History of Architecture

Ancient Greek Architecture

Sara Khasib

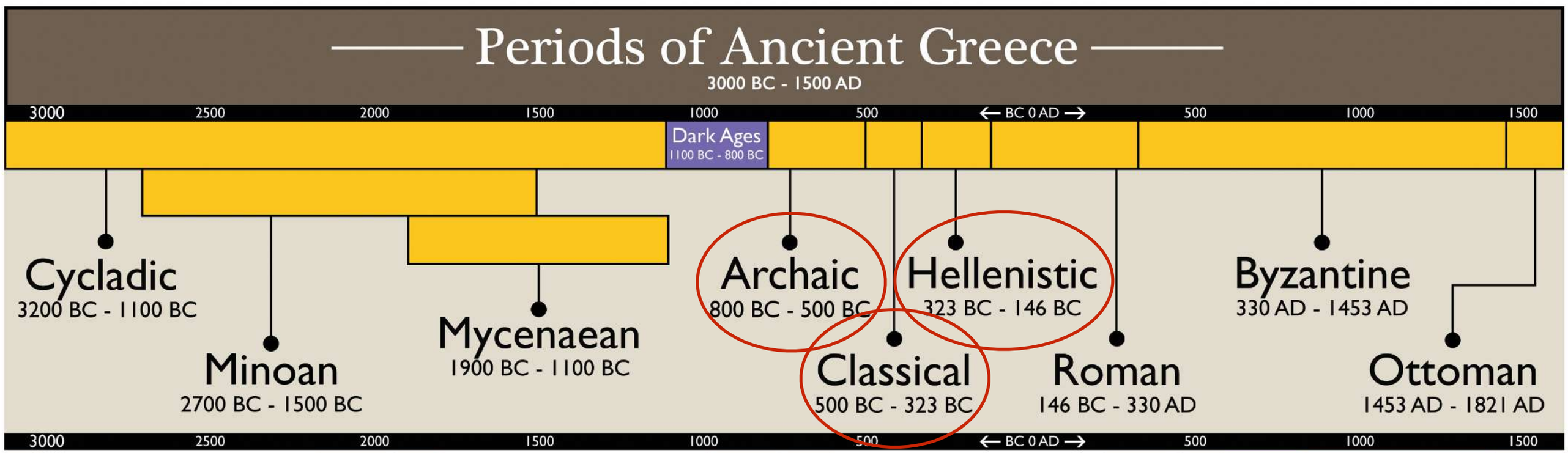
In the ancient times, Greece extended from the Balkans to include scattered islands to the south and east of Europe as well as the area along the coast of Anatolia

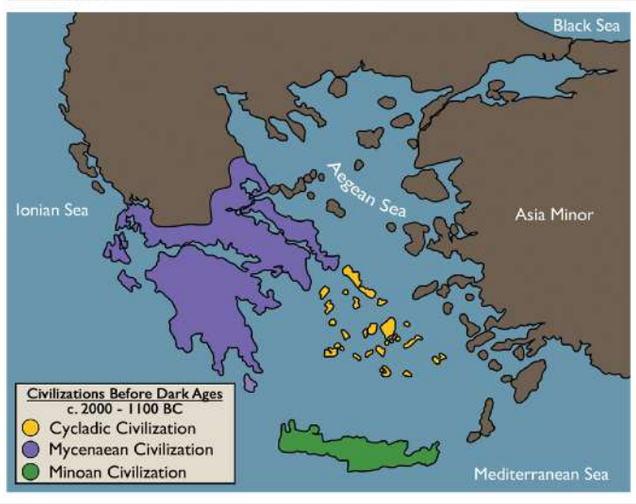
Geography

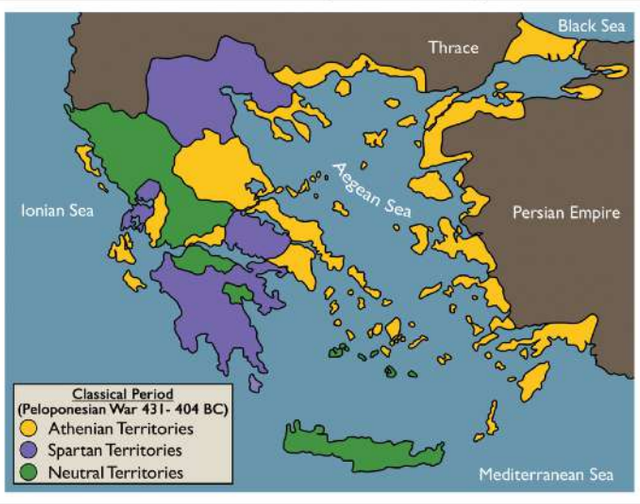
- The land was divided into 3 parts: **Attica (Athens)**, the **Peloponnese** (Sparta), and the **Island of Euboea**

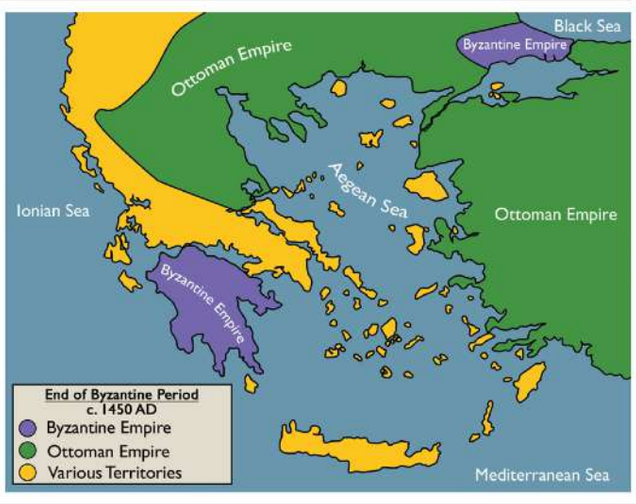
- The landscape of the area was mostly **mountainous and rugged**, and the agricultural economy of the Greeks was based on small farms individually owned. Therefore, consolidation of the many separated Greek city-states into a single nation was impossible

History



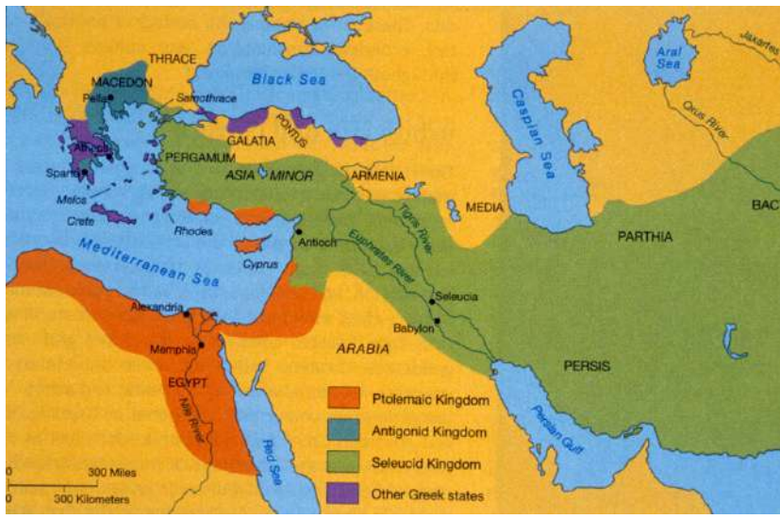






In about **750 BC**, the stone architecture remerged in the mainland

History



The Archaic Period (750 - 500 BC)

primitive era in reference to the art decorations which was used and which is considered as the seeds for the other Greek art and architectural products

The Classical Period (500 - 323 BC)

Typified by what is known as the classical style. The center was Athens during the 5th century BC then has shifted to Sparta during the 4th century BC - Ended by the death of Alexander the Great

The Hellenistic Period (323 - 30 BC)

Started when the Greek Culture, language and power extended to the middle and far east- Ended with the Roman conquest

History

- At **Sparta**, there was a close, **militaristic** society ruled by **aristocrats**

- At **Athens**, different cultures were merged to create a **cosmopolitan city** based on new ideas with a **democratic rule of free men**

Religion

- The worship of **natural phenomena** in which the gods were personifications. They were always local to each town or district

- There was a hierarchy of deities, with **Zeus**, the king of the gods, having a level of control over all the others

- Greek people recognized the major gods and goddesses:
  - **Zeus** (God of gods and sky)
  - **Apollo** (God of music, literature)
  - **Aphrodite** (God of love)
  - **Athena** (God of wisdom)

Athena

Zeus

Philosophy

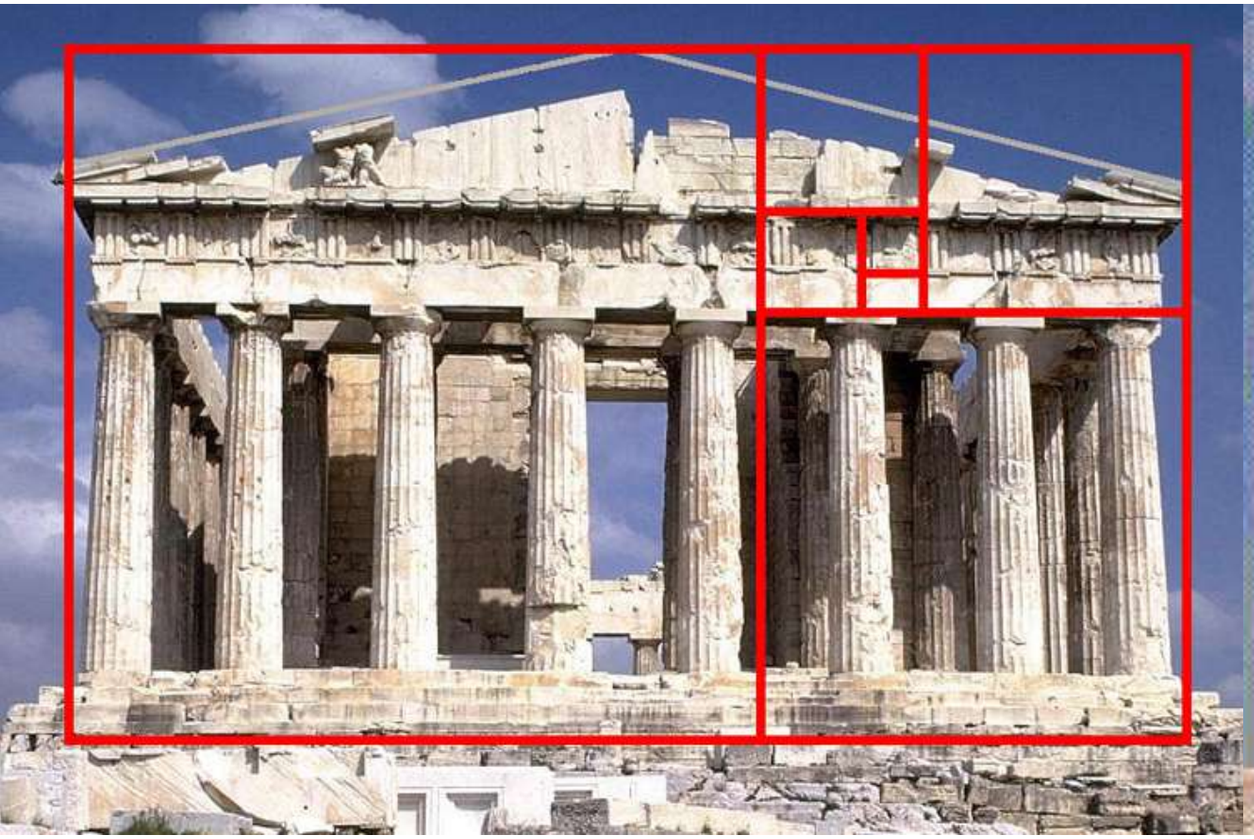
- The Greeks' character was based on the **desire to achieve perfection in human intellectual and physical endeavours**

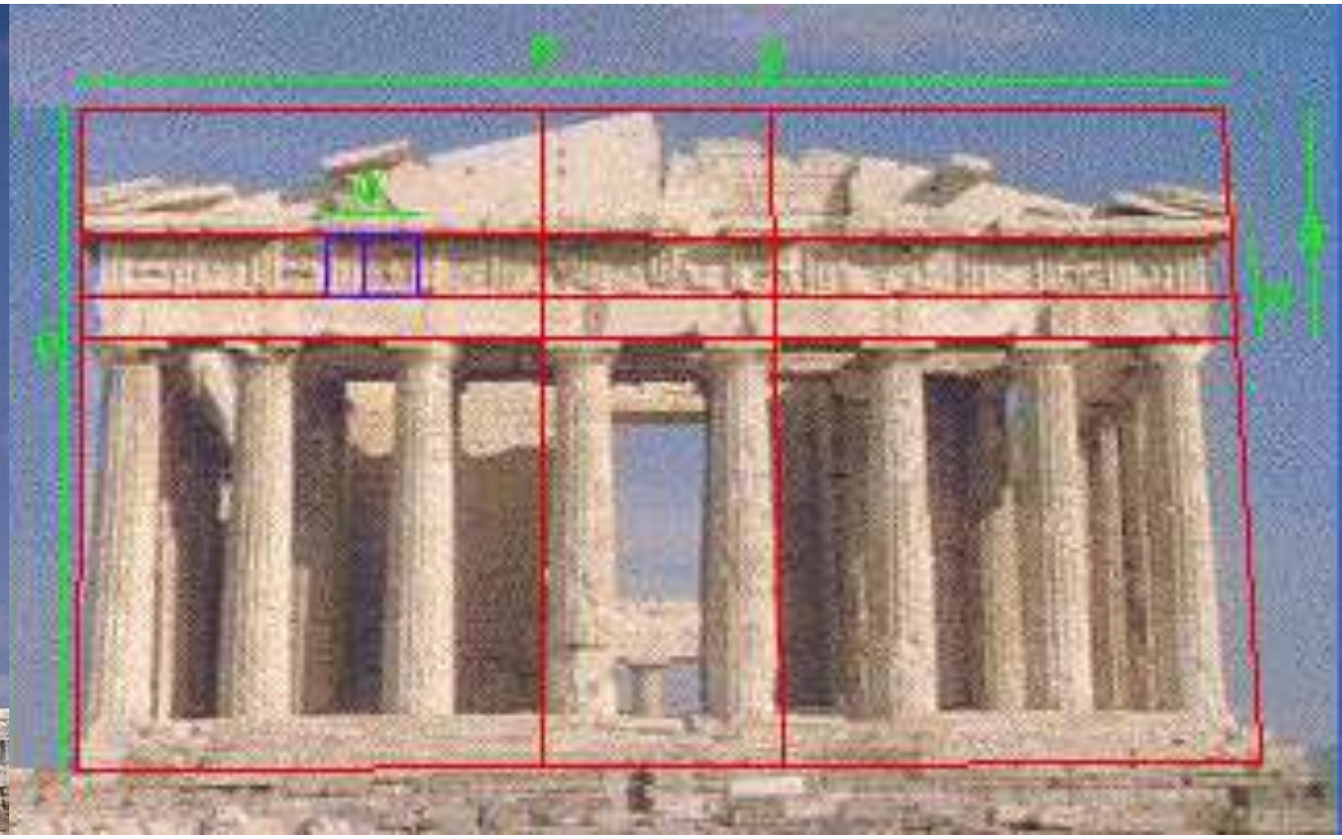
- The Greeks wanted to know why the gods did what they did and what the nature of man was, and how the world was formed and how it operated, this quest for truth is best shown by the field of natural philosophy developed during the 6th century BC

Philosophy

- The Greeks had an innate love for **logic (logos)** a word that can be translated into ‘reason’ or ‘idea’ or ‘conception’. It was the natural order whose opposite was chaos

- They sought **balance** and **symmetry**, which meant having a like **measure as the ideal**





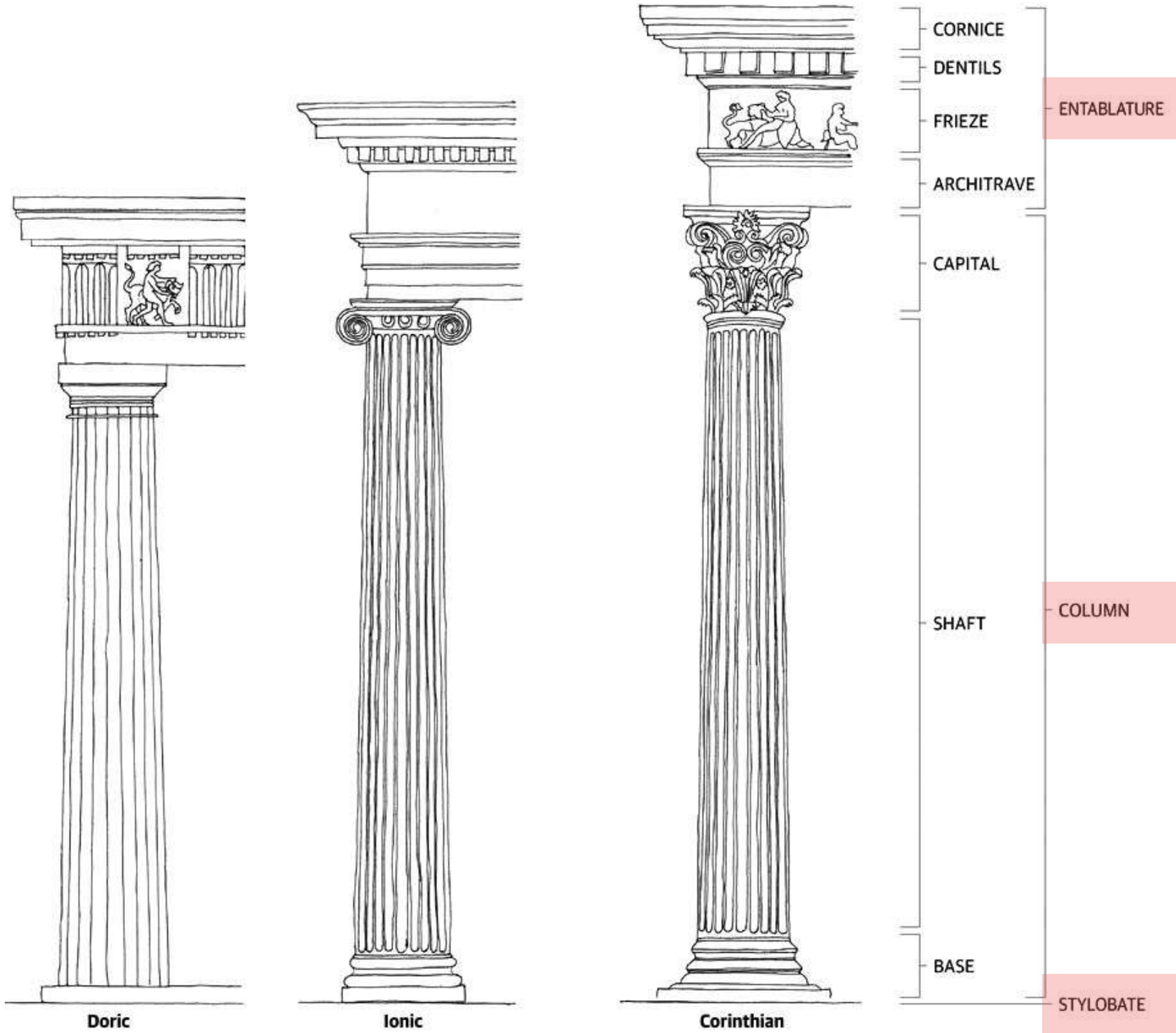
Greek Architectural Character

- The classical Greek Architecture is well known for its innovation for the **principal orders**

  - **The Doric Order**
  - **The Ionic Order**
  - **The Corinthian Order**

- Each order contains three main parts:

  1. **Stylobate**
  2. **Column**
  3. **Entablature**



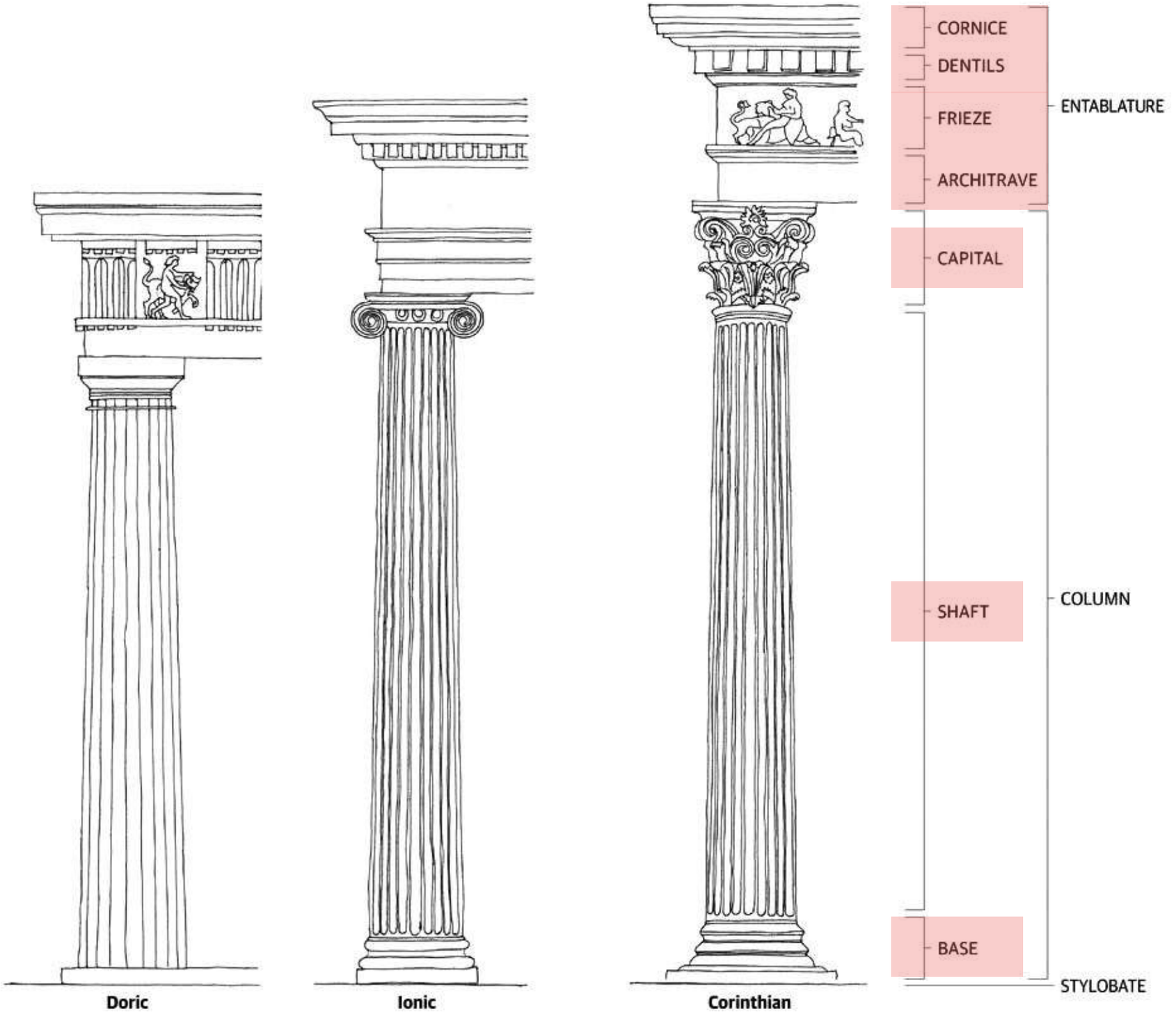
The column contains three main parts:

1. **Base**
2. **Shaft**
3. **Capital**

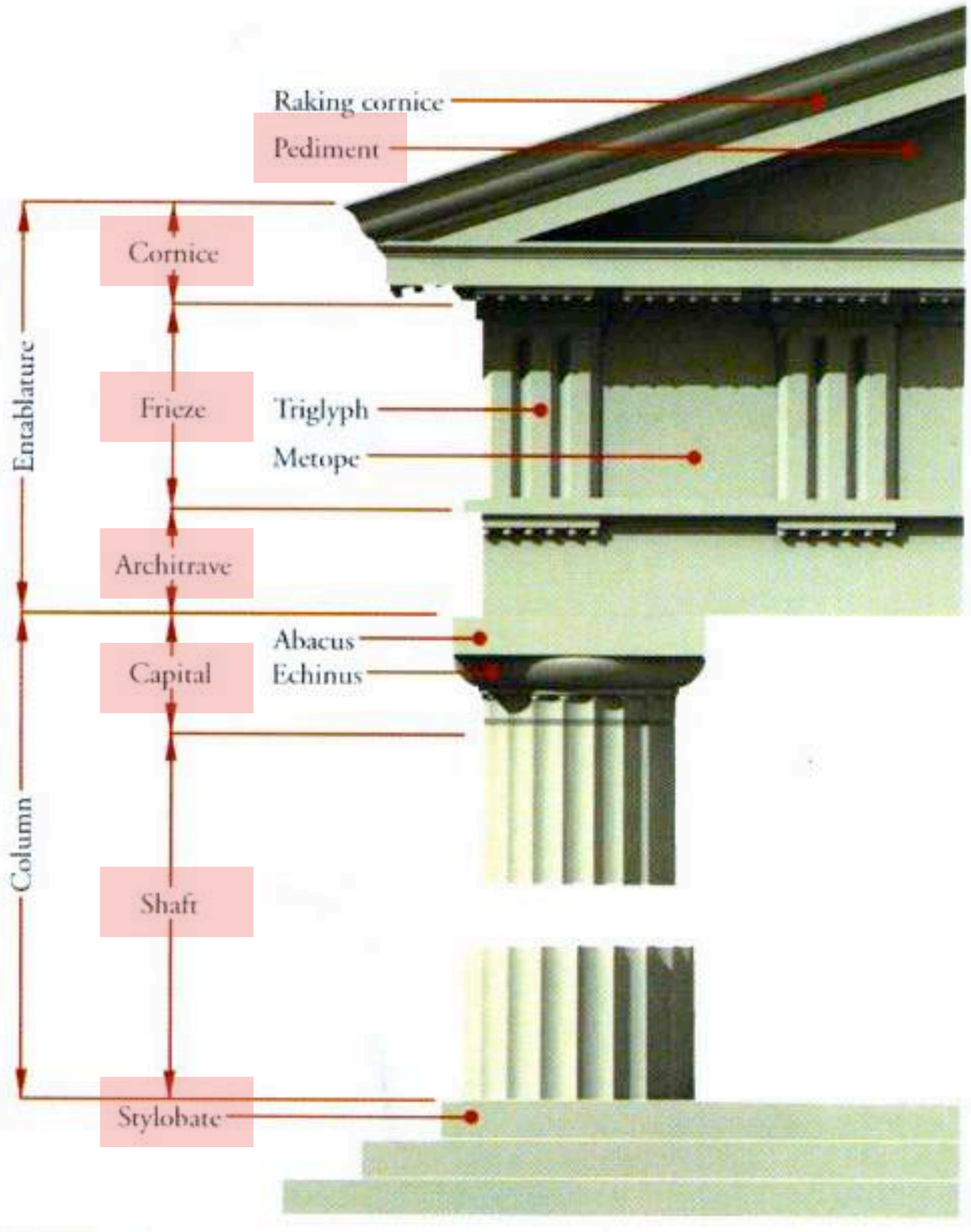
The entablature contains three main parts:

1. **Architrave**
2. **Frieze**
3. **Cornice**

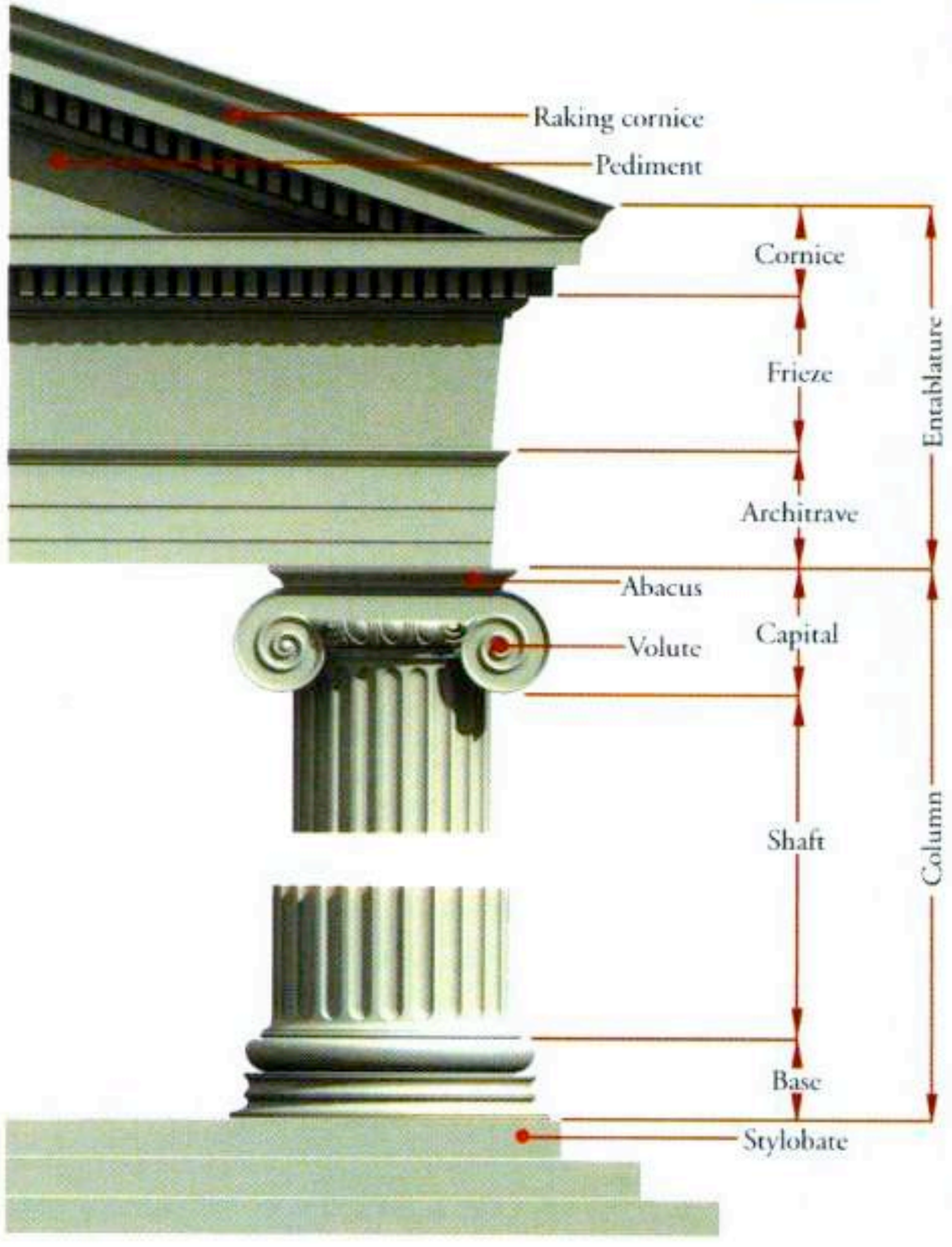
Above the entablature there is a **pediment**



DORIC ORDER



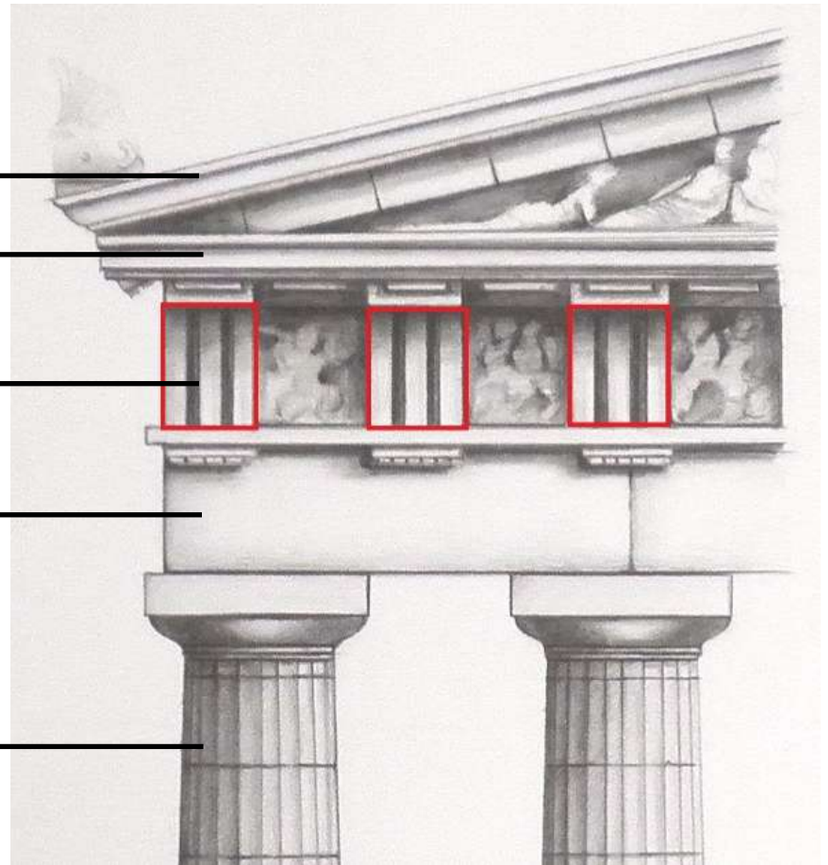
IONIC ORDER



Doric Order

- Known for its **thick proportions**. Usually its height is 4-7 times the diameter of the base

- The column is usually divided into **shallow flutes**



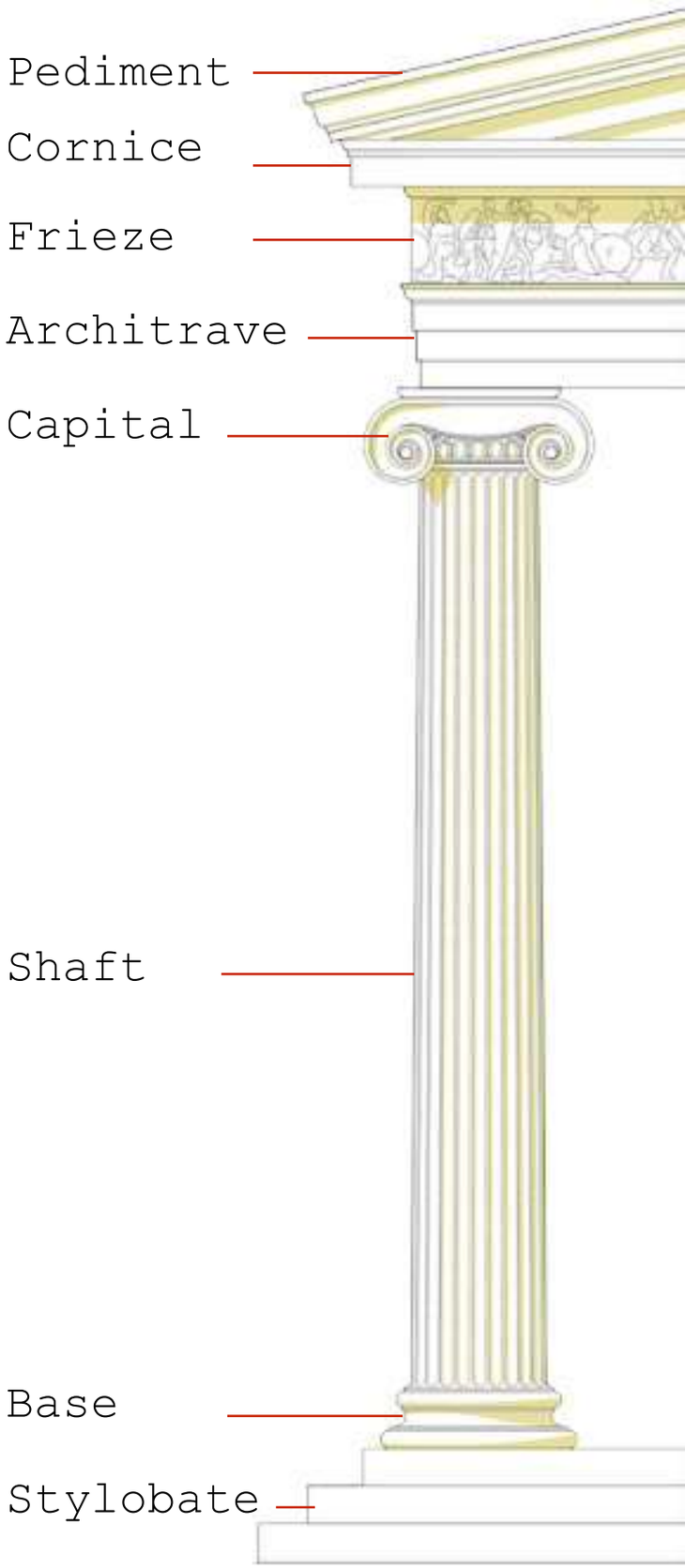
Ionic Order

- They are usually between 9-10 times their lower diameter in the height

- The capital has two pairs of **volutes** or spirals

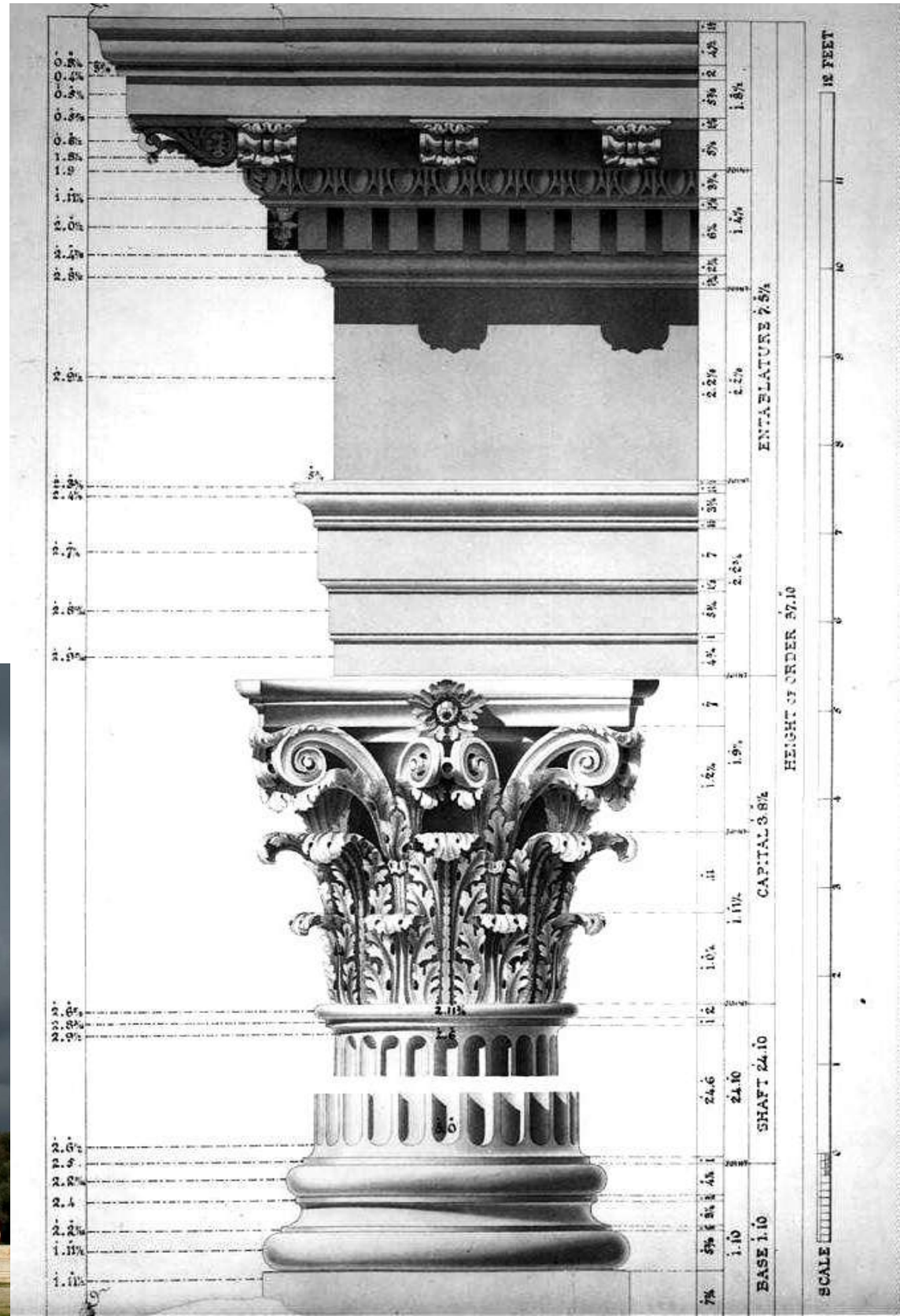
- The entablature was very **light** in relation to the columns, almost 1/6 of their height

