Determinants of Modern Design

The University of Memphis
Thomas Provost
2021

01 — Modern Origins

01 — Modern Origins

Classicism

> Vitruvius
>> Orders
>>> Cosmos
>>> & Body
>>>> Symbolic
>>>> Ideal
>>>> Beauty
>>>>> Truth
>>>>> Myth

Enlightenment

> Ancien Regime
> vs. Philosophes
>> Rationalism
>> Reason
>>> Science
>>> Empiricism
>>>> Secular
>>>>> Modern

Figures

Aristotle
Ptolemy
> Geo-centric

Nicolaus Copernicus
Galileo Galilei
Sir Isaac Newton
> New Sciences

Marc-Antoine Laugier
> Primitive Myth

Buildings

Claude Perrault
> Louvre Facade (1668)
>> Paris, France

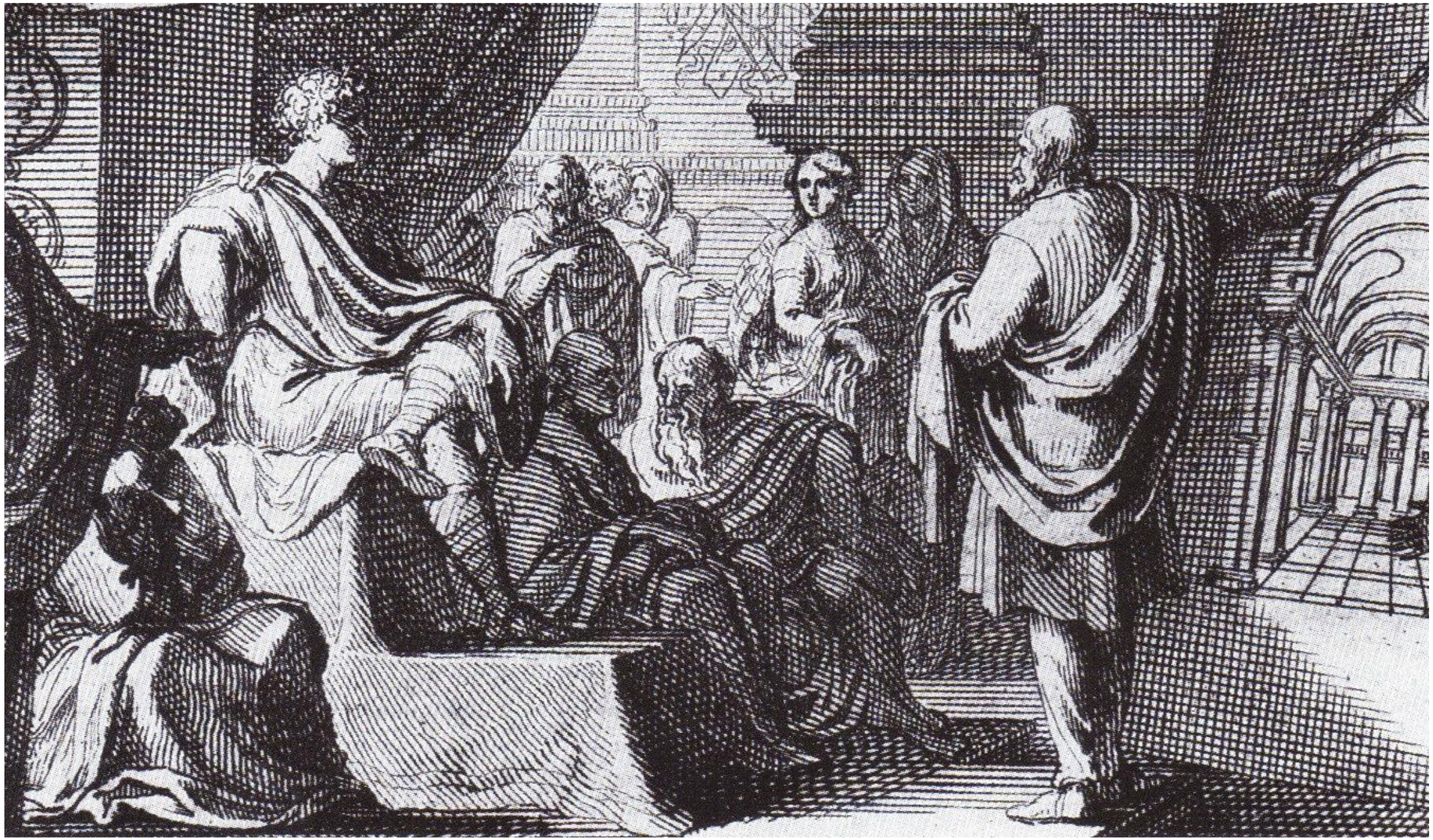
J-G Soufflot
> Sainte-Genevieve (1755)
>> Paris, France

Balthasar Neumann
> Basilica of the Fourteen Holy Helpers (1742)
>> Bavaria, Germany

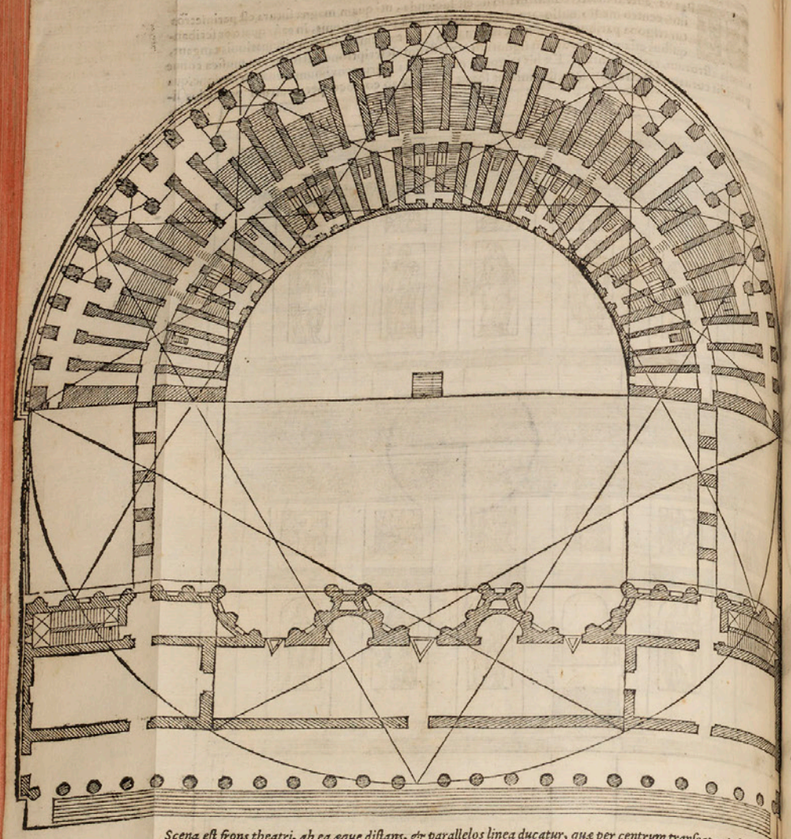
What is Modern
is not Classical.

De Architectura

Vitruvius
70-80 BCE — 15 BCE

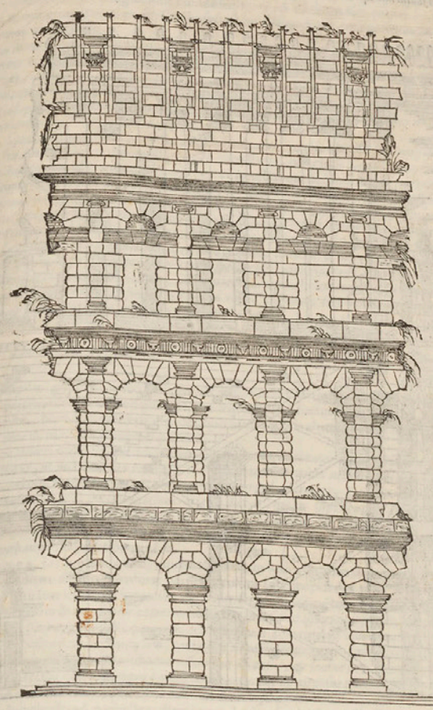


THEATRI LATINORVM VESTIGIVM.



Scena est frons theatri, ab ea æque distans, & parallelos linea ducatur, quæ per centrum transeat, & separet, disiungatq; pulpitum, idest locum altorem in quo actores recitant, ab orchestra, idest ab eo loco, qui in medio theatri planus erat, in quo subsellia senatorum collocabantur. Aliàs orchestra choro, & musicis dabatur, scena uero actoribus. cum igitur in circulo quatuor trigona descripseris, quæ angulis circumferentiam tangant, & eam in duodecim partes æquas diuidant, acceperis unum ex lateribus pro scenæ fronte, & illi latenti æquidistantem lineam duxeris, quæ per centrum ducatur, ea linea, quæ & diametros erit separabis proscenij

nij pulpitum ad orchestrã. Figuræ uero trigonorum, 12, in circulo ab Astrologis inuenta est, ut concentus siderum per ea designentur, quemadmodum nos primo libro satis aperte docuimus. Cæterum Græcorum theatra a Latinorum theatris differebant, quoniam Græci in medio plano saltatores, & chorum esse uolebant, ideo orchestra sic a saltationibus dicta, maior erat, pulpitum uero minus. sed Romani quoniam in pulpito omnia agebant, ideo ampliori spatio pulpitum constituebant, quod ex descriptione erit manifestum.



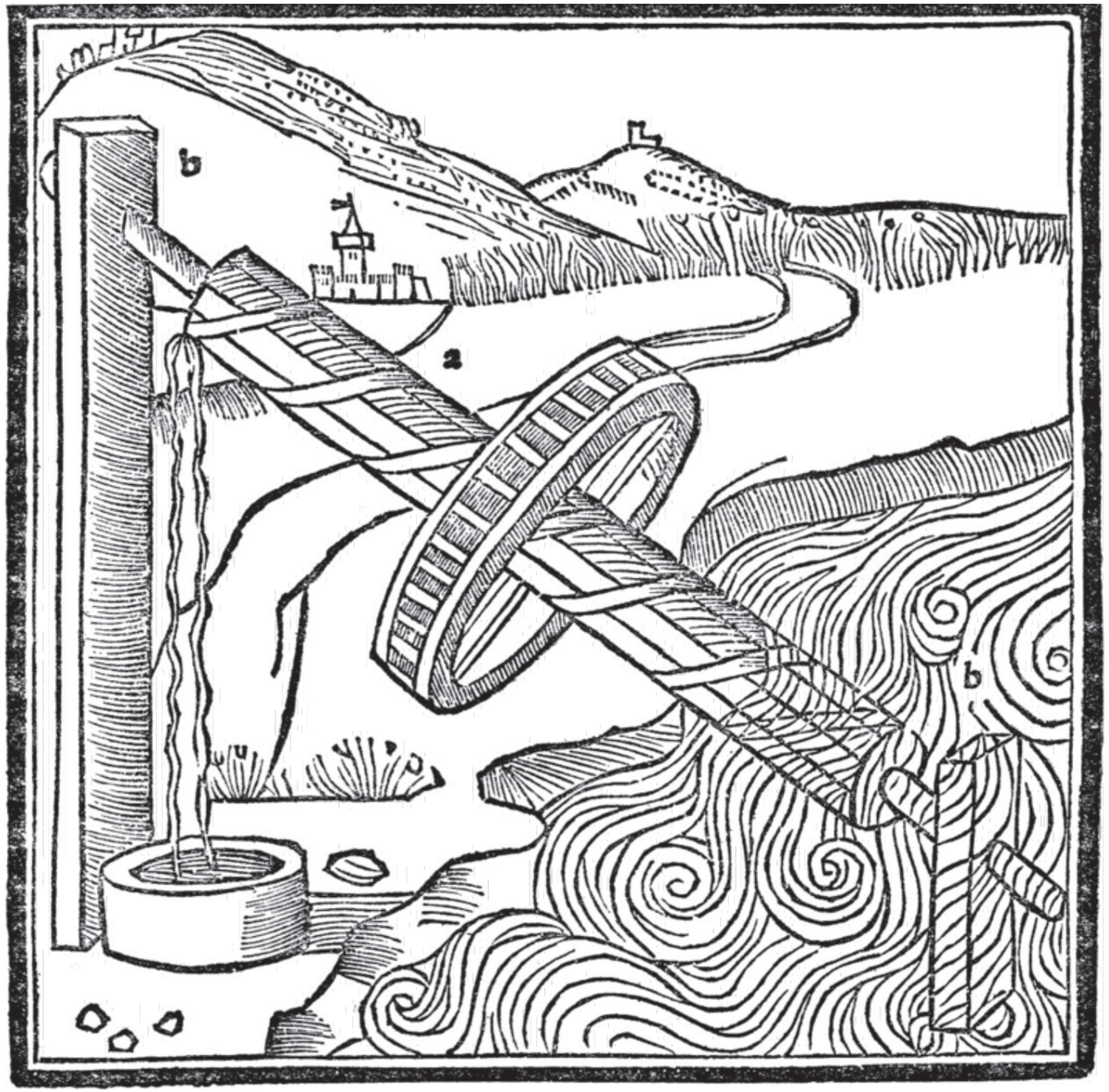
Et eius pulpiti altitudo sit ne plus pedum quinque, uti qui in orchestra sederint, spectare possint omnium agentium gestus.

