

Mesopotamia & Egypt



ARCH 1121 - HISTORY OF WORLD ARCHITECTURE TO 1900

Mesopotamia & Egypt

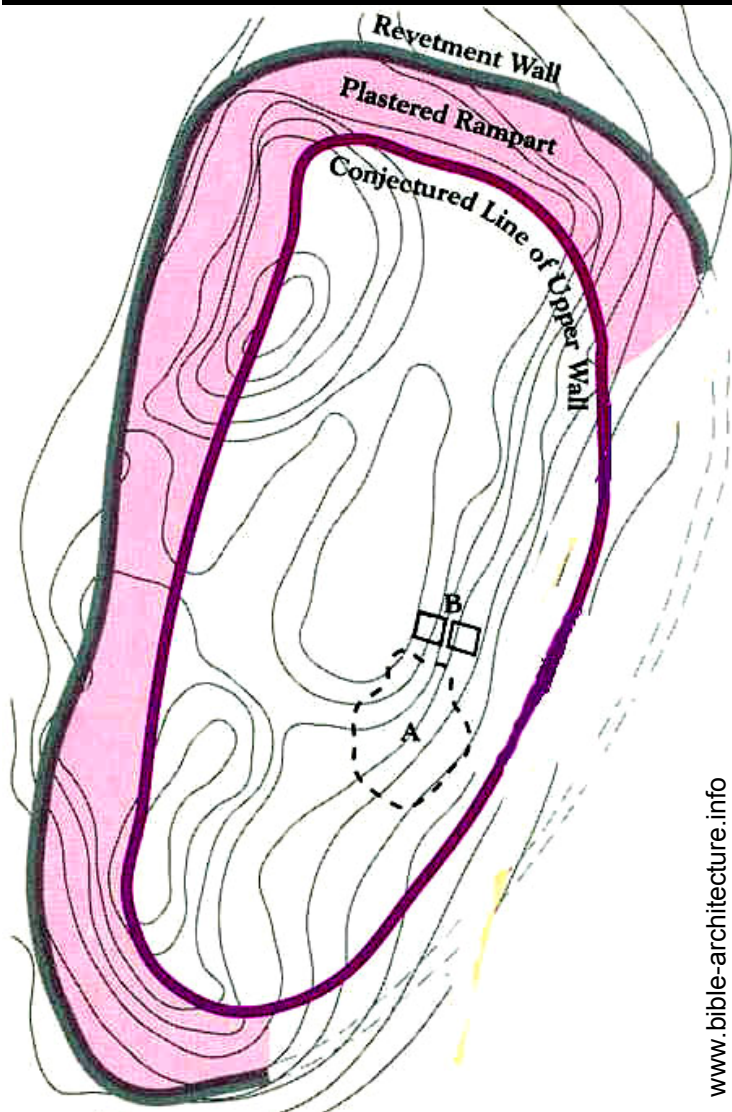
Professor: Shelley E Smith, PhD
email: ssmith@citytech.cuny.edu

Course Overview:

- What is architecture? What is history?
- Prehistoric, **Mesopotamia, Egypt**
- India & Southeast Asia, China & Japan
- Early Aegean, Greece, Rome
- Early Christian & Byzantine, Islamic
- Early Medieval, Romanesque, Gothic
- The Pre-Columbian Americas, Africa
- The Renaissance, Baroque, Rococo in Europe
- 18th Century & Neo-Classicism in Europe & America

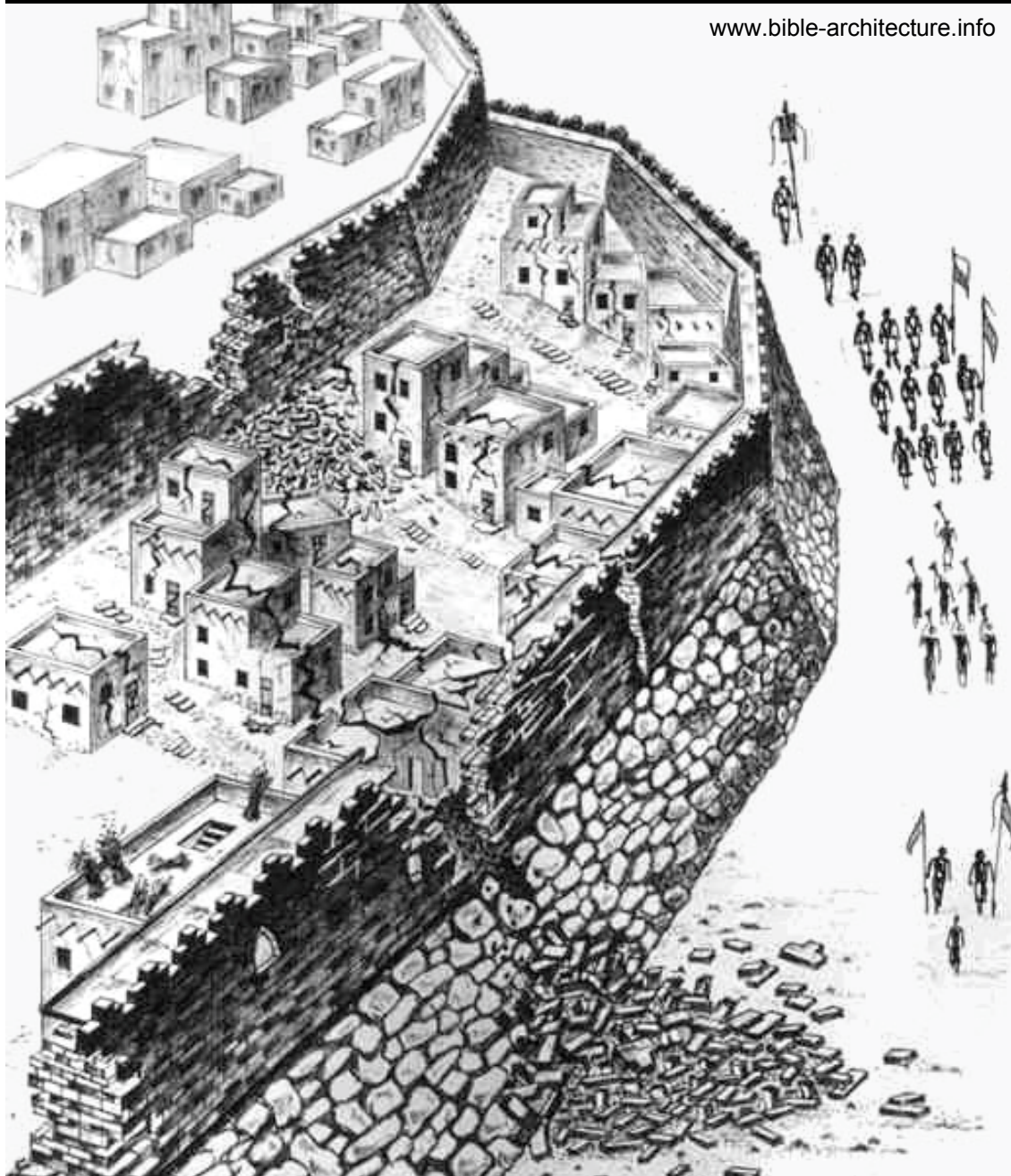
Jericho (modern Jordan)-7500BCE

Ancient city surrounded by a 14' high and 10' thick walls
A tower was 25' tall – a lookout for invaders

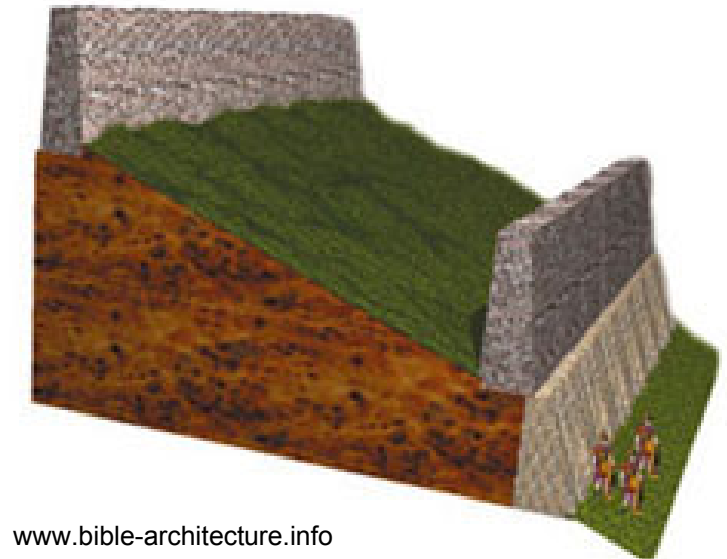


Jericho City

www.bible-architecture.info



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Catal Huyuk, Anatolia, 6000-5900 BCE



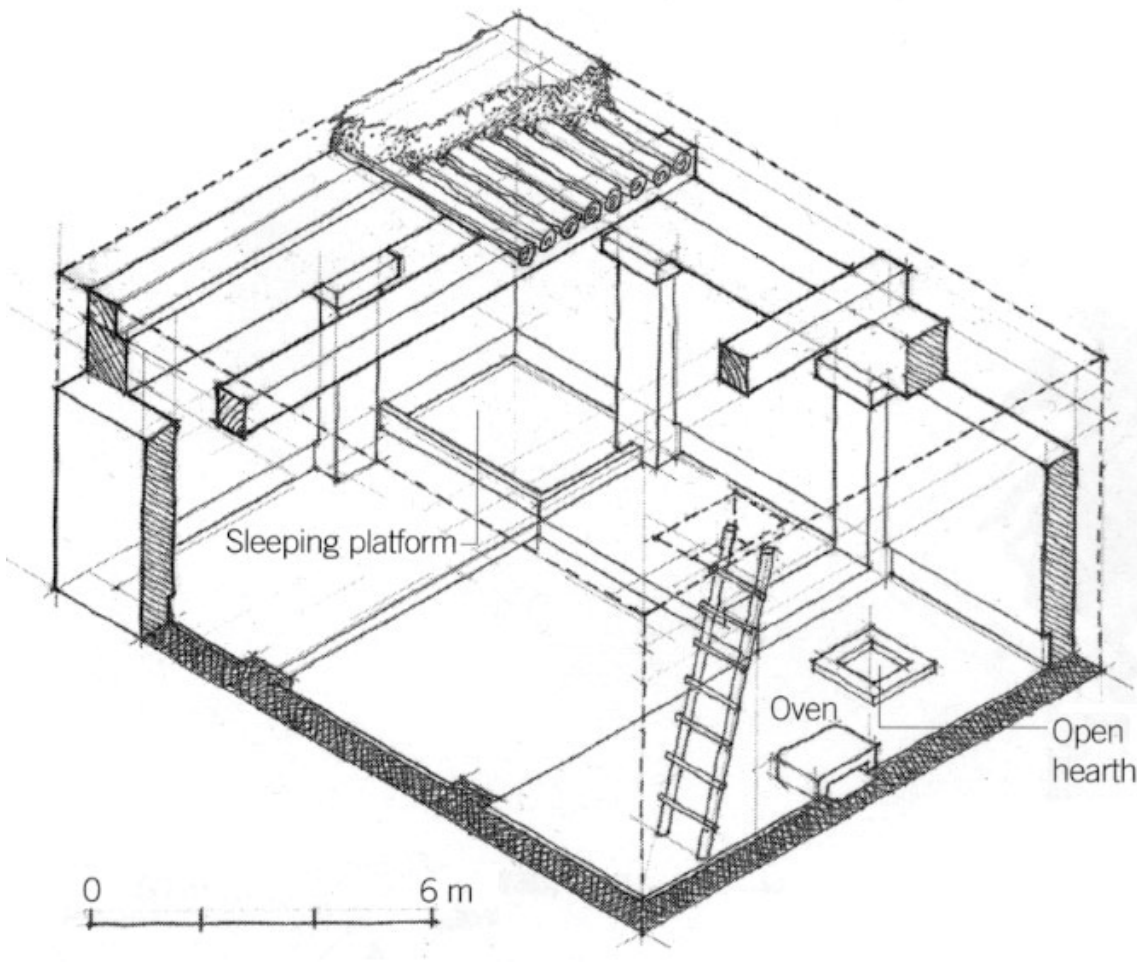
Ching & Jarzombek & Vikramaditya
- A Global History of Architecture

Catal Huyuk, Anatolia, 6000-5900 BCE

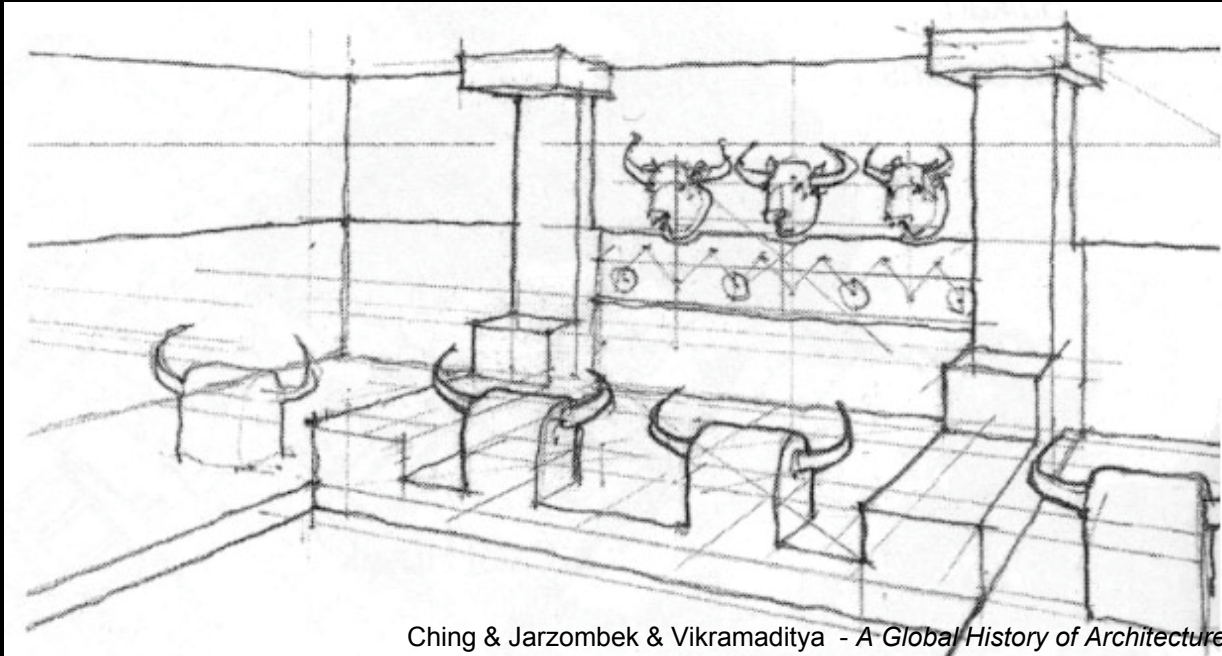


Catal Huyuk, Anatolia, 6000-5900 BCE

A reconstructed sanctuary of Catal Hüyük in Angora Museum



Catal Huyuk, Anatolia, 6000-5900 BCE



Ching & Jarzombek & Vikramaditya - *A Global History of Architecture*

RUINS



Çatal Höyük Author: [<http://en.wikipedia.org/wiki/User:Ziggurat> Ziggurat]

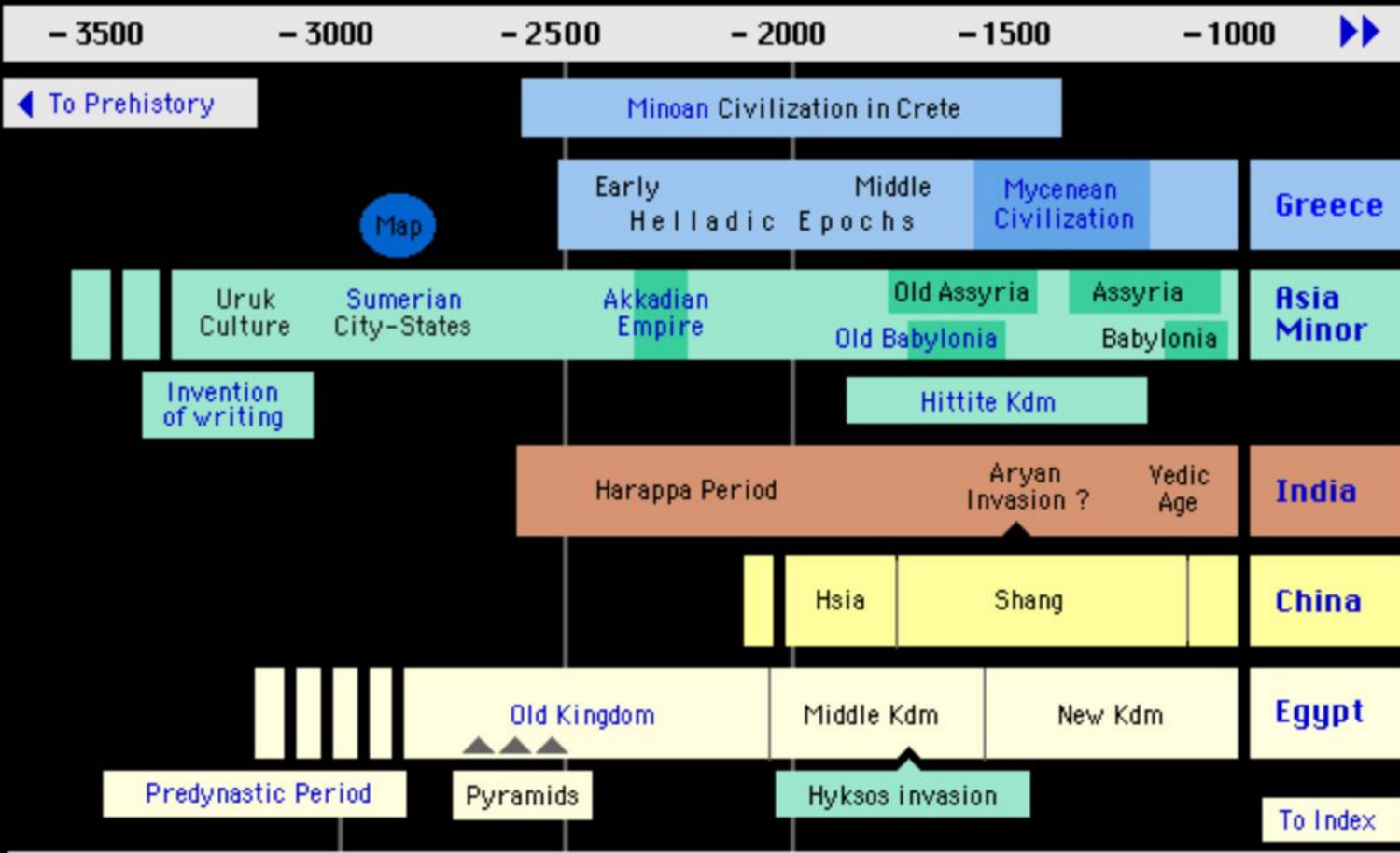
Catal Huyuk, Anatolia, 6000-5900 BC



A reconstructed sanctuary of Catal Hüyük in Angora Museum

Abbreviated Timelines for the Earliest Civilizations

blue words = links



Lifelines for persons
Click on boxes to access text files

- Gilgamesh
- Sargon I
- Minoan
- Agamemnon
- Shulgi
- Hammurabi
- Menes
- Imhotep
- Moses
- Djoser
- Senusret
- Map
- Ramses II
- Cheops
- Map
- Thutmose III
- Akhenaton

Early Civilizations

- Denser settlement in villages and towns
- Increasing specialization in labor – priests, merchants, artisans
- Increasing social and political differentiation
- Infrastructure – defensive walls, complex irrigation systems
- Defense of resources = Warfare
- Increased need for organization, required leadership

Common Features of Early City-States






- Sophisticated administration that included: taxation, writing, large state armies, and monumental architecture