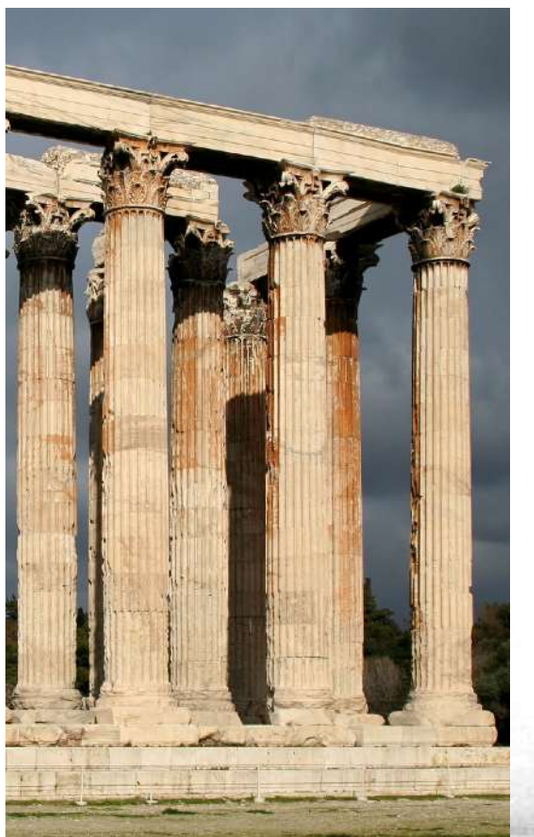
- The frieze is often decorated with a **continuous band of sculpture**

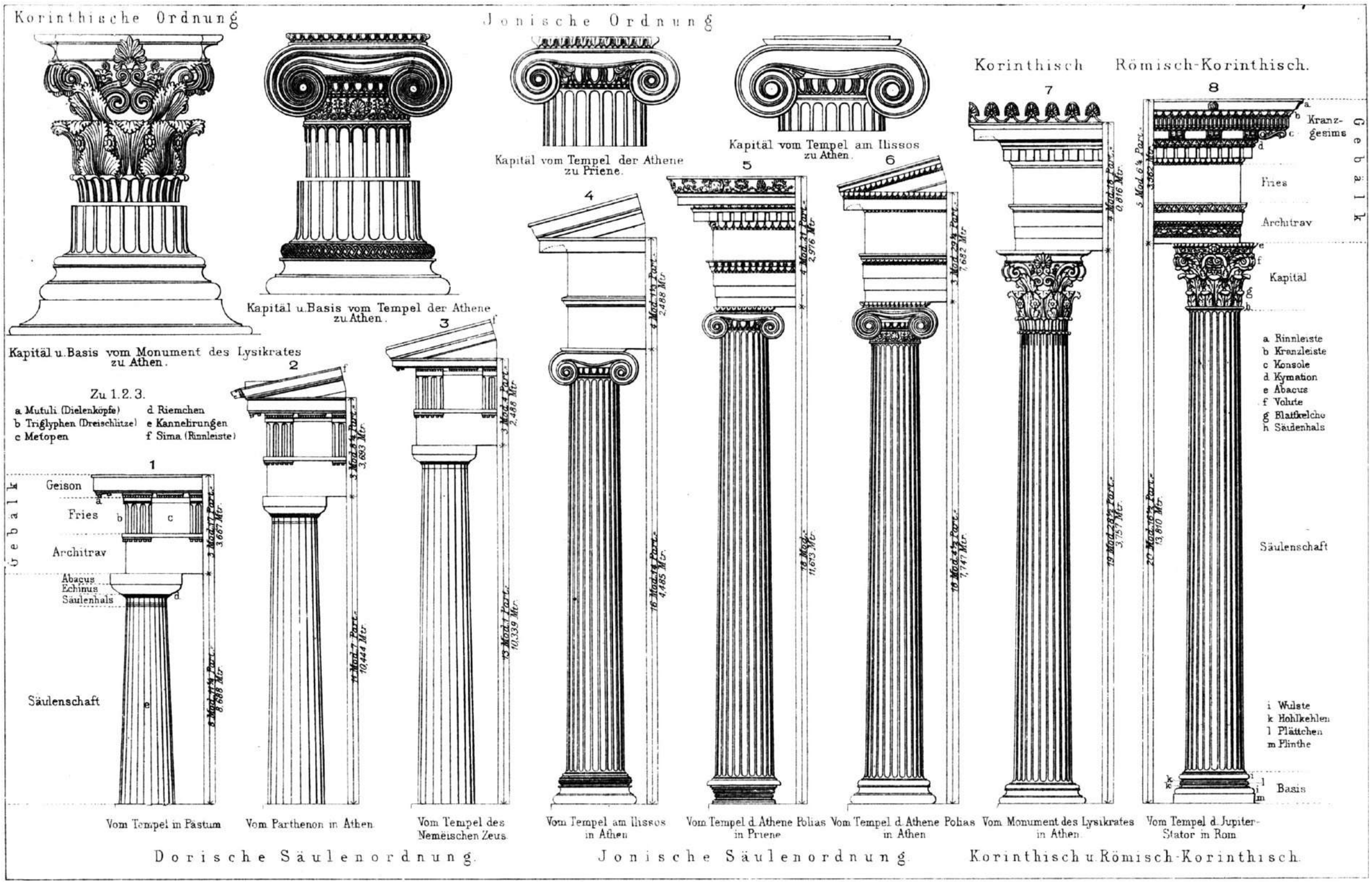


Corinthian Order

- Made its first appearance in the 5th century BC as a **decorative variant of the Ionic**
- It was first used only for **internal colonnades**, then used in external colonnades during the Hellenistic period
- The capital was taken from **acanthus plant leaves**







The orders reflect the geographic divisions of the Greek world at that time

Greek City Planning

The Greek Polis

- The most important political contribution of the Greeks was the **invention of democracy** in the polis of Athens

- A Polis **'City state'** must not be large, you must cross the whole breadth of the city by foot in 2 days

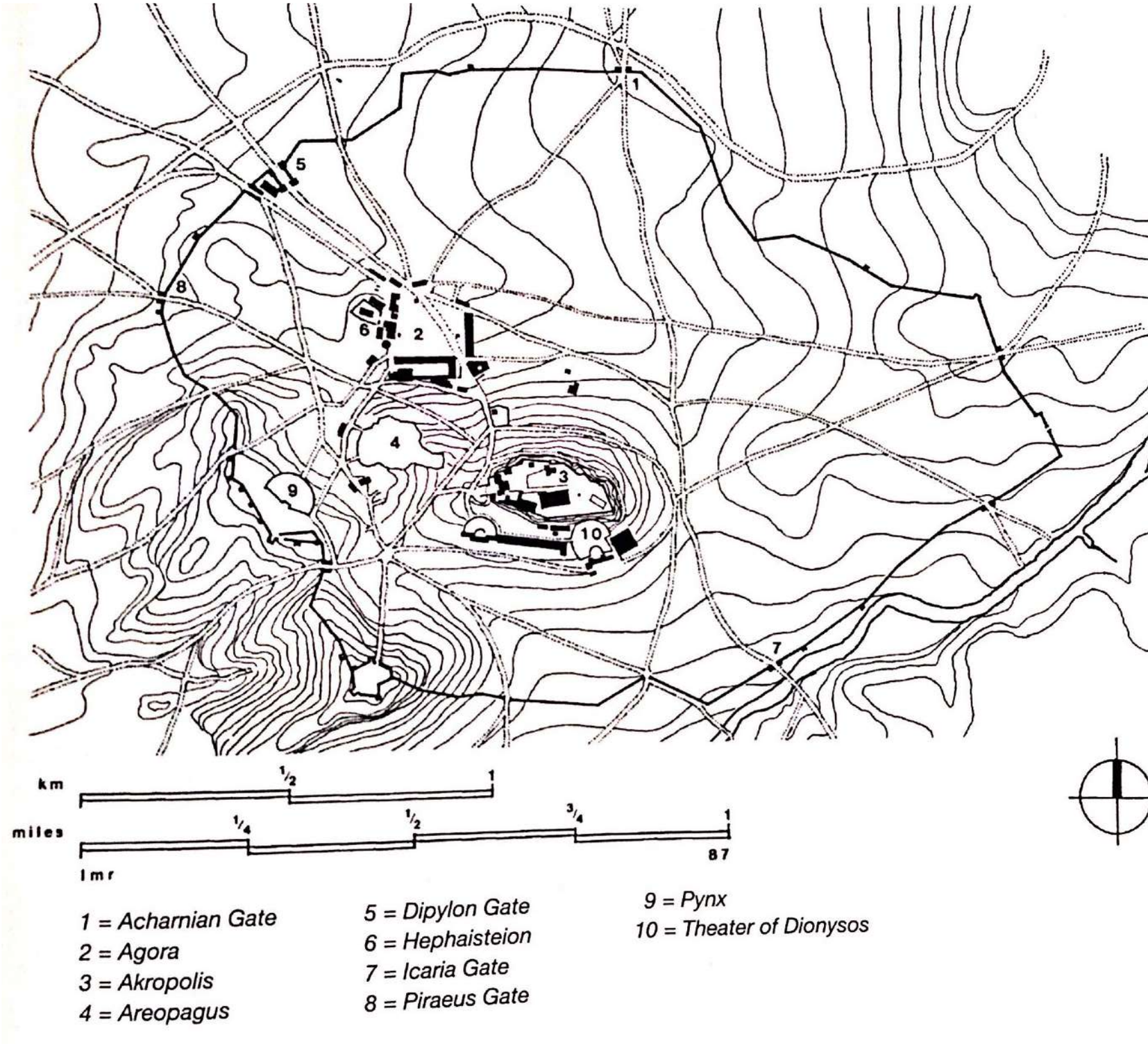
- Citizens less than 5,000, according to Aristotle - one must recognise all its citizens

- The city of Athens was ruled by its **'free male citizens'**. The entire community of its residents, not just the representatives, met monthly in an open air assembly for elections and political decisions

City Planning - Method 1

- Most Poleis grew gradually, growing around the remains of a Bronze age citadel built on an **acropolis - 'the high city'**

- It had streets which followed lines of communication curving and bending when necessary to avoid obstacles or to ease gradients

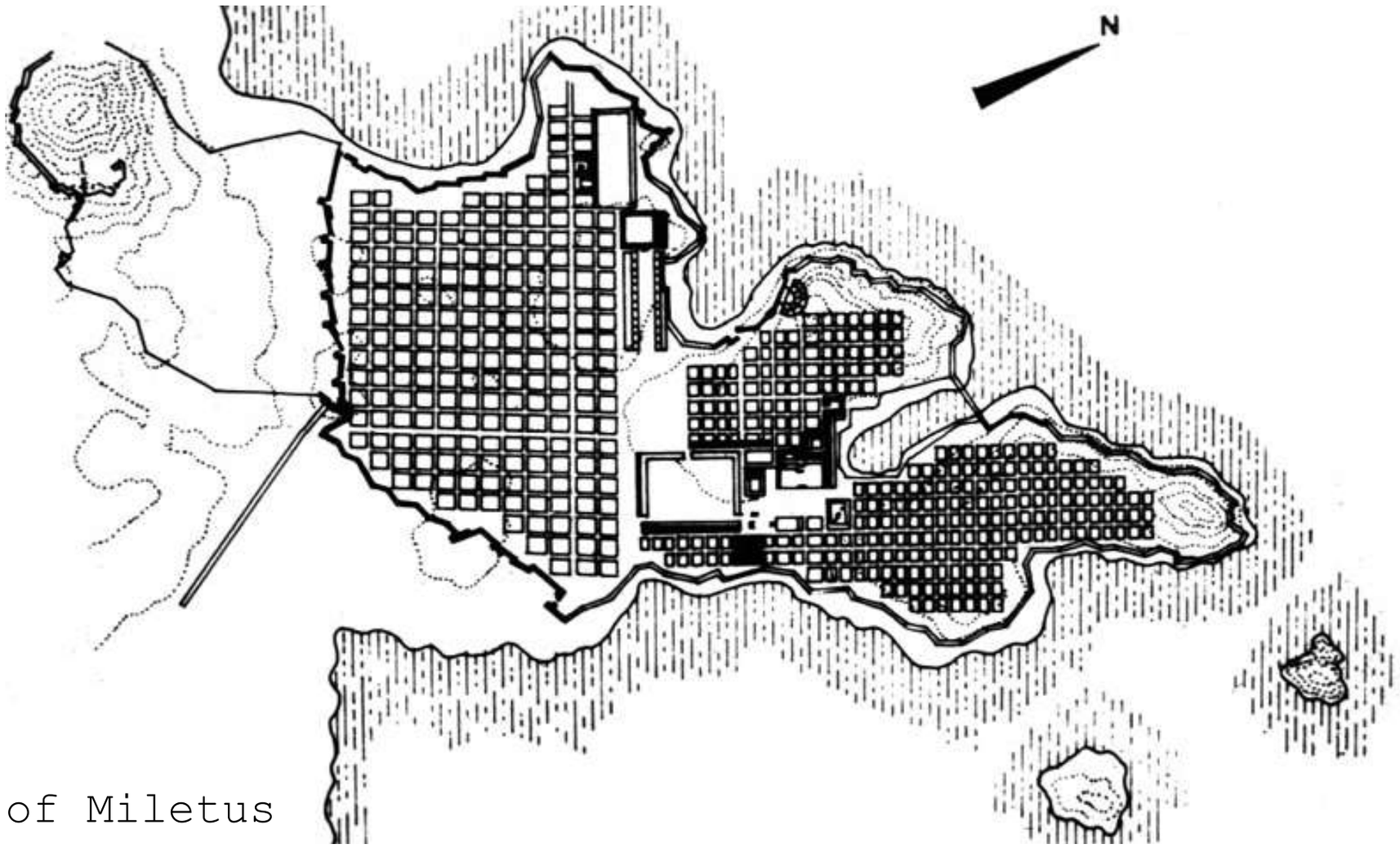


City of Athens

City Planning - Method 2

- Some cities grew as **colonial cities**, laid out from scratch on an open ground and with more orderly orthogonal gird

- It had **grid plans**, with straight streets crossing at right angles, ignoring obstacles and becoming stairways where the gradients were too steep



