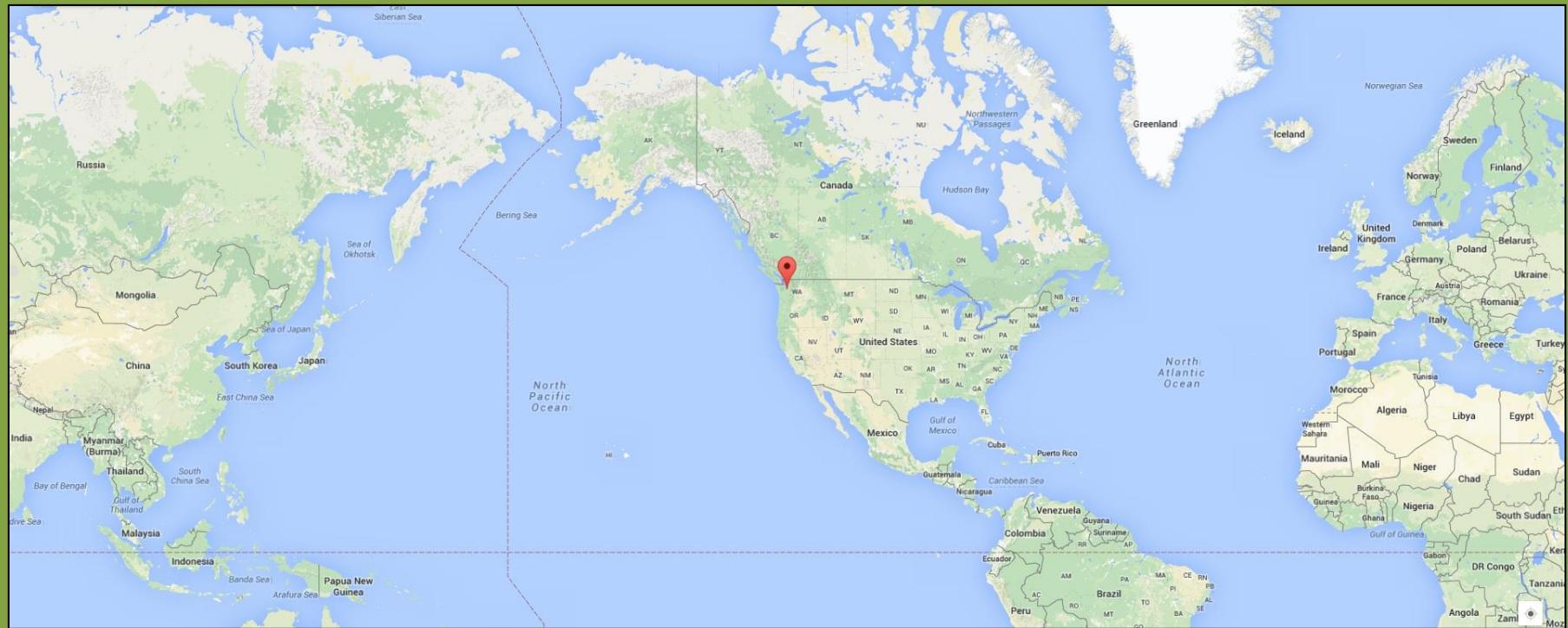
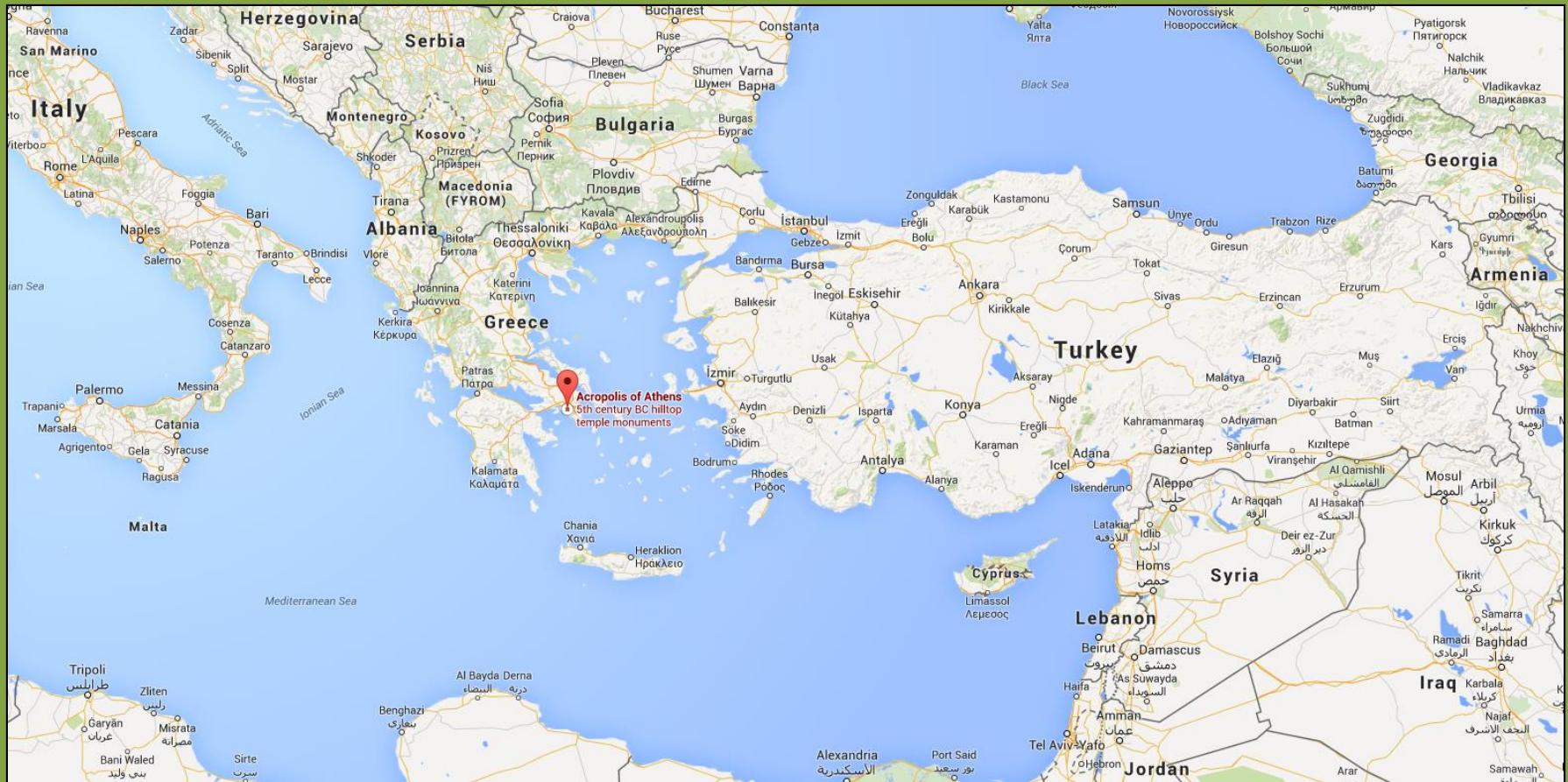


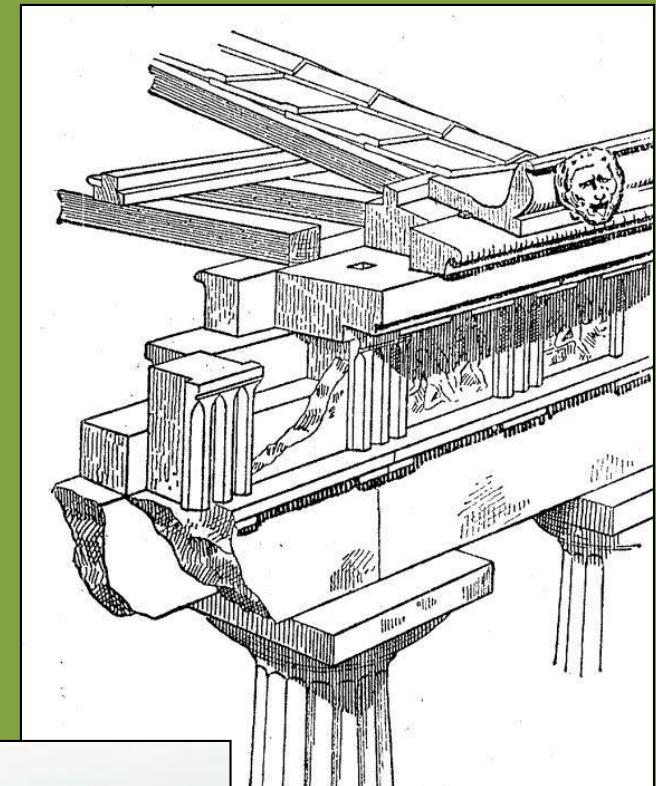
WEEK 5: Greco-Roman Architecture



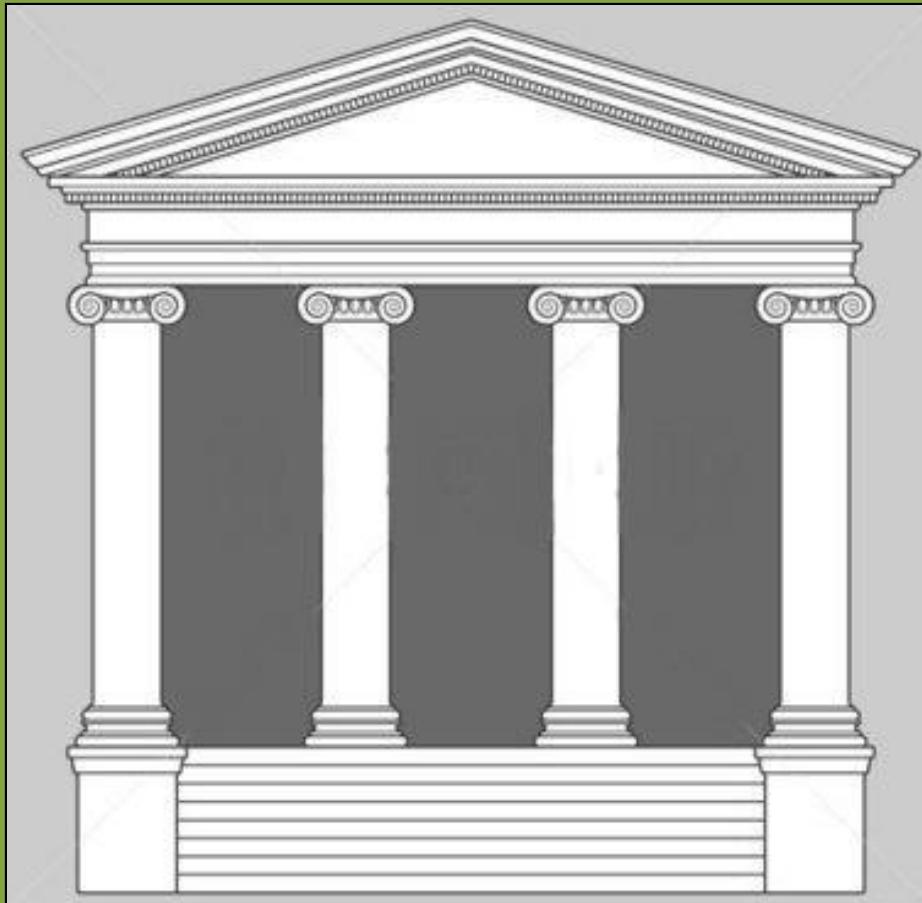
THE ACROPOLIS (PARTHENON) IN GREECE



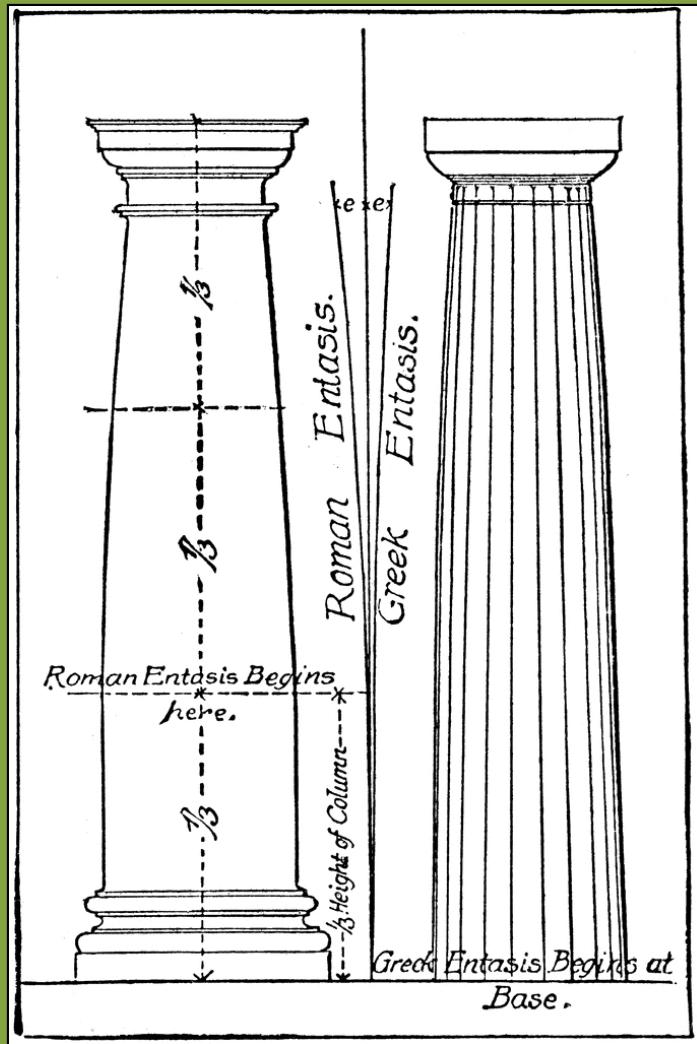
Greek Temple Architecture; Column and Beam Style, Made in stone starting around 600 BC



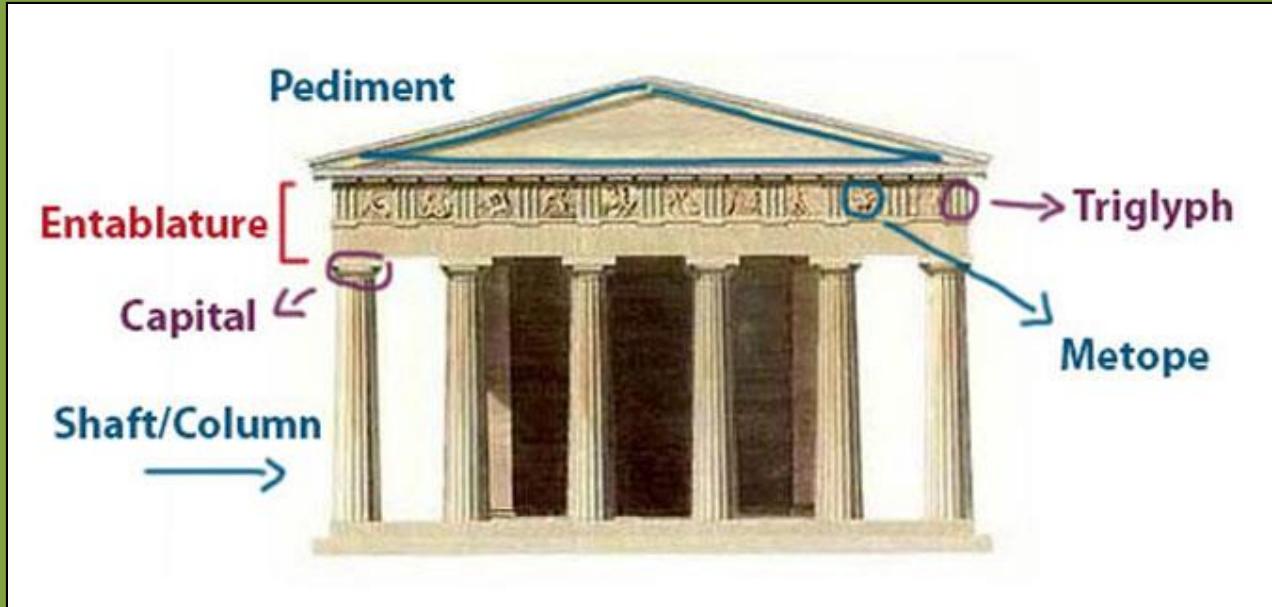
Greek Architecture; Always have an even number of columns so that there is never a column in the middle



Greek Temple Architecture; Entasis – Correcting for visual illusions



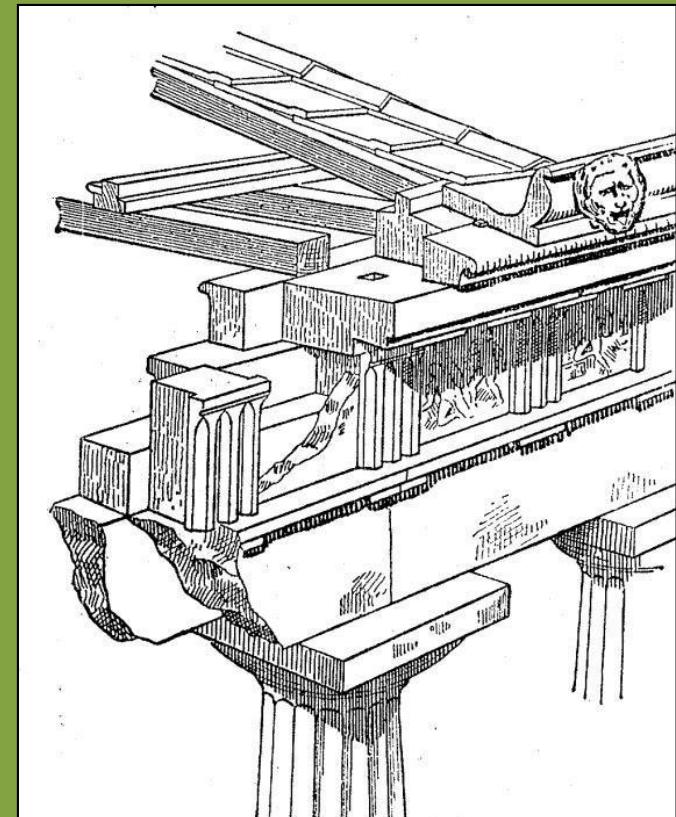
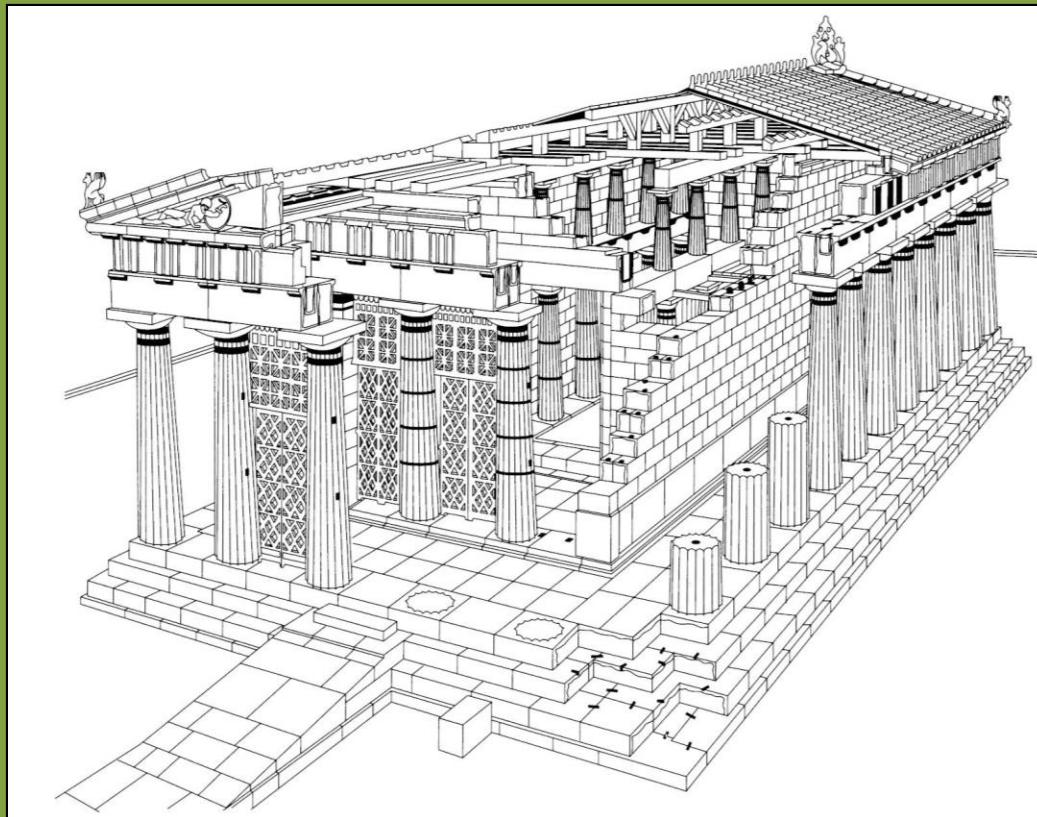
Greek Temple Architecture; Pediment, Entablature, Capital and Column



Religious ceremonies
were celebrated outside
the building

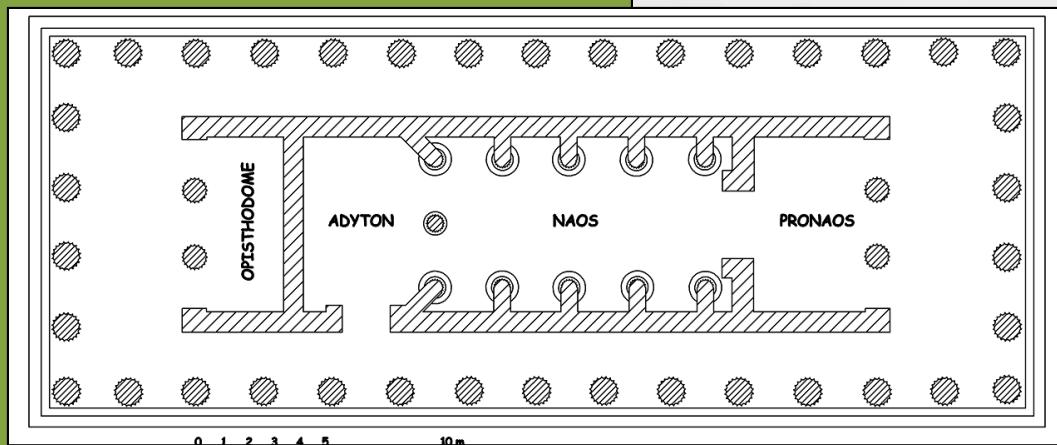
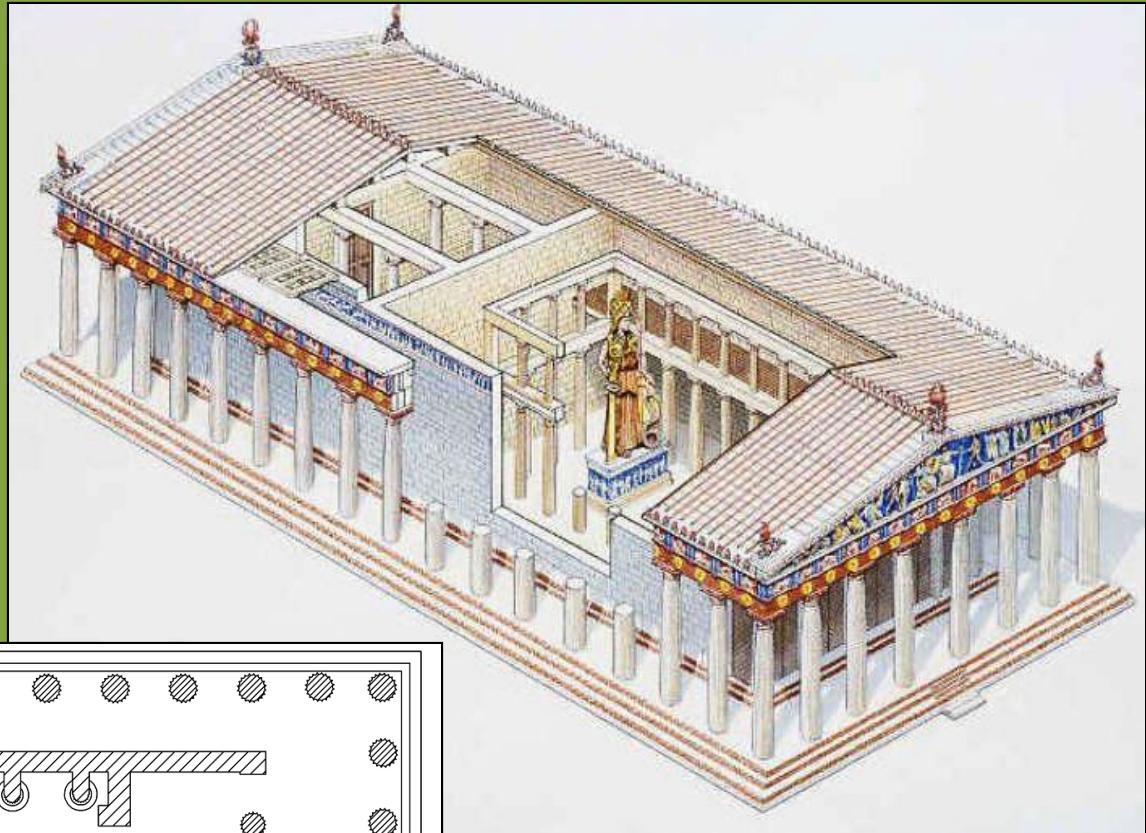


Greek Temple Architecture; Roofs had timber members covered with terra-cotta or marble tiles

