

# THE RENAISSANCE

Perspective, Brunelleschi, Alberti, Bramante, Palladio

- If the Gothic was centered in France, Renaissance clearly centered in Italy



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*Cologne Cathedral, Germany (1248 – 1880)*



*Cathedral of Saint-Pierre (Beauvais Cathedral), France [13<sup>th</sup> – 16<sup>th</sup> century]*



Duomo di Milano, Milan, Italy [began 1386 – 19th century]



*Duomo di Milano, Milan, Italy [began 1386 – 20<sup>th</sup> century]*



Map of Italy at the end of the 15<sup>th</sup> century

- Italy was not 'Italy' yet
- Collection of Regions



Left: Depiction of Florence around 15<sup>th</sup> century  
Right: King's Landing, Game of Thrones

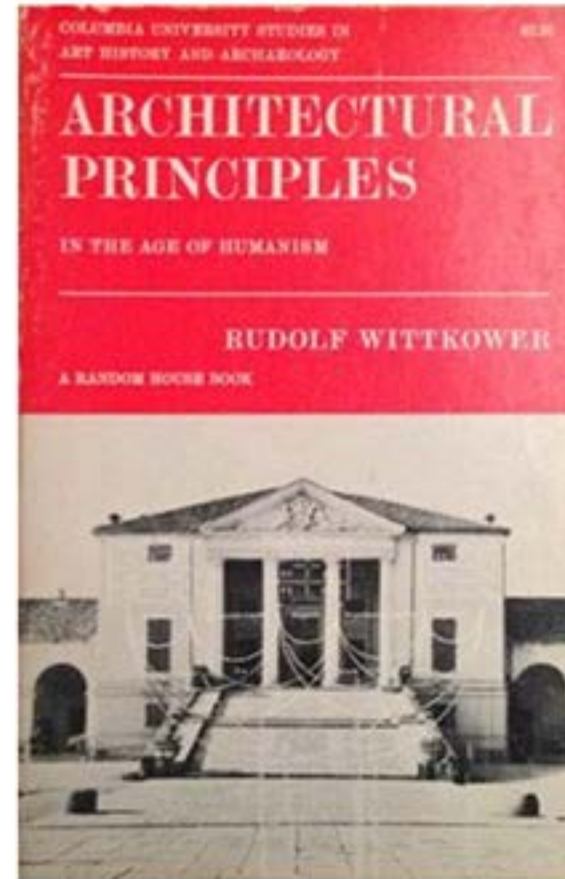


Left: Depiction of Florence around 15<sup>th</sup> century  
Right: King's Landing, *Game of Thrones*





Rudolf Wittkower  
Germany/US, 1901 - 1971



Architectural Principles in  
the Age of Humanism  
1949

- As regards architecture, one of the most seminal theoretical works was written by Rudolf Wittkower

“The conviction that **architecture is a science**, and that each part of a building, inside as well as outside, has to be **integrated into one and the same system of mathematical ratios**, may be called the basic axiom of Renaissance architects.”

Rudolf Wittkower, *Architectural Principles in the Age of Humanism*

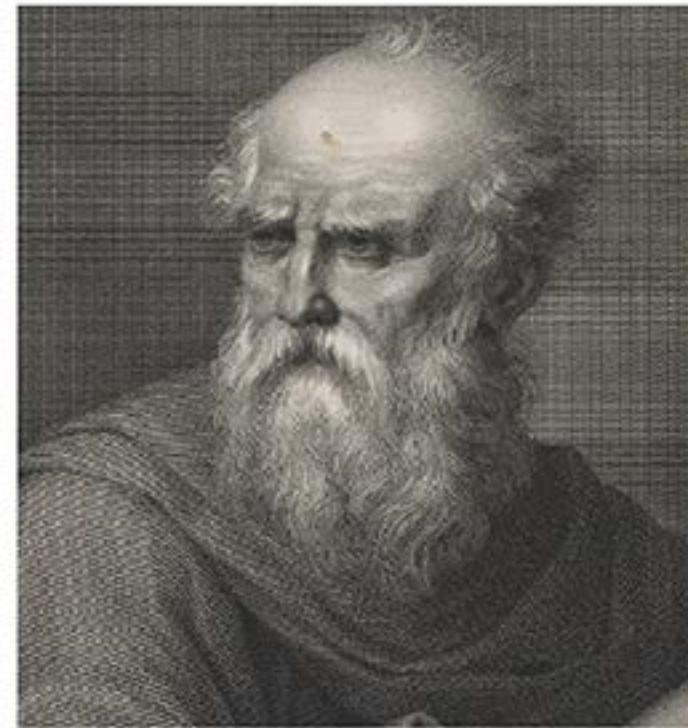
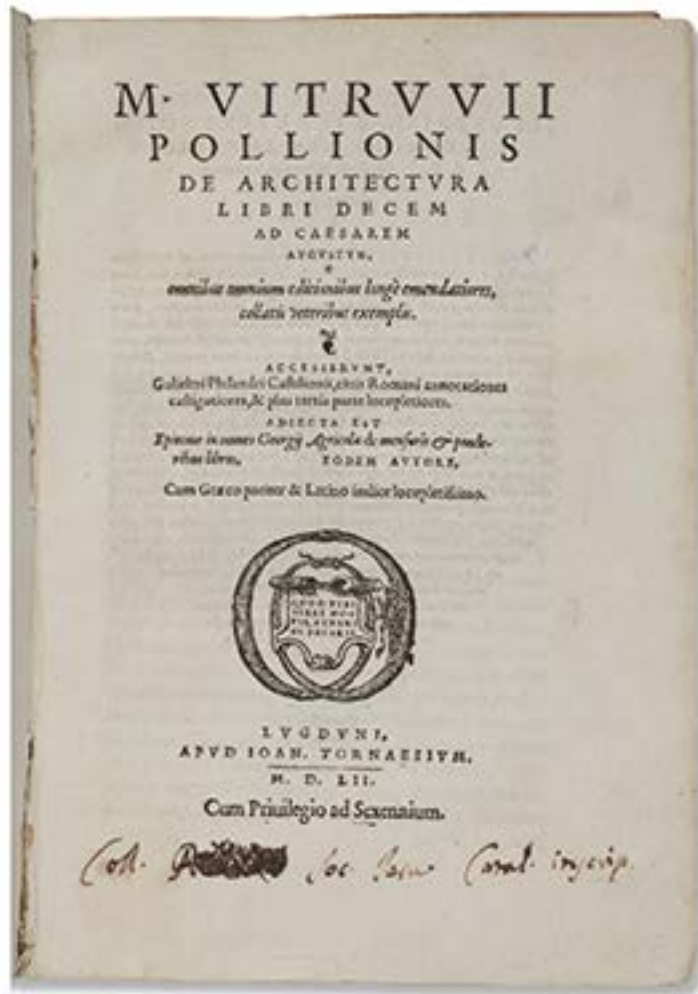
- Humanism → Rationality
- Instead of self-denial before a higher power, we can use reason to attain to truth
- Mathematics + Arts

**RENAISSANCE**  
**RINASCIMENTO**  
**RENACIMIENTO**

**RENAISSANCE**  
**RINASCIMENTO**  
**RENACIMIENTO**  
↓  
**REBIRTH**

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- Re-birth of Roman Antiquity



**Marcus Vitruvius Pollio**  
[80 – 15 BCE]

Vitruvius, *De architectura* (*Ten Books on Architecture*) [ca. 30-15 BC]  
Left: Edition Cesare Cesariano 1521

- Rediscovery of Vitruvius' texts, and a fascination with the past
- History was at their doorstep, so there was a sense of pride and responsibility to reinvoke antiquity.

# Quattrocento

Literally 'four hundred' (short for 'one thousand four hundred'), in the context of Renaissance art, refers to 15<sup>th</sup> century Italy and the beginning of the Renaissance



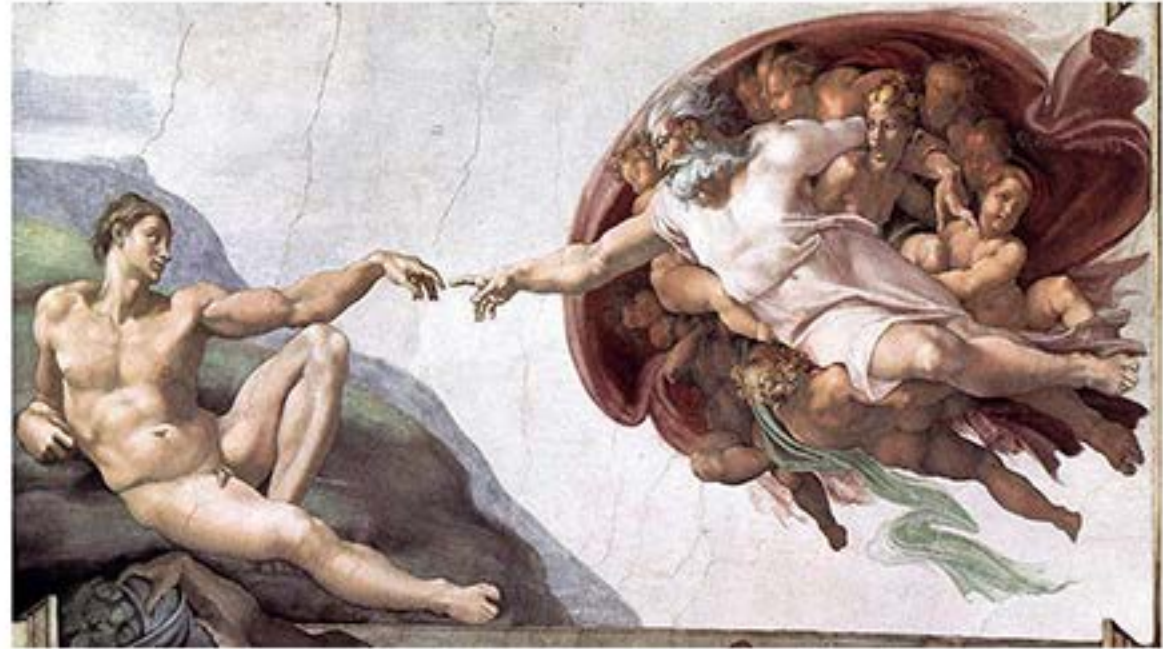
- Literally meaning 400's, and often implying the 1400's in Italy in particular



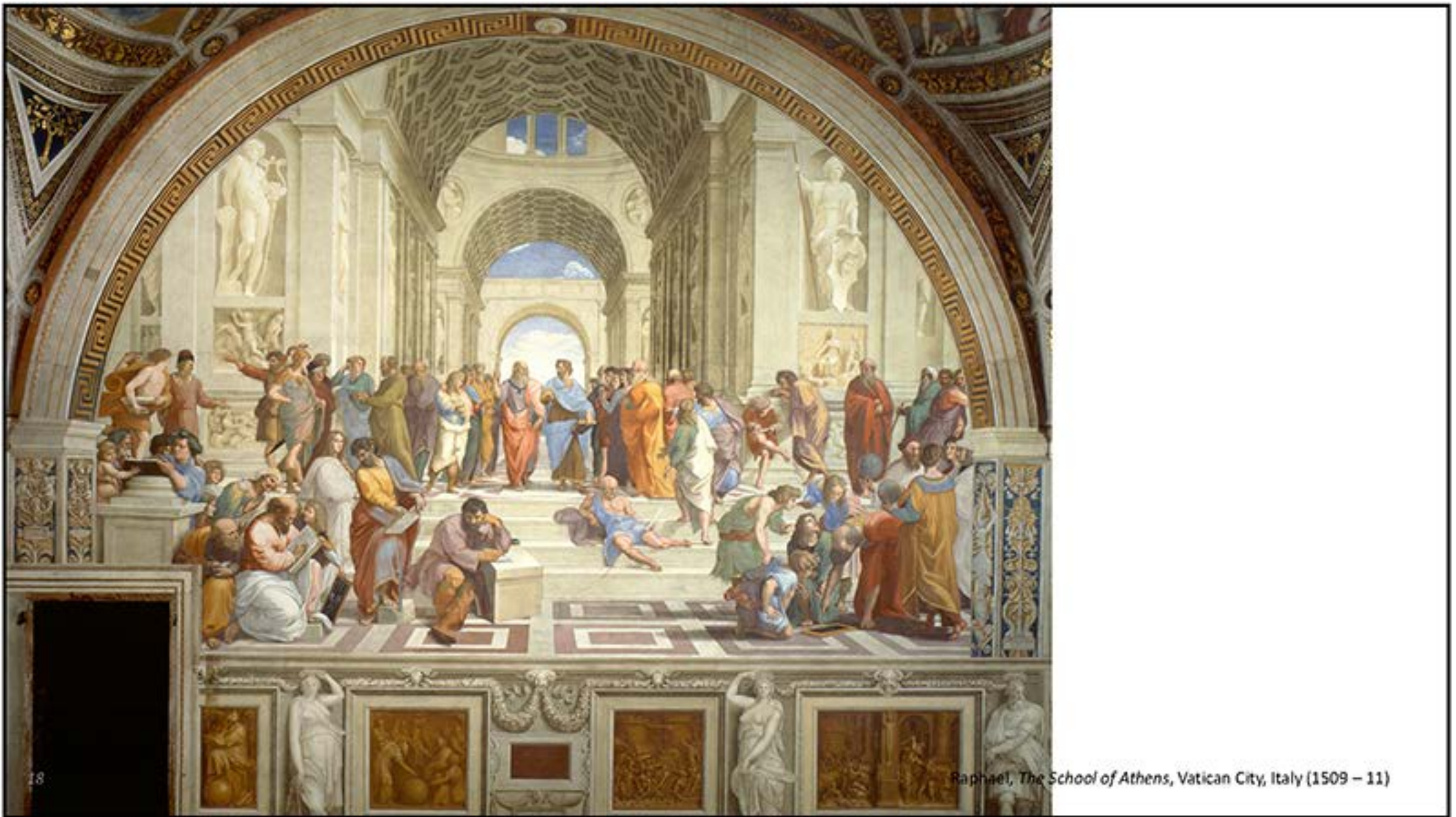


Left: Michelangelo, *The Last Judgement*, 1536 - 1541.  
Right: Leonardo da Vinci, *The Last Supper*, 1498.





Left: Leonardo da Vinci, *Mona Lisa*, 1503.  
Right: Michelangelo, *The Creation of Adam*, c. 1512.