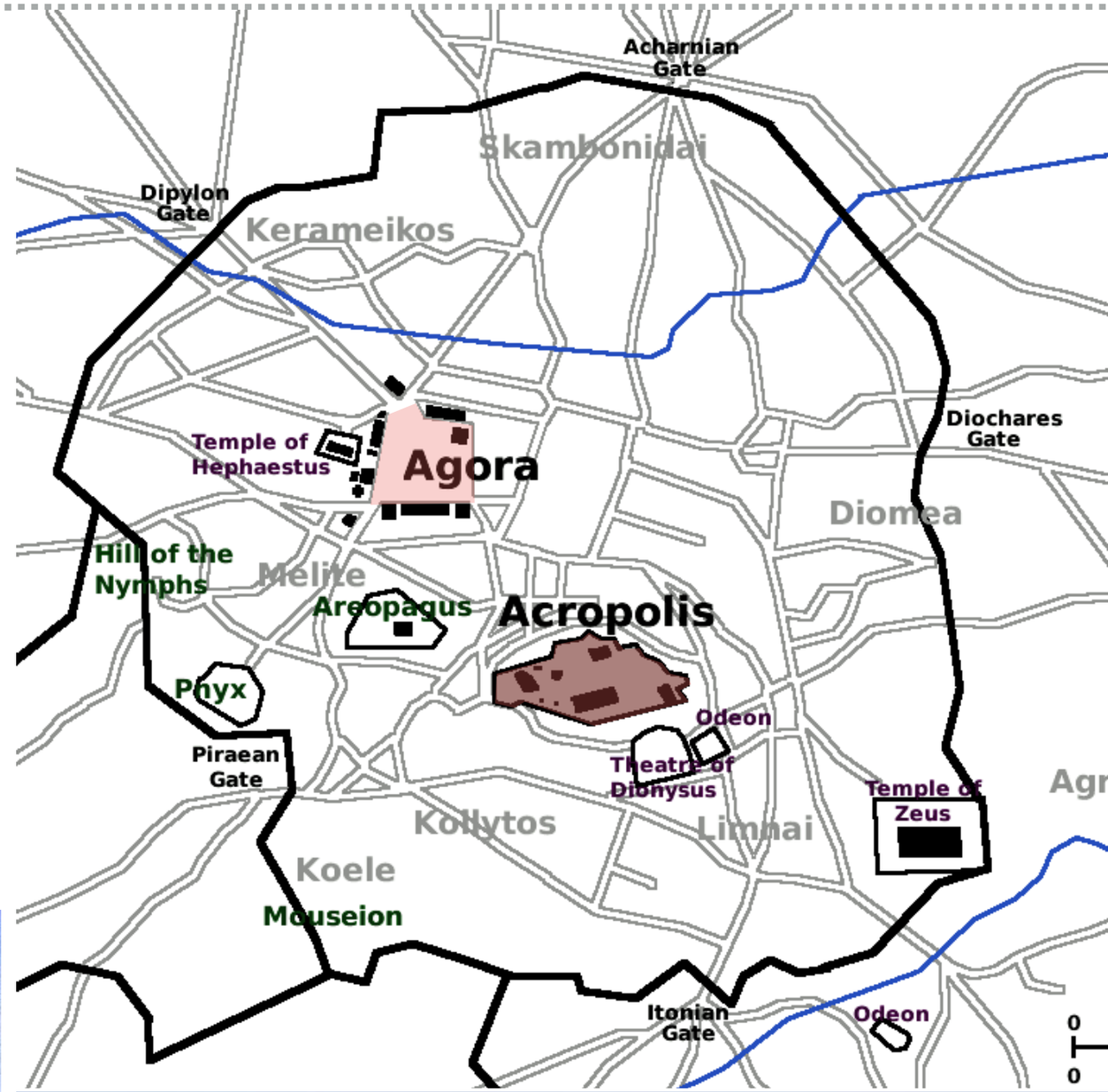
City of Miletus

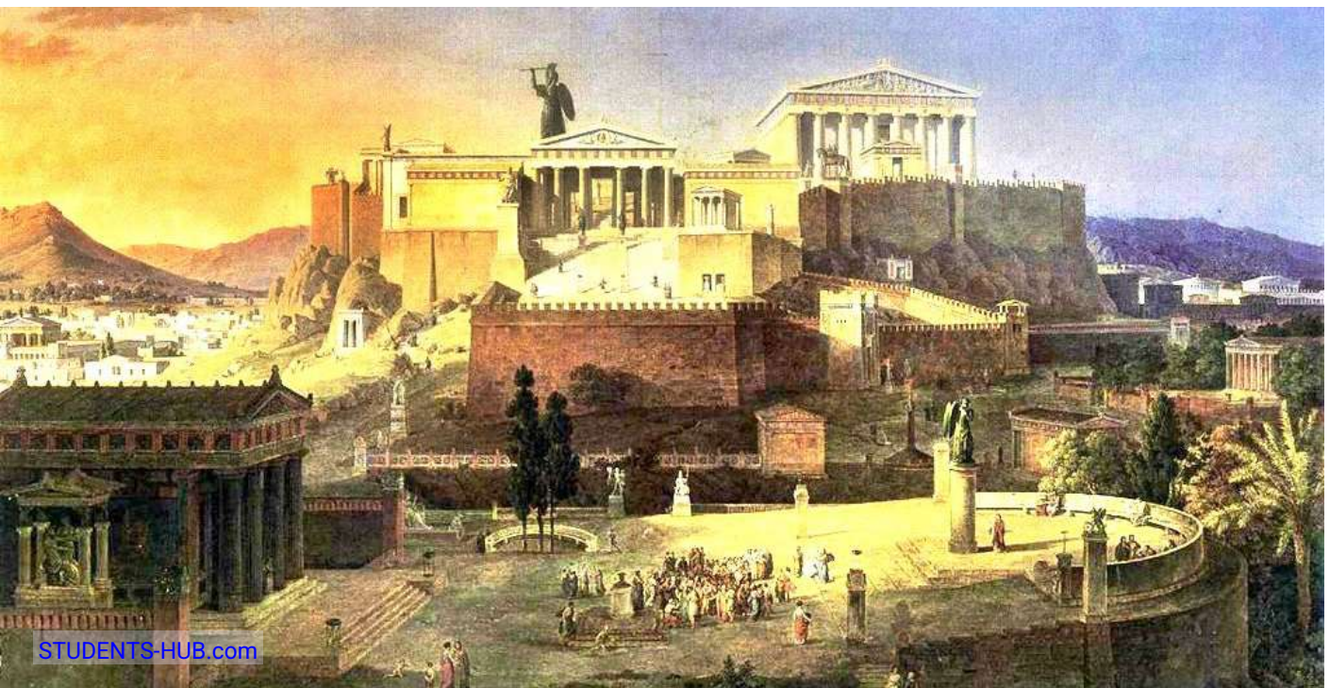
Examples 1: Athens

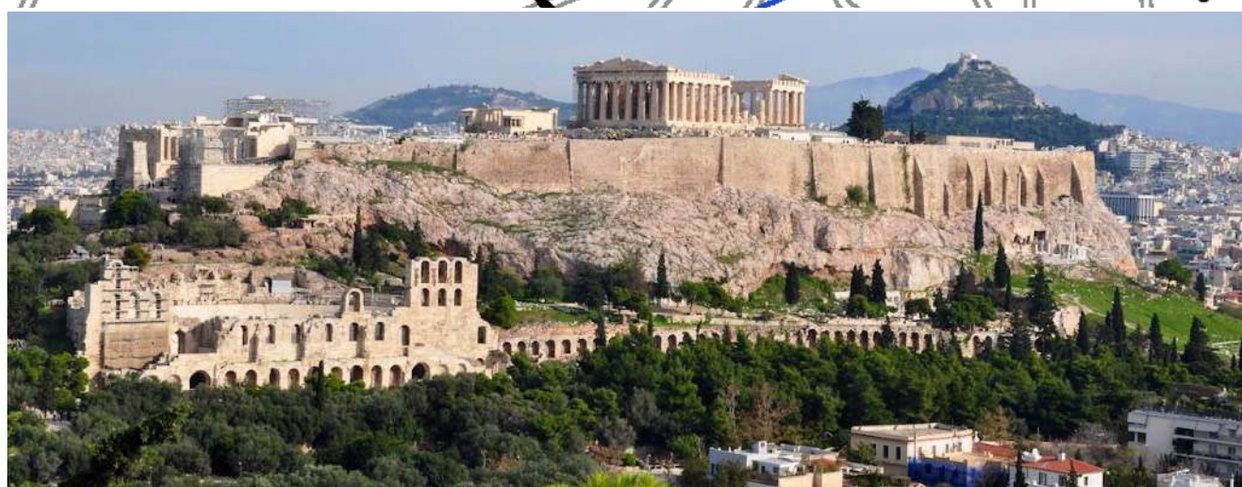
- Athens, was built around the **Acropolis**

- Paths leading out to the surrounding farms eventfully became streets

- Along one of these, a roughly rectangular open space was set aside as the **Agora**

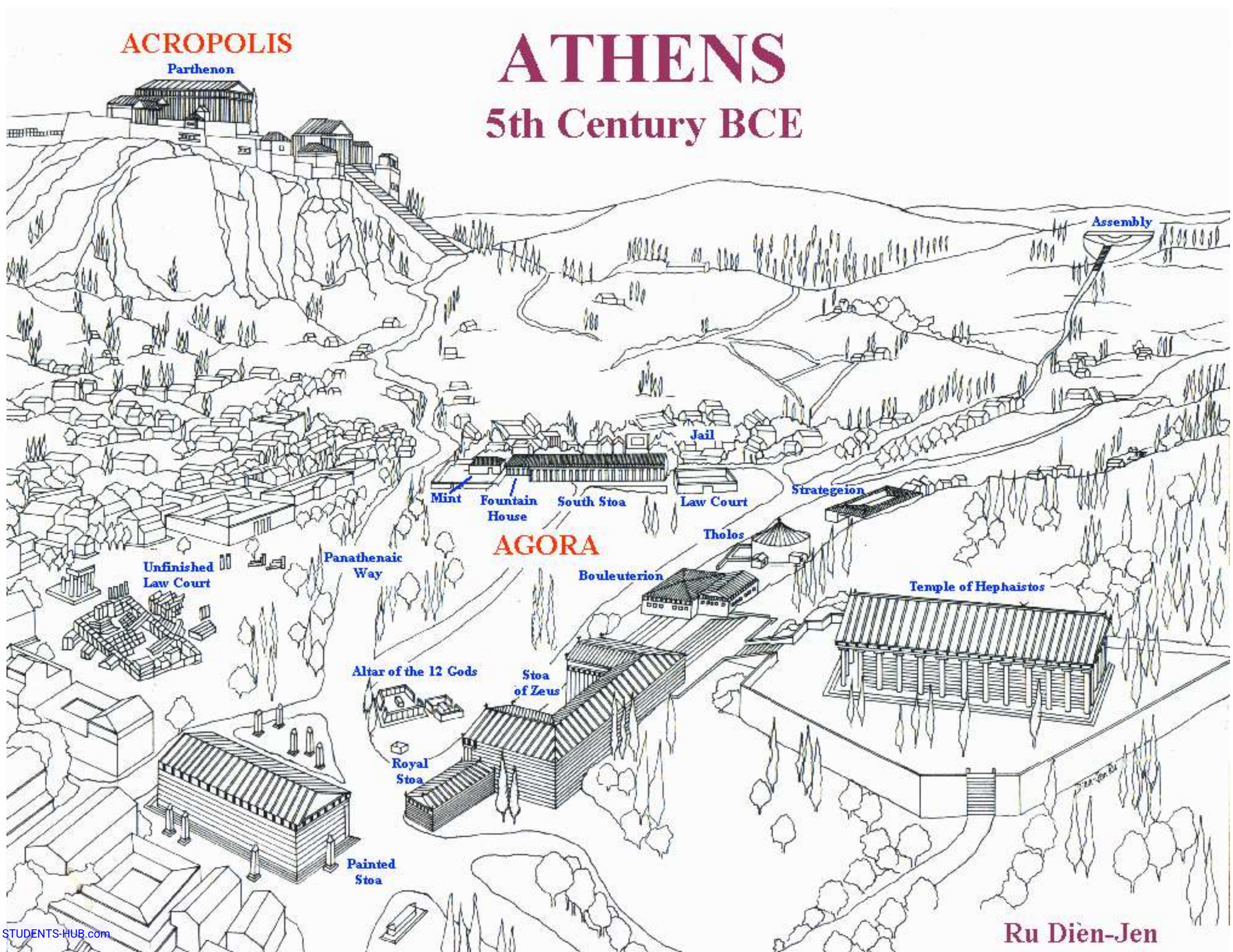






ATHENS

5th Century BCE



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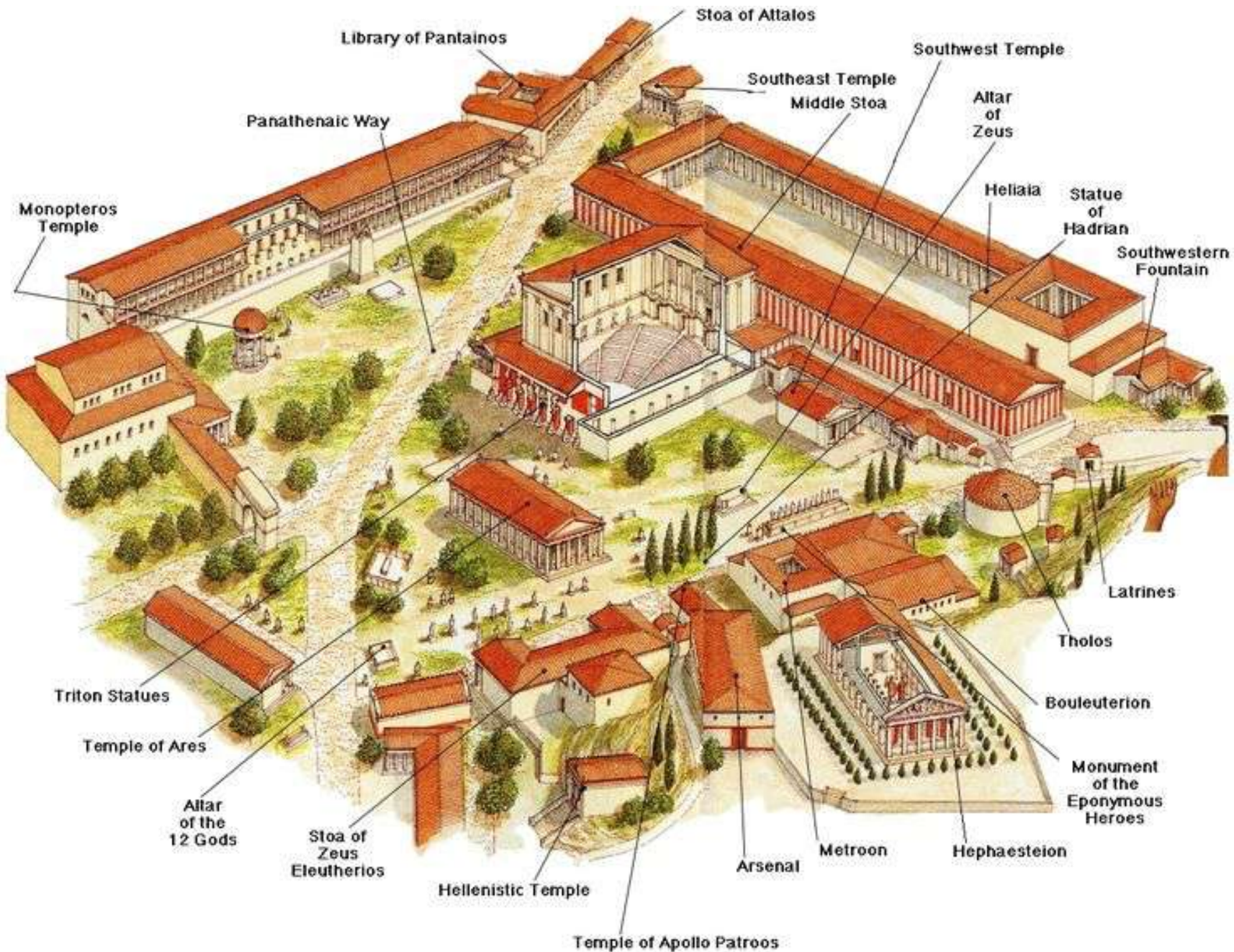
Athens Agora

- The agora was the communal heart of the Greek city

- It is the open room where trade was carried on, students were taught, business of the polis (politics) occurred

- The Agora was usually surrounded by houses and public buildings

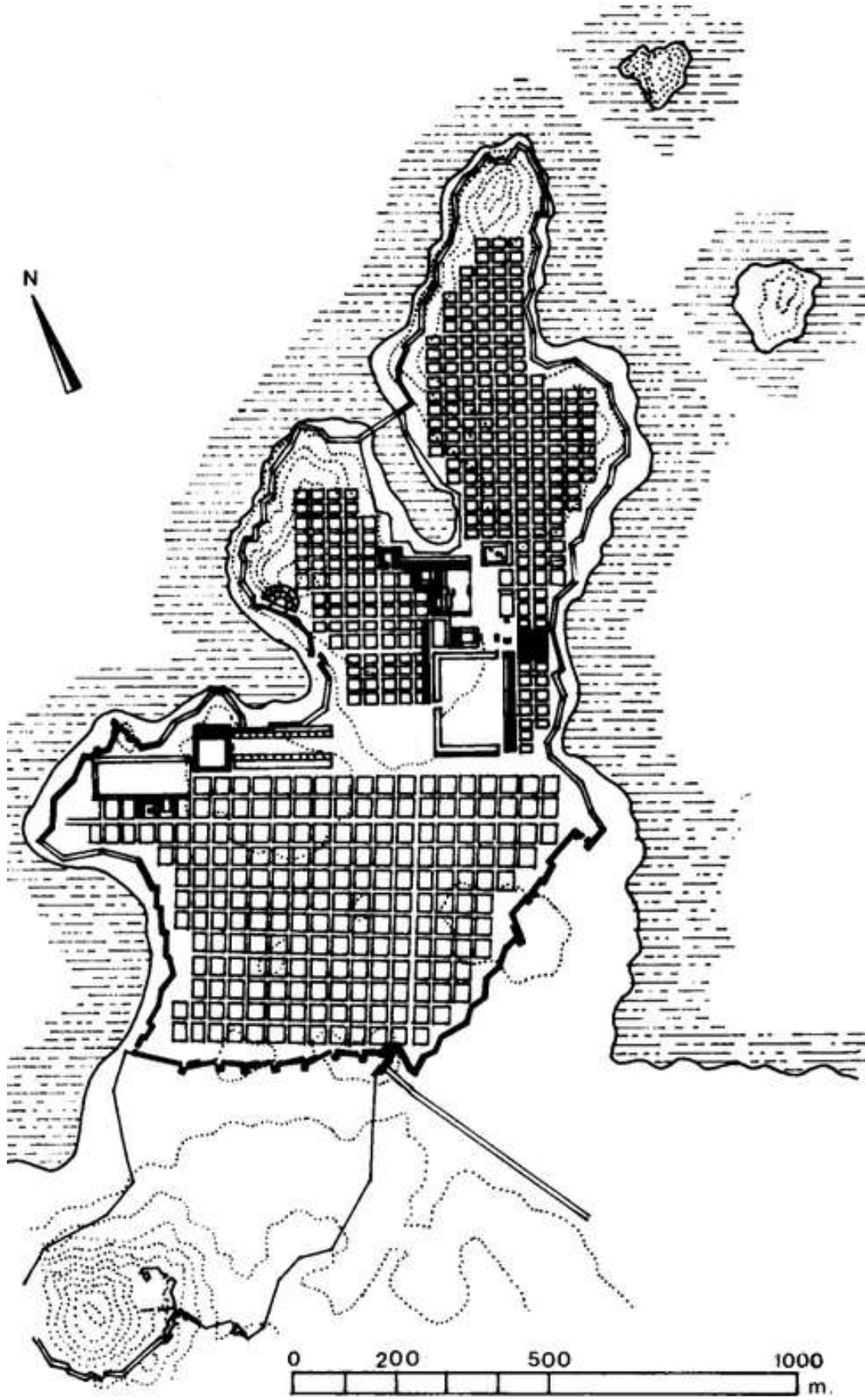
- By the 3rd century BC, the agora was surrounded by **Stoas**



Example 2: Miletus

The city was divided to 3 main parts:

- To the north was the residential quarter
- At the center was the Agora
- To the south was another residential area of larger blocks

