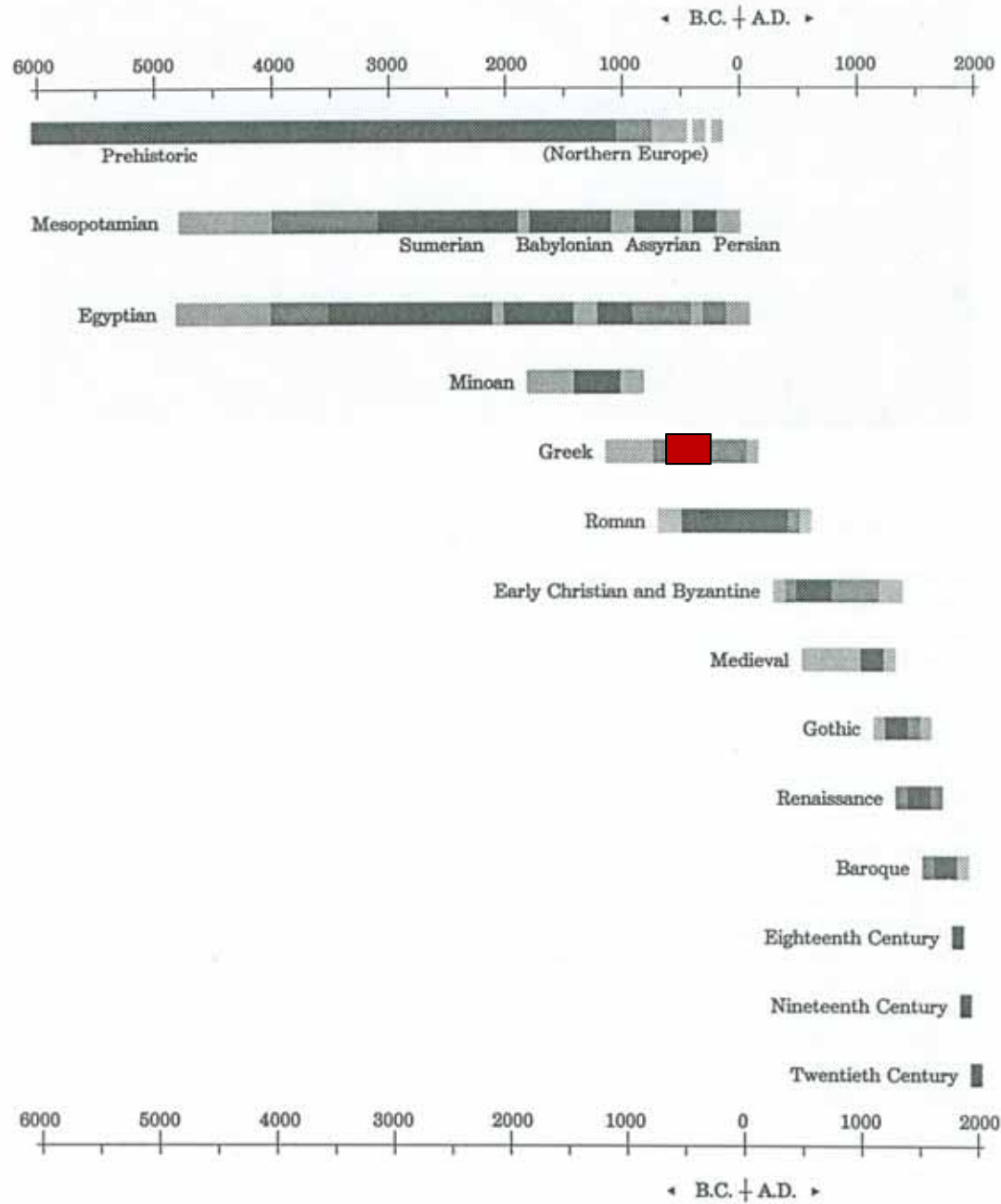


# Readings

Pages 54-60,  
*A World History of Architecture*,  
Fazio, Michael, Moffet & Wodehousecopoy

Pages 60– 65  
Great Architecture of the World

CHRONOLOGICAL TABLE







# Classical Greek Architecture 480 – 431BCE:

Known as the Classical Period in Greek History

Assertion that human intelligence puts man  
above the rest of nature

Architecture began in the service of religion

7<sup>th</sup> century BCE – 1<sup>st</sup> efforts to create proper shapes and design

Beauty = Gods

Secret of beauty lay in ratios and proportions

Invented democracy and philosophy

Created works of art in drama, sculpture and architecture

# Greek Architecture 480 – 431 BCE

Temples first built with wood, then stone w/ terra cotta tiles

Purely formal objects

Greeks pursued the beauty through architecture and materials

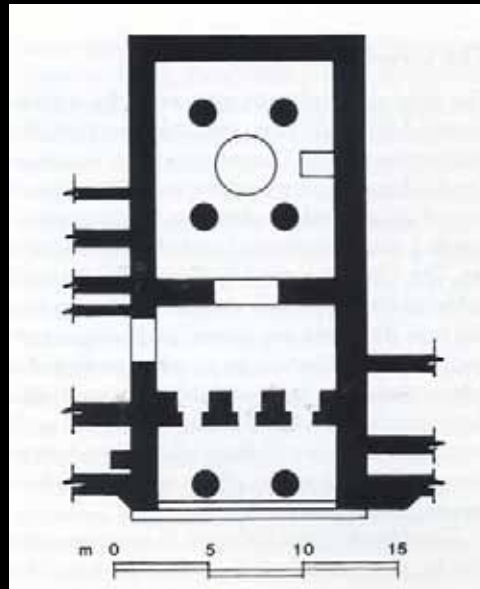
The home of the Gods

Became the principal ornaments in the cities, generally on hills or other prominent locations



Temple of Hephaestus

www.greatbuildings.com



megaron

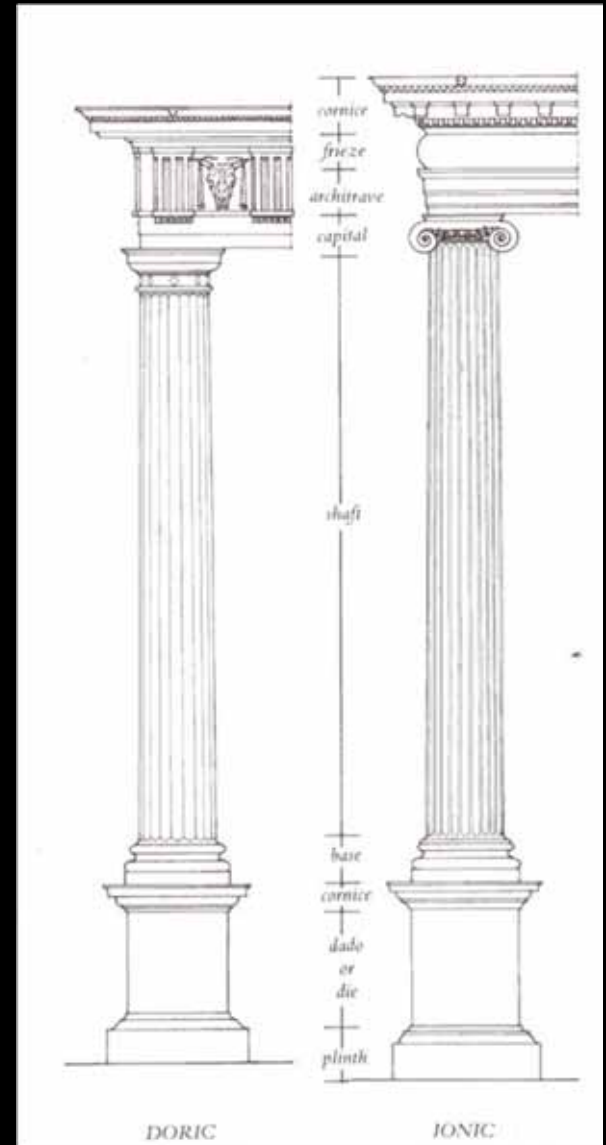


Athenian Treasury

www.greatbuildings.com

# Classical Orders

In classical Greek architecture, beauty lay in systems of the ratios and proportions. A system or order defined the ideal proportions for all the components of the temples according to mathematical ratios – based on the diameter of the columns.

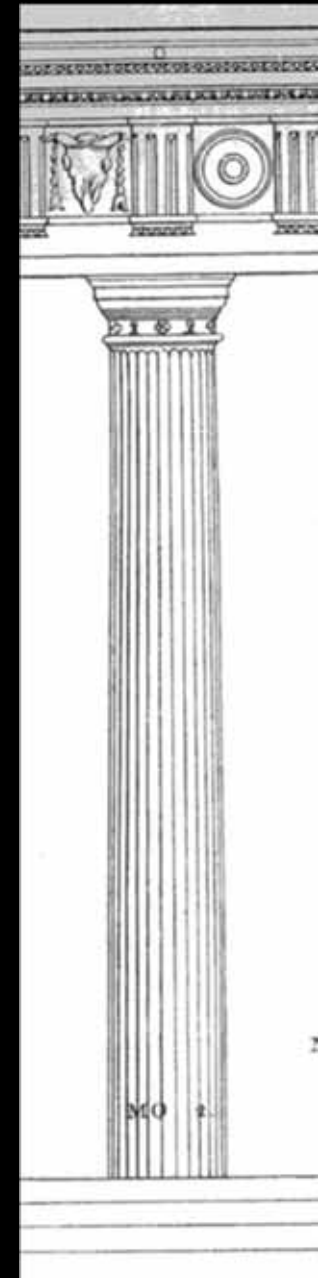


# What is an order?

An order includes the total assemblage of parts consisting of the column and its appropriate entablature which is based on the diameter of the column.



Temple of Hera II (Poseidon) 450 BCE



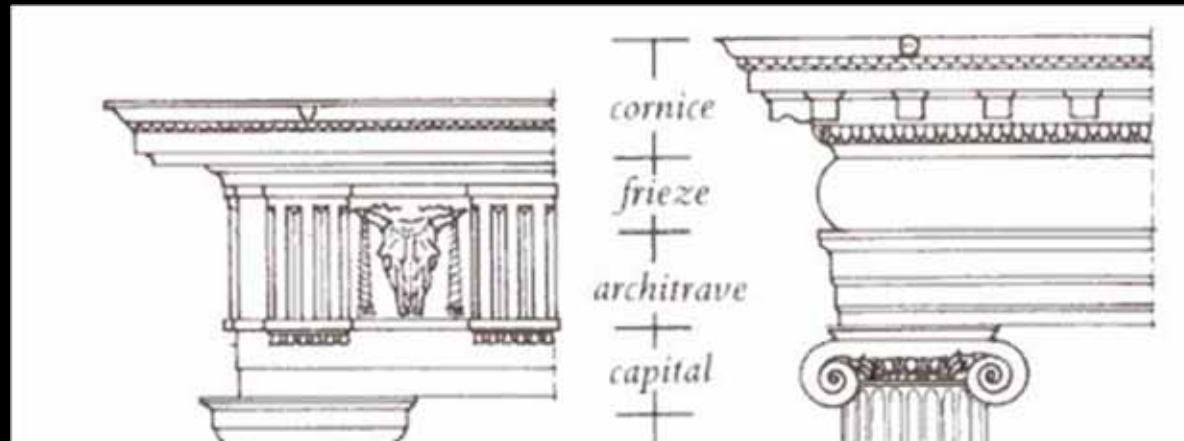


The column is vertical and supports the structure. Its diameter sets the proportion of the other parts.

The entablature is horizontal and consists of many elements.

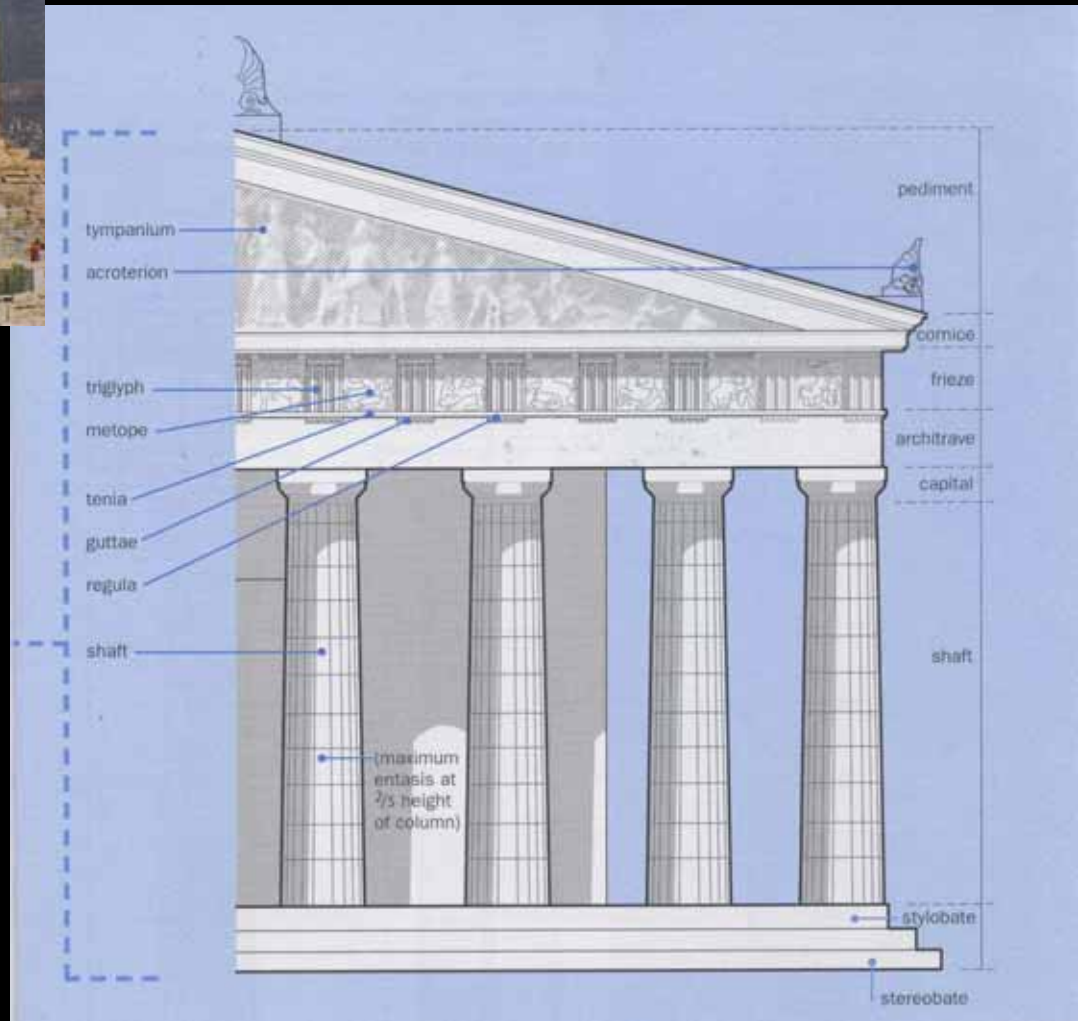


Temple of Hera II Paestum Italy



The entablature is divided into three parts

- cornice (any molded projection which crowns or finishes the part to which it is attached)
- frieze (a decorative band)
- architrave (ornamental moldings)



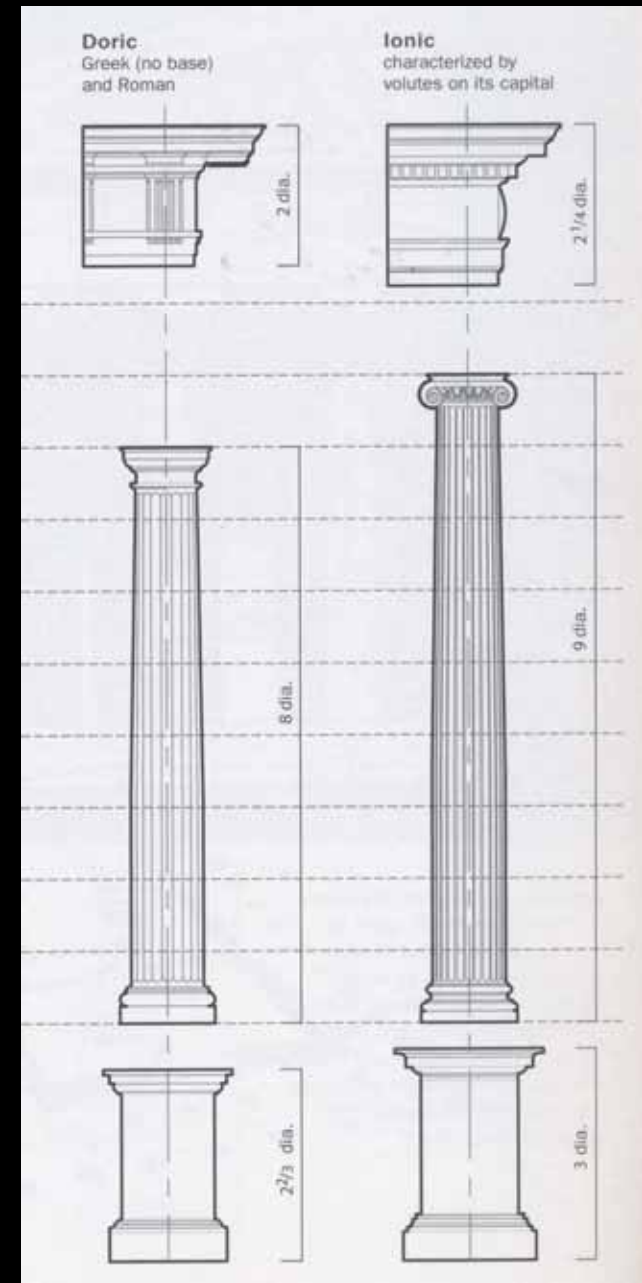
# The two classical Greek orders

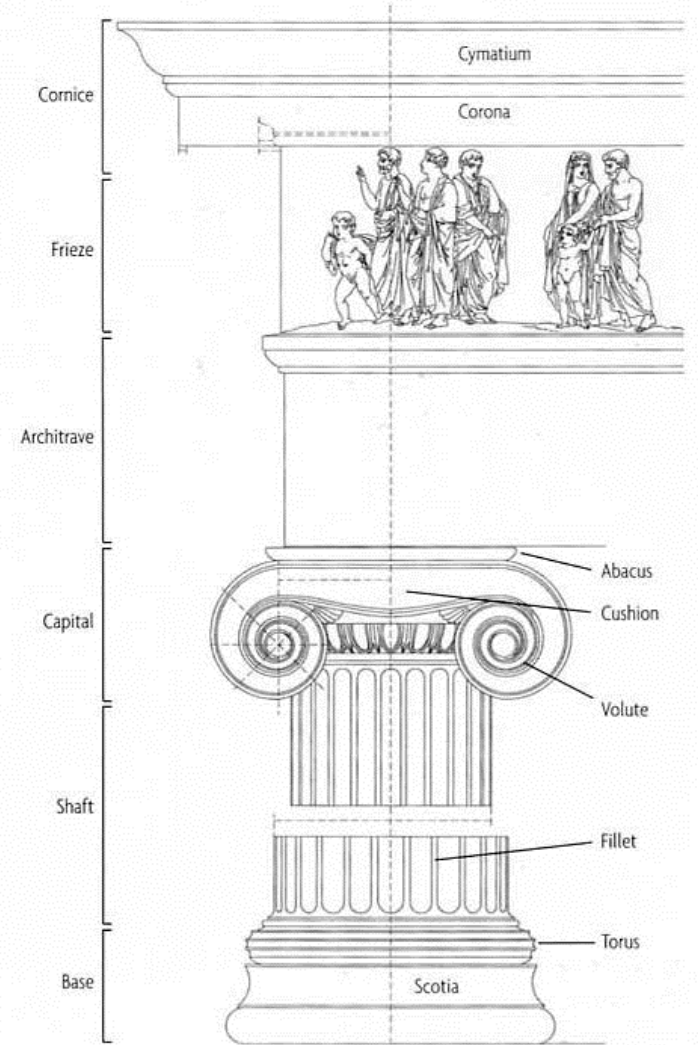
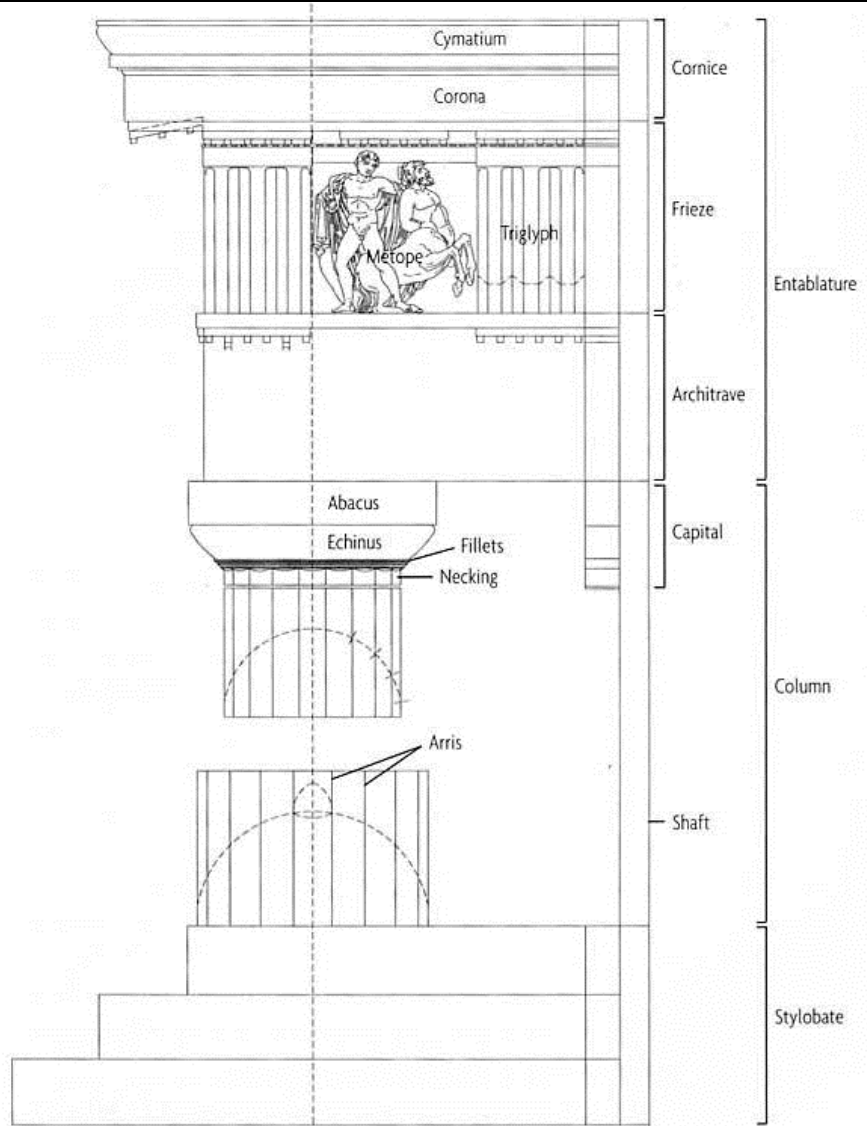
## Doric

