches) of minor physical depth, such that they intrude minimally on the two-dimensional appearance of the walls. Put another way, the walls of a Renaissance building serve as flat canvases for a classical veneer. This contrasts sharply with Baroque architecture, in which walls are deeply curved and sculpted ("sculpted classicism").
- Planar classicism also tends to divide a wall into neat sections, with such elements as columns, pilasters, and stringcourses. (A **stringcourse** is a thin, horizontal strip of material that runs along the exterior of a building, often to mark the division between stories.) A Baroque wall, on the other hand, is treated as a continuous, undulating whole.
- The foremost Renaissance building types were the **church**, **palazzo** (urban mansion), and **villa** (country mansion). While various great names are associated with Renaissance church and palazzo design, the most famous villa architect by far is **Palladio**. In England, large residences were called **Elizabethan country houses**. In France they were called **chateaus**.

Characteristics of Renaissance Architecture

Renaissance style places emphasis on symmetry, proportion, geometry and the regularity of parts as they are demonstrated in the architecture of classical antiquity and in particular ancient Roman architecture, of which many examples remained.

Characteristics

- Inspired by Roman buildings, orderly arrangements of columns, pilasters and lintels, as well as the use of semicircular arches hemispherical domes, niches and aedicules replaced the more complex proportional systems and irregular profiles of medieval buildings.
- Plans - square, symmetrical appearance in which proportions are usually based on a module
- Facades - symmetrical around their vertical axis, domestic buildings are often surmounted by a cornice
- Columns and pilasters - the Roman orders of columns are used: Tuscan, Doric, Ionic, Corinthian and Composite
- Arches – semi circular
- Vaults – do not have ribs
- Domes - the dome is used frequently, both as a very large structural feature that is visible from the exterior

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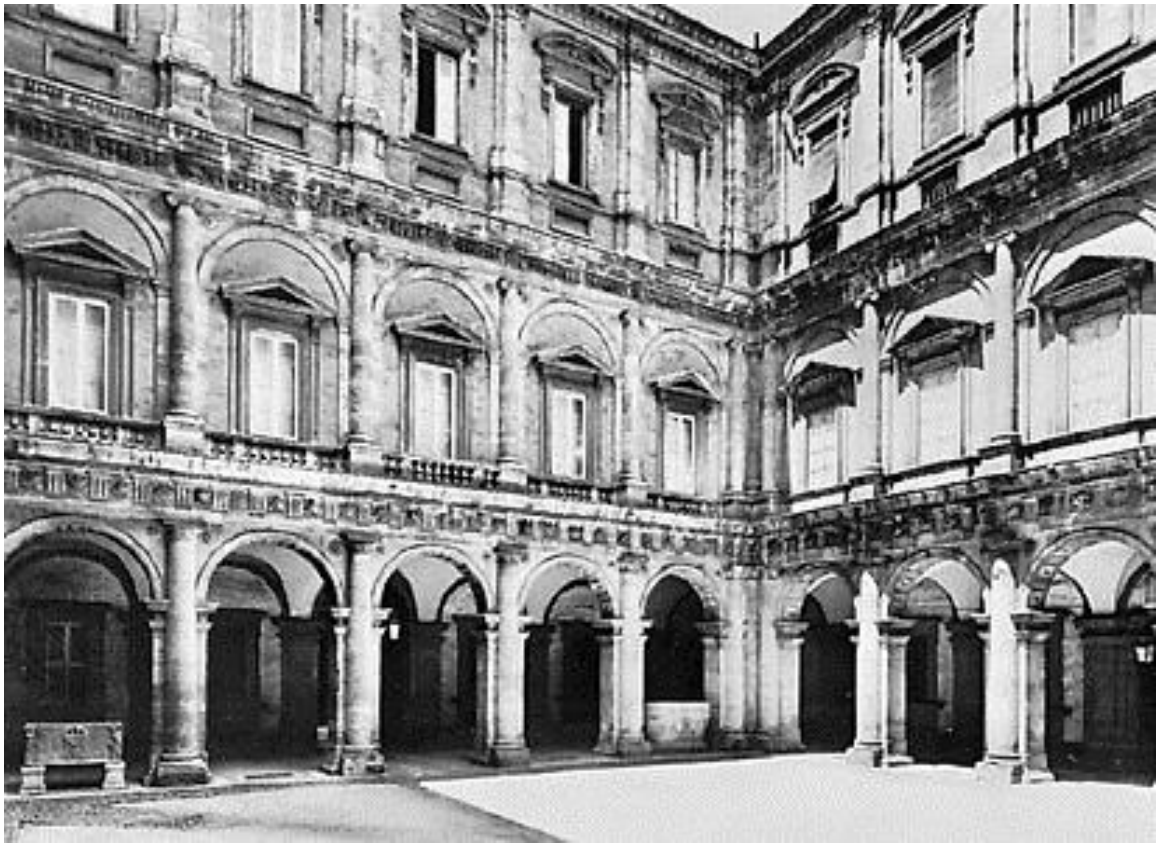
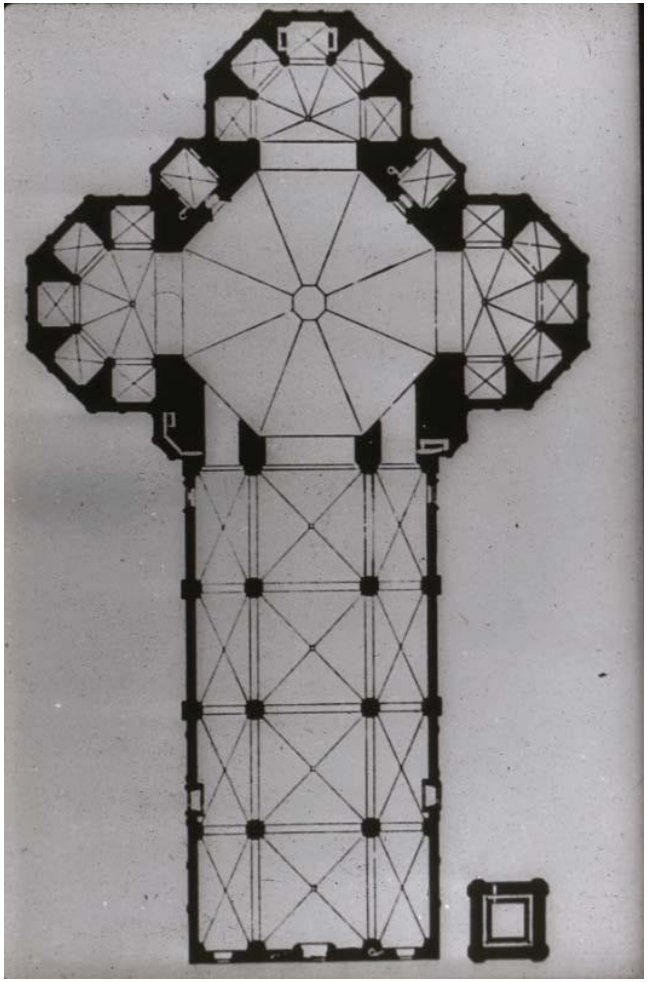


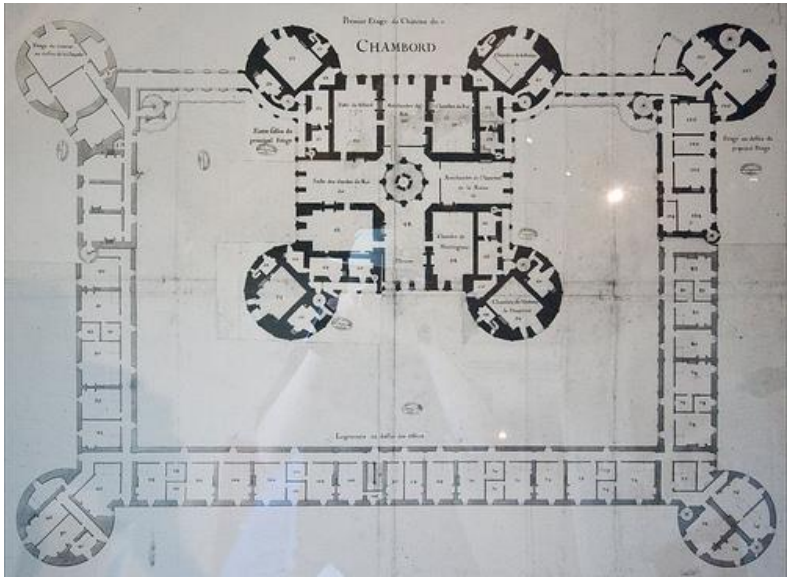
Interior courtyard of the Palazzo Farnese, Rome, by Antonio da Sangallo the Younger and Michelangelo, 1517–89.

Palazzo Massimo Alle Colonne
Rome, 1532-36

Plans - square, symmetrical appearance in which proportions are usually based on a module

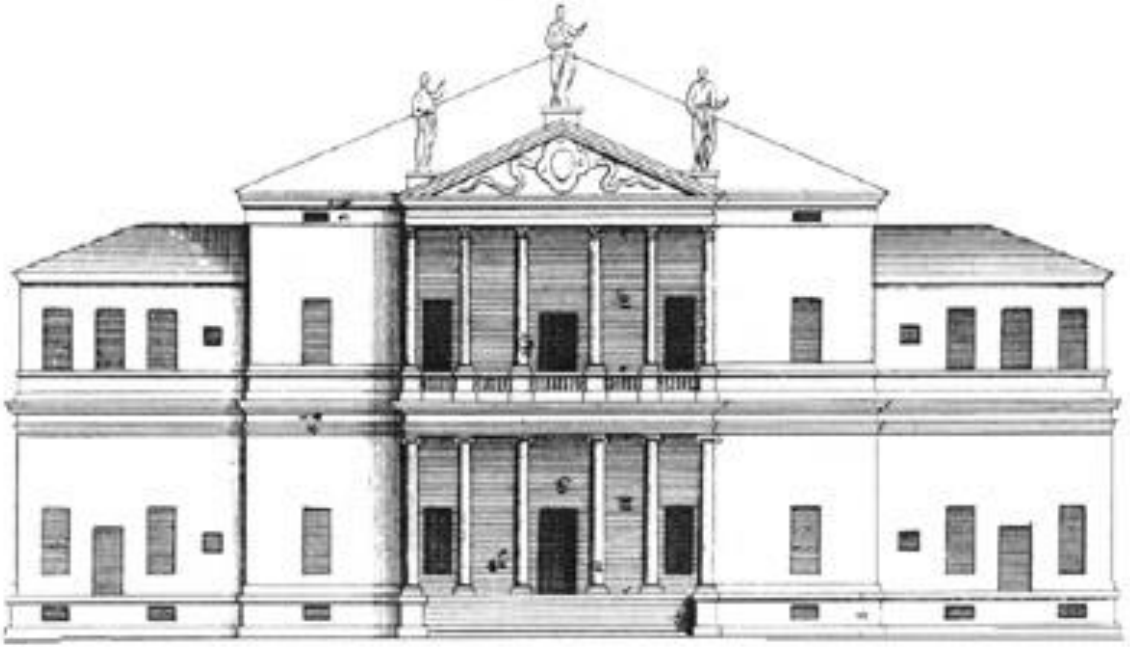


The Basilica di **Santa Maria del Fiore** or the **Florence Cathedral**



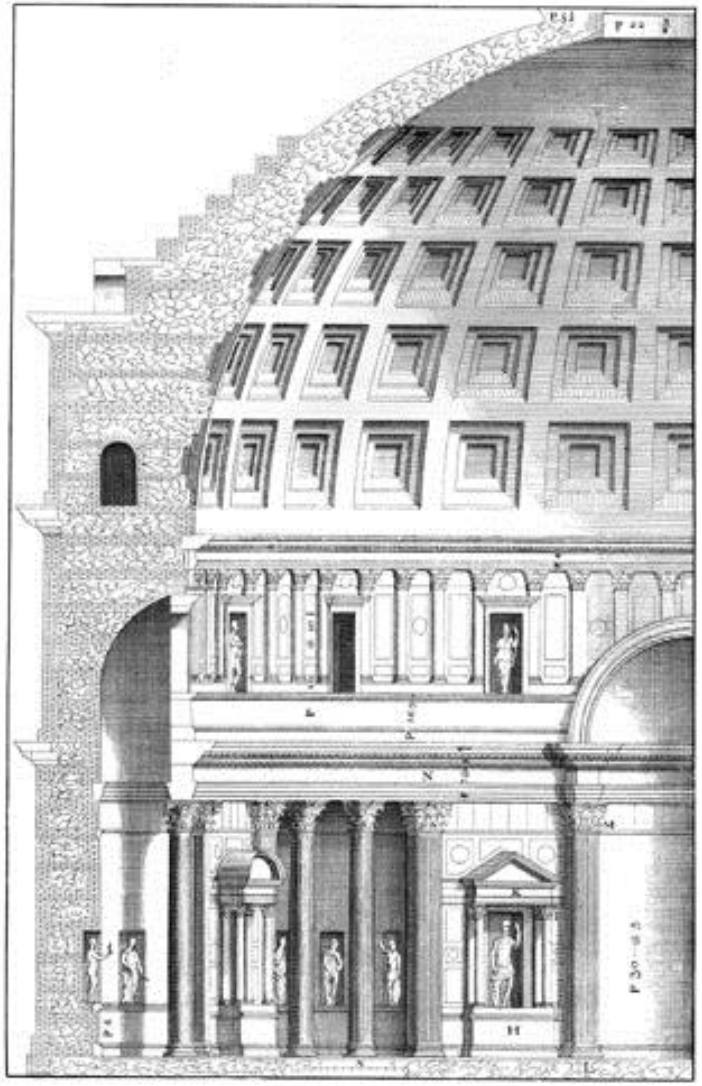
Plan of Chateau de Chamborg, France
1519-1527

