



The Development of the Temple of Karnak¹

The Karnak temple complex experienced more than 1,500 years of construction, destruction, renovation, and modification, resulting in the creation of a confusing web of buildings and courts attributed to a variety of different kings. The patronage of major state building projects was almost exclusively the right of the ruler, and his (and in one case, her) name conspicuously adorns most monuments at Karnak. In a few rare cases, important cult personnel, such as the high priest of Amun or the god's wife of Amun, gained so much power or prestige that they too sponsored the erection or decoration of buildings within the precinct. But this was unusual, and the development of the temple over time can most easily be understood as linked closely with the succession of national rulers.

The following essay is split into two sections. Section I lists the structures added (+) and removed (-) by each king, with a brief description of the architecture of new or renovated buildings. Only limited explanation is provided. Section II offers more in-depth information on the development of the temple, including discussions of the significance of the changes and the evidence for the reconstructions.

I. Phase-by-Phase Summary of Temple Growth and Change

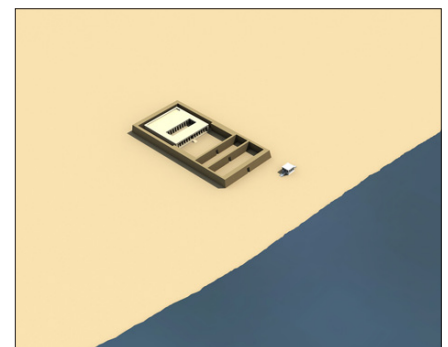
Karnak Temple in the Middle Kingdom

Senusret I (Kheperkara) 1971-1926

(+) Senusret I built a limestone temple, pierced by four doorways with red granite thresholds. It was fronted by an impressive portico of square pillars with statues of the king in the pose of the god Osiris. One reconstruction of the building suggests it had a rectangular, open peristyle court, leading to a series of inner chambers via a central axis. The sanctuary of the god lay off this axis, and could only be reached by making a ninety-degree turn to the left from the central line of rooms.² A calcite ("Egyptian alabaster") altar, found at Karnak reused in a different location, stood inside the room and held a shrine for the statue of Amun-Ra.³



Karnak as it exists today.



Model rendering of Karnak in the reign of Senusret I.

- 1 This narrative is based on the author's submission on the topic to the online UCLA Encyclopedia of Egyptology (UEE). Some sections have been directly excerpted from that publication.
- 2 Gabolde 1998: 18-21
- 3 Lauffray 1979: 124; Ullmann 2007:

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(+) The king's famous limestone "white chapel" was a square-shaped structure raised on a short platform. Its pillars were decorated with finely carved scenes of the king interacting with Amun-Ra and other gods. The chapel probably stood outside the main temple, possibly along a north/south processional route.⁴

(+) A rectangular mud brick wall encircled the Middle Kingdom temple of Senusret I, and the precinct can be imagined to have extended west at least to the position of the present fourth pylon.⁵

Karnak Temple in the Early 18th Dynasty

Amenhotep I (Djeserkara) 1525-1504

(+) Along the Middle Kingdom forecourt's north and south sides, Amenhotep I put up two lines of stone chapels and storage rooms.

(+) A calcite ("Egyptian alabaster") bark chapel was added to the temple, possibly positioned in the forecourt of the temple, bounded by two large protecting walls.

(+) The king also added a line of small chapels that possibly divided the forecourt into western and eastern halves.

(+/-) The mud brick wall and door to the Middle Kingdom forecourt were removed and replaced by a high wall and gate with a double columned portico.

(+) At the temple's main western door, a new large gate or pylon was erected.

(+/-) The brick enclosure wall surrounding the north, east, and south walls of the Senusret I temple was torn down and replaced with a limestone enclosure.⁶

(+) Amenhotep's second bark shrine, an exact copy of Senusret I's limestone "white chapel," was added to the temple. It, like the "white chapel," probably remained outside the temple's western gate.⁷

Thutmose I (Aakheperkara) 1504-1492

(+/-) The fourth and fifth pylons were added, as well as their corresponding stone enclosure walls, which still form the core area of the temple.⁸ The construction of the fourth pylon must have necessitated the removal of the earlier feature of Amenhotep I on the same location.

(+) Thutmose began construction on a new hall between the fourth and fifth pylons. This was built in two phases: in the first phase, a line of rectangular niches was inserted in the east wall of the fourth pylon for the placement of statues of the king in the pose of the god Osiris. In the second phase, a second group of larger Osiride statues were placed lining the wall between the niches. Fluted



The white chapel of Senusret I.



A model rendering of Karnak in the reign of Amenhotep I.



The Amenhotep I calcite chapel which originally may have stood in the Middle Kingdom court.

4 Lacau and Chevrier 1956

5 Gabolde 1998; Charloux 2007: pl. IV

6 Graindorge 2002

7 Björkman 1971: 58

8 Björkman 1971: 61

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sandstone columns with inscriptions of the king were added to the four sides of the hall, forming a covered peristyle to protect the exposed statuary.⁹

(+) Two red granite obelisks were raised in front of the fourth pylon, the temple's main western entrance at the time. Only the central inscriptions on this obelisk are original to the king, the slightly smaller later inscriptions, carved by Ramesses IV and VI, flank his on all four sides of the monument.¹⁰

Thutmose II (Aakheperenra) 1492-1479

(+/-) Another new pylon was added to the temple, this one placed west of the fourth pylon, enclosing the obelisks of Thutmose I and creating a deep "festival hall" of the king. Walls along the hall's north and south sides connected the new pylon to the fourth, and a small pylon entrance led out of the hall on its south. The pylon was later removed, so it does not figure into the numbering system of the temple.¹¹

Hatshepsut (Maatkara), Queen 1473-1458

(+/-) The queen extensively renovated the hall of Thutmose I between the fourth and fifth pylons. She removed his stone columns, replacing them with five gilded-wood papyriform *wadj* columns, giving the hall its name: *Wadjet*. The northern and southern areas of the hall were roofed with wooden ceilings supported by these columns.¹²

(+) Two red granite obelisks were erected within the *Wadjet* hall. The obelisks were covered with small scenes of the queen (depicted as a male pharaoh) making offerings to the gods.¹³

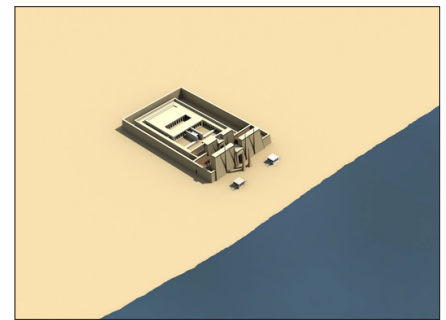
(+) The queen erected a pair of red granite obelisks commissioned by her late husband, Thutmose II. The 27-28 meter tall monoliths were almost surely placed in his "festival hall," west of the pair of Thutmose I.¹⁴

(+/-) Hatshepsut may have disassembled the Osiris portico of the Middle Kingdom temple. According to one scholar's reconstruction, she appended a suite of rooms called the "palace of *Ma'at*" to the front of the remaining structure.¹⁵

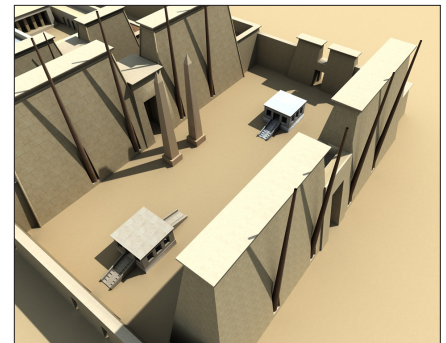
(-) The queen removed the central bark shrine, chapels, and gateway of Amenhotep I to make room for her new "palace."

(+) Within or somewhere in front of the "palace," she placed a beautiful two-roomed bark chapel of rose quartzite and black granite, the "red chapel."¹⁶

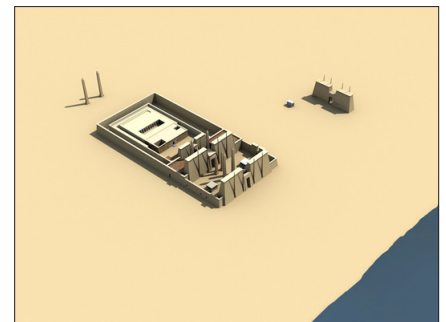
(+) In east Karnak, Hatshepsut placed another pair of obelisks outside the Thutmose I stone enclosure walls.¹⁷



A model rendering of Karnak in the reign of Thutmose I.



A model rendering of the Thutmose II "Festival Court" and pylon.



A model rendering of Karnak in the reign of Hatshepsut.

- 9 Carlotti and Gabolde 2003: 284-286
- 10 Habachi and Van Siclen 1977: 57-59
- 11 Gabolde 1993
- 12 Carlotti and Gabolde 2003: 289-291
- 13 Habachi and Van Siclen 1977: 60-63, 68
- 14 Gabolde 1987: 149-150 and pl. II
- 15 Gabolde 1998, 1999.
- 16 Lacau and Chevrier 1977: 23-25; Larché and Burgos 2006
- 17 Habachi and Van Siclen 1977: 60-63, 68

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(+) A new sandstone pylon, the eighth, was built to the south of the temple, along what appears to have been the previously established north/south temple processional route.

