RENAISSANCE ARCHITECTURE (15TH TO 19TH CENTURY)

Formation and development

I. Renaissance architecture first started in Italy in the early period of 15th century and later on, spread over the countries of W. Europe.
II. The countries which came under direct influence of this style were France, Germany, Belgium, Holland, Spain and England.
III. Religious activities largely affected by the invention of printing.
IV. New countries were discovered such as cape of Good hope by Diaz(1487) and America by Christopher Columbus(1492).
V. New materials were invented such as gun powder, marine's compass, and telescope by Galileo (1564-1642).

Characteristics features

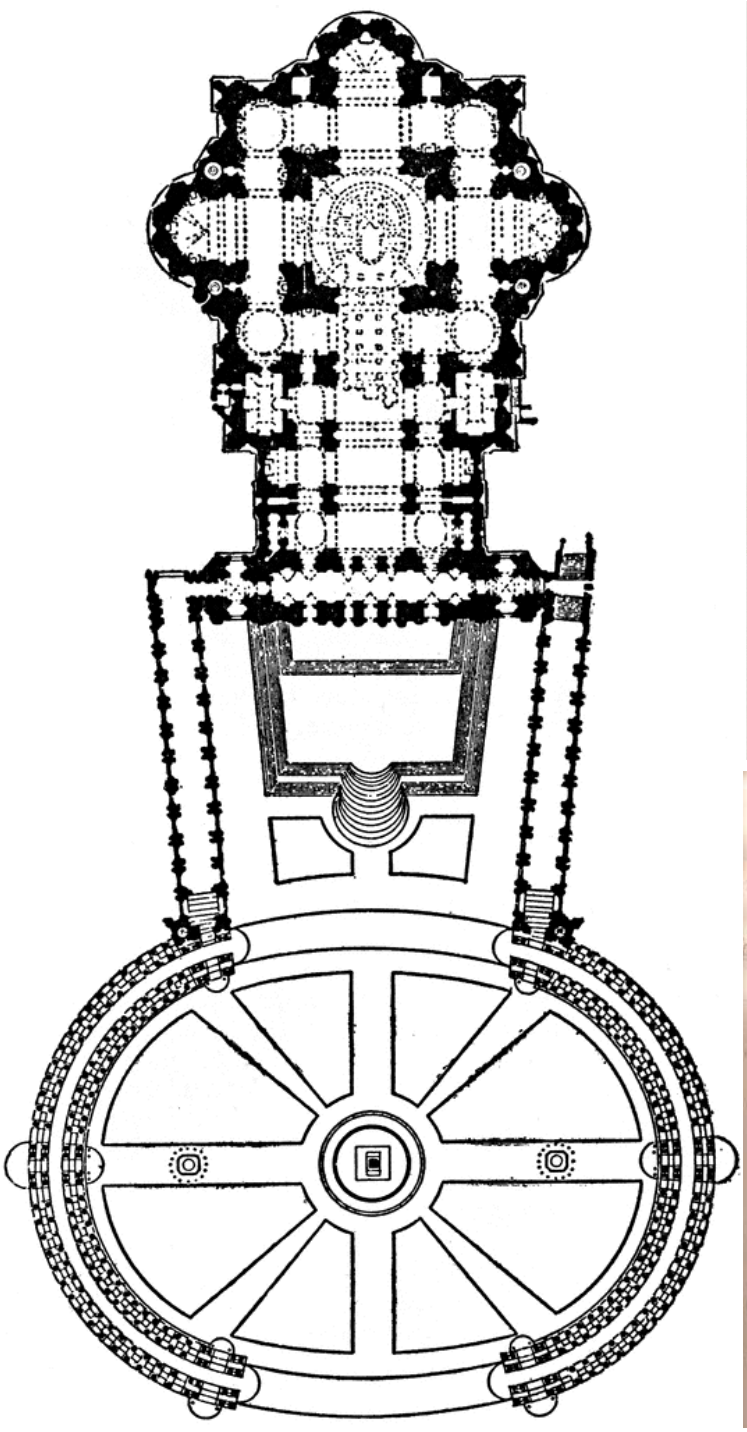
I. It is the revival of the classic Greek and Roman architecture. After the fall of feudal system. People realized the beauty of classic style. Greek, Roman and Italian workmen were employed for reviving the classic architecture. This gave so strong impact on the artist's work that they called the entire period rebirth of, Rinascita or Renaissance.
II. The Renaissance made massive rusticated masonry walls in horizontal courses.
III. Large-sized stone blocks were used in construction.
IV. Wall angles were rusticated to give an appearance of strength.
V. They used semi-circular arches in their construction.
VI. Richly moulded openings were placed in symmetry and were spanned by semi-circular arches.
VII. Doorways were not proportional to the human scale.
VIII. Windows were small and divided by vertical mullions and horizontal transoms but with no painted glass.
IX. The church interiors were planned on square bays covered with barrel and cross-vaulting without ribs, over a central large dome.
X. Naves were divided into few bays thus providing roominess.
XI. Towers were rarely used.
XII. Timber roofs were covered with plaster in the form of stucco.
XIII. Five Orders, Doric, Ionic, Corinthian, Composite and Tuskan were used both constructively as well as decoratively.
XIV. Columns and entablature appeared in novel combination in buildings designed.
XV. Architecture became the art of free expression which further laid the foundation of Modern architecture.
XVI. In this style, design of domes also improved much.