Agrarian Civilization: c. 3200 BCE – c. 1750 CE

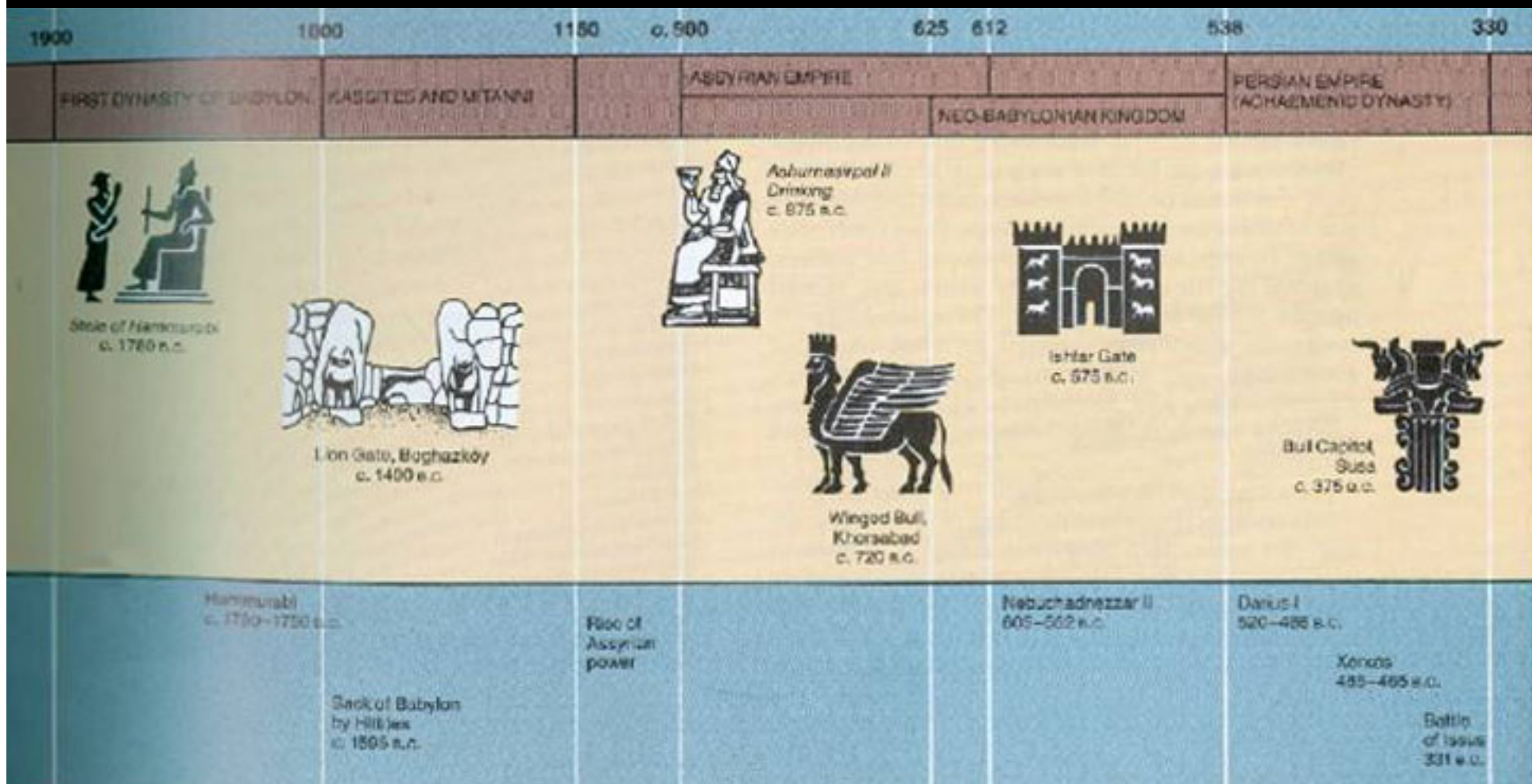
MAP OF ANCIENT NEAR EAST



Mesopotamia & Ancient Near East: c. 7000 – 2150 BCE

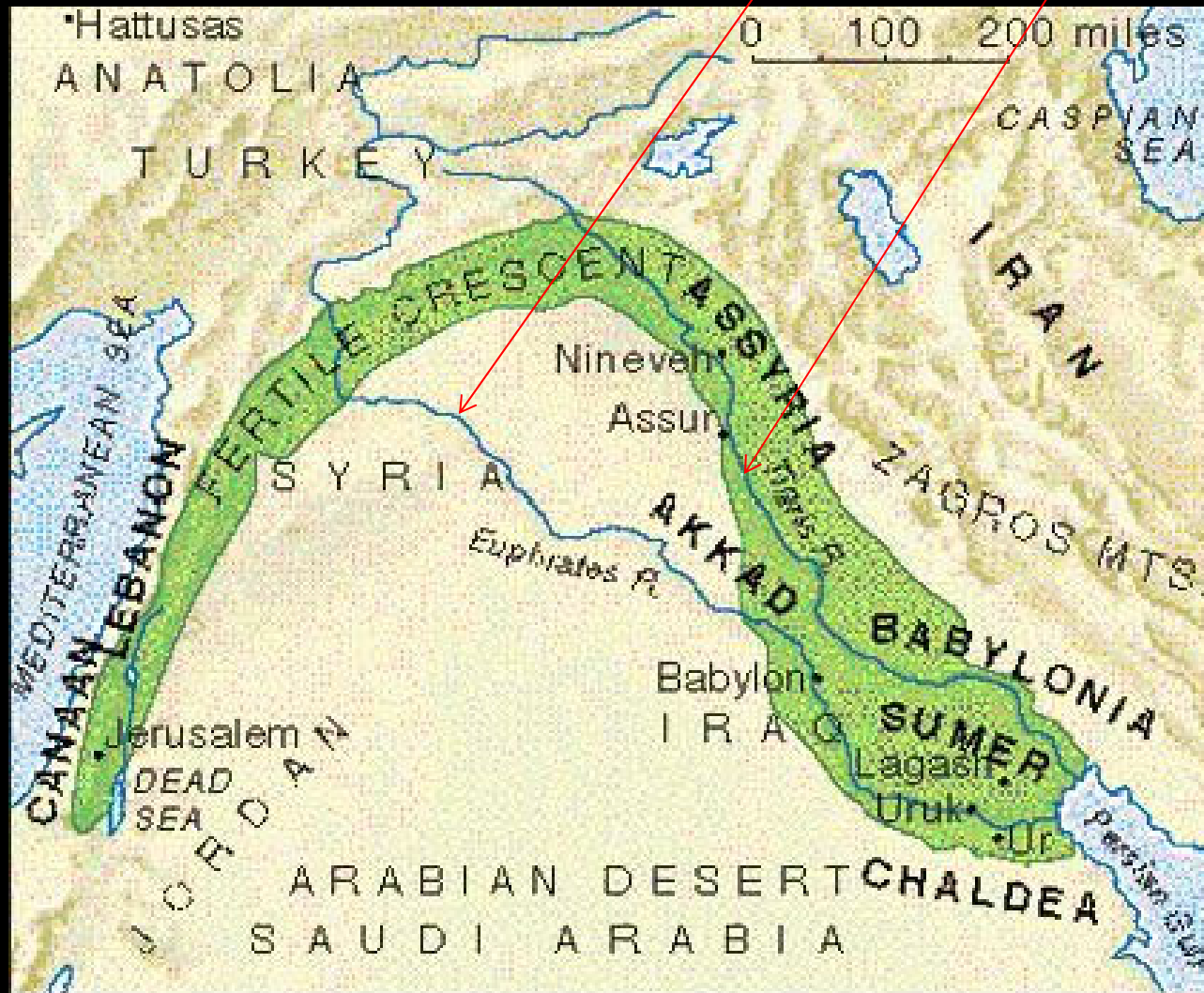
7000 B.C.	6000	3500	3000	2500	2300	c. 2150	
MESOLITHIC PERIOD	NEOLITHIC PERIOD		PROTOLITERATE PERIOD	EARLY DYNASTIC PERIOD (SUMERIAN)	FIRST DYNASTY OF UR (SUMERIAN)	AKKADIAN DYNASTY	THIRD DYN. OF UR (NEO-SUM)
 Human Skull, Jericho c. 7000–6000 B.C.	 Dancing Hunter c. 5750 B.C.			 Head of the God Abu(?) c. 2700–2600 B.C.		 Akkadian head c. 2300–2200 B.C.	 Ziggurat c. 2100 B.C.
Jericho settled	Çatal Hüyük settled			Beginnings of formal religion Development of writing and beginnings of recorded history Flowering of independent city-states		Sargon I c. 2330–2300 B.C.	
		Irrigation methods developed	Invention of the wheel				Gut invasions

Mesopotamia & Ancient Near East: c. 1900 – 300 BCE



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.

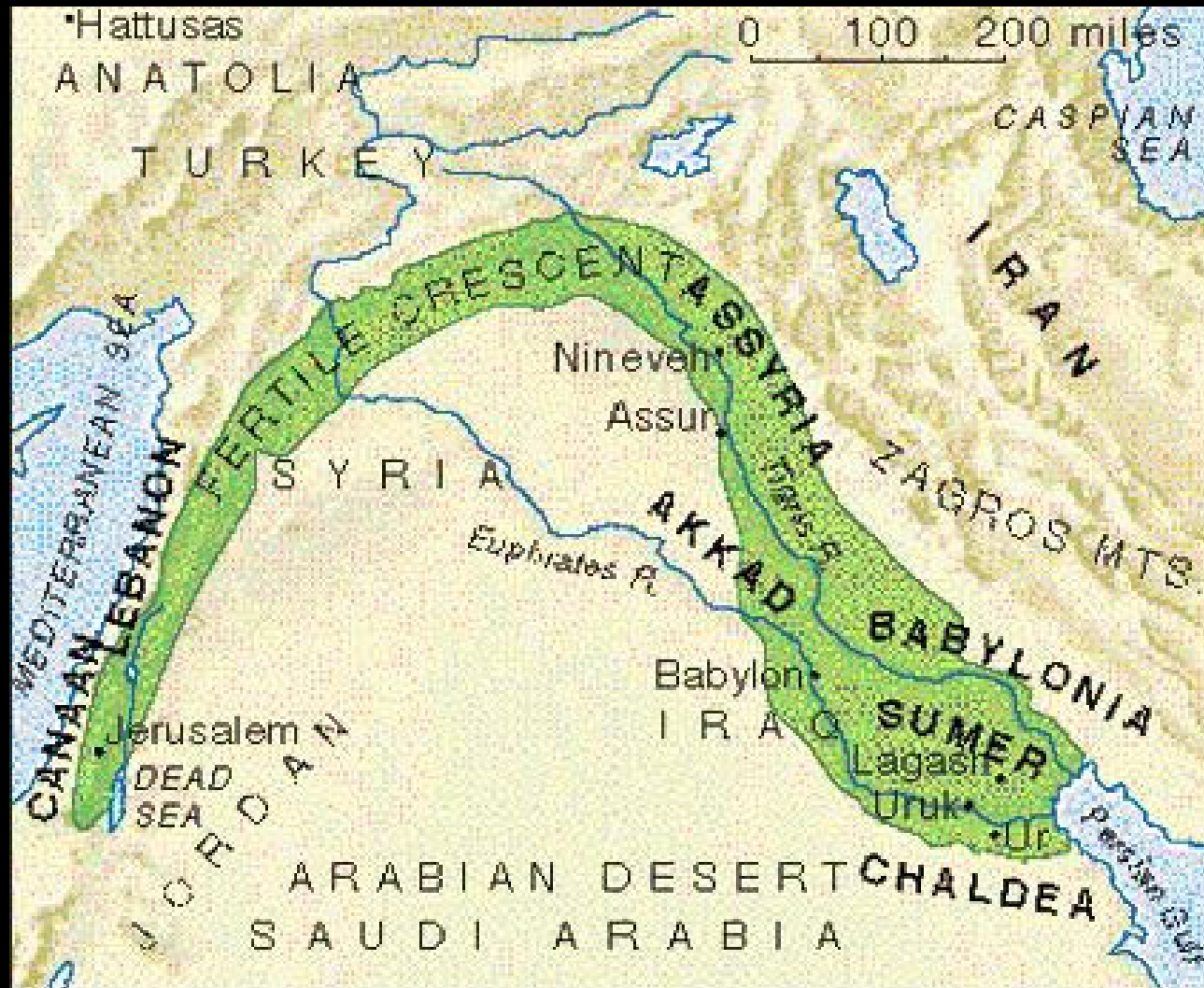


Mesopotamian Civilization

- Sumerians, Akkadians & Neo-Sumerians: c. 4000–2000 BCE
 - Writing, c. 3200 BCE
 - Bronze metallurgy, c. 4000 BCE
 - The wheel
 - **White Temple**, Uruk, c. 3500-3000 BCE
 - **Ziggurat at Ur**, c. 2100 BCE
- Babylonians, Hittites & Assyrians: c. 2000 – 539 BCE
 - Law code of Hammuarbi, c. 1754 BCE
 - **Palace at Korsabad**, 720 BCE by Sargon II
 - **Gate of Ishtar**, Babylon, c. 575 BCE
- The Persian Empire: 539 – 331 BCE
 - **Palace at Persepolis**, Persia (Iran), c. 518 BCE
- Greeks conquer Persia led by Alexander the Great: 534 BCE

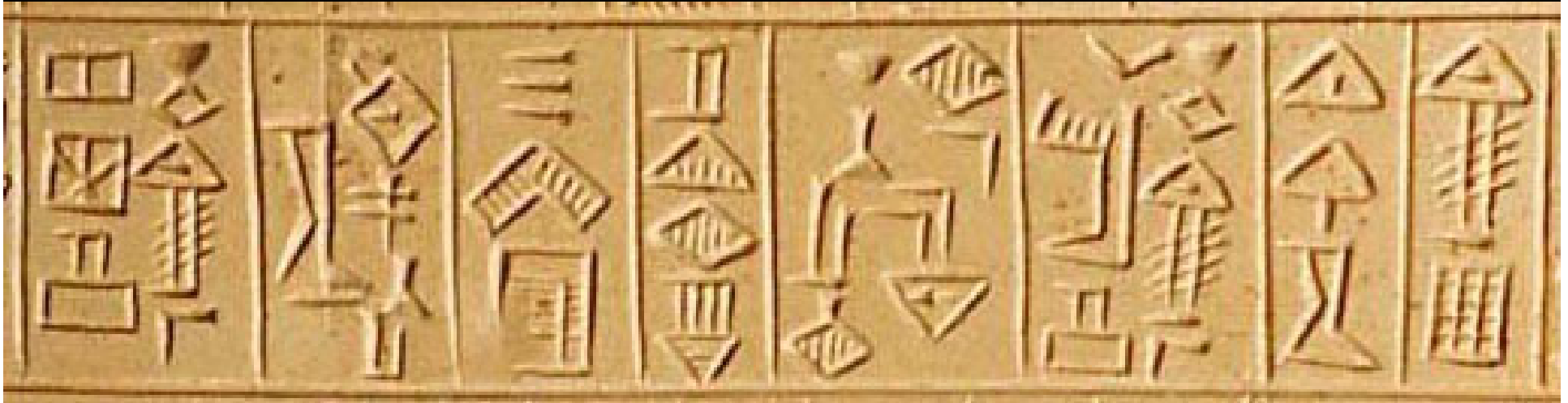
Sumer:

Considered the first civilization, c. 4,000 to 2350 BCE.



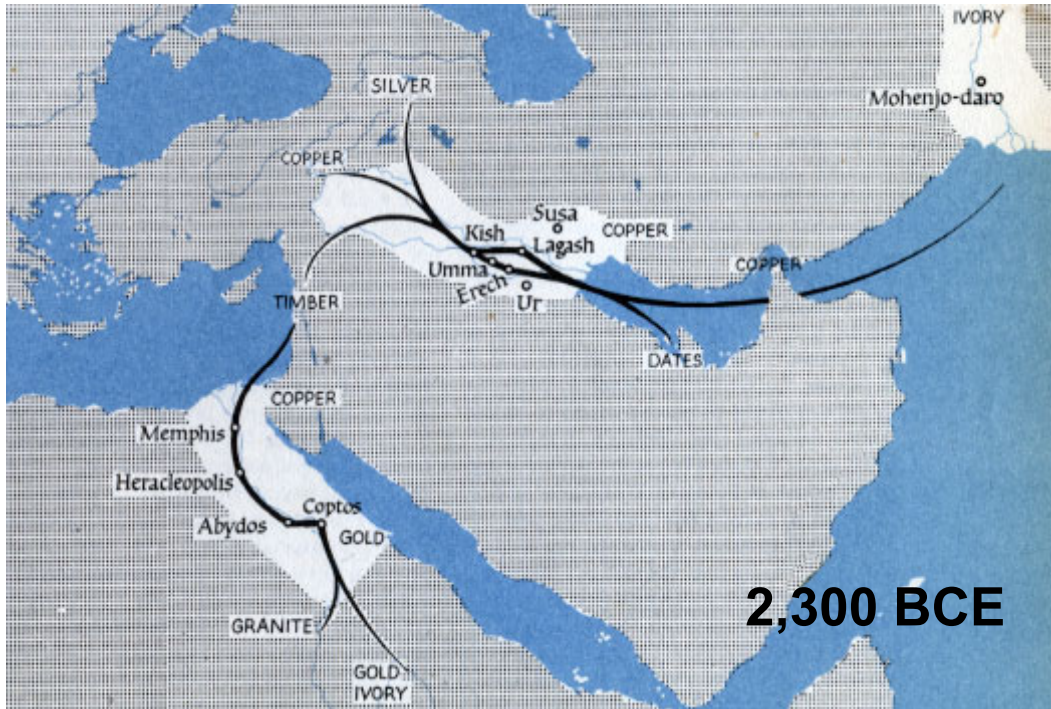
Sumerians developed the first known written language:

- 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 3500 BCE.

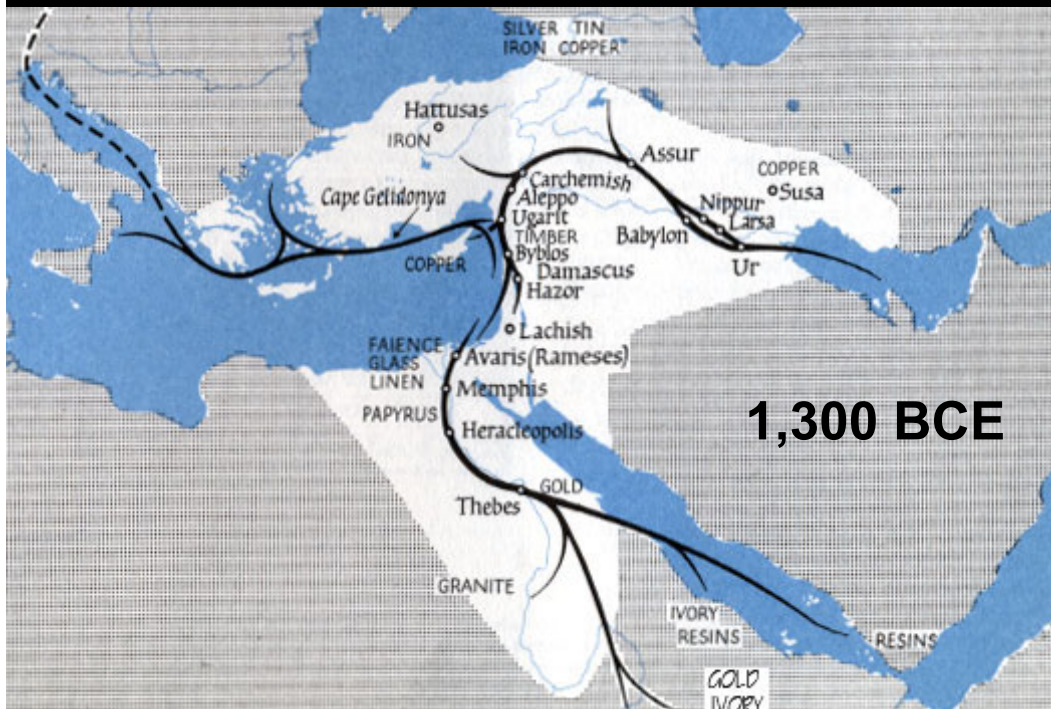


Ancient Language and Trade Routes

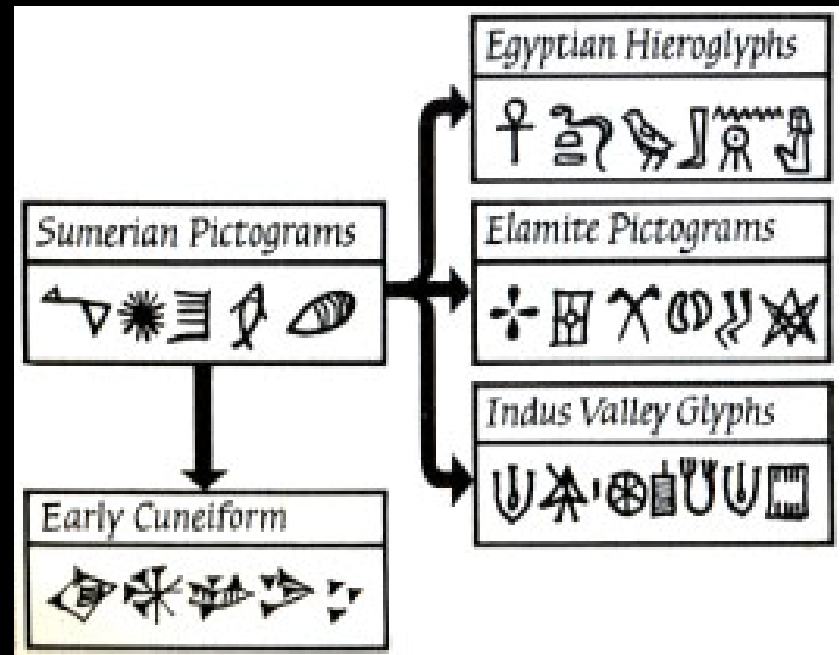
circa 2,300 BCE &
circa 1,300 BCE



2,300 BCE



1,300 BCE



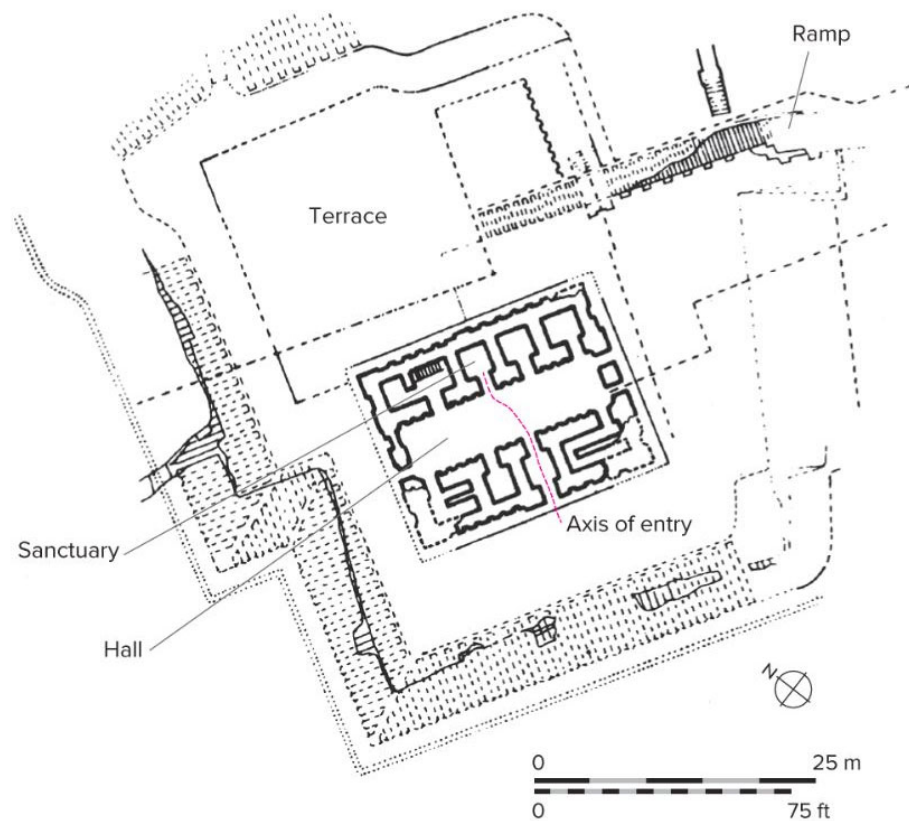
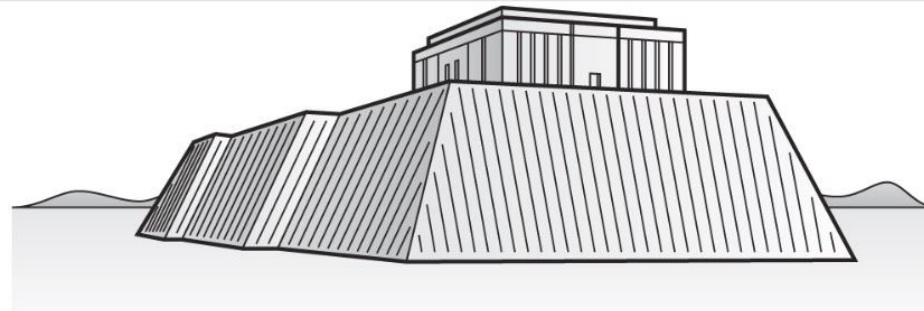
Architecture of Sumer:

Lacking timber and stone, most buildings were of sun-dried mud bricks, with roofs of wood and reeds, and thick walls supported by buttresses and pilasters.