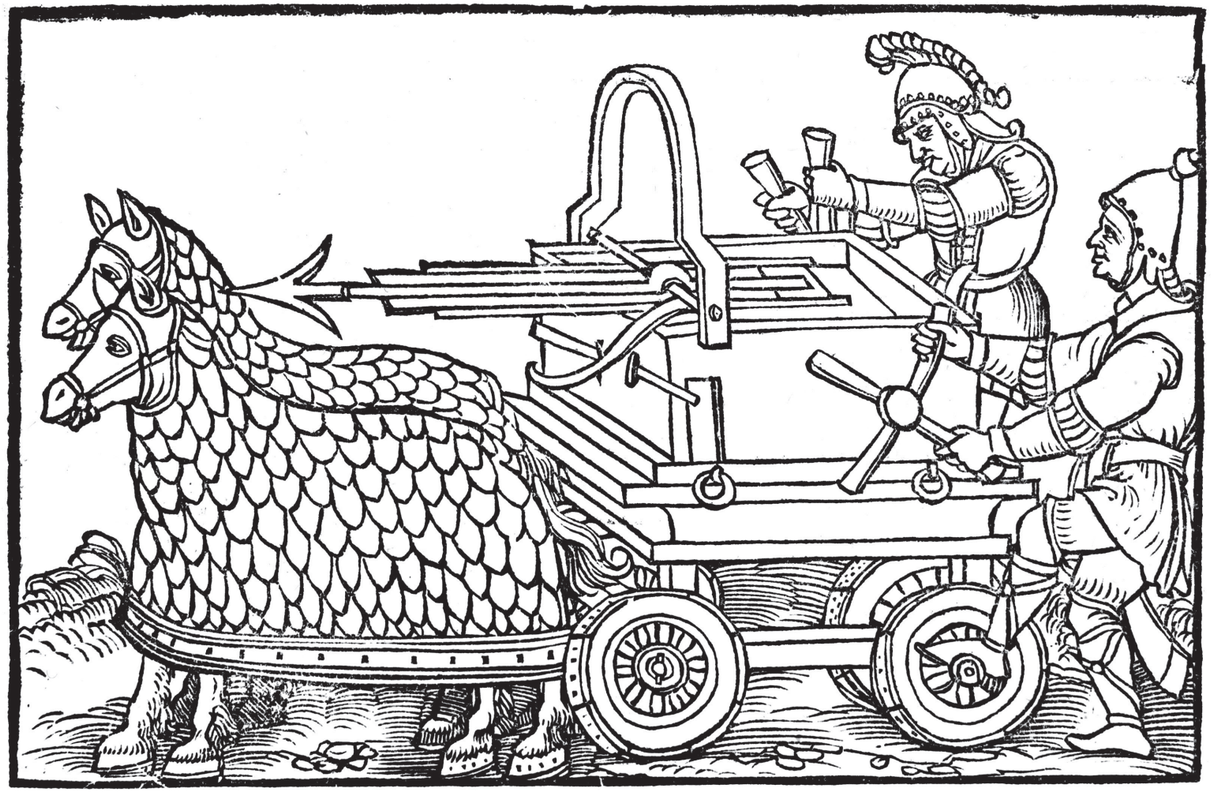
Planum pulpiti orchestræ plano altius, usque ad hemicycli centrum perueniebat, altitudoq; eius erat pedum quinque, ut senatores ab orchestræ plano commode agentium gestus inspicerent. Vt igitur orchestra inferior pulpito, sic proscenium, qui locus erat ante scenam, uel scena pulpito altior erat.

Cvnei spectaculorum in theatro ita diuiduntur, ut anguli trigonorum, qui currunt circum curuaturam circinationis, dirigant ascensus, scalasq; inter cuneos ad primam præcinctionem.

Constituta pulpiti altitudine, docemur, quæ partes, & quomodo ascensus, scalæq; sunt dirigendæ. Theatra gradationes

De Architectura, or the Ten Books on Architecture
https://www.gutenberg.org/files/20239/20239-h/20239-h.htm

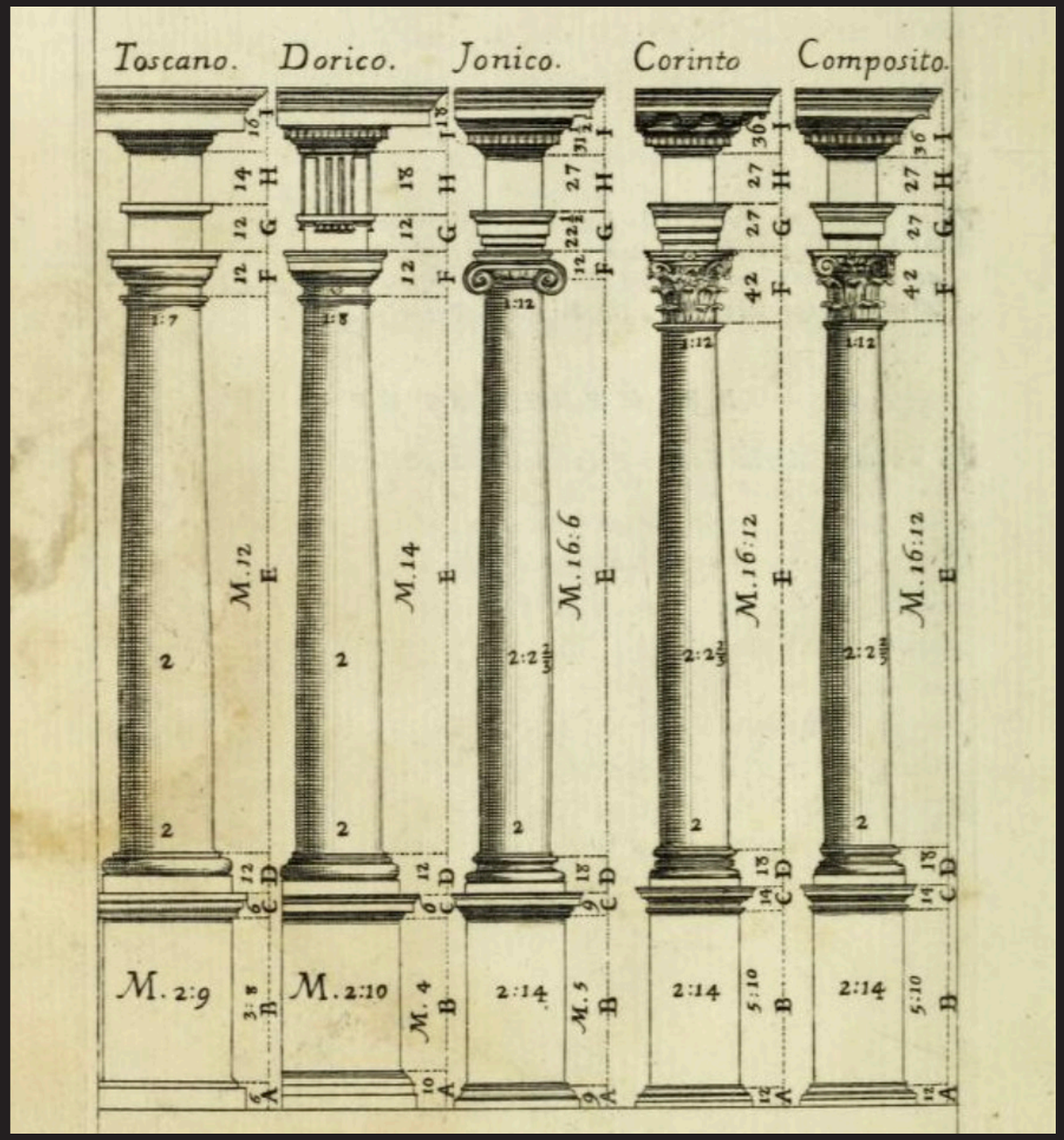




Archimedes' water-screw & ballista (from a Renaissance reproduction)

Temple of Apollo

Treasury, Athens



Dovendosi trattare delli cinque ordini di Colonne, cioè Toscano, Dorico, Jonico, Corinto, e Composito, si pongono tutte in principio con i loro piedestalli, e con le loro cornici, per dare una notizia generale di quanto a parte a parte minutamente sarà descritto.

A. Bassamento del piedestallo.

B. Fusto del piedestallo.

C. Cimasa del piedestallo.

D. Base della colonna.

E. Fusto della colonna.

F. Capitello della colonna.

G. Architrave.

H. Fregio.

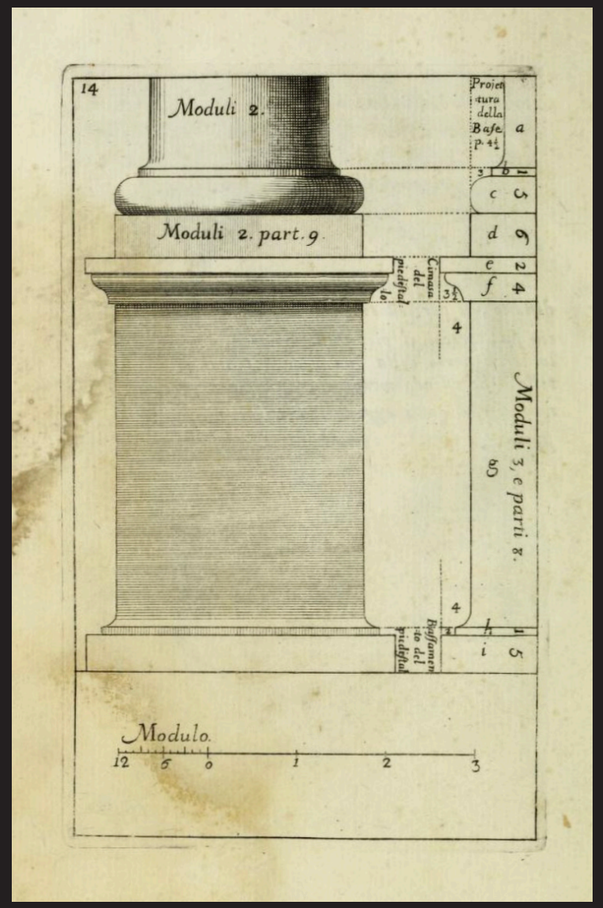
I. Cornice.

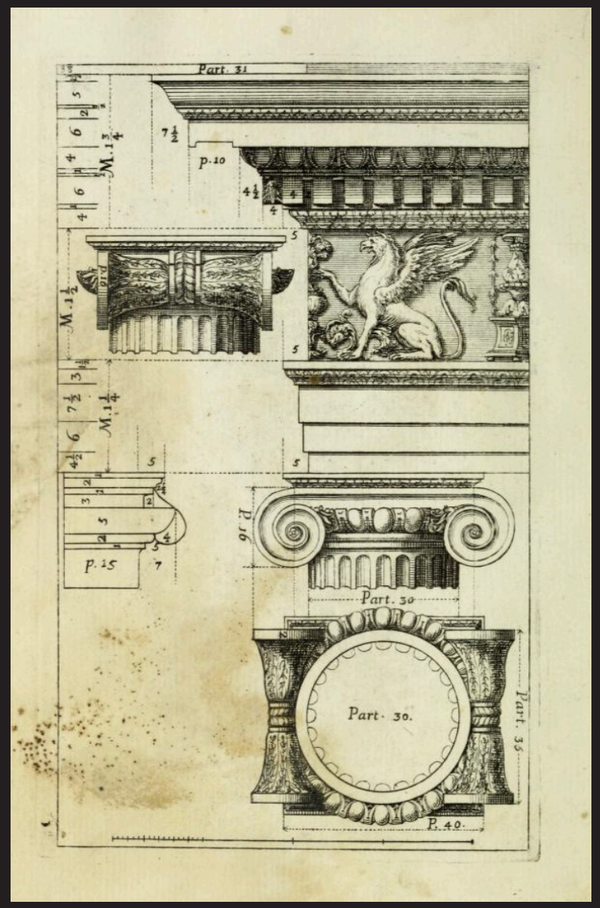
Il modulo, che serve all'ordine Toscano, ed al Dorico, si divide in 12 parti, e quello, che si vuol formare per l'ordine Jonico, o per il Corinto, ovvero per il Composito, essendo questi tre ordini composti di membri più gentili, si dovrà dividere in parti 18, come a suo luogo si dirà.

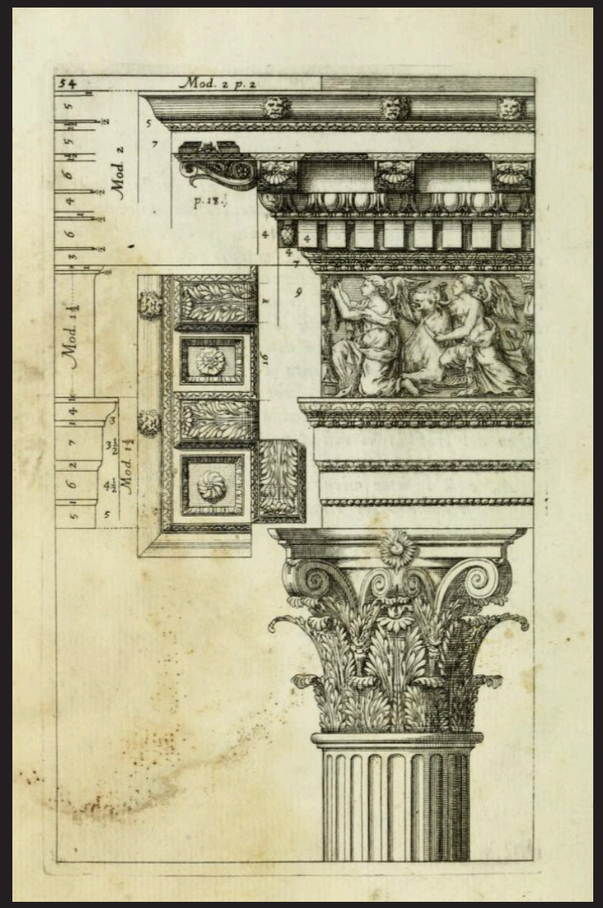
Già è noto a tutti, che il detto modulo è una misura adattabile a tutte le grandezze per essere sempre la metà della grossezza, o sia diametro di quella Colonna, che si determina disegnare, ovvero alzare in fabbrica.