Thutmose III (Menkheperre) 1479-1425

(+) One of the king's greatest changes to Karnak was the addition of a huge temple, called the *Akhmenu*, placed behind Karnak's then eastern wall. The structure had a large pillared hall with beautifully painted columns carved in the shape of tent poles. Its ceiling was covered in yellow painted stars on a blue ground. In one of the rear rooms, relief scenes depicted the many species of flora and fauna sighted by the king and his men during their foreign military campaigns.

(+) A new sandstone enclosure wall was constructed, encircling the *Akhmenu* within the sacred space of the greater temple precinct. The new enclosure created a long entrance hallway to the *Akhmenu*'s southwestern door.

(+) On the east wall of the new enclosure, Thutmose added a small contra-temple. It was bordered on each side by the obelisks of Hatshepsut. These shrines, usually appended to the rear wall of a temple and opening outward, provided a location for those not allowed to enter the temple proper to interact with the divinities. Often statues of the king were located at the contra-temple, and regular people would petition the images to act as intermediaries with the gods on their behalf. The example at Karnak held a large alabaster naos with a statue of the king and the god Amun.¹⁸

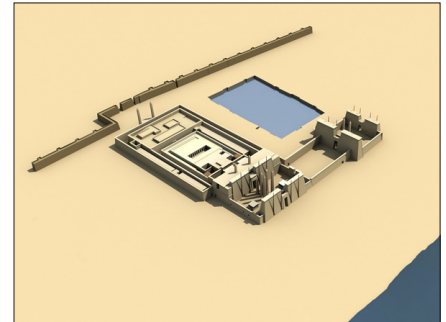
(+) Between Hatshepsut's pylon (the eighth) and the temple, Thutmose erected another pylon, the seventh. He adorned its south side with two red granite obelisks.¹⁹

(+/-) Along the southern processional route formed by the seventh and eighth pylons, the king added a calcite bark shrine surrounded by square pillars. This may have replaced an earlier calcite shrine of Amenhotep I on the same location (placed there by Hatshepsut during her renovations of the core of the temple), as Thutmose III gave his shrine an identical name.²⁰

(+) South of the Middle Kingdom court, Thutmose ordered the digging of a large sacred lake.

(+) To the east of the lake, the king added a large mud brick enclosure wall with exterior bastions. The extent of the wall at this time period, both to the north and the south, has not yet been determined.

(+/-) Renovations of the *Wadjet* hall continued. Possibly due to damage incurred from heavy rainstorms, Thutmose III determined to completely roof the space. A



A model rendering of Karnak from the later part of Thutmose III's reign.



The contra temple at Karnak as it exists today.

18 Brand 2007: 60-61; Varille 1950: 23

19 Habachi and Van Siclen 1977: 60-63, 68

20 Björkman 1971: 58; Blyth 2006: 35-36

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stone gateway was erected around the obelisks of Hatshepsut, completely encapsulating their lower portions. The queen's wooden *wadj* columns were removed for replacement with six sandstone columns in the north half of the hall, eight in the south. The interior walls of the court were covered with a skin of stone, obscuring the original statue recesses of Thutmose I. Before his death, it appears that the king only had time to roof the northern part of the hall with sandstone slabs, supported by his network of pillars, court walls, and the new gateway. Amenhotep II, the next pharaoh, finished the work²¹ (although the entire roof is added to the model under Thutmose III).

(+) The sixth pylon was erected in the area in front of the "palace of *Ma'at*," and a small, pillared court created to both its sides.

(+) Along the sides of these reworked courts, he replaced the limestone chapels of Amenhotep I with sandstone replicas.²²

(+) Walls were appended to the east faces of the fifth and sixth pylons, creating a corridor along the temple's central axis to the "palace of *Ma'at*."

(-) Hatshepsut's "red chapel" was removed and dismantled, with the front and rear doors reused in an interior wall of the palace's suite of rooms and the new corridor behind the sixth pylon.²³

(+) The "red chapel" was replaced with a new granite shrine, of similar size and shape, and a new entrance portico was designed for the "palace of *Ma'at*."²⁴

(+) The king raised his own pair of granite obelisks between those of Thutmose I and Thutmose II in the "festival hall" before the fourth pylon.²⁵

Karnak Temple in the Mid 18th Dynasty

Amenhotep II (Aakheperura) 1427-1401

(+) Amenhotep II finished the construction on the southern section of Thutmose III's *Wadjet* hall, adding and decorating the southern eight pillars and its roof (shown during the reign of Thutmose III on the model).

(+) To the east of this hall, along the narrow corridor leading to the *Akhmenu*, the king may have added small structure with a central shrine and surrounding square piers. This likely functioned as a "station of the king," a place for the king or sacred bark to pause during festival journeys.²⁶

(+) A small calcite chapel, decorated with sunk relief, was placed within the "festival hall." One scholar has suggested it was wedged between the two obelisks of Thutmose I in that court, its single doorway facing east.²⁷



A model rendering of Pylon VII with actual reliefs from Karnak.



The reconstruction in the Open Air Museum of the Amenhotep II shrine, possibly originally located between the eastern pair of obelisks in the Thutmose II Festival Court.

21 Carlotti and Gabolde 2003: 293-295

22 Björkman 1971: 77-78

23 Björkman 1971: 77-78; Dorman 1988: 54-65

24 Carlotti 1995a; Dorman 1988: 56-65

25 Gabolde 1987: 151 and pl. II

26 Van Siclen 2005a: 39-41 and figs. 14-15

27 Larché 2007: 477-480

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Thutmose IV (Menkheperura) 1401-1391

(+) King Thutmose IV added a vividly painted sandstone double peristyle to the court of the fourth pylon.²⁸

(+) The king placed a calcite (“Egyptian alabaster”) bark shrine, quite similar to the calcite shrine of Amenhotep I, within the “festival hall.”²⁹

(+) On the east side of Karnak, he raised a giant red granite obelisk, originally quarried by Thutmose III. He added lines of inscriptions around those of his grandfather (the central inscription) and raised it in the area of Karnak particularly focused on the worship of the sun. Unlike all the other obelisks at Karnak, this was intentionally placed alone.³⁰

Amenhotep III (Nebmaatra) 1390-1352

(-) The king’s most drastic change at Karnak consisted of tearing down the pylon erected by Thutmose II.

(-) He also destroyed most of the “festival hall” west of the fourth pylon, removing the western half of Thutmose IV’s peristyle and his calcite bark shrine, the limestone white chapel of Senusret I, the calcite chapel of Amenhotep I, and the loose blocks of the red chapel of Hatshepsut.

(+) All these removed structures were then used as building material for the construction of a new pylon, the third, slightly east of the destroyed pylon of Thutmose II.³¹

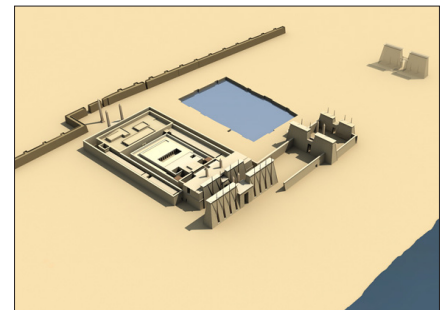
(+) Amenhotep III also began construction on another pylon, the tenth, extending the southern processional route towards the Mut Temple. With only a few courses completed on the pylon, the king must have died, as construction halted and was not to be resumed again until the reign of Horemheb.³²

Karnak Temple in the Late 18th Dynasty

Amenhotep IV / Akhenaten (Neferkheperura Waenra) 1352-1336

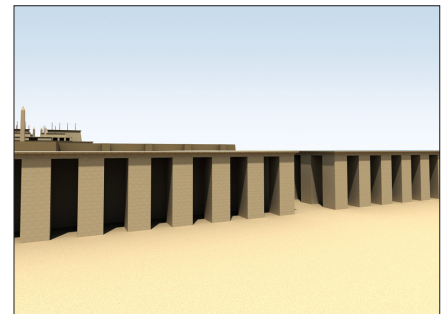
(+) A vestibule was appended to the front of the third pylon and decorated in the beginning of Amenhotep IV’s reign.³³

(+) In east Karnak, a huge temple called *Gem-pa-Aten* was built using small, easily portable sandstone (“talatat”) blocks.³⁴ The western part of the building formed a rectangular open court lined by a covered colonnade with square piers.³⁵ Huge androgynous statues of the king and his wife, queen Nefertiti, stood against each column.³⁶



Above: a model rendering of Karnak in the reign of Amenhotep III.

Below: a model rendering of the *Gem-pa-Aten* which no longer exists today.



- 28 Bryan 1980: 222-224; Letellier 1979, 1991
- 29 Bryan 1980: 228
- 30 Bell 2002: 23-25; Habachi and Van Siclen 1977: 112-114
- 31 Lauffray 1979: 49
- 32 Azim 1982
- 33 Sa’ad 1970
- 34 Redford 1984: 63
- 35 Redford 1984: 102-105
- 36 Arnold, Dorothea 1996: 18-19

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Tutankhamen (Nebkheperura) 1336-1327

(+) The boy king ordered that a series of ram-headed sphinx statues be placed along the processional route from the Amun precinct's southern gate to the temple of Mut (not shown on the model, but visible on the maps).³⁷

Horemheb (Djeserkheperura) 1323-1295

(-) Horemheb commanded the tearing down of Akhenaten's Karnak structures. The *Gem-pa-Aten* temple was demolished block-by-block and used as building fill for his new constructions at Karnak.³⁸

(+) The ninth pylon, situated along the southern processional route, was added.