- A fascination back to Classical Rome



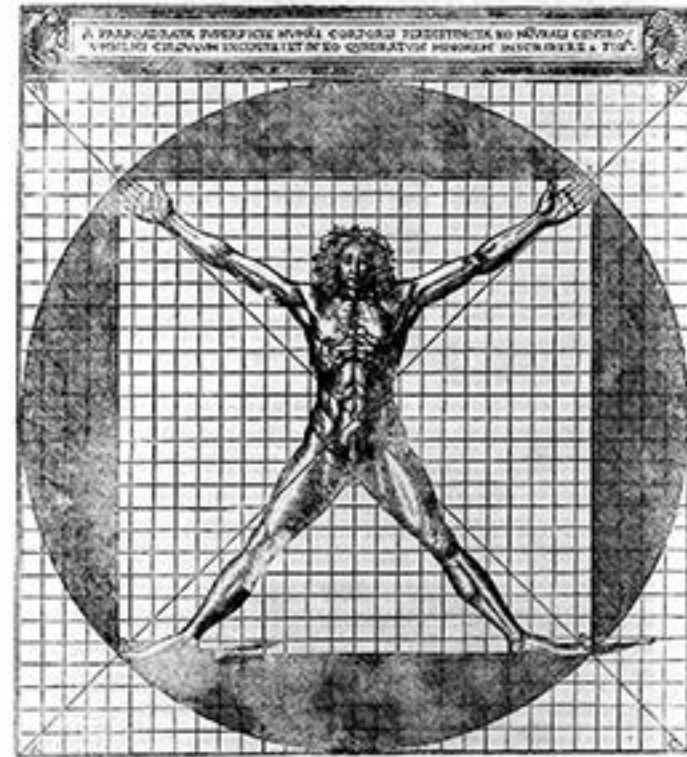
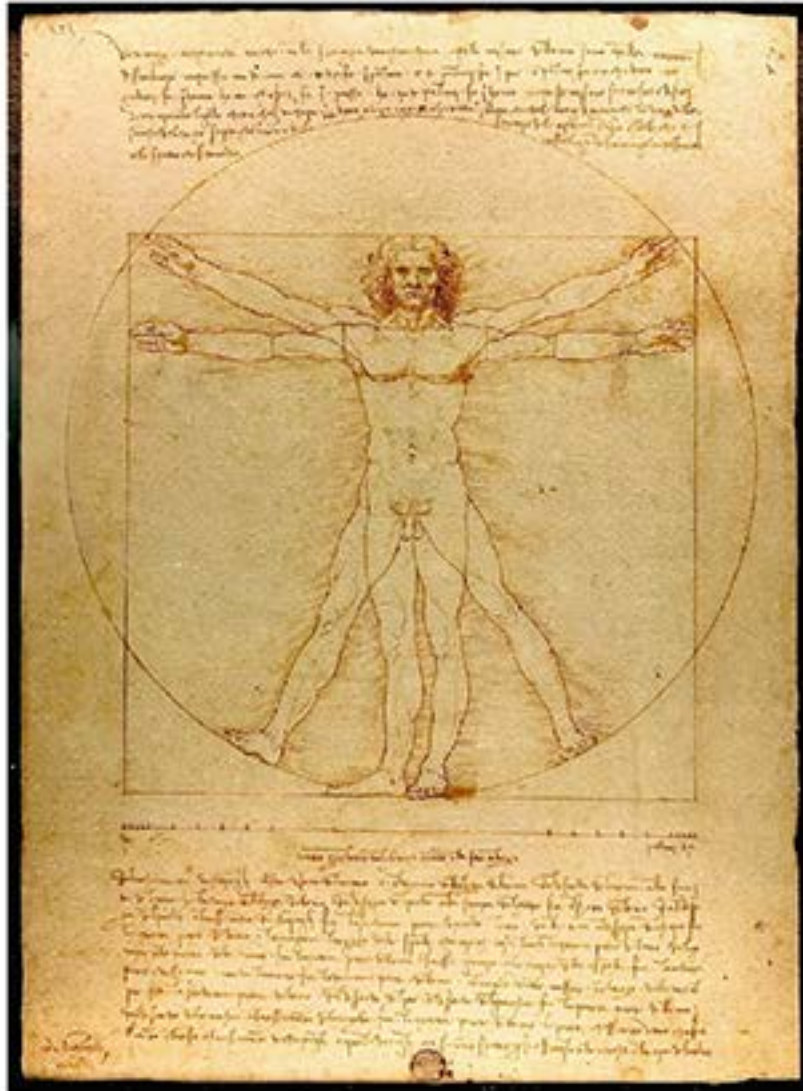
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Raphael, *The School of Athens*, Vatican City, Italy (1509 – 11)

- Painted on the wall of the Room of the Segnatura



- HUMANITY has access to TRUTH



## The Vitruvian Man

Left: Leonardo da Vinci, 'Vitruvian Man' (ca. 1490)  
Right: Cesare Cesariano, *Homo ad Circulum* (1521)

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- The human body as a result of perfect proportion, divine proportion, geometry as divine language
- Going back to Vitruvius
- Uncover the hidden orders of the universe



Michelangelo Buonarroti  
1475 - 1564



Leonardo da Vinci  
1452 - 1519

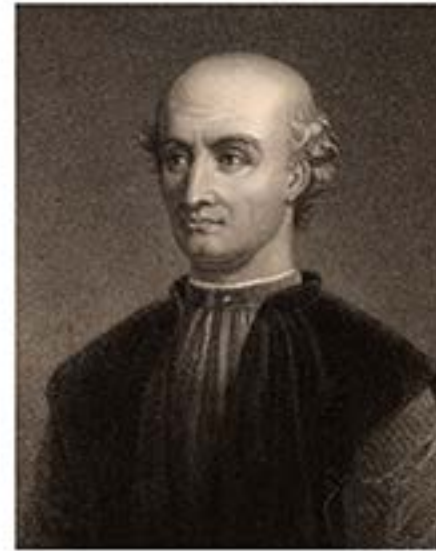
- While they designed architecture, they aren't really the center of Renaissance architecture



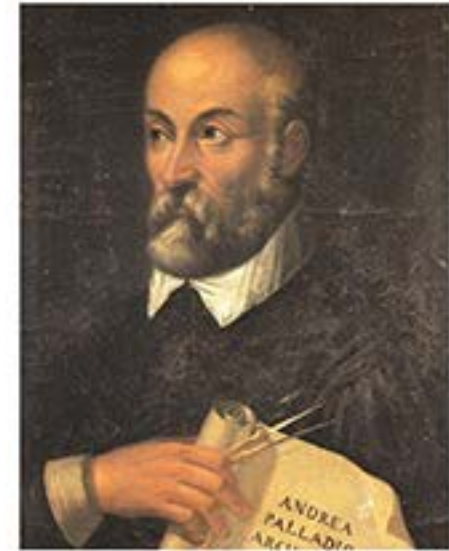
Filippo Brunelleschi  
1377 - 1446



Leon Battista Alberti  
1404 - 1472



Donato Bramante  
1444 - 1514



Andrea Palladio  
1508 - 1580

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*Early Renaissance*

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*High Renaissance*

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*Late Renaissance*

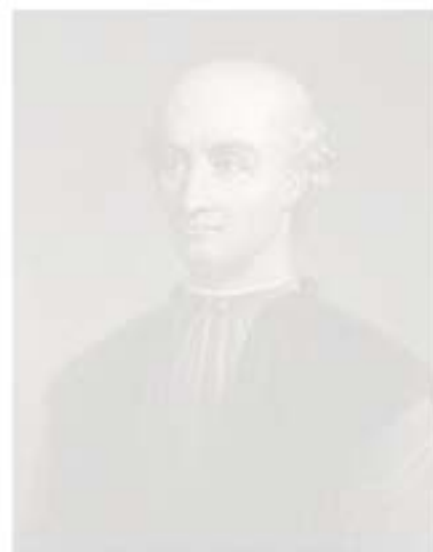
- Brunelleschi: PERSPECTIVE
- Alberti: *De Reaedificatoria*
- Bramante: OFFICIAL ARCHITECT
- Palladio: Neo-Palladianism



**Filippo Brunelleschi**  
1377 - 1446



Leon Battista Alberti  
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*Early Renaissance*

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*High Renaissance*

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*Late Renaissance*





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Brunelleschi, *Ospedale degli Innocenti*, Florence, Italy (1417 – 36)

- In comparison to Gothic, this looks a lot more stable, austere... even basic
- Emphasis on perfecting proportion, not about challenging the limits of physics
- About stability, not verticality up





- Contrary to the Gothic, repetition was important, as it reflected order





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Brunelleschi, *Ospedale degli Innocenti*, Florence, Italy (1417 – 36)

- Symmetrical design
- Must be odd, otherwise opposed



- Pietra Serena

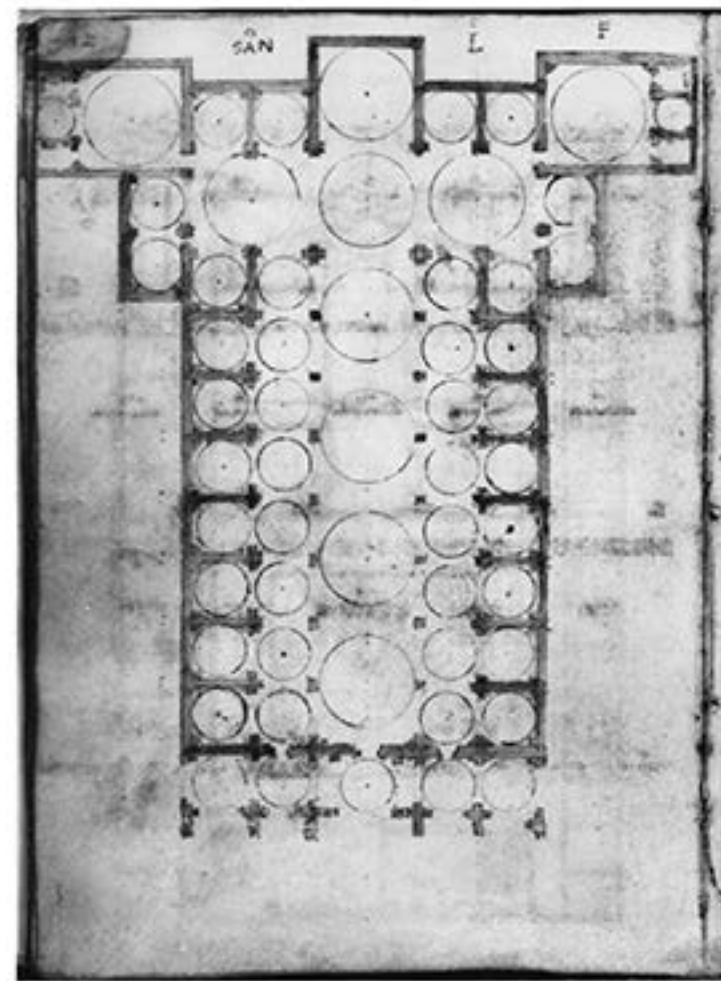


Brunelleschi, Basilica of San Lorenzo, Florence, Italy (1421 – 42)

- Never had its façade finished
- Nave / Aisle proportion of 2:1



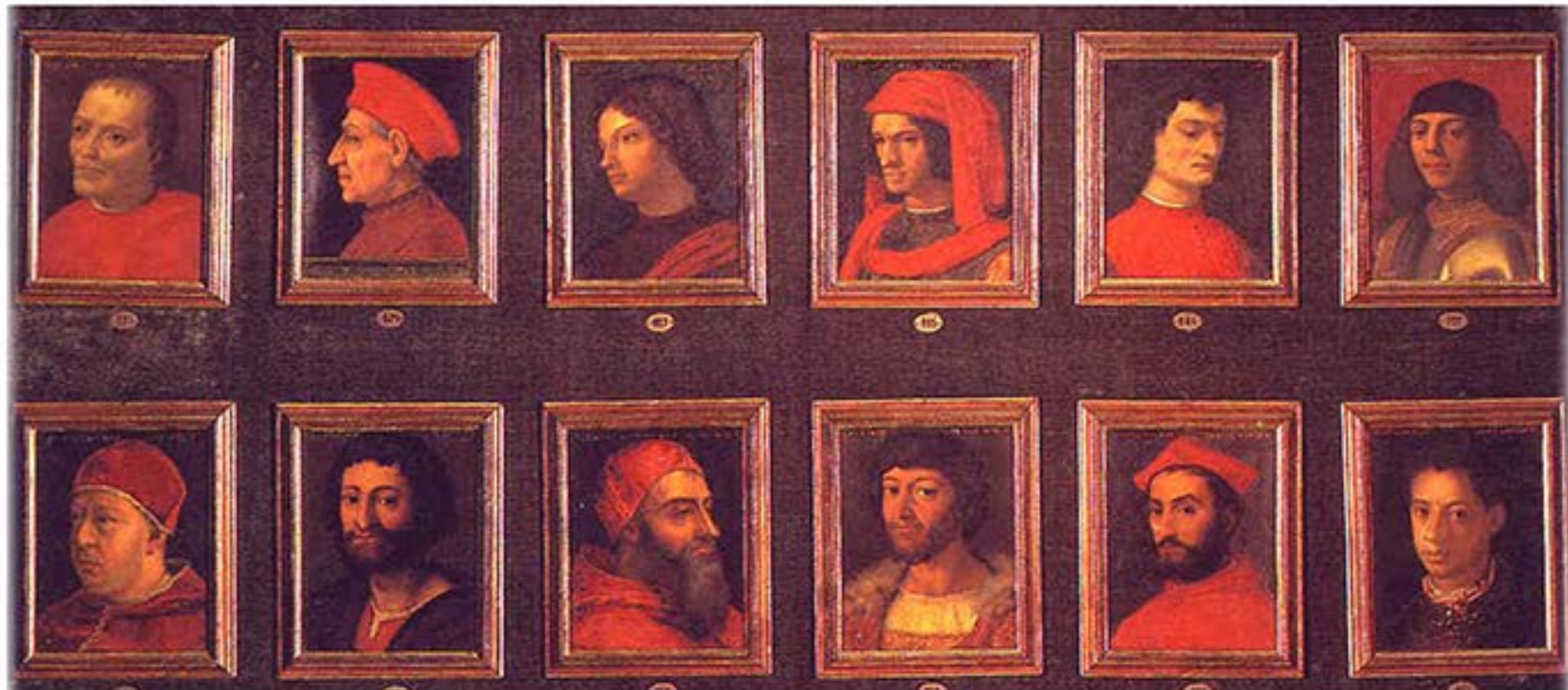






*Medici coat of arms*

- Was the main church for the Medici family, an incredibly influential and wealthy family
- Heavily connected to the flourishing of art during the Renaissance