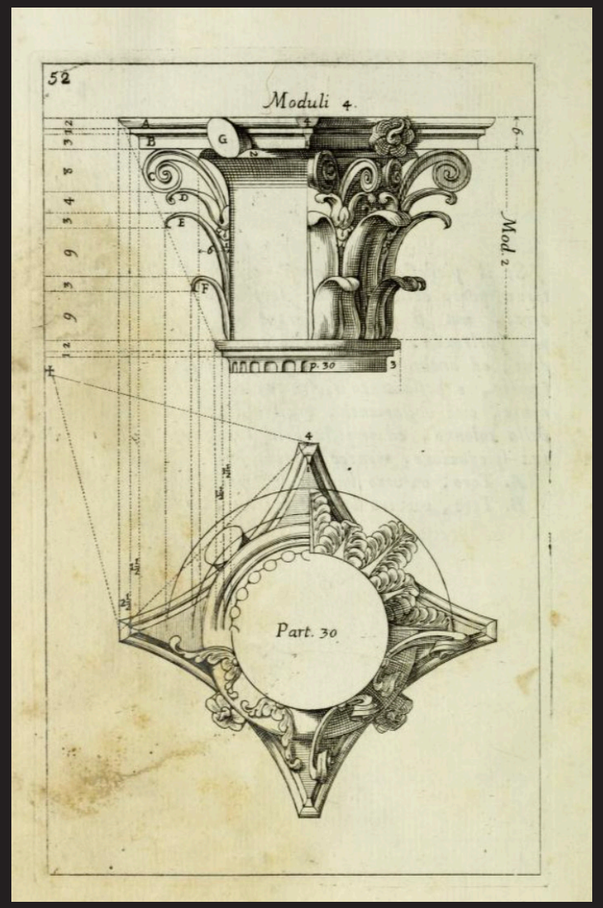
Non

Vignola — Rules of the Five Order of Architecture
https://archive.org/details/regoladellicinqu00vign_0/page/n6/mode/2up



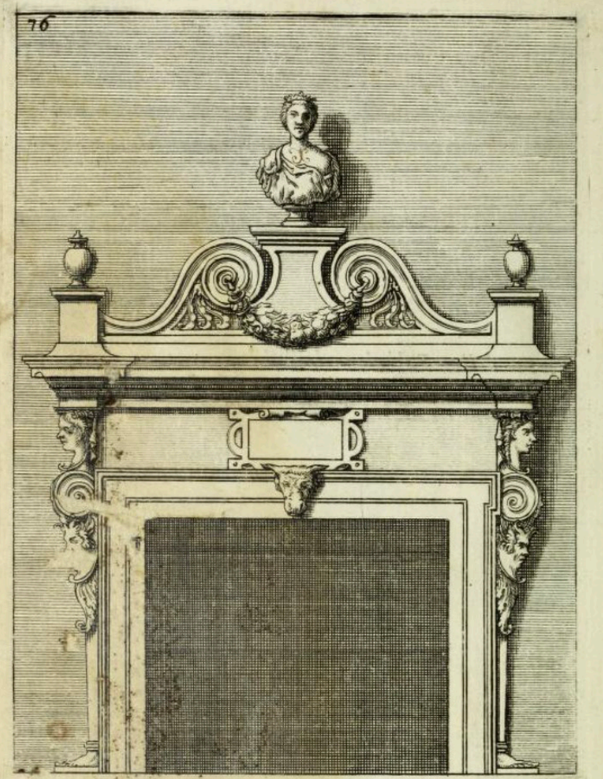






Vignola — Rules of the Five Order of Architecture

ge/o 26507 Ars 321-A

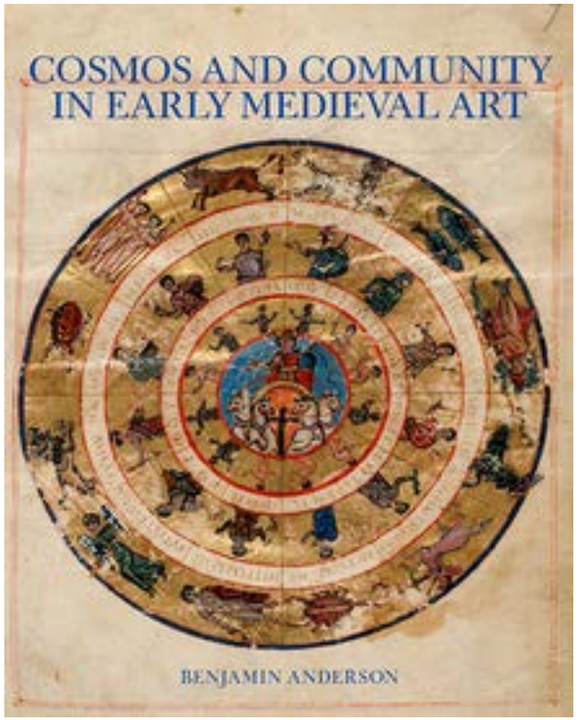


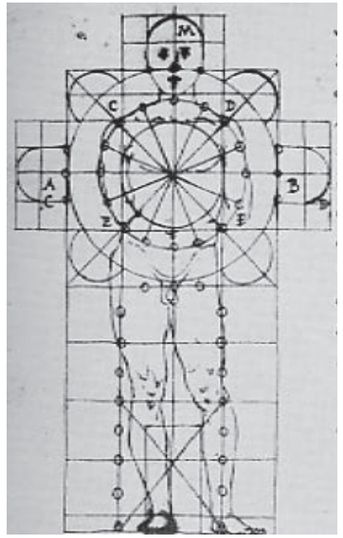
Camino nel Palazzo Farnese in Roma.

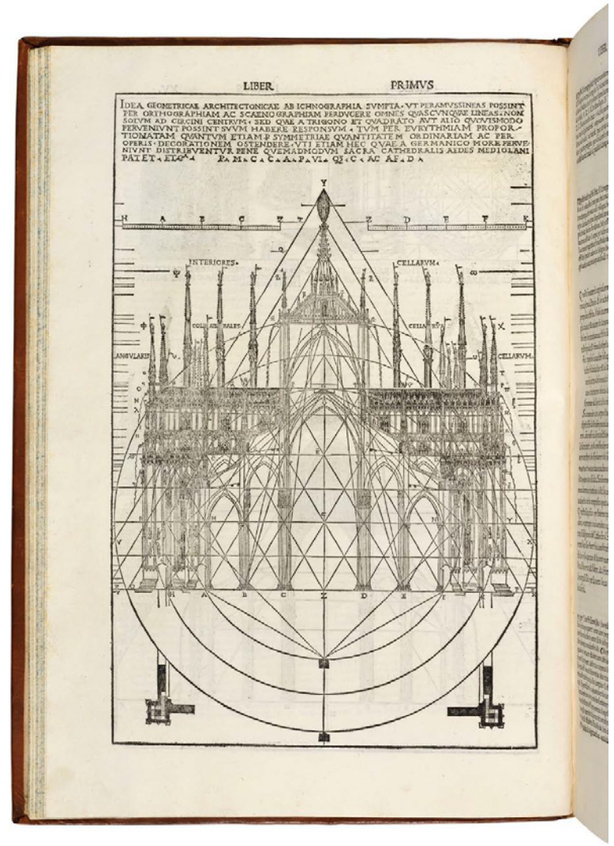
FINE
Delli cinque Ordini d' Architettura di M. Giacomo Barozzio da Vignola.

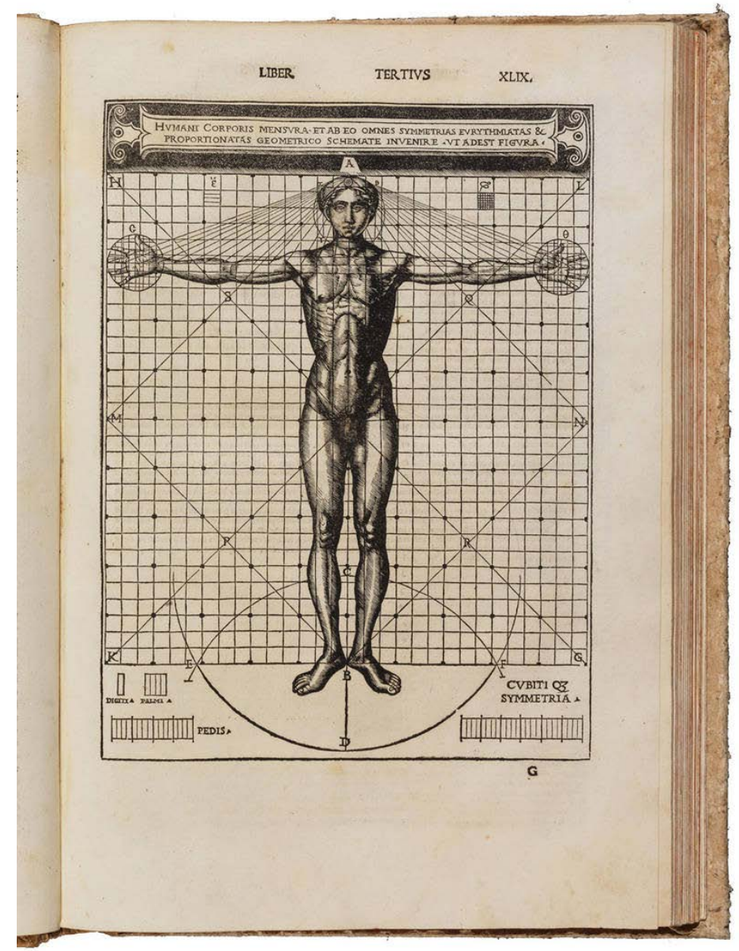
“Fine” or *end* of Vignola’s Five Rules — “Camino” or *chimney*, designed for the Farnese Palace in Rome.

The Orders represent our cosmic & corporeal existence.

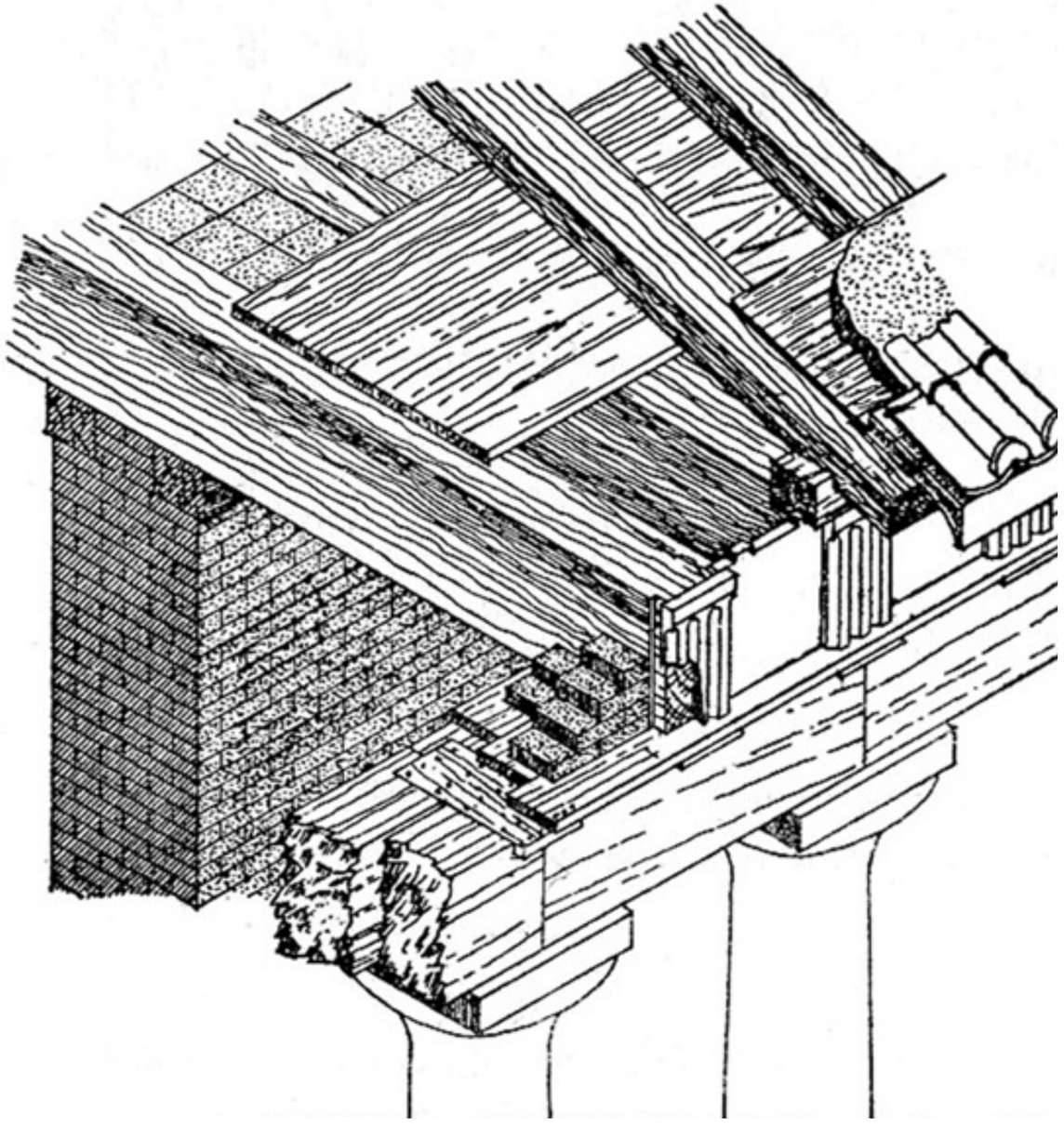








Cosmic & Corporeal orders; the body as site of truth in early architectures; beyond Vitruvian man.