Facades - symmetrical around their vertical axis, domestic buildings are often surmounted by a cornice.
Below: Palladian Villas



Characteristics of Elements

- **Ceilings** - roofs are fitted with flat or coffered ceilings, frequently painted or decorated
- **Doors** - usually have square lintels, set within an arch or surmounted by a triangular or segmental pediment, in the Mannerist period the "Palladian" arch was employed
- **Walls** - external walls are generally of highly finished ashlar masonry, laid in straight courses, the corners of buildings are often emphasised by rusticated quoins, basements and ground floors were often rusticated
- **Details** -courses, mouldings and all decorative details are carved with great precision. Studying and mastering the details of the ancient Romans was one of the important aspects of Renaissance theory, mouldings stand out around doors and windows rather than being recessed, as in Gothic Architecture, sculptured figures may be set in niches or placed on plinths.



Above: Sant'Agostino, Rome
Giacomo di Pietrasanta, 1483

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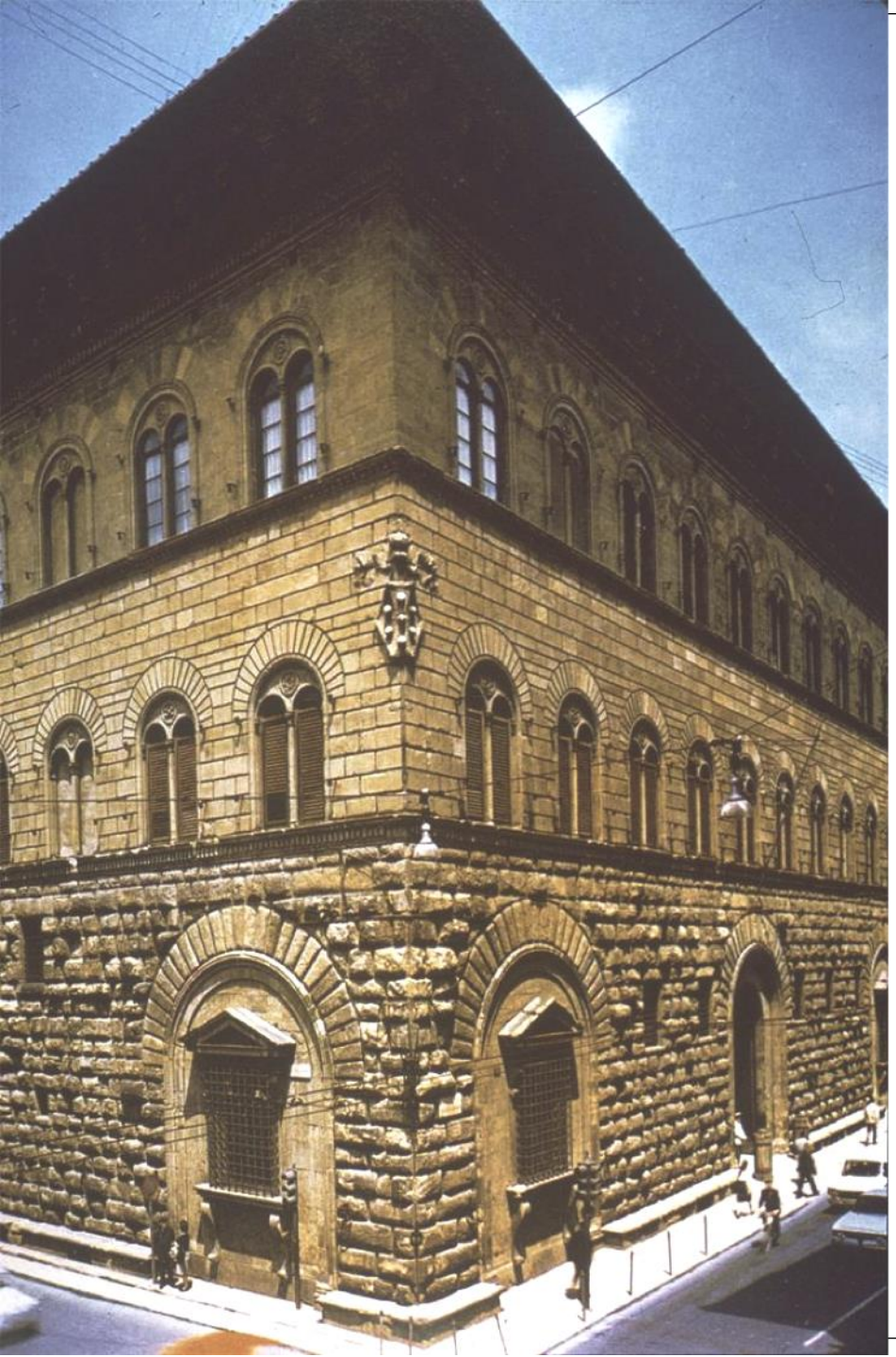

Left: Palazzo Medici-Riccardi, Michelozzo di Bartolomeo. Top: Quoining on the corners of Palazzo Aragona Gonzaga, Rome.

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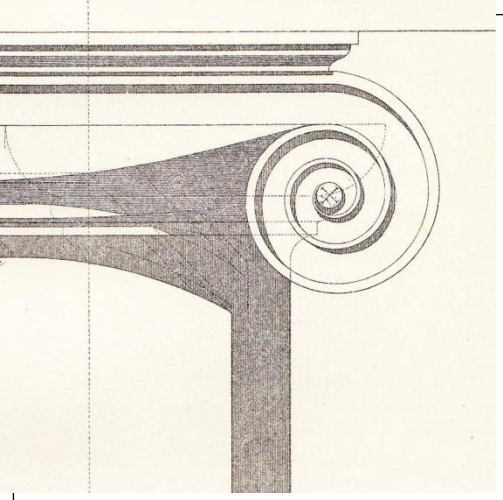
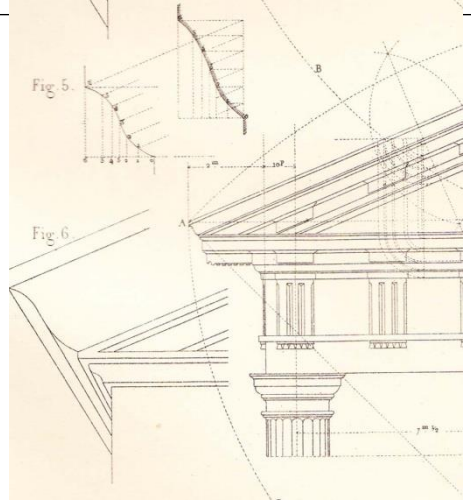
Rustication

A popular decorative treatment of the Renaissance palazzo was **rustication**, in which a masonry wall is textured rather than smooth.

This can entail leaving grooves in the joints between smooth blocks, using roughly dressed blocks, or using blocks that have been deliberately textured. The rustication of a Renaissance palazzo is often differentiated between stories.





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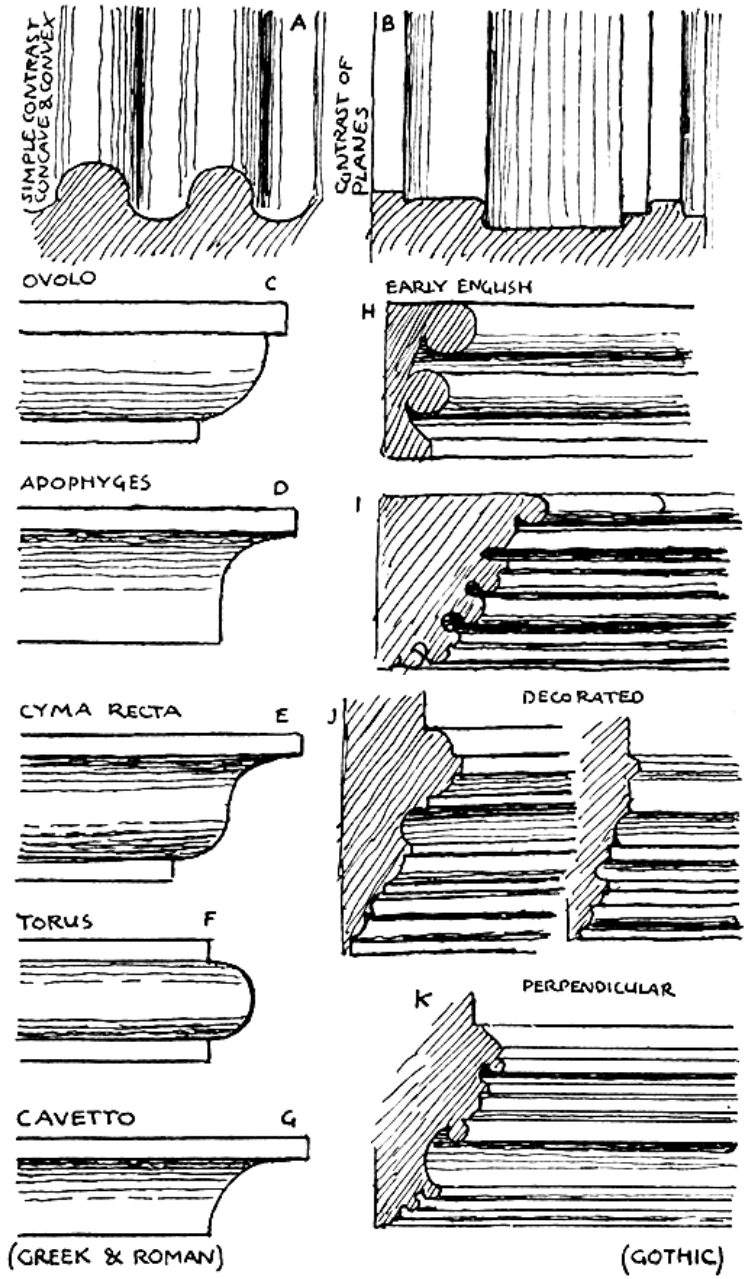
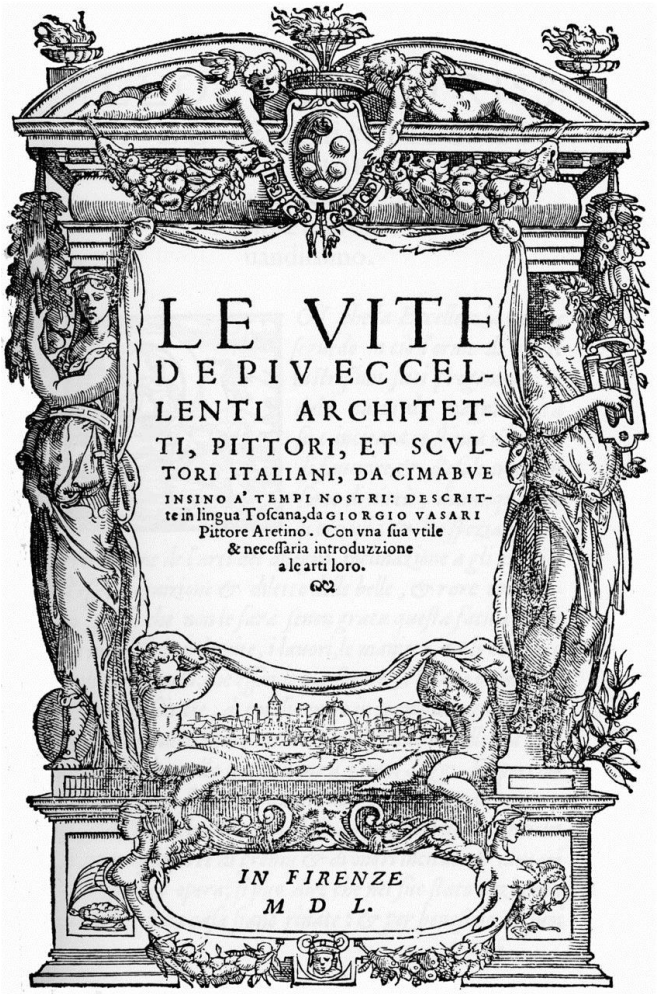


RELIEF IN ARCHITECTURAL MOULDINGS.