- Late 7<sup>th</sup> Century BCE
- Heaviest and most massive of the orders
- Column height is 4-6 x its diameter
- No base
- Fluted column (20 flutes)

## Ionic

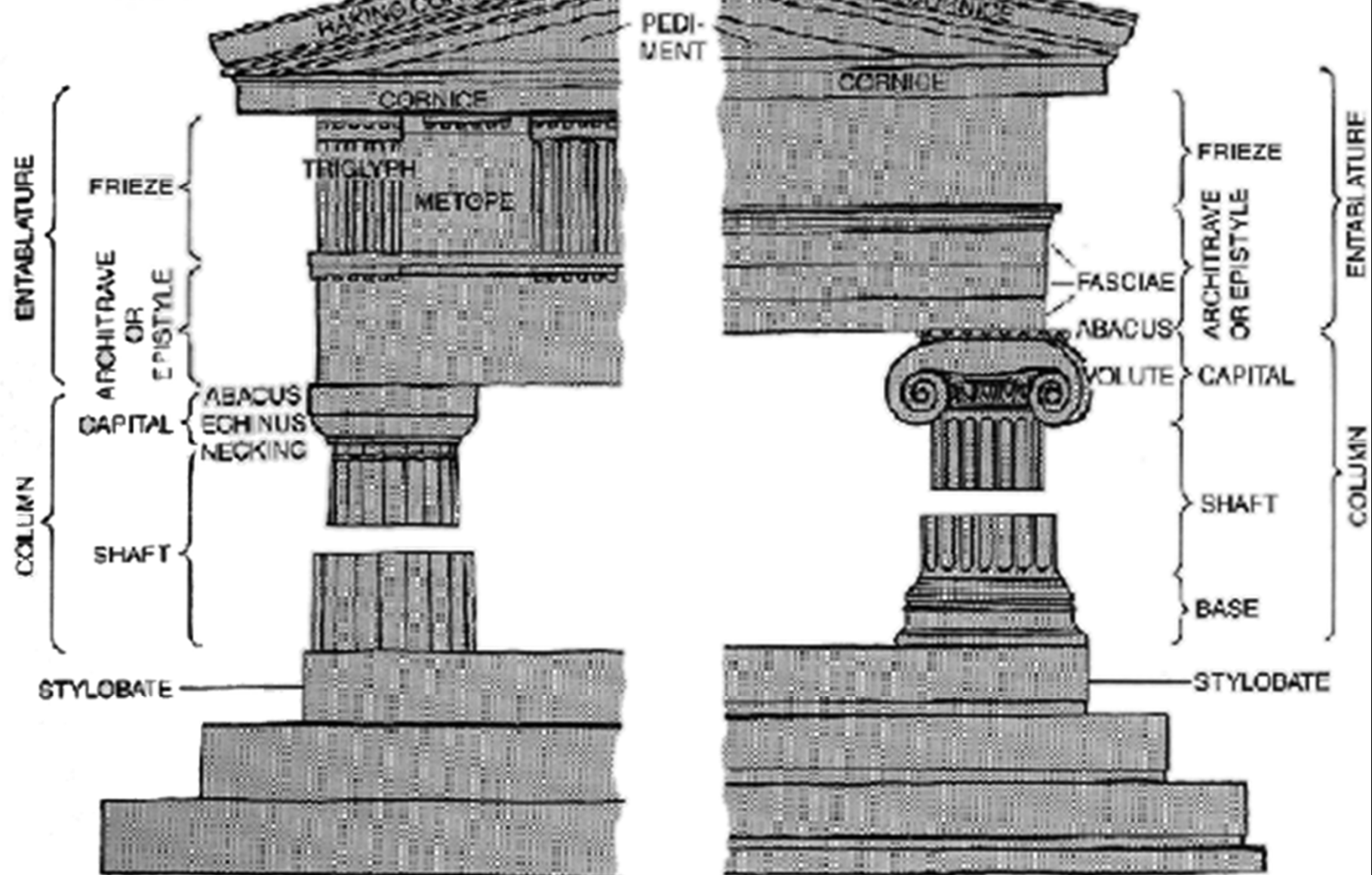
- Suitable for smaller temples - delicate
- Columns are 8-9x high as the diameter
- Base
- Fluted shaft (24 flutes)
- More elaborate capital with volute (a spiral curve; a curved top; like rolled ends of a scroll)





### DORIC ORDER

### IONIC ORDER



5-21 Doric and Ionic orders. (After I. H. Grinnell.)

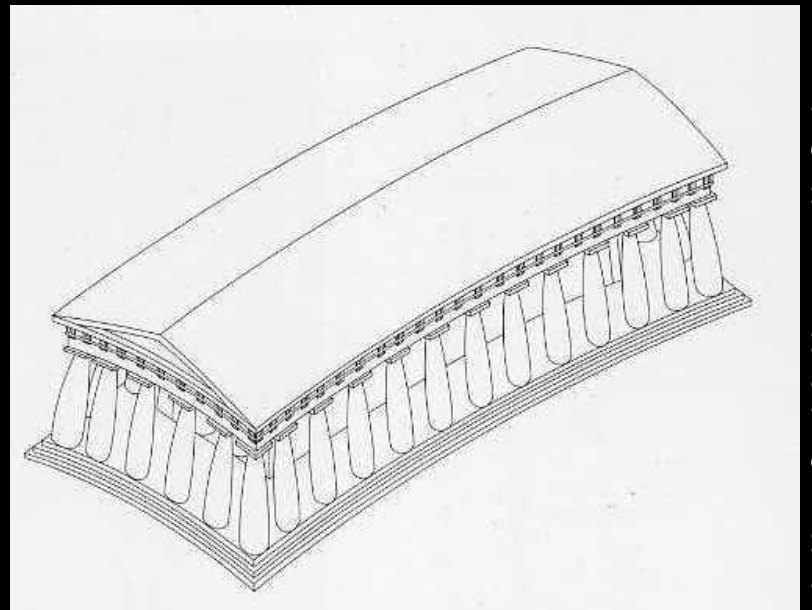
# Entasis

Done to visually correct how vertical elements seem to narrow as they rise

Done to convey straight lines and counteract the optical illusion that the middle appears thinner.

Swelling half way up columns

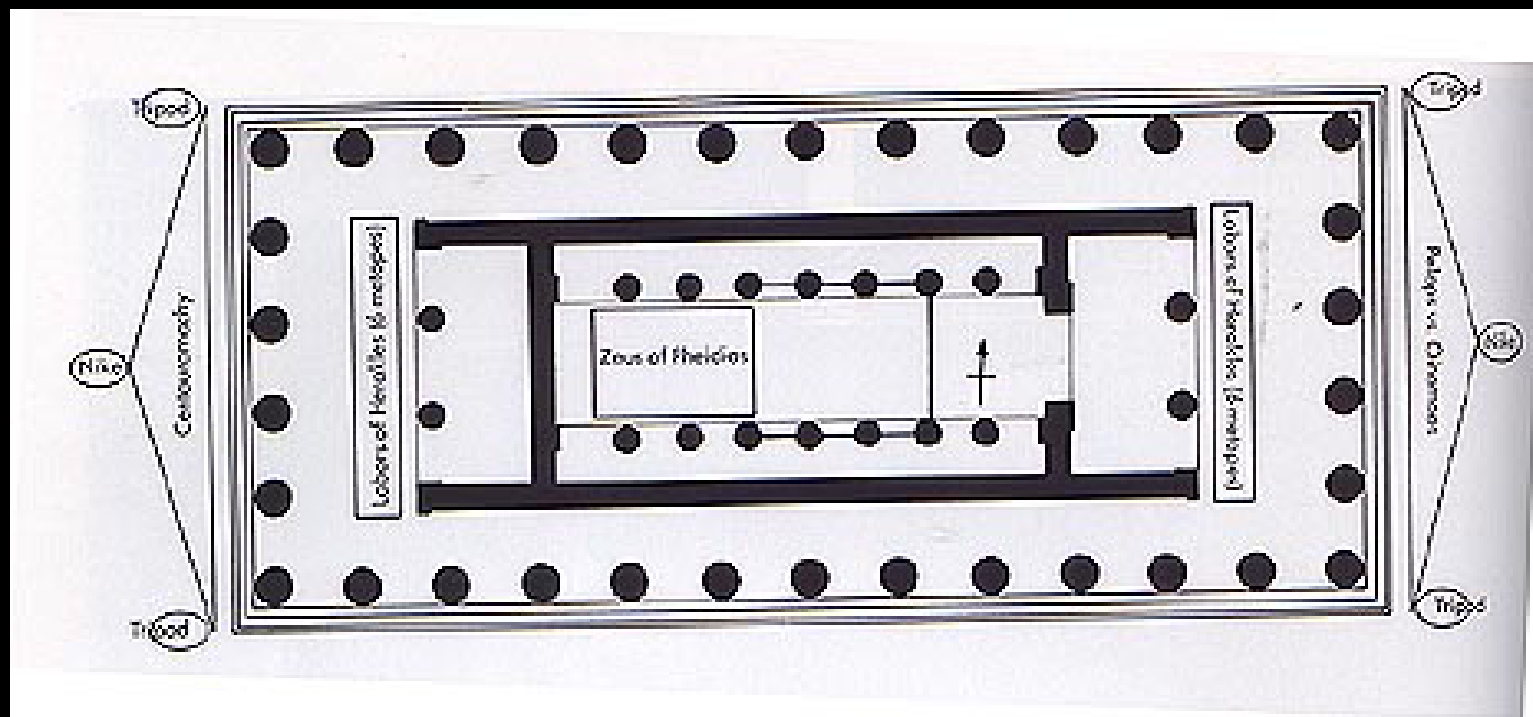
Less than 1" in a 31' high column



# Doric Order in temples:

Typical temples had 6 columns along the front and rear and 13 columns at the side. (2 x front +1)

Construction was call petrified carpentry – based on wood construction.



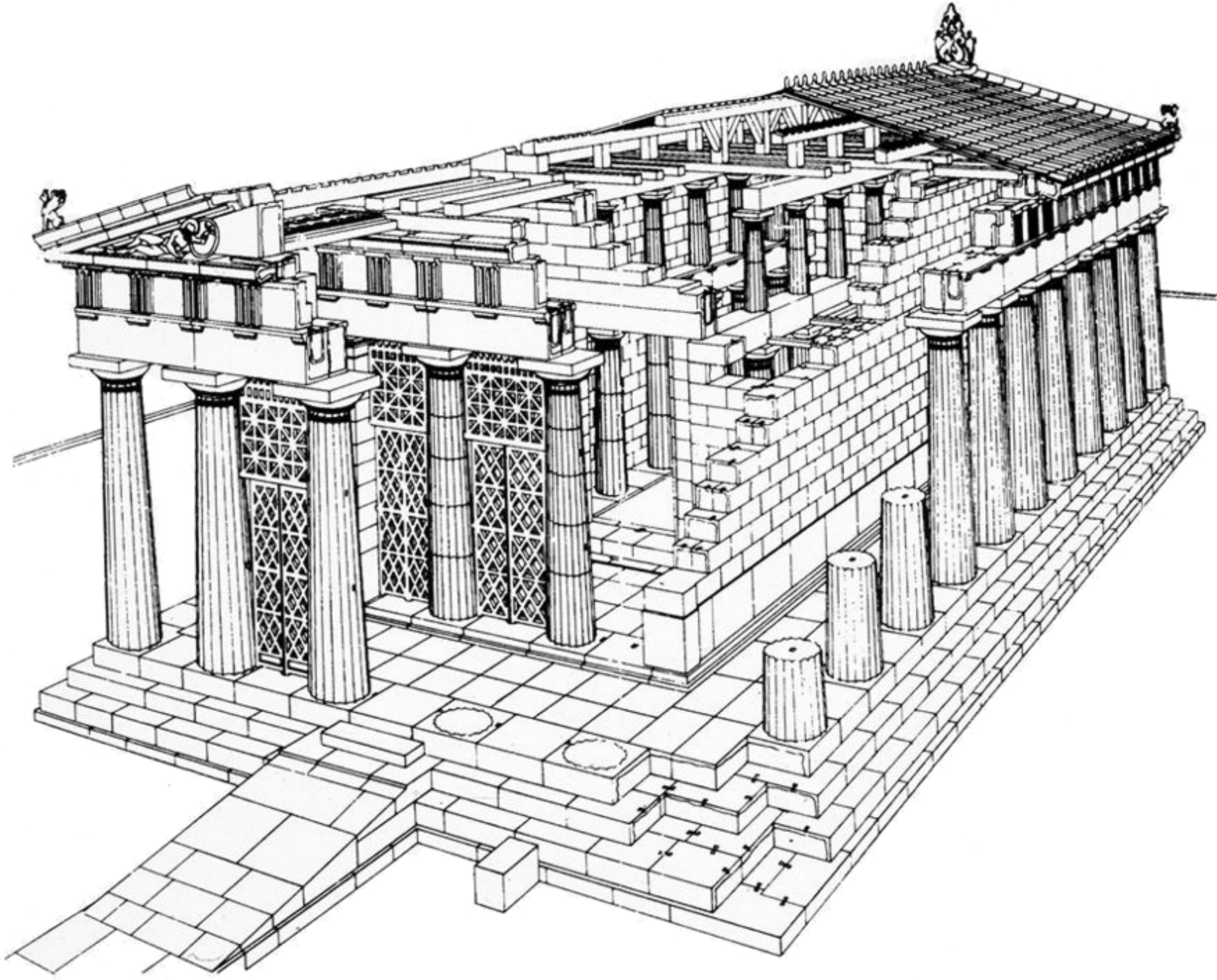
Temple of Zeus at Olympia 479-470 BCE



"The Basilica"  
at Paestum Italy









# The Erechtheion 421-405 BCE

Sloping site inspired split level design

Built at the Acropolis

No continuous colonnade – 4 separate porticos

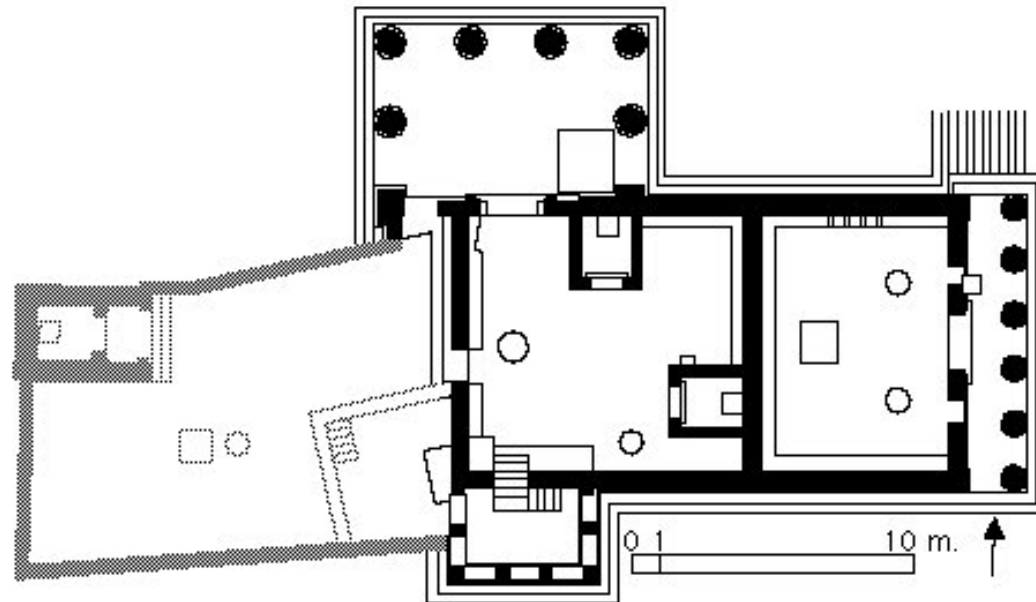
Accommodates diverse hallowed areas

Departs from traditional symmetry

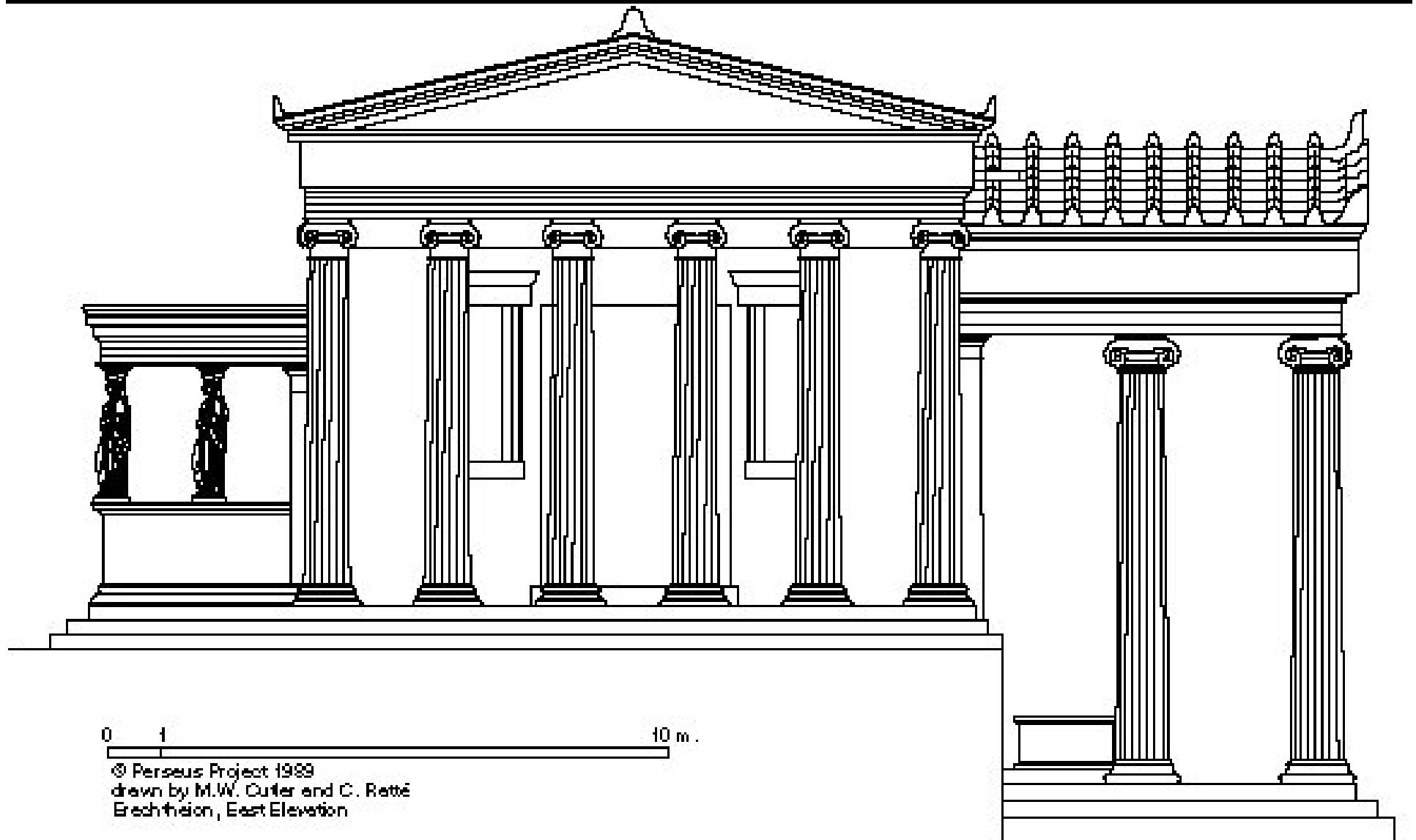
Continuous frieze running above architrave