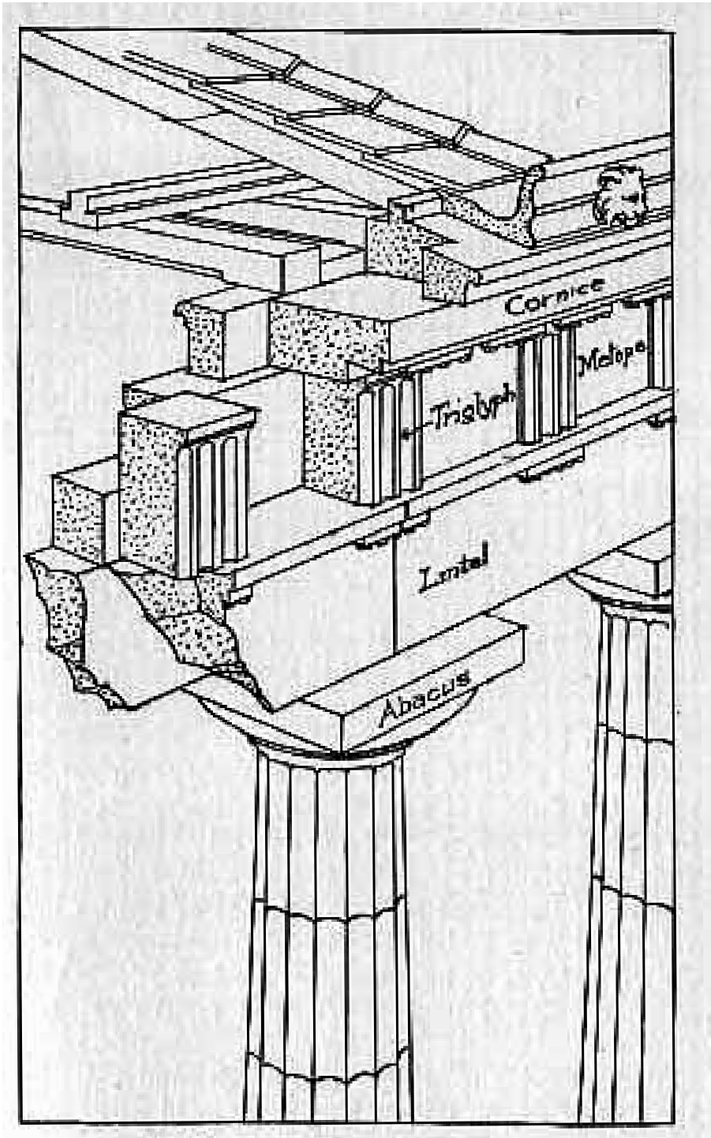
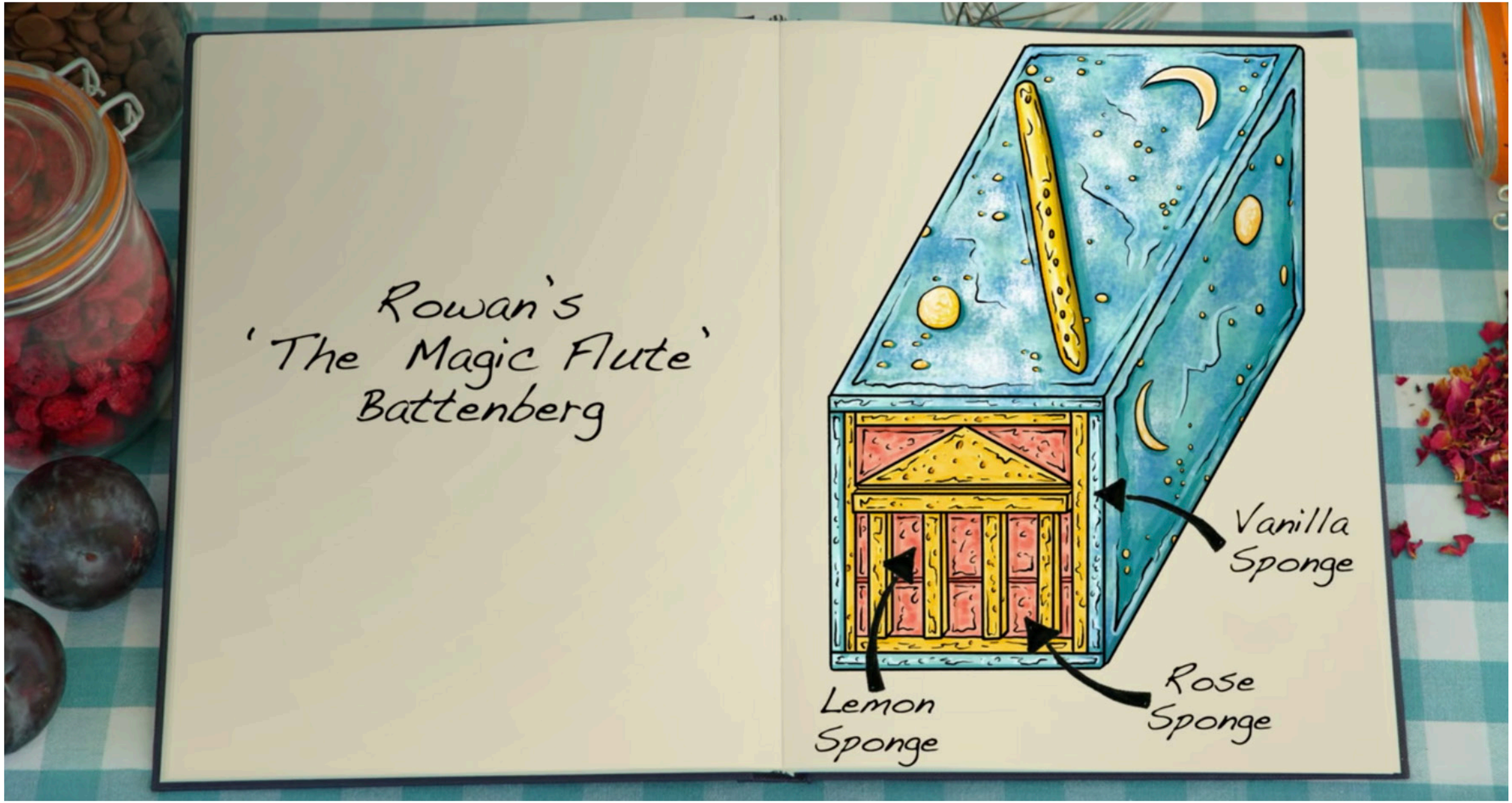


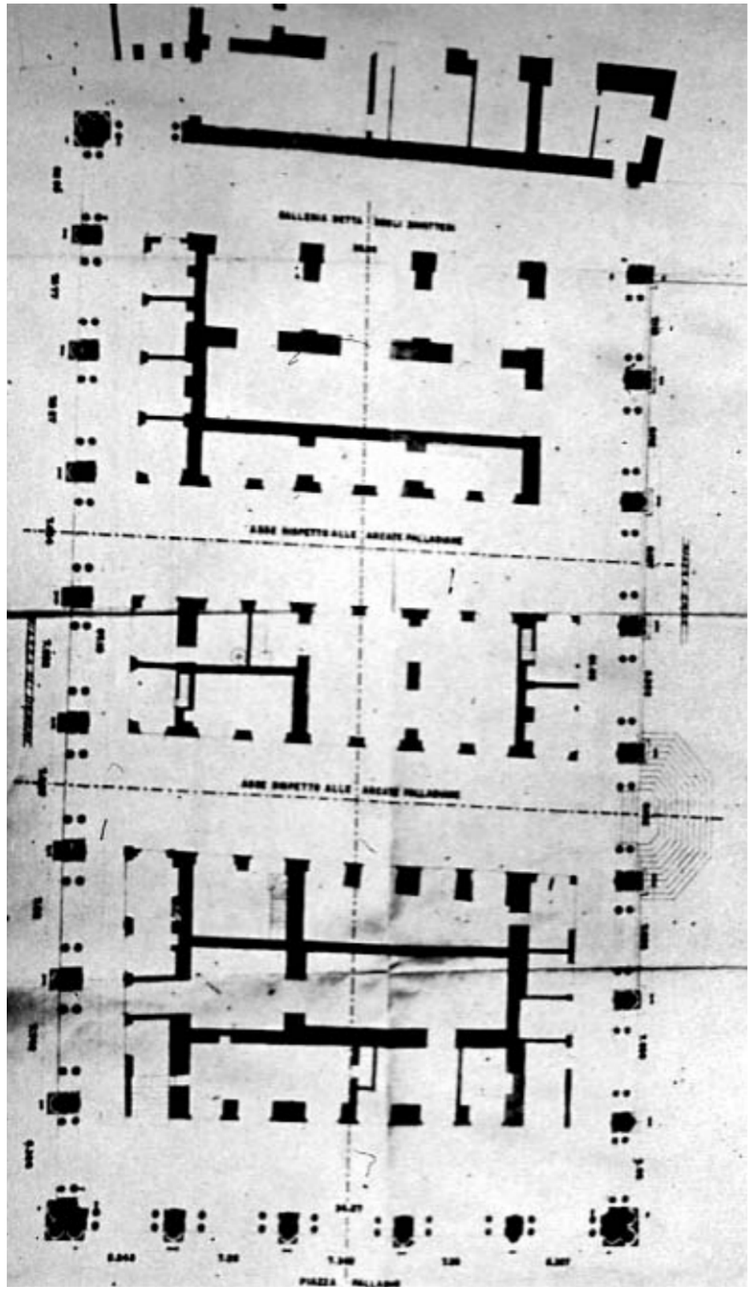
FIG. 8—GREEK STONE CONSTRUCTION

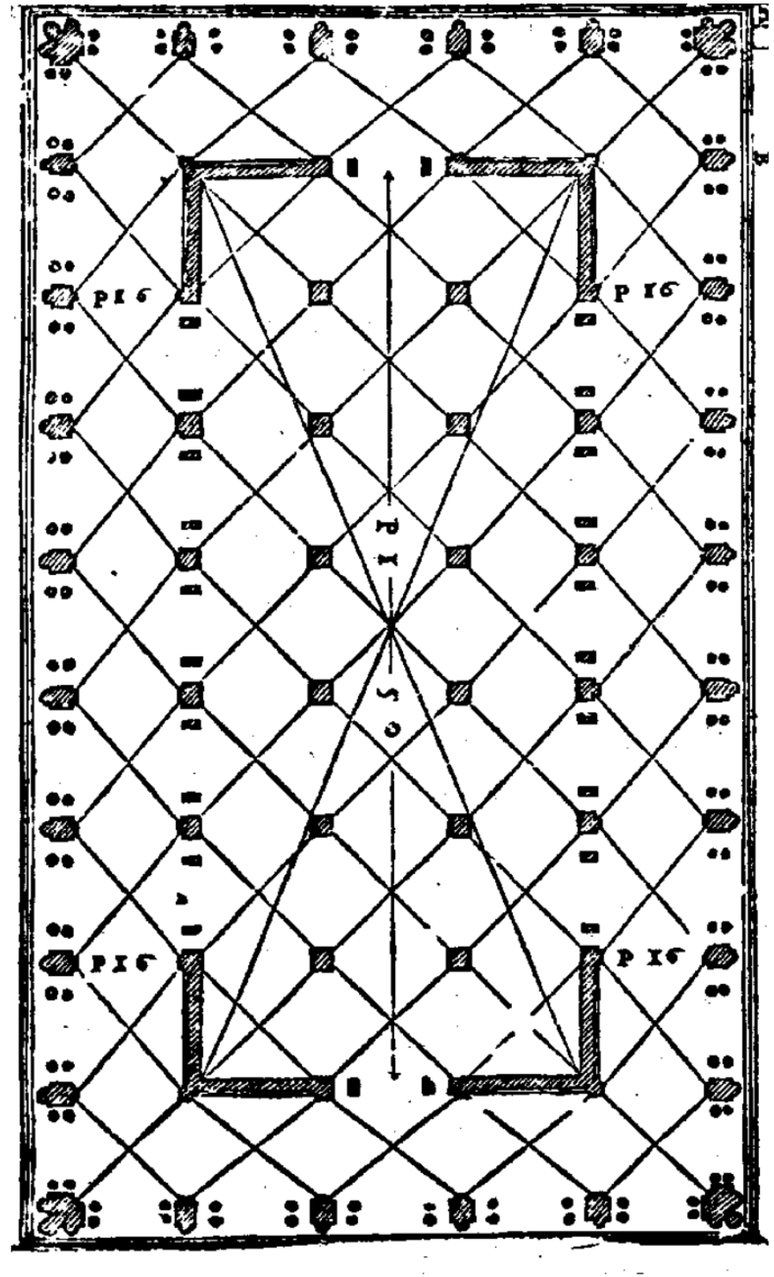
Myth of Tectonics in Classical Orders
(a) Greek wood construction & (b) stone construction.



The Great British Baking Show

The Renaissance treaty = architecture as theoria



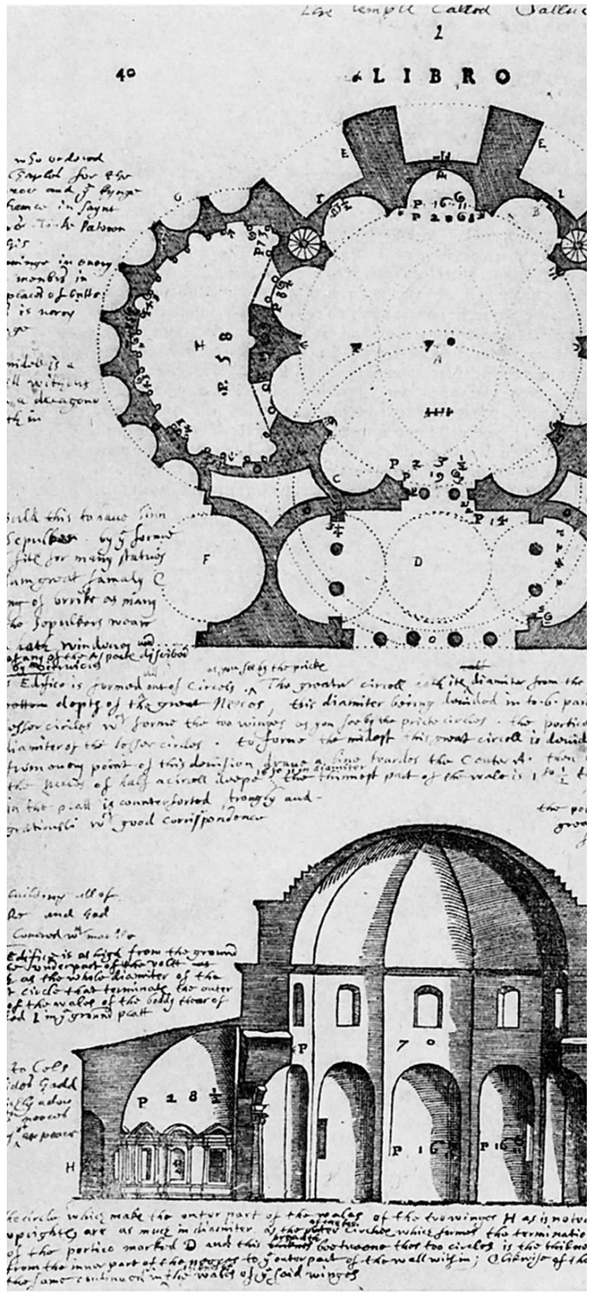


1.2 (above) Palladio, The Basilica, Vicenza, 1546-1617, view across the Piazza dei Signori (Tavernor, Palladio 35).

1.3 (far left) Palladio, The Basilica, Vicenza, 1546-1617, plan, measured drawing as built (Zorzi, Le opere publbliche plate 45).

1.4 (left) Palladio, The Basilica, Vicenza, 1546-1617, plan (Four Books on Architecture 4.42).

Palladio's Basilica (a) in situ, (b) in theory, (c) in practice
http://www.arch.mcgill.ca/prof/adams/arch533/winter2009/Arch_533/Schedule_&_Readings_files/Jones-thesis-dmt2.pdf



Inigo Jones; Palladianism in England, or: contortions of the body. The Four Humors: Bloof, Phlegm, Black Bile, Yellow. Castings and Glisters in the margins of Palladio. In other words, “Jones regularly ate food through his ass and shat waste out of his mouth” – David Theodore

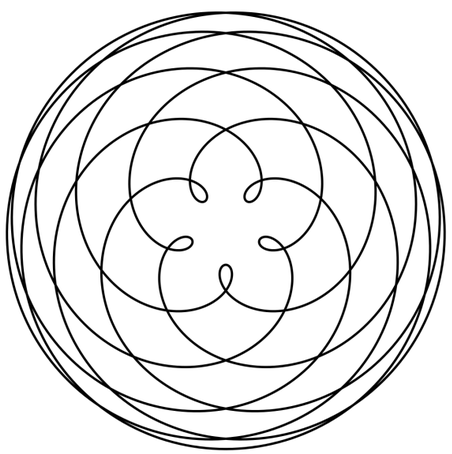
Copernicus, Galileo, Newton, Bacon, and more undermined the authority of monarchy & myth.