Early cities were organized around a central temple or shrine dedicated to a specific deity—gods of water, the moon, or the wind.

Temples were eventually raised on Ziggurats, high terraced platforms of up to seven levels.





1.11 View and plan of the White Temple, Uruk, Mesopotamia (Iraq), ca. 3500–3000 BCE.

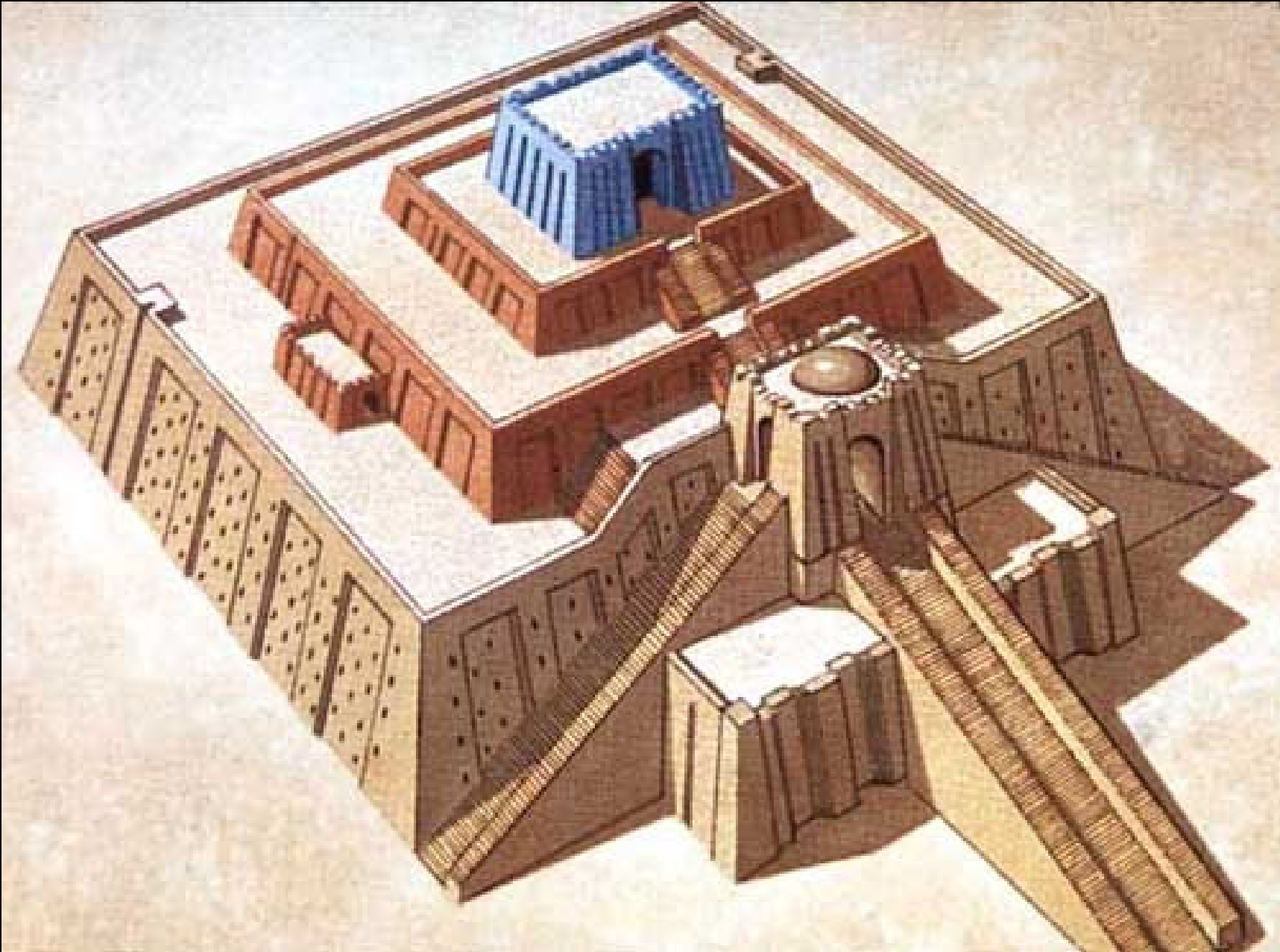
Many temples in Mesopotamia were erected on raised platforms. The base of this temple was made in part with the rubble from previous buildings on the site, buttressed in a regular pattern and protected by layers of whitewash—hence the temple's name.

Ziggurat at Ur, Mesopotamia (Iraq), c. 2100 BCE

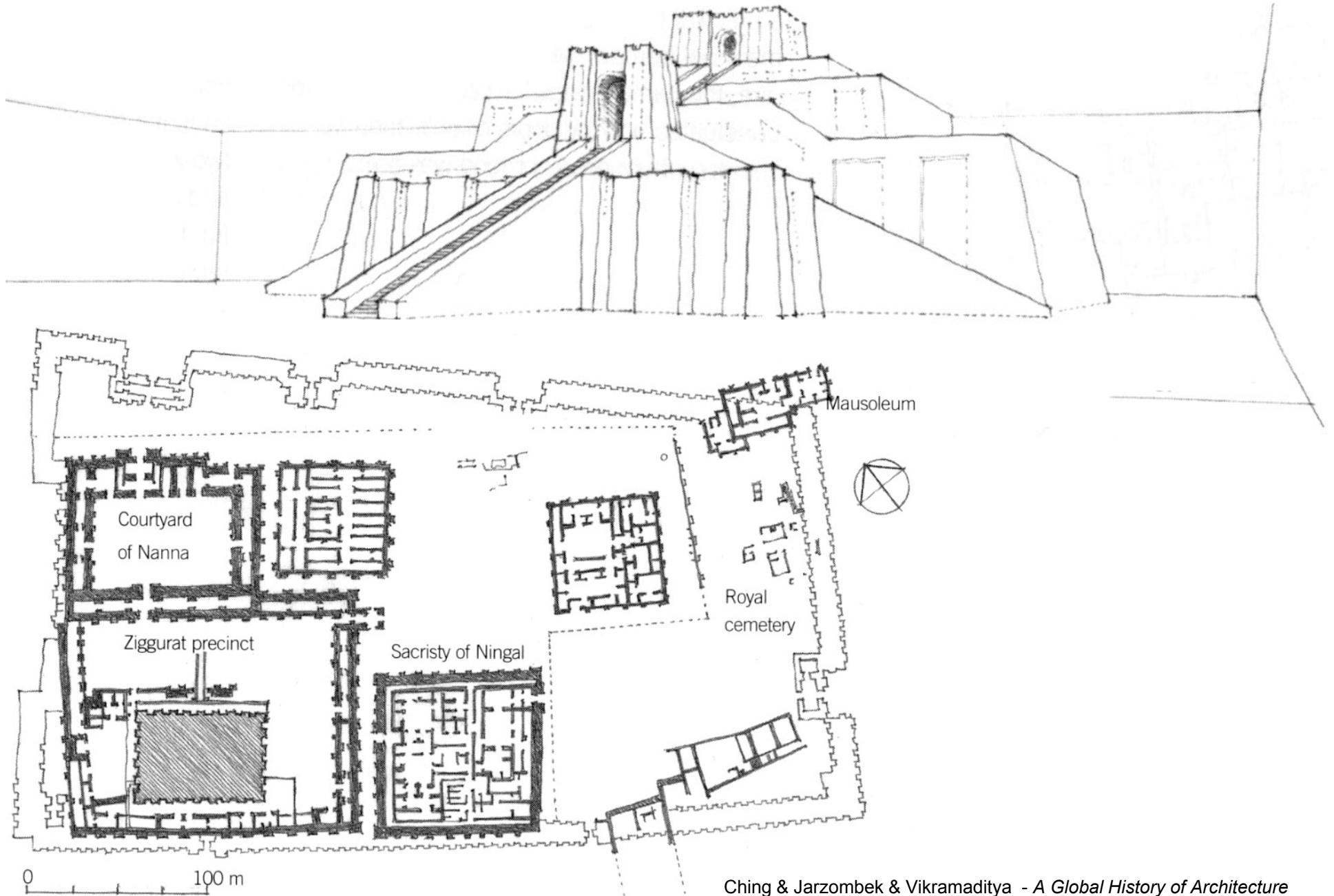


Lubinski, M. " Ruins in the Town of Ur. " Image from " Great Ziggurat of Ur " 2006
<http://commons.wikimedia.org/wiki/File:Ur-Nassiriyah.jpg> (1/31/2010)

Ziggurat at Ur, Mesopotamia (Iraq), c. 2100 BCE



Ziggurat at Ur, Mesopotamia (Iraq), c. 2100 BCE





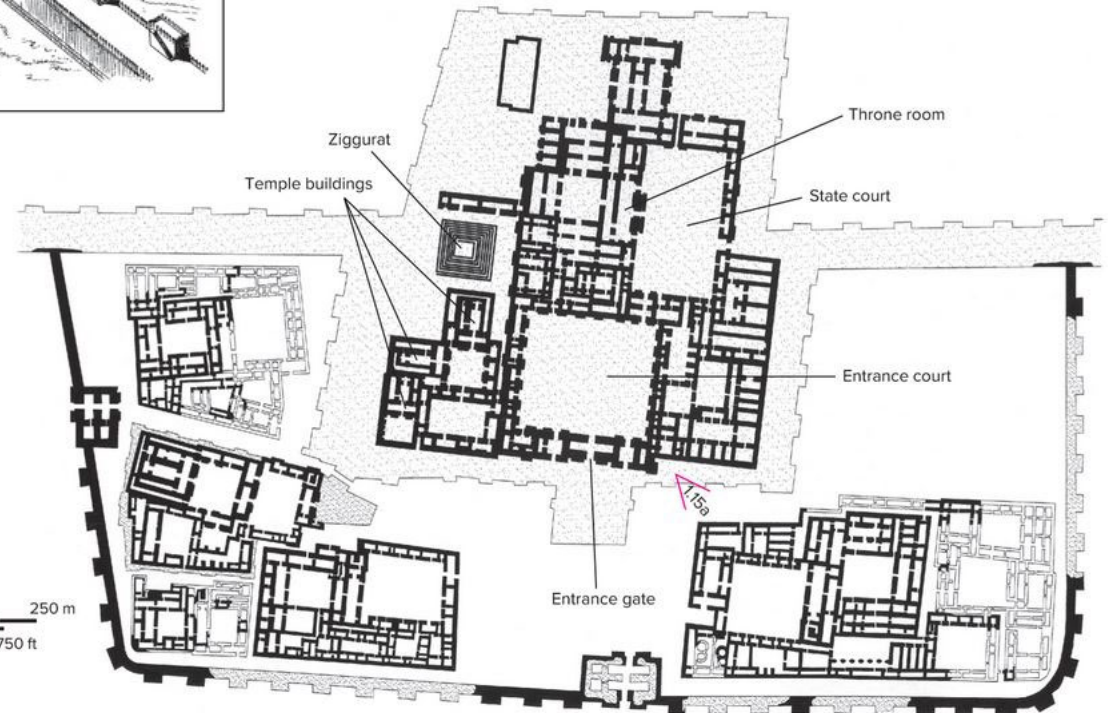
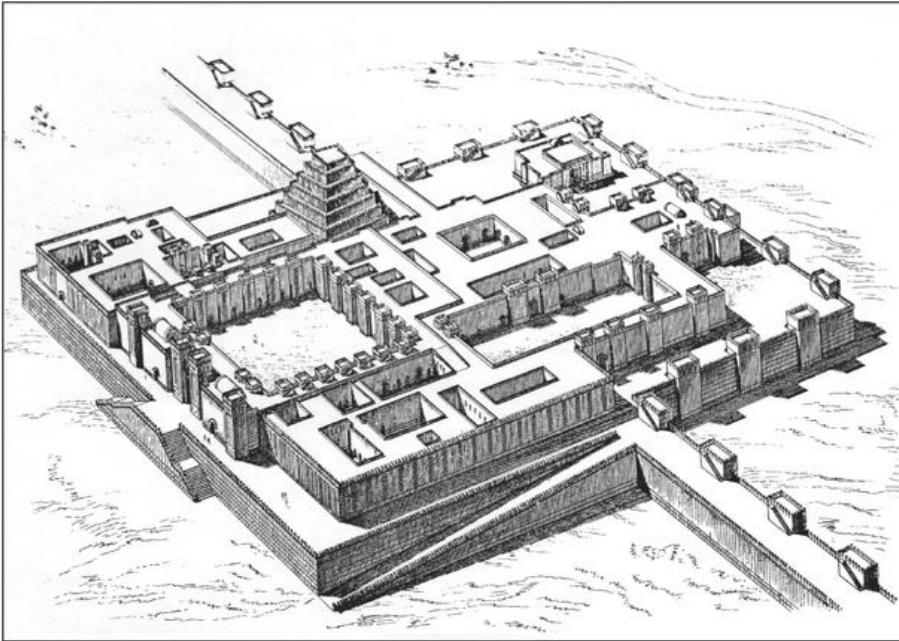
1.14a City of Ur, Mesopotamia (Iraq), ca. 2100 BCE.

This plan shows the walled precinct with the ziggurat and the enclosing city wall. A portion of the residential section that has been excavated can be seen to the southeast of the city center. Note the mazelike arrangement of the houses, contrasting sharply with the larger open spaces of the administrative and ceremonial center.

1.14b Plan of the residential quarter, Ur, Mesopotamia (Iraq), ca. 2100 BCE.

Surviving foundations indicate houses laid out on right-angled plans with living spaces organized around courtyards (shown hatched), a configuration that promoted urban density while also providing privacy and fresh air to each dwelling. Later versions of this house type can be found in Mohenjo-Daro (in the Indus Valley), Priene (in western Ionia), and in Islamic cities in the Middle East and North and East Africa.

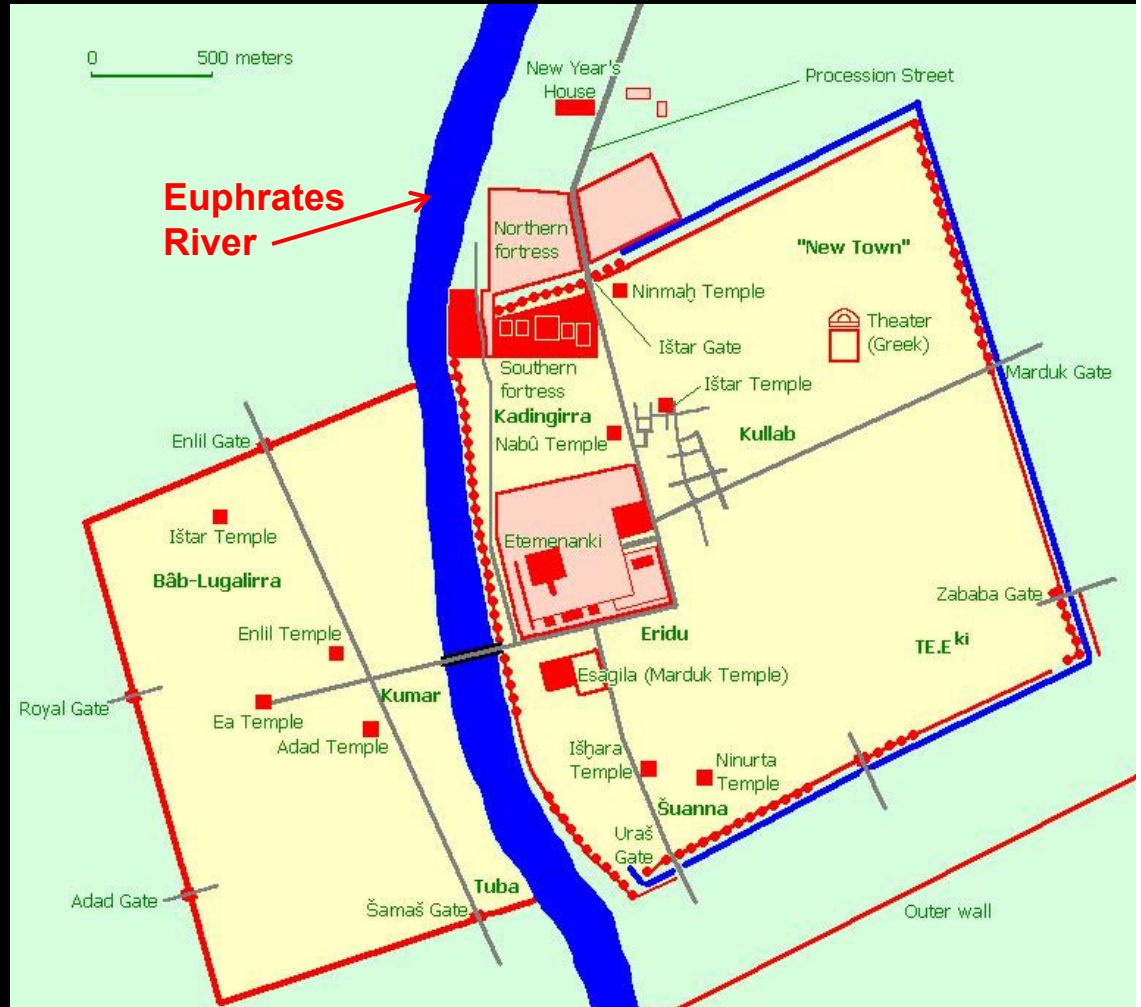
Assyrians Palace at Khorsabad, Assyria (Iraq), by Sargon II: c. 720 BCE

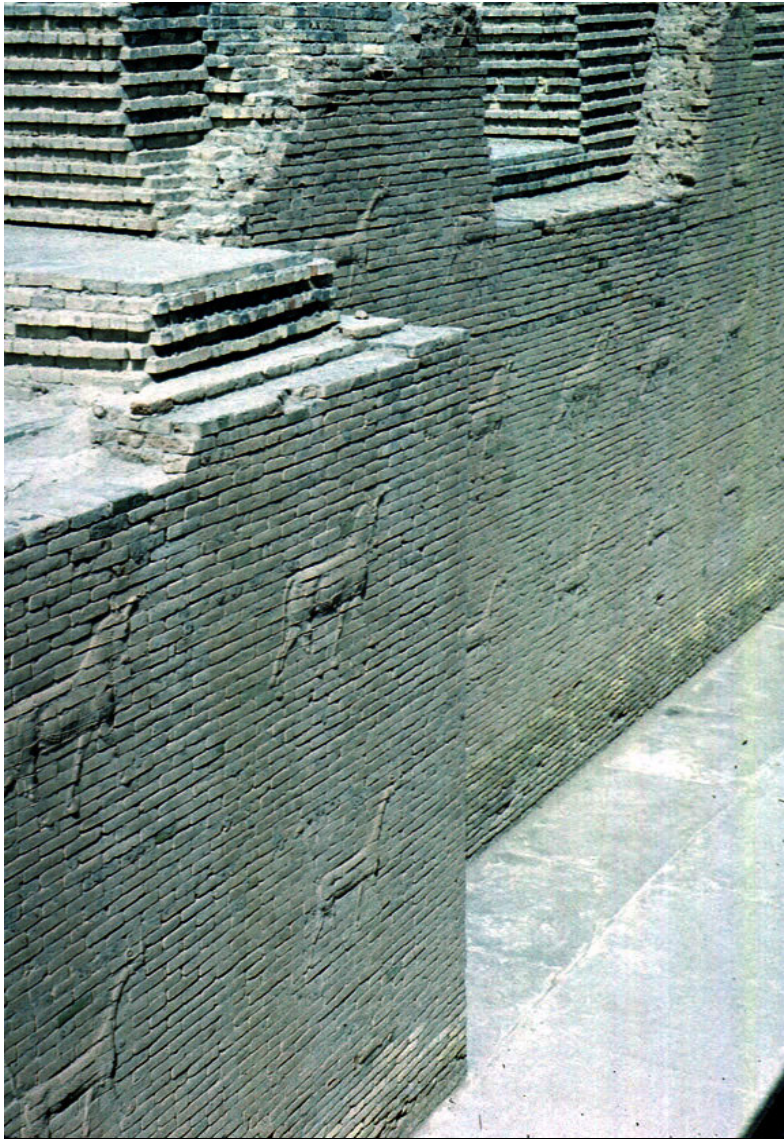


1.15b Plan of the palace, Khorsabad, Assyria (Iraq), ca. 720 BCE.

Babylon: (25 miles south of Baghdad, Iraq)

Rebuilt by Nebuchadnezzar II, 612–560 BCE.





The Processional Way:
73' long paved with white limestone
and pink marble.