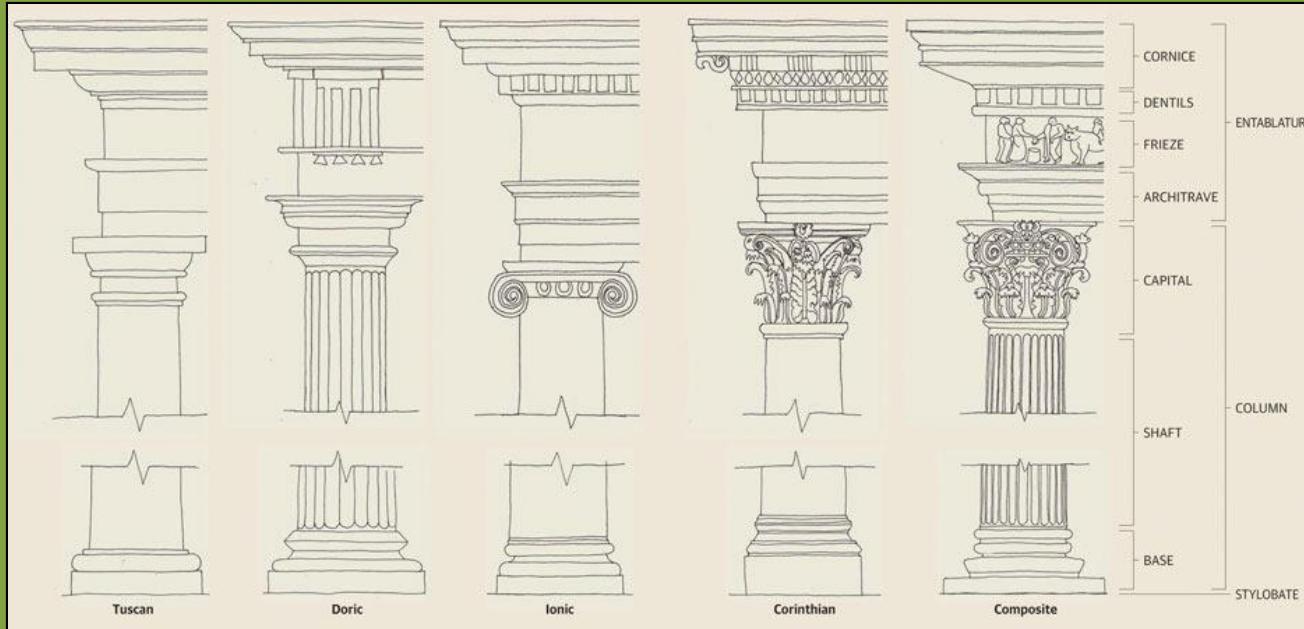


Greek Temple Architecture; Naos – The principal chamber in the temple

Colonnade; A long series of columns joined by an entablature

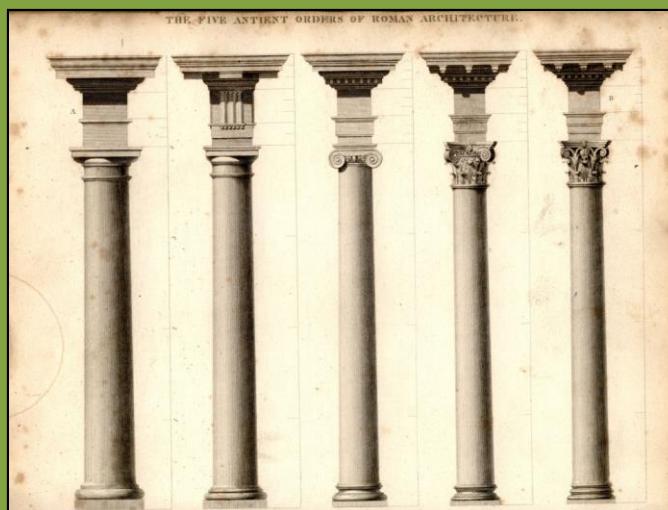


5 Orders of Architecture; Tuscan, Doric, Ionic, Corinthian, and Composite



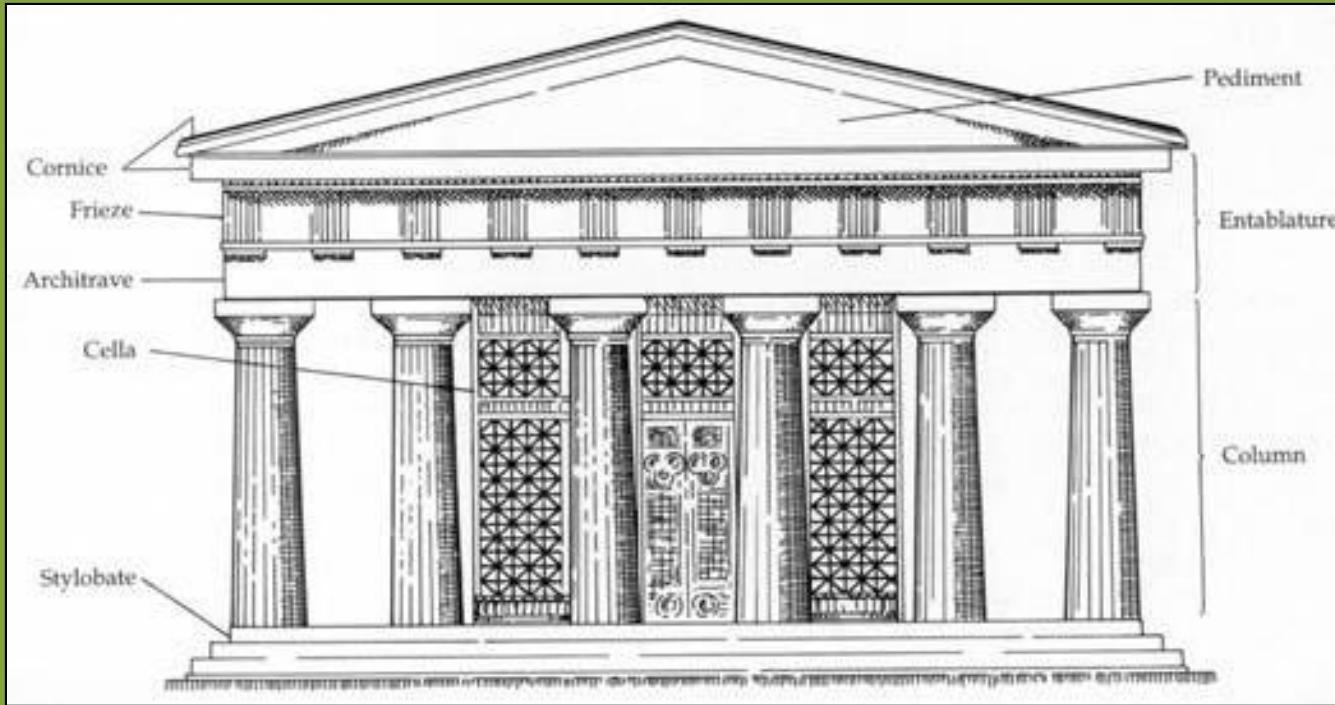
An ‘order’ consists of a column (including capital and base) and the horizontal part they support called an Entablature

These Orders have been used for thousands of years and are still being used in traditional architecture today

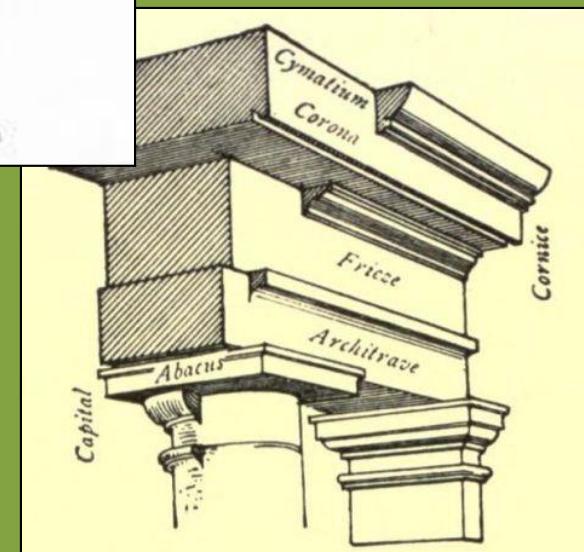


The proportions of the column and entablature vary in the different orders

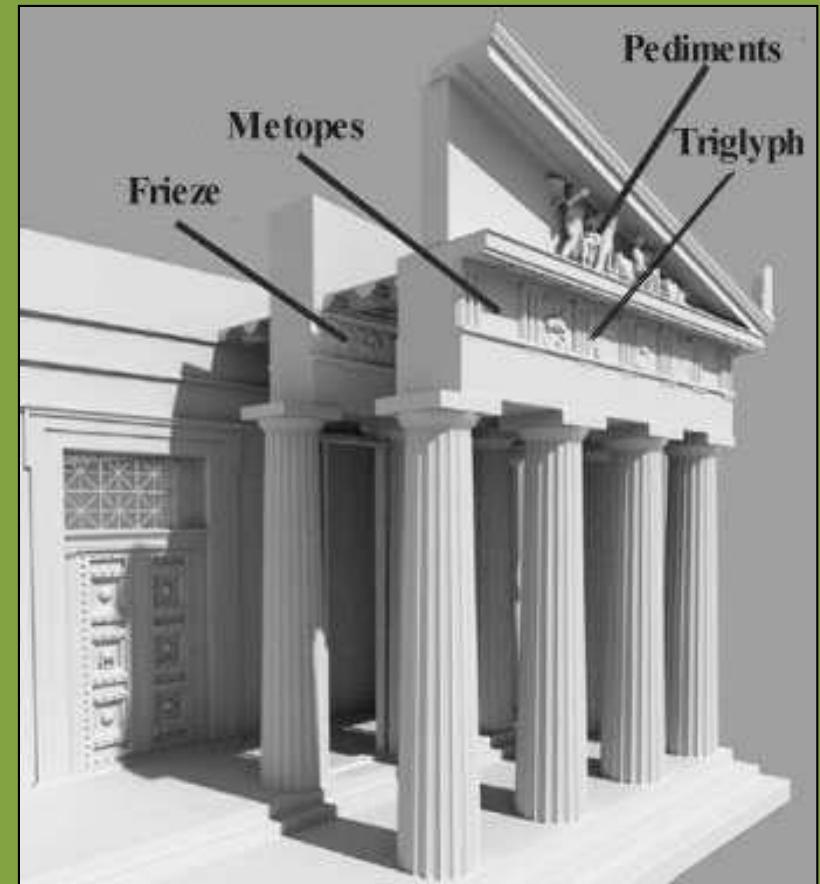
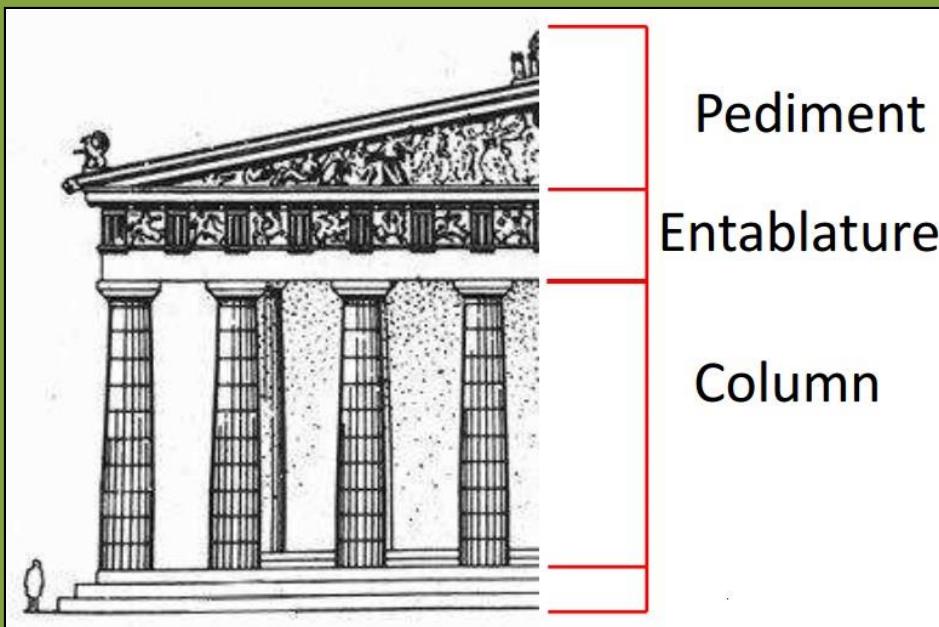
5 Orders of Architecture – (Greek) Doric; Column and Entablature with the Pediment above



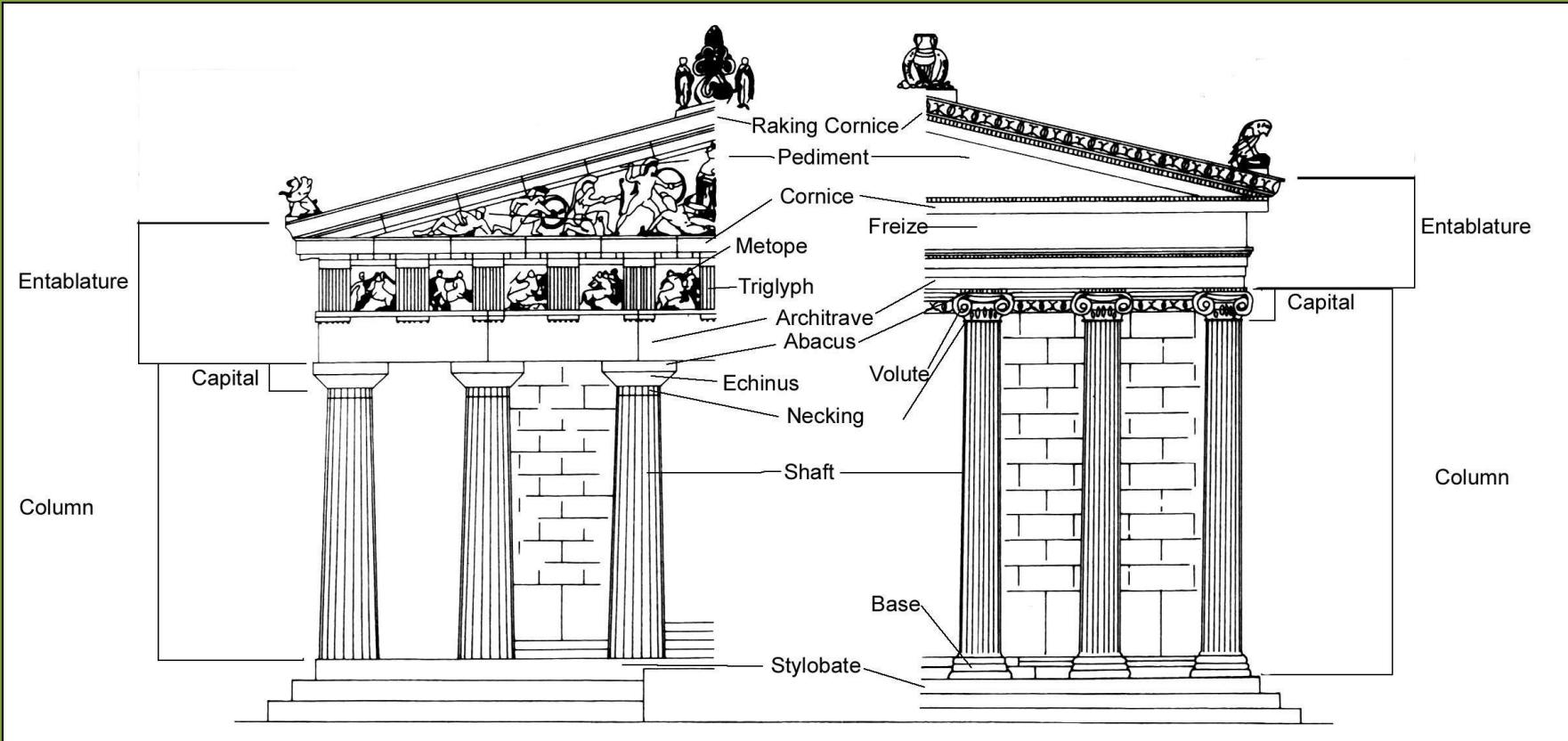
Greek Doric has no
base on the columns,
Roman Doric does



5 Orders of Architecture – (Greek) Doric



5 Orders of Architecture – Ionic; The Column has a Base and a Capital

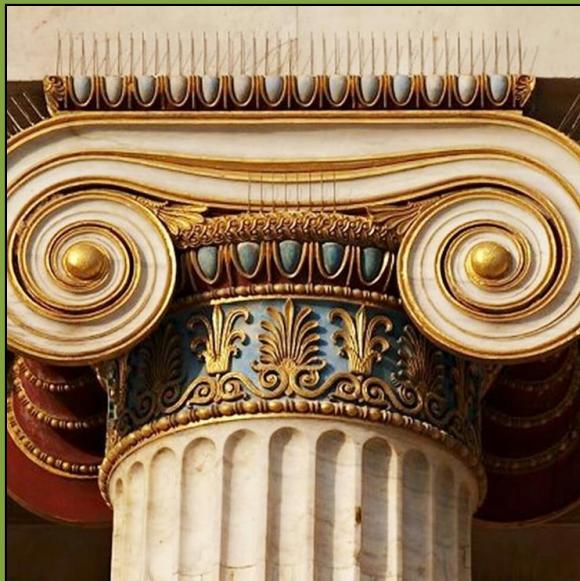


Greek Doric

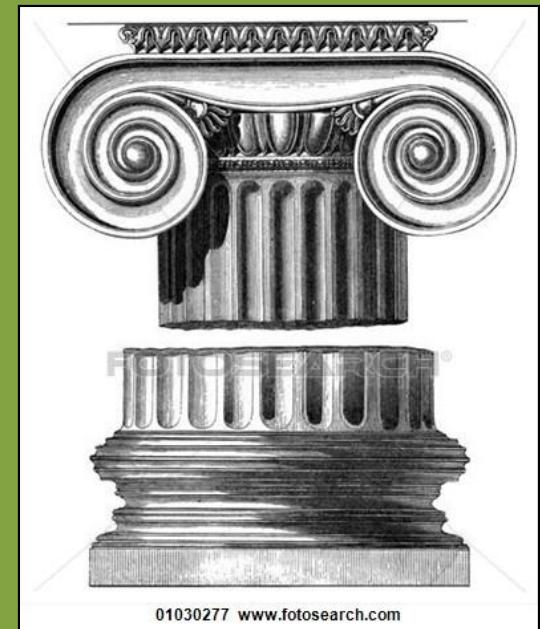
Ionic

5 Orders of Architecture - Ionic

Egg and Dart

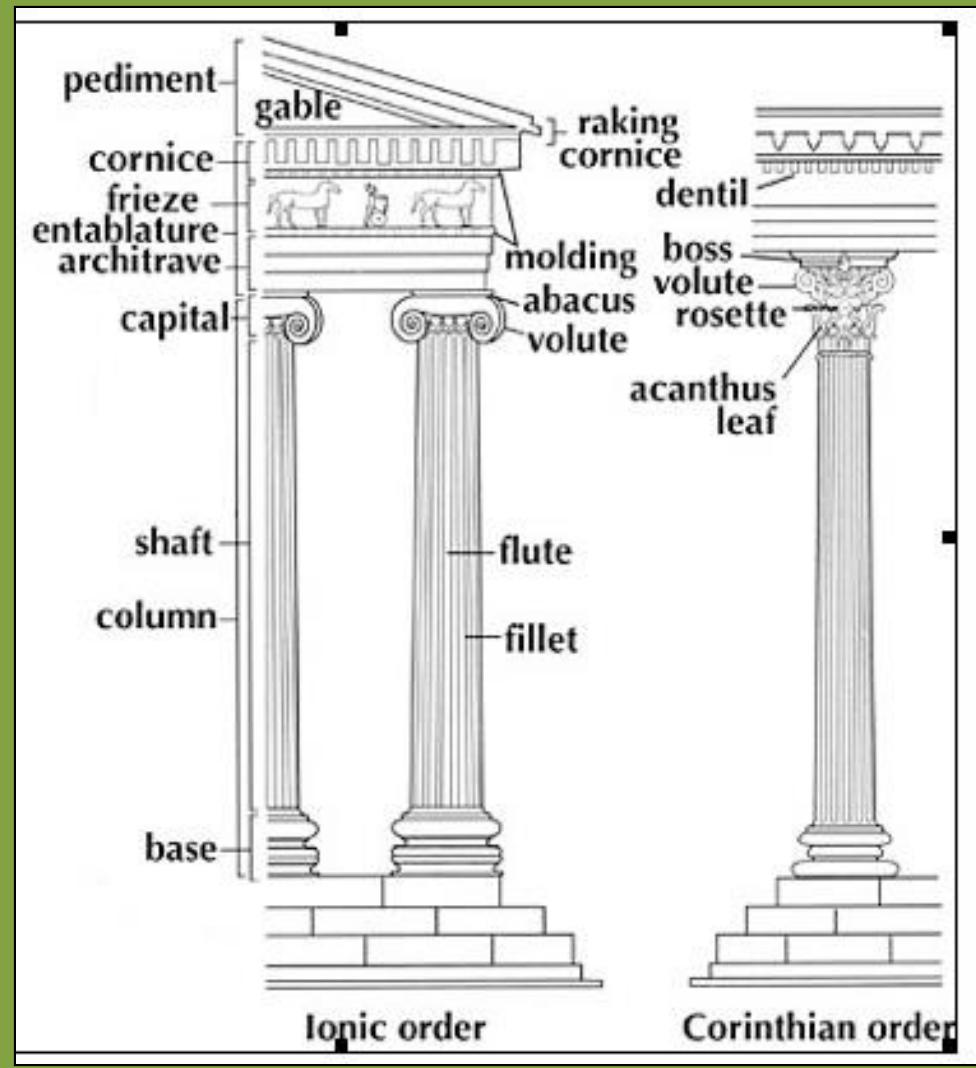
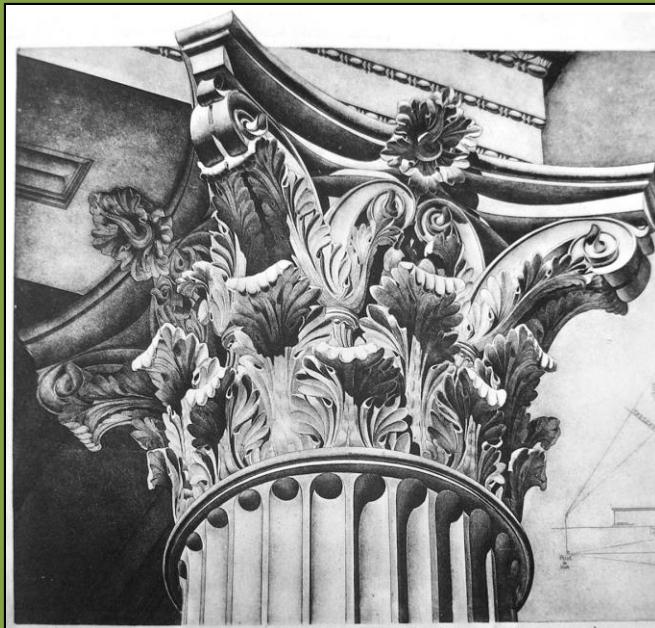


Egg and Dart

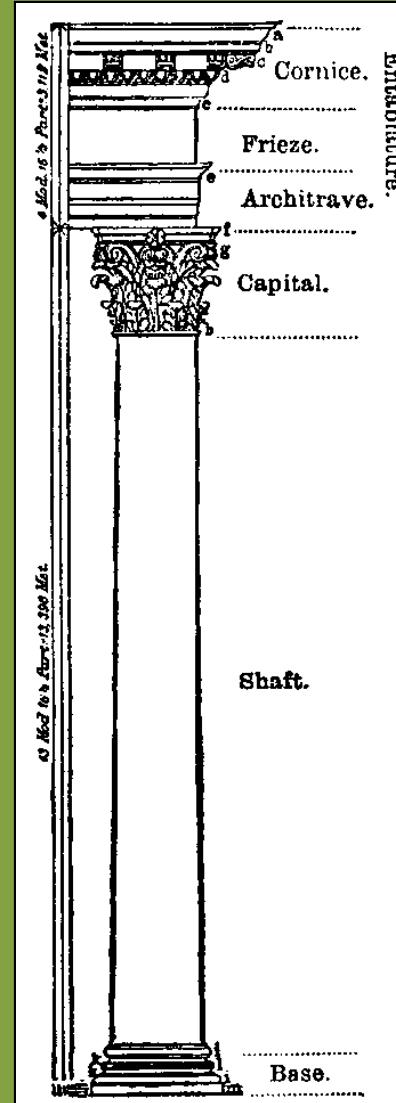
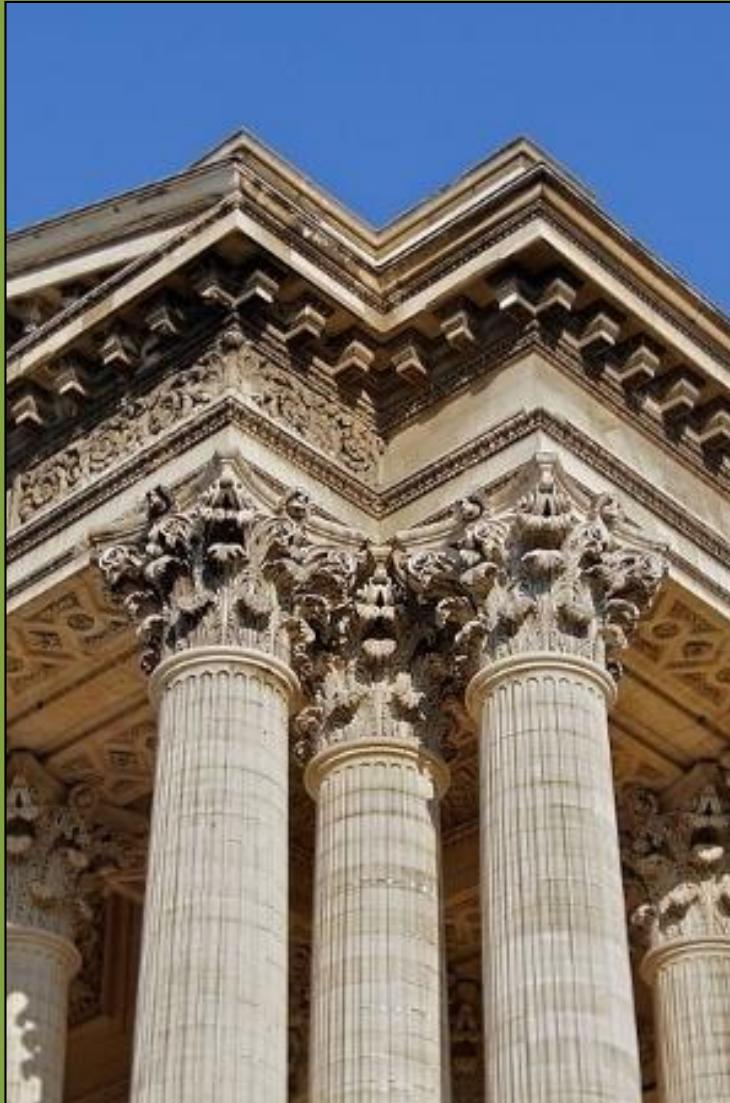


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5 Orders of Architecture - Corinthian



5 Orders of Architecture – Corinthian; Column and Entablature



Greek Gods

THEOGENY OLYMPIC FAMILY TREE

Rebellion

Cronus usurped his father Uranus and ruled with the titans. Fearing a prophecy, he ate his own children.

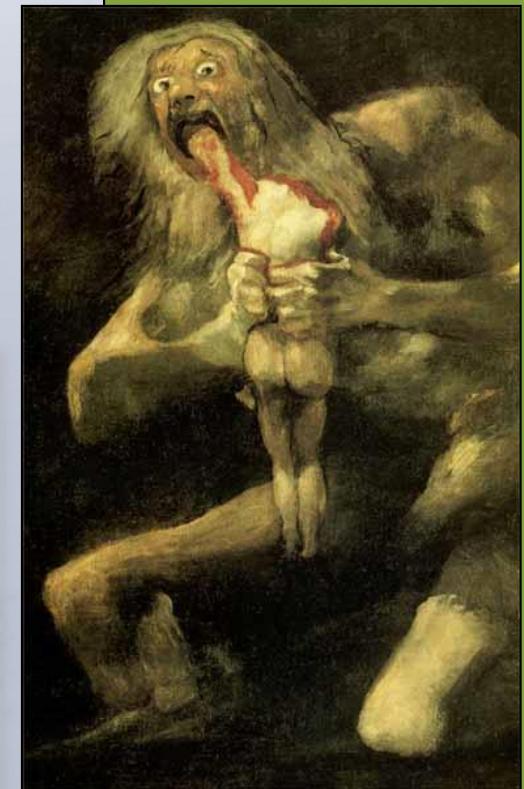
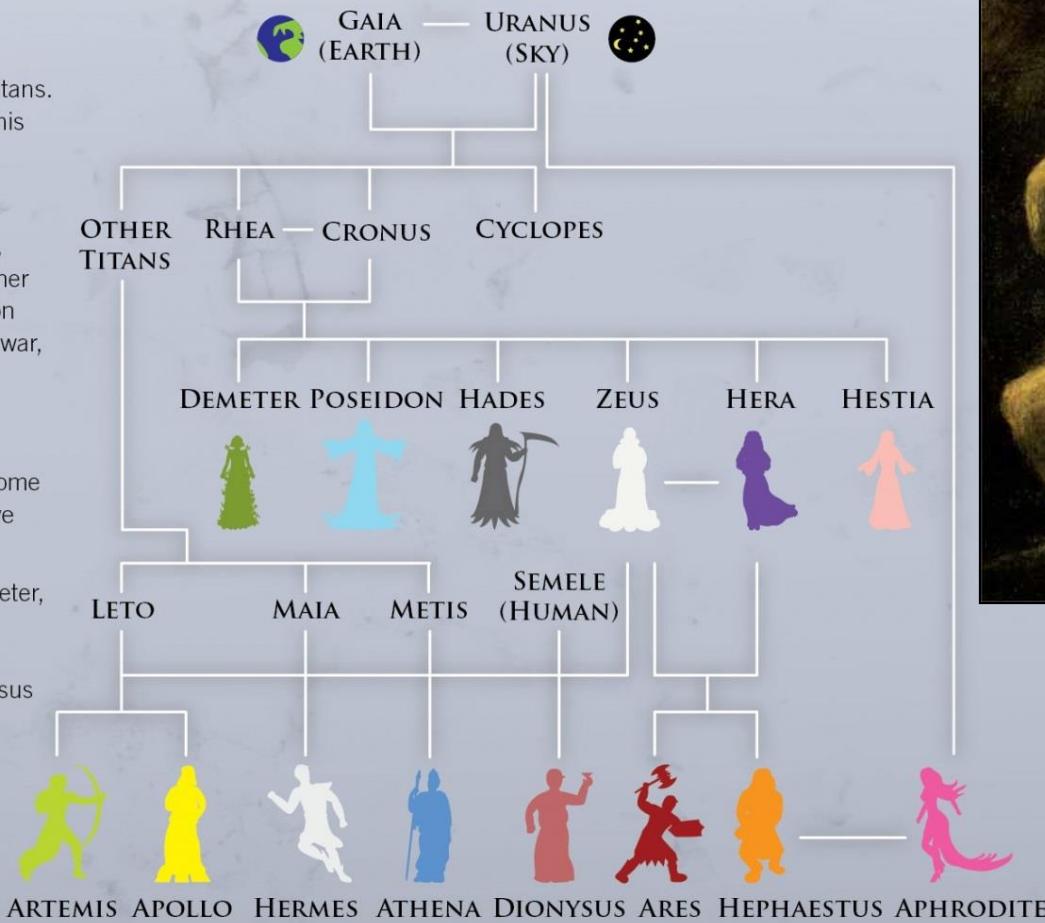
Titanomachy

Cronus' wife Rhea hid Zeus, who later challenged his father and the titans. With Poseidon and Hades, after a ten year war, Cronus was overthrown.

