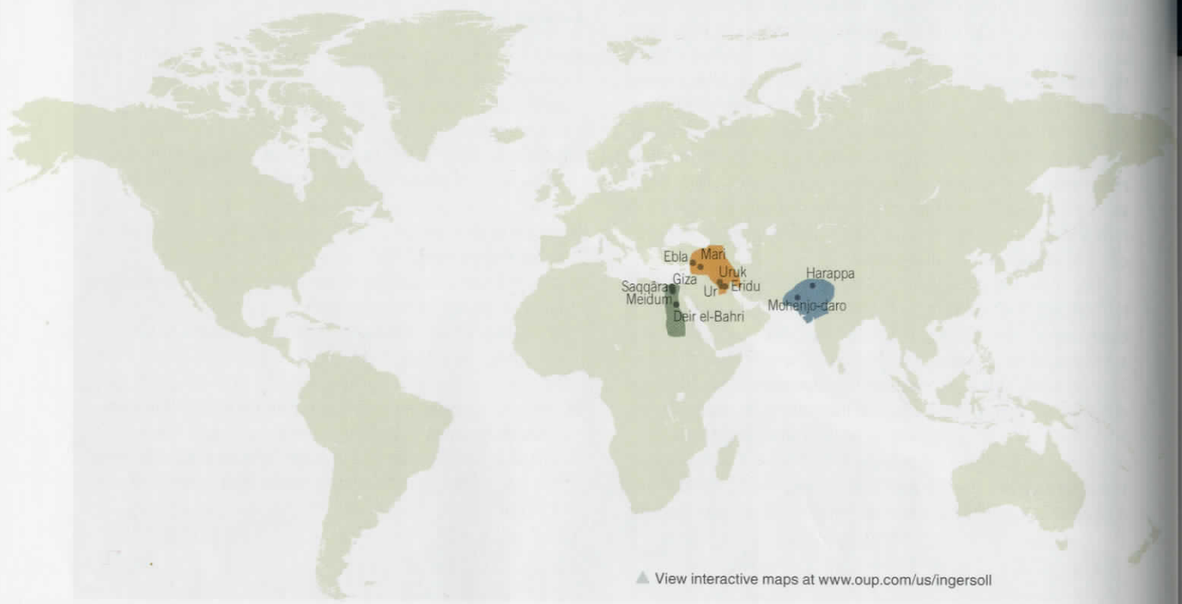
CHAPTER 2

3000–1500 BCE



▲ View interactive maps at www.oup.com/us/ingersoll

The first truly urban cultures gathered around the great river systems in the subtropical regions stretching from Egypt to Southwest Asia to India. The specific conditions of each area led to the development of different political and religious orders. In Mesopotamia councils of elders and priests governed the city-states that grew up along the Tigris and Euphrates. They constructed massive mud-brick towers over their collective grain deposits. These stepped ziggurats represented the union of heavenly and human agency in the struggle to defend the area's precarious agricultural output. In Egypt the regular overflowing of the Nile yielded a much more stable agricultural supply, encouraging the formation of a strict hierarchy under a centralized monarchy. The grand stone monuments of the pyramids symbolized the continuity of daily life into the afterlife within the eternal cycle of the river's fertility. The Harappan culture in the Indus valley had greater difficulty controlling the floods of that region. Instead of grand tombs and religious structures, the inhabitants built massive walls around their cities to protect them from floods and created brick-lined sewers to control the course of effluents. They seemed to favor pragmatic over symbolic solutions to questions of survival.

2.1 CITIES OF MESOPOTAMIA
Mud, Gods, and Urbanism

In Southwest Asia architectural traditions developed in tandem with written language, responding to the religious and political needs of people sharing common goals. As communities in the first large cities amassed surpluses and developed specialized knowledge, they created texts and monuments to supplement human memory. Their architects designed monumental structures for storing surpluses, while their scribes composed indexes of wealth and codes of behavior. A religious hierarchy oversaw this cultural transition to the awareness of historical time. Design professionals helped to orchestrate a new type of urban order, distinct from the world of nature. As cities grew, they demanded the expertise of architects, even in the production of standard dwellings, to resolve matters regulated in written codes, such as street alignments, drainage, and roofing.

The Bronze-Age city-states of Mesopotamia, scattered in the delta region between the Tigris and Euphrates Rivers, began to take permanent form during the fifth millennium BCE, sprouting the first urban monuments. Their fabric of streets, canals, and dwellings comprised an immense collective work resembling cells seen through a microscope. These inhabitants considered their city a sacred place and gave it the name of a god as its founder, hoping to procure the protection of that deity. By piling up mud bricks into soaring stepped towers, or ziggurats, they created stairways to heaven as symbolic places of access to their gods. The ziggurat loomed as a tangible **axis mundi**, a sacred center of the world, where the privileged class of high priests and governors performed rituals to secure the city's destiny. Long after the decline of these first cities, successive cultures in the region continued to worship the gods of their temples, honoring them as the origin of both architectural and written knowledge.

The Urban Temple: Creating the Axis Mundi

The alluvial plains of the Tigris and Euphrates Rivers were known in antiquity by the Greek word *Mesopotamia*, "the land between two rivers" (Fig. 2.1-1). During the fifth through third millennia BCE this muddy expanse, which extends from the Persian Gulf in the southeast through modern Iraq to the foothills of Armenia in the northwest, spawned a great system of cities. By 3000 BCE over 80% of the inhabitants of the region qualified as urban dwellers, a proportion similar to that found among the industrialized societies of today. The climate ranged from fiercely hot summers to bitterly cold winters, and these early settlers lived with the constant threat of either flooding or droughts, which did not bode well for urban success.

The immense collective effort to harness the unwieldy rivers into canals and lay out irrigation systems for the agricultural fields helped to consolidate the Mesopotamian cities. Led by an urban elite that created a division of labor for complex tasks, managers and priests invented the first written language for keeping inventories of surplus

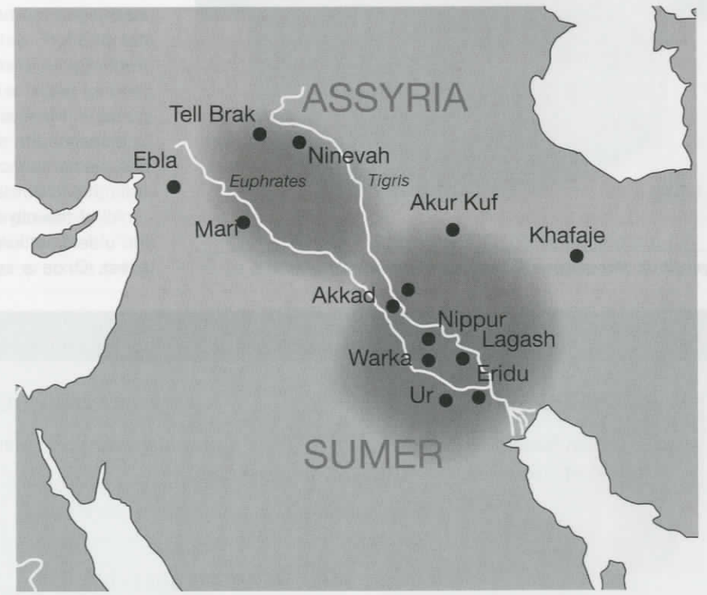


Figure 2.1-1 Mesopotamia, the land between the Tigris and Euphrates Rivers, showing the lower city-states in Sumer, 5000–1500 BCE.

agricultural products and tracking their distribution. Clay proved to be the most available medium of expression for both architecture and writing: in the cities of the plain, people built with mud bricks and wrote on mud tablets. As the ruling class perfected cuneiform characters (Fig. 2.1-2), the city itself became a type of language—a reproducible architectural system that communicated religious hierarchy in its temples, military duty in its walls, water management in its canals, and the circulation of goods and people in its streets.

Figure 2.1-2 Mesopotamia. Cuneiform cone, third millennium BCE.