Giorgio Vasari and the Vite



Giorgio Vasari 30 July 1511 – 27 June 1574) was an Italian painter, writer, historian, and architect, who is famous today for his biographies of Renaissance artists, considered the ideological foundation of art-historical writing.

As the first Italian art historian, he initiated the genre of an encyclopedia of artistic biographies that continues today. Vasari coined the term "Renaissance" (*rinascita*) in print, though an awareness of the ongoing "rebirth" in the arts had been in the air from the time of Alberti. Vasari's *Le Vite de' più eccellenti pittori, scultori, ed architettori* (*Lives of the Most Eminent Painters, Sculptors, and Architects*) — dedicated to Grand Duke Cosimo I de' Medici— was first published in 1550.

The Architects of the Renaissance

Filippo Brunelleschi (1377 –1446)

Michelozzo di Bartolomeo (1396-1472)

Leon Battista Alberti(1404-1472)

Donato Bramante (1444 –1514)

Andrea Palladio (1508 –1580)

Giacomo da Vignola (1507 –1573)

Michelangelo Buonarotti (1475 – 1564)

Filippo Brunelleschi

Filippo Brunelleschi (1377 1446) was one of the foremost architects and engineers of the Italian Renaissance. He is perhaps most famous for his discovery of perspective and for engineering the dome of the Florence Cathedral, but his accomplishments also include other architectural works, sculpture, mathematics, engineering and even ship design. His principal surviving works are to be found in Florence, Italy.

The Florence Cathedral dome (1436) by Filippo Brunelleschi

Brunelleschi drew upon his knowledge of ancient Roman construction as well as lingering Gothic traditions to produce an innovative synthesis.

- Employed the Gothic pointed arch cross section instead of a semi circular one
- To reduce dead load, he created a double shell as was done in the Pantheon
- Employed 24 vertical ribs and 5 horizontal rings of sandstone, as observed in the ruins of Roman construction
- The cupola on top was a temple of masonry acting as a weight on top of the dome.
- Designed special machines for construction.

The Foundling Hospital, 1421-1444
by Filippo Brunelleschi

The Foundling Hospital is often considered as the first building of the Renaissance.

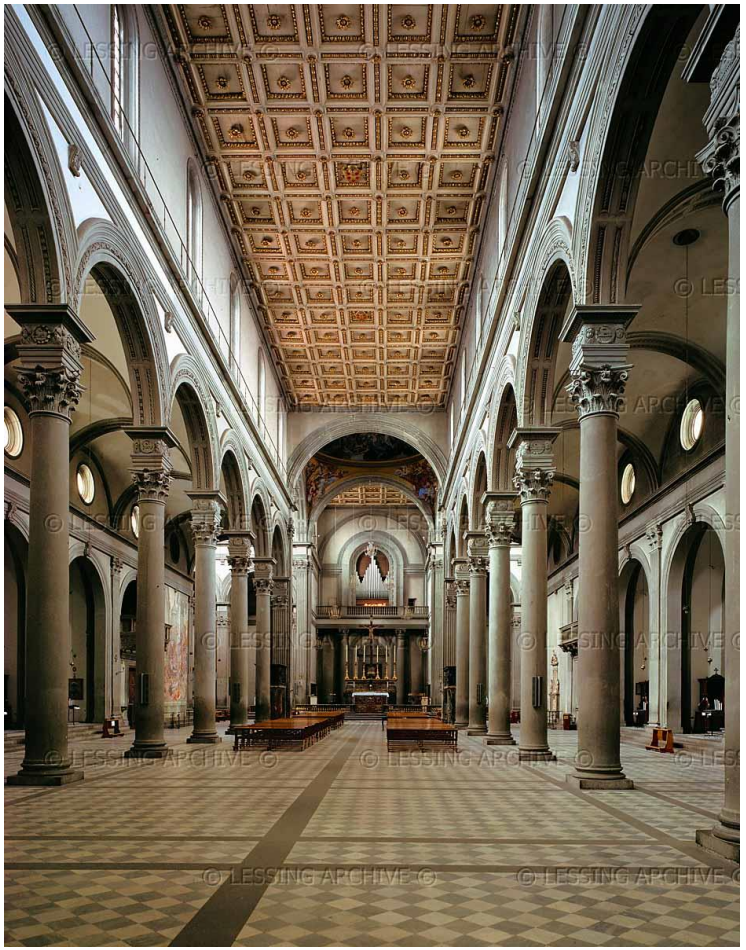
The Foundling Hospital, 1421-1444 by Filippo Brunelleschi

- Featured a continuous arcade
- At the hospital the arcading is three dimensional, creating a loggia with domed vaults in each bay.
- Use of Corinthian columns across its main facade and around an internal courtyard.
- The design was based in Roman architecture.

Other Brunelleschi projects

Pazzi Chapel, 1460

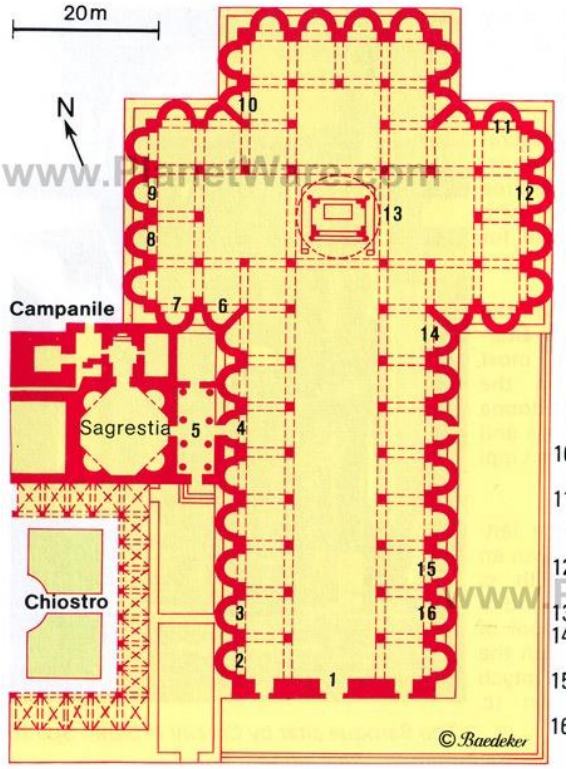
The facade was inspired by the Roman triumphal arch.



San Lorenzo, Florence, (1430-33)

This church is seen as one of the milestones of Renaissance architecture, with *pietra serena* or dark stone articulation.

The Basilica of Santa Maria del Santo Spirito ("St. Mary of the Holy Spirit"), 1481



San Spirito, begun 1445. The plan played on the configurations of the square. The current church was constructed over the pre-existing ruins of an Augustinian priory from the 13th century, destroyed by a fire.

Michelozzo di Bartolomeo

(1396-1472) Italian architect and sculptor.

Michelozzo Bartolomeo (1396-1472) and the Palazzo Medici

Cosimo de Medici of Florence

The **Palazzo Medici** is a Renaissance palace located in Florence.

- Bartolomeo was a student of Brunelleschi.
- The Palazzo was influenced by the Foundling Hospital.
- Used the arcaded courtyard of the hospital.

The Palazzo Medici, Florence 1444

- Rustication- stone blocks with deeply recessed chamfered joints
- Had three tiers of graduated textures, beginning with rock-faced stone at the street level and concluding with smooth ashlar at the third level below a 10-ft high cornice with modillions, egg and dart moldings and a dentil course.
- It was the first such cornice since ancient times.
- The building reflected Renaissance ideals of symmetry, the use of classical elements and careful use of mathematical proportions.

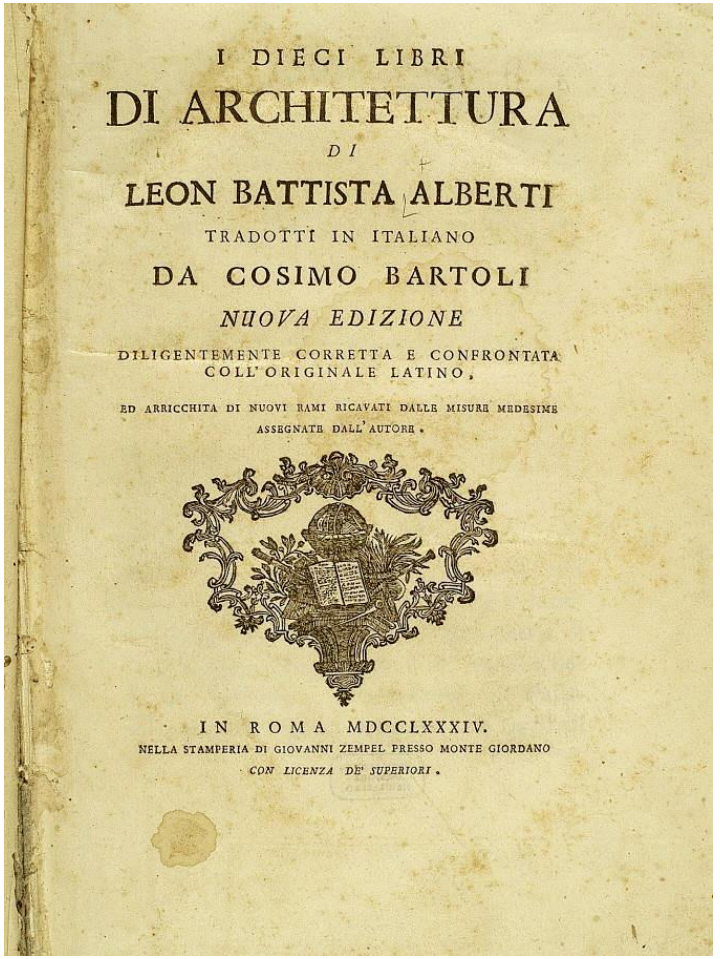
Leon Battista Alberti

(1404-1472)

Alberti was an Italian author,
artist, architect, poet, priest, linguist, philosopher, cryptographer and general Renaissance humanist polymath.