Olympus

Mt. Olympus became the home of the gods, where the twelve most powerful reigned:

Zeus, Poseidon, Hera, Demeter, Artemis, Apollo, Hermes, Athena, Ares, Hephaestus, Aphrodite, and either Dionysus or Hestia



Cronus eating his own children – but they were later rescued by Zeus

Greek Gods with their Roman names

THE OLYMPIANS

ZEUS/JUPITER

God of the Sky

King of weather, judgment, gods

Patron of:

Rulers, judges

About:

Husband and brother to Hera, he was king of the gods after overthrowing his father Cronus.



HERA/JUNO

Goddess of Motherhood

Queen of gods, marriage

Patron of:

Marriages

About:

Zeus' wife, she constantly punishes his lovers for his infidelity, while she remained pure.



POSEIDON/NEPTUNE

God of the Sea

Lord of water, horses, earthquakes

Patron of:

Sailors, fishers

About:

Easily angered, he lost patronage of Athens to Athena, so he sent a monster to attack it.



HADES/PLUTO

God of the Underworld

Lord of dead, earth, treasures

Patron of:

The dying, miners

About:

Resides in the underworld, not on Mount Olympus. Isn't evil, but didn't let the dead escape justice.



ARES/MARS

God of War

Lord of warriors

Patron of:

Warriors, athletes, Sparta

Related to:

Worshipped for war, but sometimes considered too blood thirsty and extreme.



APHRODITE/VENUS

Goddess of Love

Lady of love, beauty, sex

Patron of:

Lovers

About:

Born from Uranus in the sea, she was given Hephaestus as husband, but cheats on him with Ares



Greek and Roman Gods; Athena – The city of Athens and the Parthenon is named after her.

APOLLO

God of the Sun

Lord of light, music, arts

Patron of:

Musicians

About:

Twins with Artemis, he is associated with the arts, knowledge, and the oracle of prophecy.



ARTEMIS/DIANA

Goddess of the Moon

Lady of the hunt, night, virginity

Patron of:

Hunters, young women

About:

Twin with Apollo, she is a sworn virgin and protects young women's virtue.



HEPHAESTUS/VULCAN

God of the Forge

Lord of fire, crafts

Patron of:

Craftsmen, cripples

About:

Crippled, he forges the weapons of the gods. Given Aphrodite by his mother, Hera, their relationship isn't successful.



ATHENA/MINERVA

Goddess of Wisdom

Lady of wisdom, handicrafts, warfare

Patron of:

Philosophers, Athens

About:

Springing from Zeus' head after he ate her mother, she is the patron of Athens and her wisdom rivals her fathers'.



HERMES/MERCURY

God of Messengers

Lord of messages, oratory, commerce

Patron of:

Messengers, merchants, thieves

About:

Messenger of the gods, he was always on the move and loved playing tricks on others.



DEMETER/CERES

Goddess of the Harvest

Lady of plants, growth

Patron of:

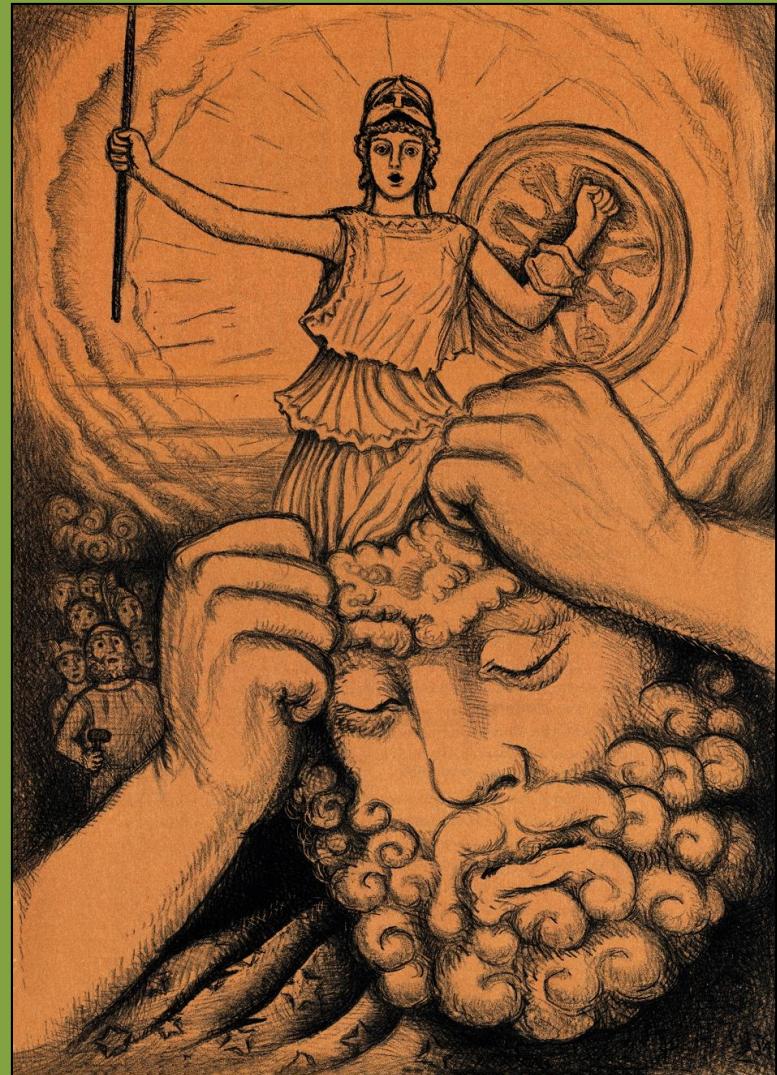
Gardeners, farmers

About:

Hades took her daughter Persephone as wife for part of the year, winter, during which Demeter refuses to produce food.



Birth of Athena; Story displayed in one of the pediments of the Parthenon

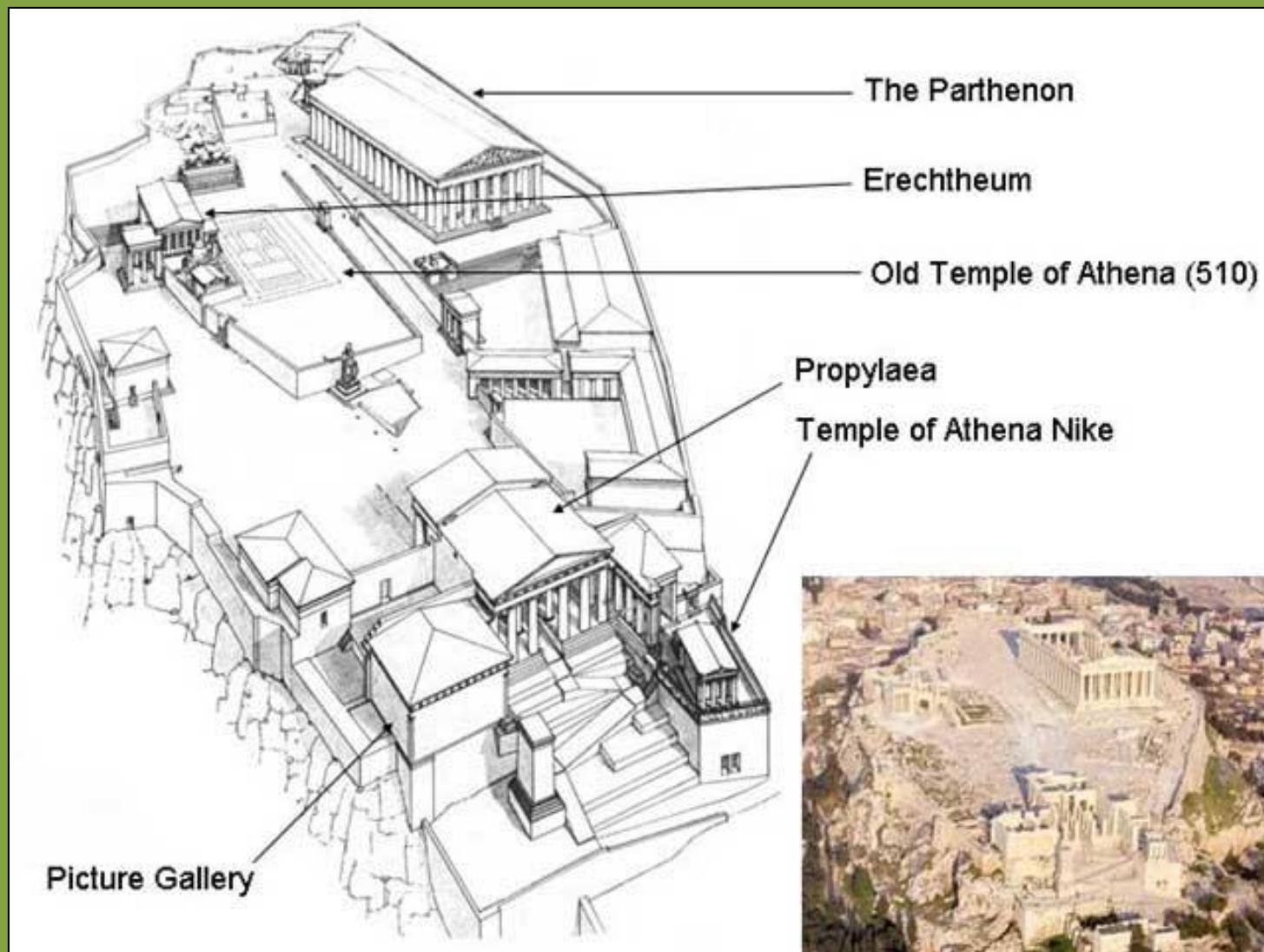


Contest between Poseidon and Athena – Story displayed in one of the pediments of the Parthenon

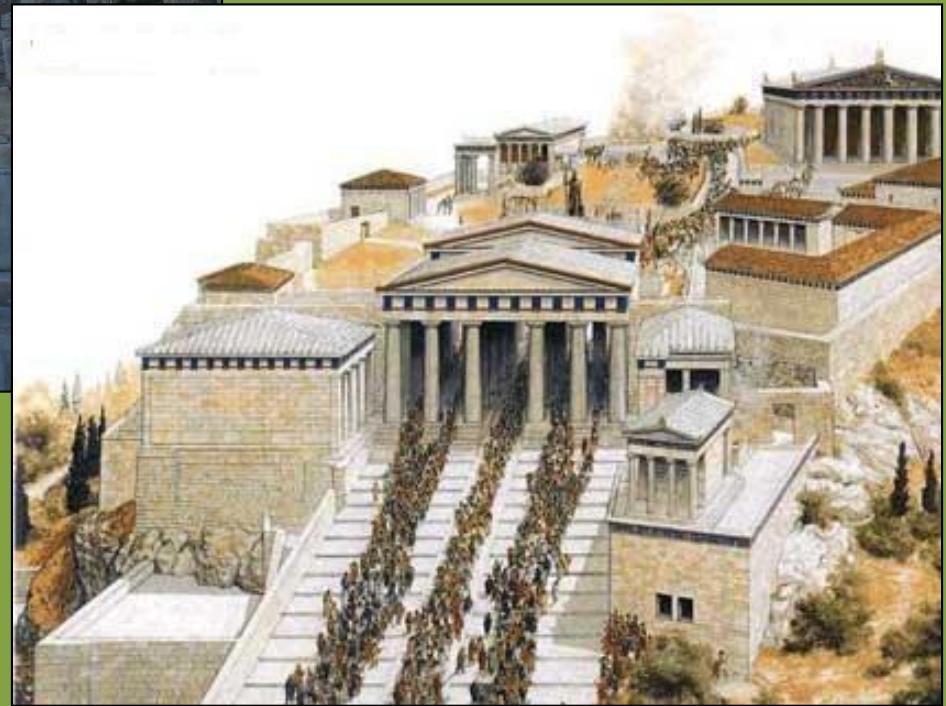
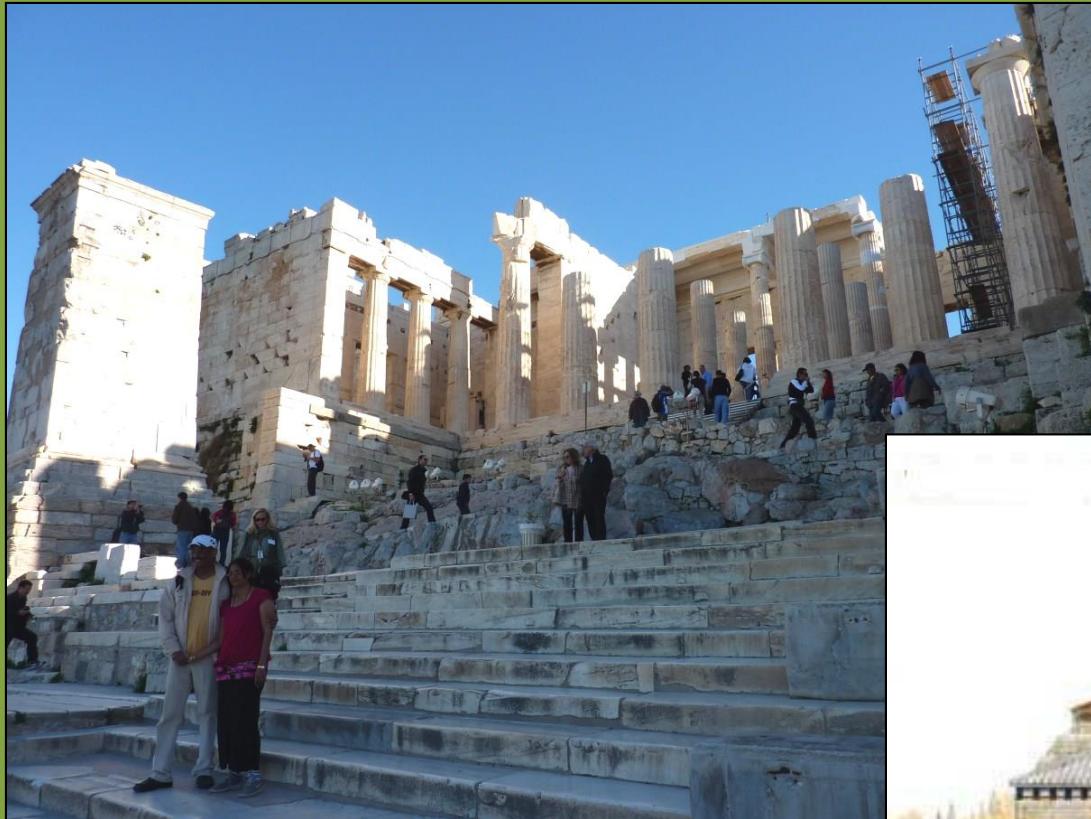


Athena won the contest so both the city of Athens and the Parthenon were dedicated to her.

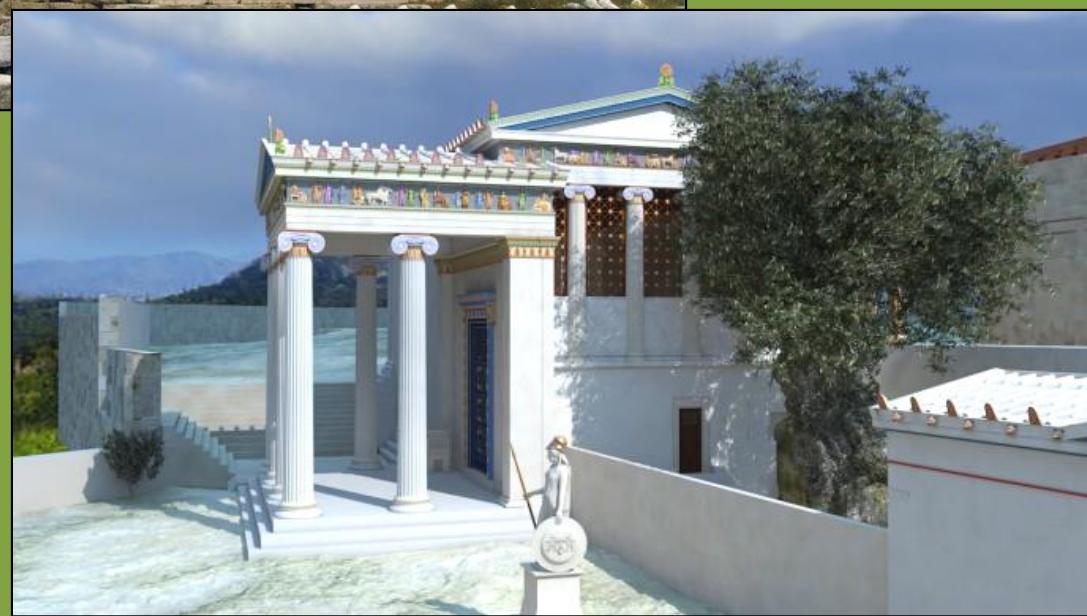
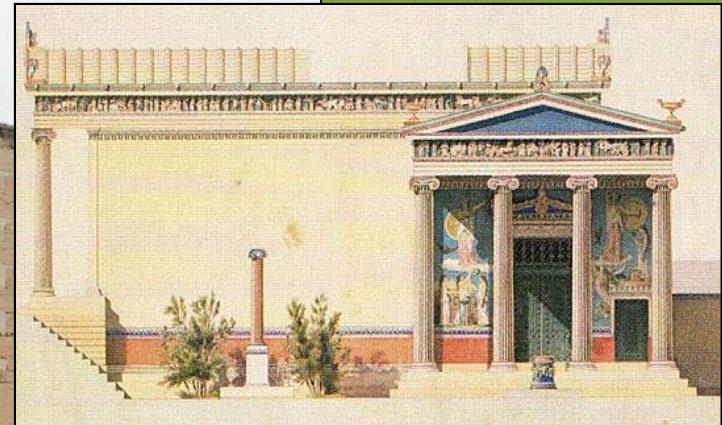
The Acropolis in Athens; 437 BC; Built by Pericles



Acropolis – Propylaea



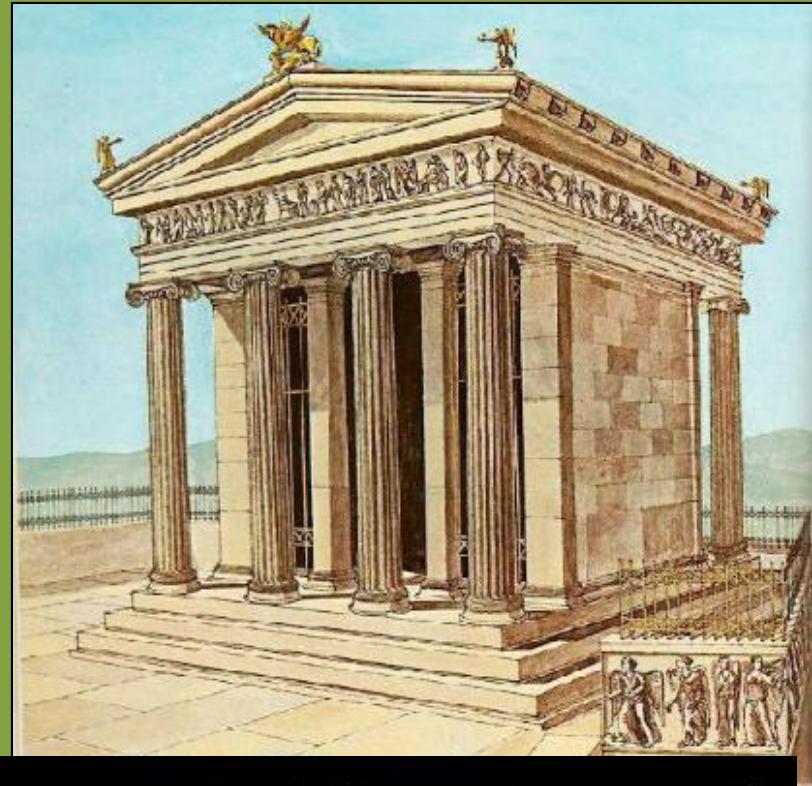
Acropolis – Erechtheion (with Caryatid Porch)



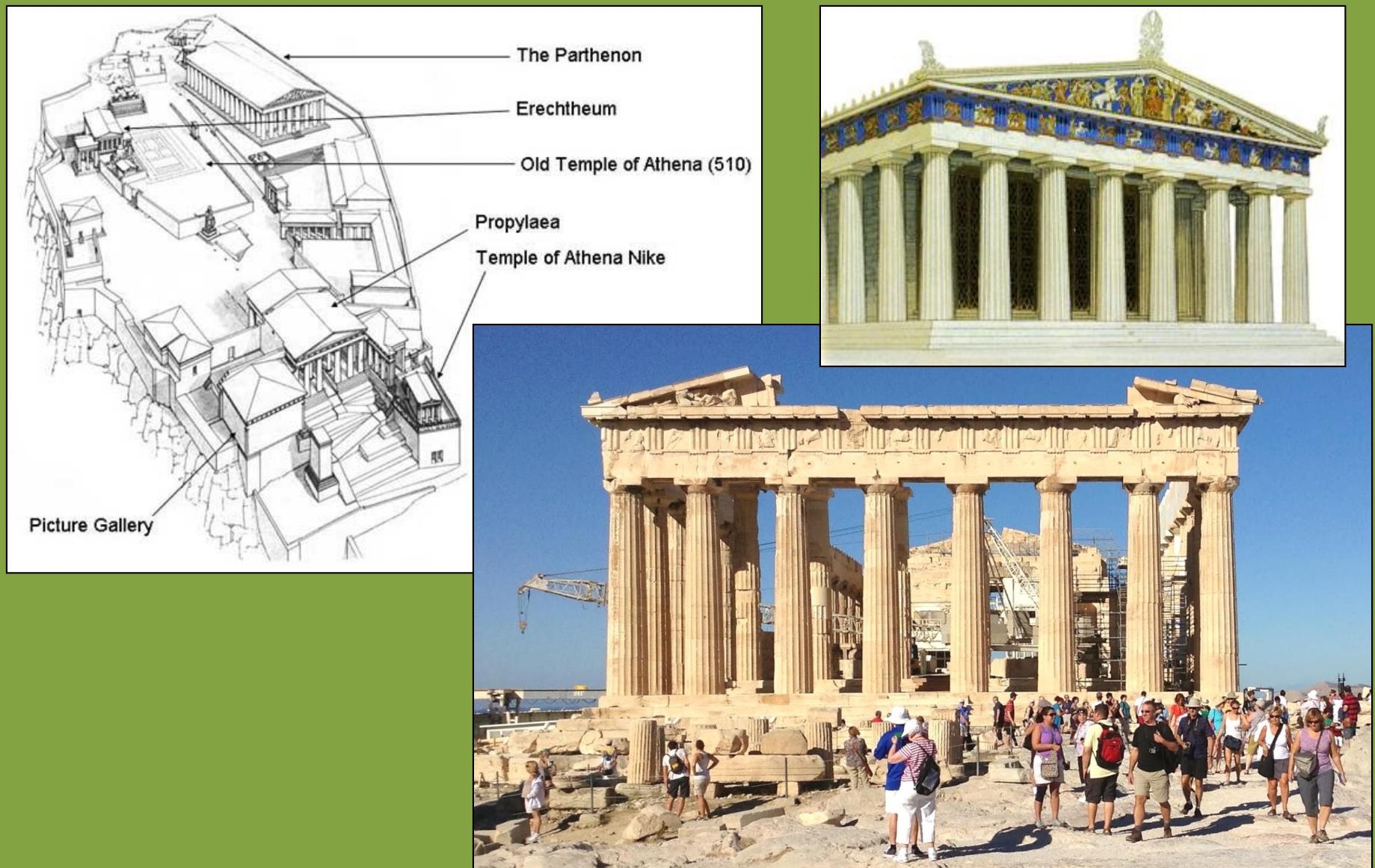
Acropolis – The Caryatid Porch of the Erechtheion



Acropolis – Temple of Athena Nike



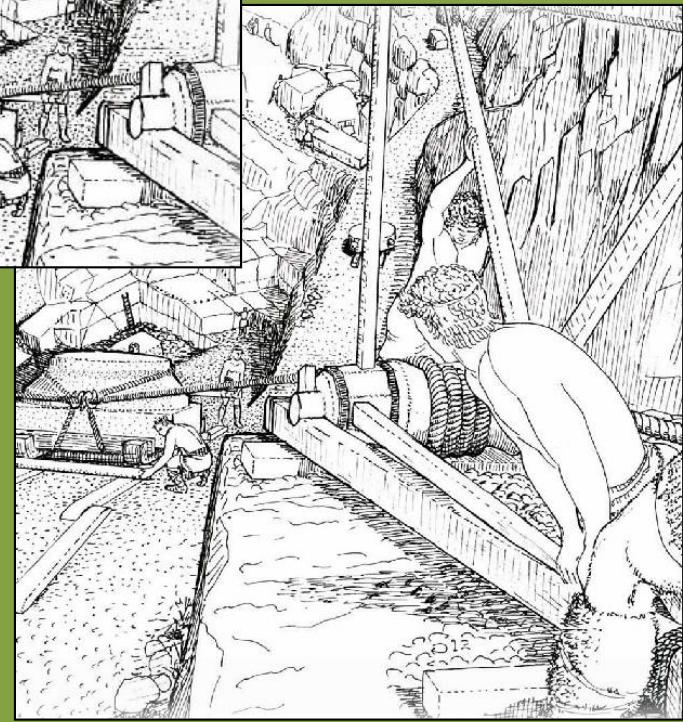
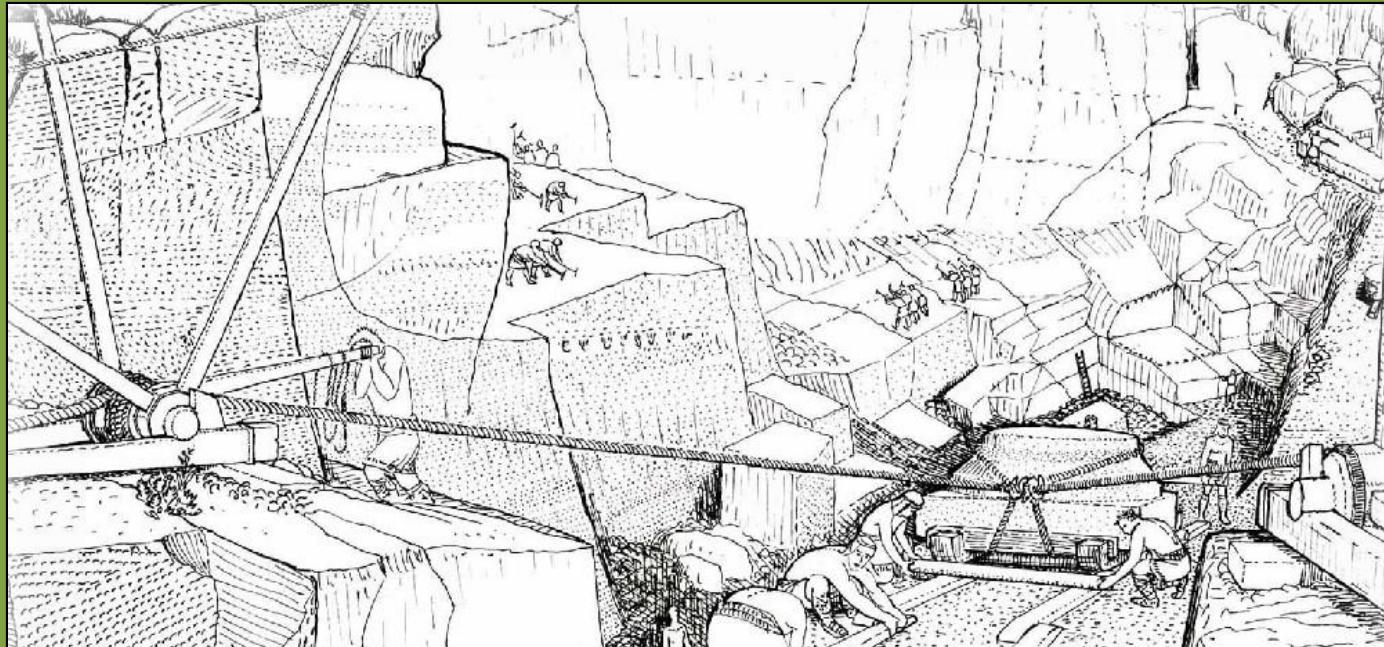
The Acropolis – The Parthenon; 432 BC