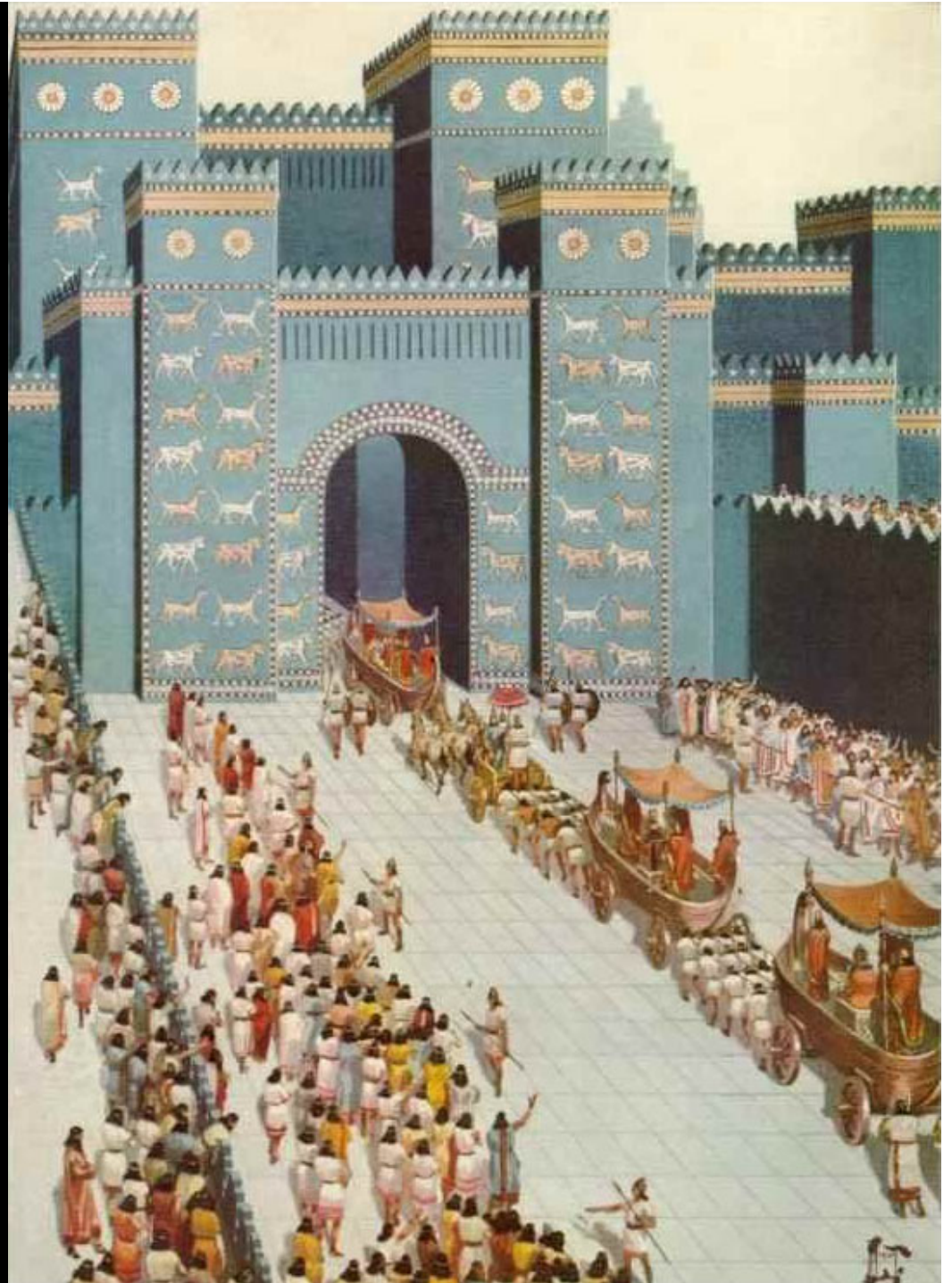


<http://oi.uchicago.edu>

<http://oi.uchicago.edu>

Ishtar Gate:
23' high with glazed brick
and animals in gold relief.

Ishtar Gate, c. 575 BCE



Renalias, Josep. "Porta d'Ishtar - Ur" from " Category:Ishtar Gate" 2008
[http://commons.wikimedia.org/wiki/\(2/1/2010\)](http://commons.wikimedia.org/wiki/(2/1/2010))

Norton, Rictor "Ishtar Gate, Pergamon Museum,
Berlin " Image from "<http://www.flickr.com>" 2009/17/05
<http://www.flickr.com/photos/24065742@N00/151247206/> (2/4/2010)

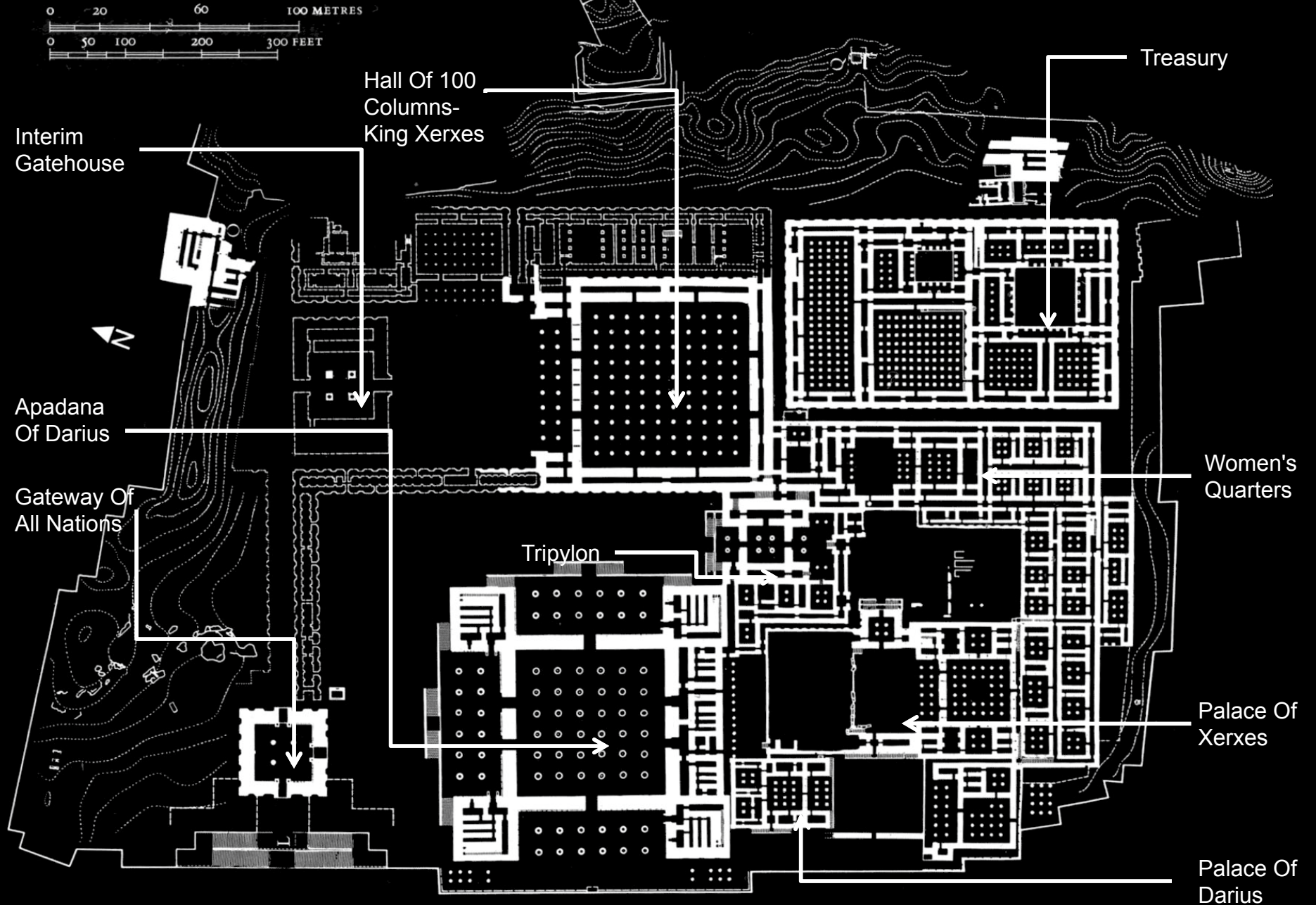


The Persian Empire: 539 – 331 BCE



Dr. Senta German, "Ancient Persia, an introduction," *Smarthistory*, June 8, 2018
(accessed September 2, 2019, <https://smarthistory.org/persian-art-an-introduction/>)

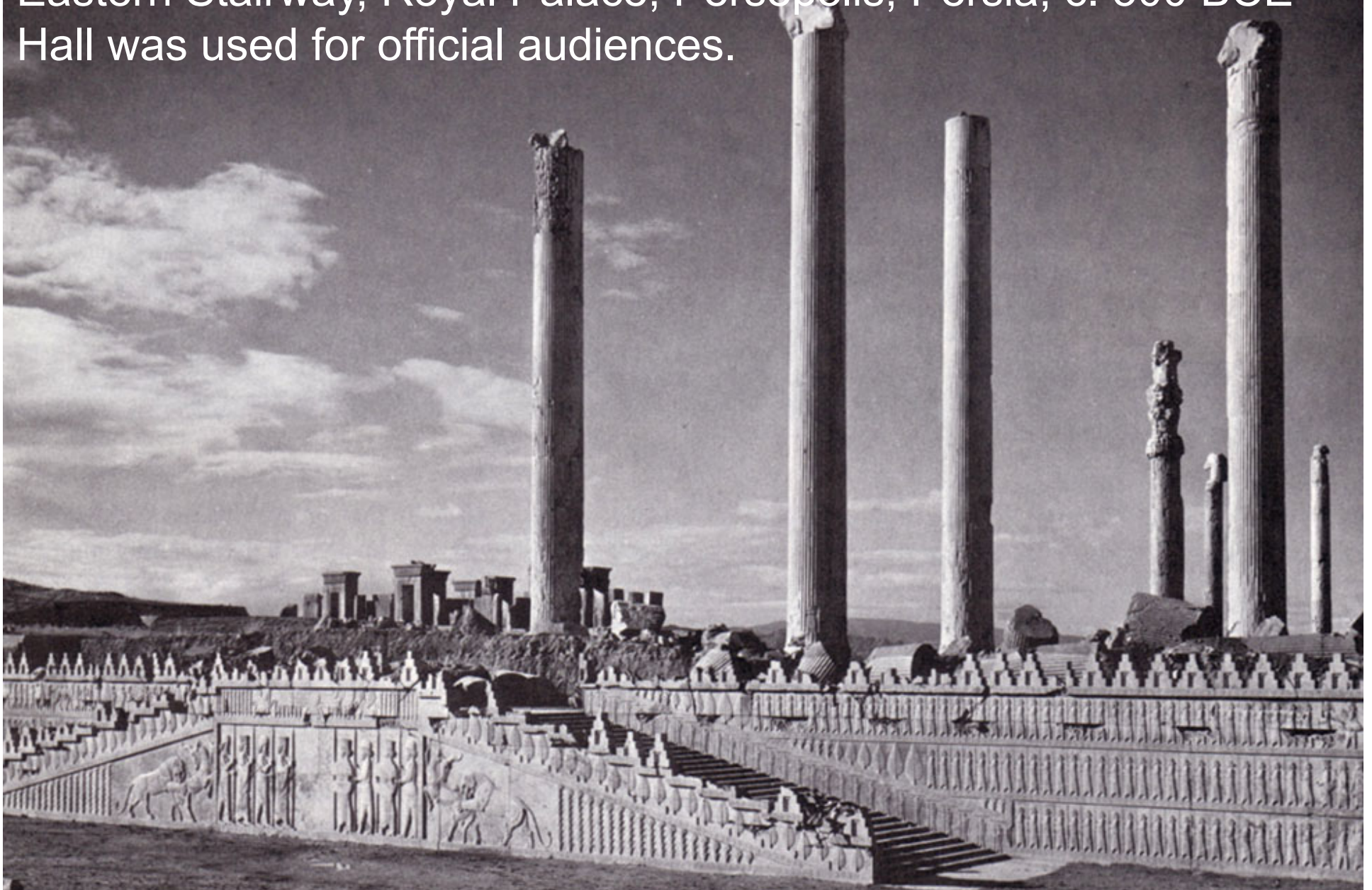
Plan of the Palace, Persepolis, Persia (Iran), c. 518 BCE



Frankfort, Henri - *The Art and Architecture of the Ancient Orient*, 1996

Apadana of Darius (Hypostyle Hall)

Eastern Stairway, Royal Palace, Persepolis, Persia, c. 500 BCE
Hall was used for official audiences.



Royal Palace Of Darius

Persepolis, Persia, c. 500 BCE



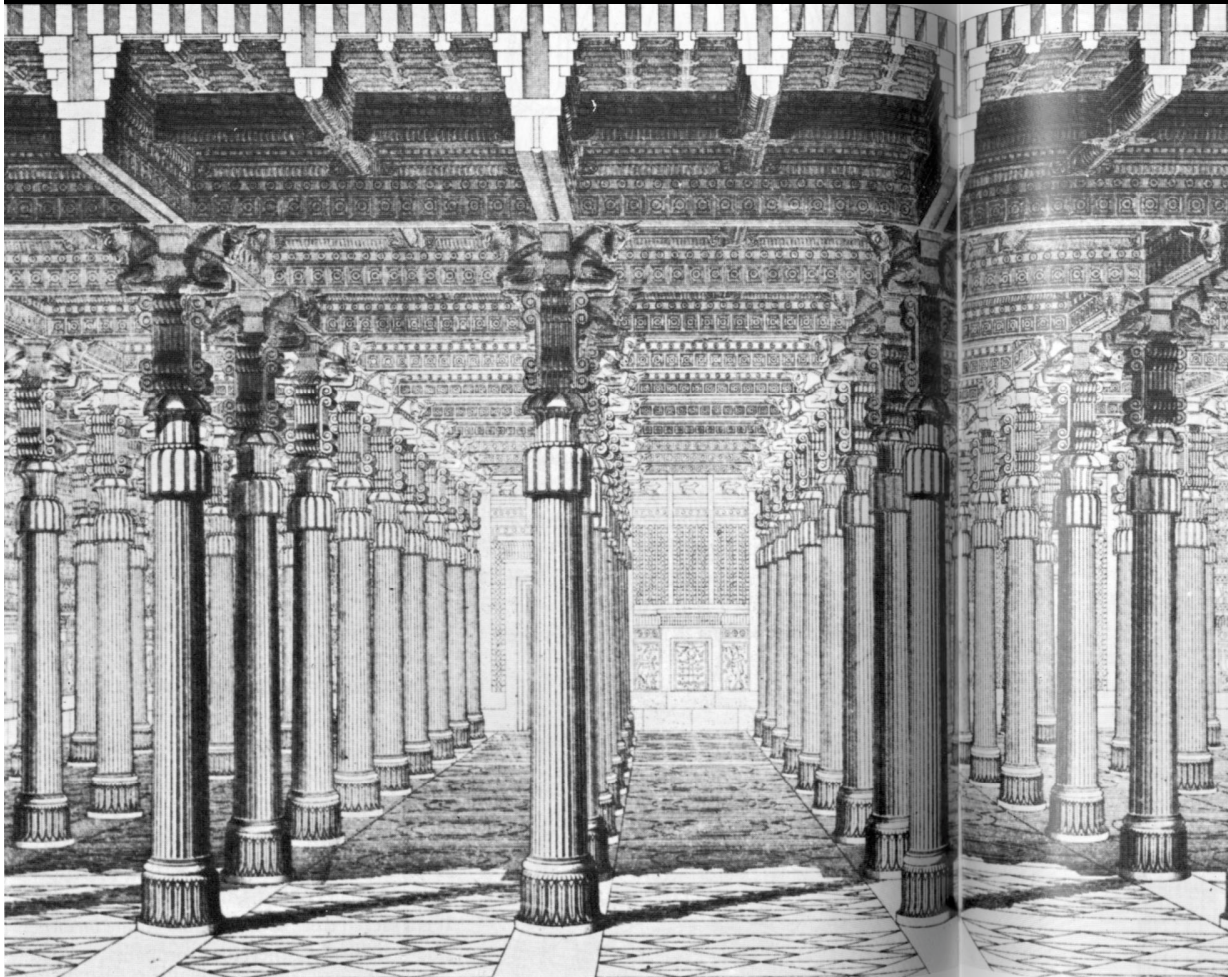
Royal Palace of Darius, Persepolis

500 BCE



From www.payvand.com

Hall Of 100 Columns, Royal Throne Room (Xerxes) Royal Palace, Persepolis



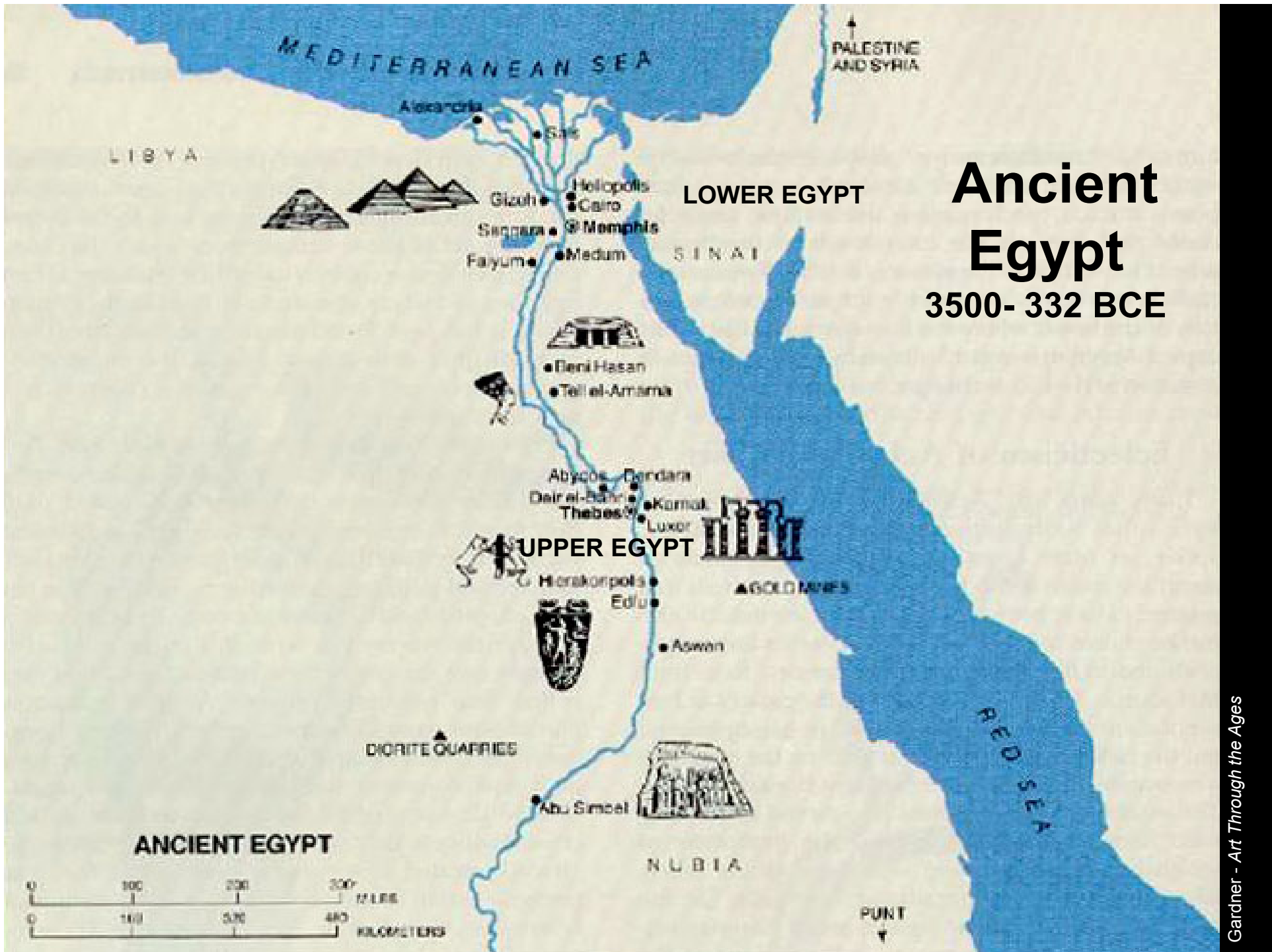
Reconstruction by Chip. Frankfort, Henri - *The Art and Architecture of the Ancient Orient*, 1996



Gateway of All Nations, Persepolis, Persia, c. 500 BCE

Sorosh "Gates of All Nations in Persepolis" Image from "Persepolis" 2007-01-25
<http://commons.wikimedia.org/wiki/Category:Persepolis> (2/1/2010)













Ancient Egypt

3500- 332 BCE

Ancient Egypt 3500 BCE - 2150 BCE

c. 3500 B.C.	c. 3000	c. 2686	2150
<p>PREDYNASTIC PERIOD</p>	<p>EARLY DYNASTIC PERIOD (DYNASTIES I-II)</p>	<p>OLD KINGDOM (DYNASTIES III-VI)</p>	<p>FIRST INTERMEDIATE PERIOD</p>
 <p>Hierakonpolis painting detail c. 3500 B.C.</p>	 <p>Palettes of Narmer c. 3000 B.C.</p>	 <p>Stepped Pyramid, Saqqara c. 2650 B.C.</p>  <p>Pyramids, Giza c. 2530-2460 B.C.</p>	<p>Civil War</p>
<p>Union of Upper and Lower Egypt under King Narmer</p>			

Ancient Egypt 2050 BCE - 332 BCE

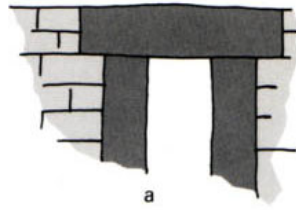
2050	1750	1570	1070	716	332
MIDDLE KINGDOM (DYNASTIES XI-XXII)	SECOND INTERMEDIATE PERIOD	NEW KINGDOM (EMPIRE PERIOD) (DYNASTIES XVIII-XX)		THIRD INTERMEDIATE PERIOD (DYNASTIES XXI-XXIV)	LATE PERIOD (DYNASTIES XXV-XXX)
 <p>Rock-cut tombs, Beni Hasan c. 2000 B.C.</p>		<p>Temple of Amen-Ra, Karnak c. 1280 B.C.</p> 			
		<p>Queen Nefertiti c. 1360 B.C.</p> 	<p>Abu Simbel c. 1257 B.C.</p> 		
Reunification of Egypt under Mentuhotep II	Hyksos invasion; introduction of horse and wheel	Ahmose I defeats the Hyksos	<p>Amarna Period (Akenaton) 1361-1352 B.C.</p> <p>Tutankhamen 1361-1352 B.C.</p>		<p>Persia conquers Egypt 525 B.C.</p> <p>Alexander conquers Persia and Egypt 332 B.C.</p>

Egypt: Ancient Egypt thrived for over 3000 years
(3500 BCE - 332 BCE)

- 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:

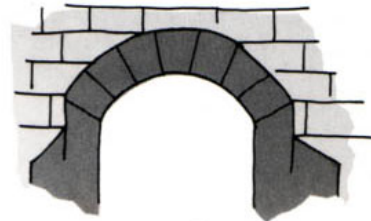
- The first large scale dressed stone buildings
- Pure geometric forms such as the pyramid
- Fine craftsmanship
- Invention of the column, obelisk, capital, cornice & pylon