(+) Construction on the tenth pylon, abandoned unfinished by Amenhotep III, was completed.

(+/-) Between the king's new ninth and tenth pylons, a building with a pillared façade was erected atop a low platform. This building, the "edifice of Amenhotep II," was composed of blocks reused from a series of structures in an earlier court along the southern processional. The buildings and the court belonged to Amenhotep II, all of whose constructions in the area were swept away for Horemheb's additions.³⁹

(+) A new western entrance to the temple was added, the second pylon.⁴⁰

Karnak Temple in the 19th Dynasty

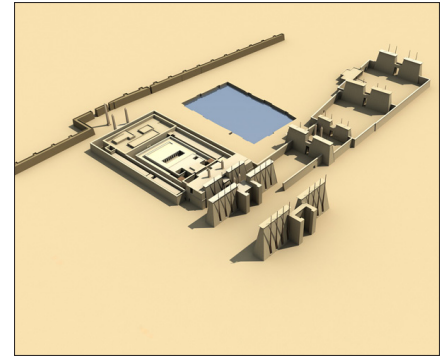
Ramesses I (Menpehtyra) 1295-1294

(+) A small "station of the king," a kiosk in which the king could stand during cult rituals within the temple, was appended to the second pylon during the king's short reign.⁴¹

Sety I (Menmaatra) 1294-1279

(+) Sety constructed a massive hypostyle hall between the third and second pylons.

Twelve sandstone columns in the shape of open papyrus plants, each 21 meters (70 ft) high, supported a raised central hall. The bordering side aisles were forested with 122 papyrus bud columns, each 12 meters (40 ft) tall. The central nave was lined with stone grills that allowed light to filter into the hall.⁴²



A model rendering of Karnak in the reign of Horemheb.



Pylon II with the hypostyle hall behind it.

37 Cabrol 2001; Murnane and Eaton-Krauss 1991

38 Redford 1984: 228

39 Lauffray 1979: 143; Van Siclen 2005a: 42

40 Azim 1982; Lauffray 1979: 111, 147

41 Van Siclen 1986: 41-42

42 Brand 2004

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(+/-) The western wall of the third pylon was covered over as part of the construction of the new hypostyle hall. Renovations were made to the vestibule as well, covering the unfinished Akhenaten scenes.

(+) On the north exterior wall of the hall, the king's battles against numerous foreign foes were memorialized in a series of monumental relief scenes. These show Sety I triumphing over people from Syria, Libya, and Nubia, among others. As the conquering pharaoh, the king dwarfs all the other figures in the relief, and he is instantly recognizable within his chariot or smiting his foes.⁴³

Ramesses II (Usermaatira Setepenra) 1279-1213

(+) In the eastern section of Karnak, Ramesses II added a small shrine before the single obelisk of Thutmose IV. The shrine, called "the temple of Amun-Ra, Ramesses, who-hears-prayers," consisted of a gateway and pillared hall with a central false door. Two lateral doors led to the object of veneration, the unique obelisk.⁴⁴ Like the contra-temple of Thutmose III, this shrine offered a place for regular people to approach and petition the divine image to act as an intermediary with the gods.⁴⁵

(+) The king also added an entrance to eastern Karnak, marked by two red granite obelisks and a pair of sphinxes.⁴⁶

(+) Ramesses II finished the decoration of the interior of the hypostyle hall, left incomplete by Sety I.

(+) On the hall's south exterior wall the king added his own series of monumental battle scene reliefs.

Sety II (Userkheperura Setepenra) 1200-1194

(+) West of the new temple entrance at the second pylon, Sety erected a small triple shrine of quartzite and sandstone. Its three sanctuary rooms were dedicated to Amun, Mut, and Khonsu, and the portable boats of these gods would have paused here during festival journeys before crossing the Nile.⁴⁷

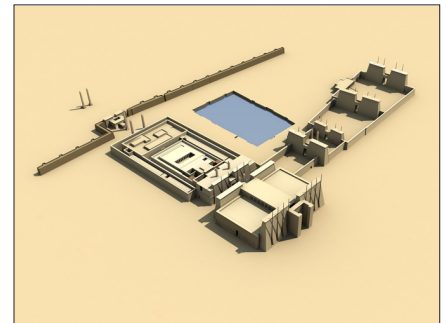
Karnak Temple in the 20th Dynasty

Ramesses III (Usermaatira Meryamen) 1184-1153

(+) Ramesses III added his own bark shrine to the temple's western entrance, opposite that of Sety II. This shrine took the shape and size of a small temple and included a small pylon, a court with colossal statue pillars of the king, a small hypostyle hall, and a sanctuary.⁴⁸



A model rendering of the hypostyle hall, showing how much darker the hall originally would have been when it had a roof.



A model rendering of Karnak in the reign of Ramesses II.

- 43 Schwaller de Lubicz 1999: 553-562; Survey 1986
- 44 Barguet 1962: 52-53
- 45 Bell 2002: 17; Brand 2007: 60-61
- 46 Barguet 1962: 223-224; Bell 2002: 23; Cabrol 2001: 186
- 47 Chevrier 1940; Legrain 1929: 75-83
- 48 Legrain 1929: 85-123; Survey 1936

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(+) To the southwest, Ramesses III began work on a new temple to the child-god Khonsu. The temple contained not only a suite of rooms for the housing of the statue of the god, but also a separate bark chamber. The Khonsu temple faced south, paralleling the southern processional route of the Amun temple, and it too would have had its own pathway in that direction.⁴⁹

Ramesses IX (Neferkara Setepenra) 1126-1108

(+) The king placed a monumental inscribed gateway on the door to the southern processional route between the third and fourth pylons.⁵⁰

Karnak Temple in the Third Intermediate Period (Dynasties 21-25)

High Priest of Amun Pinedjem 1054-1039

(+) On the western side of Karnak, he usurped and positioned a second group of ram-headed sphinxes (also possibly removed from another temple) before the second pylon.⁵¹ The exact arrangement and length of the statue-lined path is unknown, but they likely extended up to or past the area of the later first pylon to a quay.

(+) A powerful “high priest of Amun” during the 21st Dynasty named Pinedjem moved pairs of ram-headed sphinxes (likely taken from a temple of Amenhotep III somewhere in Thebes) to the processional way of the Khonsu temple (not shown on the model).⁵²

Shoshenq I (Hedjkheperra Setepenra) 945-924

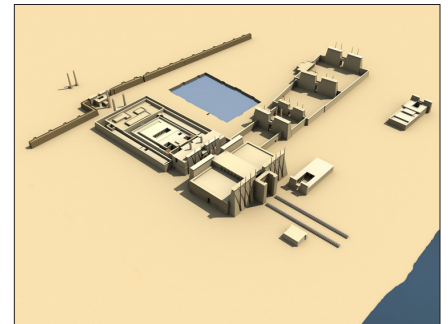
(+) Before the second pylon of Horemheb, Shoshenq constructed a huge court encompassing the Sety II shrine and the front section of the Ramesses III shrine. The court was lined on its north and south walls by a colonnade of sandstone columns with papyrus bud capitals.⁵³ On its western side, an entrance with a monumental central gate would have fronted the court. It was later destroyed by the construction of the first pylon of Nectanebo I, but the unfinished stone gate of the first pylon may originally have come from this earlier entrance.⁵⁴

(+/-) The arrangement of the new court likely necessitated the shuffling of the sphinx statues in the area,⁵⁵ with some possibly moved to outside the new court.

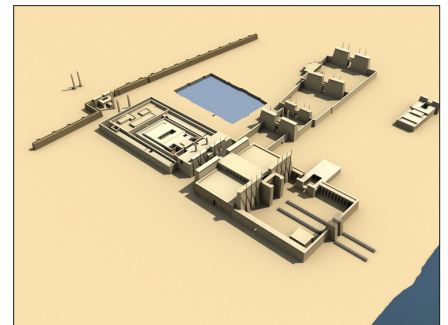
(+) The side door to the southeast corner of the court (the “Bubastite portal”) was covered with scenes and inscriptions describing the king’s military campaigns in Palestine. The king, the largest figure in the composition, strides forward in the act of “smiting” his enemies. To the left stands the god Amun and the goddess of Thebes (smaller and below Amun), both of whom grasp cords binding the hands



The Khonsu temple of Ramesses III as it is today.



A model rendering of Karnak during the reign of the High Priest of Amun Pinedjem.



A model rendering of Karnak during the reign of Shoshenq I.

49 Arnold, Dieter 1999: 25-30

50 Amer 1999

51 Cabrol 1995: 25-27, 2001: 206-208

52 Cabrol 2001: 26-27, 239-255; Porter and Moss 1927: 77-79

53 Legrain 1929: 45-50

54 Arnold, Dieter 1999: 35-36

55 Cabrol 2001: 209

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and throats of a string of captives. These symbolic figures each correspond to one of the many towns and tribes Shoshenq claimed to have conquered. Their names are written in hieroglyphs within an oval mimicking the form of a crenelated city wall. The relief scenes are a very important historical document, as an account of the king's incursions into the area is also included in the Hebrew Bible (I Kings 14:25, II Chronicles 12:2).⁵⁶

Taharqo (Khunefertemra) 690-664

(+) An entrance porch formed by twenty stone papyrus columns was appended onto the front of the temple of Khonsu.