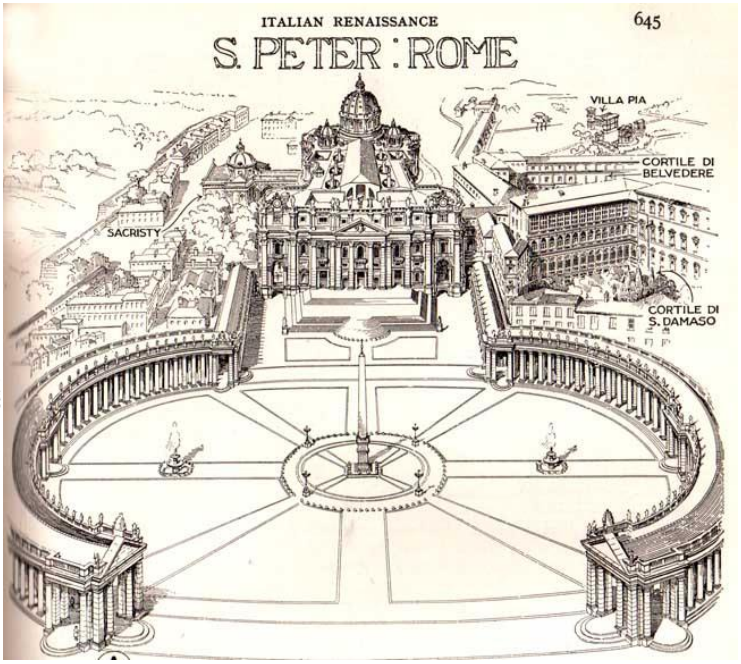
XVII. In this domes were placed over square and polygonal plans and also raised a cylindrical drum enriched by a colonnade. This treatment made the dome to appear as a grand dominating feature like compound dome.
XVIII. Domes were painted with colored frescoes.
XIX. Projecting horizontal cornices, casting deep shadow, together with balcony exhibited horizontally.
XX. Baluster became chief material for decoration.
XXI. Ornamentation was based on classical methology and Pagan subjects.
XXII. Cornices friezes, shafts, pediments were enriched with delicate carvings.
XXIII. Fresco paintings were used for colored mural decoration.
XXIV. Basilica, Palazzo, Church, Villas, Cathedral were the types of building in renaissance architecture period.

Typical Examples

1) S. Peter, Rome (1506-1626).

i. This is the outstanding monumental building of this period.
ii. This building took 120 years to complete under the direction of many architects and Popes.
iii. Length: 730 feet (220m), Width: 500 feet (150m), Height: (max.)452 feet (138m), Dome dia. (outer): 137.7 feet (42m), Dome dia. (inner): 136.1 feet (41.5m)
iv. The old St. Peter's basilica of early fourth century was ruined due to lack of maintenance. Hence it was first planned by Nicholas V and then by Bramante to improve the condition. This was further planned to accommodate the tomb house of Pope Julius II, a renowned pontiff, statesman and great patriot.
v. In 1506, the foundation stone was laid on a peristyle plan, a Greek-cross, and a dome similar to Pantheon with lantern at top.
vi. But in 1536, the plan was changed by Antonio de Sangallo with the addition of vestibule, a high tower and a large central dome.
vii. But ten years later, after his death, Michelangelo again changed over to a Greek-cross with surrounding chapels and apses.
viii. During his period the drum of the cathedral was completed.
ix. In 1564, the dome and lantern based on his plans were completed.
x. In 1554, Vignola added side cupolas and Carlo Maderna changed to Latin-cross.
xi. The Pizza, 198 m wide and surrounded by Tuscan colonnades with 284 columns was completed by Bernini.
xii. The building 213 m long externally has internal length 183 m with 137 m wide transepts.
xiii. The central nave consisting of four large bays is 26 m wide and 80 m long and is covered with huge dome 42 m in diameter rising to a height of 102 m from the ground.





xiv. The transepts and sanctuary have semi-circular apses.

xv. The throne of S. Peter, designed by Bernini, is in the western apse while the Baldachino, 30.5 m high covering the High Altar, stands over the alleged tomb of S. Peter in the crypt, beneath the dome.

xvi. The dome is 2.75 m thick built in two shells of brick-work and supported by four stupendous piers at a height of 76 m from the pavement.

xvii. The piers bear statues 5 m high and the inside of the dome is beautified with colored frescoes and mosaics.

xviii. A lantern is placed at the top of the dome at a height of 138 m from the ground.

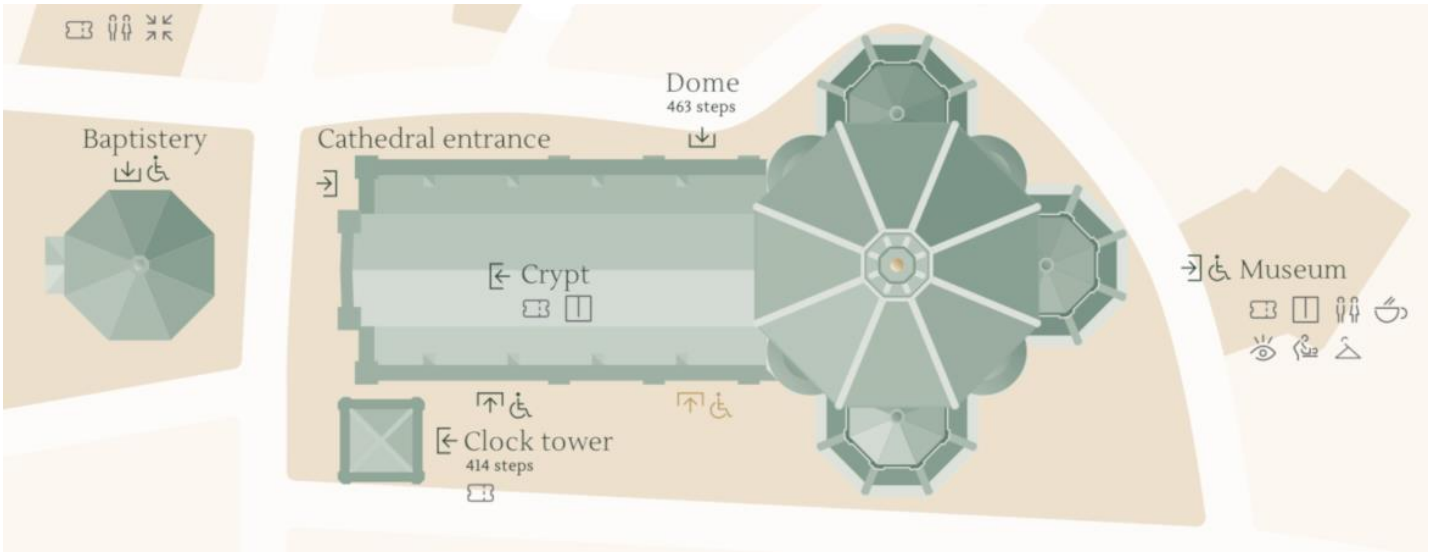
xix. This magnificent building has equally monumental portico 72 m wide by 13 m and vast entrance plaza is 198 m wide surrounded by colonnades with fountains and central obelisk.