Aristotle (384-322 BC)

- Aristotelian geo-centric cosmology dates back to classical antiquity
- student of Plato
- polymath

Ptolemy (100-170 AD)

- Ptolemaic model of planetary motion (Earth is at the center)



Copernicus (1473-1543)

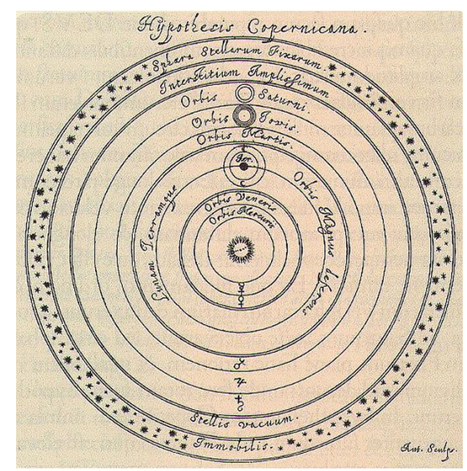
- On the Revolutions of the Heavenly Spheres (1543)
- offered the first counter-point to the Ptolemaic geocentric model.
- Index of Forbidden books
- Martin Luther outraged, called it silly, offered scripture from Joshua

Vesalius

- published De Humani Corporis Fabrica the same year (1543)

Galileo (1564-1642)

- In 1632 published Dialogue Concerning the Two Chief World Systems (Copernicus to Ptolemy)
- Index of Forbidden books
- found to have committed heresy, recanted, and lived under house arrest for the rest of his life
- in 1638, published "Two New Sciences" (strength of materials, and objects in motion)



Francis Bacon (1561-1626)

- Scientific Method
- Empiricism
- Evidence as truth
- Science as truth

Newton (1643-1727)

- In 1687, publishes Mathematical Principles of Natural Philosophy
- framework for Classical Mechanics
- with Leibiz, develops calculus

The Scientific Revolution (redux)

PHILOSOPHIÆ NATURALIS PRINCIPIA MATHEMATICA.

Autore JS. NEWTONO, Trin. Coll. Cantab. Soc. Matheseos Professore Lucasiano, & Societatis Regalis Sodali.

IMPRIMATUR.
S. PEPYS, Reg. Soc. PRÆSES.
Julii 5. 1686.

LONDINI,

Jussu *Societatis Regiæ* ac Typis *Josephi Streater*. Prostat apud plures Bibliopolas. *Anno* MDCLXXXVII.

https://archive.org/details/newtonspmathema00newtrich/page/n7/mode/2up

The Scientific Revolution, Hume, Bacon, et al promoted direct observation and understanding of the natural world — no more myth & mysticism.

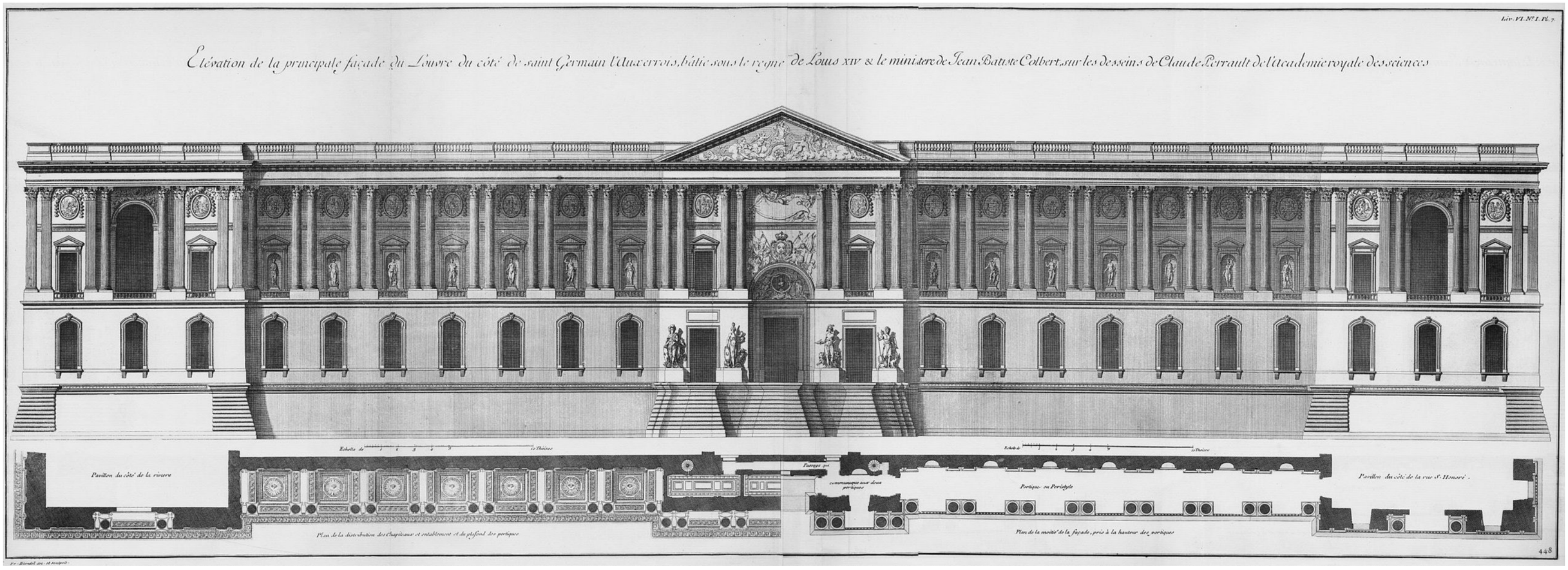
Louvre Facade

Claude Perrault
1667+, Paris, France

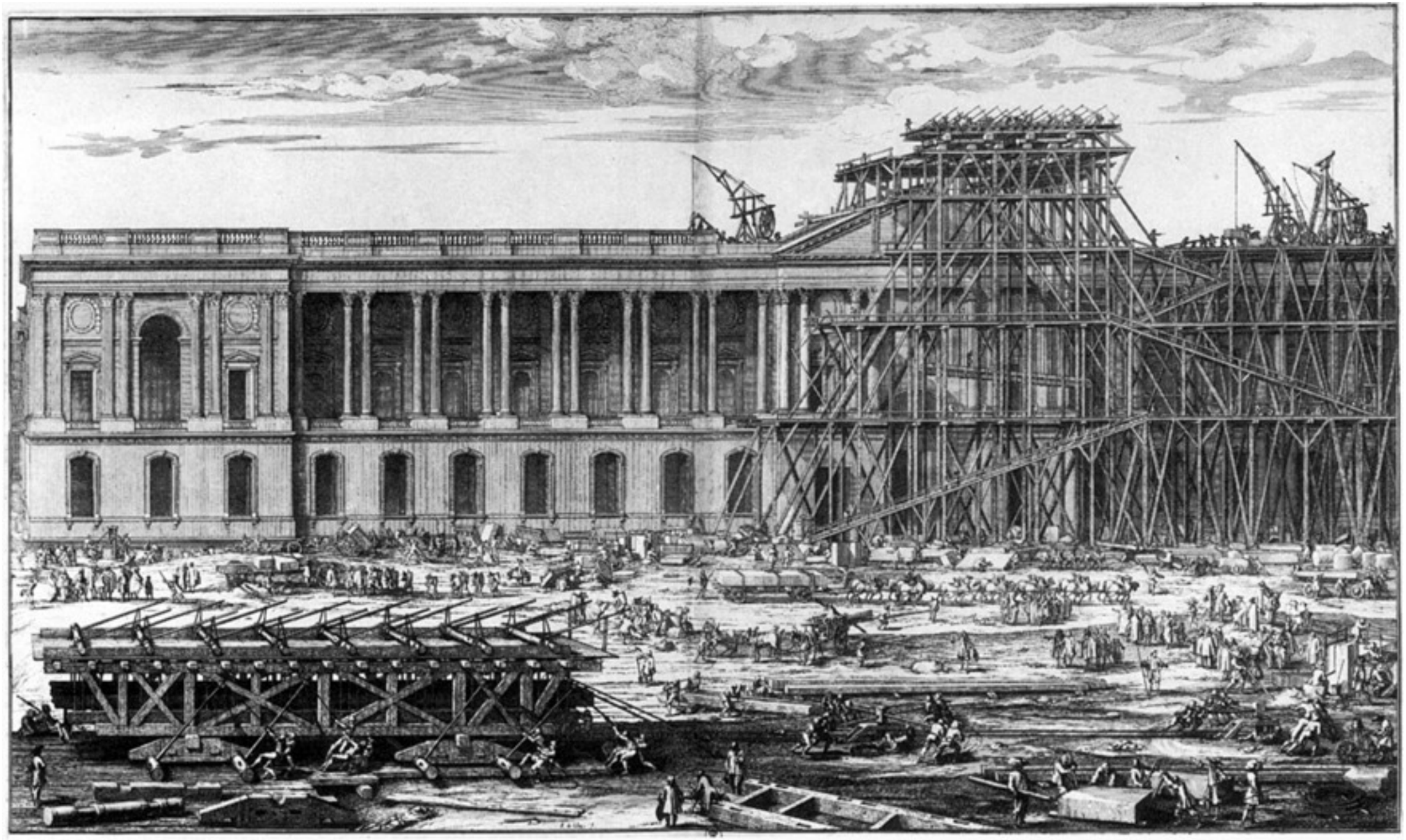
Perrault was trained as a doctor and devoted a great part of his life to scientific research.

Perrault also worked on architecture and his legacy is intertwined with the Scientific Revolution because he was writing during a period in Western culture when the Galilean scientific revolution was generally accepted. Along with Bacon, Perrault turned away from the classics, dismissing them as "comedies" and believing in a new worldview that is based upon knowledge gained from observable phenomenon.

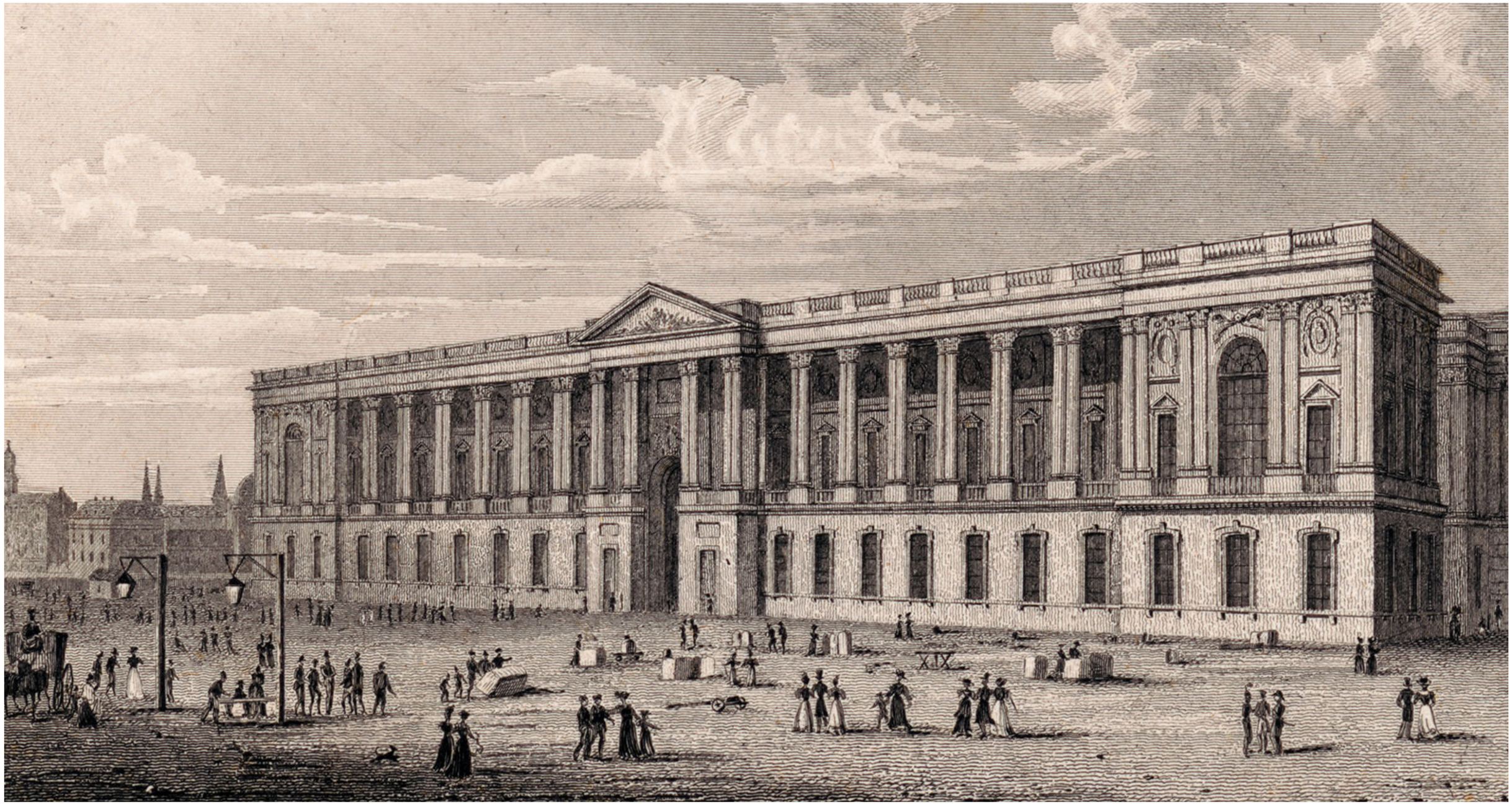
Perrault was a founding member of the French Royal Academy of Science. His brother Charles wrote "Parallele des Anciens et Modernes" which describes the conflict between ancient cosmology and new scientific advancements.



Élévation de la principale facade au côté de Saint-Germain-l'Auxerrois
Architecture françoise Tome 4, Livre 6, Page l7



Lifting of the Louvre pediment stones, 1674
Engraving by Sébastien Leclerc
https://archive.org/details/praticadigeomet00goog/page/n24/mode/2up


XIX

PRIVILEGE DU ROY.