Abundance of sculpted ornament

Athens, Erechtheion



# The Erechtheion 421-405 BCE



# The Erechtheion 421-405 BCE



# The Erechtheion 421-405 BCE





# The Erechtheion 421-405 BCE



# The Erechtheion 421-405 BCE

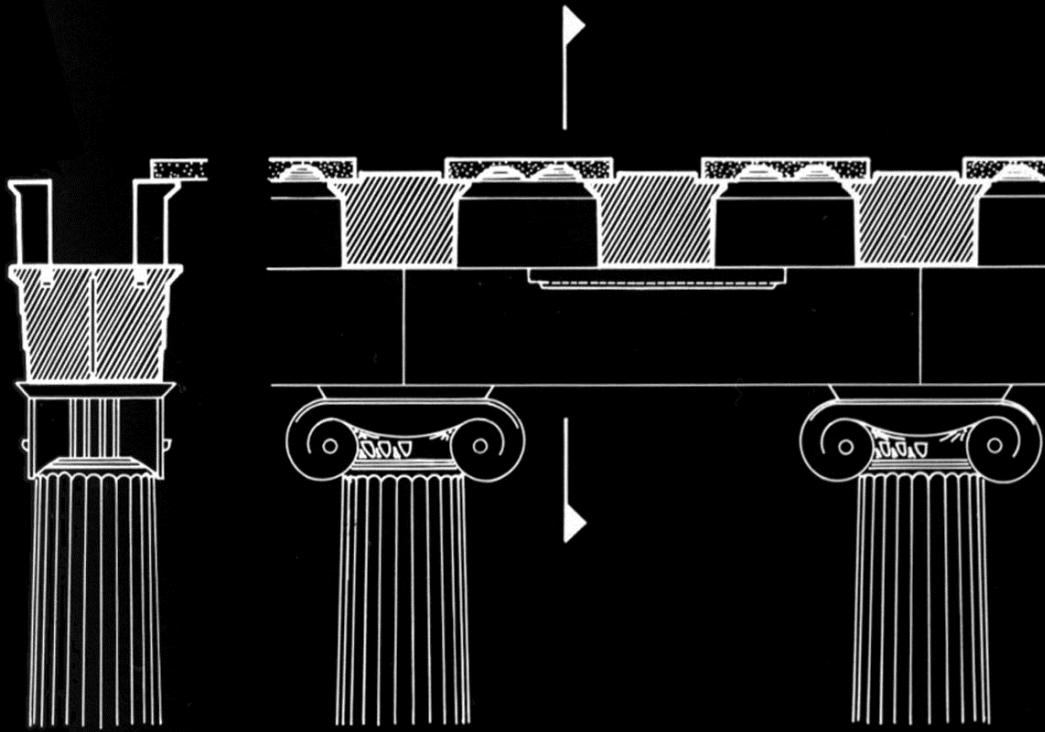


# The Erechtheion 421-405 BCE

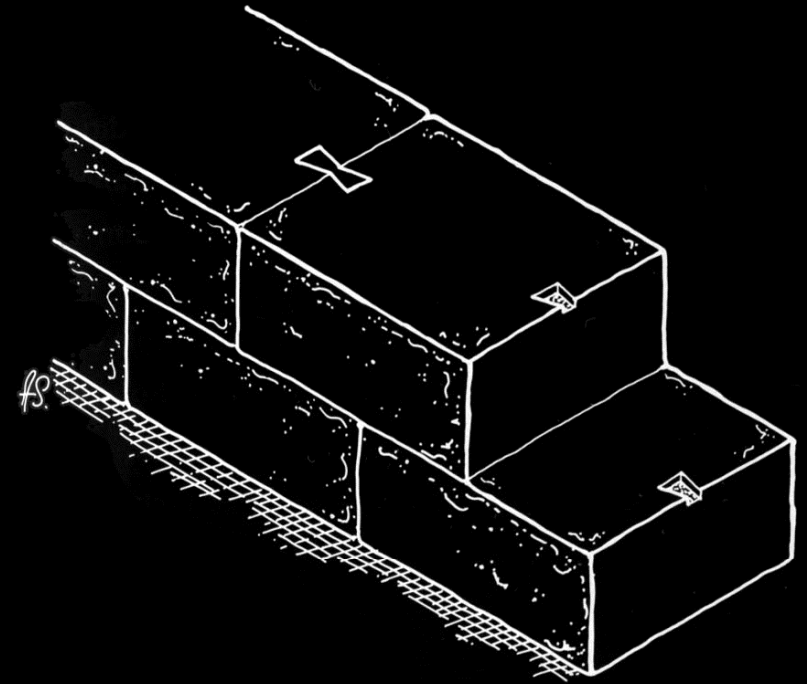




Ballista " Temple\_of\_Apollo\_(2c)" Image from "Paestum" 2006/18/05  
<http://commons.wikimedia.org/> (2/10/2010)



3.27 Propylea, Athens, ca. 432–437 B.C. Iron-bar insert in ceiling beam (after Coulton).



3.29 “Bow-tie” cramps employed in Greek temple construction (after Coulton).

# Greece: 480 - 431 BCE

480 BCE Persians destroyed many of the buildings

479 BCE ends the Persian invasion of Greece

450 BCE Pericles allocates defensive funds for rebuilding

Begins rebuilding the Acropolis



# Acropolis (High Point in the City)

Complex Site

Commanding shape

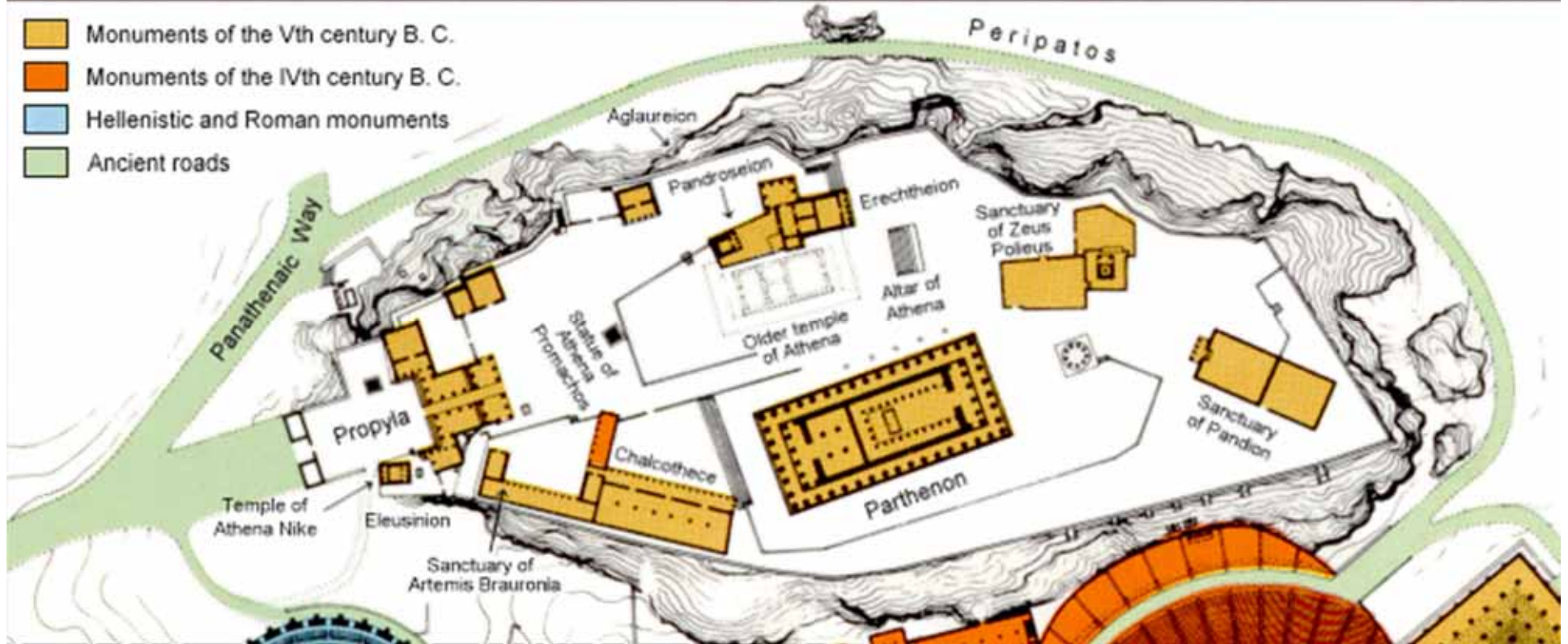
Highly defensible – surrounded by sheer cliffs except the west

Religious and Cultural Center

Built of marble - allowed fine detail (previously mainly limestone)



# Acropolis (High Point in the City)





# Site Planning:

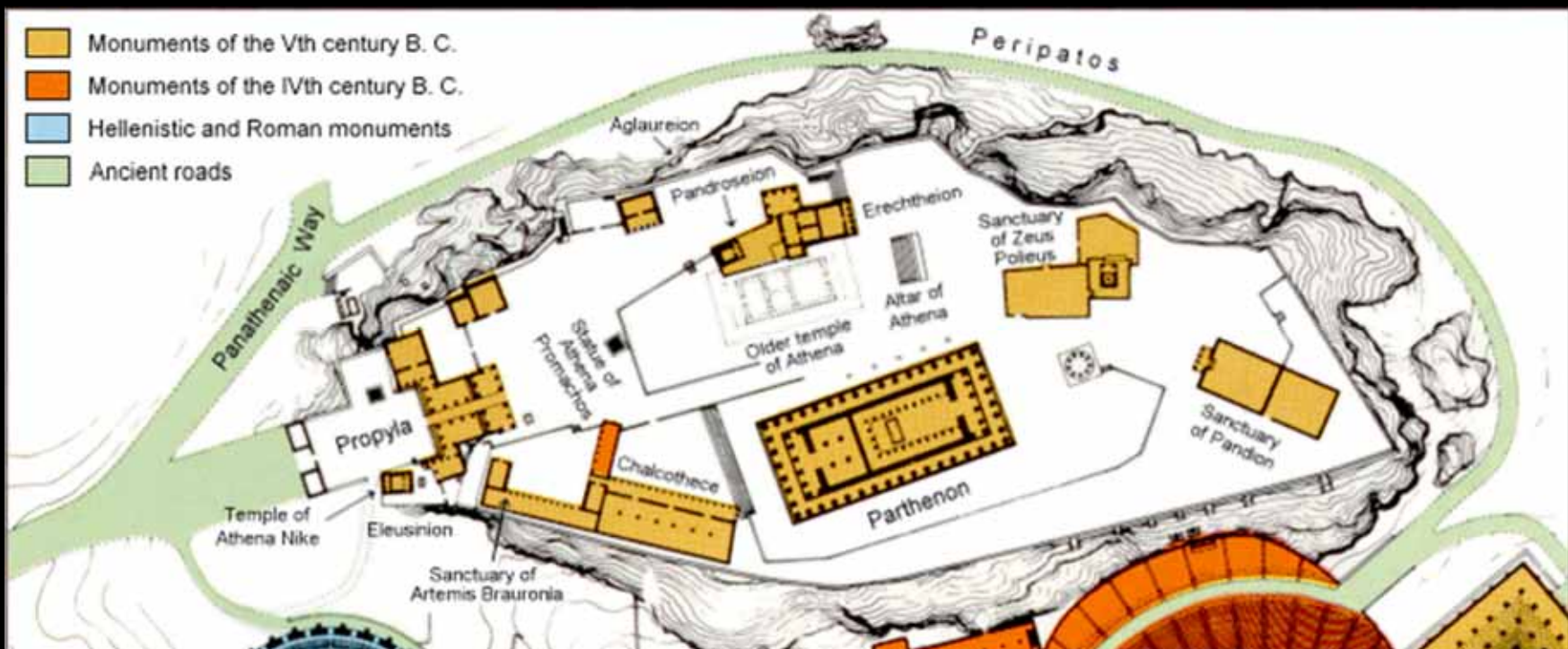
Each Building was sited and designed with others in mind

The observer went up a zigzag ramp – many glimpses

Avoid strictly frontal views of monuments (Unwritten Rule)

