

## WELCOME TO ARCH 1121-HISTORY OF ARCHITECTURAL TECHNOLOGY

- 1.PLEASE TURN OFF CELL PHONES FOR ENTIRE DURATION OF CLASS
- 2.PLEASE TURN OFF ALL IPODS, WALKMANS, ETC.
- 3.PLEASE NO EATING OR DRINKING DURING CLASS
- 4.PLEASE BE CONSIDERATE OF OTHERS-RESPECT IS KEY TO YOUR PROFESSIONAL CAREERS & DAILY LIVES.

ARCH 1121 HISTORY OF ARCHITECTURAL TECHNOLOGY  
PROF. BENARDETE FALL 2008






CLASS 1









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GARDENER-ART THROUGH THE AGES

| 7000 B.C.  | 6000  | 3500                   | 3000   | 2500  | 2300  | c. 2150   |
|--|---|------------------------|--|---|---|---|
| MESOLITHIC PERIOD  | NEOLITHIC PERIOD  | PROTLITERATE PERIOD    | EARLY DYNASTIC PERIOD (Sumerian)   | FIRST DYNASTY OF UR (Sumerian)                            | AKKADIAN DYNASTY  | THIRD DYNASTY OF UR (Neo-Sumerian)  |
| <br>Human Skull, Jericho<br>c. 7000-6000 B.C. | <br>Dancing Hunter<br>c. 5750 B.C. |                        | <br>Head of the God Abu(?)<br>c. 2700-2600 B.C. |   | <br>Akkadian head<br>c. 2300-2200 B.C. | <br>Ziggurat<br>c. 2100 B.C. |
| Jericho settled  | Catal Hüyük settled   |                        | Beginnings of formal religion  | Development of writing and beginnings of recorded history | Sargon I<br>c. 2330-2280 B.C.   | Gut invasions   |
|  | Irrigation methods developed  | Invention of the wheel | Flourishing of independent city-states   |   |   |   |

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| 1900   | 1600  | 1150  | c. 900   | 625 612  | 538                      | 330  |
|--|---|---|--|--|--------------------------|--|
| FIRST DYNASTY OF BABYLON   | KASSITES AND MITANNI  |   | ASSYRIAN EMPIRE  | NEO-BABYLONIAN KINGDOM   |                          | PERSIAN EMPIRE (ACHAEMENID DYNASTY)  |
| <br>Statue of Hammurabi<br>c. 1790 B.C. | <br>Lion Gate, Baghdad<br>c. 1450 B.C. | <br>Ashurnasipal II<br>c. 875 B.C. | <br>Winged Bull, Khorsabad<br>c. 720 B.C. | <br>Ishtar Gate<br>c. 575 B.C. |                          | <br>Bull Capital, Susa<br>c. 375 B.C. |
| Hammurabi<br>c. 1790-1750 B.C.   | Sack of Babylon by 19th law<br>c. 1500 B.C.   | Rise of Assyrian power  |  | Nebuchadnezzar II<br>600-562 B.C.  | Darius I<br>520-486 B.C. | Xerxes<br>485-465 B.C.   |
|  |   |   |  |  |                          | Battle of Issus<br>331 B.C.  |

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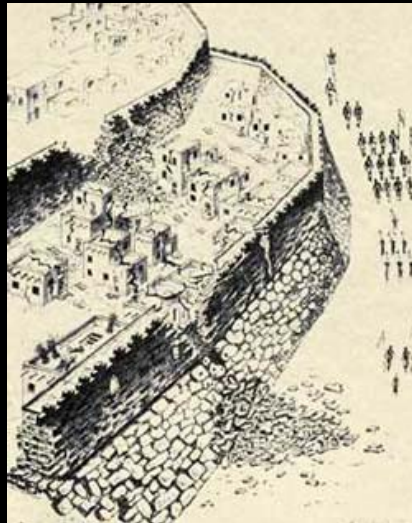
## Jericho (modern Jordan)-7500BCE

Ancient city surrounded by a 14' high wall and 10' thick

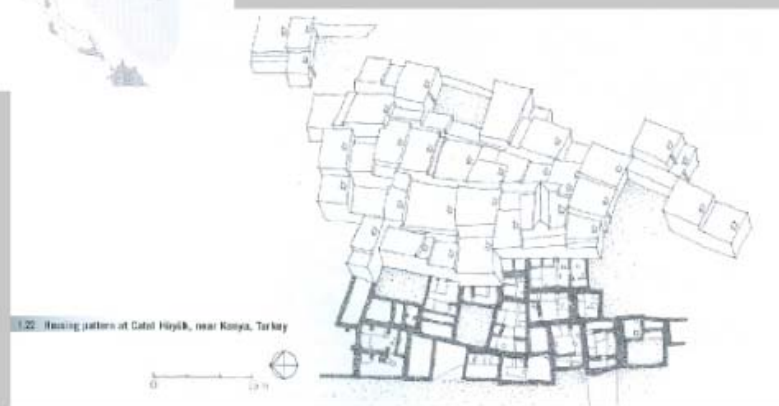
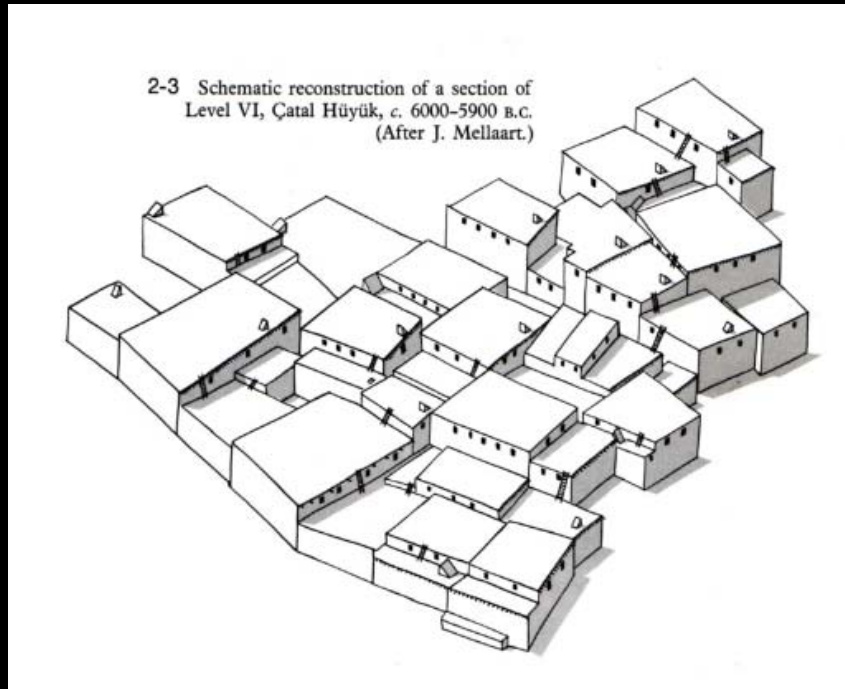
A tower was 25' tall – a lookout for invaders



## Jericho

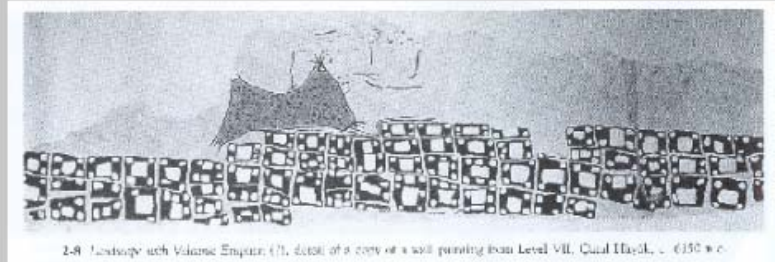


## Catal Huyuk, Anatolia, 6000-5900 BC



JARZOMBEC, CHING, & PRAKESH-A GLOBAL HISTORY OF ARCHITECTURE

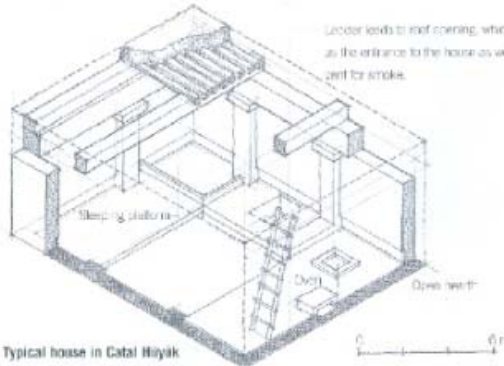
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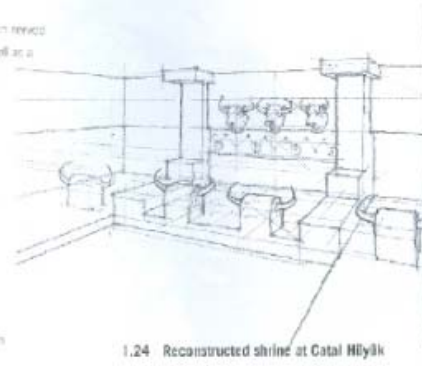
2-8 Landscape with Volcanic Eruption (1), detail of a copy of a wall painting from Level VII, Catal Hayek, c. 13500 B.C.

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3500 BCE



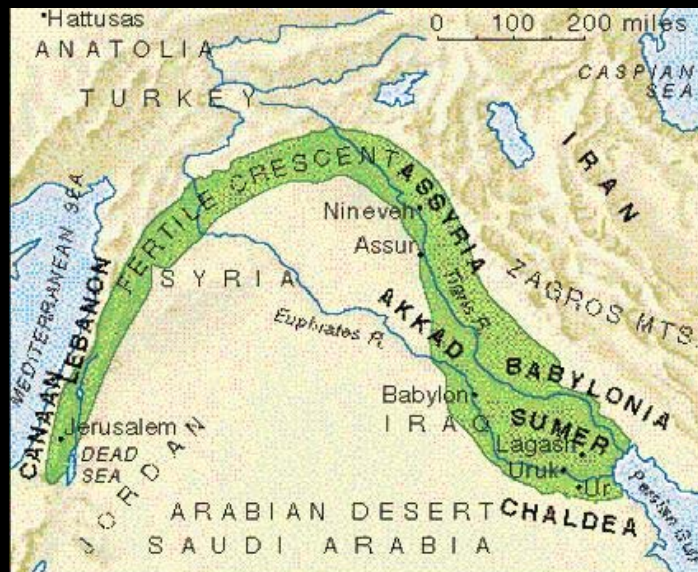
1.23 Typical house in Catal Hayek



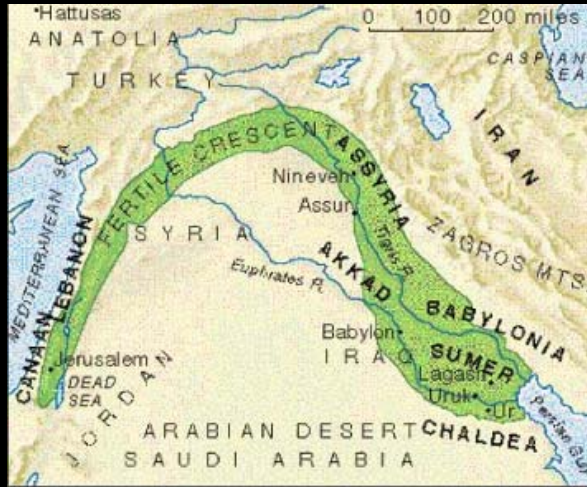
1.24 Reconstructed shrine at Catal Hayek

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**Mesopotamia:** (*means between rivers*) located on the plain between the Euphrates and Tigris Rivers, now Iraq. Civilization developed in the Fertile Crescent, benefiting from this agriculturally rich area.



**Sumer:** Early Sumerian culture developed and peaked in 3,300 BC. Lacking timber and stone, they used sun-dried mud bricks. These brick were structurally weak, so walls were made very thick.



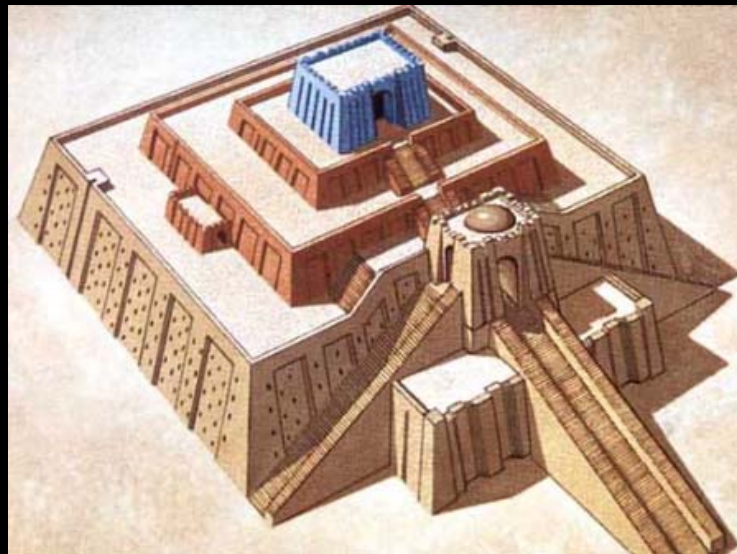
**Sumerians developed the first known written language.**

This was important for passing knowledge from generation to generation, and has been essential to the development of Civilization. The cuneiform script was first used for administrative records around 3100 BC.

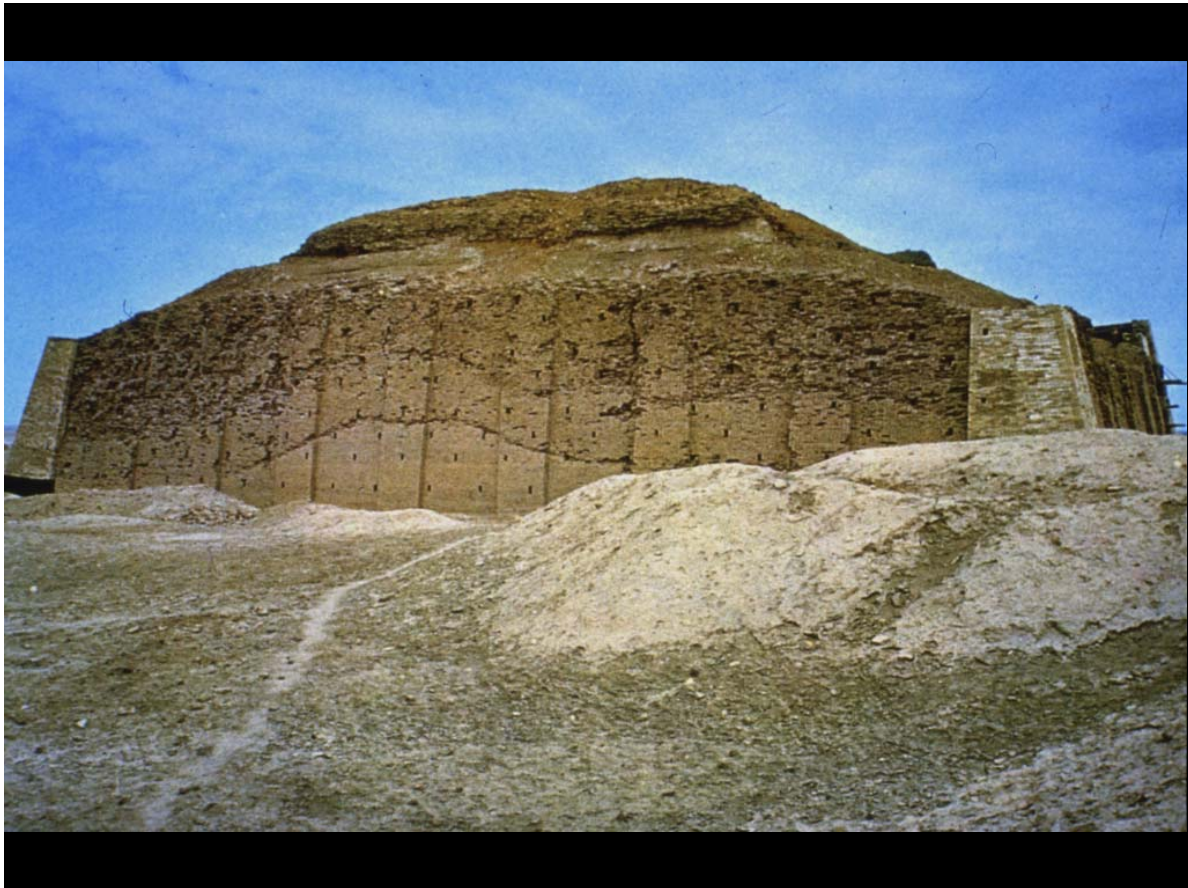
**Also, the Sumerians introduced new forms of art, monumental architecture, and politics to Mesopotamia.**

**Architecture of Sumer:** With only sun-dried mud bricks, they erected massive towers. These structures were the first monumental buildings designed.

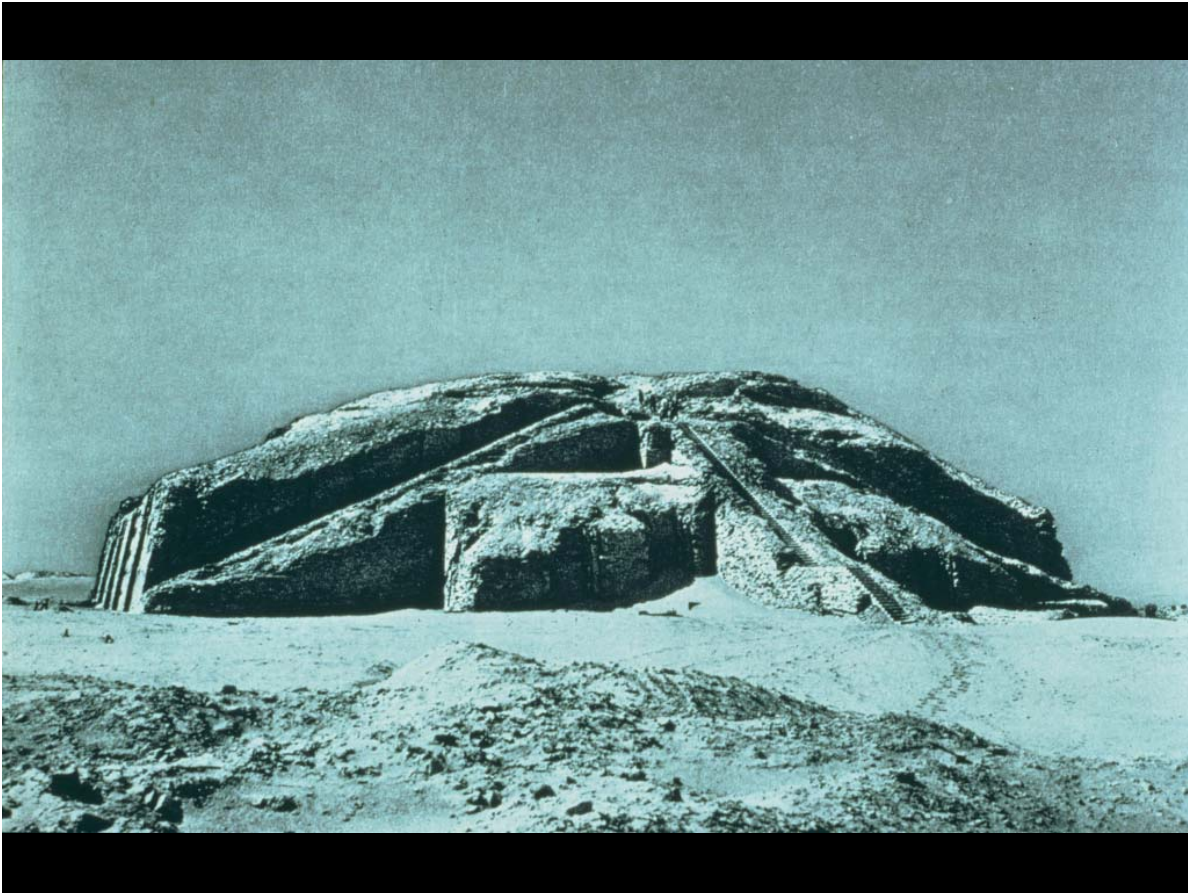
**The Ziggurat** was the major invention of the Sumerians. It is an imposing terraced tower with up to seven layers that rose over the newly settled cities. There was a temple on the summit. The king climbed the ziggurat to be with the gods. The Ziggurat also gathered together the central economic and administrative functions of the city.



