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A COMPANION TO GREEK ARCHITECTURE

EDITED BY MARGARET M. MILES

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Contents

CHAPTER 15

The Interiors of Greek Temples

Margaret M. Miles

The exteriors of Greek temples, stoas, and monuments have had an enormous aesthetic impact on many subsequent architectural styles and periods. Typically photographers of ancient Greek buildings artfully position their cameras to catch finely sculpted columns and entablature against a pellucid blue sky. Nonetheless, interiors decorated with columns, illuminated with windows, and marked by a progression of defined spaces began inside Greek temples, long before the more spectacular achievements of Roman interior design. From the Archaic to the Hellenistic period we see a rich blossoming of architectural ornamentation, attention to lighting, and increasing accommodation to the experience of the devotees inside the building. By far the most important installation inside the temple was the image of the deity. Furnishings were added to the built structure that enhanced the atmosphere of an honorable and worthy setting for the cherished statue: paintings, tapestries, lamps, tables, thrones, cupboards and chests of votive offerings, and commemorative offerings of all sorts such as shields, armor, and historical and natural relics. This essay describes the highlights of these developments and customs according to recent research, so as to give a more complete picture (inside as well as out) of Greek temples.

Light in the Interiors

During the daytime, the illumination of interiors naturally depended on ambient daylight; this in turn was affected by a building's orientation to the sun. How temples were oriented spatially within the landscape varies within regions of the ancient Greek world: in Sicily and southern Italy, temples mostly face east, while in mainland Greece, there is more variety (Salt 2009, Boutsikas 2007–2008). In Sicily and South Italy, Greeks from mainland and eastern Greece arrived in the Archaic period, and when they founded new temples, their choice of setting and orientation seems to have been open. A few temples were built on top of previous structures built by non-Greek peoples who were earlier inhabitants, but many temples had completely new foundations. A range of considerations must have loomed as important to the early settlers, such as how the landscape affected their perception of the sacred, social, and political conditions, the intended use of adjacent lands, and visibility (Cole 2004, de Polignac 1995). Recent research has brought into question the traditional scholarly speculation (rooted in the nineteenth century) that such new foundations were laid on the axis of the rising sun on the deity's birthday, or a significant festival day associated with the sanctuary; rigorous methods and new technology now allow significant, plausible advances in interpreting orientations of Greek temples (Boutsikas and Ruggles 2011).

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The many instances of apparently deliberate solar orientation in mainland Greece may have been inherited from earlier iterations of temples, such as the late fifth-century Temple of Apollo at Bassai, which has the same north–south orientation as its predecessor (Kelly 1995; Cooper 1996). The existing temple there is oriented with its long axis to the north, so that the rising sun falls through a large, framed door-like window, closed with a grille, on the east side of the temple. Other, non-solar motivating factors for eastern orientations have emerged as more likely for some temples, in particular, facing constellations in the nighttime sky. The nighttime sky was vivid in the eras before modern light pollution, and constellations were used by mariners for navigation at sea, by farmers for predicting seasons for agriculture, for noting changes in time and season, and for religious rituals. Such rituals could have been enhanced with an appropriately oriented architectural setting, with the porches and peristyles of temples used as viewing platforms (Boutsikas 2015).

In the early Archaic period, the interiors of temples were long, narrow rooms, usually with a colonnade down the center axis, such as the Heraion on Samos and the Temple of Apollo at Thermon. The main door of a temple provided the primary light for interiors of temples during the day (hence the importance of the overall orientation). Such contrasts in a long narrow space created a shadowy but mostly dim interior, with reduced light that could have added to the sense of a sacred atmosphere inside the temple. Yet some early Archaic temples have integral benches inside, along mudbrick walls (e.g., the Temple of Apollo at Metropolis, and the temple at Soros, near Volos (see Chapter 2)); these must have been used for gatherings, such as dining, discussions, or perhaps even group rituals, probably lit by oil lamps. Where there was no ceiling, opaion tiles (special terracotta roof-tiles made with circular openings, of approximately 10–15 cm, usually with a raised ridges to allow rain to flow around them) provided ventilation and some light to the interior, although extant examples date from the fifth century BCE and later (in Etruria, some examples have been found that date even earlier). For some Classical temples, marble opaion tiles have been found, suggesting that ventilation and perhaps light were wanted for attic spaces. Occasionally such opaion tiles have small hoods for further protection from rain (Wikander 1983). A few very large temples were hypaethral, built with a large open-air space or even a courtyard in the center, such as the Ionic temples at Samos and in Asia Minor of the Archaic period, and the Doric Temples of Zeus at Akragas (modern Agrigento) and Selinous in Sicily (Bell 1980).

Windows, even if initially rather small, began to be included in stone temples in the late Archaic period, and it is possible windows existed even earlier. The early Classical Temple of Aphaia on Aigina had small windows high on the side walls of the cella (Bankel 1993). In temples in the Greek West (Sicily and southern Italy), pairs of stone staircases leading to the attic were included just behind the door-wall, and the stairwells typically had small slot windows to illuminate the steps (Miles 1998/1999) (Figure G.3). An example is the Temple of Concord at Akragas (circa 450 BCE), where rectangular slot windows in the walls of the stairwells still exist (Figure 15.1).

On the Athenian Acropolis, architects began to include larger windows at least as early as Iktinos' Parthenon; two large, framed windows on either side of the great chryselephantine doors provided light for the wide interior (Korres 1984, Pope and Schultz 2014). Windows with molded frames also are preserved in the northwest wing of the Propylaia (Figure 15.2), and large windows (with alterations in the Roman period) were included in the Erechtheion (Temple of Athena Polias). Because of the example set by these distinguished buildings, we should expect to find windows in later temples, even though the evidence for them is only rarely preserved. Some Hellenistic temples in Asia Minor had "epiphany windows" in their pediments (e.g., Temple of Artemis at Magnesia-on-the-Maeander; Temple of Artemis at Ephesos), possibly used for staging dramas for a populace gathered below (on epiphanies, see Platt 2011). These would not have admitted light to the interiors but rather to the attic spaces behind the pediment (Figure 15.3, 31.2).

At night, or whenever more light was needed in the interior, people could use oil-lamps, less hazardous than torches, but still a hazard. Fires inside temples are documented, such as the one that burned down the Temple of Hera at Argos in 423 BCE when the priestess Chrysis put a torch near dried garlands and then fell asleep (Thuc. 4.133.2). In some sanctuaries, oil lamps have been found in great abundance, suggesting that nocturnal rituals were an important part of how the sanctuary was used: the area around the Classical Temple of Demeter Malaphoros at Selinous has yielded thousands of lamps, and in the second century CE, a room in the complex dedicated to the Egyptian gods at Marathon, built

Figure 15.1 Temple of Concord, Akragas, windows in stairwell. *Source*: M.M. Miles.

by Herodes Atticus, was found packed with very large terracotta lamps. In many excavations across the Mediterranean, lampstands of terracotta and bronze have been found dating from the Archaic period onward that were designed to support one or more lamps. They were used in temples as well as domestic contexts (Seidel 2009).

Organization of Space

Peripteral temples in mainland Greece usually have both a pronaos before the sekos or main cella (sometimes called the *naos*, also a word for "temple" as a whole), and an opisthodomos. Already circa 500 BCE in Athens we see the creation of multiple rooms within the length of the interior of temples: the foundations of the Old Temple of Athena Polias (burned by the Persians and eventually replaced by the Erechtheion) clearly indicate that there were at least two parallel western chambers behind the main cella. In the Older Parthenon, the first temple built on the south side of the Acropolis, a large chamber is reconstructed on the west end, a feature repeated in Iktinos' Parthenon, along with an opisthodomos. At Paestum, the Archaic Temple of Hera (I) also has an *adyton*, an anciently attested term for an enclosed back chamber (Hollinshead 1999); this feature is found commonly in the Greek West. Sicilian Greek temples generally have at least two rooms, with a step upward to each level from the doorway, and a pronaos, and in the Classical period, often an opisthodomos.

The inner walls of the rooms have subtle divisions along the vertical surface: the wall itself is built on a *toichobate*, which could be ornamented with moldings, both inside and outside the wall, thus serving

Figure 15.2 Propylaia, window in Pinakotheke. *Source*: M.M. Miles.

as a visual border and transition between the floor and the wall, both in the peristyle and inside the temple. Above this the lower part of the wall consists of pairs of orthostates (usually about 1 m high or more, according to the scale of the building), the individual blocks approximately square in outline, set parallel along the toichobate to establish its depth. Above this are individual rectangular wall blocks, crowned at their full height at the ceiling with the *epikranitis* or wall crown, articulated with moldings. The molded epikranitis serves as the transition between the vertical wall and the horizontal ceiling. These articulations in limestone and marble may have derived from earlier temples made of mudbrick placed on stone foundings or orthostates (e.g., the Temple of Hera at Olympia, circa 580 BCE); the epikranitis served in those early temples as the transition from mudbrick to a wooden roof support and ceiling (see Chapter 4). Such visual divisions of the vertical surface into zones have had a long later history: they appear in domestic wall painting of the Roman period in Pompeii and Herculaneum, and vestigial moldings below the ceilings or above the floor as a wall base are used in domestic and traditional architecture even today.

The peristyle itself, even though open to the elements, may be considered a part of the interior of the temple as a functional semi-enclosed space. The aesthetics of the exterior of the colonnades and articulation of the orders have absorbed much of the attention of architectural historians, but here what is of concern is the function of the space itself. P. Corbett has collected literary testimonia that describe performances of hymns, and recitations such as that of Herodotus, who is said to have read aloud his *Histories* from the opisthodomos of the Temple of Zeus at Olympia (Lucian, *Her.* 1–2; Corbett 1970: 153). The acoustics were enhanced by that setting, and certainly the opisthodomos offered a visible, framed position, set higher than the surrounding temenos. The peristyle was not used for storage of

Figure 15.3 Temple of Artemis, Magnesia-on-the-Maeander, blocks of pediment with epiphany windows. *Source*: M.M. Miles.

readily portable valuables but, instead, fixed dedications and statuary were set around the outer walls and columns, as preserved cuttings attest. More unusual attested items include the letter "E" at Delphi, the subject of an essay by Plutarch, which was hung or attached to the wall of the Temple of Apollo near the entrance; we also hear of an ode of Pindar set in gold letters onto the side of the (non-peripteral) Temple of Athena at Lindos (schol. Pind. *Ol.* 7). In general, arms and armor and chariot wheels, hanging high on walls, seem to be the more common objects we should visualize there.

Elaboration of the ceilings of the peristyle increased in magnificence over time: in Athens and Attica, Iktinos' Parthenon, the Hephaisteion, the Temple of Nemesis at Rhamnous, the Temple of Athena Pallenis (later Ares) are among temples with marble ceilings in the peristyle, with molded and painted coffers. A handsome, ornate marble ceiling, with a variety of flowers in high relief in the soffits of the coffers, was provided for the peristyle of the Tholos at Epidauros (circa 330 BCE). Pytheos, the architect of the Temple of Athena at Priene, included ceiling coffers carved with sculpted scenes of a gigantomachy and possibly an Amazonmachy, thus moving beyond the more typical stars, floral motifs, and abstract patterns (Carter 1983; Tanke 1989).

The Articulation and Placement of Interior Columns

Architects designed interiors to suit specific requirements for ritual, maintenance and storage, while ensuring that proper structural support was provided for the roofing and ceiling, in temples with a ceiling. In early temples, interior columns were crucial structural supports for roof timbers and the ceiling, typically wooden, from the Archaic period onward. The development of trusses meant that wider temples could be built without interior supports, and in general, late Archaic and Classical temples constructed in the Greek West (Sicily and southern Italy) do not have interior colonnades (one exception is the Temple of Hera II at Paestum). Ample supplies of timber were available in the Brutti region of Reggio Calabria and on the slopes of Mt. Etna. In mainland Greece, interior colonnades in the main cella were maintained into the Classical period, typically a double set of superimposed Doric columns, as in the early Classical temples of Aphaia on Aigina, of Zeus at Olympia, and the Parthenon.

In Doric temples, the choice of two, small-scale superimposed columns (with an architrave between them) made sense because of the smaller lower diameter of the lower series. If tall columns were used,

as tall as the interior height of the cella, they would need large lower diameters in proportion, which would take up much more of the interior floor space. Ionic temples with interior columns used the more slender Ionic order for both the exterior and the interior. At Paestum, the Temple of Athena (circa 510 BCE) is perhaps the first temple with a Doric exterior and Ionic columns in the interior, used around the porch of the inner building. The Older Parthenon, begun on the Athenian Acropolis soon after the Battle of Marathon (490 BCE) but then burned by the Persians in 480/479 while still under construction, has several Ionic elements and probably was intended to have Ionic columns in the back chamber. Iktinos' Parthenon most probably repeated those Ionic columns in the back chamber, although the Corinthian order has also been suggested as an alternative (Pedersen 1989). The combination of Doric exterior and Ionic interior was used also in monumental stoas, such as the Stoa Poikile in the Athenian Agora (460 BCE). Mnesikles adapted Ionic columns for the interior of the otherwise Doric Propylaia to the Acropolis (see Chapter 11).

The existence of an interior colonnade led to other innovations. In the Temple of Aphaia at Aigina (just after 480 BCE), a wooden stair was installed that led to a gallery, also of wood, built between the side walls and the middle architrave of the double interior colonnade. This is found also at the Temple of Zeus at Olympia (circa 460 BCE), where visitors could ascend to view the chryselephantine statue of Zeus, made by Pheidias. Such galleries and stairways seem to have been afterthoughts since they are not well integrated into to the overall design.

An innovation in the Parthenon (447–432 BCE) was the creation of a colonnade in the shape of the Greek letter Pi, which served as a visual frame for the colossal chryselephantine image of Athena Parthenos, set just in front of the back return of the colonnade. This resulted in a space around the sides and back of the main cella of the temple that permitted circumambulation of the image (thus being a very early version of an ambulatory). The space was soon lined with chests, dedicated furniture, and cupboards for storage of votives, as we learn from preserved inventories. There is no evidence for a gallery in the Parthenon, but there was a utility stair in the fabric of the door-wall of the pronaos that led to the attic, used for maintenance. The great eastern doors of the temple were also decorated with gold and ivory (Pope and Schultz 2014), perhaps with figured scenes.

The design of the Temple of Apollo at Bassai must have posed a challenge for the architect Iktinos as it seems the patrons wanted something very similar to what had been there earlier, yet they were willing to allow him to move forward in other proportions as long as certain conservative requirements were met, such as the northern orientation and the long, narrow archaizing plan. He designed an interior that was quite new for its time (circa 420 BCE). He "pushed" the interior, Ionic columns against the wall, so that they are partially engaged, crowned them with a continuous Ionic frieze, and used the new Corinthian order for a single column located in the center back of the longer chamber, with open access to the back chamber. The back chamber was illumined by the side door-like, grilled window noted earlier in the chapter. His design gave a new prominence to the interior of the temple: for the first time since early experiments on Crete, a continuous sculptured frieze ornamented the interior, depicting a centauromachy and an Amazonomachy.

Engaged columns and nearly engaged columns were then used repeatedly in the interiors of subsequent temples, in ever-varying or new combinations. After the Archaic Temple of Athena Alea at Tegea burned down circa 395 BCE, its successor, designed by Skopas of Paros, featured an interior with engaged Corinthian columns. Unusually, it also had a side door on its north side, with a ramp leading up to it, similar to the ramp leading up to the front, eastern door. The Doric Temple of Zeus at Nemea (circa 330 BCE) included a freestanding colonnade in the interior (in the shape of the Greek letter Pi, like that in the Parthenon) with Ionic columns superimposed on Corinthian columns: thus all three orders were used in the temple for the first time. It also had a sunken crypt behind the back return of the inner colonnade, a variation on the adyton.

Architects designing interiors of temples built during the fourth century BCE continued to expand and elaborate on the use of columnar orders as a way to make the interior space more magnificent and more monumental (Winter 1982). These efforts show that the setting for the cult image and the experience of the devotee were increasingly considered and addressed with fresh variations, but using a traditional architectural vocabulary. The mid-fourth century BCE is also the period when architects were asked to design buildings with no accessible interiors at all, such as small-scale choregic monuments in

Athens, and large funerary monuments like the Mausoleum in Halikarnassos. The architects of these monuments used the prestigious visual vocabulary of temples, developed over centuries, now for new commemorative purposes.

Interior Stairs, Attics, and Basements

Pairs of interior staircases, leading to the attic, are characteristic features of Greek temples in Sicily (and southern Italy) from the late Archaic period through the Classical period. This feature added expense, effort and material to the construction costs, since the stairwells are placed over especially deep foundations included to support them, and extra stone was needed for the walls and steps: they are certainly not afterthoughts or casual additions. The stairs may indicate that the attic space was used for rituals of some sort (Miles 1998/1999). Nearly all the temples with the stone staircases have no interior colonnade.

In mainland Greece, the roof timbers and underside of the roofing system were maintained from the attic, accessed via trapdoors. Pausanias (5.20.4–5) tells of a desiccated corpse of a soldier, discovered at Olympia in the attic space of the Temple of Hera in the lifetime of his interlocutor Aristarchos (second century CE). From the armor of the corpse, he was judged to have died of his wounds from a battle that took place hundreds of years earlier, circa 400 BCE; apparently he had climbed up into the attic through a trapdoor after he was wounded and had then perished. If we accept the story, maintenance of that temple seems to have been infrequent, or not thorough throughout the attic.

Some Hellenistic temples in Asia Minor have complex interiors that required staircases in between interior levels. The Temple of Apollo at Didyma (circa 300 BCE), for example, has a large, open-air courtyard in its center; a wide flight of stairs gives access to an upper level on the east end, near the doorway (whose threshold is so high only a god could cross it without climbing), and from that level a pair of stairwells led to an upper chamber. The stairwells have ceilings carved with a deep meander pattern. The Temple of Apollo at Claros (third century BCE) preserves a basement structure, accessed through stairs, that could be visited by petitioners of the oracle as does the Temple of Zeus at Aizanoi (in its last phase, second century CE).

The Tholos at Epidauros (circa 330 BCE) has an intricately designed basement consisting of a series of concentric walls with passageways between them, suggesting from a modern plan a maze-like design, perhaps to be accessed by a wooden stair through the center, although part of a (very heavy) white marble circular disk for the center of the floor of the temple is preserved. The basic function of this circular building has been long debated: was it a temple, or cenotaph for Asklepios at Epidauros, or something else? Peter Schultz and Bronwen Wickkiser (2010) suggest that this design of the basement was not intended to be used by people walking through it but rather that it served to help amplify musical performances from within the superstructure. Their idea is supported by literary testimonia that refer to musical performances within such circular structures in sanctuaries. This new proposition is intriguing and persuasive; more acoustical studies on ancient buildings should be carried out.

The sanctuary buildings with basements noted here are exceptional: most Greek temples were constructed on one primary level (the stylobate) with only one, two, or three steps between rooms, with the variation of stone staircases to the attic in western Greek areas. The simplicity of interior design of most temples reminds us of their primary practical function: to serve as a housing for the image of the deity and for storage of the deity's possessions. The exceptions with more elaborate interiors show that Greek architects were fully capable of a larger and more imaginative repertoire, but apparently there was little demand for it. Since temples were typically built on promontories, hills, or in other prominent locations, a kinetic experience for visitors of "going up" to a sacred place was provided more by the exterior setting of the temple than any passage through interior spaces.

Cult Images

Readers of Pausanias's travelogue (circa 165 CE) will be impressed by his motives for journeying through what was already considered in his time "old" Greece: he wanted to see cult images in temples and understand their history and unique qualities. The cult images served to bring the deity (as represented

by a statue) firmly into the community as a participant in rituals, thus rendered more vivid, repeatable, and focused (Elsner 1996, Nick 2002, Platt 2011: 77–123). Pausanias mentions the architecture of temples and sanctuaries only rarely, but he gives us excellent descriptions of cult images, paintings, furniture, and other dedications inside the sanctuaries he visits. The primary purpose of Greek temples, we deduce, was to provide a suitable setting for the image of the deity, much like a "home" for the god, whose presence could be evoked through the vehicle of the image (Burkert 1988, Elsner 1996, Scheer 2000, Steiner 2001). This understanding helps make sense of what is essentially a *domestic* array of offerings that were considered appropriate dedications and accumulated inside the temple (discussed later in the chapter). The images of deities most commonly were made of terracotta, wood, marble, or gold and ivory (chryselephantine) over a wooden armature, or a combination of materials (acrolithic). Occasionally images were cast in bronze, but they were fairly rare in the Classical period; notable examples are the images of Hephaistos and Athena in the Hephaisteion of Athens, for which we have preserved the financial accounts that list the purchase of large quantities of copper and tin for the alloy (*IG* I^3 472).

Typically such images were set up on a limestone or marble base, sometimes called a "praedella," and from at least the fifth century BCE onward, the bases themselves were decorated with sculpted reliefs, usually narrating a story about the deity (Kosmopoulou 2002). Images of seated deities were represented seated on thrones that were also lavishly decorated, such as the statue of Zeus at Olympia described by Pausanias (Paus. 5.11.1–9; Lapatin 2001, 79–85). A late Archaic image of Dionysos at Ikaria in Attica (now in the National Museum in Athens) was set under a Pentelic marble baldacchino, with a soffit carved with bunches of grapes (preserved: Romano 1982, Despinis 2007; see also Chapter 13). A series of Athenian cult statue bases of the fifth century BCE bore scenes referring to divine births or divine kinship: of Pandora below the Athena Parthenos; of Erichthonios below Hephaistos and Athena in the Hephaisteion; of Helen, presented to Nemesis, her birth mother, by Leda (her foster-mother) below Nemesis at Rhamnous. Kinship, genealogy, and divine narratives that established relationships with humans were thus showcased inside the temples.

The cult images sometimes had low barriers preventing very close access to the statues. The foundations for such barriers are preserved in the Temple of Athena Sounias at Sounion, and a barrier is reconstructed at Rhamnous. Traces of such barriers have been found at Aigina, Kleonai, Lindos, Lykosoura, Olympia, and Priene, and their meaning is more likely symbolic than actually a device for controlling unruly visitors (Mylonopoulos 2011). Ample literary evidence exists for people praying before the statues and kissing and touching them (Corbett 1970). Cicero describes a very old bronze statue of Herakles he saw at Akragas (the object of an attempted robbery by Verres), whose beard and chin were worn smooth over time by repeated stroking and kissing (Cic. *Verr.* 2.4.94), like the foot of a bronze statue St. Peter in the Vatican.

Reflecting Pools

A remarkable feature was introduced into the Parthenon: a shallow, reflecting pool, set in front of the chryselephantine image of Athena Parthenos. The addition may have been an afterthought, when conservation of the ivory on the image became problematic. Even though the floor of the temple is very slightly domed because of the overall curvature of the platform on which it is built, it was nonetheless possible to install it, because the stylobate for the interior colonnade rises about 4 cm above the level of the pavement in front of the statue. A low marble rim was set across the width between the two colonnades, and on both sides of the base for the statue, to create a very shallow pool about 9.0 × 9.5 m (Stevens 1955). A similar pool was more carefully constructed at Olympia, inside the Temple of Zeus, of dark Eleusinian limestone for the floor and white Pentelic marble for the rim; J. Hurwit (2005) suggests the pool in the Parthenon was added later in rivalry with the one at Olympia, which appears to have been planned precisely. Pausanias, after seeing both – and a third pool, in the Temple of Asklepios at Epidauros – explains that the pools were a response to the requirements for the maintenance of the chryselephantine statues. In the Parthenon, he believed the dry air necessitated water in the pool to increase humidity, whereas at Olympia, olive oil was used, perhaps in connection with cleaning the image (Paus. 5.11.10, Lapatin 2001). The aesthetic effect of both pools would have been to increase the ambient light, and reflect the image. Whether for aesthetics or conservation, or both, the pools were considered significant enough to sacrifice a large amount of floor space in the interiors.

Paintings and Votive Statues

Paintings on the walls of Greek temples have been found at Isthmia and Kalapodi that date to as early as the seventh century BCE; these were painted on stucco and thus were an integral part of the wall, both inside and out (see Chapter 12). For the Classical and Hellenistic periods, "painted interiors" could include paintings on stucco (frescoes) in some temples, and paintings on wooden panels (for the collected sources and evidence, see Pollitt 1990, Hurwit 2014). The famous paintings in the Stoa Poikile ("Painted Stoa") in Athens were apparently on large panels, since they were removed in the late fourth century CE. Stoas in particular offered a very well-lit, sheltered space for the display of large paintings. Large, programmatic paintings in temples and other sanctuary buildings such as the Lesche of the Knidians at Delphi are known from literary descriptions. Today we gain some idea of them from smaller-scale renditions and reflections in South Italian tomb-painting (such as the Tomb of the Diver at Paestum), and numerous examples in Macedonian tombs, or as reflections in vase-painting, where compositions thought to be based on monumental wall-painting have been identified (Stansbury-O'Donnell 2014).

The surface of the interior, marble walls of the Hephaisteion in Athens are lightly picked, suggesting that they were intended to have large-scale friezes applied to them. Because of the potential physical problems of maintenance, moisture-proofing, etc., there is some debate about whether frescoes were actually put there, but on balance it seems they were (see the reconstructed view in Figure 15.4). Today there are many traces of stucco, but it has been assumed that the stucco derives from the medieval period, when the temple was converted into a church. Future research on the chemical composition and date of the stucco may yield more definitive answers.

The custom of dedicating small *pinakes* for the interiors is well-attested in epigraphical and literary sources. In Athens, priestesses of Demeter, for example, were allowed to set up painted portraits of themselves. Such honorary portraits in the form of statuary have been found for many sanctuaries in Greece, ranging in date from the fourth century BCE through the Roman period (Connelly 2007: 117–163). In Greek sanctuaries in Asia Minor in particular, female philanthropy was channeled into refurbishing sanctuaries or making additions to them, and the philanthropic efforts were recognized with portraits of donors, either painted or sculpted, dedicated in the temples or immediate environs (van Bremen 1996).

Dedicatory statues in sanctuaries were so numerous they could be regarded almost as a "second population" in the sanctuaries. The placement of such offerings is not clear (although some were seen and described by Pausanias as extant when he visited, often located within temples), but inscriptions record efforts by priests and other officials of the sanctuary to control the placement of such dedications. An inscription dated to the second century BCE, from Athens, regulates the placement of dedications, specifically forbidding the overshadowing of cult statues (Sokolowski 1969: pp. 79–80, no. 43). The same inscription also states that dedications that have either violated regulations or are no longer worthy of the sanctuary are to be moved to a stoa by the priest. Another example is a warning carved on the wall of a cave sanctuary at Lorymna, Rhodes, which reads: "Do not carry dedications out of the sanctuary, do not harm or move the pinakes around or bring in others without the priest" (Sokolowski 1955: 172–173, no. 74).

Furnishings

Furniture inside temples is well-attested archaeologically, epigraphically, and in literary accounts (Andrianou 2006a, 2006b). Whether such offerings were intended exclusively for the deity, or to be used by the god's priest or priestess, or by devotees during periodic rituals are distinctions difficult to determine, but comfort and storage seem to be the two main goals. Anything dedicated, presumably, became the legal possession of the deity. This included the temple itself and individual architectural blocks (Miles 2011). Marble thrones, often inscribed, have been found inside temples at Rhamnous and the Temple of Apollo on Cape Zoster in Attica and several other sanctuaries (Figure 15.5).

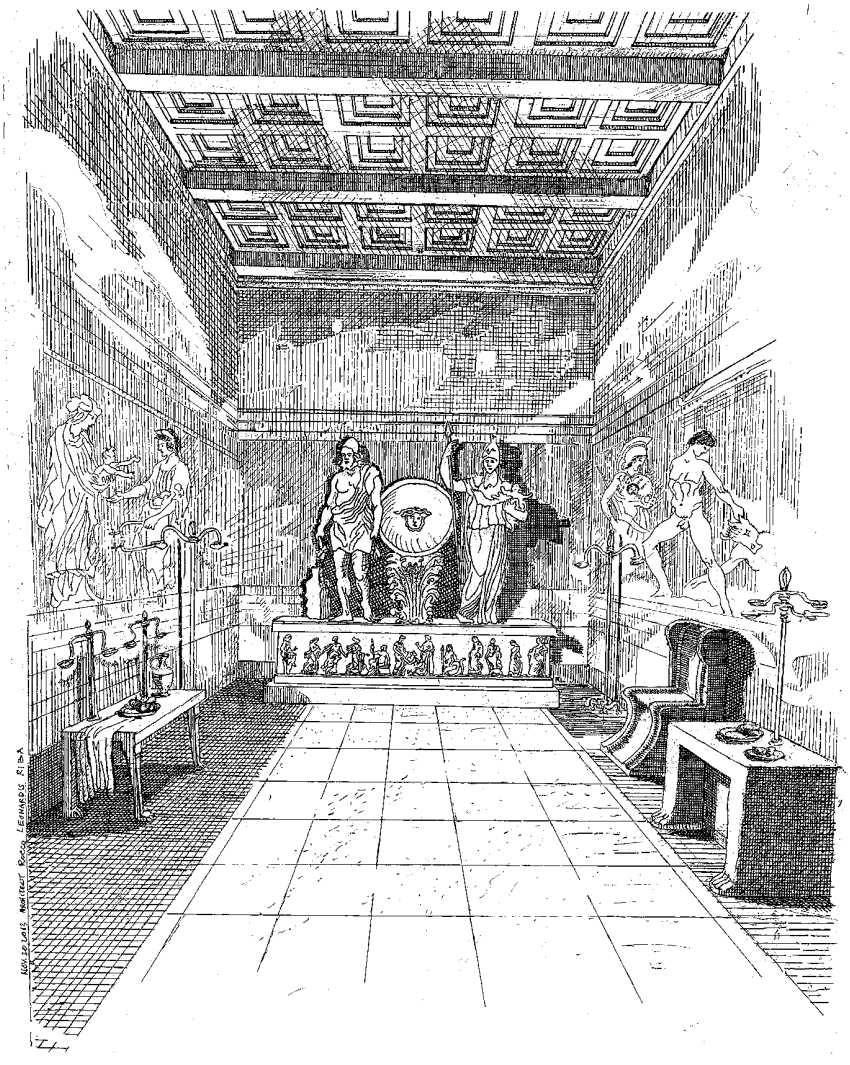

Figure 15.4 Athens, Hephaisteion, interior reconstruction, drawn by Rocco Leonardis. *Source*: M.M. Miles.

Temple inventories from Athens, Brauron, and Delos list a broad array of furniture types, including containers: chests, baskets, and boxes, strongboxes, thrones, and stools, footstools, bed-couches, and many sorts of tables. There are curtains and veils, tapestries, pillows, coverings, cushions, and rugs. Artistic items such as ivory models, pinakes with drawn or painted decoration, and silver tables are attested, as well as ordinary-sounding washbasins and pitchers (discussed in Andrianou 2006b).

Some pieces, such as the Chest of Kypselos described by Pausanias (5.17.5) in great detail, were clearly exquisite works of art in their own right. The chest was made of cedarwood and was decorated with a series of mythological narratives composed of inset figures made of ivory and gold. A unique furnishing is attested for the Erechtheion: an ever-burning oil-lamp dedicated to Athena Polias, with a chimney in the shape of a palm-tree, stood somewhere inside the temple, presumably close to a window so the smoke could escape. It was made by the fifth-century BCE sculptor Kallimachos, possibly the same Kallimachos credited with inventing the Corinthian order (Pausanias 1.26.6; Palagia 1984).

Figure 15.5 Temple of Apollo at Cape Zoster, view of interior. *Source*: M.M. Miles.

Dedicated Vessels, Money, and Gold

Another common form of dedication usually kept in temples is vessels either dedicated for their precious metal or to be used in rituals, or both. Extensive temple inventories exist for the Parthenon and for the Sanctuary of Apollo at Delos, along with several other sites (Harris 1995; Hamilton 2000). Items of precious metal were considered part of the deity's treasury and were weighed each year by a committee of magistrates whose responsibility was the proper oversight of the goddess's property. The inventories confirm the impression from scattered literary testimonia that very large quantities of such gold and silver phiales, cups, pitchers, and other dishes were kept in cupboards and on shelves inside temples, and inside the pronaos and opisthodomos. For the Temple of Asklepios on the south slope of the Athenian Acropolis, we have exact locations given: some items were nailed to ceiling beams or hung on the walls (Aleshire 1989: 37–51; 1991, pl. 11).

How such offerings could appear to Athenians is well-illustrated by Thucydides' account of a diplomatic visit to Segesta in western Sicily (Thuc. 6.46). The Athenian party, including sailors, was dazzled by the huge quantity of accumulated vessels and other precious offerings in the Temple of Aphrodite at Eryx, but the display was mostly silver, grumps Thucydides. Later the Segestans entertained their guests with borrowed plate passed each night from house to house. The Athenians went away duped, thinking the Segestans were very wealthy indeed, but in fact, they really did not have the resources to pay for the proposed Athenian military venture.

Gold in the form of artistic objects (such as sheaves of wheat in the Parthenon) is listed in temple inventories as part of the sanctuaries' holdings. On the eve of the Peloponnesian War, Thucydides has Pericles remark on the 44 talents of gold used for the drapery of the chryselephantine Athena Parthenos

as a back-up reserve that the Athenians could use for wartime expenses if they were in dire need. Presumably if the gold were melted down, it could be replaced in better times. Altogether, Pericles is said to have remarked that there were some 6,000 talents of coined money along with unstamped gold and silver dedications, plus the gold drapery (Thuc. 2.13).

Coined money (in circulation generally in most parts of the Greek world by at least circa 500 BCE, and in some areas much earlier) was an important component of the holdings in many temples, for one role of a major temple in a city was to serve as the central authority for the city's treasury. Coined money became part of a sanctuary's assets, and after maintenance and other needs of the sanctuary were taken care of, the money could be loaned, at interest, as for example on Nemesis' behalf in the Temple of Nemesis at Rhamnous in the mid-fifth century BCE (*IG* I^3 248). Such monies were carefully accounted (Davies 2001). In fifth-century BCE Athens, the *aparchai* to Athena (first-fruits, consisting of one-sixtieth of the tribute to Athens) was listed by donors on a series of very large stelai set up on the Acropolis, referred to as the *Athenian Tribute Lists*. Athena retained this money since the overall treasury was in her keeping on the Athenian Acropolis, where it had been moved in 454 BCE after the initial start of the Delian League on Delos, then under the protection of Apollo. Athens was not peculiar in using temples as banks; this was a widespread practice in the Greek world.

Temples as Museums

A rich source of information about the contents of one temple is given by the Lindian Temple Chronicle, an inscription set up around 99 BCE that records the contents of the temple of Athena Lindos before a fire occurred, in which many, if not most, of the dedications perished (Higbee 2003; Shaya 2005). It was a remembered accounting, positing a historical collection, now lost, which included such notable items as an inscribed bronze cauldron dedicated by Kadmos, bracelets of Helen, a cup of King Minos, and weapons dedicated by Alexander the Great. The inscription has a format similar to other temple inventories, but it also includes an account of epiphanies and assistance of Athena at crucial times when the city was in peril, such as a siege by the Persian general Datis, sent by King Darius, which he lifted after the goddess intervened by sending a rainstorm (and he then sent dedications to the temple, listed). Many other temples are known to have had collections of historical or commemorative relics (Pfister 1909).

Readers of Pausanias will recall many legendary or historical items he saw in temples, usually associated with specific events, such as the Trojan War, or the Persian invasions (Arafat 2009). The tusks of the Kalydonian boar that were in the Temple of Athena Alea at Tegea had been carried off by Augustus (and one of the pair was in the Forum of Augustus in Rome), but Pausanias was able to see the hide of the boar hanging inside the temple, very worn, with no bristles attached (8.45–47). In Athens, the Erechtheion (Temple of Athena Polias) was an important repository, and there Pausanias was shown a range of relics:

> In the temple of Athena Polias is a wooden Hermes, said to have been dedicated by Cecrops, but not visible because of myrtle boughs. The votive offerings worth noting are, of the old ones, a folding chair made by Daedalus, Persian spoils, namely the breastplate of Masistius, who commanded the cavalry at Plataea, and a scimitar said to have belonged to Mardonius." (1.271, trans. W. Jones, Loeb ed.)

Some items inside temples fall into a category of "curiosities," such as a giant stalk of bamboo that was dedicated inside the Temple of Athena at Syracuse, mentioned by Cicero in his prosecution of the Roman governor Verres for extortion (Cic. *Verr.* 2.4.125). Cicero also notes a series of historical paintings of 27 rulers of Syracuse inside the temple, taken by Verres, and figured door panels made of gold and ivory on the temple's main door, wrenched off by Verres (2.4.123–124). By far the most common offerings, however, seem to have been arms, armor, and chariot wheels as well as other ordinary, everyday items that nonetheless were important to those who dedicated them.

Security

Because they contained such valuable items, and indeed, sometimes held city treasuries, basic security from casual theft was a concern. Dowel-holes on columns, antae, and pavements in many temples indicate the installation of metal grilles in the intercolumniations of the pronaos and opisthodomos. Magistrates were charged each year with weighing and counting the valuables at Delos, Athens, Brauron, and other sanctuaries and were held accountable for their safety. In some places, such as Athens, staff were on patrol: the *Athenaion Politeia* mentions 50 archers stationed on the Athenian Acropolis ([Arist.] *Ath. Pol.* 24.3). A few sanctuaries had high walls that offered protection (Gawlinski 2015).

But, above all, the sanctity of the temples as the "homes" of deities, and the legal fact that the contents belonged to the deity, offered the best protection. Apart from the Persian invasions, when temples were looted and burned, that protection apparently lasted a long time (Miles 2014). The typical security measures in place in the sanctuaries were no match against armies or organized, armed looters, however. Dionysios I of Syracuse was accused of looting sanctuaries in southern Italy to pay for mercenaries, circa 400 BCE. In 356 BCE, the Phokians shocked the Greek world by looting Delphi of many of its gold dedications, which they then melted down to pay mercenaries. One of the items they melted was the gold tripod dedicated by the citizens of 31 Greek cities who fought the Persians and won at Plataia in 479 BCE. The huge amounts said to have been looted on these occasions could only have accumulated over a long period when such offerings were safe and untouched (Davies 2007; Miles 2008: 30–44).

Rituals inside Temples

Most of the typical rituals of ablutions, libations, sacrifice, and other offerings to the deity took place outside the temple. The altar, typically located to the east of the temple, was the culmination for processions, and the focal point for sacrifices, particularly animal sacrifices (for sacrifice of cattle, see Ekroth 2014, McInerney 2014), and for singing hymns (Furley and Bremer 2001: 28–35). But performances could be extended to the peristyle or even inside the temples (e.g. Paus. 3.26.10, 6.20.3), and some temples are known to have had altars inside, as did the Erechtheion, with altars for Poseidon and Erechtheus, for Boötes, and for Hephaistos, perhaps located inside the east colonnade. Before the entrance was an altar to Zeus Hypsistos, for vegetarian offerings of cakes only, no animal sacrifice or even wine (Paus. 1.26.5). Inside some early Archaic temples on Crete and elsewhere, hearths for burned offerings have been excavated, and from them we infer that the roofs of those temples must have had a chimney or at least an opening for the smoke to escape. As noted above, people prayed to deities inside the temples and while standing close up to them, even touching them. At Eleusis, the Temple of Demeter and Kore (often referred to as the Telesterion) was specifically designed to accommodate large numbers of people for the rites of initiation that comprised the Eleusinian Mysteries (see Chapter 13).

A few accounts are preserved of very strange rituals that were carried out inside a temple: one of them is Pausanias' description of what happened inside the Temple of Demeter Chthonia at Hermione in the Argolid. First he describes a normal procession of priests and townspeople, including children, and then the extraordinary sacrifice inside the temple (2.35.5–8):

> Those who form the procession are followed by men leading from the herd a full-grown cow, fastened with ropes, and still untamed and frisky. Having driven the cow to the temple, some loose her from the ropes that she may rush into the sanctuary, others, who hitherto have been holding the doors open, when they see the cow within the temple, close the doors. Four old women, left behind inside, are they who dispatch the cow. Whichever gets the chance cuts the throat of the cow with a sickle. Afterwards the doors are opened, and those who are appointed drive up a second cow, and a third after that, and yet a fourth. All are dispatched in the same way by the old women, and the sacrifice has yet another strange feature. On whichever of her sides the first cow falls, all the others must fall on the same. Such is the manner in which the sacrifice is performed by the Hermionians. Before the temple stand a few statues of the women who have served Demeter as her

> priestess, and on passing inside you see seats on which the old women wait for the cows to be driven in one by one, and images, of no great age, of Athena and Demeter. But the thing itself that they worship more than all else, I never saw, nor yet has any other man, whether stranger or Hermionian. The old women may keep their knowledge of its nature to themselves. (2.25.5–8, trans. W. Jones, Loeb ed.)

Pausanias himself was evidently an eyewitness to this highly unusual ceremony, which therefore should date to the second century CE. His account presents a series of reversals: the cows are sacrificed inside rather than outside the temple (the messiness of this procedure may be imagined); the sacrifice is conducted by old women, with sickles, rather than male priests, with knives. The image of Demeter may be seen only by the four old women, not the public. In other ways Pausanias highlights the "normal" aspect of the rituals (such as the procession of townspeople), and of the sanctuary, with portrait statues of priestesses, and seats for the women inside the temple.

Visitors

The action in Euripides' play *Ion*, composed between 414 and 412 BCE, begins with a scene of Ion sweeping the steps of the Temple of Apollo at Delphi. The chorus, a group of female attendants of Kreusa (probably slaves) just come from Athens, remark on the sculpture of the temple, and they ask Ion if they may enter. He says only those who have performed a sacrifice and wish to consult the oracle may enter. In general, people (slave or free, male or female, adult or child, citizen or non-citizen) could enter temples and expected to be able to do so. There were exceptions, temples for one sex only, or for people of specific ethnic background only, or those which were open only certain times of year; some sanctuaries were exclusive to initiates, even though initiation itself was open to most, with few qualifying restrictions (understanding Greek, not having committed a blood crime). Nonetheless general accessibility to the public is a characteristic of Greek sanctuaries, in contrast to Egyptian temples or temples in the Near East, which were highly exclusive.

Additionally, some sanctuaries became known as places of refuge for those under pursuit for legal charges or in danger of retaliation of some sort, who could become suppliants at the altar or inside the temples (Sinn 1993). In an episode set in the mid-sixth century BCE, debate over a politically difficult suppliant leads to a consultation of the oracle of Apollo at Branchidai (Miletos); birds nesting in the sanctuary are used as analogs for the suppliant, and the god advises the petitioners never again to ask about surrendering suppliants (Hdt. 1.159). Spartan helots (slaves) could take refuge at the Sanctuary of Poseidon on Cape Tainairon. The Sanctuary of Athena Alea at Tegea became well known as a place of refuge: after the Temple of Hera at Argos burned down because of her negligence, the priestess Chrysis fled first to Phleious (Thuc. 4.133.2–3) and later to Tegea. Pausanias says that Tegea was admired in his own time for daring to harbor two Spartan kings, Leotychides II (in 476 BCE, Hdt. 6.72), and Pausanias II in the early fourth century BCE (Xen. Hell. 3.5.25; Paus. 2.17.7, 3.5.6, 3.7). (in 476 BCE, Hdt. 6.72) and Pausanias II in the early fourth century BCE (Xen. *Hell.* 3.5.25; Paus. 2.17.7, 3.5.6, 3.7).

Prohibitions on behavior and dress in temples and sanctuaries are documented in inscriptions, some of them apparently set up near the entrances. One set up on the Athenian Acropolis, now referred to as the Hekatompedon inscription (*IG* I^3 4), regulates the use of fire (for cooking) by priestesses on the Acropolis and the disposition of dung, and forbids the presence of dogs. Some prohibitions were not necessarily spelled out but were expected to be generally observed. The Boeotians complained to the Athenians about their occupation of the Sanctuary of Apollo at Delion during the Peloponnesian War (in 424/3 BCE), specifically that they were living in the sanctuary and using the sacred spring in a profane way (Thuc. 4.97).

Within the temenos around the main temple in sanctuaries typically one would find sacred groves, perhaps special animals (such as a herd of cows sacred to Hera at Croton, or peacocks in her sanctuary on Samos) along with birds and other wild animals: people and animals were an integral part of evoking sacrality. Temple interiors served as banks, as museums, as a repository for commemorative items – both communal and personal – and thus they became the nucleus for forming local civic and familial identity

and fostered communal memory. Greek architecture requires people for scale against its abstract forms and should be visualized thronged with visitors. Temples were by far the most colorful element in the built environment, and their interiors attracted people who wanted to visit the deity represented by the cult statue.

FURTHER READING

The essays by P. Corbett (1970) and Burkert (1988) are still fundamental for this topic and provide general overviews. On cult images, see Kroll 1982, Romano 1982, van Straten 1981 and 2000 and Kosmopoulou 2002, with Mylonopoulos 2011 on access to the images and Platt 2011 on responses to images. For archaeoastronomy, see Boutsikas and Ruggles 2011 and the essays in Ruggles 2015. For temple inventories, see Aleshire 1989, Harris 1995, Hamilton 2000, and Higbee 2003. On temples as museums, see Bounia 2004 and Shaya 2005.

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CHAPTER 16

Scale, Architects, and Architectural Theory

John R. Senseney

Along with Ionian abstract thinkers like Anaximander in the sixth century BCE, Archaic architects were the earliest Greek prose writers. Whereas Anaximander and others wrote about the nature of the universe, architects like Theodoros, Chersiphron, and Metagenes wrote about their discoveries and successes in the sphere of building construction. Following the recording of their mastered feats, architects' activities in the realms of writing and building began to focus on more design-related concerns. This shift coincided with – though need not have depended on – the conception of Plato's *theoria*, adopted as a metaphor from a term relating to rituals of spectacle, thereby creating a descriptor for the disembodied philosophical and scientific envisioning of realities not readily seen. In the theory of Hellenistic architects focused on questions of design, there developed an interest in scale, which enabled the design of buildings through graphic means for the envisioning of buildings from the abstract, disembodied aerial view of ground plans. With extensive reference to the Didymaion, the present chapter explores scale planning in Hellenistic architectural theory as reflected in Vitruvius. As detailed below, the theoretical processes and principles underlying scale design developed first in traditional methods of construction that preceded the common application of reduced scale in the art of building, which was unlikely to have taken place prior to Hermogenes in the later third century BCE.

Scale Representation, Vision, and Architects

Three-dimensional models do not figure prominently in the question of scale in Greek architectural practice and theory. Plastic models of temples were common, but known examples appear to be limited to funerary objects, votive items, and dedications (Haselberger 1997: 83–87). These were not models in the sense of aids in the planning and construction process, and were therefore neither to scale nor germane to the activities of architects. The *paradeigmata* of architects, rather, were full-scale models of individual features (Coulton 1977: 55–58). Only the scantest evidence for reduced-scale models pertains to the Roman period, reflecting practices that it is likely were not well spread and were derivative of scale *graphic* models that originated in the Greek world (Senseney 2011b: 441; Senseney 2014).