LOUIS PAR LA GRACE DE DIEU ROY DE FRANCE ET DE NAVARRE : A Nos Amés & feaux Conseillers les gens tenans nos Cours de Parlement, Maîtres des Requestes Ordinaires de Nostre Hostel, Baillifs, Senéchaux, Prevosts, Juges, leurs Lieutenans, & tous autres nos Justiciers & Officiers qu'il appartiendra : SALUT, Nostre Amé JEAN BAPTISTE COIGNARD Nostre Imprimeur & Libraire Ordinaire à Paris, Nous a fait remontrer qu'il desireroit imprimer un Livre intitulé *Ordonnance des cinq especes de Colonnes selon la Methode des Anciens, par le sieur* PERRAULT *de l'Academie Royale des Sciences, Docteur en Medecine de la Faculté de Paris.* Auquel effet, il nous a tres-humblement fait supplier de luy accorder Nos Lettres sur ce necessaires. A CES CAUSES voulant favorablement traiter ledit COIGNARD, nous luy avons permis & accordé, permettons & accordons par ces presentes d'imprimer ou faire imprimer ledit Livre, en tels volumes, marges & caracteres, & autant de fois que bon luy semblera, pendant le temps de six années consecutives, à commencer du jour qu'il sera achevé d'imprimer pour la premiere fois, iceluy vendre, debiter & distribuer dans tout Nostre Royaume. Faisons défenses à tous Libraires, Imprimeurs & autres, d'imprimer faire imprimer, vendre & debiter ledit Livre, soûs quelque pretexte que ce soit, même d'impression étrangere, ou autrement sans le consentement de l'Exposant, à peine de confiscation des exemplaires contrefaits, trois mille livres d'amande, payable sans deport par chacun des contrevenans, applicable un tiers à Nous, un tiers à l'Hôtel Dieu de Paris, & l'autre tiers à l'Exposant, & de tous dépens dommages & interests. A la charge d'en mettre deux exemplaires en Nostre Biblioteque, un en celle du Cabinet des Livres de Nostre Chasteau du Louvre, & un en celle de Nostre tres cher & feal Chevalier le sieur LE TELLIER, Chancelier de France, de le faire imprimer en beaux caracteres & papier, conformément à nos Reglemens, & de faire enregistrer ces presentes és Registres de la Communauté des Marchands Libraires de Nostre Ville de Paris, le tout à peine de nullité des presentes ; du contenu desquelles Vous mandons & enjoignons faire joüir & user l'Exposant, & ceux qui auront droit de luy, pleinement & paisiblement, cessans & faisans cesser tous troubles & empeschemens contraires : Voulons qu'en mettant au commencement ou à la fin dudit Livre l'Extrait des presentes, elles soient tenuës pour deuëment signifiées, & qu'aux copies d'icelles collationnées, par un de nos Amés & feaux Conseillers, Secretaires, foy soit adjoutée comme à l'Original. COMMANDONS au premier nostre Huissier ou Sergent sur ce requis, faire pour l'execution des presentes, tous Actes necessaires, sans demander autre permission.

MONSEIGNEVR,

Vostre tres-humble & tres-obeïssant
Serviteur PERRAULT.

ouvrages, qui la plûpart sont également approuvez ; mais mesme qu'il n'y a point de raison, qui fasse qu'elle doive avoir une precision si juste & si compassée pour plaire ; & que par consequent il n'y a point, à proprement parler, dans l'Architecture de proportions veritables en elles-mesmes ; il reste à examiner si l'on en peut établir de probables, & de vray-semblables fondées sur des raisons positives, sans s'éloigner beaucoup des proportions reçuës & usitées.

Les Architectes modernes, qui ont mis par écrit les regles des cinq Ordres d'Architecture, ont traitté cette matiere en deux manieres : Les uns n'ont fait autre chose que recueillir dans les Ouvrages tant des Anciens que des Modernes les exemples les plus illustres & les plus approuvez ; & comme ces Ouvrages contiennent des regles differentes, ils se sont contentez de les proposer toutes, & de les comparer ensemble, sans gueres rien determiner sur le choix que l'on en doit faire. Les autres ont crû que dans cette diversité de sentimens, où sont les Architectes sur les proportions qui doivent estre suivies dans tous les membres de chaque Ordre, il estoit permis de donner son jugement sur des opinions qui ont toutes d'assez grands Auteurs, pour ne pouvoir fonder un mauvais chois : & ils n'ont pas mesme fait difficulté de proposer comme une regle, leur opinion particuliere : Car on peut dire, que c'est ainsi qu'en ont usé Palladio, Vignole, Scamozzi, & la plûpart des autres celebres Architectes, qui ne se sont pas souciez, ny de suivre ponctuellement les Anciens, ny de s'accorder avec les Modernes.

Le dessein de ces derniers a esté neanmoins loüable, en ce qu'ils ont tasché d'établir des regles certaines & arrestées qui doivent toûjours estre recherchées en toutes les choses qui en sont capables. Mais il auroit esté à souhaiter, ou que quelqu'un d'entre eux eust eu assez d'autorité pour faire des loix qui fussent inviolablement observées ; ou que l'on pust trouver des regles qui eussent en elles-mesmes des veritez évidentes, ou du moins des probabilitez & des

TABLE DE LA SAILLIE DES BASES DES COLONNES.

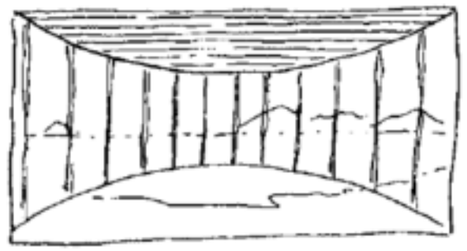
	Toscan	Dorique	Ionique	Corinth.	Composite
Portique du Pantheon				41	
Colonnes de Campo Vaccino				42	
Pilastres du Portiq. du Pant.				43	
Thermes de Diocletien				42	43
Colonne Trajane	40				
Palladio	40	40	41	42	42
Scamozzi	40	42	41	40	41
Vignole	41	41	42	42	42
Serlio	42	44	41	40	41
Temple de la Fortune Virile			43		
Colisée		40	40	40	
Temple de Bacchus					41
Arc de Titus					44
Arc de Septimius					41

G

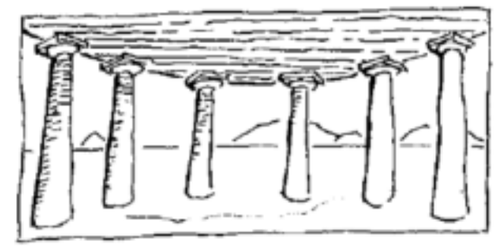
Ordinance on the Five Orders, Claude Perrault
https://archive.org/details/ordonnancedescin00perr/page/n4/mode/2up