(+) A second, similarly designed entrance porch was added to the temple of Ramesses II ("Amun-Ra-who-hears-prayers") in east Karnak.⁵⁷ Low intercolumnar walls connecting the east/west rows were covered with scenes of the king presenting offerings to Amun-Ra and other deities.⁵⁸

(+) In Shoshenq's new court, Taharqo placed a giant free-standing kiosk before the second pylon. It was formed of two rows of five papyrus columns (each some 21 meters tall), topped by square abaci. Scholars generally agree that the width of the kiosk (over 16 meters) could not have been bridged with a roof, and the structure was therefore left uncovered. It is possible, however, that its sides were connected by architraves.⁵⁹

(+/-) It may have been because of the construction of this kiosk (or earlier, when the first court was constructed by Shoshenq I), that the sphinx statues were moved to line the sides of the first court.

(+) Next to the temple's sacred lake Taharqo added another structure, his "edifice of the lake." The sandstone building's first floor consisted of a number of subterranean rooms, while its upper portion, now destroyed, possibly contained an open-air court. A mud brick courtyard fronted the building on its east side, cut through by a deep stone well. Often labeled a "Nilometer" (a place to measure the height of the Nile's inundation), it seems instead to have functioned as a well to reach the mythical primeval waters imagined to still flow beneath the ground.⁶⁰

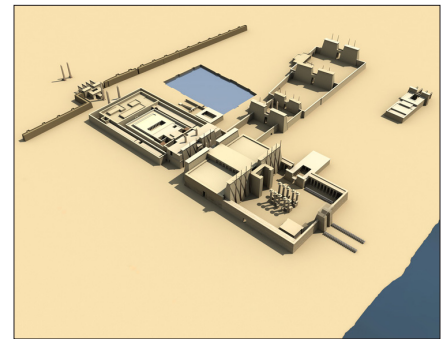
Karnak in the Late Period (Dynasties 26 to 30)

Psammuthis (Usera Setepenptah) 393

(+) Psammuthis sponsored the construction of a new storehouse and aviary located south of Karnak's sacred lake. The mud brick and stone building contained ramps for the sacred birds to access the lake, as well as areas for animal butchery. Inscriptions on building describe it as a *shena-wab*, a place for the preparation of the god's daily meals.⁶¹



The "Bubastite portal".



A model rendering of Karnak from the reign of Taharqo.



The "edifice of Taharqo" near the sacred lake also included a "Nilometer."

- 56 Survey 1954: vii-viii, pls. 2-9
- 57 Arnold, Dieter 1999: 57, 282; Leclant 1965: 56-57, 84
- 58 Leclant 1953
- 59 Arnold, Dieter 1999: 51; Lauffray 1970, 1975, 1979: 102-107
- 60 Parker, Leclant and Goyon 1979
- 61 Arnold, Dieter 1999: 101-102; Traunecker 1987

DIGITAL KARNAK

The Development of the Temple of Karnak

Hakoris (Khnummaatira) 393-380

(+) Hakoris added a small chapel outside of the temple's first pylon for the entrance and exit of the god's bark from the Nile. The chapel, a type of "turning station," possessed an extra wide western door so that the god's bark could be removed from the river with its bow and stern parallel to the banks and brought directly inside. The bark would be rested on the altar inside, then removed and taken to the temple gate via a narrower northern door, all without shifting its direction.⁶²

Nectanebo I (Kheperkara) 380-362

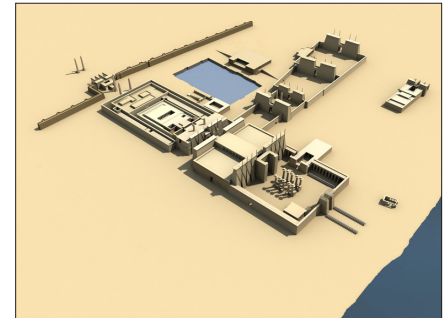
(+) The Amun temple was enclosed with new massive precinct walls, significantly reorganizing the sacred space. The precinct wall, shaped like a huge trapezoid and standing over 20 meters high, encircled the Amun temple at the first court in the west, the small temple of Ptah in the north, the obelisks of Ramesses II in the east, and the tenth pylon in the south. Extra space was given in the southwest corner to include a temple of Opet (discussed below).⁶³

(+/-) Nectanebo restructured the entrance to the temple in front of the Shoshenq I court. After removing the walls along the court's west side, he began the construction of two huge sandstone towers, the first pylon. This massive pylon, the largest ever built in ancient Egypt, measures more than 110 meters long and over 15 meters thick. Left unfinished, its height would have extended 38 to 40 meters. The huge unfinished stone gateway of Shoshenq was retained, and if it too had been completed, it would have stretched over 27 meters tall.⁶⁴

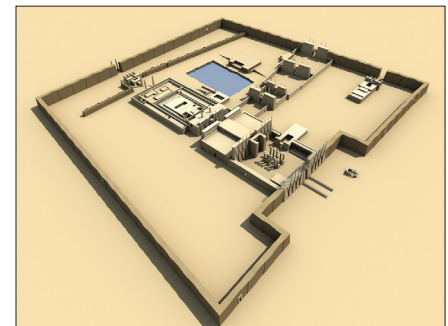
(+) The king began (or resumed) construction on a temple dedicated to the goddess Opet. Located perpendicularly to the temple of Khonsu, its small hypostyle and sanctuary area were raised on a platform two meters above the level of its forecourts. Hidden within the interior walls and floor were a number of small crypts for the storage of valuable cult equipment. One of these, extending under ground level, was envisioned as a "tomb of Osiris." Low on the temple's rear wall, a small chamber dedicated to Osiris opened out onto a side entrance into the Khonsu temple.⁶⁵

(+) The entire two-kilometer processional route between Karnak and Luxor Temple was lined with approximately 700 sandstone human-headed sphinxes (not shown on the model, but displayed on many of the maps).⁶⁶

(+) Along the sides of the contra temple of Thutmose III, Nectanebo I added two small chapels covered with relief scenes.⁶⁷



A model rendering of Karnak in the reign of Hakoris.



A model rendering of Karnak in the reign of Nectanebo I.



One of the sphinxes recently excavated on the road between Karnak and Luxor Temple.

62 Lauffray 1995a: 22-23, 59

63 Arnold, Dieter 1999: 115-118

64 Arnold, Dieter 1999: 35-36, 118; Carlotti 1995b: pl. XVII

65 Arnold, Dieter 1999: 118, 197; Lauffray 1979: 218; Wilkinson 2000: 162

66 Arnold, Dieter 1999: 118; Cabrol 2001: 283-287

67 Varille 1950: 137, 158-160

DIGITAL KARNAK

The Development of the Temple of Karnak

Karnak in the Greco-Roman Period

Philip Arrhidaeus (Macedonian): 323-316

(+/-) The red granite bark shrine of Thutmose III, situated in the heart of Karnak within the “palace of *Ma'at*,” was replaced with a granite replica of similar size and shape. The new shrine was inscribed with scenes depicting Philip Arrhidaeus (the brother of Macedonian conqueror Alexander “the Great”) as pharaoh.⁶⁸

Ptolemy III Euergetes I 246-221

(+) The king modified the entrance to the Khonsu temple. Between two planned stone pylon towers (only the foundations were completed), he placed a huge stone gate, known today by its Arabic name *Bab el-Amara*. The portal was covered with inscribed relief scenes and texts of that king.⁶⁹

Ptolemy IV Philopator 221-205

(+) In the precinct's northeast corner, Ptolemy IV sponsored the construction of an “Osiris catacomb.” Composed of three vaulted mud brick corridors with painted plaster decoration, the structure included hundreds of small niches along its aisles. While labyrinthine Egyptian catacombs usually contained burials of sacred animals, the structure instead was intended for the placement of statuettes of Osiris.⁷⁰

Ptolemy VIII Euergetes II (Physkon) 170-163 and 145-116

(+/-) The eastern temple of “Amun-Ra-who-hears-prayers” was modified. The central false door of Ramesses II was removed, and a third door created in the western side of the pillared forecourt. Walls were added around the covered colonnade, enclosing the western area of the chapel and the lower portion of the ‘unique’ obelisk.⁷¹

(+) The king completed construction (possibly begun by Nectanebo I) on a temple dedicated to the goddess Opet.⁷²

End of Ptolemaic Period

(+/-) Sometime before the end of the Ptolemaic rule, the unfinished pylon foundations for the entrance to the Khonsu temple were covered over with a brick wall that met up with the new gate.⁷³

Roman era 30 BCE-395AD

(+/-) A major reorganization of the western entranceway to the temple took place during the Roman period. The sphinxes before the first pylon were rearranged and placed in their present location.⁷⁴

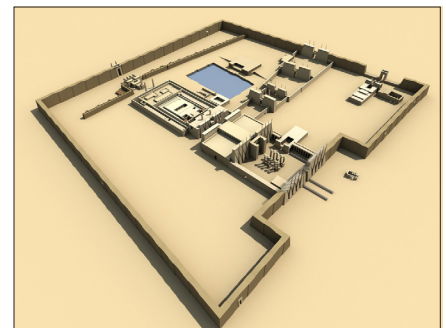


The central bark shrine from the reign of Philip Arrhidaeus.



Above: a model rendering showing the interior of the “Osiris catacombs”, now almost completely destroyed.