The Acropolis – The Parthenon, made of almost 8000 blocks of marble fitted together precisely – NO mortar

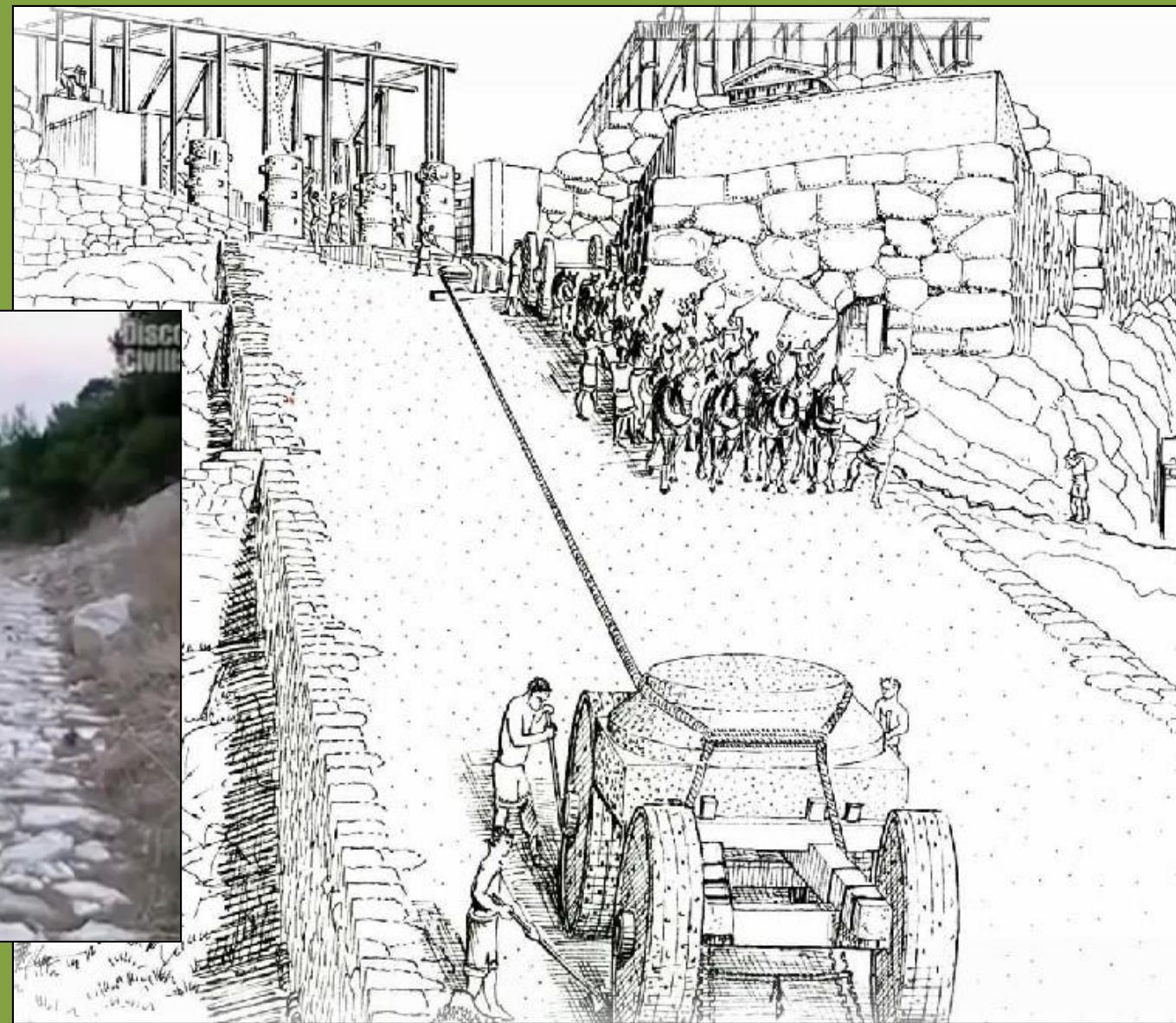


The Acropolis – The Parthenon; 432 BC, Getting the stones out of the quarry

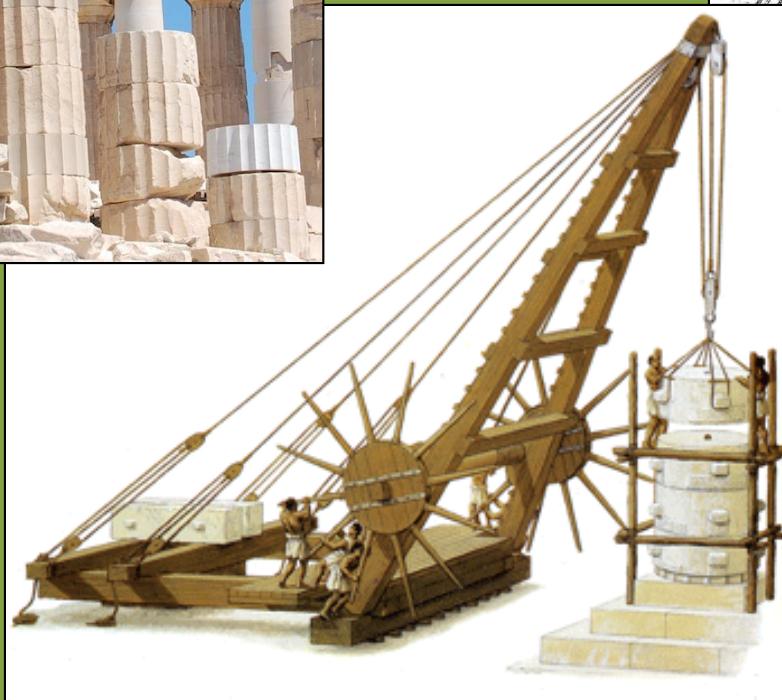


The Acropolis – The Parthenon; Getting the stones up to the site

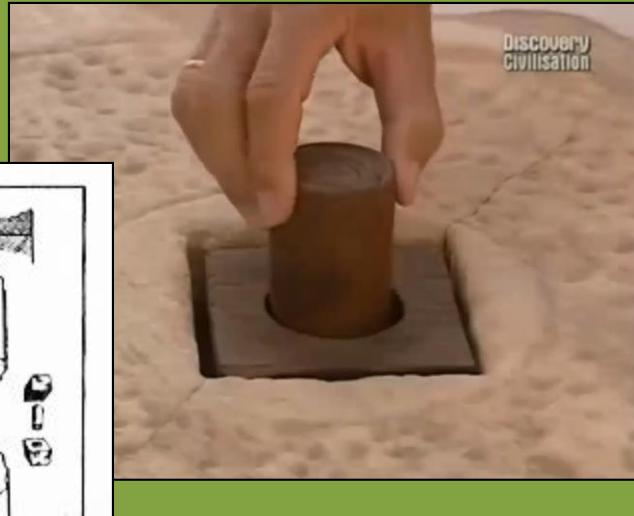
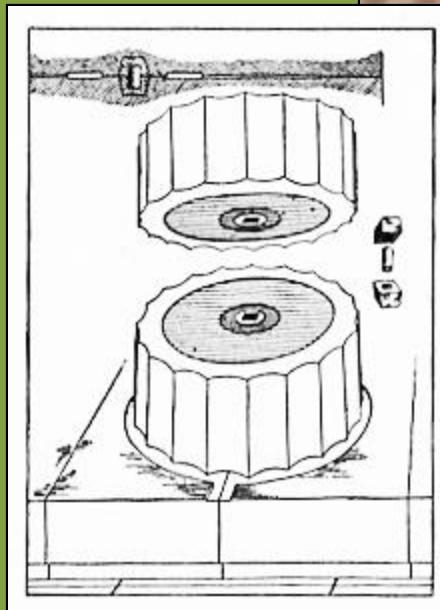
Flagstone road
between the
quarry and the
Acropolis



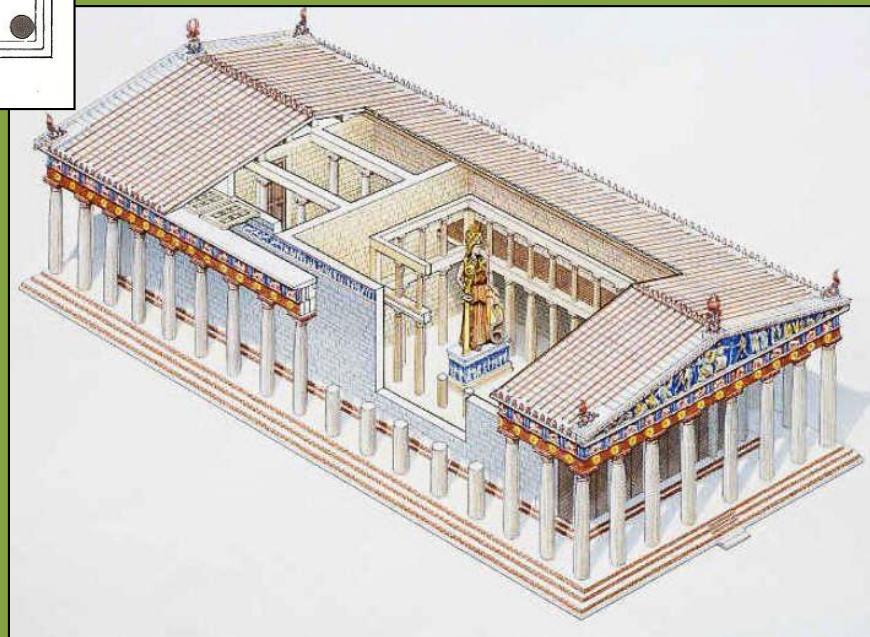
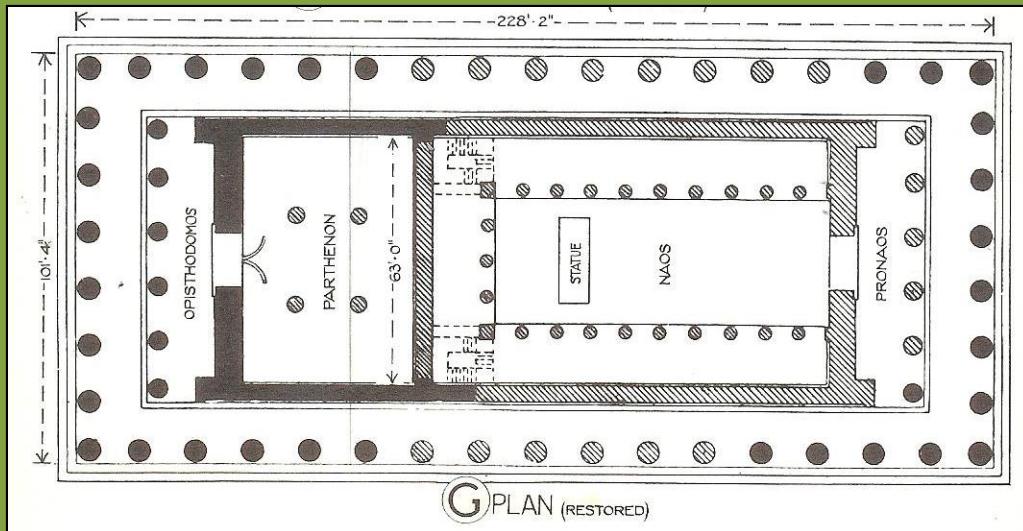
The Acropolis – The Parthenon; Getting the stones put in place



The Acropolis – The Parthenon; Lining up the drums of the columns

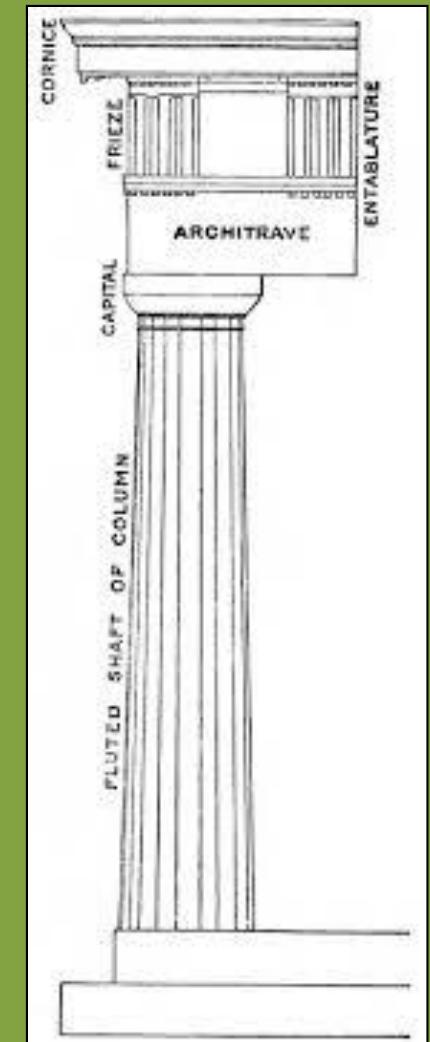


The Acropolis – The Parthenon; 432 BC, Statue of Athena below a coffered ceiling



Naos; where the statue is

The Acropolis – The Parthenon; The Entablature is 11 feet tall



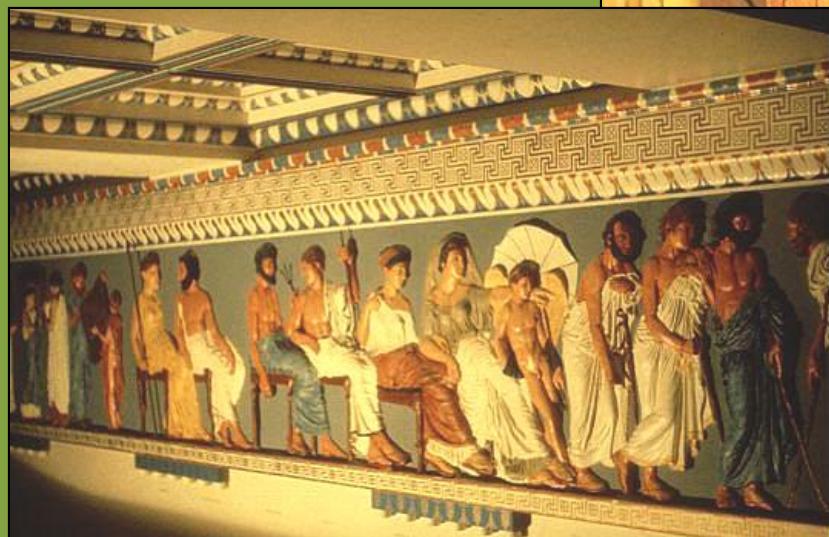
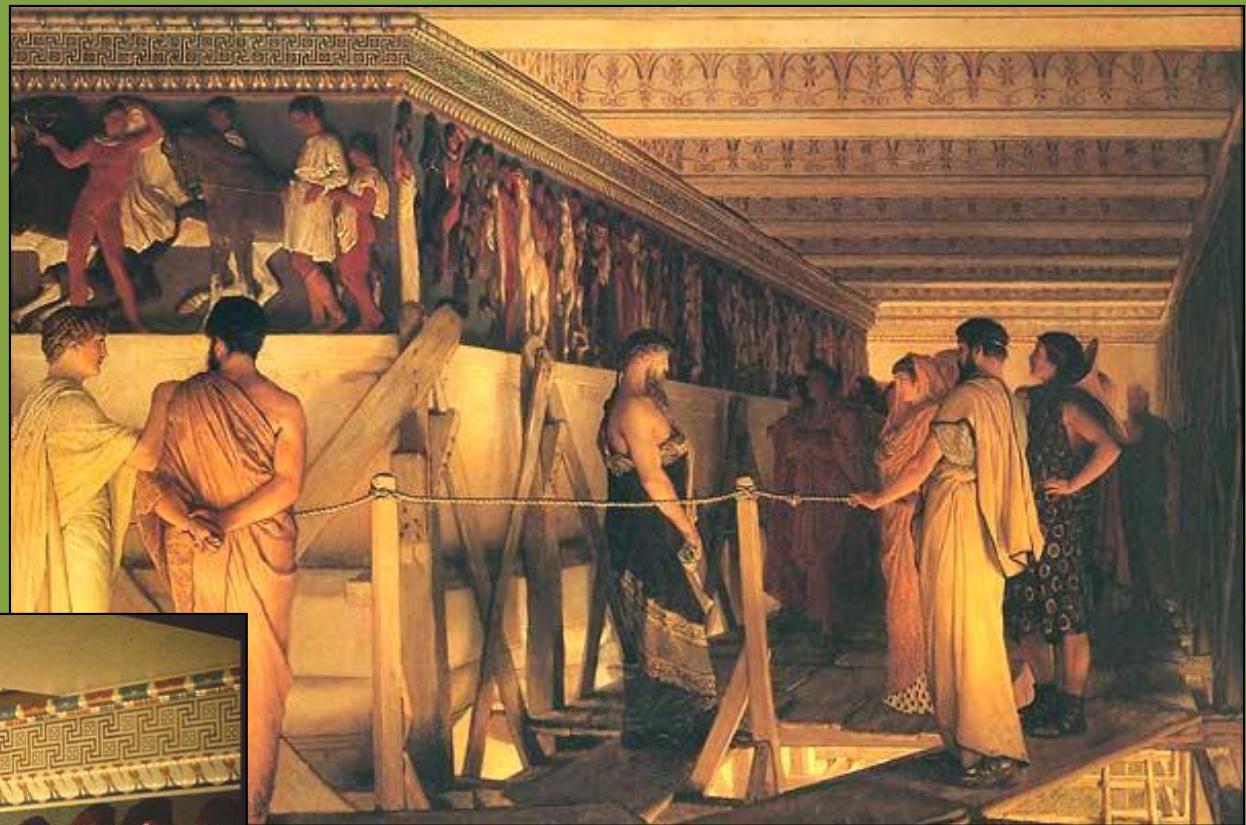
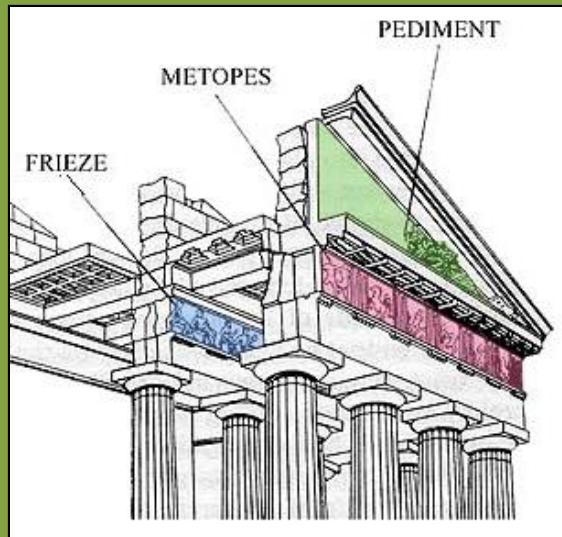
Doric Order

The Acropolis – The Parthenon ; Eastern pediment represented birth of Athena, Western represented the contest of Athena and Poseidon

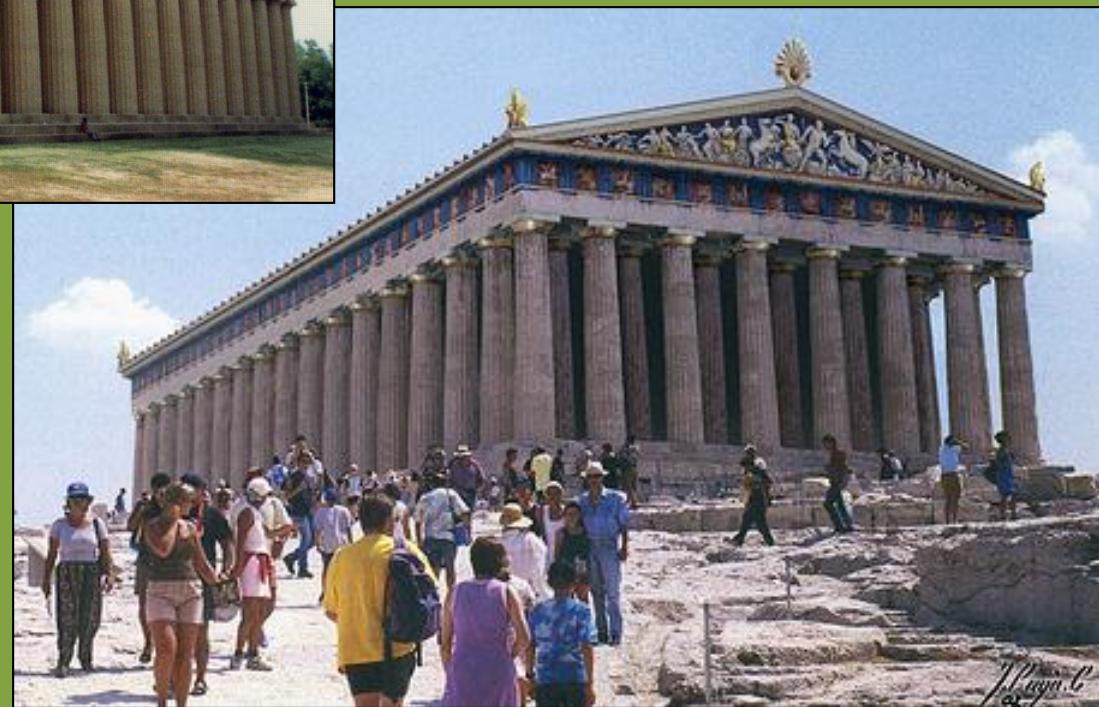


West Pediment Reconstruction; Figures are larger than people

The Acropolis – The Parthenon; Reconstruction of the Frieze



The Acropolis – The Parthenon; 432 BC, Reconstruction



ROMAN ARCHITECTURE:

Tomb in Petra, Roman Coliseum and Pantheon



Roman Architecture; The Roman Empire, +/- 500 BC to +/- 365 AD

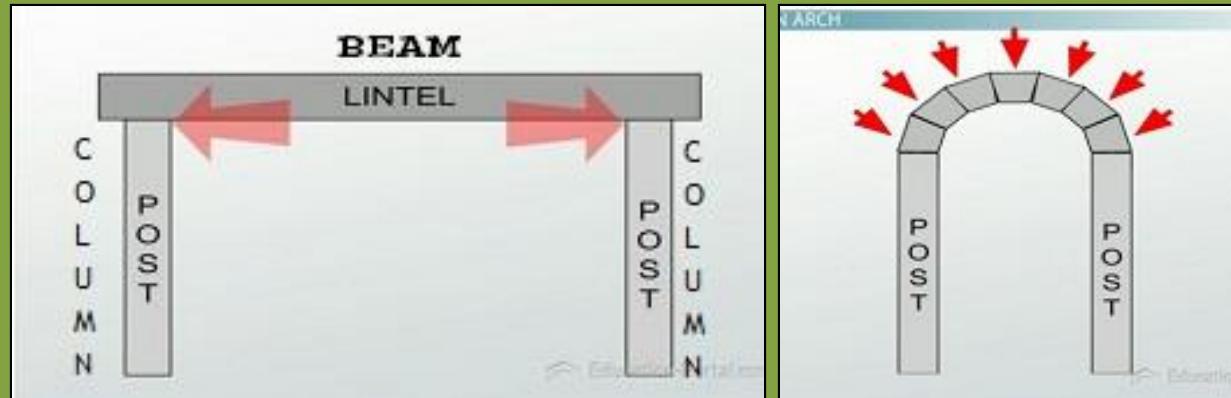
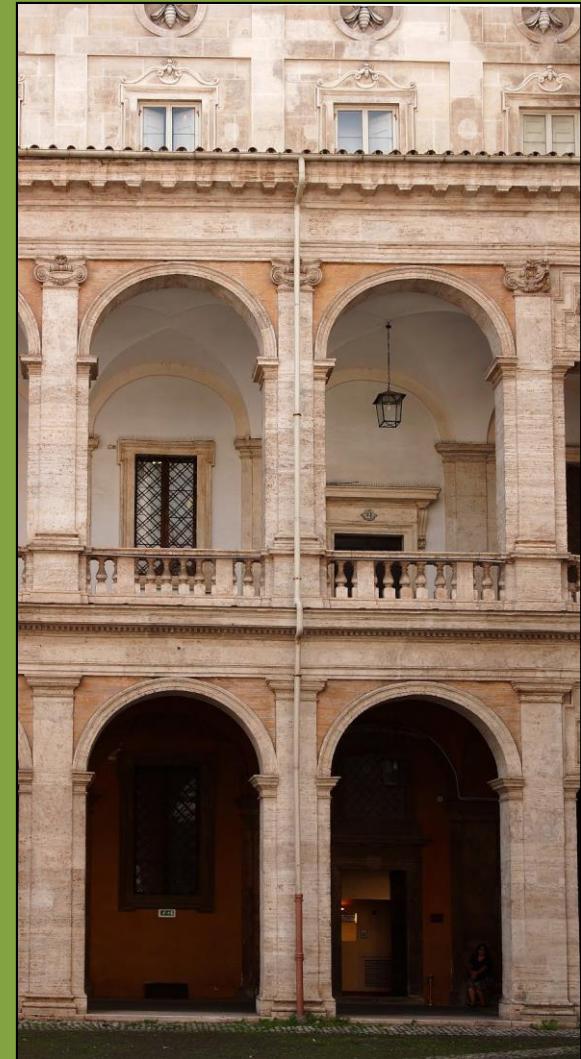
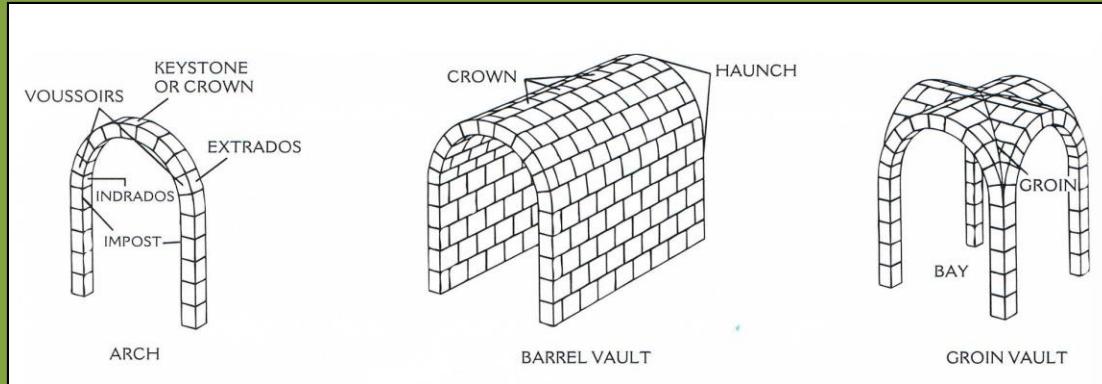
Julius Caesar and
Cleopatra



The government consisted of military dictatorships, of which Julius Caesar was the most famous (assassinated in 44 BC)