L'Academie des Sciences et des Beaux Arts, 1698
Engraving by Sébastien Leclerc

WORLD VIEWS



MODERNIST



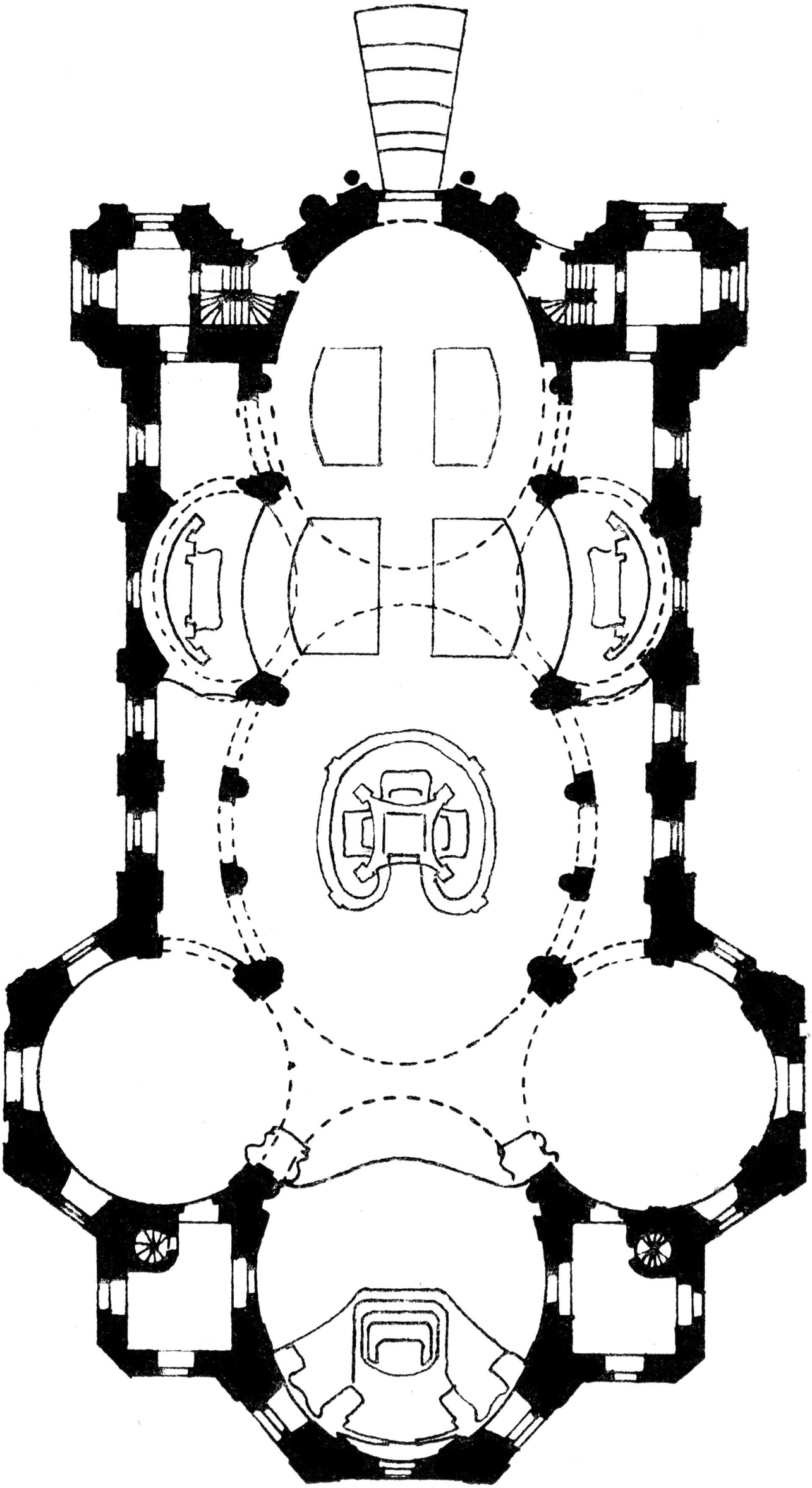
CLASSICAL

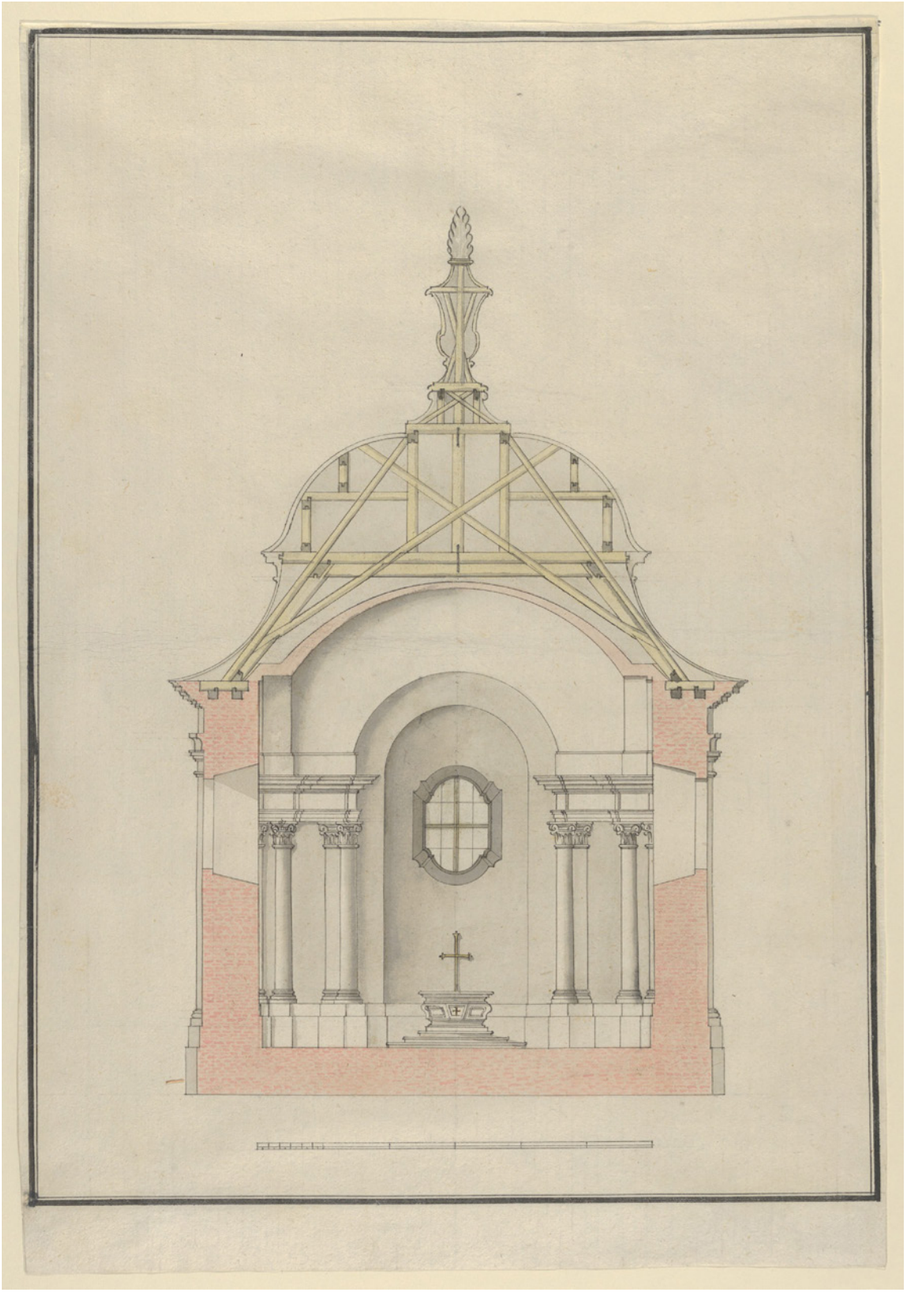
LK
91

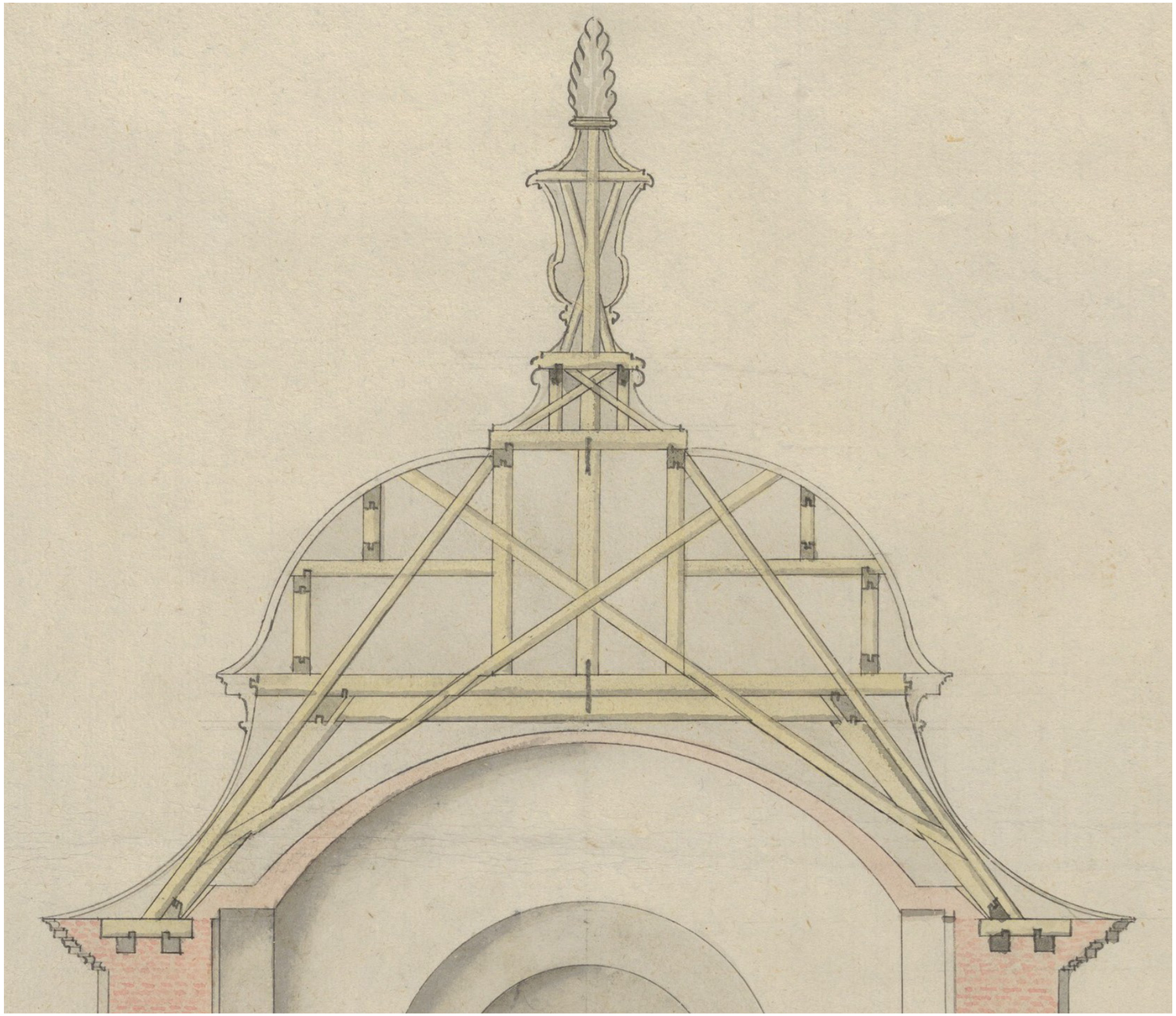
ALEXANDER McQUE
Reconfiguring an African Icon
GUITAR HEROES
Legendary Craftsmen from Italy to New York
ANTHONY CARO
ON THE ROOF
ROOMS WITH A VIEW
THE OPEN WINDOW IN THE 19TH CENTURY
FLASHDANCERS
GENTLEMEN'S CLUB
52nd & BROADWAY
COWBOYS
ALIENS
NYC TAXI
NYC TAXI
NYC TAXI

Basilica of the 14 Holy Helpers

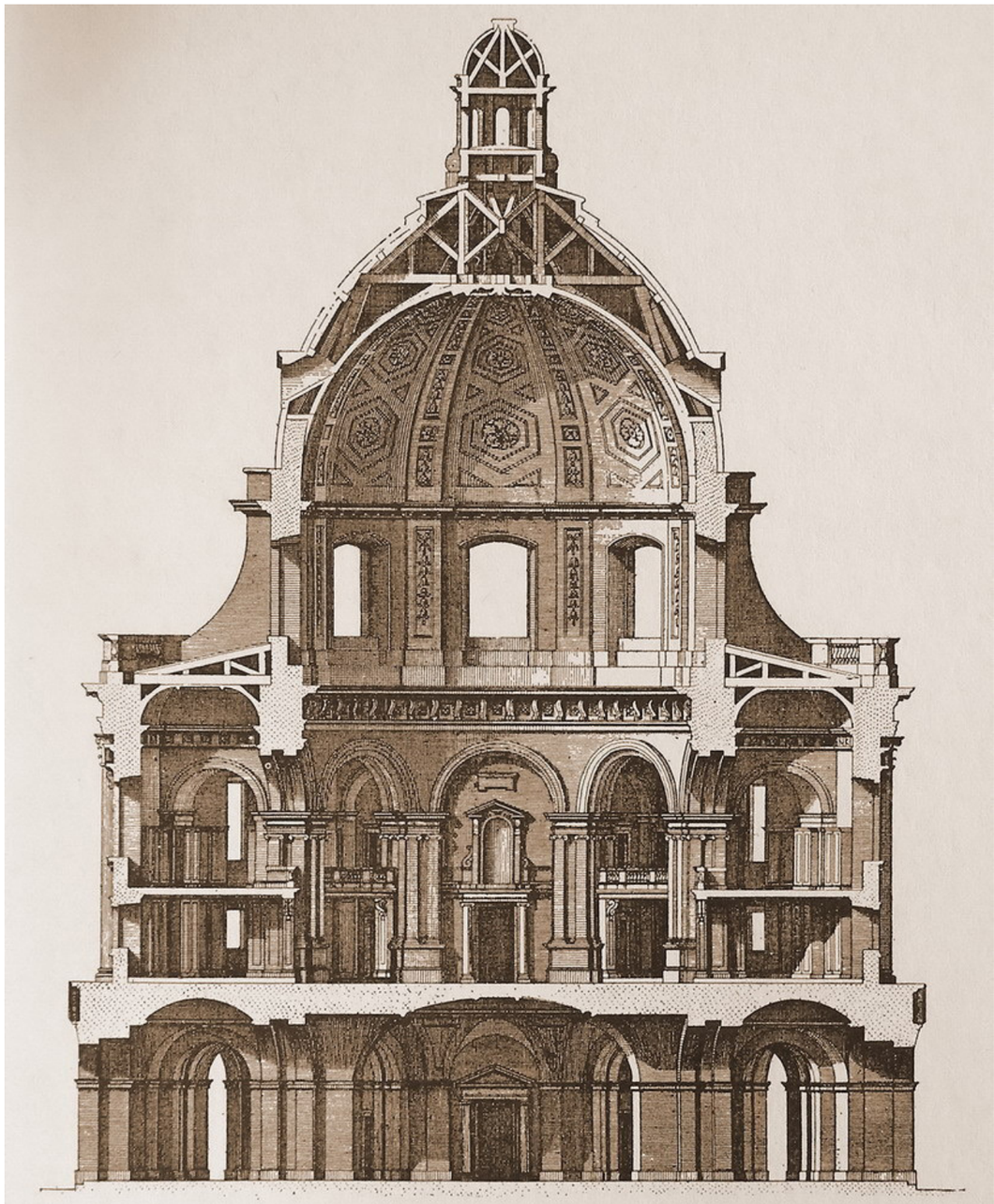
Balthasar Neumann
1742, Bavaria, Germany



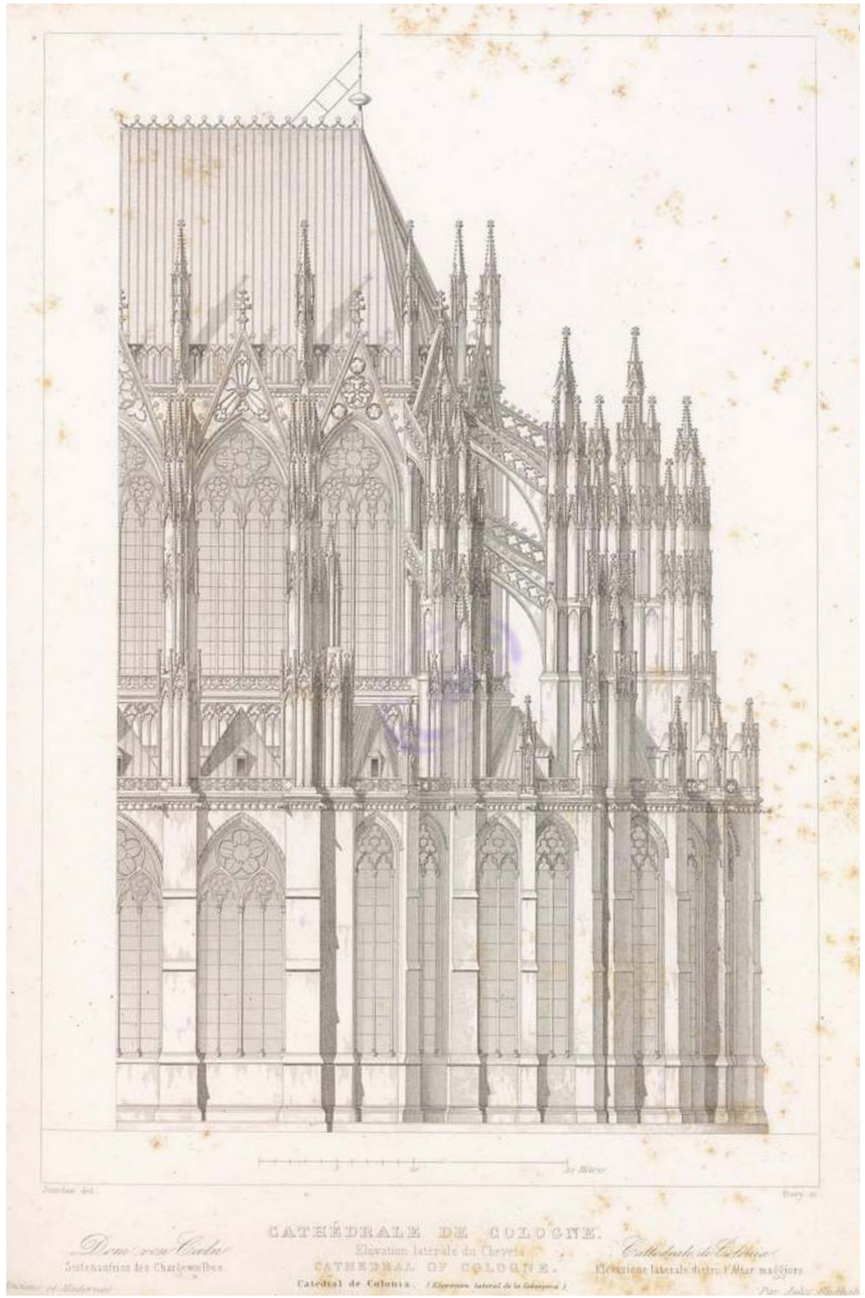




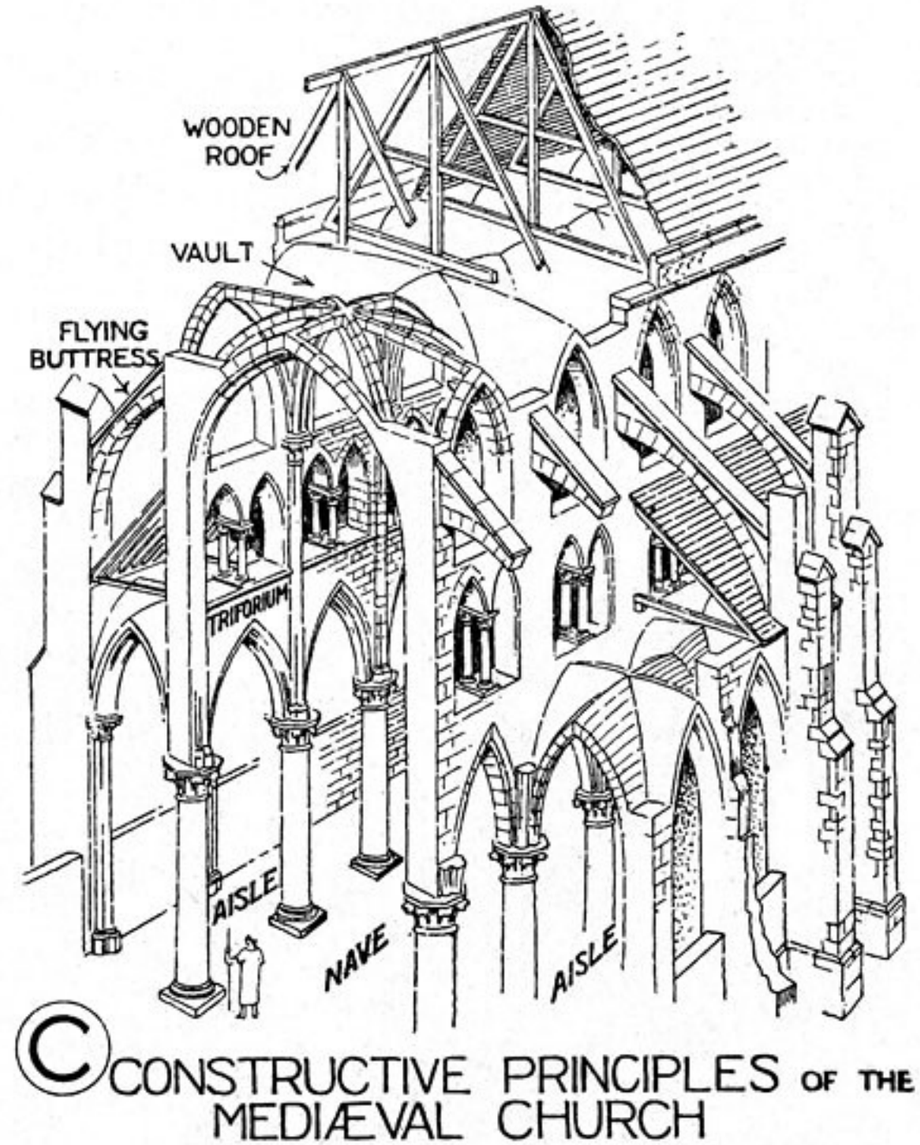
Cross Section of a Baroque Church or Chapel with a Bell-shaped Roof ca. 1650–1725