Below: a model rendering of Karnak in the reign of Ptolemy VIII.



68 Arnold, Dieter 1999: 131; Barguet 1962: 136-141

69 Lauffray, Sa'ad and Sauneron 1975: 26

70 Leclère 1996, 2002; Leclère and Coulon 1998

71 Barguet 1962: 228-240

72 Arnold, Dieter 1999: 118, 197; Lauffray 1979: 218; Wilkinson 2000: 162

73 Laroche-Traunecker 1982: 329

74 Lauffray 1971

II. Discussion of Architectural Change at Karnak

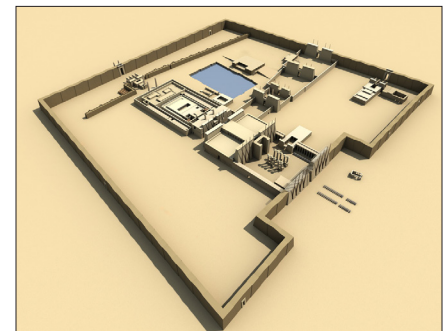
Our current understanding of how and why the temple grew and changed relies mainly on the archaeological work undertaken at Karnak in the 20th century, as well as recent work since the year 2000. Over time, the larger picture of the temple precinct has greatly expanded, and our knowledge of the temple's chronology of construction and decoration has dramatically improved. Nevertheless, while the temple model here constructed and described includes as many new discoveries as possible, each excavation season at Karnak brings fresh insights. Overtime, when such new information becomes available, some of the description given here will need to be modified, changed completely, or nuanced. Just as the temple itself evolved over time, our comprehension of the site will too, and by the end of the 21st century, we should expect that continuing excavations and new technology will allow us to visualize whole parts of the precinct in dramatically different ways.

The following section highlights the significance of some of the changes presented above and aims to explain how archaeologists and scholars have reconstructed (usually only on paper) the features of the temple that are included in the model.

The Position of the Nile River in Relation to Karnak

Visitors to Karnak today must walk almost a third of a mile (about half a kilometer) west from the temple's western quay and entrance to reach the Nile River. The river and its canals appear to have run further to the east in the Pharaonic periods, however, and their position may have directly impacted the development of the temple.

The Middle Kingdom temple precinct would have been encircled by a large enclosure wall, much smaller than the later 30th Dynasty wall of Nectanebo I that gives the temple its form today. Archaeologists working at Karnak believe that this mud brick wall (not shown on the model), with sides over 250m each, would have run somewhere in front of the present third pylon on its western edge, and near the present eighth pylon on the south. Excavations near the eighth pylon may have uncovered the wall's southeast corner, and a section of the eastern wall may have been exposed near the sacred lake. The Nile's eastern bank at this time would have run close to this wall, limiting the expansion of the temple west⁷⁵ (It has also recently been suggested that a branch of the river may have run along the temple's east side during the Middle Kingdom, drying up by the start of the New Kingdom; this would have initially limited the temple's expansion to the east as well⁷⁶). Because only a small part of this huge wall has been identified, its location remains highly hypothetical. It was therefore not included on the model.



A model rendering of Karnak in the Roman Era, circa 30 BCE.

- 75 Graindorge 2002: Abb. 1; Van Siclen 2005a: 29, 32 and fig. 4; Carlotti 2005: 178-179
- 76 Larché 2007: 481; Grimal and Larché 2007: 43-45

Throughout the life of the Amun-Ra temple, the river seems to have gradually shifted westward. A painted scene from the Theban tomb of a man named Nefer-hotep (Theban Tomb 49) implies that at some time in the 18th Dynasty, a giant T-shaped basin connected to the Nile by a canal was cut before the temple. It bordered a rectangular quay on its eastern edge.⁷⁷ If the tomb painting's representation has been correctly interpreted, the basin was located in the vicinity of the later second pylon.⁷⁸ This shift would have allowed the expansion of the temple slightly westward in the New Kingdom. The presence of a canal and basin may equally have limited further movement of the temple west at that time.

The construction of the second pylon by Horemheb was the first major move west since the reign of Thutmose II. The expansion would have necessitated the filling in of the T-shaped basin and canal before the temple. If the river had continued its gradual movement away from the temple during the 18th Dynasty, new land would be available for another temple entrance and processional to the west. About 100 years after Horemheb's death, Sety II and Ramesses III added bark shrines in front of the king's pylon, possibly lining the entrance processional of the earlier king. The exact location of the Nile's east bank at this period remains unknown, but it could have stood near the location of the first pylon.

The river's westward shift must have continued throughout the 20th and 21st Dynasties. Some time around the reign of Shoshenq I, when a new western temple entrance was constructed, a temple quay and a huge revetment wall were built. These were located about 90 meters (100 yards) to the west of the new gate and demarcate the position of the river in the start of the Third Intermediate Period.⁷⁹ The river must have remained in the same area through the 25th Dynasty, as a paved stone ramp inscribed for Taharqa was built south of the quay, descending into the bordering Nile.⁸⁰ A new section of the revetment wall has recently been discovered 50 meters south of the present quay by archaeologists of Egypt's Supreme Council of Antiquities. Their discovery showed that the stone wall, once thought to have been the side of a basin connecting the temple to the Nile by a canal, was instead a huge barrier built to protect Karnak from the Nile itself, which flowed immediately next to the temple. Inscriptions on the wall allowed archaeologists to date the revetment to the 22nd Dynasty.⁸¹ Other sections of the wall have been uncovered north of the quay, indicating the line of the river at that time.⁸²

By the end of Ptolemaic rule in Egypt, the Nile had shifted further to the east, and the area around the temple's quay and revetment wall had silted up. Domestic-style structures of Greco-Roman date popped up around Taharqa's river ramp and the Late Period chapel of Hakoris.⁸³ New land was again becoming available, but the expansion of the temple had halted, and by the end of the Roman Period, Karnak would be closed.

- 77 Gitton 1974
- 78 Gitton 1974: fig. 1
- 79 El-Aref 2008
- 80 Lauffray 1979: 94-95
- 81 El-Aref 2008
- 82 Lauffray 1979: 92; Lauffray and Sauneron 1975: fig. 3
- 83 Lauffray 1971

DIGITAL KARNAK

The Development of the Temple of Karnak

The King and Temple Expansion

When the kings sponsored construction works at temples such as Karnak it not only demonstrated their power (both financial and territorial) but also their unique relationship with the gods. Since the success or failure of the nation hinged upon the king's ability to act as a divine intermediary, appeasing the gods and currying their favor for Egypt, it was of the utmost importance that the king himself was "beloved of the gods." To prove their special status, and thus their legitimate right to rule over the nation, the kings built monumental temples covered with relief scenes depicting themselves praising, making offerings to, and embraced by the divinities. Those temples built by their famous ancestors could be restored or renewed in increased splendor, associating the kings with the glories of the past and situating them within the desired royal tradition. At Karnak, many inscriptions describe how pharaoh repaired or refurbished the buildings of his esteemed predecessors. While some kings modified the existing temple, others chose to extend its borders.

The Middle Kingdom Court

Most maps of Karnak have a large blank square in the middle of the temple, the area of the Middle Kingdom court. It appears that the early temple had been destroyed during ancient times, with only three granite thresholds remaining from the original structure. Nothing more of the structure's plan had been recovered during Henri Chevrier's excavations and clearing in the area.⁸⁴

Luc Gabolde, an archaeologist working with the CFEETK, reinvestigated the area in the late 1990s. Gabolde recreated the form of the Senusret temple using the small amount of information on the form of the temple discovered during his excavations, as well as information from the blocks of Senusret I excavated at Karnak in the early 1900s and after. The recovered limestone building materials of the temple included fragments of square pillars and statues, and Gabolde has reconstructed a Middle Kingdom temple based on the form of the fragments.⁸⁵ His reconstruction has been used for the model. A second, alternative reconstruction was recently offered by François Larché. He imagines a much smaller temple, possibly oriented towards the east.⁸⁶

That a rectangular wall surrounded the Middle Kingdom temple is known from a number of pieces of evidence. Limestone doorjambs and lintels inscribed for Senusret I were discovered at the site near the Middle Kingdom court. Remains of the wall itself were unearthed during excavations around the temple's perimeter.⁸⁷ The exact form of the wall can as yet only be projected, but that it would have extended west to the location of the later fourth pylon, influencing the form of the early New Kingdom temple, seems likely.⁸⁸ The wall was included on the model to show the viewer how the Middle Kingdom temple might have been situated.



The ruins of the Middle Kingdom court, showing a red granite threshold and a calcite altar.