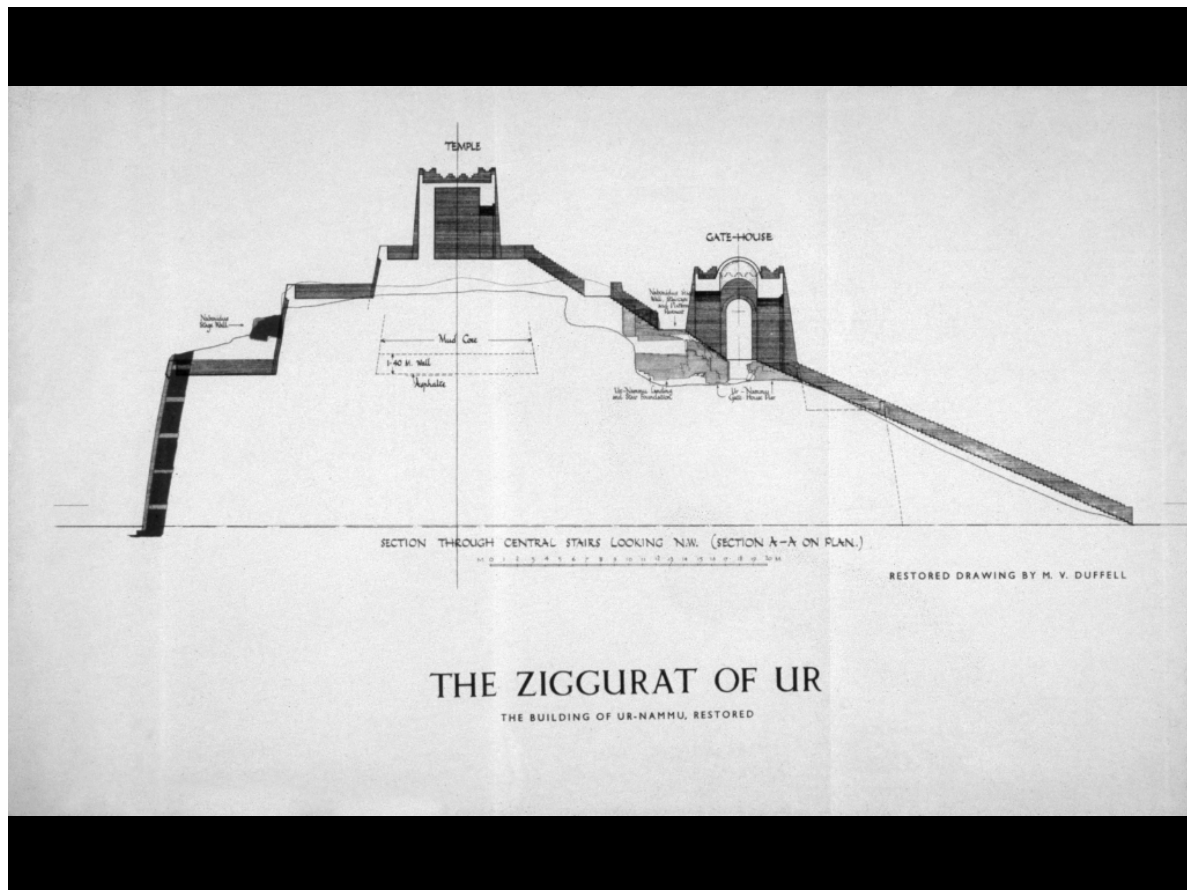
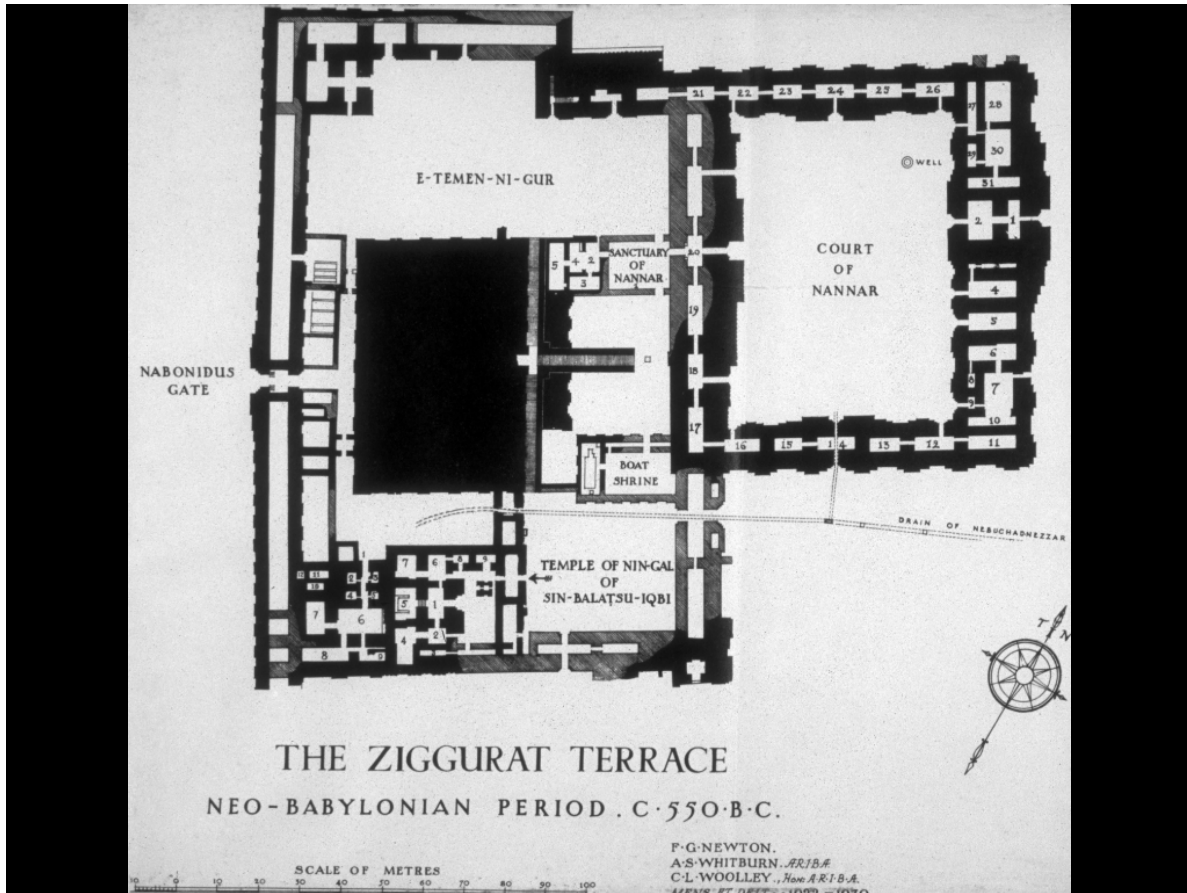
50 feet tall

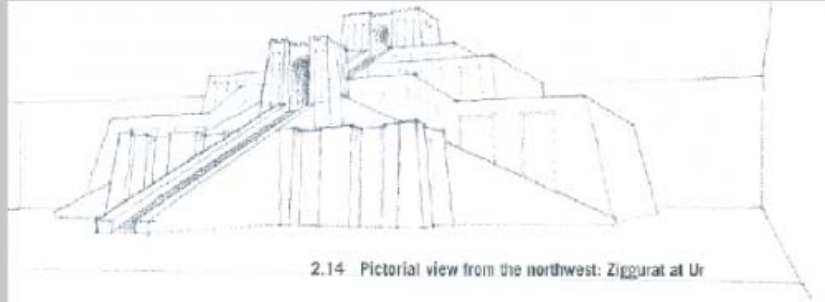








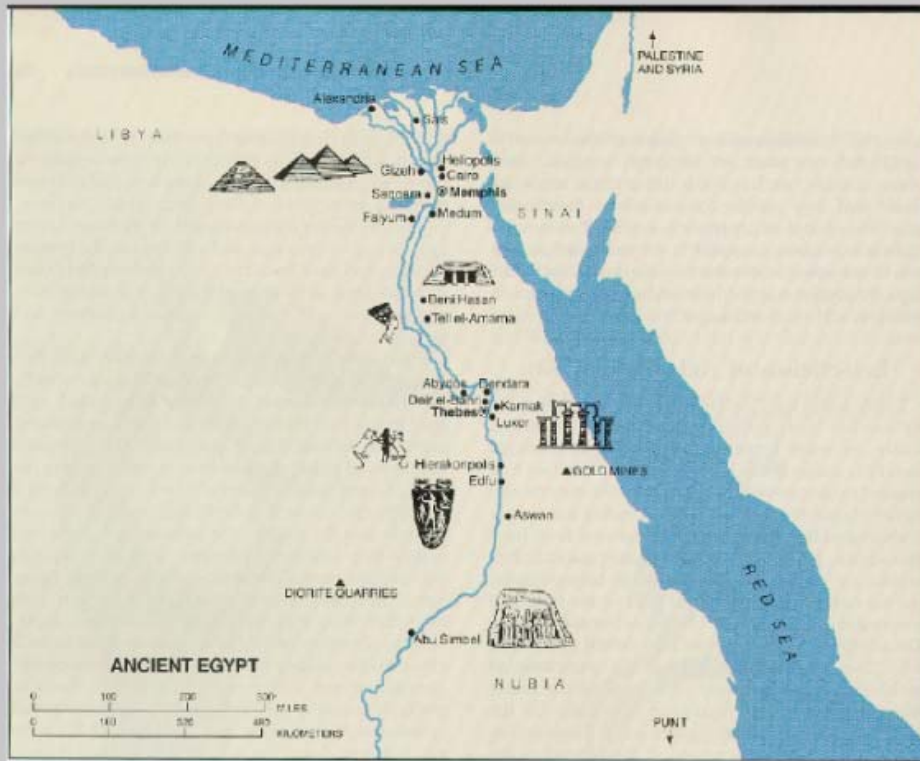




2.14 Pictorial view from the northwest: Ziggurat at Ur

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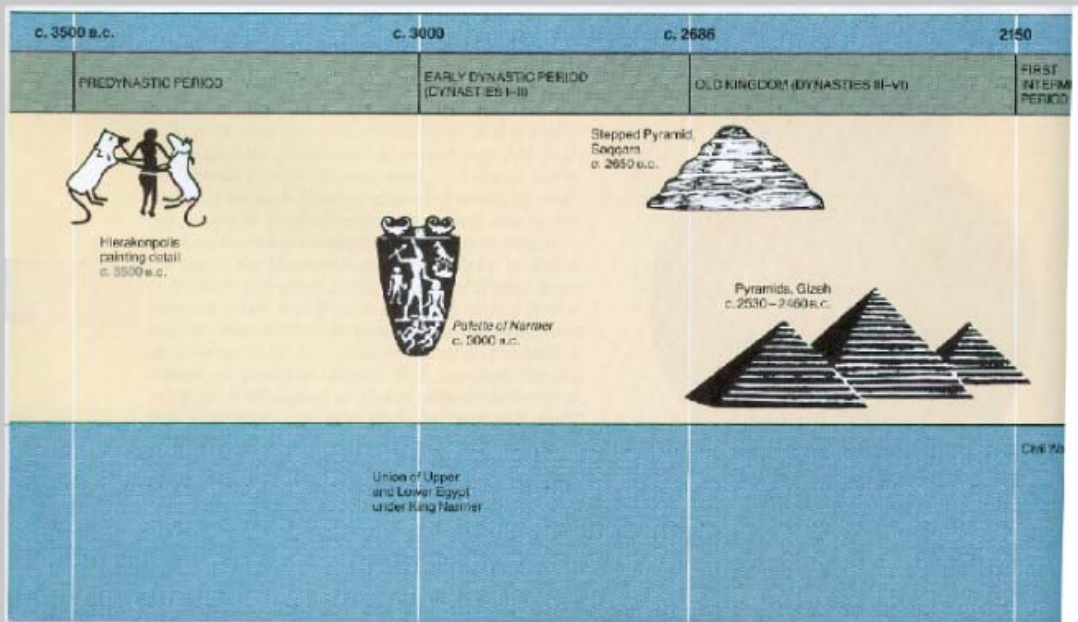


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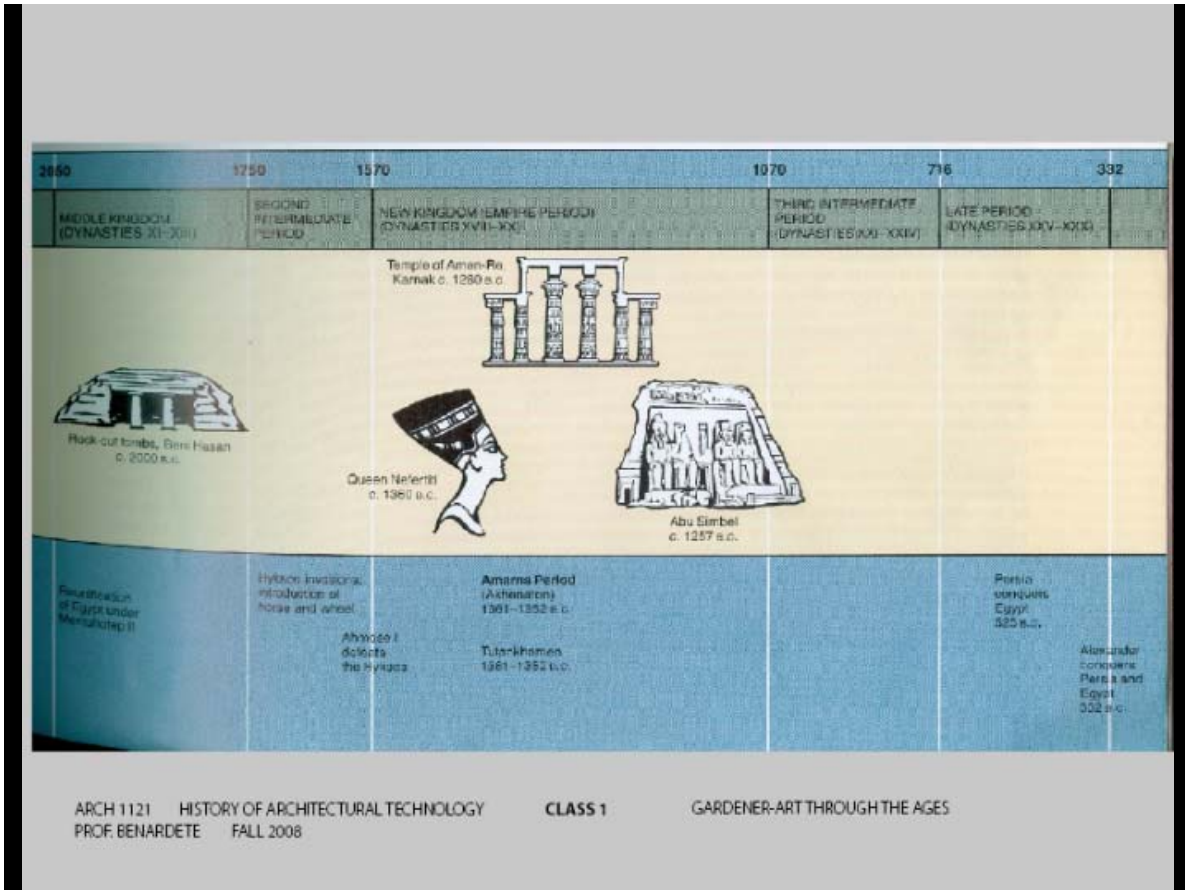
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**Egypt:** Ancient Egypt thrived for over 3000 years (3100BC-30BC).

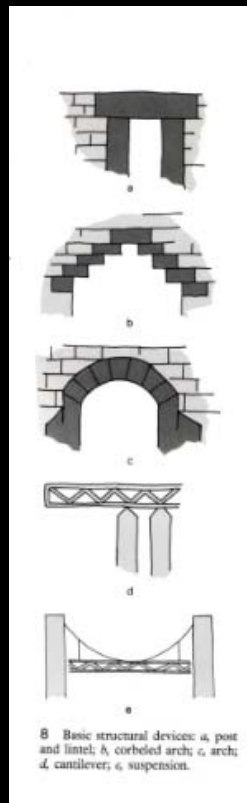
Flat plains of the desert and the Nile were the setting for the great architecture of the ancient Egyptians.

Ancient Egypt was a highly advanced civilization where the kings, known as pharaohs, were believed to be gods or the Messenger of the gods.

Egyptians believed that immortality for the pharaohs depended upon adequately providing for the deceased.

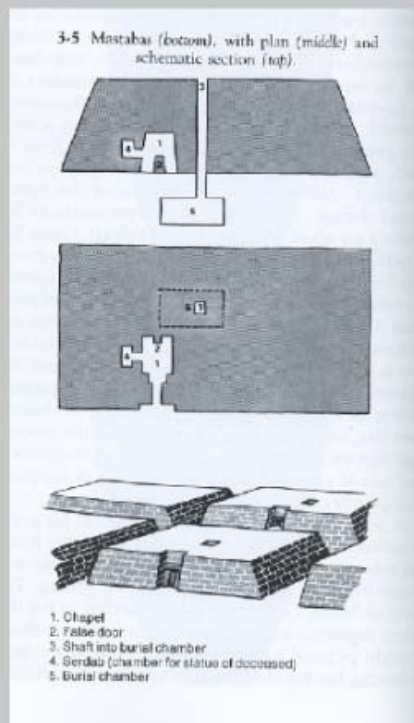
## Egypt's contribution to architecture:

- The first large scale dressed stone buildings
- Pure geometric forms such as the pyramid
- Fine craftsmanship
- Invention of the column, obelisk, capital, cornice, & pylon



# Mastabas:

- Mastabas were the beginning of the pyramids
- means "bench" in Arabic
- It was a flat topped rectangular tomb
- First made of sun dried bricks and later solid rock, with shafts and passages leading to subterranean crypt

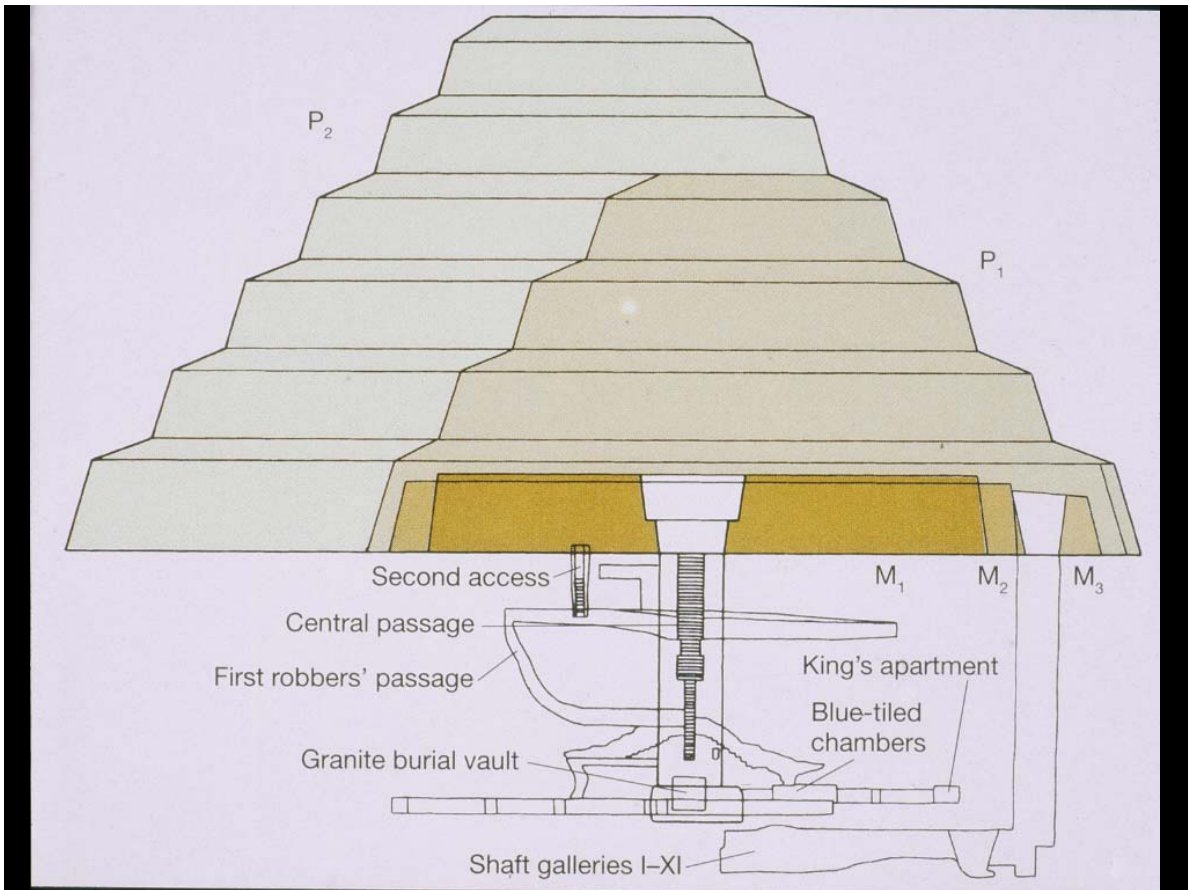


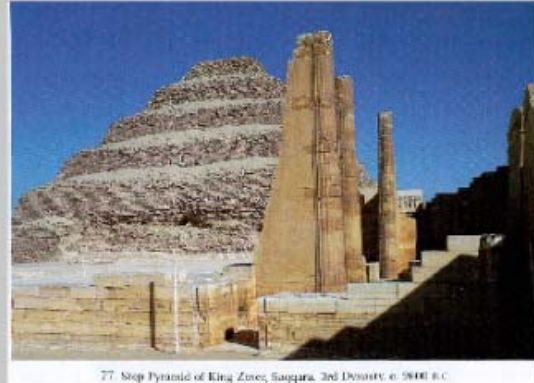
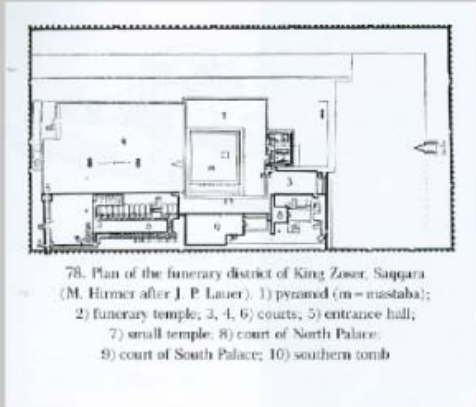