Symmetry in Buildings, not in Site Planning

Wanted observer to view buildings in 3-D not flat elevations



# Parthenon: 447-438 BCE

Thought to be the world's most perfect building

Doric Temple dedicated to Athena – Patron Goddess of Athens

Highest Point of the Acropolis

20,000 Tons of Marble

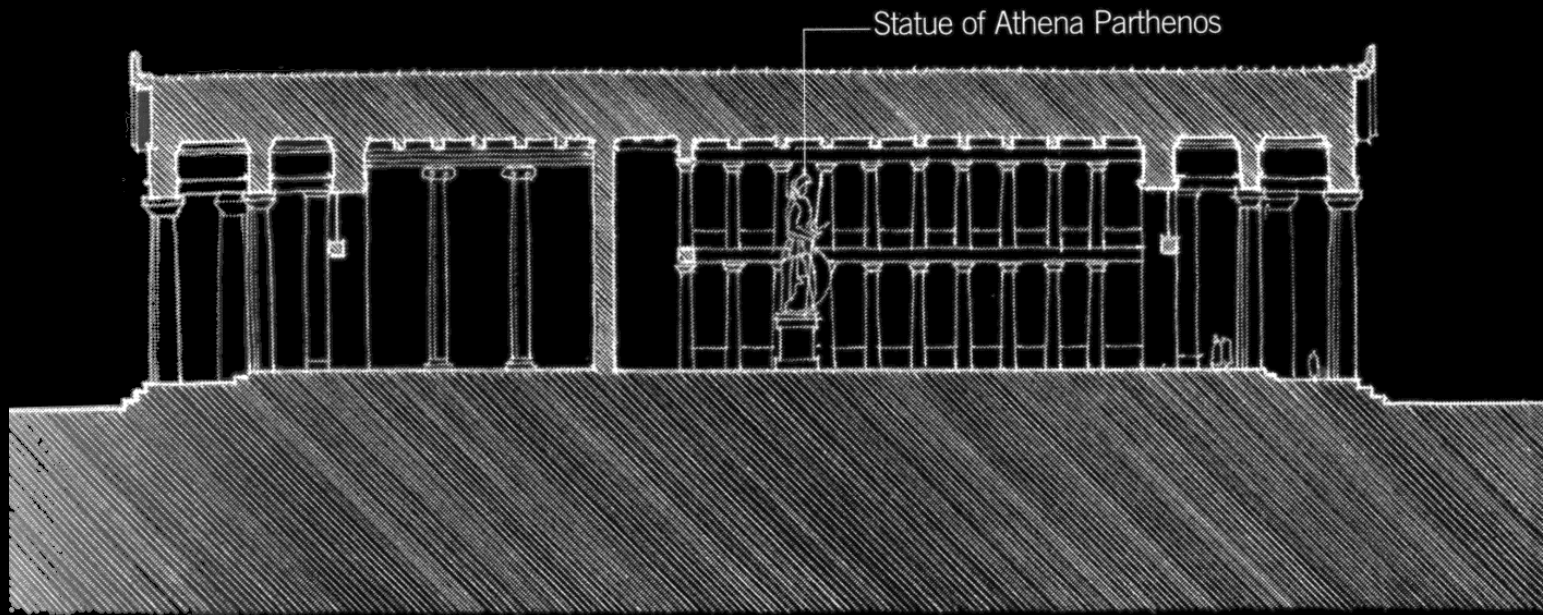
Designed by Iktinus & Kalikrates

Symbol of Architecture Refinement

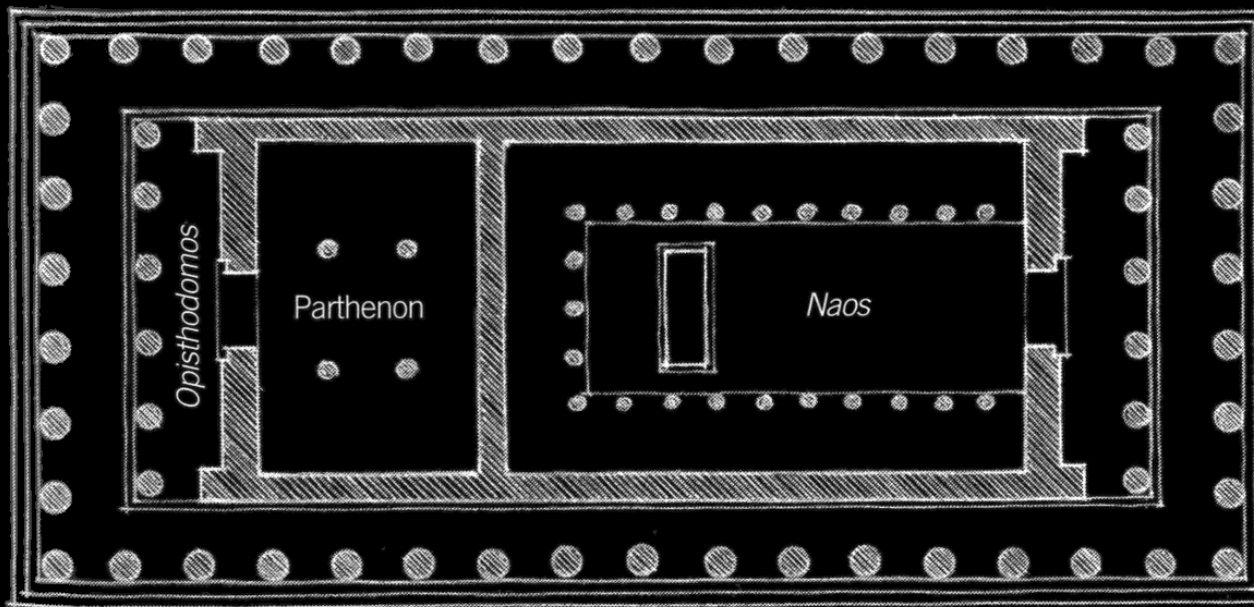




Janson - *History of Art*



Section



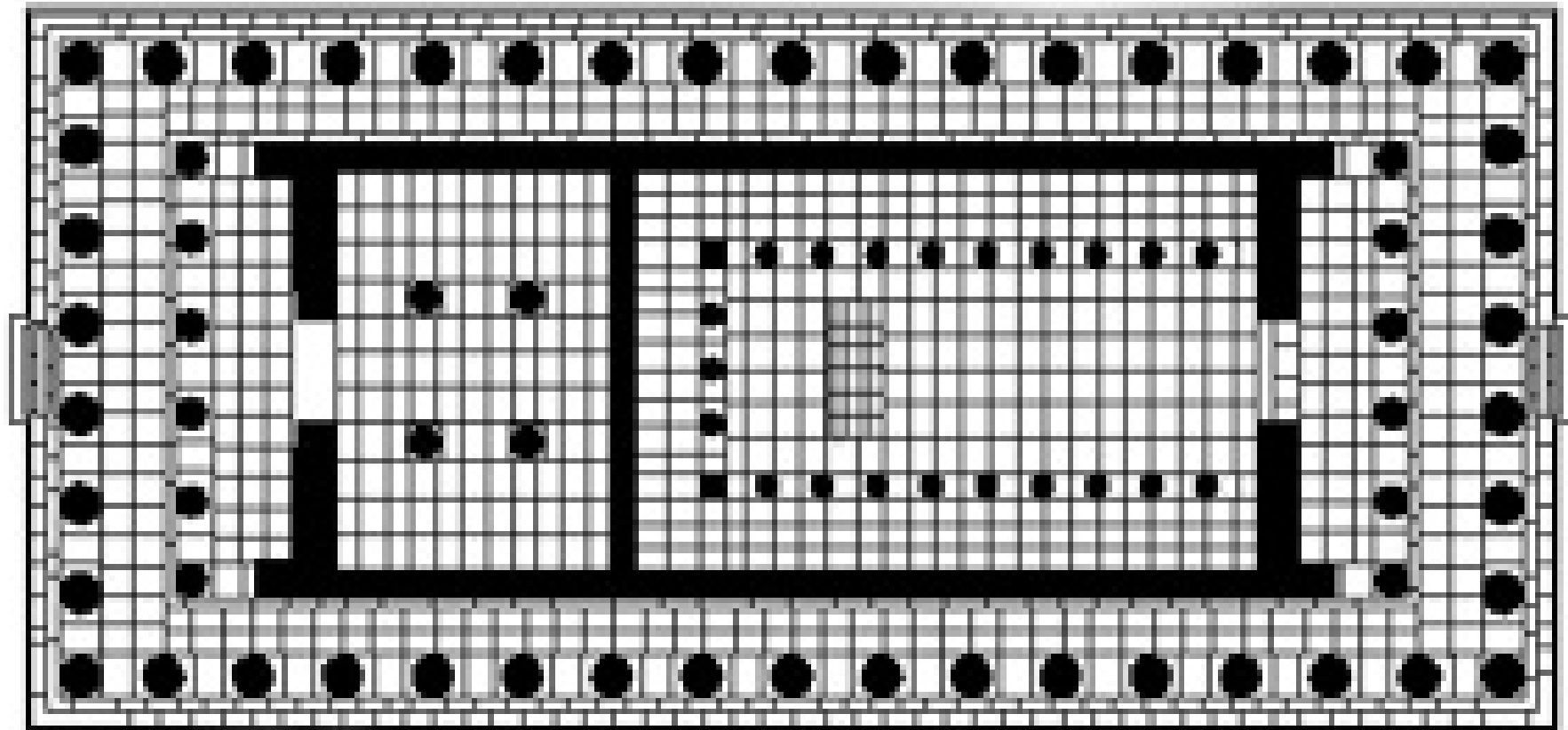
Plan

0 30 m

# Parthenon: 447-438 BCE

8 x 17 Doric columns

6 Columns at front and rear entrances



# Parthenon: 447-438 BCE

8 x 17 Doric columns

6 Columns at front and rear entrances



[www. Odesseyadventures.com](http://www.Odesseyadventures.com)



[www. Greatbuildings.com](http://www.Greatbuildings.com)



Wikimedia Commons  
@ <http://commons.wikimedia.org>

# Parthenon: 447-438 BCE

101' x 228'

8 x 17 Doric columns

Columns: 6'2" wide and 34'3" tall

Ratio: 1 : 5-1/2

Three step around the Temple

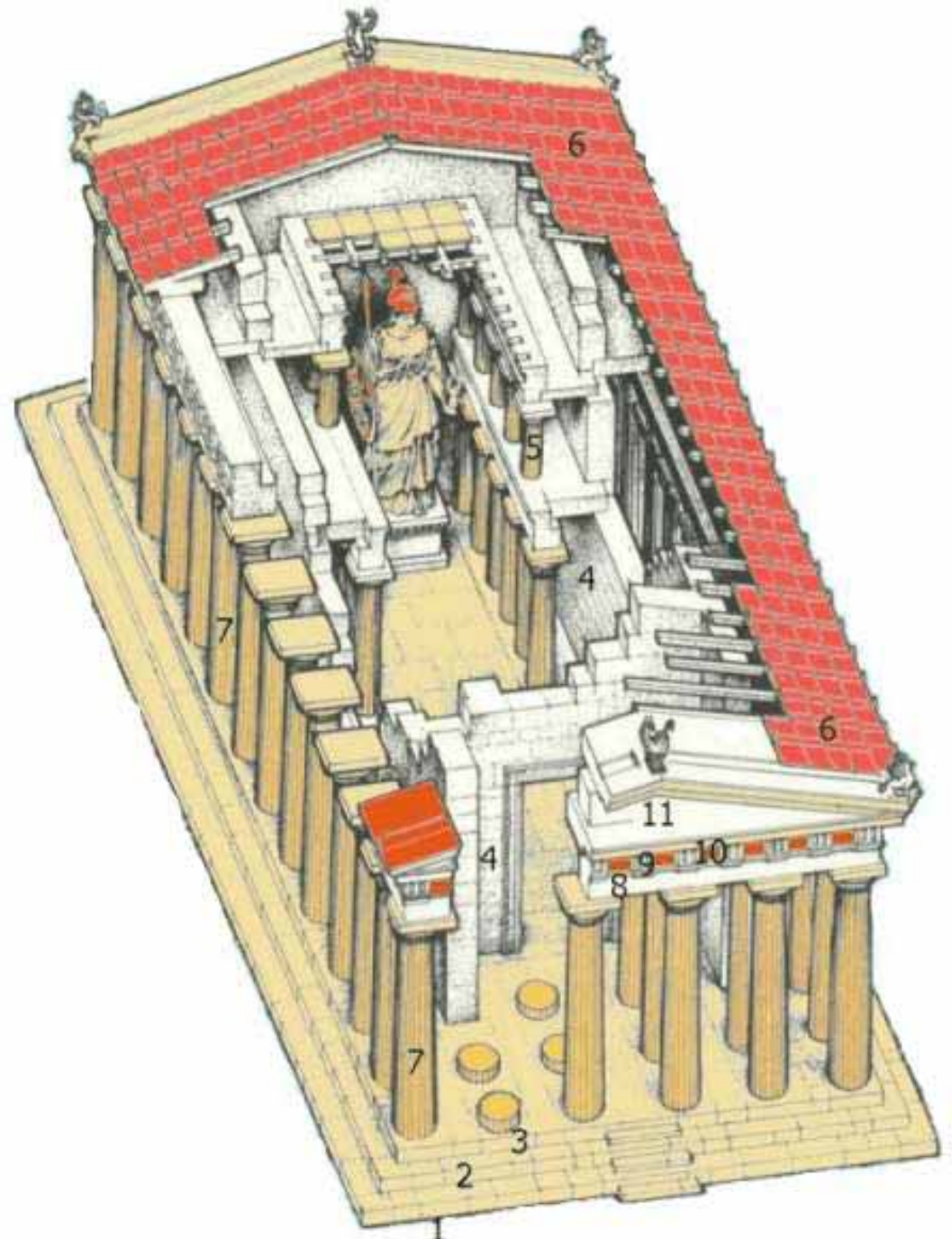
Statue of Athena – Fully Armed

Marble transported 16k from the  
Pentelicus Mountain

Remained intact until 1687 when  
a Venetian shell exploded  
destroying interior and roof

Many sculptures

Terracotta tiled roof





Wikimedia Commons @ <http://commons.wikimedia.org>  
Photographer: Marie-Lan Nguyen 2007



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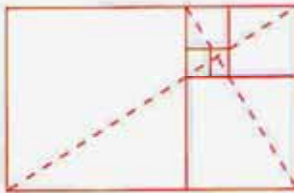
Painted by Gottfried Semper 1836



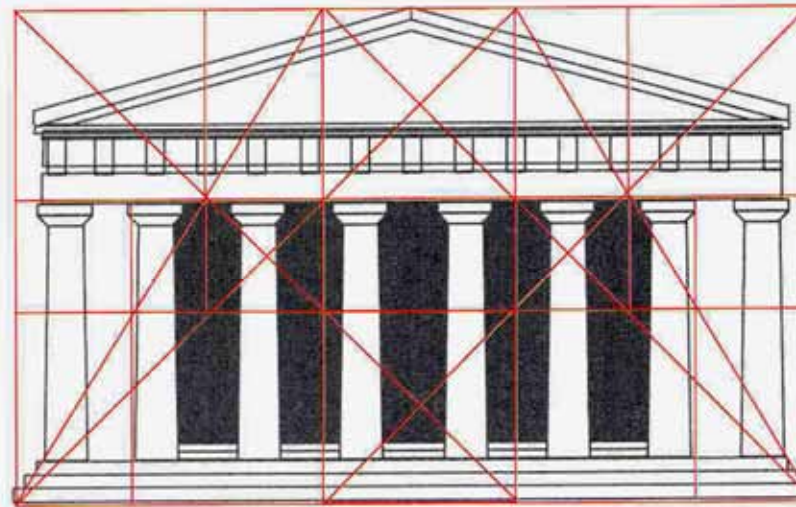
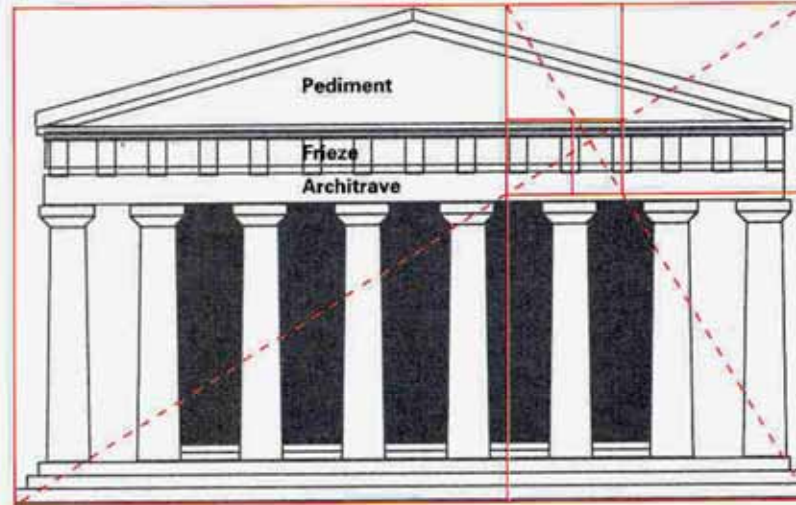
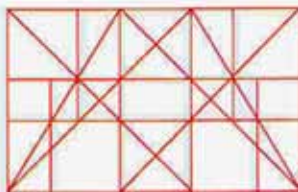
# Parthenon: 447-438 BCE

Out the history of architecture.

**Drawing of the Parthenon, Athens, ca. 447-432 B.C., and the Architectural Relationship to the Golden Section**  
Analysis of golden section proportions according to the golden section construction diagram.



**Golden Section Harmonic Analysis**  
Analysis of golden section proportions according to a diagram of a harmonic analysis of the golden section.



# Propylaea: 437- 432 BCE

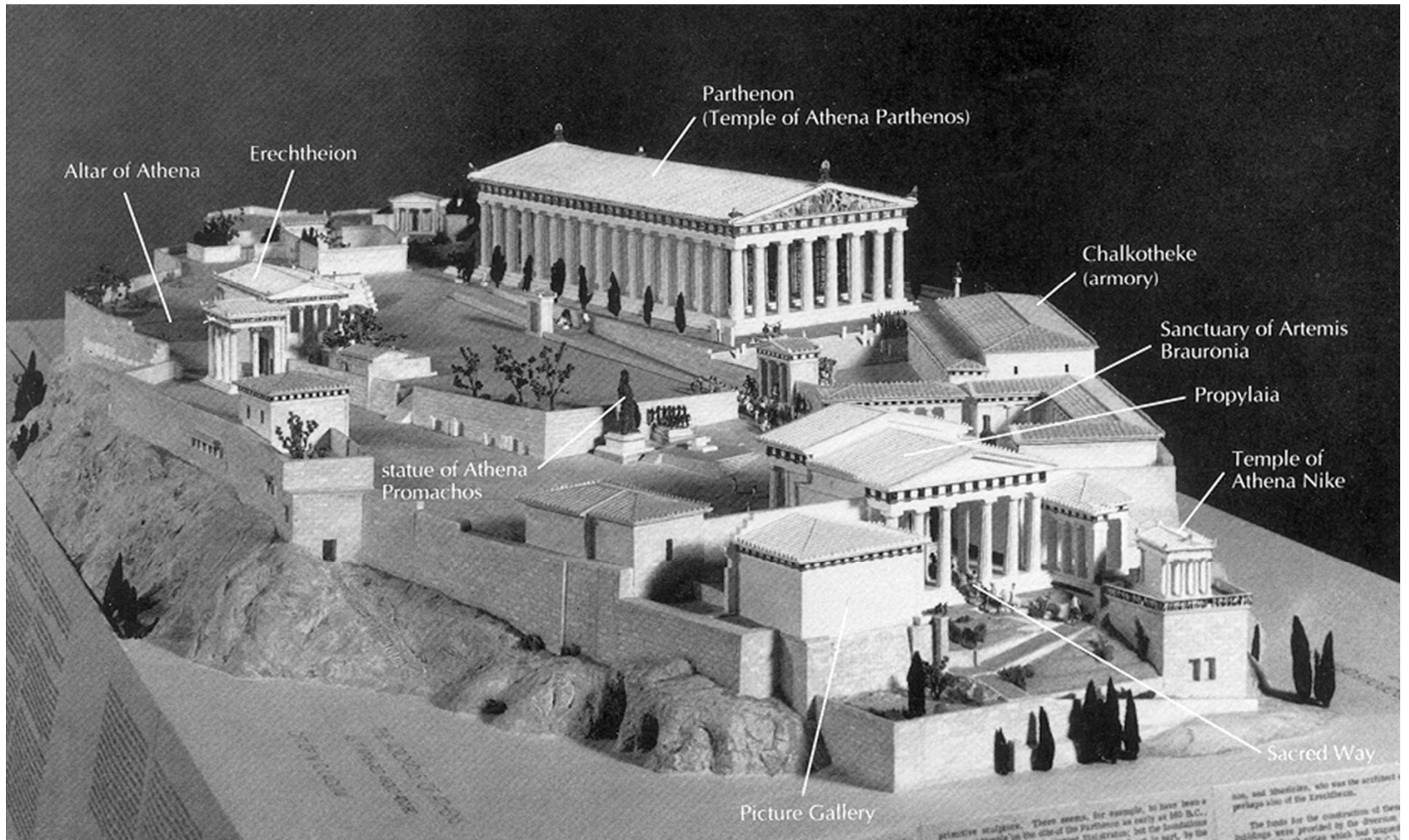
Gateway to the Acropolis

Designed by Mnesikles

2 levels due to uneven ground

Gateway from Land of Humans to  
The Land of Gods

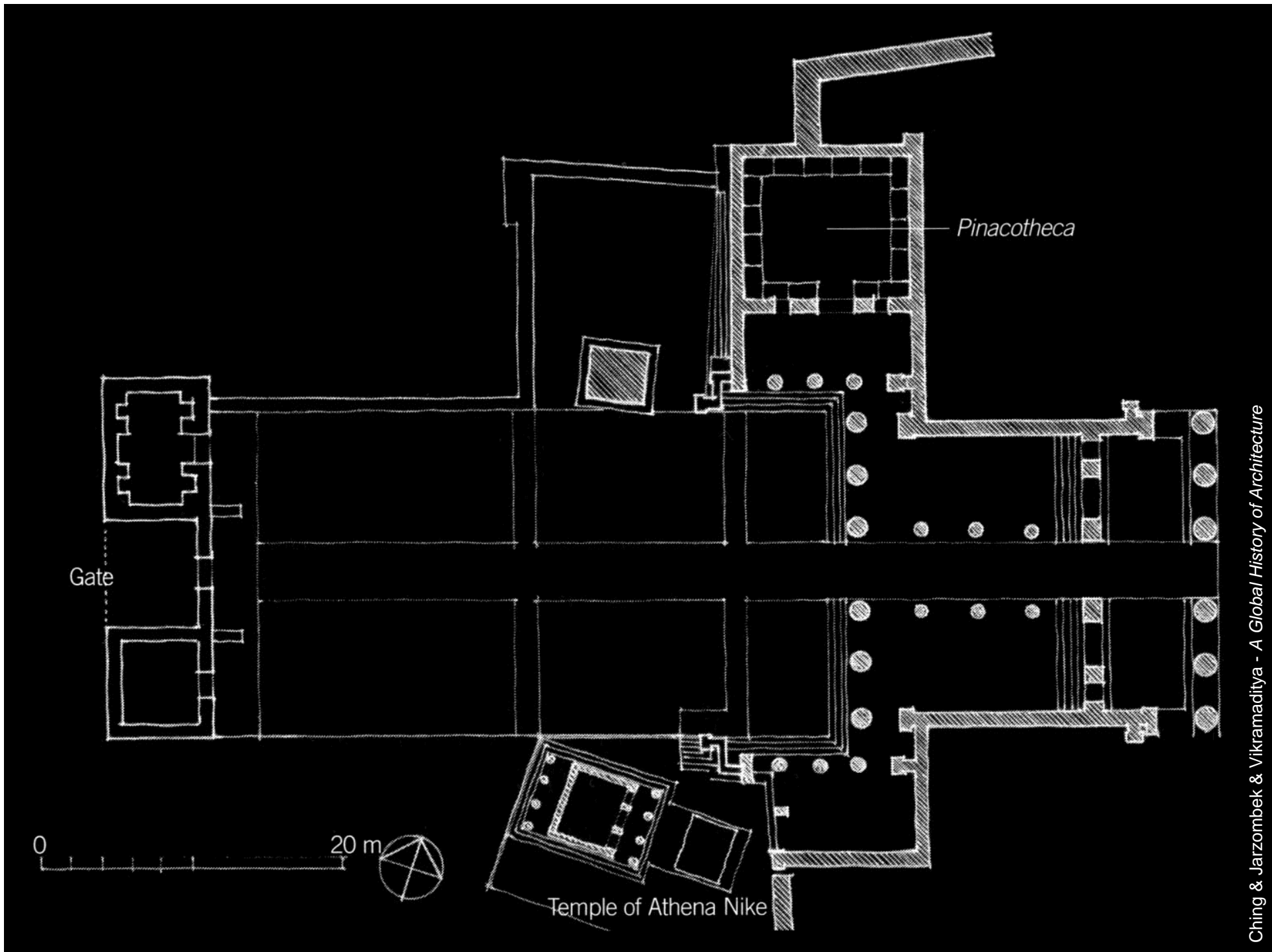


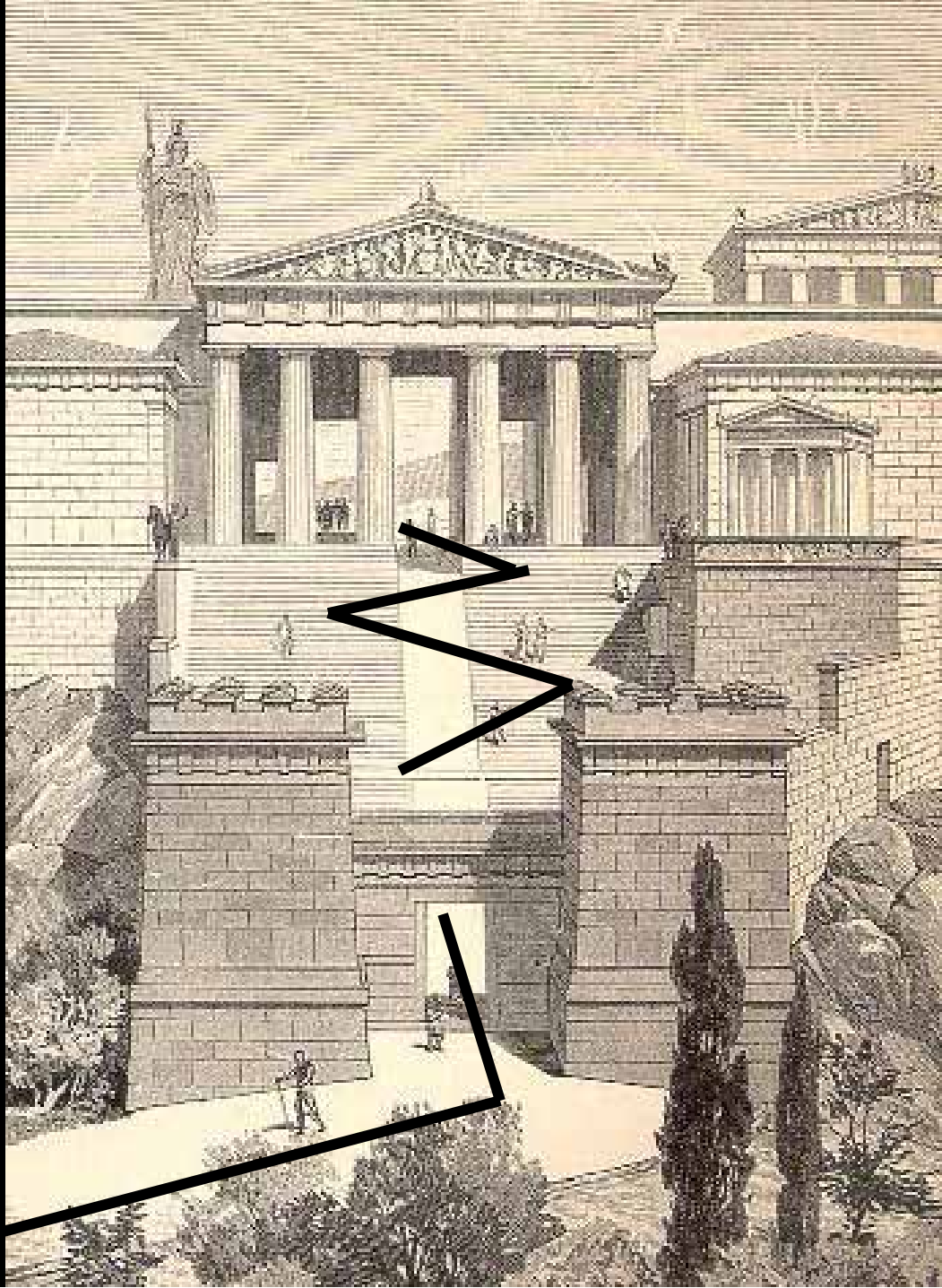


Reconstruction Model of The Acropolis, Athens



[www.flickr.com/photos/denovich/](http://www.flickr.com/photos/denovich/)  
Creative Commons license