Leon Battista Alberti (1404-1472)

- Was a classical theorist who saw architecture as a way to address societal order.
- Alberti defined the Renaissance architect as a universalist, an intellectual, a man of genius and a consort to those in positions of power and authority. He himself was a Renaissance man.
- He worked in Rome after his studies in Florence where he had many opportunities to see the monuments of antiquities as well as meet the artists who were visiting them.
- Alberti studied the writings of the classical world like Plato, Aristotle, Plutarch and Pliny the Elder.
- He wrote **Della Pittura** (On Painting) where it included Brunelleschi's theories of perspective and **De Re Aedificatoria** (On Building), the first architectural treatise of the Renaissance.
- The book was influenced by **Vitruvius' The Ten Books of Architecture**.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LEON BATTISTA ALBERTI
TRADOTTI IN ITALIANO
DA COSIMO BARTOLI
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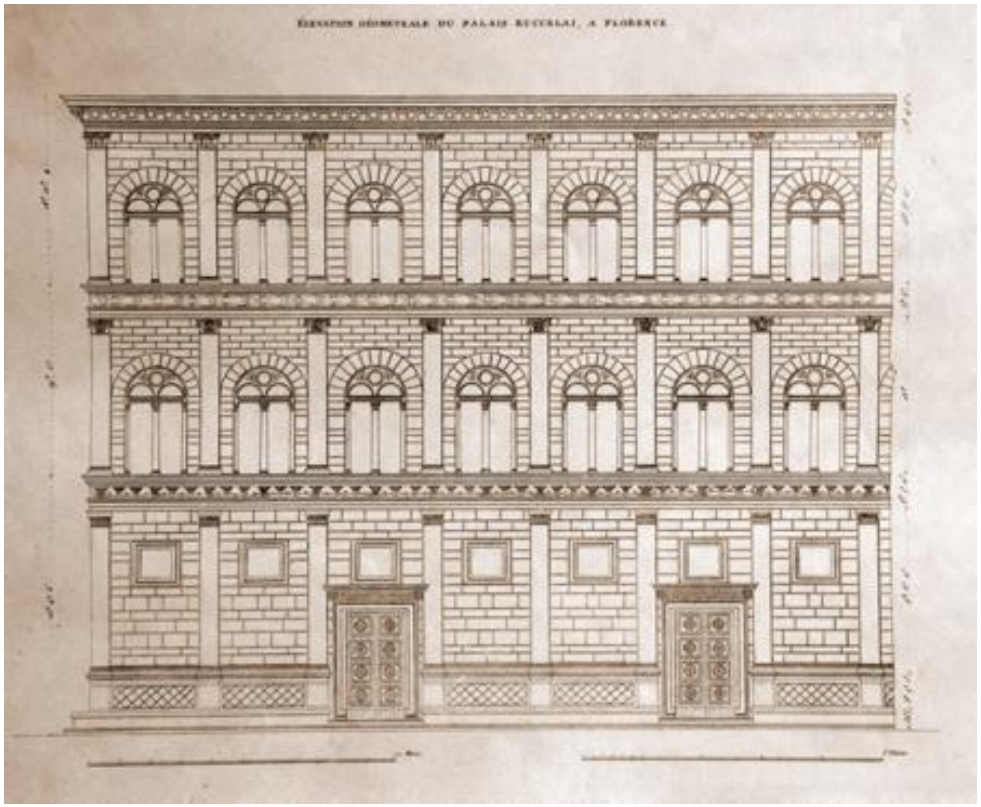
COLL'ORIGINALE LATINO,
ED ARRICCHITA DI NUOVI RAMI RICAVATI DALLE MISURE MEDESIME
ASSEGNATE DALL'AUTORE.
IN ROMA MDCCLXXXIV.
NELLA STAMPERIA DI GIOVANNI ZEMPEL PRESSO MONTE GIORDANO
CON LICENZA DE' SUPERIORI.

Leon Battista Alberti (1404-1472)



The Palazzo Rucellai (1446-1451) was the first building to use the classical orders on a Renaissance domestic building.

San Maria Novella was the first completed design for a church facade in the Renaissance. Alberti linked the lower aisle roof to the pedimented higher nave with flanking scrolls.

Leon Battista Alberti (1404-1472)

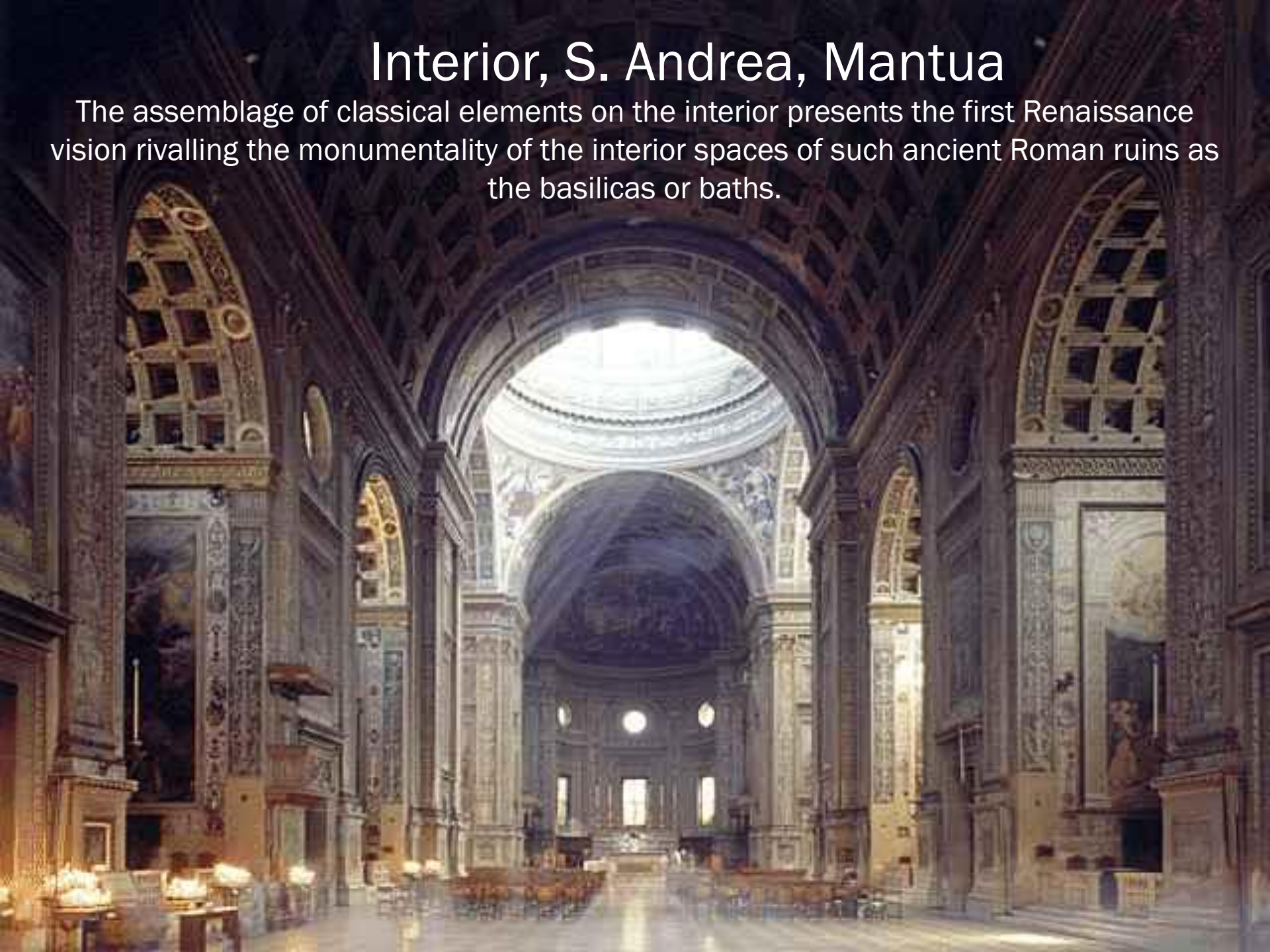
Basilica of Sant'Andrea, (1472-94)

The **Basilica of Sant'Andrea** is in Mantua, Lombardy, Italy. It is one of the major works of 15th century Renaissance architecture in Northern Italy. Commissioned by Ludovico II Gonzaga, the church was begun in 1462 according to designs by Leon Battista Alberti on a site occupied by a Benedictine monastery, of which the bell tower (1414) remains. The building, however, was finished only 328 years later.

The facade of S. Andrea, Mantua, (1472-94) is a synthesis of the triumphal arch and the temple.

Interior, S. Andrea, Mantua

The assemblage of classical elements on the interior presents the first Renaissance vision rivalling the monumentality of the interior spaces of such ancient Roman ruins as the basilicas or baths.



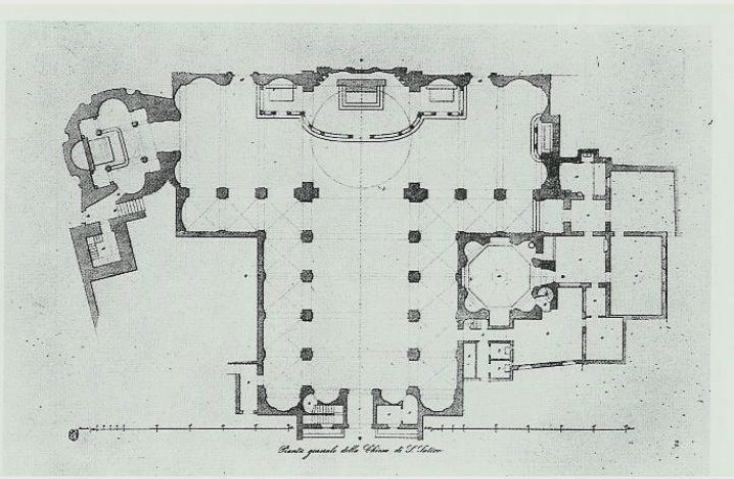
Donato Bramante

(1444 –1514)

was an Italian architect, who introduced Renaissance architecture to Milan and the High Renaissance style to Rome, where his plan for St. Peter's Basilica formed the basis of the design executed by Michelangelo.

His Tempietto (San Pietro in Montorio) marked the beginning of the High Renaissance in Rome (1502) when Alexander VI appointed him to build a sanctuary that allegedly marked the spot where Peter was crucified.

For the church of San Maria presso San Satiro (1482-92), a street prevented Bramante from adding a conventional choir. He created a low relief that when viewed on axis, has the convincing appearance of a barrel vaulted choir. Using the illusionistic potential of linear perspective , he created what must be the ultimate use of this device in 15th c architecture.



Milano. Santa Maria presso S. Satiro. (Bramante, dal 1482)

The Tempietto, Rome (begun 1502)

- Built for King Ferdinand and Queen Isabella of Spain
- The erection of a monument atop the spot where St Peter was believed to have been martyred.
- Bramante designed his building to embody both the Platonic preference for ideal form and Christian reverence for tradition, in this case reverence for the circular martyrium of the early church.
- The building is a 2-story cylinder capped by a hemispherical dome and surrounded by a one-story Doric colonnade with entablature and balustrade.
- The metope panels of the frieze displays symbols connecting the current authority of the Pope to the grandeur of antiquity.

Donato Bramante (1444-1514)

St. Peter's Basilica, Rome, (1505)

Bramante's scheme represented a building on the scale of the Baths of Diocletian capped by a dome comparable to that of the Pantheon. Started in April 1506. By the time the church was completed in nearly 150 years later, almost every major architect of the 16th and 17th c had been engaged.

Andrea Palladio

(1508 –1580)

Andrea Palladio was an architect active in the Republic of Venice. Palladio, influenced by Roman and Greek architecture, primarily by Vitruvius, is widely considered the most influential individual in the history of Western architecture. All of his buildings are located in what was the Venetian Republic, but his teachings, summarized in the architectural treatise,

The Four Books of Architecture, gained him wide recognition.

The Four Books of Architecture

Andrea Palladio produced a body of work in architecture that arguably has been the most written about in all of Western architecture.

He went on study trips to Rome and made accurate information on classical proportions, which he later used in his designs for buildings.

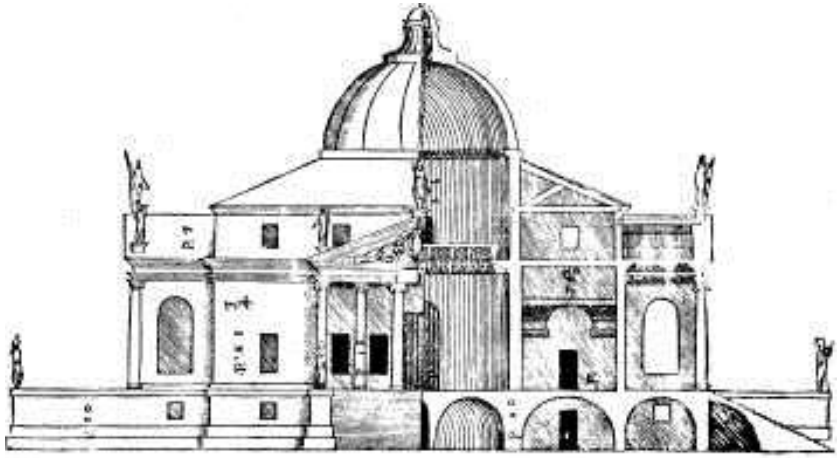
The Four Books of Architecture:

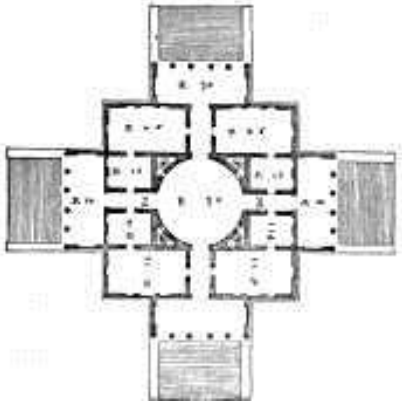
- Orders of architecture
- Domestic architecture
- Public buildings
- Town planning
- Temples

Numerals on the plans give widths and lengths of rooms and heights. It was the most coherent system of proportions in the Renaissance.