The earliest urban settlements in Mesopotamia date from 5000 BCE in Sumer, the southern delta area. Agricultural towns on the slower-moving Euphrates, such as Eridu, Uruk, Nippur, Lagash, Ur, and Kish, grew into sizable city-states with 10,000–20,000 inhabitants. Each city built a set of double walls and at least one towering temple as the center of its surrounding agricultural estates. The coordination of work teams to produce and maintain the **dikes** and canals for irrigation created the initial surpluses of these cities, leading to the stratification of their social systems. The elite class—which included an assembly of landowners, high priests, and usually an *ensi* (governor) or, in some cases, a *lugal* (king)—commanded the irrigation systems in the surrounding territory and controlled the wealth.

The Sumerian elites created architecturally distinct parts of the city for the storage of agricultural surplus and the orchestration of rituals meant to guarantee the land's continued fertility. Their architects designed sacred enclosures, what the Greeks later called ***temenos***, using orthogonally aligned storehouses to frame elevated temples. The **ziggurat**, a temple that rose on one or more platforms to create a stepped profile, became the chief monumental expression of Sumerian cities, towering above the city's one-story fabric. Religious historians call such a vertical focus the axis mundi, a sacred marker indicating a local culture's center of the world. *Ziggurat* literally meant "house of the mountain, mountain of the storm, bond between heaven and earth," and its great height and palpable mass alluded to the origin of the hill peoples who had descended to the plains. Such a symbolic structure addressed the two prime themes of prehistoric religions, the comfort of the earth and heavenward aspirations. Earth deities dwelled inside the mountain, while those of the sky used its summit as their resting place. The ziggurats in Mesopotamia embodied the collective mandate to influence the sky gods in a region afflicted by precarious meteorological conditions, ranging from century-long droughts to devastating floods.

All of the city-states of Sumer acknowledged Eridu as the oldest settlement in the region, deserving of their respect. Once a seaport on the Persian Gulf, the site now lies about 200 km (125 miles) inland due to silting. Over the course of three millennia Eridu's temple to Enki, god of deep water and wisdom, underwent eighteen rebuildings, each one raising the building higher into the air. The structure started around 5000 BCE as a tiny, thin-walled cubicle with sides only 3 m (10 ft) wide and two circular tables for burnt sacrifices (Fig. 2.1-3). Temple VII, a replacement structure built around 3800 BCE, used the area of the initial sanctuary as the foundation for one of four corner towers. The builders of the new version constructed thick walls studded with regularly spaced external **buttresses**, anticipating the pleated wall motif found on all later temples of the region. Inside, they placed **spur walls** to prop up the ceiling beams and rafters over a narrow hall. The custom of rebuilding houses one on top of the other, seen in ancient Jericho (see Section 1.1), continued throughout Mesopotamia and extended quite naturally to the temples, leading to the succession of stages of the ziggurat. By the end of the third millennium BCE the Enki Temple had incorporated many previous versions into a colossal stepped mound that took the form of a proper ziggurat, covering a base ten times as large as that of Temple VII.

Shrines such as the Enki Temple at Eridu represented the theocratic political order of the early Sumerian cities, which were ruled by high priests. The fields and the produce of the city-state belonged to the temple of the city's

CULTURE, SOCIETY, GENDER

The Millennial Tell

Because of the perishable nature of mud buildings, the patterns of the earliest urban architecture underwent constant revision rather than assuming permanent form. Cities became part of an organic process that involved the habitual reproduction of types. Rather than clearing away the earlier buildings, new buildings rose on top of old ones, making use of the previous levels as foundations. The plans of the previous buildings persisted as the preconceived idea, or type, for the replacements; and the new buildings pushed up like fresh shoots from the older roots in the soil. After centuries of building in adobe on the same site, Mesopotamian cities generated prominent mounds, known in Arabic as *tells*. A site such as Tell Erbil (Arbil), on a northern branch of the Tigris near Mosul, Iraq, has been continuously occupied since at least 5000 BCE, resulting in a formidable plateau rising 40 m (131 ft) above the plain. Generation upon generation contributed to the stratification of this human-made topography.

Kurdistan, aerial view of Tell Erbil, also called Arbil (Iraq). The mound of the city arose as a result of successive generations building on top of one another since the fifth millennium BCE.

TIME LINE

▼ **ca. 5000 BCE**

Earliest cities in Sumer; Eridu the oldest

White Temple at Uruk, first ziggurat

▲ **ca. 3400 BCE**

▼ **ca. 2600 BCE**

Gilgamesh epic written

Sargon the Great consolidates Syria, Armenia, and Sumer into the Akkadian Empire

▲ **ca. 2334–2279 BCE**

▼ **ca. 2300 BCE**

Palaces at Ebla and Mari, Syria, destroyed by Sargon the Great

Three-century period of drought weakens Sumerians, Egyptians, and Harappans

▲ **2200–1900 BCE**

▼ **ca. 2140 BCE**

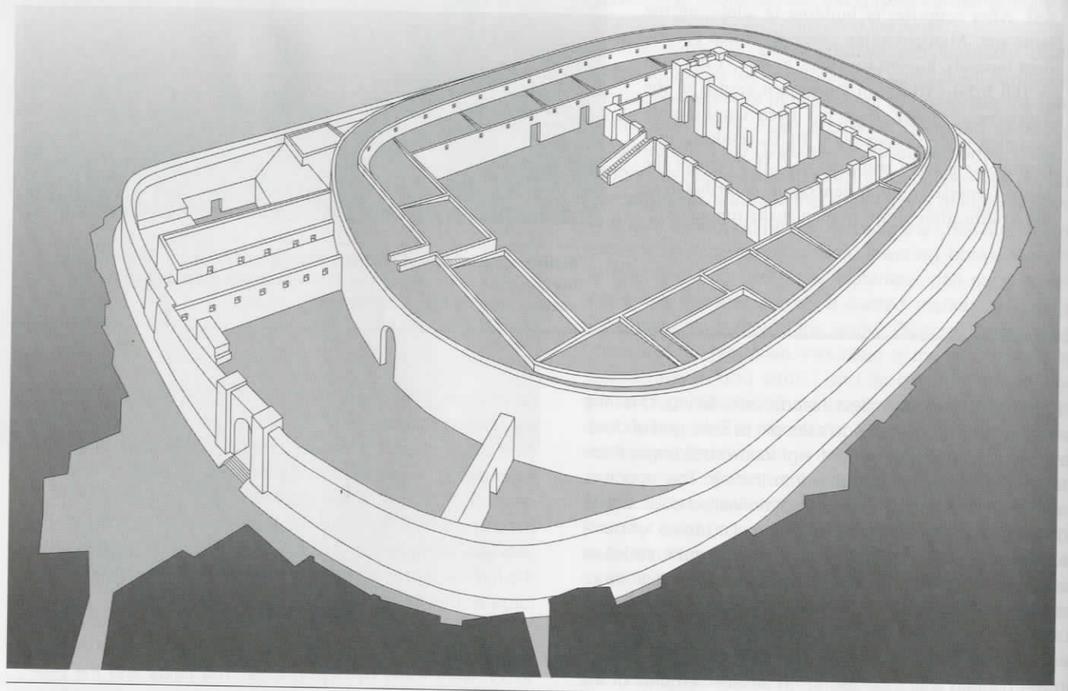
King Gudea rules parts of Sumer from Lagash

RELIGION, PHILOSOPHY, FOLKLORE

Khafaje, the Ritual Order of Mesopotamian Temples

The Oval Temple at Khafaje, begun around 2650 BCE, demonstrates the development of formal order in the creation of urban temples. Rather than adjusting to its surroundings, the new structure required the demolition of many nearby houses to accommodate the oval figure of its outer walls. The compound was entered through a formal gate flanked by thick guard towers. This threshold marked the transition from the profane world of the city streets into the *temenos*, the sacred world of the temple precinct. The entry court served as a public zone of offices for the temple administrators. A second portal on an axis with the first gate penetrated an inner, higher set of oval walls. The path ramped up a level to an inner court, a perfect rectangle set inside the rounded figure of the walls. In the center of the court, a well and circular basins for ablutions awaited the celebrants. Workshops, bakeries, and storage rooms fit into the court's perimeter. The upper sanctuary stood on a platform at the rear of the court, reached by a protruding stairway placed off axis at the southwest corner.