# Temple of Nike:

427- 410 BCE

Goddess of Victory

Earliest Ionic Building at the  
Acropolis

Columns: 11' high

Ratio: 1:7

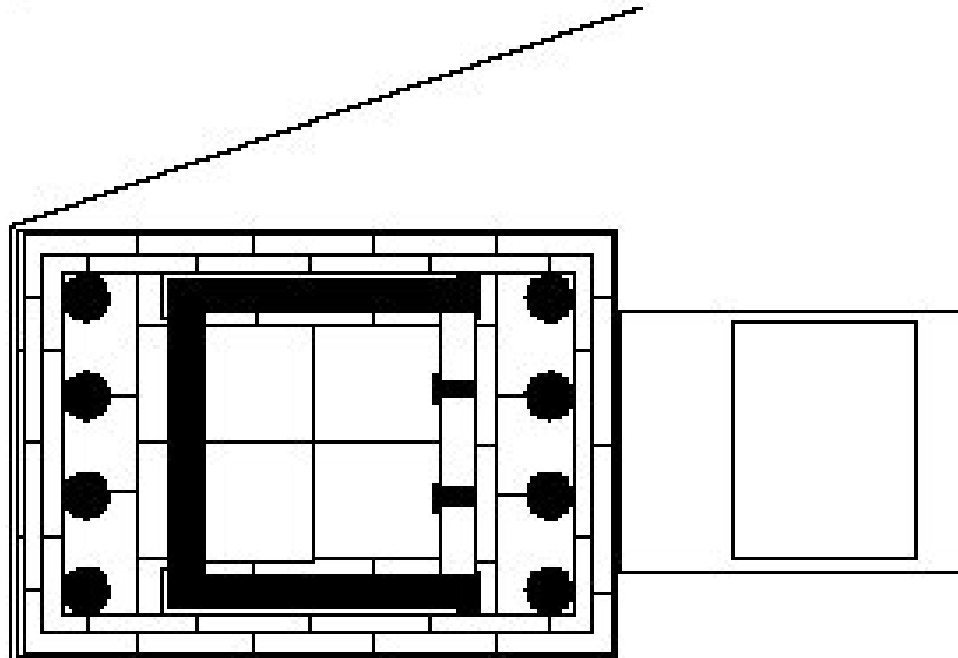
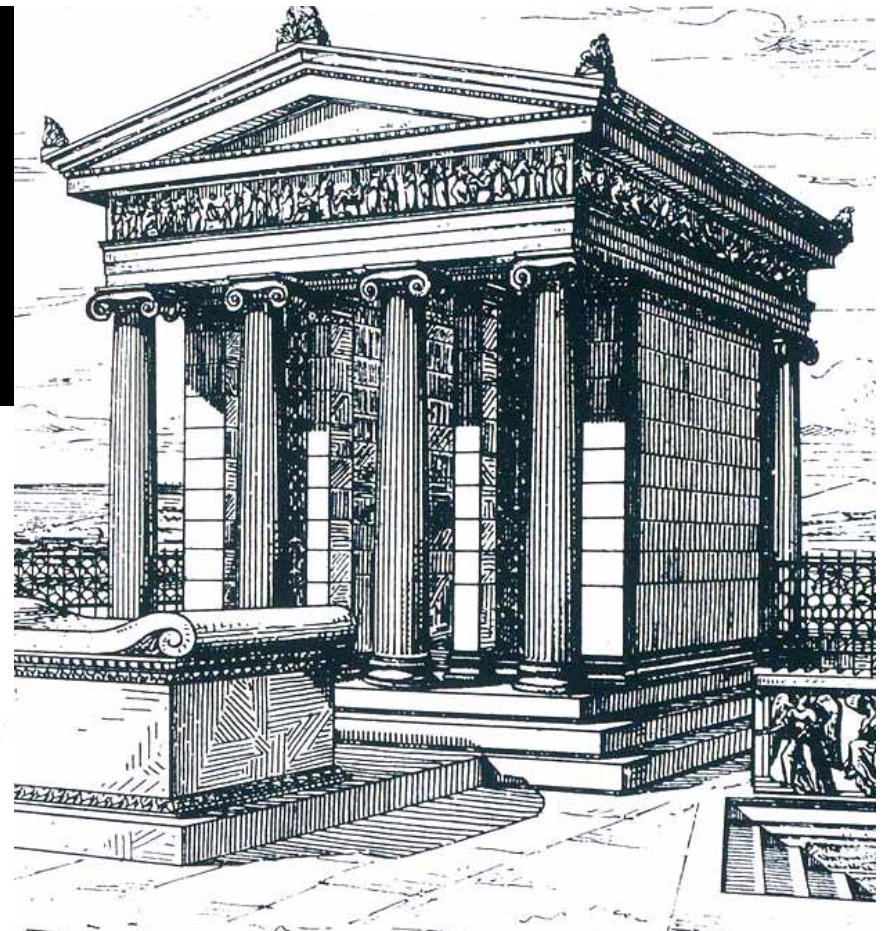
Frieze: battle scenes depicting  
Greeks versus Persians

Set on 4 steps

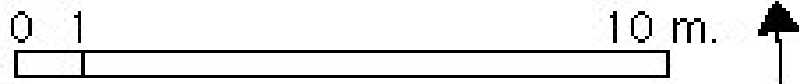
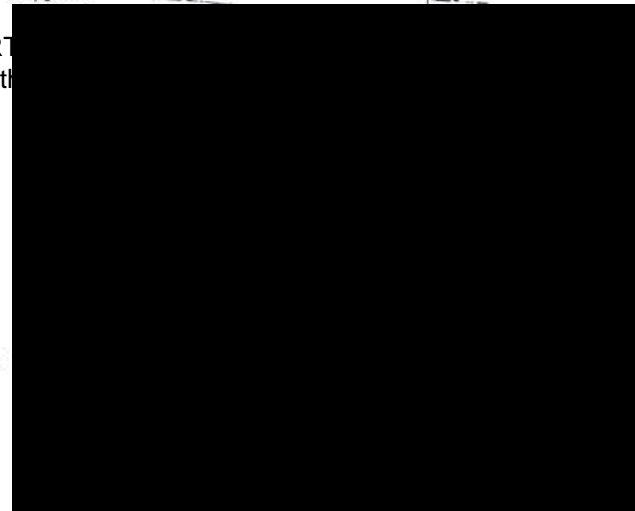
Pediment decorated with winged  
victories or Nike(s) created by  
Callimachus







ART  
"Temple of Athena"





Wikimedia Commons @ <http://commons.wikimedia.org>



# Temple of Nike: 427- 410 BCE



# The Erechtheion 421-405 BCE

Sloping site inspired split level design

Built at the Acropolis

No continuous colonnade – 4 separate porticos

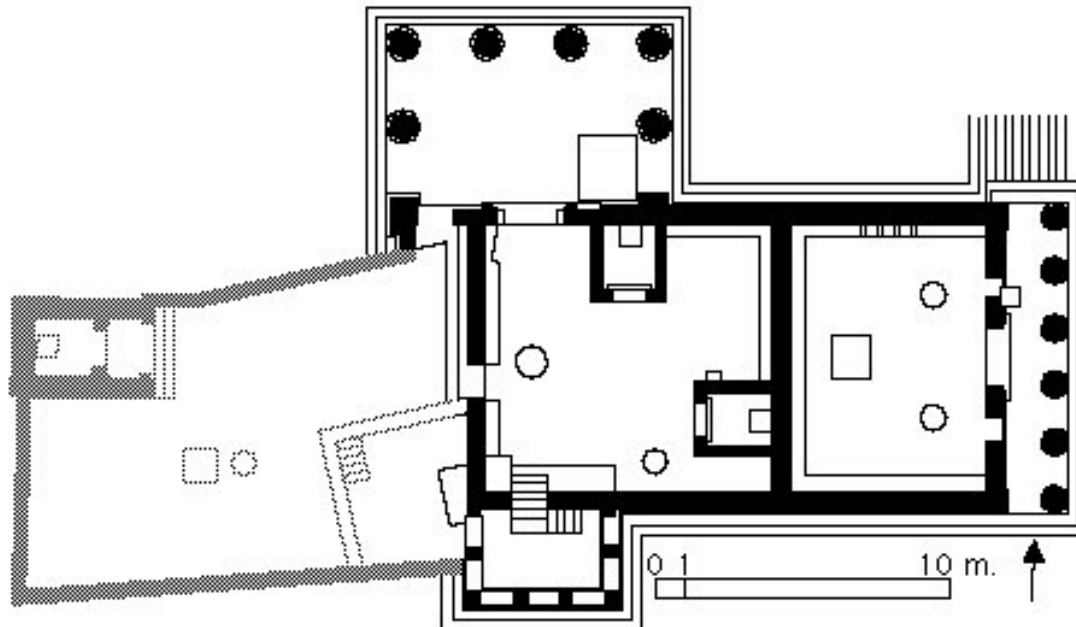
Accommodates diverse hallowed areas

Departs from traditional symmetry

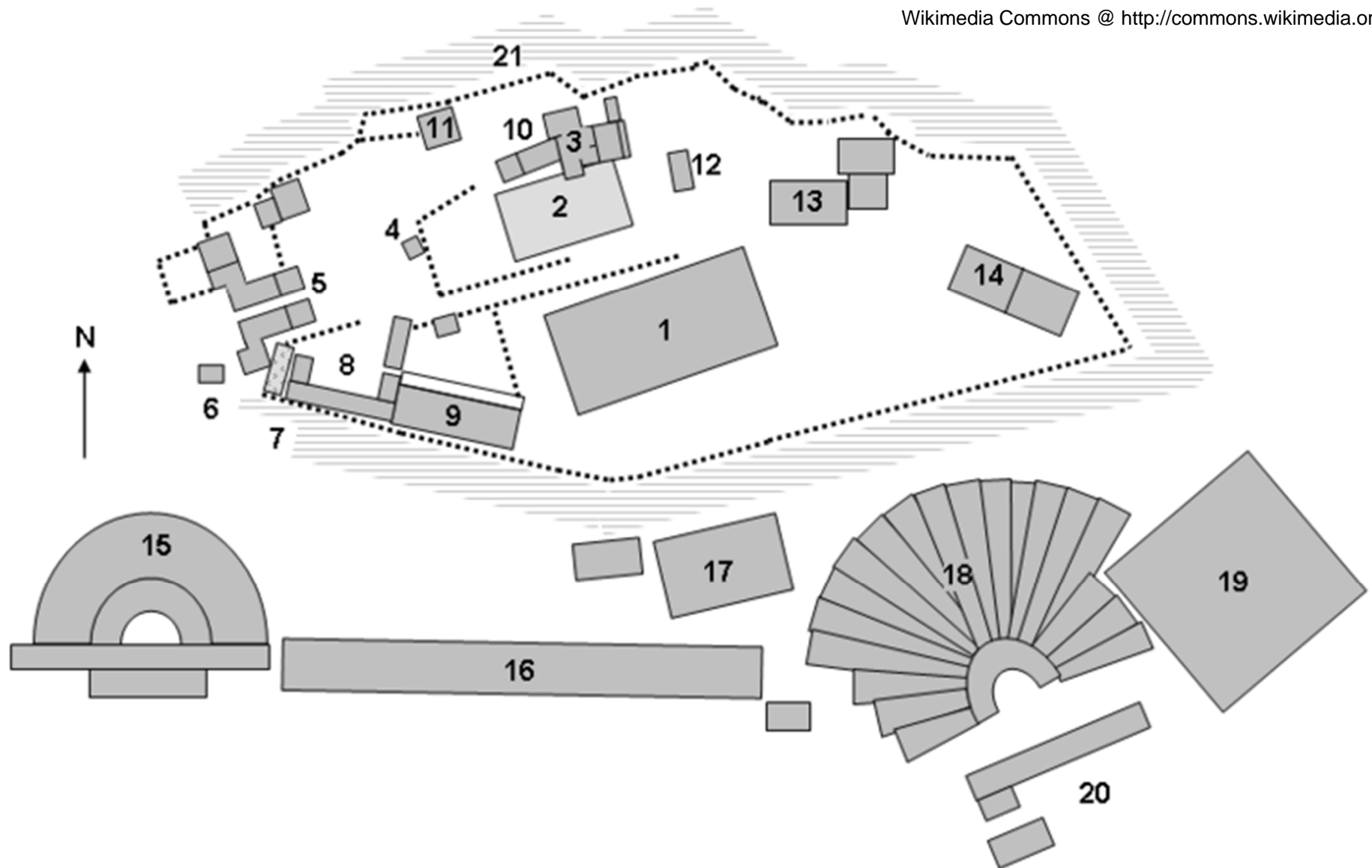
Continuous frieze running above architrave

Abundance of sculpted ornament

Athens, Erechtheion

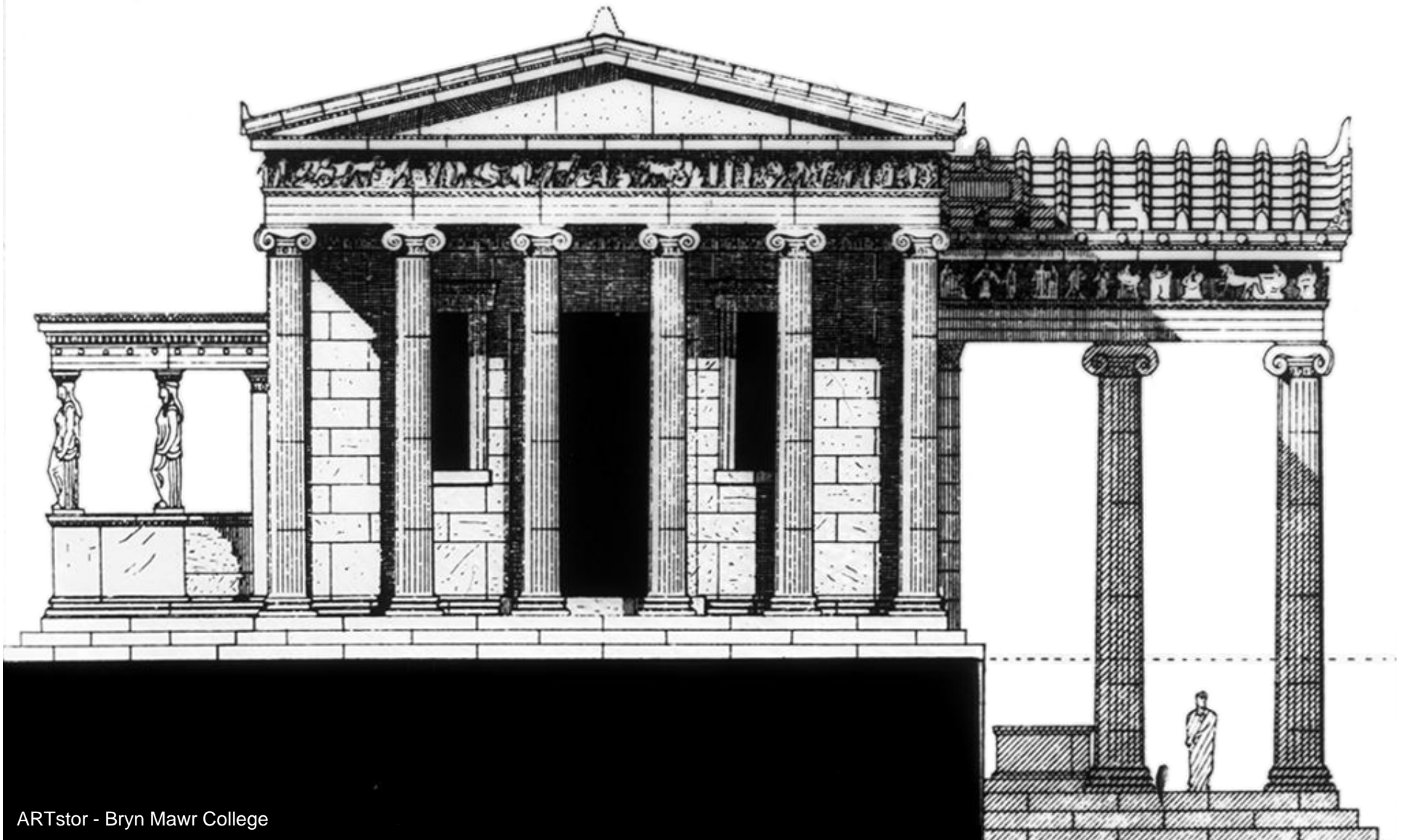






Key			
1 Parthenon	6 Temple of Athena Nike	12 Altar of Athena	18 Theatre of Dionysus Eleuthereus
2 Old Temple of Athena	7 Eleusinion	13 Sanctuary of Zeus Polieus	19 Odeum of Pericles
3 Erechtheum	8 Sanctuary of Artemis Brauronia	14 Sanctuary of Pandion	20 Temenos of Dionysus Eleuthereus
4 Statue of Athena Promachus	9 Chalkotheke.	15 Odeon of Herodes Atticus	21 Aglaureion
5 Propylaea	10 Pandroseion	16 Stoa of Eumenes	
	11 Arrephorion	17 Sanctuary of Asclepius	