Scale graphic models were not likely to have been employed by architects until a relatively late date (Coulton 1977: 70–71). In the realm of engineering, it has been proposed that, in the sixth century BCE, Eupalinos planned his tunnel at Samos with a scale drawing based on a precise calculation of the distance to be transversed through the mountain (Kienast 1995: 164–172; Hahn 2001: 115–116). Yet this suggestion is questionable, and it is more likely Eupalinos need not have ever envisioned his tunnel

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according to a scale plan, instead employing a multistage process to ensure convergence (see Chapter 5). As with three-dimensional models, rather, graphic practices in the Archaic period were limited to full-scale planning processes, as in the use of radial drawings on the flat surfaces of column drums in order to arrange the pattern of fluting around the profiles of shafts (Schwandner 1985: 26–29, 67–72). The earliest plausible candidate for a temple building designed according a scale ground plan is Pytheos' Temple of Athena Polias at Priene from around 340 BCE (Figure 16.1), in which the modular character and equal spacing of features appears to reflect a gridded, graphic underpinning (Coulton 1977: 70–71; Senseney 2011a: 153–158).

The introduction of reduced-scale representation in architecture involved a transition from visual projection in real space to a different kind of vision. When Eupalinos set out to tunnel through Mount Kastro, he may have used a simple sighting tube for purposes of leveling (Lewis 2001: 214–216). Through directed projections of visual axes across space, the level tube became both instrument and model, shaping the tunnel as a large-scale axis through the earth. In the following centuries, the idea of visual projection would come to shape the excavated hollows of hillsides for theaters. Replacing rectilinear theaters, the circular, radial arrangement adapted the same graphic construction for linear perspective (*skenographia*) as found in painted backdrops, emphasizing the role of the *theatron* as a communal space for vision (*thea*) in a form that anticipated Euclid's *Optics*, with its geometric understanding of how visual rays project. The transition to radial theaters may have occurred as early as the later fifth century BCE at the Theater of Dionysos in Athens, although the seating rows may have been straight rather than curved in this precursor to the present all-stone version that replaced it some decades later (Goette 1993: 50–51). In the earlier version, the result may have been a radial auditorium that was technically polygonal rather than circular, imitating familiar compass-drawn forms while simplifying them for construction purposes (see Chapter 25).

This loose relationship between graphic and built forms may suggest that Greek theaters need not have followed scale plans in the modern sense of fixed ratios of scale correlating drawings to overall dimensions and metric specifications of features, or in the modular approach of Hermogenes, for example (Figure 16.1). Arguably, the relationship between drawings and theaters may not have gone beyond the level of the general inspiration of the idea of circular, radial drawings of the type described by the character Meton in Aristophanes' *Birds* of 414 BCE (*Av.* 992–1020). The actual construction of theaters probably progressed in a more intuitive fashion, with the retaining walls built to the height of the available hillside to support each row rising against the curve of the level below. Just as the tunnel of Eupalinos did not depend on scale drawing, the practice of designing to scale was not, strictly speaking, a prerequisite for the first radial theaters in the fifth and fourth centuries. The earliest evidence for planning buildings according to drawings made to scale must therefore be sought in a different context.

Along with architects, scientists shared in developing the instruments, techniques, and forms of reduced-scale drawing, as well as the very concept of representing space graphically. Around 300 BCE, the first theorem of Euclid's *Phenomena* finds the earth's location within the universe by attaching a sighting tube to a pivot in the center of a disk (Figure 16.2), thereby forming a *dioptra* operated by a *theoros*, or "viewer." The theoros projects visual axes through the sighting tube toward the horizon and the rising and setting constellations of the revolving cosmos. In this way, the pivoting tube's direction duplicates that of the projected visual rays, correlating the earthbound location of the theoros in the sphere of the cosmos with the pivot at the center of the disk. In a manner similar to the correspondence between the mountain tunnel and the simpler sighting tube, from which the dioptra evolved, the result is a microcosm. Using the compass and straightedge, Euclid illustrates this demonstration in a diagram with radial lines representing the visual axes projecting from a central point, thus indicating the earth's central location in the universe (Figure 16.2). In viewing the small-scale drawing, one may behold the entirety of ordered space from an abstract perspective outside that of the theoros, just as one may view a scale ground plan of a building from the sky above in a disembodied manner. One may therefore ask whether Euclid's theorem reflects existing ways of planning buildings in real space, a prospect that seems obvious in the gridded, modular temples of Hellenistic Ionia.

This question of scale planning is central to Vitruvius' *De architectura* of the 30s–20s BCE. Reflecting the lost body of Greek architectural theory, Vitruvius emphasizes the importance of scale drawings: ground plans, elevations, and skenographia (1.2.1–9). He classifies these as *ideai*, sharing the same

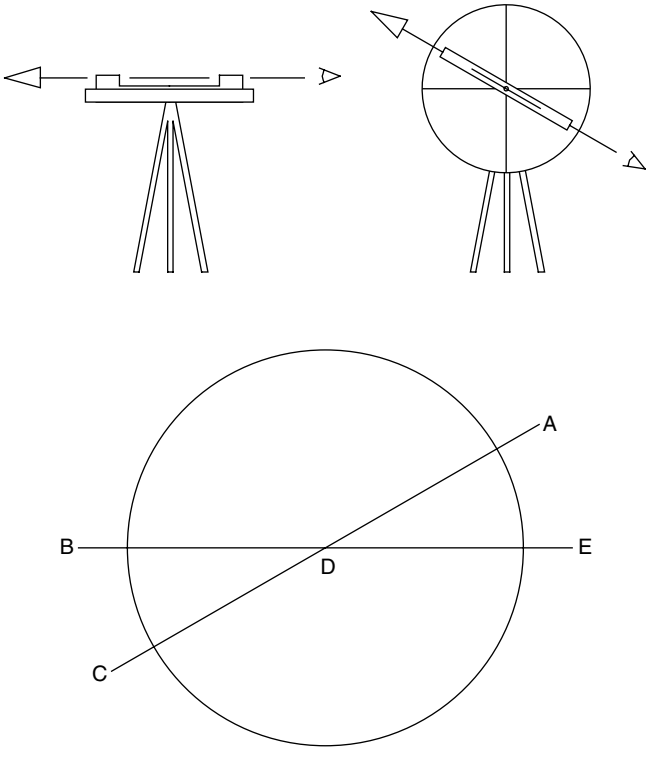

Figure 16.2 Theorem 1 of Euclid's *Phenomena*, around 300 BCE. Above: Schematic reconstruction of the *dioptra* with axes of vision of *theoros* projected through sighting tube in horizontal mode (left) and vertical mode (right). Below: Resulting geocentric diagram with shared axes of vision along setting point of Capricorn (A), rising points of Leo (B) and Cancer (C), earthbound viewer (D), and setting point of Aquarius (E). *Source*: J. Senseney.

Greek term with the Ideas or Forms of Plato, which are the transcendent universals imitated in the embodied forms in nature, analogous to how built forms imitate the drawings that project them (Senseney 2007: 560; Senseney 2009: 44–45). The term *idea* relates to the infinitive "to see" (ἰδεῖν, aorist infinitive of ὁράω), just as Vitruvius preserves in the Latin translation *species* (from *specio*, "I see"). Thus, related to vision etymologically, the idea is an important component of Plato's metaphor of theoria, a term and associated rituals adopted from the institutionalized witnessing of spectacles, allowing Plato to describe a new kind of seeing necessary to grasp transcendent reality (Nightingale 2005: 40–93). In Vitruvius' theory, as scale drawings, the ideai express a set of processes and principles that define *architectura*, a Latin term first found in Cicero's writing. Architectura does not derive from the Greek noun for the art of building (ἡ οἰκοδομική) in the sense of the "builder" (οἰκόδομος). In a more elevated way, architectura derives from the idea of the architect, or "master artificer" (ἀρχιτέκτων). For Vitruvius, this concept extends to nature itself as architect, which creates the mechanisms of the cosmos from which measurable time itself is brought forth (9.1.2, 10.1.4). Similarly, the three departments of architectura include not only the art of building, *aedificatoria*, but also the making of timepieces and mechanisms (1.3.1). For architects or a scientist like Euclid, then, scale drawing helps to theorize both buildings and the cosmos through a different kind of vision, revealing them in their totality from an abstract vantage point impossible in everyday seeing. As will be discussed with detailed reference to the Didymaion, the phenomenon of reduced scale in the practice and theory of architects is a Hellenistic Ionian development involving a new relationship between building and time, a development perhaps to be associated most closely with Hermogenes, and less with Pytheos or the architects of the Didymaion.

Construction Phases of the Didymaion

With its surrounding double colonnade and open-air adyton containing a naiskos (Figure 16.3), the Hellenistic–Roman Didymaion repeated the general layout found in its archaic precursor but at a greater scale (Gruben 1963; Schneider 1996). At the back of the pronaos, and inaccessibly raised 1.46 m above the stylobate without a stairway, is the monumental portal of a two-columned room from which prophecies may have been announced. On either side of this portal at the level of the stylobate and below a pair of stairways, two descending, barrel-vaulted tunnels lead down into the adyton. At the east end of the adyton, a wide flight of stairs ascends to the level of the two-columned room (Figure 16.3). The marble socle walls of the adyton maintain their rough finish, and it is this expansive surface that served as a drawing board for various generations of architects to incise their plans as construction progressed. Built above this unadorned level is a smoothed wall with pilasters projecting at regular distances, the lowest part of which corresponds to the level of the stylobate beyond.

The construction of the Didymaion took place across several phases. The first phase began sometime between 334 and 300/299 BCE under two architects: Paionios, who had worked at the Artemision at Ephesos prior to arriving at Didyma, and Daphnis, from nearby Miletos (Vitr. *De arch.* 7.praef.16). These figures would have witnessed relatively little of the building's shaping during their own lifetimes, and it is impossible to say how much the outcome reflected their original vision. By around the middle of the third century BCE, the walls of the adyton had been completed up to the level of the stylobate, providing an approximate date for the incised plans for constructing the columns. After this time, construction on the naiskos probably began in the third quarter of the third century BCE (Haselberger 1983: 114–115; Rumscheid 1994: 112–113). Surviving inscribed construction reports placed on public display in Miletos provide much information on the various later stages of the project (Rehm

Figure 16.3 Sanctuary of Apollo, Didyma eastward view of the adyton from the naiskos. *Source*: J. Senseney.

1958; Voigtländer 1975: 144–149). In the 220s BCE, the construction of features on the eastern stylobate was underway, including walls, plinths, and column drums, as too the temple portal, the antae, and other work in the area of the pronaos. Between the 180s and 150s BCE, the walls of the pronaos reached their full height; beams were laid; the stylobate was paved with marble slabs; walls and steps were smoothed; and column bases, shafts (fluting), capitals, and other ornaments were carved. The remaining construction, never to reach completion, was to include the paving slabs, plinths, and columns of the double pteron all the way around the stylobate, as well as the skyward features they were to support.

Theory, Nature, and Architecture

The gradual nature of this sequence of construction over several centuries is remarkable. As Marvin Trachtenberg (2010) recently explores with respect to medieval and Renaissance practices, the idea of taking on a major architectural project without having first secured all of the financial, material, and human resources necessary for speedy completion is foreign to modern sensibilities. In the classical world, however, protracted construction in the manner of the Didymaion, the Olympieion at Athens, or the Artemision at Sardis was relatively common outside the major state-sponsored projects of imperial Rome, with its ready supplies of materials, machines, and organized labor force (MacDonald 1982: 143–166). To use Trachtenberg's characterization, in building work that continues over a significantly long time, involving generations of architects, forms tend to evolve gradually "in time" at various stages of construction, rather than following a unifying design determined "outside time." In a modern view, such changes corrupt the original vision for a building, resulting in scholarly attempts to unveil a historical building's lost original plan retrospectively. Given the complete loss of architectural writing before Vitruvius, however, it is difficult to support this view.

Turning to thoughts on architecture by writers other than architects, Aristotle's observations do not easily align with modern expectations about advance planning. Aristotle observes that the art of building is like all *techmai* in that it involves a particular course of reasoning on the part of its makers (*Eth. Nic.* 6.4.3). Such reasoning concerns variables in the process of coming into being: "Art loves chance, and chance, art" (*Eth. Nic.* 6.4.5). In featuring this element of chance, art differs from nature (φύσις), in which changes lead toward an end that is not, strictly speaking, planned, but rather a "final cause" reached through internal processes set in motion. It is the task of the maker to reflect a proper knowledge of nature through grasping its principles, causes, and universals, which he induces through the process of making. As in nature, for Aristotle, the art of building depends not on an authoritative master plan but rather on effective processes and principles (*Eth. Nic.* 6.4.1–6).

One cannot expect Aristotle's thoughts to universally represent Classical or Hellenistic architectural theory, and Vitruvius' text may indirectly reflect alternative views, like those of Plato. The basis for Vitruvius' connection between nature and building is clarified by his definition of architectura in terms of its underlying ordering processes and principles, for which he supplies Greek terms (1.2.1–9). These include an alignment between the processes of design in the sense of positioning features (*diathesis*) in accordance with a quantitative ordering (*taxis*), resulting in the principles good form (*eurythmia*) and modular commensuration (*symmetria*). Vitruvius explicitly identifies these as the processes and principles of which architectura consists, and he states that they characterize the ideai. In this same spirit, the Divine Craftsman of Plato's *Timaeus* builds order into the world by following models that are specifically eternal in nature, standing outside of the passage of time (Pl. *Ti.* 27d–28a, 28c–29a, 48e–49a). Plato also asserts that, among the various technai, the art of building is supreme because of the precision of its craftsmen's tools of measurement, highlighting the mimetic role of construction with respect to the originating models of architects (Pl. *Phlb.* 56b–c).

Yet there is a significant difference between the ideal represented by the Divine Craftsman and actual builders, just as Plato distinguishes between the abilities of the ideal philosopher and actual philosophers such as Socrates (Nightingale 2005: 40–93). As Plato reveals in his *Republic*'s discussion of the diagrams of the mythical craftsman and architect Daedalus, such drawings are like the motions of stars and planets, suggesting the presence of the eternal cosmic model that they imitate but not in fact carrying any ultimate truth in themselves (*Resp.* 529c–e). For Plato, then, such drawings serve as

metaphors for the ideai as the eternal models underlying the sense of order in nature. The kinds of drawings that Plato would have known include astronomical diagrams of cosmic mechanism based on the zodiac (as in Euclid's later diagram, Figure 16.2), the similarly circular, radial drawings used in skenographia, and – again in a loose way – the design of theaters (Senseney 2011a: 56–59, 65–68). Although not even Plato attaches special philosophical significance to such drawings, the architect's graphic ideai that embody the processes and principles of Vitruvius' architectura establish the sense of order in buildings in a way that is merely imitated the process of construction. The appeal of this definition of architectura to philologically inclined Renaissance architects is obvious. How it may apply to the realities of monumental construction in the classical world prior to Vitruvius, on the other hand, remains open to question (see Chapter 7).

Metrology and Modularity in the Didymaion

According to Vitruvius, the design of temple buildings should imitate nature's ideal blueprint for the human body (3.1.2–4). To express this ideal, he describes the so-called Vitruvian Man (Figure 16.1), in which the compass and straightedge construct a circumscribed, supine body on the plane of the ground precisely in the manner of a reduced scale ground plan (McKewen 2003: 181–182; Senseney 2011a: 142–153). Consistent with Vitruvius' explanation for the ideai of architecture, the described drawing reflects taxis, ordering an arithmetical underpinning for bodily relationships and the circle and square. It also reflects diathesis, positioning the parts of the body in accordance with the quantitative and geometric system. As a result, the Vitruvian Man is a unifying plan, conveying the principle of symmetria in the whole number relationships of parts to the whole. The specifics of the symmetria and the archetypal geometry of the circle and square have enabled the Vitruvian Man to be readily envisioned and graphically constructed by draftsmen in various eras (Wesenberg 2001: 357–380). As the embodiment of theoretical processes and principles identified with Greek terms, the Vitruvian Man may reflect graphic practices of scale planning employed in Ionia, seemingly observable in Pytheos' Temple of Athena Polias at Priene, Hermogenes' Artemision at Magnesia-on-the-Maeander (see Figure 15.3) and Temple of Dionysos at Teos, and the Didymaion (Figure 16.1).

In terms of this last-mentioned example (see Figure 5.2), the fact of construction undertaken over a long period of time potentially complicates modern attempts to arrive at a unifying design from analyses of measurements. Over time, different builders might work with different foot units. Despite this complexity, differing interpretations with equally clear pictures of the Didymaion's design and measurement system have emerged. Noting long ago that the interaxials of the columns on the stylobate (5.296 m) measure 18 Attic feet of 0.2942 m, Armin von Gerkan settled on this unit as the basis for the building's master plan (1942: 127–150). The core structure (adyton–pronaos) reflects a 1 : 3 ratio. This core structure subdivides into modular units of nine Attic feet that determine the placements of columns (interaxials = 2 units, or 18 Attic feet), resulting in a planned measurement of 99 × 297 Attic feet for the 1 : 3 rectangle.

More recent studies of archaeological and epigraphic evidence leave no doubt that the features of the temple's elevation carried out from the mid-third century BCE onwards reflect a larger foot unit of 0.2985 m, which easily extends to all features in plan as well (de Zwarte 1994: 115–143; Haselberger 1996: 161–178). The columnar interaxials of 18 Attic feet, therefore, are revised as 17.75 feet in accordance with the larger unit. Recognition of this foot unit enables identification of the modular basis of the plan: the plinths, which each measure nine feet in length and width, equal three square modules of three feet. Like the parts of the body that serve as modules in the Vitruvian Man, the plinths express salient relationships with larger features. Seen in this way, the Didymaion is consistent with the Ionian tradition of the "plan-driven" modular grid identified in works from Pytheos to Hermogenes and beyond (Wilson Jones 2001: 705). Consistencies such as these are to be expected, since Pytheos published a volume about his temple at Priene, as Hermogenes later would about his temple at Magnesia (Vitr. *De arch.* 7.praef.12).

Yet there remains a perplexing metrological inconsistency at the Didymaion. On the north socle wall of the adyton are the famous working drawings of the mid-third century BCE, incised directly into the

masonry. To prepare these surfaces, ancient builders covered them with dark red pigment, against which the nearly white incised drawings read with clarity. Among these are drawings for the monumental columns on the stylobate that planned the profiles of the base moldings and, for the shafts, the dimensions, proportions, fluting, and subtle curvature, known as entasis. These drawings clearly reflect yet another foot measurement, equal to 0.2964 +/– 0.004 m (Haselberger 1980: 193; 1996: 165). As clarified below, this other measurement pertains only to the execution of the drawing and not to the features they plan. Like the plinths on which they stand, the columns are designed in accordance with the 0.2985 m foot. Nonetheless, the undeniable presence of the foot of about 0.296 m validates the possibility that more than a single foot unit may have been used in the building's construction. Because of this, we should perhaps not rule out the relevance of von Gerkan's foot unit of 0.2942 m for the earliest phases of construction, which gives a clean measurement of 99 × 297 feet for the core structure. In the Didymaion, therefore, at least three separate foot measurements may have been employed over time in the core structure, the drawings, and on the crepis and stylobate.

Beyond questions of metrology, comparison with the spacing and commensurations of features found in the other Ionian temples may suggest the impact of protracted time on the Didymaion's design. With respect to the Didymaion, the temples of Pytheos and Hermogenes differ in their spatial effects. In these buildings, the square plinths share a 1 : 1 ratio with the spaces between them, and the innovative pseudodipteral arrangement of Hermogenes' temple – in which space allows for two surrounding colonnades while the interior ring is eliminated – creates a notable airiness (Wiegand and Schrader 1904: 81–135; Humann, Kohte, and Watzinger 1904: 39–49; Koenigs 1983: 141–144). In the Didymaion, the plinths (about 2.69 m) are slightly larger than their intervening spaces (about 2.61 m), resulting in a denser arrangement. In the temples of Pytheos and Hermogenes, furthermore, the plinths express the module by which all main features throughout the plan are commensurable. Each plinth in the Didymaion equals three square modules, with the modular underpinning extending to the stylobate (51.13 × 109.34 m = 57 × 122 modules) and crepis (60.13 × 118.34 m = 67 × 132 modules) but not to the walls of the core structure encompassing the adyton and pronaos including the antae (29.17 × 87.42 m). A possible explanation for this lack of unity in the manner of Pytheos' and Hermogenes' buildings is that the module associated with the dimensions of the Didymaion's plinths, stylobate, and crepis was determined without regard for the dimensions of the walls of the core structure, which were planned with a different foot unit in an earlier phase. As such, the Didymaion's incomplete modular underpinning may reflect the reality of design as a process that overlaps with construction, unfolding over a long time rather than being crystallized in an immutable master plan finalized in advance.

Scale and Planning

A recent metrological analysis (Senseney 2011a: 189–190) demonstrates that the dimensions of the vertically compressed shaft in the working drawing that generated the entasis of the columns are based on a 3 : 4 : 5 Pythagorean triangle *ABC* (Figure 16.4). This drawing shows an architect's manipulation of scale, beginning with a circular arc g drawn as a profile for a shaft represented a full scale horizontally, but at 1 : 16 scale vertically so that each dactyl (equal to one-sixteenth of a foot) represents one foot. In protracting the scale vertically to the full height of the intended built shafts, the circular arc stretches into an elliptical arc that describes the entasis, and the same method may have been applied in the curvature of temple platforms (Figure 16.5). As a rule of technical drawing, the integral commensuration of 3 : 4 : 5 between the base, height, and theoretical hypotenuse of the triangle in the drawing's underpinning ensures the precision of the right angle of its orthogonal sides, providing a basis for orthogonality throughout the entirety of the graphic construction.

In an interesting way, the three sides of the triangle also share a modular correspondence that is integral to the purpose of the drawing. This triangle is an 18 : 24 : 30 expression of the maximum rise of the curvature, equal to about 4.7 cm. In other words, the architect worked out the degree of entasis as a rational expression of the dimensions in the drawing. This interest in the degree of columnar curvature as a rational value prefigures the spirit of Vitruvius' similar suggestion that a specific feature in the column should determine the amount of the addition for entasis (3.5.14). The module embodied by

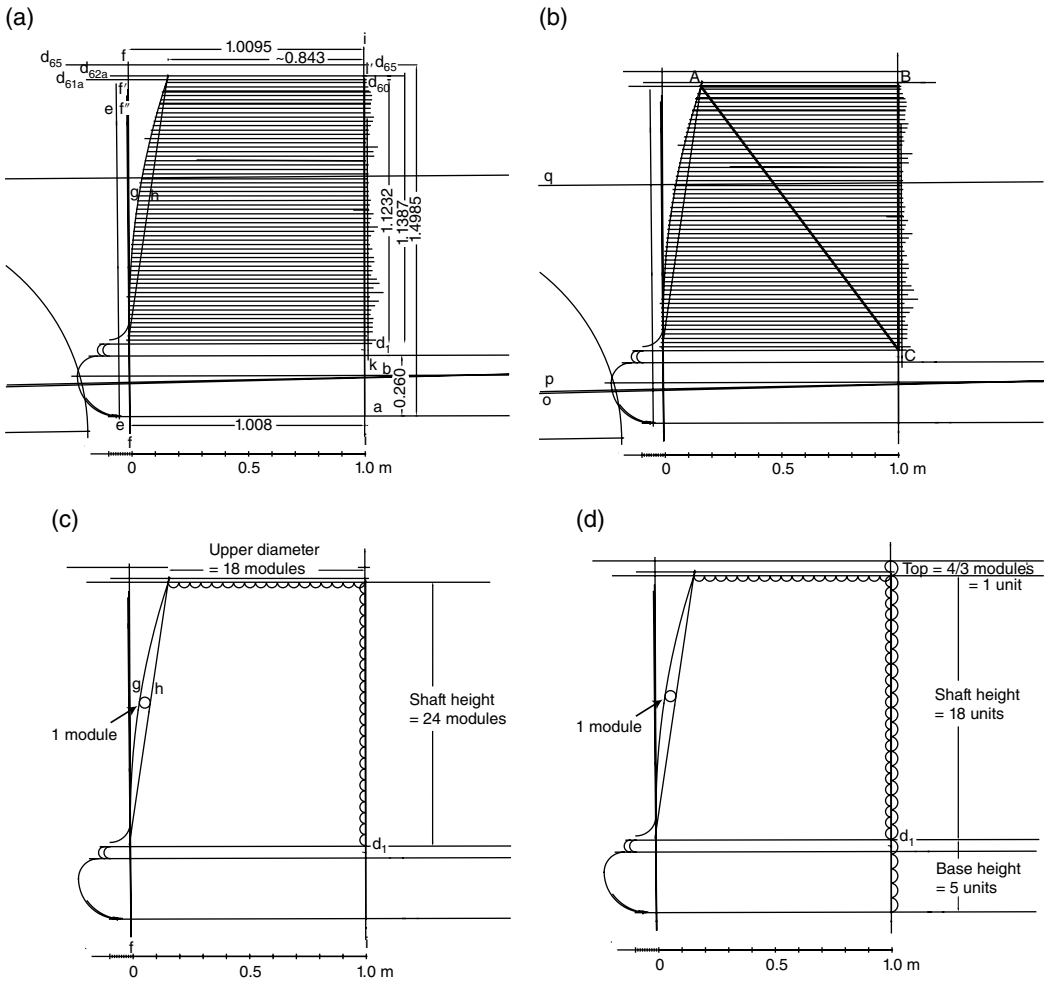

Figure 16.4 Sanctuary of Apollo, Didyma, working drawing for generating entasis. (a) Restored according to L. Haselberger. (b) Shown with underpinning of 3:4:5 Pythagorean triangle *ABC*. (c) Shown with modular underpinning, wherein the maximum height of the curve (g) above the line of diminution (h) expresses the module by which the upper column radius and height of the column are measurements of 18 and 24 modules. (d) Shown with modular underpinning established by *d65–d62a* as the dimension of the maximum curvature of entasis, and *d65–d61a* as 4/3 of that measurement, establishing the unit by which the divisions of the elevation are established: base = 5, shaft = 18, *d61a–d65* = 1. *Source*: J. Senseney, adapted from Haselberger 1980: fig. 1.

the maximum curvature helps to organize the logic of the drawing as well. The lines at the top of the drawing above the upper shaft of the column indicate both the size of the module (*d62a–d65*) and a unit equal to four-thirds of the module (*d61a–d65*), so the total height of the drawing divides into 24 units, with five units for the base and 18 units for the shaft (Figure 16.4). As a result, all of the following features of the drawings are based on the number nine:

- Total diameter of the drawing for column fluting = 99 dactyls of a 0.296 m foot[1]
- Total height of the drawing generating entasis = 81 dactyls of a 0.296 m foot[2]
- Upper shaft radius = 18 modules (along with 24 modules for height of shaft)[3]
- Shaft height = 18 units (1 unit = 4/3 module = 1/24 of drawing height)[4]

Figure 16.5 Temple of Athena Polias, Priene, northward view of stepped platform along west flank with visible curvature. *Source*: J. Senseney.

- Lower shaft radius = 54 (=9 × 6) dactyls of a 0.2985 m foot[5]
- Difference between 9-foot plinth and lower shaft radius = 18 dactyls of a 0.2985 m foot[6]
- Upper shaft radius = 45 (=9 × 5) dactyls of a 0.2985 m foot[7]

For the simultaneous use of two units of measurement in a single drawing, scholarship has distinguished between what one may term a "working measurement" and an "intended measurement." In Roman North Africa, architects commonly conceived of their buildings in terms of Roman feet, but in the actual construction, local craftsmen converted these intended measurements into their own Punic cubits with which they normally worked (Wilson Jones 2001: 104). At the level of graphic execution, the draftsman at Didyma similarly worked with a foot of 0.296 m, but he did so with a foot of 0.2985 m in mind, in order to serve the intended metrological basis for the features that his drawing planned. This procedure is foreign to modern expectations, but in the case of multiple generations of architects and craftsmen, units of measurement need not have been standards in their own right. Instead, they need only have been a *means* that served a more essential consideration: arithmetical concatenation, in which chains of similar numbers link together features and relationships planned at various points in the building's construction over time (Trachtenberg 2010: 139–141). Going back to before the Archaic period, the number nine and arithmetical progressions of nine (18, 45, 54, etc.) played an important role in Greek thought, used formulaically to express distances and durations (Hahn 2001: 173–174, 181, 185–186), and expressed important proportional relationships in the Classical period, most famously in the repeated 4:9 ratio in features in the Parthenon. Through modules and proportions, the repeated application of a specific, abstract number such as nine, along with its divisors and multiples like three or 18, continued a chain of logic that allowed for an interweaving of design and construction evolving over

extensive time. In this protracted process, foot units could be fluid, allowing for measuring tools variously divided into different dactyl units, or even to establish newly conceived features of the building as a module. Once established, this module could itself be divided into units able to serve as a new foot measurement for subsequently built features commensurable with the module, and thereby expressed in terms of measurements of the new foot and dactyl units.

Despite the entasis drawing's clear correspondences to the number nine within the specific context of the intended foot unit, the architect need not have formulated or executed these dimensions as precise measurements of dactyls. In a more practical way, he probably began simply with the size of the plinth (2.69 m), using a pair of dividers to find three of the four parts equal to half its width, thereby establishing the lower column radius (1.008 m).[8] From here, he could take five of six parts of the lower column radius to find the upper column radius, just as the upper column radius equals three of four parts of the height of the shaft.[9] It is only because the plinth itself measures nine feet across, or a radius of 72 dactyls, that subsequent measurements express multiples of nine.

In his actual measurements in dactyls, the architect worked with the foot unit of 0.296 m. The unquestionable presence of this unit has misled analyses toward the false appearance that the ancient architect planned features according to it. Instead, this unit simply provided a means of executing the drawing, probably reflecting the tools that the architect had at hand, and that the intention was to integrate the columns with the determined size of the plinths. In working with this foot unit in the drawings, the final step necessary to execute the full-length horizontal drawing of the shaft across the wall was to complete the individual dactyl lines rising up the reduced-scale shaft from *d1* to *d61a*. The result is visually unsatisfying, since it lacks equal spacing in the dactyl lines and cannot be completed at the top of the shaft, so that the total height equals approximately 60.66 rather than 60 whole dactyls. One must recall, however, that such drawings were created in a context unrelated to the post-Albertian fetishizing of architectural drawings as monuments in their own right. The untidiness of the dactyl lines is consistent with the lack of concern reflected in overlapping the three separate plans, drawing the largest of them right through the smaller two. In executing the actual built forms, these qualities would have made no difference. Instead, the working drawings simply served their purpose and, without ceremony, would have been polished out of existence had the Didymaion ever reached completion.

Architects and Theory

The reduced-scale drawing that planned the entasis of the columns reflects the processes and principles of scale planning described by Vitruvius and embodied by the Vitruvian Man. Just as Vitruvius details, design takes place in the manner of diathesis, in which the architect employs a process of positioning the outer profile of the shaft at its lower and upper radii, the height that separates them, and the base upon which the shaft rests. The logic of this positioning is in accordance with taxis, the establishing of a quantitative system with one part selected as a module, in this case the maximum extent of the curvature. The results are the desired principles of shapeliness, or eurythmia, and modular commensuration, or symmetria. As in the Vitruvian Man's body parts and archetypal geometry of the circle and square, the architect constructs his working drawing with modules that establish its breadth and height, as well as the archetypal geometry of the Pythagorean triangle. In reflecting these concepts, the working drawing preserves the Greek processes and principles that later define architectura for Vitruvius.

This graphic evidence also gives rise to the important question of what embodies these processes and principles: How may the drawing relate to master planning in the form of scale ground plans, elevations, and perspectives that, for Vitruvius, provide the architect's ideai to be imitated in construction? Taken in the Didymaion's context of a construction process of long duration, care is needed in relating the evidence for the planning of entasis with the kind of scale drawings mentioned by Vitruvius and analogized in the Vitruvian Man. It is tempting to view the entirety of the Didymaion according to the taxis, diathesis, eurythmia, and symmetria observable in the planning of entasis. As in the working drawing's commensurations based on the maximum bulge of curvature, the plinths of the Didymaion express modularity, resulting in commensurations with the crepis and stylobate in plan. The dimensions of 99 × 297 feet of 0.2942 m for the walls of the core structure divide into equal units of 9 feet,

determining the later positioning of the columns and, between these, the pilasters of the upper zone of the adyton walls. In this way, the overall sense of pattern suggested by the commensurations (plinths, stylobate, crepis) extends to the building as a whole. Once builders converted the number nine to the foot unit of 0.2985 m for the modular plinths, a unified shapeliness was engendered as an end product, even if symmetria does not strictly extend to the walls of the core structure. The integrated ground plan of the Didymaion, therefore, may not imitate a master plan. Instead, it may itself be the product of multiple progressions extending the logic of placements, proportions, and commensurations expressing related numbers over generations of builders.

Rather than being an exception with respect to Ionian planning going back to Pytheos and reflected later in the writing of Vitruvius, the Didymaion's general sense of unity as an end product developed over time – and not an originating projection designed outside of time – may represent the norm. Just as the Greek theater's sense of integration arises through the gradual repetition of concentric seating rows, the grid-like, modular underpinning of Pytheos' Temple of Athena Polias at Priene may have integrated features and dimensions retrospectively rather than through a scale ground plan completed prior to building. As close observation reveals, Pytheos' temple lacks the degree of seemingly graphically driven integration found in Hermogenes' Artemision at Magnesia and the Roman restoration of Hermogenes' Temple of Dionysos at Teos (Figure 16.1). Presumably, the Roman restoration of the temple at Teos reflects the original forms of Hermogenes' temple (Mustafa Uz 1990: 35–39). The temple at Priene provided the model for Hermogenes' temple at Teos (Koenigs 1983: 169), but the walls of the doorway into the naos of the late classical original are literally "off the grid" compared with all features found in the copy. Like the circular seating of a theater that expands outward from the circle of its orchestra, the design of Pytheos' temple might have begun with the naos as the all-important cult hall, according to whose intended dimensions the sizes and locations of the plinths were subsequently fixed. The degree of innovation in the resulting grid of the plinths and their equal interstices should not be exaggerated; as early as around 460 BCE, the architect Libon of Elis created the same grid at the Temple of Zeus at Olympia, but with the abacus blocks on the undersurface of the architrave rather than the plinths on the stylobate. Nor need Pytheos' use of the ground plane (as opposed to Libon's architrave) suggest the primacy of the ground plan, particularly in light of compelling arguments for the importance of the *middle* – and not the bottom – of the columns in determining proportions and spatial relationships (Weber 1991: 434–436). The planar role of the plinths need neither have been Pytheos' overriding design consideration, nor need it reflect scale graphic planning from an abstract aerial view at reduced scale in the way we represent the temple today (Figure 16.1).

A surviving inscription from the Temple of Athena at Priene records that Hermogenes had dedicated "the *hypographe* of the temple, which he also executed" (Hiller von Gaertringen 1906: 143, no. 207; Coulton 1977: 70–71). There is no way to know whether this Hermogenes is the celebrated Ionian architect of the later third century BCE, but the architectural context would certainly fit this interpretation. The term *hypographe* usually refers to an outline, and in suggesting the idea of a drawing that represents something below (*hypo*), it may provide an appropriate description of a ground plan. The specification that the described object was "executed" may suggest that the dedication was somehow monumental, as in a ground plan inscribed on a stone (Coulton 1977: 71). Such a monument would recall the technique of the working drawings at Didyma, but for a purpose other than planning, perhaps as a display of Hermogenes' grasp of the underlying logic of Pytheos' design, converted to an abstract, graphic demonstration.

If such were the case, it is conceivable that Hermogenes – and not Pytheos – may have codified the scale ground plan as a graphic manner of envisioning the relationships of a temple building's overall form. As opposed to the simple peripteral arrangement of columns in Pytheos' temple in Priene, the dipteral arrangement of the Didymaion features two rows of columns all around, an arrangement that was traditional to the large Ionic temples of the Greek East going back to the Archaic period. Both arrangements reflect the positioning of features conceived in terms of the relative dimensions of masses, but Hermogenes appears to have introduced a new consideration in inventing the pseudodipteral arrangement in his Artemision at Magnesia (Vitr. *De arch.* 3.3.8), which eliminates the inner ring columns as found at Didyma. In this organization, spatial units are abstractly conceived as quantities, expressed through the taxis grid that determines the positioning of features (diathesis). As opposed to

the grid that may be drawn retrospectively over the columns and walls of the temples at Priene and Didyma, the grid for Hermogenes' pseudodipteral temple at Magnesia is autonomous, with its lines establishing integral quantities regardless of whether masses are placed over their intersections. As Vitruvius states in connection with Hermogenes' pseudodipteral temple, Hermogenes followed a system of commensuration according to which the temple divides into parts equal to the size of a module. Establishing this module, according to Vitruvius, is the thickness of a column. Although the lower column diameter may commonly be commensurable with the plinth that itself expresses symmetria throughout a building, the specific identification with the column thickness allows the commensurations to extend upward in elevation through integral ratios of column diameter and height, as well as intercolumnar spacing, classified by the oft-cited four separate systems: pycnostyle, systyle, araeostyle, and eustyle (Vitr. *De arch.* 3.3.1–8). In this way, the architect's plans crystalize a comprehensive integration of features outside of time in advance of the gradual construction process. As observed in both Vitruvius' discussion and the plans of Hermogenes' temples, this suggestion of the value of the modular grid as a starting point for an entire temple's design cannot be as easily posited for the earliest phase of the Didymaion's construction under Paionios and Daphnis in the late fourth century BCE. In the work of the Didymaion's later architect who designed the plinths, columns, and other features, we are on similarly tenuous grounds in assigning to him a lost scale ground plan of the kind that, in a more readily evident way, was later drawn by Hermogenes, and still later described by Vitruvius as an *idea* embodying the processes and principles of which architectura consists.

Rather than reflecting planning practices for overall buildings in the form of a ground plan, the Didymaion's working drawing for entasis may relate to the ideai of Vitruvius in a different way. In a manner not preserved elsewhere, the drawing may very well represent common approaches to the building process, whereby proportional and commensurable relationships were anchored in selected modules and arithmetical progression, as well as guiding, archetypal forms like a Pythagorean triangle. It may be that the processes and principles first developed in this context of facture, shaping the habits and expectations of planning that, naturally, were employed later in scale drawings like ground plans and their related elevations. In temple design, longstanding practices of fabricating features and their details and refinements may have similarly informed the graphic, reduced-scale conceptions of Hermogenes.

Perhaps integral to this transition from the graphic planning of individual features to comprehensive layouts was Pytheos' temple at Priene, the principles of which would also have been made known through the commentary that Pytheos authored about his building. Symmetria was a well-established principle in sculptural expressions of the body, as in the fifth-century BCE *Canon* of Polykleitos, for which the sculptor included a well-known written commentary to explain the work. In a way perhaps unintended by Pytheos, the role of the plinths later may have suggested the new concept of the ground as a plane against which modular relationships take place, helping to establish a distinctively Ionian approach to temple form. More far reaching yet, the similarly modular approach in the graphic planning of individual features and their refinements as preserved at Didyma may have set the stage for Hermogenes' scaled-down graphic projections of entire temples. With this feat of the imagination, even the *Canon* of Polykleitos was surpassed, allowing for the eternal principles of nature's own *idea* for the human body to be envisioned, as well as the unveiling of architectura as a system of order underlying both building and the structure and mechanisms of the cosmos.

NOTES

1 Difference of only 2.5 mm: 1.834 m = (99 × 0.0185 m) + 0.0025 m. This and all of the following measurements are those of Haselberger (1980).

2 1.4985 m = 81 × 0.0185 m as an exact measurement.

3 Differences of 3 and 4.8 mm. Upper shaft radius = about 0.843 m; shaft height = 1.1232 m; maximum rise of curvature = 0.047 m. 18 × 0.047 m = 0.843 m + 0.003 m. 24 × 0.047 m = 1.1232 m - 0.0048 m.

4 Difference of 1.8 mm. Measurement of *d65–d62a* = 0.047 m. Measurement of *d62a–d61a* = 0.0155 m. Measurement of *d65–d61a* = 0.0625 m. Shaft height (1.1232 m) = 18 × 0.0625 m +.00018 m.

5 Difference of 1.8 mm. Lower column radius = 1.008 m. The foot unit of 0.2985 m/16 = 1 dactyl = 0.0187 m. 54 × = 1.0098 m = 1.008 m + 0.0018 m.
6 Measurement from the column axis to the edge of the plinth: 2.69 m/2 = 1.345 m = 1.008 m + 0.337 m, with 0.337 m as the difference between the plinth and the lower shaft radius. 18 × 0.0187 m = 0.337 m.
7 Approximately 0.843 m/45 = 0.01873 m.
8 (2.69 m/2) = 1.345 m. (1.345/4) × 3 = 1.009 m = 1.008 m + 1 mm.
9 0.843 m +/− 0.001 m. Lower shaft radius = (1.008 m/6) × 5 = 0.840 m = 0.843 m – 3 mm.

FURTHER READING

The classic study of Greek architects, their theory and methods of design (including questions of scale) is Coulton 1977. Coulton's study precedes the discovery of the working drawings at Didyma, the importance and implications of which for curvature and related questions of classical design and construction are explored in the various chapters of Haselberger 1999. In particular, the authoritative overview of these issues in Haselberger's introduction is essential reading on the topic of refinements in ancient practice and theory; see also concise overview (1997). Hellenistic architects and architectural theory, including their Roman legacy, are covered in Wilson Jones 2001. A highly useful and remarkably complete reference for all manner of topics related to the methods of ancient Greek architects and related bibliography is Hellmann 2002. An excellently illustrated, broad treatment of these topics for Greek and Roman architecture (though without treatment of architectural theory and limited as a bibliographic guide) is Malacrino 2010. For detailed, theoretical considerations of primary sources and an exploration of the origins and development of scale design and linear perspective, see Senseney 2011a.

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PART III

Civic Space

CHAPTER 17

Urban Planning and Infrastructure

Betsey A. Robinson

Among the principal concerns of ancient planners were the location and healthiness of a site, the sustainability of water and agricultural resources, and the practical and equitable division of urban space. Diodorus Siculus (12.10.5) reports the wise counsel of the Delphic oracle to the founders of Thurii: "Water to drink in due measure, but bread to eat without measure." A similar concern for self-sufficiency is reflected in a story recounted by Vitruvius of the architect Deinokrates' first meeting with Alexander the Great (*De arch.* 2.praef.1–4). He presented the king with his design for a city on Mount Athos, sculpted into the form of a man, his left hand cradling a spacious walled city and, in his right, a bowl collecting mountain streams. After confounding the architect with a question about the productivity of the surrounding countryside, Alexander counseled him that no city could thrive without enough arable land to sustain its population. Nonetheless, Deinokrates impressed Alexander, and he is said to have gone on to shape Egyptian Alexandria, a Mediterranean port-city alongside the Nile Delta, and to command all the granaries of Egypt.

These testimonia offer an introduction to Greek planning, allegorizing the major issues faced by urban planners and highlighting interrelations of foundation and fabrication history, setting and relationship with the countryside (*chora*), and the physicality and aesthetic impact of the resulting city. My chapter will survey urban planning and focus on select case studies, through which I hope to draw attention to trends and to demonstrate three major points. First, Archaic Greek colonies in southern Italy and Sicily were the testing ground, the "crucible" of city planning, to quote Graham Shipley (2005: 345), and they offer the best insights into the principles and process of early efforts. Second, although the tradition that Hippodamos of Miletos was responsible for the celebrated plan of that city in the second quarter of the fifth century is perpetuated in textbooks and popular histories of the "Hippodamian" or gridded plan, Hippodamos must actually have been active as a theorist and practitioner of planning somewhat later in the century; his major contributions were far from his home and no less significant. Finally, beyond the standardized plans that characterized many new cities in the Hellenistic world, the planners of several sites exploited topography in such a way as to create dramatic and highly effective cityscapes. A brief consideration of streets will then be followed by sections on stoas and fountains, two building types of great importance to the organization of cities and the maintenance of city life.

Urban Planning

Towns and cities are the subject here, taking cities not only as large and important towns but also as entities that had urban institutions and were engaged in activities that significantly impacted the hinterland (see Hansen 2008: 71). The evolution of any settlement unfolds synchronically and diachronically.

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

Some cities seem to have been designed and filled out in a relatively brief "moment," while others (more commonly) grew over a longer period, and while some cities have been continuously inhabited, others existed for a finite period.

The form of a settlement can be seen as a reflection of social values, political structures, and economic corollaries. Closely related are questions of the goals and intentions of the planners (architects), who themselves interacted with polity and people to fashion the built environment, ordering and articulating space, dividing public and private and the living from the dead, and demarcating boundaries between city and country. Planning required consideration of the prevailing wind directions and adjustments necessary to account them (Vitr. *De arch.* 1.4.1; Plut. *Alex.* 26, along with other hygienic concerns, such as the lay of the land, and the configuration of preexisting plans or structures). Cosmological concerns – the articulation of proper relationships between the human and divine – were also central, and accommodations for religious needs were often made in the first phases of planning (see Shipley 2005: 336).

Studies of urbanization have tended to fall into two branches of scholarship that only sometimes converge. Dominated by theorists and survey archaeologists, one group has focused on the formation and function of the polis, or city-state, and its relationship to its chora as well as to other territories (de Polignac 1995, 2005; Hansen 1997, 2005). Of equal interest and importance are the studies driven by concern with architecture and design, which offer detailed analyses of physical remains and inquire into architects' design processes (Shipley 2005). Here I focus on the physical appearance of cities and the stages by which they took shape, especially as illuminated through archaeology and survey, literature, and epigraphy.

As R.E. Wycherley notes, "it would have been surprising" if Greeks had not been rigorous planners (1962: 15). As in the related field of architecture, planning became very theoretical and mathematical, but given its role in shaping physical and social space, it likewise interested statesmen and philosophers. Geometric plans promised economy and repeatability. Planning was clearly a social and political action, but while some scholars find evidence of equality and democracy in Greek settlement plans, such schemes served autocrats equally well.

Old cities and early planning

The Archaic centers of mainland Greece are among the least known and least knowable. The rule for old cities such as Athens and Corinth was "organic" growth, a gradual evolution of the city without a priori planning and subject to local contingencies. The lack of regularity speaks not to random growth but to communal responses to natural and social and political circumstances (Morgan and Coulton 1997: 95). Urban development was occasionally punctuated by major events such as the relocation of the agora, the construction of an aqueduct fostering development in a particular area, or the wholesale replanning of another area, as undertaken at the Piraeus in the later fifth century. There are some similarities. The agora was the heart of every city, a center of civic and commercial life, often including religious shrines as well. Industrial complexes were relegated to the edges, as were cemeteries as early as the eighth century. Within the walls, residential patches grew and merged.

Ancient literary accounts offer some terminology for urban features. Each polis comprised the *asty* and the chora, the central settlement ranging in scale from village to city and its countryside. A *plateia* was a "broad" street or avenue, while smaller streets were called *stenopoi*, meaning "narrows" (Theophr. *On Winds*, fr. 5.29). Modern authors often use the Latin term insula for the blocks defined by the intersection of streets. *Isonomia* reflects the concept that colonists received equal shares in a colony, translating into equal shares of land or *kleroi* (sing. *kleros*). Early planners seem to have little concern for aesthetics or experiential effects. The early plan of the Corinthian colony of Syracuse was aligned along the long axis of the Ortygia island. At Himera, a seventh-century foundation, first-phase streets paralleled the northern edge of the terrace on which the city was built; around 580–560 they were supplanted by a new plan oriented to the cardinal points (Shipley 2005). The later planners at Himera deviated

from the original layout, whereas other secondary designs clearly incorporated earlier designs, as at Thurii (Greco 2009).