Mesopotamian temples contained two standard interior components: an altar table for sacrificial offerings; and a niche of epiphany, a place for the god to make an appearance. The niche usually framed a statue of the deity. Priests would have brought a sacrifice of food to the temple, rubbed it on the statue's mouth, and then distributed the rest to be eaten by the celebrants.



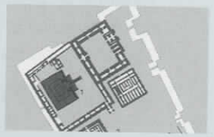
Khafaje, Mesopotamia (Iraq). Reconstruction of the Oval Temple, ca. 2650 BCE.

Ur-Nammu publishes first code of written laws in Ur

▲ **ca. 2047–2030 BCE**

▼ **ca. 2040–2000 BCE**

Ziggurat of Ur built by Ur-Nammu and his son



Palace at Mari destroyed by King Hammurabi and the Babylonians

▲ **1759 BCE**

god. Cuneiform tablets discovered in Uruk, a close neighbor to Eridu, detail how the townspeople devoted their lives to the god Anu, the lord of the sky, while the ruling class of priests and elders exercised stewardship over the god's estates. The temple managed the canals, seeds, draught animals, and implements of tilling and stored the harvest on its grounds for distribution to the community, resulting in a system of "theocratic socialism." Craftspeople, organized into guilds, offered part of their output to the temple, as did builders who offered their labor and fishermen who shared their catch.

Uruk's White Temple (Fig. 2.1-4), dedicated to Anu, and the first true ziggurat, rose as the focus of the city's religion and government. It dates from the protoliterate period, between 3400 and 3000 BCE. Similar to the Enki Temple at Eridu, successive generations mounded this structure over earlier temples, buried underneath its platforms. The sloping base climbed 13 m (40 ft) above the skyline. Artisans embossed its battered walls with broad, regularly spaced grooves and cut a long access stair and ramp through its eastern mass. At the summit they placed a sanctuary, similar to Temple VII at Eridu, that took the form of a pure **parallelepiped**, a rectangular box, articulated with a uniform alternation of protruding buttresses and deep niches. While the priesthood entered the oblong interior hall on the broad southwestern facade, a special door on the short northwestern side was reserved for Anu to make appearances, probably in the form of a wooden statue. The interior of Sumerian temples sheltered a sacrificial **altar** for symbolically feeding the gods. Plastered and whitewashed in gypsum, the White Temple projected a gleaming stepped profile lording over the irrigated fields surrounding the city and visible from as far away as Eridu. The landmark testified to Uruk's divine patronage and oriented its residents to the axis mundi.

While the ziggurat offered a palpable symbol of Uruk and its founding deity, the city produced many other types of temples to important cults. About 100 m (300 ft) from the White Temple, the priesthoods of the moon god, Nanna, and the goddess of the morning star, Inanna, sponsored a collection of extraordinary monuments. Set within a bounded space, the designers encrusted several rectangular cult buildings with weatherproof, terra-cotta cone mosaics (Fig. 2.1-5). Thousands of baked cones, each about the size of a finger, were dipped in colored glaze and embedded into the mud walls and half-columns of the structures. The builders arranged

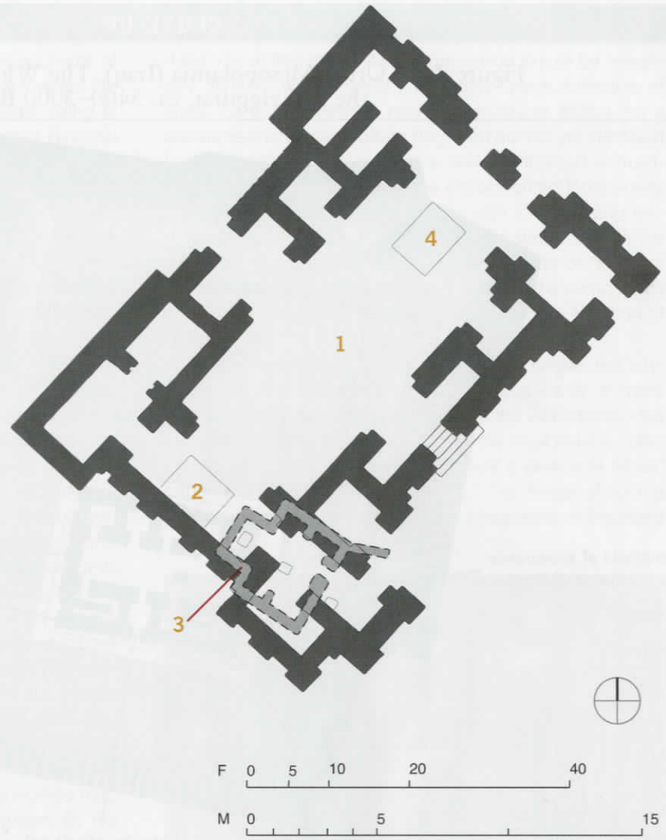


Figure 2.1-3 Eridu, Mesopotamia (Iraq). Development of the Temple of Enki from a single chamber built ca. 5000 BCE to the multichamber Temple VII of ca. 3500 BCE. Fifteen hundred years later this temple was covered over by a ziggurat. (1) Temple VII, ca. 3500 BCE (a rebuilding of the Enki Temple over nine previous versions); (2) niche for the wooden statue of the god; (3) trace of the earliest temple, built ca. 5000 BCE; (4) altar for sacrifices.

the red, white, and black dots of the **polychromatic** ceramic **cladding** into vibrant diamond and zigzag patterns like those of woven fabrics. A passage in the epic poem *Gilgamesh* (written around 2600 BCE) celebrates the temples of Uruk as marvels of baked bricks rather than mud.

The constant building and rebuilding of temples in Uruk came as a response to the fragility of existence in Sumer. Ever greater shrines served to beseech the mercy of the gods. After centuries of overworking the soil, the land underwent salinization, resulting in frequent crop failures and periodic famines. Droughts tormented the region from roughly 2200 to 1900 BCE, leaving a general feeling of anxiety in Sumerian cultures. The extravagant temple-building mission of Gudea, a high priest with kingly status

CLOSE-UP

Figure 2.1-4 Uruk, Mesopotamia (Iraq). The White Temple of Anu, the first ziggurat, ca. 3400–3000 BCE.