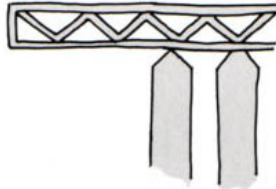
a



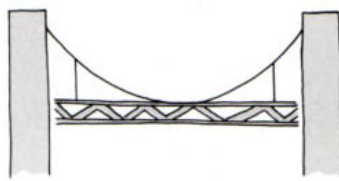
b



c



d



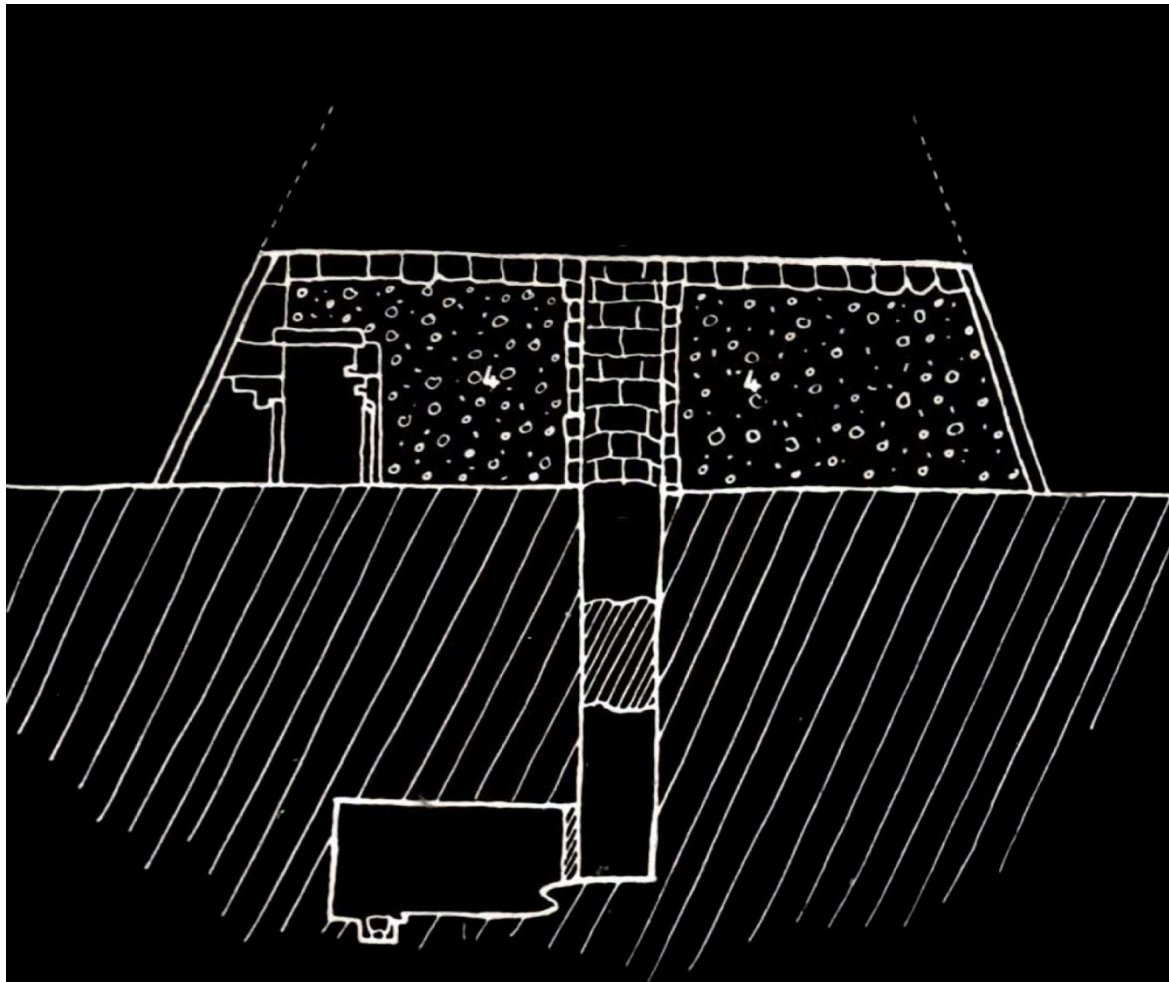
e

8 Basic structural devices: *a*, post and lintel; *b*, corbeled arch; *c*, arch; *d*, cantilever; *e*, suspension.

Mastabas= beginning of the pyramids

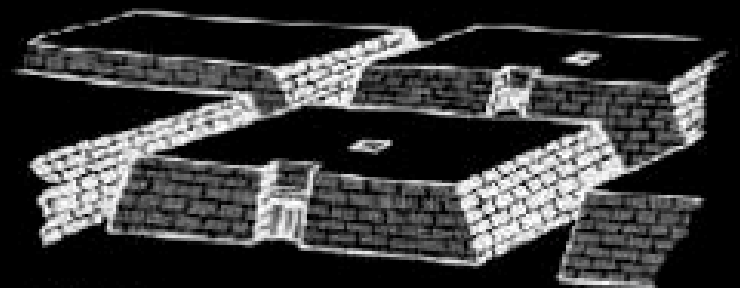
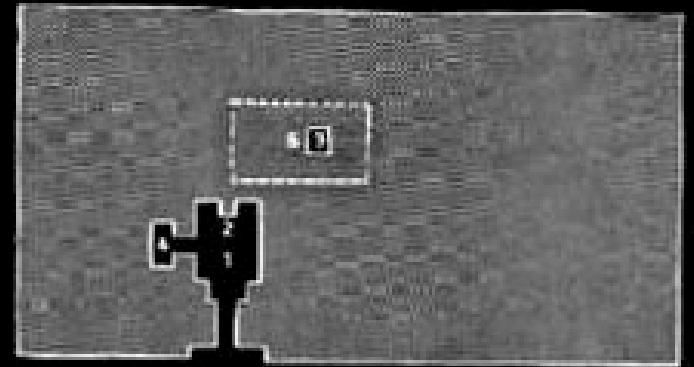
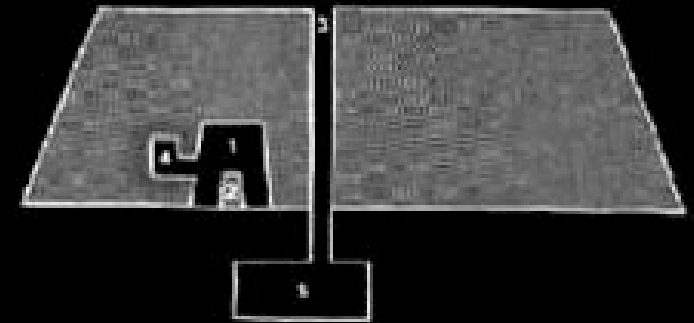
- Means “bench” in Arabic
- It was a flat topped rectangular tomb
- first made of sun dried bricks and later faced with solid rock, with shafts and passages leading to subterranean crypt (tomb).





Samivel, *The Glory* 1955

3-5 Mastabas (bottom), with plan (middle) and schematic section (top).

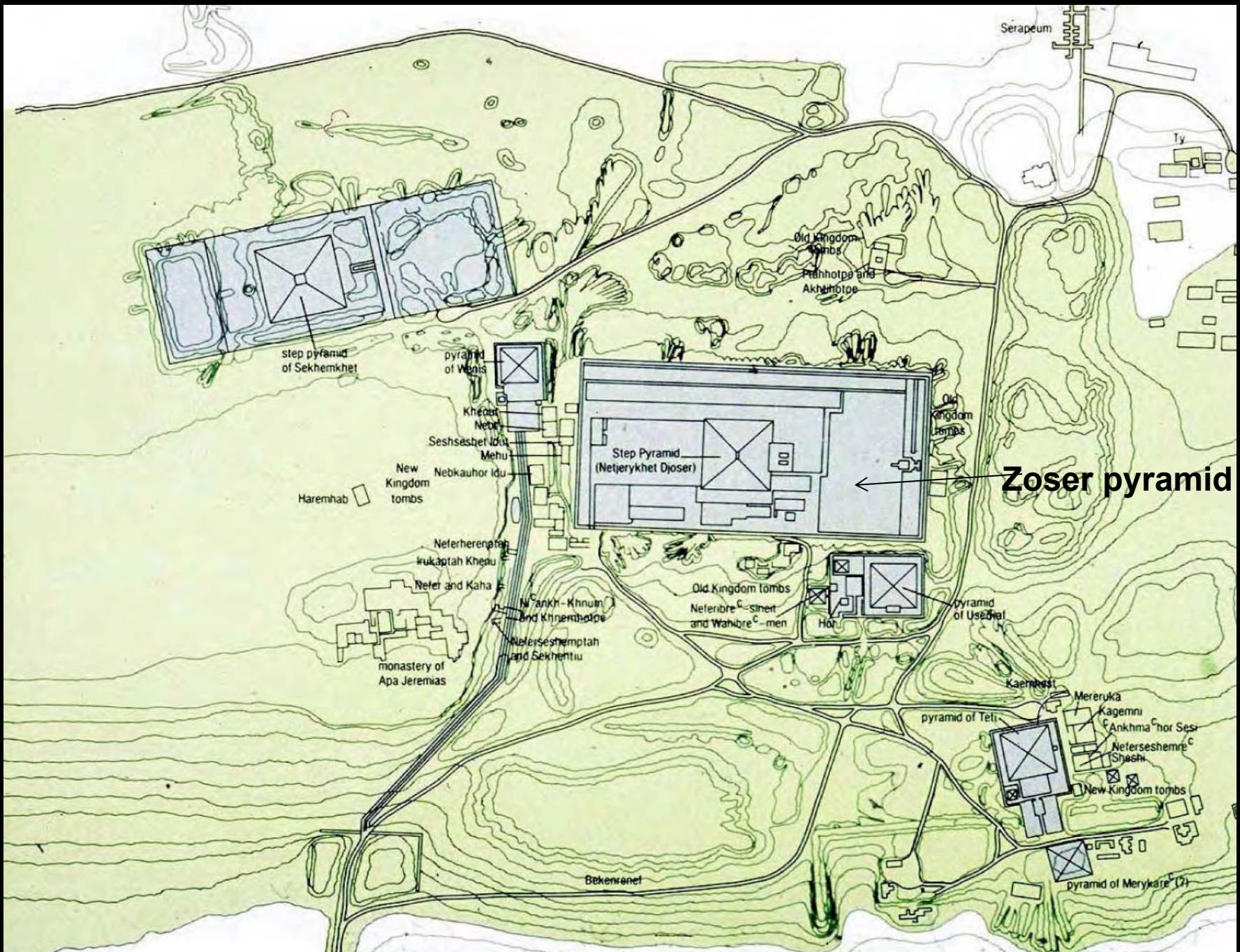


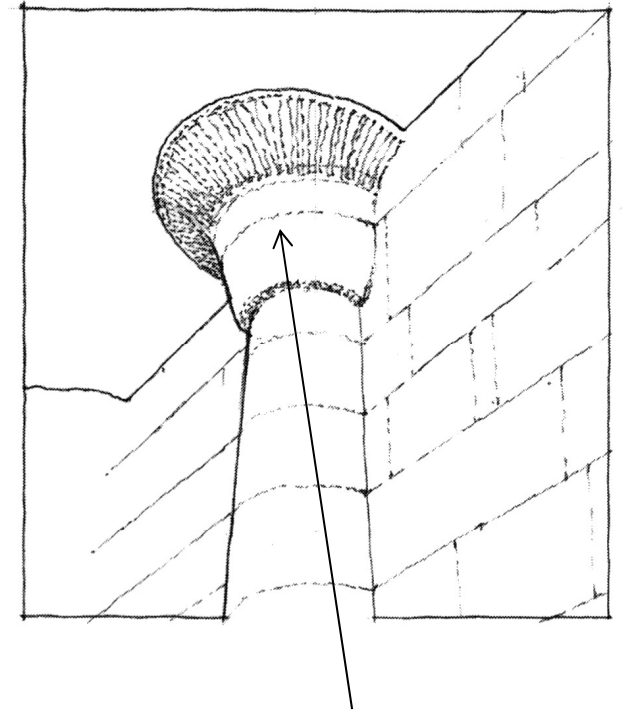
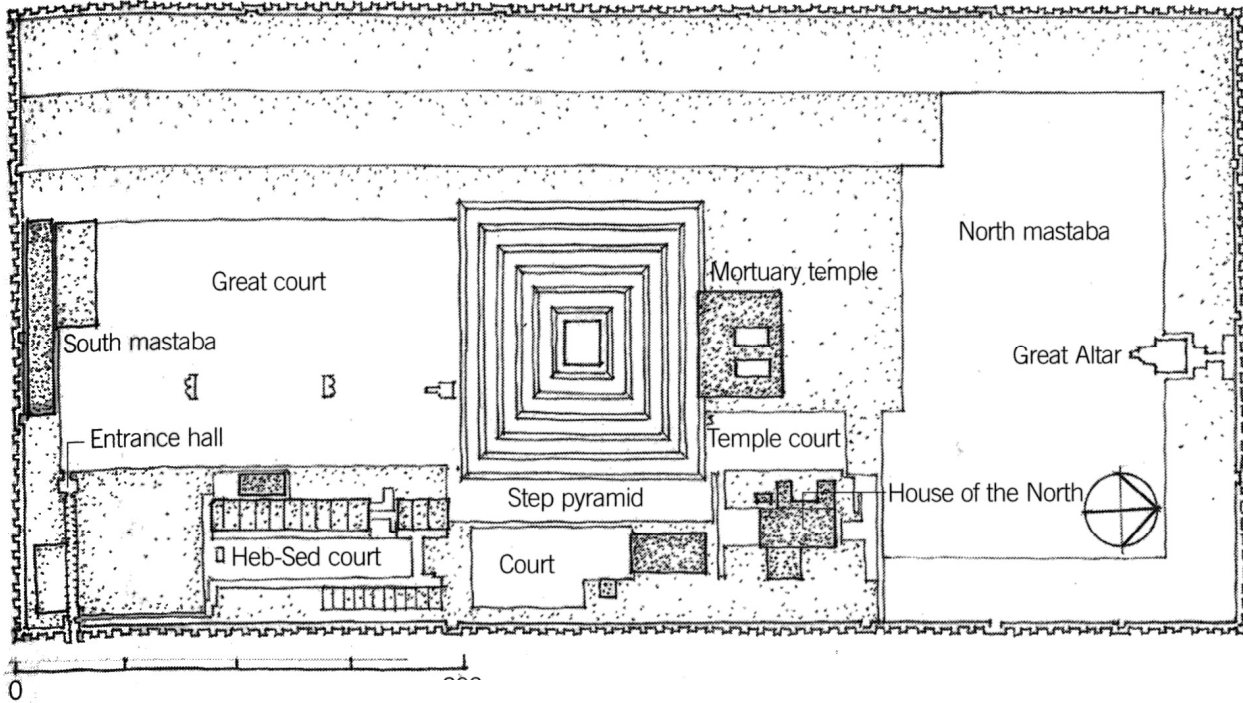
1. Chapel
2. False door
3. Shaft into burial chamber
4. Serdab (chamber for statue of deceased)
5. Burial chamber

Step Pyramid, Saqqara, Egypt: c. 2630 BCE

- Tomb for Pharaoh Djoser [Zoser]
- Designed by Imhotep, Architect to Djoser
- Egypt's 1st pyramid & 1st building to use dressed stone
- Receding stack of 6 stone mastaba rising over 200' high
- Image of stone stairway rising to the heavens

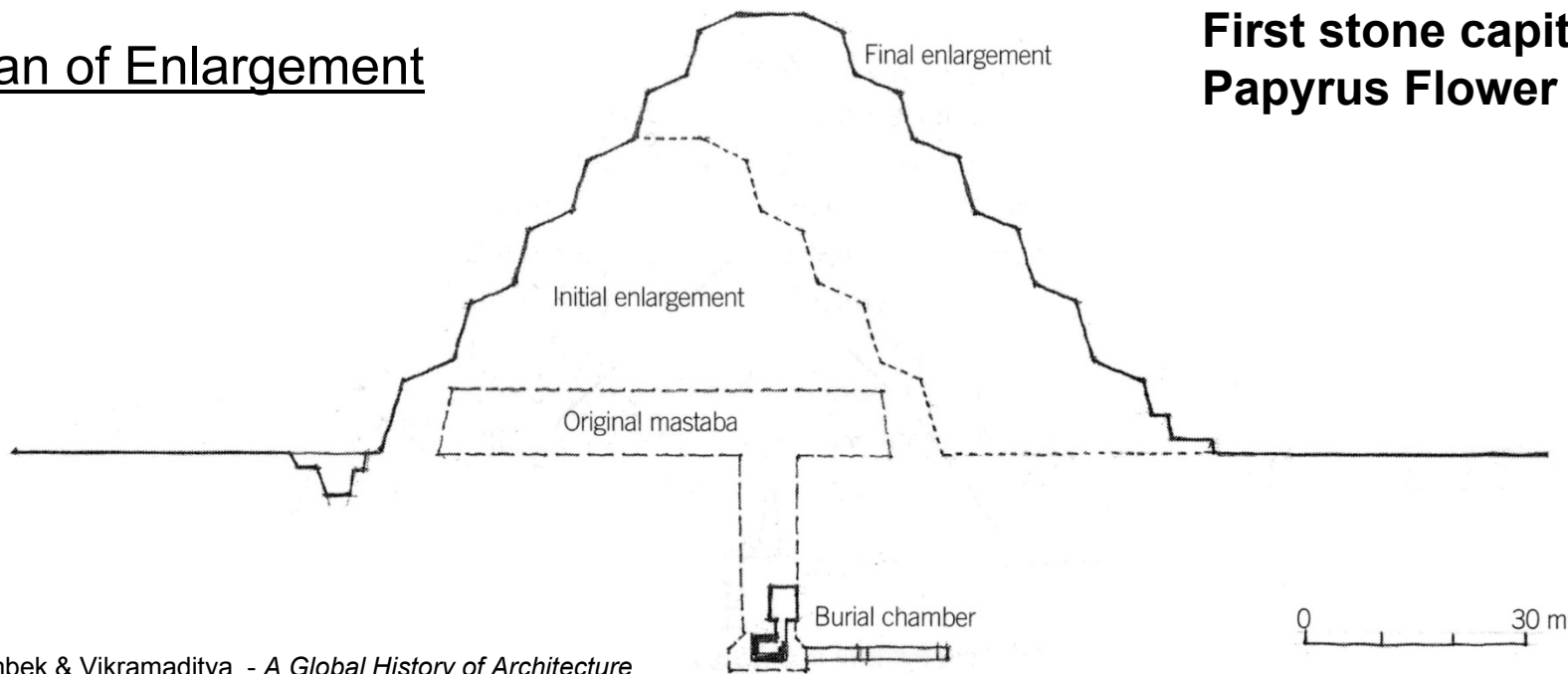


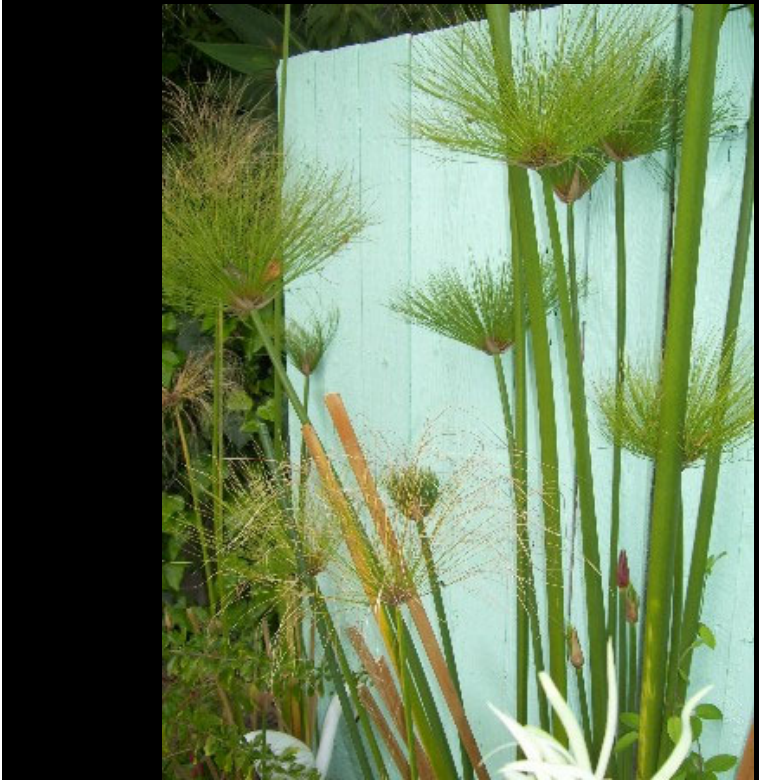




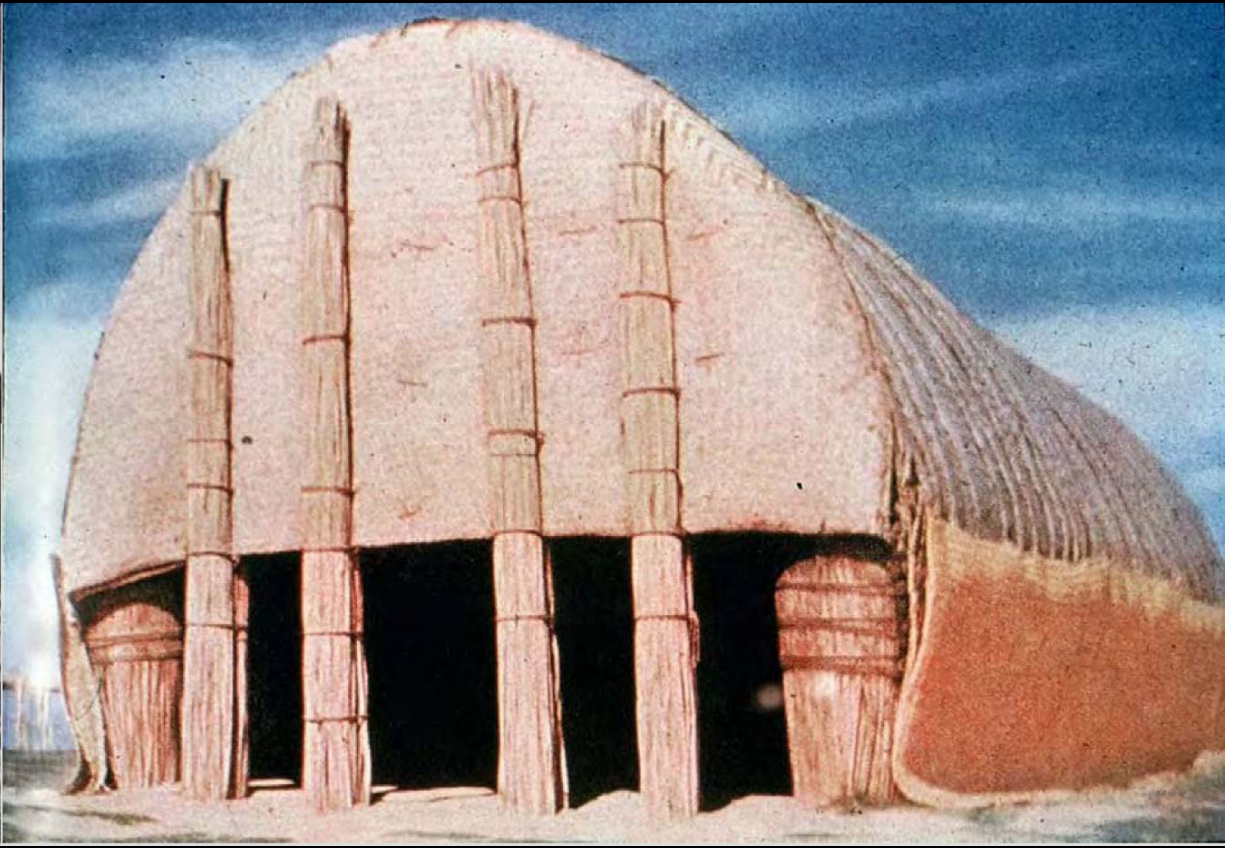
Plan of Enlargement

**First stone capital
Papyrus Flower**









Lewis, Miles - <http://www.mileslewis.net/>

Stepped Pyramid of Djoser [Zoser]- 2778 BCE



Sebi " Cour_du_Heb_Sed" Image from "Pyramid of Djoser" 2005
http://commons.wikimedia.org/wiki/Category:Pyramid_of_Djoser (2/4/2010)