The grid plan is "by far the commonest pattern for planned cities in history," geographically and temporally ubiquitous (Kostof 1991: 95), and we owe its early development to Greek planners, or *geometrai*. Planned cities have their origins in the eighth or seventh century BCE, and multiply in the sixth and fifth centuries, an active period of colonization. It was in Magna Graecia especially (southern Italy and Sicily), where Greek settlers pioneered the art and science of rational city planning. Planners of largely independent "colonies" and other new cities were faced with virgin ground and new possibilities. They responded with large-scale spatial schemes, laying them out well before monumental structures took shape, and at some sites where they never would. The colonial bridgeheads were usually defensible and well-watered promontories or adjacent islands (Pithekoussai, Ortygia). Early mainland settlements remained close to the shore, often near rivers and land-routes into the countryside. Colonists and colonies depended on the successful exploitation of surrounding farmland, and in turn agricultural success and surplus brought the prosperity that fueled their growth (Mertens and Greco 1996: 243; Carter 2006). Absent from most sites are the prominent acropoleis of the Greek mainland (Mertens and Greco 1996), but planners often reserved space for religious buildings and rituals from the beginning (including a heroön to the *oikistes*, or founder), as well as for suburban and rural sanctuaries.

The planning and populating of cities happened on separate timelines. Central zones were reserved for varied purposes, particularly administration and assembly, religion, and trade. Primary streets were surveyed and plotted first; they were often intersected by cross-streets, but nowhere was there the emphasis on a central crossing seen in Roman designs. The earliest examples already display a certain degree of regularity, but even the earliest plans are much later than the traditional foundation dates or the first archaeological signs of presence, and their precise dates are often debated. Called *strip planning* in modern usage (from the Latin *per striga*), the most common approach in the Archaic period was to divide a site into long, narrow blocks between parallel roads. Cross-streets divided the individual blocks, with intersections that were either oblique or orthogonal. Plans in which parallel cross-streets intersect at the same angle, but not necessarily a right angle, were developed as early as the eighth century BCE at Megara Hyblaia, on the east coast of Sicily, and by the seventh century at nearby Syracuse. Rectilinear, or orthogonal, plans existed at Sicilian Naxos by the seventh century, and later became prevalent. The construction of dwellings followed, continuing, if they thrived, until much of the plan filled in. In general, earlier foundations were "open textured," with room for small-scale cultivation among freestanding houses in the blocks, while later, denser packing seems to have become more common (Morgan and Coulton 1997: 93).

Traditionally founded in 728 BCE on the eastern shore of Sicily, Megara Hyblaia is an important case study in the history of orthogonal strip planning. At least five districts, each with its own orientation, were laid out around an agora, in which two or three temples were eventually built. In each district, roughly north–south, parallel *plateiai* are crossed by east–west streets, stenopoi, creating house plots (Mertens 2006: 63–72). At Selinous, a colony of Megara Hyblaia in Southwest Sicily, the geometrai developed a large and well-articulated master plan around 580–570 BCE. Antonio Di Vita emphasizes their adaptive responses to natural contours and animation with "relational spaces" (1996: 289). Beyond the agora, residential quarter extended along three differing orientations, with long, thin strips, or *insulae* (29.25 × 175.50 m). The acropolis was a slight eminence at the south end of the city, devoted to the poliac divinities from the foundation, with two monumental temples added by the early fifth century. Extramural sanctuaries of chthonic and celestial divinities stood outside the walls but still in plain view of the city, to west and east. Flourishing until its destruction in 409 by the Carthaginians, Selinous demonstrates the way a comprehensive city plan could accommodate growth and gradual monumentalization.

Metapontum provides an especially well-documented case study of planning in a city and its chora. The Achaean colony in southern Italy was founded near the coast and between two rivers, its northwestern edge marked by a wall that was pierced by a straight road leading from the shore into the countryside. A zone north and east of the road was designated for public use. Despite a traditional foundation date in the eighth century BCE, the earliest known structures belong to the second half of the seventh century, including bleachers (*íkria*), huts, an open-air shrine, and perhaps a wooden temple (Pliny's

vine-stem columns of the Temple of Hera: *NH* 14.2.1). After a destruction event marked by an ash layer, later structures were built. The town was then strip-planned in the third quarter of the sixth century. The scheme included broad plateiai and stenopoi, narrower but varying in width, intersecting at right angles for blocks about 180 m long and 35 m wide. The public area was divided into sanctuary and agora with boundary stones (Mertens and Greco 1996: 254).

Two archaic peripteral temples were aligned with the street plan. In the case of one (Temple A), earlier work on a different orientation was halted and the temple was realigned and rebuilt (Carter 2006). In the agora, a large circular assembly structure was built around the mid-sixth century BCE (Carter 2006: 198, 204–205). This and other contemporary projects attest to there already being a sizeable and prosperous settlement, though the filling out of urban and extraurban grids occurred only gradually (Carter 2006: 200, 202, 209).

Recent mapping of the Metapontine chora allows comparison with the city plan and understanding of interrelations between the two (Carter 2006). Parallel land divisions (marked by roads and canals) are approximately 195–205 m apart and depart from the urban system by a few degrees; they extend 12–14 km inland. The earliest seem to have been in place by the late sixth century BCE, and it seems that the definition and division of the chora occurred together with the urban organization. About two or three generations after the establishment of the city, a major sanctuary was founded about 3 km away, on the Bradana river (Pedley 2005: 55).

In the same period, the "organic" city remained the rule in mainland Greece. An exception was Halieis in the Argolid, where development appears to have begun with the differentiation of several zones, at least two of which were strip planned with subdivisions of rectilinear insulae (though there was at least one oblique street). Although the excavated streets and insulae date to the fourth century BCE, they are thought to go back to the sixth century, making Halieis the earliest planned city in mainland Greece (Owens 1991: 67; Shipley 2005: 345).

Classical designs

The second half of the fifth century BCE brought the mature period of urban planning. Expanding urban areas, synoecisms, and, still, the occasional colony provided new opportunities. In general, the period witnesses a move from strip planning to grid planning, defined by perpendicular, equidistant (or nearly) streets and, often-squarer blocks. Regional differences remained. Western planners still seem to have favored strip plans and elongated blocks (Naxos, Camarina, Heracleia Minoa). This period also saw the regularization of agoras and a diversification and monumentalization of the buildings they contained, represented by work at Naxos and Himera in the early fifth century BCE and at Gela and Camarina later in the century. Elsewhere, a preference for shorter blocks, some square or almost so, can be detected.

An important figure in this period is Hippodamos of Miletos. Although he remains a popular hero of urban design and is still often touted as the inventor of town planning, or the planner of post-Persian Miletos around 470 BCE, the scholarly consensus now places his floruit somewhat later, in the second half of the fifth century (Gorman 1995; 2001: 155–163; Shipley 2005; Gill 2006). The "textbook" grid of Miletos, moreover, is largely the product of Hellenistic and Roman evolution (Shipley 2005: 362). It seems clear that Hippodamos theorized about urban organization and division; from Aristotle (*Pol.* 2.1267b30–37), we learn of his ideal division of urban space in a city of 10 000 men – craftsmen, warriors, and farmers – and allotting even thirds of the city to sacred, public, and private uses, with public land supporting the warriors, while the private land was to be allotted to farmers.

A contemporary of Pericles, and probably working under his direction, Hippodamos is said to have invented the division of cities and to have planned or "cut up" (*katetemen)* the Piraeus (Arist. *Pol.* 1267b22–23), a project of the third quarter of the fifth century. This work was probably framed by his planning of the Panhellenic colony of Thurii in Magna Graecia in 444 BCE and later, the new city of Rhodes in 408 BCE, a synoecism of Ialyssos, Camiros, and Lindos.

Diodorus Siculus (12.10.6–7) reports that Hippodamos planned Thurii, and his principles may well be reflected in its "new and unprecedented principles of regularity and symmetry, applied, as far as we can see, with maniacal precision" (Greco 2009: 116). The new city was founded by the Thouria spring

over the remains of Sybaris, an early Achaean colony destroyed by nearby Croton in 510 BCE. Excavations indicate that it was smaller than its predecessor and that its plan preserved the line of at least one earlier street (and probably the city took its orientation from its predecessor). Of the fifth-century city, traces have been found of at least three north–south plateiai (oriented about 30 degrees west of north), as well as two perpendiculars. Their coordinates reveal that the site was divided into 396 × 296 m tracts, which were themselves subdivided by narrower streets and alleys into smaller units. Greco (2009) believes that the north–south avenues represent three of the four plateiai that, according to Diodorus (12.10.7), divided the city lengthwise and were named Heracleia, Aphrodisia, Olympias, Dionysias; the east–west plateiai should then represent two of the three named cross-streets, Heroa, Thouria, and Thourina.

Dense modern development in the Piraeus has limited excavation, but recent work has revealed a plan including parallel streets running northeast from the Akte hill to the northern city wall across the neck between the two main harbors, Kantharos and Zea (Hoepfner & Schwandner 1994: 22–50). Northwest–southeast streets intersected them at right angles. The "Hippodamian agora," mentioned by ancient authors (Andocides 1.45; Xen. *Hell.* 2.4.1), is probably that noted by Pausanias on the northeastern side of the city, northwest of Zea, near the findspot of a *horos* stone for the agora; an inscription recording the construction of the Arsenal of Philon in the mid-fourth century supports this reading (Gill 2006: 6–7). Gill (2006) proposes that Hippodamos also delineated zones for dockyards, an *emporion*, or commercial port, and possibly the Dionysion and a theater on the northwest slope of Mounychia.

Strabo (14.2.9) enthuses about the Hippodamian plan of Rhodes, the federal capital of that island from 408 BCE. There, excavations have revealed the salient features of the ancient plan, consisting of streets, terraces, and integral drainage systems (see Hoepfner and Schwandner 1994: 59–62). Oriented a few degrees off compass, parallel and perpendicular streets were used to create "major rectangles," each subdivided into smaller blocks. As at Thurii, the width of plateiai varies; every third was broadened for emphasis, with the largest nearly three times wider than the rest (Gorman 2001: 162).

Olynthos and Priene are exemplary cases of the late fifth and fourth centuries BCE, by which time grids were often laid out with stringent regularity. Olynthos was a small town from the seventh century until 432 BCE, when the Chalcidic League synoecized the site (technically an *anoikismos* or "moving inland"), adding to a fairly irregular extant settlement (on the "South Hill") a newly planned district on a flat hill just to the north (the "North Hill"). The agora is identified with an open area at the south end of the North Hill; it boasted a stoa, fountain, and another public building; significant coin finds in adjoining streets suggest that temporary shops or stalls stood in that area (Cahill 2000: 503). North–south avenues were laid out, intersected at right angles by smaller east–west streets to form blocks or insulae that were generally 86.34 × 35.00 m but were less standard around the edges. Houses were laid out in blocks consisting of 10 similar (but not identical) units, grouped in two lines, set back to back across an alley. In his house-by-house study, Nicholas Cahill weighs the evidence of isonomia against apparent social and economic inequalities (2000: 500). Inscriptions indicate that property values varied in such planned cities, with house prices seemingly correlating with proximity to the agora (Cahill 2000: 508–509). No religious architecture has been found in the urban area, and Cahill suggests that an inscription mentioning a sanctuary, found west of the site, may suggest that the main sanctuary was extramural (2000: 499). Three cemeteries have been excavated, north, east, and west of the city. Probably in the early fourth century, the city grew beyond the walls to an eastern plain, where the grid is oriented about two to three degrees off that of the North Hill (Cahill 2002: 45). The city prospered for 84 years, with population growth gradually filling in the grid, but after its defeat by Philip II of Macedon in 348 BCE, Olynthos was all but abandoned (Cahill 2000, 2002).

The polis of Priene is known from the fifth century BCE, but the planned city on Mount Mycale, in the shadow of a high citadel overlooking the Maeander Valley, is a foundation of the fourth century BCE. Its remains reflect a stringent application of grid planning, tempered by the integration of plans and elevations, with porticoes used not only to articulate spaces but also to join and unify discrete complexes. Streets defined insulae of equal size (47.2 × 35.4 m). They were scaled according to importance, with the main avenue from the city's western gate to the agora being the widest (Ferla 1996: 52). The agora was apparently designated as open public space from the beginning, but it developed gradually. It occupied two full insulae and the southern halves of two more. An adjacent 1.5 insulae were reserved at the east for the Sanctuary of Zeus, enclosed in stoas by the third century BCE, though the temple would not

be completed until the second half of the next century; a smaller extension was earmarked for a fish market (Radt 1993: 206). A stoa was built along the entire north side around 300 BCE, and a more elaborate pendant to the south followed in the third century; the street along the southern side of the agora ran behind the façade and under its roof. The Sanctuary of Athena was on slightly higher ground, within a colonnaded court leveled with retaining walls and fill, occupying two blocks and two half-blocks.

Scholars have characterized the plan of Priene as "often charming but essentially mechanical" (Pollitt 1986: 235) or sometimes the outgrowth of "a fundamentally democratic orientation" (Radt 1993: 203). Indeed the city gives the impression of having been simply projected on a map of the site, with no regard for the irregular topography. Ironically, in so rigidly applying their plan, the geometrai created an inherently uneven system. Supposedly equal blocks differ substantially in slope, surface area, and quality, providing unequal construction conditions and presumably different values or prices (Radt 1993: 204). Priene is the foil for everything that was to follow.

Hellenistic applications

Hellenistic designers pushed urban planning schemes in two directions. As the Macedonians and Greeks came to control new territories, new administrative and military centers were needed. Remains have been excavated from Alexandria, Egypt, to Ai Khanoum, Afghanistan. Strategic locations and utilitarian designs were the norms of new foundations, with designers following standardized procedures to lay out rational grids, with spaces reserved for agoras and sanctuaries, and residential districts divided into elongated insulae. Dynastic capitals, furthermore, included royal complexes, often placed on the highest ground of the city, as at Macedonian Aigai and Pella or Mysian Pergamon. Much in the spirit of Deinokrates (mentioned at the beginning of this chapter), Hellenistic designers were also clearly interested in creating dramatic cityscapes. J.J. Pollitt has recognized a Hellenistic "taste for theatricality" in architecture and planning, reflected in striking settings and the creation of exciting and sometimes surprising spatial changes and vistas (1986: 230). The trends reflect both practical and ideological concerns, on one hand the need to build new settlements swiftly and efficiently, and, on the other, the desire of rulers and residents to express city identity and pride through architecture and urban form.

Many of the new cities of the age have a "cookie-cutter" appearance, with surrounding walls and severely imposed grids having one or more broad avenues. Such is the plan of Kassope in Northwest Greece (see Hoepfner and Schwandner 1994: 114–126), as well as Thessalian Demetrias, built by Demetrios Poliorcetes in 290 BCE. From Antioch-on-the-Orontes to Seleuceia-on-the-Tigris, Seleucid planners likewise laid out urban grids, favoring blocks with a 2 : 1 length-to-width ratio (Owens 1991). Main arteries were often broadened for emphasis.

The masterpiece of Deinokrates and his associates, Alexandria was founded in 331 BCE on a strip of land between the Mediterranean Sea and Lake Mareotis. It was linked to the Nile by canals and well placed to exploit the fertile Egyptian hinterland and trans-Mediterranean trade. The lines of the walls were said to have been laid out by Alexander himself (Plut. *Alex.* 26.3–10). Although Alexander died soon after its foundation, Alexandria thrived, first as the Ptolemaic capital and as a major metropolitan center ever since.

In a first-hand description of the late first century, Strabo (17.1.8) writes that Alexandria was divided into five districts. Termed *klimata*, and known by the Greek letters alpha through epsilon, their distribution is still debated. Though severely limited by modern development, archaeological evidence suggests a grid of nearly square blocks filling the area south of the large, eastern harbor (McKenzie 2007: 19–30, 37–40). The north–south streets were oriented some degrees west of north, the better to draft Etesian winds (Diod. Sic. 17.52.2). They were crossed at even intervals by east–west streets, the largest of which, called the plateia or Canopus Street, was said to be a *plethron* in width (100 ft, or about 30 m) or greater (Strab. 17.1.8; Diod. Sic. 17.52.3), but it was probably closer to 14–20 m. Interaxials are 330 m and 278 m respectively, and at least some blocks were further subdivided by smaller streets. Major streets had integral water supply channels and drains. Other Hellenistic features include the Heptastadion causeway linking the Pharos island to the mainland between two harbors, the Temple of

Serapis, a racecourse, and a royal palace quarter and cemetery. The agora remains to be rediscovered. A Doric stoa near the center of town, and references to some kind of quadrilateral stoa (*tetragonos kaloumene stoa*) are suggestive of an agora but could have served other purposes (McKenzie 2007: 68).

Laid out as a royal capital in the third century BCE, the city of Pergamon epitomizes the theatrical bent of Hellenistic planning. Residential quarters and complexes fan out around the sides of the small mountain, capped by the citadel and royal palaces. As Pollitt writes, the city's planners seem to have envisioned a design in which the physical ascent accentuated symbolic readings, "with the buildings connected with mundane affairs of life at the bottom, those connected with education and the development of the mind in the middle, and those expressing divine powers and supreme cultural achievements at the top" (1986: 233). A broad street wound up the mountainside. Between its turns, a relatively regular grid of narrow streets defined blocks of about 70 m^2. Under the paving-stones of the steep southeast–northwest streets, storm drains ran toward a great drain under the broad street. But farther east, where the surface dips, the main grid took a more northerly orientation. Sanctuaries, agoras, and other complexes were enclosed by walls and stoas (Radt 1993: 204–206). Their lines echoed natural contours, but buttressed retaining walls were used to create massive platforms for self-contained complexes, perhaps best exemplified by the Sanctuary of Demeter, and the Sanctuary of Athena, in which the area around an earlier temple was regularized and monumentalized with two-story stoas in the second century.

Stoas

A stoa is a freestanding building, "a great deal longer than it is high or deep, and which has a colonnade occupying most of one side and a portico as the most important part of its interior," as defined by J.J. Coulton in his authoritative study of the form (1976: 4). Stoas range from simple, covered buildings fronted by a colonnade to more complex two-story, aisled buildings with chambers along one side. In plan, they vary from the self-contained rectangles of mainland Greece to the L- and Π-shaped (or winged) structures that were designed by Classical Ionian architects to define and frame open spaces. Stoas were found in most Greek cities and sanctuaries and, indeed, they came to be considered a basic urban amenity (Polybius 9.27.9; Coulton 1976: 13).

Stoas offered shade from the summer sun and shelter from winter inclemency; the few that included a second story offered good views over surrounding buildings. They were often built near theaters and in gymnasia; many offered places for strolling and informal meetings. They were used to display statues and other objects of monetary or symbolic value. Internal divisions might be used for commerce, dining, or for sleeping or incubation at sanctuaries (as at those of Asclepius at Epidaurus, and on Kos).

Stoas are attested as early as the early Archaic period, particularly in the eastern islands and Asian coast. They reach maturity, and "monumental status," in the fifth century BCE, with all main types represented by its closing decades. Stoas of grand proportions and multiple stories appear in the fourth century BCE, further proliferating and diversifying in the Hellenistic period. Long used by Ionian planners as tools for the shaping of space, stoas increasingly fulfilled similar roles in the mainland, even if freestanding rectilinear buildings remain the rule (Coulton 1976: 7, 55).

The Athenian Agora offers multiple examples, contextualized by systematic excavation and study. From the early fifth century BCE, the Royal Stoa (Stoa Basileus) stood at the northwest corner of the Athenian Agora and served as the office of the royal archon (Figure 17.1a). It was a small, plain building, facing east, with the eight Doric columns of the façade echoed by four Doric columns spaced along the long axis, dividing the interior space into two aisles. The Painted Stoa (Stoa Poikile), built circa 475–460 BCE, was considerably more ornate. Its exterior Doric colonnade faced south over the Panathenaic Way, and Ionic columns marked the central axis. Subtle touches like the marble bases and capitals used in that order added some luxury, which was further enhanced by the display of captured weapons and panel paintings of mythological battles and the Athenian victory over the Persians at Marathon by the leading artists of the time (Paus. 1.15.1–1.16.1).

The Stoa of Zeus Eleutherius (Figure 17.1b) was built circa 430–420 BCE, across the Panathenaic Way from the Painted Stoa. Two pedimented wings framed a screen of nine Doric columns, one

marking the central axis, and the architects ably handled issues resulting from the more complex form and its reentrant angles. The exterior columns were of marble with a poros frieze, and marble akroteria in the form of Nikai have been reconstructed. A colonnade of unfluted Ionic columns traced the long central axis of the stoa, in which wall paintings were added in the fourth century, by the painter Euphranor. It would prove to be an influential plan. John Camp compares examples at Megalopolis, Thasos, Kalauria, and Delos (2010, 73). Despite its more modest materials and rougher finish, the late fifth-century building known as South Stoa I dominated the Athenian Agora with its elevated position and 80-meter-long façade, the largest of its time. Its two-aisled colonnade was backed by 15 chambers, interpreted as dining rooms for city officials (Camp 2010: 161–164).

Most fourth-century stoas resembled their predecessors, relatively modest in size and simple in plan. This century, however, brought two major developments: the introduction of two-storied stoas and a major graduation in scale. In Athens, a stoa within the Asklepion is the earliest surviving two-story stoa, the design of which anticipates numerous stoas to come. Built in honor of Philip II in the third quarter of the century, a 155-meter-long winged stoa at Arcadian Megalopolis looks forward to the giant stoas that would follow in the Hellenistic period, though its design remained fairly simple, with Doric façade and wings and two internal Ionic colonnades (Figure 17.1c).

The Hellenistic period was the grand age of the stoa. Whether or not the impetus came from Macedonia and Pergamon (as much of the funding did), the grandest examples are to be found in mainland Greece. In Athens, for example, the Stoa of Eumenes II (r. 197–159 BCE) was built beside the theater on the south side of the Acropolis (Vitr. *De arch.* 5.9.1). His successor, Attalos II (r. 159–138 BCE) added a grand two-story stoa, 111.96 m long, on the east side of the Athenian Agora (Figure 17.1d). Important developments are also seen in the Peloponnese. Although its date is debated, the 164.38-meter-long two-story South Stoa at Corinth arguably represents the culmination of the type, with its sweeping Doric colonnade and Ionic interior order, as well as 33 rear rooms or "shops," almost all provided with a well, to which water came through a channel of the subterranean Peirene water system (Figure 17.1e). In this era, stoas multiplied in sanctuaries under the patronage of Hellenistic royals,

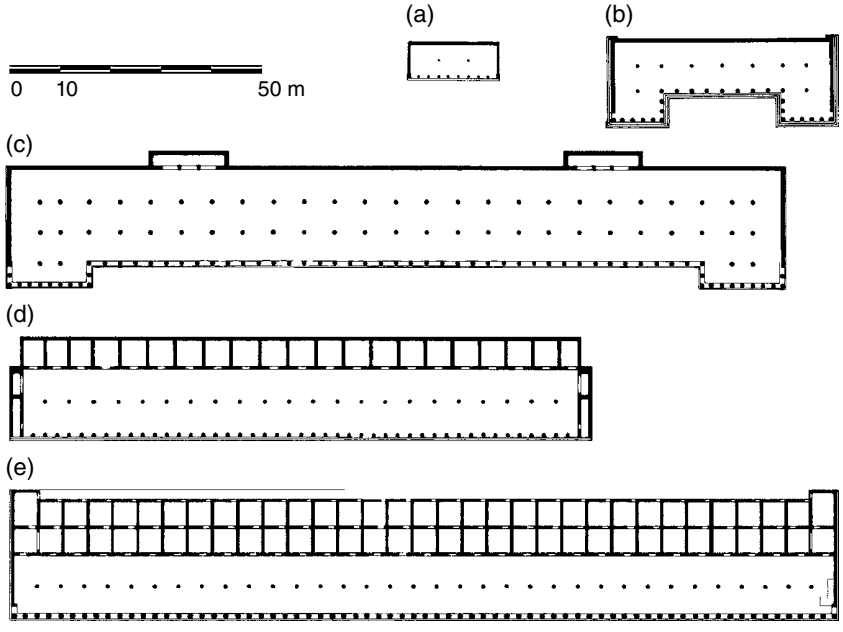

Figure 17.1 Plans of stoas at uniform scale: (a) Royal Stoa (Athens); (b) Stoa of Zeus Eleutherios (Athens); (c) Stoa of Philip II (Megalopolis); (d) Stoa of Attalos II (Athens); (e) South Stoa (Corinth). *Source*: adapted from Coulton 1976, used with permission of Oxford University Press.

including several at Delos (Antigonos and Philip V) and at Delphi, a stoa built by the Pergamene Attalids and its slightly later, western pendant, erected by the Aetolian League. Both projected beyond the walls of the sanctuary on purpose-built terraces.

Stoas appear in cities in sanctuaries across the Greek world. At Lindos, Rhodes, stoas were integral components of an elaborate system of ascending terraces, serving as semipermeable screens, surrounds, and backdrops.

Roads and Streets

Country roads were, for the most part, unsurfaced routes of varying width, best suited to pedestrians and animal traffic. Sometimes, where bedrock was exposed, grooves or "wheel ruts" were made to accommodate wheeled vehicles of a standard gauge (138–144 cm), and by the Hellenistic period, some routes were metaled with quarry chippings (White 1984: 92–93). As is clear in the previous sections, streets were a "basic unit of urbanism," not only means of passing through a city and from point to point but also tools for shaping urban space and defining places therein. Streets were public property. Regular maintenance was necessary to keep passages clean and surfaces level, as well as to prevent the encroachment of buildings. These activities, like the construction of streets, were overseen by local governments.

In both planned and unplanned cities, streets varied significantly in width. Major thoroughfares and sacred procession routes tended to be broadest, followed by routes wide enough for two carts to pass one another (about 4–6 m), and finally alleyways, only some wide enough to allow the passage of a single cart. Wheel ruts mark the locations of streets, reflect on their use, and hint at greater circulation patterns (Costaki 2006: 242). Paved routes were rare: Olynthian cobblestone streets and slab-covered avenues in Priene offer examples. More common were gravel or road metal, the latter characterized by packed and leveled fills dominated by hard materials like stone tailings and potsherds, and sometimes including coins, ostraka, lamp fragments, loom weights and pieces of broken sculpture (Costaki 2006: 93). City streets were sometimes delimited by boundary markers or curbstones. Terrace walls and fills leveled uneven ground, while ramps and steps, only some preserved, facilitated movement over steep slopes. Drains were often integral components of substructure (Tölle-Kastenbein 1994). Inadequate drainage or blocked passages would lead to muddy streets, as noted, for example, by Strabo in Smyrna (14.1.37). A new direction in research considers traffic patterns inside cities, and routes between cities and rural areas, in a range of case studies around the Mediterranean, including Athens, Greek cities in Sicily and Hellenistic Asia Minor, as well as cities of the Roman period (see the essays in Mertens 2008).

Water Supply and Fountains

Water "in measure" is an absolute necessity of life, and its management was crucial to the success of any urban site, whether planned or unplanned, and the health of its inhabitants. Water features often attracted settlement and became famous landmarks. Frequently emanating from natural fissures or caves, natural springs offered volume and purity, and were the *raison d'être* of many a settlement. The provision of water for consumption and hygiene, as well as the drainage of wastewater and storm surplus were central concerns in every ancient city (see Tölle-Kastenbein 1990).

Wells and cisterns were the simplest hydraulic interventions, the former common in areas of aquiferous bedrock, as at Athens and Corinth, the latter at sites that were more dependent on direct rainwater catchment, such as Olynthos. Cisterns ranged from simple rock-cut or built chambers, uncovered or covered, to complex systems of chambers and tunnels fed by roof runoff and accessed through wells and manholes.

The earliest fountain houses were simple affairs that improved access to water as well as its collection and protection but also recognized its importance in durable and increasingly monumental form. Early "step fountains" descend into level ground, like Delian Minoe, or into acropolis slopes, like Athenian Klepsydra and Acrocorinthian Peirene. Developed archaic and classical fountain houses typically

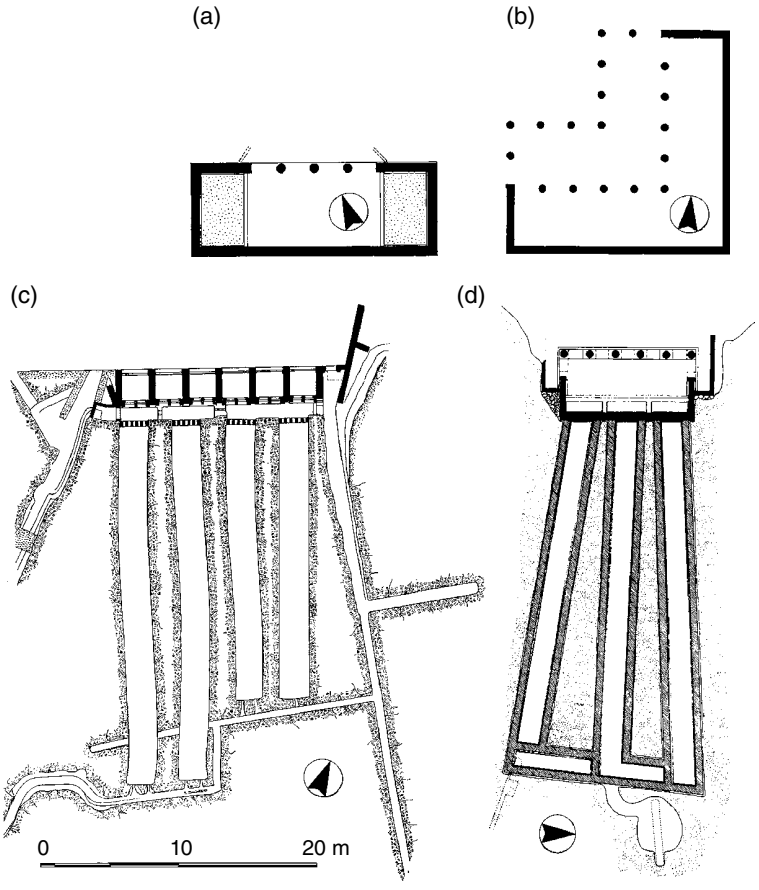

Figure 17.2 Plans of Fountains at uniform scale: (a) Southeast Fountain House (Athens); (b) Southwest Fountain House (Athens); (c) Peirene Fountain (Corinth); (d) fountain house (Perachora). *Source*: (a–b) adapted from Travlos, used with permission of American School of Classical Studies at Athens; © B. Robinson; (d) adapted from Tomlinson 1979, used with permission of the British School at Athens.

included reservoirs, draw-basins, and sometimes animal-head spouts, sheltered by simple columned porches. Athens boasted freestanding stoa-like fountains, for example, the Southeast Fountain House and the fourth-century Southwest Fountain House in the Agora (Figure 17.2a–b; Camp 2010: 173–174). In the Corinthia, spring houses were often built against terrace edges with much of the structure carved out of the living rock behind the façades. They were likewise outfitted with basins and spouts, with flow ensured by the creation of extensive reservoirs, as at Peirene (Figure 17.2c), and later at the fourth- to third-century Asklepion-Lerna and Glauke fountains, along with comparable structures at Perachora (Figure 17.2d) and Sikyon (Tomlinson 1969; Glaser 2000: 429–431; Robinson 2011: 146). Such benefactions highlight patrons' expectations of significant returns on hydraulic investments, as well as the experience gained in stewarding a precious resource through wet and dry seasons and cycles.

Already in the Archaic period, the needs of some cities exceeded local sources, and long-distance aqueducts were created, generally constructed with terracotta pipelines following a gentle gradient through protective trenches and tunnels. It is likely that the Peisistratid tyrants sponsored the construction of such an aqueduct. Renate Tölle-Kastenbein (1994: especially 101–105) traces its course over 15 km (with later repairs and extensions) through the city, from its Hymettian source through the Ilissos Valley to a point east of the Acropolis where it divided into two branches, one leading to the area of the Agora (where it fed the Southeast Fountain and perhaps others) and the other running south of

the Acropolis towards the Pnyx (see also Camp 2001: 35). Thucydides (2.15.4–5) also credits the Peisistratids with the Enneakrounos fountain house near the Ilissos river, southeast of the Acropolis. Counted by Herodotus (3.60) among the Greeks' most impressive constructions, the mid-sixth-century aqueduct of Eupalinos at Samos included a 1036-meter-long tunnel through which the approximately 3-km-long pipeline carried water from a remote spring into the city (see Chapter 5). The well-preserved Megarian fountain, attributed by Pausanias (1.40.1) to the tyrant Theagenes but probably a work of the early fifth century BCE, also drew from a distant source (Gruben 1965; Glaser 2000: 429–430; Hellner 2004). There, two 164 m^3 reservoirs had octagonal piers supporting a roof and draw-basins out in front. Corinth's aquiferous bedrock could be tapped in various ways, and in place of pipelines, springs tended to be improved *in situ*, with their flow maximized by underground water-catchment tunnels. Approaching a kilometer in length, the Peirene system was the most elaborate, but similar tunnels were begun at the nearby Sacred Spring by the late sixth or early fifth century BCE (Robinson 2011). Systems of catchment channels and reservoirs were developed at many Corinthian springs, some functioning continuously to the present day (Landon 2003).

Increasingly varied plans, the use and combinations of orders, and sculptural additions reflect increased Hellenistic aestheticization. At Corinth, the Peirene fountain was enlarged and redecorated in the second half of the fourth century BCE. Seven short walls of fine poros-masonry were inserted under the natural stone ceiling in front of the draw basins to create six square antechambers into which visitors would step to draw water over low parapets. Two pilasters and perhaps a central pier graced each parapet, replaced about a century later by the pilasters and Ionic column-adorned piers that are preserved today. Built in Messene in the late third century, the Arsinoë Fountain was fed by the Klepsydra spring uphill to the north. Its plan was conservative, but its Doric façade stretched across 40 m for an effect that was traditional and familiar yet impressive in its sheer size (Reinholdt 2009).

In the Hellenistic period, water provisioning systems became more impressive than ever before. As Pergamon outgrew its water supply in the early second century BCE, three long-distance (20–45 km) pipeline-aqueducts were built, each dominantly gravity-flow but concluding with an inverted siphon propelling water to the citadel. The Madradağ aqueduct was the most impressive, depending mainly on gravity flow through terracotta pipes; but where the ground level dropped precipitously for several kilometers between the eponymous mountain range and the Pergamene citadel, a reverse siphon through lead pressure-pipes drove water to a head of 180 m (Garbrecht 2001).

FURTHER READING

For theories and structures of Greek *poleis*, see de Polignac 2005, Hansen 1997; 2005; 2008 and other publications of the Copenhagen Polis Center. Shipley 2005 provides an outstanding survey of archaeological and literary evidence for Archaic and Classical planning. Mertens and Greco 1996 and Di Vita 1996 detail evidence for Greek planning in southern Italy and Sicily. Within a textbook treatment, Owens 1991 usefully covers Hellenistic planning, augmented by Pollitt 1986 and Radt 1993. Burns 1996, Gorman 2001, and Shipley 2005 offer insight into the life and works of Hippodamos, with detailed case studies of his cities, Thurii and Piraeus by Greco 2009 and Gill 2006. Cahill 2002 and Carter 2006 demonstrate the value of excavation and survey for understanding asty and chora. Coulton 1976 remains the authority on stoas. For streets, the dissertation by Costaki (2006) is comprehensive, and Broder 2008 and Du Bouchet 2008 briefly treat conditions and terminology. Tölle-Kastenbein 1990 and Glaser 2000 offer broad surveys on water usage in the Greek world. More detailed explorations, with bibliography include, for Athens: Tölle-Kastenbein 1994, Camp 2010; Megara: Gruben 1965; Corinth: Landon 2003, Robinson 2011; Messene: Reinholdt 2009; Syracuse: Collin-Bouffier 1987; and Pergamon: Garbrecht 2001.

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CHAPTER 19

The Architecture of Greek Houses

Barbara Tsakirgis

It is a simple fact that there were more houses in a Greek city than there were public buildings. While the agora or the acropolis might be occupied with grander and architecturally more complex buildings, both the civic center and the sacred spaces were surrounded by houses. It was in the houses that the Greeks, and especially Greek women, spent the better part of their lives, and it was here that traces remain of many of the aspects of Greek life studied by scholars in public settings. Consequently, in domestic architecture we can find information about Greek religion, the economy, and other aspects of social life.

Houses have been neglected in scholarship until the past few decades, and the reason lies in their size, preservation, and perceived architectural merit. The impressive construction of many public buildings and the incomparable sculptural programs of Greek temples are of far greater artistic merit than the humble domestic architecture, but from at least the late Classical period onward, the domestic sphere featured interior decoration of considerable aesthetic quality. Temples and other public edifices were often built of large blocks of carefully cut stone, material that has survived better than the less durable materials used in house walls. Yet scholarly neglect of houses arose not just because of quality but also because of the linking of public buildings (temples and stoas) to the surviving works of literature from Classical antiquity. The buildings recognized as the locations where Athena was honored in the Panathenaic festival or where Socrates was tried for impiety provide a sense of immediacy, and they have interested scholars and the lay public who want to visualize where the actions of Pericles, Plato, and Pausanias were played out.

That domestic architecture could tell us more about the social and cultural habits of the Greeks was first clearly expressed by Michael Jameson in two articles (1990a; 1990b). Building on the work of social scientists, Jameson proposed that houses themselves had much to say about the lives of men and women, the conduct of cult, and even the economy of both the domestic unit and the city itself. In some ways, Jameson's realization was a return to the idea of Aristotle himself, who said (*Pol.* 1.1.6 (1252b)) that the *oikos* is part of the *polis* and in its social structure reflects that of the polis.

Construction and Materials

While the construction materials and techniques of any building depend on regionally available resources, there are some commonalities that can be recognized in the structure of Greek domestic architecture. Because personal, rather than public, resources went into the building of Greek houses, mudbrick (adobe) walls laid on a socle of stone rubble were the norm throughout the Archaic, Classical,

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

Figure 19.1 Orraon, andron, House A, stone construction and window. *Source*: B. Tsakirgis.

and Hellenistic periods. The stone socles prevented the mudbrick from wicking water from the ground, and the eaves of the houses (no longer extant) would have kept the walls dry from above. A coating of plaster on the exterior of the wall would have provided further weather-proofing. Mudbricks were a preferred building material because they could be fashioned from readily available materials (i.e., earth, water, and straw), and specialists were not required for making the bricks as they were for cutting stone blocks. Mudbrick is an excellent insulator, allowing a building to stay cool in the hot Mediterranean summer and warm in the winter, when houses were heated by hearths or charcoal braziers. In the late Classical and Hellenistic periods, socles built of large square-cut blocks found some favor, and here, as in the interior appointments, we may see techniques and forms already used in public architecture and now borrowed into the private sphere.

Walls built entirely of stone were not unknown in Greek domestic buildings. The well-preserved late Classical houses at Orraon in Molossia (Figure 19.1 and Figure 19.2) and at Dystos on Euboea, as well as the late Hellenistic houses on Delos show that in some places, builders chose stone instead of mudbrick for their house walls. At Orraon the motivation for the durable material may have been the wetter local climate, but no such problem existed on arid Delos. Evidence for upper stories exists at all three sites, but the desire to build a second story on the houses is not a factor in the choice of stone for the walls either; upper stories existed in mudbrick houses, but we know of the upper stories of the houses at Orraon, Dystos, and Delos precisely because of the stone used in their construction. Ultimately, the choice to build the walls entirely of stone was probably made because of the abundant local material, including the gneiss on Delos that breaks in convenient horizontal layers.

Figure 19.2 Orraon, House A. *Source*: M.M. Miles.

Wood was used sparingly in house construction. Wood's high cost was due to its scarcity in much of Greece, and it is attested by several ancient notices (e.g., *IG* II² 249.11–14, 30–37) that doors and window shutters were considered part of the movable property of the house (Tsakirgis 2010). Window and doorframes, the construction of the floors of the upper stories, and roof beams were also wooden. It was not necessary to craft the beams, rafters, and floor joists in houses from the stout cedars from Lebanon imported for temple construction. Varieties of trees which produced shorter and narrower trunks would have sufficed, as long as the timbers were closely spaced.

Throughout the Classical and Hellenistic periods, terracotta roofs were the norm in house construction. Corinthian roofs were little used on houses; the norm for domestic roof tiles was the curved Laconian type (see Chapter 4). A roof tile standard recovered from the excavations of the Athenian Agora probably served to ensure that the tiles were mass-produced to a standard that was recognized in contemporaneous construction (first century BCE, Figure 19.3). Based both on modern parallels and on ancient citations for events such as the Adoneia in Athens, which took place on the roof, some scholars have restored flat roofs on parts or all of Greek houses. The support for these restorations comes also from the absence of roof tiles in some excavated houses. Houses at sites on the arid Cycladic islands (e.g., Xobourgo on Tinos and Zagora on Andros) probably had flat roofs.

Who built Greek houses is not a question that can be easily answered. Xenophon's Socrates (*Symp.* 4.4) mentions professional house builders in Classical Athens, and several papyri in the Zenon archive suggest that they existed as well in Hellenistic Egypt. No surviving documents detail the hiring of professionals to build houses, and we cannot discount the possibility that homeowners had an active role in building their own houses. In his study of the construction techniques evident in the houses at Olynthos, Nicholas Cahill (2002: 203) suggests that families built the blocks of houses in which they lived together, using rubble and easily fashioned mudbricks.

Figure 19.3 Tile standard, Athenian Agora. Courtesy of The American School of Classical Studies at Athens, Agora Excavations. *Source*: American School of Classical Studies at Athens.

Metal was necessary for some elements of the house, but few such fittings are extant. Because metal could be and was recycled, the bronze and iron used in house construction have been recovered only in chance finds. Iron nails were used to fasten the purlins of doors and shutters, and bronze bosses decorated the exterior of both. In Hellenistic houses, bronze latch plates, keyholes, and pivot plates were also used. The scarcity of nails in excavated houses probably indicates that the woodwork of the roofs was joined with pegs rather than with metal. The metal door fittings provided both real and perceived security in the houses and may also have served as signals of the wealth of the homeowner who could afford the expensive material in the construction and adornment of his home.

Houses and the Urban Environment

Within the polis, residential areas were often fairly densely built. Even in communities without an orthogonal grid of streets (e.g., early Archaic Zagora on Andros, Classical Athens, or Hellenistic Delos), party walls were the norm in house construction. This filling in of the urban landscape left little or no room for exterior yards. The need of homeowners to maintain and to protect shared house walls is seen in the Pergamene law of the *astynomoi*, a legal code of the second century BCE preserved in a second-century CE Roman copy (*OSIG* 483, *SEG* XIII.521). This document is a valuable source for many aspects of residential life in Pergamon at the time of King Eumenes II.

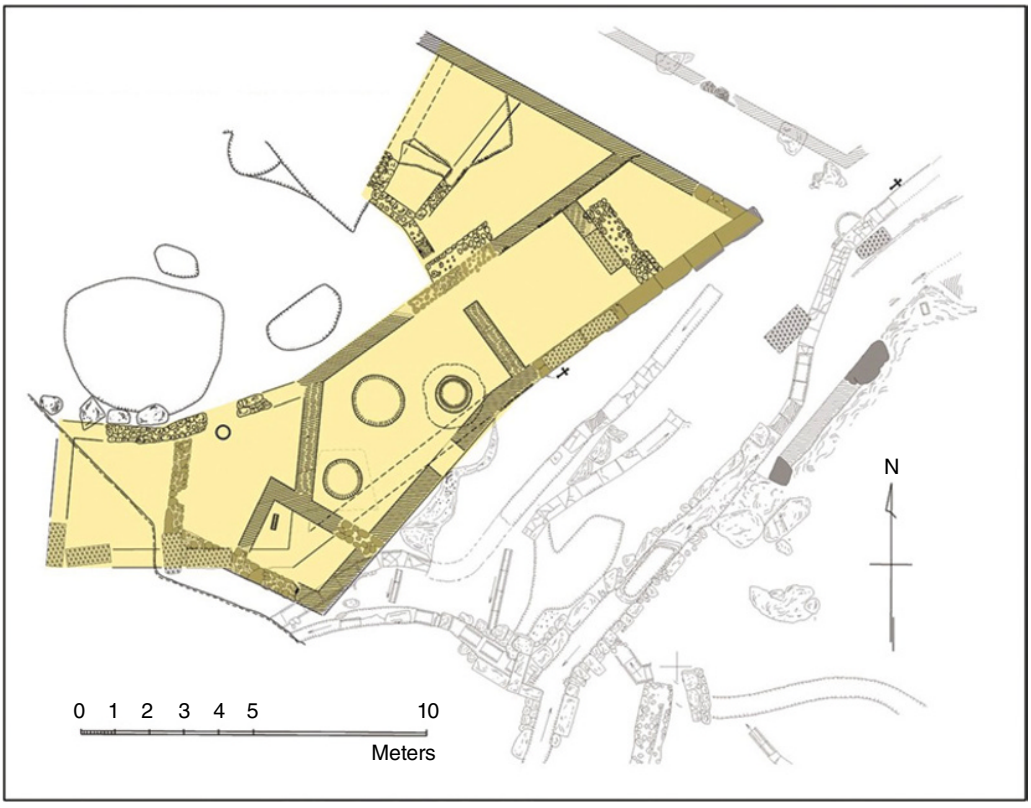

Figure 19.4 House of Mikion and Menon, Athens, plan. Courtesy of The American School of Classical Studies at Athens, Agora Excavations. *Source*: American School of Classical Studies at Athens.

While histories of urban planning have long credited Hippodamos with the invention of the orthogonal grid of streets, archaeology has proven that the idea predates the fifth-century Milesian by at least 300 years (see Chapter 17). In the colonial Greek cities on Sicily, dating from the late eighth and seventh centuries BCE, grid-planned streets were the norm. The basic outlines of the houses built within these networks of streets were determined by the layout of the urban area, and in many of the colonial poleis there is evidence for an equal allotment of space to each householder. Usually the houses built in grid-planned cities had their main entrances off the narrow cross streets (*stenopoi*) rather than the broad avenues (*plateiai*). In the more developed cities, a longitudinal alley provided access and drainage for the houses in the block, and, in a few cities (e.g., Himera), the blocks were further provided with a lateral alley.

In many older cities, such as Athens, houses were built with respect to the preexisting street system, even if the line of those thoroughfares was not straight and resulted in house lots of quite varied size and shape. Excellent examples of this accommodation of the public right of way can be seen in the plans of the House of Simon and the House of Mikion and Menon (Figure 19.4) near the Athenian Agora; the street walls of both houses come to an uncomfortably acute angle where two preexisting roads run up and into the public square (Tsakirgis 2005). In planned cities, such as the colonies of Sicily and Olynthos, which was refounded by synoecism in the fifth century BCE, house lots were both regular in plan and equal in size. Such cities reveal careful planning on the part of their first residents, and both blocks of houses and the lots themselves were often laid out using multiples of a given foot length; even the width of the longitudinal alley of blocks in such cities was planned as a multiple of the chosen foot length.