Radcliffe Camera, Oxford



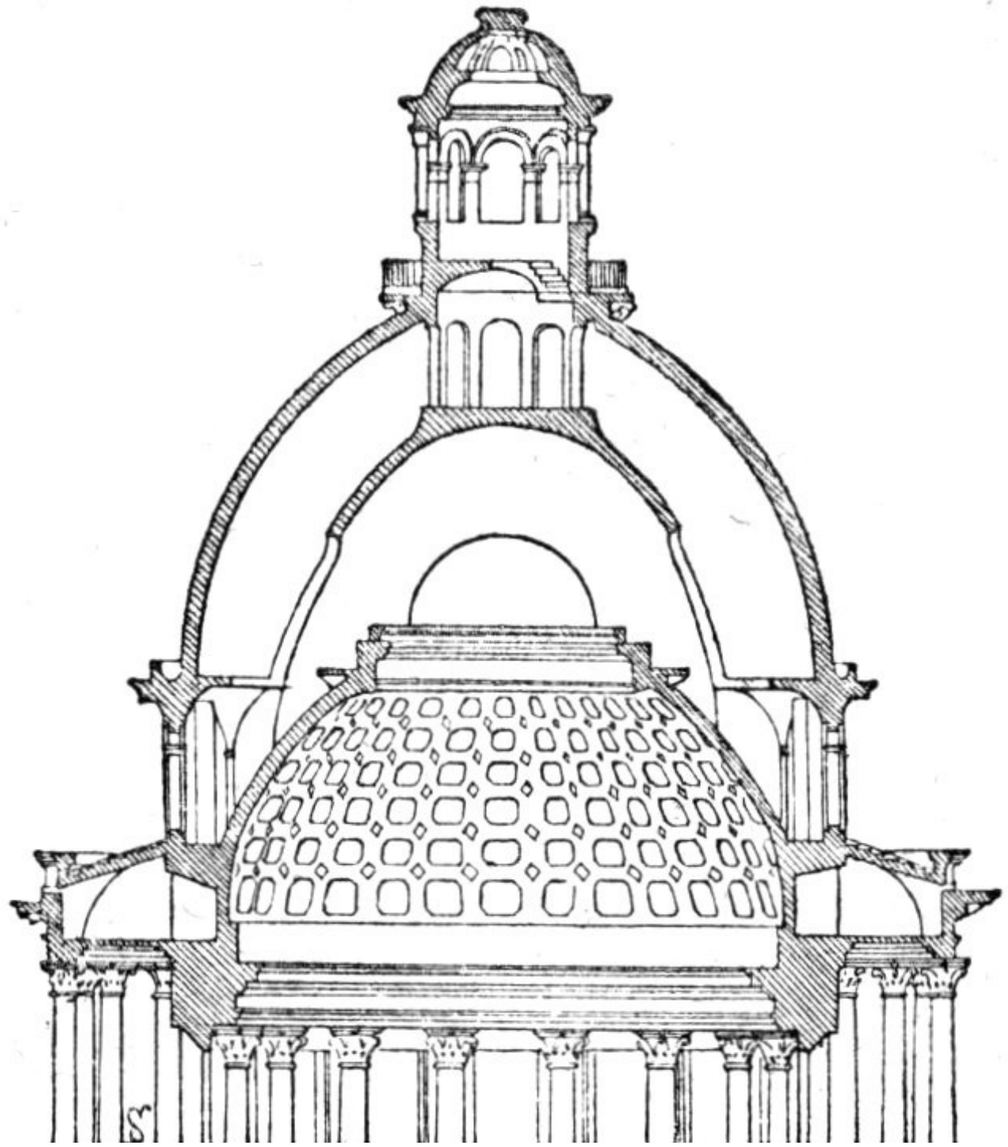
Cologne Cathedral, Germany

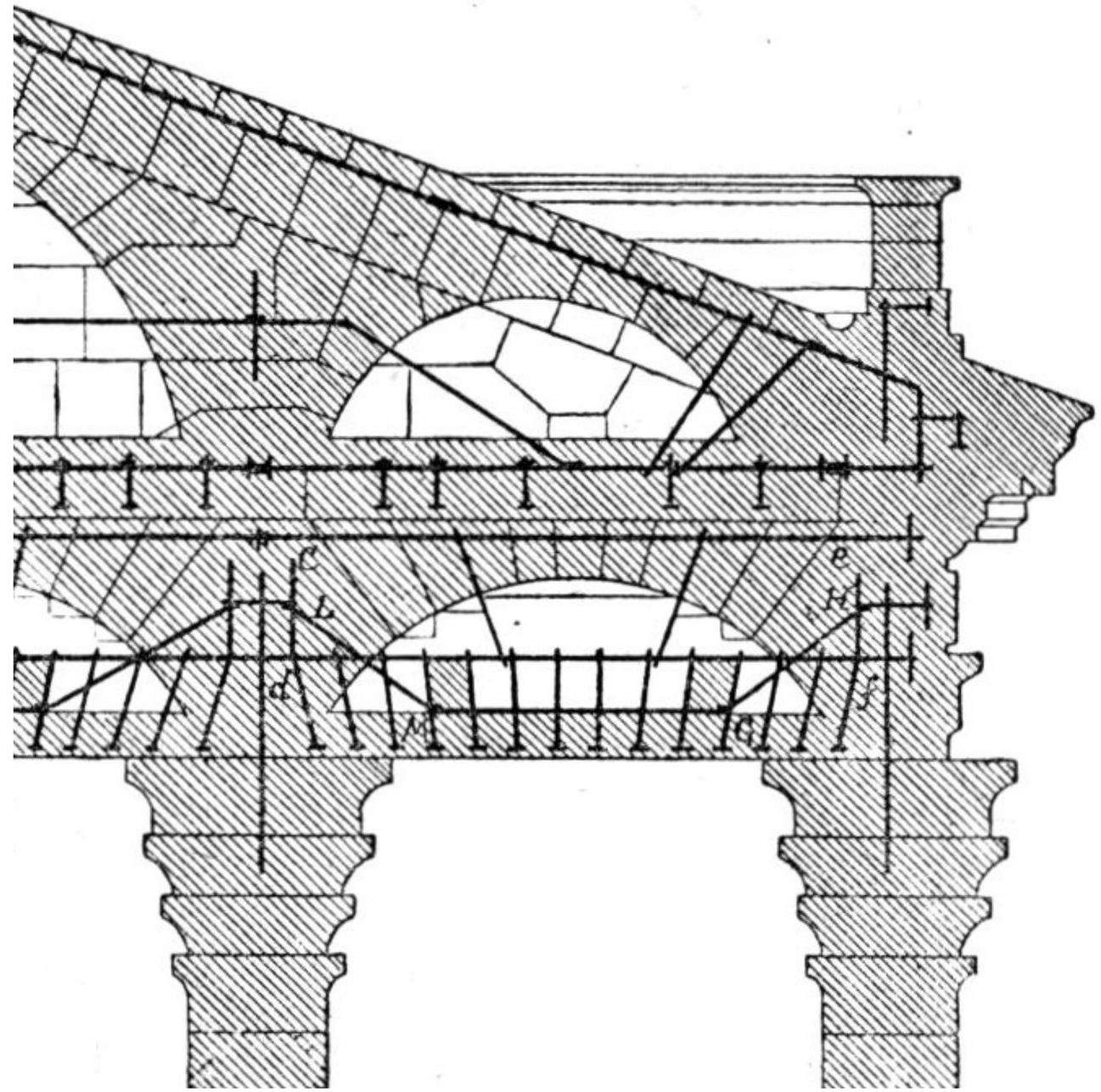


Cologne Cathedral, Germany

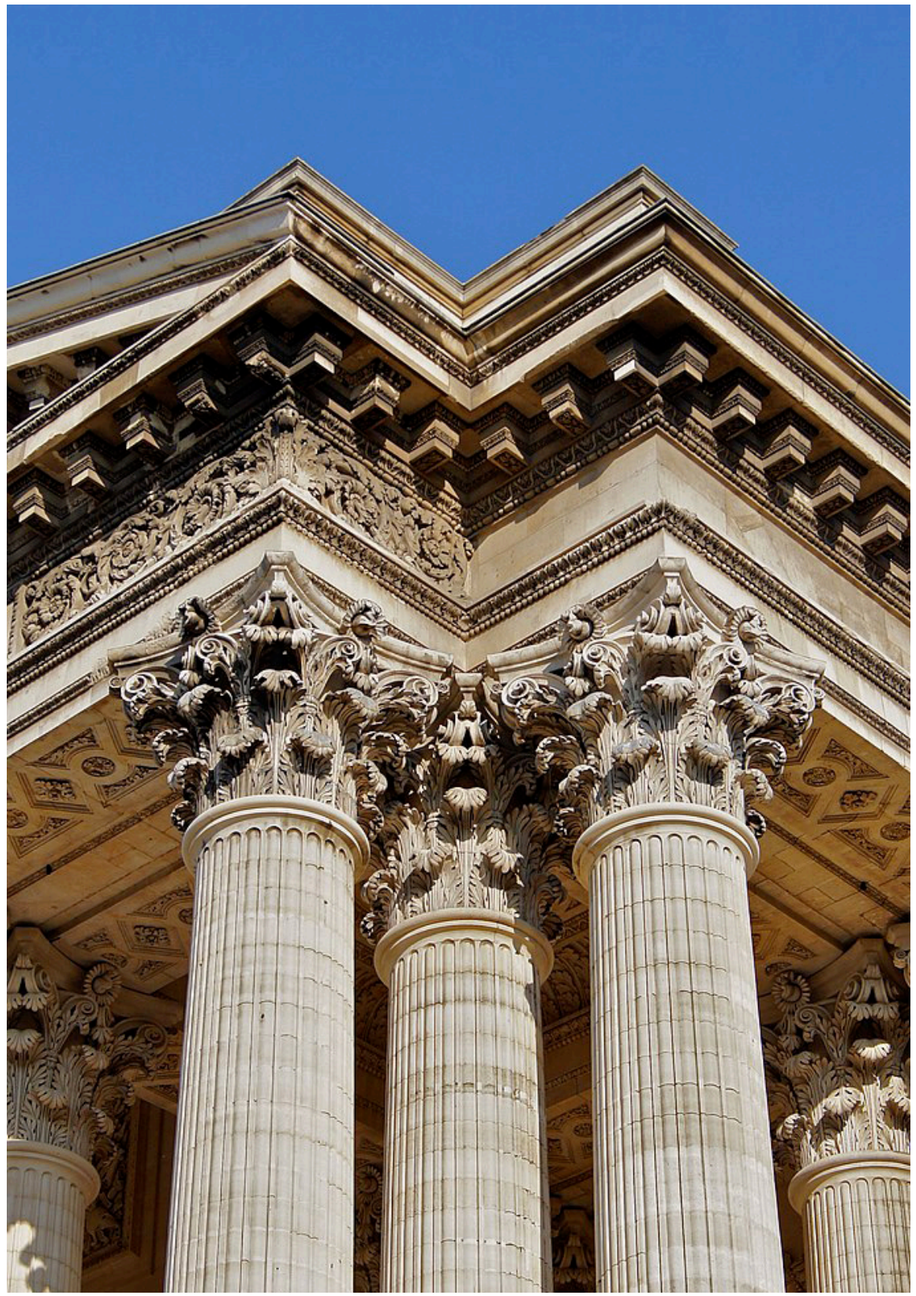
Sainte-Genevieve / Pantheon

Jacques-Germain Soufflot
1755, Paris, France



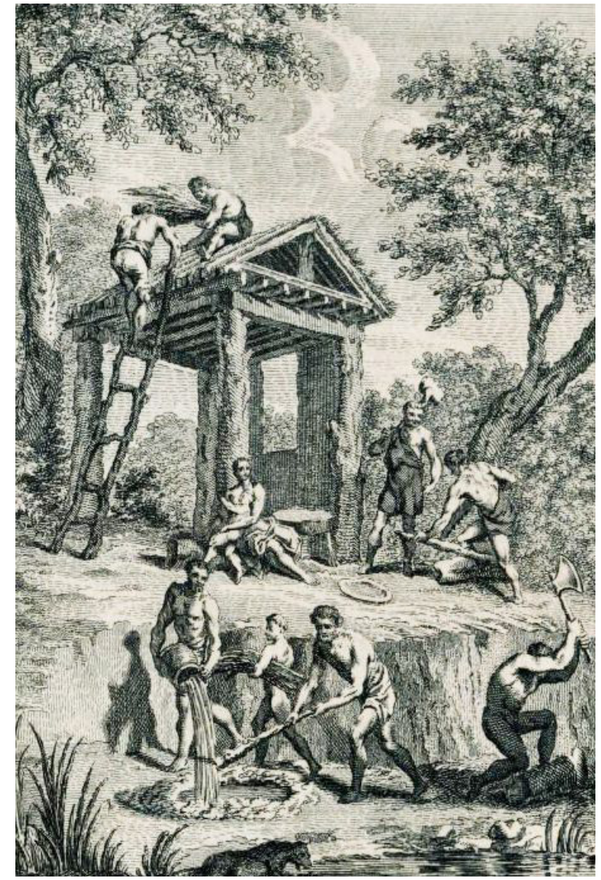


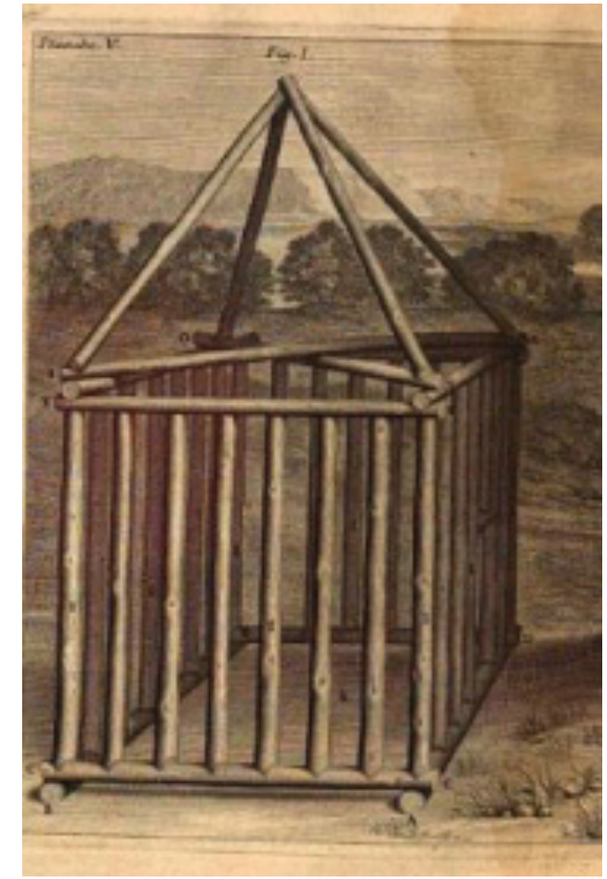
(a) Cross Section through Pantheon, (b) Detail of iron rods



Pantheon		Fourteen Holy Helpers
Soufflot		Neumann
stone	vs.	plaster
moderns	vs.	ancients
philosophes	vs.	ancien regime
faith in human reason	vs.	pandering to monarchy
rationality	vs.	supernatural
secular	vs.	sacred

Laugier invented a structuralist
“Genesis” myth with Primitive Hut.





Laugier writes the first “modern manifesto” replacing the cosmic and corporeal origin with a romantic version of “back to nature” necessity.

LMAO WHO MADE THESE 😂😂