# The Erechtheion 421-405 BCE







# The Erechtheion 421-405 BCE



# The Erechtheion 421-405 BCE



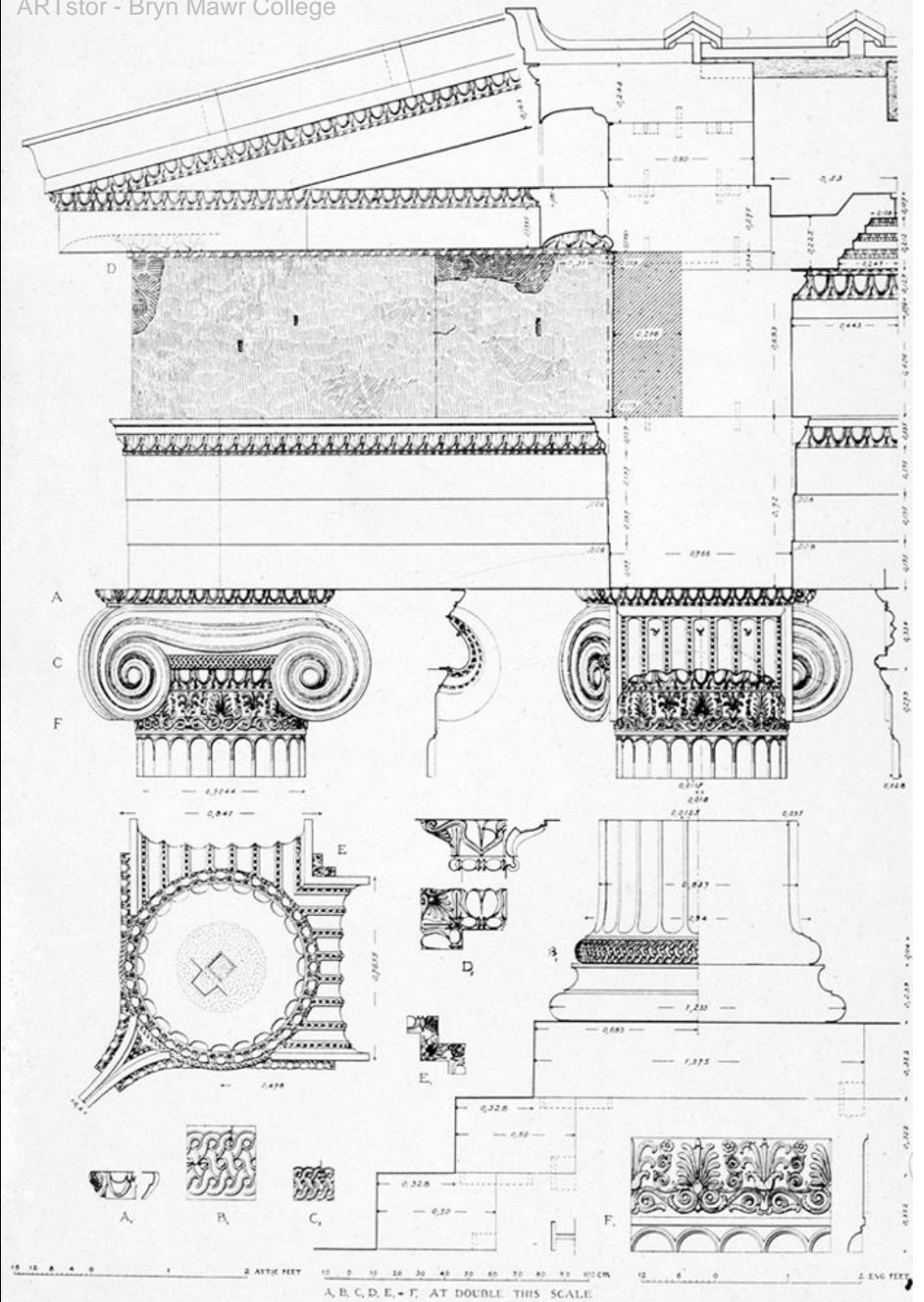
# The Erechtheion

421-405 BCE



ARTstor - Image © Bryn Mawr College

ARTstor - Bryn Mawr College



A, B, C, D, E, + F. AT DOUBLE THIS SCALE



431 BCE: Peloponnesian War: Greece loses to Sparta democracy remains

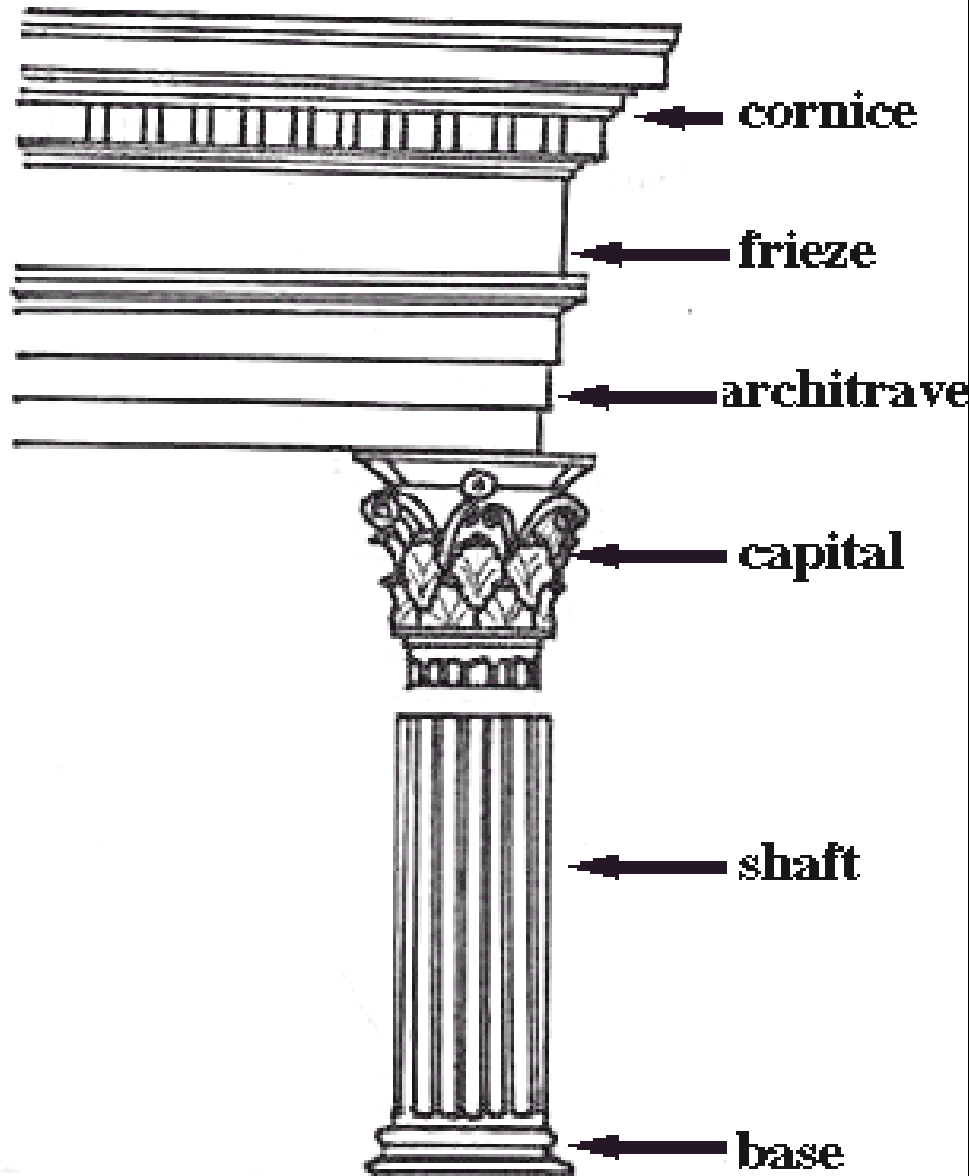
336 BCE: Alexander the Great conquers Greece: democracy survives, but its vitality was gone

Hellenism began after the death of Alexander the Great

Change in the Greek citizen: specialized – not involved in all aspects of public life (politically, military and economically)

Change in Architecture: greater freedom, shift in Architectural style, introduction of the Corinthian Column

## Corinthian Order



## Corinthian:

Late 2<sup>nd</sup> Century BCE

Thin and decorative

Columns were 10 times taller than the diameter

Designed by Callimachus combining a goblet and scrolls and acanthus leaves

There were 24 flutes

# Corinthian:

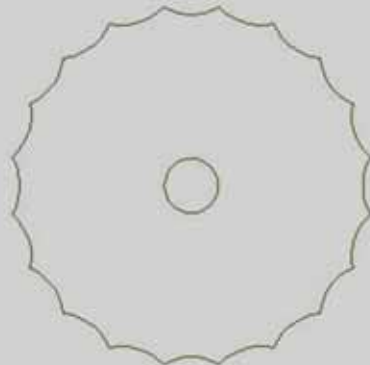


[/www.phpwebhosting.com](http://www.phpwebhosting.com)

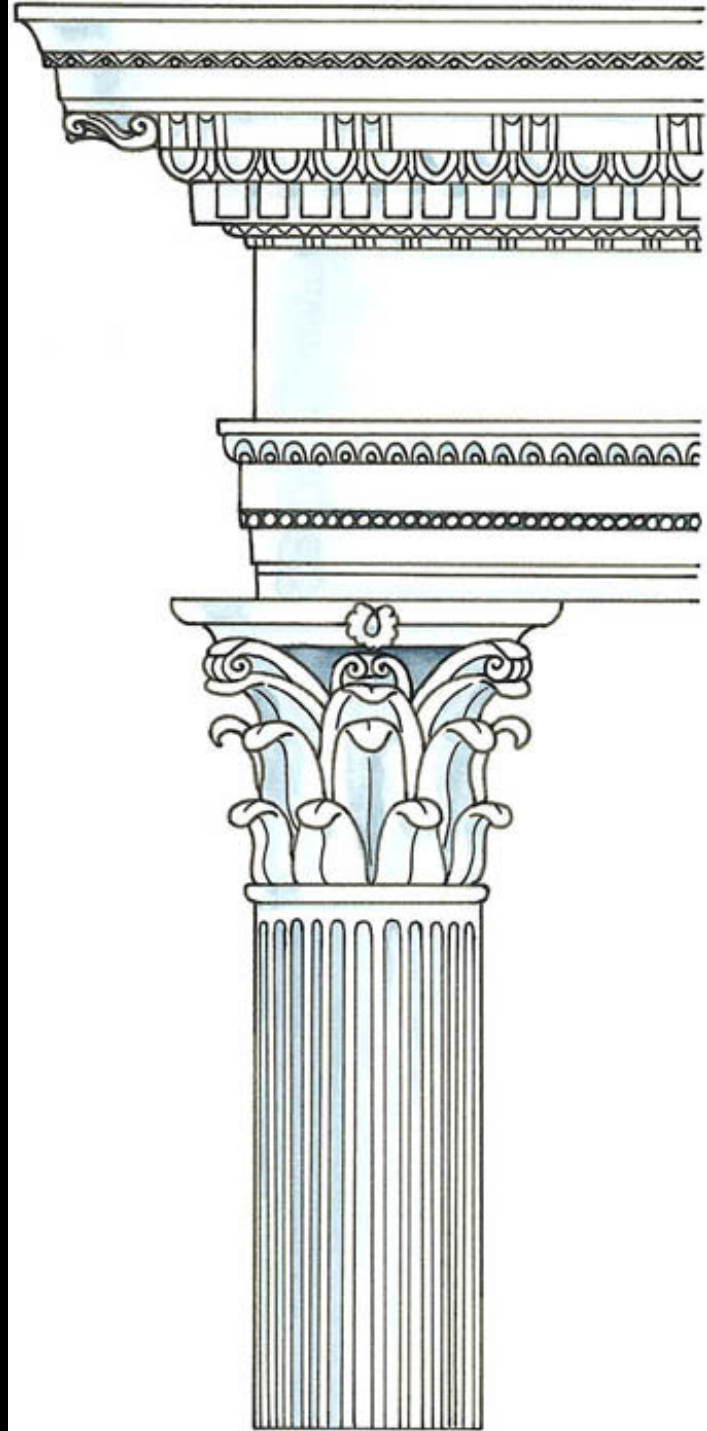
Ionic and  
Corinthian  
fluting



Doric  
fluting

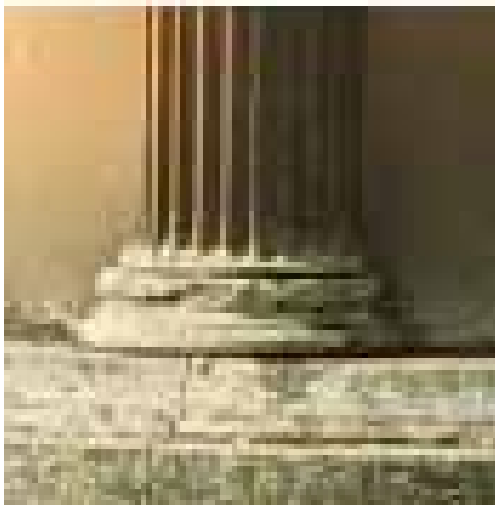


[/www.geocities.com](http://www.geocities.com)



[/www.phpwebhosting.com](http://www.phpwebhosting.com)

# Choragic Monument of Lysicrates in Athens.



Wikimedia Commons @ <http://commons.wikimedia.org>



# Temple of Zeus Olympius, Athens: 170 BCE

Started in the 6<sup>th</sup> Century BCE with Ionic Columns,  
but abandoned

Construction began again in the 2<sup>nd</sup> Century BCE,  
but changed Order to Corinthian by Roman Architect, Cossutius





# Temple of Zeus Olympius, Athens: 170 BCE

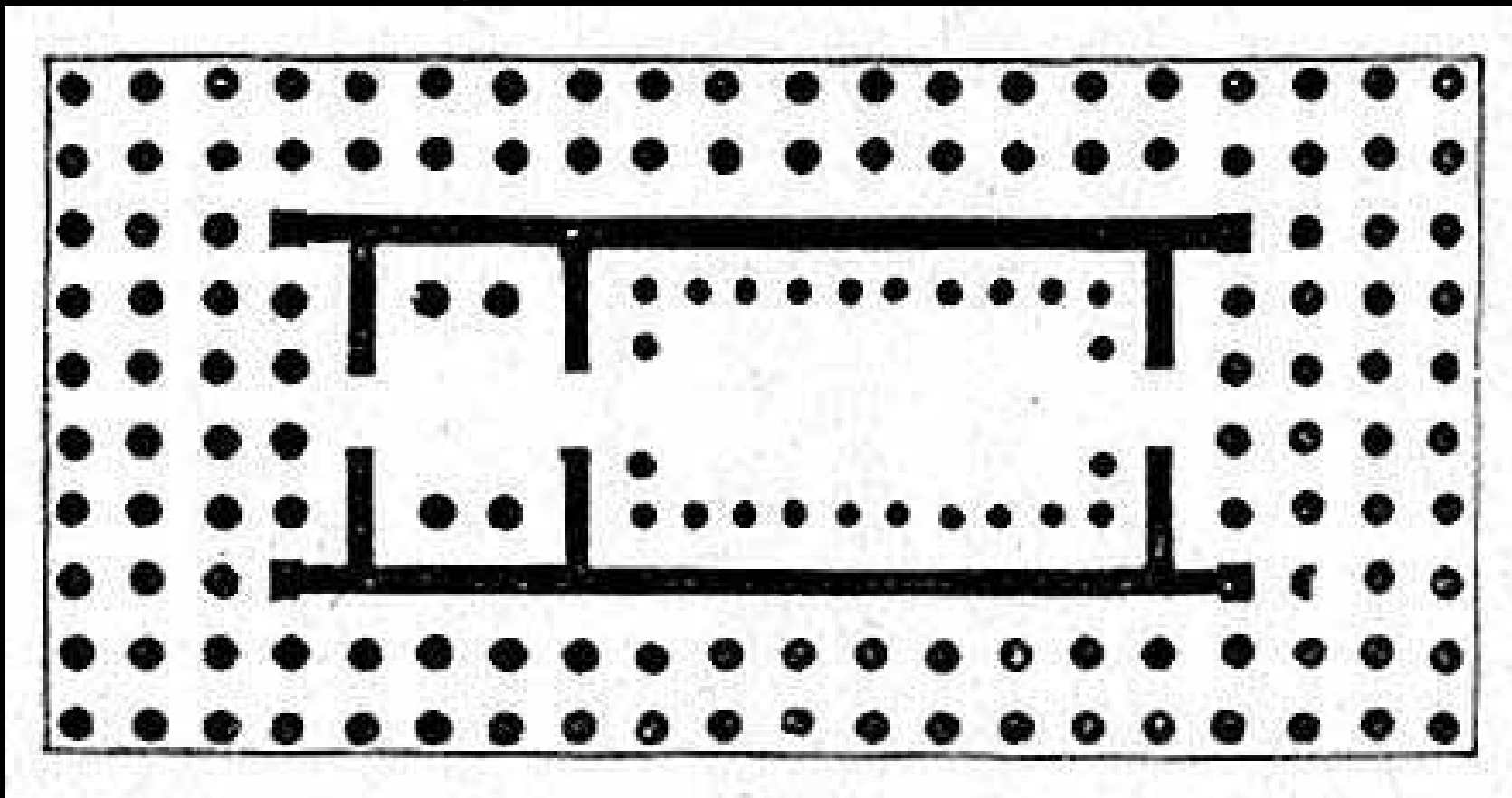


# Temple of Zeus Olympius, Athens: 170 BCE

Located east of the Acropolis

Over 100 Columns, double rows of 20 (N&S) and triple rows of 8 (E&W)

Columns: 56' high 5'6" wide



# Civic Architecture - Agora:

Place of public assembly in a Greek city; the focus of political, commercial, administrative and social activity, the religious and cultural center, and the seat of justice



# Civic Architecture - Agora:



Athens: Agora

# Civic Architecture - Agora:



# Civic Architecture - Agora:



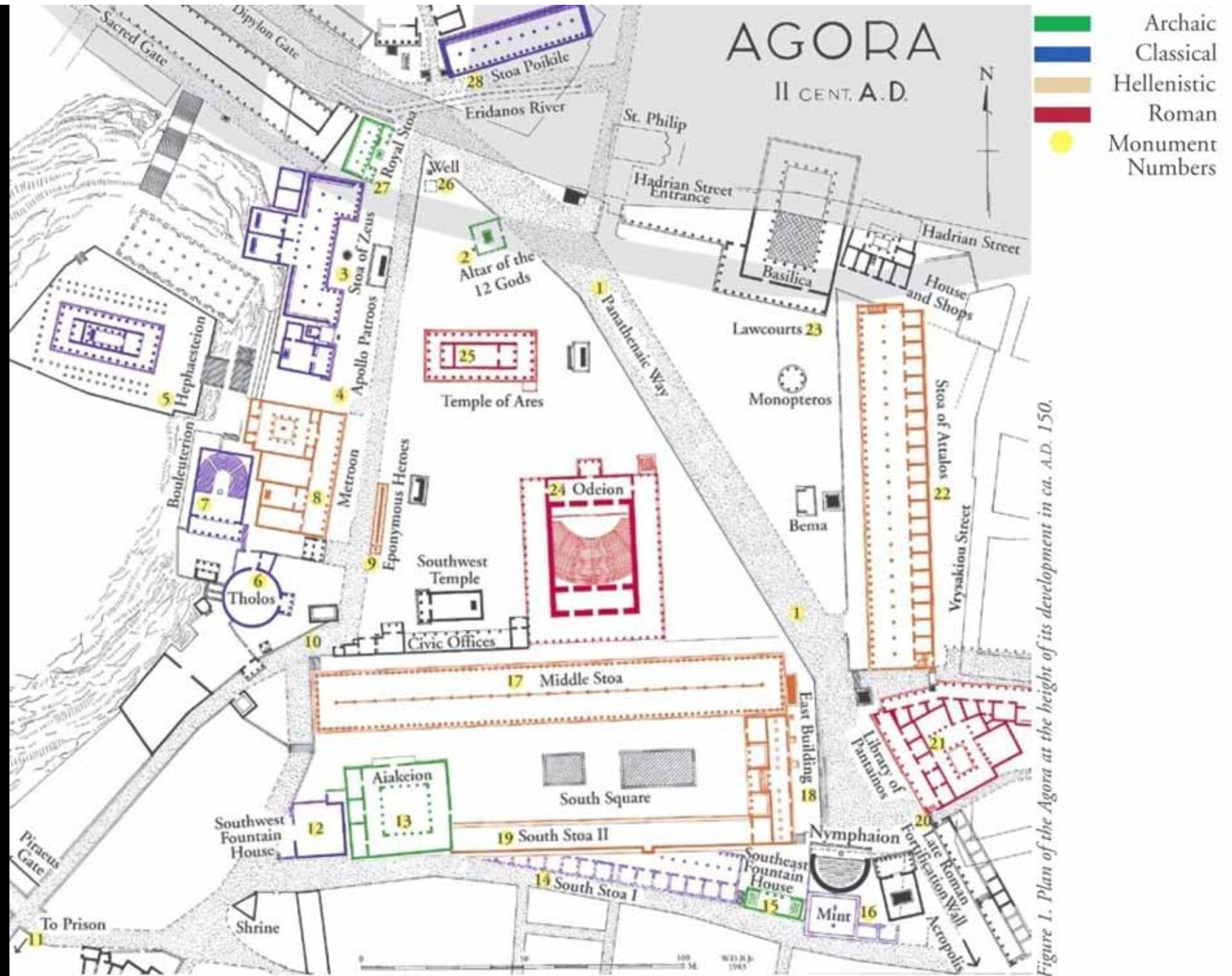


Figure 1. Plan of the Agora at the height of its development in ca. A.D. 150.