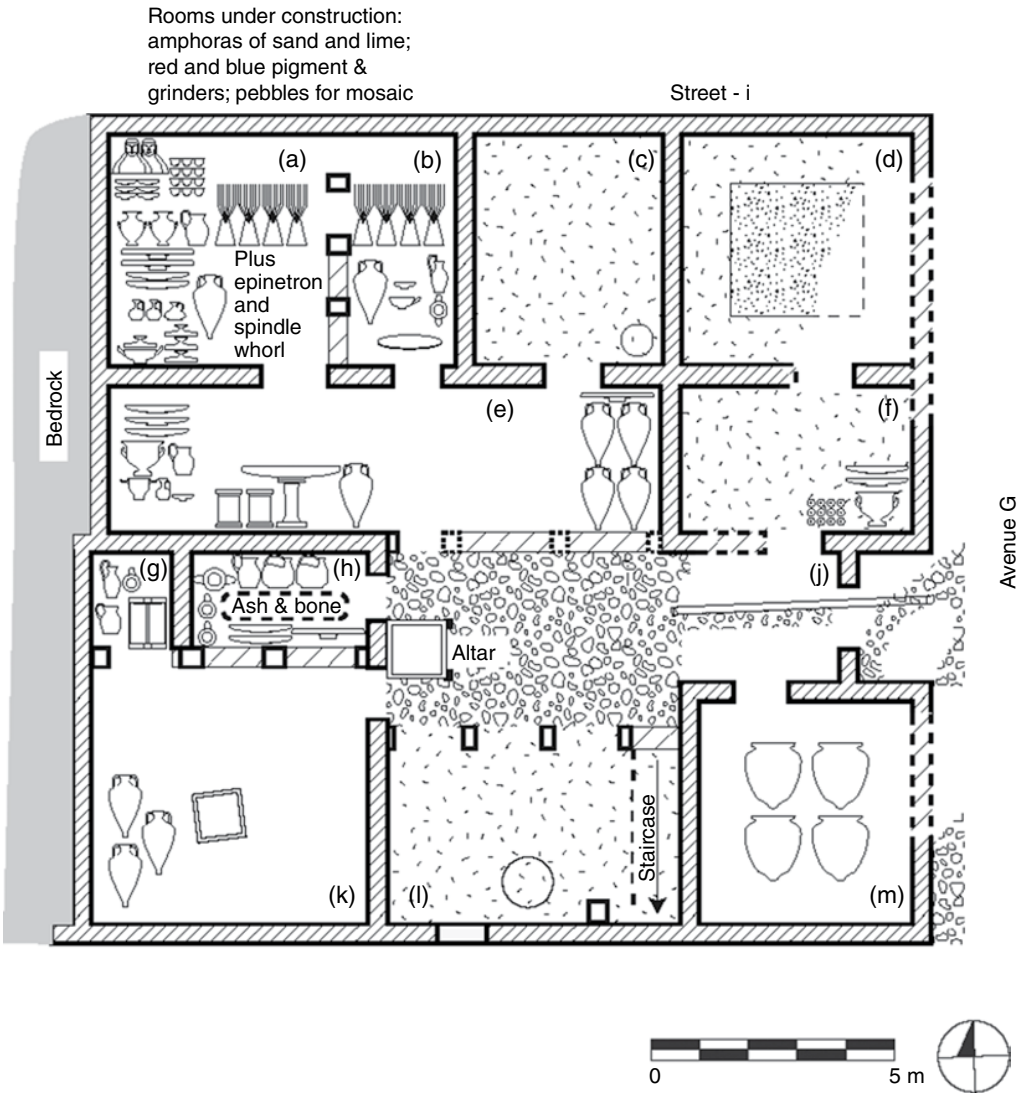

Figure 19.5 Olynthos, House of Many Colors, plan with distribution of finds. *Source*: Courtesy N.D. Cahill.

The equal allotments of houses to the founding settlers of the Greek colonies has led W. Hoepfner and E.L. Schwandner to posit that the motivation for such allotments was the principle of *isonomia*, or equality under the law (1994, *passim*). While there may have been a political equality amongst the colonists, soon after the foundations of many colonies much variation existed in the economic fortunes of the householders. At numerous planned Greek cities, original house lots were altered to accommodate the rise in one man's fortune and the fall of another's. At Olynthos, the equal house lots of the late fifth-century city were quickly divided to make some houses larger and others smaller (Figure 19.5).

Houses often shared their neighborhoods with shops and shrines. Just as stores today are placed to serve the needs of local residents, Greek shops were located at intersections, so that the merchants could best attract passersby. Four shops are located in a row on the West Hill at Morgantina, in a district densely built with Hellenistic houses (Tsakirgis forthcoming). One room, opening next to the street door of House C in the Industrial District of Athens (at the base of the Areopagus) may have been a

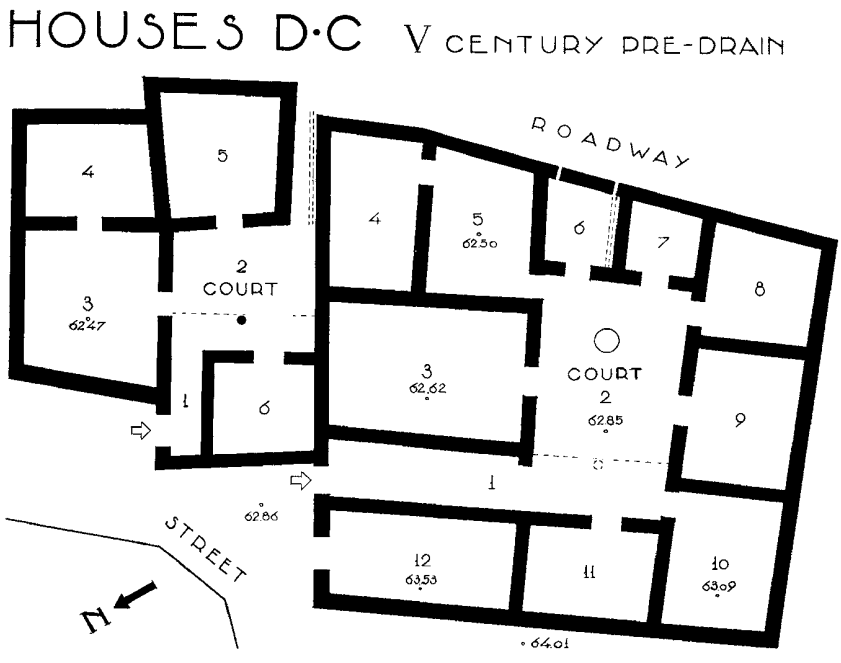

Figure 19.6 Houses C and D, Residential and Industrial District, Athens, plans. Courtesy of The American School of Classical Studies at Athens, Agora Excavations. *Source*: American School of Classical Studies at Athens.

shop (Figure 19.6, no. 12). Little evidence exists to prove whether the residents of houses, which shared party walls with the shops, owned or operated the commercial establishments. The gods, too, could be neighbors, as Pindar (*Nem.* 7.86–94) attests, as shrines existed in many residential districts.

The streets of the Greek city provided not only a means of access to houses, shops, and shrines but also a route of evacuation for excess water and sewage. Street drains were commonly fed by channels lined with stone or terracotta that exited under the threshold of the main entrances of houses. The excess water resulted from rainwater run-off from the unroofed courtyards of the houses, and, in Hellenistic houses, the water flushed the latrines commonly built just inside the houses, as seen at Delos and in some houses at Morgantina, Sicily (Trümper 1998: 63–64). The longitudinal alley in a block often accommodated additional drains that helped keep the houses dry. Because wastes of all types were flushed through the house drains and into the public system, Greek cities were probably rather smelly. That odor might have been further increased in cities in which *koprones*, or stone-lined depressions, were placed in the street. Koprones were cesspits, where waste of all sorts might be discarded, and they have been found in Athens, Halieis, and Thasos (Ault 2005: 63–65). Several characters in Attic comedy mention or make use of the *kopron* (Eubulus' *Kerkopes*, cited by Ath. 10.417; probably Blepyros in Ar. *Eccl.* 320–322). Private contractors in Athens were hired to empty the cesspits and to carry the waste beyond the city walls.

The protection of urban thoroughfares from encroachment by private homeowners was legislated in many cities. The astynomic law from Pergamon cited earlier in the chapter is an example of such legal protection. In classical Athens (*Ath. Pol.* 50), the astynomoi were charged with protecting the public right of way; one focus of their attentions was on windows and balconies. An inscription from the northern island of Thasos provides for similar protection of the public streets (*SEG* XLII.785; Duchêne 1992).

While glass vessels had been produced in the Mediterranean region from the third millennium onward, flat panes of clear glass for windows were not made until the Roman period, and then first for public buildings, especially baths. Greek domestic windows were closed with wooden shutters, simply

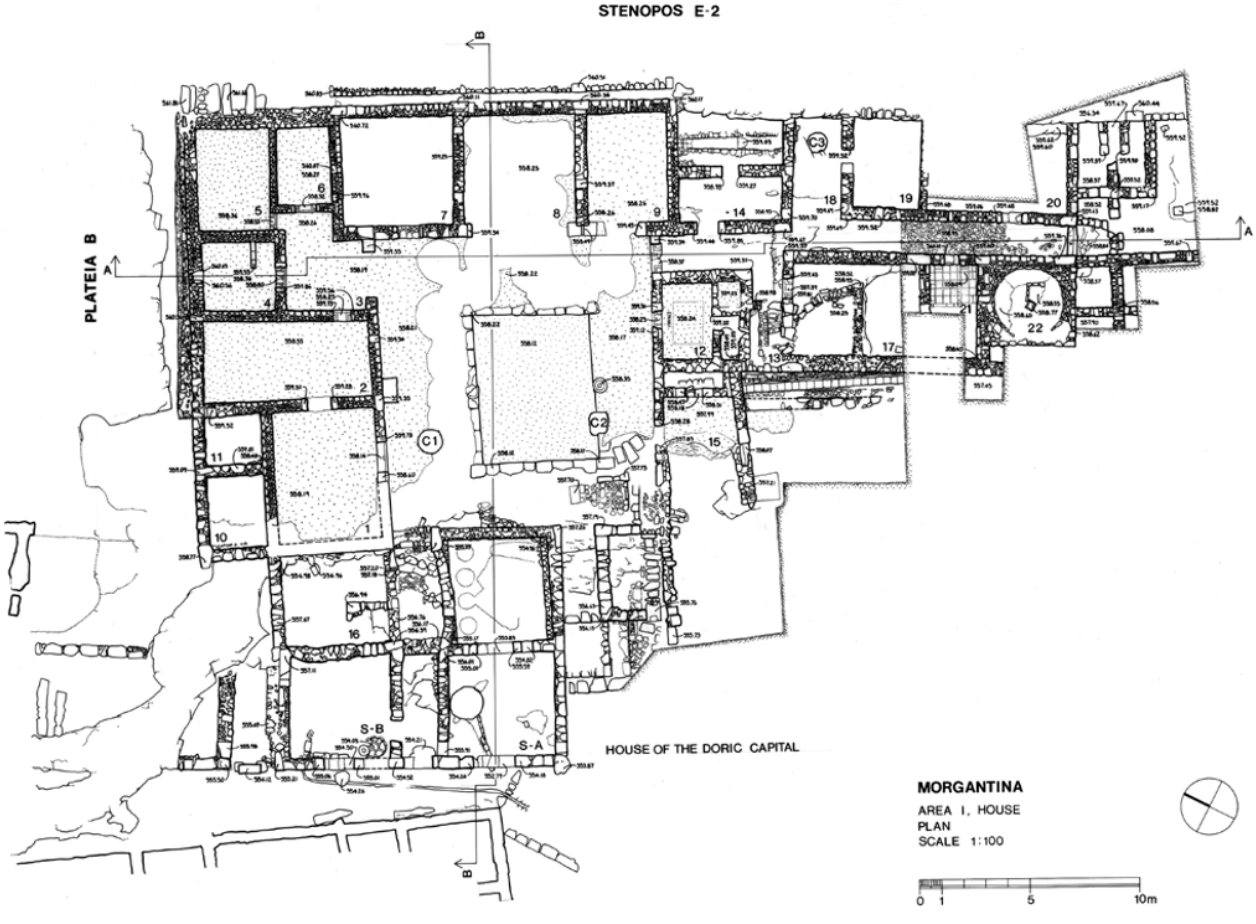

Figure 19.7 House of the Doric Capital, Morgantina, plan. *Source*: American Excavations at Morgantina.

small versions of the usually double-leaved doors. Household security could be ensured by having few windows on the ground story, or at least by placing windows high in the walls (Figure 19.1). Security was enhanced with grilles, as can be seen in placements for metal bars in the street level window in the House of the Trident on Delos. Slit windows, such as in the house at Orraon or the House of the Doric Capital at Morgantina (Figure 19.7, room 4), with a wider opening on the interior of the house, served to ventilate the interior and to prevent entry by unwanted intruders. Windows were doubtless a feature of houses, as stone window frames attest, and some were included in houses as more than sources of ventilation and illumination. The window frames, fashioned as miniature columns and found in numerous houses, show that the decorative architectural elements incorporated into the interiors of late Classical and Hellenistic houses appeared on the exterior as well.

The main entrance into the Greek house was rarely embellished with large-scale architectural elements. In the Hellenistic period, some distinction was made to the primary street door, as we see from the pilasters on the wall outside the House of the Official at Morgantina, but the real focus of architectural elaboration was inside the house. Written sources (e.g. Thucydides 6.27–28) tell us that the doors of Athenian houses were marked by herms, symbolic of the god Hermes who served as a guardian of the liminal space. Far from seeking large carved stone herms in such positions, we should probably reconstruct these domestic markers as figurines of terracotta, wood, or stone placed in niches, or reliefs carved in the door jambs, or paintings on the same. Scenes of the *Lares compitales* painted on house façades at Delos give some idea of how the herms appeared to someone approaching a Greek house.

The Planning and Layout of the Greek House

In the fourth century BCE, both Xenophon (*Mem.* 3.8.8) and Pseudo-Aristotle (*Oec.* 1345a) prescribed that houses be built with a southern exposure so that in the winter months the sun could shine into the doors and, thus, warm the house. This environmentally conscious approach to domestic architecture is confirmed in the archaeological remains of many classical houses. The heating of the rooms was probably enhanced by windows opening onto the interior court that let in even more sunlight in winter. In summer, when the sun was overhead, it would shine on the roof tiles, and, once courts were provided with surrounding porticoes, the entrances to the rooms were further shaded by the roofs of those covered passages.

Early Greek houses generally had few rooms, and the main living space was often accessed directly from the exterior. Beginning in the Classical period, vestibules were more commonly built in Greek houses (Figure 19.5, room j; Figure 19.6, both rooms 1). The vestibule of classical Greek houses served as a buffer to the outside world, discouraging both physical access and casual glances into the interior of the house. The development of this house plan has been recognized as responding to changing social practice in the Classical period and the desire to separate the private inner world of the home, especially as it pertains to women's life, from those not belonging to the family (Nevett 1999: 154–155). The separation from outsiders was effected not only by the vestibule itself but also by its alignment, often at right angles to that of the interior spaces. Doors or curtains probably provided additional barriers to any physical or visual intrusion into the private space.

In many ways, the courtyard was the defining characteristic of the Greek house (Figure 19.5, court 1; Figure 19.6, both courts 2). Many early houses (e.g., at Megara Hyblaia) were built facing south onto an open yard, showing that both the orientation of the rooms and their dependence on an unroofed space were features of Greek domestic architecture from an early date. From the Archaic period onward, the courtyard came to be included within the architecture of the house and was surrounded by either a perimeter wall or the rooms of the house. These alterations probably marked social changes occurring in the Greek world, as was the case with the vestibule. The resulting interior courtyard was, while unroofed, very much a living space for the family, and both domestic assemblages and literature show that many activities took place in the domestic courtyard. Tools for food preparation, altars, and loom weights attest to much daily activity in the courtyard, where children probably played and laundry might be hung to dry.

The courtyard served as more than a locus of human activity. Because of the relative absence of windows on the exterior of the house, the unroofed interior was a major source of ventilation and illumination for the rooms surrounding it. The windows that can be seen in the late Hellenistic houses at Delos or at Iaitas in Sicily in the courtside walls of many rooms enhanced the free flow of air. Light entered the rooms from the same source. For the inhabitants, the courtyard was a central node of access to the surrounding rooms, and the vast majority of rooms opened directly onto the courtyard or its porticoes. Suites of rooms do exist in Greek houses, but interior rooms are rarely more than two degrees removed from the courtyard. It is not surprising, given the tremendous importance of the courtyard, to find that it often had the greatest size of any living space in the house.

Another very significant function of the courtyard was the provision of water to the Greek house, an important consideration in the dry climate of the Mediterranean region, particularly during the summer. In the early Iron and Archaic periods, wells were dug in the domestic courtyard to tap the water table, but increasingly, in later periods, cisterns were excavated below the courtyard or its porticoes to serve as storage for the water collected during the brief rainy months. Water would wash down the tiled roofs, which were sloped to the interior, and then would flow to the cistern or cisterns below. Courts were usually paved, in order to facilitate the collection of water and to ensure that little would be lost by soaking into the ground. Courts of Classical houses, like those at Olynthos or House C in the Industrial District of Athens (Figure 19.6), had cobbled paving, while some Hellenistic houses (e.g., Morgantina) were paved with terracotta tiles. In the Delian houses, polychrome mosaics were used to pave many domestic courtyards, but while the wealthy merchants there could afford this luxurious treatment, it was not the norm throughout the Greek world. Gardens planted in courtyards were not at all common in Greek houses, although there is some evidence that the domestic *paradeisos* (pleasure garden) was introduced into Hellenistic houses via the palaces of the successors of Alexander the Great (Nielsen 2001b).

The waterworks of the Greek house could be fairly advanced technologically but were rarely embellished with fountains or sculpture. In the Classical period, terracotta wellheads (puteals) were placed at the mouth of domestic wells to prevent injury to the inhabitants of the house. In the Hellenistic period in larger homes, the wellheads might be more elaborate, with marble examples found at Delos and a terracotta example adorned with architectural moldings in the House of the Arched Cistern at Morgantina. The stones forming the mouth of the well under House C in the Industrial District of Athens bear cuttings for a windlass used to lower vessels into the well; the marks on the marble wellheads at Delos give evidence of the ropes used to raise vessels in the wells. Hand- or foot-holds were cut into the well shafts for someone to climb in to clean the well or to retrieve a lost object. Most wells were cut into the rock underlying the houses, but some were lined with stones or with carefully crafted terracotta rings in which the footholds were fashioned. Cisterns were usually lined with a waterproof mortar and many were of a bell- or bottle-shape, to maximize the storage capacity of the cistern. Several houses in Hellenistic Athens were served by cisterns connected by tunnels underground, and similar connected cisterns appear in other Hellenistic houses. At Soluntum and Delos, two very dry sites, the cisterns were built as chambers.

In earlier Greek houses, and later in the houses of the less well-to-do, any interior courtyard led directly into the surrounding rooms. Beginning in the Classical period, however, shed roofs were built in some houses across the courtyard face of rooms, especially those on the north side. Judging from the simple stone footings, the roofs of the early porticoes were supported with wooden beams. Full peristyles are not generally found in Greek domestic courts before the beginning of the fourth century BCE, but after that date, porticoes on all four sides of the unroofed court become more common (Figure 19.7). Whether the courtyard was surrounded by a full peristyle or not, in many houses the northern portico is the deepest. This depth can be seen as a demonstration of the orientation described by Xenophon and Pseudo-Aristotle. The greater breadth of the northern portico shielded the important rooms of the house from the heat of the summer sun. Houses with a deeper northern portico are too numerous to list, but this characteristic was first noted by the excavators at Olynthos (Figure 19.5), who dubbed that portico the *pastas*, the term taken from Vitruvius' description of Greek houses, but appearing elsewhere in ancient texts, especially Hellenistic papyri, about houses. Vitruvius (*De arch.* 6.7.1) calls the space in front of the main rooms of the house the pastas or the *prostas*. The latter term was borrowed by the excavators at Priene to identify the usually colonnaded porch of the main room, often on the north of

the courtyard. The resulting arrangement in the houses at Priene, and at several sites in eastern Greece, is much like the axial layout of the porch and main room in the megaron of the Bronze Age. Much early scholarship on houses revolved around identifying houses as either pastas or prostas in type, but this approach is now recognized as having little value for understanding the use of domestic space. Either type of porch would provide shade for the entrance to the rooms on the north of the courtyard.

The supports of the domestic peristyle were elaborated architecturally from the late Classical into the Hellenistic period. The courtyards of fourth-century Olynthos are surrounded with square-sectioned piers, and the porticoes of the late fourth-century houses at Pella are made up of columns. The Doric order was favored for Hellenistic domestic peristyles, and when there was an upper story to the peristyle, the Ionic order was often used, repeating the gradation of the orders seen in many public buildings. In fact, public architecture is recognized as the source for the increasing architectural elaboration of Hellenistic houses (Walter-Karydi 1994). Domestic peristyles rarely had gutters, but the eaves of the roofs of some houses, such as those at Eretria in the Hellenistic period, were edged with decorative terracotta antefixes.

In the Classical period, the hallmark of the house was the flexible use of space. Rigid identification of rooms was not common, and we can today understand the use of space in any Classical house only through the distribution of artifacts used by the members of the household. These objects, including vessels for food storage and preparation, altars and other ritual equipment used for ritual observance, represent only the last use of a space before the house was destroyed and are definitive only if their deposition was not affected by other factors, including looting, erosion, and modern intervention, such as plowing. Thus, we cannot label most rooms in classical houses, even though names for domestic rooms do appear in the written record. While the literary testimonia name rooms such as a woman's room (*gynaikōn* or *gynaikonitis*), or a weaving room (*histeion*), over time the label for any given domestic space could be changed along with the way the room was used. More firmly identifiable rooms are known in the Hellenistic period, when many houses had more rooms than their classical predecessors.

One room that is frequently identifiable in the classical house is the *andron*, literally the men's room, where the *kyrios*, master of the household, could entertain his male friends at dinner or communal drinking parties (symposia). Classical andrones often have against their walls a raised platform on which dining couches were placed so that the reclining drinkers and diners might face into the center of the room (Figure 19.5, room d). The andrones are usually square in plan so that the couches would fit comfortably in the space. The houses at Priene have small andrones, which could accommodate three couches, while the andrones in the Olynthian houses usually held seven couches (Cahill 2002: 180). Dining rooms for five or nine couches are also known. The andron is the room in which pebble mosaic floors first appear, and the designs of the pavements are oriented to the viewer entering the room (Figure 19.8). While the mosaic floors must be seen as interior decoration, and so are discussed in Chapter 20 (see also Westgate 2012), they had a functional aspect as well. After the dinner and drinking were concluded, the floor would be littered with dropped food and spilled wine, if not also with the contents of the stomachs of those who had consumed too much. A stone floor was easily sluiced out by the domestic slaves charged with cleaning up after the carousal. Not all classical houses contain a room easily identified as an andron (e.g., Figure 19.6), but the absence of a square room with a raised platform does not mean that male social dining and drinking did not occur in such a house (contra Nevett 2010: 43–62). A symposium could occur wherever men congregated, on couches or even on pallets on the ground.

In a number of houses, the andron is preceded by an anteroom (Figure 19.5, rooms f and d). Several houses at Olynthos have these suites of room, as does the House of the Greek Mosaic in Athens and the House of the Mosaics at Eretria. Some of the anterooms are well decorated with mosaic floors similar to those in the dining room itself, and they would have served as a further display of the wealth and taste of the homeowner. Many could have served as places for food preparation, but their main function may have been as a buffer for the household residents from the noise of the party and the visual intrusion of the male guests. A transom above the entrance of the dining room in the House of the Mosaics at Eretria would have allowed ventilation while also impeding visual access to the rest of the house.

Food preparation for either the symposium or everyday meals might take place in many different places in the house. Dedicated kitchens are virtually unknown in classical houses. Portable charcoal braziers used for cooking could be set up in the unroofed court in good weather or be placed under a

Figure 19.8 House A vi.3, Olynthos. *Source*: M.M. Miles.

roofed portico or in the doorway of a room in inclement weather. Opaion tiles, with a central opening, are found in a few houses and probably were used to evacuate the smoke from a fixed hearth (Figure 19.5, room k). In classical Greece, hearths were more often used as a gathering point for the family and a source of warmth and light, rather than as a locus for food preparation. The hearths at Olynthos contained no traces of bones or food debris. The Olynthian houses often have a sizable flue off the hearth room (Figure 19.5, room h), connected by a pillar-framed opening in the wall, and it is here that traces of cooking are found.

Bathrooms are also rare in early Greek houses, and we must look to the all-purpose *lekane* (basin) to provide bathwater. No Greek houses had provision for running water, so the water would be poured into the tub and the used water scooped out after the bather had finished. In the fourth century BCE, rooms for bathing became more common, and, in houses where they occur (e.g., at Olynthos and Eretria), the bathrooms are located next to rooms with hearths on which water could be heated. The bathrooms are recognizable because they contain large terracotta tubs, fashioned with one step for the bather to sit on, a lower step for his feet, and a lowermost step on which the used bathwater could collect. Tubs of the same type appear in Greek public baths (see Chapter 23).

Latrines were also uncommon in Greek houses until the Hellenistic period. Before then, the cesspits in the court or street and various vessels, including the *amis*, specifically designed for urination, were used instead. When latrines were built, they were placed just inside the street door of the house, so that the wastes might be quickly evacuated into the street and its drain. The latrines in the Hellenistic houses on Delos and at Morgantina appear in this location and are identifiable by their narrow trenches, on top of which simple wooden seats might once have been placed.

Several Classical authors speak of the gynaikōn or gynaikonitis, a room that by its name has been seen as the place for women in the home. Using these passages and the Roman architect Vitruvius' description

of the Greek house, scholars have long sought evidence in house plans of the secluded quarters in which well-bred Classical women kept out of men's gaze. The vast majority of Classical houses have no such identifiable spaces, and, as a result, some scholars have assumed that the upper story was used for female seclusion in Classical houses. Here, too, the evidence is wanting, as very few houses present any certain proof of an upper story. More recently, scholars agree that the seclusion of females was an ideal, rather than a practice so entrenched that we can see its evidence in house plans. Women could inhabit many domestic spaces over the course of a day, with greater freedom of movement in the daylight hours and perhaps lesser at night, when male guests might be invited in by the master of the household. M. Mactoux (1996) has argued that the specialized terms gynaikōn and gynaikonitis denote those rooms where female slaves were sequestered rather than separate living quarters for all females in the household.

Ancient authors often specifically labelled those rooms in a house where both women and slaves carried out their daily activities. Thus food and other household goods were stored in the *tameion* or *pitheon*, and weaving was done in the *histeion*. Yet, as with the gynaikōn, these rooms were not purpose-built in Greek houses. Where pithoi and other storage vessels survive, we can recognize the family larder, usually on the ground floor, where the foodstuffs might be kept cool. Terracotta loomweights are the sole surviving element of the warp-weighted loom, and their findspots vary from house to house. The conclusion that must be reached from the diverse findspots of the household assemblage is that the rooms of the Greek houses were used in multiple ways by each family and the choices were motivated by custom as much as by the climate and season of the year.

Underground rooms were rare in Greek houses. An exception is the area of the Black Sea, where domestic cellars are common in Greek houses. On the Greek mainland they have been identified only at Eretria and on the Rachi at Isthmia. The basements are limited in scope and do not extend under the entire ground story of the house. Given the small size of the cellars and the access to them through the domestic areas of the house, they probably served as places for food storage, although few remains of large vessels confirm this assumption.

Upper stories are rare in the archaeological record, even though we may infer they existed from other evidence. At several Hellenistic sites (e.g., Soluntum on Sicily and Florina in Greece), houses were built on terraces cut into the slope of the hill. Excavators at Florina have restored the houses with belvederes, although little exists to support this reconstruction. At other Hellenistic sites (e.g., Iaitas, Delos, and Dystos), stone staircases or remains of the architectural orders of the gallery above the porticoes is the evidence of the upper story. Because most of these upper stories have collapsed, it is rarely possible to identify the use of their rooms, although sealings suggest that the upper story of the House of the Seals on Delos was used as an office for a thriving business. The general existence of upper stories in Classical houses is based largely on inference from literary testimonia, with two speeches of Lysias (1 and 15) cited most often. The mudbrick walls of the Classical houses were capable of supporting the weight of an upper floor, but since the mudbricks have long since decomposed, no trace of the elevations survives.

The separation of domestic space from either commercial or industrial activity was not rigidly enforced in Classical antiquity. Both literary and archaeological evidence attest that the Greeks were comfortable with combining their living and working spaces. Houses at both Athens and Olynthos amply demonstrate this fact. The House of Mikion and Menon in Athens (Figure 19.4) was used for several generations as both a residence and a sculptor's workshop. Abundant domestic pottery and painted wall plaster show that the building served as a home, but a thick layer of marble chips, dust, unfinished sculpture, and abandoned tools prove that at least some forms industrial production might not be separated from residential neighborhoods in antiquity (Tsakirgis 2015). The writers of several of the forensic speeches surviving from the fifth and fourth centuries BCE refer to houses with workshops (*ergasteria*) appended, and documents exist for the sale or lease of houses with attached workshops.

The remains of country houses often reveal a similar combination of residence and work-related activities. While many Attic farmhouses, like those at Dema and Vari, are laid out very like the houses in the urban areas, agricultural tools and vessels used for food storage and manufacture reveal that the interior spaces were put to many uses. This practice parallels the flexibility of space in the urban houses and reveals another way in which the Greek house was not composed of rooms with strictly defined use. Additionally, farmhouses throughout the Greek world were equipped with stoutly constructed towers, which have long been thought of as storehouses for agricultural produce or equipment. Morris and

Papadopoulos (2005) have suggested that the thick-walled towers with provision for securing the interior were places where slaves were kept, although the towers could have been used for other, agricultural purposes.

Developments in the Late Classical and Hellenistic Periods

Hellenistic houses are notable not only because their forms derive from Classical domestic architecture but also because they reflect an increase in scale and decoration over their predecessors. Some scholars have speculated that the greater size and elaboration of late Classical and Hellenistic houses was due to a decline in the importance of the polis under the Macedonian kings and their Hellenistic successors (Walter-Karydi 1994). This suggestion may overly complicate the social process, since domestic luxury began to increase in the late fifth century BCE, as is shown both by the testimony of the Attic Stelai, which list the houses and domestic possessions of the wealthy Athenian men who were found guilty of profaning the Eleusinian Mysteries, and by literary accounts of growing personal wealth and expenditure. Regardless of the cause, the effect of the new individual prosperity is most marked on both the size and the interior decoration of houses.

Interior decoration is discussed in Chapter 20, but let us consider here the effects of this increasing luxury on house plans, elevations, and architectural details. From the fourth century BCE, some houses were built with two unroofed courts, rather than the one often found in Classical houses. Late Classical examples of this type can be seen at Eretria and at Athens, where two fifth-century houses (Houses C and D) (Figure 19.4), originally with one court each, were combined into a single house with two courts in the succeeding century. The courtyards of houses built from the outset with two unroofed centers, such as the House of the Mosaics at Eretria, the house at Maronea, or the house at Erythrai, demonstrate a very distinct difference. In all three of the houses noted here, one courtyard is noticeable larger and equipped with more architecturally elaborate columns. In the other courtyard, fewer, if any, columns were built. The size and decoration of the rooms surrounding the two courts also differ, with those rooms around the larger court being themselves bigger and more elaborately decorated. Finds from the respective courtyards and rooms confirm what the architecture tells us, that the more impressively built space was for entertainment, presumably of guests, and that the other was the locus of household activities, such as food storage and preparation.

While it might be tempting to see in these houses the vindication of the Roman architect Vitruvius and his description of Greek houses, the homes are better interpreted as demonstrating the ever-increasing scale of domestic accommodations. It is to this period that many architecturally elaborate houses, such as Peristyle House I at Iaitas, belong. The stone columns and capitals there, the molded and painted terracotta antefixes at Eretria, the mosaics at Pella, and the wall paintings of the Morgantina houses are all features of the domestic setting that must have derived inspiration from the palaces of the Hellenistic kings. The luxury gardens of some Hellenistic houses are further confirmation of this source.

FURTHER READING

Basic information on the plans and details of Greek houses and their domestic assemblages can be found in the publications of excavations, including Athens (Young 1951), Eretria (Ducrey, Metzger, and Reber 1993; Reber 1998), Rachi (Anderson-Stojanović 1996), Halieis (Ault 2005), and Morgantina (Tsakirgis forthcoming). Other volumes analyze the evidence recovered in earlier excavations, e.g., Hoepfner in 1999 (for numerous sites) and Trümper in 1998 (Delos). The bibliography on Greek houses has grown greatly since the mid-1990s. Several scholars examine the social and economic structure of Greek domestic life, either from a general perspective (e.g., Nevett 1999; 2010) or with a focus on particular sites, e.g., Cahill 2002 on Olynthos. All of these books build upon the ideas of Jameson in his two articles of 1990. Hoepfner and Schwandner 1994 also use house forms to interpret social structure in the Greek polis at large, but their conclusions have met with some criticisms. Several compilations of articles explore detailed aspects of houses and housing: Ault and Nevett 2005; Westgate, Fisher, and Whitley 2007; Ladstätter and Scheibelreiter 2010. The various articles contain a wealth of bibliography.

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CHAPTER 20

Hellenistic Royal Palaces

Stella G. Miller

Basileia

Macedonia, as birthplace of Hellenistic monarchies, stands at the head of any study of Hellenistic palaces. The modern term "palace" (derived from the Italian *palazzo*) demands definition, however, since its current usage tends to be highly elastic. A broad view accepts three major categories of ancient palaces: royal palaces, governors' palaces, and private palaces/palatial houses that are found over the vast territories conquered by Alexander and subsequently ruled by the Successors (Nielsen 1994: 11). It may also cover a host of palaces reused from earlier times as well as hybrid structures built in distant places to suit local traditions and aspirations. And chronologically, finally, Hellenistic palaces may extend from the age of Philip II (reigned 360/59–336 BCE) down into the Roman Republican period, with the Battle of Actium marking a cut-off date in 31 BCE. Such a range, fascinating and important as it is, exceeds the parameters of the present chapter, which takes the narrow course by focusing on the small corpus of royal Hellenistic palaces now known through excavations, with a few additional glimpses gleaned from written sources. It thus adopts the now generally accepted definition of *basileia* (Latin *regia*) as a royal compound that, in addition to residential installations, included an array of public administrative and religious precincts (Hoepfner 1996: 1–43).

Macedonian kings built multiple palaces that answered to particular, changing needs over the years in accord with territorial expansion and dynastic ambitions. Of the three extant palaces, Vergina and Pella reportedly have mid-fourth-century roots in the age of Philip, while Demetrias was begun in the early third century as a creation of Demetrius Poliorcetes (reigned 294–287 BCE). Additionally, there is literary evidence to suggest the existence of a fourth palace at Thessaloniki in the age of Perseus (reigned 179–168 BCE), of which actual traces may have been found (Diod. Sic. 32.15.2; Livy 44.10).

The royalty of the Successor kingdoms also ruled from palaces, though the complex of Pergamon alone survives. Thus, for instance, we have nothing, apart from brief literary references, to document the once magnificent palace of the Seleucids at Antioch (Nielsen 1994: 112–115). For the Ptolemies, too, we have no palaces, though here we gain some sense of the royal compound at Alexandria with help of more extensive written sources. It is for this reason that the Alexandrian palace finds a place in this overview.

Current archaeological investigation of Hellenistic royal palaces is adding new dimensions to our understanding of the institution of the monarchies. Although there is no typical plan, the Hellenistic palace complex tended toward multifunctional activities that led to expansive layouts, even mini-cities. While centered on diplomatic activities for reception and the all-important banqueting, they included administrative, political, cultural, and military facilities, all served by a fully organized infrastructure that kept the operation running.

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

Notably, royalty on the move used mobile palaces in the form of tents and even barges, just as they freely requisitioned foreign resources as needed. For example, witness Alexander's use of the great Achaemenid palaces during the eastern campaign, or, quite outrageously, Demetrius Poliorcetes' commandeering of the Parthenon while in Athens (Plut. *Vit. Dem.* 23.3). Thus, mobile palaces, too, merit attention. In the end, self-presentation was paramount wherever royalty set foot in whatever milieu. Palaces, stationary and mobile, are presented in this chapter in chronological order according to their founding dates, although, to be sure, all underwent renovation, sometimes major, as time went on.

The Palace at Vergina

Vergina, ancient Aigai, founded in mythical times as chief city of the Macedonians, continued to serve as ceremonial capital and royal burial grounds even after transfer of the official administrative capital to Pella in about 400 BCE. Vergina's extant palace was, according to latest research, constructed during the lifetime of Philip II, with alterations and additions occurring over the next two centuries. It was ultimately destroyed by fire sometime after the arrival of the Romans, whose victory at Pydna in 168 BCE under Aemilius Paullus was decisive not only for Macedonia but also for all of Greece. Quarrying of the palace was already underway when it was struck by a serious earthquake in the first century CE. An earlier palace, from the time of Alexander I the Philhellene (reigned circa 498–454 BCE), known so far only from literary sources, lies elsewhere in the area. Whether or not it survived and possibly even functioned in some capacity during the Hellenistic period cannot be ascertained at present.

The extant palace was discovered and partially investigated in the mid-nineteenth century by French travelers who sent significant fragments to the Louvre (Descamps-Lequime 2011: 296–311). Results of excavations are currently approaching final publication after years of intermittent interventions by different Greek teams and many attempted restorations (Kottaridi 2011: 297–333). Occupying an area of some 12 500 m^2, roughly three times the size of the Parthenon, the palace sits on a leveled plateau of the sloping acropolis, within towered city walls that are currently dated over several decades in the fourth and early third centuries. From this perch it commands a far-ranging view across the lower city to the plain and mountains beyond. Just below is the unfinished theater, believed to be the spot where Philip II was murdered (Diod. Sic. 16.91–94). How the palace relates to the urban fabric encompassing not only the theater but also royal dedications and public monuments beyond awaits further archaeological investigation.

The palace is laid out around a large peristyle courtyard with the addition of a smaller, off-center peristyle at the rear (Figure 20.1). Overlooking the city along the north side is a great retaining wall built to support an open veranda that, contrary to most earlier reconstructions, is now thought to have had neither columns nor parapet. The entryway midway along the eastern façade (labeled "Pr. 1" in Figure 20.1) is currently restored with a two-storied propylon. Its lower order, distyle in antis, is composed of Ionic double-sided pillar-columns, flanked by antae crowned with sofa capitals. Its blind upper story is reconstructed with Ionic half columns, pentastyle in antis, interspersed with false doors (sometimes called "windows" in scholarship), in a manner reminiscent of the two-storied façade of one of the grandest Macedonian tombs, the late fourth-century "Tomb of the Judgment" at Lefkadia (Miller 2014: pl. 5.5). Flanking the propylon on either side are foundations for long, two-storied porticoes with benches restored on foundations found inside (U and X). These porticoes once featured Doric columns below an upper Ionic order of double-sided pillar-columns connected by parapets. Working windows with wooden sills are associated with the façade.

The entrance proper, restored with Ionic double-sided pillar-columns flanking heavy, bronze-clad wooden doors (Pr. 2, Figure 20.1), leads through a large antechamber/waiting room having space for 40 seated individuals (Pr. 3, Figure 20.1) to the huge central couryard. Measuring 41.40 m^2 and with a peristyle of 16 Doric columns on a side, the courtyard could accommodate an estimated 3000 people seated. Presumably this great space served as an official gathering place; it was, in any case, not planted with gardens, as has sometimes been proposed. In general, much palace activity focused on banqueting, as is indicated by the numerous *androne*s (dining rooms), many embedded in tripartite configurations where they flank a central room accessible from the peristyle. Collectively, the palace androne have an estimated capacity of 224 dining couches. The largest tripartite grouping (M1–3) has astonishingly long,

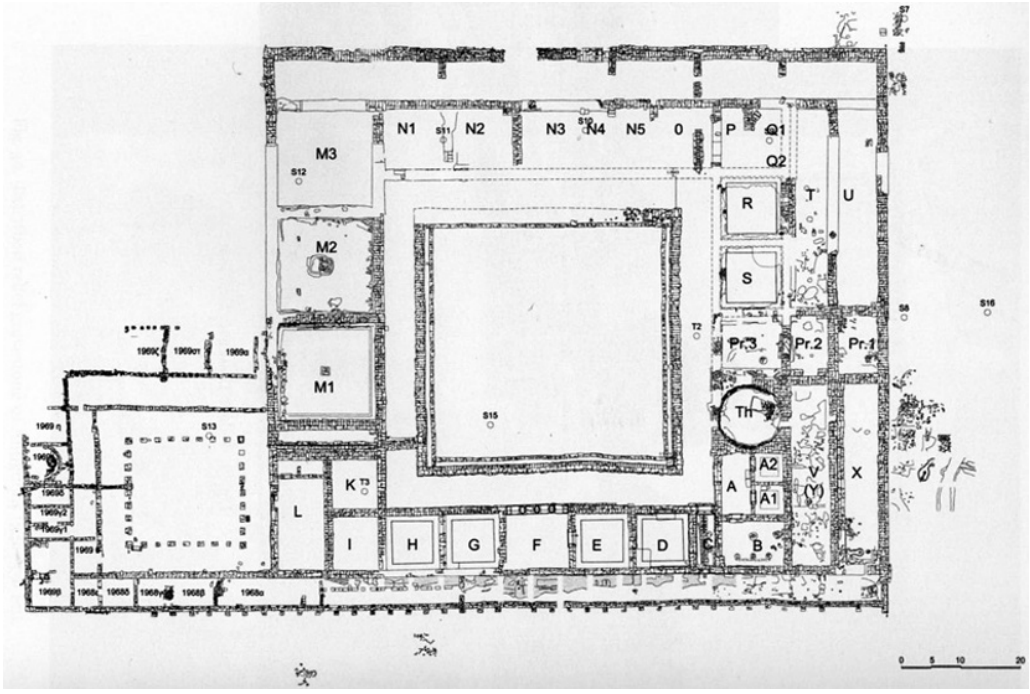

Figure 20.1 Palace at Vergina, plan. *Source*: adapted from Kottaridi 2011, fig. 32a.

unsupported roof spans of more than 18 m. Its central chamber (M2), a possible throne room capable of accommodating 500 seated individuals, is paved in marble *opus sectile* laid in red plaster with black pebble mosaic borders. It is set off from the peristyle by five double-sided pillar-columns. The androns in the smaller tripartite grouping on the southern side (E–G) have ornate pebble mosaic floors: one (E) with florals and vegeform females in the corners, the other (G) centered on the abduction of Europa and surrounded by dolphins and sea monsters. A glimpse of elite banqueters, complete with entertainers and symposium furniture, appears in a painted frieze on the façade of a contemporary tomb at Aghios Athanasios near Thessaloniki (Descamps-Lequime 2011: 388, Fig. 76; Miller 2014: pl. 5.8–9).

Other generous spaces in the palace presumably functioned in official capacities, although whether for administrative or perhaps legal purposes cannot be said. A second story over part of the palace may have been residential. Religious activities undoubtedly occurred in a tholos off the courtyard on the east (Th), a room that is epigraphically connected with rituals of Herakles Patroos, the mythical royal progenitor of the Macedonian royal house. Dating in part to a late renovation, it is provisionally restored with interior Corinthian half columns to support a series of fragmentary reliefs now in the Louvre (Descamps-Lequime 2011: 306, figs. 182–184). Necessary infrastructure for the palace complex was housed in the smaller, off-center unit to the rear that consists of a wooden peristyle and rooms appropriate for storage as well as a kitchen with hearth.

Much of the palace was constructed of limestone, either from the quarries at nearby Mt. Vermion or, for carved elements, of travertine. Visible surfaces were coated with marble stucco. Marble itself was reserved primarily for thresholds. Walls were constructed in the usual fashion of classical antiquity with well-worked stone orthostates supporting a mudbrick superstructure. Blocks were treated with anathyrosis and connected with metal dowels and clamps, both pi-shaped and dovetailed. Interior stuccoed wall surfaces were painted red, ochre, grey-blue, black, and white in the "Masonry Style," complete with faux stone veining to mimic ashlar coursing. Surviving drainage pipes and channels are part of an extensive and sophisticated system of water management, while post holes around the exterior perimeter indicate the positioning of cranes that lifted blocks into place during construction. The roof had a

wooden substructure supporting Corinthian roof tiles, many of which were stamped, and ended in terracotta relief antefixes together with painted cornices.

Mathematical principles said to underlie palace construction await full discussion with final publication. In the meantime, we recognize a combination of traditional and innovative features embodied in the Vergina palace that also inform its counterpart at Pella, as well as the architecturally articulated façades of Macedonian tombs (Miller 1993: 11 and *passim*). Most striking, perhaps, is the theatrical treatment of two-storied façades that employ architectural orders for decorative effect. It was a tradition embraced during the succeeding centuries for assorted buildings ranging from stoas to fortification tower gates. The introduction of double-sided pillar-columns that, whether actually the first of the kind or not, enjoyed considerable popularity as time went on, was also innovative. And, by the same token, tripartite suites had a long after-life. The provocative suggestion that the palace was conceived by Pytheos, an architect best known for his work on the Mausoleum at Halikarnassos, is a working hypothesis that awaits further consideration (Kottaridi 2011: 332).

The Palace at Pella

The capital of Macedonia moved to Pella around 400 BCE, as noted, a step likely engineered by King Archelaus (reigned 413–399 BCE) to take advantage of a favorable location near the sea. Archelaus is said to have built a palace for which he commissioned the painter Zeuxis of Heraklea as decorator (Ael. *VH* 14.17). Whether that palace lies beneath the Hellenistic structure currently being excavated or elsewhere in the city remains under collegial discussion (Akamatis 2011: 401; Chrysostomou 2011: 64).

The extant Hellenistic palace, first investigated in the 1960s, has remained under excavation to this day, with a succession of Greek directors (Chrysostomou 2011: 58–65). It is an archaeologically challenging site that was repeatedy renovated and restored in Greek antiquity, then heavily quarried for building material starting in Roman times. The palace, covering a large expanse currently estimated at more than 70 000 m^2, was built on a hill (the so-called Acropolis) overlooking the plain toward what was then Lake Loudias and mountains in the distance. According to current understanding, building was begun in the fourth century, perhaps as early as the reign of Philip. Throughout subsequent updating and expansion during the next two centuries, associated primarily with the reigns of Cassander, Antigonus Gonatas, and Philip V, it always remained separate and apart from the city, while functioning as the royal residence and administrative center of the kingdom until the coming of the Romans in 168 BCE. The palace evidently fell into disuse when the Roman colony of Pella, founded a century later, was shifted slightly westward.