## Stepped Pyramid of Zoser: (2778 BC)

- Designed by Imhotep – 1st known Architect
- Receding stack of 6 stone mastaba rising over 200' high
- Tomb for King Zoser
- Image of stone stairway rising to the heavens



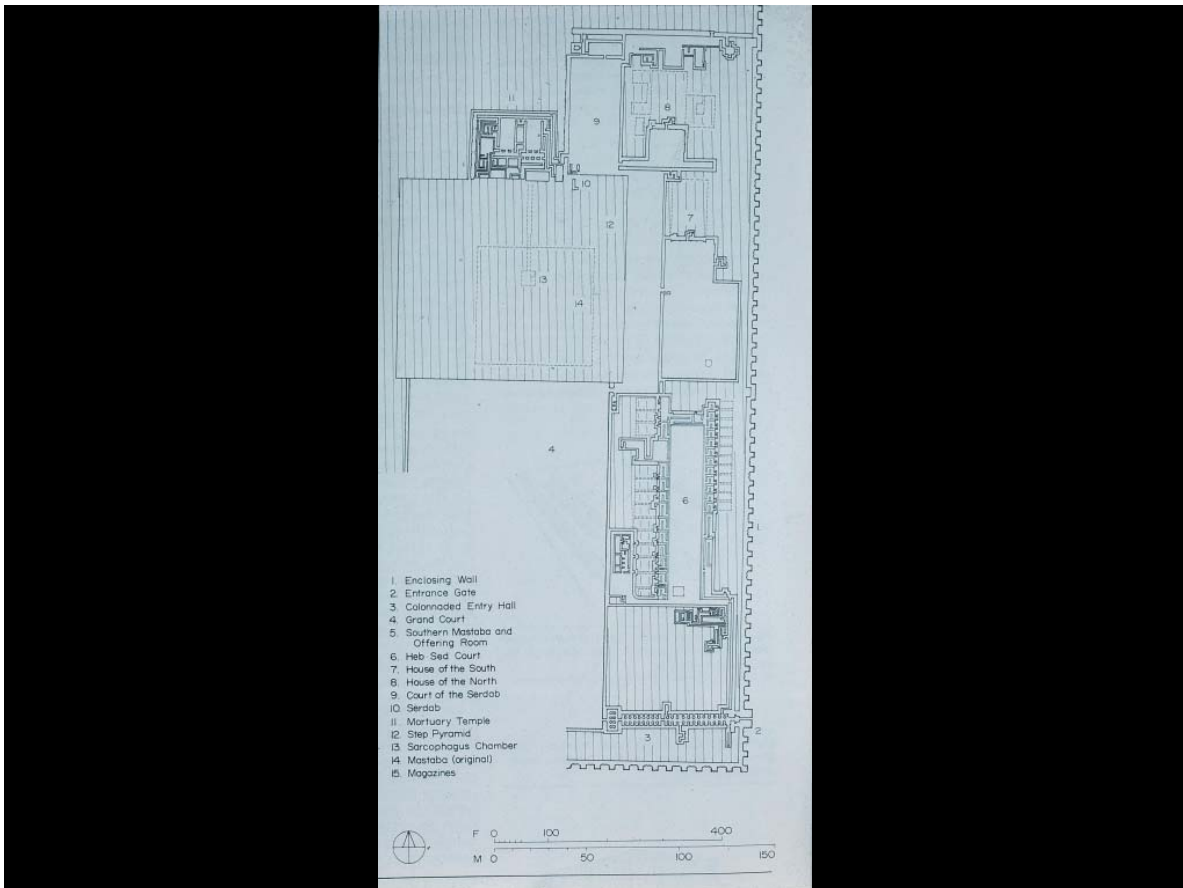


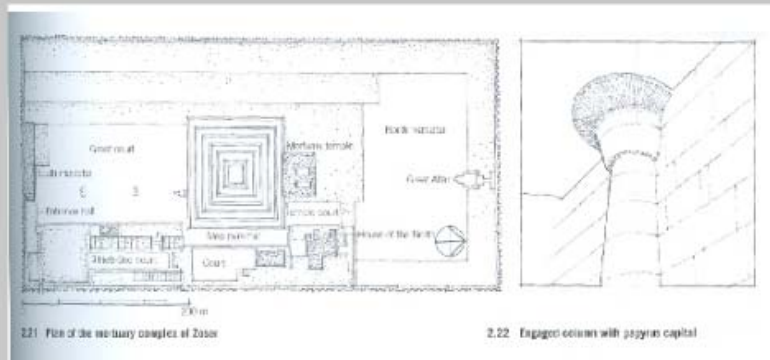
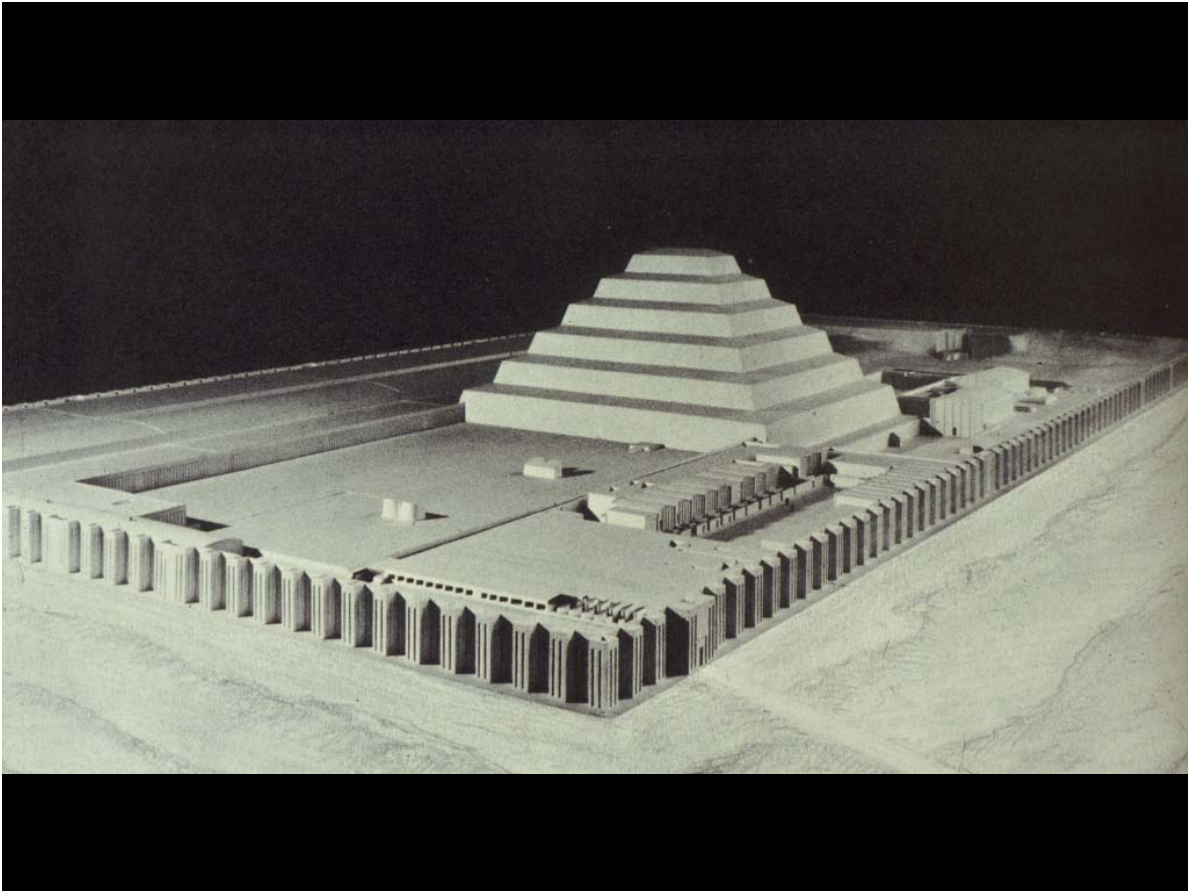


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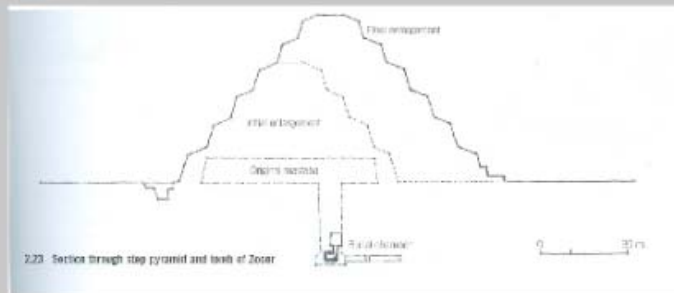
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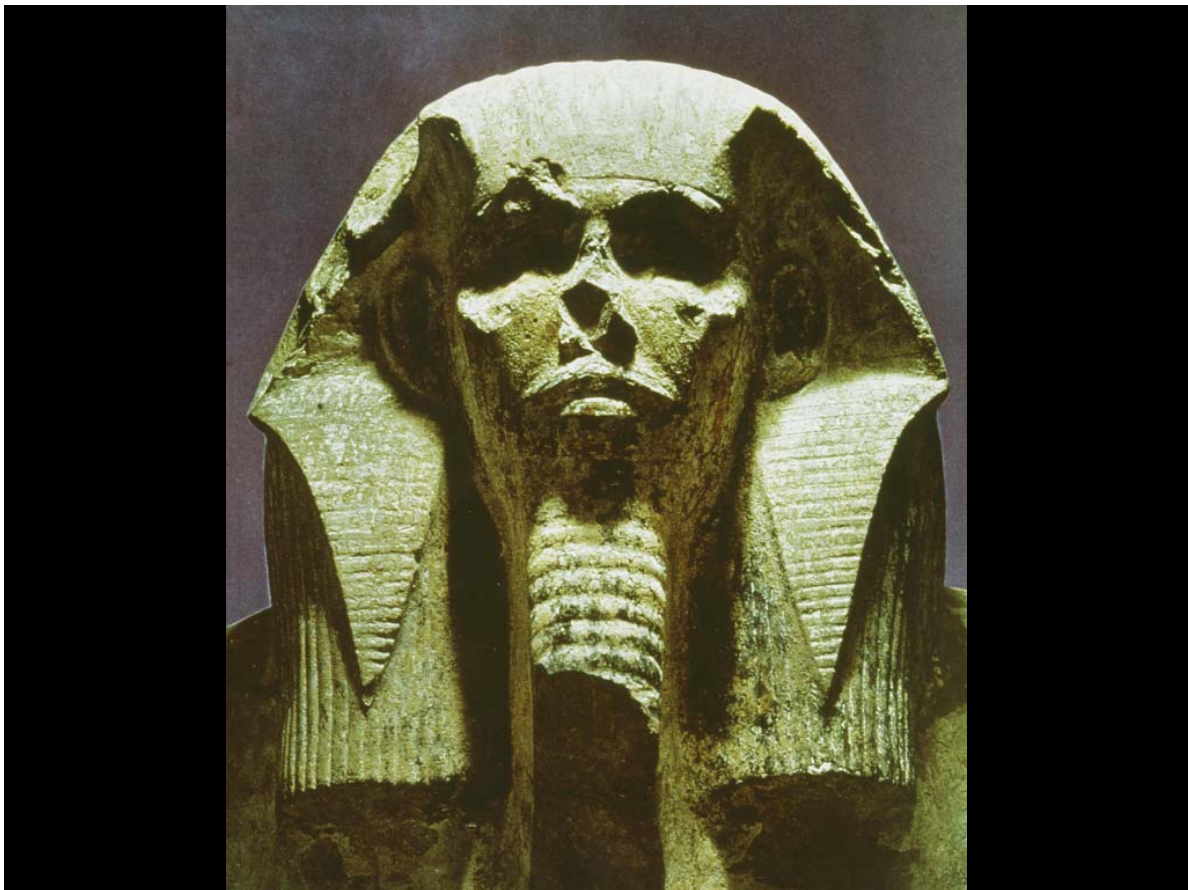


2.21 Floor of the walled complex of Zoser

2.22 Engaged column with papyrus capital

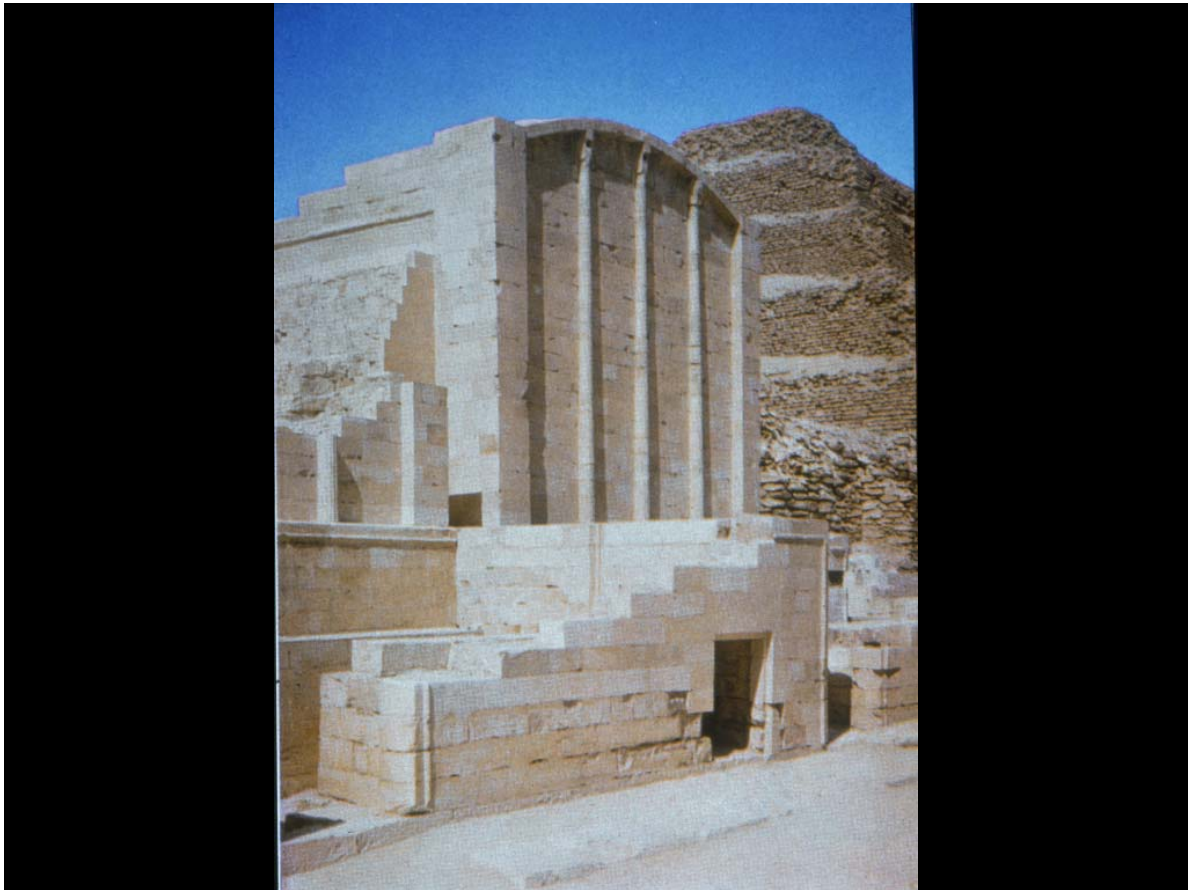
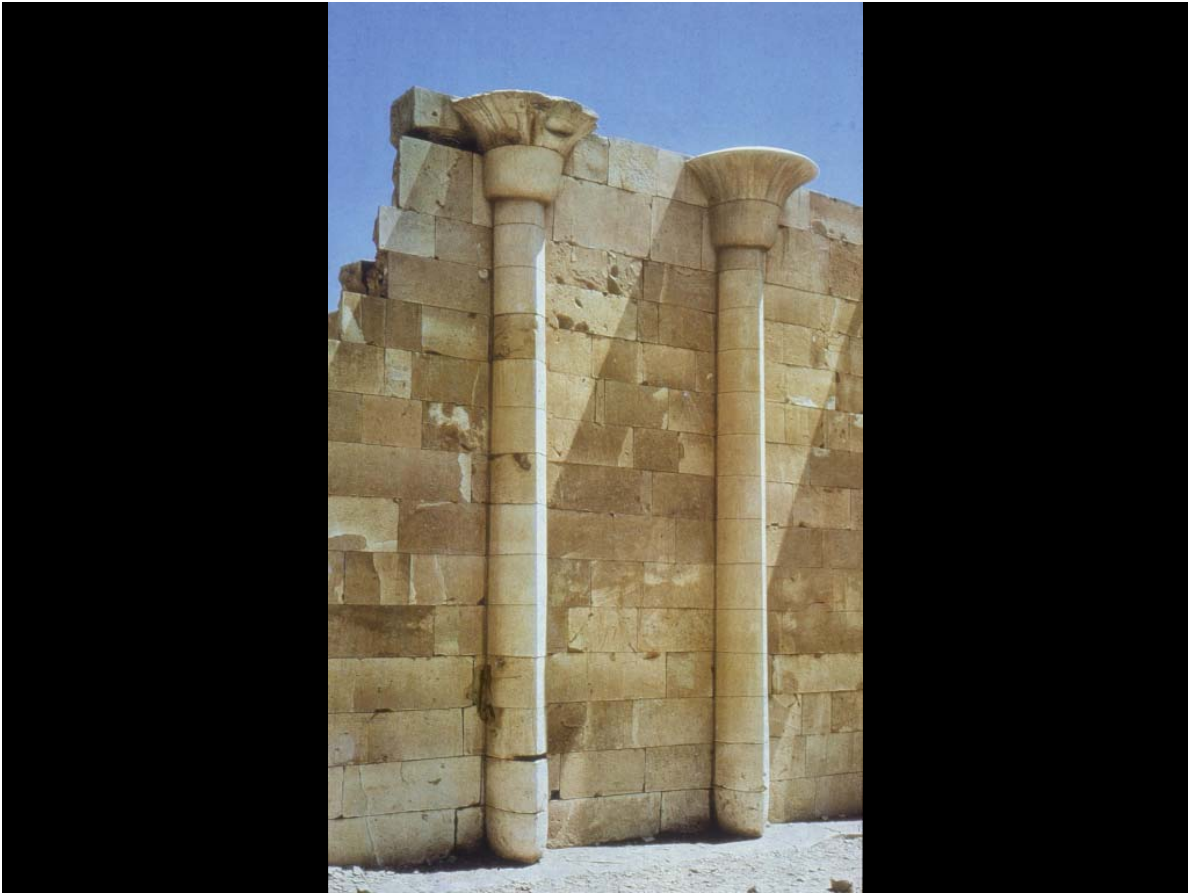


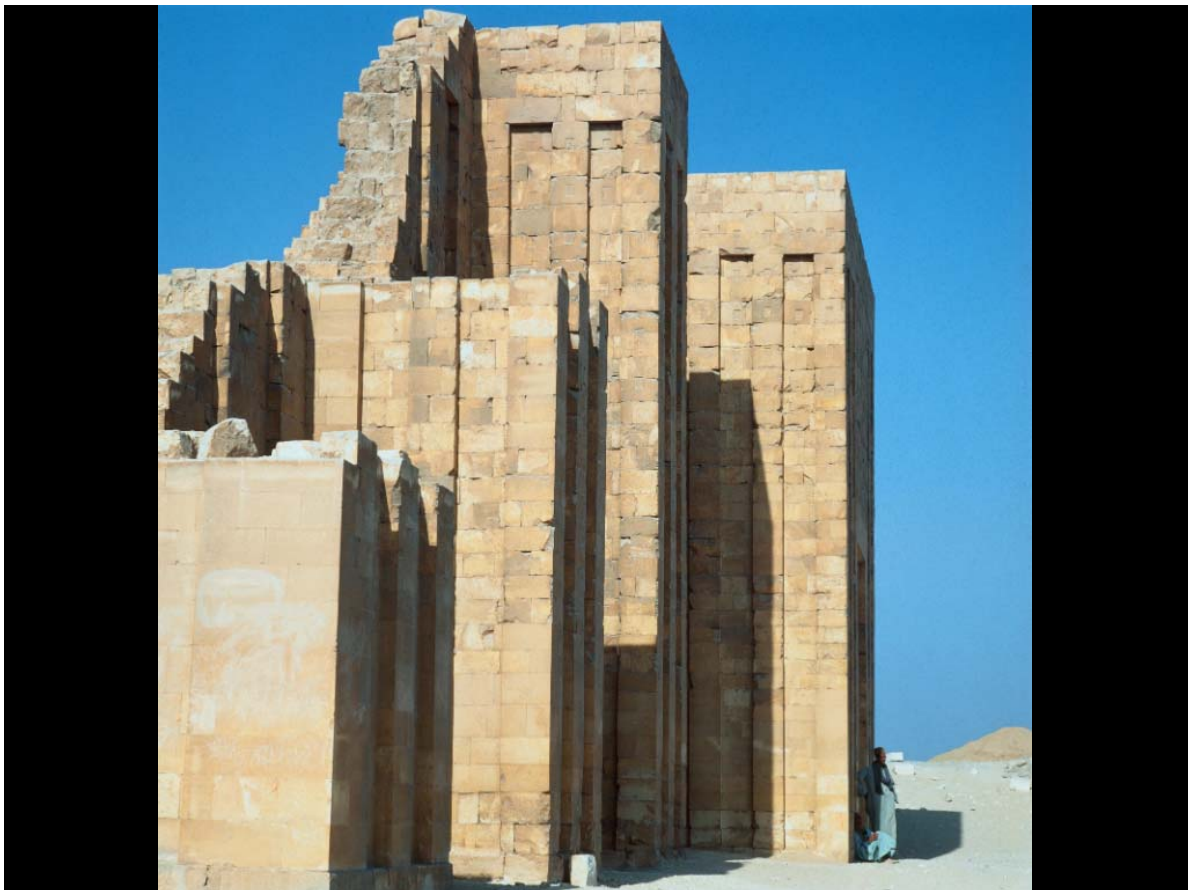
2.23 Section through step pyramid and tomb of Zoser