Roman Empire at it's height

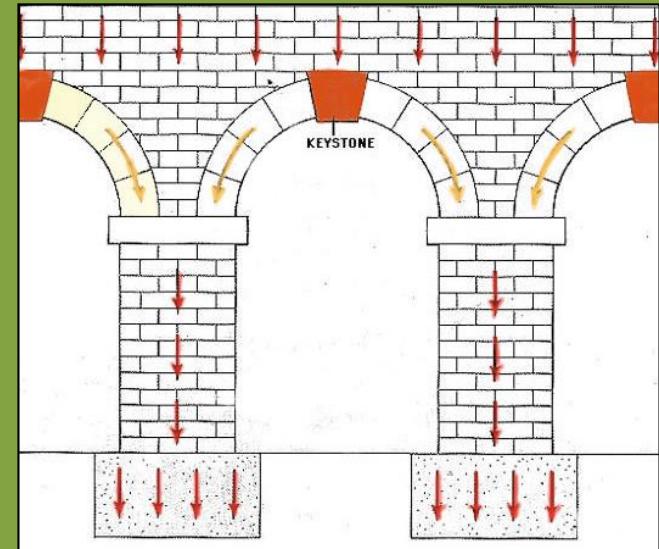
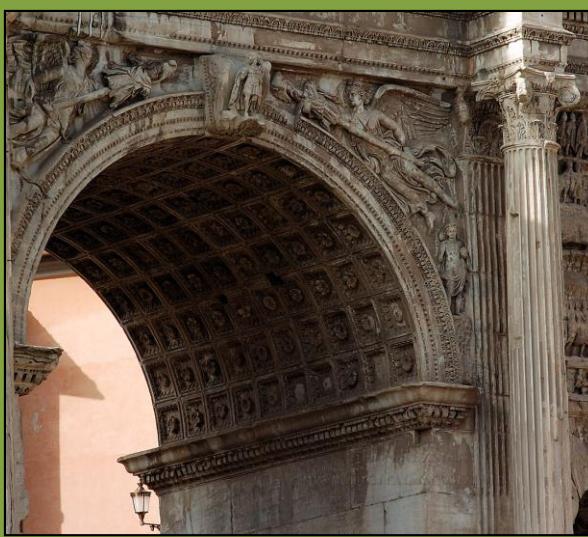
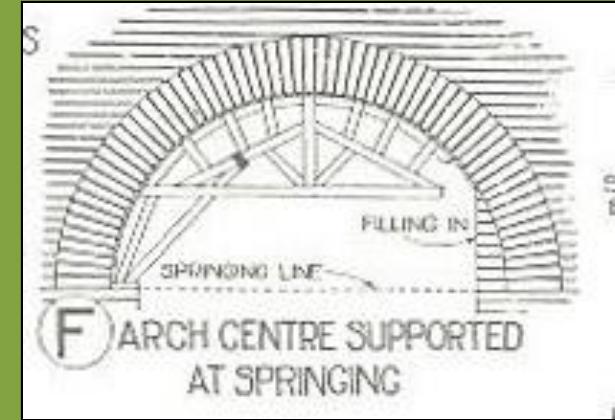
Roman Architecture; Use of Column, Beam and Arch (with keystone at the center). This lead to the Barrel and Groin Vault



Greek Architecture;
They only had the
column and beam

Roman
Architecture;
Column, beam,
AND true arch

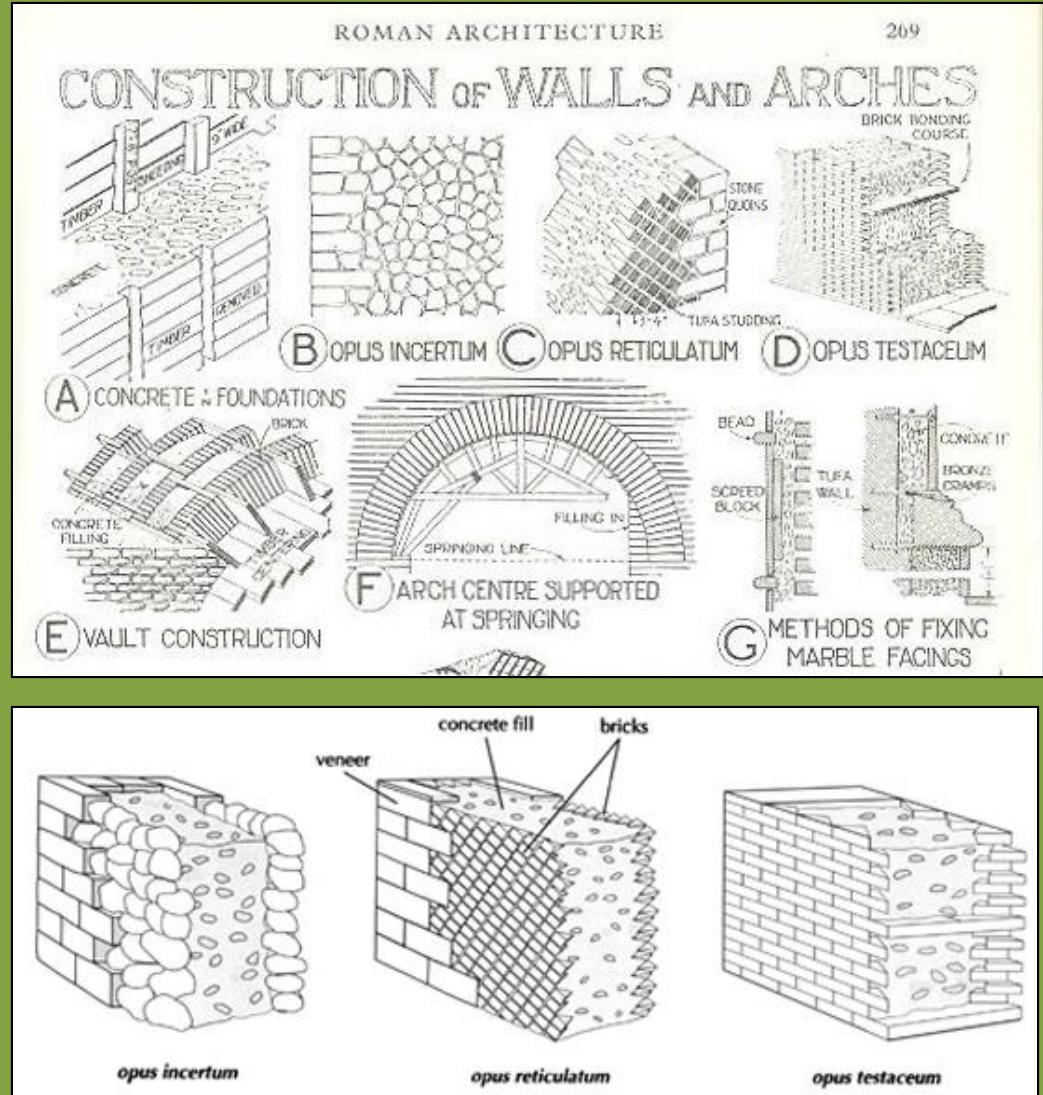
Roman Architecture: The keystone is the wedge shaped piece at the apex of an arch which locks the rest of the pieces into place



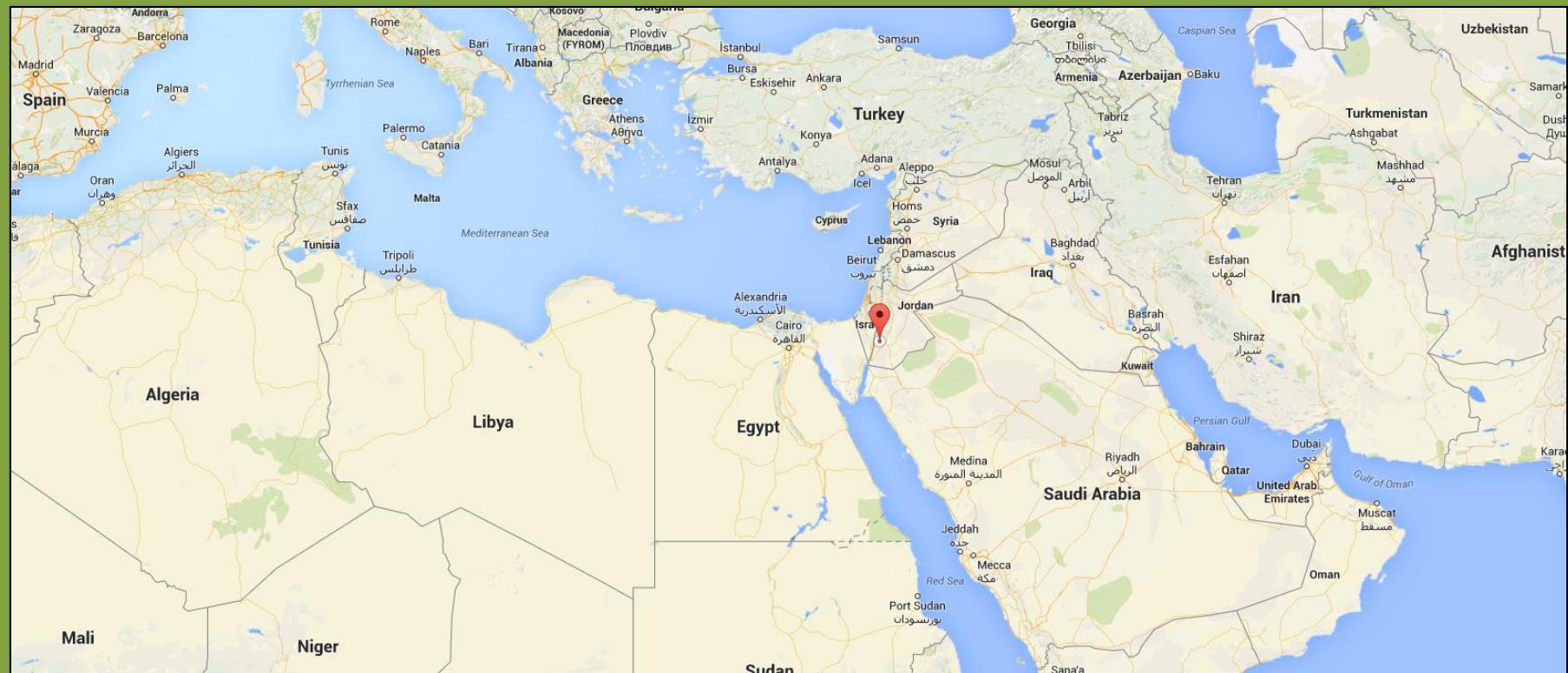
Roman Architecture (Besides rock cut tombs); Building materials included: brick, stone, cement or mortar, concrete and marble.



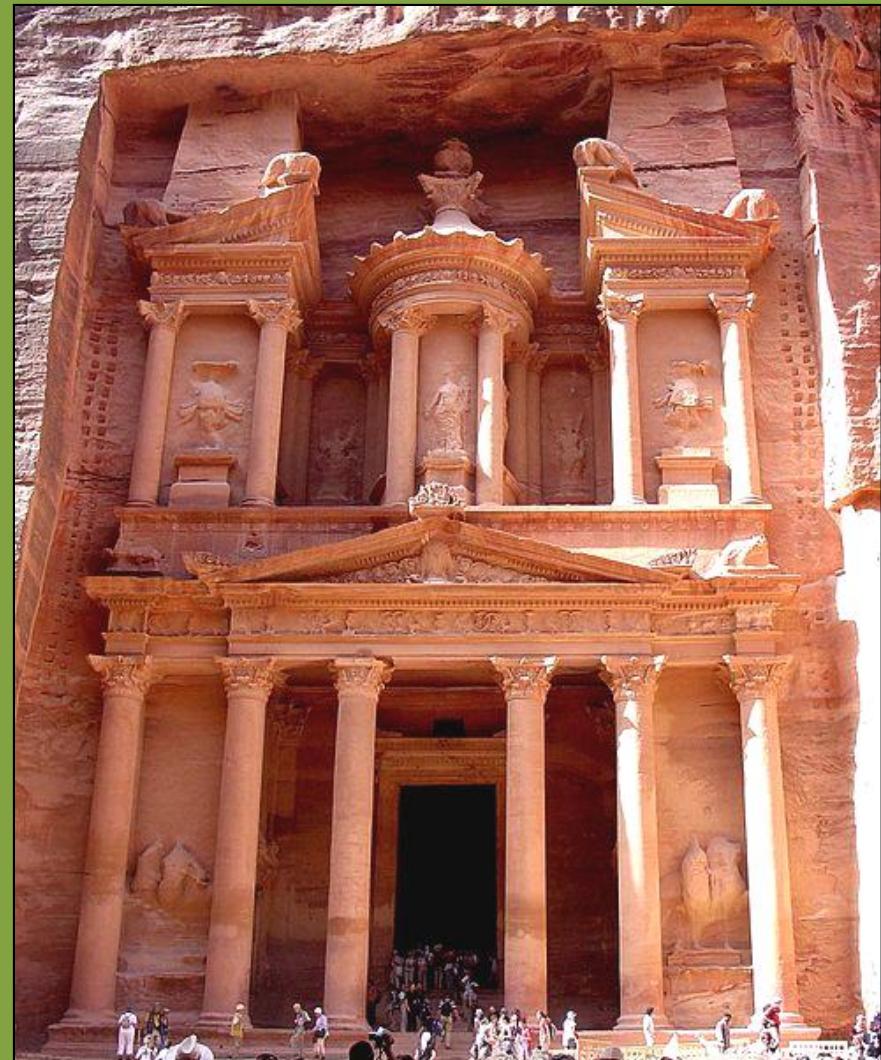
Roman Coliseum



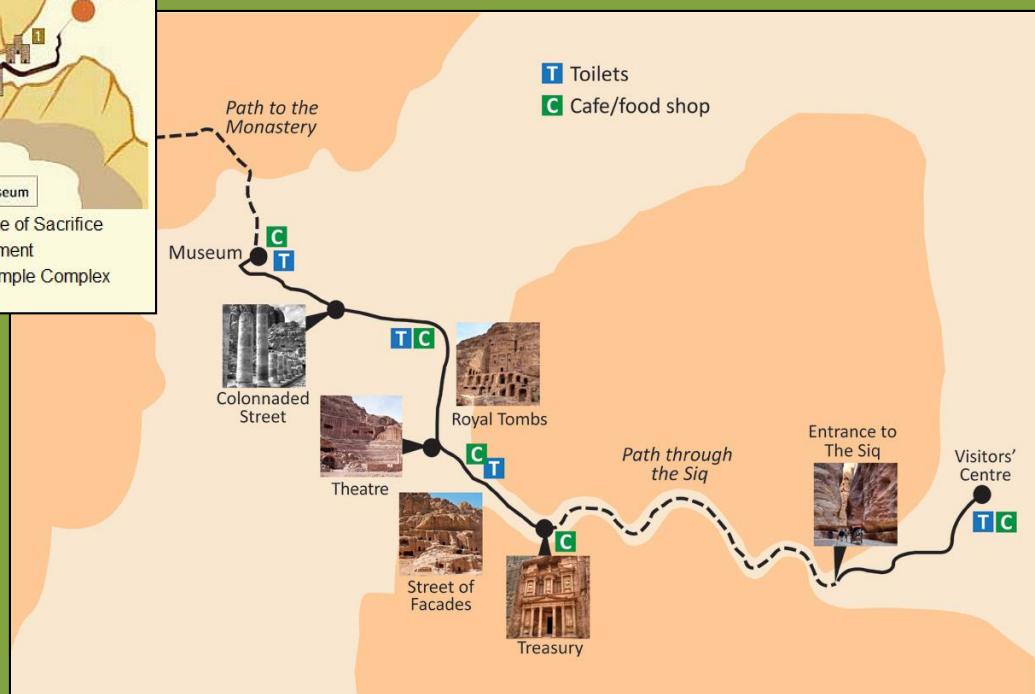
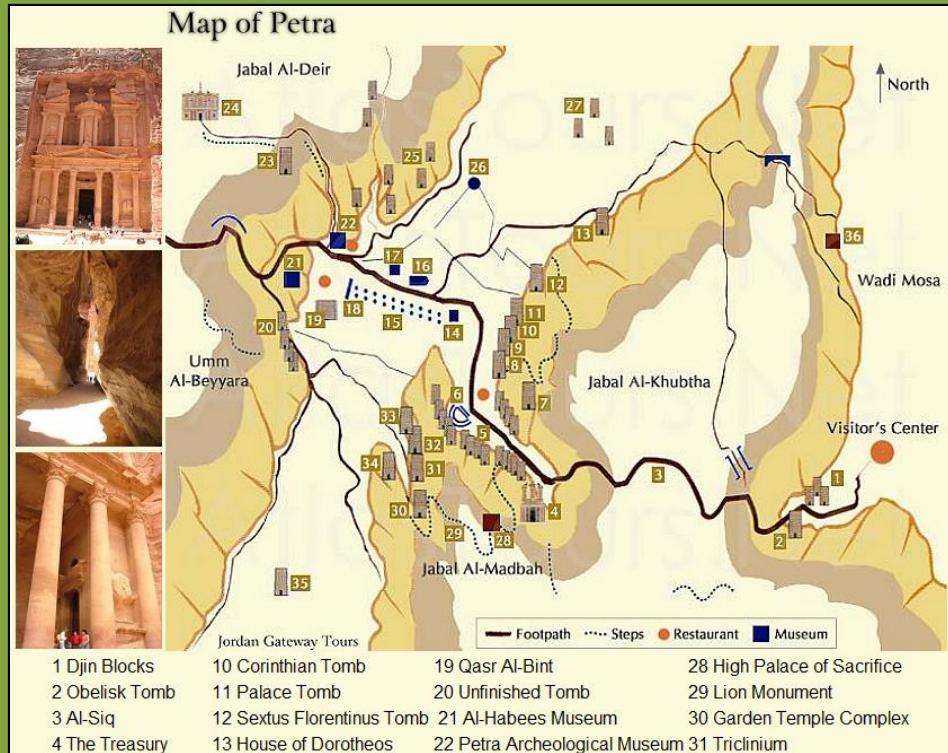
ROMAN ARCHITECTURE: TOMB IN PETRA (JORDAN)



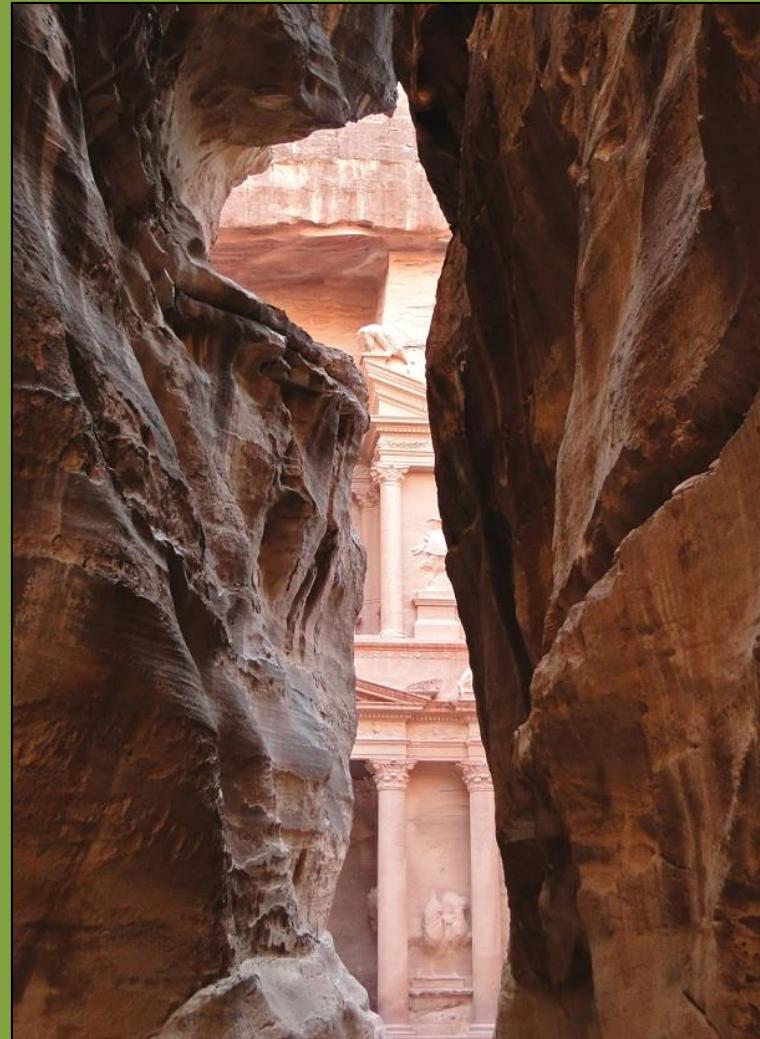
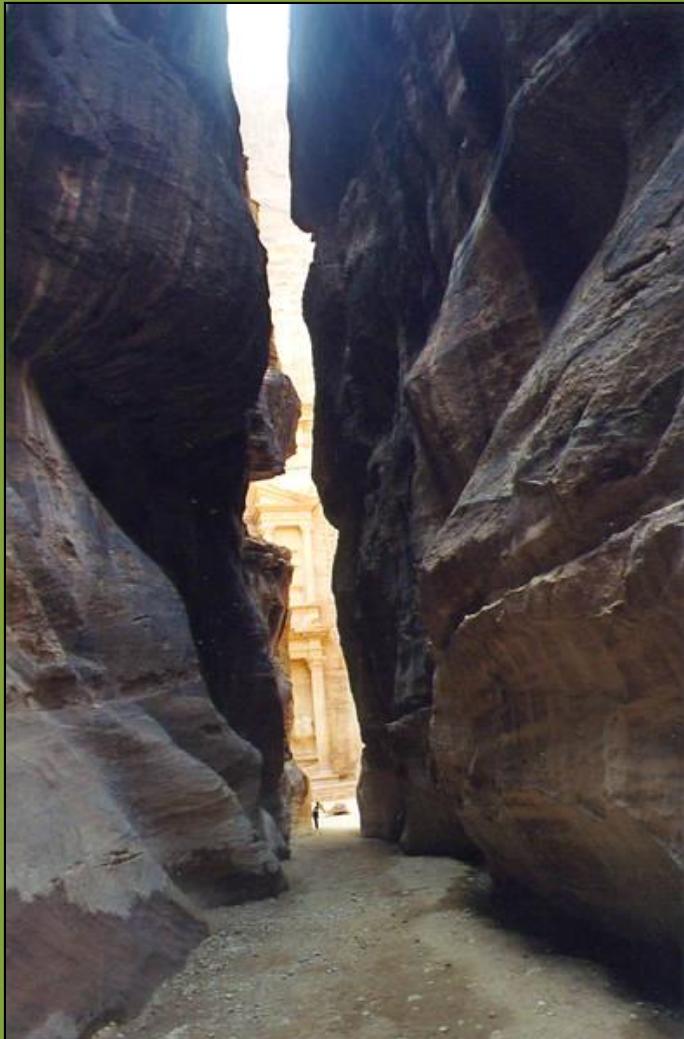
Tomb at Petra (Al Khazneh); 300 BC, Rock cut tomb carved from the top down



Tomb at Petra (Al Khazneh); Capital city of the Nabataeans



Tomb at Petra (Al Khazneh); Siq, the entrance to Petra

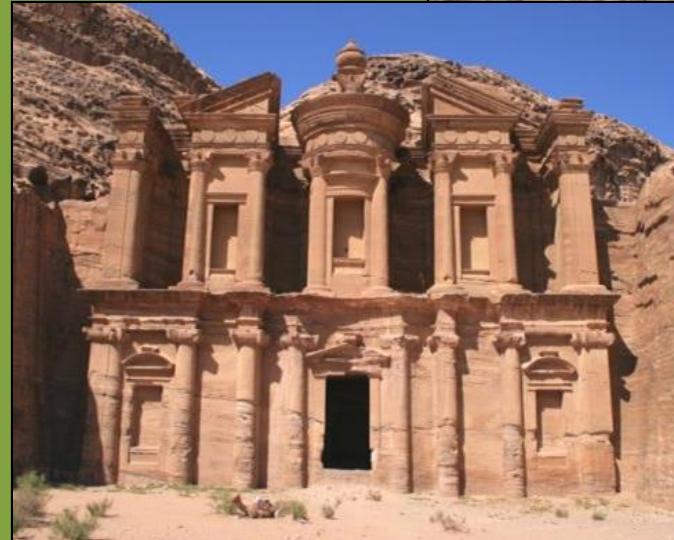
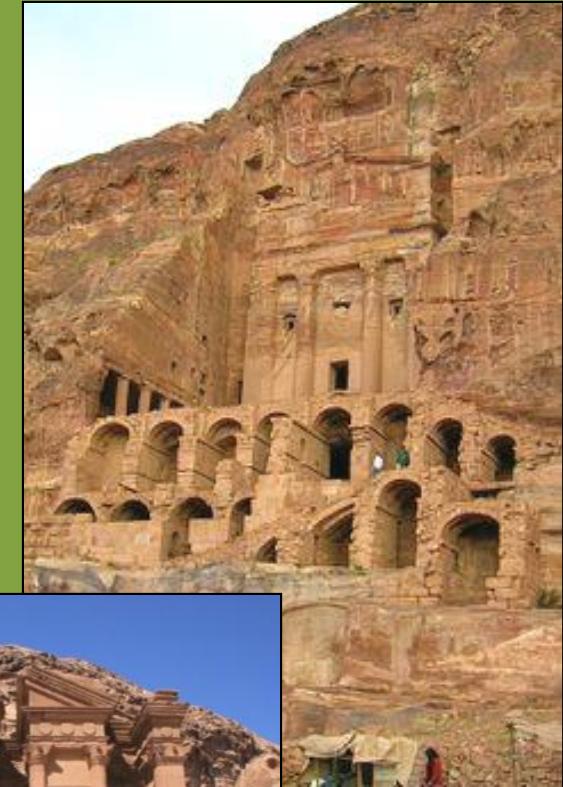
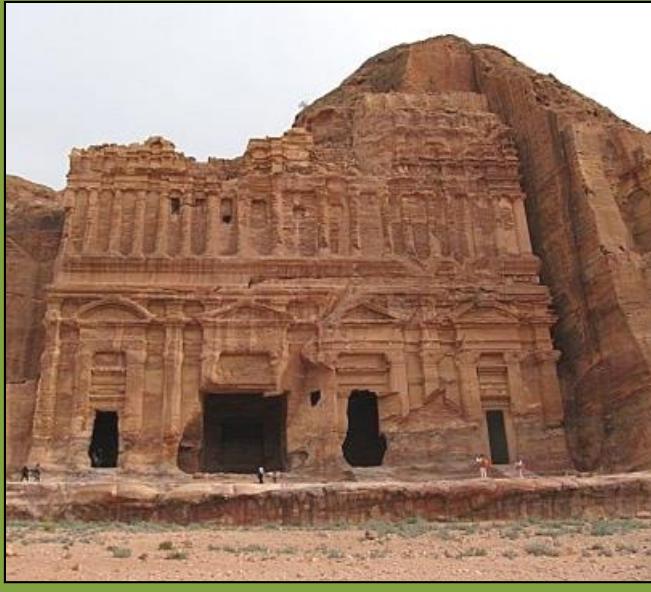
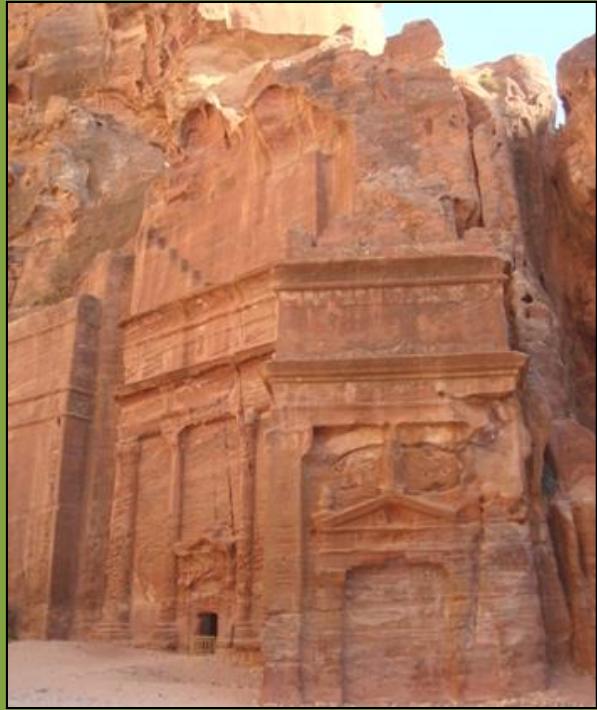


Tomb at Petra (Al Khazneh); The Nabataens used advanced hydraulic engineering to create an artificial oasis in the desert

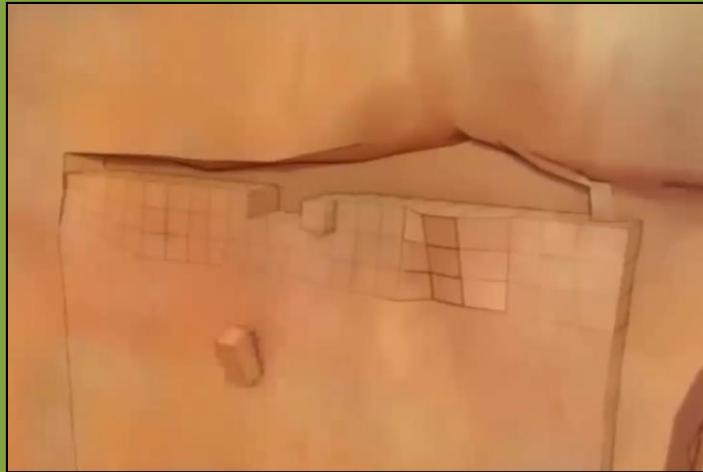


Dams, cisterns and water conduits dug into the rock or made of terra cotta pipes

Other tombs, temples and structures at Petra; capital city of the Nabataeans



Tomb at Petra (Al Khazneh); Carved out of one massive rock



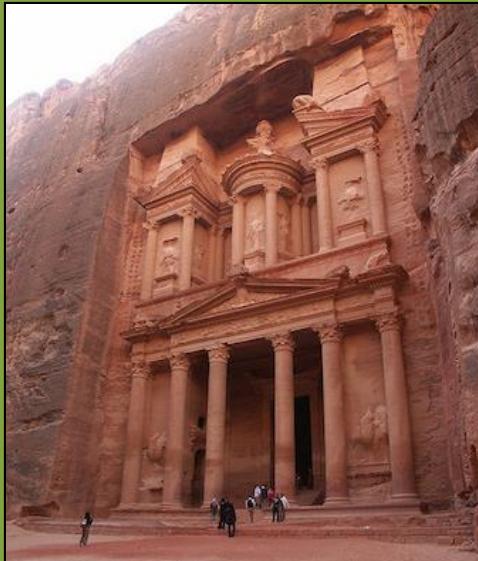
First step was to carve a smooth flat working surface from the cliff face with iron pick axes. Unwanted blocks of stone would be used for free standing buildings