The palace complex, constructed on artificially terraced terrain facing south, came to be protected at the rear by a moat and towered fortifications that date to the age of Cassander (Figure 20.2). Off the northeast rear corner is a monumental postern gate-tower, called a *karabos* by the Macedonians (Hsch., s.v. karabos), that gave access to the ramparts. A road from the agora formed the official approach in that direction, but there was also a service road circling behind. The complex, as currently understood, is divided into numerous large units of which four, laid out in a great square, form the core. Each unit, interconnected by corridors and stairs, is focused on a central courtyard with an Ionic or Doric portico. The two front units (KTHPIO I and II), together encompassing 13 000 m^2, share a common façade of Doric porticoes, 160 m long, that are interrupted by an off-center two-storied propylon. The propylon is currently restored with four Doric columns in antis at ground level and Ionic double-sided pillar-columns in antis separated by false doors above.

The front units are considered public spaces that served official purposes in hosting symposia, assemblies, and royal audiences with visiting dignitaries. Unit I has a Doric peristyle having columns arranged 11 × 13 that preserves a full complement of its architectural order. At the center is an altar. Toward the north is a base of monumental scale, 30.50 × 1.30 m, reconstructed to support bronze tripods and family portraits that, like a well-known Antigonid dynastic dedication on Delos, patently legitimized and glorified the power of the rulers in a fashion ultimately adopted, and for the same reason, by Roman emperors. Around the peristyle is a complicated web of rooms, some from later renovations, such as two opposing apsidal exedrae toward the northern end that presumably served religious purposes. The

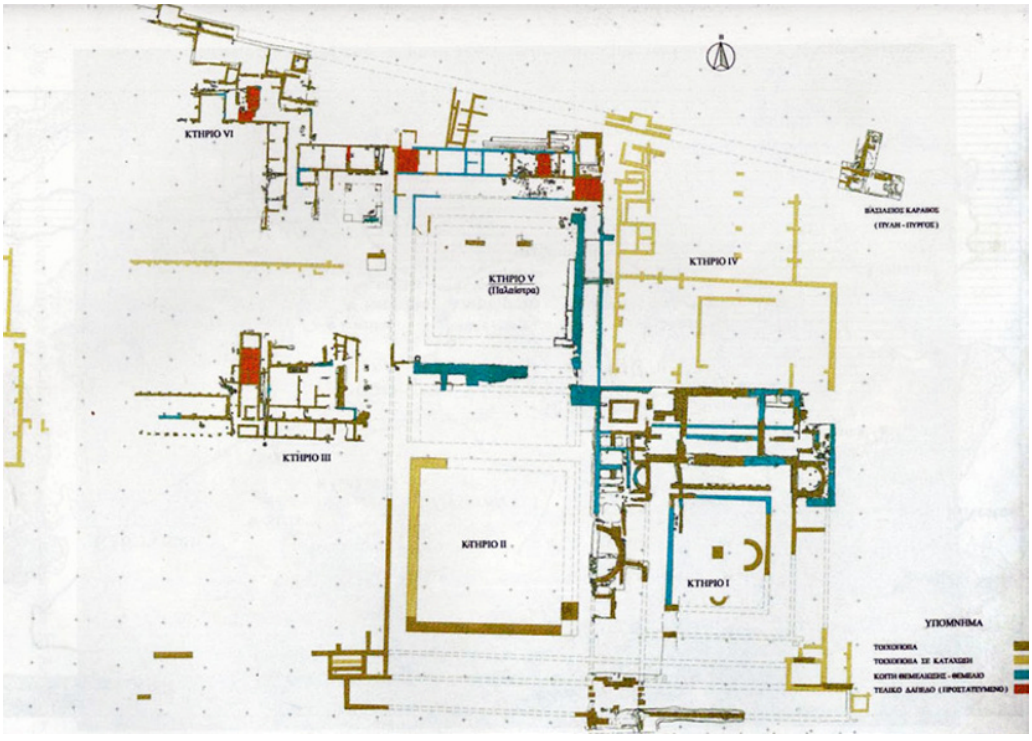

Figure 20.2 Palace at Pella, plan. *Source*: adapted from Chrysostomou 2011, fig. 25.

larger of these preserves two Ionic columns in antis at the entrance and two pilasters with sofa capitals inside. Along the northern side of the peristyle is a suite consisting of a vestibule and antechambers, each with Ionic double-sided pillar columns, that opened to three andrones, one for 26 couches and two more for 15 each (Hoepfner 1996: 29–30, figs. 24–25). A series of relatively small Ionic engaged capitals and bases has been tentatively reconstructed along the walls of the central *andron* (Hoepfner 1996: 33–34, figs. 28–29). Behind is a poorly preserved unit thought to be the royal residence (IV), which also housed a mint, so identified by discovery of bronze bars and coin blanks. It may also have contained the royal library from which Aemilius Paulus took books for his sons, though this remains purely conjectural (Plut. *Vit. Aem.* 28.6). Just outside is a hypostyle bath.

Next to the residence is the fourth unit (V), indisputably a palaestra that rivals the facility at Olympia in size. Reference to the ideal palaestra described by Vitruvius (*De arch.* 5.11) is illuminating. He writes of a large open-air courtyard surrounded by roofed colonnades, single on three sides, double on the north. The courtyard at Pella, measuring 50 × 38 m, has a wooden peristyle, as well as the recommended second portico along the north. Vitruvius proceeds to describe a series of exedrae off the northern peristyle that show some similaritites with the eight rooms of the Macedonian floor plan. Thus, the Vitruvian *ephebeion* designed for youths in training for future citizenship can be seen in the center room here (52 m^2) that, as in the ideal version, is flanked by rooms appropriate for the punching bag, another for dusting, and a third for oiling. Other rooms, preserved in several building phases, are for undressing, bathing, and so on. Exact correspondence is not to be expected (well-preserved palaistrai at Olympia and Priene also differ), as spaces will naturally have evolved according to local needs and preferences. Pella, for instance, adds a rectangular swimming pool complete with tank reservoir. Here too, off to the west, is a *xystos*, or long covered corridor (115 × 5.5 m) that permitted exercise in winter. Bases in the courtyard were presumably for honorary or votive statues. Noteworthy are the architectural details of the ephebeion that is set off by columns and pilasters with Corinthian capitals.

Two more units extend the palace core: one adjacent to the palaestra with Doric peristyle and fitted with a smaller bath that is thought to have housed aristocratic youths in training (VI). Fragmentary wall plaster painted white, yellow, and red was found nearby. Another area (III) revealed, at lower levels, a large unfinished stoa (of which a partially worked Doric column drum remains in place) that was built over in the early third century, partly in wood. These later structures are identified as workshops, storage rooms, living quarters for service personnel, and a stable. Additional workshop areas under investigation have produced lead weights, amphoras, pithoi, and the like.

Construction relied heavily on limestone for foundations, mudbrick for upper walls, and wood for doors, roof timbers, and the palaestra's peristyle. Marble was employed selectively for architectural members, including roofing, together with Laconian terracotta roof tiles. Surviving architectural members tentatively help to establish various building phases. From its initial mid-fourth-century phase, for example, are antefixes, simas, lion-head spouts as well as a Doric capital from the façade. Later phases are documented in part by an early Hellenistic marble Ionic capital from the peristyle of the residential wing (IV) and a sofa capital from an exedra in Unit I dated before the mid-third century. Finally, an abundance of stamped roof tiles are of great interest, as they span more than two centuries, with some indicating royal workshops and others the names of private entrepreneurs (Chrysostomou 2011: 58–63).

Apart from the "Masonry Style" wall covering noted earlier, little remains of interior decoration, but we may assume that paintings covered the walls in the tradition started by Zeuxis for the earlier palace. Indeed Zeuxis' original paintings might have been moved to serve together with the pinax he gave the king as the core of a royal art collection (Plin. *HN* 35.63). An addition to it was the bizarre painting by Aristeides the Younger of a dying mother suckling her child that was reportedly brought to Pella by Alexander the Great (Plin. *HN* 35.98–99). Some reflection of palace paintings may perhaps be seen among tomb paintings discovered at Pella, Vergina, and elsewhere in Macedonia (Miller 2014: *passim*). Indeed, the palace might even have possessed the originals from which they derive. To complement what must have decorated walls, we can imagine palace floors set with pictorial mosaics in the manner of several palatial villas in the city below (Dunbabin 1999: 14–15, figs. 12–14; Miller 2014: Fig. 5.26, CD/Web 5.11). Alternatively, the residents might have used Persian-style carpets with figural motifs like those in the Ptolemaic tent pavillion at Alexandria (Ath. 197.B).

The ever-evolving palace at Pella may stand as close to a model of functioning palaces in the Hellenistic world as we can hope to come. It also had a bearing on Roman lifestyle. The customary looting that formed a coda to Macedonia's military defeat in 168 BCE, though obviously tragic for the losers, was the impetus for wholesale export of treasures, works of art, even architects and artists (Plut. *Vit. Aem.* 29–34). The event helped cement the cultural bridge that linked the admiring populace in Italy back to Greece. With a taste for Hellenic luxury well established, affluent Romans could choose a lavish lifestyle exemplified by the splendid villas around Mt. Vesuvius. An obvious showpiece is the "palatial" House of the Faun at Pompeii (Nielsen 1994: 165–168; Hoffman 1996).

Alexander's Mobile Palace: the "Tent of One Hundred Couches"

Tents are obviously portable utilitarian affairs that have trailed along with peoples on the road, and not only nomads, since time immemorial. But there were also seriously upscale tents, such as the royal Persian pavilions the Greeks encountered during the invasion of their country early in the fifth century BCE. Xerxes' fabulous campaign tent, captured in the aftermath of the Battle of Plataea (479 BCE), adorned with gold and silver, furnished with embroidered draperies, and filled with objects of staggering value, had enormous impact at the time (Hdt. 9.9.80–82). The playwrite Euripides helped perpetuate its afterlife (*Ion* 1132–1165). And better yet, lingering memories would be grounded in reality once Alexander captured the luxuriously furnished tent left behind by a fleeing Darius (III) at Issos in 333 BCE (Plut. *Vit. Alex.* 20.11).

Even before leaving home, Alexander held court in an enormous tent-pavilion at Dion to mark his immanent departure on the Eastern expedition in 335/4 BCE (Diod. Sic. 17.16.3–4). Unsurprisingly,

the tent then accompanied the king eastward, where it became part of a tent city that sprang up as needed for entertaining, for holding audiences, for sleeping, and the like. Indeed, we hear of Alexander's mobile office in Central Asia where he conducted business from a gold throne (Ath.12.537.D, quoting Ephippos of Olynthos). The king's growing addiction to luxury, measured in terms of gold and precious jewels alone, was fed by a steady supply of costly loot. How else to imagine the marriage tent, possibly even Darius' own, at Susa (Ath. 12.538.B–E, quoting Chares of Mytilene) whose bejeweled gold columns, gold-shot figured curtains, and carpets interwoven with gold staged the extravagent mass wedding? The Ptolemies would carry on the lavish tent tradition in Alexandria (as will be seen) and even the Romans got in on the act by dedicating, though for somewhat different reasons, four of what were purportedly Alexander's tent-poles in Rome: two at the Temple of Mars Ultor in the Forum of Augustus, and two in front of the Regia in the Forum Romanum (Plin. *HN* 34.18.48).

The Palace at Alexandria

Alexander founded the city named for him on the Nile Delta during his invasion of Egypt in 332 BCE. At the time, however, he and his entourage stayed in the old capital at Memphis, surely at the traditional palace, the so-called Palace of Apries, whose poorly preserved remains have been investigated, though with disappointing results (Thompson 2012: 11–12). Since Memphis, rather like Vergina, retained ceremonial significance even after Alexandria became the capital under Ptolemy I (reigned 306–282 BCE), the Ptolemies likely undertook renovation even as they enhanced the Memphite landscape with palaces of their own. According to tradition, Alexandria was laid out by the master architect Deinocrates (Vitr. *De arch.* 2.praef.1). It was then left to the Ptolemaic Successor generations to build the city into the Mediterranean showpiece that dominated the eastern Mediterranean economically, politically, and culturally for several centuries thereafter.

The vast quarter of ancient Alexandria's palace complex, spread over ancient Cape Lochias (the Silsilah promontory), is for the most part inaccessible today under the modern cosmopolitan city of the same name. Intermittent excavations in the city have occurred since the late nineteenth century under direction of Egyptian and international teams (e.g., German, British, Italian, Polish, and French). Important investigations took place in the 1990s during construction of the Bibliotheca Alexandrina that overlies part of the palace precinct and also with underwater exploration of the harbor (Empereur 1998; Goddio and Clauss 2006). A few remains uncovered over time in the presumed area of the palace provide tantalizing glimpses into the Ptolemaic city (McKenzie 2007: 68–71). Thus, excavations of long ago revealed substantial Greek-style architectural members together with foundations of a late third-century monumental building with Doric and Ionic colonnades. Other remains include a Doric stoa, parts of some structure with a Corinthian-style interior, and foundation plaques of a temple dedicated to Isis, Serapis, Ptolemy IV (circa 244–205 BCE), and Arsinoe (221–205 BCE). Best known, however, are the more recently discovered Hellenic-style mosaic floors from urban residences, ranging in date from the fourth to second centuries that have been uncovered here and there (Dunbabin 1999: 23–26, figs. 22–24; McKenzie 2007: 67–71, figs. 96–100).

Otherwise, what we know about the palaces derives essentially from late written sources (cf., Fraser 1972: I.14–17). To begin with, Alexander reportedly ordered a "palace marvelous for its size and the massiveness of its works" (Diod. Sic. 17.52.4). And the quarter is described by Strabo, who visited in the 20s BCE, as a city within a city that occupied between a quarter and a third of the city (Strab. 17.1.8). In the end, it contained a number of palaces built by successive generations, temples, banqueting halls, the Mouseion and Library, residences, parks with pavilions and gardens, and the Sema, or royal burial grounds with the tomb of Alexander that firmly established the all-important dynastic legitimacy of the Macedonian rulers. The poet Lucan (*Phar.* 10.111–121), a visitor in 48 BCE in the age of Cleopatra VII (69–30 BCE), provides some specific details. He marveled at the temple-like appearance of the palace whose ceiling beams were clad in gold, walls covered in marble, floors in alabaster, and doors of ebony with touches of ivory, tortoise shell, and even emeralds. Whether all the materials were genuine cannot be said, and Lucan may have been at least partly taken in by appearances achieved through faux finishes typical of the Hellenistic "Masonry Style."

An extension of the already vast palace existed in the famous banqueting tent of Ptolemy II (285–246 BCE) (Ath. 5.196a–197c, quoting Callixenus of Rhodes; cf., Nielsen 1994: 133–136; Pfrommer 1999: 69–75; Calandra 2011; Emme 2013: 31–53). Callixenus' description invites comparison to Alexander's expedition tents (discussed in the previous section). Here the main hall, approximately 26 m high, had a canopied roof with gold eagles on top, palm-tree columns, dark red curtains, and animal skins, while a colonnade with vaulted roof ran around three sides outside. Couches were set here too for 100 guests in a fabulous setting of paintings and sculptures by famous artists, wondrous carpets, gold and silver dinner plate, and other treasures.

Sources of inspiration for the elusive Alexandrian palaces came from several directions. We can imagine a mixture of elements from Persia, Pharaonic Egypt, and the homeland in Macedonia, a theory supported above all by the hybrid character of funerary architecture that dots the modern city's landscape. Architectural features of Alexandrian buildings, often described as "Baroque," are, in turn, widely reflected in Roman wall painting of the Second Style (McKenzie 2007: 96–113).

The Ptolemaic River Boat Palace

A different sort of palace was the *Thalamegos*, or Nile River Boat, of Ptolemy IV (reigned 222/1–205 BCE), a 300-ft long catamaran (Ath. 5.204d–206c, quoting Callixenus; cf., Nielsen 1994: 136–138; Pfrommer 1999: 93–124; Thompson 2013, 189–192). Though allegedly designed for river use, and said to have traveled under a linen sail, scholars have questioned its navigability; perhaps it remained moored like an elegant offshore casino. In any case, emphasis on banqueting is as apparent here as it is in the land palaces. Thus, we hear of a spacious entry with propylon, a roofed area resembling a stage building, a four-doored gateway with windows, and antechambers that opened into a Corinthian peristyle made of wood touched with gold and ivory that enclosed 20 klinai, or couches. Also on this floor were bedrooms, another andron, and a separate women's domain. Callixenus marveled at the interior decoration of its 29 rooms spread over two floors. Upstairs, accessible by a stairway, were several more bedrooms and andrones. One of the andrones was decorated in Egyptian style with lotus-type capitals on columns tapering downward in a nod to Pharaonic culture. Another, draped tent-like, takes a cue from Macedonian campaign tents. Clearly a highlight are the sanctuaries, a tholos for a statue of Aphrodite and a peristyle as a fitting honor for Dionysus, having space for 13 klinai and a bejeweled faux cave alongside that housed royal portrait statues.

The Palace at Demetrias

Demetrius Poliorcetes founded the Magnesian city of Demetrias in the gulf of Volos around 293/2 BCE as a synoecism of earlier communities. It was a strategically located base (later called one of the "three fetters of Greece" by Polybius (18.11.5–6)), from which the ambitious king hoped to rule an Aegean empire. That did not happen, but the city flourished under his Antigonid successors as Macedonia's second most important city after Pella, complete with a royal residence of its own.

Excavation of the palace complex, begun in the early twentieth century, has continued intermittently since the 1960s with a succession of teams under Greek and/or German direction. Even so, and despite occasional targeted probes, substantial parts remain unexplored in a tangle of foundations that render interpretations frustratingly tentative. Additionally, as at Pella, the palace underwent several building phases while here too, suffering from erosion and the results of later quarrying for materials. The main extant part of the palace is identified in reports as the "Anaktoron" (or alternatively as the "Tetrapyrgon" for the four towers appearing at each outer corner), a complex dated to around 200 BCE during the reign of Philip V (221–179 BCE) (Marzolff 1996: 156–159). Entrance locations are unclear, but a buttressed wall linked it to the agora as part of the city fortification system built against Roman threats. The palace was probably abandoned after 168 and deserted after 120 BCE.

The complex sprawls across several terraces high above the agora, aligned fairly closely with the city's orthogonal grid system (Figure 20.3). The "Anaktoron" measures 59.80 × 61.30 m, but inclusion of

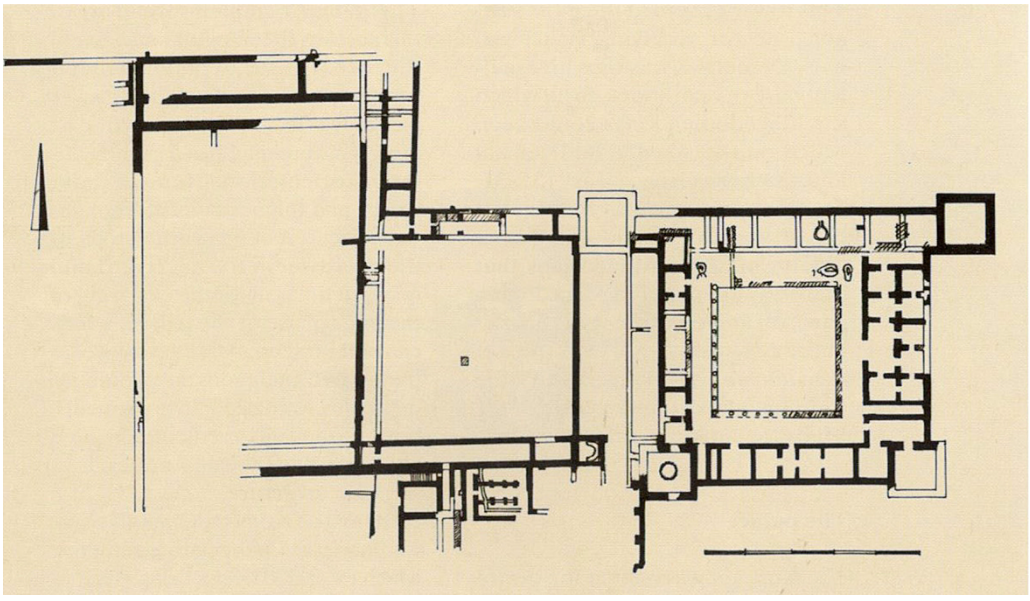

Figure 20.3 Palace at Demetrias, plan. *Source*: adapted from Batziou-Efstathiou 2002, fig. 19.

the four towers at its corners gives it a maximum dimension of approximately 94 m on a side. The central two-storied peristyle, measuring 27.10 m on a side, is tentatively restored with tall Ionic double-sided pillar-columns along the north, the rest with Doric above and below. For the Doric order, the architect employed distinctive cordiform piers at re-entrant angles (heart-shaped half-columns applied to adjacent faces of a square pillar), a solution already widespread in Ionia (Marzolff 1996: 159–160). Dispersed along all four sides of the courtyard are some 36 rooms of different sizes and configurations. Among them tripartite configurations appear on each side where, as at Vergina, the side rooms are accessible only through the central space. Many of the rooms have appropriate shape and dimensions for accommodating klinai. The location of residential areas remains unclear. Otherwise, a number of clay sealings indicate palace activities under royal and/or public authority and remains of a base for a naval monument may have supported a ship's prow bearing a statue of Demetrius Poliorcetes as both naval hero and *oikistes*, or city founder, that probably stood in the courtyard (Batziou-Efstathiou 2002: 28, fig. 31). Marking the end of the palatial phase is activity associated with bronze workers who took over the peristyle to cast, most notably, a more than life-sized equestrian statue in the mid-second century BCE (G. Zimmer 2003: 31–38). The suggested attribution of the statue to Aemilius Paullus, who conquered Macedonia and with it, all of Greece, makes historical sense.

Building materials of the "Anaktoron" include reused elements from one or more predecessors, of which outlines can be partially traced in foundations below. Several layers of remains, mostly unexcavated, have been noted on lower terraces to the west, where walls preserved up to the floor level of the upper story have been found. Additionally, a peristyle with Doric half columns may be late third century in date, while further installations might have to do with athletics, cult, and other functions.

Construction of the many-phased building complex involved a range of materials and building techniques, including grey marble ashlars for the towers and limestone, sandstone, mudbrick, stone rubble, and reused architectural members elsewhere. Remains of polychromatic "Masonry Style" painting have been found in places to accompany floors of crushed limestone and beaten earth, all covered by roofing with stamped tiles. Part of a stone drainage system was uncovered in the courtyard. Various features, including the towered construction, have led scholars to recognize eastern influence, not surprising in light of Demetrius' Anatolian connections, and even to consider the possible presence of Carian builders at the site (Marzolff 1996: 158 with n. 24).

The Palace at Pergamon

The kingdom of Pergamon, modern Bergama, was founded in 281 BCE by Philetairos (circa 343–263 BCE), the first of the Attalid dynasty, a one-time general under Lysimachos and, as such, a member of the second generation of Alexander's Successors. Philetairos' descendant Attalos III (138–133 BCE), perhaps anticipating the inevitable, willed the kingdom to Rome, after which it became the capital of the Roman province of Asia. The fortified acropolis sits on a high mountain ridge that was clearly selected for reasons of security in an age of intense rivalries. Astute military policies, combined with enormous cultural ambitions, saw the construction of an astonishingly rich and showy city that spilled over into its steep theater and beyond to the plain with its public and private districts of all sorts.

The site, well known to early European travelers, has undergone excavation under German leadership from the 1870s to this day. A portion of the finds from the early years can be seen in the purpose-built Pergamon Museum in Berlin. The complexities of the site are daunting, not only by reason of scale, but also because of later occupation by Romans, Byzantines, and Seljuks. The Traianeum of the second century CE, long under anastylosis, is but the most conspicuous evidence of these latecomers. The poorly preserved Hellenistic remains that are conventionally identified as the palace complex, excavated in the 1880s, consist of six building units ("Baugruppen," or Units, I–VI) that range along the eastern side of the acropolis (Kawerau and Wiegand 1930; Radt 1988: 83–102; Nielsen 1994: 102–111; T. Zimmer 2012: 251–259). Some underwent transformations that disguise their original layout, even as they themselves were built over earlier remains.

Units IV and V, conventionally called Palaces IV and V, are laid out like standard peristyle houses with rooms appropriate for entertaining and dining. Of them, Palace IV, measuring approximately 30 × 35 m, is usually dated to the reign of Attalos I (241–197 BCE) or Eumenes II (197–159 BCE). The courtyard, originally stone-paved over a large cistern, was renovated, perhaps in mosaic, of which, however, only the bedding survives. A large room on the east side, outfitted with a low marble altar on a mosaic floor, was clearly a private sanctuary. Many fragments of typical "Masonry Style" speak to the nature of the wall decoration, enhanced in one room by a painted band of griffins, antithetically placed on either side of an amphora. In another, remains of a miniature stuccoed band in the Corinthian order with a frieze of possible Erotes ran high up on the wall.

Palace V, dated to the reign of Eumenes II (197–159 BCE), is much grander at approximately 2420 m^2, with a courtyard measuring 22.50 m on a side. The use in its foundations of discarded building material from the second-century Great Altar is an important dating factor. A cistern lies under the west portico, so too does an earlier storage facility. Wall thickness implies an upper story, though no stairs remain. A sturdy base midway along the west side of the courtyard may have supported an altar. The so-called Altar Room, a small, gated room in the northeast corner, approximately 3 m^2, had a tessellated pictorial mosaic floor with garlands, a colorful parakeet (Figure 20.4), and tragic masks flanking an altar that may have been sacred to Dionysus (Dunbabin 1999: 28–29, Fig. 28). A larger room in the same palace, approximately 8.50 m^2, preserved a floor with rinceaux enlivened by Erotes and grasshoppers and, importantly, the signature of the mosaicist Hephaistion (Dunbabin 1999: 29, Fig. 29).

The palace complex is currently undergoing a welcome reinvestigation, with a view toward integrating Palaces IV and V into the larger conglomeration spread across much of the rest of the acropolis. Earlier structures include a large peristyle building (Unit I) that was very likely the first residential palace, whose later use, traditionally called a barracks, is now being questioned. Other installations range from the practical sourcing of water through military and storage facilities to the Sanctuary of Athena Nikephoros (Hoepfner 1996: 1–43; T. Zimmer 2012: 251–259). This sanctuary, though rooted in earlier times, was enhanced to include porticoes and propylon as part of the grand renovation project of Eumenes II that included not only Palace V but also the Great Altar (now partially reconstructed in Berlin), its expanded terrace, and reconfiguration of the Upper Agora. Royal power was visually displayed with victory monuments, including the well-known, but controversial, series of Gauls identified by its fragmentary base at the site and by statuary copies of the Roman period. The Attalids

Figure 20.4 Detail of mosaic floor with parakeet from the so-called Altar Room in Pergamon Palace V (Antikensammlung der Staatlichen Museen zu Berlin inv. Mos. 71). *Source*: bpk, Berlin/Antikensammlung/Juergen Liepe/Art Resource, NY.

were renowned for their library and royal art collection, fated to join the westward exodus of Greek artifacts to Rome, where they played an influential role in developing tastes.

An expanded version of Pergamon's *basileia* beyond just the residential Palaces IV–V brings the Pergamene acropolis conceptually closer to the situation known in theory from Alexandria and, in fact, from the emerging compound at Pella. The implications are far-reaching. The complex layout that covers administrative, political, and cultural aspects of royal command as seen at Pella, Pergamon, and at the elusive Alexandrian compound found resonance in Rome with the Augustan configuration of the Palatine (Nielsen 1994: 174–178; Gros 1996: 234–239).

FURTHER READING

An important recent resource on the palaces at Vergina and Pella is Lane Fox 2011, with articles by Kottaridi and Akamatis, respectively. For Pella's palace, still under excavation, one should also refer to Chrysostomou 2011. On the Demetrias palace, see Batziou-Efstathiou 2002 and final publications in the *Demetrias* series of the German Archaeological Institute beginning in 1976. On Pergamon see Radt 1988 and detailed studies in the series entitled *Altertümer von Pergamon* starting in 1885 and supplemented since 1968 by *Pergamenische Forschungen*, both published by the German Archaeological Institute. Otherwise, indispensable tools for following developments on individual sites are excavation reports that for Vergina and Pella have appeared since 1987 in the annual journal *Archaeological Reports on Macedonia and Thrace* (*AEMTh*), in Greek with occasional English summaries; reports on Greek excavations at Demetrias since 1985 appear in *Αρχαιολογικόν Δελτίον*; and for Pergamon in various reports from Germany and Turkey (see T. Zimmer 2012 for references). For exploration of Roman adaptations of Hellenistic palaces see an overview in *Hellenistic Palaces* (Nielsen 1994: 171–180), and for greater detail see Gros 1996.

For a broadly based chronological and geographical consideration of palaces and palatial structures throughout much of the ancient world see Nielsen 1994, although there have been significant advances in the field since then.

A more specialized but highly productive approach was taken in the essays in Hoepfner and Brands 1996. In it, an international group of experts in diverse areas of the Mediterranean addressed theoretical issues (the concept of royal palaces and political power), architectural arrangements (such as androns), interior décor (sculpture and dinner services, for instance), landscaping, and a number of regionally based case studies in Macedonia, the Black Sea area, Ionia, Cyprus, Ptolemaic Egypt, Caria, and Palestine.

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CHAPTER 21

The Greek Agora

John McK. Camp II

The agora of a Greek city was the center of town in virtually all respects. A large open square, reserved for public gatherings, it was used in a variety of ways: as commercial center and marketplace, as the focal point for political assemblies and elections, for theatrical performances, for athletic contests, for religious rites and processions, for military drill, and for socializing. Not surprisingly, many of the public buildings needed to run a Greek city came to be built around the edges of the square where the citizens were gathering – albeit for different reasons – almost on a daily basis. Administrative, legislative, commercial, judicial, and religious buildings lined the large open square, while inscriptions recording laws and sculptural monuments celebrating great achievements by both individuals and the city were set up there. Long colonnades and fountain houses provided necessary shelter and water to the large numbers of daily visitors. Agoras were the focal point of life in a Greek city, even though they were not regarded as essential in other Mediterranean and Middle Eastern societies. Herodotus (1.153) quotes king Cyrus of Persia: "I have never feared men who have a place set apart in the middle of their city where they lie and deceive each other," and then he comments, "Hellenes have agoras and buy and sell there; for the Persians themselves do not use agoras, nor do they have any." Agoras were something of a cultural marker, identifying the presence of Greeks.

Although an agora was a feature of every Greek city, much of the information for the following chapter comes from a single example: the Agora of Athens (Figure 21.1). There are two reasons for this. First, it has been extensively excavated and published over the past 80 years and is unparalleled in the quantity of archaeological material recovered and analyzed. Second, because of Athenian dominance and importance throughout much of antiquity, the literary and epigraphical sources for the city are unusually rich, allowing R.E. Wycherley (1957) to collect no fewer than 731 ancient references that enliven our understand of this particular agora, its uses, appearance, and remains. The range of activities and buildings known for the Athenian Agora over a span of almost eight hundred years allows us to imagine similar facilities and activities in the agoras of other Greek cities, although on a smaller scale.

Origins

Despite its many functions – political, commercial, social, religious, and military – it seems that civic activities and the administration of justice provided the original impetus for the creation of these large open spaces at the heart of the city. The meaning of the word as a meeting place for deliberation is found in both Homeric epics: in the description of the scenes on the shield of Achilles (*Il.* 18.497ff.) and in the city of the Phaeacians in the Odyssey (*Od.* 8.5, 12, 16). The word appears also early on in

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

Figure 21.1 Athenian Agora, Roman period, second century CE. Courtesy The American School of Classical Studies at Athens, Agora Excavations. *Source*: American School of Classical Studies at Athens.

Hesiod's *Works and Days* (29), and here, too, it is associated with deliberation and the settling of disputes. The concept, at least, seems to have been in place as early as the eighth century BCE, though physical evidence for the contemporary agoras is hard to come by. It may well be that the earliest known are those on the island of Crete – at Lato, Gortyn, and perhaps Dreros – where there was also a well-established early tradition of law codes and lawgivers.

The agora proper was the open space itself (Figure 21.2), an area defined in Athens by boundary stones, two of which have been found along the edge of the agora square, while another, not found *in situ*, has been recovered for the agora at the Piraeus. Interestingly enough, the markers found *in situ* have the inscription facing inwards, so they can only be read once one is within the area itself, a counterintuitive arrangement for most modern markers, which warn of a liminal area before the boundary is

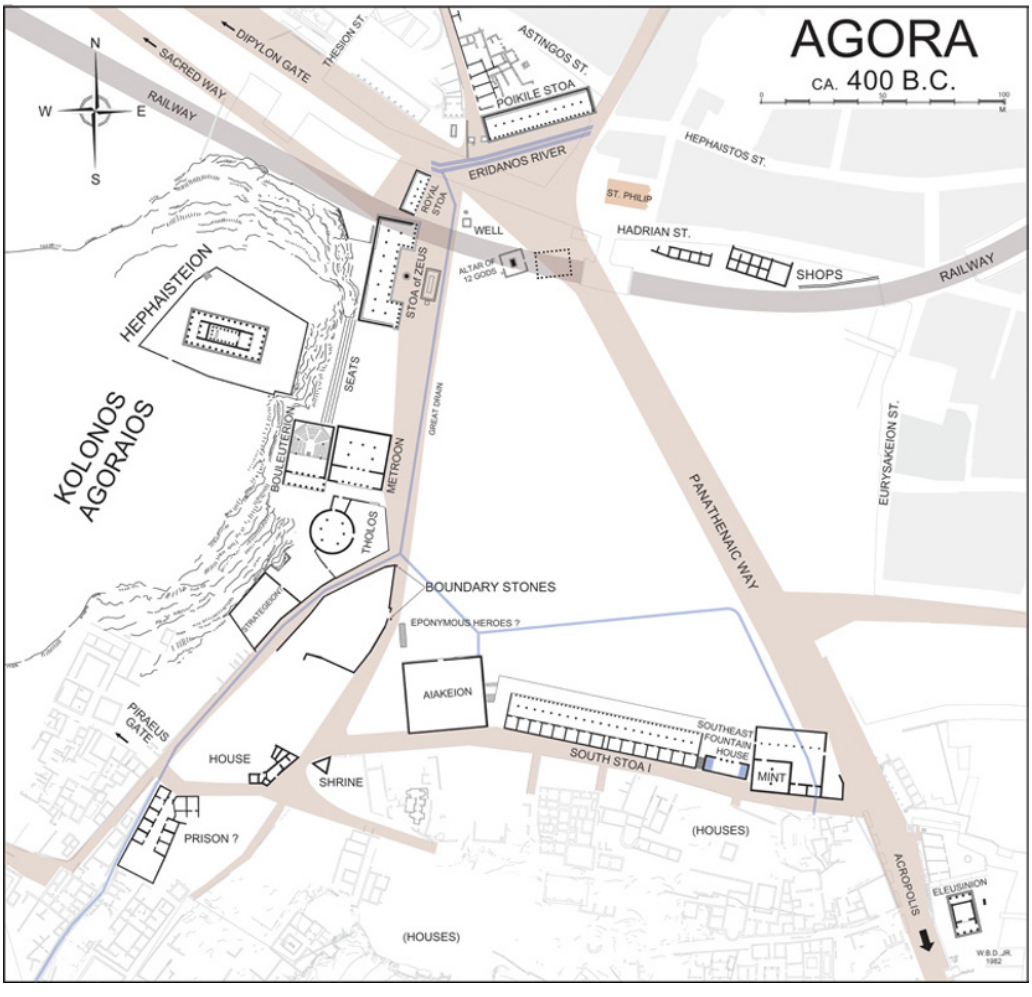

Figure 21.2 Athenian Agora, Classical period, circa 400 BCE. Courtesy The American School of Classical Studies at Athens, Agora Excavations. *Source*: American School of Classical Studies at Athens.

passed. Yet a similar use of a boundary stone is reported by Plutarch in his account of a marker Theseus set up at the Isthmos (*Thes.* 25.3): "he set up that famous stele at the Isthmos and carved upon it the inscription giving the territorial boundaries. It consisted of two trimeters, of which the one towards the east declared: 'Here is not Peloponnesos, but Ionia' and the one towards the west: 'Here is the Peloponnesos, not Ionia.'"

There are at least two good reasons why boundary stones were used to define the limits of an agora. Agoras were public land, and the boundary stones marked the area so it could not be infringed upon by private individuals. Such a case is attested for the deme of Sounion, south of Athens, where a citizen made the gift of two plethra of land, because the old square had become too cluttered with unauthorized buildings. *IG* II^2 1180, of the fourth century BCE reads as follows:

> Voted by the people of Sounion: since Leukios has given to the demesmen to make an agora, to choose 3 men at once, who are to set the boundaries for the agora with Leukios, not less than 2 plethra, one plethra should be open space where the Sounians and who else may wish may buy things, since the present one is now built over. Nor shall it be permitted to the demarch or anyone else to build within the boundaries. (*IG* II^2 1180.4–21)

The second need to define the limits of an agora was because it was a religious area. In addition to boundary stones, marble water basins (*perirrhanteria*) for ritual purification stood at the entrances, at least in Athens. "So the lawmaker keeps outside the propitiatory basins of the agora the man who avoids military service or plays the coward or deserts, and does not allow him to be crowned, nor to enter shrines which are publicly maintained," says Aeschines (3 [*In Ctes.*], 176). People convicted of certain crimes were not allowed in the agora (Dem. 24.60 and 22.77). The Athenian ban for impiety imposed upon the Megarians, preventing them from entering any agora within the Athenian sphere of influence, was one of the principal causes or pretexts for the outbreak of the Peloponnesian War.

City Planning and Urban Design

> The city itself is totally dry and not well-watered, and badly laid out on account of its antiquity. Many of the houses are shabby, only a few useful. Seen by a stranger, it would at first be doubtful that this was the famed city of the Athenians. (Pseudo-Dikaiarchos *FHG* II, fr. 59)

Many of the old cities of Greece developed haphazardly over time, and the creation of an agora was a process rather than an event. In Athens, Thucydides tells us that the early city lay south of the Acropolis, not where it was in his day, and various pieces of evidence suggest that an earlier agora lay several hundred meters to the east of the classical agora northwest of the Acropolis. The classical Agora, which has been explored by the American School of Classical Studies, seems to have been laid out in the second half of the sixth century BCE, with the establishment of two public monuments: the founding of the Altar of the Twelve Gods in 522/1 BCE and the construction of the southeast fountain house and its aqueduct, built to deliver water to that specific location. Thereafter, buildings were added seemingly at random over the next two centuries (Figure 21.2). Those along the west and south sides are more or less aligned, while the orientation of the northern side is determined by the course of the Eridanos river, and the east side shows little sign of planning in the layout of the buildings, several of which are thought to have served as lawcourts (Figure 21.3).

One must look beyond mainland Greece to find regular, well laid-out public spaces. The early colonies in South Italy and Sicily, where the fair division of previously unoccupied land encouraged a more regular and organized layout for a new city, offer a starting point. One of the claims for an early agora has been made by the excavators of Megara Hyblaia in eastern Sicily, where there is a large open space near the center of the city, lined on two sides with long colonnades or stoas, a common element in many agoras and demonstrably public.

In the latter half of the fifth century BCE, Hippodamos of Miletos was celebrated as a town planner, though exactly what his innovations may have been are not entirely clear. Aristotle (*Pol.* 7.10.4) seems to credit him with some sort of orthogonal street plan: "The arrangement of the private dwellings is thought to be more agreeable and more convenient for general purposes if they are laid out in straight streets, after the modern fashion, that is, the one introduced by Hippodamos." A simple orthogonal grid plan, however, which is a feature of many of his designed cities (Miletos, Rhodes, Piraeus, and Thurii), had already been used decades earlier in various settlements dated to the Archaic period (see also Chapter 17). It seems that the relationship and layout of public spaces, as opposed to private and religious areas, was part of his design, though Aristotle's other passage (*Pol.* 2. 5.1) is somewhat vague: "Hippodamos, son of Euryphron, a Milesian, who invented the division of cities into blocks and cut up Piraeus …" The Agora of Piraeus was actually known as the "Hippodamia" or "Hippodamian agora" (Xen. *Hell.* 2.4.11; Andoc. 1. 45; Dem. 49. 22). Thus far, none of his cities has been sufficiently explored to identify his contribution to city planning. Indeed, agoras of the Classical period remain largely and surprisingly unexplored. Other than Athens, only the classical agoras of Corinth, Argos, Olynthos, and Elis have been excavated.

It is not really until the fourth century and the Hellenistic period that we regularly find the agora as an organized rectilinear space laid out near the center of the city and accommodated in its grid. Such agoras are particularly common in Asia Minor, at sites such as Priene, Pergamon, Magnesia, Ephesos, and Miletos. Often they consist of a complex of stoas set in the form of a Greek pi, surrounding the

Figure 21.3 Athenian Agora, model, Classical period, circa 400 BCE. Courtesy The American School of Classical Studies at Athens, Agora Excavations. *Source*: American School of Classical Studies at Athens.

open space on three sides. The fourth side accomodates a major street and a fourth, detached, stoa; the south agora at Miletos and the Agora of Priene are good examples of this arrangement. It is Pausanias, in his description of the Agora of Elis (6.24), who articulates the concept that the largely enclosed peristyle courtyard was a feature of agoras in Ionian cities, whereas a looser arrangement of stoas, set somewhat apart from one another, was to be found in the agoras of older cities: "The agora of Elis is not after the fashion of the cities of Ionia or the Greek cities near Ionia; it is built in the older manner, with stoas separated from each other and with streets through them." As noted, this observation has been largely borne out by the available archaeological evidence, particularly for Elis, excavated by the Austrians between 1910 and 1914.

The enthusiasm for a strictly rectilinear plan, colonnaded perimeters, and axial and visual symmetry becomes the accepted norm, used thereafter as a fully enclosed peristyle courtyard in Greek cities throughout the centuries of the Roman Empire (e.g., Hierapolis, Iasos, Smyrna, Aphrodisias, Thessaloniki, etc.). Vitruvius records the differences between a Greek agora and the forum of a Roman city at the beginning of Book 5:

> The Greeks lay out their forums in the form of a square surrounded by very spacious double colonnades, adorn them with columns set rather closely together, and with entablatures of stone or marble, and construct walks in the upper story. But in the cities of Italy the same method cannot be followed, for the reason that it is a custom handed down from our ancestors that gladiatorial shows should be given in the forum. (Vitr. *De arch.* 5.1.1)

The size of the forum should be appropriate to the population of the city, and an important new architectural addition, the basilica, is described. He also indicates that rather than a square like the Greek agora, a forum should be a rectangle, with a length-to-width ratio of 3:2. It is noteworthy that the early forum in Rome, like the agora in Athens, developed organically over time and shows little sign of

planning or design, in contrast to other fora in Italy (e.g., Pompeii, the imperial fora of Rome), which seem to accord to the specifications of Vitruvius.

Stoas

One of the most recognizable architectural elements used to delineate an agora was the stoa (colonnade) (see also Chapter 17). Running dozens or even hundreds of meters long, they were ideal for defining a large open space, and almost every agora had a least one, and often as many as four, defining all or part of the perimeter of the public space. They could be as simple as a single colonnade, designed to provide shelter from sun in summer and wind and rain in winter, while providing ample light and fresh air for the hundreds of people expected to congregate in the agora. Over time, stoas became more elaborate, first with the addition of an interior colonnade, then with rooms opening off the back wall. Early examples with rooms, such as at Brauron and the Asklepieion at Athens (and possibly the oikoi at Aliki and the Herakleion on Thasos), appear first in sanctuaries and are arranged for dining. South Stoa I, in the Athenian Agora, also had dining rooms, yet it seems to have been a civic building. By the Hellenistic period, stoas might have a double colonnade, with rooms behind, and the whole arrangement repeated on a second story. In second century BCE, the Pergamenes even developed stoas that were three stories high (Aigai, Alinda, and Assos). Like the squares themselves, stoas and their rooms were multifunctional, used for public offices, lawcourts, shops, public display of booty, dining, storage, and as hangouts.

Fountains and Water

Any area intended to attract large numbers of individuals needed to provide for their most basic requirement: water. Early agoras were either established near existing fountains, such as Peirene and Glauke at Corinth, or water was piped in to an appropriate facility, such as the archaic southeast fountain house in the Athenian Agora (see Chapter 17, Figure 17.2). It may not be coincidental that, along with the Altar of the Twelve Gods, the southeast fountain house is the earliest demonstrably public building to be constructed in the area. Until the Hellenistic period, water had to be delivered by means of a gravity-flow aqueduct, which may have affected the placement of an agora. Pressure lines were known by the Hellenistic period, invented perhaps in Ptolemaic Egypt or Attalid Pergamon, allowing water to be conducted almost anywhere.

Proper drainage of a large level area was also a concern and was dealt with at Athens by means of a huge early built conduit which carried excess water to the Eridanos river, while the forum in Rome, of course, only became viable with the construction of the *Cloaca Maxima*. The Greeks made no archaeologically recognizable provisions for other needs; large communal latrines, a feature of many agoras, gymnasia, theaters, and sanctuaries, are found only in the late Hellenistic and early Roman periods.

Civic Life and Politics

As we have seen, the earliest uses of the word "agora" emphasize its primary function as a place of political assembly and public deliberation, and the archaeological evidence supports this. The square itself could be used for large assemblies, elections, and (in the case of Athens) ostracisms.

Smaller deliberative bodies were housed in council chambers (*bouleuteria*) near the square (e.g., at Athens, Priene, Miletos, Ephesos, and Troy (Ilion)). Early on, these were simple rectangular buildings with level seating, and a sufficiently large interior space could created by one or more rows of columns. In the Hellenistic period, the seating consisted of banked rows of benches. In many examples the seating is curvilinear, like a small theater (e.g., Miletos, Nysa, Stratonikaia), though benches

set in a rectangular arrangement are also common (e.g., Priene, Notion, Sagalassos). (See also Chapter 24.)

Other administrative activities were accommodated as well, in buildings or rooms often referred to as *archeia*, facilities for assorted magistrates and other officials charged with running the city on a day-to-day basis. A large polis would have dozens, if not hundreds, of such officials, requiring numerous civic buildings, sometimes collegial and shared, sometimes specific to a single magistrate. Even an abbreviated list for Athens from Aristotle's *Constitution of the Athenians* gives some idea of the numerous officials requiring facilities of some sort: eponymous archon, king archon, polemarch, 9 archons (*thesmothetes*), 10 generals (*strategoi*), 10 revenue collectors (*apodektai*), 10 accountants (*logistai*), 10 city wardens (*astynomoi*), etc. Facilities would be needed also for archives, and the scribes and clerks they required.

A building that was a feature of every Greek city, set in or near the agora, was the *prytaneion*. Within this building burned a flame of Hestia, symbolic of the hearth of the city, never to be extinguished. The building also served as the dining hall for high magistrates and important individuals, where ambassadors from elsewhere were entertained as well. One of the highest public honors available to a citizen was maintenance for life (*sitesis*) in the prytaneion. Offices for magistrates and archives were also often housed in the building. Given its functions, the plan of a prytaneion should consist of a courtyard open to the sky, with a central hearth or altar, and dining facilities, usually recognizable by doors set off-center to accommodate the largest possible number of dining couches, and a low raised border to carry the couches. Numerous prytaneia have been claimed for many cities, with greater or lesser probability. Those recognized with a high degree of probability, supplemented by inscriptions and dedications to Hestia, include Lato, Priene, Delos, and Ephesos. The prytaneion at Athens lies unexcavated, some 500 m east of the classical Agora. It is mentioned by Pausanias in his description of Athens, and its position should indicate the location of an early agora, laid out before the one which has been excavated to the northwest of the Acropolis. Religious scruples and tradition will presumably have prevented its relocation to the new center of town.