84 Golvin and Goyon 1987: 75-76

85 Gabolde 1998, 1999

86 Larché 2007: 409-421

87 Gabolde 1998: 114-115; Charloux 2007: pl. IV

88 Such as the form shown in: Graindorge 2002: Abb. 1

The Southern Processional Routes

The date and form of the earliest processional routes south from the temple remain speculative. Senusret I added a number of small shrines to Karnak, including the famous peripteral shrine, the “white chapel.” Its blocks were found in the third pylon and reconstructed in Karnak’s Open Air Museum. Two other chapels of the king probably lined the important processional routes of the time. Work done by Charles Van Siclen in the court of the ninth pylon suggests that a small court (not pictured on the model) was located here in the Middle Kingdom. One of Senusret’s shrines (also not pictured on the model) may have stood here on a brick platform. If so, it would be the earliest signs of a north/south directed processional route from Karnak. The destination of the route at this early period remains unknown, since the earliest evidence for temples to the south at Mut and Luxor come from the 18th Dynasty.⁸⁹

In the reign of Hatshepsut, solid evidence for a north/south processional avenue between Karnak, Mut, and Luxor temples appears. The queen’s pylon (the eighth) was added south of the core temple, and the calcite shrine of Amenhotep I (originally standing within the central section of the Amun temple) may have been moved just north of her new pylon to adorn the route.⁹⁰ The queen’s “red chapel” depicts the events that formed the *Opet* Festival, part of which included a procession south to Luxor temple. A Ramesside shrine at Luxor likely replaced one built by the queen before that temple. The temple of the goddess Mut was clearly an important cult site during the queen’s reign as well, and reused blocks from the queen’s temple there have recently been discovered during excavations at that site. Shrines for the movement of the god’s bark in festival stand just north of the entrance to Mut’s temple.⁹¹

The location and orientation of the temple of Khonsu, built by Ramesses III, can be best understood as related to the important southern processional routes. His temple faced south, and it seems to have had its own processional running in that direction. A powerful “high priest of Amun” during the 21st Dynasty named Pinedjem added pairs of ram-headed sphinxes (likely taken from the mortuary temple of Amenhotep III across the river) to this processional way.⁹² It did not connect with the route to Luxor, but instead connected to the temple’s own basin and Nile canal, evidence for which has been found in recent excavations.⁹³ The image of the child god Khonsu, as son of Amun and Mut, would have been an important part of the riverine festival processions, and his temple thus would have warranted its own launch for the god’s sacred bark.

The avenue from Karnak to Luxor must have been important from the New Kingdom onward. Its early form is unknown, but the processional may have paralleled the later route of Nectanebo I, known from its stone paving and hundreds of sphinxes.⁹⁴ While this route was previously only exposed directly around

- 89 Bell 1997: 147-148 and note 61; Bryan 2005: 181; Ullmann 2007: 11
- 90 Blyth 2006: 36
- 91 Bell 1997: 147-149; Bryan 2005; Van Siclen 1987: 159-160, fig. 2
- 92 Arnold, Dieter 1999: 30; Cabrol 2001: 26-27, 239-255; Porter and Moss 1927: 77-79
- 93 El-Molla, Hegazy and Abd el-Hamid 1993: 246-247
- 94 Arnold, Dieter 1999: 118; Cabrol 2001: 283-287

DIGITAL KARNAK

The Development of the Temple of Karnak

Karnak and Luxor temples, ongoing excavations by the Supreme Council of Antiquities within the present day city of Luxor have exposed numerous additional sections of the sphinx avenue south of the Mut temple.⁹⁵ The exact location of the entire pathway may one day be known.

See the essay: *Festival Processions* for more information and maps demarcating the festival routes under different kings.

The Western Sphinx-Lined Processional Route

Karnak's present-day entrance allows visitors to walk over the ancient quay and through the western sphinx alleyway before approaching the temple's gate. While this layout reflects the Roman form of the temple's entrance, the line of sphinxes had a very different form in earlier periods.

About 100 ram-headed sphinxes (crio-sphinxes) were discovered around the temple's first court and pylon during clearance in the beginning of the 20th century. Between the statues' forepaws, small statuettes of a king were visible. The excavator attributed the assembling of the original sphinx alley to king Ramesses II, whose name was inscribed on these statuettes. However, more recent study of the style of these images instead suggests that they were carved during the mid-18th Dynasty. They were possibly arranged before Luxor temple by king Amenhotep III, then moved and usurped by Ramesses II to front his new court at the temple. Pinedjem, a "high priest of Amun" in the 21st Dynasty, usurped and positioned the Amenhotep III/Ramesses II sphinxes before the second pylon at the temple of Amun (the temple's entrance at the time).⁹⁶ The exact arrangement and length of the statue-lined path is unknown, but they likely extended up to or past the area of the later first pylon to a quay.

The construction of the first court by Shoshenq I must have enclosed many of the sphinxes along the western alleyway within its walls. It may have been at this time, or possibly later when the Taharqo kiosk was added, that these sphinxes were moved to line the north and south walls of the court.⁹⁷ The model shows the latter option, with the sphinxes remaining in a single line during the additions of Shoshenq I, but this chronology of layout is only a suggestion.

It was only with the reorganization of the western entranceway during the Roman period that the sphinxes were placed as we see them today.⁹⁸

The Early 18th Dynasty

Very little evidence for the form of the temple in the reign of Amenhotep I remains *in situ*. Decorated limestone blocks and fragments in the modern-day site storage magazines, all of which were excavated in various parts of the site in the



The western sphinx-lined processional way outside Pylon I.

95 Mansour Boraik of the SCA was kind enough to allow the author to view these excavations.

96 Cabrol 1995: 25-27, 2001: 206-208

97 Cabrol 2001: 209

98 Lauffray 1971

DIGITAL KARNAK

The Development of the Temple of Karnak

20th century, have been used to re-imagine Karnak at this period. The model reproduces some of the main elements of one scholar's reconstruction, showing one possible arrangement of the architectural features discovered.

Many of Thutmose I's constructions, on the other hand, still stand at Karnak. Ruins of the fourth pylon and one of his two red granite obelisks remain on the temple site.

The pylons of Thutmose II and the walls of his "festival court" were dismantled by Amenhotep III. Many of the inscribed blocks from these constructions were found in the third pylon, and they have been used by Egyptologists to reconstruct the court's general form.⁹⁹ Fragments of the king's granite obelisks have also been recovered from Karnak, allowing scholars to estimate their height and width. Bases for two obelisks later subsumed by third pylon were revealed during excavations and clearance in the "festival court." These almost certainly belonged to Thutmose's monuments.¹⁰⁰

Hatshepsut's many works at Karnak still exist in some form. Her eighth pylon (with decorative scenes recarved by Amenhotep II) still graces the southern processional route. One of her red granite obelisks stands in the Wadjet hall, while part of its fallen pair has been put on display near the sacred lake. The queen's new sanctuary, the "palace of *Ma'at*," now encloses the temple's later bark chapel of Philip Arrhidaeus. Her second pair of obelisks at the eastern edge of Karnak were mostly destroyed, but they are mentioned in a quarry inscription at Aswan and depicted in the queen's temple at Deir el Bahri.¹⁰¹

The Wadjet hall

Politically, Karnak took on new importance in the 18th Dynasty, as the pharaohs began to use the temple as a means of demonstrating their ordained selection as king by the gods. The enhancements of Thutmose I highlight this change, as one of his contributions to the temple was the addition of this special hall where coronation rituals took place with the god Amun sanctioning the choice.¹⁰²

Various interpretations of the form of this hall under Thutmose I, Hatshepsut, and Thutmose III had until recently been based on early excavations in the area and a text of Thutmose III describing his changes within. However, CFEETK archaeologists made a number of finds in the hall that have altered our understanding of the hall. While consolidating the sandstone blocks of the fourth pylon, inscribed niches for seated statues of Thutmose I were discovered along the north tower's eastern face. The bases and lower sections of some of the sandstone images were still in place. Other excavations in the hall and a reconsideration of the materials found previously in the area allowed Jean-François



A model reconstruction of the Wadjet hall in the reign of Thutmose I.

99 Gabolde 1993

100 Gabolde 1987: pls. I and II

101 Habachi and Van Siclen 1977: 60-63, 68

102 Golvin and Goyon 1987: 44

DIGITAL KARNAK

The Development of the Temple of Karnak

Carlotti and Luc Gabolde to reconstruct the many phases of construction within the hall, and it is their conclusions that have been used for the model.¹⁰³ Even this may eventually have to be changed, as an alternative interpretation of this data, slightly modifying the chronology of the construction, has recently been offered by François Larché.¹⁰⁴

Many of the larger Osiride statues of Thutmose I still stand in the hall today, although their faces have all been mutilated. An example of a painted and mostly complete head, possibly originally from one of these statues, has been used to recreate the original appearance of the standing figures. Thirty-six standing royal images would have lined the hall originally, those on the south side wearing the white crown (as shown on the model), those on the north wearing the double crown.¹⁰⁵

The Central Bark Shrine

The earliest bark shrine preserved from Karnak is the calcite shrine of Amenhotep I. It may have stood immediately outside the Middle Kingdom temple, sheltered by screen walls on its north and south sides. Other reconstructions (not represented in the model) suggest the main shrine at the time was made of wood, and the calcite shrine was positioned further west, in front of the later fourth pylon.¹⁰⁶

Amenhotep's central shrine likely remained in its location until the reign of Hatshepsut. At this point, the central area of Karnak was redesigned, and the queen's new sanctuary, the "palace of *Ma'at*," was built before the Middle Kingdom temple. If the calcite shrine indeed acted as the main shrine of Karnak until this time, it would have been moved, possibly to a location along the southern processional route near the queen's new pylon.¹⁰⁷ To replace the central shrine, the queen commissioned the quartzite "red chapel," a two-roomed chapel with low-relief decoration on its interior and exterior. After the construction of the "palace of *Ma'at*," a number of renovations within its interior increased the available central space to make room for the now completed chapel.¹⁰⁸

The "red chapel's" time at the heart of the temple was limited. At some point in the reign of the queen's nephew, Thutmose III, the chapel was dismantled and its blocks stored somewhere in Karnak. The front and rear doors were reused in Thutmose's additions and renovations to the sanctuary and the court of the sixth pylon.¹⁰⁹ The red chapel was replaced with a new granite shrine, of similar size and shape, and a new entrance portico was designed for the "palace of *Ma'at*."¹¹⁰ It seems to have fared better than the "red chapel," and served as the main bark shrine for hundreds of years.