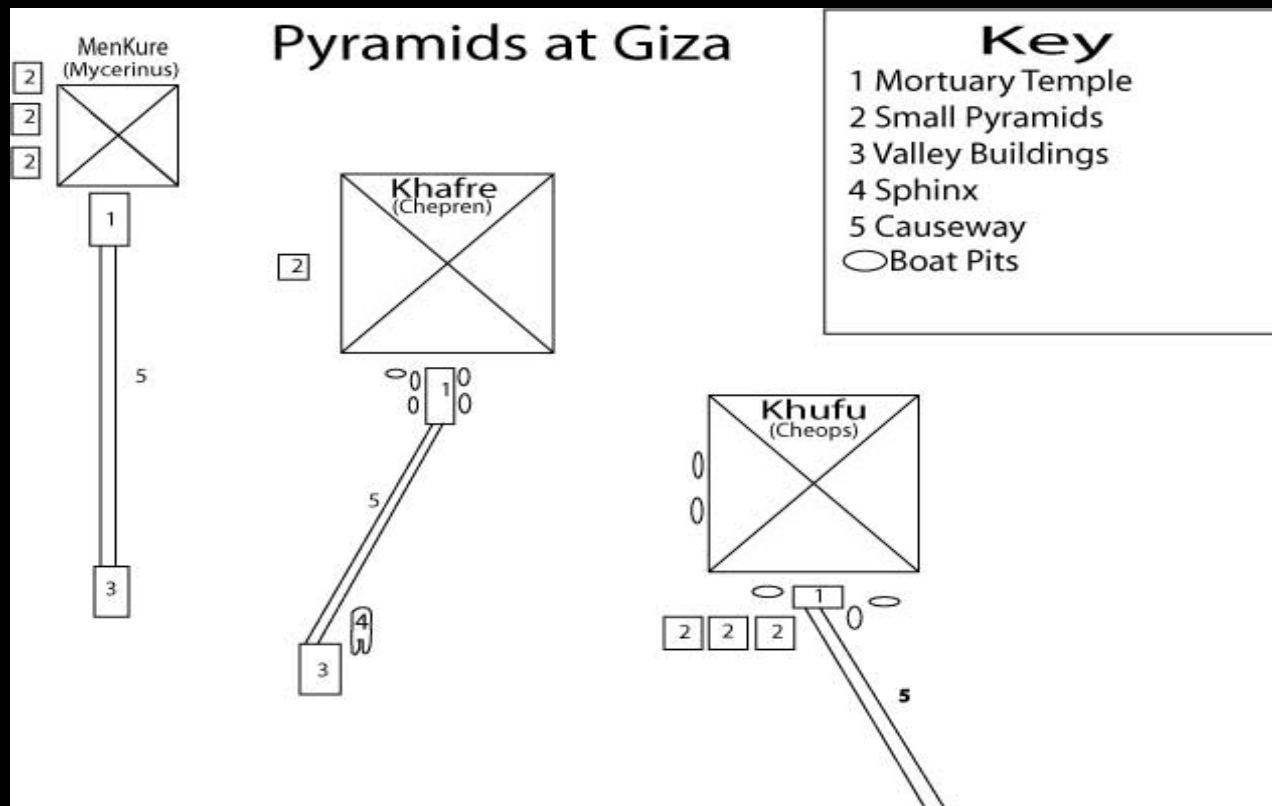
Great Pyramids of Giza: 2560 BCE

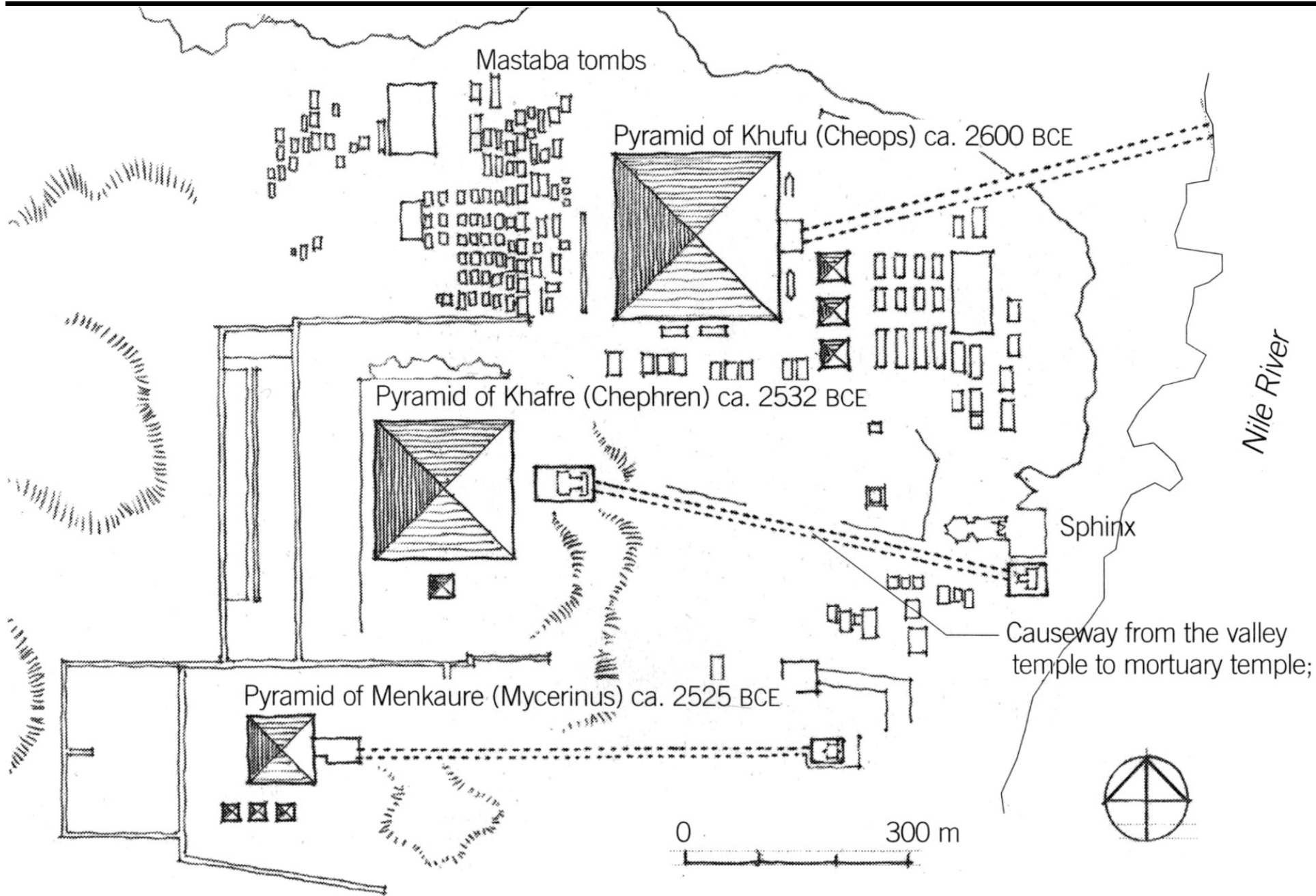


Henri Stierlin, *Notre Histoire Lue du Ciel: Mouments de l'Antiquite* (2005)

Great Pyramids of Giza: 2560BCE

- 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: Khufu (Cheops), c. 2550 - 2460 BCE

- 2.3 million blocks of granite and limestone
- Each block weighing about 2.5 tons
- 201 tiers, 481' high, base covers 13 acres

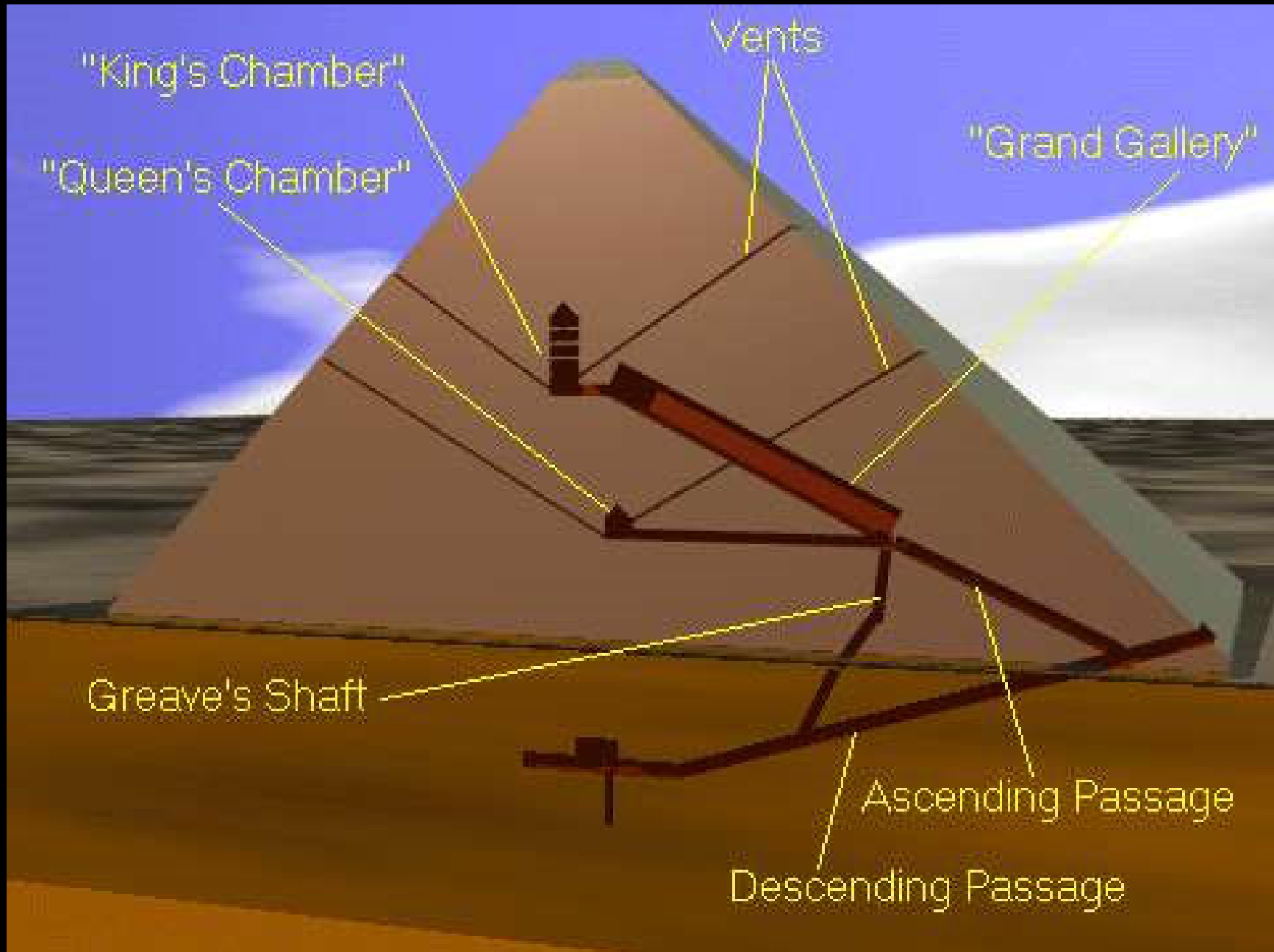


Pyramid Construction:

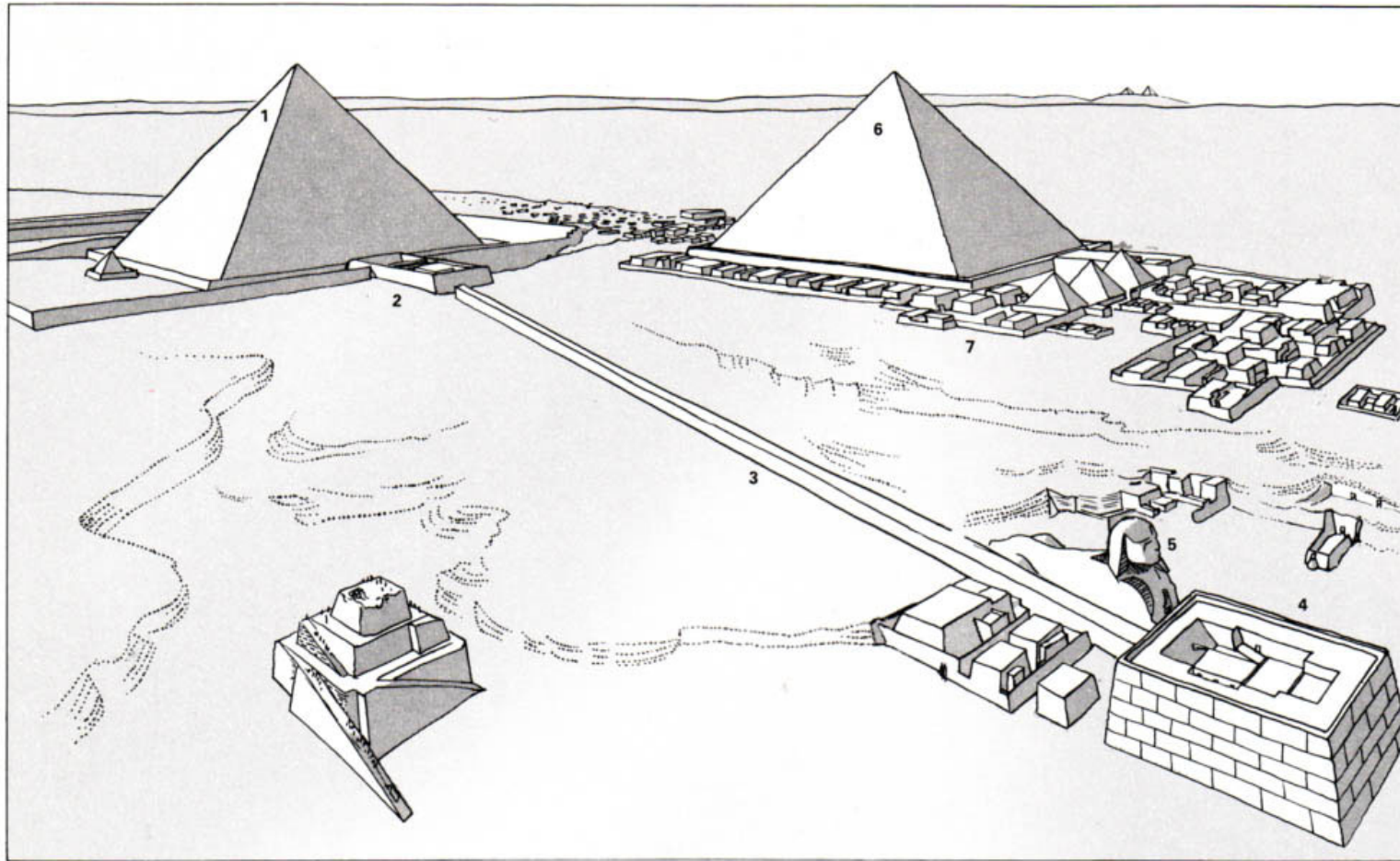
- When the Nile flooded each Fall, the farmers were able to help with the building of pyramids
- Used the Nile to float the stones on barges from the quarries
- Used huge earthen ramps that wrapped around the pyramids & they were removed after completion.
- A partitioned ceiling with triangular arches deflects loads



Pyramid Organization



Great Pyramid: Cheops, 2589-2566 BCE



3-9 Reconstruction of the Pyramids of Khufu and Khafre. (After Hoelscher.)

1. Pyramid of Khafre
2. Mortuary temple

3. Covered causeway
4. Valley temple

5. Great Sphinx
6. Pyramid of Khufu

7. Pyramids of the royal family and mastabas of nobles

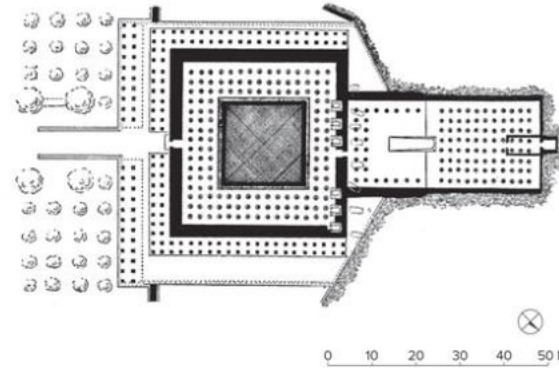
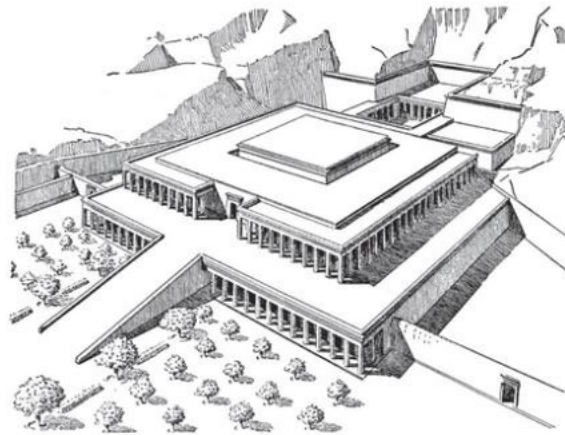
Great Pyramid: Cheops, 2589-2566 BCE



Aldin, Nina "Great Pyramid of Giza" Image from "Great Pyramid of Giza" 2005
http://commons.wikimedia.org/wiki/Great_Pyramid_of_Giza (2/3/2010)

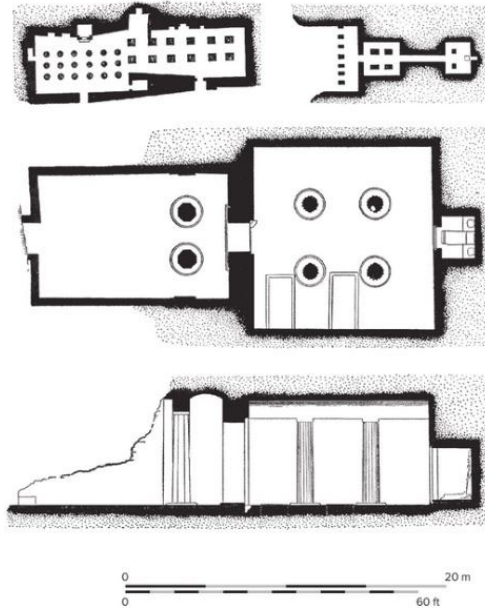
Temples

- Pyramids were continually being looted by grave robbers
- In response, burial sites came to be secretive, in tombs carved out of cliffs
- Pharaohs also created public mortuary temple complexes dedicated to the sun god, Amun, with whom the pharaohs were associated



1.26 Reconstruction and plan of Mentuhotep's mortuary temple, Deir-el-Bahari, Egypt, ca. 2061–2100 BCE.

This Middle-Kingdom temple represents an interesting synthesis of an axial temple, hypostyle hall, and burial chamber into a single composition. Its ramps and stepped terraces would be echoed in the New-Kingdom temple of Hatshepsut built about 400 years later on an adjoining site.



1.27 Plan and section of rock-cut tombs, Beni-Hasan, Egypt, ca. 2000–1900 BCE.

Even when working amorphous rock, the builders chose to replicate rectangular geometries and to carve details reflecting the wooden and plastered reed construction that doubtless characterized houses. The lower of the two plans corresponds to the section.