In general, the buildings housing the government in the Classical period were surprisingly modest in construction: walls of stone and/or mudbrick, columns of limestone, floors of packed clay, and roofs of terracotta tiles were the norm, at least in Athens, as in the Tholos, Bouleuterion, Royal Stoa, South Stoa I, Mint, and Square Peristyle (lawcourts). When the Athenian people built for themselves, they did not waste any money. Marble, sculptural adornment, and costly materials were largely reserved for the gods both in the Agora (Stoa of Zeus, Hephaisteion) and elsewhere, particularly on the Acropolis. And, despite its prominence, at all periods the Panathenaic Way, the principal thoroughfare of the city, was unpaved for almost its entire length, surfaced only with successive layers of packed gravel (Figure 21.3 and Figure 21.4).

Athenaeus humorously comments (14. 640b/c): "You will find everything sold together in the same place in Athens: figs, summoners, grapes, turnips, pears, apples, witnesses, roses, medlars, haggis, honeycombs, chickpeas, lawsuits, beestings, beestings-pudding, myrtle, allotment machines, hyacinth, lambs, waterclocks, laws, indictments." As is clear from this passage and archaeological evidence from both Athens and elsewhere, official businesss – though nominally primary – was not significantly protected from aggressive commercial activity.

Commerce

> Each of you is in the habit of frequenting some place, a perfumer's shop, a barber's, a cobbler's, and so forth; and the greatest number visit those who have their establishments nearest the agora, the smallest number those who are furthest from it. (Lys. 24.20)

As noted, our earliest sources suggest that the primary function of an agora was as a political meeting place. It appears as such in Homer, Hesiod, and the lyric poets, and as late as Aeschylus and Pindar in the first half of the fifth century BCE. By the later fifth century, however, in Herodotus and Aristophanes, the commercial aspects of the agora are clearly referred to, and the concept of the agora as primarily a marketplace becomes well established thereafter in most cities and sources.

Figure 21.4 Athenian Agora, artist's view by Peter Connolly, fifth century BCE. *Source*: John McK. Camp.

Starting with Homer (*Od.* 159–164), there is in the heroic tradition an abiding distain for trade and business that survives well into the fourth century BCE (Xen. *Mem.* 3.7.5–6). In practical terms, this is occasionally expressed in the conservative societies in Thessaly and Crete by means of two distinct and separate agoras, one for politics, the other for commerce:

> And below this place should be built an agora of the sort customary in Thessaly, which they call free, which it is necessary to keep clear of all merchandise, and into which no artisan or farmer nor anyone of that type can go unless summoned by the magistrates … The agora for mechandise must be different and separate from this one. (Arist. *Pol.* 1331a)

Two inscriptions from Demetrias designate an agora as being sacred (i.e., *hiera*; *IG* XII 2.1105, 1106), suggesting that this practice of separate agoras continued in Thessaly into the Hellenistic period. Indeed, large cities in other areas, especially those with ports, often had two agoras, one largely devoted to commerce and trade, the other to politics and administration (e.g., Ephesos, Miletos, and Piraeus (Paus. 1.1.3), and, later, Pergamon).

As the primary market area of the city, an agora was also the focal point of the regulation of the economy, and several groups of officials, such as the *agoranomoi* (market police), *metronomoi* (officals in charge of weights and measures), *poletai* (state auctioneers), and *sitophylakes* (grain commissioners), held office in buildings around the square in Athens. One of the mints (*argyrokopeia*) of Athens has been found at the southeast corner of the agora, while a similar installation has been identified in the

Agora of Pella. *Agoranomia*, the headquarters of the market police, are attested epigraphically in Athens and Piraeus, as well as many other cities, largely in the east, such as Cyzicus, Rhodes, Delos, Samos, Amorgos, Pergamon, Tralles, and Iasos. Official sets of bronze weights and dry measures of both terracotta and bronze have been found in Athens, while marble plaques cut to serve as standards for roof tiles have been found in Athens, Assos, and Messene.

Commercial activity was carried out in a variety of buildings, most conveniently in the rooms of the large stoas lining the agoras, presumably rented out by the city to provide revenue. This arrangement is specified in an inscription from Miletos, concerning a stoa dedicated by king Antiochos in 299/298 BCE (Rehm 1958: No. 480, ll. 10–14). By the Hellenistic period, stoas with rooms serving as shops and entire floors given over to storage were common (e.g., Aigai, Alinda, Herakleia-by-Latmos, Assos). With 42 shops on two levels under a single roof, the Stoa of Attalos ressembled a modern mall, and it served as the commercial center of Athens for over four hundred years. A more developed formal plan of enclosed peristyle courtyards with rooms/shops behind the colonnades become common in Hellenistic agoras such as those of Miletos, Nysa, and Ephesos. In the Roman period, similar but smaller well-defined peristyle courts with rooms were used as markets and became known as *macella*.

In addition to the shops of the surrounding stoas, less official commercial buildings surrounded many agoras. In Athens these take the form of a row of small square rooms, each with a door opening directly off a street or a group of rooms set along either side of a common interior passageway. Their prominent locations and fairly substantial construction make it uncertain whether they are entirely public or private enterprises, though it seems clear that they were commercial in function. More informal still were individual rooms attached to private houses but with a separate door opening directly onto street, often with no direct connection into the house (as at Olynthos and Athens). Even less substantial were the temporary booths of wickerwork and tables set up for market activities within the square, leaving little or nothing in the archaeological record but attested in several ancient sources (e.g., Dem. *De cor.* 18.169; Pl. *Ap.* 17c).

Cult, Religion, and Festivals

Many of the early references to agoras suggest a close affinity or connection to the gods and heroes: agoras are often in or near sanctuaries and are adorned with altars to the gods. The Agora of Troy was near the Sanctuary of Athena (*Il.* 6.88) and Apollo (*Il.* 5.460), the agora of the Phaeacians was sacred to Poseidon (*Od.* 6.266; 7.44; 8.5; 12.109), and that of Nestor was sacred to Athena (*Od.* 3.444–445). Archaeology has also borne out this close connection with the gods. The Athenian Agora, for instance, has no fewer than 28 cult installations, ranging from large peripteral marble temples to the most modest of receptacles for libations. Other agoras have similarly close associations with cult activity, such as Magnesia-on-the-Maeander, Corinth, Priene, and Megalopolis. One of the earliest altars attested for the Agora of Athens is that dedicated to the Twelve Gods by the younger Peisistratos in 522/1 BCE. The Twelve Gods appear also in the agoras of Xanthos and Magnesia-on-the-Maeander (Dittenburg *Syll.*^{3} no. 589). Other deities carry the epithet *agoraios*, particularly Zeus (18 cities) and Hermes (10 cities), along with rarer instances of Athena, Artemis, and Aphrodite. Tombs and/or cults of city founders (15 cities) or other significant local heroes (27 cities) were often to be found in the agora (e.g., the heroön for Theagenes in the Agora of Thasos).

The large open square, capable of holding thousands of people, was a natural venue for large-scale spectacles of various types, which were often performed as part of some religious festival. Early on, for instance, the Athenian Agora was used as a venue for dramatic performances, and a part of the square was known as the *orchestra* (dancing ground). The seating for spectators consisted of the large temporary wooden structures of scaffolding, known in Greek as *ikria*, and in colloquial English as "bleachers." Hesychius described ikria as constructed from poplar trees and being "upright timbers, with planks attached to them, like steps; on these planks the audience sat, before the theater was built" (Hsch., sv. ikria). Ikria are illustrated as early as the early sixth century BCE on a dinos painted by Sophilos that shows the seated audience at the funeral games of Patroklos. We are told (Suidas, sv. *Pratinas*) that when a set of these in the Athenian Agora collapsed during a dramatic performance in the early fifth century BCE the plays were transferred to the Sanctuary of Dionysos, south of the Acropolis, where the

theater is built into the slope of the hill. Banked rows of seats creating an early theatral area at the edge of an open space are also recorded at Dreros and Lato on Crete and at Morgantina in Sicily. (See also Chapter 25.)

Perhaps the most compelling spectacle of all in Athens was the huge procession held as part of the Panathenaic festival in honor of Athena. The parade involved hundreds of individuals and animals, described by Aristophanes and depicted on the frieze which decorated the Parthenon: priests and priestesses, *kanephoroi* (aristocratic maidens carrying sacrificial paraphernalia), stool-bearers, water-bearers, parasol-bearers, musicians (flutes and kitharas), olive-branch-bearing elders, sacrificial cows and sheep, and a huge contingent of cavalry (see Chapter 11 and Chapter 12). All the participants would be elegantly dressed in their best finery, and the display must have been magnificent as it made its way through the Agora and up the slopes to the Acropolis. The literary evidence suggests that this parade was held for close to a thousand years, from the sixth century BCE until at least the fourth century CE. The Panathenaic Way, the broad route followed by the procession, passed through the Agora and has been excavated at various points. More than sixty superimposed layers have been recorded, also covering a period of over a thousand years. Here, too, special temporary stands, or ikria, were set up along the course of the street to provide spectators with a good view as the parade went by. Cuttings for their supports have been excavated at the shoulder of the road at several points along its course through the Agora.

Athletic Competition

> You will find that at other cities statues of athletes are set up in the agoras, at Athens statues of good generals and tyrannicides. (Lycurg. *Leoc.* 51)

In Homer, the agora of the Phaeacians was used as a venue for athletic contests (*Od.* 8.109ff.). It may well be that one of the earliest recognized needs for a large open space of the sort we associate with agoras was indeed for athletic competition and display. There is reason to believe the the classical agoras of Athens, Corinth, Elis, and Argos were all equipped with running tracks. It is also worth noting that Vitruvius (*De arch.* 5.1.1) regards the layout of the forum in Italy and the design of the surrounding buildings as dictated primarily by its function as a venue for gladiatorial displays.

In Athens, a festival in honor of Athena with a strong athletic component, the Panathenaia, was founded or reorganized on a grand scale by the tyrant Peisistratos in 566 BCE, some two hundred years after the Olympics, but only a decade or so after the other three Panhellenic games, at Delphi, Isthmia, and Nemea. The program at Athens was somewhat different from the four Panhellenic games in several important aspects: some contests were open only to Athenians, there were prizes of value, there were prizes for more than just first place, and there were team competitions. These last three aspects perhaps reflect the democratic politics of Athens, in contrast to the essentially aristocratic ethos of the Panhellenic games, with their emphasis on individual achievement.

It seems likely that a close relationship between the games and the agora square goes back to the origins of both in the sixth century BCE. One of the earliest public inscriptions from Athens, though fragmentary, seems to refer to a *dromos*, which means a race-track (and used as such in the *Odyssey*, Book 8). The same term was used for the Panathenaic Way as late as the fourth century CE (Himer. *Or.* 3.12). It seems likely that part of the Panathenaic Way, used as the processional route for the festival, also served as the racecourse for the games. Excavations have shown that the surfaces of the road in the fifth century BCE were made of carefully screened material, with no stones at all, packed very smooth and very level – an ideal running track. What is of particular interest is that two other classical agoras excavated in Greece, at Corinth and Argos, both have racetracks as well; there are well-defined starting lines with the characteristic grooves for the runners' starting positions. It can be argued that the initial laying-out of a large open space in the middle of a Greek city was for an athletic venue, and that most of the other uses as an agora came later.

Over time, specific facilities for spectacles and competition were built elsewhere, replacing early facilities in the agora. Thus the orchestra in the Agora of Athens and the dancing ground (*choros*) of Sparta

were replaced by theaters, and racetracks for men and horses gave way to stadia and hippodromes. In Athens, one very old-fashioned event continued to be held in the Agora square: the *apobates*. This involved a man in armor jumping on and off a moving chariot driven by a second man. The finish line seems to have been the Eleusinion, just southeast of the square (Neils and Schultz 2012). This unusual event is very archaic or even heroic, since there is little evidence the classical Athenians used chariots in warfare in the historical period.

Military Activity

An agora was the ideal mustering point in times of trouble, a place where troops could gather in sufficient numbers, at the center of a network of roads leading out in all directions, allowing a rapid response to whatever part of the city or its walls were threatened and in need of defense. The open space of an agora was also, of course, an ideal spot to practice military drill, and there is evidence that the agoras of both Athens and Elis were used for cavalry activity.

In Athens, reliefs showing cavalry contingents, honorary decrees for the hipparchs and phylarchs (cavalry commanders), tokens, and part of a cavalry archive all cluster together at the northwest corner of the square, suggesting that somewhere nearby was the *hipparcheion* (headquarters of the cavalry commanders), though no specific remains have been identified. A fragment of the fourth-century comic poet Mnesimachos, cited by Athenaeus, preserves an extraordinary correlation between literature and archaeology: "Go forth from the chambers roofed with cypress wood, Manes; go to the agora, to the Herms, the place frequented by the phylarchs, and to their handsome pupils, whom Pheidon trains in mounting and dismounting" (Ath. 9.402f). The Herms were a series of primitive statues set up at the northwest entrance to the Agora, just where a series of clay tokens issued by Pheidon "the Hipparch in Lemnos" were found in a nearby well. The large space of the agora and the wide surface of the Panathenaic Way at this point apparently made a convenient and useful place to train and exercise the cavalry. The people of Elis, according to Pausanias, even called their agora the hippodrome, because they also used it for training horses (6.24.2).

Memorial Display and Public Honors

> Pass on in thought to the Stoa Poecile too – the memorials of all your great deeds are set up in the Agora. (Aeschin. 3.186)

Not surprisingly, given its public nature, the agora of a city was deemed the appropriate repository of monuments commemorating military triumphs. The buildings themselves, of course, could have been built from the proceeds of successful military campaigns, such as the stoa built in the sixth century BCE in Sikyon with spoils from Kirra (Paus. 2.9.6); the stoa seen by Pausanias in the Agora of Elis (6.24), which was constructed from the booty taken from the Corcyraeans; the *Persike* at Sparta (Paus. 3.11.3; 3.17.4); and the stoa at Thebes, built with spoils from Delion (Diod. Sic. 12.70.5).

In Athens, several buildings, as well as the square itself, were used for such military display. The Stoa Poikile, or the Painted Stoa, built circa 470 BCE, was used for the display of various memorials (Figure 21.5). The paintings described by Pausanias (circa 160 CE) showed Athenian military triumphs, both mythical and historical: the Athenians fighting Amazons, the fall of Troy, the victory over the Persians at Marathon, and the Athenians defeating the Spartans at Oinoe. In a sense, these paintings collectively may be thought of as an early museum: art on permanent public display. The paintings were exhibited in the Stoa for well over six hundred years. The building also displayed more tangible evidence of Athenian triumphs: shields taken from the enemy in battle. Pausanias saw a group taken from the Spartans at Pylos (425/4 BCE) and others from a victory at Skione (421 BCE). One example of the shields from Pylos, carrying the inscription "The Athenians from the Lacedaimonians at Pylos," has actually been recovered in the excavations. Also from the Peloponnesian War is an inscribed bronze spear butt taken from the rebellious allies of Lesbos in 428 BCE and dedicated to the Dioskouroi (the

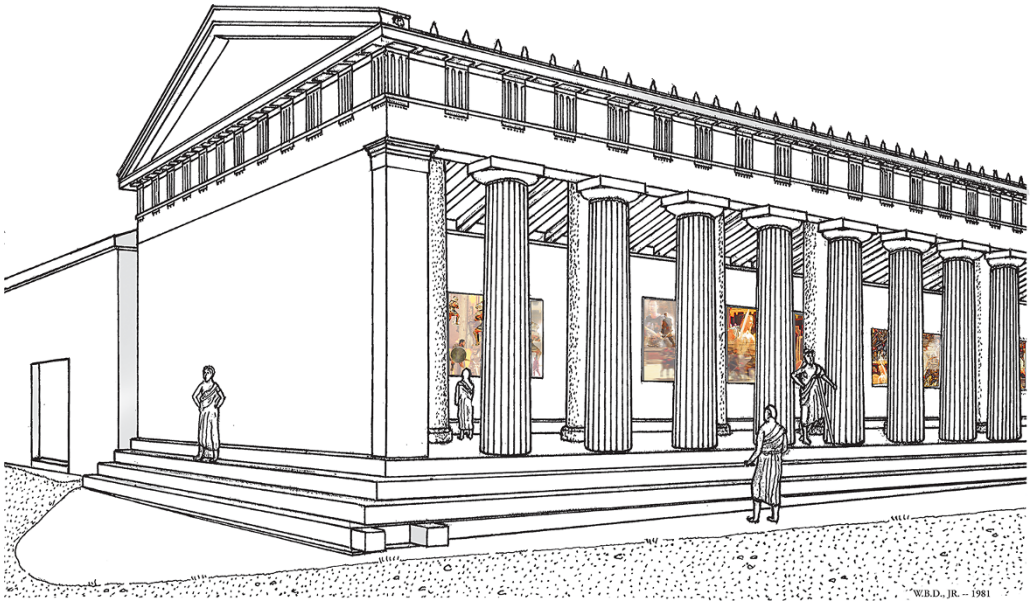

Figure 21.5 Stoa Poikile, reconstruction by W.B. Dinsmoor, Jr. Courtesy The American School of Classical Studies at Athens, Agora Excavations. *Source*: American School of Classical Studies at Athens.

sons of Zeus, Castor and Pollux). Later trophies and statues celebrating military success were set up in front of or near the stoa in the Hellenistic period.

According to Pausanias (1.26.2 and 10.21.5–6), other shields, in this case belonging to those Athenians who died fighting for the freedom of Athens, were displayed on a different building, the Stoa of Zeus Eleutherius (Freedom). The wall of this stoa was also decorated with a painting of the battle of Mantinea (362 BCE), when the Athenians and their allies checked the rising power of Thebes.

Among the earliest known victory dedications in the Athenian Agora were three Herms, set up to commemorate victories in the aftermath of the Persian wars. In the fifth century, such memorials did not honor individuals; the name of the victor, Kimon, did not appear on the Herms, dedicated after the victory at the Eurymedon river, and the name of his father, Miltiades, did not appear in the painting of Marathon in the Stoa Poikile. Things changed in the fourth century, however, when statues of successful generals – Chabrias, Timotheos, Konon – were set up in the square. Indeed, Aristides reports that "they [were] rewarded with the highest and most distinguished honors, setting them up in bronze in the agora, and giving them a seat beside the gods on the Acropolis" (Aristid. *Or.* 53. 23/4).

The concept of personal honor was an extraordinarily important aspect of classical Greece. Just as athletes in the Panhellenic games competed for nothing more than a wreath, so the Greeks contended for recognition in the political arena. In a society which had few tangible luxuries, honors conferred by the state were coveted prizes. Thucydides (2.46) articulates the concept in his account of the funeral oration of Pericles: "for where the prizes for virtue are greatest, there are found the best citizens." Among the highest honors available would be the statue of an individual set up in the agora of a city. Pausanias, in his tour of Greece, lists many such honorary statues, and dozens of decrees from various Hellenistic cities survive, recording this honor; they usually specify that the statue is to be set up "in the most visible place" in the agora or a sanctuary. Most of them indicate that the statue was to be of bronze, and because bronze can be melted down and reused, only a handful of such statues survive. What do survive are the hundreds of inscribed bases with the cuttings that anchored them, and many excavated agoras have revealed a long row of such bases, set side by side. Over time, the accumulation of such monuments made the agora of the city the repository of its history, where its military successes,

prominent citizens, and allies were commemorated and celebrated, in large part to impress the present inhabitants and to encourage emulation.

Conclusions

Greek agoras were in some sense the first truly public gathering places, designed to provide a focal point at the heart of the city, and they are an important element in the rise of urbanism. The buildings required were stoas, a bouleuterion, a prytaneion, fountains, temples and altars, civic offices, and markets; but it was the open space itself, defined by these buildings, which provided the venue for political, commercial, cultural, religious, military, and social activities. Regardless of the political system in force, all Greek cities seem to have had one. They are paralleled in antiquity by similar centers: the fora of the cities of the Roman Empire. In the first century, Vitruvius called for a forum appropriate to the size of the city, and as Rome grew during the empire, so too did the number of imperial fora, five of them, built near to the old Forum Romanum to accommodate the growing population. Constantinople, with its estimated population of 500 000, had a series of seven Imperial fora, spread out along the major thoroughfares.

The concept survived in the piazzas of the city-states of Renaissance Italy, and eventually in most of the larger, later cities of Europe. The scale of modern post-Renaissance cities do not lend themselves to a single obvious center of town, and this is perhaps an element in their weakened viability as political and social entities. It may be no coincidence that the earlier creative, vibrant, largely successful, and enlightened cultures all have in common a well-defined city center, which begins with the agoras of Greece, is paralleled by the fora of imperial Rome, and echoed in the piazzas of Renaissance Italy.

FURTHER READING

The Athenian Agora, featured prominently in this chapter, is excavated by the American School of Classical Studies at Athens. The excavation series, *The Athenian Agora*, is wide-encompassing (and continually growing), covering many aspects of the Agora: literary testimonia (Wycherley 1957); the history and development of the Agora (Thompson and Wycherley 1972); the lawcourts (Boegehold 1995); and various studies of material found in the Agora (e.g., coins, inscriptions, painting, pottery, sculpture). Further detailed studies can be found in the various titles of the *Hesperia* supplements, such as Lynch 2011 and Rotroff 2014. Camp 1986 and 2010 offer excellent overviews of the site. For the agora more generally in the Greek world, see Martin 1951, Kenzler 1999, and Mertens 2006. Coulton 1976 provides the best survey of the Greek stoa to-date. For the political buildings associated with the agora, consult McDonald 1942 for a general treatment of the prytaneion, Miller 1978, and Gneisz 1990 for a synthesis of the bouleuterion. Rotroff 2009 discusses commerce related to the agora. See Robinson 2011 for a discussion and bibliography related to water and fountains in the agora.

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CHAPTER 22

Athletics: Stadia, Gymnasia, Palaistrai, and Hippodromes

David Gilman Romano

Introduction

Athletic events had special significance in ancient Greek culture: competitions were central to religious festivals, especially at the great Panhellenic centers of Olympia, Delphi, Isthmia, and Nemea, and athletic training was a key component of education and military preparation. Over time, purpose-built facilities for training and for staging athletic events became an expected component of any Greek city or large sanctuary. Because athletics were so essential to Greek culture, naturally we find frequent references to them and to athletic facilities in literary, historical, and epigraphical texts. The vocabulary for Greek athletic structures appears at least as early as the sixth BCE, also the time when the earliest structures for athletic events were built and are visible in the archaeological record. Much of this ancient Greek vocabulary for athletic facilities has become part of ours: hippodrome, stadium, palaistra, gymnasium.

The word "hippodrome" is used by Homer (*Il.* 23.330), as is the word "dromos" (*Il.* 23.745). A hippodrome is noted in the context of the preparations for the chariot race that was the first event of the funeral games of Patroklos, and dromos is used in the context of the preparations for the footrace in the same funeral games. The provisions for both events are very simple, as they were made on the plain of Troy and do not include any kind of permanent or substantial architectural elements. The turning post in the chariot race, as described by Homer, is the stump of an old tree about 6 feet high and with two white stones leaning against it. His description of the setting made the funeral games for Patroklos more vivid to his audience.

The word *stadion* probably derives from the Greek verb *ἵστημι*, "to stand," and the original meaning was the "standing place." Although Homer does not use the word "stadion," he does use the word *stadios*, meaning standing fast and firm. Later stadion had the meaning of the architectural structure, the footrace of 600 feet in length, as well as the linear distance of 600 feet.

From Herodotus (6.126), we hear about Kleisthenes, the tyrant of Sikyon, who won the four-horse chariot race (*tethrippon*) in the Olympic games of 576 or 572 BCE, and who had earlier won the tethrippon at Delphi in 582 BCE. After his Olympic victory, Kleisthenes announced that he had a marriageable daughter, Agariste, and that any man who thought himself worthy enough to marry her should come to Sikyon to be reviewed over the course of the succeeding year. Kleisthenes "had a dromos and a palaistra built" (δρόμον καὶ παλαιστρα ποιησάμενος) for the suitors of his daughter to train in, while he tested them for a year.

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

The fourth-century BCE orator Aeschines refers to an earlier era (perhaps nostalgically) during the life of Solon, circa 600 BCE, and to regulations for the training of individuals during that time. Aeschines (*In Tim.* 138) states, "Solon forbids the paidotribe [trainer] to open the palaistrai before sunrise and he commands them to close them down before sunset. He prescribes what children are to be admitted as pupils and their age at admission. He provides for a public official who shall superintend them. He regulates the festival of Hermes in the palaistrai." Also referring to that early era in Athens, Demosthenes mentions that Solon made the regulation that anyone found stealing clothes from any of the public gymnasia would be liable to the death penalty (Dem. 24.114).

Athenians looked to a pre-Solonian time for the origins of the three public gymnasia of Athens (i.e., the Academy, the Lyceum, and the Kynosarges), although there is little archaeological evidence for these from such an early date. Plutarch credits Kimon with waterworks and specific improvements to the Academy, circa 460 BCE. The Academy had been a waterless and dry area and then became a lush, well-watered district with walking and running paths (Plut. *Cim.* 13.8). By the end of the fifth century BCE Aristophanes gives a description of the Academy as a beautiful location for training and camaraderie in the spring (*Nub.* 1005).

Footraces: Dromos and Stadion

From Pausanias (2.27.5) we learn that a dromos and a stadion are not the same and, in fact, have a number of differences. The dromos was the racecourse proper, and the distance between the starting lines of the dromos was measured as 600 feet, although the absolute measure of distance varied from sanctuary to sanctuary, since the foot measure differed from site to site. A dromos could be found without facilities for spectators and, as such, could be either a racecourse for athletes to practice or a simple place for athletes to compete. An example of a dromos at Sparta is mentioned by Pausanias as a place where athletes practiced (3.14.6–7). A stadium, on the other hand, was an architectural facility that combined the dromos with facilities for spectators. The stadium's "600-foot" lengths, measured between starting lines, varied considerably from site to site, since, just as with the dromos, the foot used to measure the linear distance varied. At Olympia the stadium length was 192.28 m, with a foot measure of 0.3205 m, whereas at Delphi the stadium measure was 177.80 m, with a foot measure of 0.295 m, and at Halieis the stadium measure was 166.50 m, with a foot measure of 0.278 m.

The earliest use in Athens of the word "dromos," or racecourse, is on several public inscriptions carved on limestone stelai, found on the Athenian Acropolis, and dated circa 566–550 BCE. The stelai (*IG* I^3 507, 508, 509) regulate the construction of a racecourse (or possibly the contests themselves) for the Panathenaic games. In each case the inscriptions begin "they made the dromos for the gods" (τὸν δρὸμον ἐποίεσαν τεῖ θεοῖ). These preparations likely were for the earliest contests of the Panathenaic games held in the Athenian Agora, under the control of magistrates called *hieropoioi*, the arrangers of sacred events. The "making of the dromos" likely involved a preparation of the Panathenaic Way itself, a straight and level stretch of road in the agora, perhaps near the (later) Altar of the Twelve Gods.

At Corinth, a dromos as an area of competition was built circa 500 BCE, together with a unique curved starting line. The curved starting line was discovered in the Upper Lykaion Road Valley, and is located immediately to the west of the later Roman Julian Basilica (Figure 22.1; see Rorres and Romano 2005). The preserved length of the starting line is over 12 m, and its width is between 1.25 and 1.30 m, although its original length is probably between 16 and 17 m. The top surface of the starting line is smooth and was plastered and painted a dark blue–black color in a fresco technique. The starting line itself was constructed of rectangular limestone blocks that are joined with a thin cement. Individual grooves for the toes of the front left foot and the rear right foot were cut into each of the poros blocks, after which the top of the blocks was plastered and painted. The border of the starting platform was painted white to create a contrast with the starting line. Red letters indicating lane numbers were also painted on the finished surface of the starting line between each pair of toe grooves. The 17 starting positions for the athletes were numbered from alpha at the south to pi at the north end; the central position was unnumbered although the toe grooves were cut. The numbers were meant to be read from

Figure 22.1 Curved starting line, Corinth, circa 500 BCE. *Source*: Corinth Excavations, American School of Classical Studies at Athens.

the eastern side of the starting line, looking west, in the direction of the racecourse. Unfortunately, the five southernmost positions were destroyed during the construction of the subsequent Hellenistic starting line.

Each of the toe grooves has a vertical back wall and a beveled front wall. The distance between the front and rear toe grooves at each starting position varies considerably, from 0.60 to 0.87 m. These widely spaced toe grooves are virtually unique in Greek athletics. In addition, the curved starting line did not include any post-holes that would have provided lane dividers or turning posts or attachments that might suggest a mechanical starting device, the *hysplex*, that would become common in later stadia (see Valavanis 1999). Archaeological evidence exists for a later, straight starting line (ca. 270 B. C. E.) that was constructed on top of the earlier archaic starting line. Parts of the racecourse floor found nearby were found to be composed of crushed limestone. The curved starting line was the location of the start of a distance race of more than two lengths of the dromos and the curve allowed each of the competitors an equal distance to run to a certain point on the track. Possibly the curved starting line was used in a race for girls at Corinth, perhaps in the Hellotia, a festival of Athena Hellotis.

One of the characteristics of the earliest stadia is that one end of the dromos, and one of the starting lines, was often located near the altar of the deity in whose honor the contests were held. This is true at both Olympia and Isthmia as well at a number of other Archaic and Classical sanctuaries, including the Sanctuary of Apollo at Halieis. In its earliest form, the stadion was a flat, usually rectilinear, space 600 feet long and 50–100 feet wide, often bordered by natural or artificial embankments of earth for the accommodation of the spectators.

The word "stadion" is first used in Greek literature in the early fifth century BCE in the poetry of Simonides, Pindar, and Bacchylides; throughout their odes composed in honor of athletic victors are many references to the stadion as a structure and a race, and also to *stadiodromos* runners. Later in the fifth century BCE, Herodotus and Thucydides use "stadion" as a measure of distance. Herodotus (2.149) defines the stadion as the equivalent of 6 *plethra*, 100 *orguiai*, or 600 feet.

In an early appearance the word "stadion" is found on a prize Panathenaic amphora now in the Metropolitan Museum of Art (1978.11.13).On the obverse of the vase is an image of an armed Athena, striding to the left; the reverse depicts three sprinting runners, and the athletic scene includes a painted inscription giving the name of the contest for which the amphora was won. The inscription reads "of the stadion race for men" (ἀνδρῶν σταδιό). The amphora is dated to the mid-sixth century BCE and thus pre-dates the first literary use of the word by at least 20 to 30 years.

The architectural evidence for Greek stadia first appears in the sixth century BCE in the form of embankments for spectators at the Sanctuary of Zeus at Olympia and at the Sanctuary of Poseidon at Isthmia. These were simple, but sophisticated, arrangements for spectators to watch the contests that would have taken place on the dromos of the stadium. The artificial embankments took the form of banked earth between low stone foundation walls that gave the standing spectators a slight elevation from which to watch the contests from the sides, or the ends of the stadion. At both Olympia and Isthmia no trace of the racecourse floor was found in association with the spectator embankments, as this was probably destroyed in the construction of later versions of the stadia at the same sites.

Stadia had a growth and evolution of design over the course of many centuries. At Olympia, for instance, there are the partial remains of two successive stadia; a third (earlier) stadion is hypothesized. The earliest remains date to the middle of the sixth century BCE in the form of a portion of the stone foundations and artificial embankment for the southern spectator area. In the fifth century BCE, the stadium was enlarged when embankments were added on the east and west ends of the stadium. The northern embankment remained the natural hillside of the Kronos hill. This larger fifth-century stadium was then modified in different ways over the course of many centuries, but it remains one of the best known of all ancient stadia (Figure 22.2). This facility was characterized by having a dromos of 192.28 m (measured between its limestone starting lines), and the track was approximately 30 m wide. The borders of the dromos had a water channel at ground level with periodic basins for the collection of water. The long north and south sides of the stadium were convex to the dromos so that the long spectator sides were bowed out, making it easier for those on the embankments to watch the contests. There were no seats for the spectators, but the capacity of the embankments is estimated at 45 000 standing individuals. Seats were provided for the *Hellanodikai*, the judges, and for the Priestess of Demeter. In addition several seat blocks dating to the sixth century have been found for *proxenoi*, the consuls.

The location of the judges' area (noted by Pausanias (6.20.6)) and the Priestess of Demeter opposite is found approximately one-sixth of the distance of the stadion from the western starting line. The reason for this location of the judges must have been related to a specific area, a square plethron, or area of 100 square feet, that was demarcated on the track surface, as the place where certain field events took place, likely to have been the wrestling, boxing, pentathlon, and pankration. In this way, the Hellanodikai could have had a good view of all of these events. At Olympia this space, approximately 32 m or 100 feet per side, would have corresponded to the available space within the open courtyard of the palaistra at Olympia. It also probably corresponded with the practice gymnasium that Olympic athletes had trained in at Elis that Pausanias (6.23.1–7) describes as a *xystos* (running track), with high plane trees growing between the tracks and inside the wall. There is a sacred track, as well as a practice track on which the athletes train. Pausanias goes on to say that there is an enclosure called *plethrion* where the Hellanodikai match the wrestlers by age and skill.

The Peloponnesian city Messene offers an example of a spectacular Hellenistic stadium, known from the work of A. G. Blouet in the nineteenth century, and recently excavated. The north closed end of the stadium is enclosed on three sides by a colonnade and a series of stone seats. Rooms opened from the colonnade into a number of rooms similar to those in a gymnasium. The southern half of the stadium does not have seats but slopes without seating facilities. At the far south end of the stadium was found a heroön built into the southern city wall, probably in the first century BCE.

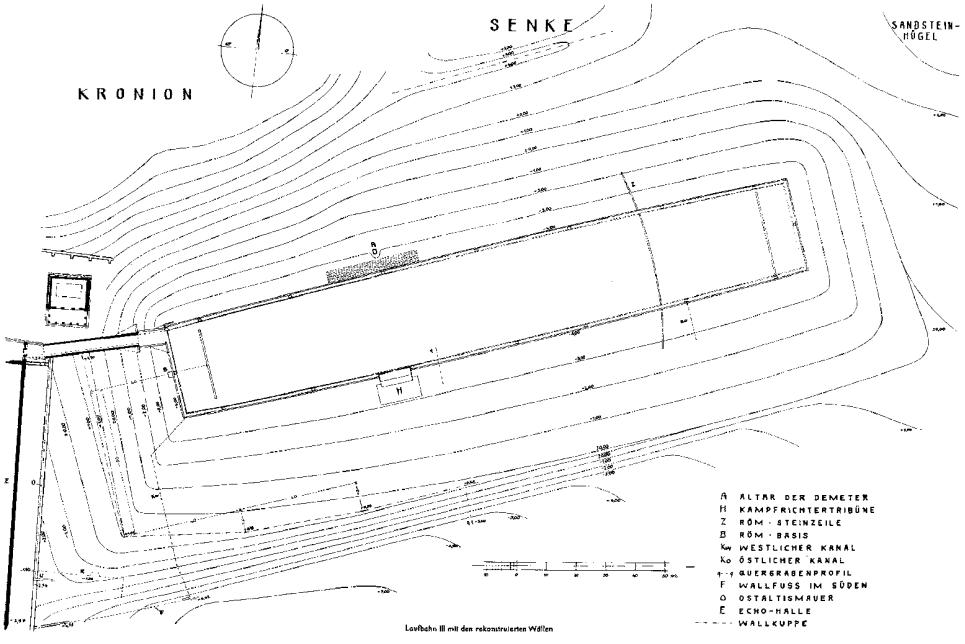

Figure 22.2 Stadium with reconstructed embankments, Olympia, circa 450 BCE. *Source*: DAI.

At the Hellenistic city of Pergamon in Asia Minor, the dromos of a stadium was combined with the cavea of a theater on the western slope of the citadel. Constructed in the second century BCE during the reign of Eumenes II (197–159 BCE), this stadium–theater complex was not the only one of its kind in the Greek world, but it is perhaps the most impressive for its size and location. Other examples of this architectural combination are known from Sardis, Tralles, Rhodes, Dodona, and possibly Pessinus. At Pergamon, the terrace of 250 m in length and 25 m in width was situated in front of, and to the west of, the theater cavea (Figure 22.3). Spectators sitting in the cavea of the theater could have watched the athletic events on the terrace, as well as the dramatic or musical events in the orchestra. The scene building of the theater was constructed of wood and was portable, so it could be removed for the running of the footraces. The stadium–theater complex was likely built as a result of the victory of Eumenes II over Prusias, when he established musical and athletic contests in honor of Athena Nikephoros (Kohl 2002). The games were crown games, and the musical contests were considered the equal of the Pythian games at Delphi in prestige, while the athletic contests were supposed to be the equal of the Olympic games. An Ionic temple at the north end of the terrace is likely to have been dedicated to Athena Nikephoros. An earlier example of the combination of theater and stadium complex is to be found in Athens on the Pnyx Hill where, during the period of Lykurgos in the fourth century BCE, the Panathenaic Stadium and Theater was constructed. The facility combined the enlarged theatrical assembly area with the long adjacent terrace bordered by spectator embankments as a setting for the athletic and musical contests of the Panathenaic games.

An extravagant stadium at the ancient city of Aphrodisias in Asia Minor was constructed in the first century CE; it was 270 m long and had 30 rows of stone seats. The spectator capacity of the stadium was approximately 30 000. The track surface measures 238 m in length and is 31 m wide at its narrowest point and 40 m wide at its widest point. The stadium, located at the northern limit of the city, was closed on both ends and, as such, is one of the best-preserved stadia in the ancient world. It was used for Greek athletic contests as well as for Roman spectacles, gladiatorial events, and *venationes*, or hunting games. An inscription from Rhodes mentions the Aphrodisias *Isolympia* in the first century CE, and it is possible that there was an earlier Hellenistic festival on the site.

Figure 22.3 Acropolis with theater–stadium complex, Pergamon, circa second century BCE. *Source*: H.R. Goette.

Architectural features of stadia included a number of common elements. Typically the floor surfaces were composed of smooth clay that had been prepared, rolled, and provided a comfortable surface to run on barefooted. At Nemea, narrow bands of colored clays, red and white, were found imbedded into the track surface, suggesting that colors were utilized in the track surface for the definition of different parts of the track, or for special uses or specific events. The crushed limestone surface associated with the starting line at Corinth (dated to circa 500 BCE) is an exception to this generality. Water facilities in the form of stone water channels and basins typically line the racecourse floor and would have been used to maintain the track surface. It was important to wet the track as a part of the maintenance of the track surface from time to time. Clay that has been baked in the sun can be brought back to a soft supple surface with the addition of moderate amounts of water. Authors have suggested that these water facilities found at track level in stadia provide drinking water for the athletes and spectators, but water that has circulated around the track surface and settled in basins will not have been attractive to drink. It is more likely that the spectators brought their own drinking water with them. Stadia had some provision made for rainwater run-off to prevent the pooling of water on the surface of the track. One solution to this problem was to provide a pitch to the track so that the center of the racecourse floor was higher than the sides and, in addition, to have a gradual slope to the stadium as a whole so that the open end is lower than the closed end. Some tracks also included storm channels and drains for large amounts of rainwater. All of these hydraulic related features were present in the Hellenistic Stadium at Nemea.

Stone starting lines located at the ends of the dromos limited the length of the track. These starting lines, *balbides* (sing. *balbis*), were typically composed of stone blocks and were characterized by having starting positions, single or parallel starting grooves for the toes of the front left and rear right feet of the starting athlete. Typically there would also be a series of postholes for vertical posts as lane dividers in the starting line that could also be used as turning posts. The characteristics of the starting lines vary somewhat over time, but the basic concept was literally to provide a starting position for each athlete at the start of the footraces. The grooves guaranteed that the athlete would stand stationary and motionless in a very specific place during the start. During the Hellenistic period, an additional apparatus was added to the starting line, known as a *hysplex* (pl. *hyspleges*), a spring loaded mechanism that automatically raised or lowered a bar or a cord to allow the athletes to start the race. From an inscription found

at Epidauros (*IG* IV² 1.98), it is known that a hysplex mechanism was being installed there in the mid-third century BCE. Similar devices are known from the stadia of Isthmia, Nemea, and Corinth, and there were other more elaborate examples from other sites, for instance at Epidauros and Rhodes.

Formal entrances to stadia were commonly found as an integral part of the architectural design of the stadium. The earliest such formal entrances were an important aspect of the ancient stadium, and over several centuries these took a variety of different forms. The approach of the athletes to the stadium was of significance in the design of the sanctuary as it appears from the archaeological evidence. From the fifth century BCE onward, there are examples of open-air entrances that channeled the athletes toward the track. Such an example is found at Isthmia, where a ramp 11 m long with low walls leads from near the southeast corner of the Temple of Poseidon to the northern corner of the curved end of the stadium. Another such open-air corridor, of the fourth century BCE, has been found at the Sanctuary of Zeus at Mt. Lykaion between the Administrative Building and the direction of the stadium and hippodrome. Later, in the Hellenistic period, constructed vaulted entrances were constructed to the stadia at Olympia, Nemea, Delphi, and Epidauros. These were larger and more elaborate constructions; in the case of Olympia the vaulted entrance was 32.10 m long and at Nemea it was 36.35 m. In each instance these vaulted entrances were constructed to create an artificial formal and dramatic entrance for athletes to arrive into the stadium.

By the fourth century BCE, athletic facilities for practice and for competition were so widely known and expected that portable facilities were devised for military expeditions. Xenophon describes two festivals that included athletic contests held by the "10 000" (largely Arcadian mercenaries who worked for Cyrus) during the course of their march (*An.* 1.2.10; 4.8.25–28). The first was a festival in honor of Lykaion Zeus at the beginning of the expedition, and the other towards the end as the army reaches Trapezus on the Black Sea. In both cases, these contests were held on mountainsides where the soldiers were camped and temporary athletic facilities were created for the festivals.

During Alexander's march to conquer the Persian Empire, two of his generals, Perdiccas and Krateros, carried with them a training facility in the form of hides of animals stitched together that could be set up to create an awning as an indoor training area one stadium in length. In addition, animals carried sand to be spread in the area designated as the palaistra (Ath. 12.55). Alexander founded several new cities in Eastern Bactria, possibly the ancient Alexandria-on-the-Oxus, known today as Ai Khanoum, where excavators discovered a Greek gymnasium, a Greek theater, and Greek houses characteristic of the Seleucid Empire and probably dating to the early third century BCE, although many of the most conspicuous remains date later, to circa 175–145 BCE. The gymnasium included facilities of Vitruvian proportions (see the following section), a large walled courtyard, 99.90 m per side, with interior dimensions of 73.60 m per side. The interior included an exedra on each side, and the north side had six Doric columns, and on the east, west, and south sides two columns. To the south there was an enormous open courtyard 118.50 × 96.50 m, and further to the south a huge swimming pool 58.50 × 53.50 m.

Training and Wrestling: Gymnasia and Palaistrai

Gymnasia and palaistrai could be found in both cities and sanctuaries all over the Greek world. The gymnasium was a facility that often included a palaistra, literally the wrestling school; a xystos, or training track; a bath; and some area of open space. The three public gymnasia of the city of Athens were well known, the Academy, Lyceum, and Kynosarges. Each of these was built at public expense and located in the suburbs of the city: the Academy to the northwest; the Lyceum to the northeast; and the Kynosarges to the south. The Academy became the school where Plato taught in the fourth century BCE; the Lyceum was known as the school of Aristotle, Plato's pupil; and the Kynosarges was known as the gymnasium where illegitimately born Athenians would go. Private gymnasia, baths, and changing-rooms are also noted in Athens of the later fifth century BCE (*Ath. pol.* 2.10).

Early Archaic or Classical architectural remains of palaistrai and gymnasia are rare. There is little that can be cited until the fourth century BCE. The best dated of these is the gymnasium at Delphi, which can be dated to the years 334–327 BCE based on an inscription (*Corpus d'Inscriptions de Delphes* [*CID*]

Figure 22.4 View of gymnasium, Delphi, fourth century BCE, with Roman additions. *Source*: David G. Romano.

2.79A). The gymnasium architectural complex was situated on two adjacent long terraces, 4 m apart in elevation, the upper one approximately 200 m in length and the lower 60 m, and found between the Sanctuary of Athena Pronaia (Marmaria) and the Castalian Spring (Figure 22.4). The axis of the two terraces is approximately northeast–southwest. The gymnasium was originally within the city limits of Delphi, and two stairways gave access to the Pleistos ravine and the city below.

The upper terrace (approximately 200 × 34 m) is composed of the xystos (the covered running track), measuring 185.95 × 9.02 m, and the parallel *paradromis* (the open-air running track), measuring 172.71 × 6.00 m. The xystos was covered by a Doric portico, including columns, triglyphs, and metopes. In the Roman period, the columns were replaced with a marble Ionic order when the colonnade was extended by 1.16 m, and the xystos was extended. A ground-level water channel bordered the paradromis to the west. At the north end of the upper terrace are the remains of an earlier small temple, probably dedicated to Demeter.

The xystos provided a covered practice dromos on which athletes could train, but since sand was found as the floor surface in the dromos perhaps it may have been used also for activities other than running. No starting-line blocks were found as a part of the xystos. The paradromis provided an uncovered practice dromos that was found together with a starting line at both the north and south ends. The starting lines were found *in situ* and feature a single groove for the purchase of the toes of the athlete's right foot. There are also several square post-holes in the starting-line blocks that received the wooden posts to identify the lanes, as well as turning posts. There are places for two starting positions at either end of the paradromis, and since the starting positions are staggered, it would have been possible for four runners to start on the paradromis at the same time, and if they ran at the same speed they could remain on the track together without causing interference.

The lower terrace takes the form of an irregular trapezoid. The palaistra itself, at the southern end of the terrace, is a square structure, 35 m on a side, with a central open court and several rooms that open onto the courtyard. The open-air courtyard is 13.33 m square and included an Ionic colonnade,

approximately 3.58 m in height and with probably 8 columns per side. There were water basins and a water channel at ground level inside the peristyle court. Rooms led off of the central court to the west and the north, and we know a good deal about the names and the function of these rooms from an inscription of 247/6 BCE, an account of work to be done in the stadium, gymnasium, and hippodrome at Delphi in preparation for the approaching festival (*CID* 2.139).

The main palaistra entrance was a distyle in antis porch facing southwest. On the south side of the internal court was a large recessed room with four columns in antis, and is considered to be the *apodyterion*, or the dressing room. Two rooms on the west side of the courtyard are considered to be the *sphairisterion* and the *konima*, separated by what may have been a small shrine room in honor of Hermes or Herakles. This room faced the internal peristyle by two columns in antis. The sphairisterion was the room in which boxers and pankratiasts trained with sand-filled bags. The konima, or *konisterion*, was the room in which athletes covered their bodies with fine sand. There was one additional room off of the central peristyle that may have served as a classroom.