The "Red Chapel", now located in the Open Air Museum, once stood in the heart of Karnak, serving as a bark chamber.

103 Carlotti and Gabolde 2003; Larché 2000: 31

104 Larché 2007

105 Bryan 2002

106 Graindorge 1998, 2002; Blyth 2006: 36

107 Blyth 2006: 36

108 Carlotti 1995a; Nims 1966

109 Björkman 1971: 77-78; Dorman 1988: 54-65

110 Carlotti 1995a; Dorman 1988: 56-65

At some later distant moment, Thutmose's bark was damaged. This may have occurred during the invasions of Thebes in the 7th or 6th centuries. Amun's shrine was replaced with a granite replica, of similar size and shape, inscribed with scenes depicting the Macedonian king Philip Arrhidaeus as pharaoh. This is the bark shrine that stands today within the temple of Amun.¹¹¹ Recently, one scholar has questioned whether the replacement of the central bark was actually accomplished by Nectanebo II (360-343), an earlier 30th Dynasty king, as part of broader renovations to the core of the Amun temple. If so, the bark was left uninscribed, only to be decorated later by Philip Arrhidaeus.¹¹²

The Mid 18th Dynasty

The renovations of later kings have obscured many of Amenhotep II's contributions to Karnak. South of the eighth pylon, the king built a court with a pillared portico and a bark station with a pillared façade. The court's entrance was adorned with a small pylon and a colossal statue of the king. All these structures were pulled down and reused as building material for the "edifice of Amenhotep II" by Horemheb when he erected the ninth and tenth pylons. A thorough study of the blocks of the standing building has allowed this general reconstruction, but the exact plan and form for this court cannot yet be determined.¹¹³ It was therefore not included on the model. The king's small calcite shrine, whose walls were disassembled and reused in later periods, has been reconstructed at Karnak's Open Air Museum.

The peristyle of Thutmose IV was partly dismantled and placed in the third pylon of Amenhotep III. About one thousand blocks, protected for over three thousand years from the sun and sand, were removed from the pylon in modern times and still retain traces of their original paint.¹¹⁴ Recently, the structure has been reconstructed in Karnak's Open Air Museum, along with the king's calcite bark shrine, also found in the pylon. Sections of the eastern half of the peristyle that were not removed from the Wadjet hall aided in locating its original position in the court.¹¹⁵ Although exact plans and measurements for the pillars were not available to the Digital Karnak Project, photographs of the CFEETK reconstruction of this feature were used to recreate it for the model. More details may soon be made available about the peristyle's plan, and the model will need to be changed to reflect this information.

The third pylon of Amenhotep III remains in its original location within the temple, and the north tower's eastern face still maintains monumental relief scenes of the king. The king's contribution to the tenth pylon, however, has only recently been clarified. The presence of two colossal statues of the king flanking the door of the tenth pylon clearly indicated that the king had intended to build some type southern gateway on that location. The "talatat" fill within the pylon

111 Arnold, Dieter 1999: 131; Barguet 1962: 136-141

112 Arnold, Dieter 1999: 131-132

113 Van Siclen 2005a: 27, 39-41 and figs. 14-15, 2005b: 187-189

114 Bryan 1980: 222-224; Letellier 1979, 1991

115 Larché and Grimal 1993: VIII

116 Barguet 1962: 243-244

(from the buildings of the king's son, Akhenaten) demonstrated that he could not have constructed the tenth pylon itself. Horemheb, whose name was inscribed on the pylon's gateway, was assigned ownership of the towers.¹¹⁶ CFEETK archaeologists discovered that the foundations of the tenth pylon were in fact very different from those of Horemheb's second and ninth pylons. Close investigation of the architecture of the towers suggested that the tenth pylon had been commenced (presumably by Amenhotep III) and then abandoned with only a few courses of stone laid. Its construction was resumed under Horemheb, who took advantage of the mass of building material available in east Karnak to erect three pylons at the temple.¹¹⁷

The Late 18th Dynasty

At least four buildings commissioned by Amenhotep IV/Akhenaten in east Karnak have been identified by the study of inscriptions on the "talatat" blocks removed from pylons at Karnak and Luxor. The location of most of the structures remains unconfirmed, but the largest and most important of these, the *Gem-pa-Aten*, was discovered east of the Amun precinct in the 1920s. Only this temple, whose layout and location are (at least partly) known from these and later excavations, could be reconstructed with a reasonable attempt at accuracy. Few details exist regarding the interior of the temple, however, so this area had to be left blank on the model.

Sometime in his fifth regnal year, Amenhotep IV changed his name to Akhenaten and launched a fervent attack on the existence of gods other than the solar deity Aten.¹¹⁸ Amun was a special target, and his name and figure was cut out of temples all over Egypt, including at Karnak. Shortly after, the king decided to leave the city of Thebes, and move the center of cult, the royal residence, and his burial site to Middle Egypt, in a city he named Akhetaten (modern day Tell el-Amarna). The wealth of the Amun Temple at Karnak was diverted to building projects for the new city, and the temple itself was closed.¹¹⁹

See the essay: *Introduction to the Temple of Amun* for more information on Akhenaten.

After Akhenaten's death, the boy king Tutankhamun reopened many temples and reinstituted construction and decoration projects at the Thebes.¹²⁰ To the south, along the temple's processional to the Mut temple, he added two lines of ram-headed sphinx statues. Study of the sphinxes suggests that they originally depicted Akhenaten and Nefertiti, and that the heads were removed and replaced with the image of a ram (the animal associated with the god Amun). The human-headed sphinxes likely adorned the temples in east Karnak, and were moved and altered by Tutankhamun as part of his religious restoration projects.¹²¹

117 Azim 1982: 146-153

118 Allen 1996

119 Redford 1984: 137-142

120 Redford 1984: 205-211

121 Cabrol 2001: 24-25, 221-227;
Murnane and Eaton-Krauss 1991

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The structures of the final king of the 18th Dynasty, a former general named Horemheb, still stand at Karnak today. His three pylons and the “edifice of Amenhotep II” have been discussed above (see the comments on Amenhotep II and III). It should be mentioned that the religious changes of Akhenaten by this time had fallen completely from favor. Horemheb systematically demolished Akhenaten’s buildings at east Karnak and attempted to erase that king’s name from history. The removal of these structures should be viewed as a specific policy against that king, and not as a typical act of reuse of another king’s monuments. The proscription against Akhenaten’s religion and family soon extended to Tutankhamun, and Horemheb usurped the sphinxes of his predecessor along the route to the Mut temple.¹²²

The 19th Dynasty

The construction of Karnak’s famous hypostyle hall has been assigned to a variety of kings: Horemheb, Ramesses I, Sety I and Amenhotep III. Although the hall’s interior walls, columns, and architraves were all decorated with the relief of Sety I and Ramesses II, some scholars questioned whether an earlier king raised the hall’s central nave. Peter Brand performed a careful study of the hall and discovered that the majority of its walls had been decorated using scaffolding once the mud brick construction ramps had been removed. However, the highest parts, including the clerestory windows and architraves above the central nave, had been carved while the ramps remained in place. That these were inscribed by Sety I proved that it had been this king who was responsible for the hall’s creation.¹²³

Ramesses II’s eastern temple for “Amun-who-hears-prayers” can be visited at Karnak today. The sphinxes and obelisks guarding the temple’s east gate have been mostly destroyed, but the bases and socles upon which they stood have been identified outside the later Nectanebo I gateway.¹²⁴

The small bark shrine of Sety II still remains in the temple’s first court.

The 20th Dynasty

Ramesses III’s bark shrine in the first court exists at Karnak today. His temple to Khonsu, further south, also remains in good condition. Many scholars think that this structure replaced an earlier temple to the child-god on the same location. Reused blocks of Amenhotep III in the bark sanctuary could suggest that Khonsu’s temple existed in the mid 18th Dynasty or before, but these blocks could also have been taken from Amenhotep’s defunct mortuary temple on the west bank for use as building material.¹²⁵



The hypostyle hall at Karnak.

- 122 Barguet 1962: 242; Cabrol 2001: 226
- 123 Brand 2000: 201-219, plans 2-3
- 124 Golvin 1993: fig. 2
- 125 Arnold, Dieter 1999: 30; Lauffray 1979: 214; Survey 1979: xvi

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The Development of the Temple of Karnak

The inscribed gateway of Ramesses IX still adorns the south door of the third pylon's narrow court.

The Third Intermediate Period (Dynasties 21-25)

The sphinx avenues of the “high priest of Amun” Pinedjem have previously been discussed (see the two sections above on the western and southern processional routes).