79. Papyrus half-columns, North Palace,  
Funerary district of King Zoser, Saqqara

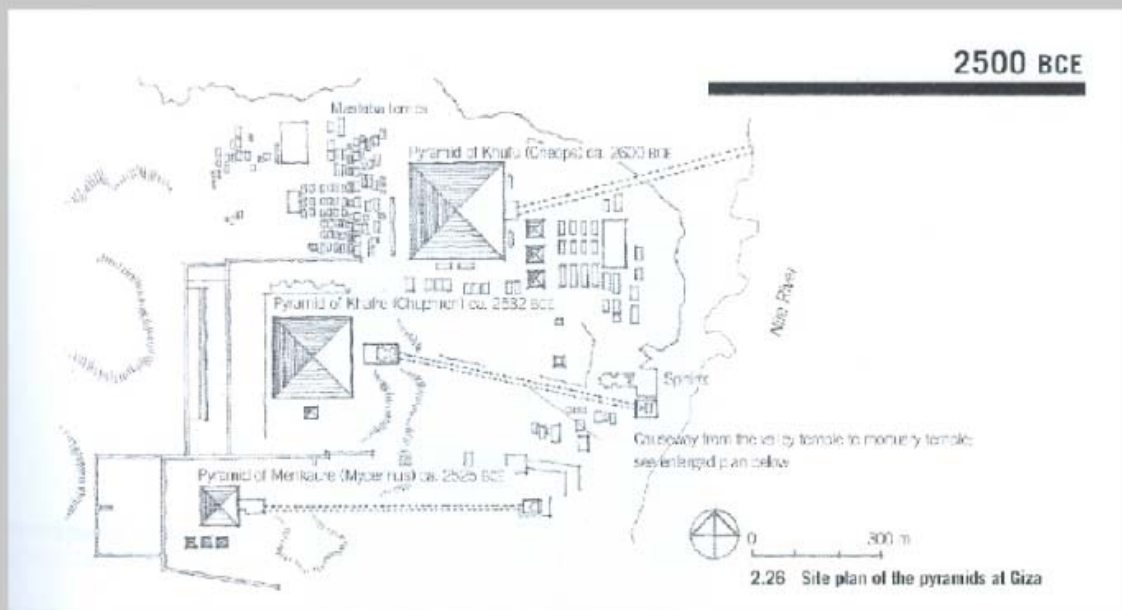
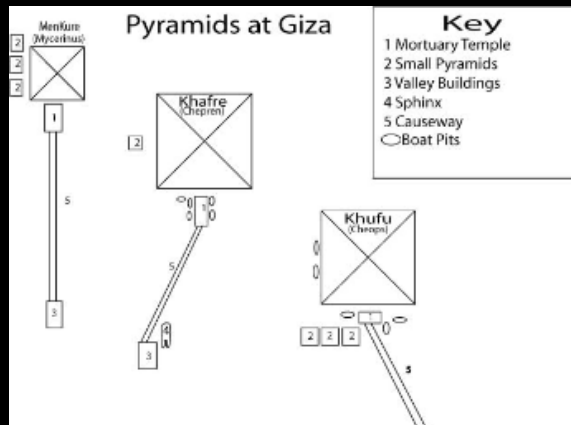






# Great Pyramids of Giza: (2560BC)

- Built for Pharaohs Cheops, Chephren and Mycerinus
- Four equilateral triangles, base is exactly squared
- Originally encased in white limestone with a gold capstone
- Each side oriented to a point of the compass



**Man fears Time, yet Time fears the Pyramids**  
*Arab proverb*

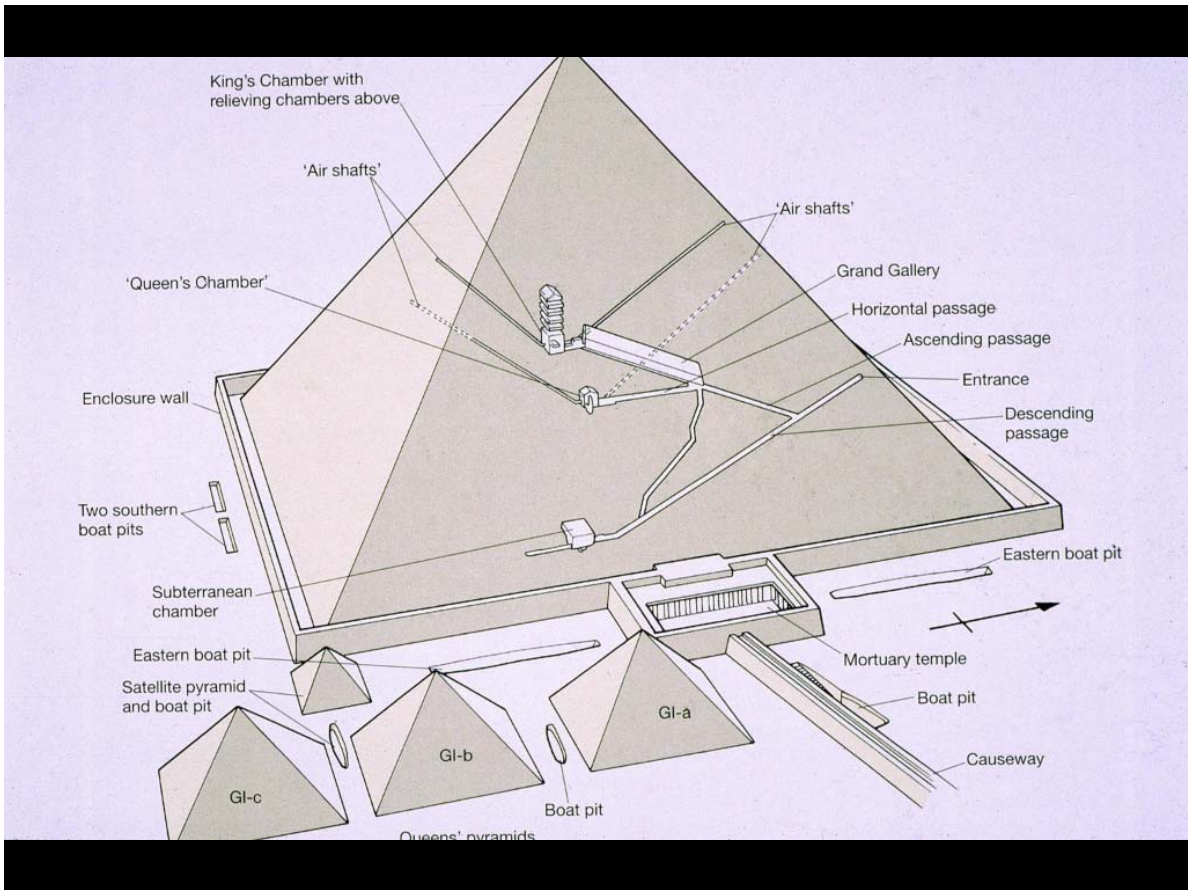
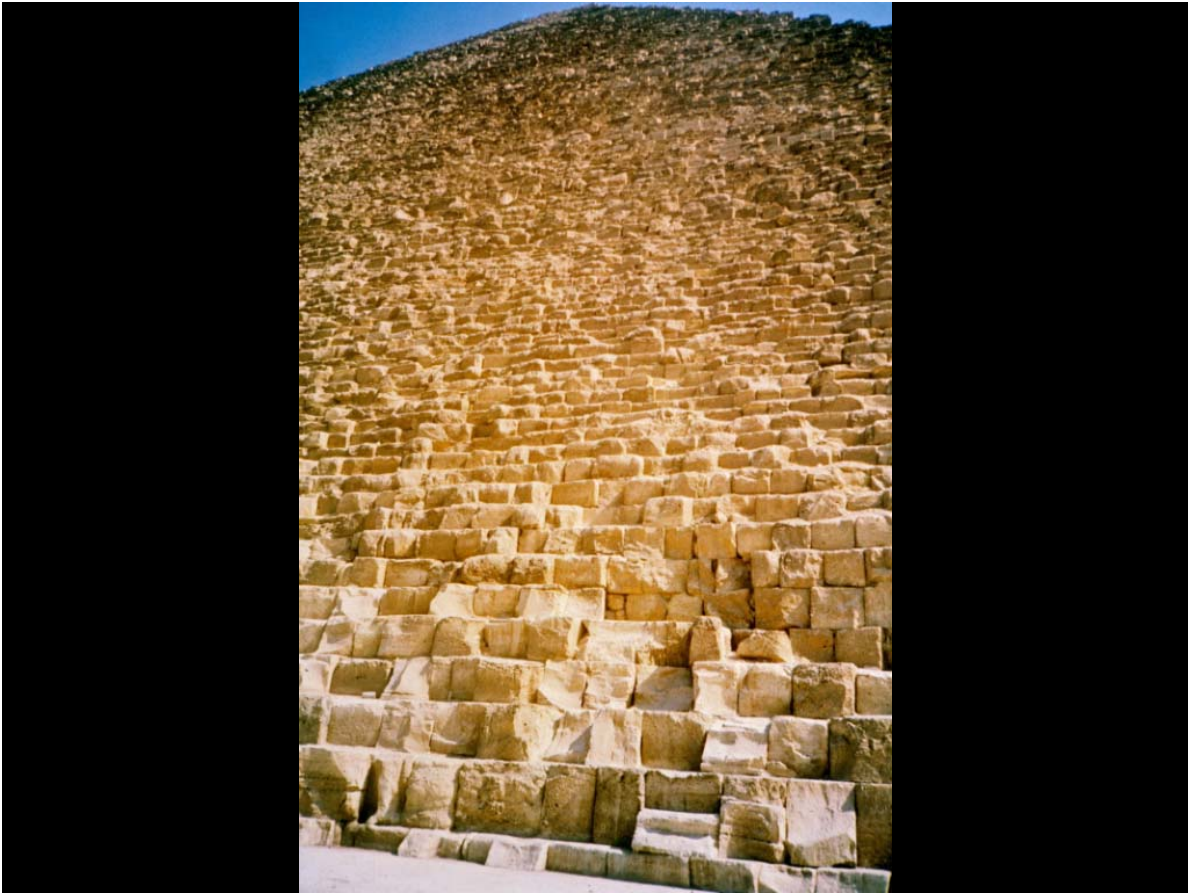
## Great Pyramid: (Cheops, 2589-2566 BC)

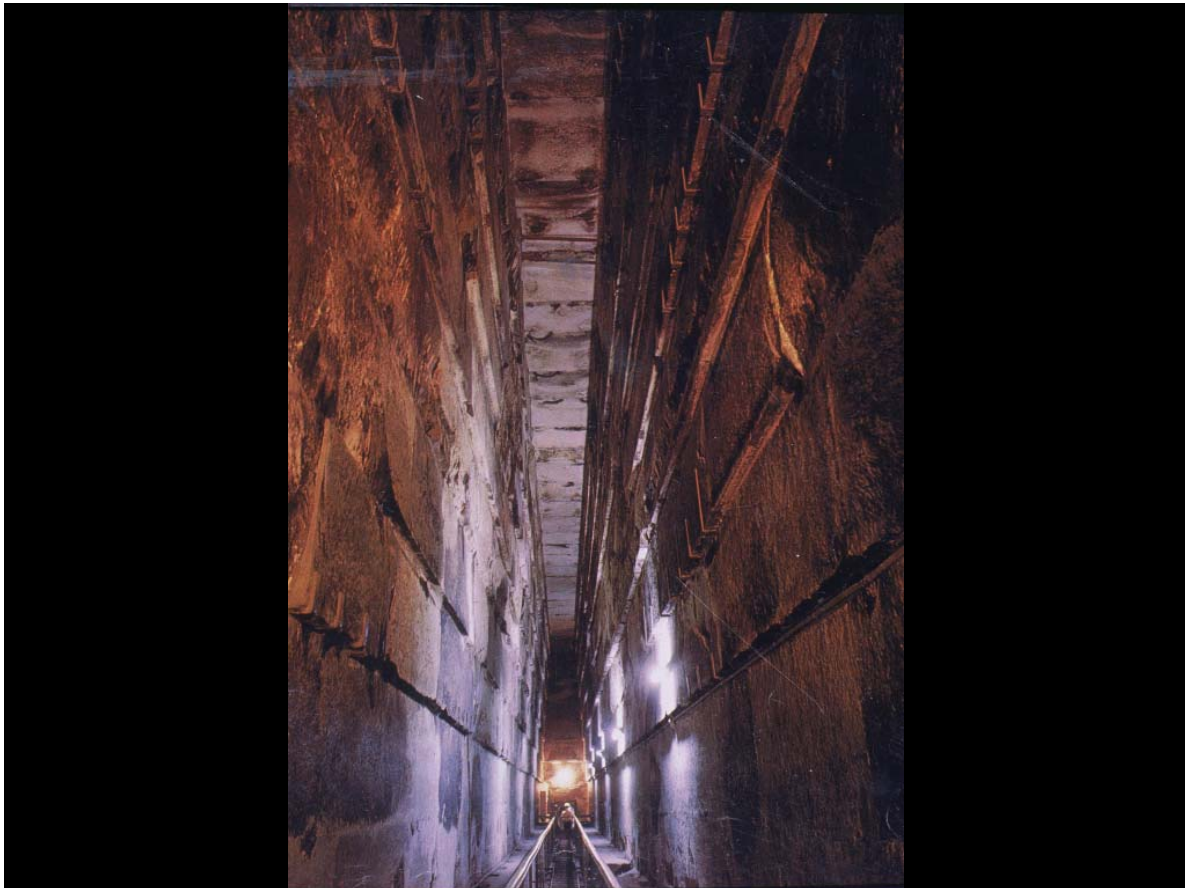
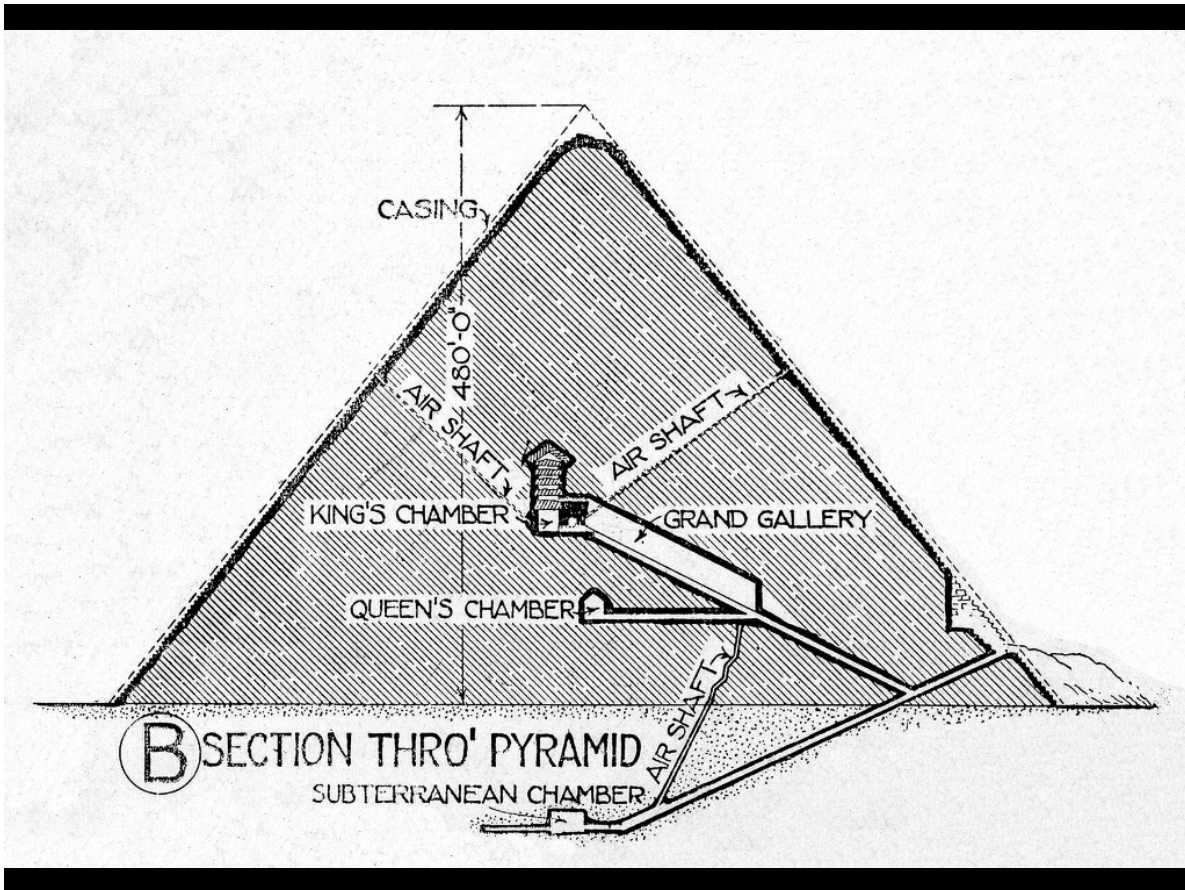
- 2,300,000 blocks of granite and limestone
- Each block weighing 2 tons = 4000 lbs
- Stacked 201 tiers = 481' high
- Base is 13 acres square











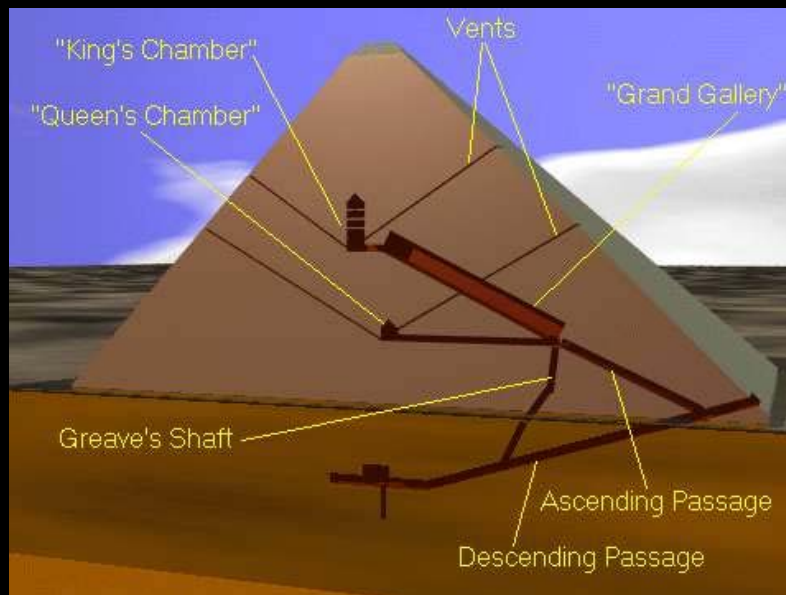
## Pyramid Construction

- When the Nile flooded each Fall, the farmers became able to help with labor of the pyramids
- Used the Nile to float the stones on barges from the quarries
- Also used huge earthen ramps that wrapped around the pyramids. They were removed after completion.