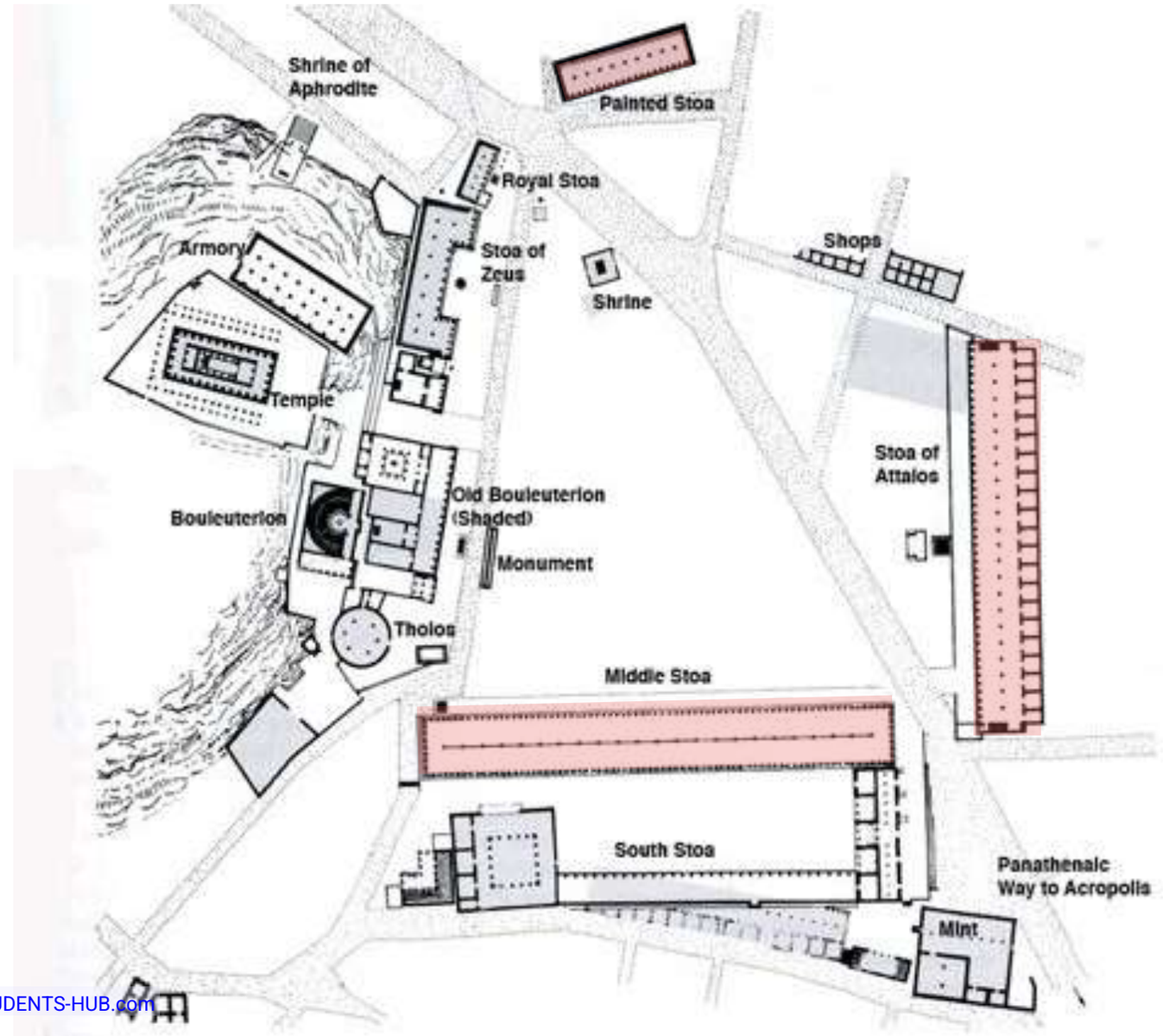


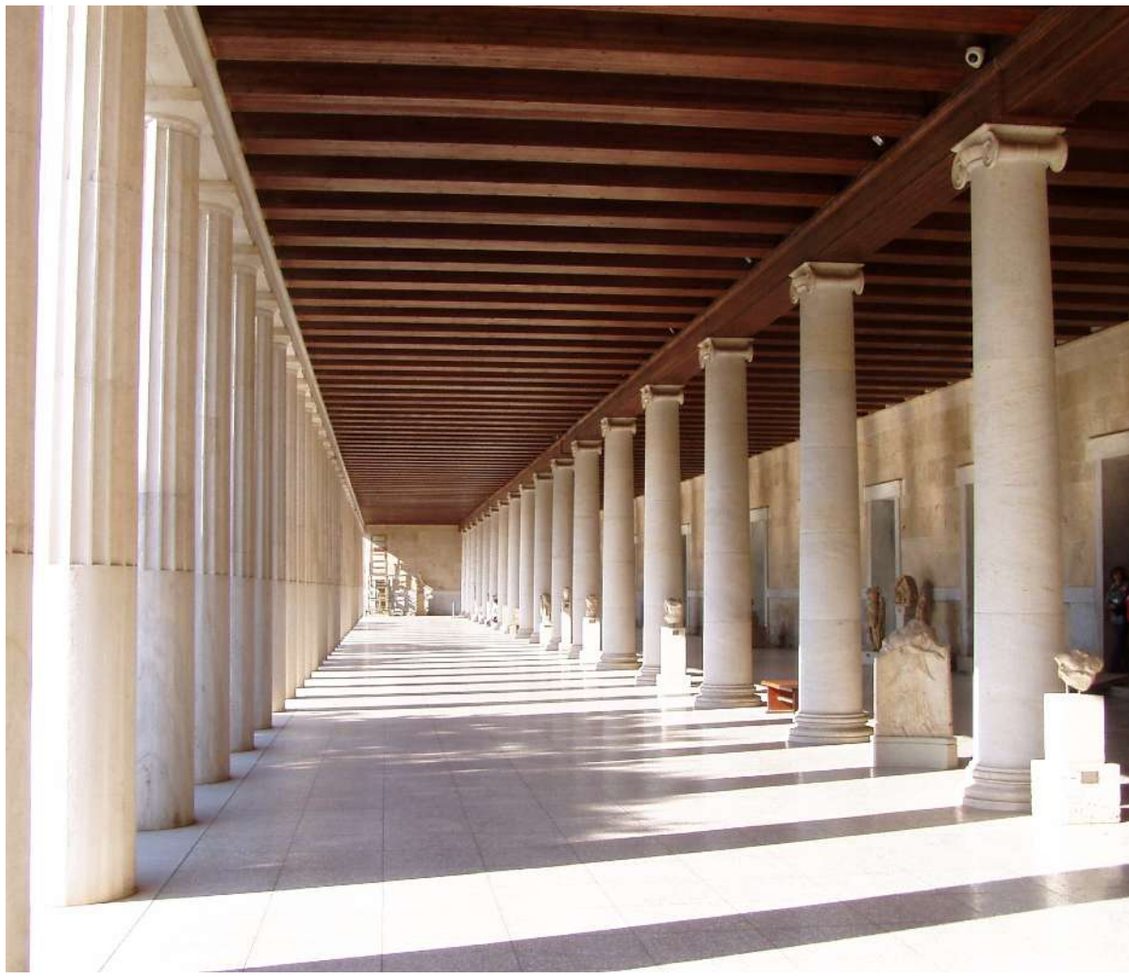
Greek Buildings

Domestic	Commercial	Political
Sport	Cultural	Religious

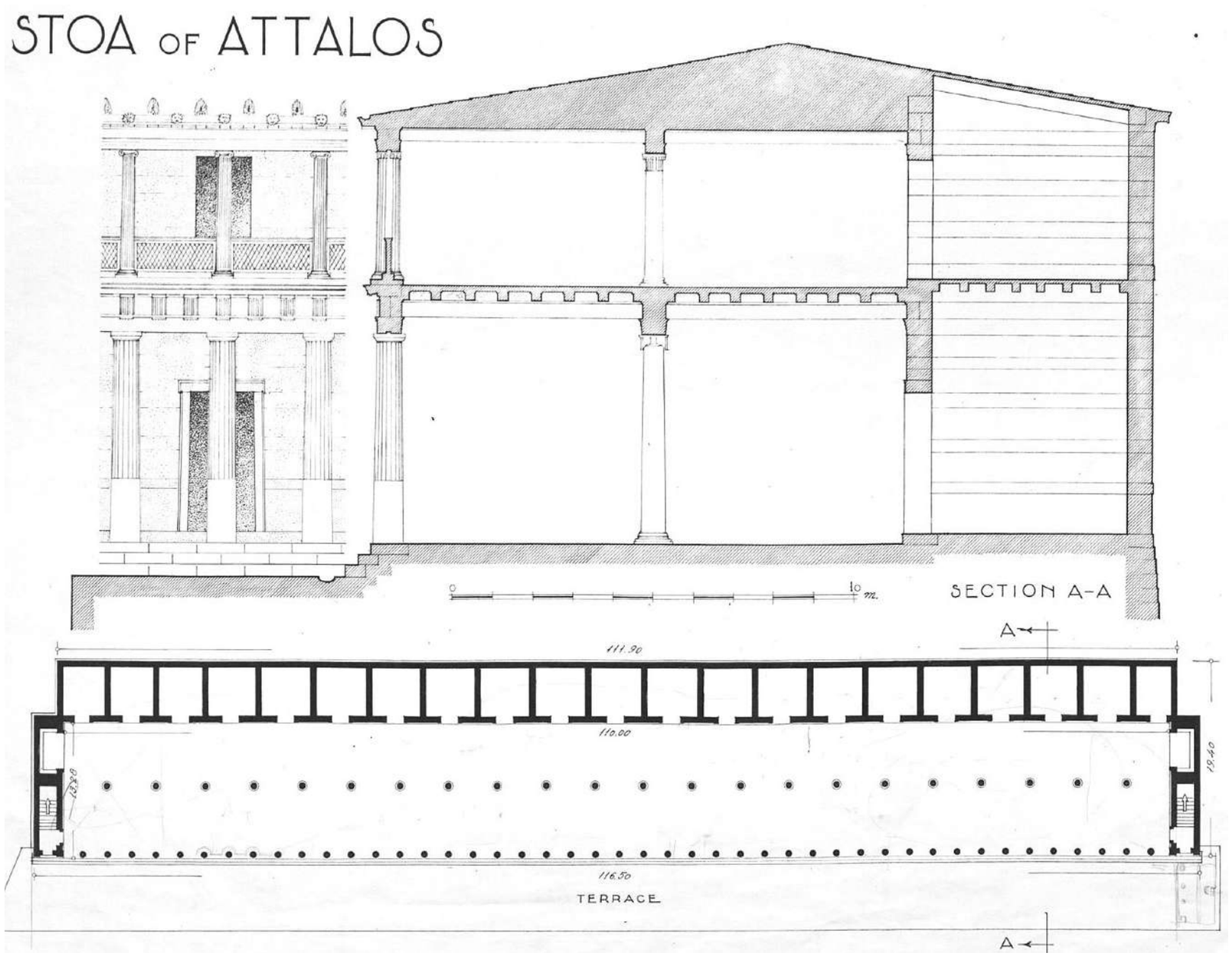
1. Stoa

lined and came to define the agora.
A Long, rectangular buildings, open on one side to face the public space





1. Stoa

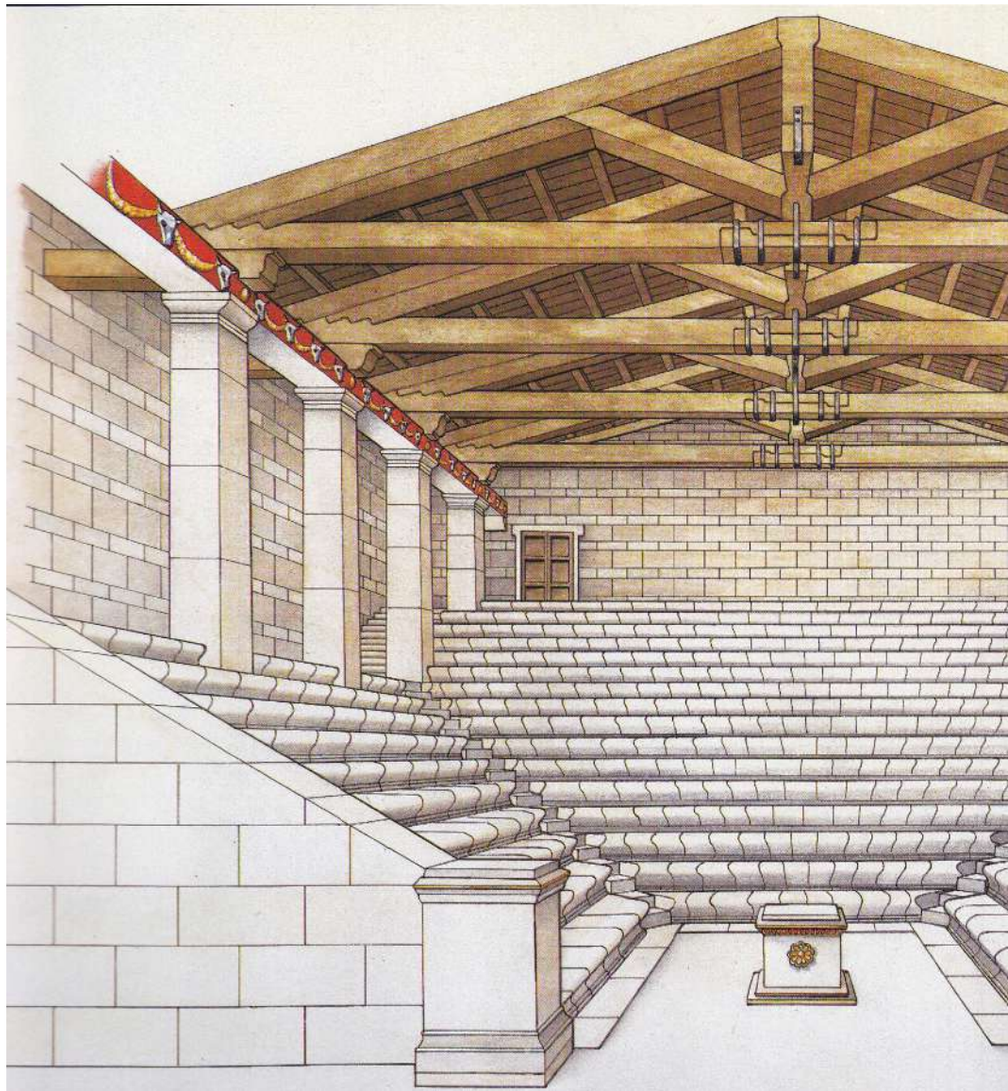


Often had an internal row of columns down the middle to support the roof or the upper floor, with small chambers in a row along the back for storekeepers and offices

2. Bouleuterion

- Houses the council of the polis

- It had tiers of benches on three sides providing seating for about 700 people

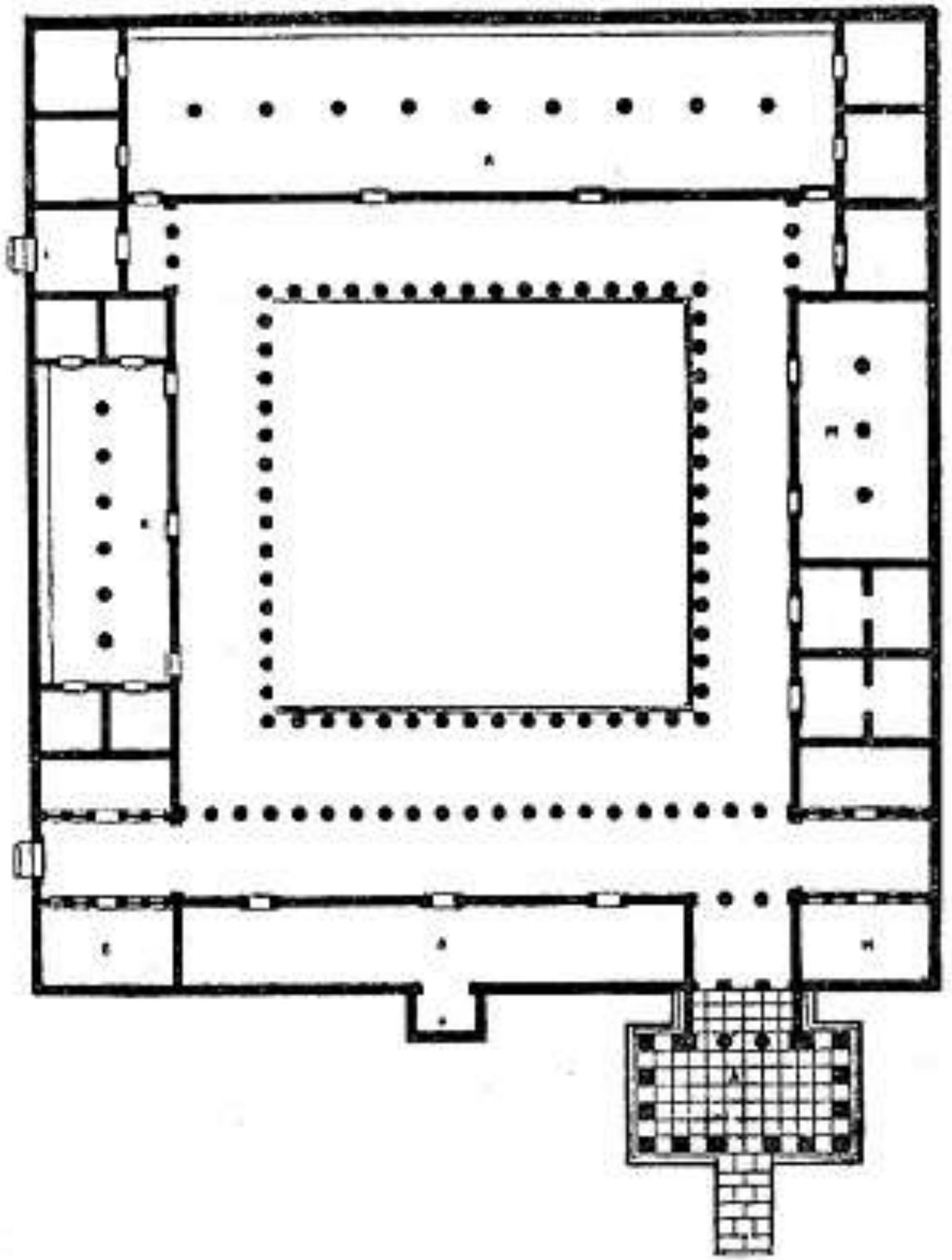


3. Palaestra

- ‘baths’ and Gymnasia in ancient Greek, and a wrestling school

- Functioned as a training facility for competitors in public games

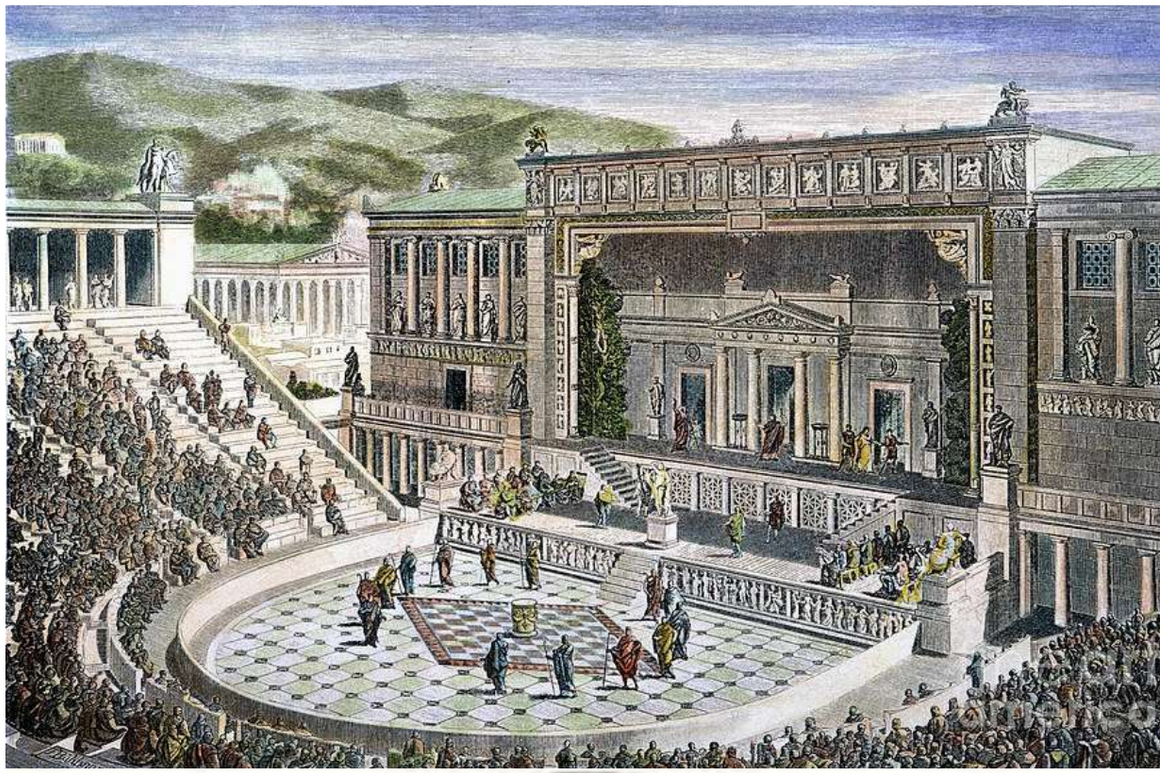
- It was also a place for socializing and engaging in intellectual pursuits which are often near to Stadium