To the west of the palaistra, and joined by a corridor from the interior court, is a nearby outdoor area that is characterized as a flat terrace that includes a circular pool with steps, and an area for large washbasins on supports. The circular pool is approximately 10 m in diameter and has five steps leading to the bottom, with a total depth of 1.90 m. The upper terrace retaining wall to the east features 10 basins, grouped into two series of five, with waterspouts probably in the form of bronze lion heads, one for each of the basins, and an additional central spout, which emptied into a canal that leads to the circular pool. Later, a small Roman bath facility was built to the north of the circular pool and area of the water basins.

At the Sanctuary of Zeus at Mt. Lykaion, to the northeast of the hippodrome in the lower sanctuary, a bathing facility has been found in connection with a large reservoir, 17 × 10 m. The building includes a small room that once housed several stone bathing tubs on legs and is likely to date to the fourth century BCE.

At the Sanctuary of Zeus at Nemea, a simple peribolos and bathing facility has been discovered near the *xenon* (guesthouse) that dates to the late fourth century BCE. The east room of the facility is a square room with sides approximately 20 m in length, and the west room is slightly smaller. The east room served as a simple kind of peribolos with four columns towards the center of the room to support the roof and walls around the four sides. There were no further subdivisions of rooms in this facility. The southern third of the west room is dedicated to a bathing area characterized by a rectangular plunge pool in the center approached by steps to the north and two side areas to the east and west where large stone bath tubs on supports were located against the outside walls. The same steps also led down to the areas of the bathing tubs.

The largest and most extravagant excavated gymnasium from the Greek world is in the Hellenistic city of Pergamon. Built largely by Eumenes II on three terraces on the southern slope of the acropolis, epigraphical evidence attests that the terraces were divided according to three age groups, from boys to young men: the Lower Terrace was for the youngest, the *paides*; the Middle Terrace for the *ephebes*; and the Upper Sanctuary for the *neoi*. Each of the terraces was separated by 10–15 m of elevation (see also Chapter 28). The Lower Gymnasium is an open area, 80 m long and about 25 m wide at the western, wider end; inscriptions of lists of boys who had graduated to become ephebes were found on its north wall. The Middle Gymnasium consisted of two areas, the middle terrace (150 × 36 m) and the north hall, which served as a xystos, or covered running track (230 × 10 m). The middle terrace was divided into two areas: the western part constituted an exercise area, and may have included landscaping with trees, while the eastern area included statues, votive reliefs, an altar, and a temple. The marble temple, dedicated to Hermes and Herakles, was tetrastyle prostyle in the Corinthian order, built on a limestone foundation with an altar to the west along with statues, votive reliefs, and stelai. Names of ephebes were found written on the back wall of the temple. The Upper Gymnasium was constructed on a terrace approximately 200 × 45 m. The courtyard (74 × 36 m) was surrounded by stoas on four sides, and a prostyle Ionic Temple of Asklepios was adjacent. The buildings were constructed in the Doric order and in andesite in the Greek period, and changed to the Corinthian order and marble in the Roman period.

Vitruvius (writing in the first century BCE) includes the Greek palaistra and gymnasium in his handbook on architecture, and his description gives us valuable information about the organization and use

of the facilities (*De arch.* 5.11.1–4). Vitruvius acknowledges that the building of palaistrai is not common in Italy, but he wishes to explain how the buildings are constructed by the Greeks (*De arch.* 11.1–3). He describes the arrangements in detail and gives directions and dimensions for their construction. He advises orientations for inclement weather, rooms for philosophers and rhetoricians, division of spaces according to active users and passersby, bathing facilities, shade, and spectators.

What Vitruvius describes is somewhat similar to the archaeological remains of the palaistrai at Olympia, Priene, Delos, and Delphi. The palaistra at Olympia is much larger than that at Delphi, measuring on the exterior about 66 m per side and with an interior court of approximately 41 m, creating a large central, open courtyard (Figure 22.5). The central colonnade was built of the Ionic order, while the in antis openings from the corridor to the outside rooms were built of the Doric order. There were three entrances to the building, two small entries on the south side and a large one to the west. There are 16 rooms that face onto the colonnade. Three of the largest of these rooms, one on the north

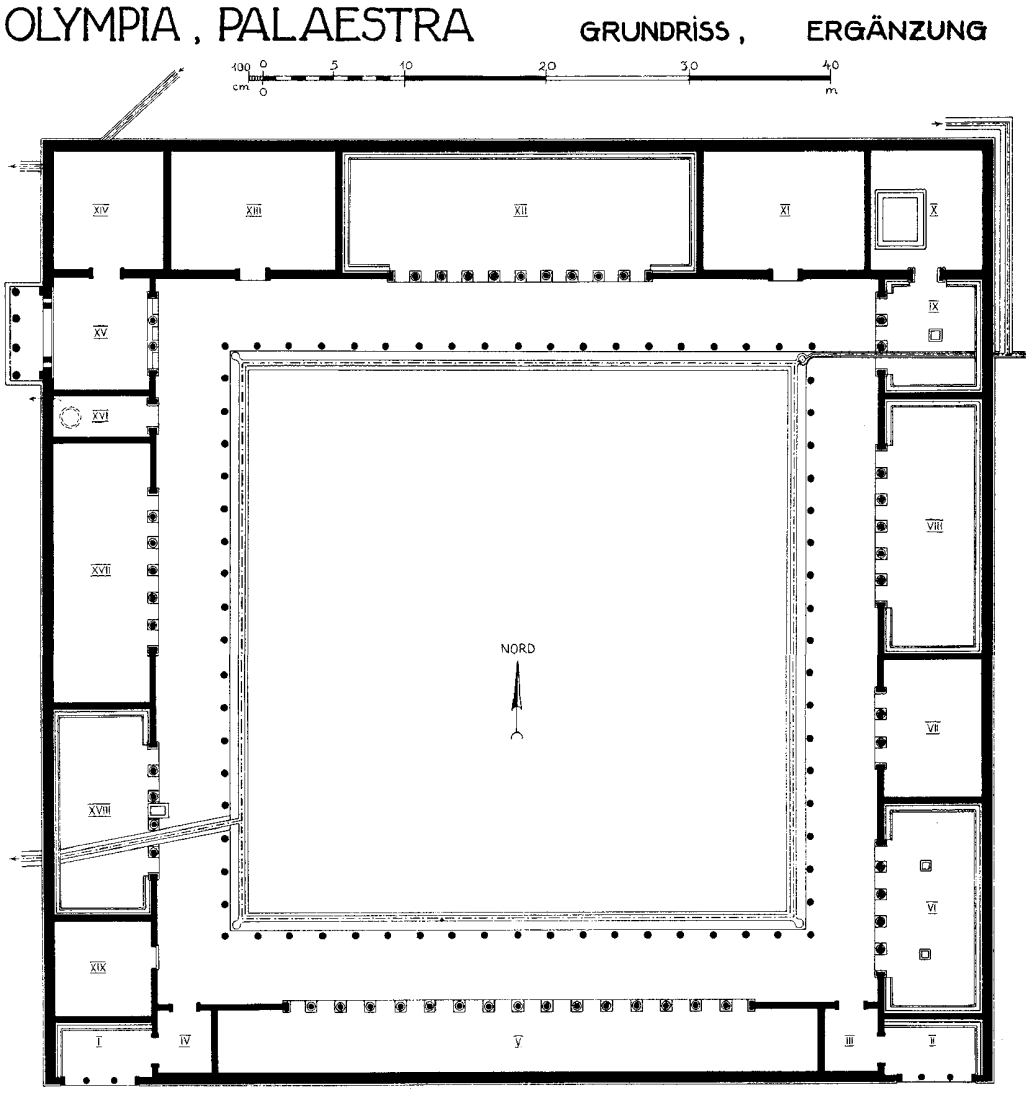

Figure 22.5 Palaistra, Olympia, second century BCE. *Source*: DAI.

and two on the east, were characterized as having a stone bench around the interior of the room. Walking or running once around the four sides of the colonnade, in the middle of the corridor, would have been the equivalent of running one Olympic stadion or 192 m. There was also a xystos as a part of a large gymnasium enclosure located immediately to the north of the palaistra. The xystos, a full stadium length long, included stone starting lines at both ends, forming the eastern component of a large rectilinear enclosure of the second century BCE, approximately 212 m long by more than 50 m wide.

A Hellenistic inscription from the Greek city of Beroia (*SEG* 27.261) gives us a great deal of information about the workings of a gymnasium and specifically the duties of the gymnasiarch, who was in charge of the running of a gymnasium, as well as the duties of the *paidotribes* who were the trainers.

Equestrian Events: the Hippodrome

Equestrian events were probably the most popular of all of the athletic events from ancient Greece. Possibly the facilities for watching equestrian events accommodated more spectators than were available for watching the track and field events of Greek athletics. We know of the importance of equestrian events from a fourth-century BCE inscription that lists the prizes in the Panathenaic games (*IG* II^2 2311). The victor of the two-horse chariot race in the full-grown class received 140 amphorae filled with olive oil, more than any of the other athletic events.

The hippodrome was a common structure in Greek sanctuaries, as well in Greek cities and towns. We know of many hippodromes from literary and epigraphical evidence, but, even though it is likely to have been one of the largest of all structures built in the Greek world, there is only one example that can be seen today, at the Sanctuary of Zeus at Mt. Lykaion. Visible Greek hippodromes are scarce because they required so little architectural support, and as a result, leave little archaeological trace in the ground. In contrast, many Roman circuses are extant and visible across the Roman Mediterranean world. Since the hippodrome covered so much flat land, in the periods of the year, or years when the hippodrome was not being used, it would be returned to agricultural use. This is attested in inscriptions from Delos and Lebadeia (Humphrey 1986: 12). For some sites, it is known approximately where the hippodrome is located in a city or sanctuary, and in other cases it is not as clear.

There are many references by ancient authors to hippodromes in Olympia, Delphi, Nemea, Isthmia, Thebes, and Athens. The most thorough literary account of a hippodrome is Pausanias's description of Olympia, with details about the starting arrangements (6.20.7–10). He says the hippodrome is located next to the stadium in an area that has been leveled for horse racing and has a starting line shaped like the prow of a ship with the beak pointed towards the racecourse, with a bronze dolphin at the point. He mentions that the competitors draw lots for the assignment of the starting positions and that, instead of an automatic starting device, they use a rope stretched in front of the horses. At each Olympic festival the organizers have a mudbrick altar in the middle of the "prow" that they plaster with ash, and a bronze eagle is situated on the altar with its wings stretched out. At the appropriate time, the eagle flies up and the dolphin falls to the ground and the horses are released in pairs from both sides of the stoa, until all the horses are allowed to start at the point of the beak of the prow. The inventor of this starting system was Kleoitas son of Aristokles. Pausanias also mentions that one side of the hippodrome is longer than the other, and on one side is a feature known as *Taraxippos*, the terror of horses, shaped like a circular altar. Unfortunately the hippodrome at Olympia has yet to be discovered, and, therefore, the details of his description cannot yet be correlated with archaeological evidence.

The archaeological evidence from the Sanctuary of Zeus at Mt. Lykaion gives us more details with respect to the architectural makeup of a hippodrome. The measureable dimensions of the visible hippodrome at Mt. Lykaion are a length of 260 m and a width of 102 m (Figure 22.6). The east long side of the facility is longer than the west long side, the latter having a low terrace bordering the hippodrome at an oblique angle. The orientation of the facility is slightly west of north in an upland mountain meadow (elevation of 1180 m), which is a part of the lower sanctuary at Mt. Lykaion. The hippodrome is situated between two low hills on the east and west that limit its width, and it once had a stone retaining wall to the east bordering a lower terrace. The northern end is a tongue-like projection of land, although there is no retaining wall visible in the modern day. On the surface of the hippodrome were

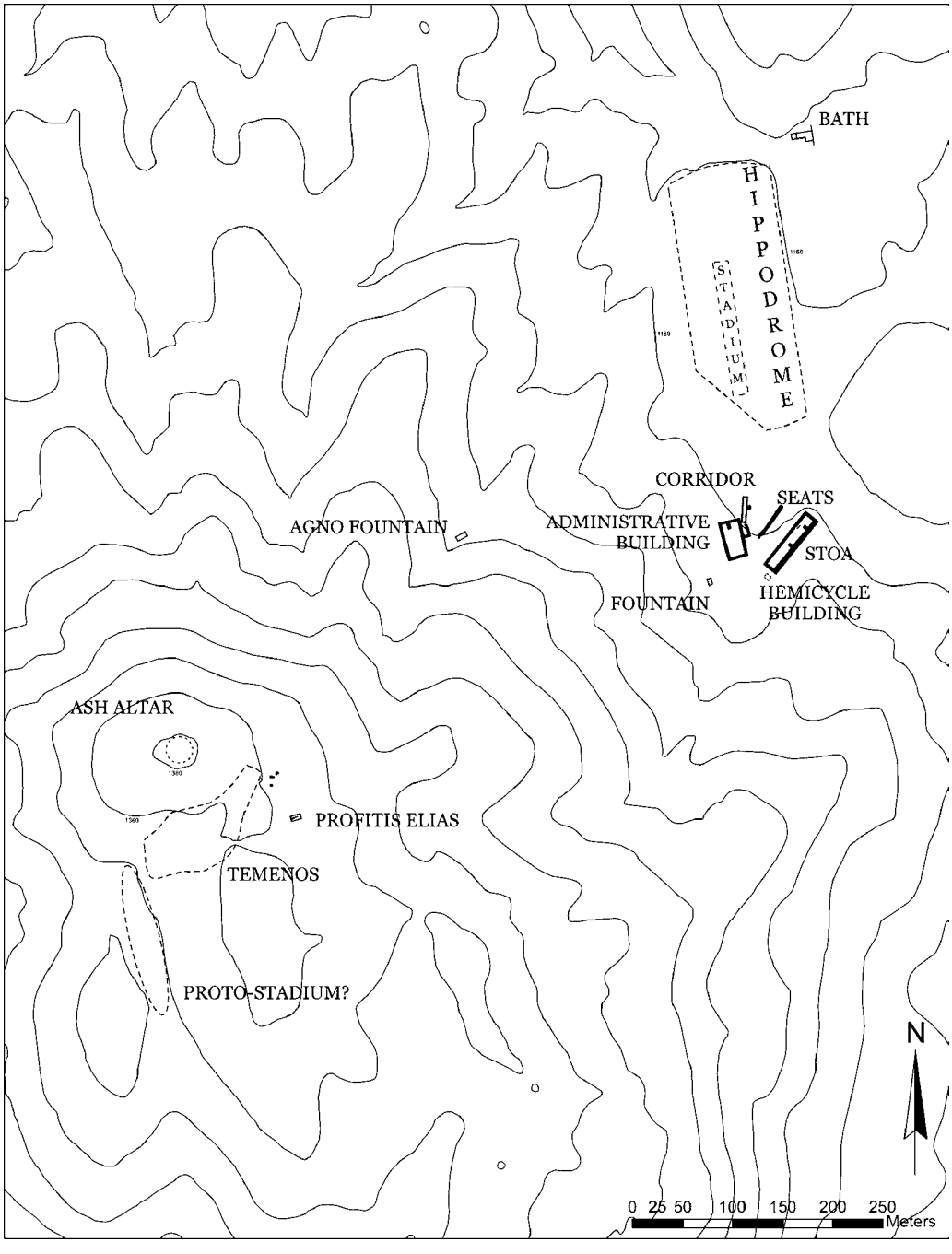

Figure 22.6 Mt. Lykaion, plan of location of stadium, hippodrome, and associated building in mountain meadow, fourth century BCE. *Source*: Mt. Lykaion Excavation and Survey Project.

found the limestone column drums for two stone turning posts, unfluted stone cones tapering from bottom to top. The turning posts with bases would have originally stood 2.94 m tall above the floor of the hippodrome. Although their original locations are not known exactly, it is clear that there were two

turning posts on the surface of the hippodrome. Geophysical remote sensing on the upland mountain meadow at the site of the hippodrome has shown that there is no evidence for a barrier running down the spine of the hippodrome, as there was commonly found in the Roman circus. The floor of the hippodrome was a man-made clay surface, and the southern limit of the hippodrome has been identified as a clay or stone barrier limiting the surface of the hippodrome from the hillside to the south. No evidence of starting gates has been found to date.

Within the limits of the hippodrome at Mt. Lykaion was also found evidence for the dromos of a stadium, characterized by a series of stone starting-line blocks found in the middle of the hippodrome, suggesting that the axis of the stadium was the same as that of the hippodrome. The length of the dromos of the stadium at Mt. Lykaion is still unknown since its southern end has not yet been discovered.

Conclusions

The importance of athletic events of all sorts, human and equestrian, in Greek life may be appreciated from Greek literary and historical accounts. But excavations over the last century or more have brought to light the actual architectural remains of splendid examples of each type of facility. From the temporary arrangements for funeral games in Homer's epic poetry to the grand complexes at Pergamon and Aphrodisias, footraces, wrestling matches, chariots, and horses all provided spectators with intense entertainment. A common thread throughout the history of Greek athletic architecture is its location in or near sanctuaries, and its use, filled with competitors and spectators as a part of religious festivals. For the Greeks were sure that the gods were just as interested as they were in these exiting contests and honored the victors as more than ordinary mortals.

FURTHER READING

Vitruvius, writing his treatise on architecture (*De architectura*) in the first century BCE, gives us insight into the design of Greek athletic facilities and their use. Winter 2006 includes an excellent summary of Greek athletic architecture from the Hellenistic and the Classical periods; this useful account serves as an overview of the subject that is a good introduction for the reader. Recent excavation reports and archaeological studies from Ai-Khanoum (Veuve 1987; Lecuyot 2007), Aphrodisias (Welch 1998), Athens (Romano 1985; 1996), Corinth (Williams and Russell 1981; Romano 1993), Isthmia (Broneer 1974; Gebhard and Hemans 1992), Mt. Lykaion (Romano and Voyatzis 2015), Nemea (Birge, Kraynak and Miller 1992; Miller 2001), and Pergamon (Romano 1982), as well as the important publications on Olympia (Mallwitz 1972) and Delphi (Jannoray and Ducoux 1953), give detailed information about the description of ancient athletic facilities. Several modern handbooks on Greek athletics include chapters on athletic facilities, and among the best is Harris 1966. Romano 1981 provides a full overview of the stadia of the Peloponnese. The palaistra and the gymnasium are studied most fully by Glass 1967 and 1988, and Delorme 1960 presents a good discussion of the education associated with the training at the gymnasium. For more on Greek athletics, see Kyle 1993, Miller 2004, and Christesen 2007. Romano 2007 explores judging in athletic contests.

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CHAPTER 23

Greek Baths

Sandra K. Lucore

Introduction

The study of Greek public baths (*balaneia*) recently has become the focus of increased scholarly attention, resulting in a dramatic revision of our understanding of their highly developed forms and of the sophistication of Greek bathing culture throughout the Mediterranean especially in the Hellenistic period. The archaeological evidence has grown considerably to provide a more comprehensive and more factual appraisal of design, construction, technology, and use of Greek baths, and a better understanding of the social and cultural role they played as an expression of bathing culture in Greek urban environments. A great deal of work remains to be done, but the appearance of a chapter focused exclusively on Greek baths for the first time in a scholarly volume on Greek architecture marks a major step forward.

Greek baths flourished and reached their highest point of development in the Hellenistic period, thereby providing a combined body of evidence that addresses one of the specific goals of this volume: to give deserved attention to the generally neglected Hellenistic phase of Greek architecture. Current archaeological evidence reveals distinctive Mediterranean-wide regional developments in the thermal architecture of the Hellenistic period. The western Greek baths of Sicily and South Italy, for example, include seminal features that are not found in contemporaneous baths elsewhere in the Greek world but which, not coincidentally, appear in early Roman baths. Thus, Greek baths are inherently important for what they reveal of Greek architectural and social practices, and in the broader context they are a significant source of influence on the architectural form that more than any other would come to characterize Roman culture. Because Greek baths were not restricted by traditional rules that generally applied to the design and construction of temples and other forms of civic architecture, they provided the locus for unprecedented experimentation and innovation and thereby make a crucial contribution to our understanding of ancient architecture more generally. This chapter focuses on the Greek public bath, the *balaneion*, to the exclusion of other forms of bathing, and it considers the broad geographical (throughout the Mediterranean) and chronological (from the fifth century BCE to the second century CE) distribution of public baths that provides a large and coherent body of evidence allowing for a more detailed and comprehensive assessment of the architecture and customs of bathing in the Greek world.

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

History of the Study of Greek Baths

Balaneutiké, published in 1962 by René Ginouvès, was the first comprehensive study of Greek baths; in it the author brought together all of the available archaeological, art historical, and especially textual evidence to arrive at a synthesis that laid the foundations of the discipline. *Balaneutiké* has not been surpassed, but recent excavations, reexamination of previously known material, and new approaches to traditional sources combined have built on Ginouvès' study. The greatest advances have been made in the archaeological evidence, which today includes more than 75 known examples of Greek public baths, in contrast to the 23 Ginouvès had available on which to base his assessment. Greek baths can now be more realistically evaluated on their own terms, and while it is true that "architecture, technology, and decoration are the determining components of Roman baths," this assessment could just as well apply to the most fully developed Greek baths (Manderscheid 2000: 534).

Other overviews have appeared since *Balaneutikè*, all of which have limitations, either because they do not include all of the evidence that was available at the time, or because they are unpublished and therefore not accessible to researchers (see Lucore and Trümper 2013: 1–10). From the mid-1980s some of the most illuminating discussions of Greek baths came from scholars investigating Roman baths and possible influences on their origins from the earlier Greek bathing complexes of Sicily and South Italy (Nielsen 1985 and 1990: 6–36; DeLaine 1989; Yegül 1992: 6–29; Broise 1994; Fagan 2001; Thébèrt 2003: 45–74; Winter 2006: 131–134). The subject has grown in importance, and only for the first time recently was it a major focus of discussion, with the relevant Greek evidence central to that discussion, in a conference on Roman baths of the Republican period (Coarelli, Battaglini, and Tsiolis forthcoming; Lucore forthcoming).

Since these more recent studies there has been a spate of scholarly interest in Greek baths, and the increased attention to the archaeology and to the complexity of the issues concerned with their study is reflected in the broader boundaries of the discipline. One of the most striking results of this research is the clear picture established of the widespread distribution of Greek baths throughout the Mediterranean by the Hellenistic period. Egypt, for example, currently accounts for roughly half of all known Greek or Greek-style baths, and their popularity continued even into the Roman period after the introduction of Roman baths (Fournet and Redon 2009; Redon 2012). As this evidence is better understood, it provides intriguing insights into important questions of cultural interaction and assimilation in Ptolemaic Egypt.

Images of bathing on Greek vases traditionally have constituted a major source for the study of Greek baths, especially bathing customs. As long as these images were believed to represent "everyday life," they could be taken at face value as indicators of real places and practices, a condition of especial significance regarding images of women bathing. Recently, however, this approach to understanding images on vases as reflecting "reality" has been fundamentally questioned (Ferrari 2002; Stähli 2009); and in the case of scenes of women bathing, some scholars have determined that they have nothing to do with real baths and bathing at all (Stähli 2013). Although such images might not be informative of actual facilities and practices, further research could determine what these new approaches to understanding the visual evidence might reveal of other aspects of bathing culture.

Women bathing in public are, however, located in textual sources, which provide information on other aspects of Greek baths, from finances and administration, to function and use, and ultimately to their social significance (Fournet and Redon 2009: 115–117; Redon 2011). On the important question of ownership and patronage, a survey of the evidence reveals that until the Hellenistic period, public baths were primarily privately owned for personal profit. Later in the Hellenistic period, it is possible to discuss public ownership of *balaneia*, although the evidence is by no means conclusive (Trümper 2013). The ancient sources, and modern compilations and commentaries, are fewer for Greek baths and bathing customs than for their Roman equivalents. Yet, just as more careful attention to the full range of the archaeological evidence for Greek baths has resulted in a more accurate understanding of the design, construction, and features of Greek bathing establishments, more careful attention to the textual sources, and to the full range of questions they can address, can produce equally informative results.

Early Greek Baths

The earliest archaeological evidence for Greek baths is found in Greece and dates to the first half of the fifth century BCE. The Dipylon Baths in Athens are the earliest of the four bathing facilities that are archaeologically attested in the city (cat. no. 11; for the other three, see cat. nos. 12–14; these and all following catalogue numbers refer to the Catalog in Lucore and Trümper 2013). Athens is exceptional for the number of baths it accommodated (two others are known from textual sources), and it is also exceptional for the extent of the literary and epigraphic sources that help to fill out the picture of bathing in the city (Trümper 2013: 37–40). All of this suggests that Athens was the innovator in the appearance of the *balaneion*, as it was for so much else in the fifth century BCE. All but one of the Athenian baths were located outside the city walls and away from the center of life, providing the archaeological evidence that coincides with the questionable early reputation of baths themselves. Aristophanes targets specifically the warm water bathing available in public baths as detrimental to the character of male citizens, in contrast to the simple cold-water ablutions that were the standard regimen of the gymnasium. He furthermore condemns the idle pleasures of public baths that seduced young men away from the physical rigors of the *palaistra* (Ar. *Nub.* 1046, 1053–1054).

Although this evidence is limited to Athens, it is reasonable to believe that initially there would have been some general resistance to the more comfortable bathing amenities and facilities provided by the balaneion, given Greek society's emphasis on the discipline of instilling masculine virtues. Gradual acceptance accounts for the modest number of public baths known throughout the Greek world, datable to the fifth and fourth centuries BCE, compared to the proliferation of examples in the Hellenistic period, a time when Greek societies increasingly refined their urban environments to reflect developing standards of comfort and individual well-being. In the Hellenistic period, in contrast to the earlier evidence from Athens, Greek baths were normally intra-urban constructions, often situated in very prominent and highly accessible settings, not simply a sign of their acceptance but more significantly an indication of their central importance to urban life.

Modern scholarship agrees that Greek public baths are defined by the presence of one or more rooms in the building that are usually, but not always, circular in plan (*tholos*). These spaces were equipped with individual hip-bathtubs, either of masonry construction, or "portable" and made of terracotta, sometimes stone, in which patrons sat while hot or cold water was poured over them to provide a seated shower-like bath. The Dipylon Baths, and the other known establishments in Athens, are incompletely excavated or only partially preserved, but, while the full extent of their plan and features is unknown, the defining *tholos* with hip-bathtubs is clearly identifiable. For the Dipylon Baths, water was apparently supplied by a nearby well and was heated over a furnace adjacent to the *tholos*, from where it was transported manually to the bathing room. Portable braziers probably provided heat in the room during cold weather. A system of drains controlled the evacuation of used water from the interior to the exterior of the building. Additional rooms include the service area of the furnace and an adjacent space possibly intended for patrons to change in or to await their turn for a bath. From their first appearance, then, Greek baths include all the features necessary to provide a simple form of cleansing bathing in a type of space (round) most suitable to controlling the warm and moist environment.

Two additional bathing establishments in Athens, the Baths outside the Piraeus Gate (cat. no. 12) and the Baths of Diochares (cat. no. 13) were constructed possibly in the fourth century BCE, but, because of their incomplete state of excavation, they do not provide sufficient evidence to determine how baths in Athens developed after their first appearance. The larger size of the tholos bathing spaces of these two buildings does reflect, however, a growth in popularity and use, and decorated floors attest to a concern for aesthetic embellishment.

Until later baths of the Hellenistic period were designed to include innovative, alternative forms of relaxing bathing, plans of public baths were conceived around the principal feature of the room with hip-bathtubs. Some complexes included two *tholoi* for tub bathing, a feature generally explained as indication of the separation of different user groups, most notably women and men. The majority of such examples are found in Ptolemaic Egypt, and therefore might reflect more consistent local bathing customs of segregation. Alternatively, the presence of two *tholoi* in the same complex could be explained

as a means of doubling the available bathing space. The rooms surrounding the bathing spaces functioned as entrance/reception areas, waiting/changing spaces, and service areas related to the function and maintenance of the facilities. Comparison of the Athenian plans and those of other Classical period bathing complexes, for example at Olympia (cat. no. 23), Piraeus/Serangeion (cat. no. 28), Hephaistia (cat. no. 21), Kolophon (cat. no. 30), and Marseille (cat. no. 4), shows that, although the cleansing form of bathing itself was uniform, designs and layouts varied, and individual Greek communities adapted the designs to suit their particular needs.

The baths at Olympia (cat. nos. 23–25) are frequently cited in discussions of ancient baths because of the long history of bathing at the sanctuary. In a sequence of renovations undertaken after the initial construction around 400 BCE of the Older Sitz-Bath (cat. no. 23), the facilities were developed to accommodate greater numbers of bathers and to provide more extensive heating systems for both water and additional heated bathing forms (Younger Sitz-Bath (cat. no. 24); Late Hellenistic Baths (cat. no. 25)), thereby reflecting the general trend of renovating and updating facilities in public baths. Very few sanctuaries provided independent bathing establishments, and it is not surprising that the first to do so was the preeminent Panhellenic sanctuary of the Greek world. Baths located in or in proximity to sanctuaries generally have been understood as facilities used for cultic or ritual purposes, but there is no evidence to confirm this identification (Ginouvès 1962: 230–428; Trümper 2013: 52–62). The shared features of these baths and those of *balaneia* in urban environments indicate instead that they were provided as amenities for visitors to sanctuaries who increasingly would have been accustomed to such luxuries at home. At Olympia, where the crowds of Panhellenic visitors were numerous, use of the baths was probably limited to magistrates and elite visitors, and possibly athletes too, who could have enjoyed an alternative to their athletic facilities in Elis.

After first appearing in Athens, and although initially not numerous, public baths gradually spread outside Athens: to Piraeus, Corinth (cat. no. 15), and Ambracia (cat. no. 10); and to other areas of the Greek world, from Marseille in the northwest to the Ionian city of Kolophon. Greek public baths spread as well to North Africa, especially, later, to Egypt. Early plans vary, and except for the custom itself of taking a bath in public in a dedicated space equipped with hip-bathtubs for individual cleansing bathing, no defining Athenian influence is discernible. Thermal architecture was not bound by the same rules as civic and religious buildings, thus providing designers and builders with the freedom to adapt and develop baths according to local needs, taste, and resources. Because bathing as a profane activity and the architecture that accommodated the practice were unrestrained by tradition, Greek baths furthermore provided the rationale for remarkable innovations in design, construction, and technology that characterize Greek public baths at the high point of their development (Lucore 2016, forthcoming). The invention and development of more complex heating systems constituted the technology most essential to promoting the rise of luxury bathing, and the combined evidence is interesting for what it reveals of the different approaches that Greeks in various areas of the Mediterranean took to this new aspect of their bathing experience. Greek baths in their entirety were anything but homogeneous.

Western Greek Baths

By the late fourth century BCE, the *balaneion* had made its way to Greek Sicily and South Italy (Lucore 2013a). When Gela was refounded by Timoleon in 338 BCE, the city was repopulated and developed to include a new habitation zone where a bathing complex (cat. no. 2), the earliest known in Sicily, was constructed before the end of the century as an amenity for the citizens of the new city. In 2012, a second bathing complex was discovered in the same habitation area of Gela, and it is provisionally dated to the late fourth–early third century BCE. Awaiting complete excavation and publication, preliminary reports (*La Sicilia*, June 23, 2013) suggest it is similar to the previously discovered baths at Gela and includes features that also link this new complex to mainland traditions. Hence it appears that the *balaneion* was imported to Sicily, along with the population of new citizens from the Greek mainland. The original plan of the Gela bath included one rectangular room for individual hip-bathtub cleansing bathing, instead of the standard *tholos*. A second bathing room, installed in a later renovation, followed the *tholos* design, which was then used exclusively in all subsequent Sicilian baths. The original

configuration was apparently influenced by the earlier bathing establishment at Olympia, the sanctuary very familiar to Sicilian Greeks with their longstanding tradition of participation in the Panhellenic games. The Older Sitz-Bath at Olympia was equipped with only one rectangular room for bathing, and in both complexes the hip-bathtubs were of similar masonry construction and not the portable terracotta tubs that were the standard in *tholoi* in all other Sicilian baths.

Greek baths in Sicily constitute a crucial body of evidence, with secure dates and well-preserved remains that allow for a vivid reconstruction of the innovative and experimental nature of the *balaneion* as it was distinctly developed in the Greek West. Even in its incompletely excavated state, the bath complex at Gela is revealing and important for providing the earliest furnace/hypocaust system known from Greek baths anywhere in the Mediterranean, thanks to the *terminus post quem* of 282 BCE, the date of the destruction of the city. Greek hypocaust/furnace systems are essentially large pits cut into the ground, the walls of which are then lined with small pieces of tile. In this chapter, "furnace" is the term used to refer to the large heating installations, and "hypocaust" is used for the small heating channels constructed below the communal immersion pools in Greek baths. This new and advanced heating system was installed when the original complex was renovated to include the second bathing room, clearly to provide greater amounts of hot water for the expanded facilities. The unusual plan of the furnace at Gela, along with other evidence of underfloor heating channels, suggests that additional heated spaces or heated forms of bathing might have been part of the original plan. Without further research on the building, a reliable reconstruction of the heating system and related features is not possible; yet what the evidence does make clear is that as soon as Sicilian Greeks were introduced to public bathing facilities, they modified the plan to include a more extensive heating system that revolutionized the baths themselves to accommodate desired new forms of bathing.

The other known Sicilian Greek bathing complexes are found at Syracuse (cat. no.8), Megara Hyblaia (cat. no. 5), and Morgantina (Figure 23.1; cat. nos. 6, 7); all are dated to around the middle of the third century BCE, and close similarities of their plans and features indicate a common source, most likely Syracuse (Lucore 2009; 2013a; 2013b; forthcoming).

The best preserved of the Sicilian baths are the North Baths at Morgantina, and they provide a vivid picture of the central importance placed on bathing and the architecture of bathing in the kingdom of Syracuse under Hieron II. As the best preserved, technologically most innovative, and most extensively decorated public bath known throughout the Greek world, the North Baths provide the most complete picture of the full development of Greek baths. The 11-room complex features (as numbered in Figure 23.1) reception (6) and waiting and changing areas (*apodyteria*: 1, 2, 7), in addition to the relaxing (8) and bathing spaces themselves (5, 9), and the associated service areas: a well (3), the central furnace (4), a large reservoir (10), and the service corridor (11). The plan includes the characteristic *tholos* (5), originally equipped with 15–17 portable terracotta hip-bathtubs for simple cleansing bathing.

Unprecedented, however, is the division of the building into two discrete and clearly defined zones: one for hygienic bathing and the other to accommodate a revolutionary new form of leisure bathing in a communal hot-water immersion pool (north end room 9). Each bathing area had a separate entrance from the streets (from *Stenopos* West 14 into room 1; from *Plateia* B into room 7, possibly also room 6). The two zones are situated on either side of a large furnace that heated the water for use in the tholos and that would have provided ambient heat to surrounding spaces. The firing chamber (*praefurnium*) of the furnace is located at the east end. A series of platforms supported the water vessels of the boiler system, while the central channel between the platforms helped to draw hot air more efficiently towards the flue at the west end. The construction of the top of the furnace would have prevented access from room 5 to room 8, and vice versa, effectively dividing the building into two separate zones and thereby allowing the possibility of restricting bathing, and segregating bathers according to gender, social class, or other criteria.

The traditional Greek form of bathing in individual hip-bathtubs was certainly a communal experience, considering the intimate side-by-side spacing of the tubs and the normally modest size of the bathing rooms. But the intimacy of soaking in the same pool of warm water with a small group of patrons, and within a large and well-appointed space, provided a very different experience, with the emphasis on relaxing and socializing in a leisurely manner, and not simply on washing oneself. The first

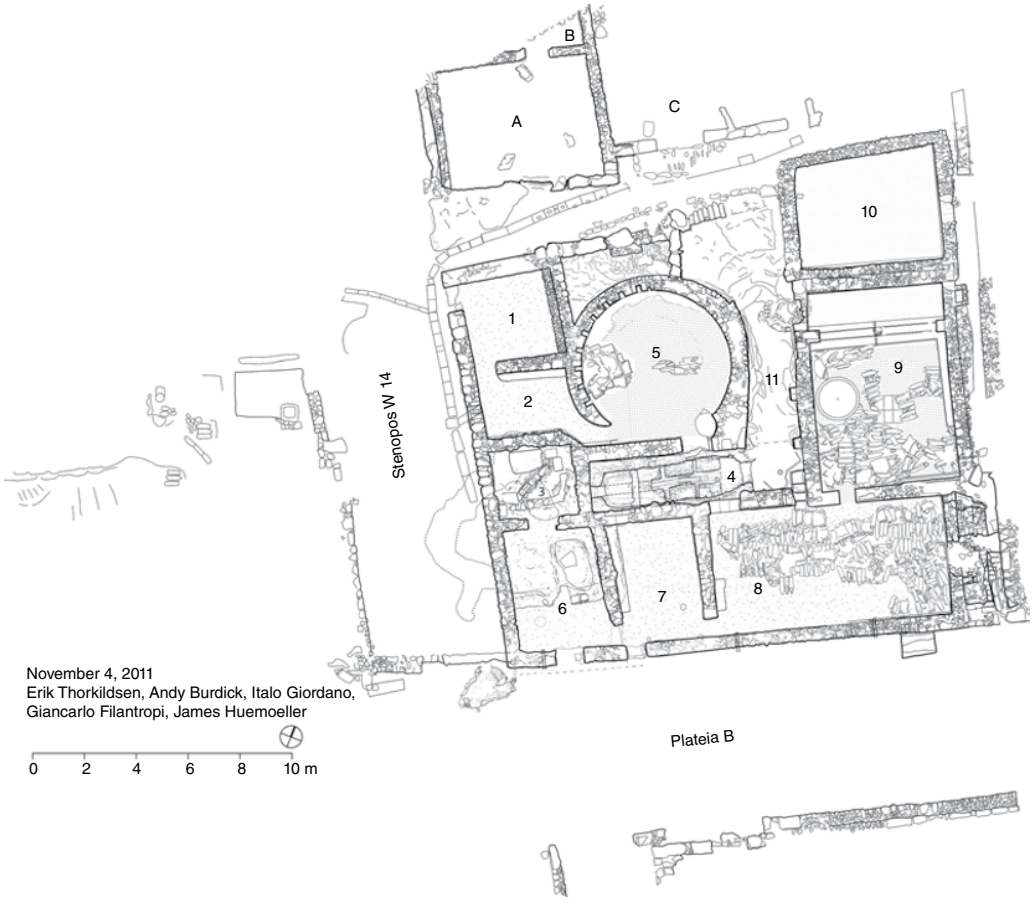

Figure 23.1 North Baths, Morgantina, plan. *Source*: E. Thorkildsen of the American Excavations at Morgantina.

appearance in Sicilian Greek baths of a relaxing form of bathing dependent on ample supplies of hot water could have been influenced by already established customs of frequenting thermal springs, a natural resource that was (and still is) abundant in Sicily, including in the eastern part of the island dominated by Mt. Etna. The appearance of this novel feature, however, is more accurately explained as a conscious decision at this time to commit considerable economic, design, and technological resources to further develop and distinctly enhance bathing culture as a sophisticated element of a well-appointed city.

Water for the immersion pool was first heated over the furnace before being transported to fill the pool. A small hypocaust channel runs under the floor of the pool, from the firing chamber at the west end to the flue at the east, which helped to keep the water warm, but it was the installation of an early form of *testudo* that ensured a steady comfortable temperature of the water throughout the working day (Figure 23.2). The *testudo*, mentioned by Vitruvius (*De arch.* 5.10.1), is made of bronze and consists of a half cylinder set on a pan, closed at one end and open at the end that is fitted against an arched opening in the wall of the immersion pool to allow the *testudo* to fill with water from the pool. Lead was used as a seal between the bronze and the masonry. The testudo is placed over the open fire of the hearth on the opposite side of the pool wall, and by a process of convection the heated water is circulated back into the pool, thereby maintaining a steady temperature of the water. This is the earliest known example of this ingenious device, which, until the discovery at Morgantina, was known only in Roman baths. Water throughout the North Baths was controlled by an extensive system of supply and

Figure 23.2 North Baths, Morgantina, view from east to room 9 and *tholos* (5); room 9 immersion pool at right, with opening in west wall of pool that resulted when metal *testudo* was removed in antiquity; opening filled with ancient debris. *Source*: Sandra K. Lucore.

drainage within the complex, which connected to a central drainage system at the exterior of the building that appears to have been designed to recycle used water for use in nearby fields and groves. The *opus signinum* floors of all the bathing rooms in the building provided a water resistant surface appropriate for the wet environment.

Most Greek baths preserve little evidence of their original decorative programs, except for floors in many cases, but in this instance, too, the North Baths are exceptional. The *opus signinum* floors of all public spaces are decorated and hierarchically differentiated with *tesserae* inlay, including *opus tessellatum*. Walls are painted, extensive moldings are applied, and painted figural friezes give added emphasis to the two main bathing rooms themselves (Rooms 5, 9) (Figure 23.3).

Most remarkable, however, is the dome over the *tholos* (Figure 23.1: 5) and the two barrel vaulted rooms (Figure 23.1: 8, 9), constructed of interconnecting hollow terracotta tubes (Figure 23.3). These are among the earliest existing evidence of above-ground vaulting, a technology that current evidence indicates was invented for use in baths. The unprecedented appearance of this bold and original form of construction was very possibly influenced by the work of Archimedes, and it was certainly a product of the lively culture of science and technology that characterized Syracuse under Hieron II in the third century BCE (Lucore 2009, 2013a, 2013b, and forthcoming; Napolitani and Saito 2013). Evidence exists to indicate the likely presence of domes and vaults in the other known baths of Hieron's kingdom (e.g., Syracuse and Megara Hyblaia), and the advent of this ingenious form of roofing alone calls for a new chapter in the history of Greek architecture.

Bathing complexes similar to those in Sicily appear in South Italy also in the third century BCE, at Caulonia (cat. no. 1), Locri (cat. no. 3), and Velia (cat. no. 9), and together these establishments, with their emphasis on heating systems and communal leisure bathing in heated pools, constitute a significant source of influence on the earliest Roman baths (e.g., Fregellae, see Tsiolis 2013).

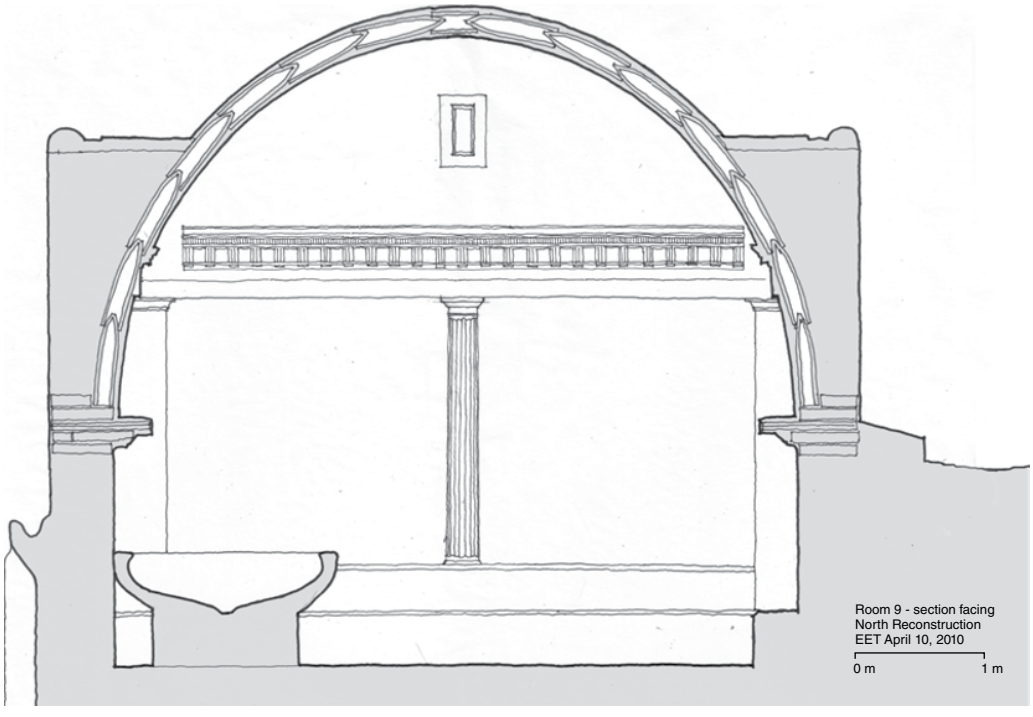

Figure 23.3 North Baths, Morgantina, elevation of north end of room 9, with Doric column supporting entablature with mixed Doric and Ionic frieze over the immersion pool. *Source*: E. Thorkildsen.

Greek Baths in Egypt

In the wake of Alexander and the settling of the Ptolemies in Egypt, Greek public baths as well were readily established in Alexandria and in towns in the Delta and Fayum. Recent excavations and research have revealed that about half of all known Greek or Greek-style baths are found in Egypt, a remarkable circumstance accounted for by the exceptional longevity of this type of bath as late as into the Roman imperial period, when Greek style baths existed alongside Roman establishments. Dating is a critical problem for the study of Greek baths in general, and even more so for baths in Egypt, although recent excavations and research are providing more reliable chronologies. It is clear, nonetheless, that once introduced to Egypt, the traditional Greek bath with its emphasis on cleansing bathing was modified and adapted to suit local conditions.

The baths at Schedia (cat. no. 63), located southeast of Alexandria, were built in the second half of the third century BCE (Bergmann and Heinzelmann 2009). In the first phase, the building consisted of a waiting/changing room with two benches and two *tholoi* of equal size, each equipped with 15 constructed hip-bathtubs, that were located on opposite sides of a central corridor. The use of corridors as the central organizing element of the bathing facilities is a defining characteristic of Egyptian Greek baths (Trümper 2009; Lucore and Trümper 2013: 269–334). The absence of evidence of a furnace or boiler indicates that water for bathing was heated on portable braziers. Although a few examples of double *tholoi* baths exist elsewhere in the Mediterranean, this plan is particularly popular in Egypt. Papyri from the third century BCE onward confirm the existence of separate *tholoi* for women and men (Lukaszewicz 1986: 66ff.; Meyer 1992: 51–60); and the location of the entrances to the *tholoi* at Schedia, which prevented direct access from one to the other, is evidence of this division. In subsequent remodeling two individual immersion bathtubs were installed in a room added on to the original building, evidence that Egypt too followed the trend in the Hellenistic period toward greater emphasis on leisure bathing.

Yet instead of relaxing together in heated communal immersion pools, as was the custom in the Greek West, bathers in Egypt preferred to relax separately, even if in close proximity to other bathers. The immersion tubs were not equipped with a heating system, and thus hot water for relaxation bathing was supplied manually from nearby braziers. This characteristic rejection of communal bathing in Egypt has been attributed to an Egyptian culture of "excessive" purification, as recorded by Herodotus, and a related desire to avoid unwholesome direct contact with others (Fournet and Redon 2009: 127). It is also evidence of the remarkable degree to which the integration of Greek baths into the local culture responded to local customs from the outset.