xx. Indeed this majestic building with its gigantic facade based on a design of great nobility is amazing, inspiring and is the greatest glory of Christendom.

2) Florence Cathedral, Italy

I. Location: The cathedral complex, located in Piazza del Duomo, includes the Baptistery and Giotto's Campanile.
II. The three buildings are part of the UNESCO World Heritage Site covering the historic center of Florence and are a major attraction to tourists visiting the region of Tuscany.
III. Introduction: Cathedral of Saint Mary of the Flower is the main church of Florence, Italy.
IV. It began in 1296 in the Gothic style to the design of Arnolfo di Cambio and completed structurally in 1436 with the dome engineered by Filippo Brunelleschi.
V. The exterior of the basilica is faced with polychrome marble panels in various shades of green and pink bordered by white and has an elaborate 19th-century Gothic Revival façade by Emilio De Fabris.
VI. The cathedral of Florence is built as a basilica, having a wide central nave of four square bays, with an aisle on either side.
VII. The chancel and transepts are of identical polygonal plan, separated by two smaller polygonal chapels.
VIII. The whole plan forms a Latin cross.
IX. The dimensions of the building are enormous:
- Length 153 meters (502 ft.)
- Width 38 meters (124 ft.).
- Width at the crossing 90 meters (295 ft.)
- The height of the arches in the aisles is 23 meters (75 ft.)
- The height of the dome is 114.5 m.

X. THE DOME: Employed the Gothic pointed arch cross section instead of a semicircular one.
XI. To reduce dead load, he created a double shell as was done in the Pantheon.
XII. Employed 24 vertical ribs and 5 horizontal rings of sandstone, as observed in the



ruins of Roman construction.

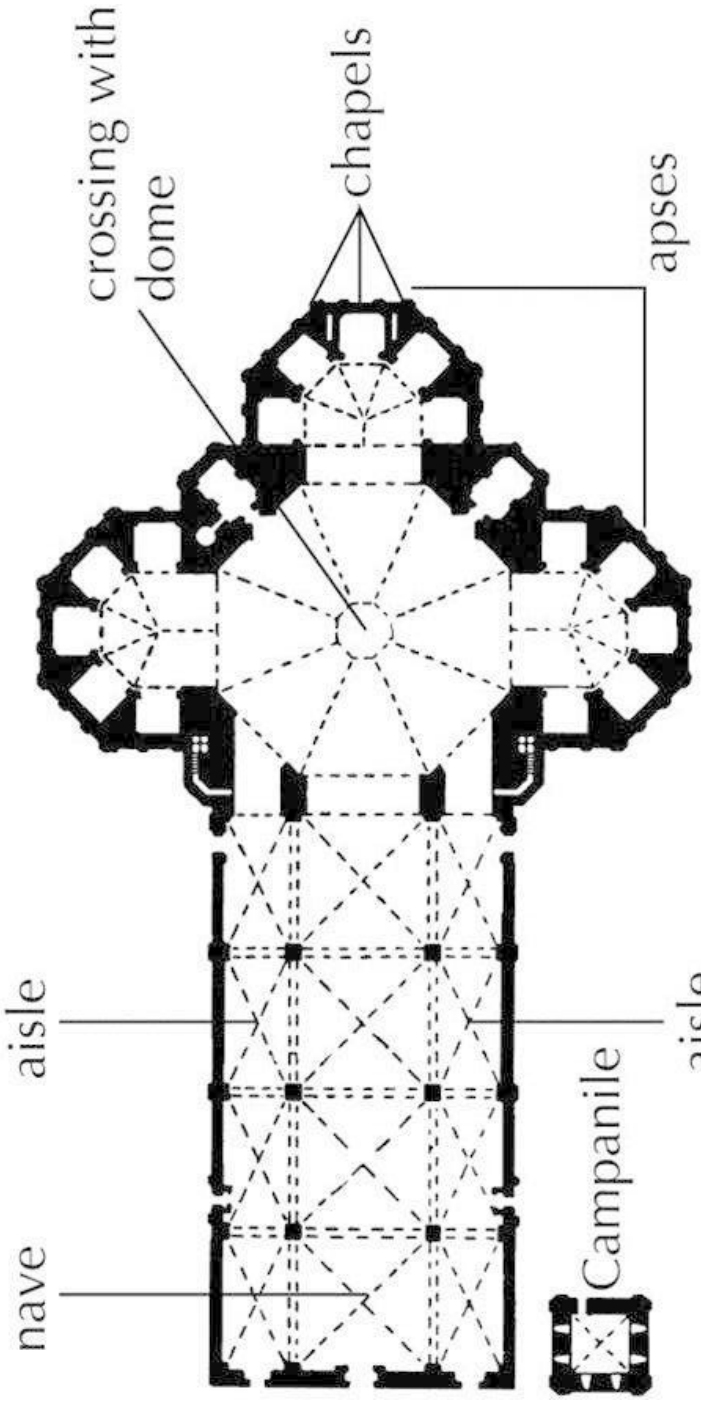
XIII. The cupola on top was a temple of masonry acting as a weight on top of the dome.