4. Theatres

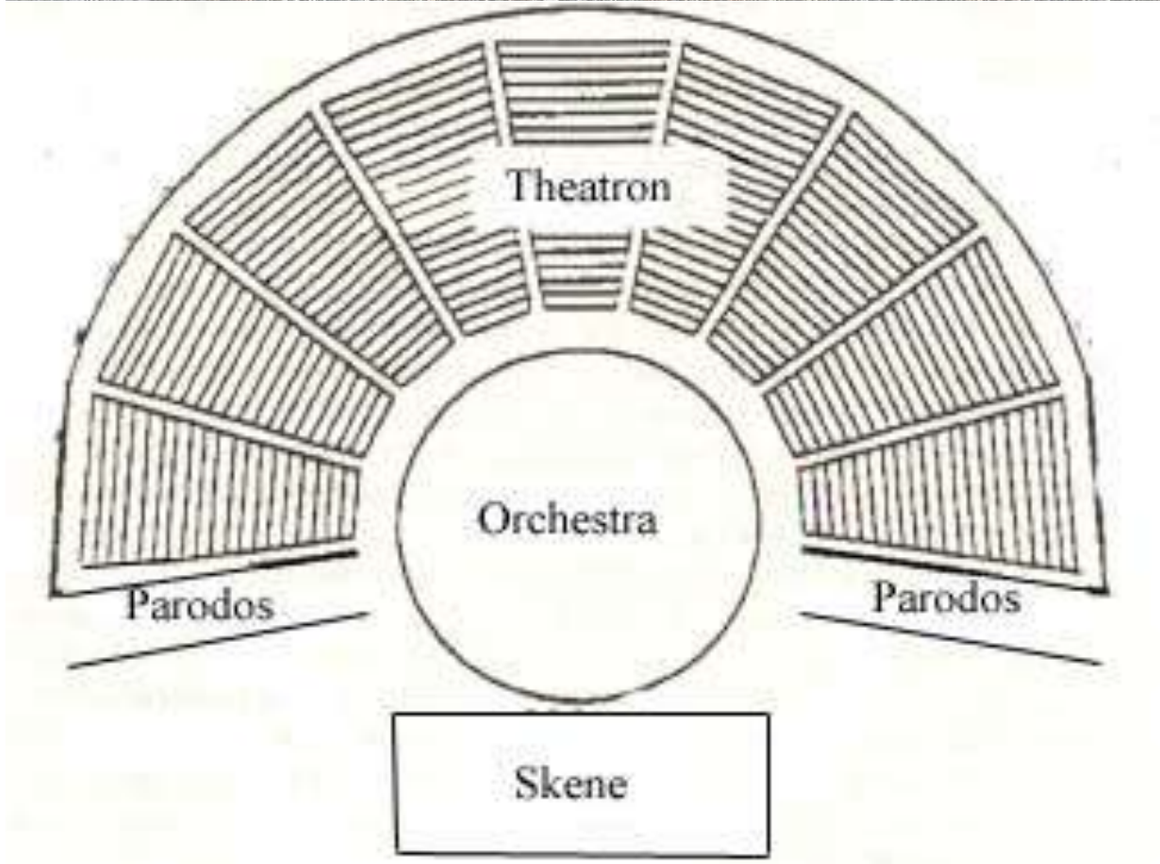
- Drama productions began as religious rituals, later, it started to define the ideal civic morals

- Initially it accommodates around 6000 people, later it developed to accommodate around 14000 people



- The Greek theater had three main basic parts:

  - **The Theatron**: *The* seeing place
  - **The orchestra:** the dancing place
  - **The skene:** a low structure forming the background behind the orchestra

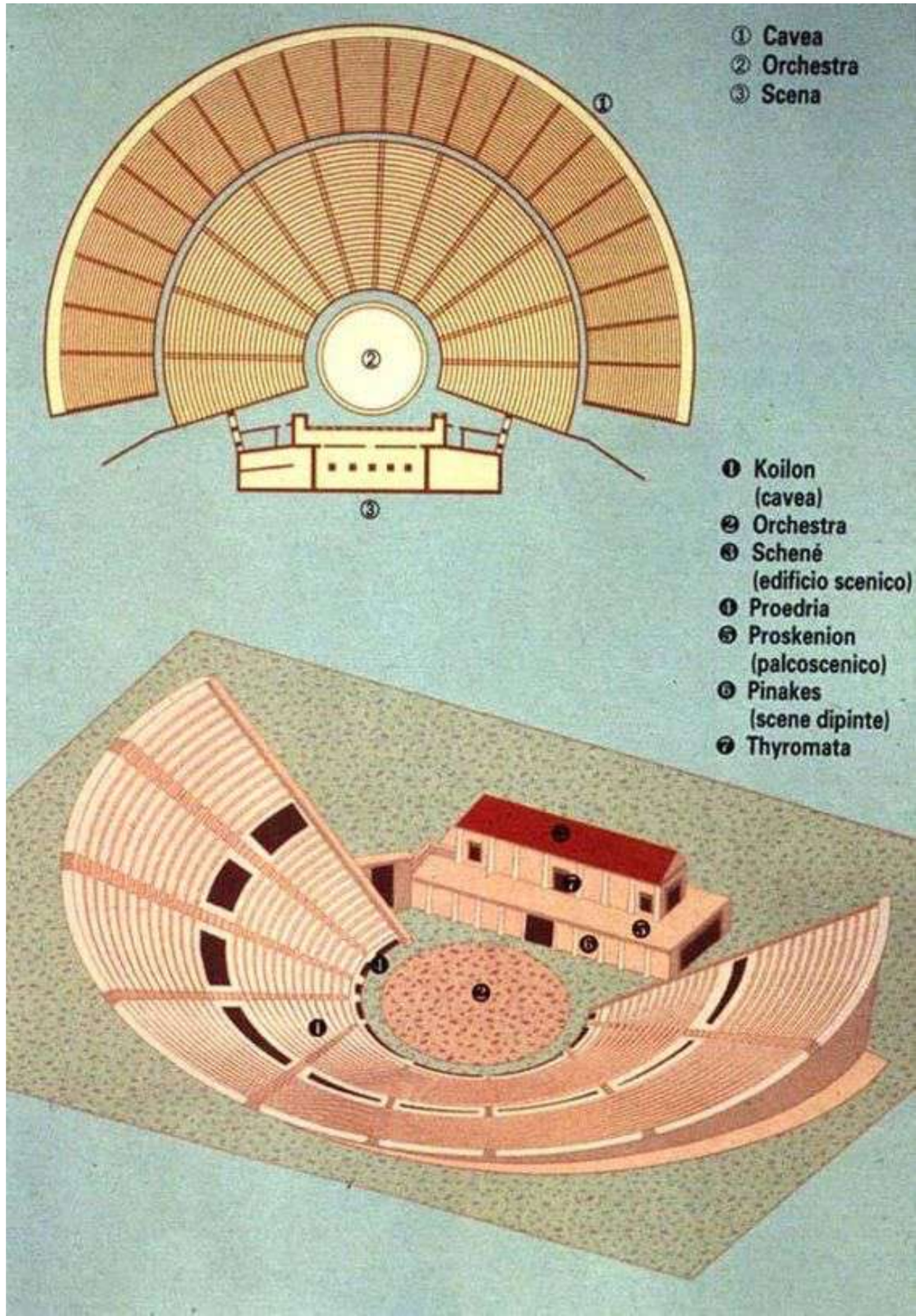


4. Theatres

- The skene (greek word for scene) was low in order to introduce the landscape surrounding it as part of the scene

- The seating formed more than a semi circular and the skene was a little more than one story high

- The Greek theaters were of earthen works or a hillside



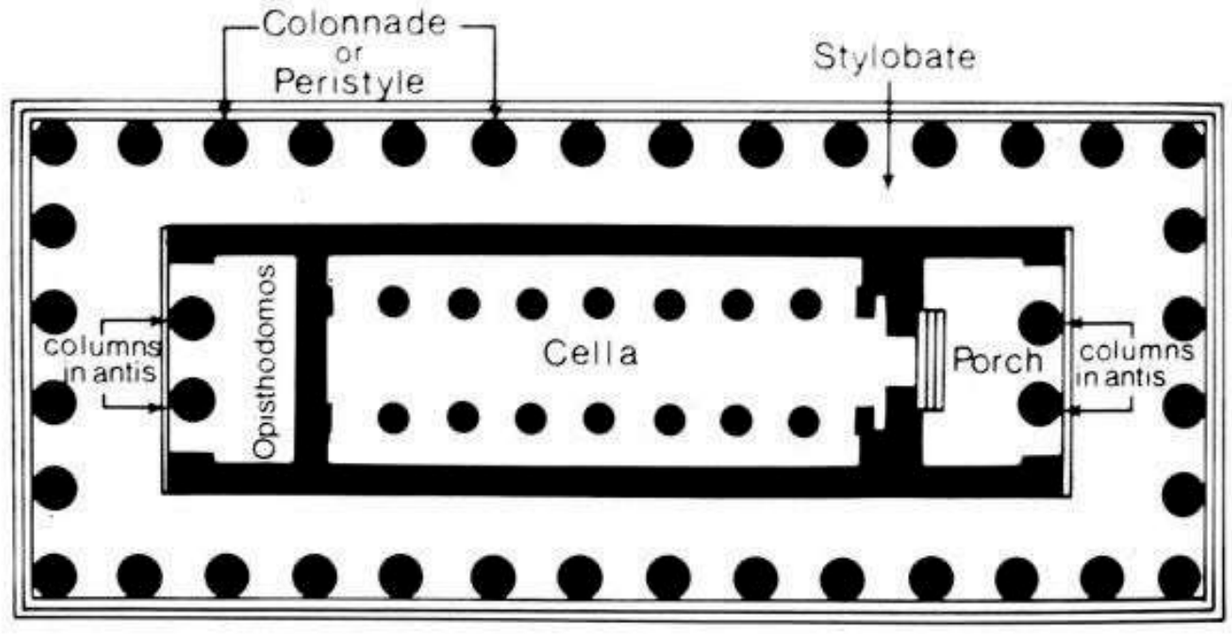
5. Temples

- Rectangular in plan stand on a podium of 3 steps, with inner room called **Cella.**

- The side walls usually extended forward to form the **porch**

- Symmetrical design, with usually even numbers of columns, built from marble, stone

- Named based on the number of columns in Greek numeral:
  - **distyle: two columns**
  - **tetrastyle: four**
  - **hexastyle: six**
  - **octastyle: eight**
  - **decastyle: ten**



The Acropolis

- The Acropolis raises above the city, putting the white marble temples in view of the residents of the entire polis, it is the result of a remarkable building program initiated several decades after the Acropolis was burnt down by the Persians in 480 BC

- It was a focal point of the **Panathenaia festival**, observed every year on Athena's birthday

Monuments of the Vth century B. C.
Monuments of the IVth century B. C.
Hellenistic and Roman monuments
Ancient roads

Peripatos
Aglaureion
Panathenaic Way
Parthenon
Erechtheion
Sanctuary of Zeus Polieus
Altar of Athena
Older temple of Athena
Sacrificial Athena Procession
Propyla
Temple of Athena Nike
Eleusinion
Chalcotheca
Sanctuary of Pandion
Tripod Road
Sanctuary of Artemis Brauronia
Sanctuary of Asclepius
Odeum of Herodes Atticus
Stoa of Eumenes
Theater of Dionysus Eleuthereus
Temenos of Dionysus Eleuthereus
Odeum of Pericles

N

Achamian Gate
Skambonidai
Dipylon Gate
Kerameikos
Temple of Hephaestus
Agora
Diochares Gate
Diomea
Hill of the Nymphs
Melite
Areopagus
Acropolis
Pnyx
Odeon
Piraean Gate
Theatre of Dionysus
Temple of Zeus
Kollytos
Limnai
Koele
Mouseion
Itonian Gate
Odeon

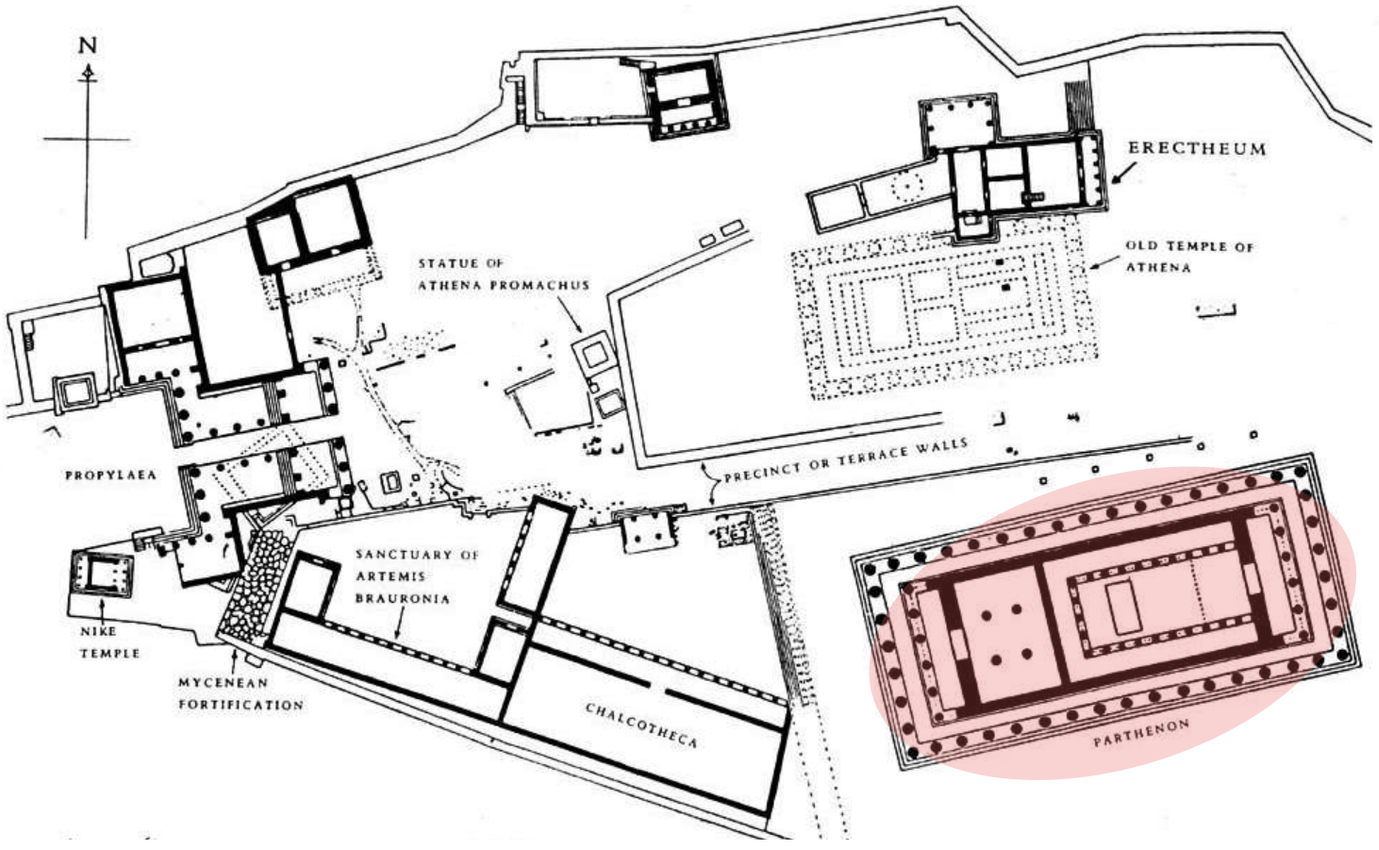
Parthenon

- It is the only **octastyle temple** that was built in ancient Greece

- Started in 447 BC and completed in 436 BC

- The temple stands on three steps platform

- At the top step, the dimensions are 30.9 x 69.5 m

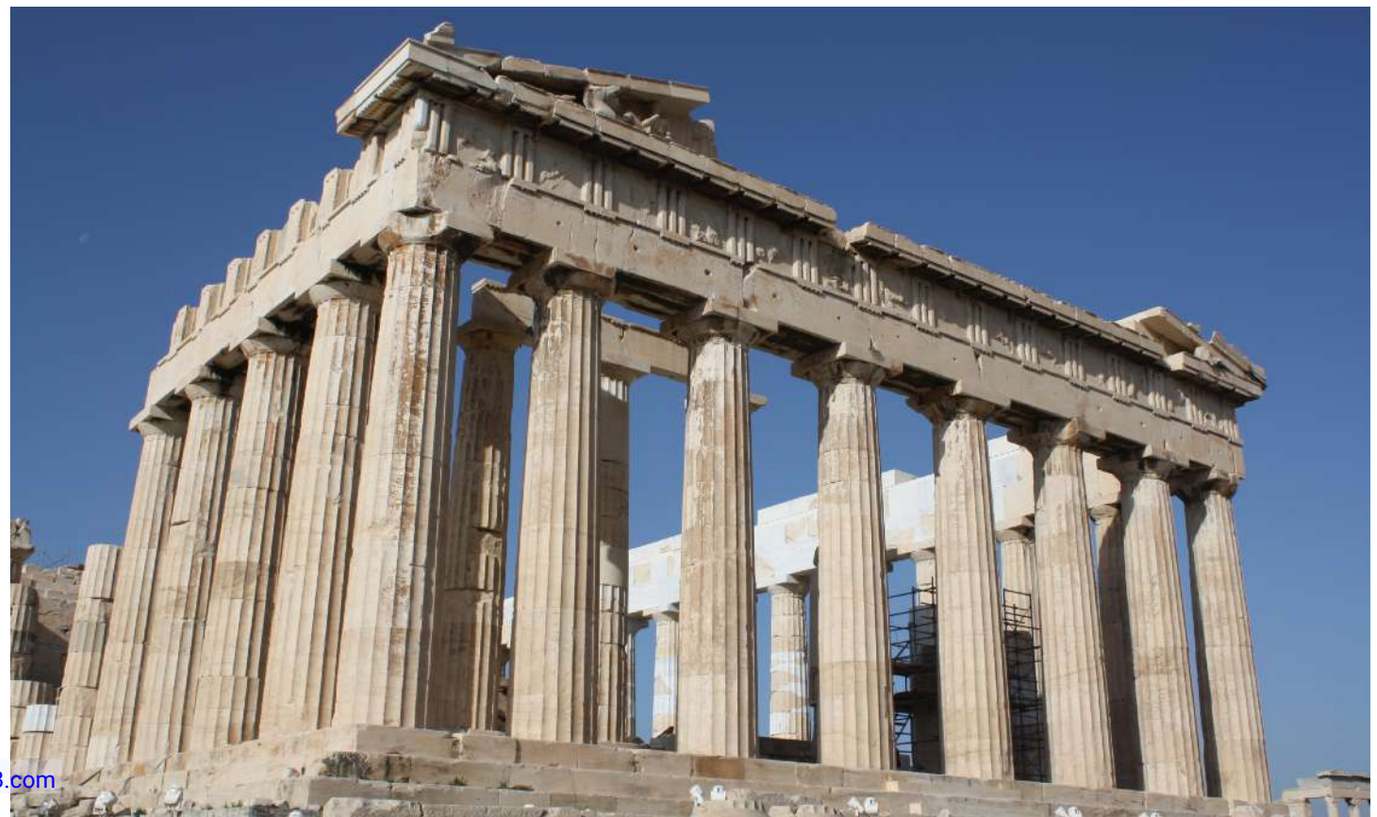


Parthenon

- The cella consists of 2 main rooms

- The eastern room has Doric colonnade. Inside the colonnade towards the end was a gold and ivory statue of Athena

- On the western side, a square room considered a depository for valuable offerings, its roof was probably supported by Ionic columns



