Egyptian Architecture

Egypt and the Nile

-The Nile and the history of architecture in Egypt are inseparably joined

-From the third millennium onwards, climate is extremely dry

-Average annual rainfall now varies slightly according to latitude, from 115 mm in Alexandria to about 5 mm in Upper Egypt. Some parts of Upper Egypt does not rain at all even for years.

-Yet, the Nile rarely gets dry, even though rain is very little

-Water from the mountains of Ethiopia and from the great lakes of Central Africa

-the three principal sources of the Nile: the Atbara, and Blue and White Niles

-The annual flooding of the Nile was not a curse, but a blessing for Egyptian people, because the land was extremely arid.

-The Egyptians always had to rely on the Nile for irrigation

-Only in the 19th and 20th centuries has the flooding of the river been regulated to provide a more even supply all year round.

Egypt and the Nile

-Ideal condition for transportation from the Lower Egypt to the Upper Egypt or vice-versa

-the flow of river from the south to the north

-the stream of wind from the north to the south

Geography of Egypt

-Three basic components of the physical geography of Egypt

the Nile, flowing from the south to north between fertile banks and the two areas of desert on either side

-In the north the Nile branches into many streams through the Delta and finally flows out into the Mediterranean

-The fertile plain through which the Nile runs is solely the result of the annual flooding of the Nile and the deposition of silt carried in suspension by the flood waters

Geography of Egypt

-The silt deposition is most noticeable in the areas closest to the river, and consequently the land there is slightly higher

-The annual inundation of the Nile was a natural phenomenon

-It was caused by the large amounts of rain that normally fall in the summer months in the highlands to the South of Egypt and the Sudan

Geography of Egypt
-Egypt is also divided into three areas based on latitude
The Upper Egypt
The Middle Egypt
The Lower Egypt

Geography of Egypt
The Lower Egypt

-Egyptian settlements naturally tended to be located in the areas bordering the river

-The settlements were thus developed along the Nile Valley and the Delta

-In particular, through the Egyptian history, the Delta has always been a fertile-region and a prime area for animal husbandry

-Here developed ideal locations for settlements such as Tanis, Sais, Tell el-Farain and Bubastis.

-These areas have been inhabited since Predynastic period (c. 6000 BC to 2925 BC)

Geography of Egypt
The Lower Egypt

-The crucial area around the junction between the Delta and the Nile Valley has been the site of the capital of Egypt for most of its history

-The high-quality of limestone of the cliffs flanking the valley was regularly quarried for building purposes.

Papyrus and Lower Egypt

On the banks of the Nile and throughout the delta, tall papyrus (Cyperus papyrus) clumps and thickets flourished.

-The papyrus was a natural symbol of life itself and the primeval marsh from which all life came

-Papyrus pillars were also said to hold up the sky

-Papyrus shaped columns common in many temples may reflect this double symbolism.

-The plant was often shown with the heraldic plant of Upper Egypt, lotus as a representation of the Two Lands, the united Egypt.

-In art, the papyrus clump represented the marshlands

-Naturalistic scenes of families wild-fowling often contained images of papyrus purely as its detailed and repeated hieroglyph.

-Finally, papyrus represented the concept of "around" or "behind"

-The hieroglyph was frequently paired with the Sa sign of protection as a depiction of the phrase "All life and protection are around".

The Middle Egypt

-The largest areas of agricultural land are located to the west of the river

-The principal settlement of Middle Egypt, Hermopolis Magna, was thus located on the west side of the river

-In contrasts, the cemeteries such as Beni Hasan, Deir El-Bersha and Deir El-Gebrawi were cut into the eastern cliffs that approach close to the bank in this stretch of the Nile

The Upper Egypt

-Some of the earliest settlements such as Naqada, El-Badari, Koptos and Abydos were developed in the agricultural land of Upper Egypt

-A little further down to the south the broad flood plain at Thebes encouraged a thriving settlement

-Compared with cliffs in lower Egypt, the limestone of the Theban cliffs was poor in quality

-Therefore, the sandstone and red and black granite provided further building materials for the temples of Upper Egypt (Sandstone: Gebel El-Silsila, Red and black granite: Aswan)

-The lotus closes at night and sinks underwater

-In the morning it re-emerges and blooms again.

-Thus the flower became a natural symbol of the sun and creation.

-In Egyptian mythology (Hermopolis), it was believed that it was a giant lotus blossom that first emerged from the primordial waters of Nun and from which the sun-god came forth (portrayed in the image at left in the previous slide).

-As a symbol of re-birth, the lotus was closely related to the imagery of the funerary and Osirian cult

-The Four Sons of Horus were frequently shown standing on a lotus in front of Osiris.

-The Book of the Dead contains spells for "transforming oneself into a lotus" and thus fulfilling the promise of resurrection.