Villa Rotonda, Vicenza (1566-70)

was his most famous residential design. It is square in plan with a central 2 story rotonda. The central domed space radiates out to the 4 porticoes and to the elegantly proportioned rooms in the corner. It is a powerful yet simple scheme, one that would be copied many times.

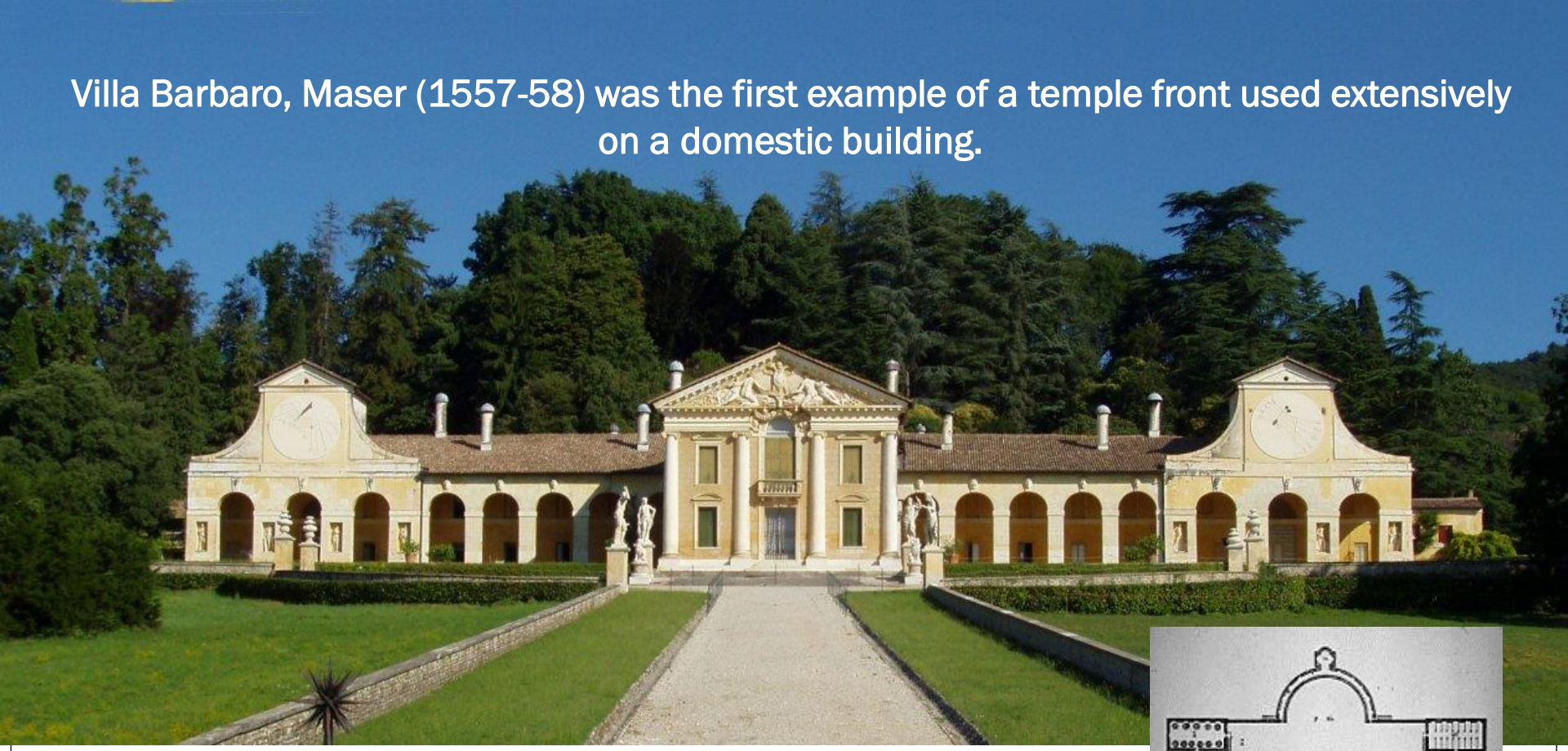


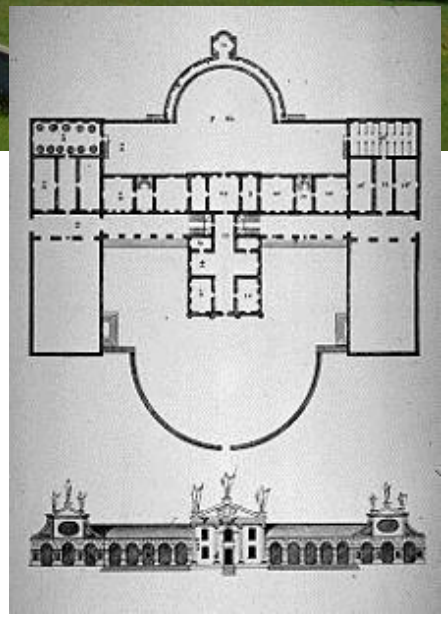


The design is for a completely symmetrical building having a square plan with four facades, each of which has a projecting portico. The whole is contained within an imaginary circle which touches each corner of the building and centres of the porticos.

The name *La Rotonda* refers to the central circular hall with its dome. To describe the villa, as a whole, as a 'rotonda' is technically incorrect, as the building is not circular but rather the intersection of a square with a cross. Each portico has steps leading up, and opens via a small cabinet or corridor to the circular domed central hall. This and all other rooms were proportioned with mathematical precision according to Palladio's own rules of architecture which he published in the Quattro Libri dell'Architettura.

Villa Barbaro, Maser (1557-58) was the first example of a temple front used extensively on a domestic building.

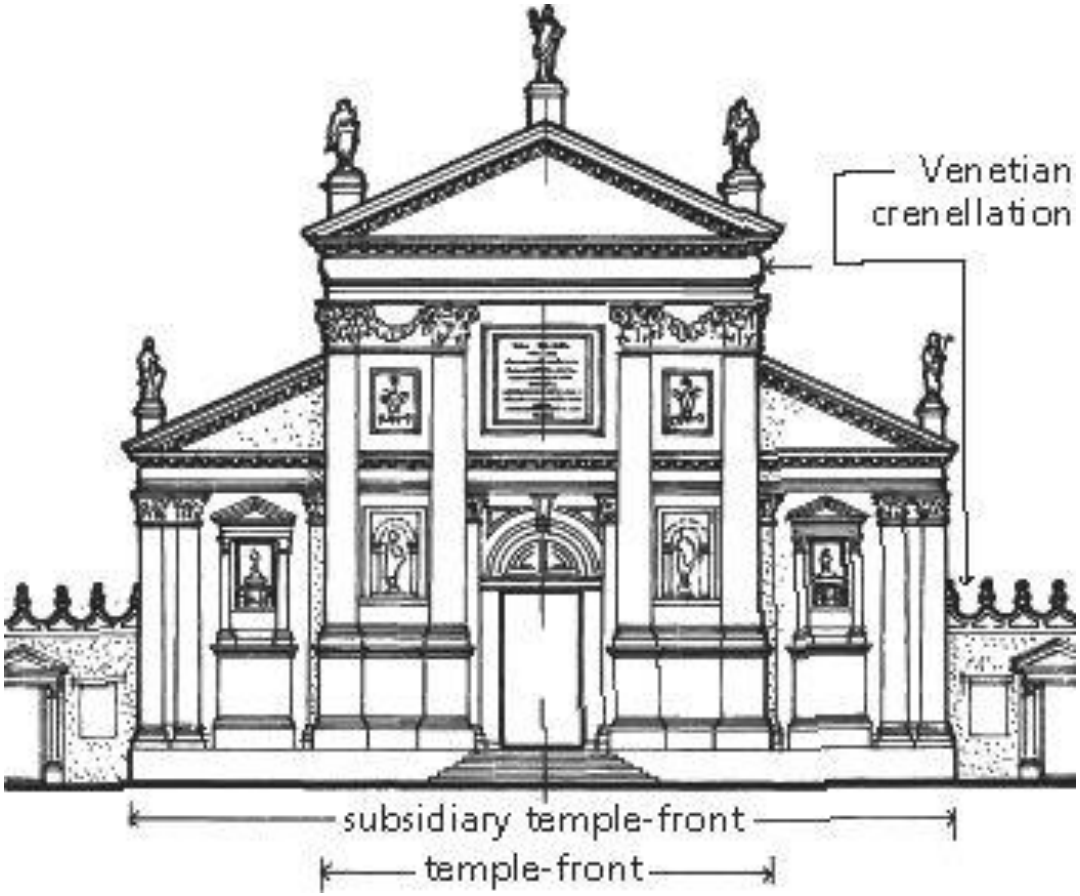




Villa Barbaro, also known as the **Villa di Maser**, is a large villa at Maser in the Veneto region of northern Italy. It was designed and built by the Italian architect Andrea Palladio.

San Giorgio Maggiore, 1566-1610

San Giorgio Maggiore is a 16th century Benedictine church on the island of the same name in Venice, designed by Andrea Palladio and built between 1566 and 1610. The church is a basilica in the classical renaissance style and its brilliant white marble gleams above the blue water of the lagoon opposite the Piazzetta and forms the focal point of the view from every part of the Riva degli Schiavoni.



Palladio offered a new solution to the Renaissance problem of placing a classical facade in front of a basilican cross section. He combined two temple fronts: a tall one consisting of four Corinthian columns on pedestals that support a pediment at the end of the nave, superimposed over a wide one, with smaller Corinthian pilasters, that matches the sloping aisle roofs.

Giacomo da Vignola

(1507 –1573)

was one of the great Italian architects of 16th century Mannerism. His two great masterpieces are the Villa Farnese at Caprarola and the Jesuits' Church of the Gesù in Rome.

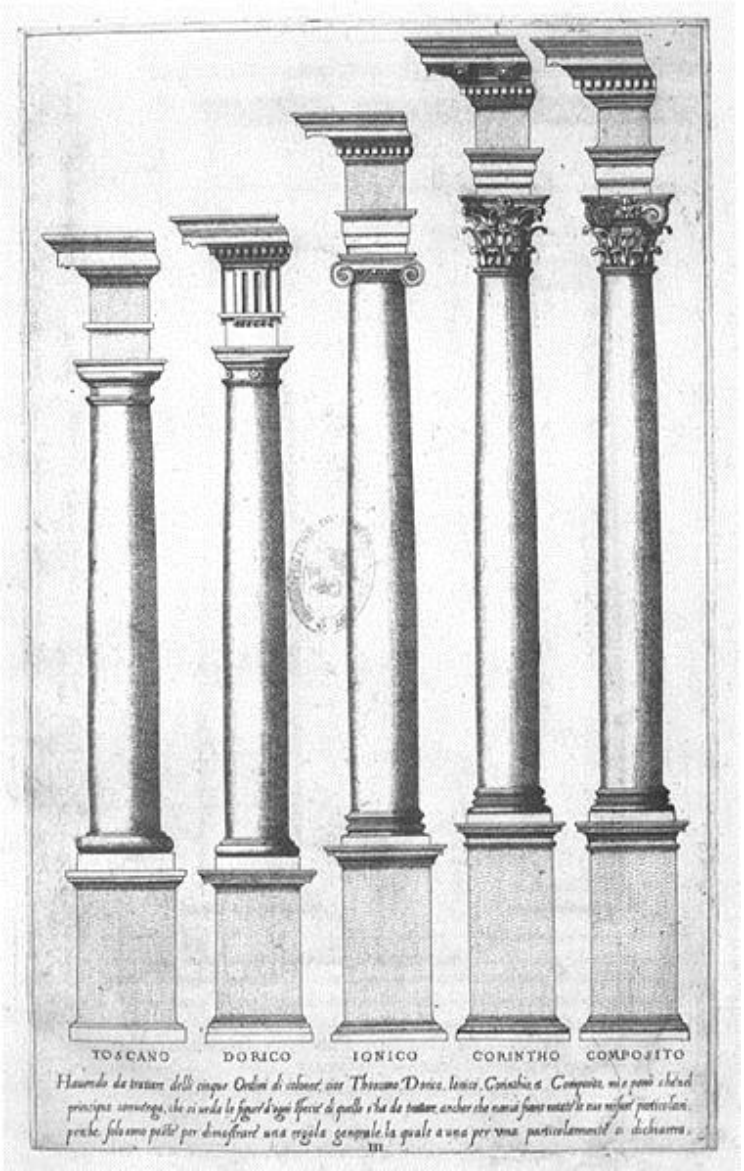
The Villa Farnese, also known as Villa Caprarola, Northern Lazio, Italy .
This villa should not be confused with the Palazzo Farnese and the Villa Farnesina, both in Rome.