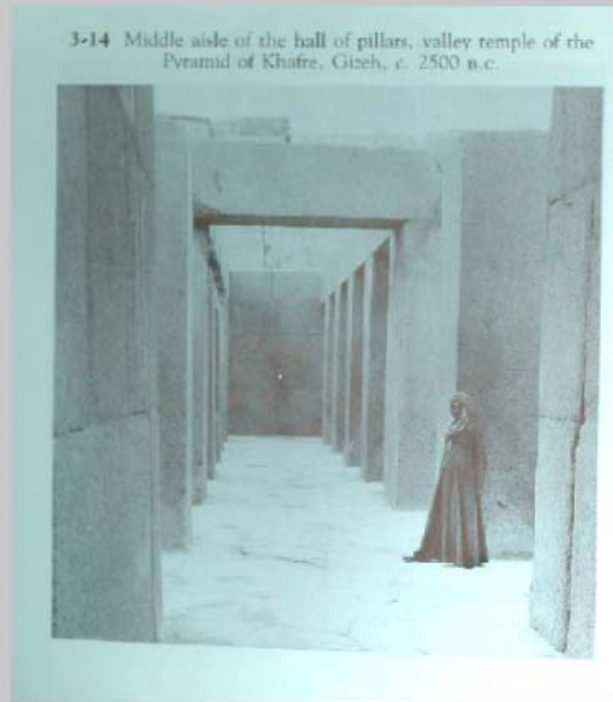
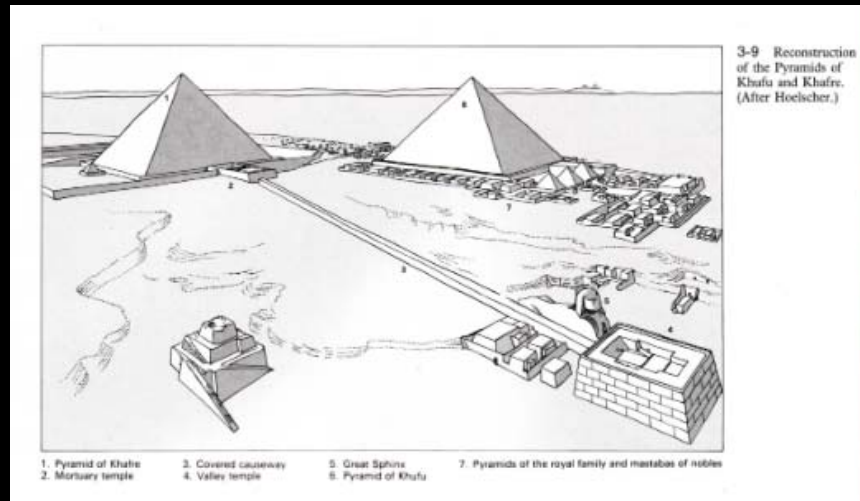


- A partitioned ceiling with triangular arches deflects loads

## Pyramid Organization



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## Temples: *“House of Death”*

- Pyramids were continually being looted by grave robbers
- Pharaohs created mortuary temple complexes with tombs cut directly in the cliffs

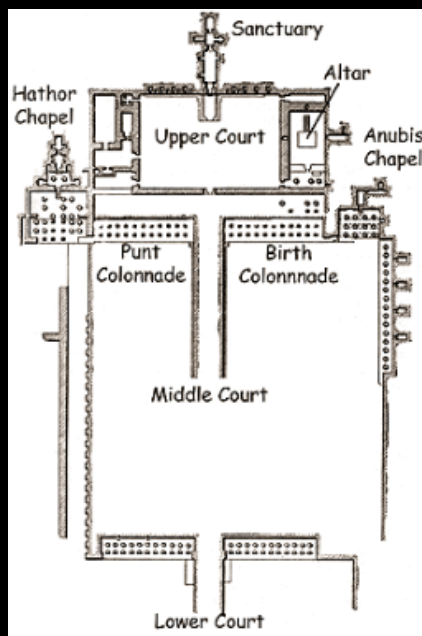
## Queen Hatshepsut’s Mortuary Temple: (1450 BC)

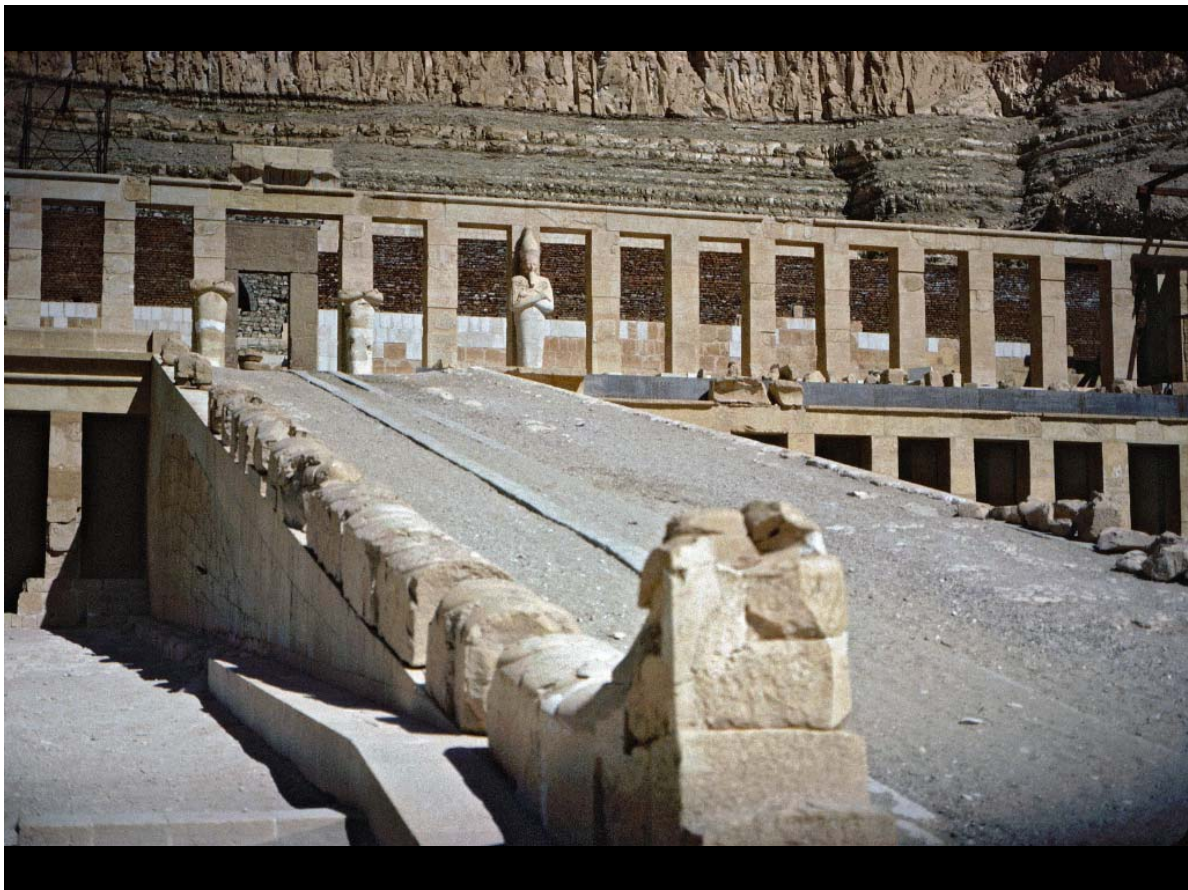
- This temple breaks with traditional Ancient Egypt Architecture  
Colonnaded limestone terraces, linked with gentle sloping ramps, set in the mountains

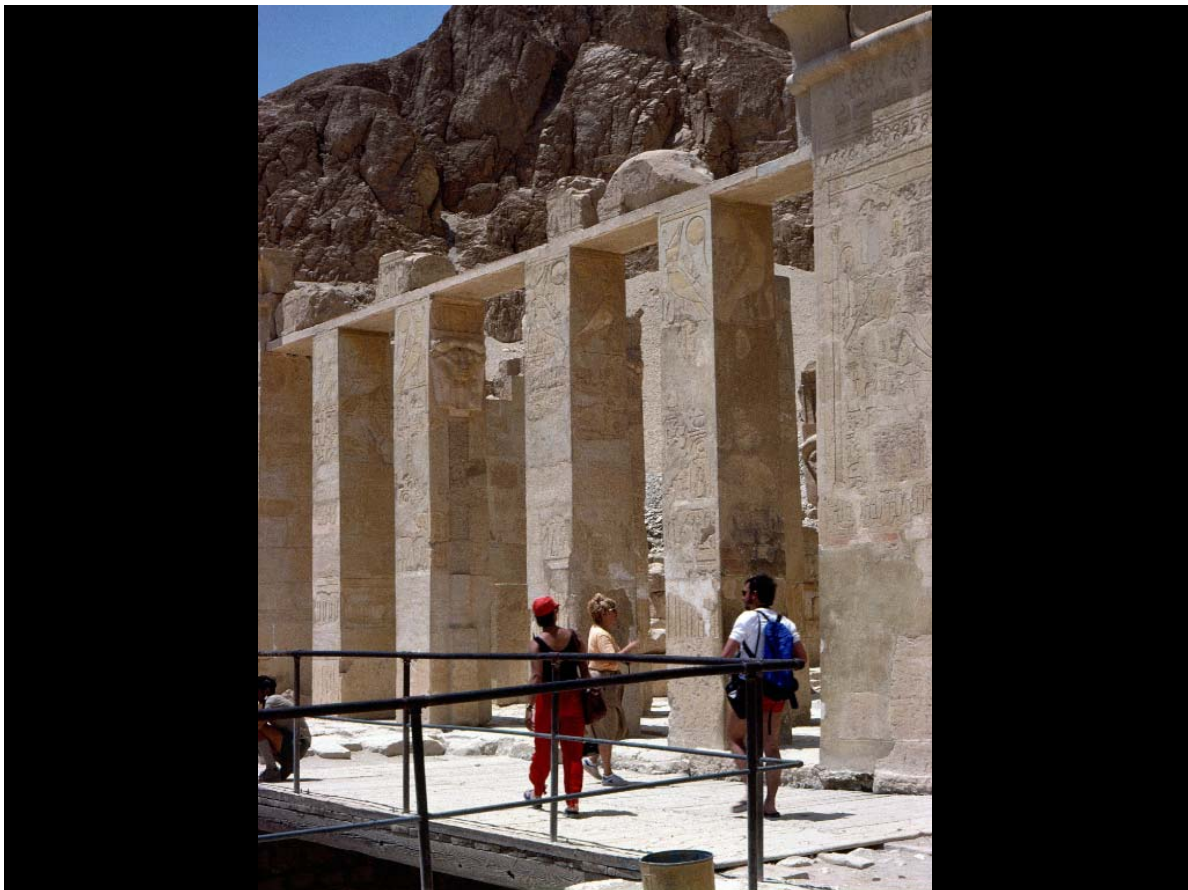


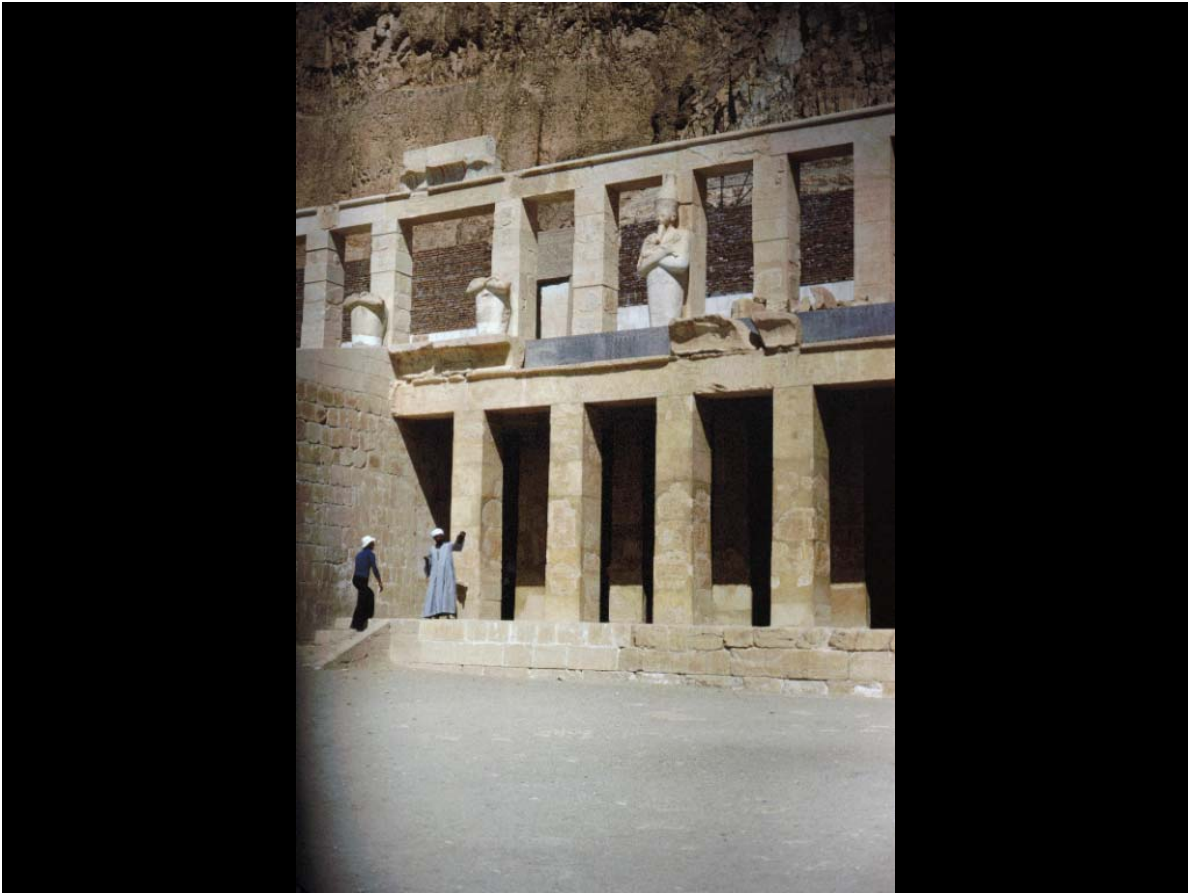


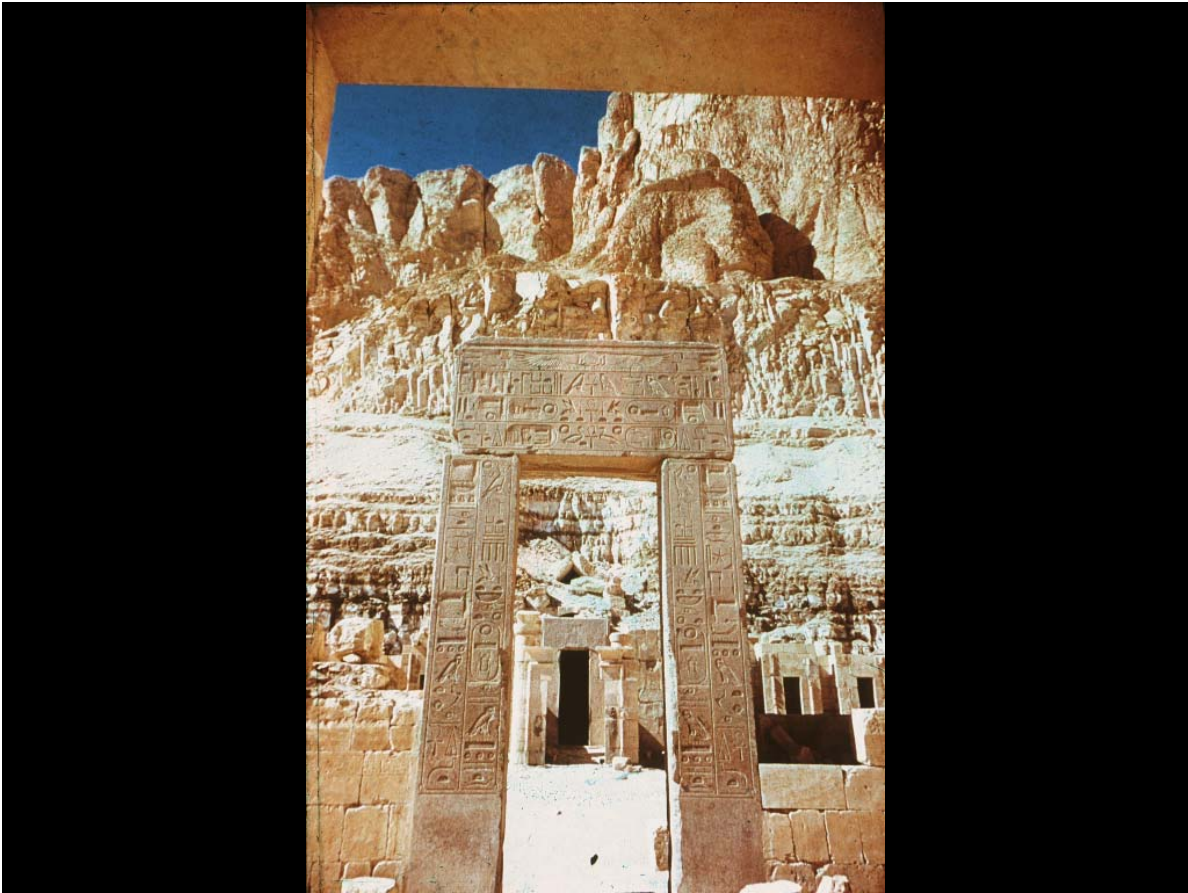
## Queen Hatshepsut's Mortuary Temple: (1450BC)