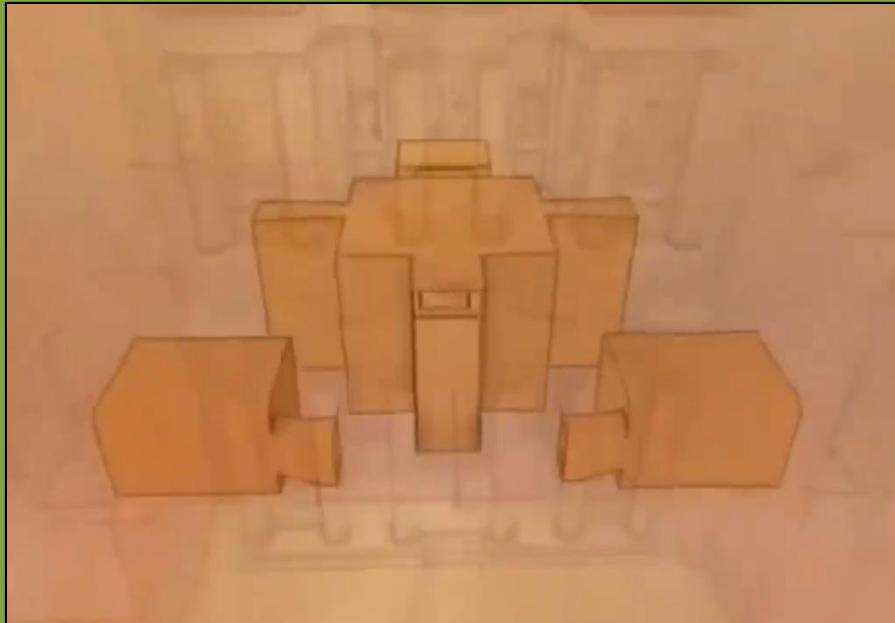
Tomb at Petra (Al Khazneh); Carved from the top down



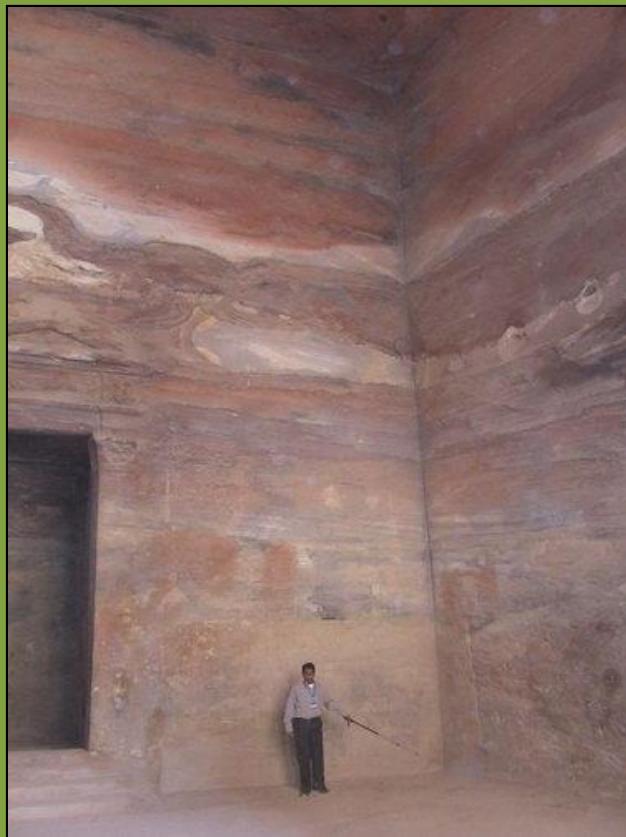
Another working platform was carved into the cliff face so that the façade of the structure could be worked on. The pediment and entablature act as a lintel to support the weight above.



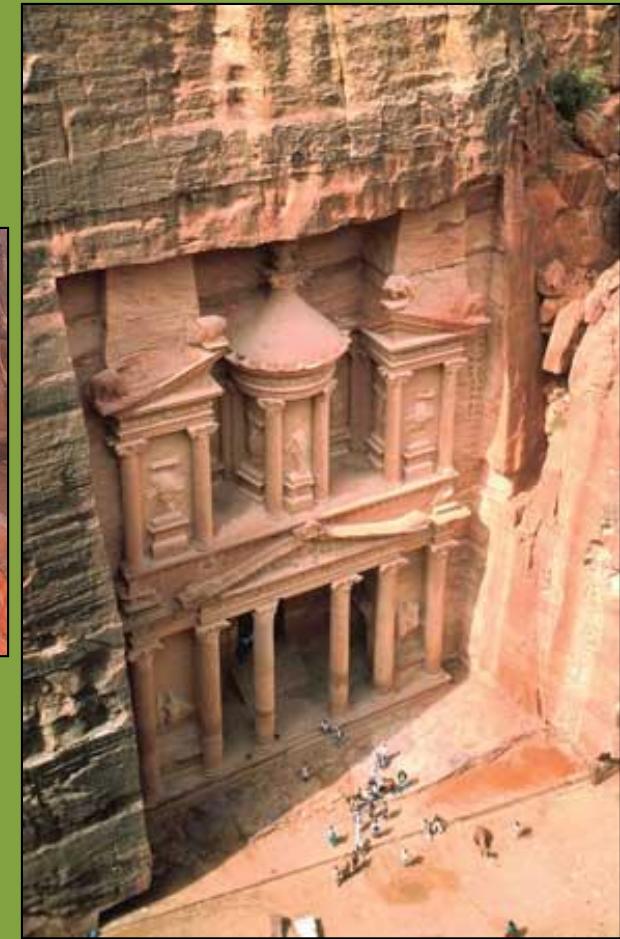
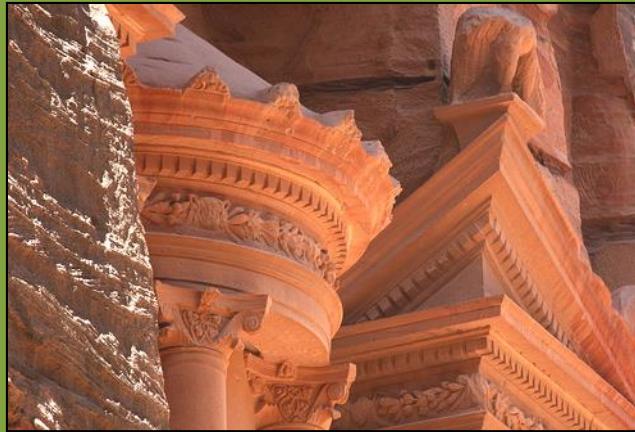
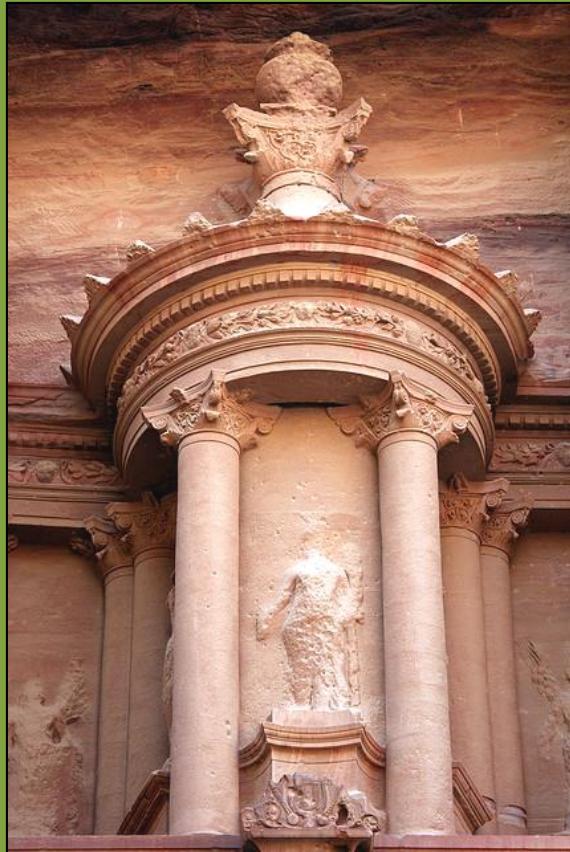
Tomb at Petra (Al Khazneh); Interior also carved from the top down.
Floors of chambers went down as exterior working platform dropped.



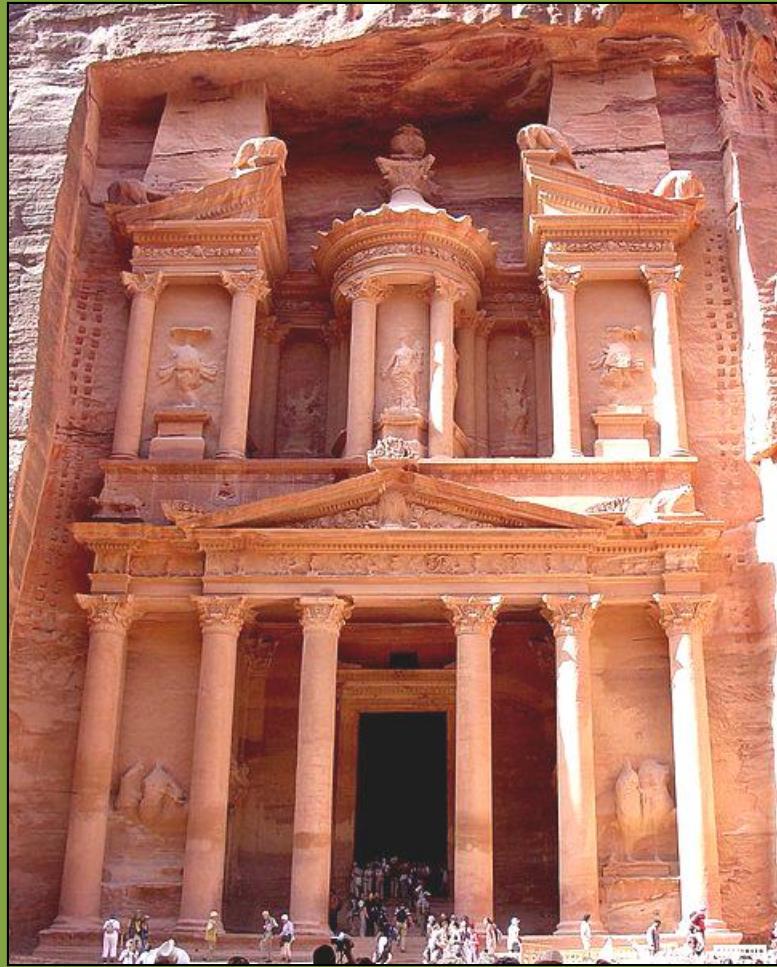
Tomb at Petra (Al Khazneh); Interior



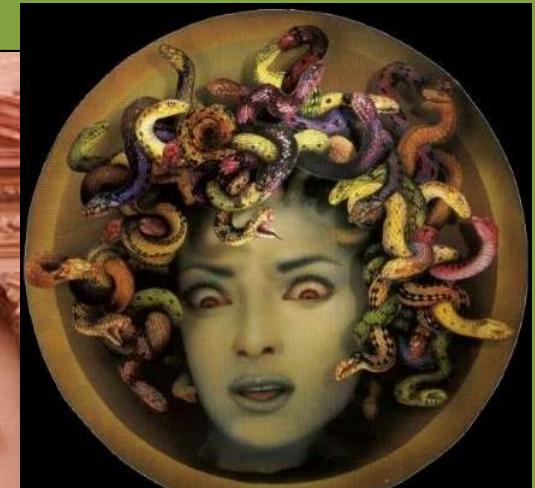
Tomb at Petra (Al Khazneh); Tholos with Urn, Dancing Amazon Women and Eagles



Tomb at Petra (Al Khazneh); Winged Nikes, Castor and Pollux



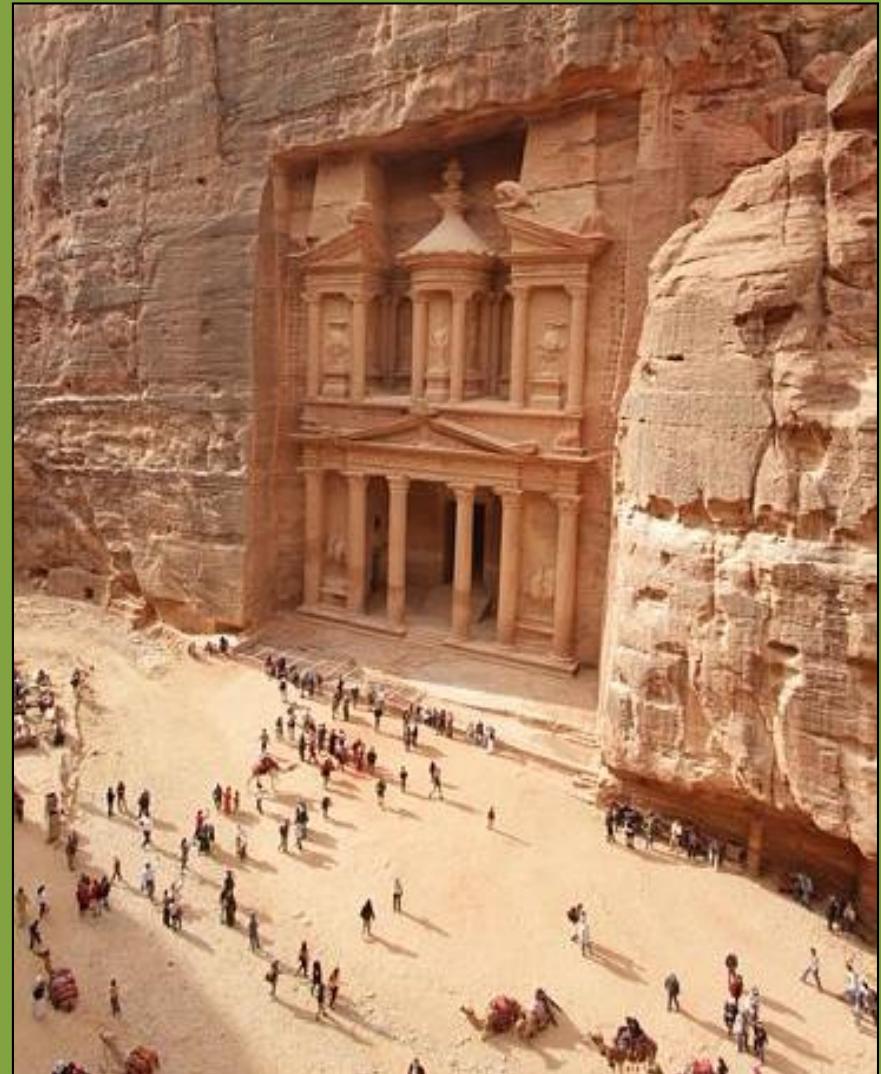
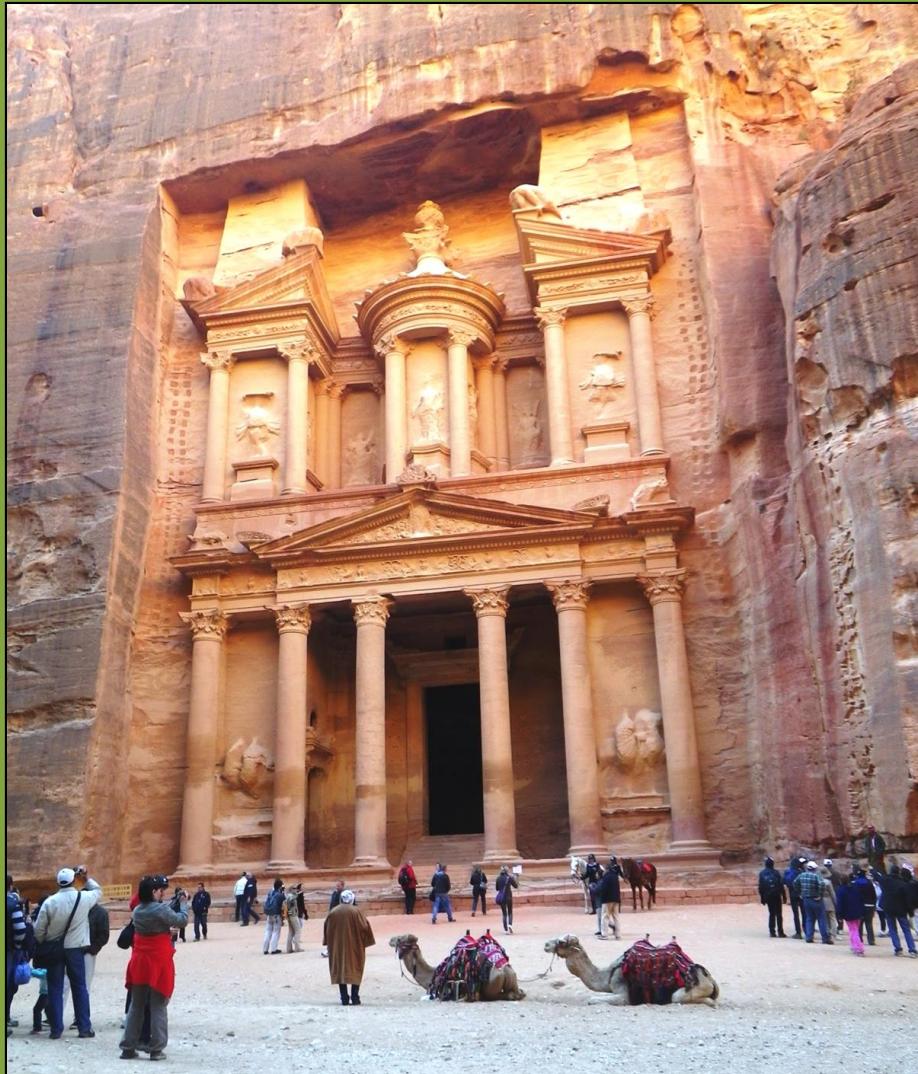
Tomb at Petra (Al Khazneh); Symbol of Isis and Head of Medusa



Tomb at Petra (Al Khazneh); Crypts below the main structure



Tomb at Petra (Al Khazneh)



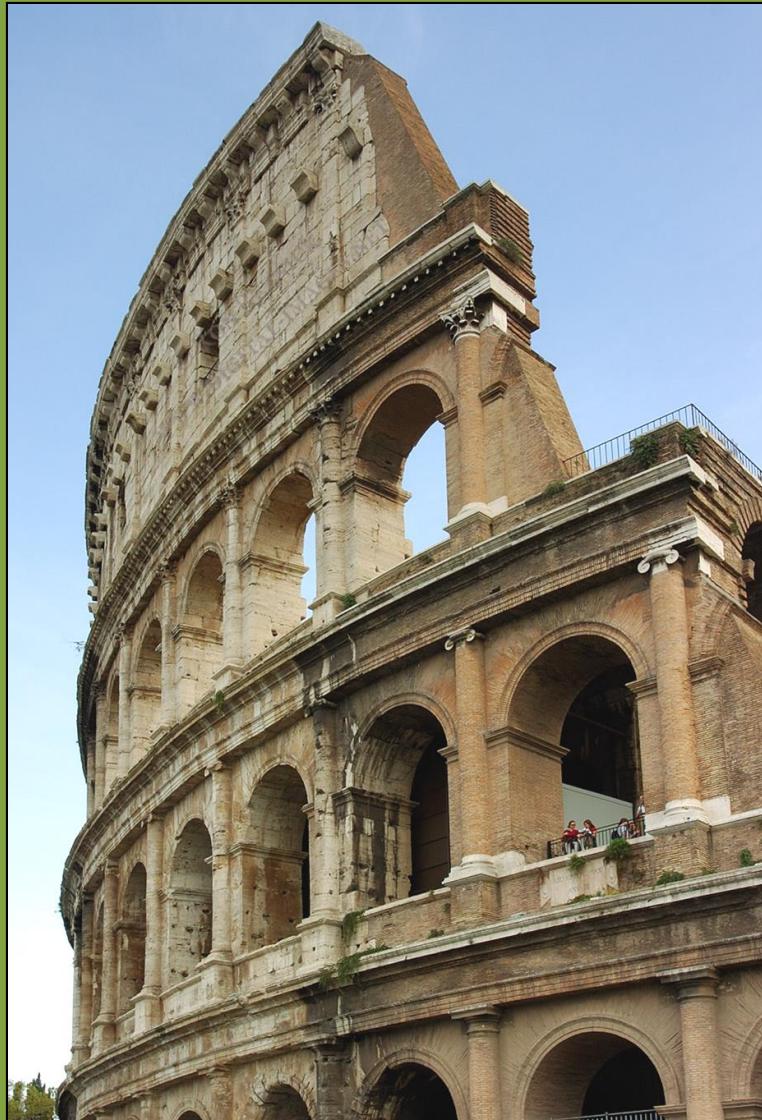
PANTHEON & COLISEUM IN ROME



Coliseum in Rome, AKA Flavian Amphitheatre; 70–82 AD



Coliseum; Commissioned by Emperor Vespasian in 70 AD



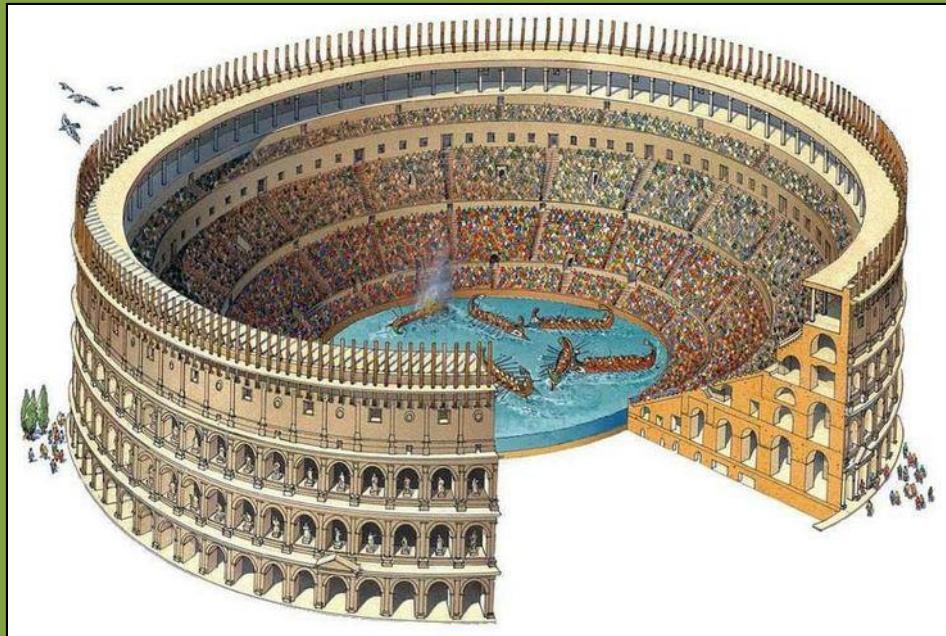
Coliseum in Rome, Italy; First Amphitheater of it's size – It could hold 50,000 - 70,000 spectators



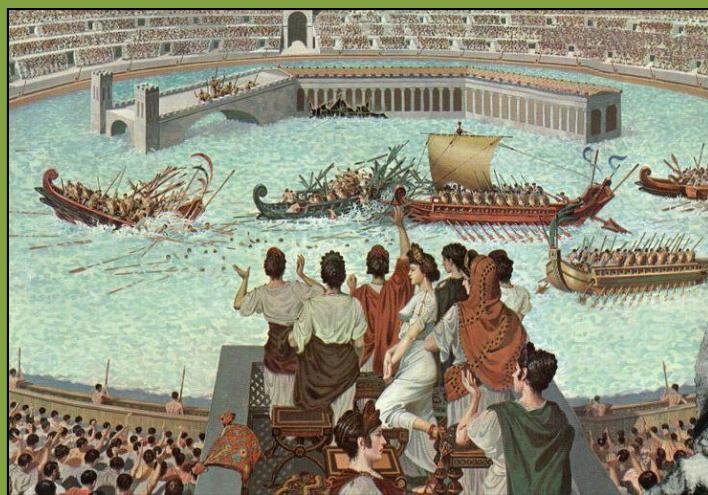
2 theaters stage to stage
making a continuous
auditorium around a
central arena



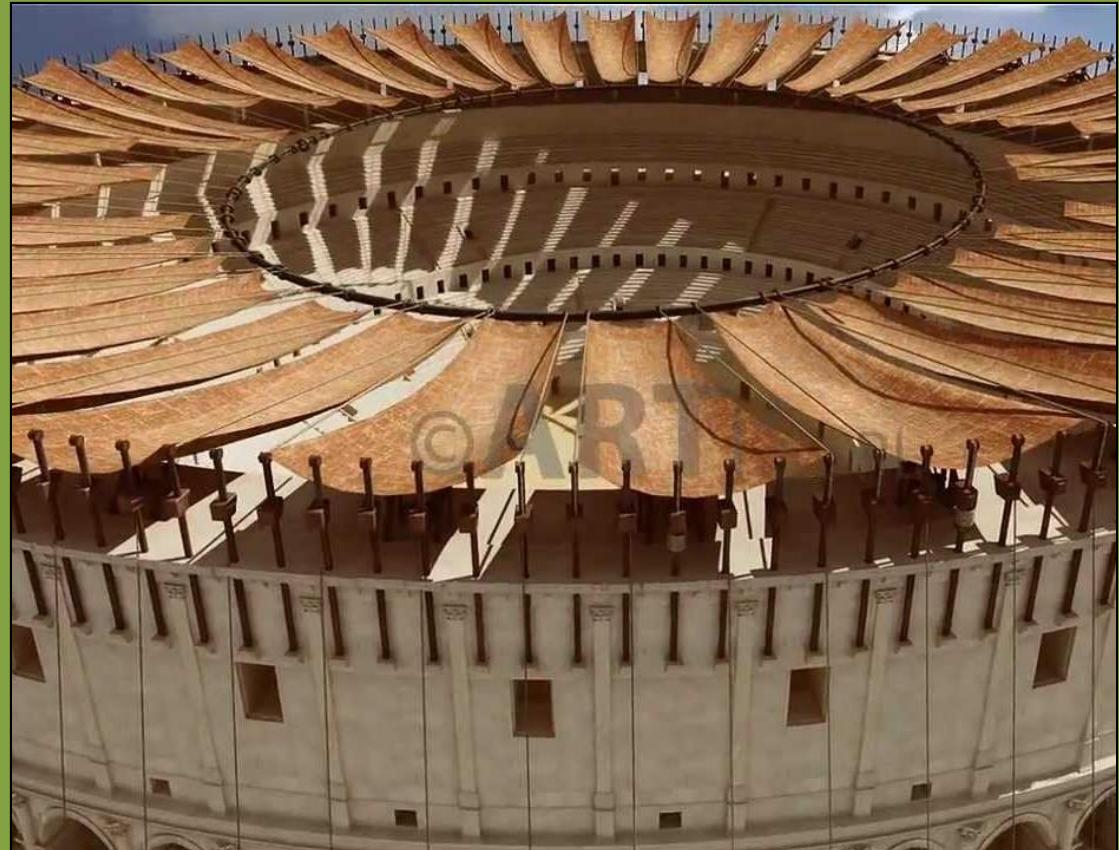
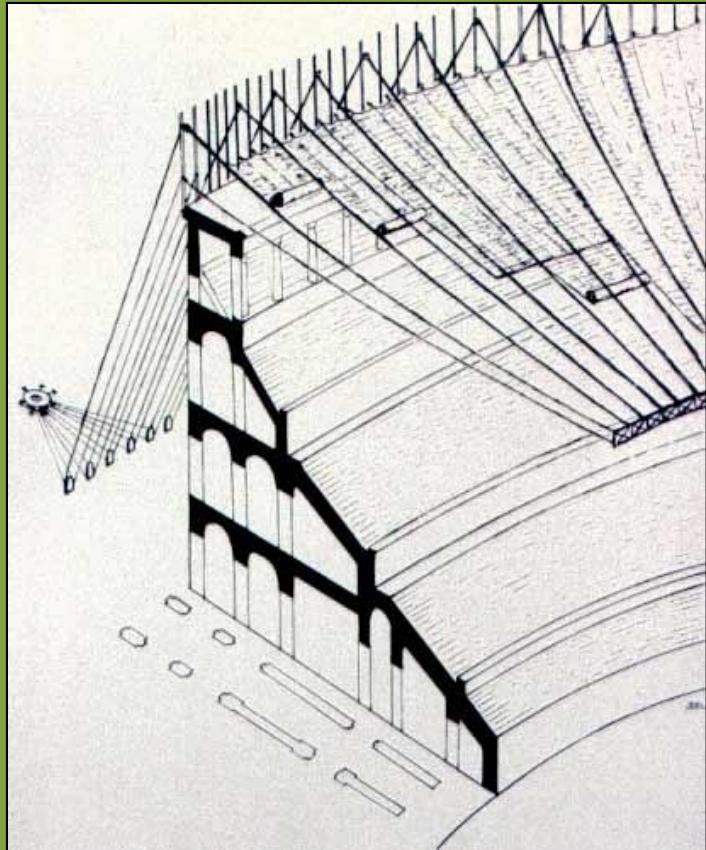
Coliseum in Rome, Italy – Was once used for naval exhibitions