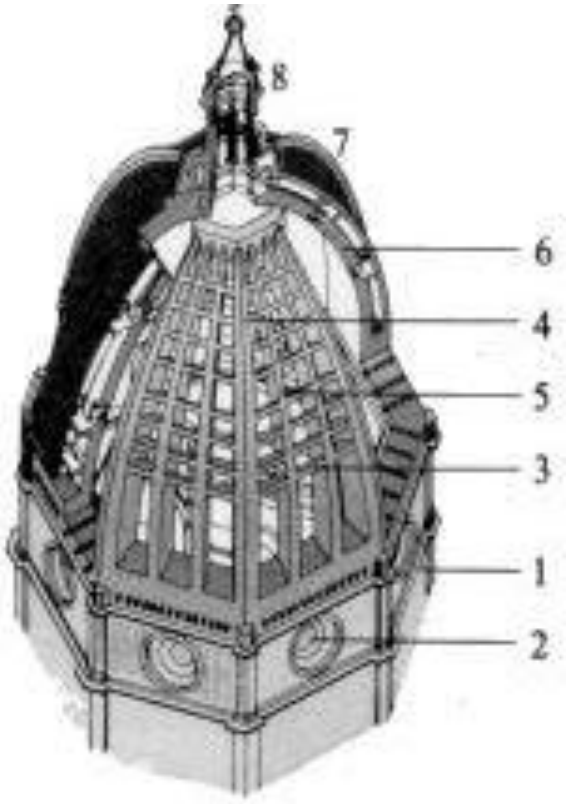
XIV. A wooden framework was laid on which stone strings were attached at 5 segments/levels.

XV. Bricks were laid on top of the framework.

XVI. The Ribs, 4 meters deep, are supported by 16 concealed ribs radiating from center.

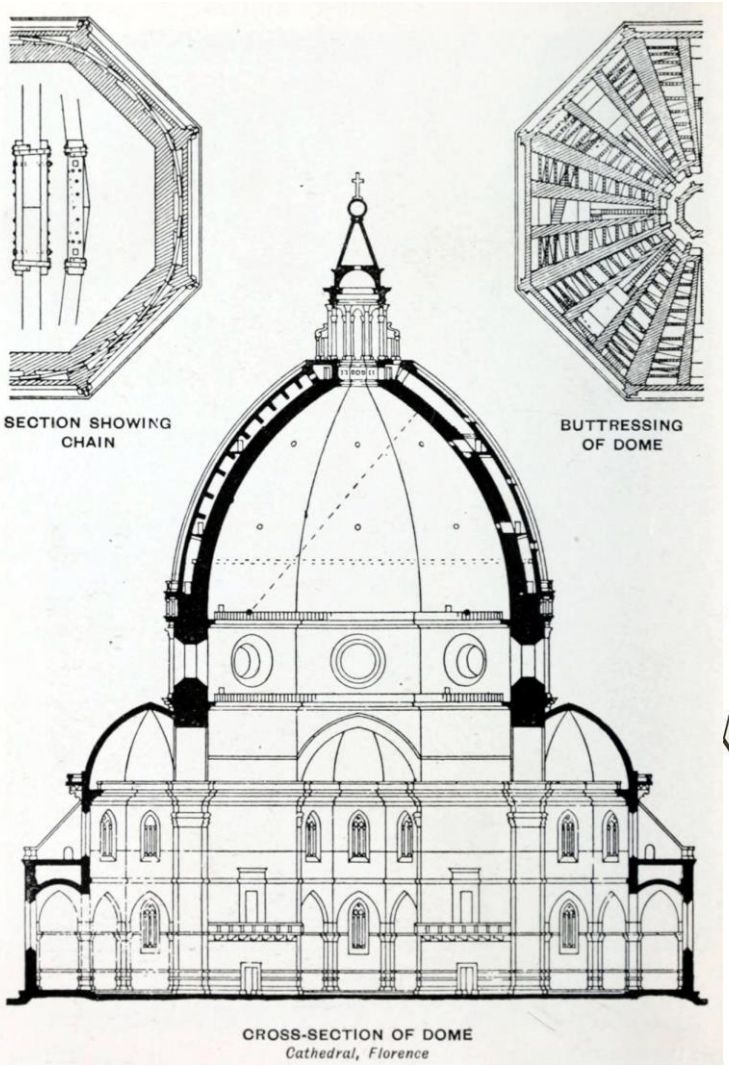
XVII. The ribs had slits to take beams that supported platforms, thus allowing the work to progress upward without the need for scaffolding.