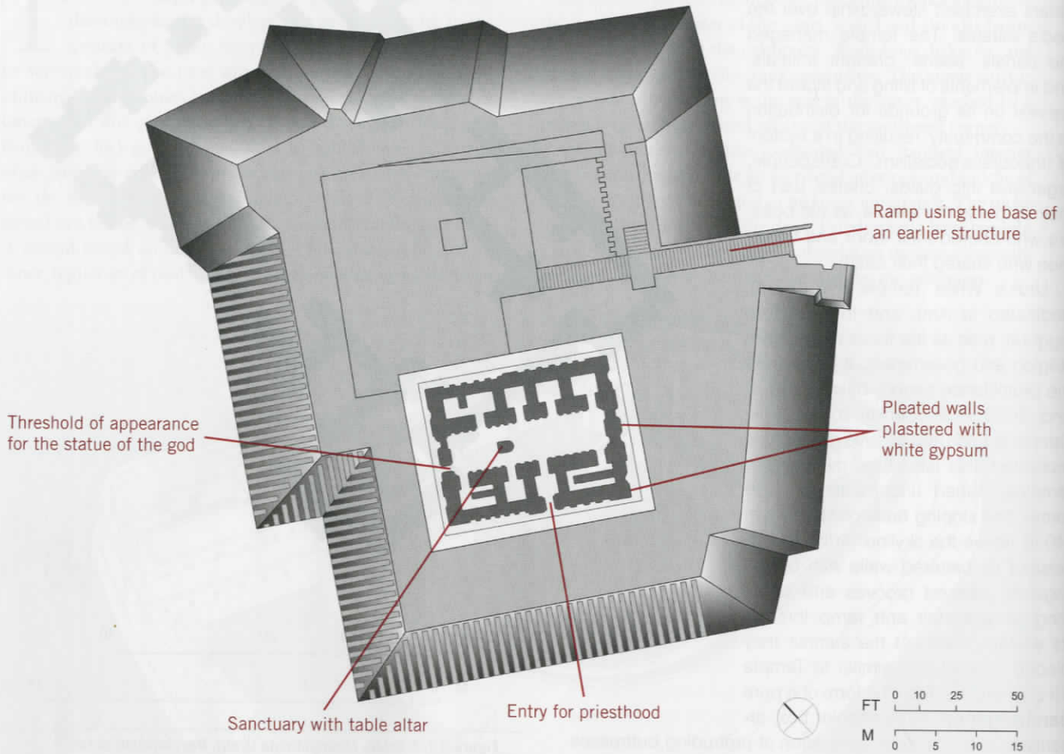


Figure 2.1-5 Uruk, Mesopotamia (Iraq). Cone mosaics covering urban temples with more permanent cladding, ca. 3400–3000 BCE.

who commanded the city of Lagash east of Uruk, illustrates this desperate struggle for survival. Gudea reigned ca. 2140 BCE and left behind detailed written accounts of his rebuilding of the city's temples in which he invokes the environmental crisis of the Tigris River no longer rising to water the fields. He also claims that the city god Ningirsu has appeared to him in his dreams while sleeping in the old temple and promised, "When thou shalt set thy right hand to my temple, I will set my foot upon the mountain where the storm dwells . . . abundant rain shall pour for thee, it will give the heart's life to the land."

While undertaking the rebuilding of Ningirsu's temple, Gudea commissioned twenty stone statues of himself, intended as permanent witnesses to the glory of his god. In one version, Gudea is seated with his hands clasped in prayer above a drawing board with the plan of a temple on his lap (Fig. 2.1-6). The sculpture indicates that Sumerians invented not only written language but also architectural graphic conventions. In this rendering, parallel lines indicate the rippling outlines of an oblong temple's pleated walls, while five gaps represent the doorways. The proportions of Gudea's temple, his account reports, came to him in a dream, and he urged his people to gather materials for its construction. He and his family led rituals to purify the city and, on the site of the future temple, had the soil cut down to the bedrock for the foundations. After placing sacrifices there, his workers filled in the foundation trenches with purified sand before the piling of levels. Unlike the slave labor used by later imperial powers, Gudea's workers belonged to a theocratic regime that sought to redeem the city. They built the temples, but "the lash struck not, and none was oppressed with blows." Although early Sumerians worked hard for their gods, their piety was not always rewarded. By the end of the second millennium BCE the land could no longer support such large cities, and the population of the plains dwindled through starvation and warfare, leading to deportation of its inhabitants as slaves to neighboring kingdoms.

Kingship: The Emergence of the Palace

The Sumerian city-states periodically lost their autonomy to either local kings or foreign conquerors. The title "king of Kish" appeared around 2500 BCE, signifying that the *lugal*, or ruler, of one of the Sumerian cities claimed the right to command other cities in the region. Individual military leaders absorbed the governing authority of the earlier priesthoods. While the great cult sites in the original cities continued to be rebuilt into ever-higher piles, the region underwent a series of conquests. The power to rule in Sumer changed hands as frequently as the course of the twin rivers. The new status of kingship fostered the development of the palace complex as a new urban building type.

The most important political shift in Mesopotamia came around 2300 BCE, when a Semitic-speaking courtier, the charismatic Sargon the Great (r. ca. 2334–2279 BCE), seized power from the reigning king of Kish and proceeded to take control of as many as sixty-five cities. Sargon, whose name meant "legitimate king," ruled for half a century and amassed the region's first empire, uniting the areas of Syria and Armenia with the old city-states of the Sumerian delta. He shifted the political organization to rule by hereditary dynasty, with imperial jurisdiction over a collection of cities. Sargon founded a new capital city at Akkad, on a site somewhere near modern Baghdad but not yet identified by archaeologists. By starting a new city instead of building on top of an existing one, he circumvented local power struggles inherent in existing cities with longstanding religious cults and political clans. Sargon's successors in the Akkadian dynasty took the grandiloquent title of "kings of the four quarters of the earth" and required the same forms of address allotted to the gods, establishing a tradition of deified rulers.

This transition from a system of loosely connected city-states to post-Sumerian empire building—with a more structured rule by a dynasty such as the Akkadians—led to the development of an enclave for the royal palace. Literary documents report that Sargon built a palace at Akkad capable of "feeding 5,400 courtiers." The design of such a compound no doubt relied on the precedents of bounded

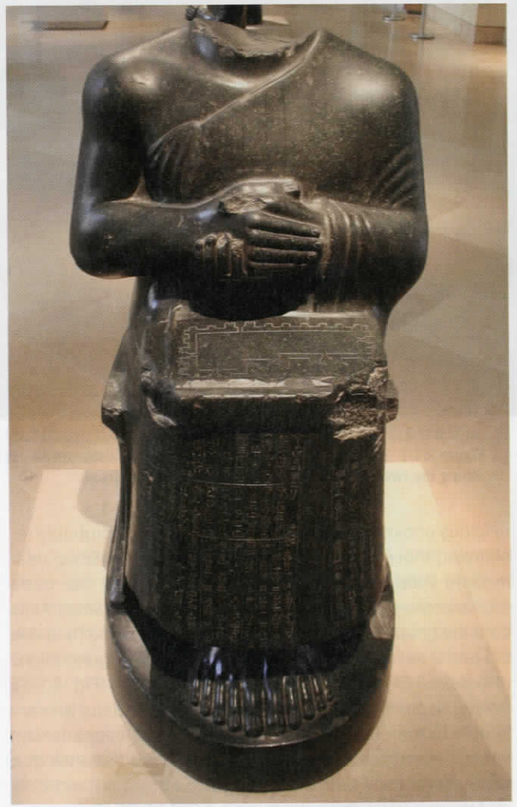


Figure 2.1-6 Lagash, Mesopotamia (Iraq). Sculpture of King Gudea of Lagash with a plan of a temple in his lap, twenty-third century BCE.

Figure 2.1-7 Ebla, Syria. The *tell* of the ancient city destroyed during the twenty-third century BCE by Sargon the Great.

religious enclosures. Sargon's palace at Akkad probably resembled those built in rival city-states, such as Ebla, near modern Aleppo, Syria, which then dominated the trade routes between the Mediterranean and Mesopotamia. At its core the ground of Ebla's compound rose 26 m (83 ft) above the rest of the city as a result of the work of many generations of builders. This human-made acropolis, or *tell* (Fig. 2.1-7), served as the site for both the royal palace and the primary temple to the city goddess, Ishtar. As often happens with ancient monuments, the best preserved are the ones that were intentionally destroyed: Sargon's armies sacked Ebla and burned down the palace around 2300 BCE. The heat of the fires accidentally converted the clay of the walls and the cuneiform tablets of its archive into the more durable form of terra-cotta. Ebla's royal palace had orthogonally arranged interconnected rooms gathered around courtyards averaging 20 m (65 ft) in width. The devastated palace served as an excellent model for the conquering Akkadian culture.