The grand court and inscribed “Bubastite portal” of Sheshonq I still stand at the temple. Only the western side of the court, removed for the construction of the first pylon by Nectanebo I, has disappeared. A hypothesized form of this wall and gate has been used for the reconstruction on the model.¹²⁶

Small chapels dedicated to the funerary god Osiris appeared at Karnak during the early and late Third Intermediate Period (not included in the model). Generally, these were located to the north and north east of the Amun temple in small clusters. Many of these structures were decorated not only with scenes of the king, but of a series of important priestesses known as the “god’s wife of Amun.”¹²⁷

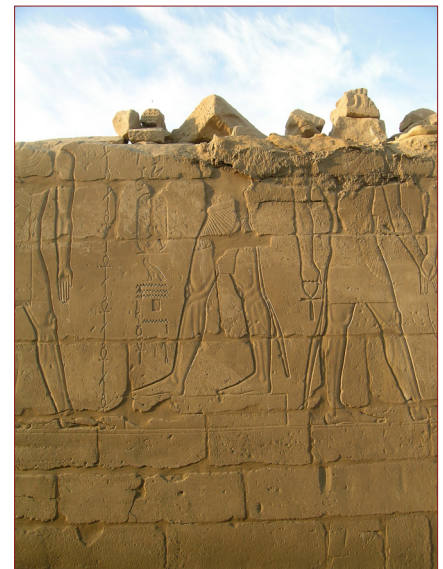
Parts of Taharqo’s buildings still grace the precinct. One column of his ten-columned kiosk stands in the first court, and the bases of the others provide the feature’s basic layout. Only the lower column shafts of his entrance porch at the Khonsu temple remain, but entire columns and low walls from his porch at the eastern temple of “Amun-Ra-who-hears-prayers” have been physically reconstructed from blocks at the site. The lower section of his “edifice of the lake” and the structure’s deep well are intact, and have been studied at length. Hypothetical reconstructions of the upper layer and building forecourt were used to re-imagine the space for the model.¹²⁸

The Late Period (Dynasties 26 to 30)

In the first half of the Late Period, Karnak experienced only limited amounts of construction, focused mainly on the addition of new small Osiris chapels.¹²⁹

After a hiatus, construction at the temple resumed under the 29th Dynasty kings. The remains of the *shena-wab* of Psammuthis and the chapel of Hakoris at Karnak have been studied and the reconstructions of these buildings have been used for their representation in the model.¹³⁰

King Nectanebo I of the 30th Dynasty altered Karnak dramatically with the construction of a series of huge mud brick enclosure walls. His work gave greater



Relief from the edifice of Taharqo.

126 Arnold, Dieter 1999: 35-36

127 Coulon and Defernéz 2004: 138; Leclant 1965: 23-36, 110-113; Redford 1973

128 Parker et al. 1979

129 Coulon and Defernéz 2004

130 Arnold, Dieter 1999: 101-102; Lauffray 1995a: 22-23, 59; Traut-ecker 1987

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Karnak the shape by which we know it today. The Amun, Montu, and Mut temples were all given their own giant precinct walls, significantly reorganizing the sacred space of Thebes.

Nectanebo's first pylon serves as Karnak's western entrance today. It was never completed, and remains of the mud brick ramps used for its construction in ancient times can still be seen inside the first court.

The Opet temple is also extant. It is currently undergoing an architectural study by the CFEETK, and the chronology of its construction may soon be clarified.

The Greco-Roman Period

The ruling dynasty formed by Alexander's general Ptolemy supported the traditional temples of Egypt, and Karnak continued to benefit from royal patronage.

Ptolemy III's gate in the enclosure wall south of the Khonsu temple continues to be one of the most impressive features of the temple. The chronology of construction in the area remains difficult to understand, however, and its appearance in the temple's different phases cannot positively be determined. CFEETK archaeologists discovered the foundations and lower courses of two incomplete stone pylon towers that would have flanked the gate. An exact date could not be assigned to this construction, so whether this was intended as part of the 30th Dynasty construction remains unknown. It is possible that the stone pylon may have been meant to replace an earlier mud brick pylon on the same location.¹³¹ To build his new gateway, Ptolemy would have then needed to remove a section of the Nectanebo wall (and any earlier gate on the location), adding his own gate and subsequently repairing the wall.¹³²

Henri Chevrier first uncovered the "Osiris catacombs" of Ptolemy IV during the 1950s. The CFEETK renewed excavations there in the 1990s and they have recovered thousands of pieces of painted plaster originally adhering to the interior walls of the building. The lower portions of the walls and their niches remain *in situ*, and this fact has allowed the CFEETK to suggest a reconstruction for the entire building.¹³³

The modifications to the temple of "Amun-Ra-who-hears-prayers" in east Karnak were done using a regularized style of stone construction typical of the Ptolemaic period.¹³⁴ A new door created in the western side of the pillared forecourt was inscribed by Ptolemy VIII, suggesting that the other additions date to his reign as well.¹³⁵



The Bab el Amara Gate, built by Ptolemy III.

- 131 Lauffray and Sauneron 1975: 26
- 132 Golvin and Hegazy 1993: 151-152
- 133 Leclère 1996, 2002; Leclère and Coulon 1998
- 134 Masson 2007
- 135 Barguet 1962: 228-240; Gallet 2007

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Houses at Karnak

Excavations around the mud brick wall of Thutmose III, near the modern-day bleachers for the temple's "sound and light" show, have revealed a number of houses inhabited by temple priests.

Along the south section of the wall, six habitations were originally dated to the early Third Intermediate Period. The best preserved of these houses show that they were small, rectangular mud brick dwellings with open courtyards, three to four interior rooms, and staircases leading to upper terraces.¹³⁶ Renewed excavations in the area suggest however, that the date assigned to these buildings may be too early: materials found in a seventh building date to the first half of the Late Period.

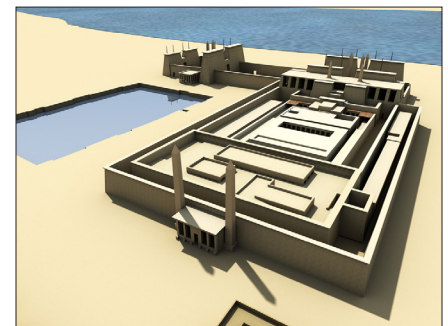
To the north, domiciles of temple priests dating to the Ptolemaic period were also discovered. The squarish mud brick buildings had interior courts and stairways leading to a roof or second floor.¹³⁷ Some of these have been physically reconstructed at the site.

While they were not constructed on the model, the plans of these houses can be easily seen on the maps of Karnak at these periods.

The Karnak Model

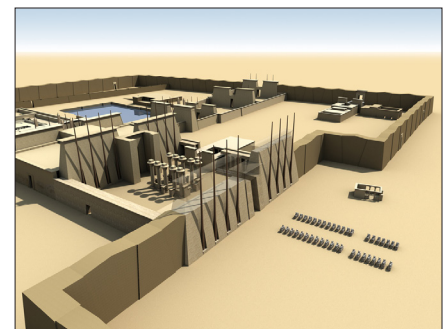
Not every structure existing at Karnak today could be reconstructed and placed on the virtual reality model. The small chapels dedicated to the funerary god Osiris in the Third Intermediate Period and Late Period were not reconstructed, for example, as insufficient evidence exists about the appearance of the upper portions of many of the structures. The architecture of the temple of Ptah, located just inside the north enclosure wall of Nectanebo I, has not yet been thoroughly studied. While the ground plan is well-known, here again published drawings and sections documenting the walls and roofing are lacking. Many additional features, such as the colonnade and columned porch of Shabaqo in areas north of the Amun temple, are known primarily from plans documenting their broken remains at the site. Little information on their height, appearance, or integration with the surrounding temple is available. Temple features that could not be reconstructed on the model have been placed on the series of chronological maps created to accompany the model and website.

The temples and chapels at north Karnak (the precinct of Montu) and south Karnak (the precinct of Mut) could not at this time be included in the virtual reality reconstruction project. These areas, as well as Luxor temple further to the south, have been added to the chronological maps to provide the larger context in which the temple of Amun developed.



Above: a model rendering of Karnak looking west during the reign of Thutmose III.

Below: a rendering of Karnak in the Roman Era showing the unfinished first pylon.



136 Lauffray 1979: 201-202; Lauffray, Sauneron and Anus 1969; Lauffray et al. 1975

137 Lauffray 1995b: 301-306

It should be again stressed that the 3-D Virtual Reality model (in both the accompanying videos and the lower-quality model posted on Google Earth) represents the state of our knowledge today about the form of the temple. Many details have been left out, and many elements of the basic architecture of the reconstructed buildings are based on hypotheses and conjecture. The model cannot show us Karnak “as it really was,” because we will never know everything about a site so ancient. What the model does offer is an approximation of how buildings may have looked (in a very general way) and a chance to tour through this reconstructed space. As it is presented here, the model shows only one possible reconstruction of each building per king’s reign. This is misleading, as the nature of the evidence means that sometimes Egyptologists have very different ideas about the appearance or architectural form of a single building. In the future, the model could be adjusted and expanded to show multiple reconstructions for those debated structures. As it is, new information gained through ongoing excavations at Karnak will most definitely change our understanding of the precinct and the modeled buildings, and the model will need to be continually modified to reflect the new “reality.”

Conclusion

As has been mentioned above, many of the structures upon which the model is based still stand at Karnak today. The remains of other features have been meticulously excavated and studied by Egyptologists, archaeologists and architects. But much of the greater precinct still waits investigation, and future work at the temple will likely clarify the chronology of some of the more confusing areas, as well as reveal currently unknown buildings and features. The story of Karnak continues.

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