-The lotus was commonly used in art as a symbol of Upper Egypt

-It was often shown with its long stems intertwined with papyrus reeds (a symbol of Lower Egypt) as a representation of the unification of the two lands.

Dates

Old Kingdom / Dynasties 1 to 10/ 3000-2130 BC
Middle Kingdom / Dynasties 11 to 17/ 2130-1580 BC
New Kingdom / Dynasties 18 to 30/ 1580-322 BC

Temple Architecture

1. Cult Temple: devoted to a deity
2. Mortuary Temple: concerned with the cult of a deceased ruler
    - -Mastabas
    - -Pyramids
    - -Mortuary temples cut into rocks

Thebes (Upper Egypt), general site plan

Temple of Khons, Karnak, Thebes, plan

Cult Temple devoted to Deities

-The cosmological model of the Egyptian world was based upon the interchange of vital forces.

-It is also believed that all the things even including deities were the combinations of the basic elements such as water, fire, air and earth

-In this sense, even deities, although they were superior oven human beings, were not immortal.

-Even the whole cosmos, as it was created, was not eternal.

-Here arises the wish to seek eternity

-The massive solidity of Egyptian monuments, from the pyramids to the major temples of the New Kingdom and later, reaffirmed the fragile order and aspired to an ultimately unattainable permanence.

Cult Temple devoted to Deities

-the gods of the early Egyptians were Sun, Storm or wild beast

-They carry strong forces in the world around them

-Man was supposed to placate, entreat or thank them.

-Polytheism

The Egyptians believed that the same vital force pervaded everything, even inanimate objects, and could be transmitted between deities, enabling them to be identified with each other without losing individuality.

-This syncretism led to the appearance of one god in many different manifestations

-Gods fused one another (triad: a male deity, female deity and a youthful third)

-Divine names were combined in pairs or larger sequences

-Syncretism with Re, the sun god, is commonest; after the middle of the Old Kingdom Re was the leading god and the prime creator, so that gods identified with him had an explicit status as creators.

The principal Egyptian deities: (a) Amun; (b) Mut; (c) Khonsu; (d) Isis; (e) Orsis; (f) Horus; (g) Ptah; (h) Anubis; (i) Re; (j) Thoth; (k) Bastet; (l) Bes

Cult Temple devoted to Deities

-the Egyptian pantheon never consisted of a fixed number of major deities, and the prominence of individual gods fluctuated, partly influenced by political changes

-Sometimes, a local deity acquires the status of the State deity as the area rose to power

-For instance, when Thebe became the capital of Egypt in the New Kingdom (c. 1540 BC – c. 1075 BC), Amun, chief deity of the Theban area, rose to the status of a national god.

Cult Temple

Religion and Politics

-God and kings were mutually dependent, the gods showing favour to the king in return for ritual observation.

-the god or goddes created the world and provided for the king

-In return and anticipating renewed favours, the king created temples for the gods and dedicated them to them the fruits of success including military conquests.

-the king was the organization pivot of the cult and of religion as a whole.

-Temple reliefs show the gods in exclusive intercourse with the king, who performed actions for them and received benefits from them.

-monuments were a token of the endless mediations between the royal/ human and divine worlds, in which reciprocity and dependence were complementary human strategies and feelings

Temple of Khons, Karnak, Thebes, plan

-a temple in the Karnak complex

-constructed by Ramesses III who reigned between (1187-1156 BC)

-It shows the typical features of the temple construction during the New Kingdom

-the two towers of the pylon facade renders the temple to look like a fortress, closed to the exterior

-a massive forbidding form of unseeing stone walls

-The temple was the representation of a world of perfect order.
-The god with his or her beneficial power came down to dwell in this earthly house, to be more precise in the form of a statue.

-The reliefs that covered these sloping outer walls expressed both the nature and the benefit of the sacred place

-Scenes of victory and of the hunt showed the pharaoh and the gods establishing order and justice in this world of chaos (Nun)

-Outside vastness to entrance gate, then to peristyle hall open to the sky, then to hypostyle hall, then to ante-chamber, then to the sanctuary

-Beyond the hypostyle hall, only the priests were allowed to enter

-The architecture of the Egyptian temple was therefore essentially directed to the interior, to the space rendered holy by the divine presence.

-It constituted a calculated progress towards the sacred in the size of its chambers, from the larger to the more intimate.

-As one proceeded, having crossed the great peristyle courtyard preceded by the entrance gate, the halls became shorter and narrower.

-Ceiling were set lower and floors higher.

-The most sacred place in the temple, the sanctuary in which the statue was placed, was both the smallest and the highest chamber in the complex.

-Light also played a role in this orderly architectural progress.
-The peristyle courtyard was open to the sky and flooded by the sun

-The hypostyle halls were lit by high windows giving out from the central nave over the lower roofs of the aisle

-The rear of the temple received only a dim light through skylights let into the roof.