At Mari, another ancient city in northern Syria that rivaled Ebla as the hinge for trade between the Mediterranean and Mesopotamia, the great palace was destroyed during the time of Sargon, rebuilt two centuries later, and destroyed definitively in 1759 BCE by King Hammurabi of Babylon. As in Ebla, the torching of the palace converted the mud-brick walls and the archive of cuneiform tablets into terra-cotta, inadvertently preserving the most complete set of documents of the period, including the "List of Kings." The palace at Mari served as both a royal residence and a religious center, consistent with the theophanic, or god-like, status of rulers during this period. It covered a site roughly 150 m (492 ft) per side and was divided into two halves, each structured around a great court (Fig. 2.1-8). The eastern side served the more public functions, the western the more domestic. While the architects plotted the layout of more than 260 rooms with orthogonal grids, they avoided placing the apertures and passageways in symmetry. They in fact went to great trouble to make the approach through the fortified entry gate at the northeast corner a twisting series of three antechambers to slow down entrants and allow the guards to better control their access.

The eastern half of the palace served as the site for public encounters and ceremonies at the palace temple. The great court, measuring 50 × 30 m (164 × 98 ft), would have accommodated hundreds of functionaries and petitioners. A hall at the southern edge of the court may have served as the primary audience chamber. It was approached by a special set of semicircular steps, and its walls carried fresco paintings in deep red hues. The palace temple, the oldest part of the site, occupied the remote southeast corner, reached through a succession of four chambers. This secondary position indicated a less important role for the priesthood. The inclusion of temple-like spaces in the domestic areas of the palace suggests that the ruler carried out priestly functions and commanded quasi-divine status.

The second courtyard, in the western half of the Mari palace, served the ruler and his retinue. While parallel to the first court, there was no direct access between the two. The bureaucrats used a hollow chamber between the two courts as the palace archives, leaving behind a cache of 20,000 cuneiform tablets. Remarkable fresco paintings, representing scenes of sacrifice and the investiture of King Zimrilim by the goddess Ishtar, covered the southern walls of the second court. The paintings set up one's approach to the throne room, a space as large as the hall of a temple. A pair of massive, 2 m (6.5 ft) thick pillars placed on the central axis carried the loads of the ceiling. At the west end of the hall a raised platform served as the throne, while at the east end a special niche contained statues of two goddesses holding vases from which water flowed into a drain, representing the perennial concern for adequate water supply. The private living quarters of the royal family and a sizable harem were gathered around four smaller courts in the northwestern and western sections of the palace. The walls here were painted to imitate marble encrustation, and some areas were paved with alabaster slabs. The western flank housed a service wing with kitchens and baths, one of them with two terra-cotta tubs and a hole in the floor for a toilet. The labyrinthine plan of the palace at Mari allowed the paths of servants and troops to be segregated from that of the king. It ensured that the king's intimate life with his queen and forty concubines in the western half would remain independent from his duties and public display in the eastern half. This prototypical royal harem also guaranteed that the women would give birth only to the king's children.

Figure 2.1-8 Mari, Syria. Reconstructed plan of the Palace of Zimrilim, ca. 2250 BCE, showing the private (1) and public (2) courts. The arrow path (3) traces the route through the three antechambers leading to the public court.

Ur: The City and the Ziggurat

The city of Ur emerged as the largest in Bronze-Age Mesopotamia following the demise of Sargon's Akkad. Like nearby Eridu, it began as a port city in Sumer, where the Euphrates meets the Persian Gulf, but now lies inland. The extensive archaeological excavations of Ur's temples, palaces, mausoleums, harbors, canals, streets, fortifications, shops, and common dwellings offer a unique vision of the urban fabric of this period. The city reached its maximum development during the period of the Third Dynasty, when King Ur-Nammu (r. 2047–2030 BCE) assumed the imperial ambitions of the Akkadians. Ur-Nammu improved the city's infrastructure of walls, canals, and public spaces. He also published the first code of laws, revised three centuries later in Babylon as the celebrated Code of Hammurabi. Ur-Nammu's code protected the rights of the weak and restored "equity in the land." The code punished the crimes of murder and theft with death, established the proper treatment of slaves, sanctioned against sexual misconduct, levied heavy fines for violent crimes, and protected orphans and widows. Apart from his remarkable attention to the urban fabric and human rights, Ur-Nammu became famous for centuries to come as the patron of the Great Ziggurat of Ur, a monument completed by his son, Shulgi (r. 2029–1982 BCE).

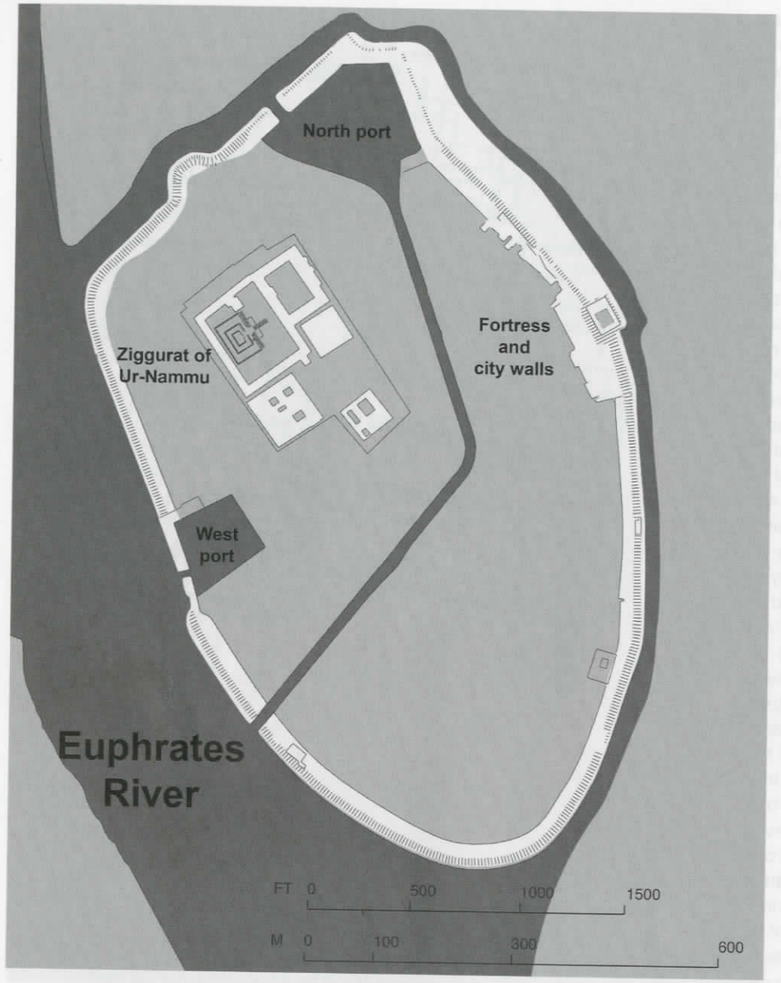


Figure 2.1-9 Ur, Mesopotamia (Iraq). Plan showing the city's oval outer walls, a northern port and a western port, a canal traversing the city, and near the geographic center a *temenos*, an orderly religious nucleus for the ziggurat, twenty-second century BCE.

A canal surrounded Ur-Nammu's city, and another bisected it. The oval shape of Ur's walls embraced a dense, twisted network of narrow, unpaved streets, relieved only by the port on the western edge, the harbor and a large palace in the north, and the great *temenos* for the ziggurat in the center (Fig. 2.1-9). The temple's orderly rectangular precinct of about 300 × 400 m (984 × 1,312 ft) covered an area as large as a city in itself. The street widths in Ur were never greater than 3 m (10 ft). An occasional open space, such as the so-called Baker's Square, resulted from the demolition of a few buildings according to a planned revision of the city fabric. Coordinated planning led to the rounding of corners at the street intersections. Perhaps initially the adobe edges were worn away by the frequent passage of pack donkeys, but in later times they were built expressly with nubbed bricks to accommodate the turning radius of carts. Although the Sumerians probably invented the wheel, it is hard to imagine much wheeled traffic in this congested maze.