- House of Medici, Florence 15<sup>th</sup> – 18<sup>th</sup> century
- Wealth and political power through Banking and Commerce
- Used much of their wealth to support the arts, and to attract Italian talent to Florence



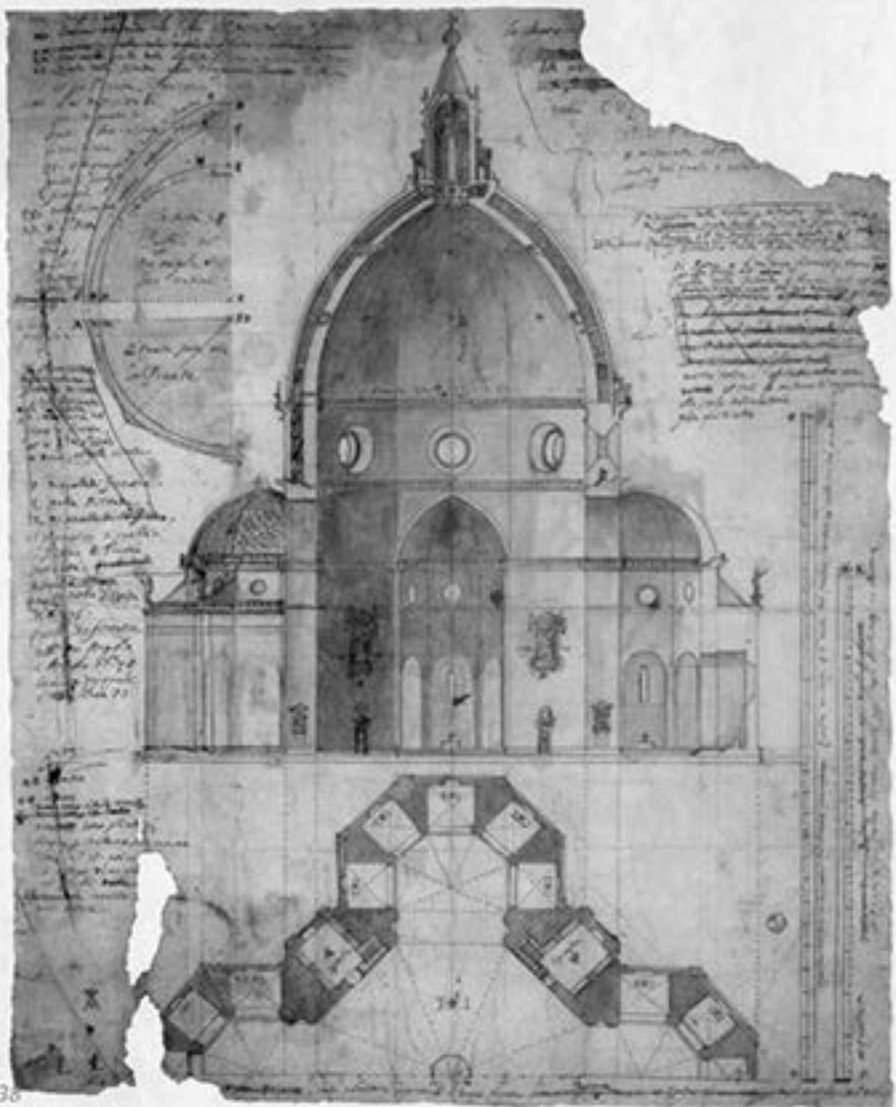
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Brunelleschi, *Cathedral of Santa Maria del Fiore*, Florence, Italy (1436)

- Cathedral of Santa Maria del Fiore
- Commissioned by the Medici, using again Brunelleschi for the Dome

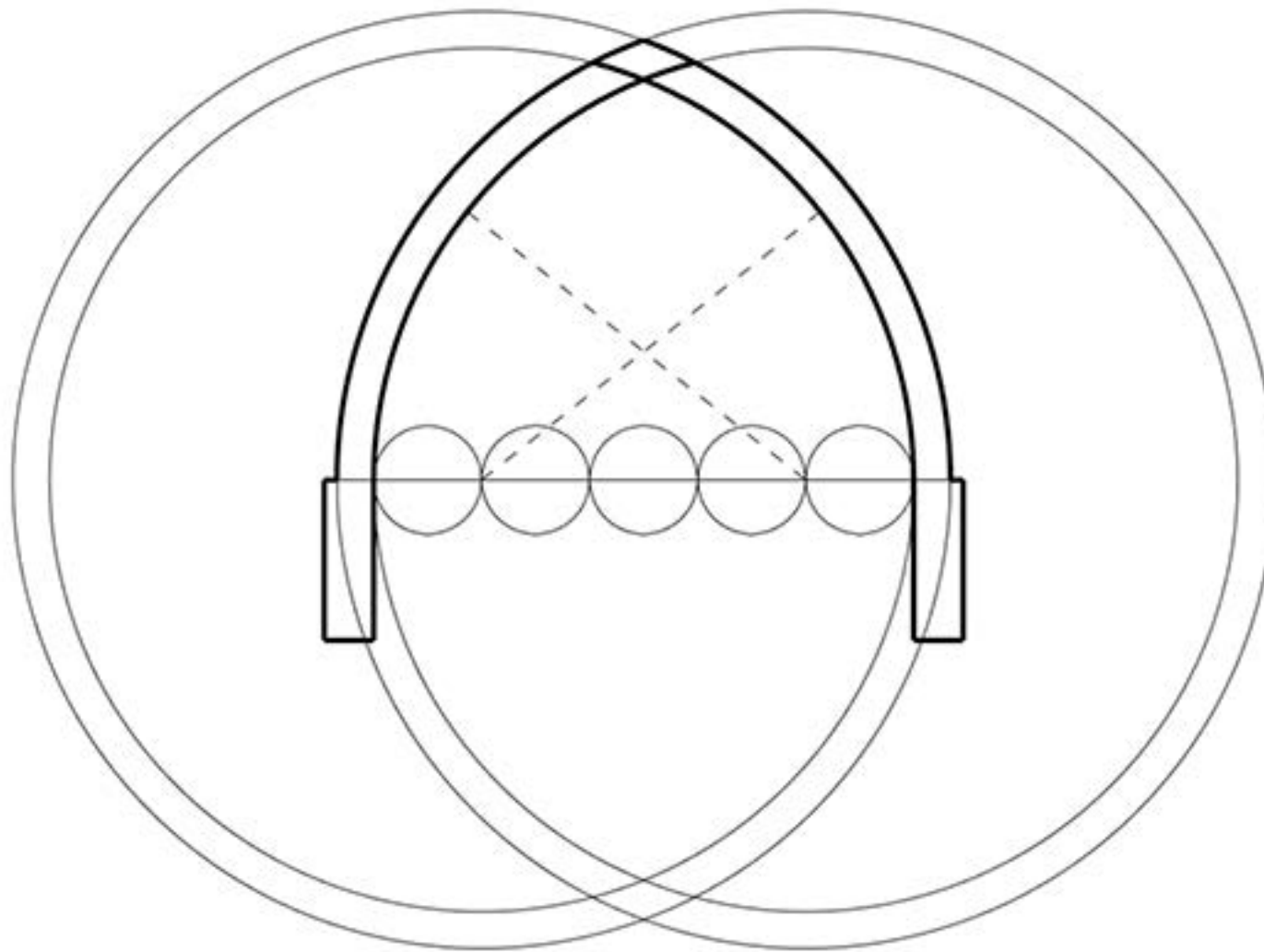


- The outer style we see is Neo-Gothic, completed only in 1871 – 300 years after the completion of the nave

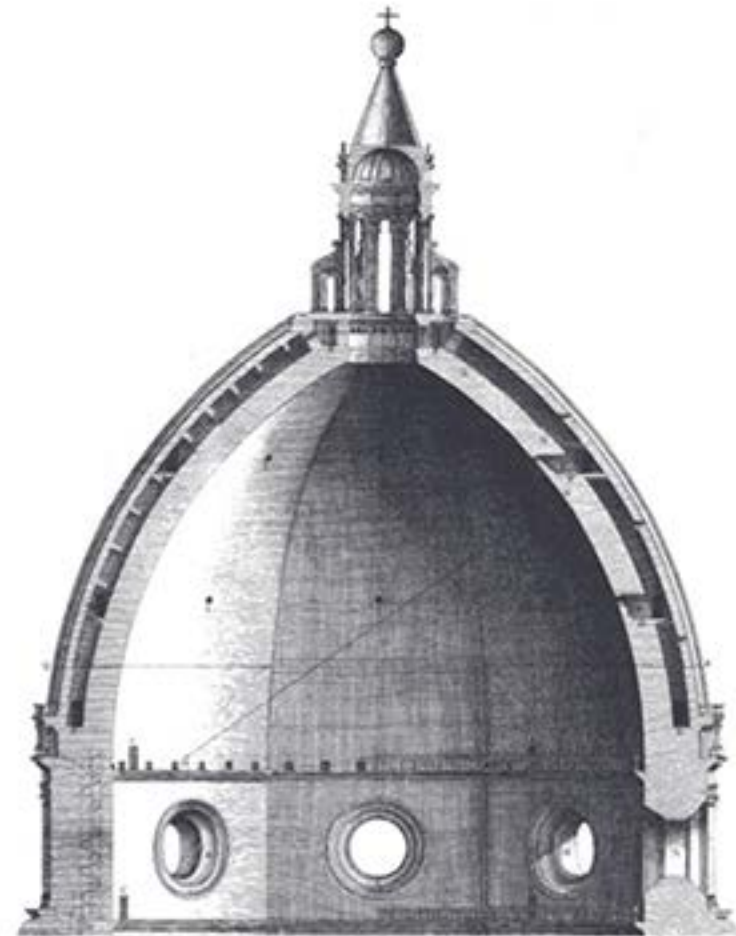
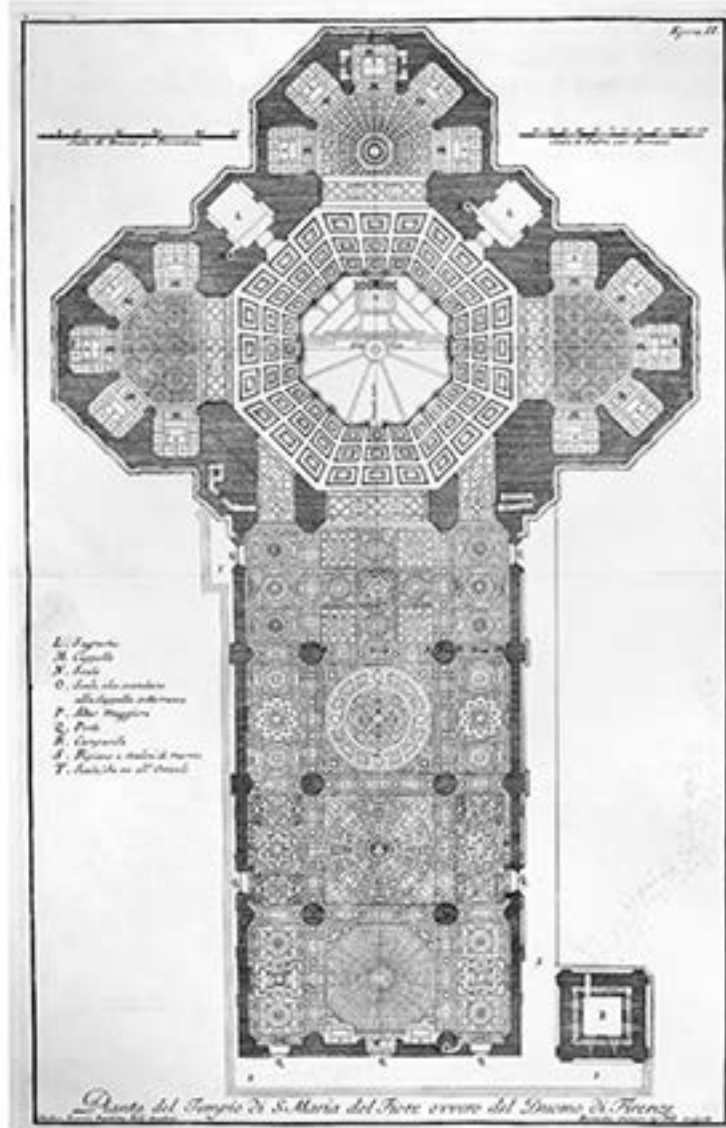


Brunelleschi, *Cathedral of Santa Maria del Fiore*, Florence, Italy (1436)

- After a series of proposals and competitions, Brunelleschi won, with the proposal for a 'double dome'



- Constant thinning towards the top



Brunelleschi, Cathedral of Santa Maria del Fiore, Florence, Italy (1436)







Brunelleschi, *Cathedral of Santa Maria del Fiore*, Florence, Italy (1436)

- View from the campanile
- View of the painted underside of the dome, *The Last Judgment* by Giorgio Vasari



- Façade in large part in such great shape because of its relatively young age



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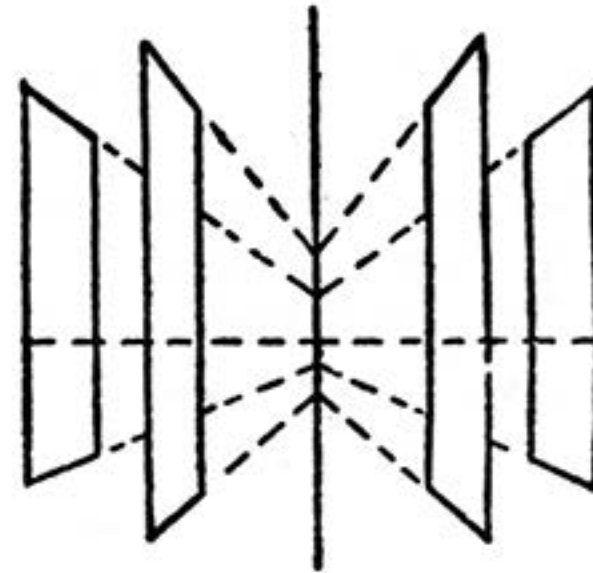
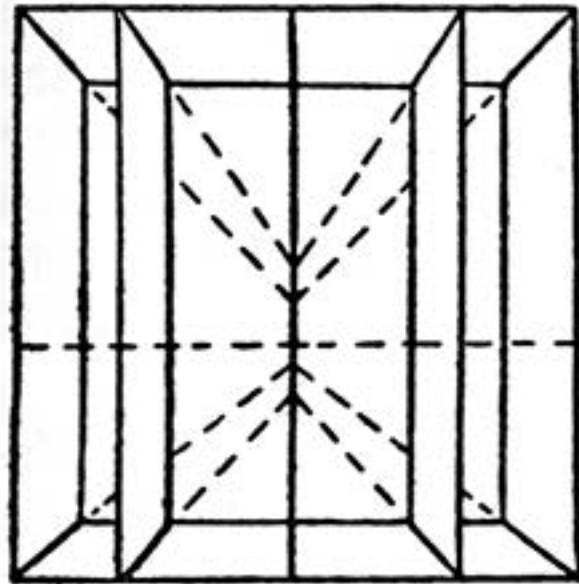
Artist unknown