-The sanctuary itself was in total darkness

-However, at one moment during the day it received a strong light from the entrance, straight along the axis of the central aisle

-When the sun passed between the twin towers of the pylon, it enabled the few privileged priests who were responsible for his cult and offerings to contemplate the illuminated revelation of the god present in his statue.

Thebes (Upper Egypt), general site plan

Luxor, temple of Amun, Mut, and Khonsu
(right) Ramses II, 1304-1237 B.C.

(left) Amenhotep, 1417-1739 B.C.

-Tuthmosis III built a small shrine

-Then, the second phase was done at the time of Amenhotep III (ca. 1417-1379 BC)

-The final phase was done during the time of Ramses II (CA. 1304-1237 BC)

-The rear part of the temple contains the sanctuary (2), dating from Amenhotep III (XVIIIth dynasty)
-This king built the great peristyle court (4) with its magnificent lotus-bud shaped columns
-He also added a long vestibule with two rows of campaniform (opening papyrus) columns (5)

Temple of Amun, Re and Khonsu, Luxor, Thebes, showing lotus-bud shaped columns

Luxor temple; interior view from the forecourt of Amenhotep III

The great hypostyle hall, temple of Amon-Re, Karnak
example: Showing campaniform (bell-shaped, opening papyrus shape) columns

-During the XIXth dynasty, Ramesses II built a second peristyle court (7) on a rhomboid plan
-This plan might have been caused by a wish to be aligned with the processional way coming from Karnak.
-Ramesses also added a large entrance pylon (8).
-In front of this there stood six colossal statues of the Pharaoh.
-Only one of the two obelisks that used to frame the door still in place
-The other is in the Place de la Concorde, Paris.

Luxor, Ramses II pylon

Thebes (Upper Egypt), general site plan

Temple Architecture

1. Cult Temple: devoted to a deity
2. Mortuary Temple: concerned with the cult of a deceased ruler

Statue of King Zoser in Serdab, now moved to the Egyptian Museum, Cairo
King Zoser (c. 2630 – 2611 BC), 3rd Dynasty

Death and the Underworld

-The Egyptians believed death to lead into next world.

-The deceased are also believed to return to their old abodes to attend special events or festivals.

-If not treated suitably, they thus could afflict the living.

-The Egyptians also believed that when a person is born, he or she is given what they called ‘ka.’

-Even if his body passes away, ka still lives in the corpse.

-Ka was somewhat required the body for its own living.

-For this reason, to maintain the corpse in a good condition was very important.

-To preserve the corpse in its best condition, antiseptic techniques were highly developed.

Death and the Underworld

-In case the corpse decomposes completely, the Egyptians also prepared a sculptural imitation of the dead person so that ka may reside in it as an alternative.

-preparation for death absorbed much of the elites' resources. Kings started to construct their mortuary complexes early in their reigns.

-The tombs included goods, offerings and decorations. Their grandeur testified the status of the dead in the world of the living, and guaranteed their owner's positions in the next world.

(a) Mastaba at Giza, 4th Dynasty, c. 2500 BC; (b) rock-cut tomb at Beni Hasan, 12th Dynasty, c. 1900 BC

Mastaba

-Mastaba was the typical form of Egyptian tomb for the great and famous.

-It was a tomb of rectangular plan with sloping walls

-It was originally built of brick , and later it was also built by stone

-Richly decorated rooms were arranged in the upper parts.

-In particular there was a chapel with a false door for the tomb’s occupant and a table for offerings

-There was also a room in which statues of a dead person were placed.

-A shaft filled in after the funeral service, led to the subterranean vault, which contained the grave goods and the mummy in its sarcophagus.

Step pyramid of Zoser (CA. 2680 BC), Sakkara, Architect: Imhotep
restored view of the pyramid and enclosure from the flooded Nile valley

Saqqara,
mortuary complex
of King Zoser (ca.
2680 BC)

Pyramid of Zoser, aerial view of the pyramid and enclosure

Dummy Chapels in Heb-Sed Court and Step Pyramid, Saqqarah

The Mortuary Complex in Saqqarah
Architect was Imhotep
-At Saqqarah, the architect Imhotep built the first collection of monumental buildings in stone.
-Imhotep: was a scribe, and counselor and vizier to the king, Paraoh Zoser, and a man of inventive and original mind
-He was a high priest of the sun-god Re in the temple of Heliopolis
-He was scholar, astrologer and magician, and so skilled in the arts of healing that 200 years later he was deified as the god of medicine.

The Step Pyramid
-the vast collection of the buildings covered 15 hectares (37 acres)
-It was surrounded by an imposing fortified wall.
-This wall imitated in stone a brick fortification (of Memphis, the capital city during the period)
-This complex expressed for the first time the fundamental aim of the funerary architecture of Ancient Egypt – namely to deny the existence of time and of death by constructing a permanent and perfect building.