The houses at Ur formed tightly packed blocks, built with party (shared) walls. Since the residents habitually dumped their refuse into the public space outside the front door, the level of the streets continually rose. Like the houses of ancient Jericho, the thresholds of Ur houses had to be constantly adjusted upward to keep pace with the rising street level. Inner steps descended to the house's original floor level. When in time the rising streets threatened to bury the ground story, the owners pulled the house down and laid a new floor on top of the old ceiling beams to match the current level of the street. This architectural metabolism constantly transformed the makeup of Ur's cityscape. Nothing about its streets or houses remained fixed or finished at any time, but like a living organism, the city continued the process of rebuilding itself.

Ur houses were mostly single-story structures of mud brick, with several rooms wrapped around an open court (Fig. 2.1-10). They usually contained no exterior **windows**, due to the repugnant nature of the street. The only connection to the outside, the constantly revised front door, opened to a small **vestibule** from which one moved cross-axially to enter the area of the courtyard.

A wealthier house in Ur, such as the two-story House III on Gay Street, would have been whitewashed inside and out. That house's footprint of 150 m^2 (1,623 ft^2) proves larger than a typical middle-class apartment of today but would have housed three times as many occupants. The servants, or domestic slaves, used the ground floor for their chores, while the family lived upstairs. A typical plan included a wide and shallow reception room on the far side of the court for visitors and a main lavatory on the side facing the guest room, next to a staircase to the upper floor. In one corner was the kitchen. The courtyard generally had a strong formal order, usually a perfect square 4–5 m (13–16 ft) per side, defined by four wooden posts at the corners that held up a continuous wooden balcony for the upper rooms. The ***impluvium*** roof would have sloped gently inward, projecting beyond the balcony and carrying downspouts to the paved court below, where in some cases there was a drain.

The Mesopotamian courtyard house provided the primary cell of the city. This type of dwelling, which is still being built in the region, generated the courtyard houses in later cultures, such as the Greek *oikos* (see Section 4.2), the Roman *domus* (see Section 5.1), and the Moroccan *riad* (see Section 8.2).

Ur-Nammu strictly planned the temple district (Fig. 2.1-11) as a solemn void with orthogonal coordinates. The enclosing *temenos* established an obvious contrast between order and disorder—a perceptible distinction between the sacred and the profane. Thick double walls studded with buttresses surrounded the entire compound, and tall guard towers flanked the major gateway on the northeast leading to an oblong court as large as the base of the ziggurat. Here, the administrators of the cult of Nanna kept their offices. An oblique path led to a second court, twice as large as the first, which framed the ziggurat. While the platforms of the tower and its three-way stair rose in strict symmetry, the path to reach it remained intentionally non-axial. Other temples and sites for specialized functions, including a kitchen for preparing the sacrifices to Nanna, occupied the perimeter of the *temenos* of Ur-Nammu's ziggurat.

Figure 2.1-10 Ur, Mesopotamia (Iraq). Detail of neighborhood with courtyard houses, ca. 2000 BCE. Gray areas indicate streets; darker gray boxes show courtyards.

South of the tower, beyond its courtyard, stood the perfectly square palace of E-Gi-Par, with sides 100 m (328 ft) wide. It served the high priestesses, whose role in the cult of the moon god was considered essential to the survival of the community. One among them was selected each year to consummate a physical union with the god, a part probably acted by the king or a high priest, at the top of the ziggurat. The ritual copulation was believed to ensure the fertility of the land. Far more women than men were buried in the royal cemetery at the southeast corner of the precinct's walls, attesting to the important role of the high priestesses. Next to their palace the king used a similarly scaled square palace, the E-Hur-Sag, during religious occasions.

Ur-Nammu conceived his ziggurat as a calculated addition to a site that had been sacred for over a millennium. His heroic commitment to rebuilding the temple was partly customary, as Sumerian rulers were expected to restore temples in the interests of the theocratic well-being of the city. It was also a strategy for advancing imperial claims over the surrounding city-states from which he exacted tribute. Records of the project give the impression that the king personally designed the staged tower and participated in its construction. A stele relief arranged in five narrative bands shows Ur-Nammu building the ziggurat (Fig. 2.1-12): on a lower level he carries the builder's tools and **mortar** basket for the approval of the god, and above this he pours libations for the god, who is holding a measuring rod. At the top, under the crescent moon, the king stands alone in reverence before the seated god.

The design of the ziggurat at Ur followed a preconceived geometric idea, and it was among the first to be built with materials meant to last. Unlike the majority of Mesopotamian temples, which have melted away as a result of their perishable adobe construction, much of the outer shell has remarkably survived, as it was encased in a 2.5 m (8 ft) skin of baked bricks, each stamped with the cuneiform slogan

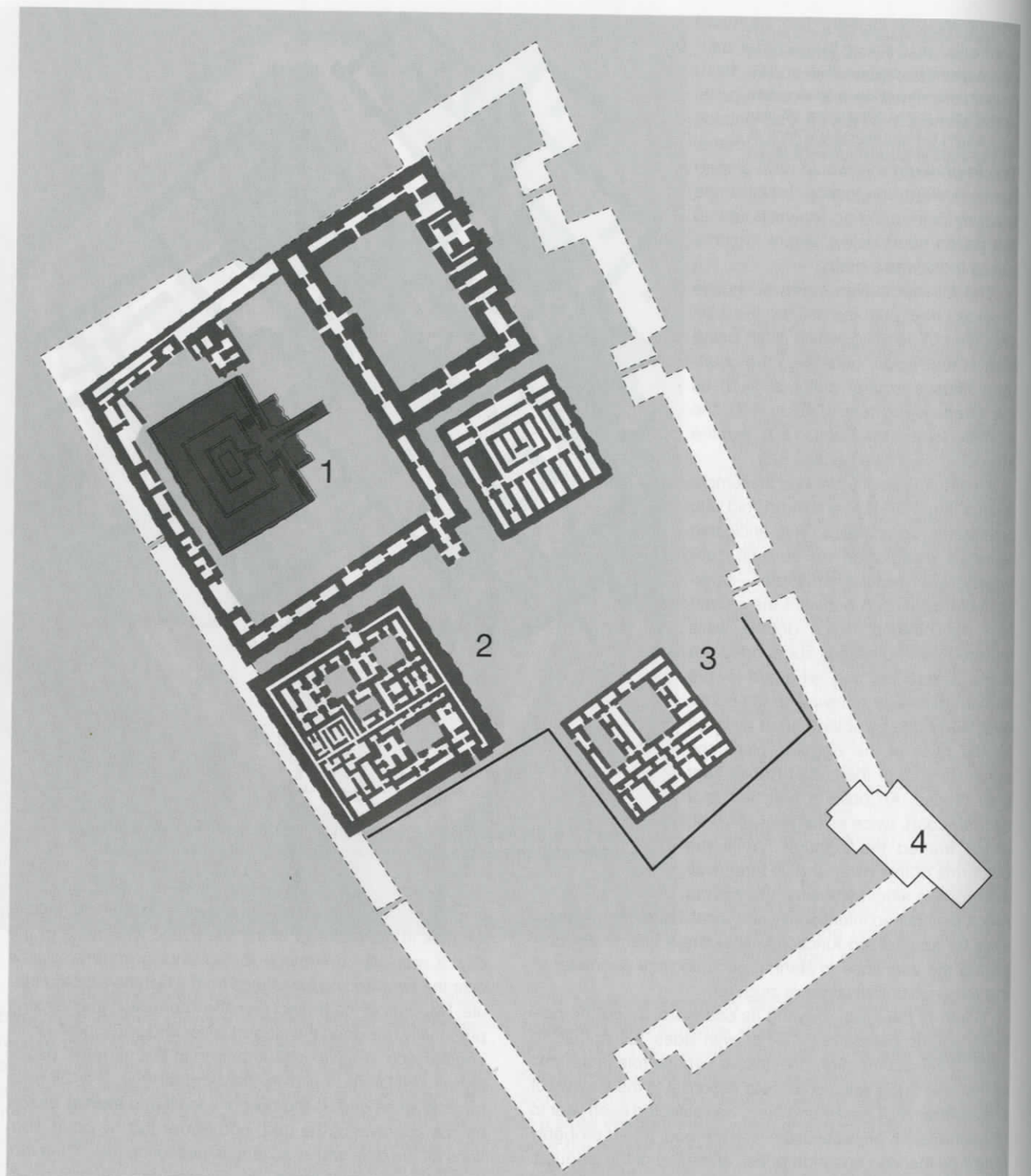


Figure 2.1-11 Ur, Mesopotamia (Iraq). Plan of Ur-Nammu's temple compound, ca. 2100 BCE: (1) ziggurat; (2) palace of E-Gi-Par; (3) palace of E-Hur-Sag; (4) royal cemetery.