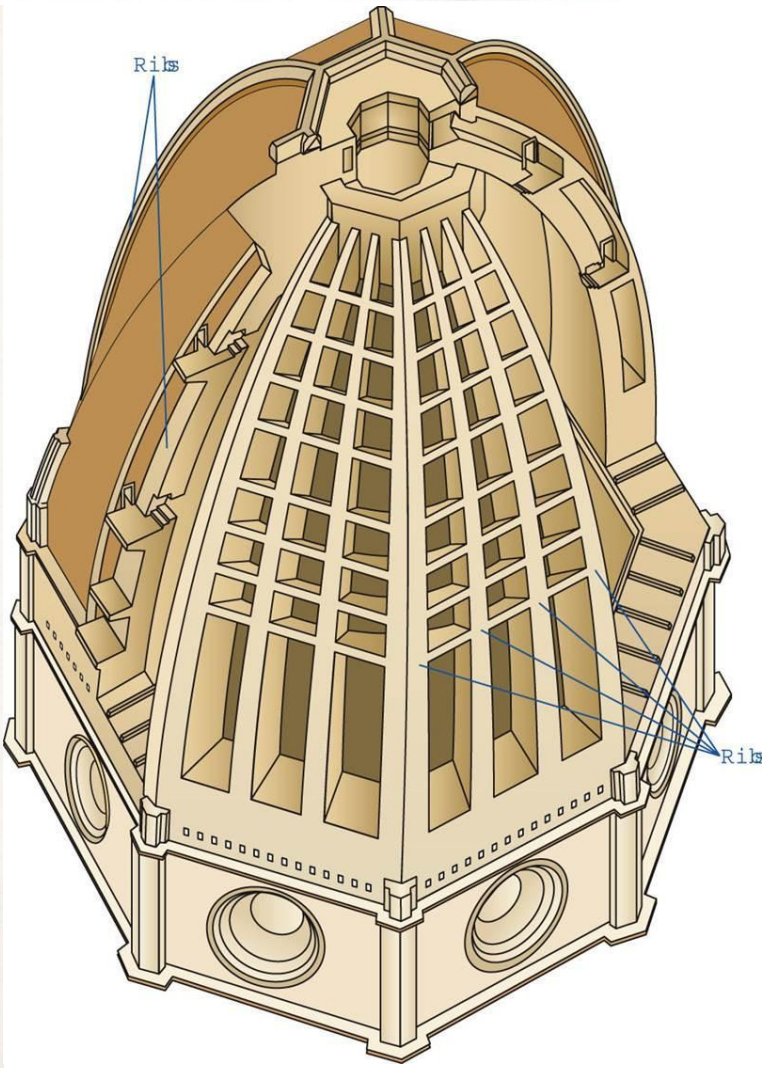




1 octogonal support
2 round windows
3 horizontal connector
4 main ribs
5 secondary ribs
6 inner shell
7 outer shell
8 lantern