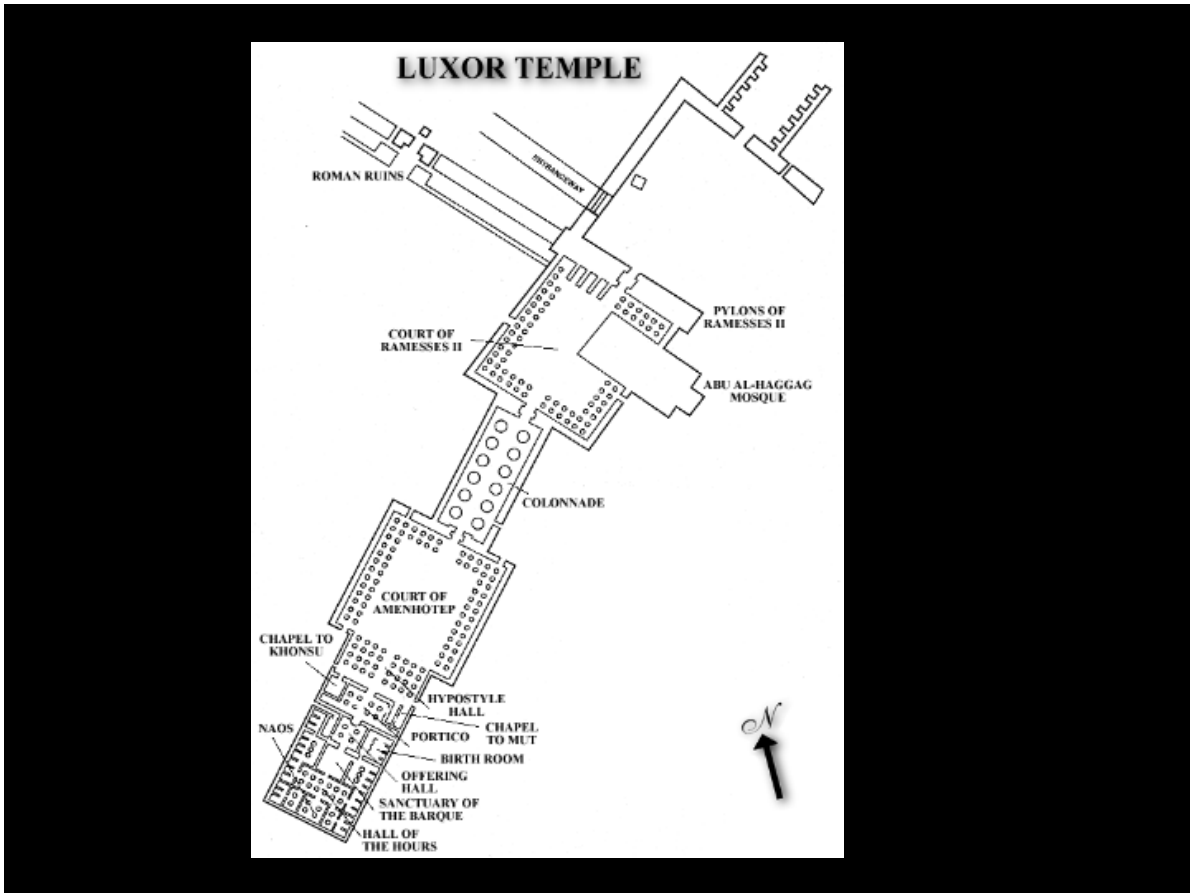




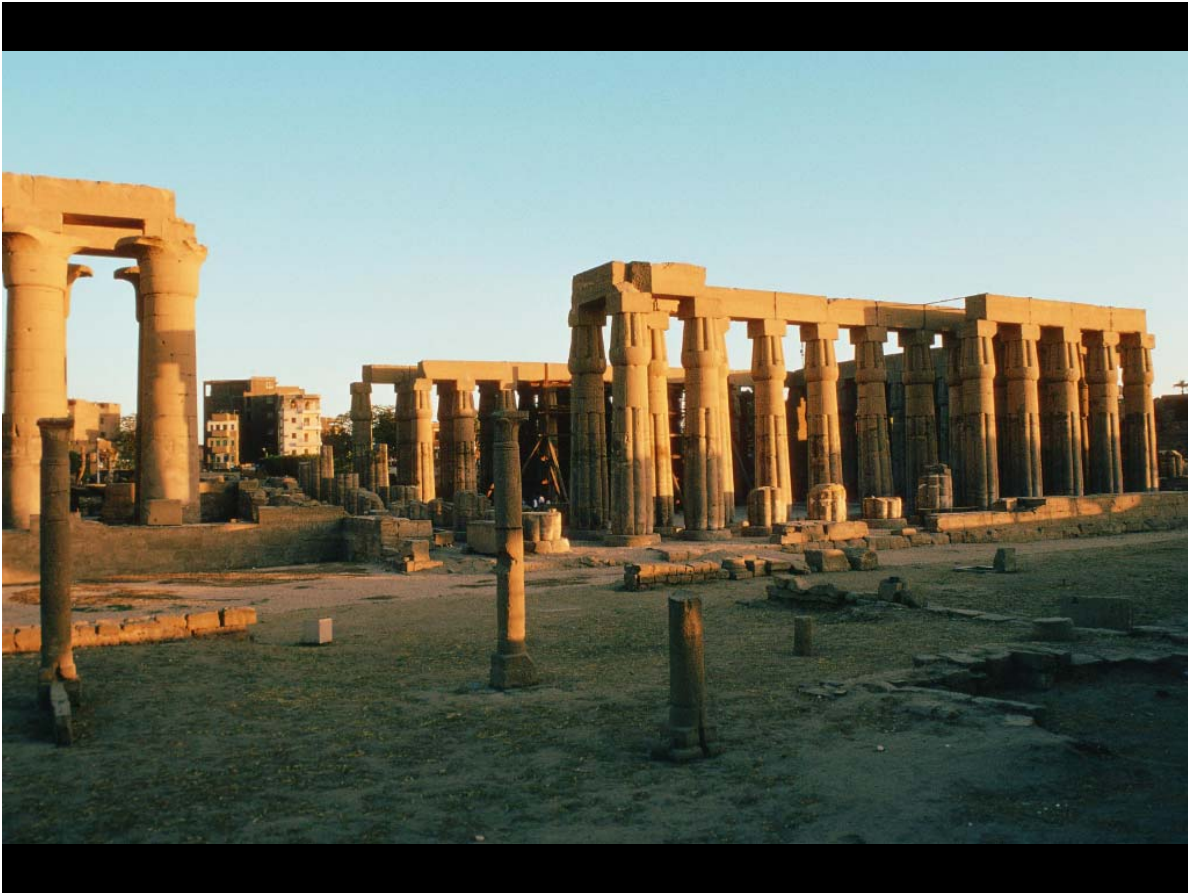


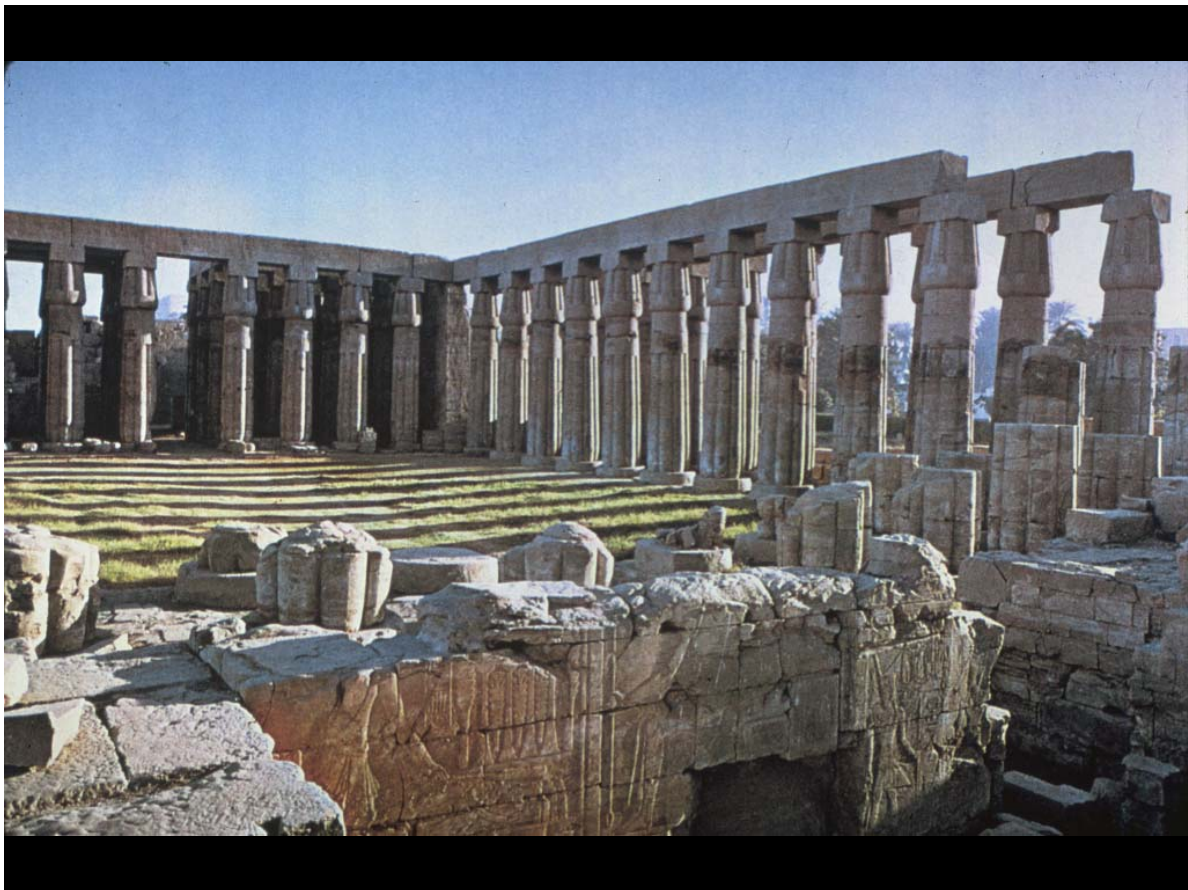
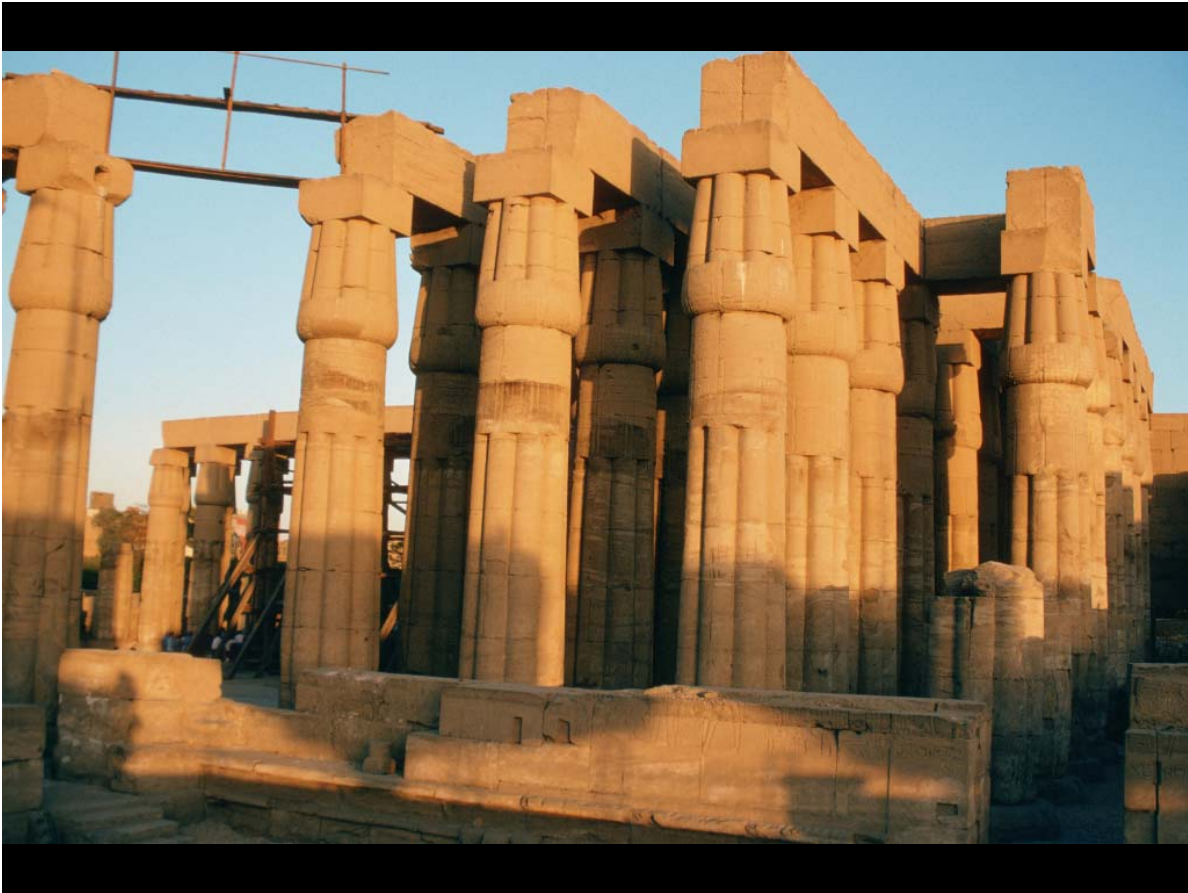


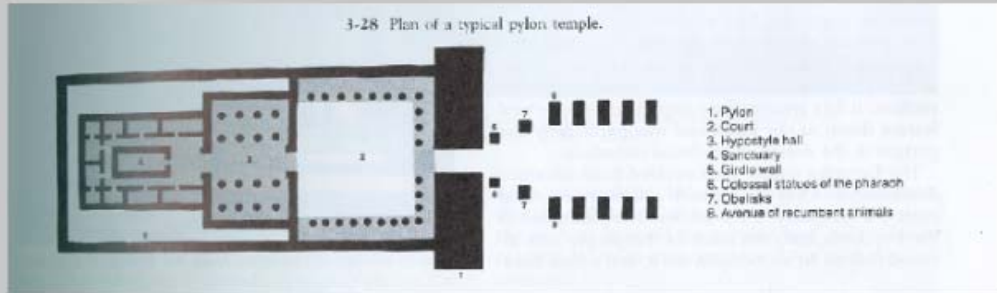








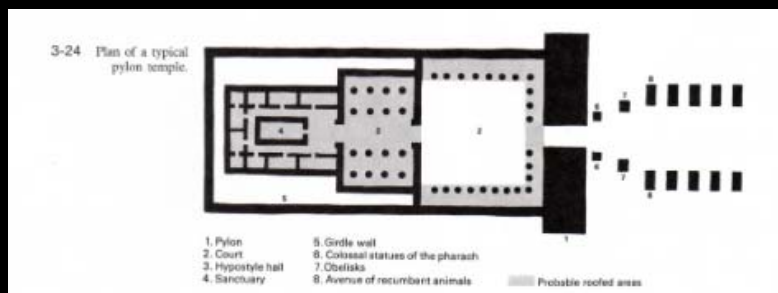




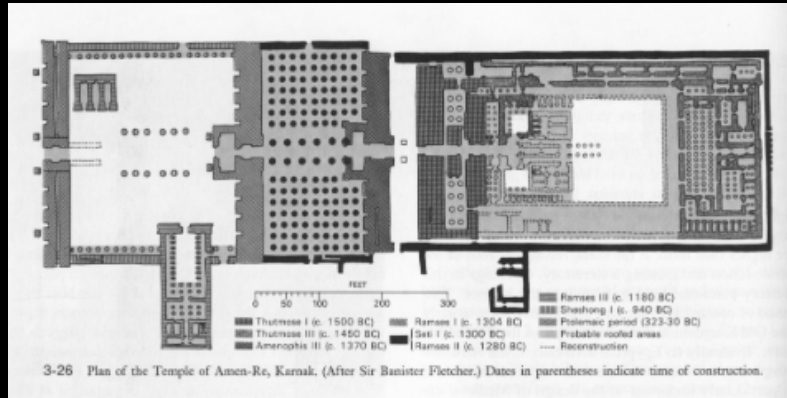
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## Temple of Amen at Luxor



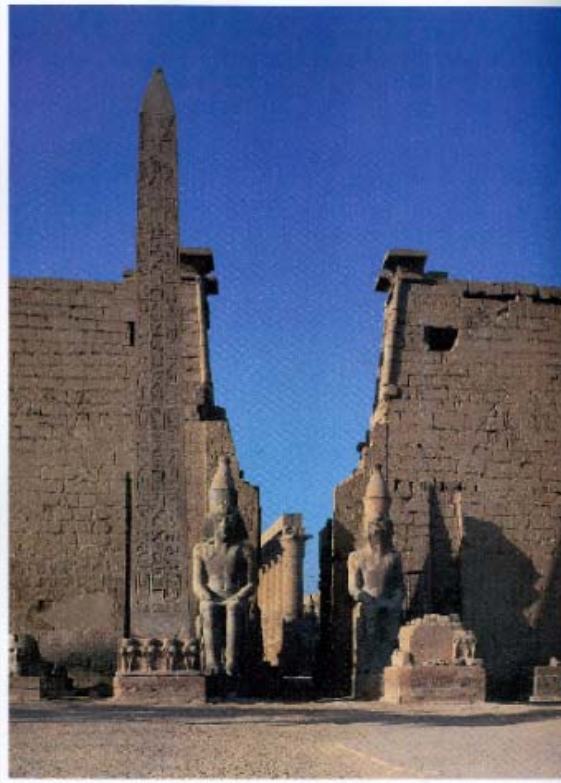
Temple of Amen Re at Karnak 1500-30 BC.



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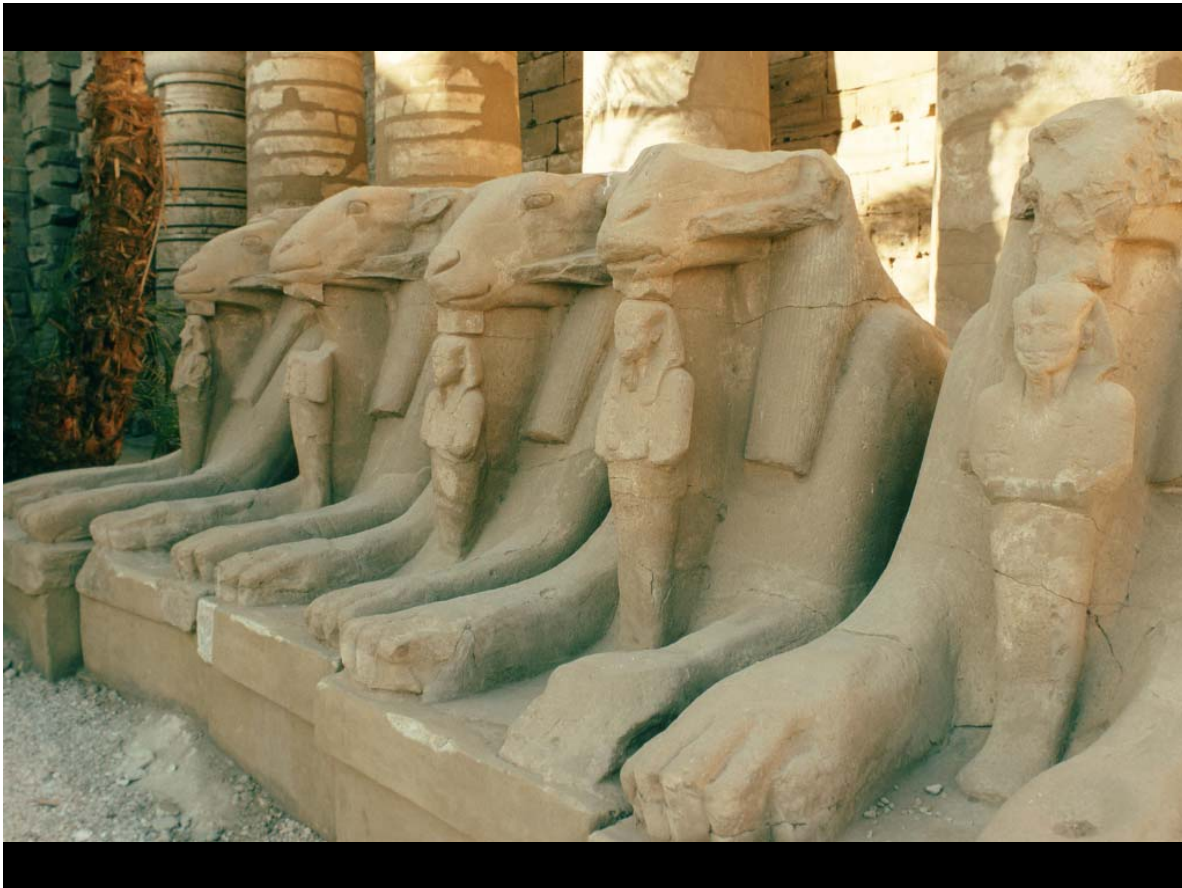
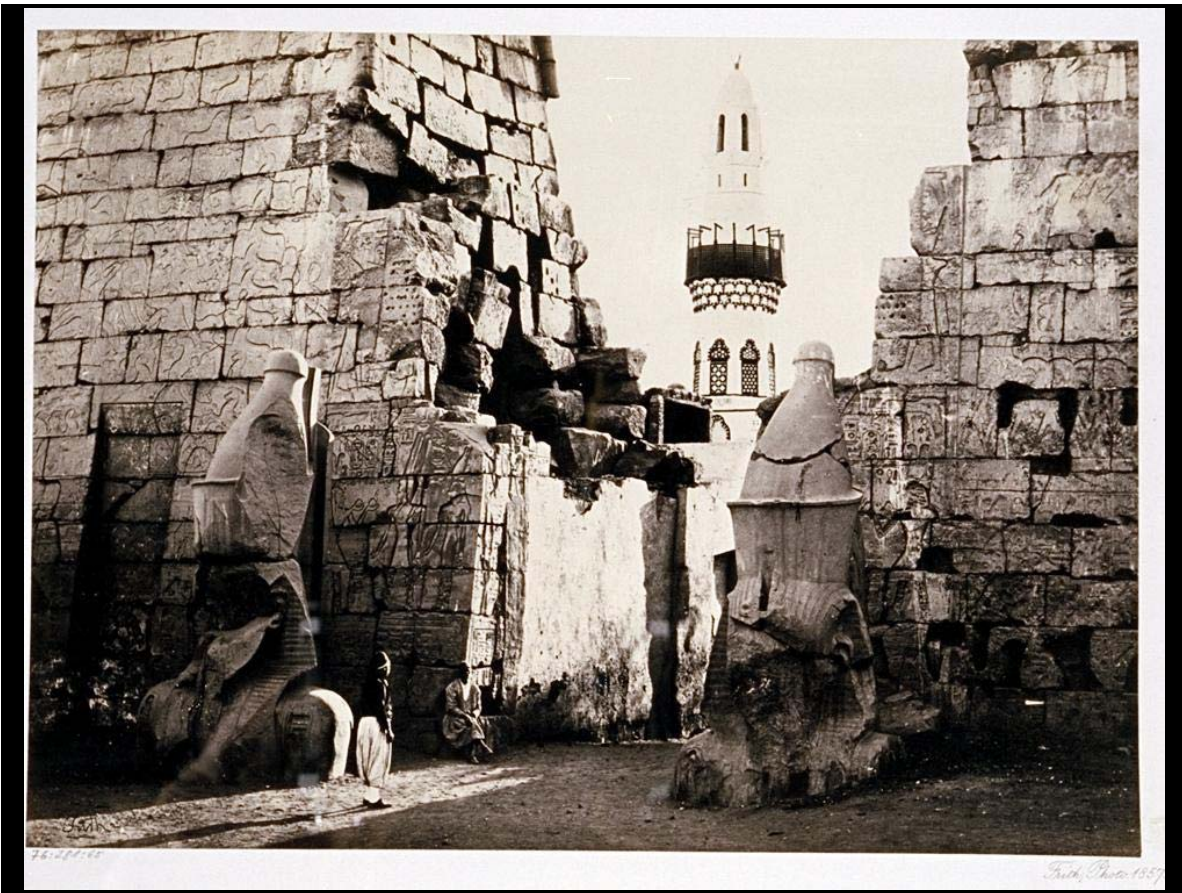
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3.7 Plan of the Temple Complex at Karnak, dedicated to the divine triad: Amun, Mut, and Khonsu

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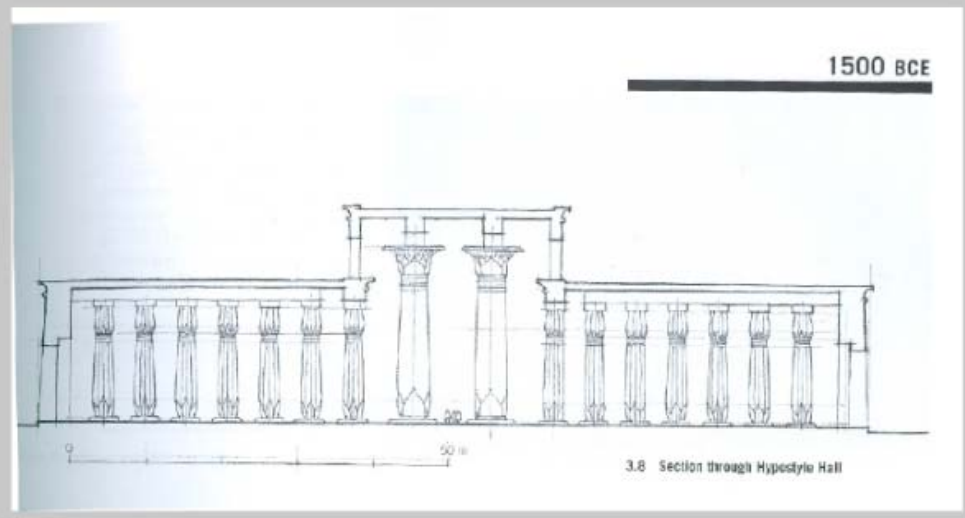








Temple of Amen-Re at Karnak, 1280-323 BC.