"Ur-Nammu, king of Ur, who built the temple of Nanna." Mud bricks filled the core of the tower, while masons set the baked bricks with straw bonds in bitumen mortar, utilizing the region's abundant supply of asphalt and petroleum byproducts. The builders cut narrow slits, or "weep-holes," at regular intervals through the baked-brick casing to drain the interior of residual moisture and prevent the walls from deforming.

As was customary, Ur-Nammu oriented the corners of his ziggurat to the cardinal axes. The triple staircase (Fig. 2.1-13), with its central branch pointing straight out and the other two ascending from the sides, emphasized the symmetry of the design. They converged at a pavilion gateway. From this point, a single flight of stairs ran straight up the next two platforms to the portal of the temple at the summit. The first stage of the tower rose 18 m (59 ft) and the next about half of that, following the same proportions in a plan of 2:3. The third level continued the pattern of diminishing in proportion by one-half. The Temple of Nanna, which served as the moon god's "bridal chamber," rested on top of the third **terrace**, about 6 × 10 m (20 × 33 ft) and plastered in blue. The ziggurat's cumulative height reached over 35 m (115 ft), more than ten times higher than any of the city's buildings.

The power embodied by Ur-Nammu's tower endured long after his dynasty's decline. The succeeding conquerors of the region dutifully maintained the Great Ziggurat of Ur and eagerly copied it elsewhere. After a three-century drought that devastated Southwest Asia, from roughly 2200 to 1900 BCE, new powers laid claim to the increasingly unfruitful plains between the Tigris and the Euphrates. After the new regime of Babylonians reunited the lands of Sumer and Akkad around 1800 BCE, they carefully restored and expanded the *temenos* of Ur as a sign of respect to the local gods. In the northern outpost of Tell al-Rimah near modern Mosul, the Babylonians constructed a new ziggurat attached to a vast temple. The next group to take power, the Assyrians, created the new capital city of Assur, on the upper Tigris, and crowned it with a series of three staged towers. The Kassites, during a short period of dominion in the fifteenth century BCE, built one of the tallest of the ziggurats, the 57 m (187 ft) Aqar Quf, near Baghdad. Much of its core still stands as a result of the layering of rope and reeds in bitumen mortar between the mud bricks. The Elamites in the thirteenth century BCE built a seven-level ziggurat at their capital

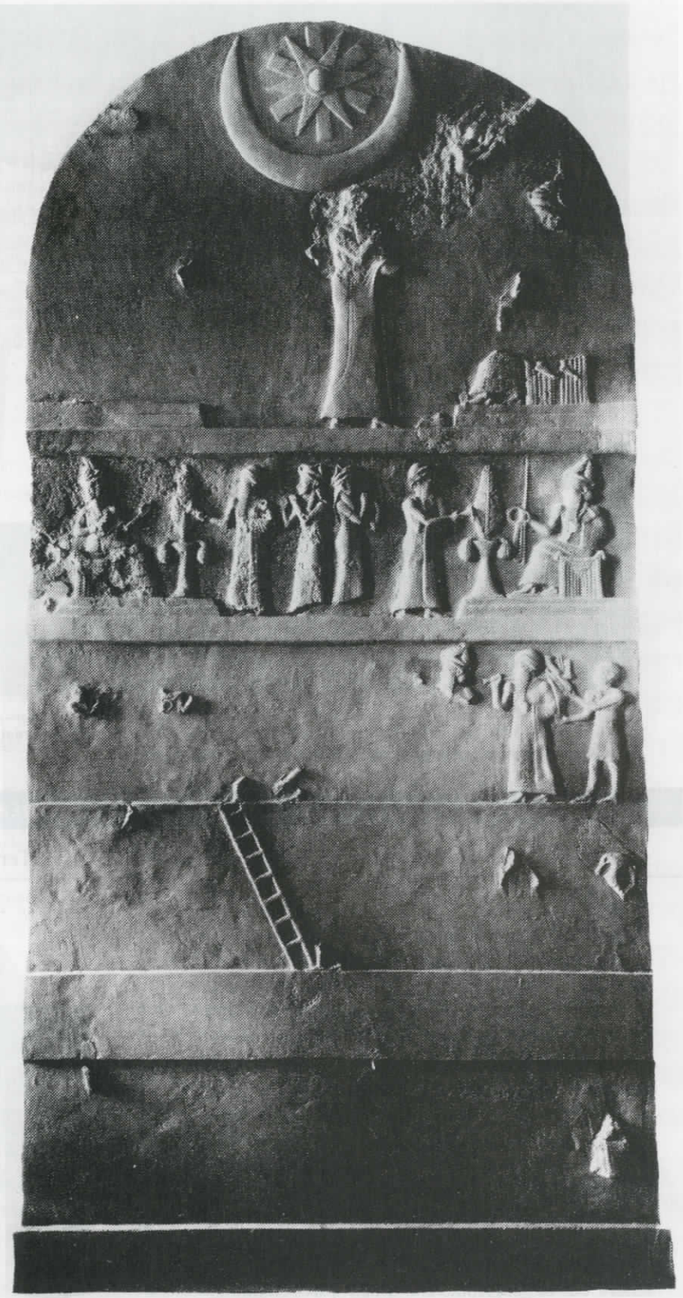


Figure 2.1-12 Ur, Mesopotamia (Iraq). Stele showing Ur-Nammu constructing the ziggurat and presenting himself to the god Nanna, ca. 2100 BCE.

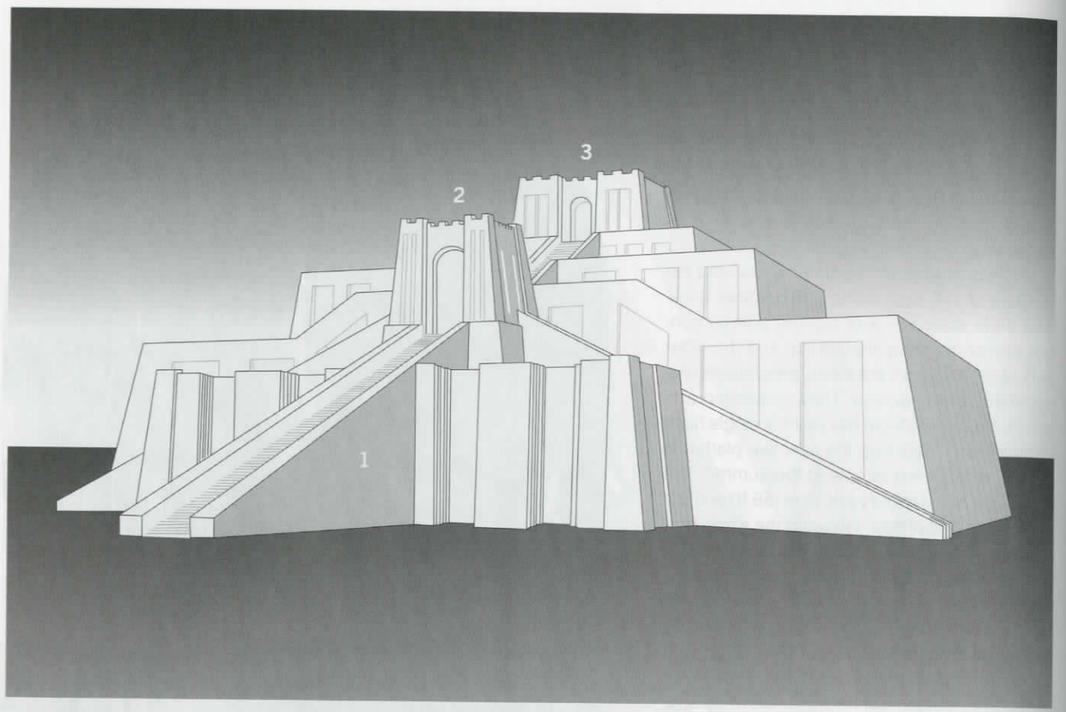
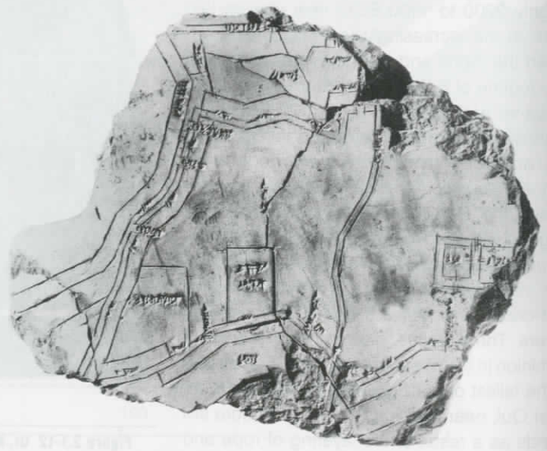