- Brunelleschi's importance is due to his 'invention of linear perspective'
- 'invention of perspective' – Western-centric interpretation, contemporary historians refuting such a basic chronology





Giotto, *Ascension of the Evangelist* (1320)

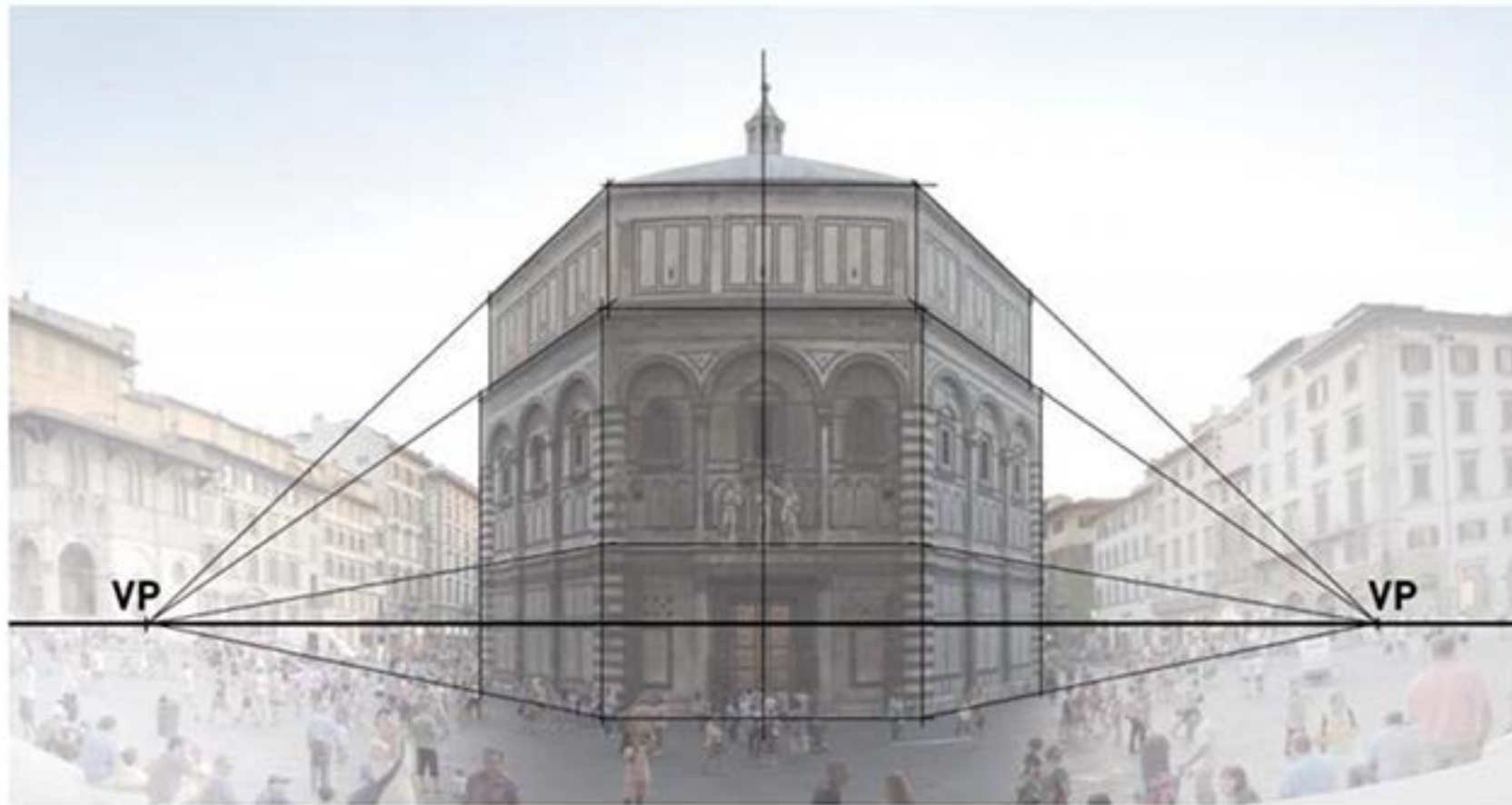


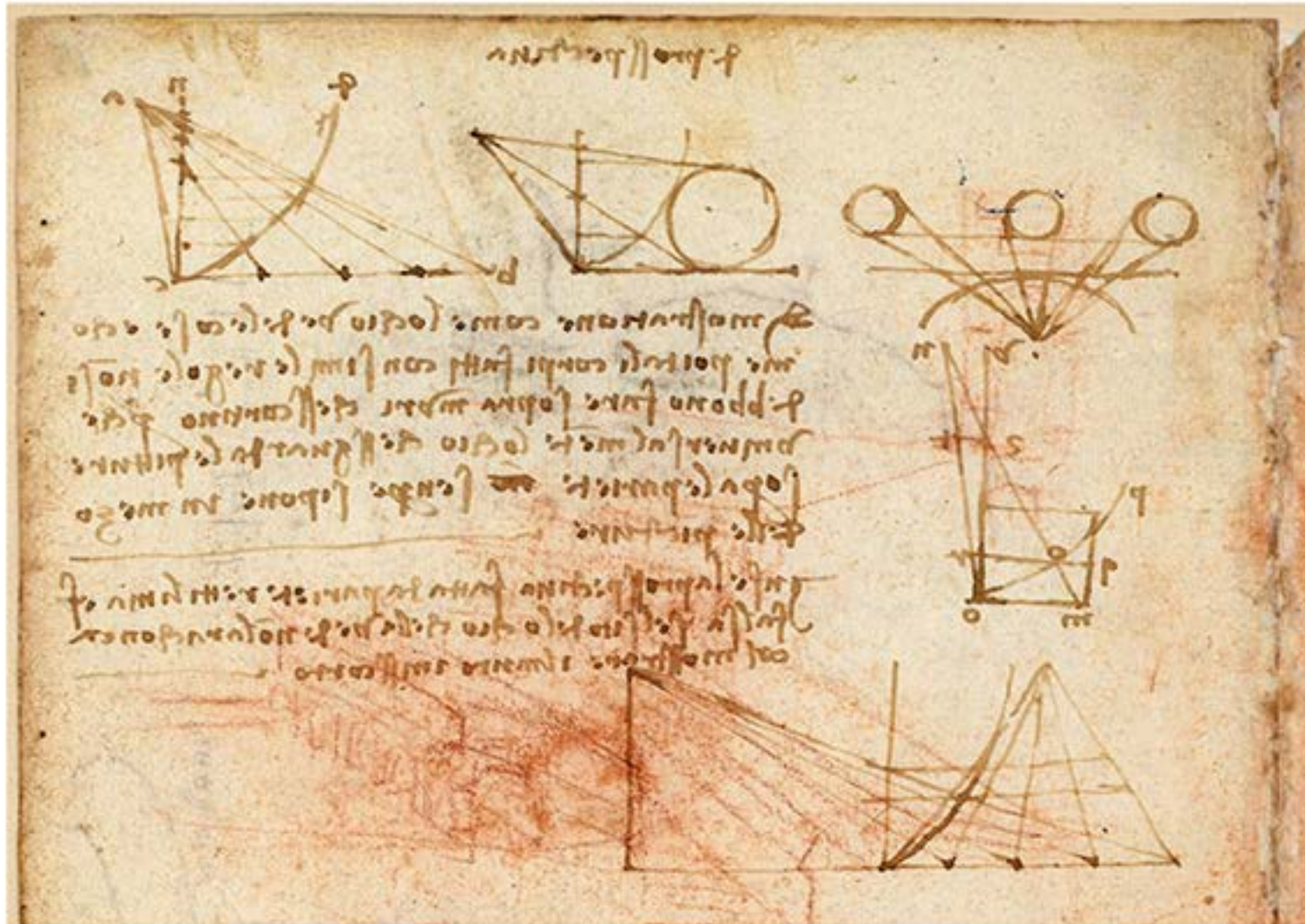
- Axes of convergence
- But where modern linear perspective is developed, we have vanishing points



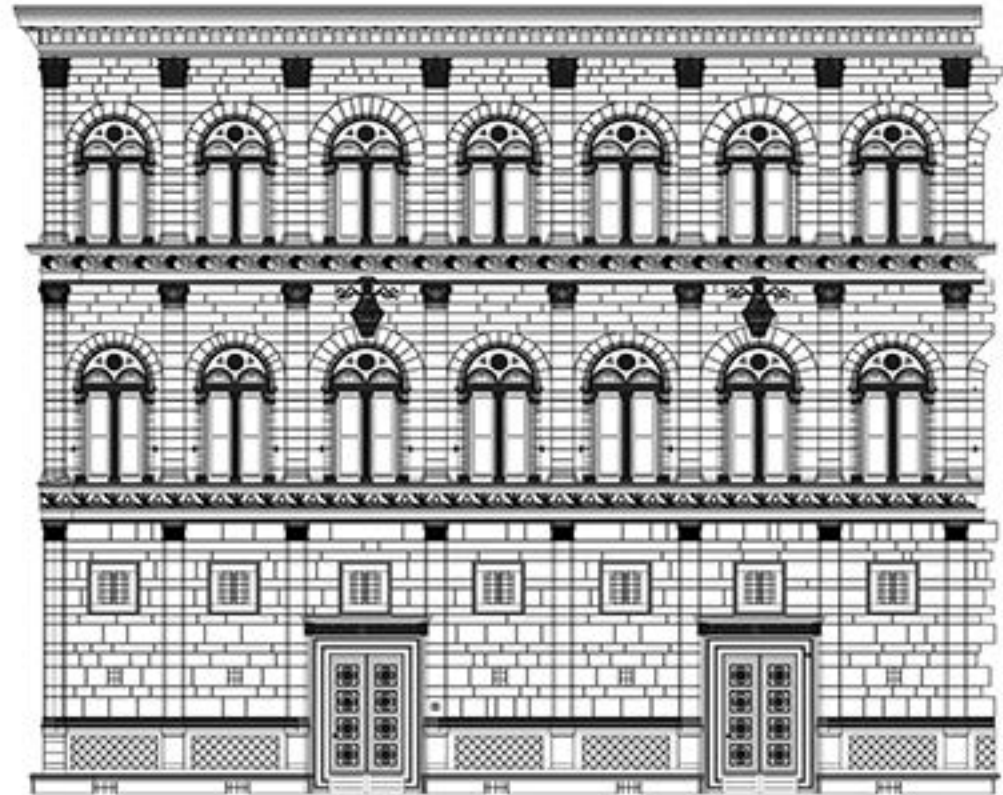
- Example of Vanishing Axes







- Da Vinci's Paradox – draw three equal cylinders, and the outer ones will look heavily distorted



Alberti, *Palazzo Rucellai*, Florence (1451)

- For the Rucellai family – rivals of the Medici
- Façade only, and not even fully realized
- 3 Tier system

# rustication

Decorative masonry (stone work) that exhibits rough or patterned surfaces. Most often present on the ground floor







Bartolomeo, *Palazzo Medici Riccardi*, Florence (1444 - 1484)

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- A sense of order, rather than simple repetition
- Strong, yet refined, whereas the Palazzo Medici was like a fortress

# piano nobile

Direct translation 'noble floor', the first floor above ground level. Often the formal, public functioning floor.



- The most important is the relationship between the ground floor and the piano nobile
- Where official, formal business occurred, most public, most decorated
  - Living quarter just above



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Alberti, *Santa Maria Novella*, Florence (1279 - 1470)

- First important basilica in Florence
- Giovanni di Paolo Rucellai, commissioned reconstruction on the façade (1456 – 1470), and he employed Alberti





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Alberti, *Santa Maria Novella*, Florence (1279 - 1470)

- Giovanni Rucellai. Son of Paolo. Year of Salvation. 1470
- Large Sun at the top Pediment – emblem of the neighborhood and the convent of Santa Maria Novella