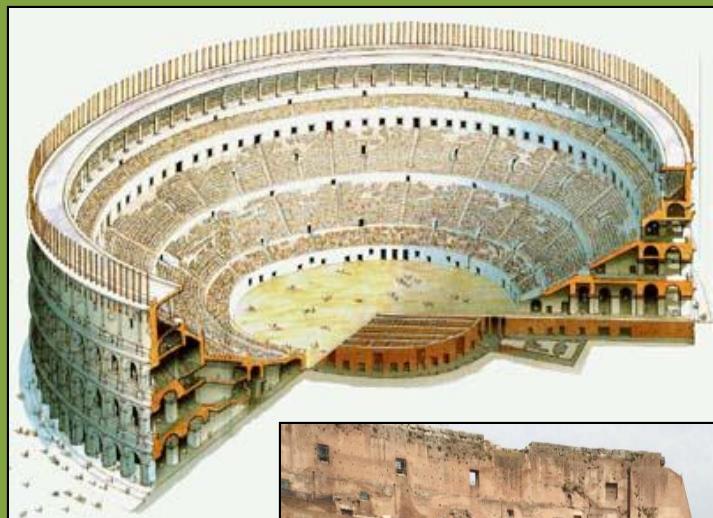
Arena means sand or beach in Latin, and was so called because of the sand that they used to absorb the blood



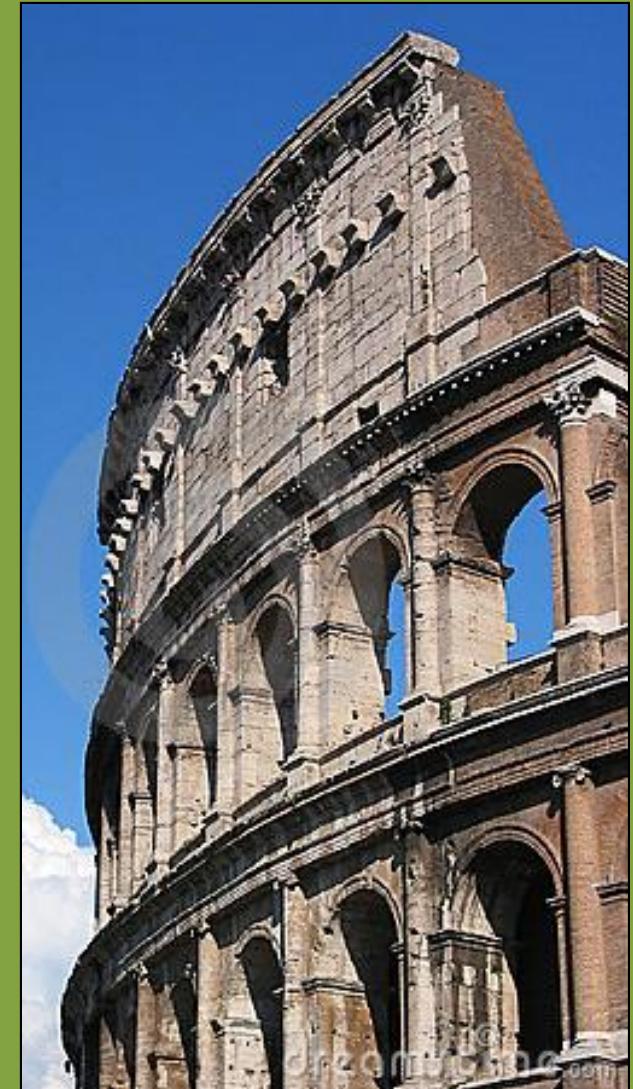
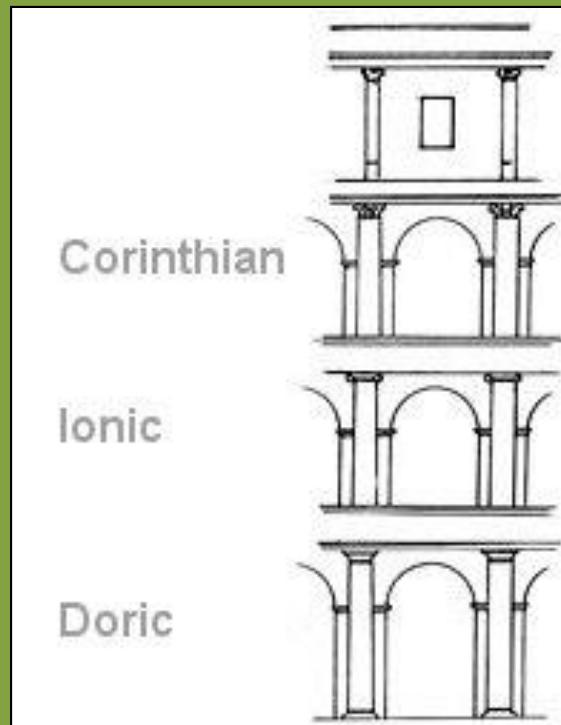
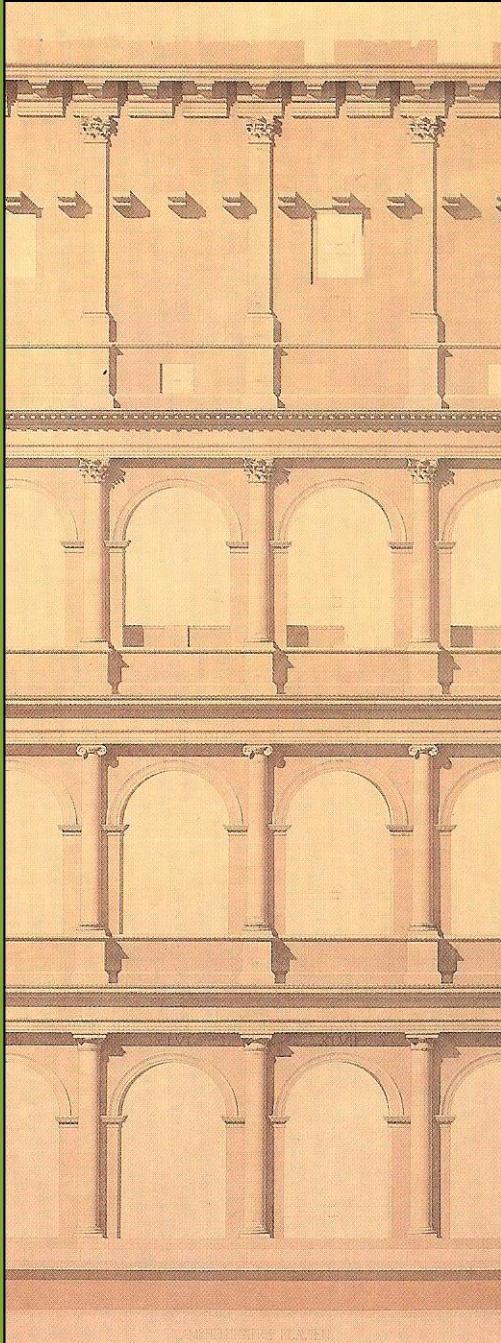
Coliseum in Rome, Italy – Masts of the Velarium



Coliseum in Rome showing The Hypogeum under the Arena



Coliseum in Rome; Doric, Ionic & Corinthian Styles

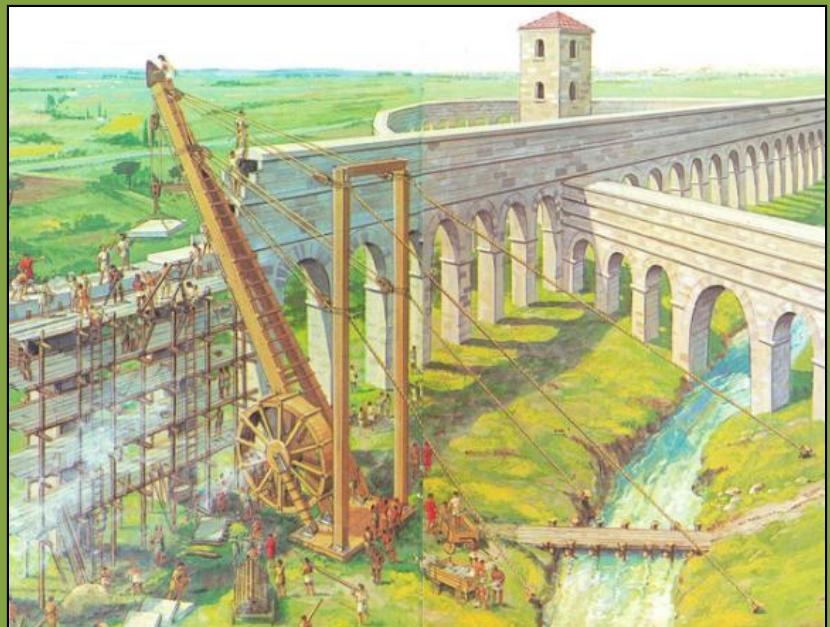


Coliseum in Rome; 6,000 tons of concrete was used and the marble was brought in from a quarry over 20 miles away



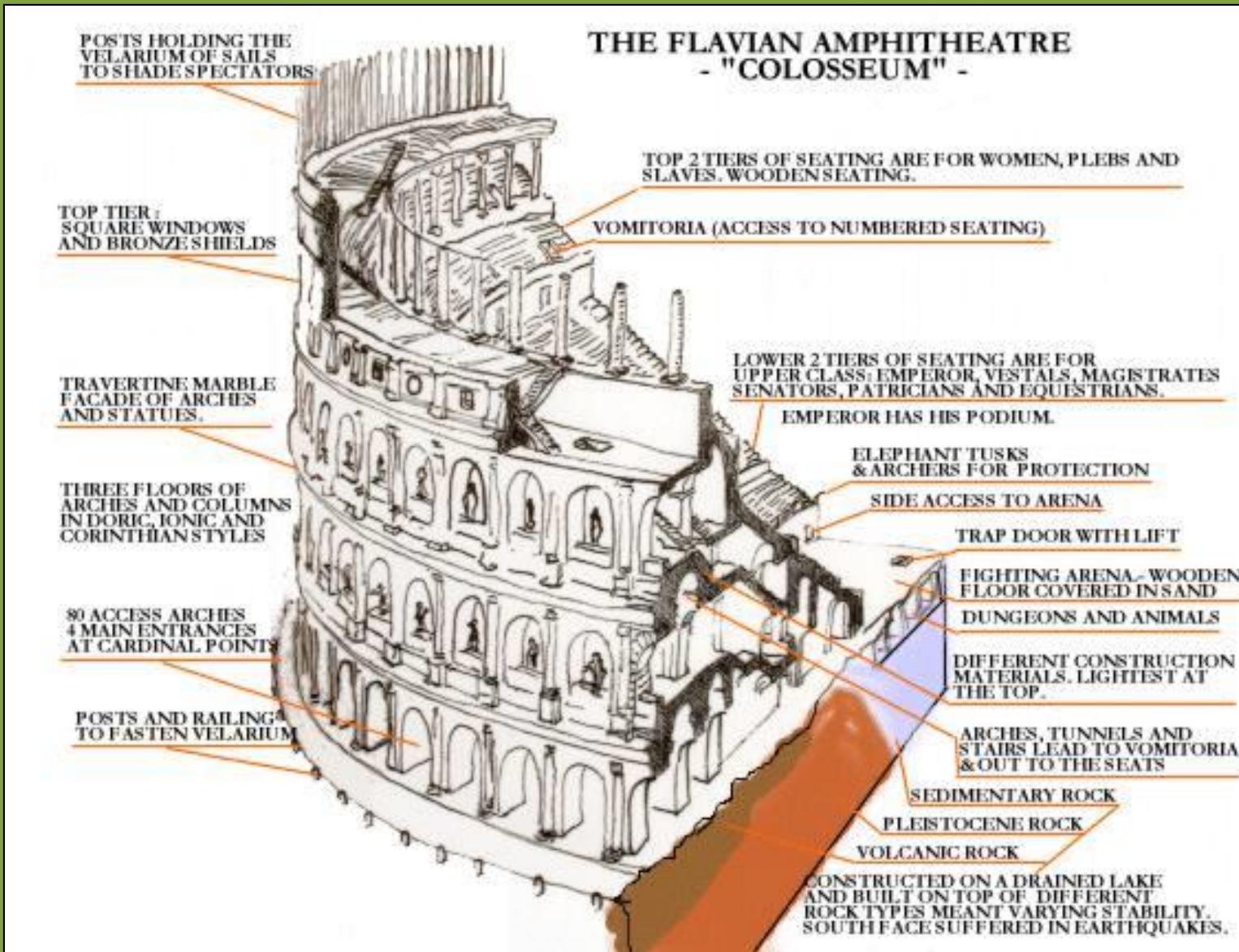
Blocks of stone
were brought to
the top of the
structure by
wooden cranes

Roman Coliseum; Wall construction and wooden cranes

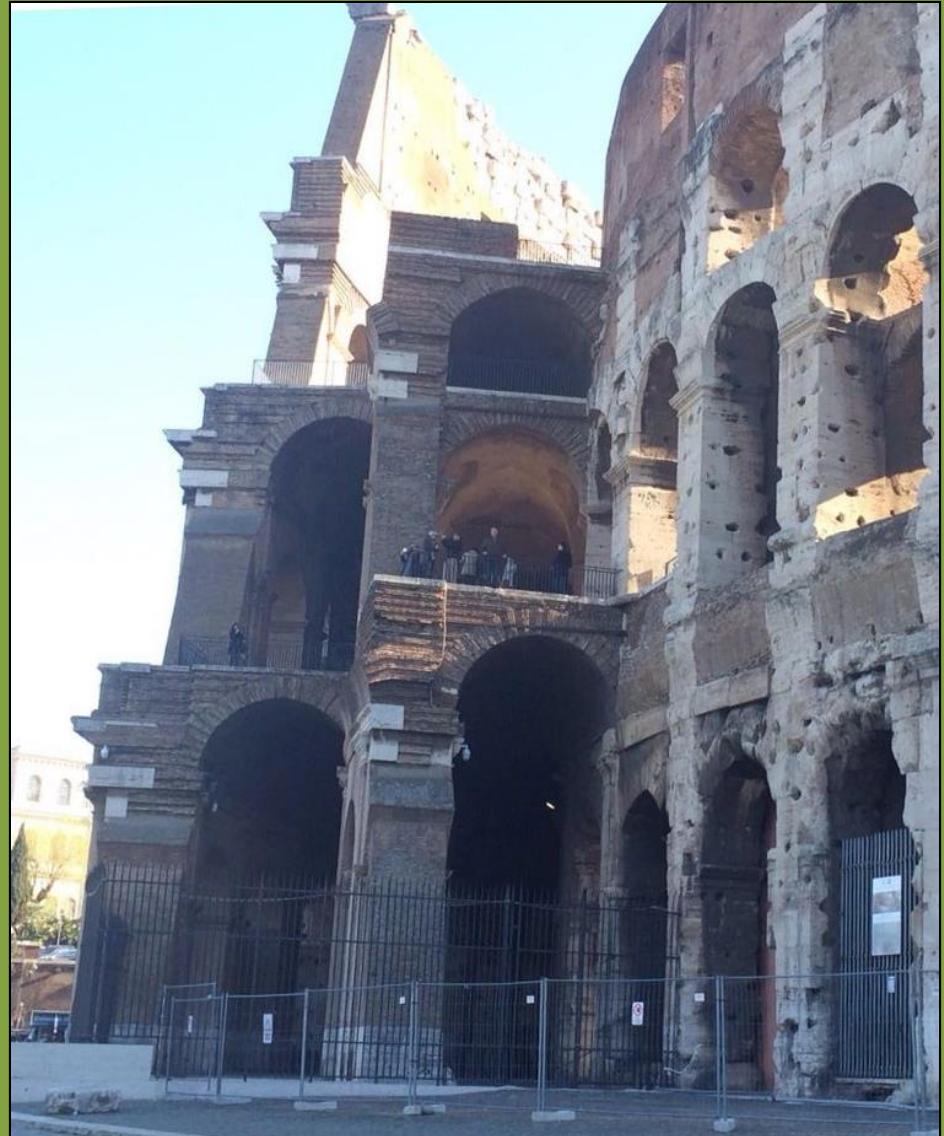
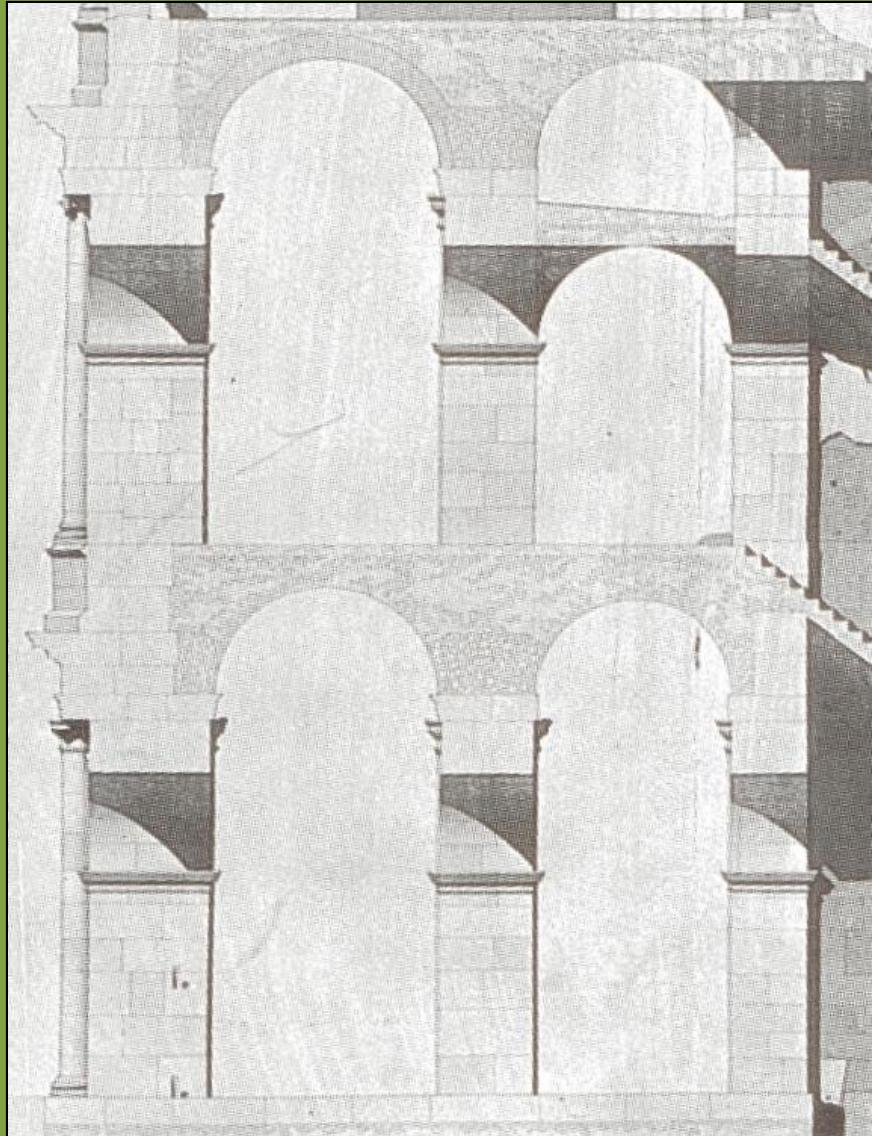


Concrete on the inside with brick and a stone veneer exterior

Coliseum; Lava stone was used for the solid foundations. Pumice stone was used in the concrete for the vaults to reduce their weight



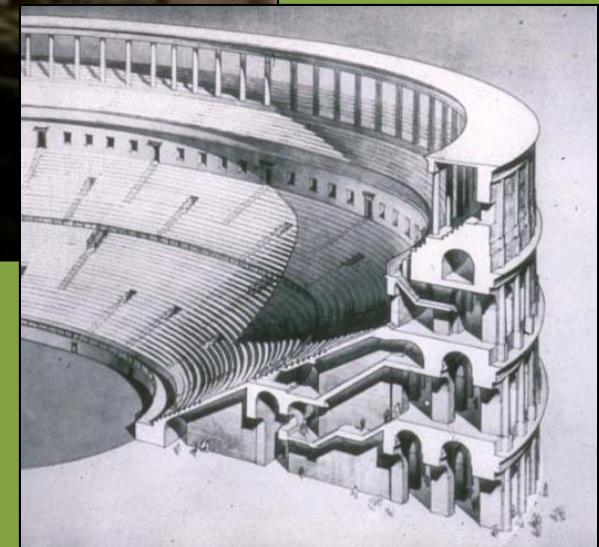
Coliseum; The travertine marble blocks on the exterior were held on
my 300 tons of metal cramps that have been dug out over time



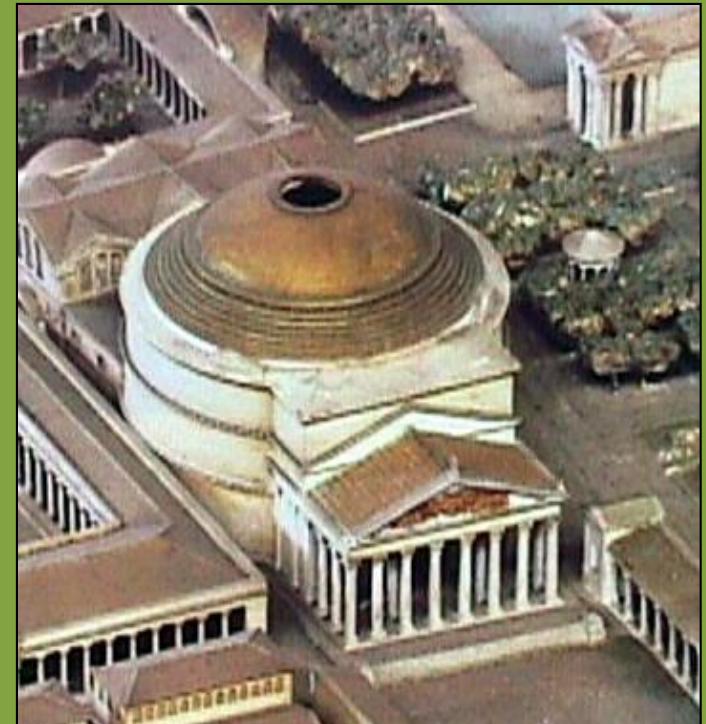
Coliseum in Rome, Italy – 70 AD; Reconstruction



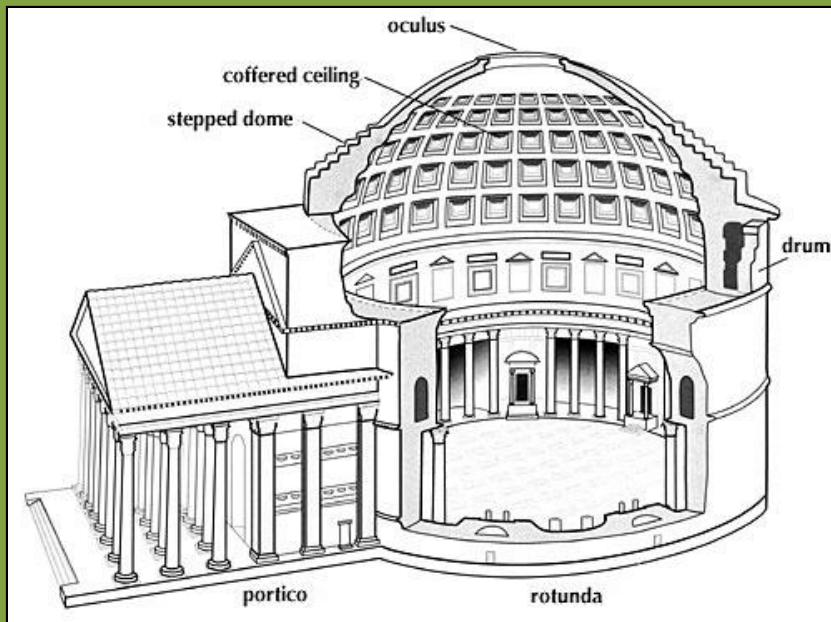
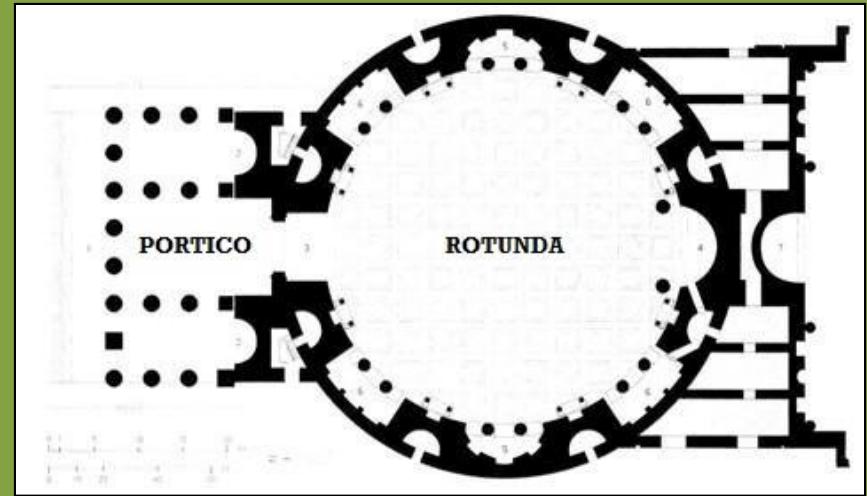
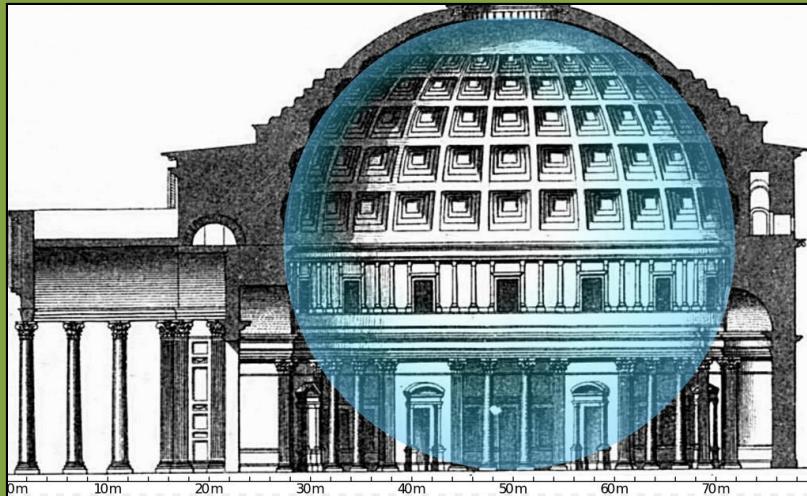
Coliseum in Rome, Italy – 70 AD; Reconstruction



Pantheon in Rome, Italy; 120 AD. Round dome on a round base - Built by Agrippa, then Hadrian



Pantheon in Rome, 120 AD; From the floor to the under side of the dome is 142', the same is it's diameter. It's a perfect circle.