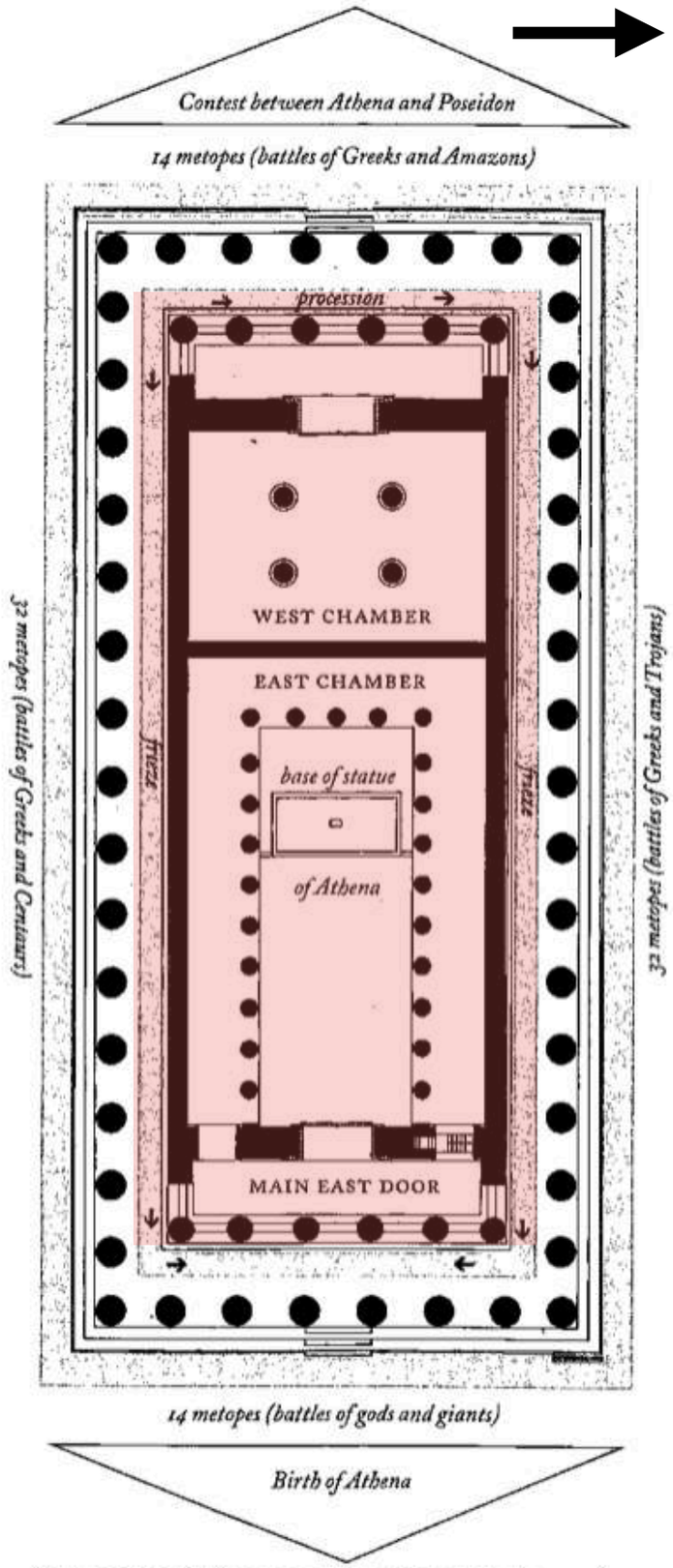
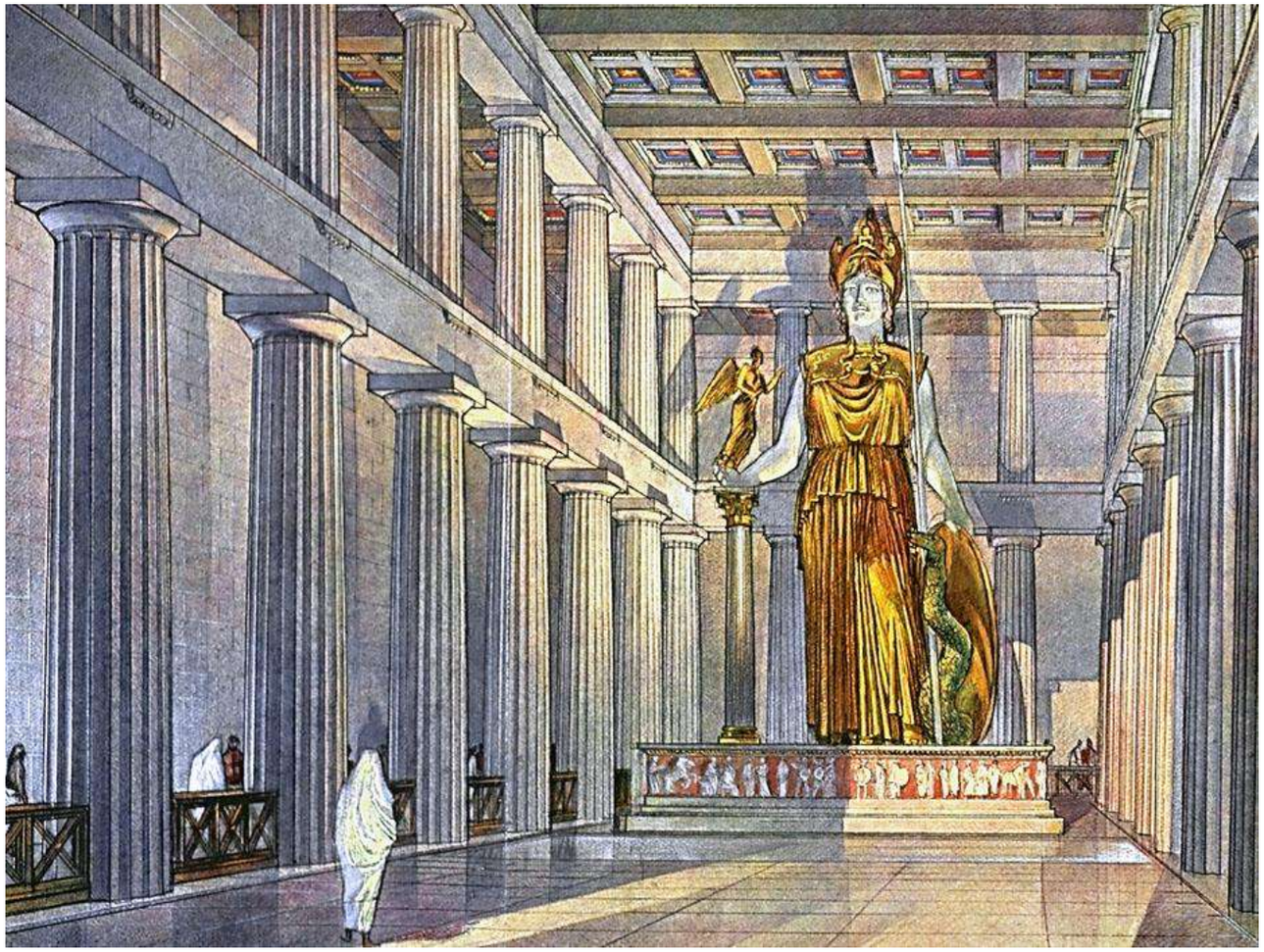
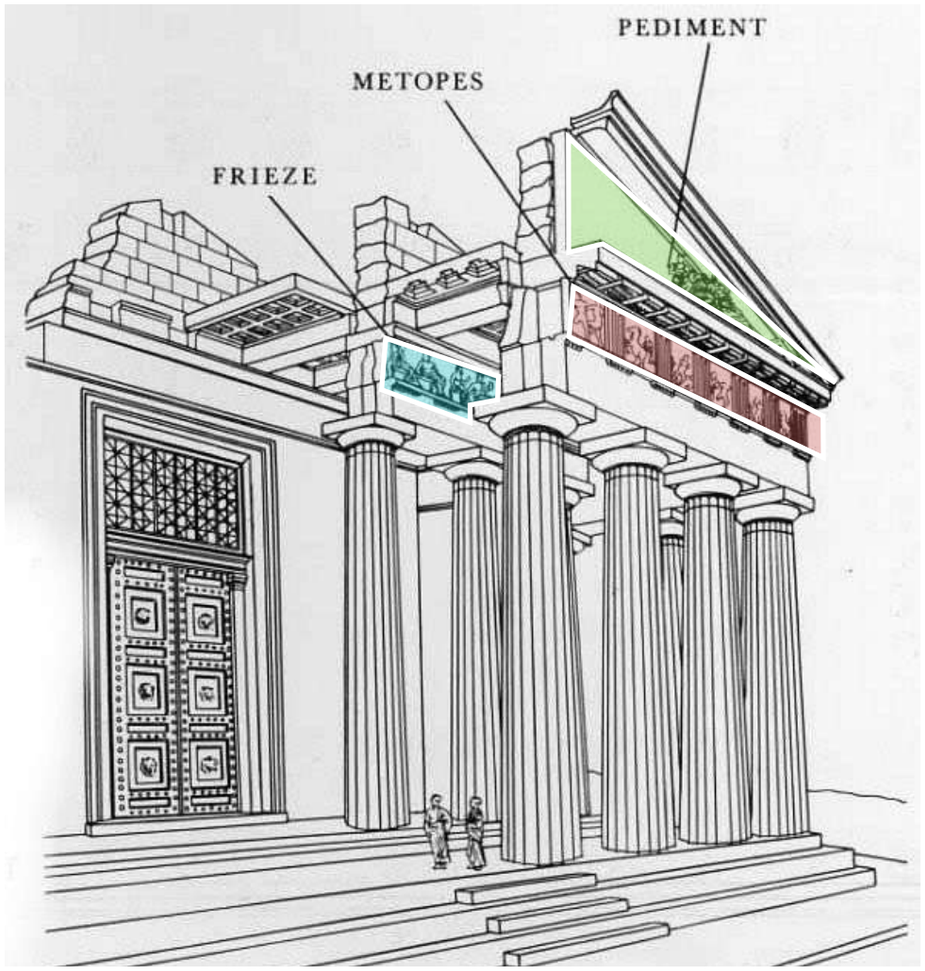
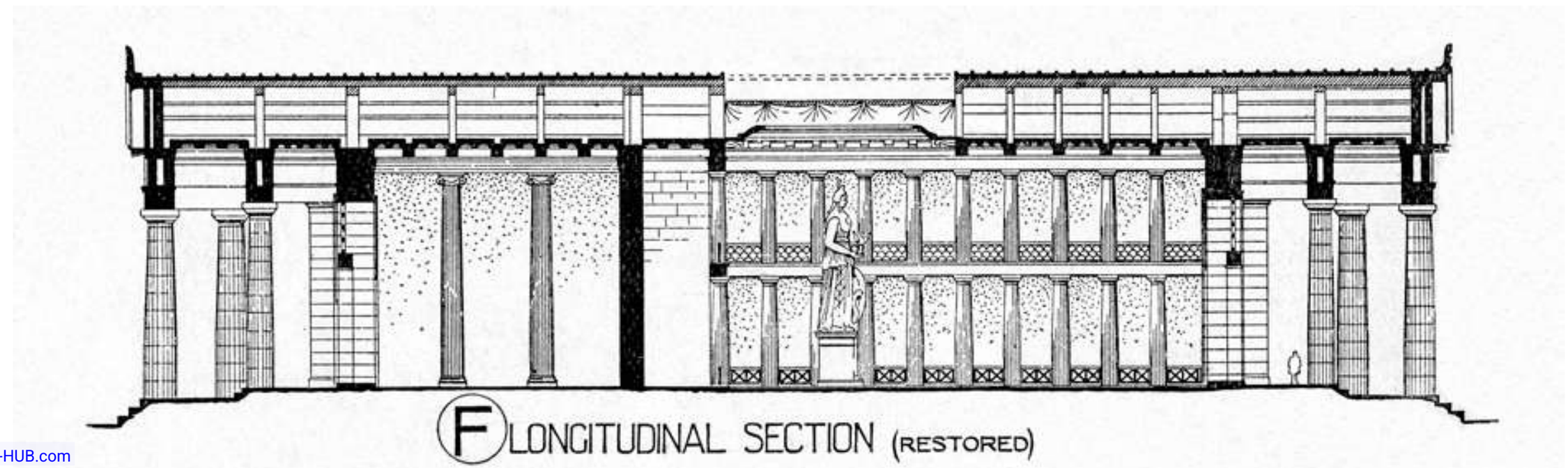


Figure 2. The Parthenon and its sculpture (scale 1:400).

Parthenon

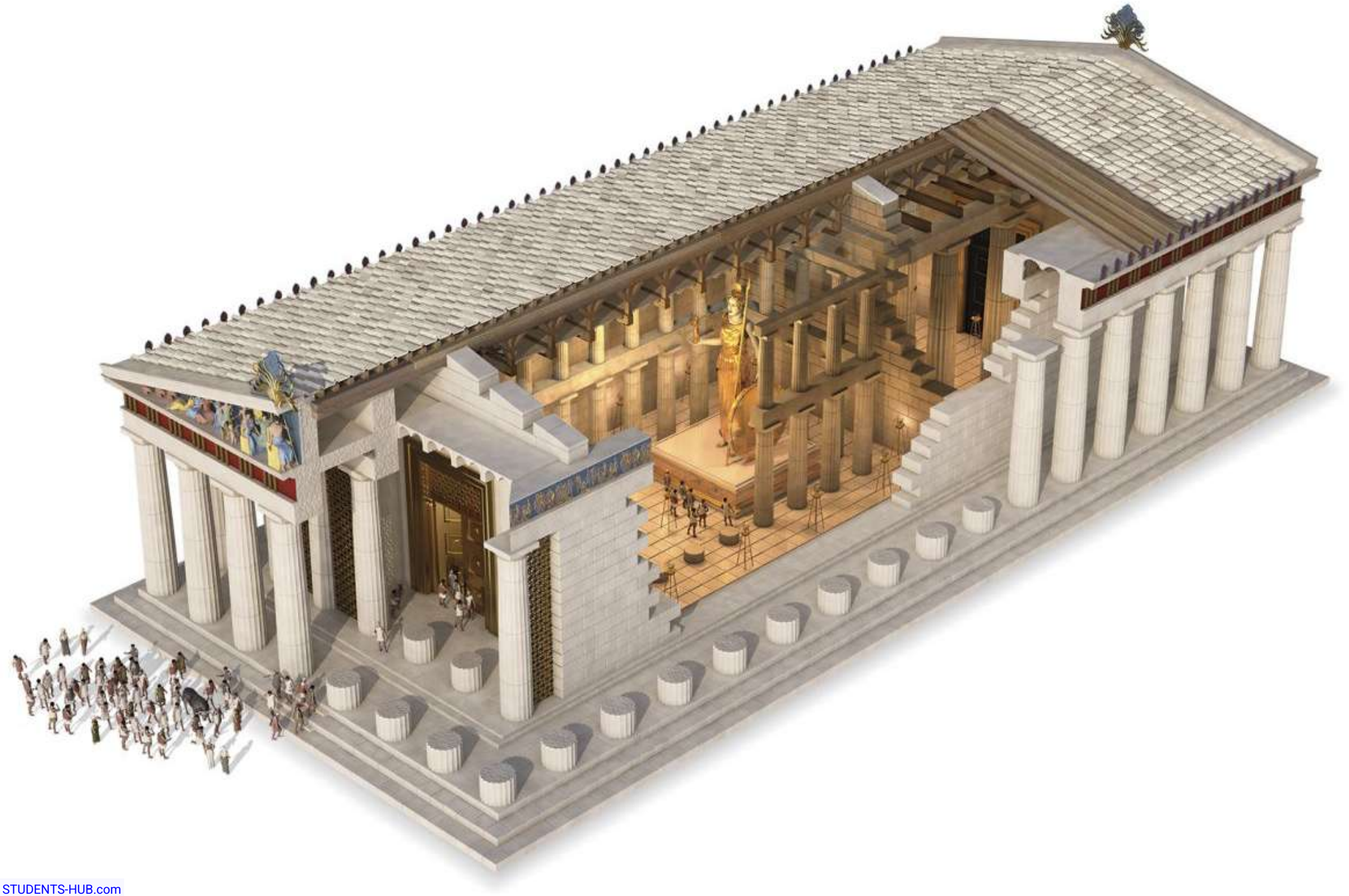






F LONGITUDINAL SECTION (RESTORED)

Parthenon



Parthenon Proportions

The Golden Section

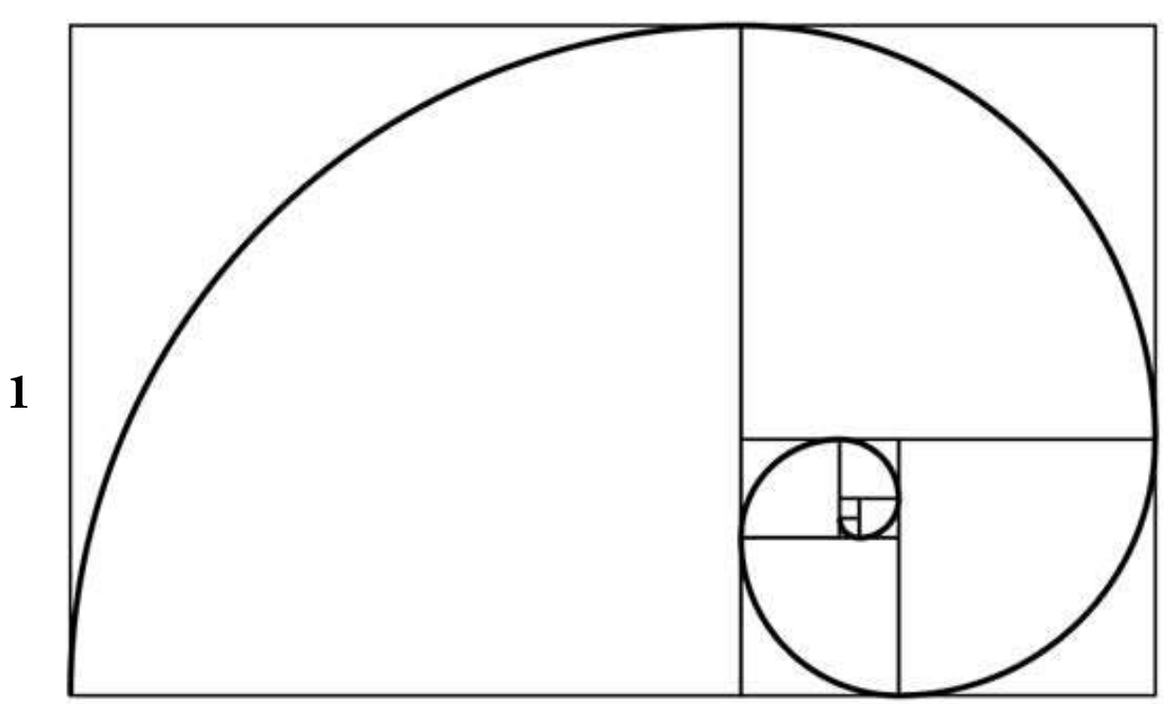
- The Golden ratio is a special number found by dividing a line into two parts so that the longer part divided by the smaller part is also equal to the whole length divided by the longer part