# Metreon 2<sup>nd</sup> Century BCE

The building has an Ionic propylon

It accommodated both the sanctuary of the Mother of the Gods and the state archives, including the proceedings of the meetings of the Council of 500 and various official documents, protected by the goddess.



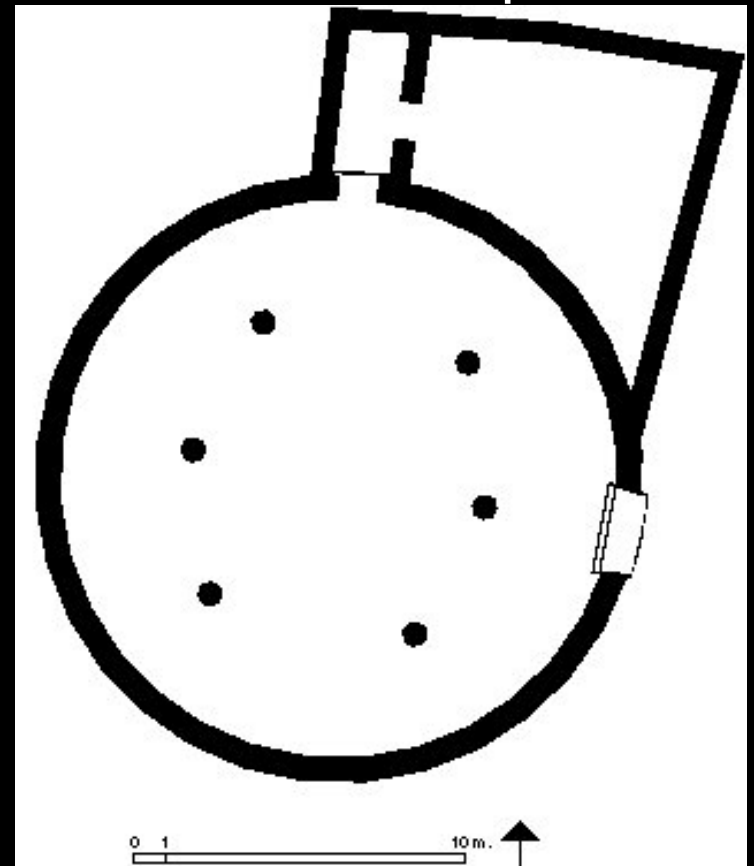


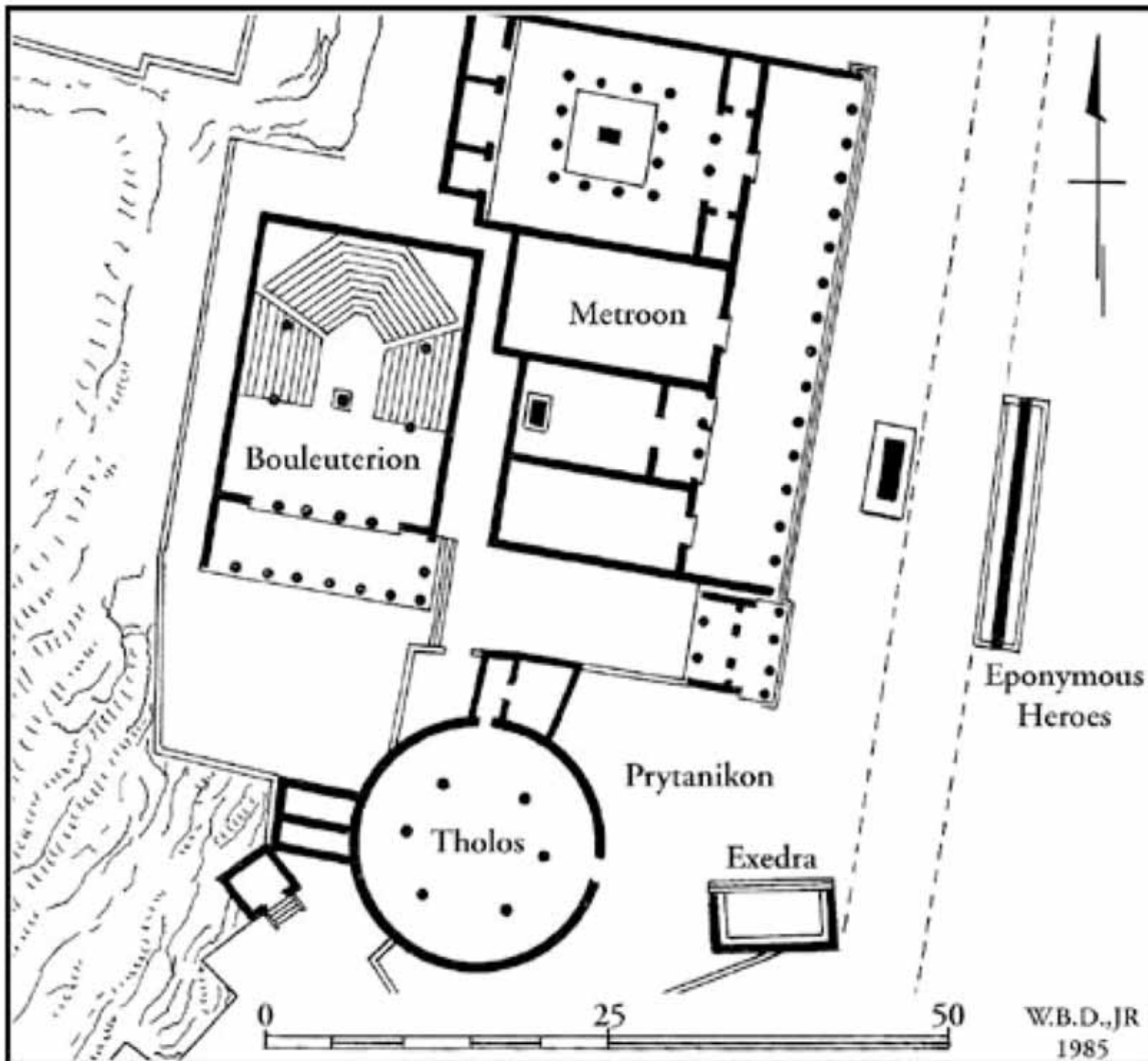
# Tholos 460 BCE

Circular building

The chairmen (prytaneis) of the Council of 500 (Boule) dined and spent the night in the Tholos so as to be available if necessary.

A set of standard weights and measures was also kept in the building.





*Figure 14. Plan of the administrative buildings at the south end of the west side of the Agora.*

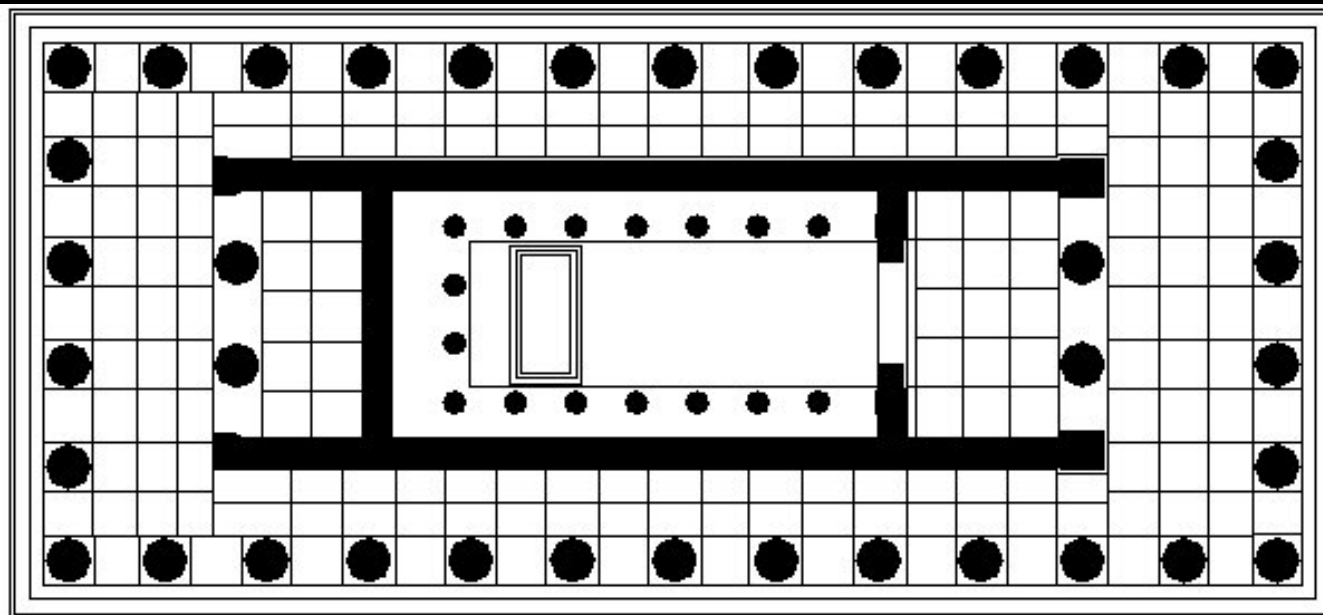
# Temple of Hephaistos 449 BCE

Doric temple

It is sited on the hill.

It is the most prominent and better preserved monument of the Agora.

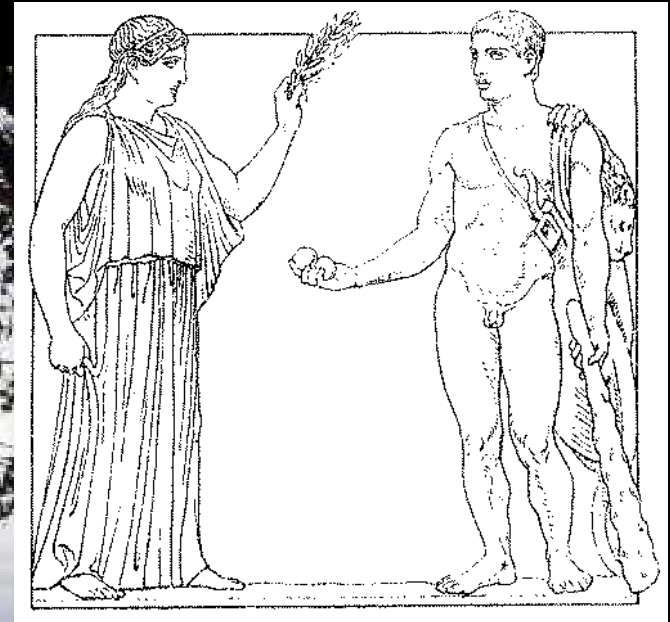
The temple was dedicated to two gods, Hephaistos and Athena, whose bronze cult statues stood in the interior.



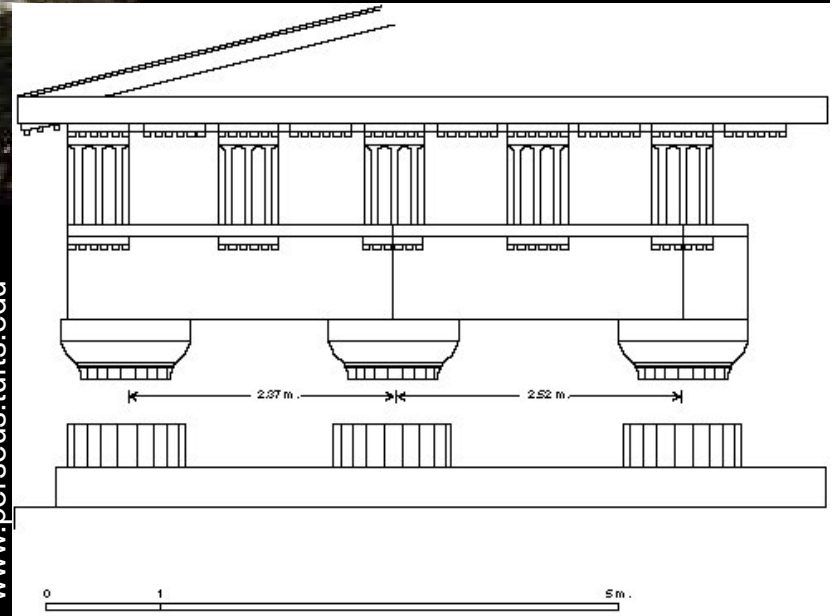
0 1 20 m.



# Temple of Hephaistos 449 BCE



www.perseus.tufts.edu



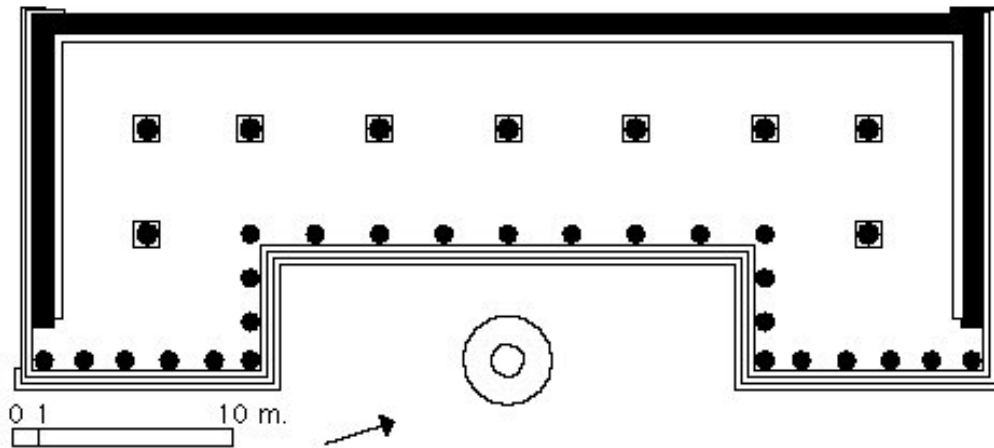
www.perseus.tufts.edu

# Stoa of Zeus Eleutherios 5<sup>th</sup> Century BCE

The stoa was erected in honor of those who fought for the freedom and security of the city.

Socrates is said to have met his friends in this stoa.

Athens, Stoa of Zeus (Eleutherios)



# Theater of Epidaurus 350 BCE

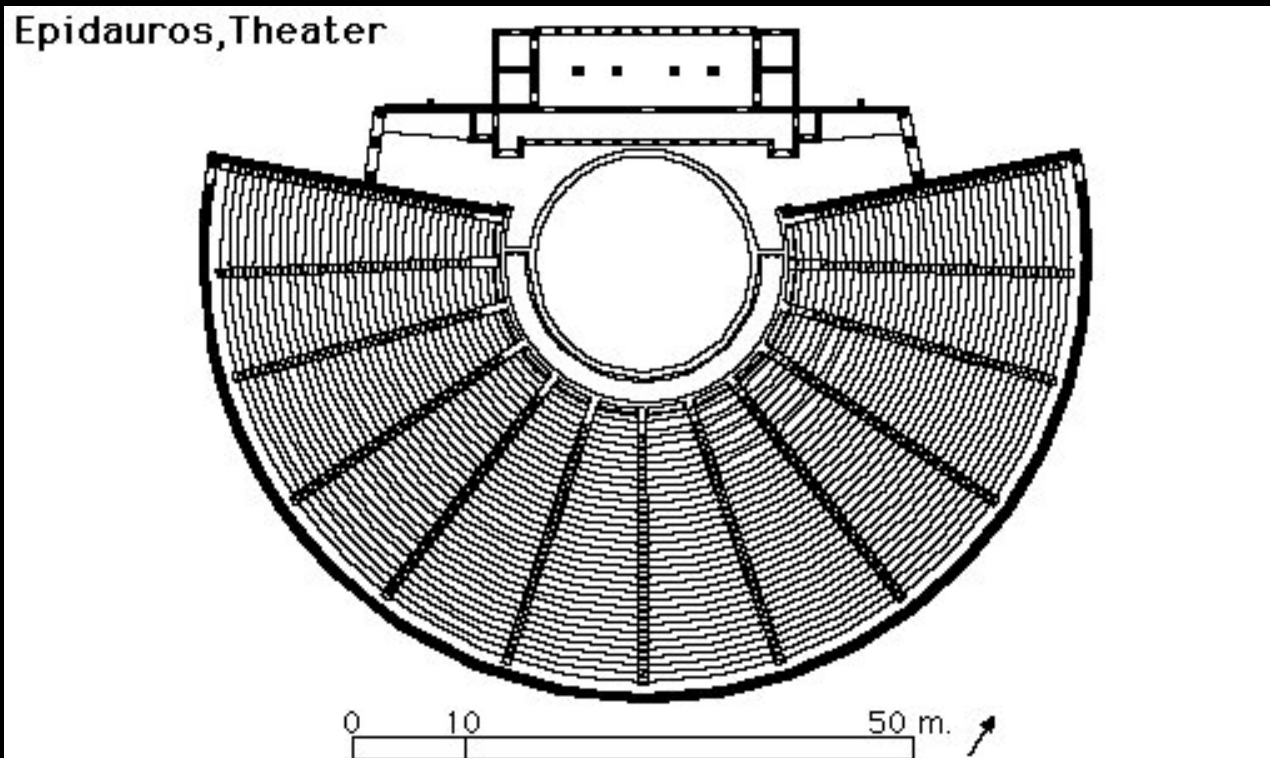
Semicircular outdoor theater

Consists of 55 tiers of steeply banked stone seats

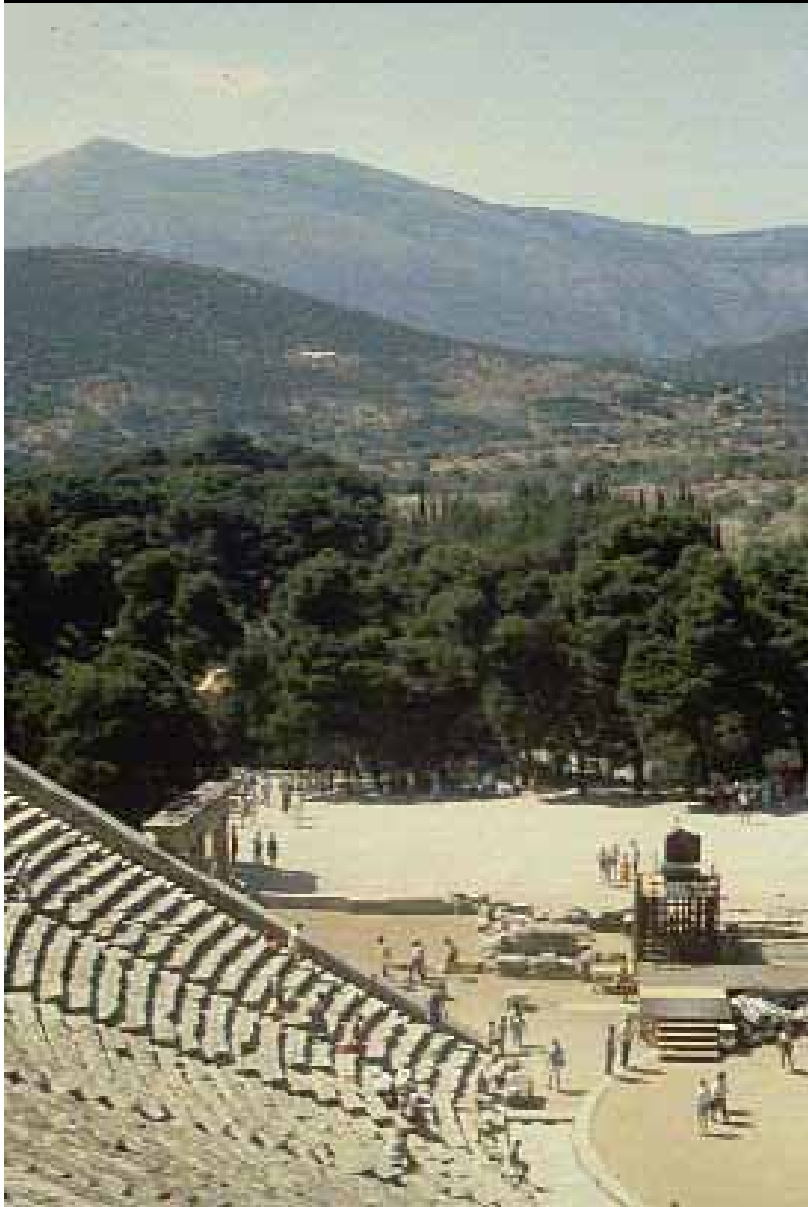
Used for: Political assemblies, religious festivals and plays