The villa is one of the finest examples of Renaissance architecture. Ornament is used sparingly to achieve proportion and harmony. Thus while the villa dominates the surroundings, its severe design also complements the site. This particular style, known today as Mannerism, was a reaction to the ornate earlier High Renaissance designs of twenty years earlier.

"Canon of the five orders of architecture“, 1562

His two published books helped formulate the canon of classical architectural style. The earliest, "Canon of the five orders of architecture" (first published in 1562, probably in Rome), presented Vignola's practical system for constructing columns in the five classical orders (Tuscan, Doric, Ionic, Corinthian and Composite) utilizing proportions which Vignola derived from his own measurements of classical Roman monuments.

The clarity and ease of use of Vignola's treatise caused it to become in succeeding centuries the most published book in architectural



The Church of the Gesù, Rome, 1568

The **Church of the Gesù** is the mother church of the Society of Jesus, a Roman Catholic religious order also known as the Jesuits. Officially named Church of the Most Holy Name of Jesus, its facade is "the first truly baroque façade", introducing the baroque style into architecture.

The church served as model for innumerable Jesuit churches all over the world, especially in the Americas. The Church of the Gesù is located in the Piazza del Gesù in Rome.

Michelangelo Buonarotti

(1475 – 1564)

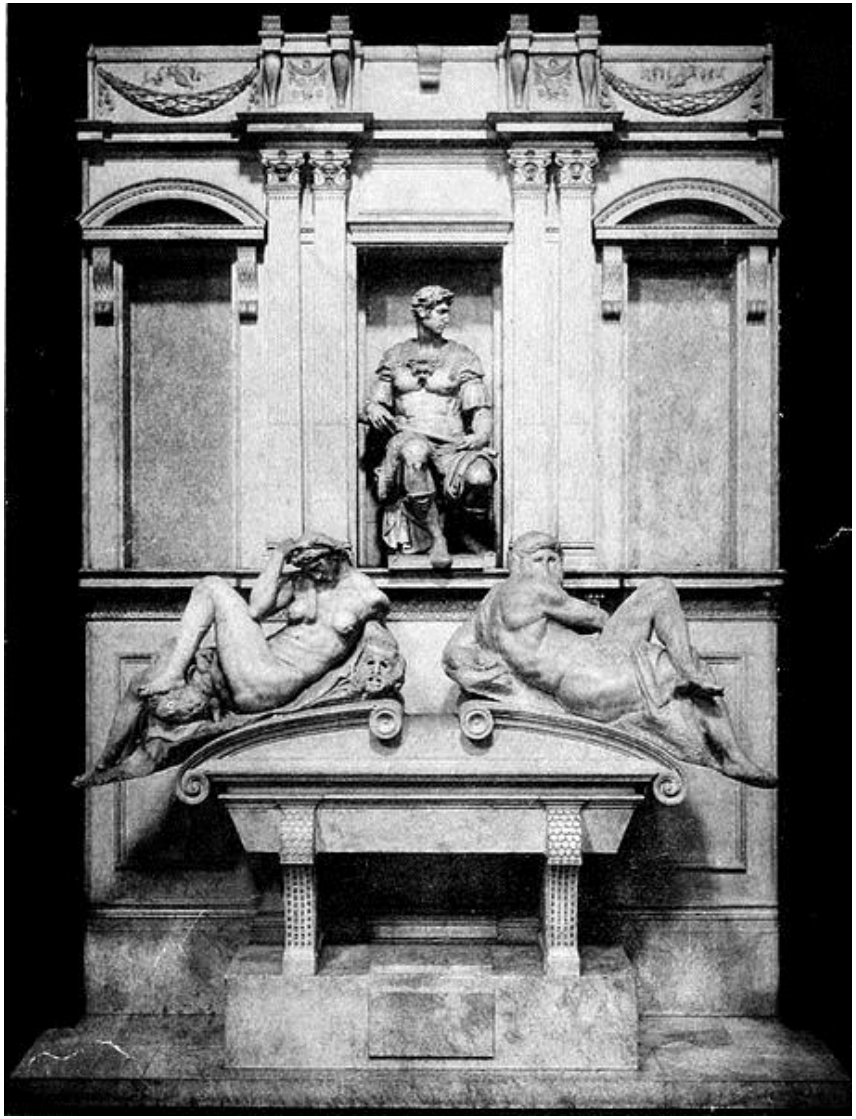
Michelangelo di Lodovico Buonarroti Simoni commonly known as **Michelangelo** was an Italian Renaissance sculptor, painter, architect, poet, and engineer who exerted an unparalleled influence on the development ofWestern art. Despite making few forays beyond the arts, his versatility in the disciplines he took up was of such a high order that he is often considered a contender for the title of the archetypal Renaissance man, along with fellow Italian Leonardo da Vinci.

The Palazzo Farnese

The Palazzo Farnese facade has a cornice and central window with coat of arms at the piano nobile level. Unlike the Florentine interpretation of the type, this palazzo has rustication only in the form of **quoins** and at the entry has classically inspired window surrounds.

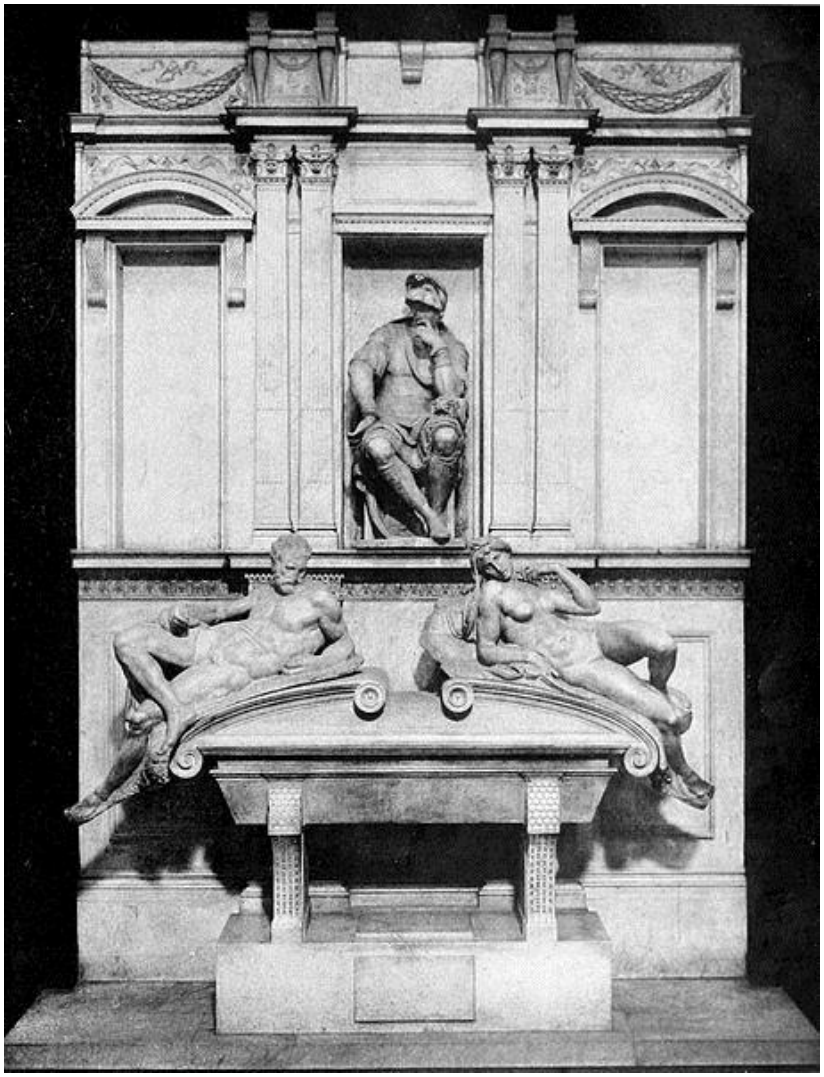
The **Medici Chapels** are two structures at the Basilica of San Lorenzo, Florence, Italy, dating from the 16th and 17th centuries, and built as extensions to Brunelleschi's 15th century church, with the purpose of celebrating the Medici family, patrons of the church and Grand Dukes of Tuscany. The ***Sagrestia Nuova***, ("New Sacristy"), was designed by Michelangelo.

Material: white stucco walls with gray pietra marble.



Tomb of Giuliano di Lorenzo de' Medici with *Night* and *Day*

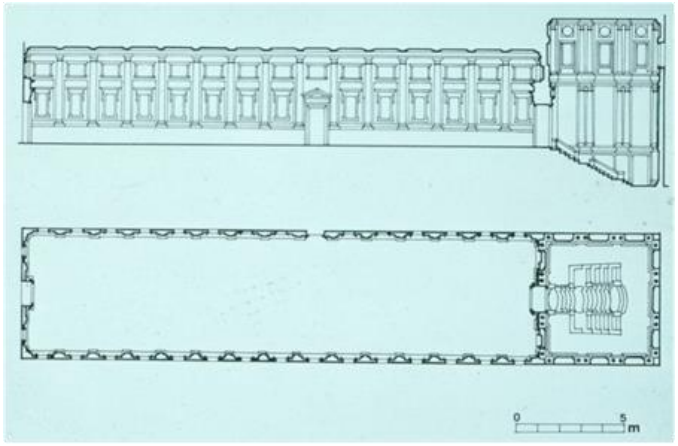
Tomb of Lorenzo di Piero de'Medici with *Dusk* and *Dawn*



The Laurentian library, Florence, 1524

Laurentian Library vestibule and stairs by Michelangelo (c. 1524-34). The library is located on top of an existing monastery building in San Lorenzo, Florence. The staircase is a piece of dynamic sculpture that appears to pour forth from the upper level like lava and compress the limited floor space of the vestibule.

The impacted columns astride this doorway create in architecture the same kind of tension expressed in the reclining figures at Michelangelo's Medici Chapel.



The stairway connecting the high, narrow space of the vestibule to the long, low room of the library proper is among the most remarkable inventions of mannerist architecture. It was built under the direction of Bartolomeo Ammannati in 1559--more than thirty years after work on the vestibule had begun--in accordance with a clay model sent from Rome by Michelangelo.