Temple of Amen at Luxor, 1370-1300 BC.

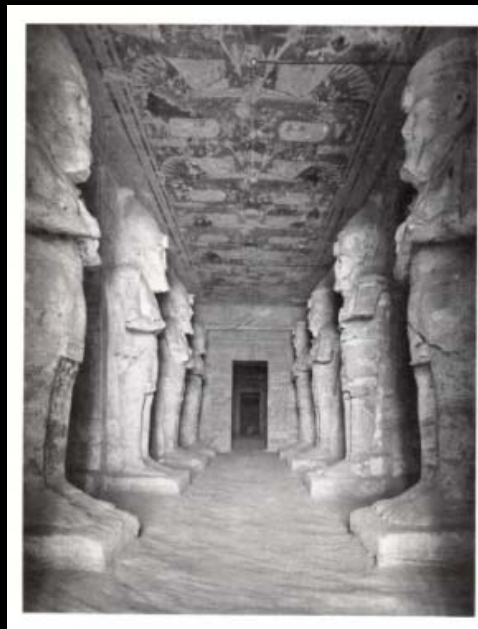
Closed papyrus buds capitals

Hypostyle Hall – “resting on pillars”



Temple of Amen-Re at Karnak, 1280-323 BC.

12' thick and 69' high



Temple of Amen-Re at Karnak, 1280-323 BC.

# Obelisks:



Temple of Amen at Luxor



Temple of Amen at Karnak

# Pylons:



Temple of Amen at Luxor



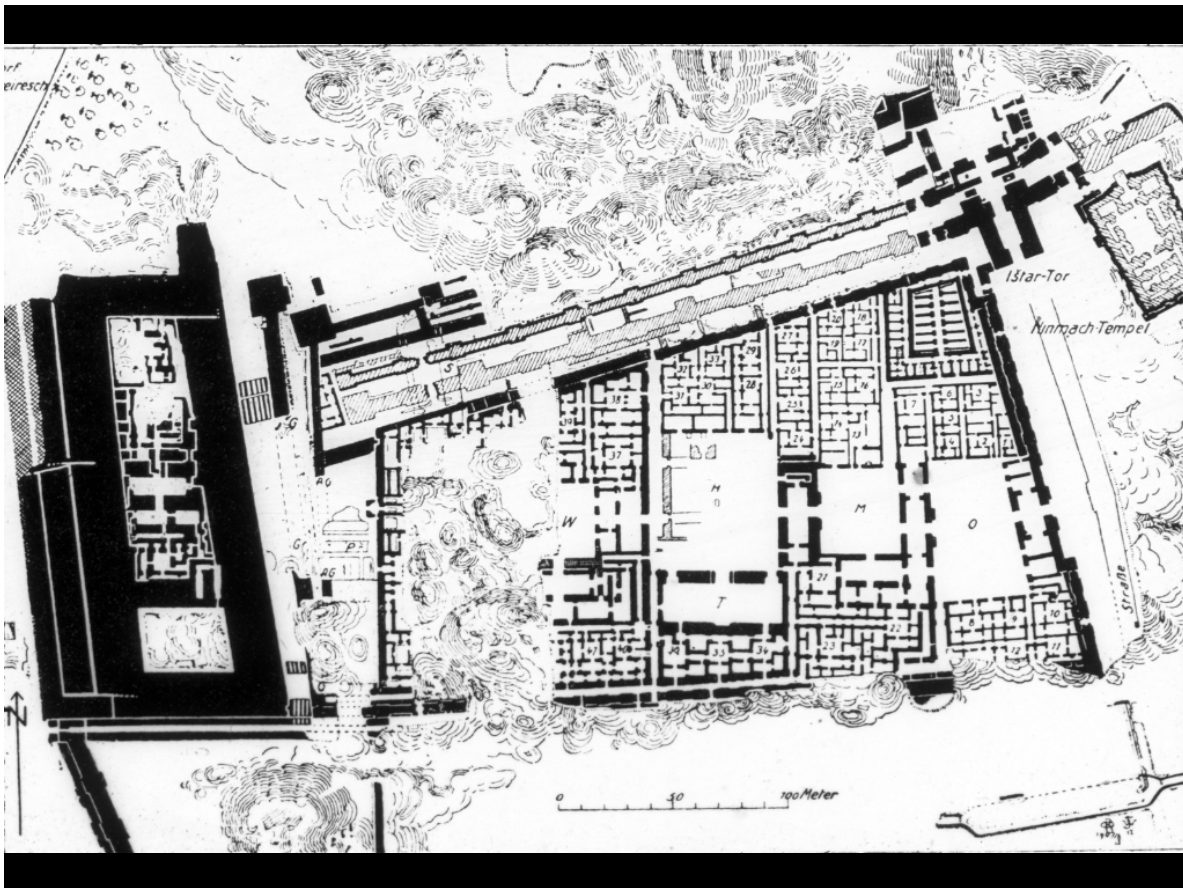
Temple of Amen at Karnak

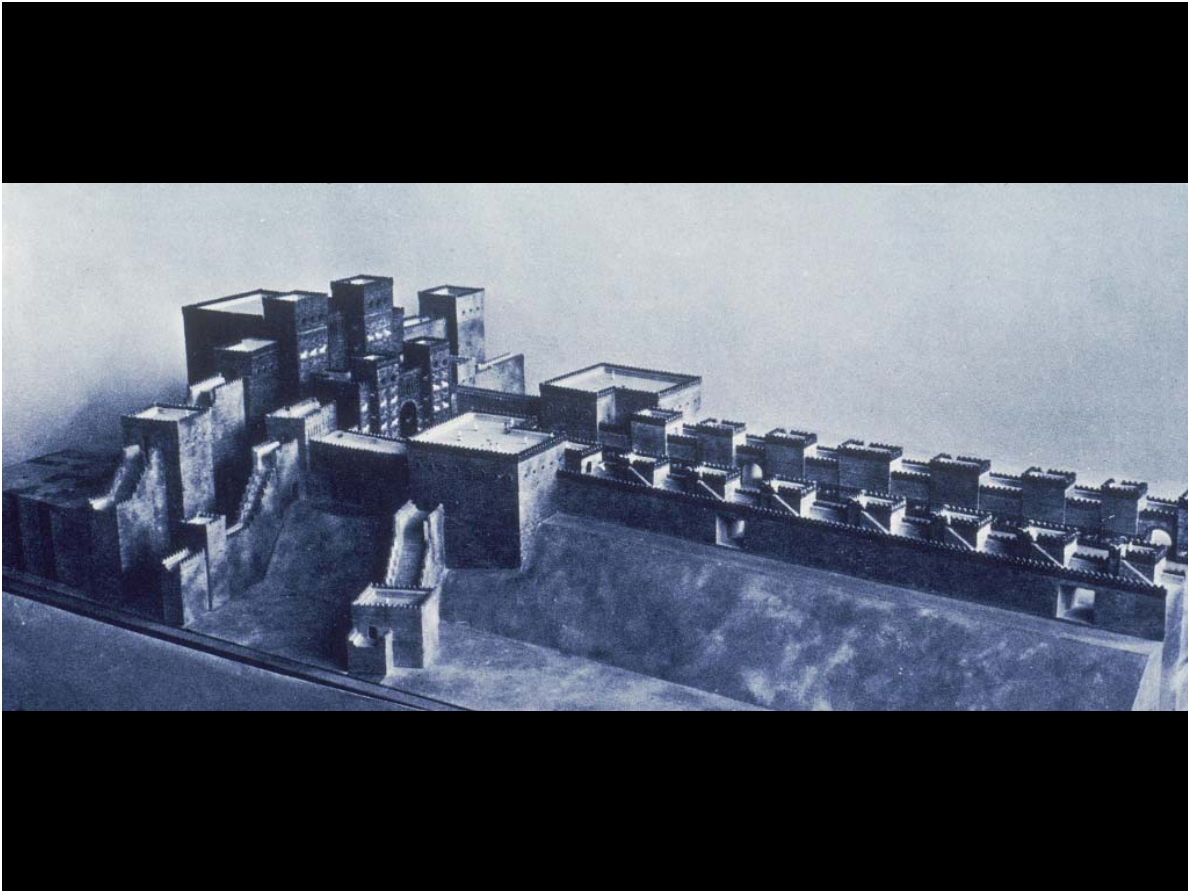
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**Babylon:** (located 25 miles south of Baghdad, Iraq) reached its height of luxury from 605-562BC. There are two major architectural achievements from Babylon.



<http://oi.uchicago.edu>





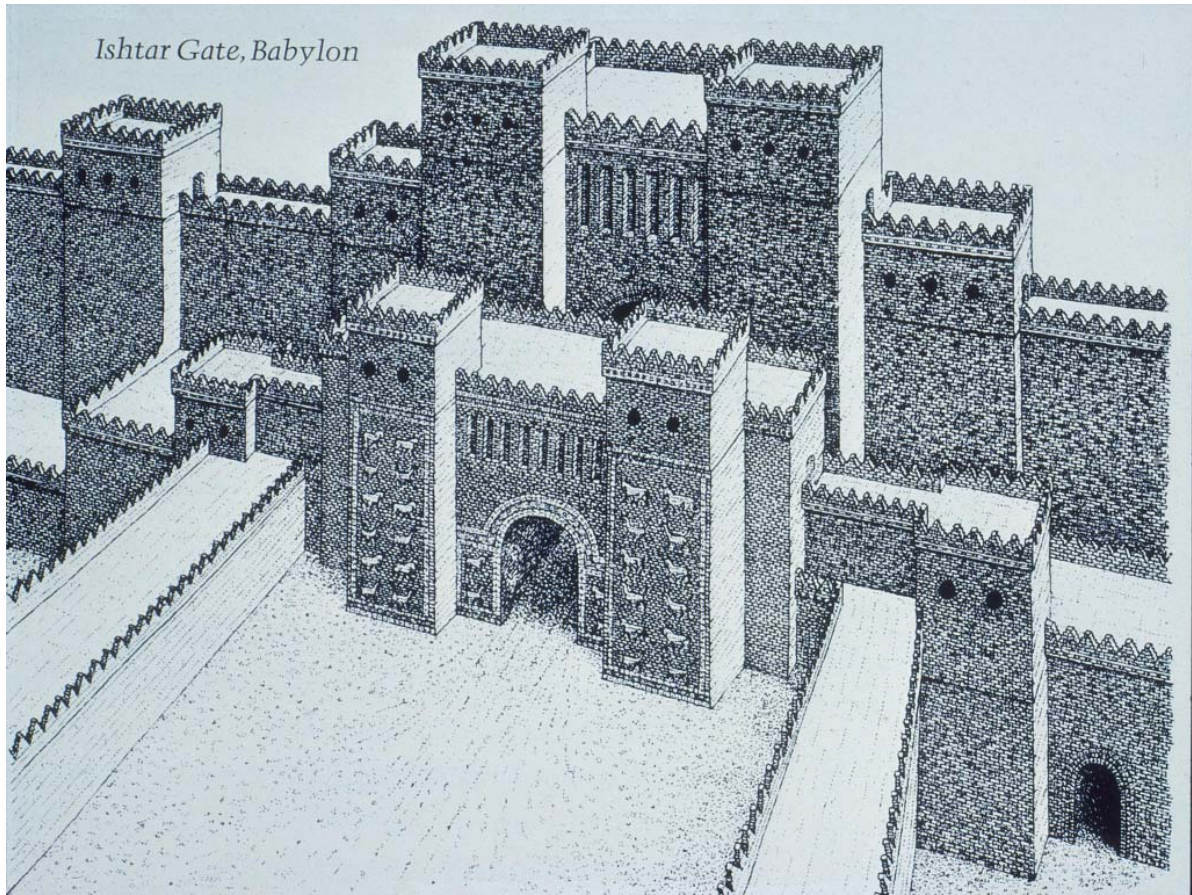
<http://oi.uchicago.edu>

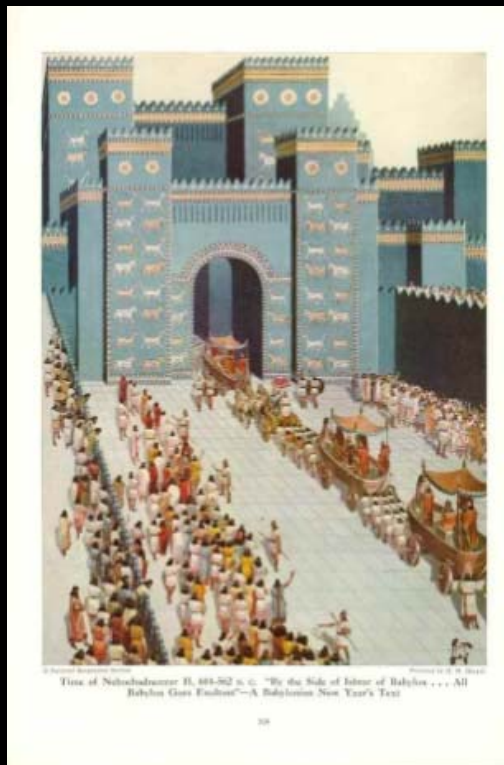
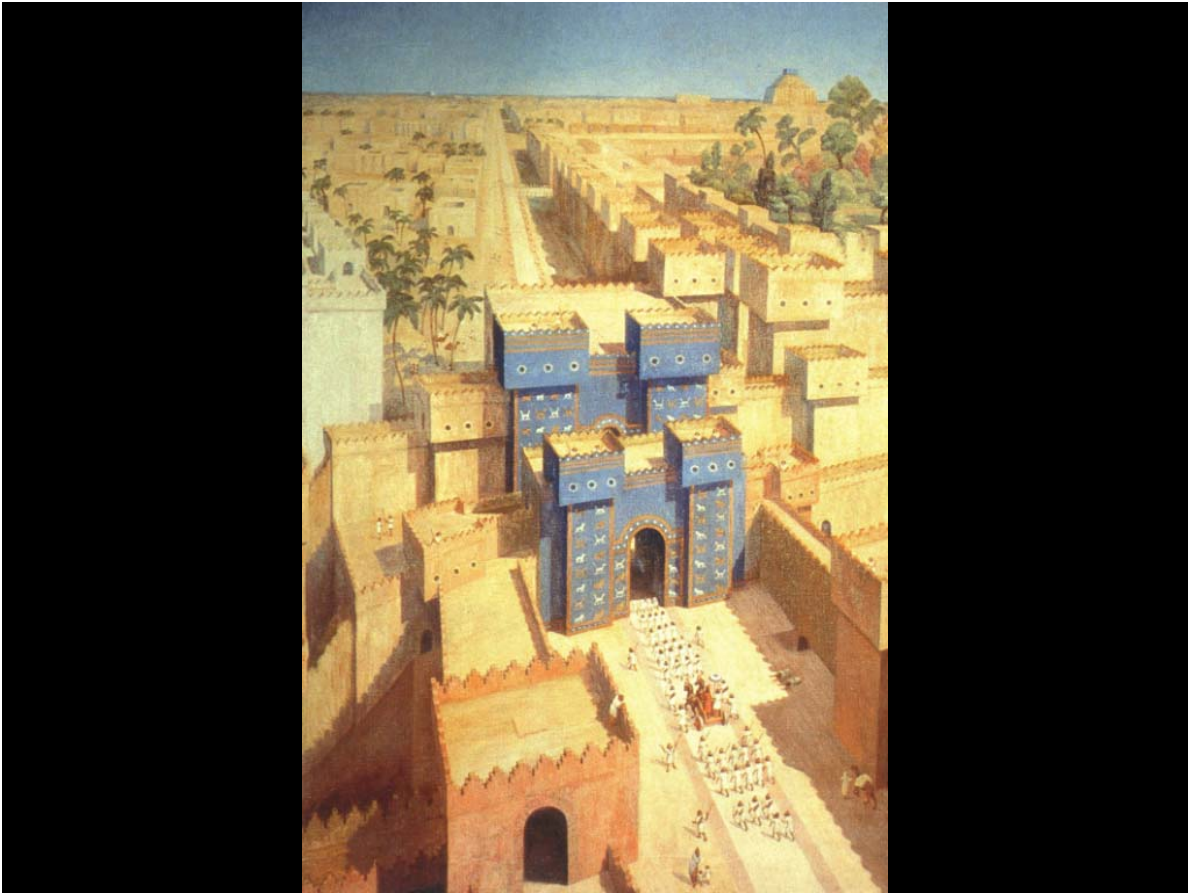
Ishtar Gate-23' high decorated with blue and red tiles with gold relief enamels of lions



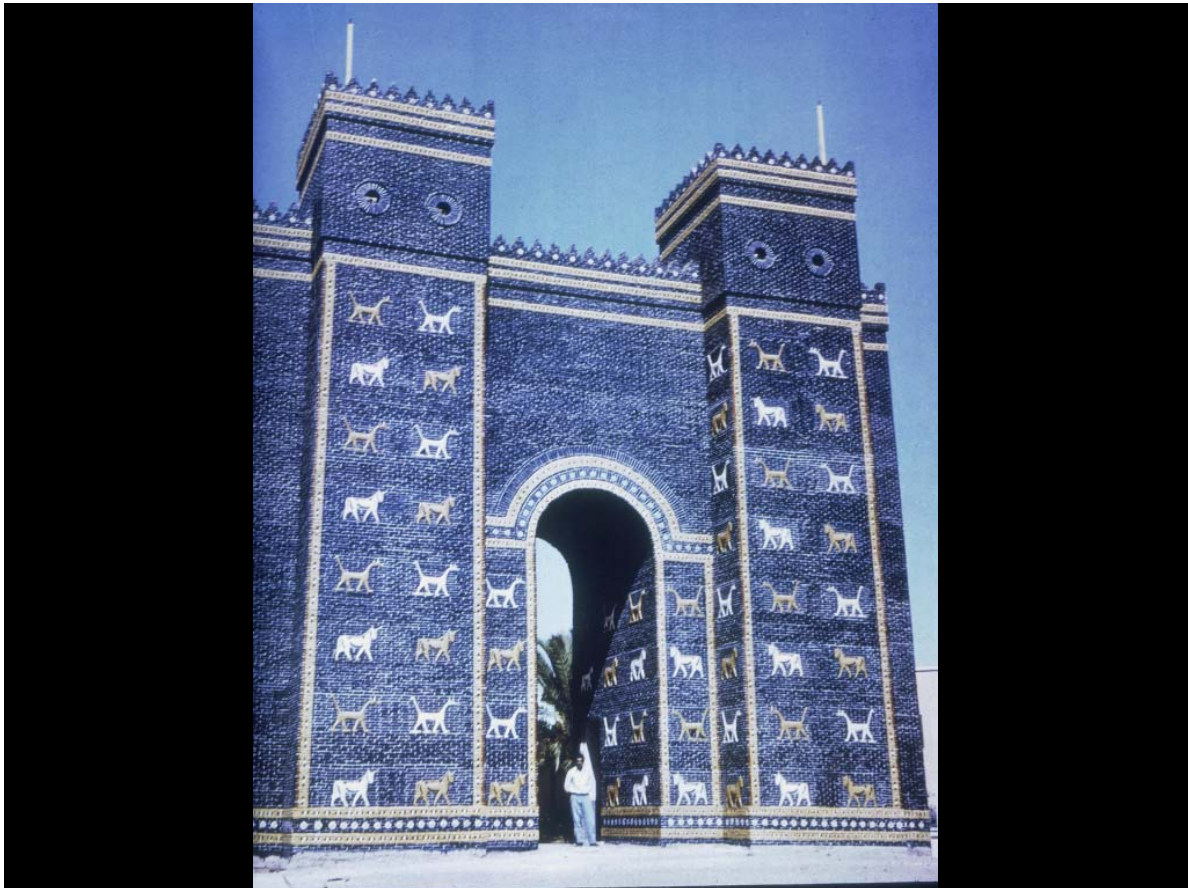
<http://oi.uchicago.edu>

The Processional Way-73' long running North to South, paved with white limestone and pink marble.