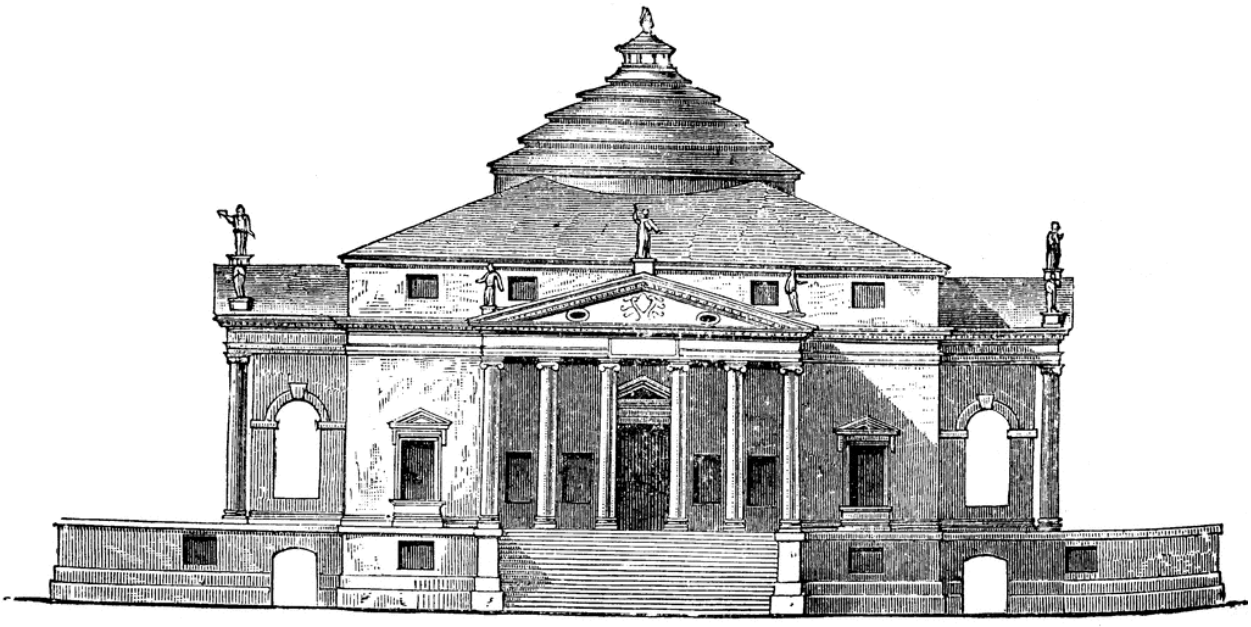
The Dome

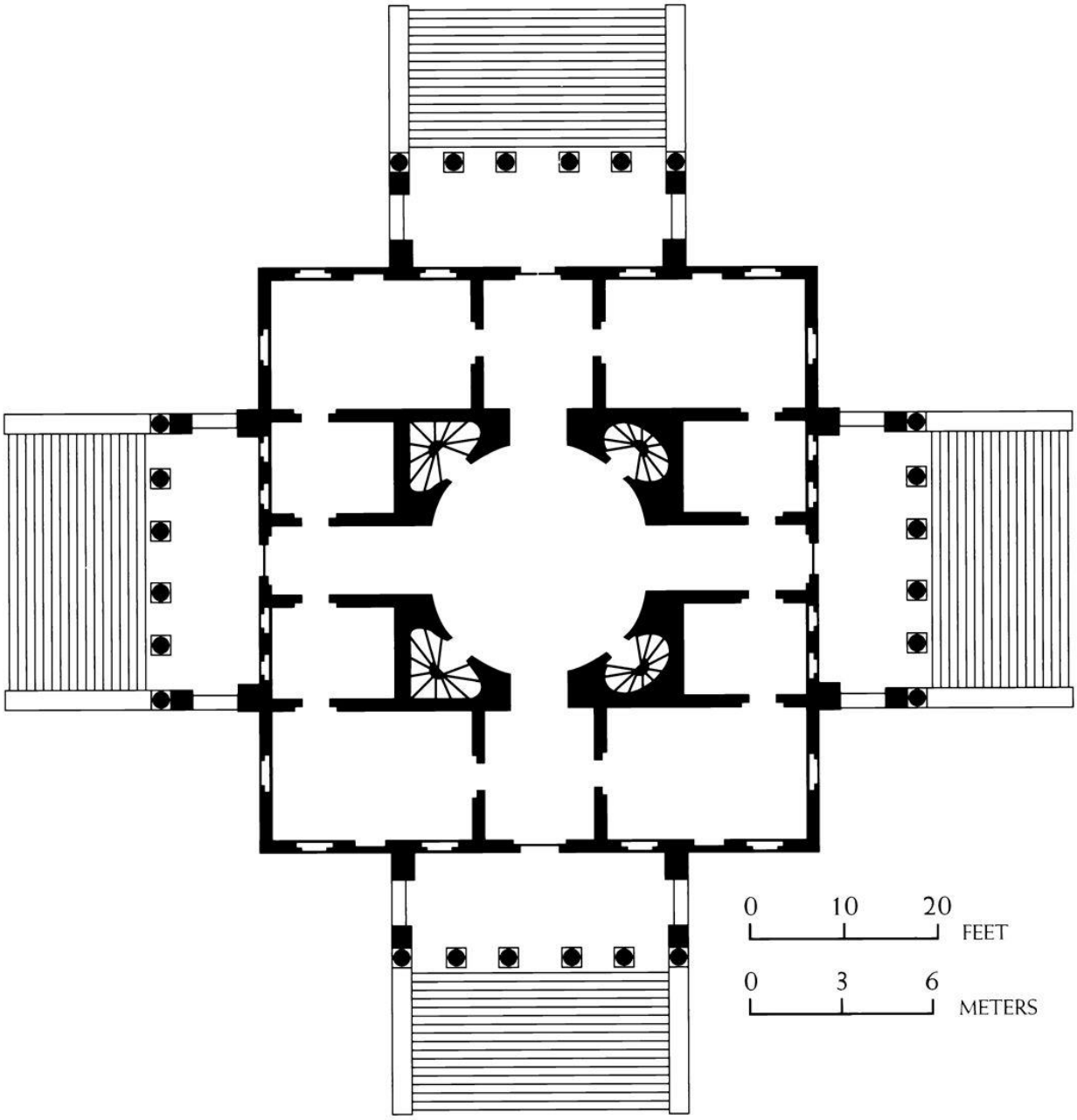

SECTION SHOWING CHAIN
BUTTRESSING OF DOME
CROSS-SECTION OF DOME
Cathedral, Florence


Ribs
Ribs

3) Villa Capra “La Rotonda”

I. Designed by Andrea Palladio.
II. The site selected was a hilltop just outside the city of Vicenza.
III. This sophisticated building was designed for a site which was called "suburban".
IV. Palladio classed the building as a "palazzo" rather than a Villa.
V. The design is for a completely symmetrical building having a square plan with four facades, each of which has a projecting portico.
VI. The name La Rotonda refers to the central circular hall with its dome.
VII. The building is not circular but rather the intersection of a square with a cross.
VIII. Each portico has steps leading up, and opens via a small cabinet or corridor to the circular domed central hall.
IX. This and all other rooms were proportioned with mathematical precision according to Palladio's own rules of architecture.
X. The design reflected the humanist values of Renaissance architecture.
XI. In order for each room to have some sunlight, the design was rotated 45 degrees from each cardinal point of the compass.
XII. The pediments were each supported by six Ionic columns.
XIII. Each portico was flanked by a single window.

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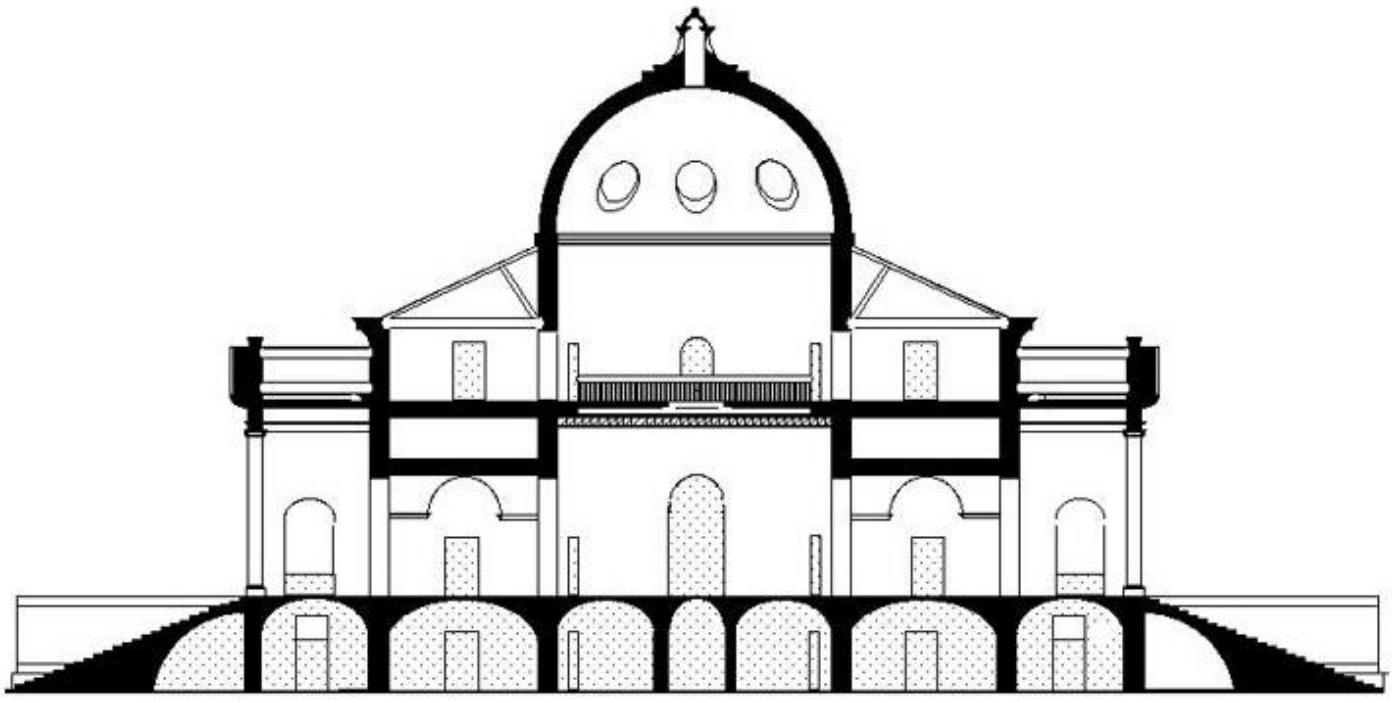
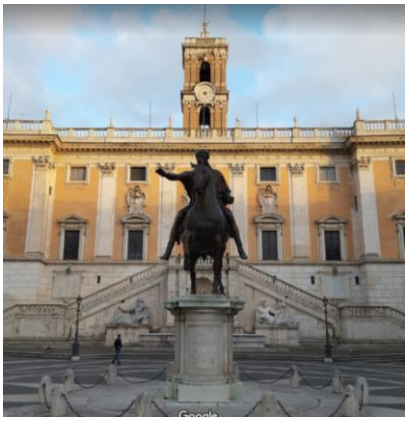