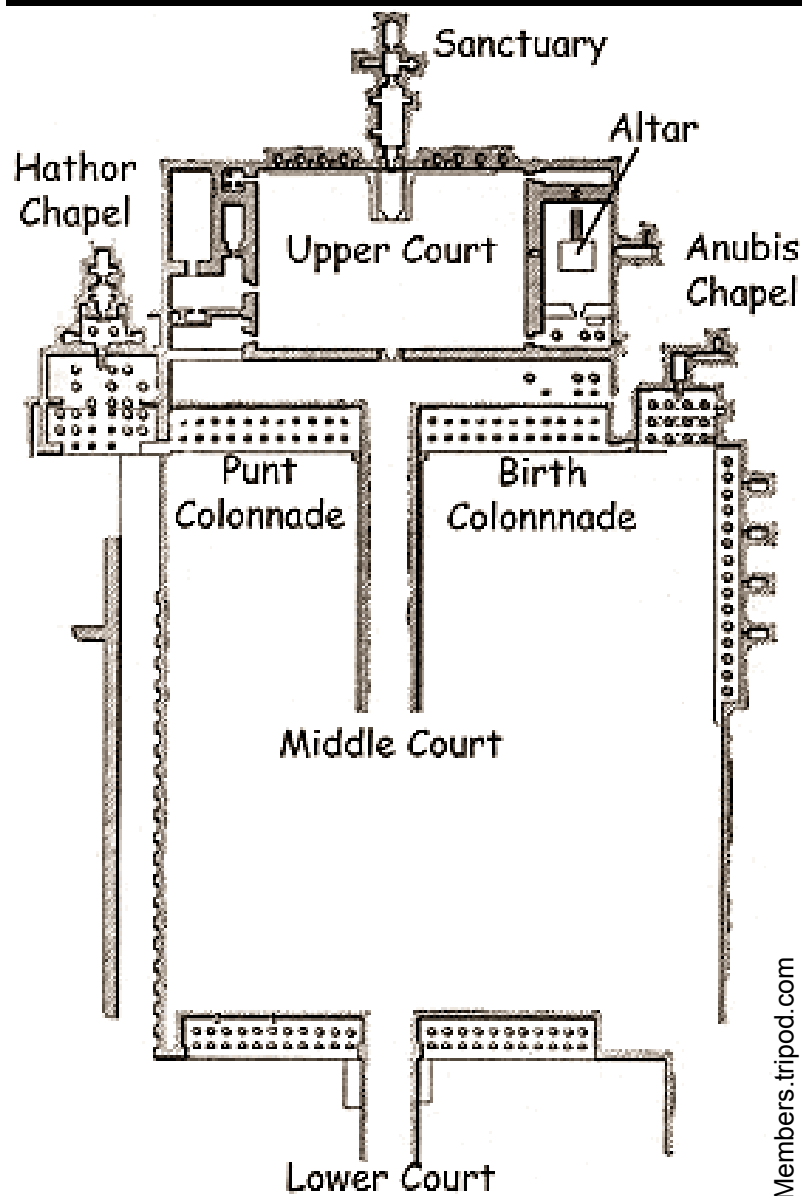
Fazio, Moffett and Wodehouse (2019)

Queen Hatshepsut's Mortuary Temple-1450 BCE

Colonnaded limestone terraces, linked with gentle sloping ramps, set in the mountains



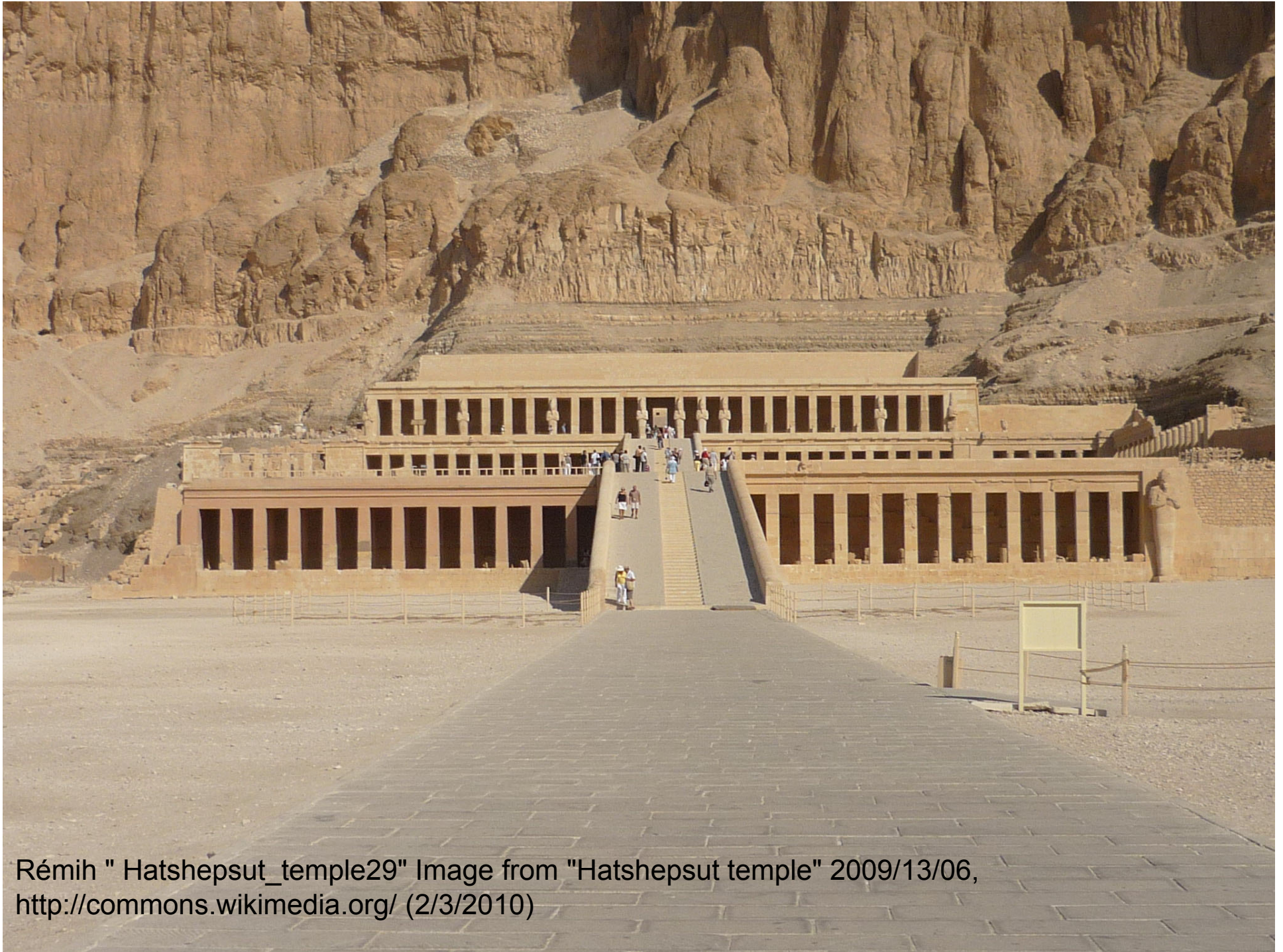
Queen Hatshepsut's Mortuary Temple: 1450 BCE



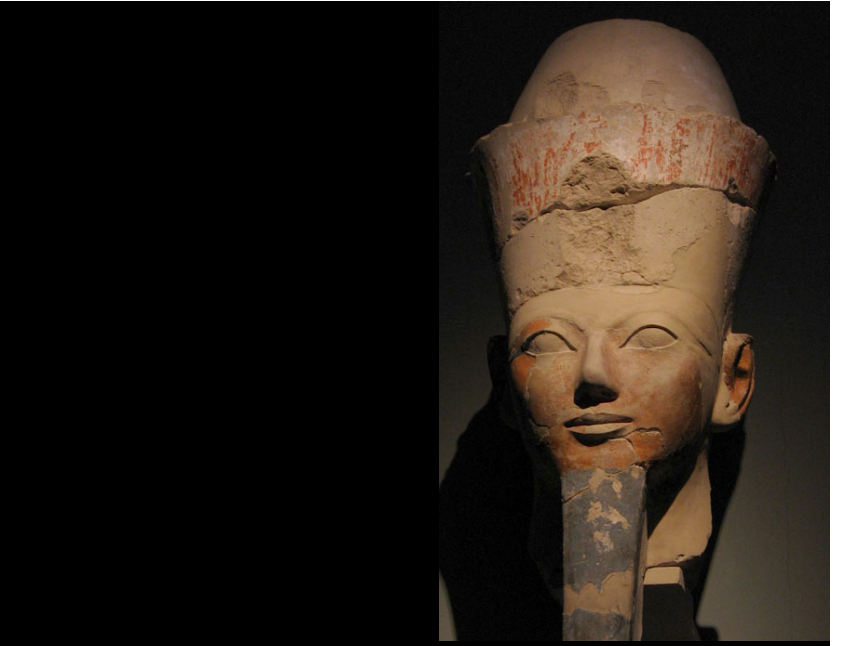
Members.tripod.com



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Rémih " Hatshepsut_temple29" Image from "Hatshepsut temple" 2009/13/06,
<http://commons.wikimedia.org/> (2/3/2010)

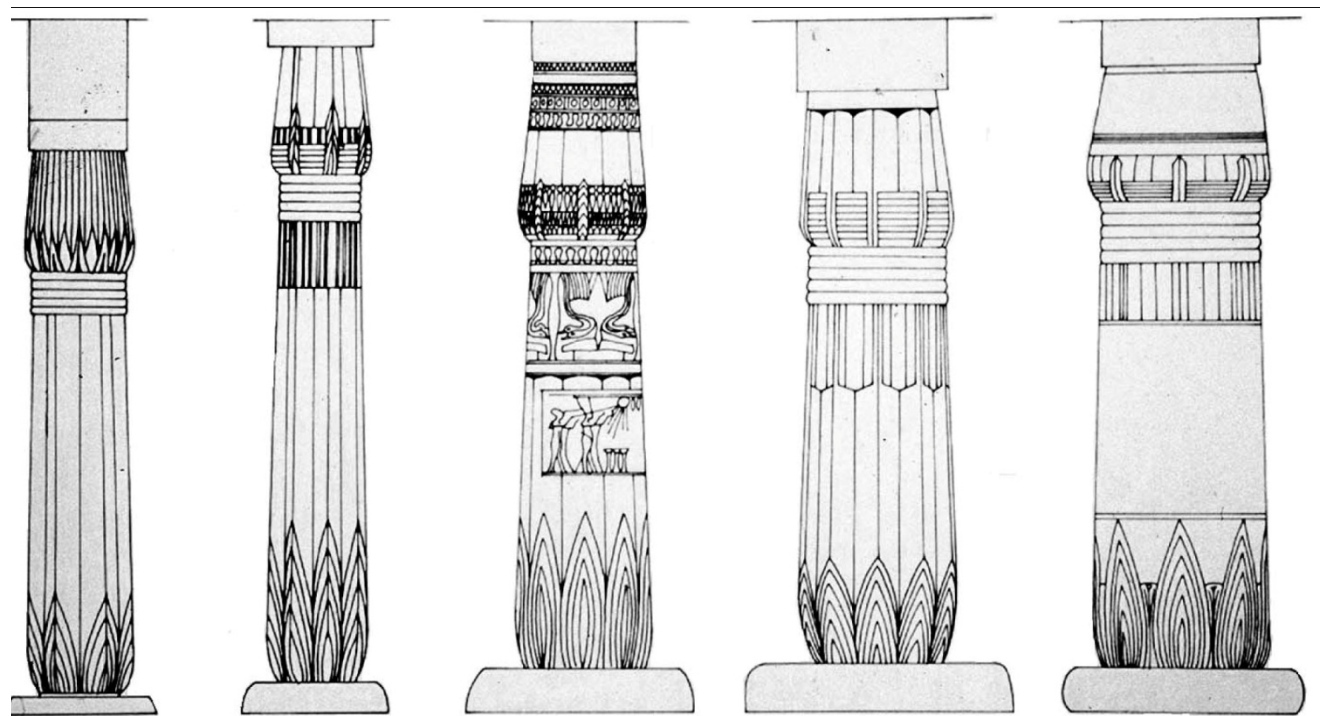
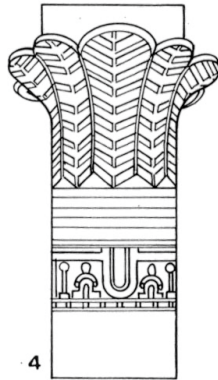
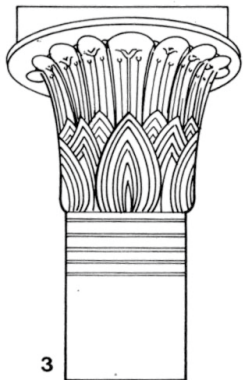
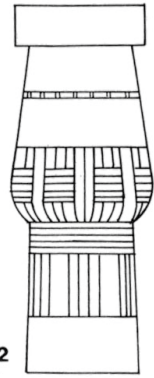
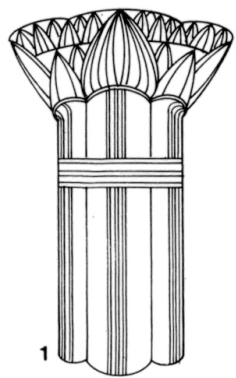


Rémih "Hatshepsut temple" 2009/13/06
<http://commons.wikimedia.org/> (2/3/2010)



Rémih "Hatshepsut temple" 2009/13/06 <http://commons.wikimedia.org/> (2/3/2010)

The first column capitals in the world



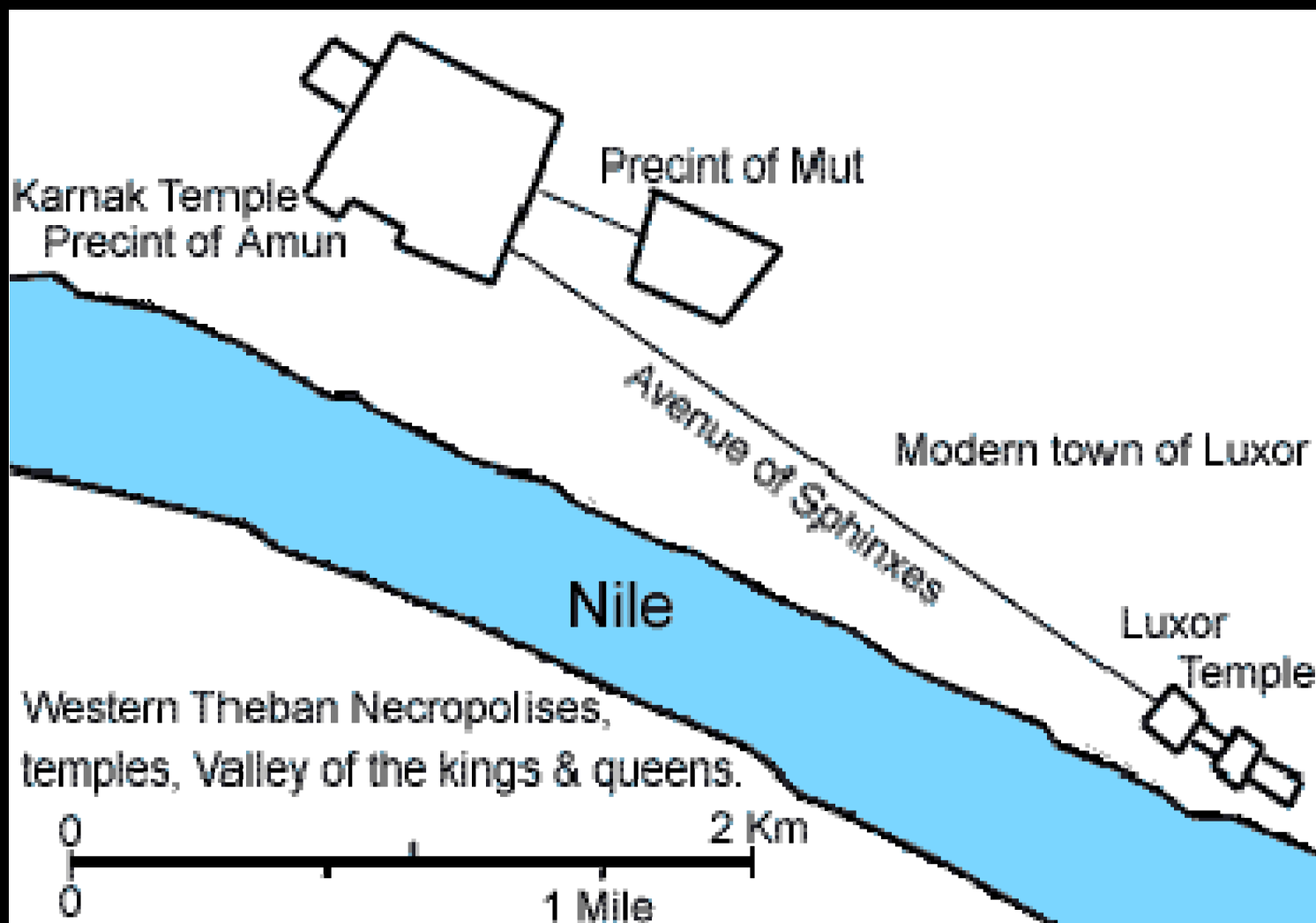
- (1) lotus flowers
- (2) papyrus buds
- (3) papyrus flowers
- (4) palm leaves

evolution of closed papyrus bud columns in Egypt: (a) 5th Dynasty;
(b) 18th Dynasty, Tuthmosis III; (c) Amenhotep IV; (d) 19th Dynasty,
Sety I; (e) 20th dynasty, Ramses III

J-L de Cenival, *Living Architecture: Egyptian* (London 1964), p 181

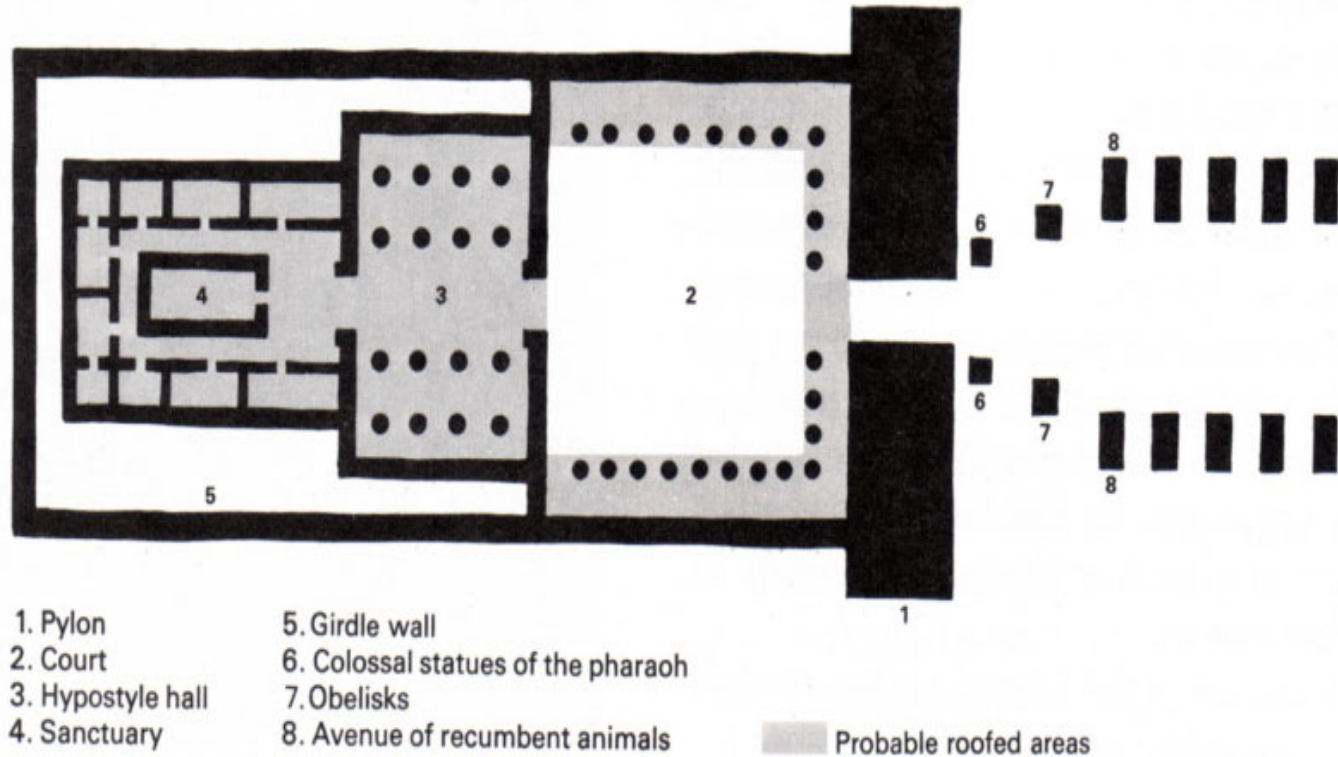
Later, temples are built to honor more than one God and added by various Pharaohs. Two main examples are:

- The Temple of Amun (Amon) at Luxor, c.1400 BCE
- The Temple of Amun (Amon)-Re at Karnak, c.1550 - 323 BCE