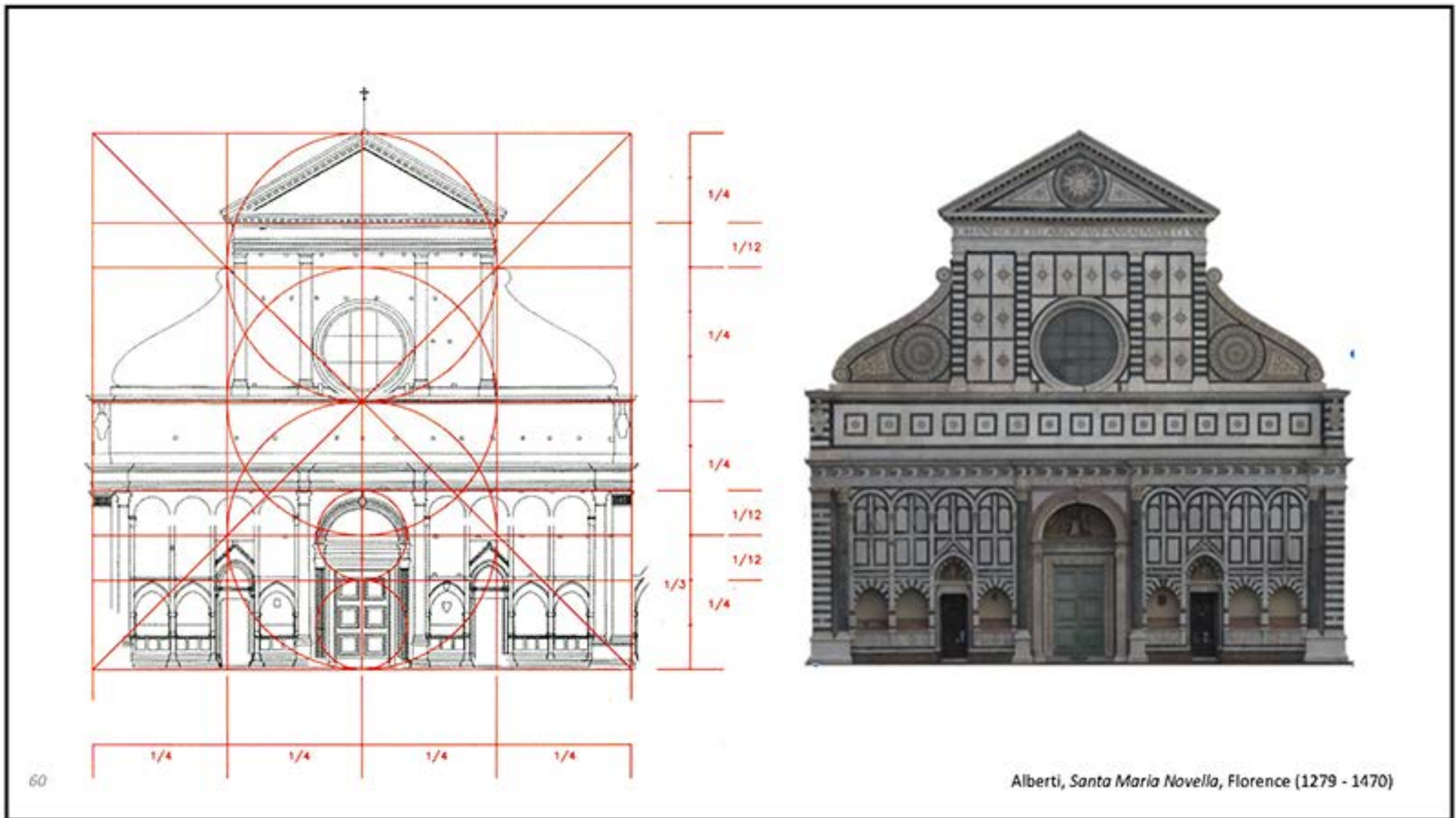
Alberti, *Santa Maria Novella*, Florence (1279 - 1470)

- Frieze decorated with Rucellai Emblem



Alberti, *Santa Maria Novella*, Florence (1279 - 1470)

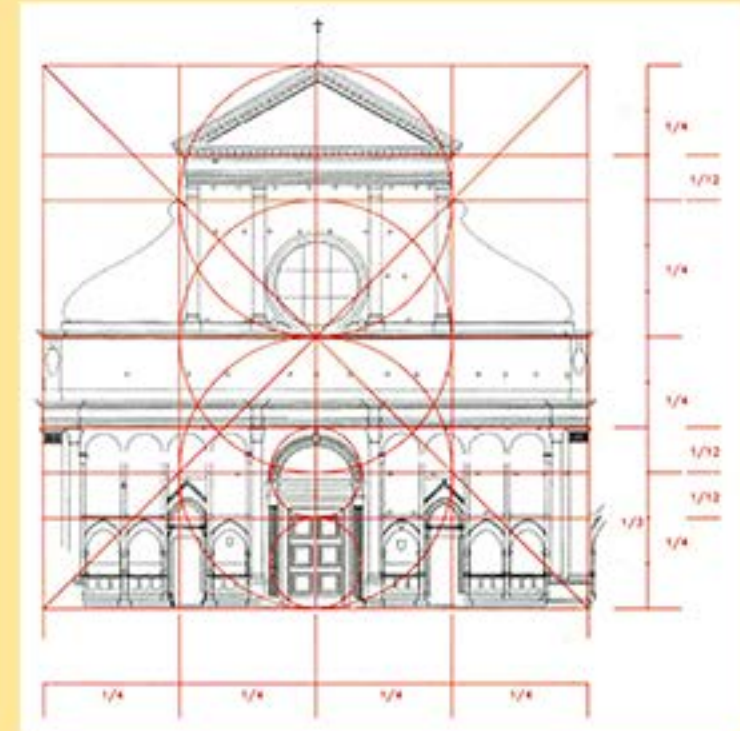
- An idea of the unfinished façade before Alberti, and after



- Well known as a Renaissance work for the proportions that were used
- Basic Shapes – Squares, circles, Triangles

# eurythmia

From Vitruvius, indicating a graceful and agreeable quality that contributed to the overall harmony and beauty  
*aka - proportion*

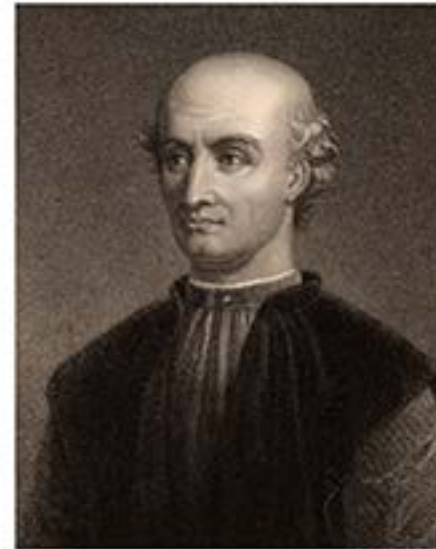




Filippo Brunelleschi  
1377 - 1446



Leon Battista Alberti  
1404 - 1472



Donato Bramante  
1444 - 1514



Andrea Palladio  
1508 - 1580

*Early Renaissance*

*High Renaissance*

*Late Renaissance*

- Bramante, best known for official commissions (from the papacy)
- However, many projects contributed, not complete



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Bramante, Santa Maria presso San Satiro, Rome (1478 - 83)

- Bramante only had minor role, not entirely sure what part, but definitely the apse



Bramante, Santa Maria presso San Satiro, Rome (1478 - 83)

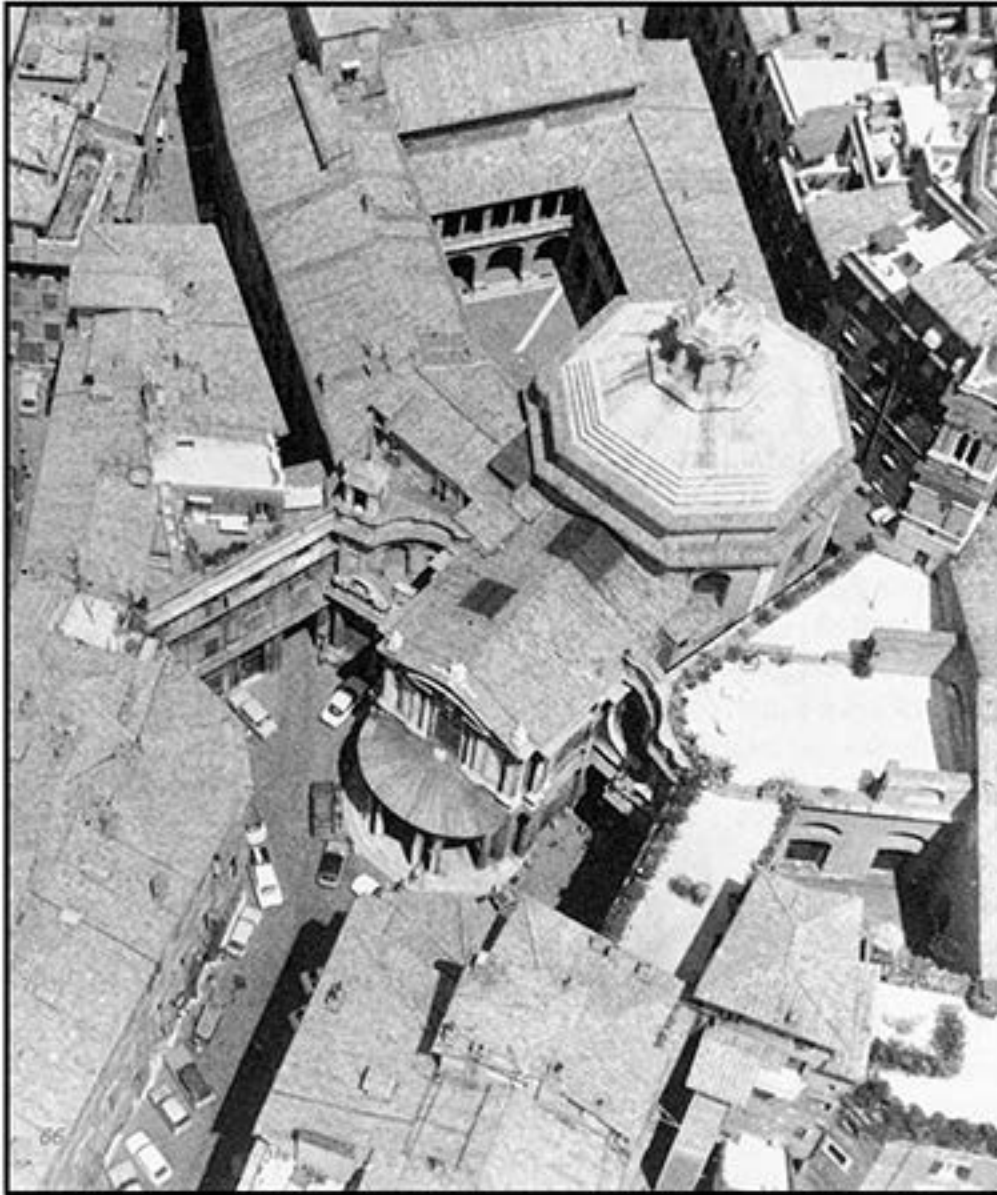
- Demonstration of knowledge of perspective and its application
- Example of math + art



# trompe l'oeil

'trick of the eye,' a technique in which a surface is rendered so as to deceive the observer





Santa Maria della Pace, Rome (1656 – 67)



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Santa Maria della Pace, Rome (1656 – 67)

- Not flamboyant, about solidity and proportion



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Santa Maria della Pace, Rome (1656 – 67)

- Strange implementation of columns over arches
- Trabeated system over one that's arcuated

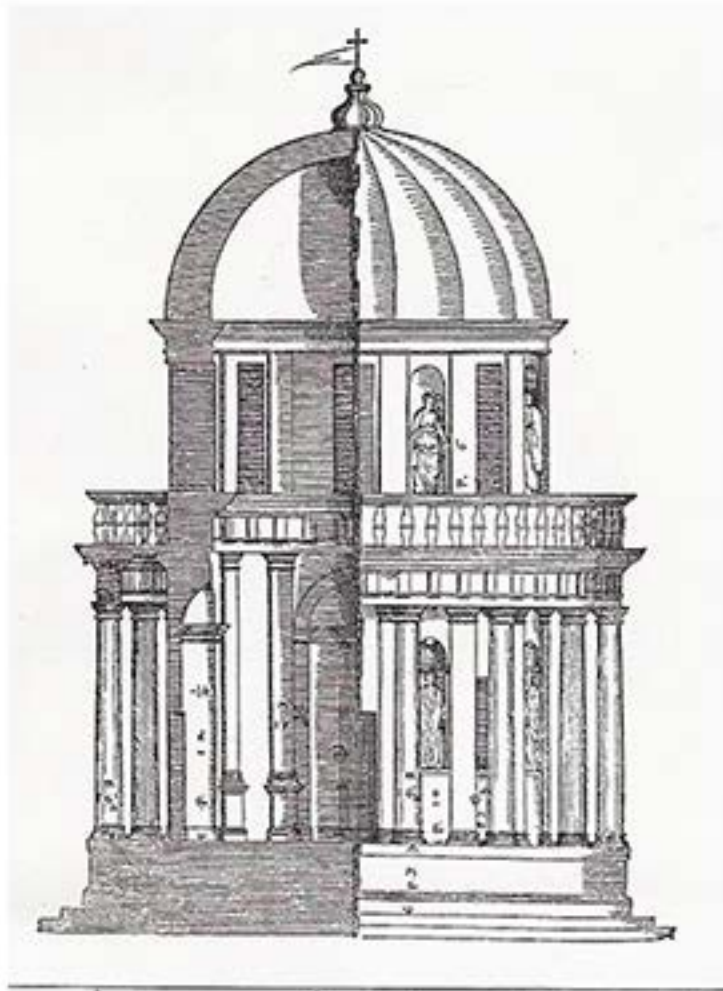


- Very high base on bottom pilasters, to help offset the eye and make the two levels of pilaster more even



70

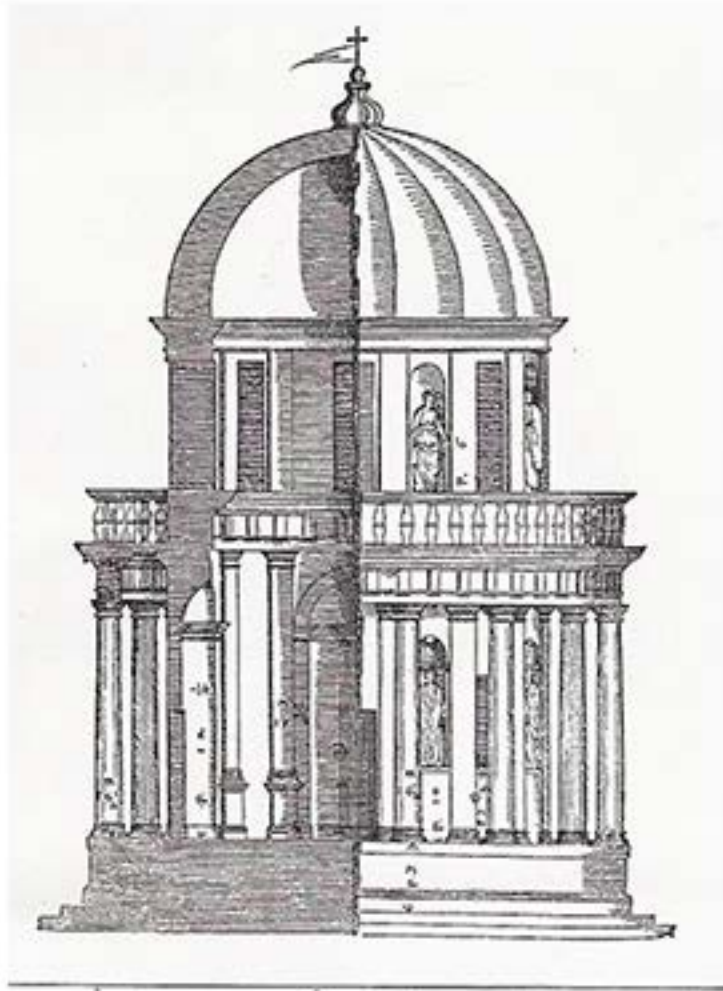
- Means 'small temple'
- Of course, most circular Renaissance buildings point to the Pantheon