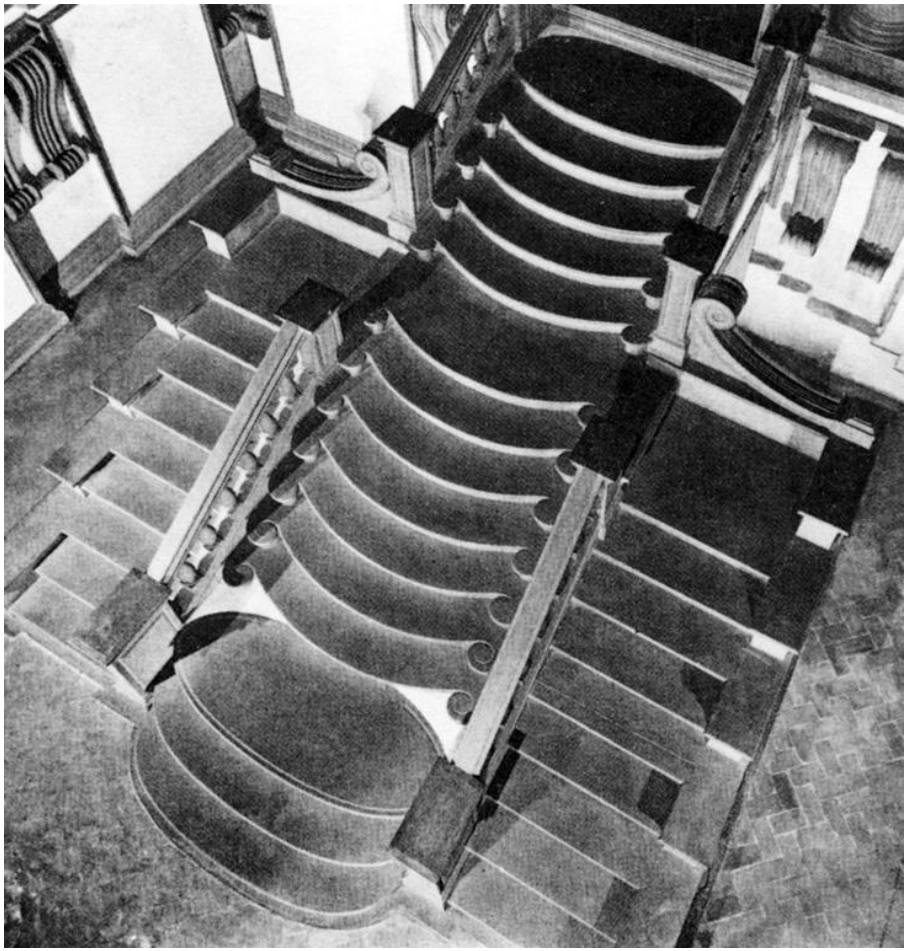
As has often been remarked, it resembles a lava flow that the walls seem intent on containing. Here the volutes assume a character totally at odds with the static quality of the consoles from which they derive, having been invested with great power, bulging forward in the center only to recede in the lateral swirls and assume conventional form to either side of the balustrade. The large volutes easing the transition from the central to the lateral stairs also stabilize the balustrade. The opposing forces given physical form here are undeniably biomorphic in character.

The Laurentian library, Florence, 1524

The Laurentian Library is one of Michelangelo's most important architectural achievements.

The admirable distribution of the windows, the construction of the ceiling, and the fine entrance of the Vestibule can never be sufficiently extolled. Boldness and grace are equally conspicuous in the work as a whole, and in every part; in the cornices, corbels, the niches for statues, the commodious staircase, and its fanciful division-in all the building, as a word, which is so unlike the common fashion of treatment, that every one stands amazed at the sight thereof.

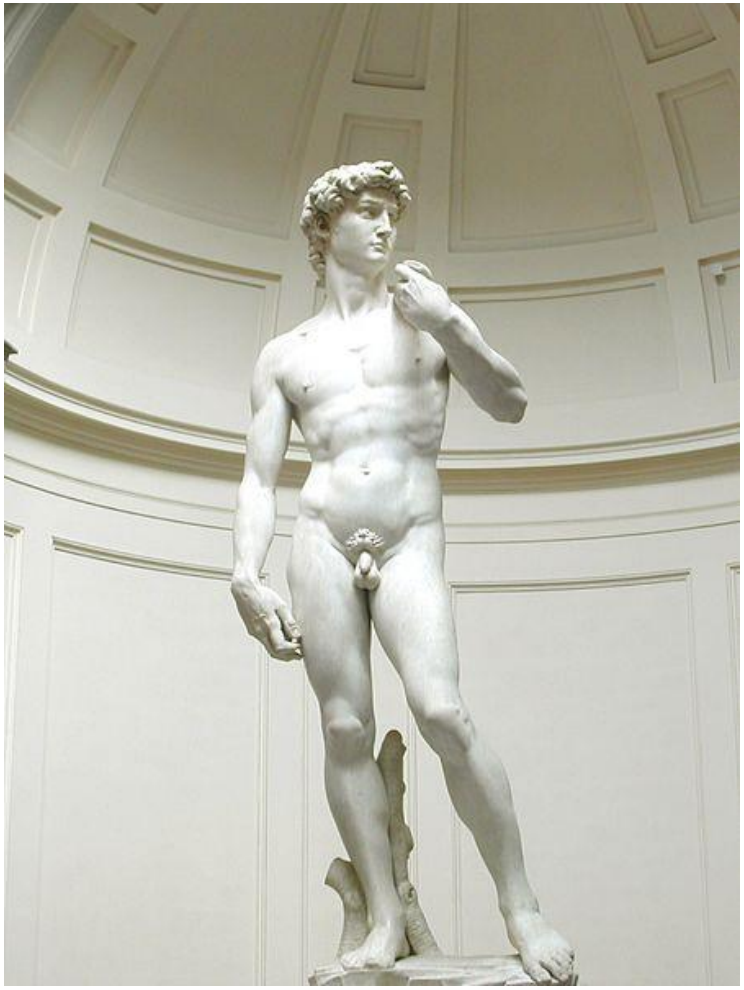
– Giorgio Vasari.



The reading room of the Laurentian Library.

Laurentian Library wooden reading desks.

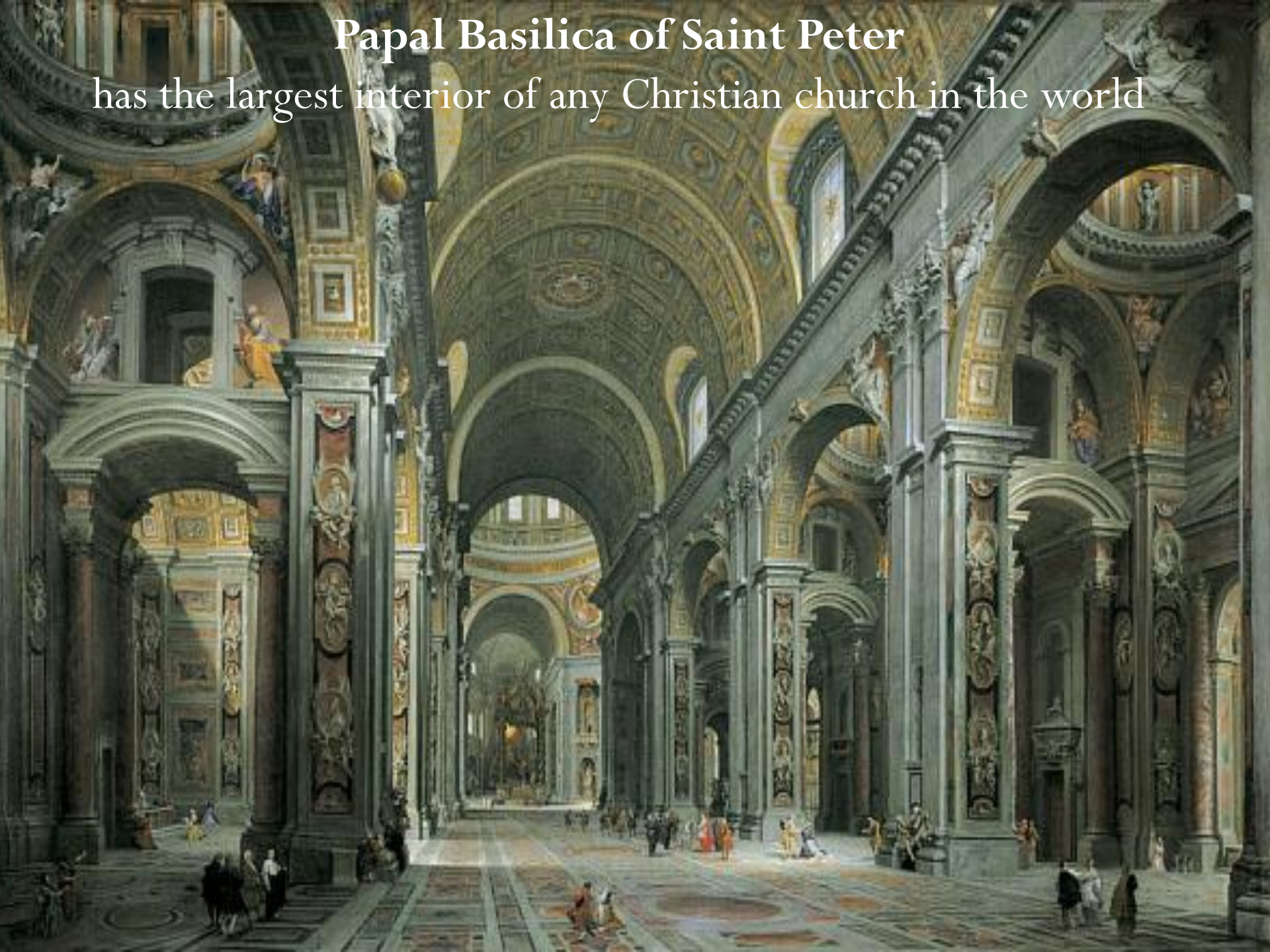
Michelangelo's *Pietà*, a depiction of the body of Jesus on the lap of his mother Maryafter the Crucifixion, was carved in 1499, when the sculptor was 24 years old.



The Statue of David, completed by Michelangelo in 1504, is one of the most renowned works of the Renaissance.

St. Peter's Basilica by Michelangelo, Donato Bramante, Giacomo della Porta and Carlo Maderno.

Michelangelo's dome for St Peter's basilica has a hemispherical form. Della Porta, who constructed the dome after Michelangelo's death, employed a taller profile in order to decrease the lateral thrust and use the lantern cupola to force the weight of the dome towards the drum.


Papal Basilica of Saint Peter
has the largest interior of any Christian church in the world

The Renaissance in France

French Renaissance architecture is the style of architecture which was imported to France from Italy during the early 16th century and developed in the light of local architectural traditions.

During the early years of the 16th century the French were involved in wars in northern Italy, bringing back to France not just the Renaissance art treasures as their war booty, but also stylistic ideas. In the Loire Valley a wave of building was carried and many Renaissance chateaux appeared at this time, the earliest example being the Château d'Amboise.

The Renaissance in France – the Chateaux

The cultural center of France in the early 16th c was not Paris, but the valley of the Loire, where the king and his nobles maintained elaborate chateaux or castles for leisure, entertaining and attending to the pleasures of the hunt. Blois in particular illustrates the transition from the Middle Ages to the Renaissance style. Blois in particular illustrates the transition from the Middle Ages to the Renaissance through the successive stages of its construction.

The Chateaux de Chambord

By Domenico de Cortona.

In contrast to this town-based chateau, the Chateaux de Chambord (1519-47) was built in the countryside in the style of a fortified castle within a bailey or outer wall, thus neatly overlaying Renaissance symmetry and detailing on a fundamentally medieval building type.

The Louvre Palace was altered frequently throughout the Middle Ages. In the 14th century, Charles V converted the building into a residence and in 1546, Francis I renovated the site in the French Renaissance style.

The Louvre, Paris (begun 1546)
By Pierre Lescot

The Place des Vosges, Paris, 1605

Originally known as the *Place Royale*, the Place des Vosges was built by Henri IV from 1605 to 1612. A true square (140 m x 140 m), it embodied the first European program of royal city planning and is the oldest planned square in Paris.

What was new about the *Place Royale* in 1612 was that the housefronts were all built to the same design, probably by Baptiste du Cerceau, of red brick with strips of stone quoins over vaulted arcades that stand on square pillars. The steeply-pitched blue slate roofs are pierced with discreet small-paned dormers above the pedimented dormers that stand upon the cornices.

The Renaissance in England

Renaissance architecture arrived in England during the reign of Elizabeth I, having first spread through the Low countries where among other features it acquired versions of the Dutch gable, and Flemish strapwork in geometric designs adorning the walls. The new style tended to manifest itself in large square tall houses such as Longleat House.

Elizabethan Country Houses
Wollaton Hall by Robert Smythson, 1580

Wollaton Hall, Nottinghamshire, Robert Smythson (1580-88). Wollaton was built between 1580 and 1588 for Sir Francis Willoughby and is believed to be designed by the Elizabethan architect, Robert Smythson, who was the architect of Hardwick Hall.