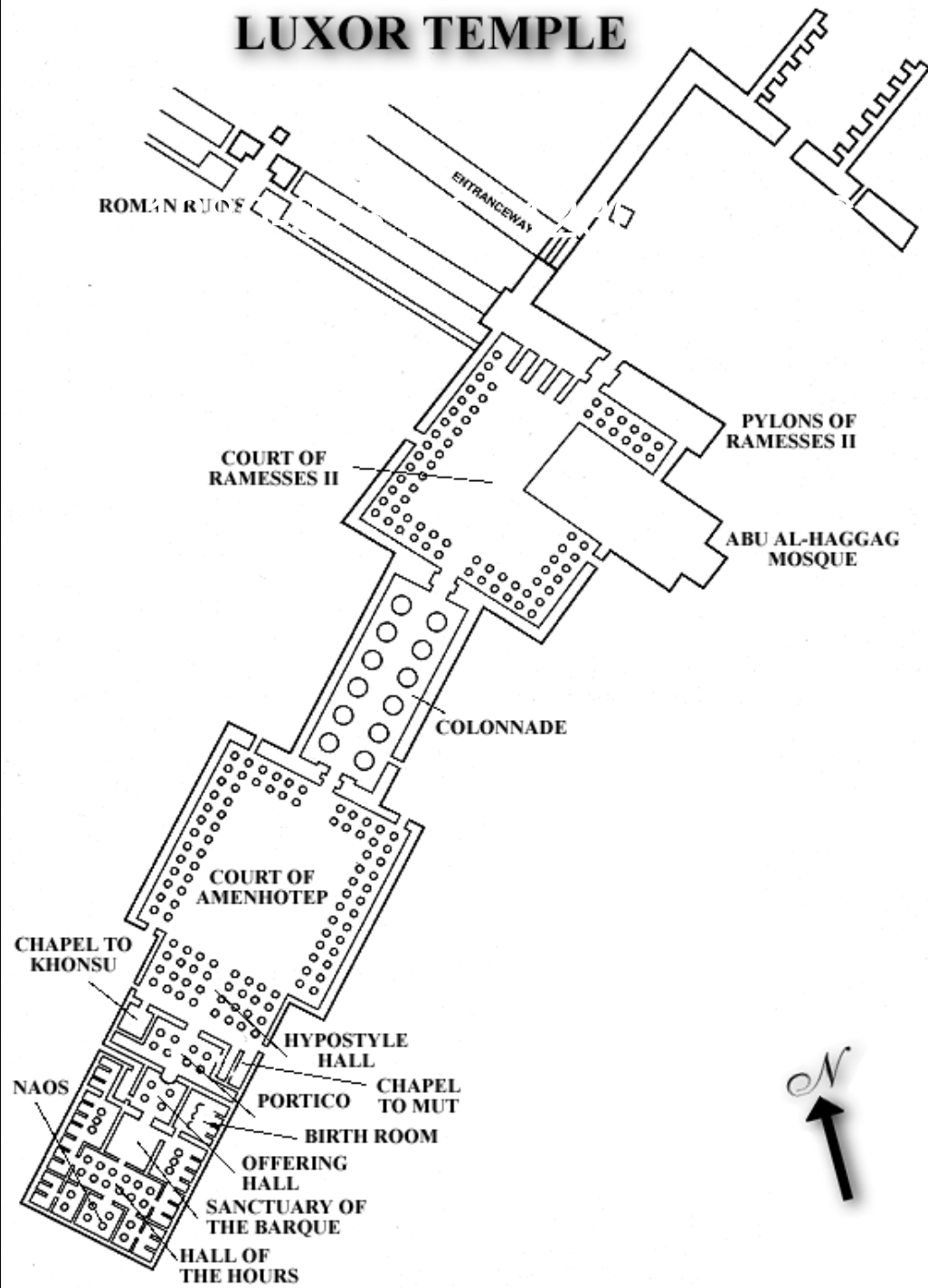


Plan of a typical pylon Temple

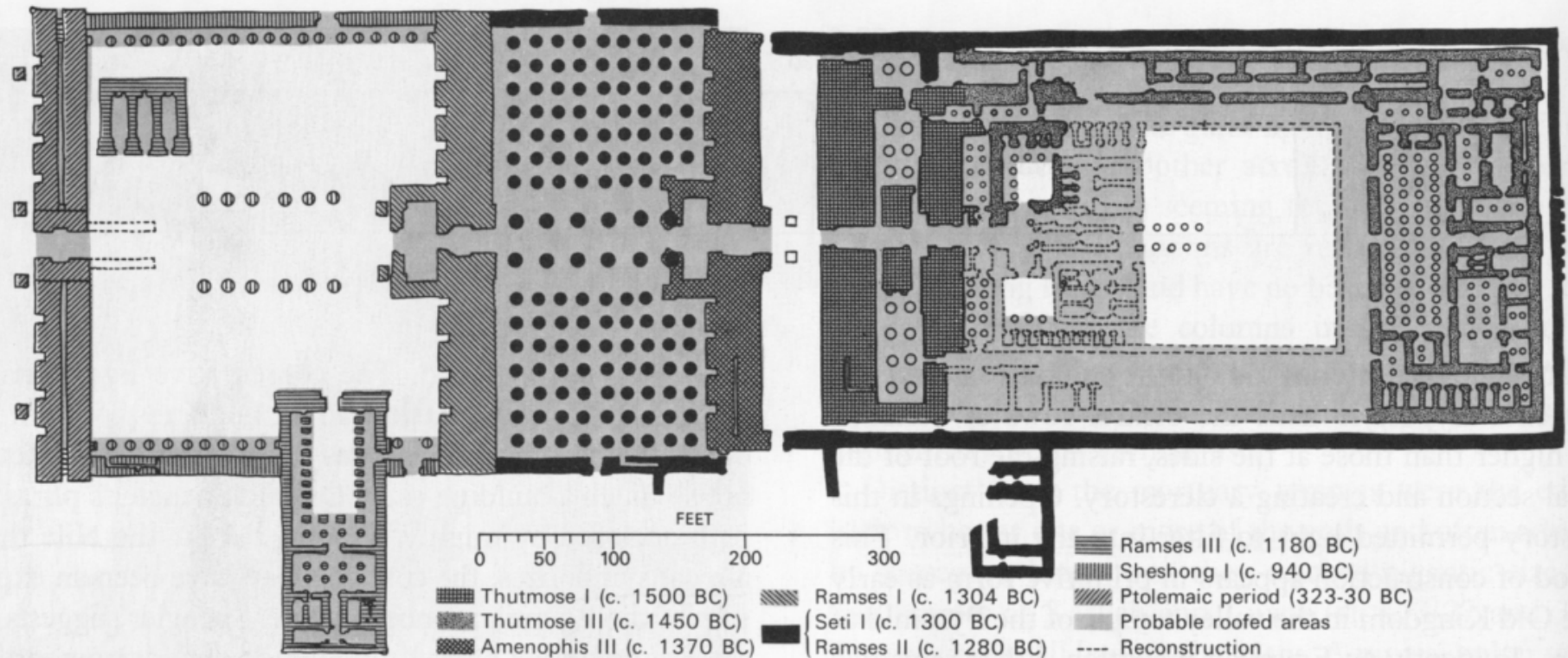
3-24 Plan of a typical pylon temple.



LUXOR TEMPLE

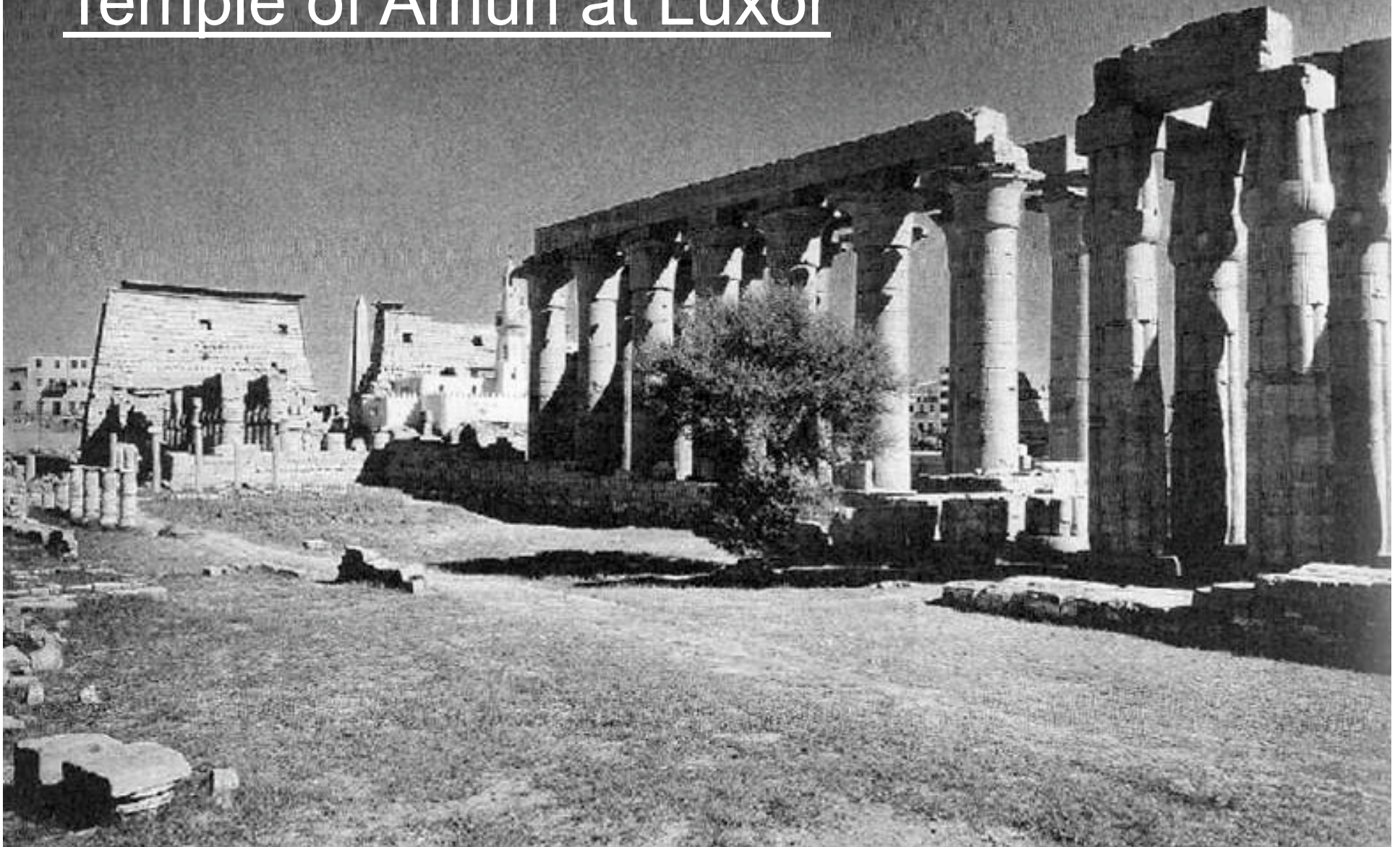


Temple of Amun-Re at Karnak: c. 1550 - 323 BCE

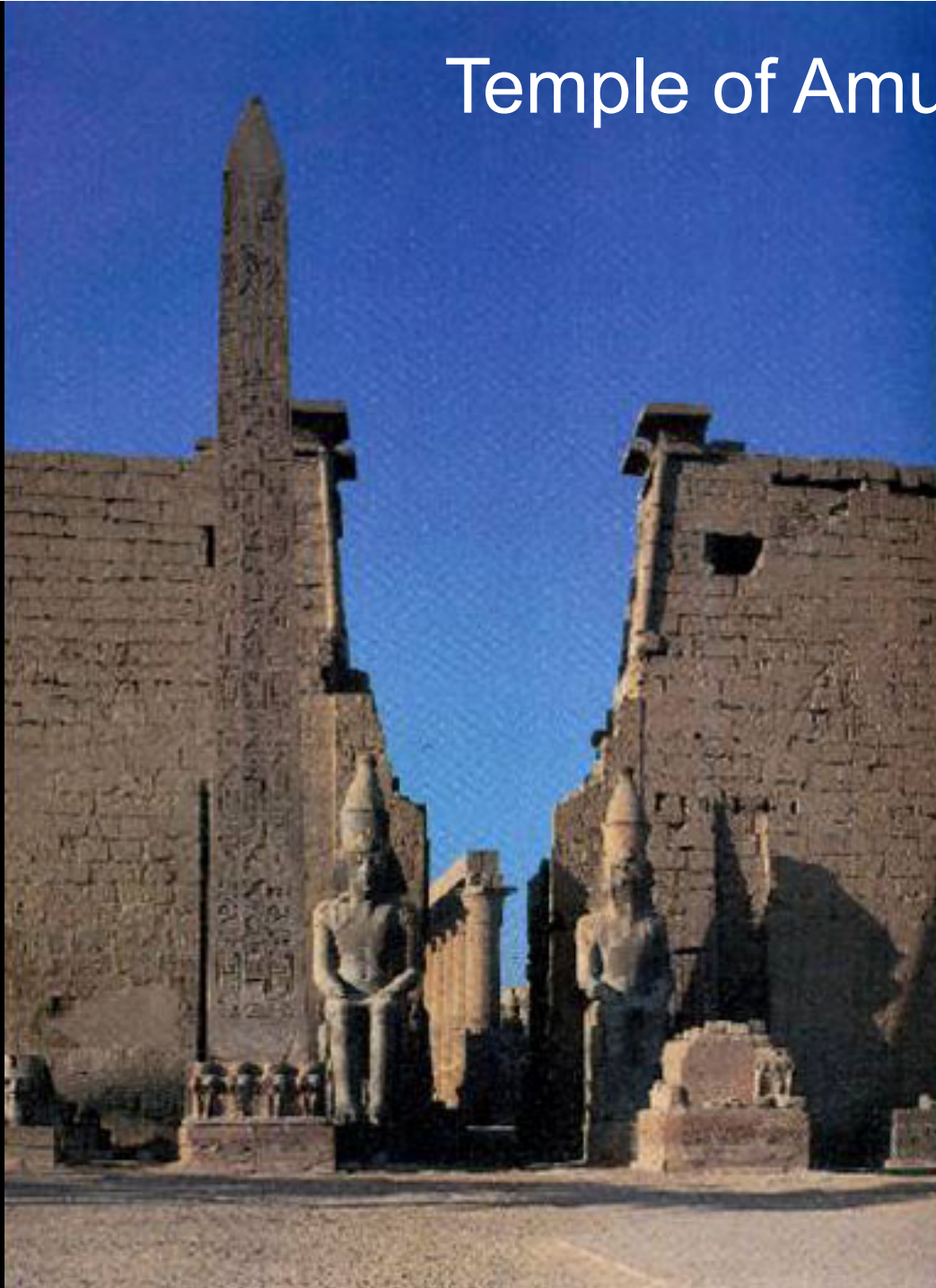


3-26 Plan of the Temple of Amen-Re, Karnak. (After Sir Banister Fletcher.) Dates in parentheses indicate time of construction.

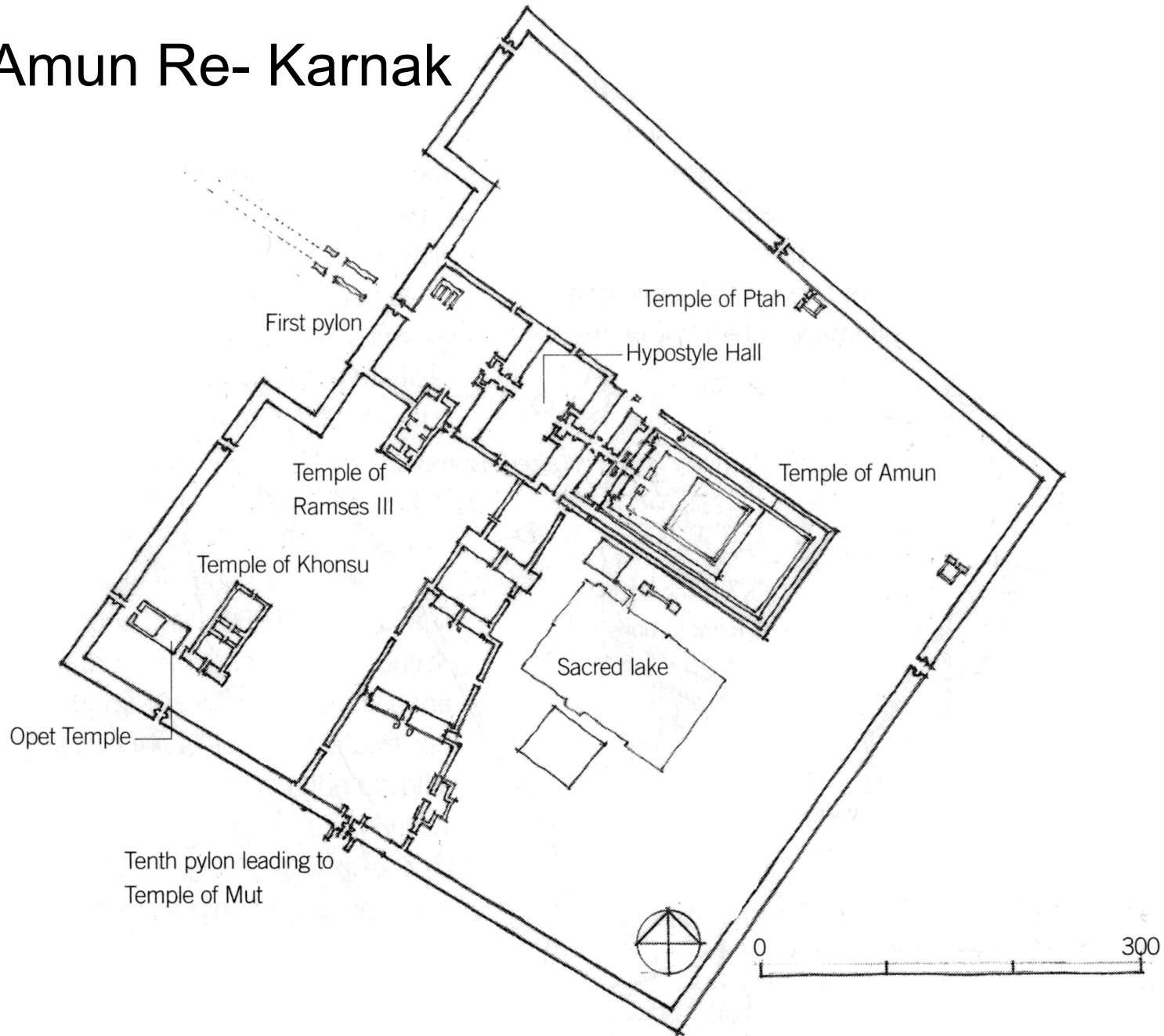
Temple of Amun at Luxor



Temple of Amun at Luxor



Amun Re- Karnak

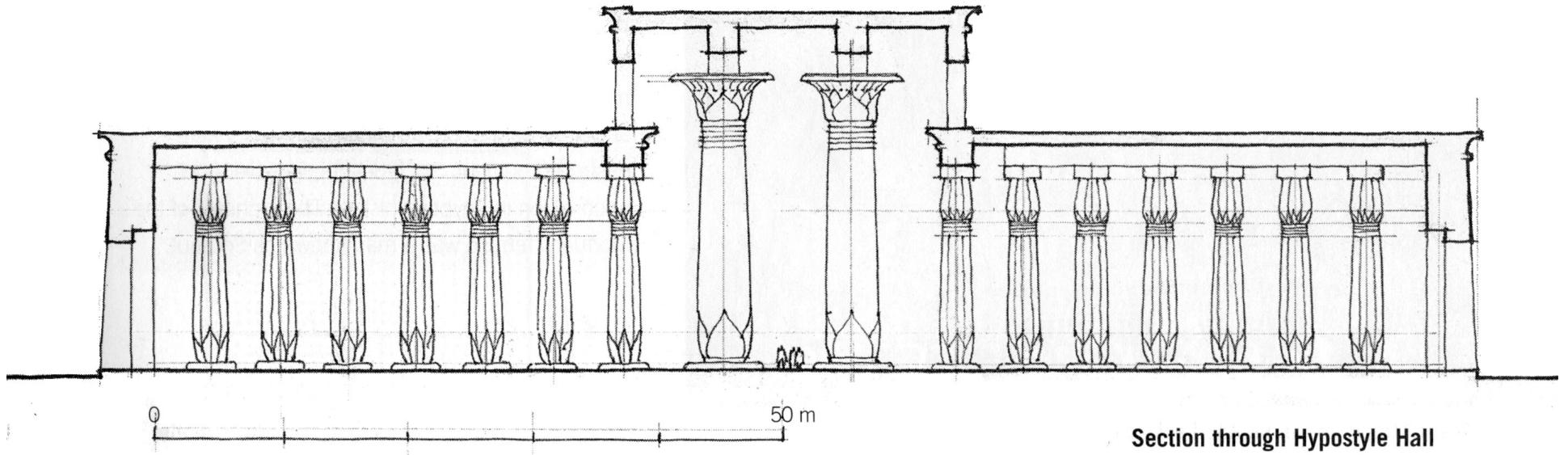


Plan of the Temple Complex at Karnak, dedicated to the divine triad: Amun, Mut, and Khonsu

Temple of Amun-Re, at Karnak, 1270-323 BCE



Model of hypostyle Hall, Temple of Amen-Ra Karnac, c. 1280 BCE. Metropolitan Museum Of Art, New York (bequest of Levi Hale Willard).

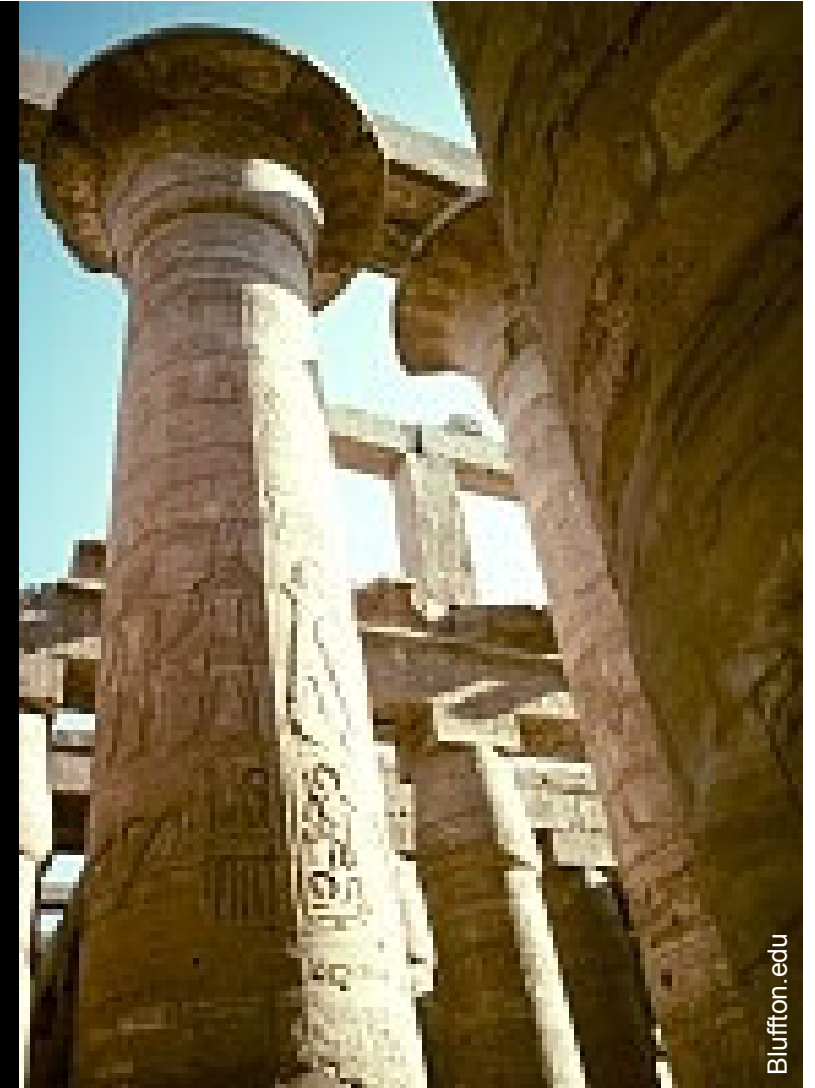


Section through Hypostyle Hall



Bluffton.edu

Temple of Amen at Luxor, 1370-1300 BC.
Closed papyrus buds capitals
Hypostyle Hall – “resting on pillars”



Bluffton.edu

Temple of Amen-Re at Karnak, 1280-323 BC.
Papyrus flower capitals
12' thick and 69' high

Obelisks:



Pbs.org

Temple of Amen at Luxor



Bluffton.edu

Temple of Amen at Karnak

Pylons:



I-cias.com

Temple of Amen at Luxor



Egypttreasures.gov.eg

Temple of Amen at Karnak

Temple of Adu Simbel, at Nubia; 1285-1255 BC.



Sebi "Abu Simbel Temple of Ramesses II" Image from "Abu Simbel temples" 2005/30/05
http://en.wikipedia.org/wiki/File:Abu_Simbel_Temple_May_30_2007.jpg (2/4/2010)

Reading: Fazio, Moffet & Wodehouse
A World History of Architecture* or *Buildings Across Time
Chapter 1



from <http://en.wikipedia.org/wiki/Image:Egypt.LuxorTemple.06.jpg>, General view of front end, from the cornice
Photo taken by Hajor, Dec.2002. Released under cc.by.sa and/or GFDL