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Bramante, *Il Tempietto (The Small Temple)*, Rome (ca. 1502)

- Greatly revered by Renaissance architects for its **'perfect proportions'**



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Bramante, *Il Tempietto (The Small Temple)*, Rome (ca. 1502)

- Thought to be inspired by the Temple of Vesta in Tivoli (near Rome)
- 1<sup>st</sup> century BC
  - Homage to classical antiquity, with the proportions of the High Renaissance





- The super project – the church to end all churches... St. Peter's Basilica
- View from the approach from the city
- Doesn't define the Renaissance



Donato Bramante  
1444 - 1514



Raphael  
1483 - 1520



Pirro Ligorio  
1514 - 1583



Giuliano da Sangallo  
1443 - 1516



Michelangelo Buonarroti  
1475 - 1564



Giacomo da Vignola  
1507 - 1573



Gian Lorenzo Bernini  
1598 - 1680



Giovanni Giocondo  
1433 - 1515

- Various architects involved in its design and construction



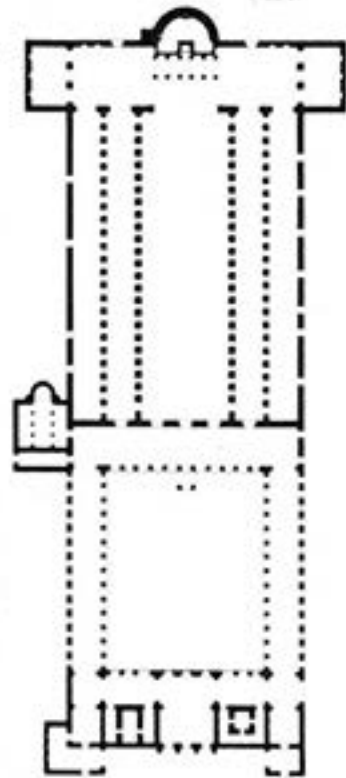
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St. Peter's Basilica, The Vatican (in Rome) [consecrated 1626]

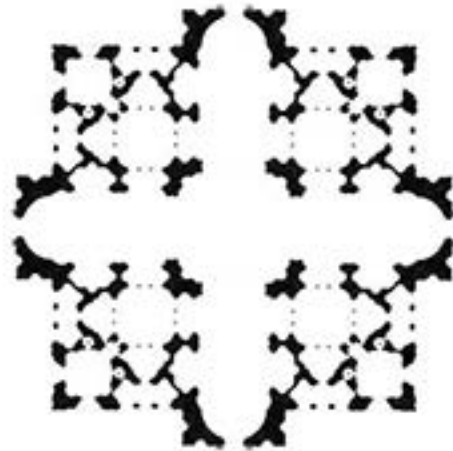
- 'Arms' of St. Peter's Square
  - Bernini
  - Symbolizing the outstretched and embracing arms of the church



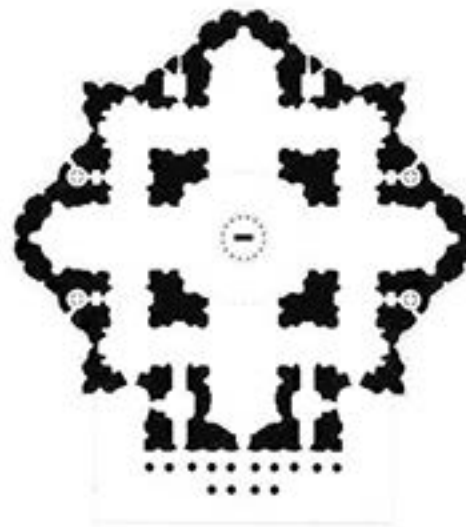
- From within St. Peter's Square



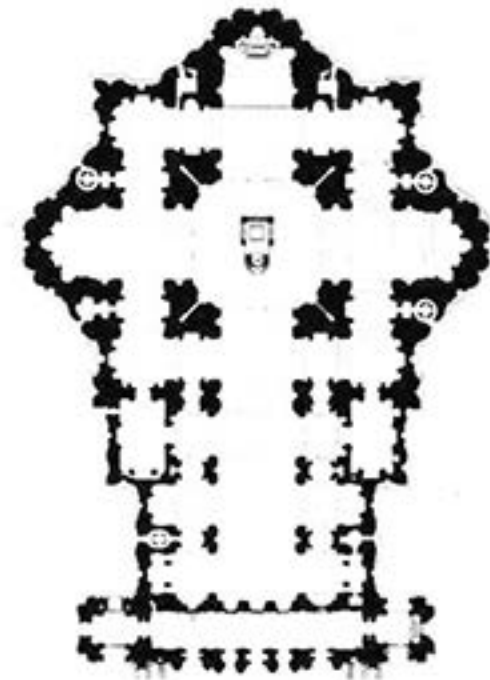
Old St. Peter's  
4<sup>th</sup> century



Bramante  
1506



Michelangelo  
1546 - 64



Maderno  
1607 - 12

St. Peter's Basilica, The Vatican (in Rome) [consecrated 1626]

- The evolution of designs for St. Peter's Basilica
- Bramante and Michelangelo opted for Greek Cross
  - Nave was constructed, converting to Latin Cross



St. Peter's Basilica, The Vatican (in Rome) [consecrated 1626]



- Entrance looking down the nave
- Heavily gilded coffers
- Again, transitional style – too decorated for strictly Renaissance



St. Peter's Basilica, The Vatican (in Rome) [consecrated 1626]





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St. Peter's Basilica, The Vatican (in Rome) [consecrated 1626]

- A view of the BALDACHIN

# Solomonic column

A column with a corkscrew shaft



- While 'invented' in antiquity, its popularity was revived in the Baroque
- Possible origin towards Eastern Europe and/or the Middle East





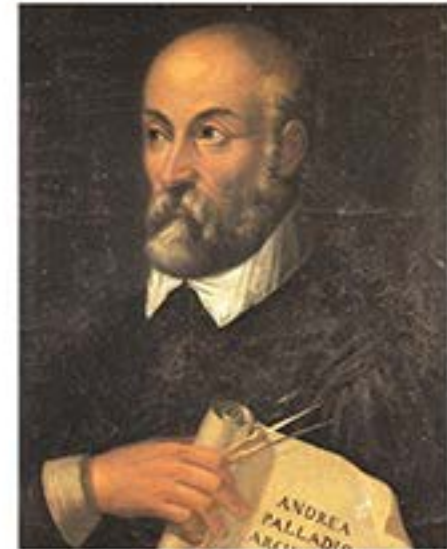
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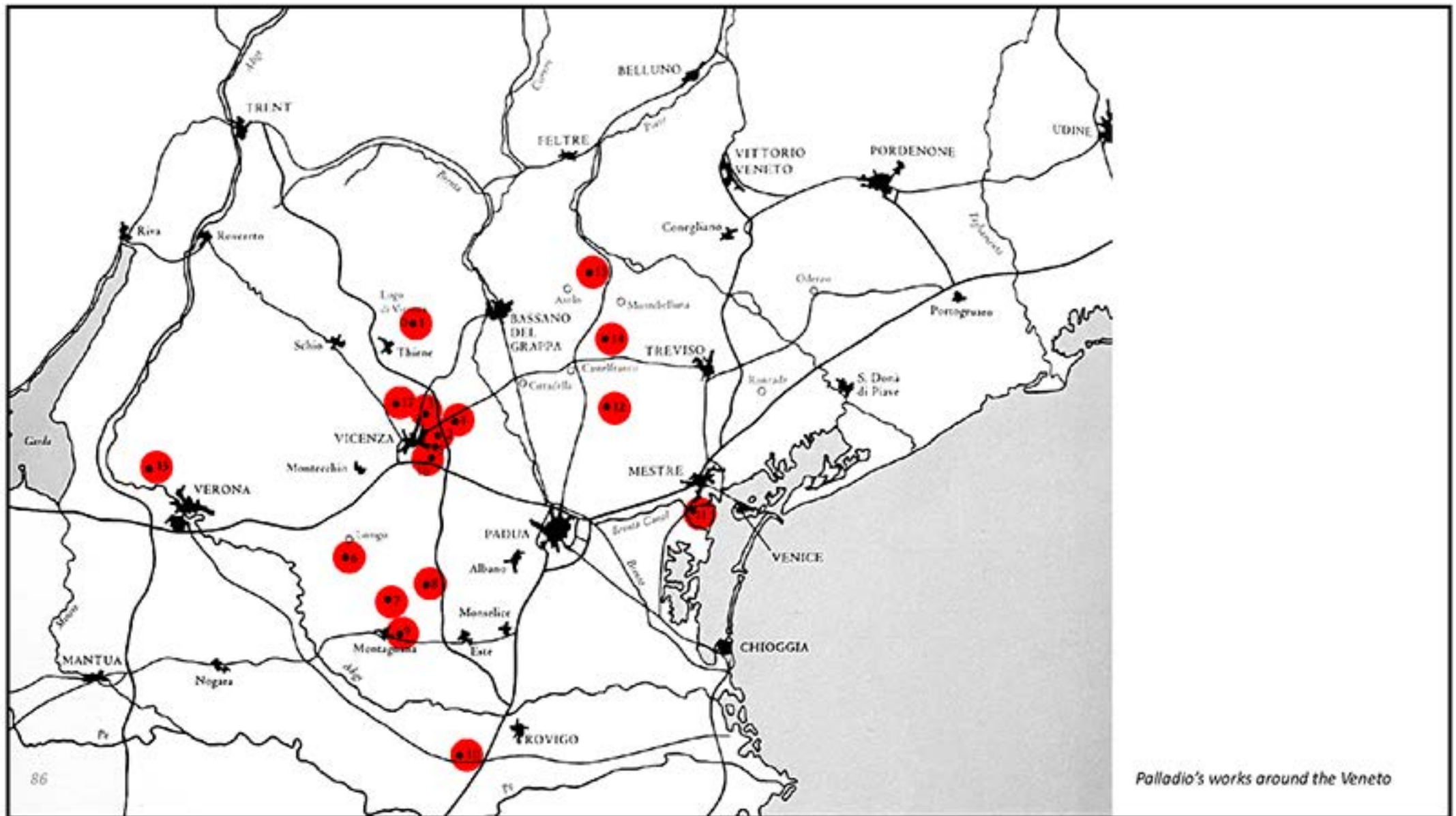
*Early Renaissance*

*High Renaissance*

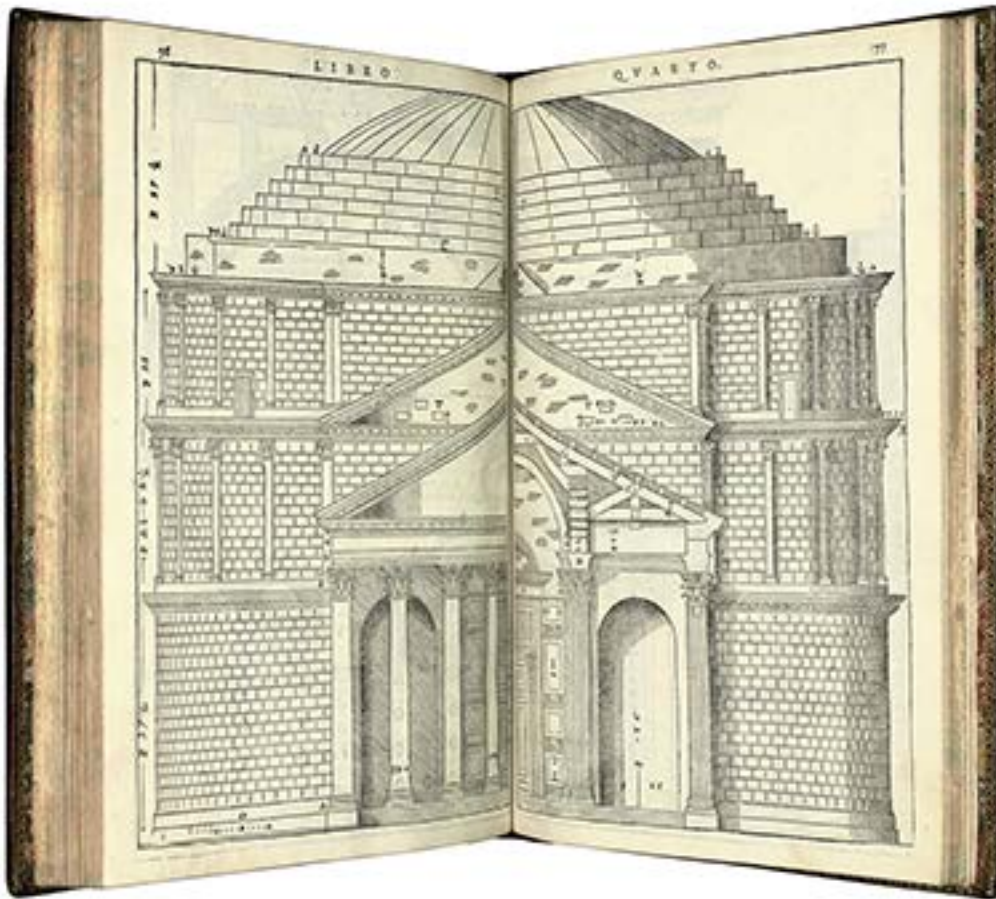
*Late Renaissance*

- Palladio, father of 'Palladian' and 'Neo-Palladian' Styles





- With regards to his built work, his center was undoubtedly Venice, or more accurately, the Veneto area (region in which Venice is in)
- Highly concentrated within a relatively small area



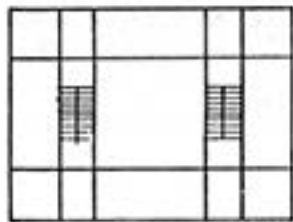
*I Quattro Libri dell'Architettura (The Four Books of Architecture) (1570)*

- The Four Books of Architecture (1570)

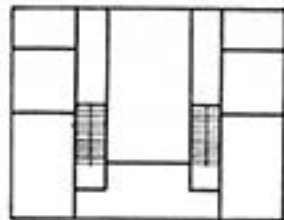


- Outlines his rules of proportion, symmetry
- 1. Materials and Techniques, 2. Country Villas, 3. City Planning, 4. Roman Temples