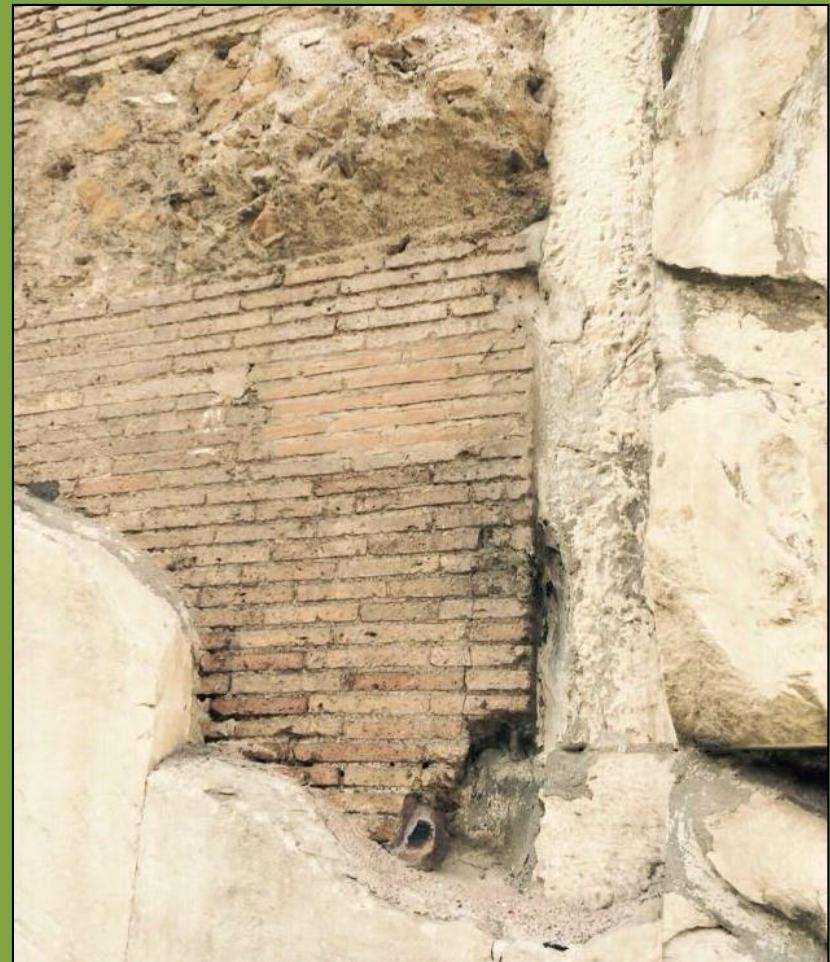


Oculus
Cofferred
Ceiling
Portico
Rotunda

Pantheon in Rome; The walls are made of concrete and brick, faced with slabs of white marble below, and white stucco above.

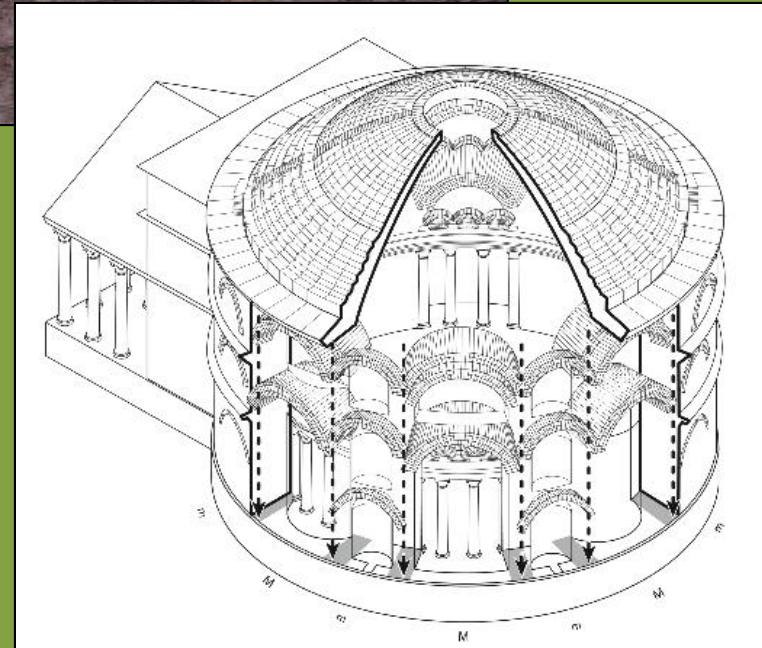
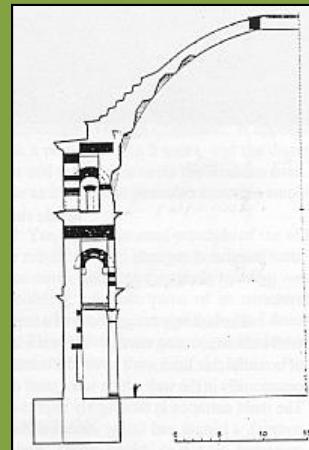
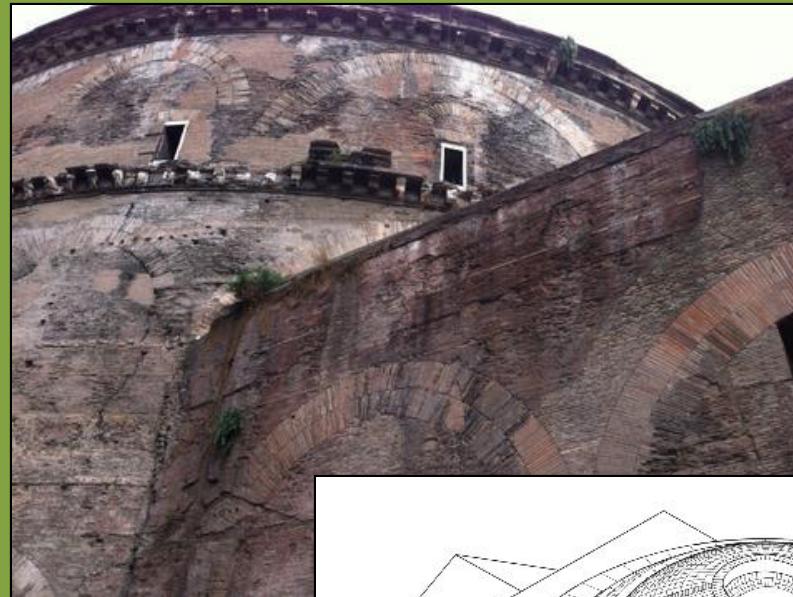
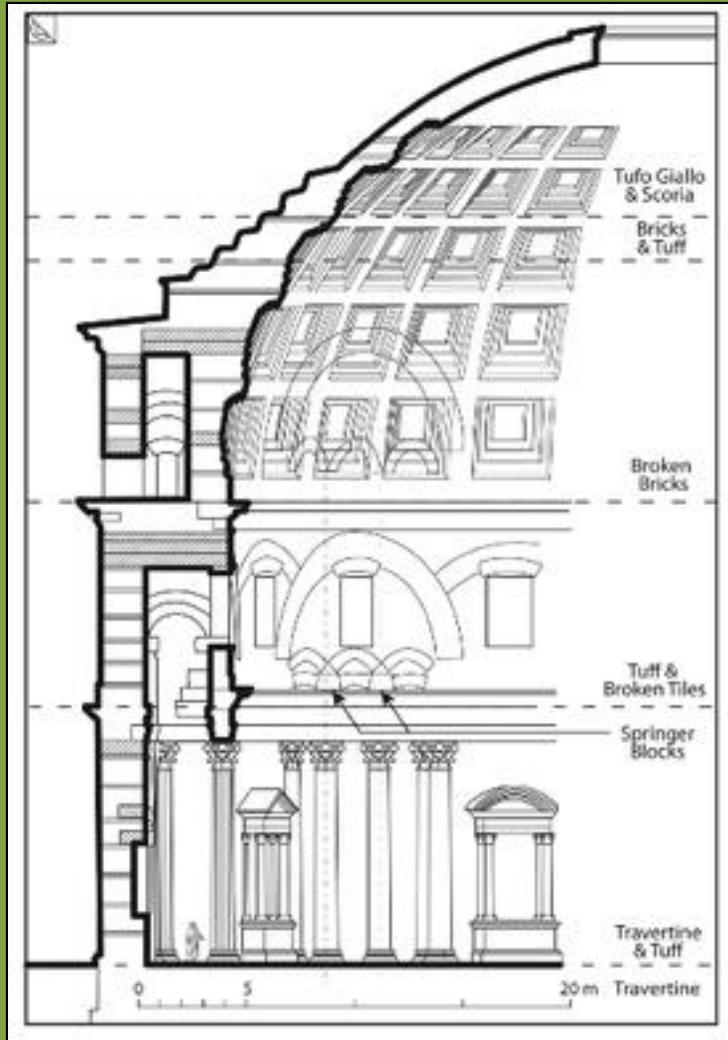


Exterior of Pantheon today

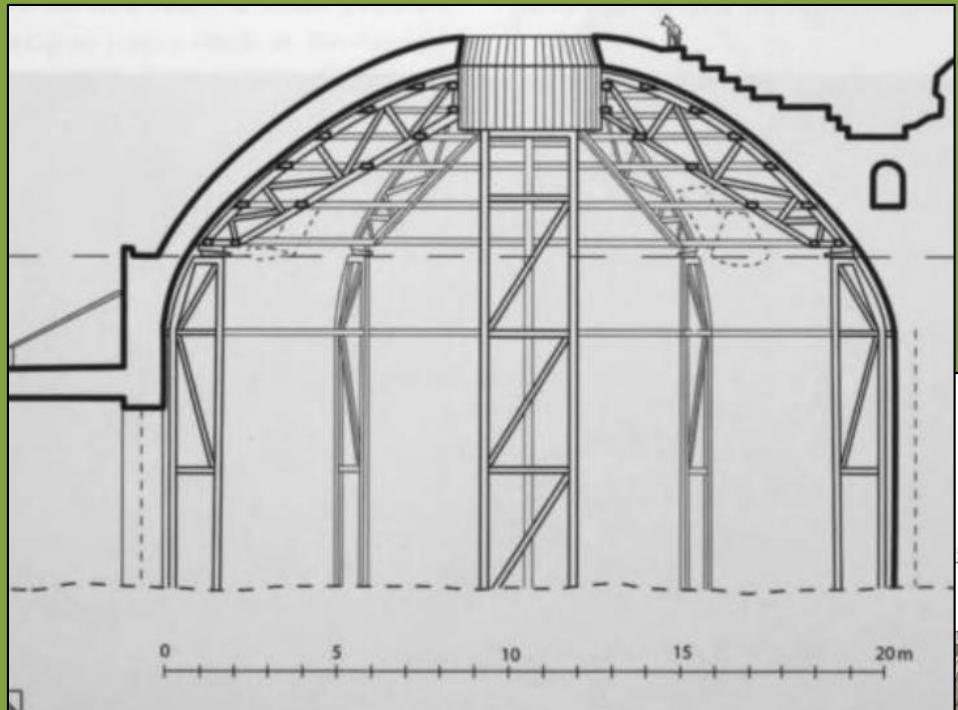


Pantheon in Rome, 120 AD; The composition of the concrete and bricks changed depending on the needs of the structure.

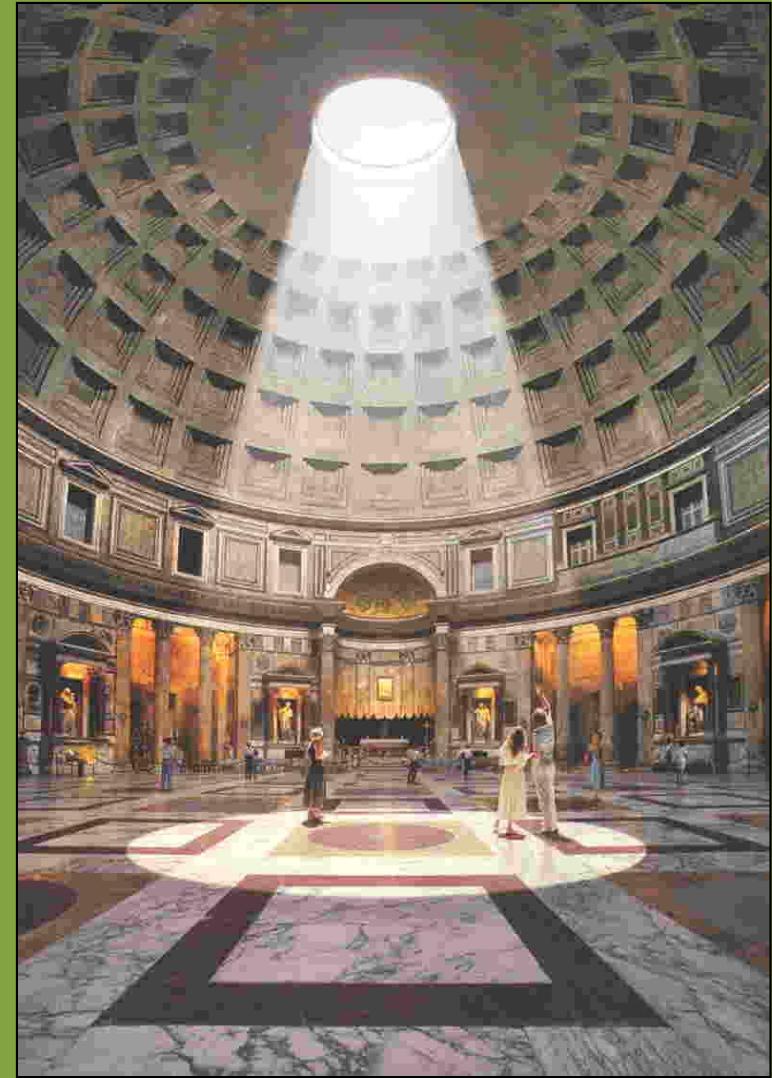
Concrete made of....



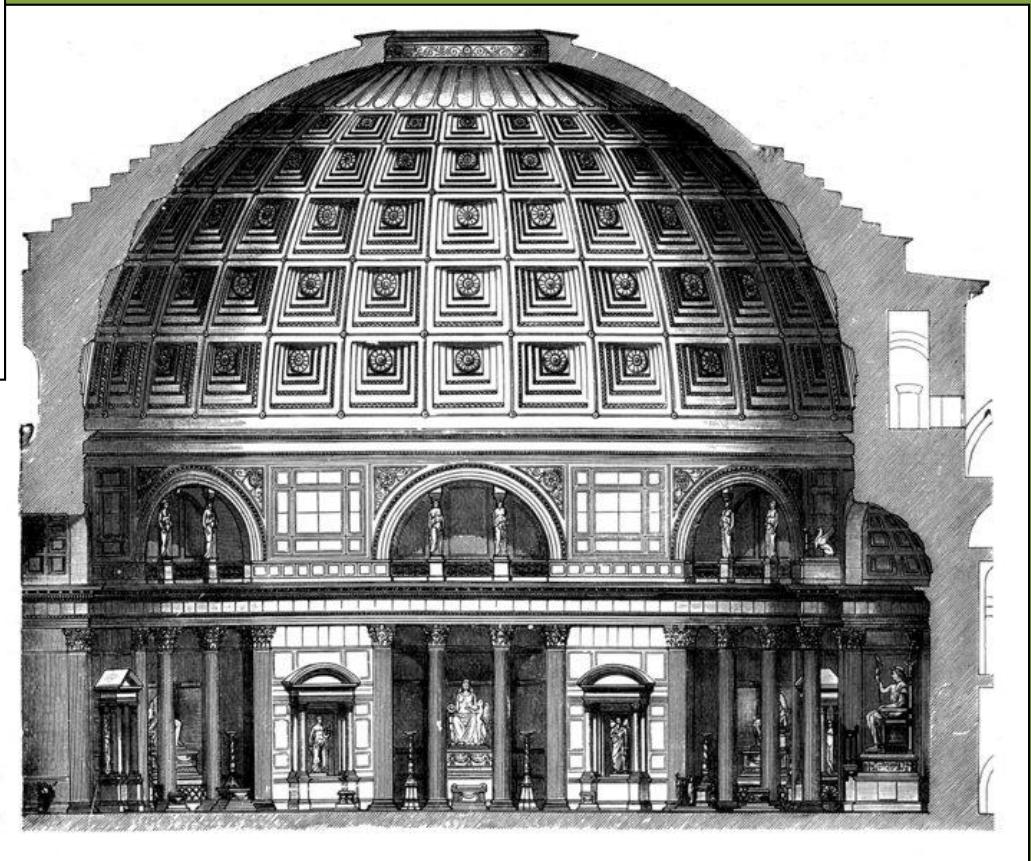
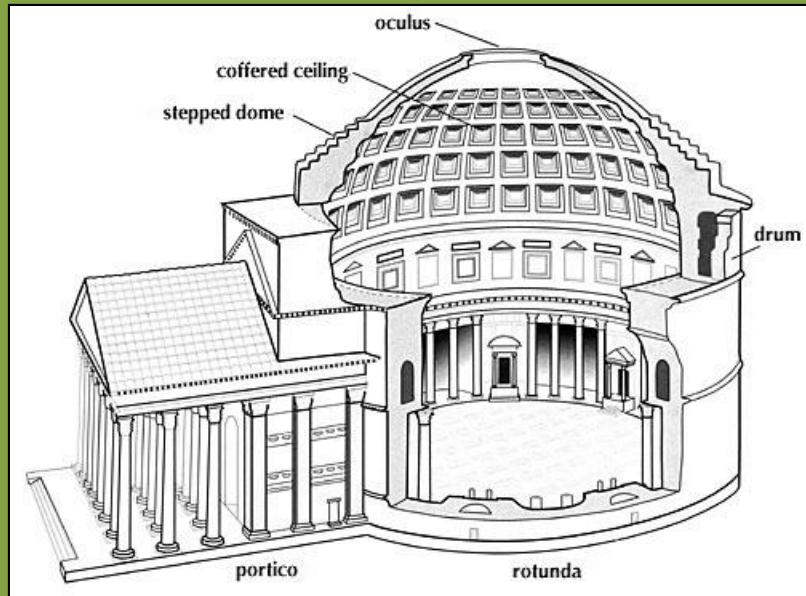
Pantheon in Rome; The construction of the dome probably used some type of wooden scaffolding while the concrete set



Pantheon in Rome, 120 AD;
The Oculus is 27 feet across and open to the weather



Pantheon in Rome; Coffers – They lighten the dome and every row is different to make them look more uniform from below.

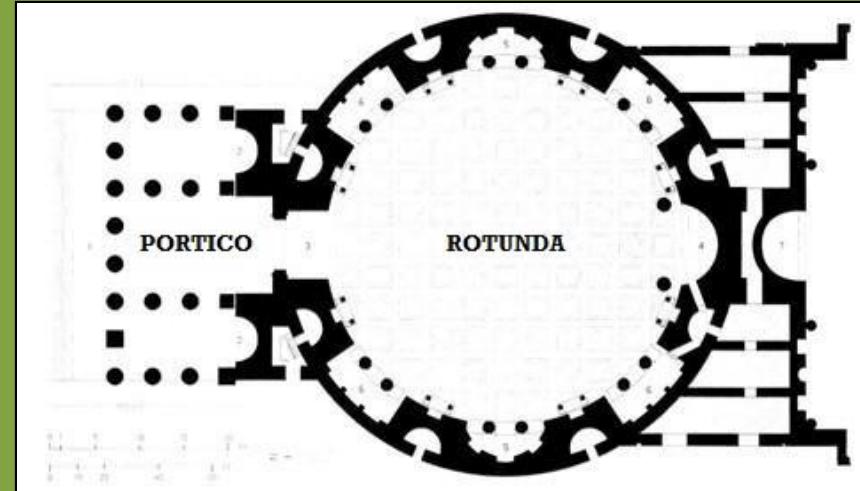


Pantheon in Rome; Interior walls lined with Marble and Porphyry

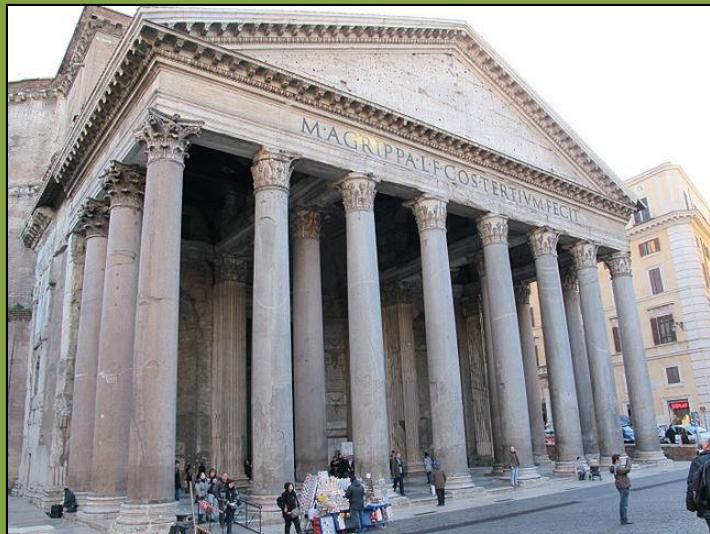


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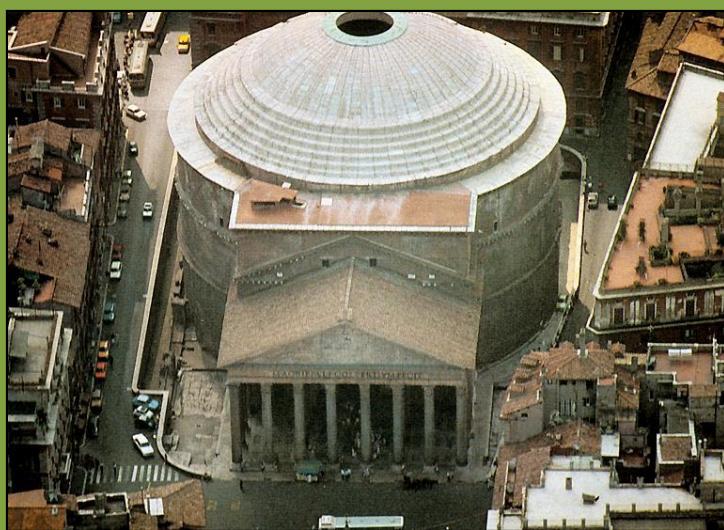
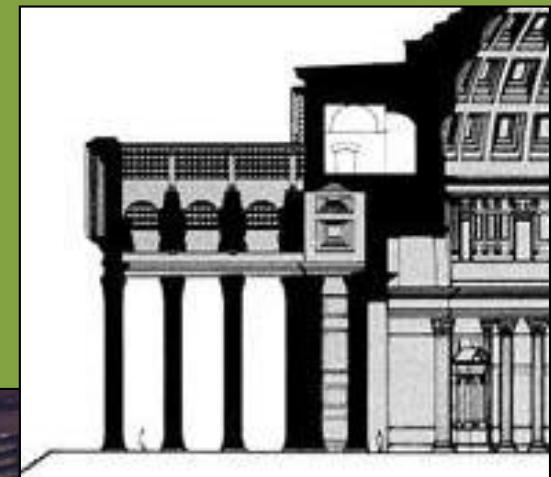
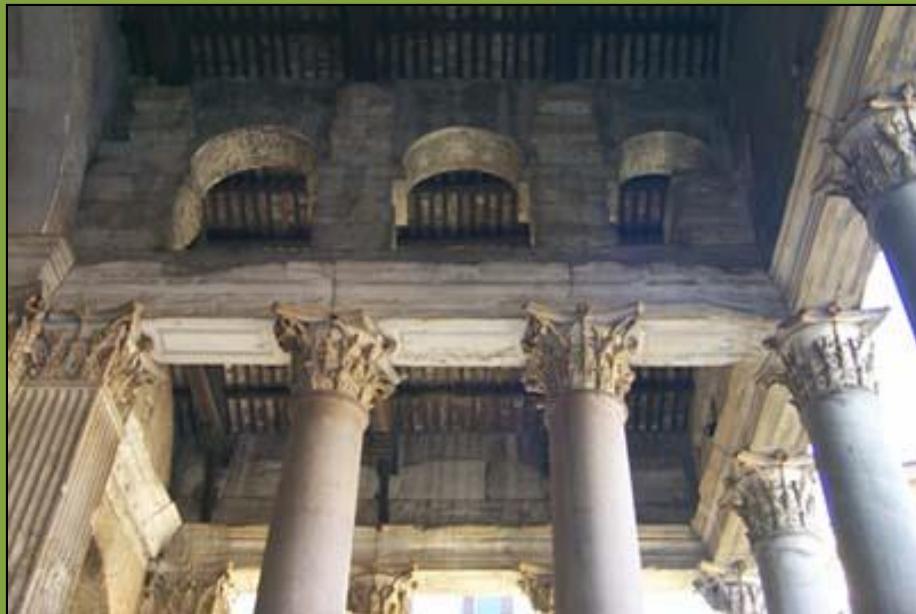
Pantheon in Rome; 8 recesses inside, all with Corinthian columns



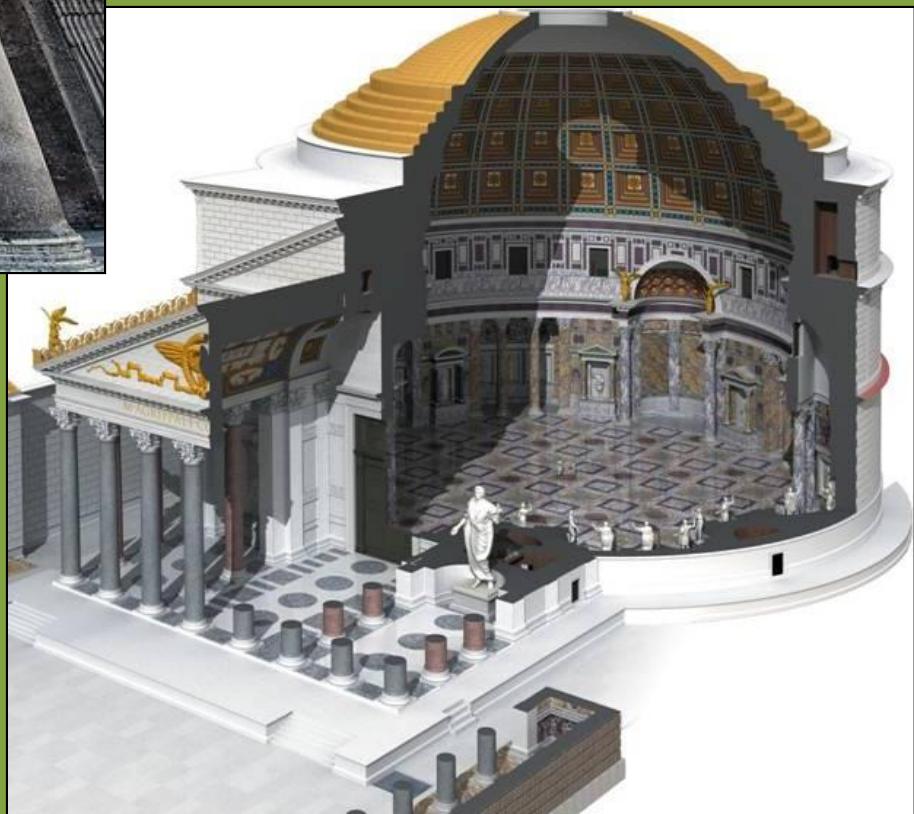
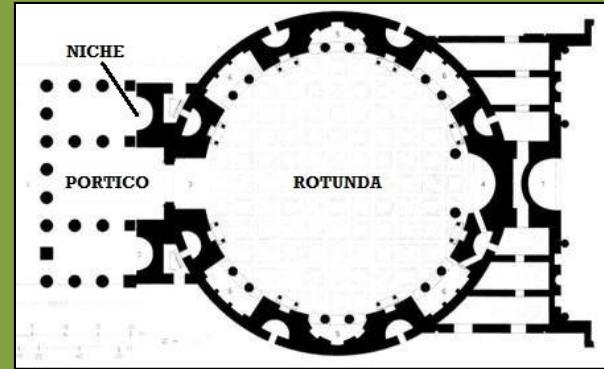
Pantheon in Rome; Portico columns are made of solid granite with marble capitals. They were brought from Egypt.



Pantheon in Rome, 120 AD; Portico roof structure



Pantheon in Rome; Niches in Front Portico



Pantheon in Rome, Italy – 120 AD; S. Maria Rotunda