4) <u>Capitoline Hill, Rome</u>

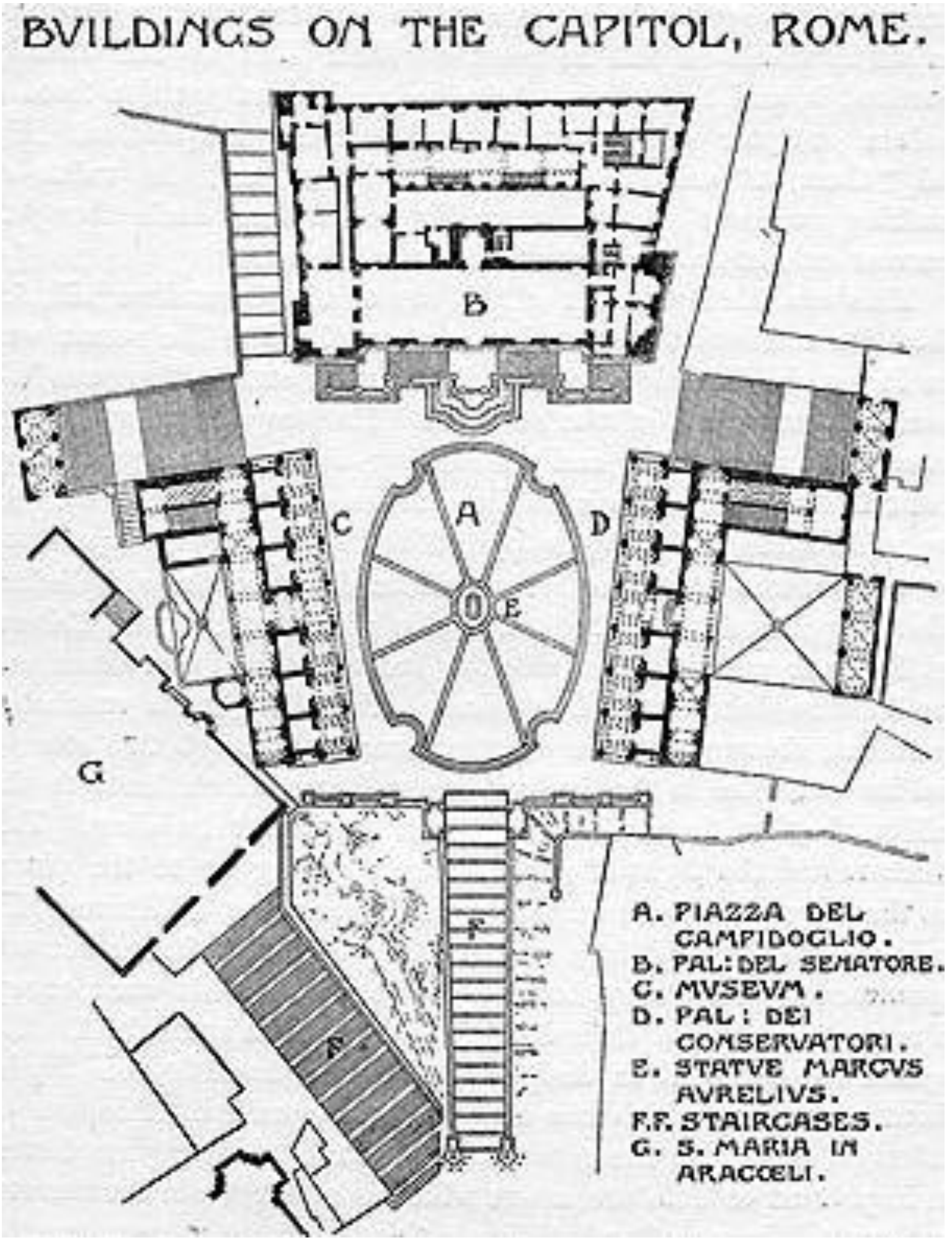
Out of Rome's seven hills, Capitoline Hill is the smallest.
It is the political and religious heart of Rome.
The hill actually has two separate summits. The highest is the Arx to the north and the lower one is Capitolium towards the south.
The space between the two summit is the Asylum and was used as a shelter by refugees in ancient times.
This is now the location of the Piazza Capitoline.
The centerpiece of Capitoline Hill is the masterfully designed.
Palazzos or splendid buildings resembling palaces frame the square on three sides.
Each of their facades were also designed by Michelangelo.
The center building is the city hall of Rome called the Palazzo Senatorio.
The buildings to the right and left of city hall are museums.
One is the Plaza of Conservatori and the other is the Palazzo Nuovo.
In the center of the plaza, there is a statue of Marcus Aurelius on a horse which was inspired by the Emperor Constantine.
The actual bronze statue from the Renaissance era is now located inside the Plaza of Conservatori.
A copy of the statue stands in the place of the original.
The beautiful Cordonata Staircase ascends to Plaza Capitoline.
The stairs were also designed by Michelangelo who made them wide enough so that horse riders could ride up the stairs.
Marble statues of Castor and Pollux are positioned at the top of the staircase while two Egyptian lion statues are located at the bottom.