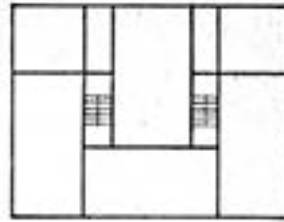




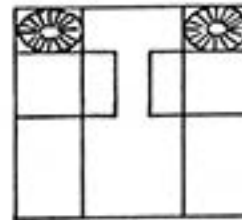
*Villa Thiene at Cicogna*



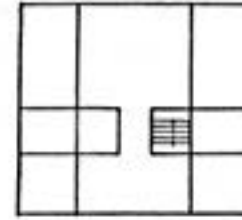
*Villa Sarego at Miega*



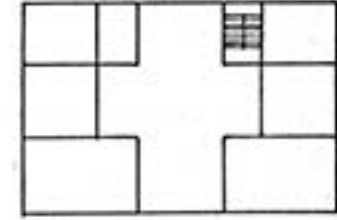
*Villa Poiana at Poiana Maggiore*



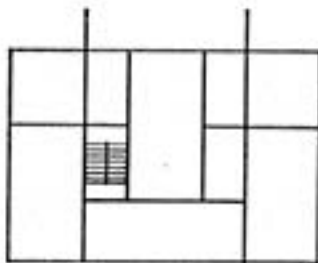
*Villa Pisani at Montagnana*



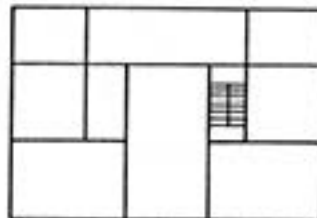
*Villa Emo at Fanzolo*



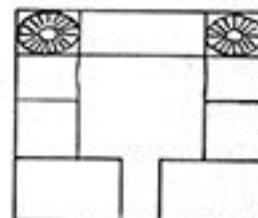
*Villa Malcontenta*



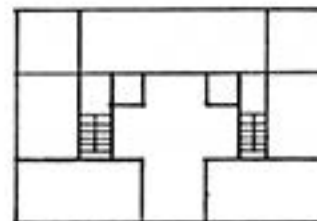
*Villa Badoer at Fratta, Polesine*



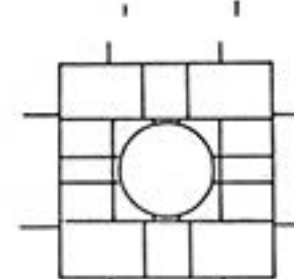
*Villa Zeno at Cessalto*



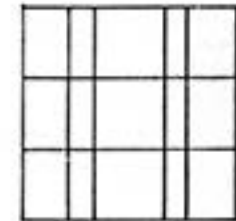
*Villa Cornaro at Piombino Dese*



*Villa Pisani at Bagnolo*



*Villa Rotonda*



*Geometrical Pattern of Palladio's Villas*

- Symmetry, Central space, cornered spaced
  - Stairs either in corners or along inner flanks

- 1. Circular**
- 2. Square**
- 3. The diagonal of the square for the length of the room**
- 4. A square and a third (e.g. 3:4)**
- 5. A square and a half (e.g. 2:3)**
- 6. A square and two-thirds (e.g. 3:5)**
- 7. Two squares (e.g. 1:2)**

**1.6 x 12 = 9' height**  
**2.4 x 9 = 6' height**  
**3.6 x 12 = 8' height**



*Heights of rooms in relation to floor plan ratios*

- Symmetry (bi-, quad-)
- Tetra/Hexastyle
- Elevated entrance(s) for grandeur
- Temple-like façade
- Relatively plain exteriors
- Pediments over doors, clear centralization
- Clear reference to antiquity



- Typical Palladian Style



Right: Palladio, *Villa Almerico Capra Valmarana (La Rotonda)*, Vicenza (1571)  
Left: Thomas Jefferson, *The Rotunda at University of Virginia* (1822 – 26)

- Highly influential throughout Europe and the US

# (tetra)style

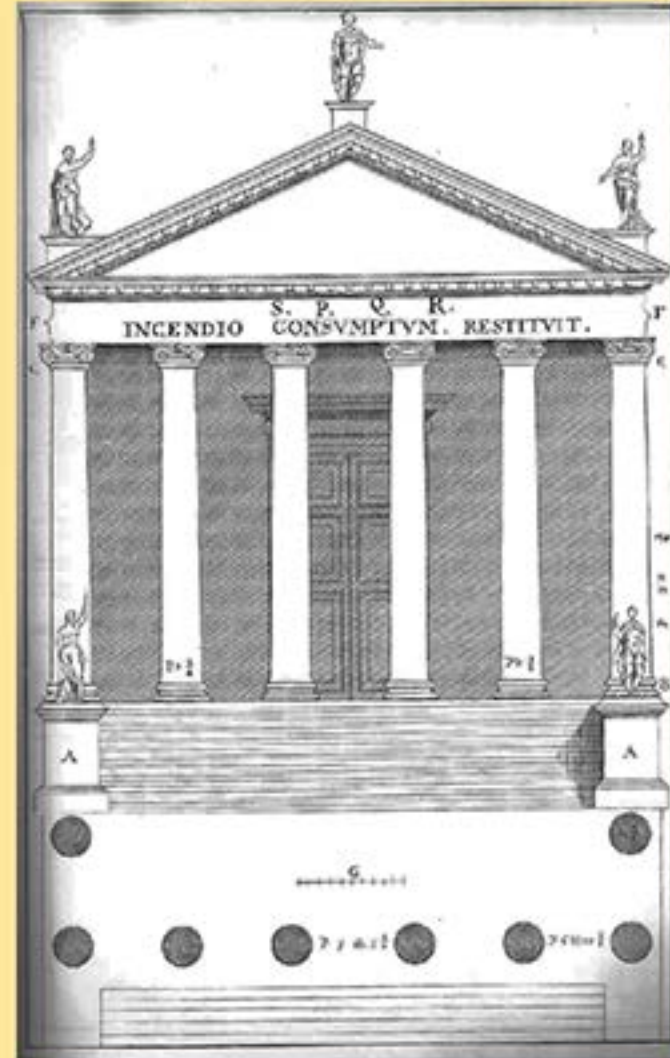
An arrangement of four columns in a row



3. Temple of Victory, Athens. (Abt. 460 B. C.) Tetrastyle.

# (hexa)style

An arrangement of six columns in a row



- DI Style, OCTO style, DECA style

# portico

A platform leading to the entrance of a building which is covered by a roof with supporting columns



Think 'Portal'





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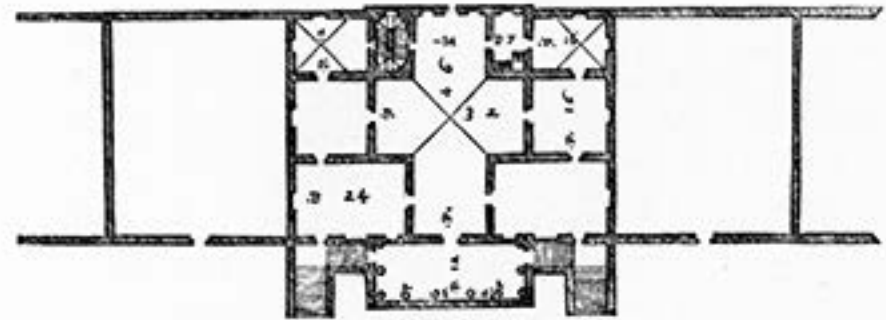
Palladio, *Villa Foscari (La Malcontenta)*, Venice (1559 - 60)

- Known most today for his country villas





Palladio, *Villa Foscari (La Malcontenta)*, Venice (1559 - 60)



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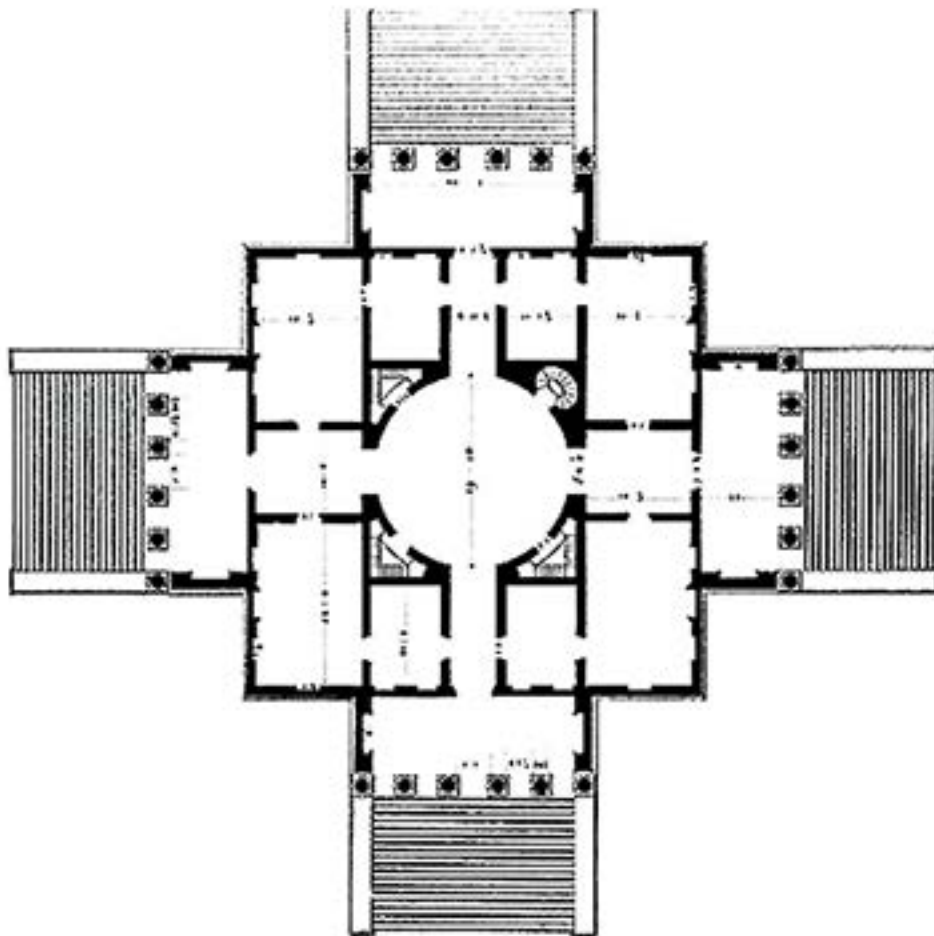


- Think about them like the weekend homes for the wealthy – living in Venice, home in the country for events and socializing









- Mathematical proportions
- Porticos half the width of the length of the main building
- Column entrance half the depth of the core of the building
- Porticos (plus stairs) same floor area as main building





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Palladio, Villa Almerico Capra Valmarana (La Rotonda), Vicenza (1571)





- A relatively small church, directly on the waterfront in Venice
- Known generally as Il Redentore (The Redeemer)



Palladio, *La Chiesa del Santissimo Redentore*, Venice, Italy (1591)

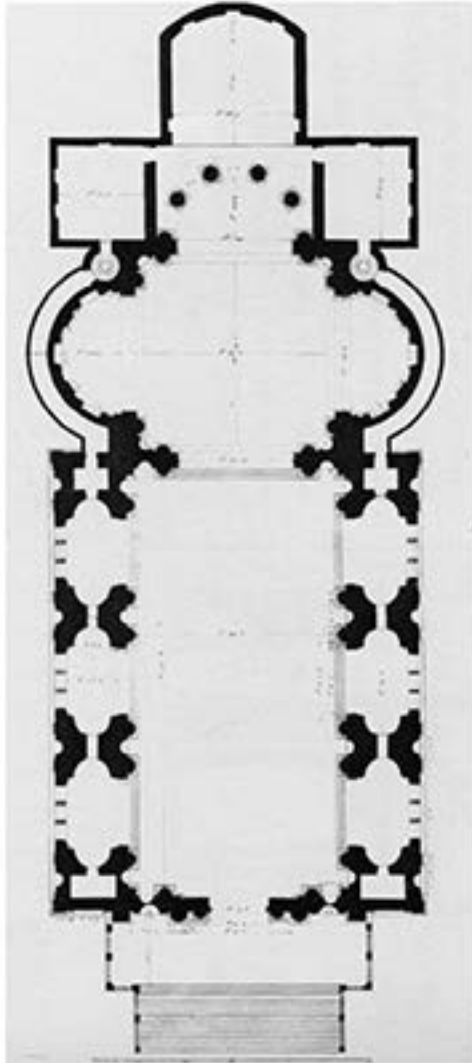


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Palladio, *La Chiesa del Santissimo Redentore*, Venice, Italy (1591)

- Austere interior, white stucco throughout





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Palladio, *La Chiesa del Santissimo Redentore*, Venice, Italy (1591)

- Lateral chapels (instead of aisles)