Perfect acoustics

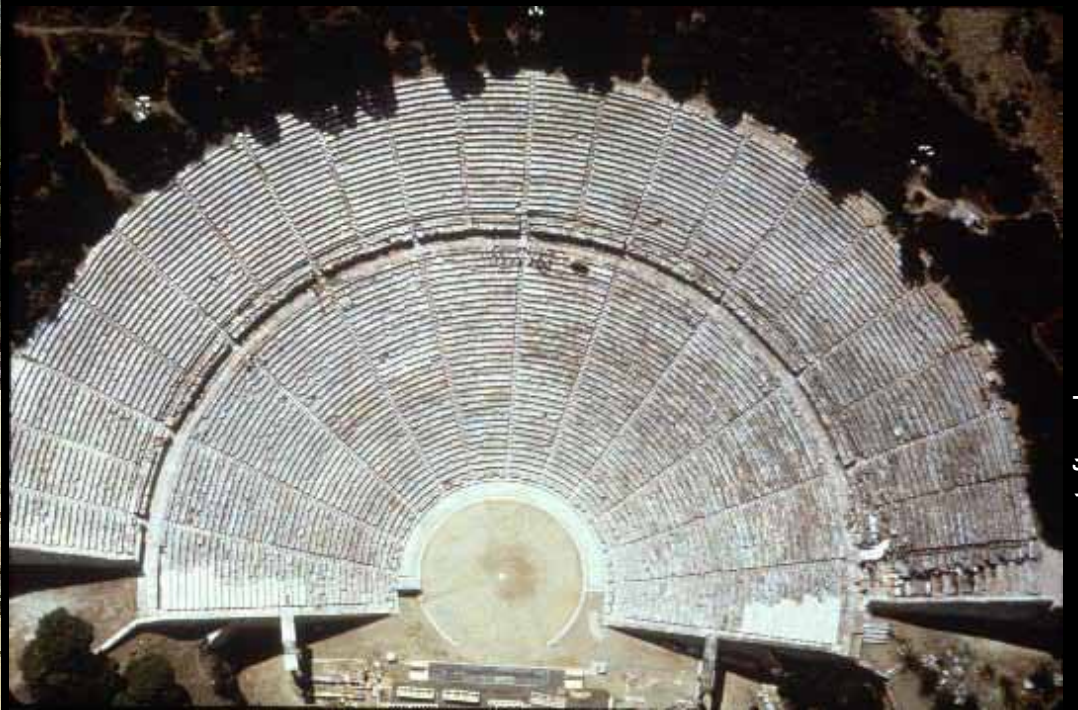
Seating extends more than half way around the orchestra



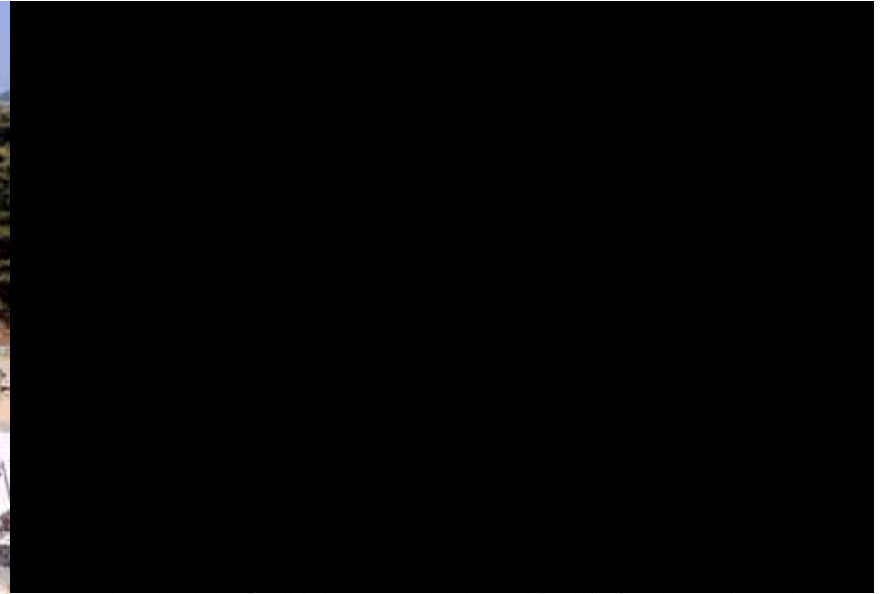
# Theater of Epidaurus 350 BCE



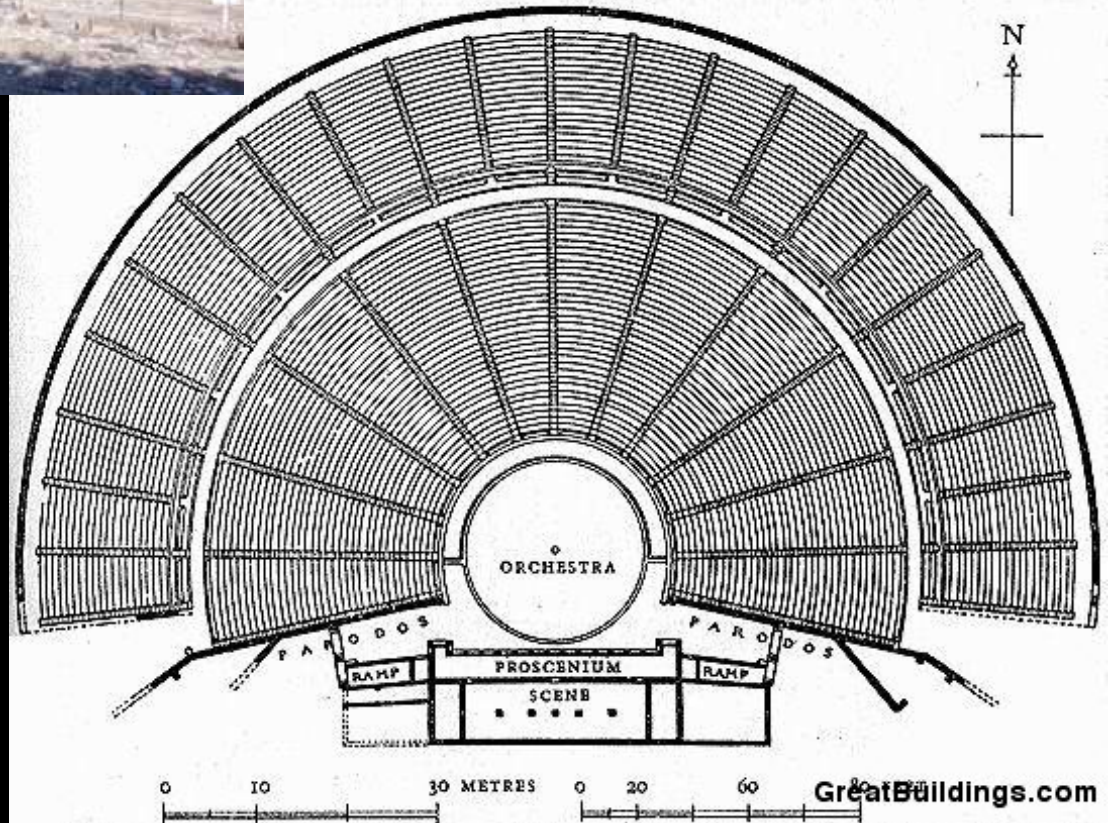
[www.perseus.tufts.edu](http://www.perseus.tufts.edu)



[www.perseus.tufts.edu](http://www.perseus.tufts.edu)

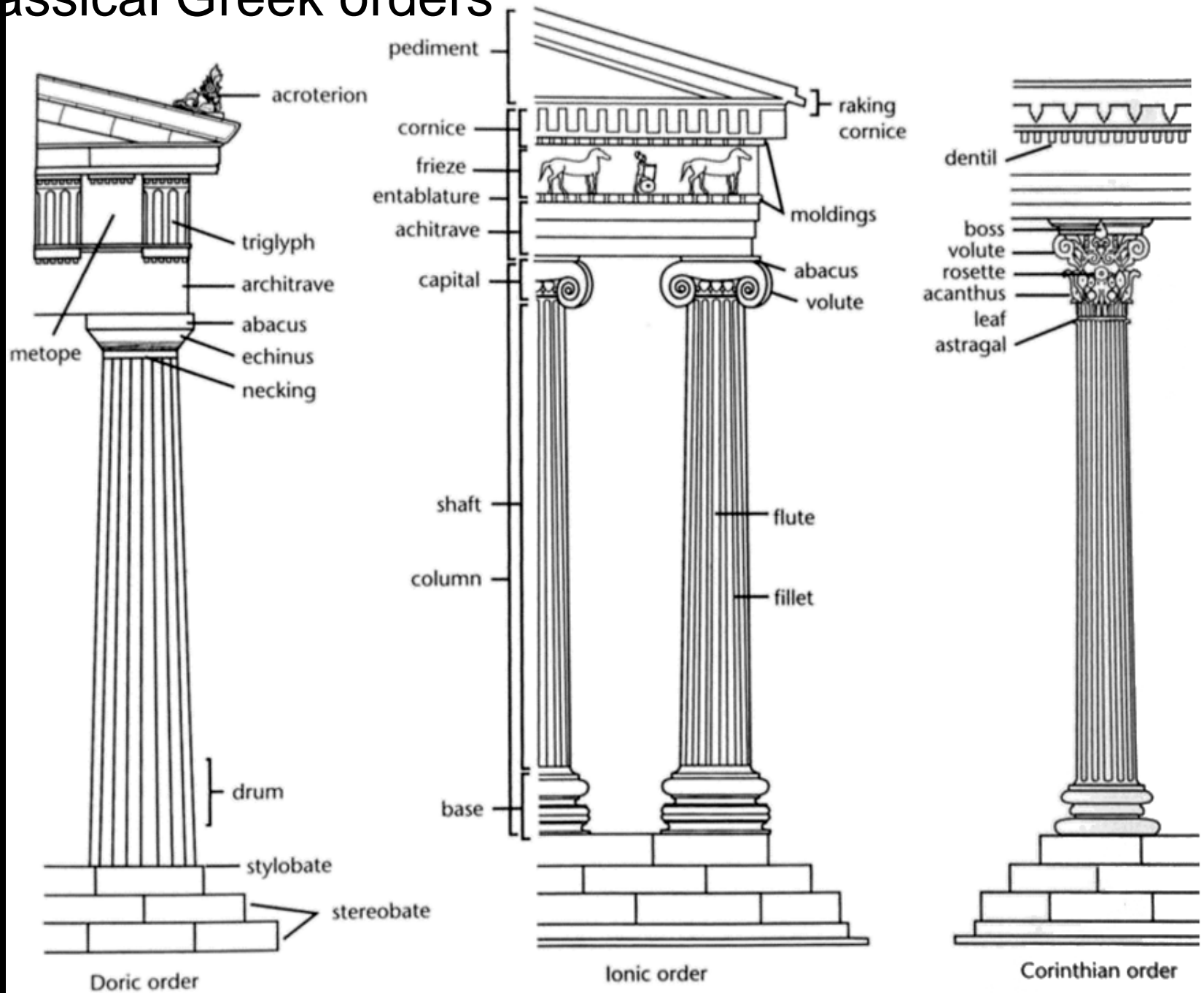


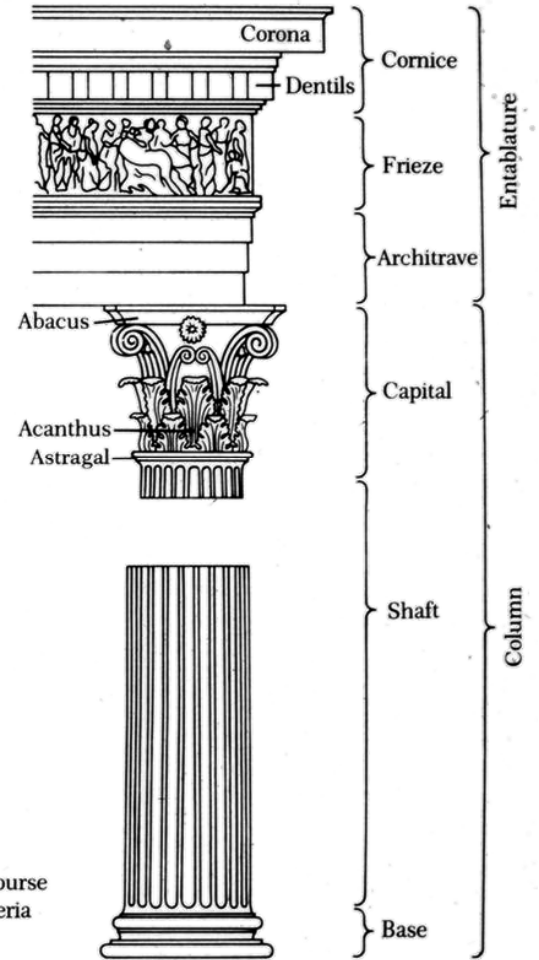
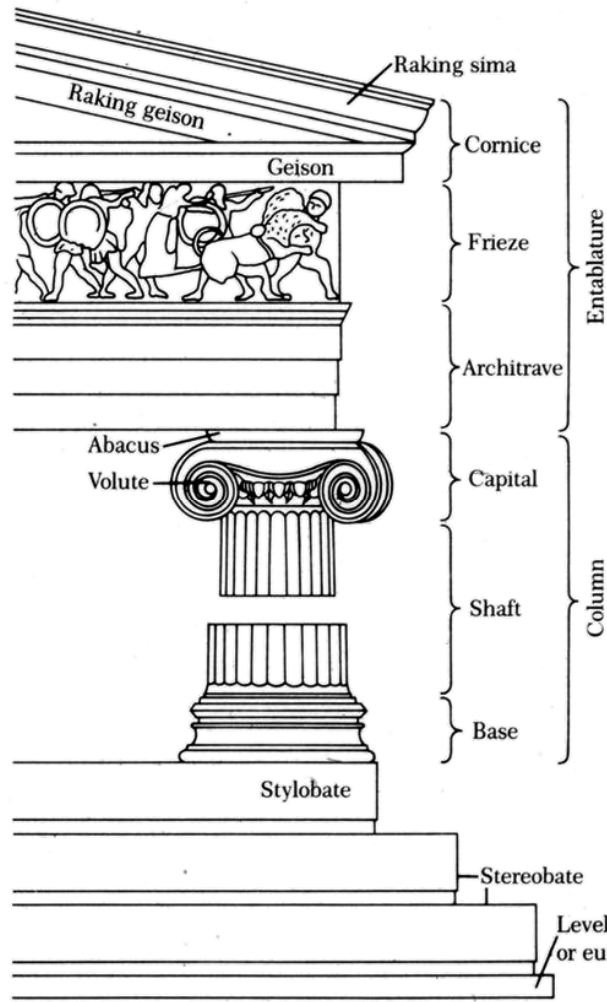
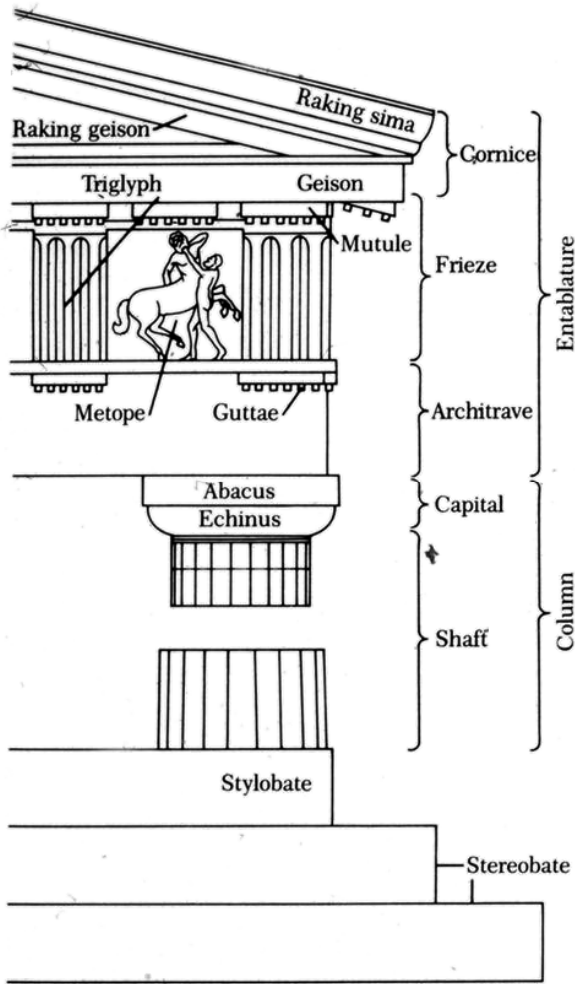
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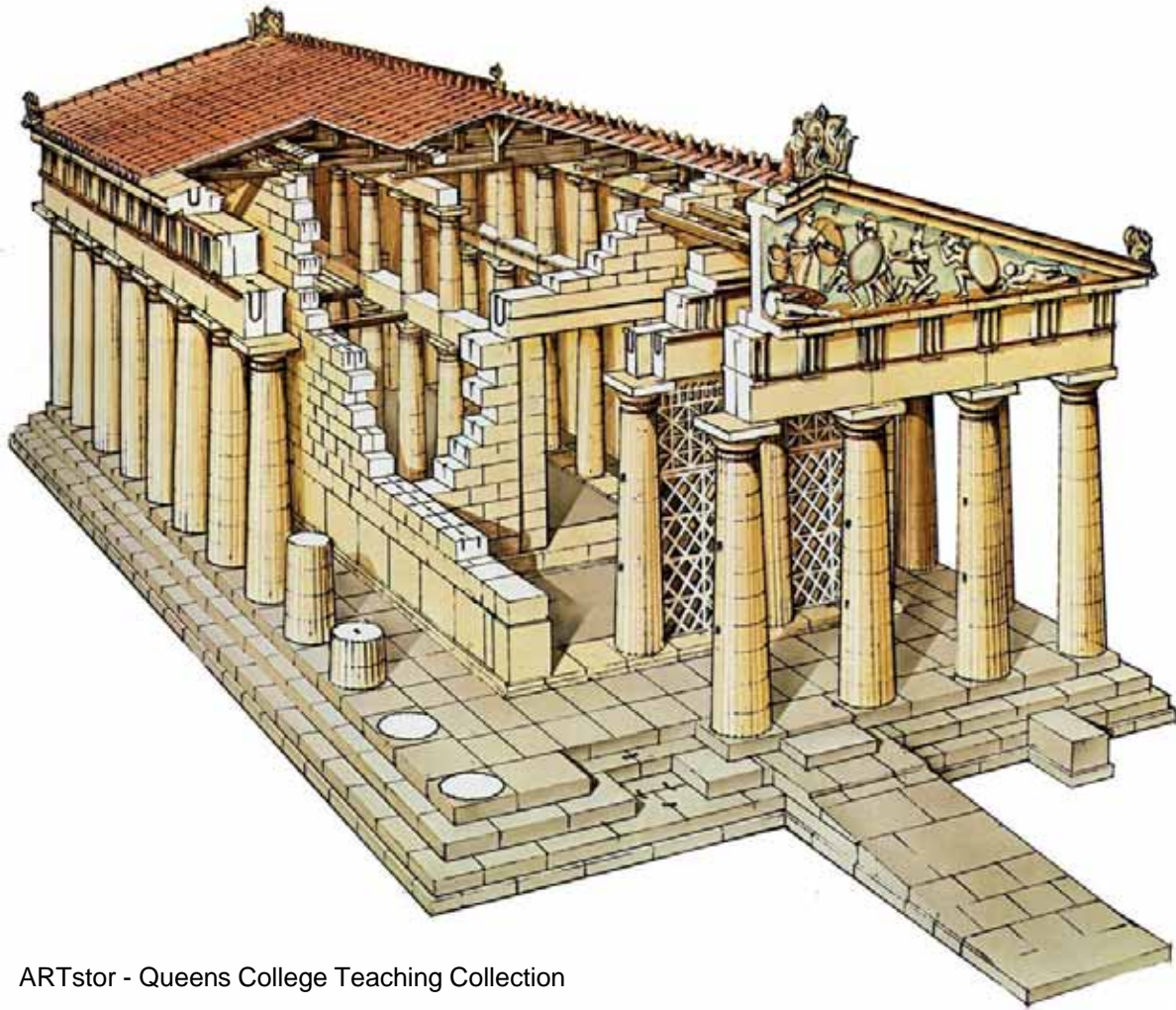




# Classical Greek orders







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