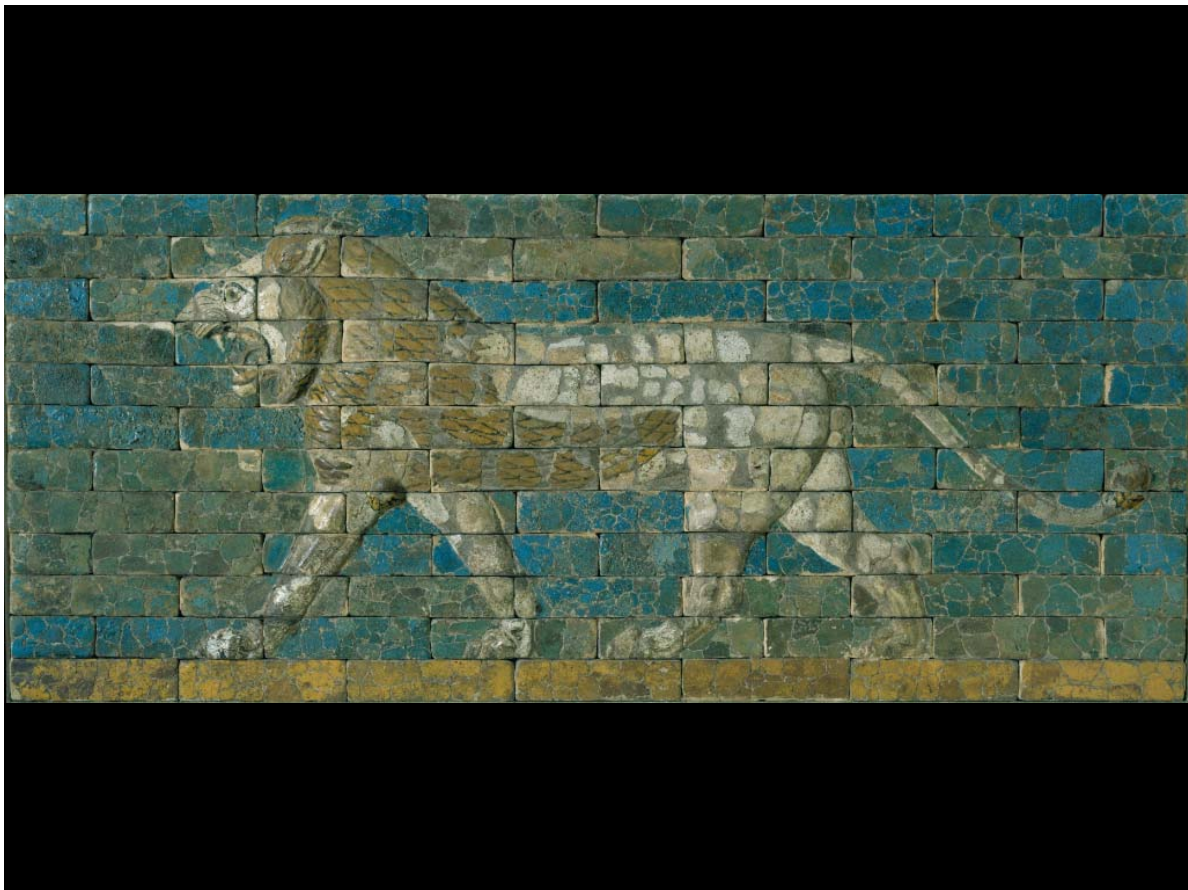
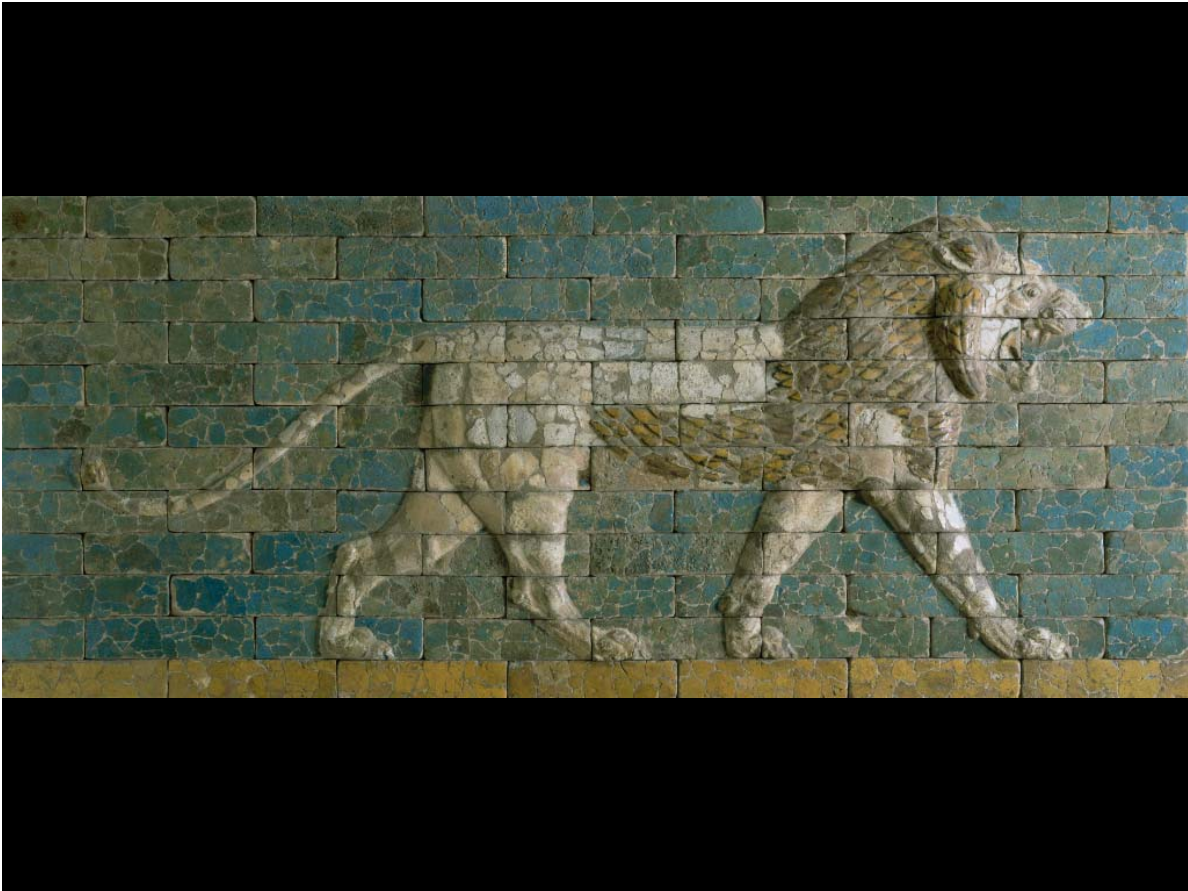
Ishtar Gate, 605 563 BC

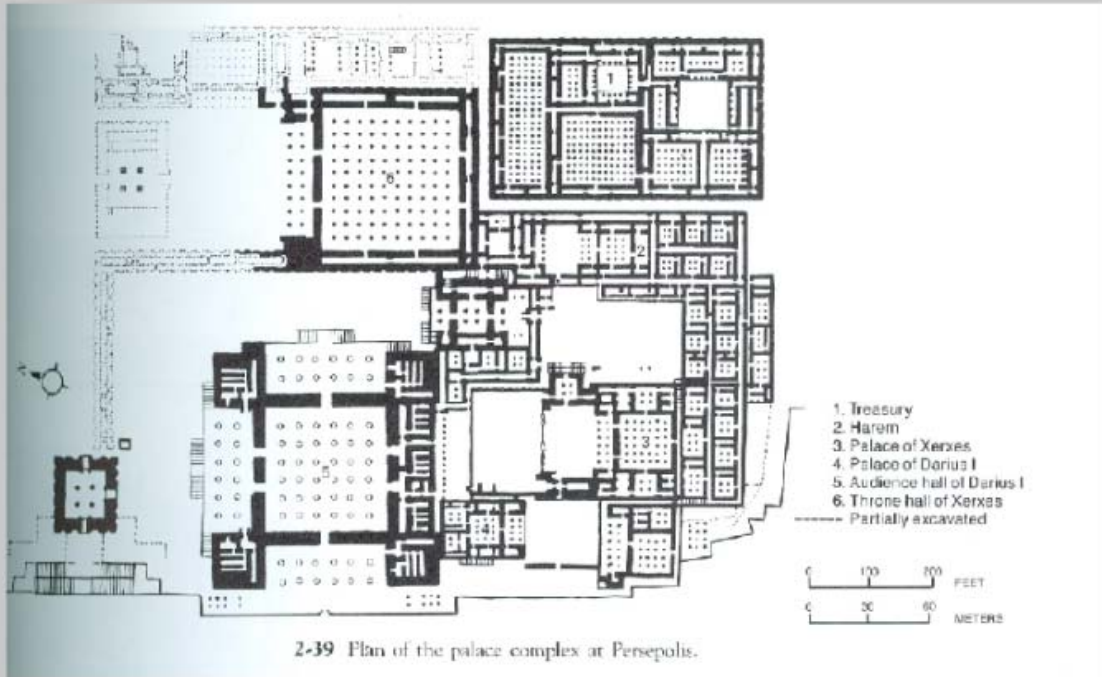






2-36 The Ishtar Gate (restored), from Babylon, c. 575 B.C. Glazed brick. Pergamon Museum, East Berlin.



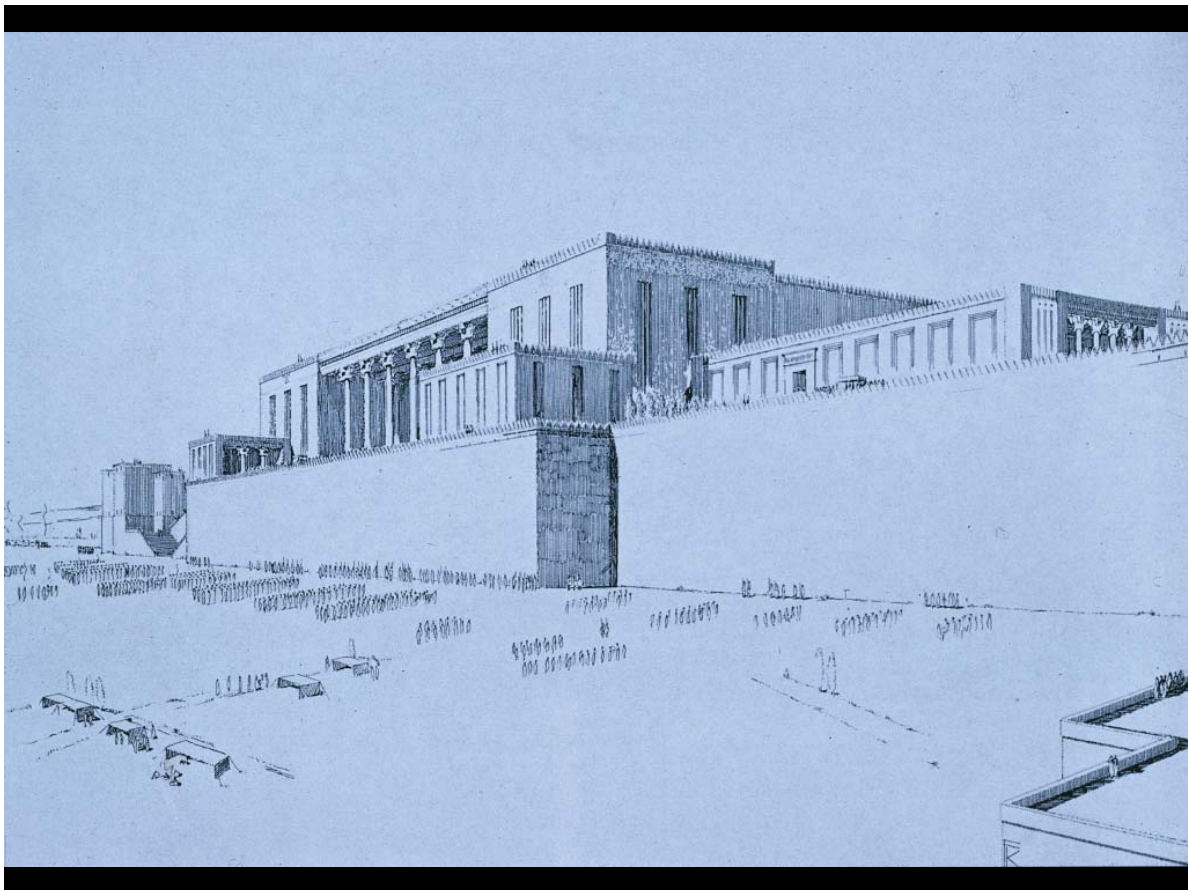


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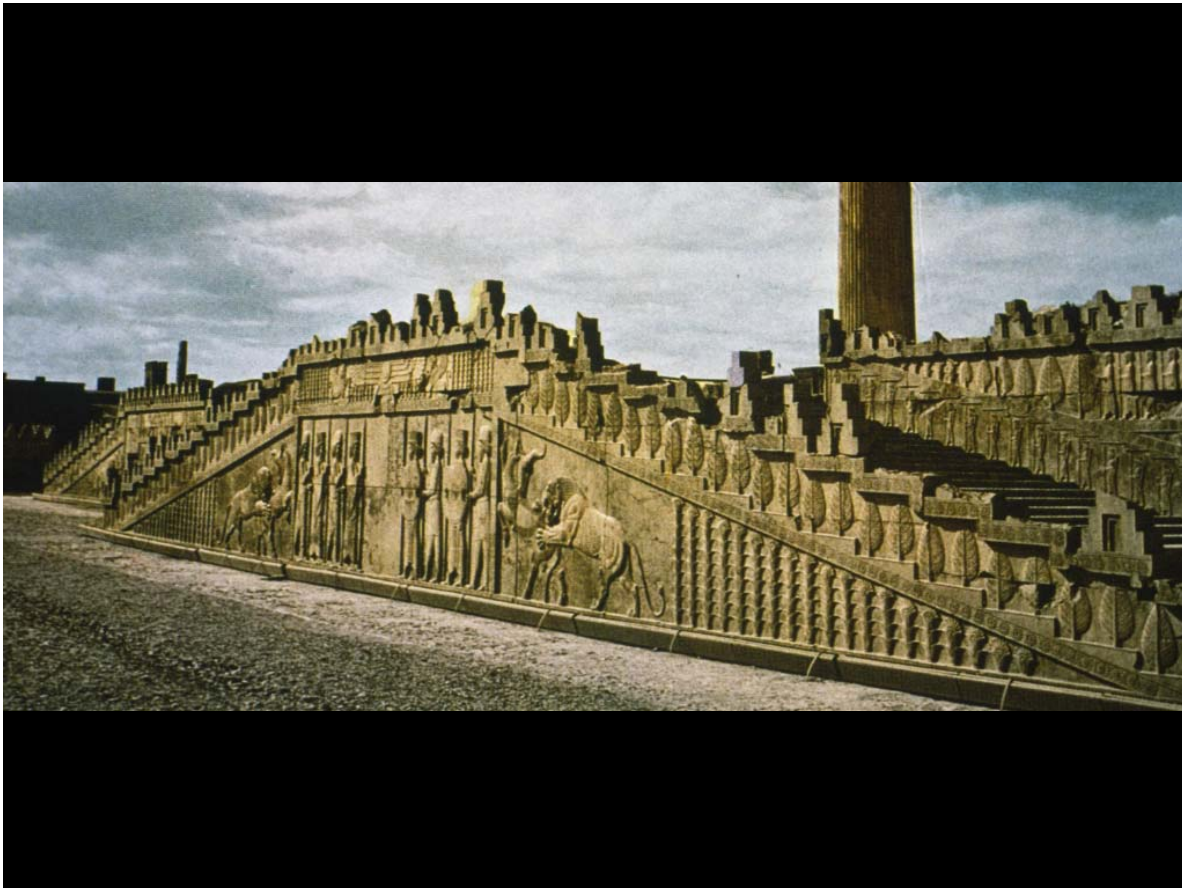


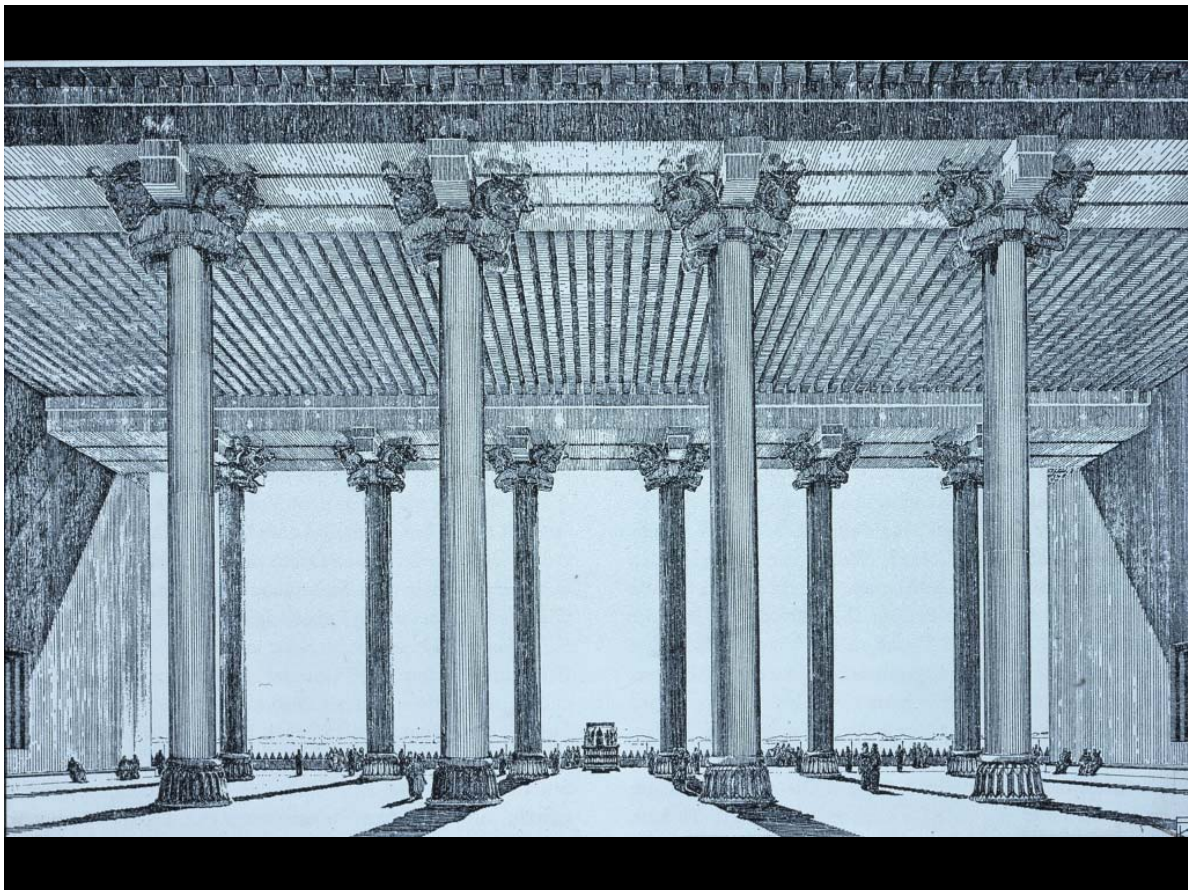


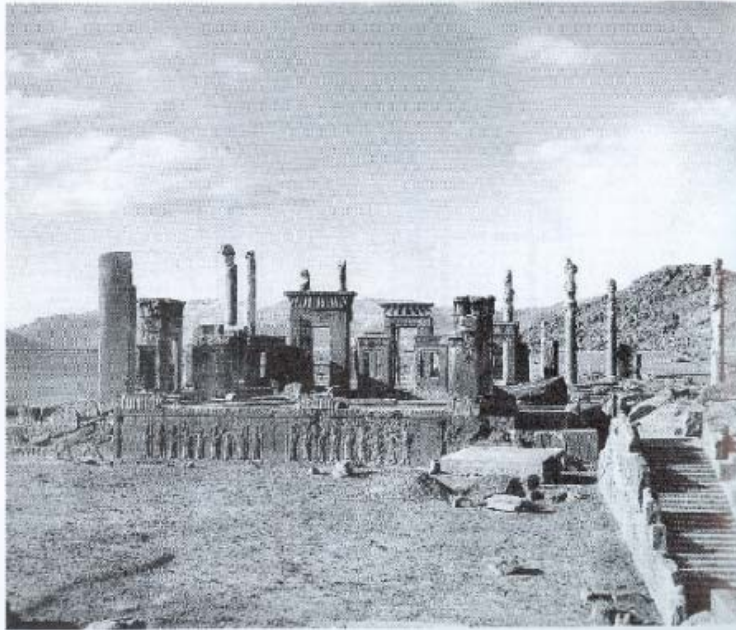
## Royal Palace, Persepolis, Persia, c. 500 BC



## Royal Palace, Persepolis, Persia, c. 500 BC







241. Palace of Darius, Persia, c. 500 B.C.

240. Bull capital from the royal audience hall of the palace of Artaxerxes II, Iran, 5th century B.C. Ureah marble, 7' 2" high, 11' 7" wide. Louvre, Paris.



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