The Step Pyramid

-The central feature was the first step pyramid

-the pyramid of Zoser (IIIrd Dynasty) was the earliest form of pyramid

-It rises in six stages to a height of 60 meters (195 feet)

-Its plan is rectangular and measures 121 by 109 meters (390 by 350 feet)

-It was the outcome of three successive projects

-Imhotep first designed a great mastaba in stone

-Then, almost certainly for theological reasons connected with the doctrine of Heliopolis, he decided to raise a four-step pyramid on the initial mastaba.

-Finally he enlarged the base to permit the addition of two more steps.

The Step Pyramid
-Because of its stepped shape, the pyramid reproduced the image of the great celestial staircase
-Under the core, a shaft 28 meters (92 feet) deep leads to the subterranean galleries of the funeral apartment.
-This consists of several limestone chambers
-The burial vault itself is made of Aswan granite.
-In the foreground, dummy (roomless) chapels run along the western edge of the Heb-Sed courtyard

Giza (Lower Egypt), pyramids of Chefren (Kaefre, c. 2520 – 2494 BC), Cheops (Khufu, C. 2552-2528 BC), and Mykerinos (Menkaure, c. 2490-2472 BC), Old Kingdom, Dynasty IV

Giza, the Great Pyramids

-The tendency to seek eternal monumentality its peak at Giza in ancient Egypt.
-The precision and perfect shapes of the three pyramids remain a symbol of the architectural mastery of the ancient Egyptians

Cheops (145 meters / 475 feet high)
Chephren (144 meters/ 470 feet)
Mycerinus (62 meters/ 200 feet)

Giza, the Great Pyramids

Pyramid of Cheops
-the biggest one.
-It measures 230.5 meters (756 feet) at the base against a height of 146 meters (479 feet), that is to say a slope of 51 52’.
-It is the oldest of the pyramid of Giza, (adopting the smooth-sloping profile inaugurated by Cheops’ predecessors Snefru, whose pyramid is to the south of Dahchur.)

Giza, the Great Pyramids

Pyramid of Chephren
-In the center, the pyramid of Chephren is slightly smaller than the pyramid of Cheops.
-Its size is 143 by 215 meters/ 470 by 705 feet at the base).
-Its slope is a little bit steeper 52 20’.
-At the top, it retains the capping of polished limestone that gave these monuments the appearance of veritable hills of light when the sun’s rays shone on them.

-In the foreground, the pyramid of Mycerinus is the smallest of the three, measuring 108 meters (354 feet) at the base and 62 meters (203 feet) in hegith – a slope of 51.

Giza, the Great Pyramids

Pyramid of Mycerinus

-the smallest of the three, measuring 108 meters (354 feet) at the base and 62 meters (203 feet) in height –a slope of 51.

Pyramid of Chephren

Royal Tomb of Old Kingdom: typical pyramid complex of the 4th dynasty, c. 2500 BC: (a) pyramid; (b) mortuary temple (OR Upper Temple); (c) causeway; (d) valley temple

Pyramid of Chephren

-This pyramid had a quay and a temple at the spot where the canal to the Nile terminates.

-This temple might have been associated with the embalming and purification rites carried out at the time of the funeral.

-This upper temple consisted of an outer temple, a large vestibule leading to a cloister.

-This cloister was bordered with effigies of kings.

-It had five cult chapels. And, finally an inner temple with repositories for cult objects.

-There was also a false door carved in stone through which pharaoh could come to enjoy the gifts left by worshippers.

The Sphinx, Giza

-The three pyramids were guarded by the great sphinx of Chephren at the base of the plateau.

-The great sphinx is a natural rocky outcrop.

-The remains of a quarry that supplied a large number of blocks to the pyramid of cheops
-The builders of the pyramid of Chephren had the idea of using it to create a giant sphinx.
-The head was sculpted as an effigy of Chephren.
-The rock was covered with painted pilaster to make it look like the body of a lion
-The paws were carved separately and added on
-The sphinx is 20 meters (65 feet) high and 71 meters (230 feet) long.
-Its nose measures 1. 70 meters (5 feet 6 inches).

Section through the pyramid of Cheops, Giza

-This is the section of the pyramid of Cheops.
-It shows the disposition of funeral apartments.
-the builders had three different schemes for the location of the burial chamber
1. the subterranean one.
2. According to a theory, for a theological reason, the chamber was moved above the ground level later.
This second chamber is 21 meters above the level of the base.
This chamber was vaulted by a large monolithic blocks set in an inverted V. vault.

3. The final solution was to create another chamber near the center of the pyramid.
The funeral chamber was added on top of it by upper chambers.
The reason for this installation of upper chambers is believed to have come from discharging the load.
The great gallery is 47 meters (154 feet) long.
It had a corbelled vault.