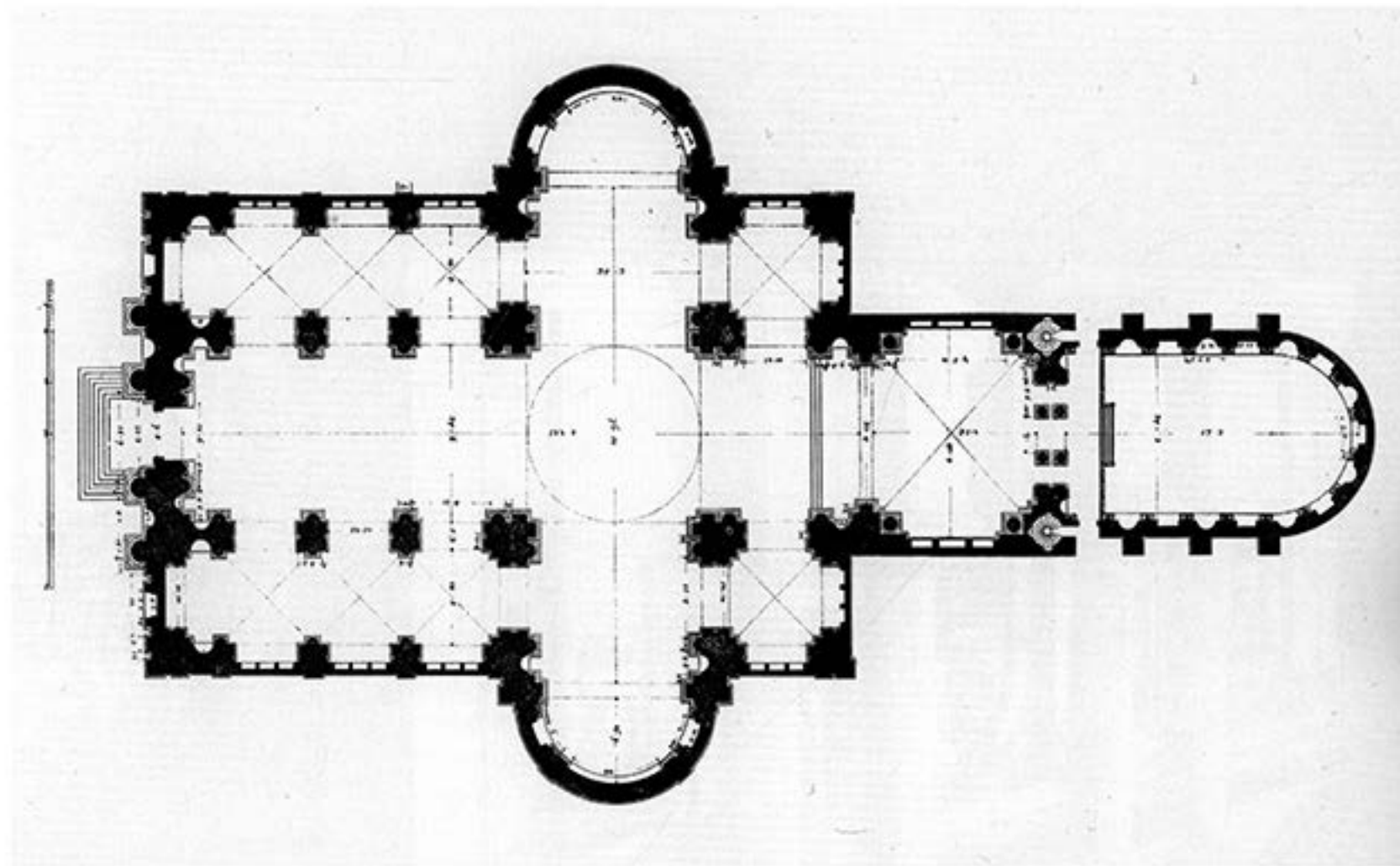
- Palladio commissioned in 1565 to design church, and final construction up until 1610



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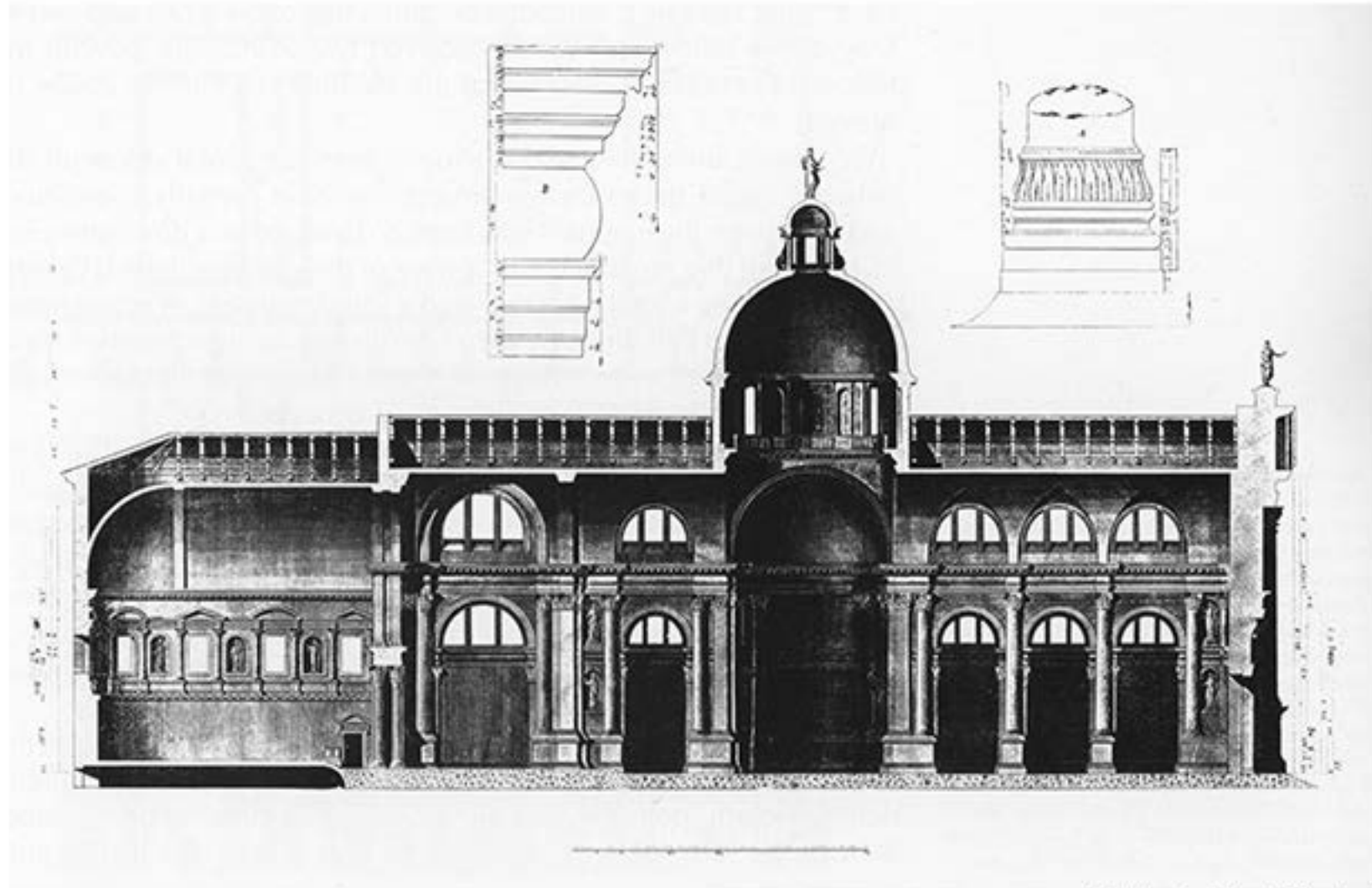
Palladio, *San Giorgio Maggiore*, Venice (1610)



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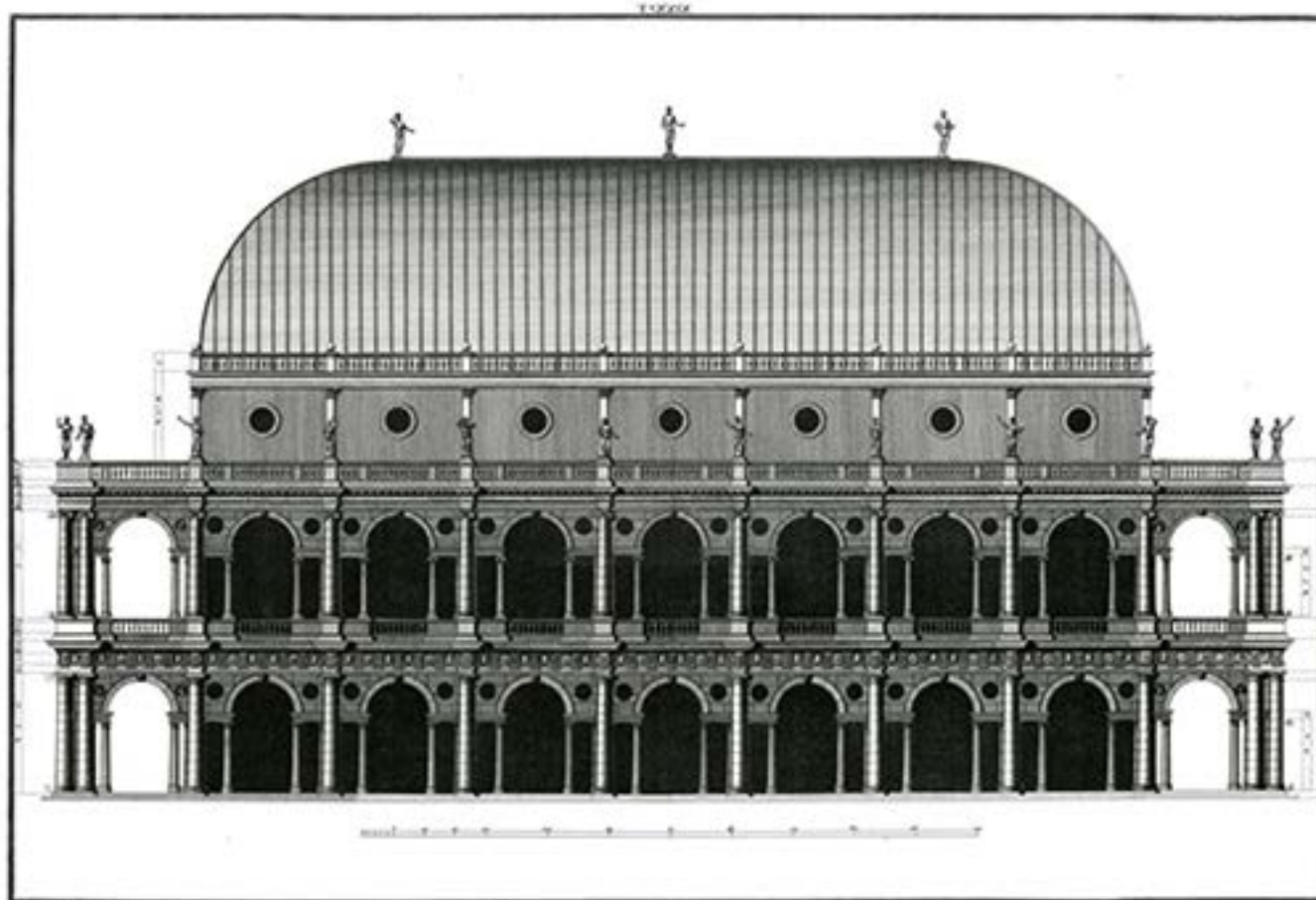
Palladio, *San Giorgio Maggiore*, Venice (1610)

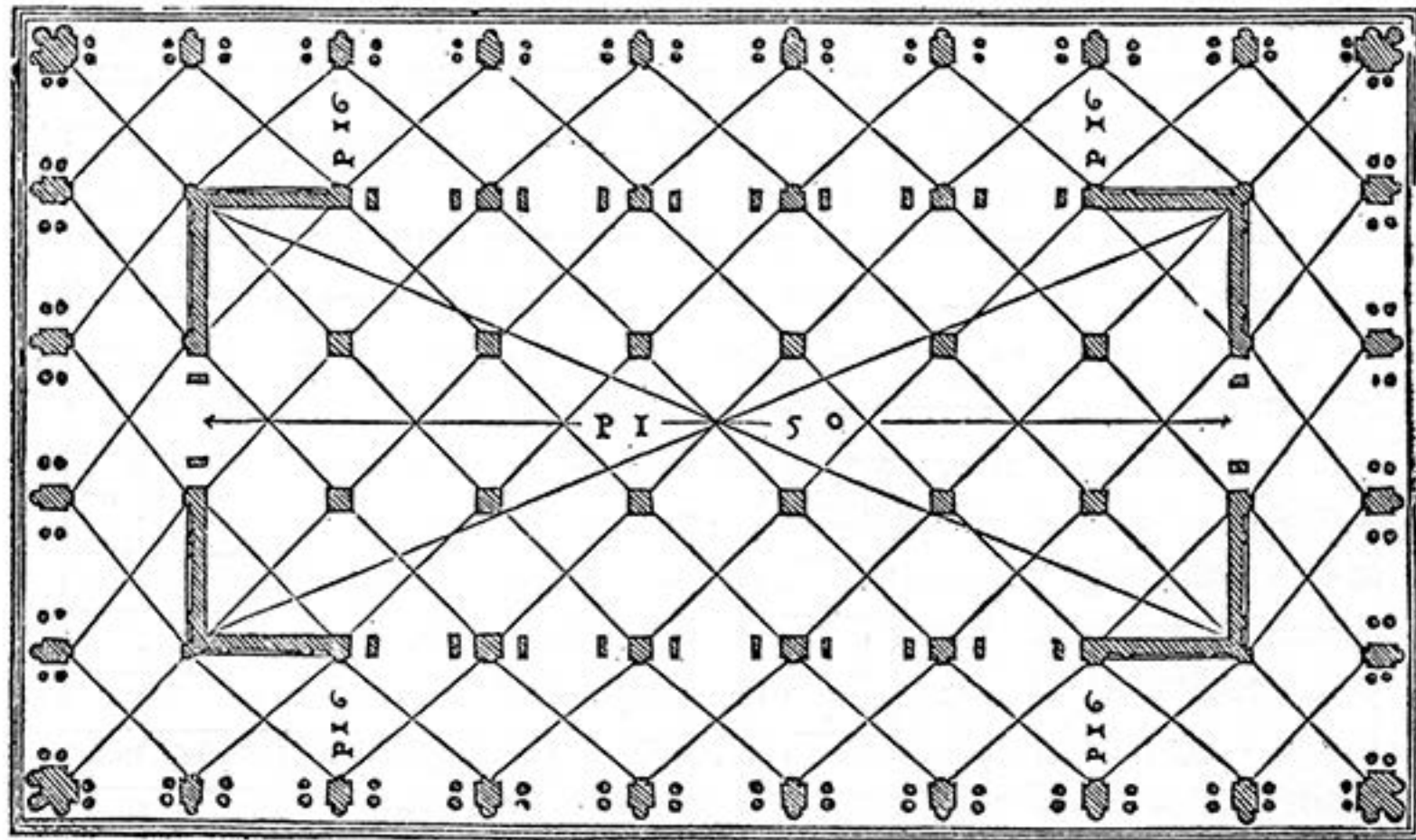
- Echoes from the Gothic, in the highly clustered columns
- But a very simple layout, with transept moved towards the entrance





- Meant to resemble Ancient Rome
- Show stability, not moving up but in balance









Palladio, *Palazzo della Ragione (Basilica Palladiana)*, Vicenza (15<sup>th</sup> century)

- Double half-columns supporting the arches



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Palladio, *Palazzo della Ragione (Basilica Palladiana)*, Vicenza (15<sup>th</sup> century)

- Gave birth to the 'Palladian Window', sometimes called the 'Venetian Window', Serliana
- Palladio not first to use them

## Key comments on the Renaissance

- Quattrocento (“four hundreds”)
- Heavily centered in Florence / Italy
- Emphasis away from awe, and towards proportion, symmetry and balance
- Relational geometry, interrelated parts of construction
  - Clarity of relations, often resulting in cleanliness of lines
- Renewal of forms from Classical Roman antiquity