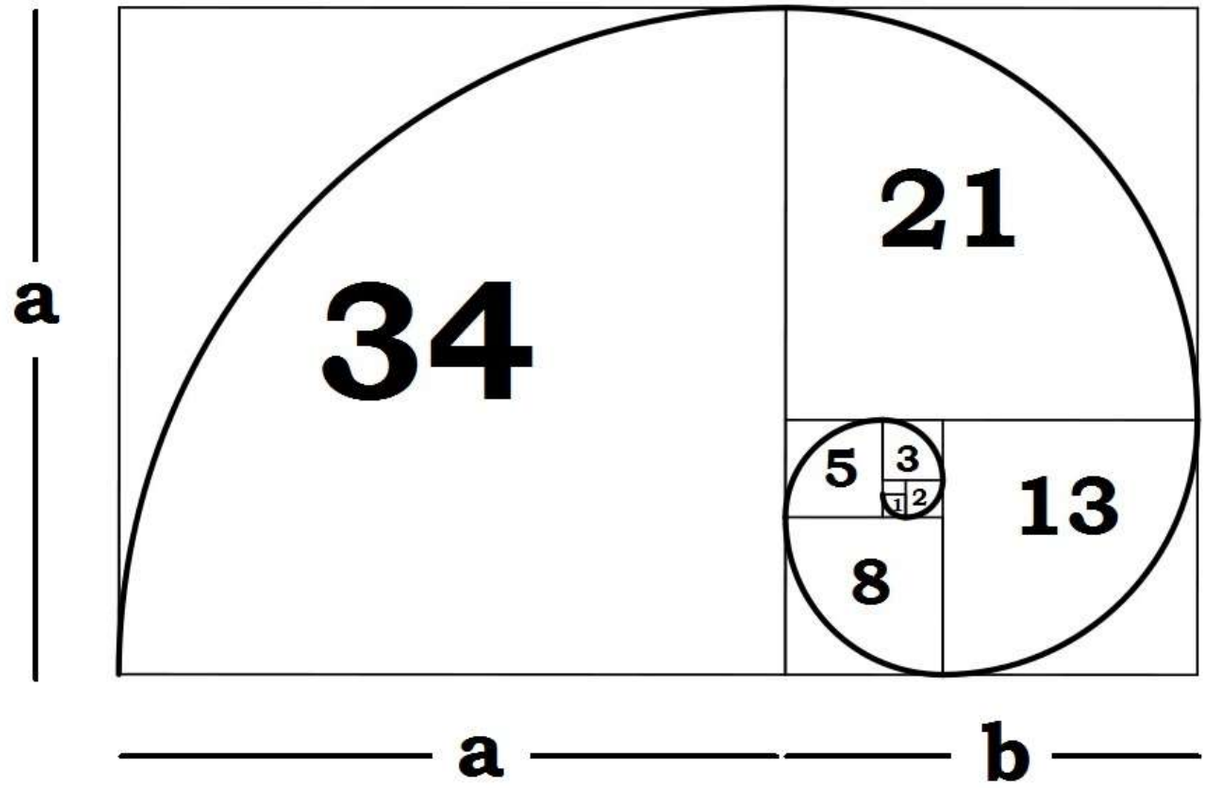
- It is often symbolized using **phi**

- In an equation form, it looks like this:

a/b = (a+b)/a = 1.6180339887498948420

$$\frac{a+b}{a} = \frac{a}{b}$$



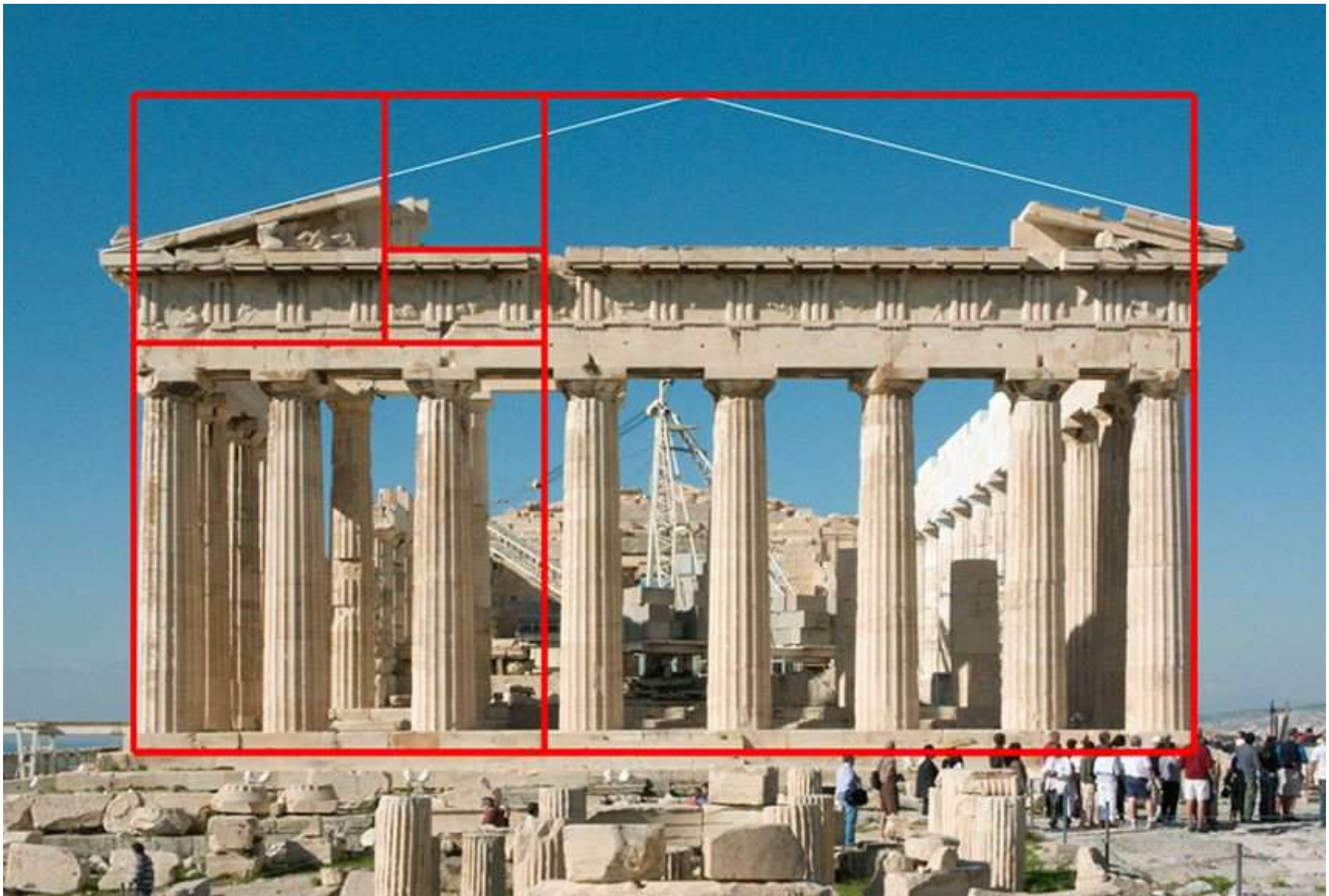


The Golden Section

https://www.youtube.com/watch?v=aKc1xTHSjIQ&t=4s

The Golden Section

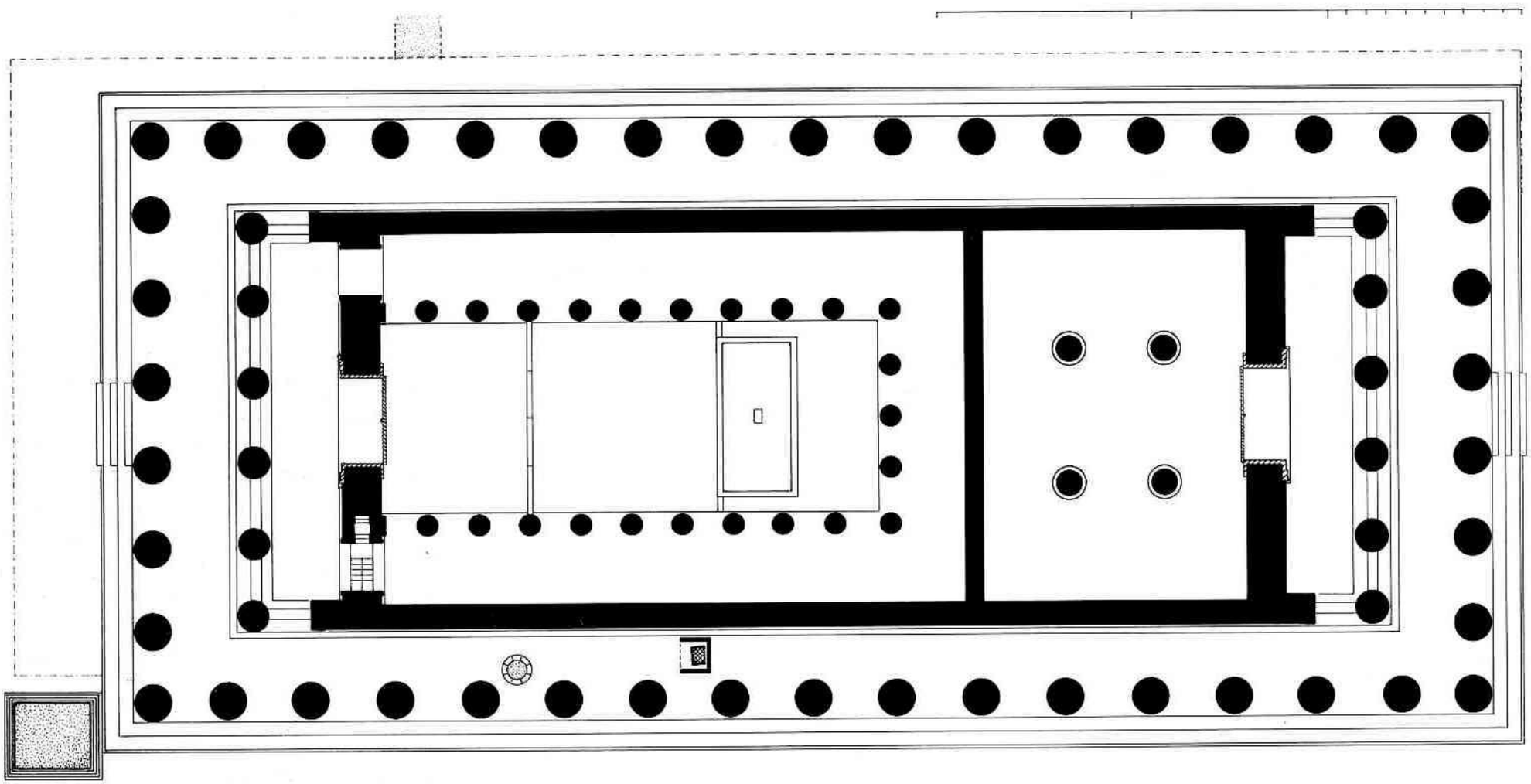
Phidias (500 - 432 BC) was a Greek sculptor and mathematician who is thought to have applied phi to the design of sculptures for the Parthenon



1 : 2.25 ratio

- As an embodiment of logos, the entire design is governed by proportional system of **X to (2X+1)**

- Accordingly if there had to be eight columns across the ends, the length would be seventeen column

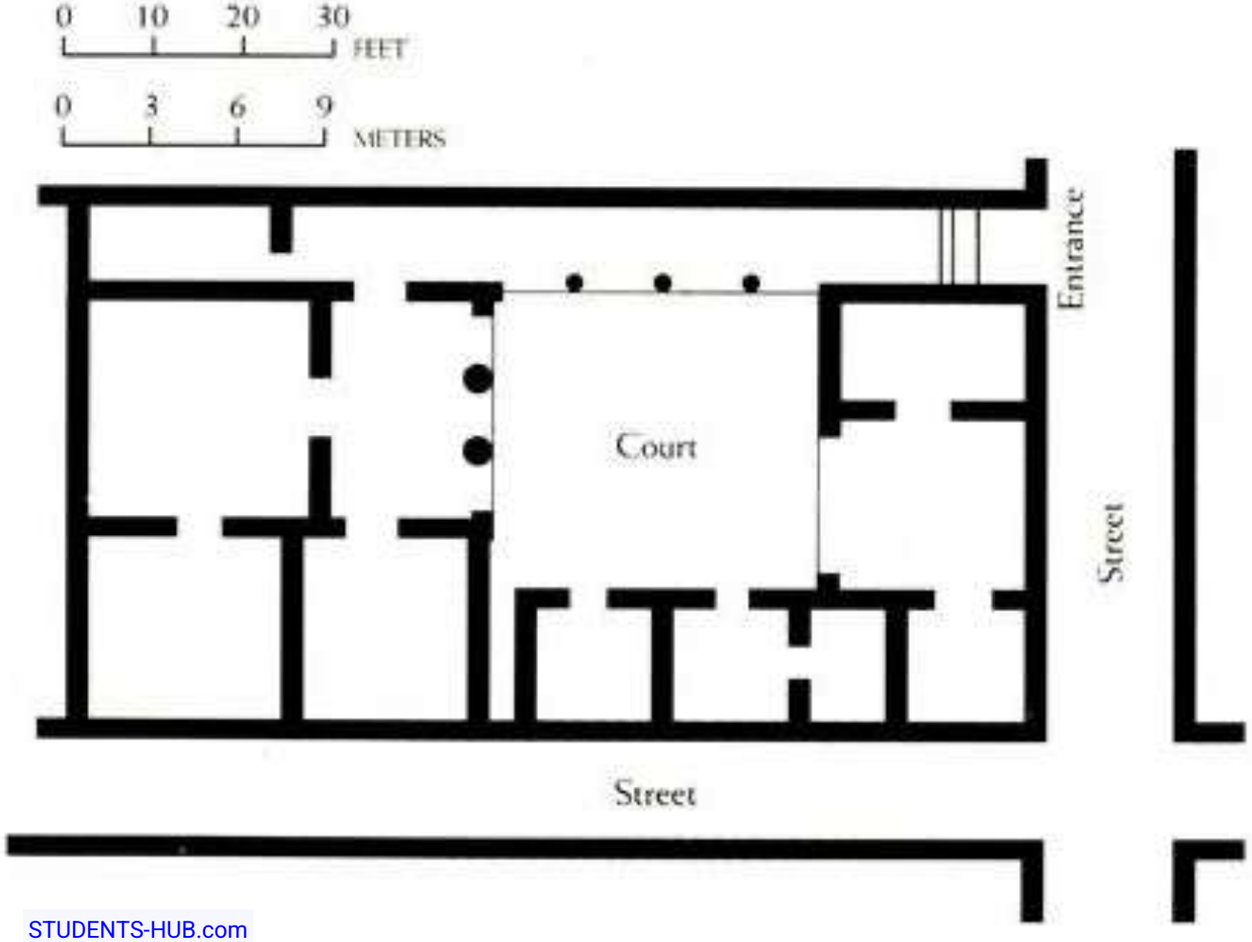


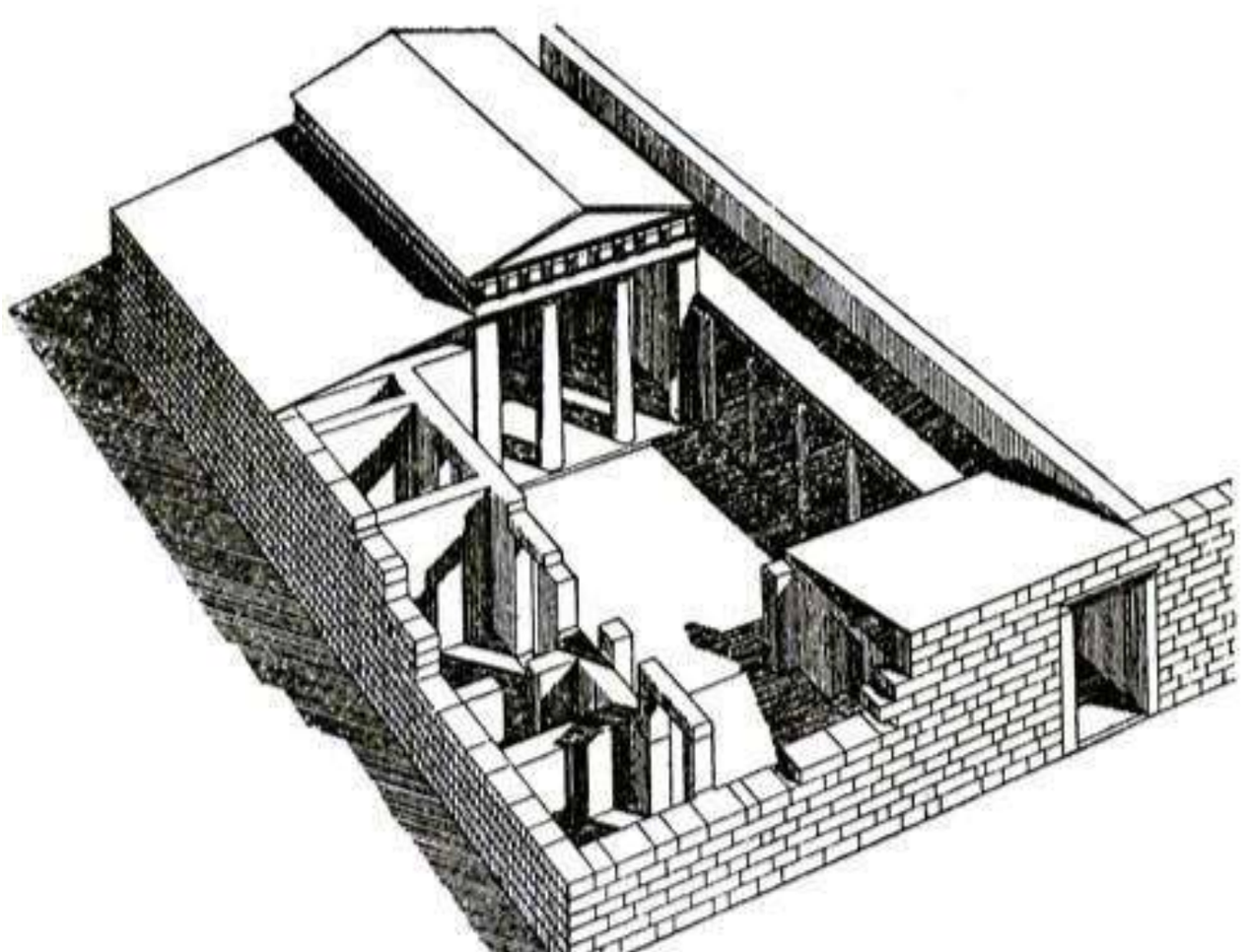
Greek Domestic Architecture

Domestic Architecture

- Since most civic and commercial business was transacted in the agora, the private houses of the Greeks generally were small and unelaborated

- In planned cities, private houses were rectangular, with rooms arranged around an open courtyard so that cool air could built up and circulate through the rooms during the heat of the day



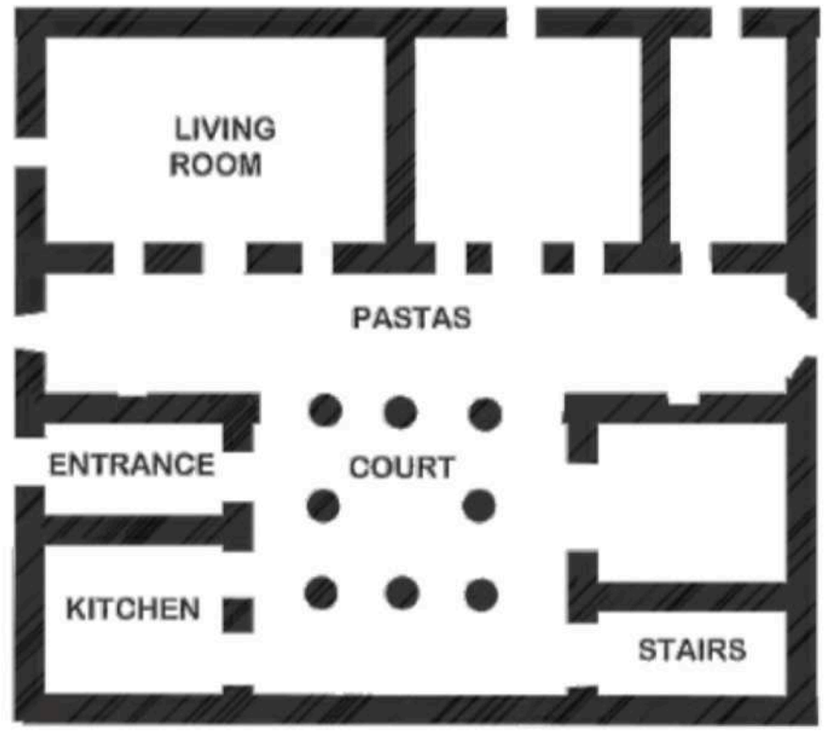


Domestic Architecture

- The houses were usually one story and had a pitched roof inwards towards the central open court

- Usually made out of Sun dried mud bricks

- Had separate areas for men and women



Next lecture

Roman Architecture