Hardwick Hall, Derbyshire by Robert Smythson 1590-97

Hardwick Hall, Derbyshire, Robeert Smythson (1590-97) Hardwick Hall, in Derbyshire, is one of the most significant Elizabethan country houses in England. In common with its architect Robert Smythson's other works at both Longleat House and Wollaton Hall, Hardwick Hall is one of the earliest examples of the English interpretation of the Renaissance style of architecture, which came into fashion when it was no longer thought necessary to fortify one's home.

Inigo Jones 1573 – 1652

Inigo Jones is regarded as the first significant British architect of the modern period, and the first to bring Italianate Renaissance architecture to England. He left his mark on London by single buildings, such as the Banqueting House, Whitehall and in area design for Covent Garden square which became a model for future developments in the West End. St. Paul's, Covent Garden, London (1631-35)

Above: Queen's House, Greenwich, 1616 was built for James I's wife, Anne of Denmark. It was finished in 1635 and was the first strictly classical building in England, employing ideas found in the architecture of Palladio and ancient Rome. This is Inigo Jones's earliest surviving work.

In Tudor and Early Stuart English architecture a banqueting house is a separate building reached through pleasure gardens from the main residence, whose use is purely for entertaining.

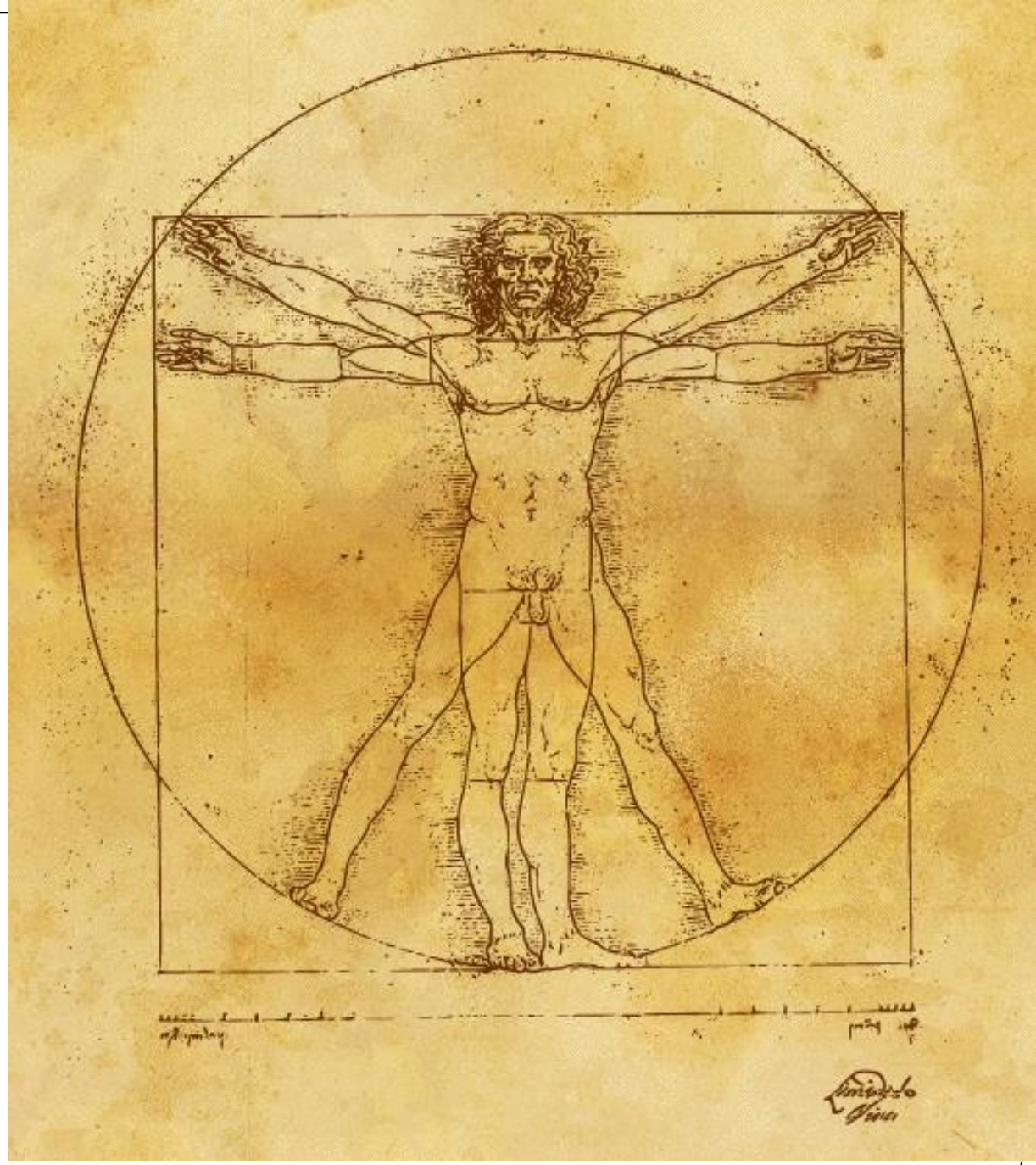
Banqueting House, Whitehall, London (1619-22) The Banqueting House, Whitehall, London, is the grandest and best known survivor of the architectural genre of banqueting house, and the only remaining component of the Palace of Whitehall. The building is important in the history of English architecture as the first building to be completed in the neo-classical style which was to transform English architecture.

Begun in 1619, and designed by Inigo Jones in a style influenced by Palladio, the Banqueting House was completed in 1622

FIN

The Vitruvius Man

For if a man be placed flat on his back, with his hands and feet extended, and a pair of compasses centered at the navel, the fingers and toes of his two hands and feet will touch the circumference of a circle described therefrom. And, just as the human body yields a circular outline, so too a square form may be found from it. For if we measure the soles of the feet to the top of the head, and then apply that measure to the outstretched arms, the breadth will be found to be the same as the height, as in the case of plane surfaces which are perfectly square.



The Tiempetto
Donato Bramante
(1444-1514)

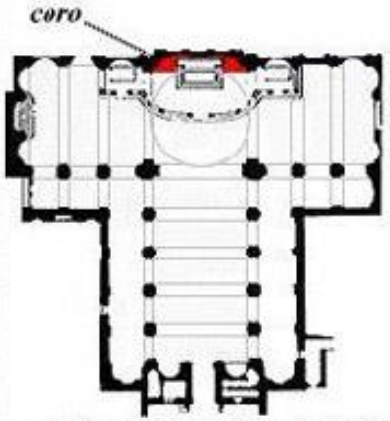
Villa Rotonda

Andrea Palladio (1508-1580)

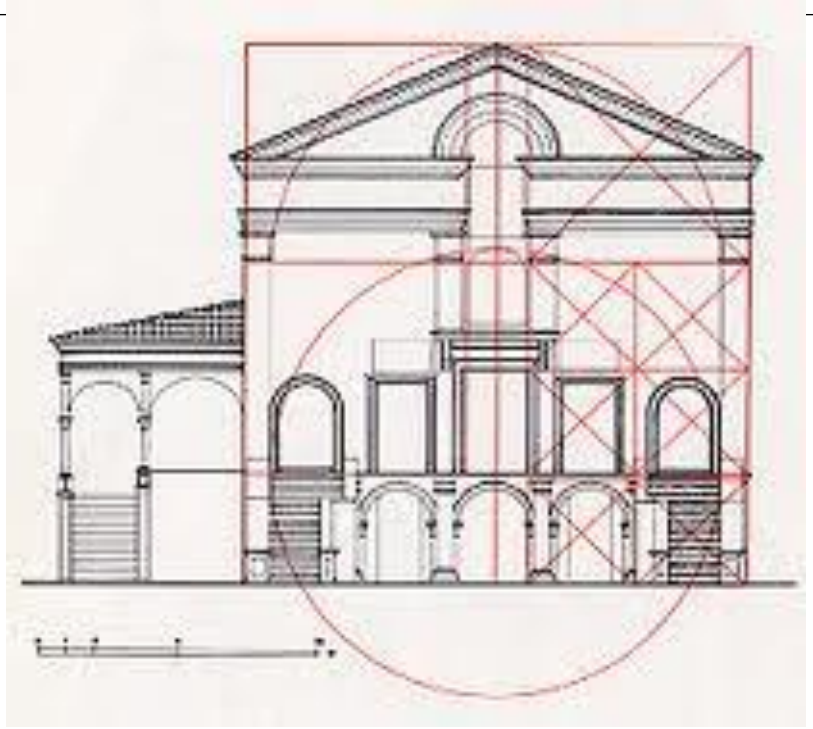
Architecture, music and geometry

- Pythagoras – discovered musical consonances
- Renaissance architects derived whole number ratios, such as 1:1. 1:2, 2:3 and 3:4. They believed that the innate harmony of these ratios would be impressed upon anyone experiencing spaces determined by them. Humanists were convinced that God's cosmic order could be expressed on earth through such mathematical proportions, which were inevitably related to the mensuration of the human body.

In this context, the circular church represented the most perfect form, absolute, immutable. Echoing celestial harmony.

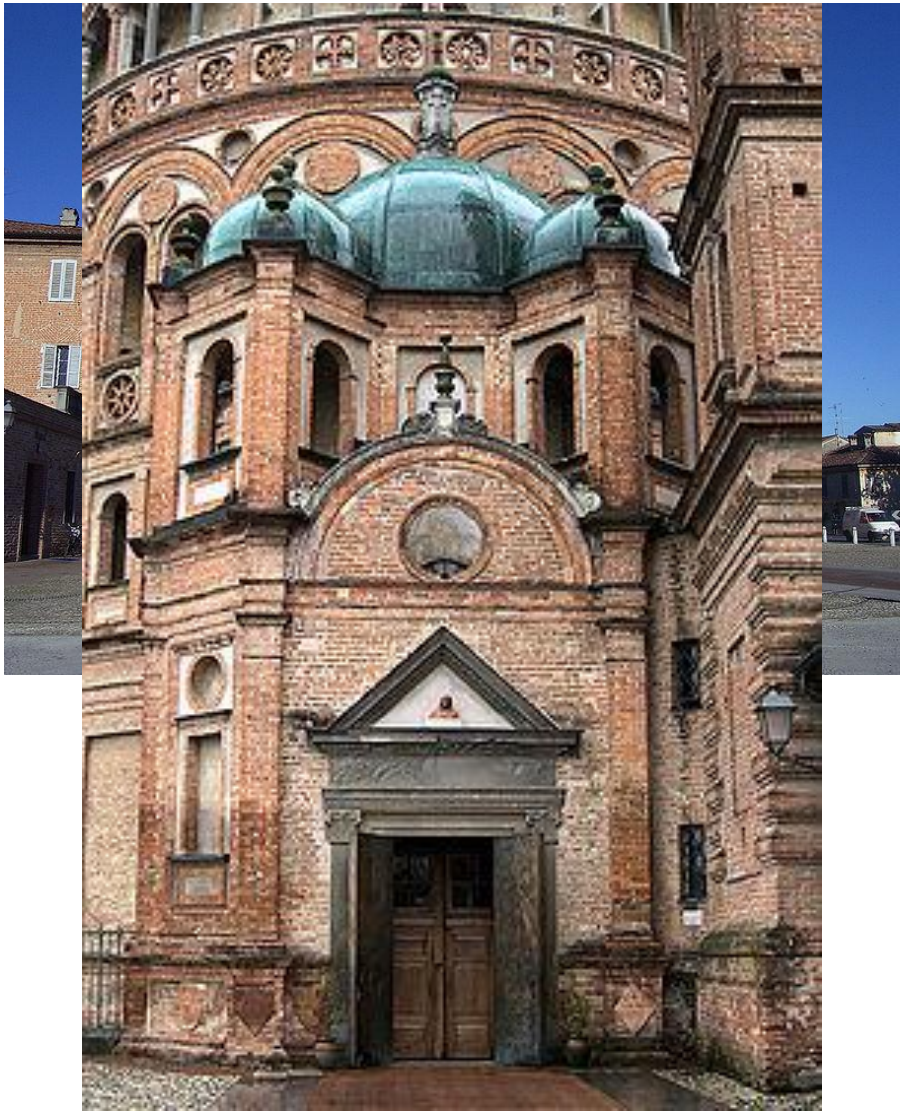


Milano, chiesa di Santa Maria presso San Satiro
planimetria



Giovanni Battaggio

Pavia cathedral (1490)



Frequently painted or decorated

Ceilings

the sistine chapel ceiling