Figure 2.1-13 Ur, Mesopotamia (Iraq). Axonometric drawing reconstructing the Great Ziggurat of Ur-Nammu, ca. 2100 BCE: (1) triple stair; (2) pavilion at the landing; (3) the "bridal" chamber at the summit.

CULTURE, SOCIETY, GENDER

A Map of Ancient Nippur's Territory

This clay tablet, created around 1500 BCE, describes land divisions belonging to the Sumerian city-state of Nippur. The cuneiform inscriptions refer to roads, canals, and sluices that were managed by the central temple of the city. Over the course of the second millennium, Nippur was incorporated into the neighboring city-states as a dependency but still maintained administrative autonomy. It became an important pilgrimage site during the period of the Third Dynasty of Ur-Nammu, often serving as the royal residence. The map shows evidence of sophisticated methods of two-dimensional spatial representation, using parallel lines to indicate a network of roads, canals, enclosures, and gateways. The temples maintained records not only of products and people, written in cuneiform letters, but of geographic and urban space, communicated with the sort of line drawings that became the convention for representing architecture. The cities of Mesopotamia during the Bronze Age invented written language and included as one of its subtexts communication about landscapes, space, and buildings.



Nippur, Mesopotamia (Iraq). Clay map, ca. 1500 BCE.

in Choga in western Iran. Finally, more than fifteen centuries after Ur-Nammu's achievement, Nebuchadnezzar, king of the Neo-Babylonians, scrupulously restored the ziggurat at Ur and used it as the model for his own city's Entemenanki stepped tower, which at 90 m (295 ft) prevailed as the tallest ever built in the region (see Section 4.1).

The Mesopotamian ziggurat crowned the city, flaunting a tangible axis mundi, the vertical link to the supernatural. In a world full of dreadful uncertainties, including the threats of war, famine, and ecological catastrophe, the stairway to heaven transmitted the comforting illusion that humans could influence the gods for the good of their city. The factors of decline, however, such as the exhaustion of the soil, calamitous droughts, and the arrival of invaders, proved too great for religious faith to overcome.

Further Reading

Algaze, Guillermo. *Ancient Mesopotamia at the Dawn of Civilization: The Evolution of an Urban Landscape.* Chicago: University of Chicago Press, 2008.

Bottéro, Jean. *Everyday Life in Ancient Mesopotamia.* Translated by A. Nevill. Baltimore: Johns Hopkins University Press, 2001.

Fagan, Brian. *The Long Summer: How Climate Changed Civilization.* London: Granta Books, 2004.

Frankfort, Henri. *The Art and Architecture of the Ancient Orient.* Harmondsworth, UK: Penguin, 1970.

Hawkes, Jaquetta. *The First Great Civilizations: Life in Mesopotamia, the Indus Valley and Egypt.* New York: Alfred A. Knopf, 1973.

Lampl, Paul. *Cities and Planning in the Ancient Near East.* New York: Braziller, 1968.

Leick, Gwendolyn. *Mesopotamia: The Invention of the City.* London: Penguin Books, 2001.

Moscati, Sabatino. *The Face of the Ancient Orient.* New York: Anchor Books, 1962.

Postgate, Nicholas. *Early Mesopotamia: Society and Economy at the Dawn of History.* London: Routledge, 1992.

2.2 OLD KINGDOM EGYPT
Architecture for the Afterlife

The period of Old Kingdom Egypt, ca. 2700–2100 BCE, parallels that of the Sumerian city-states. While few traces remain of their cities, the ancient Egyptians left behind immense funerary monuments that constitute the most permanent **volumes** ever constructed. They created the **pyramids** as exquisite, abstract shelters for the spirits of the pharaohs, their queens, and their courtiers, who they believed would live in an eternal afterlife in the company of the lord of the sun. Specialist architects emerged as key members of the royal court, calculating the precise geometry of the monuments and directing skilled masons in the assembly of the stones.

The great expense of the Egyptian pyramids suggests that in the society of the Old Kingdom the needs of the afterlife exceeded those of the here and now. The tombs served as investments to ensure good terms with the gods who regaled Egypt with the "gift of the Nile," the annual summer floods. The surplus of food produced by these floods and the lull in between growing seasons allowed the Egyptians extra time to pursue the complexities of their religion. Their construction of monuments and grand enclosures for the dead was believed to promote the well-being of their people, in this world and the next.

The Nile and Sacred Geometry

The geography of Egypt determined that it developed in relative autonomy. A thin, fertile strip along the Nile River, the kingdom's habitable land lay between parallel stone cliffs, beyond which stretched vast deserts. The river supplied the fundamental wealth of the land, while the cliffs offered a limitless quarry for stone monuments. The Nile's reliable annual floods encouraged the belief in an eternal order. The floodwaters left a deposit of rich black silt that could be sowed with little need for plowing. After each annual flood, farmers divided this "black land" into squared-off parcels using surveyor's cords. Although Egypt had a few heavily populated urban centers, the 5 km (3 mile) wide band of agricultural estates that straddled the river made the Nile valley more like a single, linear farming town, connected by the 1,000 km (620 mile) transportation artery from the first cataract at Aswan to the beginning of the river's delta at Memphis. The right angles used to plot the fields in relation to the river inspired the development of the Egyptians' precise knowledge of geometry, which they subsequently used to design the pyramids at the great funerary complexes.

Orthogonal planning came naturally to the ancient Egyptians. In their pictographic system of writing, they adopted a rectangle divided by a cross-axis as the hieroglyph for "province," or *nome*, and a circle similarly divided by intersecting axes as the sign for "town." The knowledge of right angles, combined with proportional systems obtained from triangles, enabled Egyptian engineers to plan immense works of astounding geometrical accuracy.

Unlike the solidity of their tombs, Egyptian houses were made with perishable materials. While scant evidence remains of urban dwellings, their forms appear in tomb decorations and in tomb architecture itself, which frequently imitated that of the houses. Aside from rectangular mud-walled structures covered with palm trunk roofs, the most frequent house type used vegetable matter: river reeds and papyrus stems, either bundled together for compressive strength or matted into **planar** surfaces stretched between wooden posts. In the south the desert climate favored tent structures, which were thought suitable even for the royal palace. Palace architecture in the north borrowed from Mesopotamian precedents,