PLAN


BVILDINGS ON THE CAPITOL, ROME.
B
C
A
D
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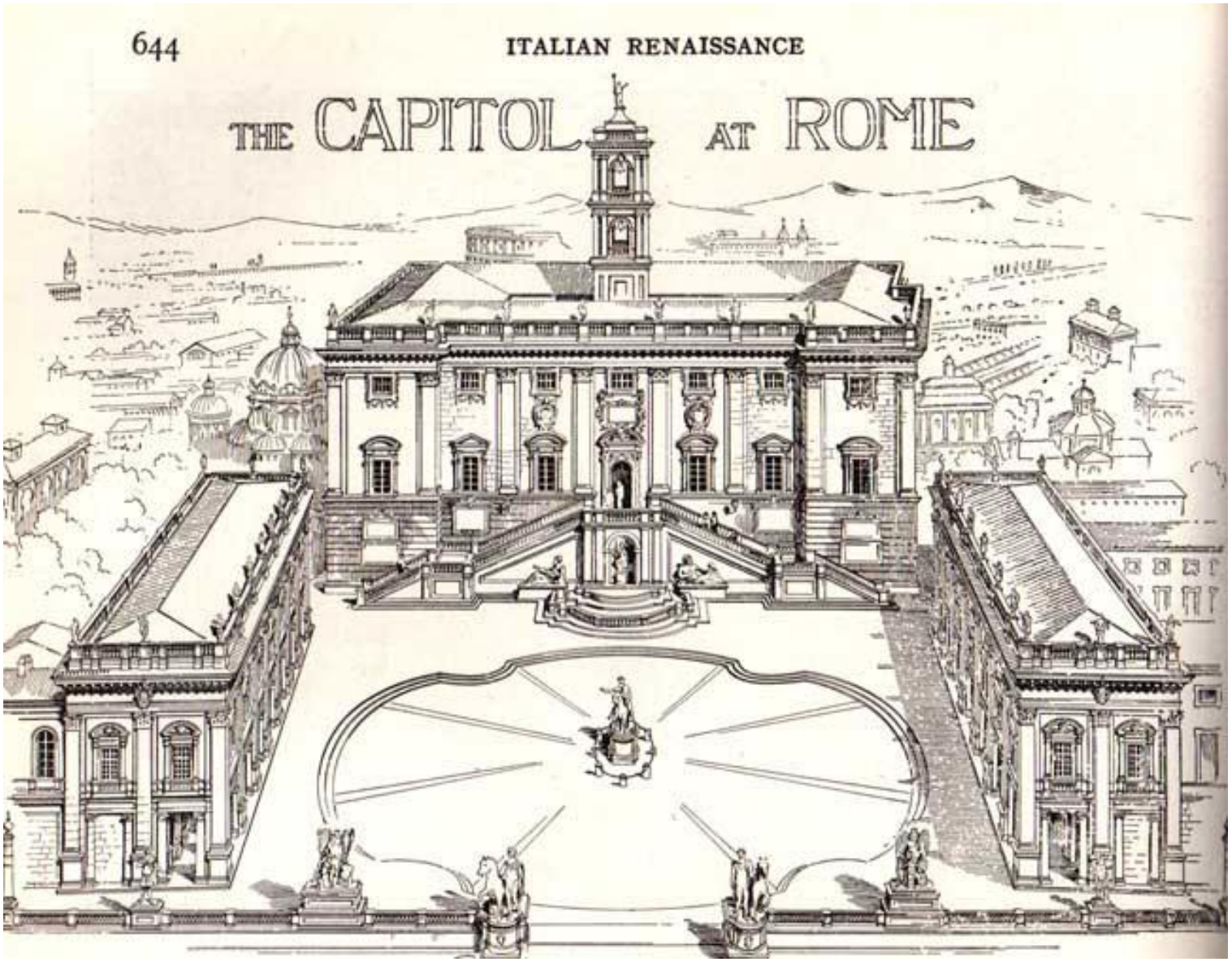
G
A. PIAZZA DEL CAMPIDOGLIO.
B. PAL: DEL SENATORE.
C. MVSEVM.
D. PAL: DEI CONSERVATORI.
E. STATVE MARCVS AVRELIVS.
F.F. STAIRCASES.
G. S. MARIA IN ARACŒLI.



- PERISTYLE: - A row of columns surrounding a space within a building such as a court or internal garden or edging a veranda or porch.
- STUCCO: - Fine plaster used for coating wall surfaces or moulding into architectural decorations.
- VESTIBULE: - An antechamber, hall, or lobby next to the outer door of a building.
- PORTICO: - A structure consisting of a roof supported by columns at regular intervals, typically attached as a porch to a building.
- RUSTICATION: - Rustication is a range of masonry techniques used in classical architecture giving visible surfaces a finish texture that contrasts in with smooth, squared-block masonry called ashlar.

- BALUSTRADE: - A railing supported by balusters, especially one forming an ornamental parapet to a balcony, bridge, or terrace.