Until recently, baths in Egypt were further distinguished by the absence of developed heating systems. Recently excavated evidence from the bathing complex at Taposiris Magna (Figure 23.4; cat. no. 65) has brought about a reassessment, however, which defines a recognizable Egyptian system that was developed and became popular in the second century BCE (Fournet and Redon 2013).

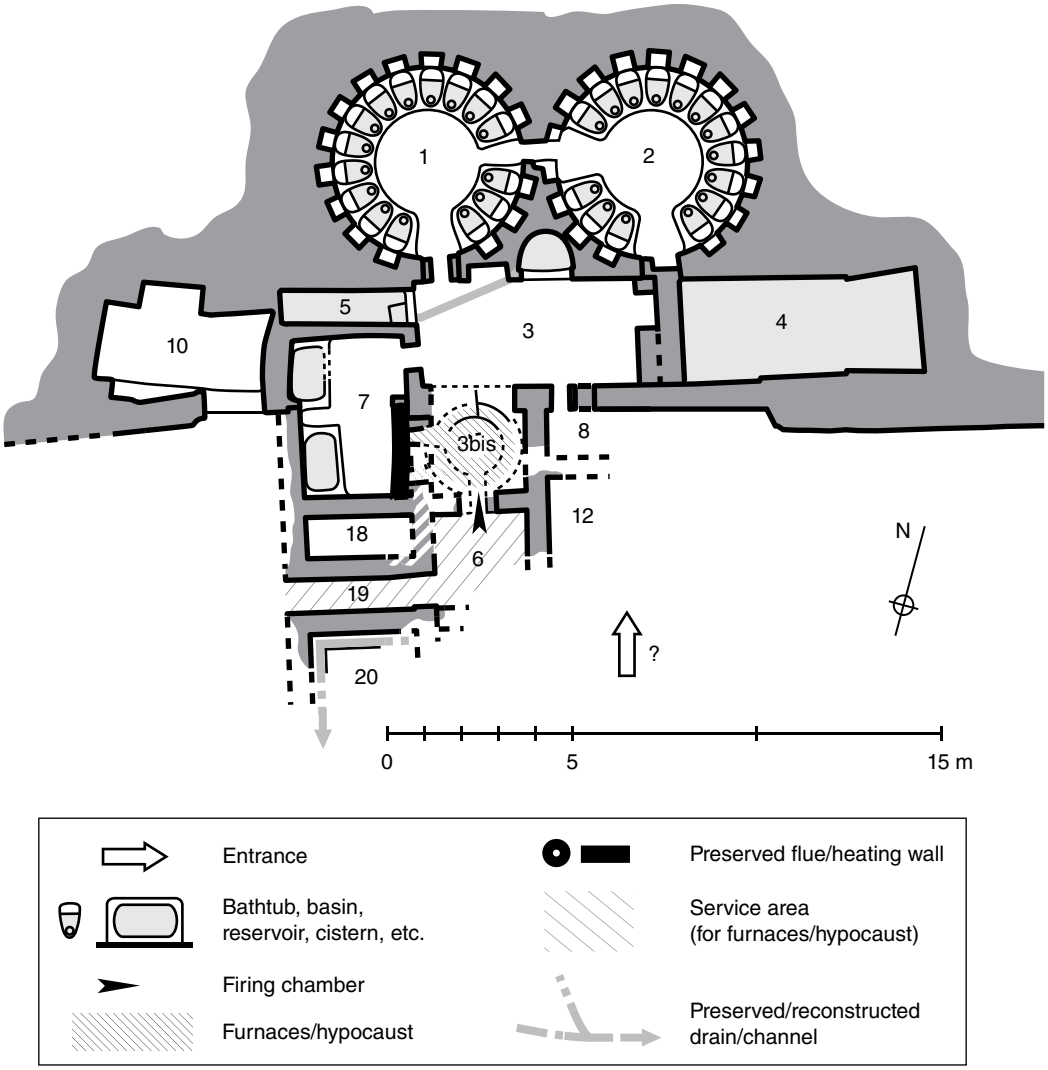

Figure 23.4 Baths, Taposiris Magna, plan. *Source*: T. Fournet.

The first phase of the baths at Taposiris Magna is dated to sometime before the middle of the second century BCE. The building is largely cut into the bedrock, with additional rooms constructed in the adjacent area to the south. The plan, as shown in Figure 23.4, is of the standard type and similar to that of the Schedia baths, with two *tholoi* (1, 2) of equal size, each with 16 constructed hip-bathtubs, and each with a separate entrance off a central corridor (3). This same hall gives access to a room (7) with two individual immersion tubs for relaxing bathing, apparently original features and not later additions, as at Schedia.

Sometime at the end of the second to the beginning of the first century BCE, a renovation of the complex took place characterized by the installation of an extensive heating system (3bis in Figure 23.4). This provided radiant heat for surrounding spaces, hot water for bathing, and, unique to Greek baths in Egypt, a heated wall in the room with the immersion tubs that ensured a higher level of comfort for the leisure bathing the room was designed for. The wall heating system is described by the excavators as "proto-tubuli," and it is thus related to similar wall heating devices that were developed in Roman contexts in the western Mediterranean in the second and first centuries BCE. Western Greek baths, with their large furnaces and their hypocaust systems for heating collective hot water pools, are recognized for the influence these features (among others) had on early Roman baths. Now, with the discovery of a distinctly Egyptian form of heating, including heated wall surfaces, Greek baths in Egypt contribute as well to this much debated topic of the influences involved in the transition from Greek to early Roman baths.

Later Hellenistic Baths in Greece

Bathing establishments in the eastern Mediterranean of the second century BCE have been identified as a discrete group because of two new forms of leisure bathing that were adapted to the traditional plan: individual immersion bathtubs and a round sweat bath, both heated by hypocaust channels below (Trümper 2009: 145–149). The well-preserved bathing complex in the Sanctuary of Asklepios at Gortys (Figure 23.5; cat. no. 20) provides the most coherent example of this eastern Mediterranean type (Ginouvès 1959). The open plan allowed patrons to circulate freely within the building and to access the bathing facilities in no prescribed order. Cleansing bathing is here clearly deemphasized, with only nine hip-bathtubs in the *tholos* (G). Underfloor hypocaust channels and heating rings run throughout the center of the building providing the source of hot water for the individual immersion bathtubs (D) and the necessary heat for the round sweat bath (E). Part of the central room C was heated by the same system, thereby adding significantly to the comfort of this large space clearly meant for relaxation and other, simpler forms of bathing at the basins installed in the room. The heating channel ends below the apse of room B, a large space for patrons to wait, change, or simply relax before accessing the baths themselves. Considering the effort made at Gortys to provide hot water for cleansing and soaking, hot air for sweating, and generally ambient heat for increased comfort, the absence of communal heated pools is striking, clear indication that this form of communal bathing did not suit local practices.

Although less well-known than the building at Gortys, other roughly contemporaneous baths in Greece can be identified as sharing similar features. The second-century BCE Late Hellenistic Baths at Olympia (cat. no. 25) included a *tholos* with 13 hip-bathtubs and a leisure bathing area with two individual immersion bathtubs and a round sweat bath, both heated by a hypocaust channel below, as at Gortys. Because of the incomplete state of the visible remains, it is impossible to know what other spaces and amenities made up the original complex, including the possibility of more heated rooms. In a subsequent renovation of the building in the following century, the original heating system and the baths it heated apparently went out of use. At the same time, a new underfloor heating system was installed, but too little remains to indicate what form this took and what type of bathing spaces it might have heated. At Gortys, the baths continued in use until the first century CE, with modifications that did not affect the major bathing facilities. The suppression of the two defining relaxing bathing forms at Olympia in the previous century might indicate that there was less rather than more uniformity in the

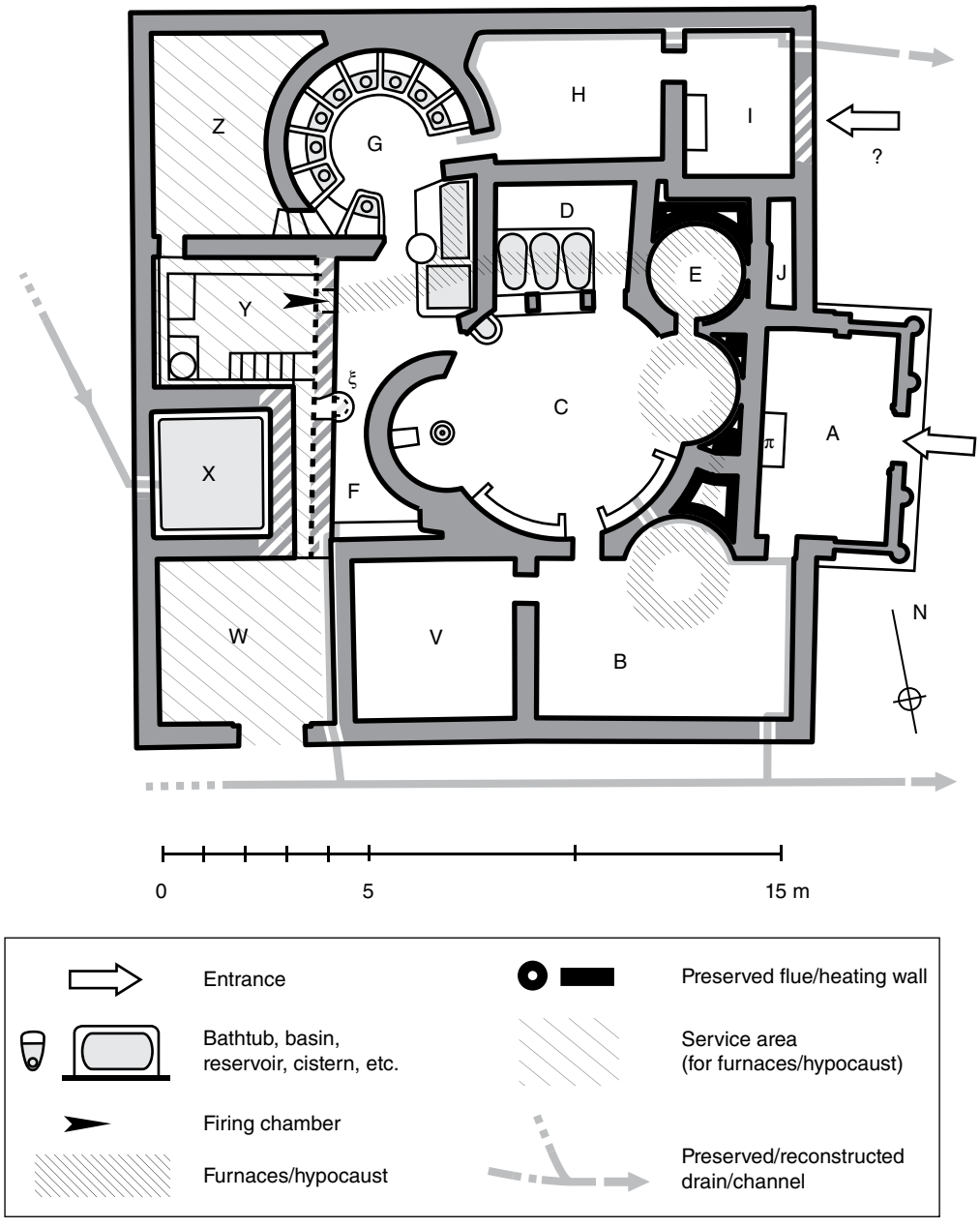

Figure 23.5 Baths, Sanctuary of Asklepios, Gortys. plan. *Source*: T. Fournet, adapted from Ginouvès 1959.

design and features of late Hellenistic baths in Greece, although with only partial remains by which to judge the question remains open.

Other less well-known bath buildings of roughly the same period provide further evidence of this regional type (Trümper 2009: 145–149). Many of these examples are incompletely, or now not at all, preserved, or are subject to other conditions that make reliable reconstructions difficult, if not impossible. The accepted reconstruction of the double *tholoi* bathing complex at Eretria (cat. no. 19), for

example, includes individual immersion bathtubs and a round sweat bath, but the date of construction is disputed, whether fourth century BCE or second century BCE (Lucore and Trümper 2013: 289).

A simplified variation on this eastern Mediterranean type of bath is seen in the complex at Oiniadai (cat. no. 22), where a remodeling that took place probably in the second century BCE resulted in the conversion of the smaller *tholos* into an unheated (except by portable braziers) sweat bath, and in the installation of a small pool for individual or collective soaking in cold water. Further variations on this type of plan are found in a recently discovered bath at Pella (cat. no. 26), where a second-century BCE refurbishing updated the traditional form of bathing in hip-bathtubs with the addition of a sweat bath, a possible large cold-water immersion pool, and a hypocaust system that heated a possible collective immersion pool and two adjacent spaces. At this point, the variations begin to blur the definition of the *balaneion* as it has been identified in this part of the Greek world. Yet, undoubtedly, future research and discoveries will help to clarify these later developments in Greek baths. What is now very clear, however, is that Greek baths flourished throughout the Mediterranean, especially in the Hellenistic period, and, not surprisingly, in response to the particular cultural conditions and practices that characterized the different regions of the Greek world. Further excavation, research, and studies that address the full complexity of the phenomenon of Greek baths will result in a more comprehensive reassessment of Greek architecture itself, especially in the Hellenistic period, and of the social developments behind the rise in bathing culture in the varied societies served by these remarkable establishments.

FURTHER READING

The study of Greek baths begins with Ginouvès 1962, especially for textual sources, along with the subsequent explorations by Faucher and Redon (2014), Meyer (1992), Redon (2011), and Römer (2013). Nielsen (1985), DeLaine (1989), and Broise (1994) raised the profile of Greek baths in the western Mediterranean by their investigations into the much-debated topic of the transition from Greek to Roman baths. Fagan 2001 is a useful summary of the state of this question of origins, although some of his conclusions have been superseded by more recent research. Since Fagan, major archaeological investigations have been undertaken at Greek baths in Sicily and South Italy that are resulting in important revisions, especially in relevant articles in Lucore and Trümper 2013. For gender issues related to the architecture of Greek baths, see Trümper 2012. For domestic Greek baths, see Trümper 2010. For more on the role of technology in Greek baths, see Greene 2000 and 2008, Wikander 2000, Cuomo 2007, Oleson 2008, Lucore 2016 and Lucore forthcoming.

In 2006, the French Balnéorient project (http://balneorient.hypotheses.org, with regular updates) held its first conference on baths and bathing in all periods in Egypt, which publicized the remarkable phenomenon of Egyptian Greek baths. Boussac, Fournet, and Redon 2009 is the resulting publication, which includes the first comprehensive review of the evidence and other articles on individual baths and related topics. The first conference organized exclusively on Greek baths was held in 2010 at the American Academy in Rome for the purpose of highlighting the most recent archaeological evidence from throughout the Mediterranean. The proceedings of the conference, in Lucore and Trümper 2013, include, in addition to a complete and up-to-date bibliography, the first comprehensive catalog of all known Greek public baths from all areas of the Mediterranean, a major resource for anyone studying Greek baths. Also of note was a 2011 conference held at the École française de Rome, which focused on the origins of baths in the Mediterranean (Coarelli, Battaglini, and Tsiolis forthcoming).

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CHAPTER 24

Bouleuteria and Odeia

John McK. Camp II

Public gatherings for religious, political, and social reasons were a common feature of all Greek cities, which were accordingly provided with numerous appropriate venues: agoras, theaters, assemblies, council houses (*bouleuteria*), stadia, and, eventually, music halls (*odeia*). These facilities varied a great deal in size and form, depending on both the numbers to be accommodated and the primary activity the venue was intended to house.

Several cities are known to have had separate areas or buildings for large political assemblies, such as Athens, Sparta, Argos, Metapontum, and Akragas. Where remains survive, these political arenas have provisions for large numbers of people to stand or, more often, to sit. The Pnyx in Athens is thought to have been built originally around 500 BCE in order to accommodate the large assemblies of all the citizens participating in the new democracy. Another early venue built for large meetings is to be found at Argos, where 37 rows of seats are carved into the rock at the base of the acropolis, permitting seating for an estimated 2300–2500 individuals. In the Greek cities of Magna Graecia and Sicily, a regional variant of a large theatral area came to be built specifically for large assemblies. This takes the form of a round or oval building with concentric rows of benches all around and an open area in the center. The rows of seats are banked, though less steeply that in most theaters on the mainland. Examples of this type have been reported at Metapontum and Paestum (Posidonia) in South Italy, and Agrigento in Sicily. As a rule, they are unroofed and large, with a capacity of over 1000 (and perhaps as great as 8000 at Metapontum). Theaters are listed by Pausanias (10.4.2) as practically the *sine qua non* of a Greek city, and in many cities, including Athens, they would be used not only for dramatic performances but also for large public meetings. In effect, most theaters will have housed both dramatic performances and political gatherings (see Chapter 25).

Smaller versions of theaters also came to be built: bouleuteria for meetings of councils and other small political units, and odeia for musical performances. These smaller venues, theatral in spirit and form, and usually thought to differ from theaters by virtue of being roofed, are the subject of this chapter. These two types of buildings are discussed together because, despite differences in both function and design, their basic architectural forms are generally so similar that the fully developed Hellenistic or Roman bouleuterion is often indistinguishable from an odeion/odeum without the help of external evidence. They are of similar size, built as small theatral areas with an orchestra and banked rows of seats, and both are roofed buildings. These similarities often make it difficult to distinguish the original intended purpose of the building. A bouleuterion was designed to hold a deliberative body, usually of several hundred people, rarely exceeding a thousand participants. An odeion was designed as a music hall, used for both instrumental and singing performances, also for a limited audience. The odeion proved to be such a useful and desirable building type that its history of use stretches across the Greek, Hellenistic and Roman periods in a wide geographical range in the Mediterranean.

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

Figure 24.1 Odeion, Troy. *Source*: J. Camp.

It goes almost without saying that both types of venue are designed for performances and therefore that a given building of this generic design could accommodate both activities: political deliberation and musical events. In one case at least, we have explicit evidence of this double function: an inscription from Teos instructs those responsible for the youth of the city to arrange musical events in the bouleuterion (*SIG* 578.32–34). Nonetheless, when such a building was originally commissioned, it was presumably to serve a primary purpose, and that intended function should have had some effect on its design and plan. This envisioned function often indicates whether the building was designed as a bouleuterion or as an odeion. The sites of Troy (Ilion) (Figure 24.1), Apollonia (in Albania), and Arykanda (in Lycia) have examples of both types of buildings near to one another, allowing one to consider a general set of criteria, which help to distinguish the two.

Bouleuteria

Regardless of the form of government, Greek cities needed meeting places for deliberative bodies of limited size, whether the court of a tyrant, the limited franchise of an oligarchy, or the representative body of a full democracy. Examples of such meeting places are known from the literary records and inscriptions. The remains of many others have been brought to light by excavation. They are often referred to generically by the name *bouleuterion*, after *boule* (the Greek for "council"), but they are also known in ancient sources as *ekklesiasterion*, *gerousia*, *gerontikon*, and the like.

Not surprisingly, a bouleuterion is often located on or near the agora, the political and commercial center of a Greek city (see also Chapter 21). Access to the building from the main square is easy, often through a stoa or colonnaded façade and then by means of several large doors, which give access directly

Figure 24.2 Bouleuterion, Miletus. *Source*: J. Camp.

onto the orchestra floor. The well-preserved bouleuterion at Miletos, built in the early second century BCE, is a good example of this desired ease of access (Figure 24.2). So too is the one at Stratonikaia in Caria. There are no intervening rooms behind the orchestra, just the door-wall, with several wide doorways. There is usually no stage; the speaker seems to have spoken from the orchestra floor or perhaps from a raised *bema* (speakers' platform), though no permanent traces have been found. The banked rows of seating can be either curvilinear (e.g., Miletos, Stratonikaia, Metropolis, Ilion, Aigai) or rectilinear (e.g., Priene, Notion, Herakleia), though the option of a rectilinear arrangement seems to be specific to bouleuteria, and does not occur in odeia. The rectilinear seating plan may have originated in the small, early deme theaters in Attica. The theaters at Rhamnous, Ikaria, and Euonymon all seem to have been rectilinear, as is much of the seating at Thorikos, which may go back to the sixth century BCE. To this list should be added the rock-cut seats at Argos, also dated to the fifth century BCE, and a row of straight benches along the east slopes of Kolonos Agoraios in the Athenian agora, also dating to the fifth century BCE (Boegehold 1967).

Early on, bouleuteria may have followed a general rule of many Greek performance areas involving large audiences. If the event was a spectacle entailing movement and something to be seen, such as an athletic contest or a dramatic performance, then the audience was raised on banked rows of seating, as in a stadium or theater. If the event involved primarily speaking and hearing, however, with limited or no movement on the part of the performer, then it was far easier to raise the speaker rather than the entire audience. This latter situation is to be encountered in Thucydides' account of the funeral oration delivered by Pericles in 431 BCE (Thuc. 2.34): "Pericles, son of Xanthippos, was chosen to speak. And when the proper time came he advanced from the tomb and took his place on a platform which had been built high in order that his voice might reach as far as possible in the throng, and spoke." Similarly, the rhapsode in Plato's Ion (535 d–e) speaks of "looking down" on his audience from his bema, a situation illustrated

in many black and red figured vases showing musical performances, with the singer or musician standing on a platform of two or three high steps. At the Pnyx, the meeting place of the full Athenian assembly, the speaker was also raised on a high stepped rock-cut platform, and Antiphon (6.40) indicates that the Athenian bouleuterion had a bema in the fifth century BCE as well.

The early bouleuteria seem to have had level floors, perhaps with wooden benches, and, because there is little or no consistency as to architectural form, recognizing one depends on other criteria, such as size, location, and literary or epigraphical evidence. One of the earliest examples has been identified at Olympia on the basis of descriptions of the Sanctuary of Zeus by Xenophon in the fourth century BCE (*Hell.* 7.4.31) and Pausanias in the second century CE (5.23.1; 5.24.1; 5.24.9). The building consists of two apsidal halls with Doric façades set side by side facing east, each measuring approximately 11 × 22 m, with a courtyard between them measuring approximately 14 m on a side. The northern apsidal hall is the earliest element, thought to date to the late sixth century BCE, while the southern hall was added in the first half of the fifth century BCE. Without the literary information it is by no means clear that the structure could or would have been recognized as a bouleuterion.

Other early bouleuteria are the Old and New Bouleuteria in Athens, dating to the late sixth and late fifth centuries respectively, both built to house 500 councilors. Once again, there is little about the surviving floor plans or ruins that lead to this identification, which rests on location, Pausanias' description of the Athenian Agora, and other literary sources (Wycherley 1957). The Old Bouleuterion measures 23.5 × 23.8 m (exterior foundations), for an interior maximum space of approximately 22 × 22 m (about 484 m^2). The New Bouleuterion measures 17.5 × 22.5 m (exterior foundations), for an interior maximum space of approximately 16.5 × 21.5 m (around 355 m^2). Both are rectilinear in plan, and the seating arrangements are not entirely clear. Though the rows of seats may also have been rectilinear rather than curved, they may have been set on level ground rather than banked, particularly evident in the New Bouleuterion, built in the last quarter of the fifth century BCE. It was set into the slopes of Kolonos Agoraios, which was quarried back extensively to make sufficient room for the building. This quarrying was brought down to a uniform low floor level. If the building had banked seats, it is hard to see why the quarrying was not stepped down to reflect that arrangement, as is the case with numerous rock-cut theatral areas in the Greek world, such as Argos, Akragas, the Panionion, and the theaters at Chaironeia, Syracuse, and the Letoön.

A separate but related category of early bouleuteria are those used by leagues or federations for meetings of the representatives of the various member cities. These leagues often had their meeting places within major sanctuaries. Known leagues with regular meetings include, but are not confined to, the Achaeans, the Aetolians, the Acarnanians, the Boeotian Confederacy, the Chalcidic League, the Carians, the Cretans, the Delian League, the Delphic Amphictyony, the Epirotes, and the Lycians. Three such federal meeting places have been recognized in the archaeological record. At Delphi the bouleuterion of the *hieromnemones* (representatives of the Amphictyonic Council) can be identified with some probability by its location near other known monuments. Their second meeting place, in a sanctuary of Demeter near Thermopylai, has not yet been recognized. Also found in mainland Greece is the Phokikon, the federal sanctuary of the Phocians, which lies east of Mount Parnassos, some 4 km south of ancient Daulis (French and Vanderpool 1963: 213–225). The building is unexcavated, though architectural blocks and inscriptions presumably mark its site. Pausanias describes the building as large, with interior columns and banked rows of seats rising up along opposite sides, with statues of divinities at the end. It seems likely, therefore, that the building and seating were both rectilinear. The third federal meeting place is that associated with the Panionion, a sanctuary of Poseidon Helikonios at the base of Mount Mykale in Asia Minor (Figure 24.3). Representatives of the 12 Ionian cities met here. The altar of Poseidon has been recognized at the top of a low hill, at the base of which is a small rock-cut theatral area consisting of several (at least 11) rows of rock-cut seats carved in a semicircle. There is no trace of any roofing (Kleiner, Hommel, and Müller-Wiener (1967); for an alternate location, see Lohmann (2007: 59)).

Bouleuteria were first collected and analyzed in the 1940s by William McDonald. Because excavators sometimes claim identifications not readily accepted by everyone, McDonald listed them and assigned a rating system of one to four stars, not unlike hotel ratings in guidebooks. One star means the identification as a bouleuterion is possible, while four stars means it is certain. There were only four four-star bouleuteria, and eight three-star bouleuteria. To his list of some 29 examples known then,

Figure 24.3 Bouleuterion, Panionion. *Source*: J. Camp.

we can now add four highly probable or certain examples, at Arykanda in Lycia, Iasos in Caria, Metropolis in Ionia, and Sagalassos in Pisidia, along with the Panionion and Phocicon. Also identified, but not fully excavated, are possible bouleuteria at Aizanoi in Phrygia, Alabanda in Caria, Laodicea on the Carian/Phrygian border, Pinara in Lycia, Teos in Ionia, and Termessos in Pisidia. Simena (Lycia) and Knidos both have small theatral buildings which may be bouleuteria, and there is epigraphical evidence for the bouleuterion at Kyaneiai in Lycia. Thus to McDonald's list of 29, we should now add 15 additional probable or possible examples, bring the total of known bouleuteria to something over forty. The latest list has been compiled by D. Gneisz (1990).

Odeia

The earliest building known as an odeion is unique in several ways and precedes other odeia by centuries. Following the Battle of Plataia in 479 BCE, the Athenians received, as part of their share of booty, the tent of the Persian king, Xerxes. This was no modest affair but measured some 62 × 69 m, with the roof supported by dozens of columns. It was, in effect, a barely portable version of the great, multi-columned halls, which made up a central part of the royal palaces in Persia, such as the Apadana at Persepolis. After the battle, the Athenians set up this structure in the Sanctuary of Dionysos in Athens, next to the theater. Within a generation or so, the original structure was in disrepair, and, following a proposal by Pericles, it was decided to build a more permanent version of the building on the same spot. The sources suggest that this was essentially a petrified version of the original tent, almost square in plan, with several rows of columns within.

As a building with no recognized function in Greek culture, the structure was used for a variety of purposes: law court (Dem. 59.52; Poll. 8.33), grain dispensary (Dem. 34.37), marshaling area for the

military (Xen. *Hell.* 2.4.9; 2.4.24), lecture hall for philosophers (Ath. 336b; Diog. Laert. 8.7.134), and rehearsal hall for plays performed at the Dionysia (schol. Aeschin. 3.67; schol. Ar. *Vesp.* 1109). One of its earliest functions, as a venue for musical performances, gave the building its name, the Odeion of Pericles. Plutarch gives the best description of the building, its name, and function:

> The Odeion, which was arranged internally with many rows of seats and many columns and had a roof which sloped down from a single peak, was an exact replica of the Great King's tent, so they say, and this too was built under the superintendence of Pericles … Desirous of honor, Pericles, then, for the first time decreed that a musical contest be held as part of the Panathenaic festival; he was elected director and set the manner in which people played the flute, sang, or played the kithara. Then and in later times these contests were performed in the Odeion. (*Per.* 13)

The present remains, largely unexcavated, date to the first century BCE and are the work of King Ariobarzanes of Cappadocia, following the deliberate destruction of the original fifth-century BCE building by the Athenians in order to deprive the Roman general Sulla of timber during his siege of the Acropolis in 86 BCE.

Because of its unusual acquisition, building history, cultural unfamiliarity, and invented functions at Athens, the architectural form of this first odeion was not a model for later odeia. Odeia as purpose-built roofed theatral areas for musical performances do not make their appearance until several centuries after the Odeion of Pericles. Their only connection with the Athenian building is in nomenclature, the fact that musical events took place there, and that they are roofed. In general, the Odeion of Pericles is a distinct anomaly in its architectural form.

It is worth noting, however, that similarly large, roofed hypostyle halls were occasionally used for other gatherings in the Greek world. The Telesterion at Eleusis uses the form for large gatherings of initiates in the Eleusinian Mysteries, perhaps as early as the late sixth century BCE, and reached monumental size in the fifth century, when it measured just over 51 m on a side (about 2600 m^2), with a roof supported on 42 columns (6 × 7 columns). Spectators were accommodated on a level floor and presumably stood; eight rows of steps (rock-cut at the west) along the walls allowed an improved view for those far from any activity taking place near the center of building. The Thersilion at Megalopolis, built in the fourth century BCE, was designed to accommodate meetings of the Arcadian Confederation of up to 10 000 representatives (Paus. 8.32.1). It measured approximately 67 × 53 m (about 3500 m^2), with a seating capacity of 6000 or estimated space for 10 000 standing. The auditorium sloped down slightly, and rows of columns to support the roof were aligned so as to allow optimum sight lines. Other smaller hypostyle halls, such as that near the agora at Argos, are often identified as bouleuteria.

The earliest dated example of an odeion as a purpose-built roofed theatral area with banked seating for musical performances is probably that in Pompeii, built soon after Sulla's refounding of the city in 80 BCE (Richardson 1988; Parslow 2007). The date is based on the dedicatory inscription, found in the building in 1769, naming the two officials responsible for its construction, C. Quinctius Valgus and M. Porcius, and referring to it as the *theatrum tectum* (*CIL* 10.844). The building is rectangular, with curved banks of seating. Below a parapet, the orchestra had a series of steps to carry a prohedria, or seats of honor for high officials. A floor of colored marble in the orchestra is later, probably Augustan, the work of M. Oculatius Verus (*CIL* 10.845). The exterior dimensions of the building are 28.6 × 30.0 m, and the lateral walls are thicker than the others (1.04 as opposed to 0.89 m), presumably in order to support the timber truss roofing. The dedicatory inscription is in Latin, the officials are Romans, and the building is laid out in Roman feet. Even though the earliest securely dated odeion was built in a mid-sized provincial town in Italy, it is not necessarily the birthplace of the type. The architectural prototype of an odeion is clear enough: the Hellenistic bouleuteria of the Greek world. What, however, was the cultural origin? Pompeii in the first century BCE consisted of a population of Oscans, Samnites, and Italian/Roman veterans who had served with Sulla in Greece, and there must have been an educated elite among them who desired frequent musical performances and lectures.

An odeion follows the form and development of the Greek theater in the Roman period, with a semicircular auditorium. In several cities they are paired with and close to the theater: Corinth, Pompeii, Patara, and Lugdunum (Lyon). In theory, an odeion can be built almost anywhere within the city,

though public areas seem to be preferred. More important than location in identifying an odeion is the question of access to the stage and orchestra. Often the orchestra is sunken and largely inaccessible from the seating area, as is the stage, which is almost always raised several feet higher than the orchestra floor. Access to the seating of the auditorium is usually through arched *parodoi* from the sides and through stairways at the back. Easy access to the orchestra floor was not regarded as necessary, either for the audience or the performer, who would perform from the raised stage. Behind the stage there are often rooms where equipment and instruments could be kept and where performers could prepare and wait. As noted, all known odeia have curved rather than rectilinear seating plans. Not surprisingly, seating capacities of purpose-built odeia are often appreciably greater than that of bouleuteria, holding a few thousand individuals.

Particularly noteworthy in the decoration of many odeia were the elaborate stage buildings and the use of varied imported colored marbles. Odeia were a luxurious amenity and not an essential component of Roman urban life. Despite their elegance, ancient attestations of odeia are rare. Other than the two in Athens, referred to by Pausanias and Philostratos, other references to odeia include: Naples (Stat. *Silv.* 3.5.91), Patara (*CIG* 4286.10), Patras (Paus. 7.20.6), Philadelphia (*CIG* 3422.17–18), Rome (Suet. *Dom.* 5), Selge (*IK* 17.14), and Thessaloniki (*SEG* 24.270).

More than fifty odeia have been recognized in the Greco-Roman world; most date from the first century BCE through the second century CE. They are found especially in Greece, Italy, and Asia Minor, occasionally in the Levant, Italy, North Africa, and Gaul. Generally, odeia seem to be a phenomenon of the Roman world, largely confined to cities of some significance. Designed odeia are found at Athens, Patras, Alexandria, Patara in Lycia, and Corinth; that is, in major cities and regional centers of the eastern Roman Empire, where Hellenistic influence was the strongest (see also di Napoli 2010). Rome itself seems not to have an odeion until the time of Domitian, and Lugdunum, the capital of Gaul, had one.

Two Athenian Odeia

Two of the most elegant and largest examples of odeia in the Roman world are both, as it happens, to be found in the city of Athens. This may well be because the city had a long and well-established tradition as the educational and cultural center of the Mediterranean, based on the philosophical schools, the Academy, the Lyceum, and the Stoa, which found their origin in the fourth century BCE. The Roman aristocracy followed Hellenistic dynasts in both studying at and honoring this ancient seat of learning. They are among the very few odeia discussed or described in the ancient literary sources. With one dating to the first century BCE and the other to the second CE, the two Athenian buildings span the period of most odeia and will serve as models of the type.

The Odeion of Agrippa in the Athenian Agora is estimated to have held 1000–1200 spectators and to have had an original open span of 25–28 m, though the roof eventually collapsed, and both the capacity and span were cut in half in a reconstruction of the second century CE (Figure 24.4). The building was excavated by various scholars and then studied and published by Homer Thompson in one of the fullest archaeological studies of any *odeion* (1950). The building is associated with the passage in Pausanias (1.8.6) referring to it as "the theater called the odeion," and two passages in Philostratos' *Lives of the Sophists* (2.5.4, 2.8.4), as "the theater in the Kerameikos known as the Agrippeion." The name Agrippeion would seem to associate the construction of the building with Agrippa, son-in-law of Augustus. Agippa visited Athens in about 15 BCE, a few years before his death in 12 BCE, and he was honored by the Athenians with a statue on a tall pedestal at the entrance to the Acropolis. Archaeological evidence from the building also suggests a date of construction in the latter half of the first century BCE. The building was a lavish one, standing several stories high, with engaged Corinthian pilasters decorating solid walls on three sides and a colonnade of massive columns, approximately 1.07 m in diameter, on the south side. The open colonnade would have provided good light, supplemented by windows restored along the side walls between the pilasters. Within, the rows of curved seats came down to the floor of the orchestra, which was paved in colored marble slabs of varied shapes, in an early appearance in Greece of *opus sectile*. The stage was 1.20 m high, composed of Hymettian, Pentelic, and Karystian marbles, with the front decorated with sculpted herms with alternating male and female heads. Access

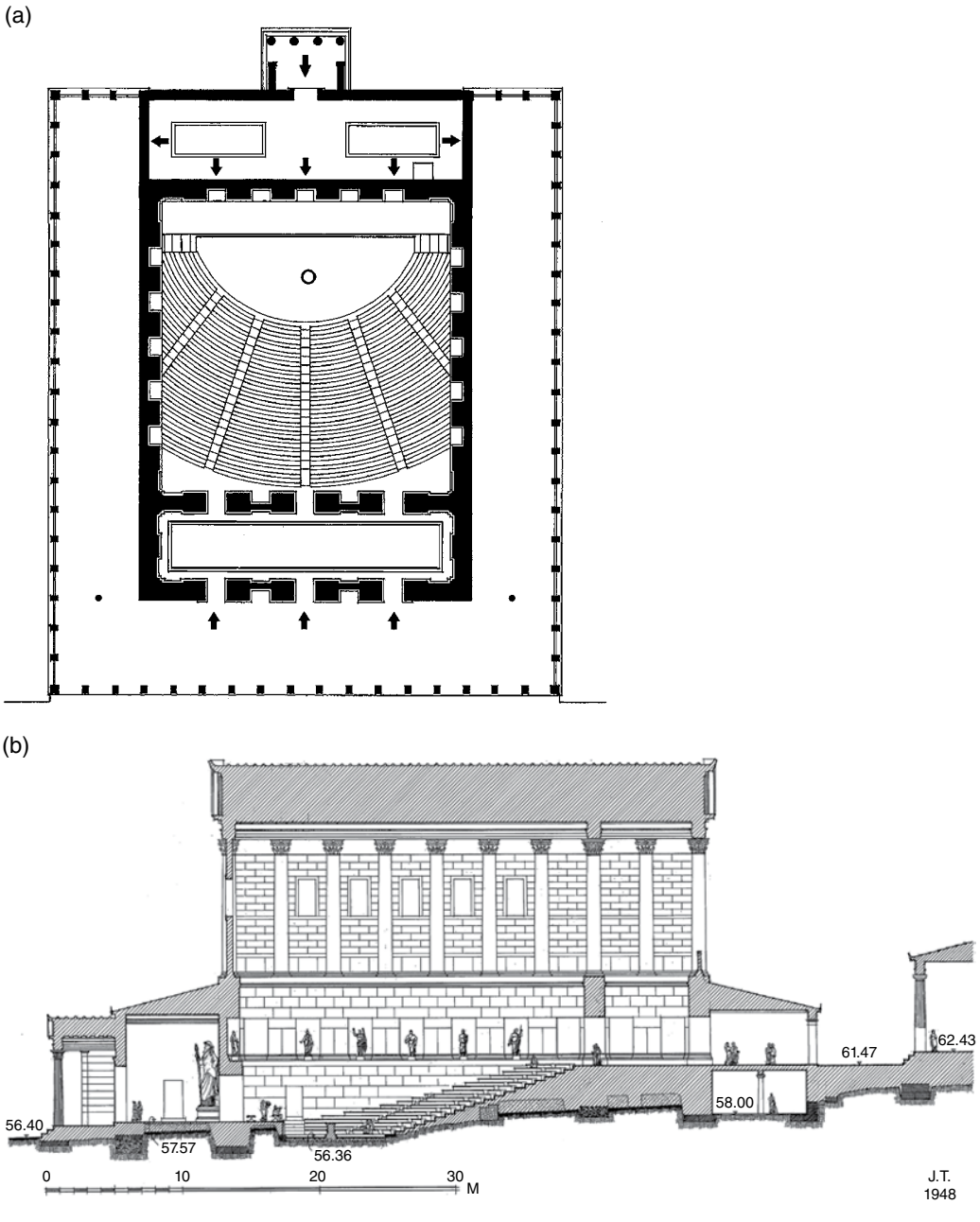

Figure 24.4 Odeion of Agrippa, Athens (a) ground plan, first phase (Augustan, late first century BCE); (b) cross-section, first phase (Augustan, late first century BCE), looking east. *Source*: American School of Classical Studies at Athens.

to the auditorium was from the south, while the area north of and behind the stage was a separate "backstage" area, entered through a small, separate porch.

When the roof of the Agrippeion collapsed (mid-second century CE), and the building was rebuilt, a new monumental entrance was added, decorated with massive sculpted figures of giants and tritons. In the new building the span of the roof and the capacity of the auditorium were reduced by half, and the

Figure 24.5 Odeion of Herodes Atticus, Athens, circa 160 CE. *Source*: J. Camp.

references to it by Philostratos seem to suggest that this smaller version was used thereafter primarily for lectures and philosophical discourse. The musical and other performative functions were now given over to a new building, the odeion of Herodes Atticus, which was constructed on the south slopes of the Acropolis at this same time.

Pausanias (7.20.6), writing about 165 CE, characterized the odeion of Herodes Atticus as the grandest in Greece (Figure 24.5). It may well be the grandest known from antiquity, both in terms of size and decoration. Herodes was a local Athenian millionaire, who also built a marble stadium for the Athenians and erected several other handsome buildings in cities and sanctuaries throughout Greece. The odeion at Athens was built in memory of his wife, Regilla, who died around 160 CE. It seated 5000 people on marble benches and had an elaborately decorated scene building, which rose three stories high. The entrance hall to the south was floored with mosaics of mixed geometric and curvilinear designs. Philostratos refers to its roof being made of especially expensive cedarwood (*V S* 2.1.5). In addition, the excavators found a thick layer of ash and broken roof tiles covering the orchestra and lower seats, suggesting the destruction of a roof and its timbers. Nonetheless, the span of approximately 35 m without interior supports has proved a challenge to restore. G. Izenour has argued that perhaps the central part was closed only by means of canvas, like the awning (*petasos*, *velum)* known to have been used to protect the audience in both theaters and arenas (1977; 1992 but now see also Korres 2015). Such an awning may also have been needed to cover the large odeion at Lugdunum (Lyon), only a few meters smaller in diameter than the odeion of Herodes Atticus.

Enigmatic Buildings

There are several hybrid examples of odeia, usually Roman in date, which have the character of both types of buildings. At both Ephesos and Aphrodisias, the location on the agora and a lack of "backstage" facilities would seem to suggest the buildings were intended to serve as bouleuteria, while the sunken

Figure 24.6 Odeion, Aphrodisias. *Source*: J. Camp.

orchestra and raised stage with an elaborately decorated scene building (at Aphrodisias) indicate a primary function as an odeion (Figure 24.6). At Nysa it appears as though a standard Hellenistic bouleuterion, referred to as the *gerontikon* by Strabo in the first century BCE/CE, was converted into an odeion in the second century CE by sinking the orchestra and adding a raised stage and an elaborately decorated scene building (Figure 24.7). Similarly, the fifth-century rock-cut auditorium of Argos was converted into an odeion with curved seating in the Roman period. Other possible conversions from bouleuterion to odeion have been suggested for Messene and Miletos, where raised stages were added. Presumably these conversions were brought about by the changing needs of the municipality in the Roman world.

Setting

With a few exceptions (at Eretria and at Dion), Greek theaters were set into a hillside to provide most if not all of the slope needed for banked rows of seats. This prerequisite is not so necessary with smaller theatral buildings. The position of all bouleuteria and many odeia is determined by the location of other associated public facilities, especially agoras and other peristyle courtyards. Level ground was often favored for such large complexes, and in many instances, the Roman expertise with vaults comes into play to provide the height and slope needed for banked rows of seats. Two types of support are favored. One involved laying foundations to support radiating rising vaults, such as at Aphrodisias and Epidauros. The other type used a single large vaulted passageway creating a cryptoporticus in the form of the letter "C," the top and inner curve of which could provide the necessary banked seating around the orchestra: this arrangement is found at Anemurium, Bargylia, Gortyn, and Iasos.

Figure 24.7 *Gerontikon* (Bouleuterion), Nysa. *Source*: J. Camp.

Seating Capacity

Determining capacity depends on measuring or restoring linear meters of seating and then dividing by a certain allotted space per individual. Anyone who flies or has attended the theater or a sporting event knows that the present allowance per individual can vary considerably. The same was probably true in antiquity. There is evidence that blocks of seats were assigned to political, social, or economic groups but little reliable evidence for individual seating. Vertical marks on the fronts of theater seats in Athens are about 0.41 m apart, while in the theater at Corinth they are only 0.36 m apart.

Another surviving indicator for the likely widths of seats is the spacing of the openings in the seats of the known communal latrines, though these might be expected to be a bit generous in relation to other forms of seating. As it turns out, they also vary considerably in their spacing, as even a cursory comparison makes clear. At the Byzantine shops southwest of the large baths at Sardis, the spacing is a stingy 0.43 m; at Ephesos, in the Vedius gymnasium in they are 0.48 m apart, while in the baths of Scholastica they are spaced 0.60 m apart. In Athens, the seat blocks collected by the large latrine east of the Roman market vary from 0.60 to 0.70 m. With such variability within a single city, and perhaps within a single building, it is clear that any attempt to compute capacity can be little more than a reasonable guess. Despite the uncertainty, a common estimated allotment is in the region of 0.45–0.50 m (about 16–18 inches) per individual.

As noted, the capacity of a bouleuterion will have been determined by the maximum number of people expected to meet, usually numbered in the hundreds. Athens, with a council of 500, will have had one of the largest deliberative bodies, though the bouleuterion at the large city of Miletos is thought to have accommodated 1200–1500. The estimated 600–640 people who could be seated in the ekklesiasterion at the small city of Priene suggests – as does its name – that it held the full voting

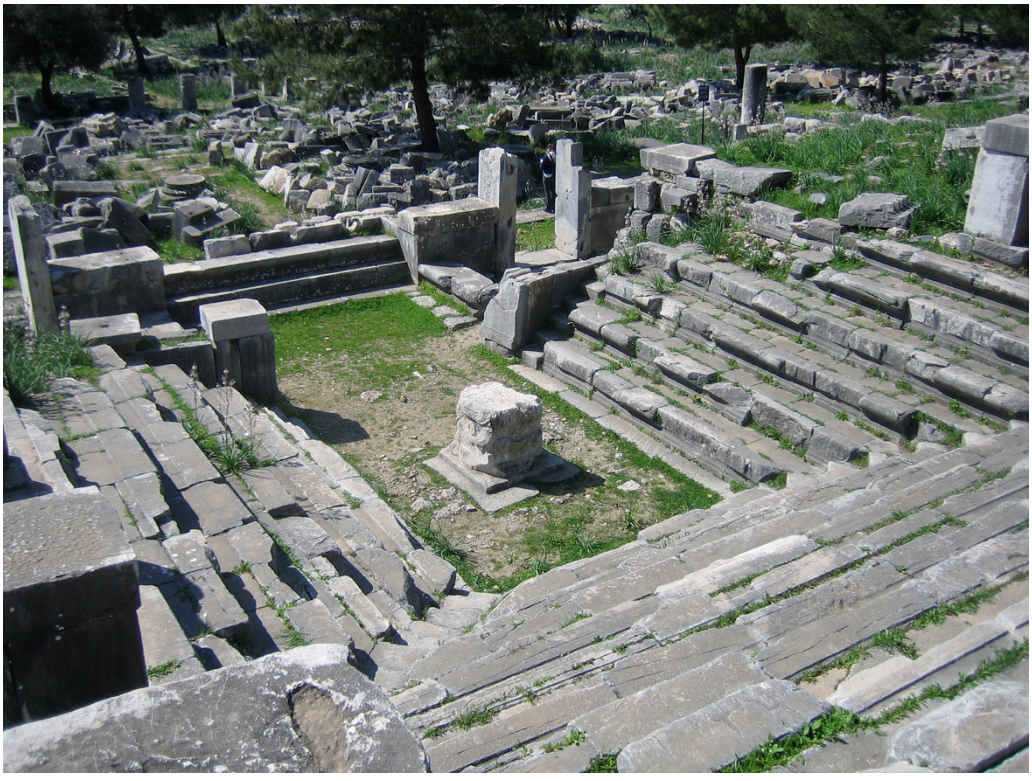

Figure 24.8 *Ekklesiasterion* (Bouleuterion), Priene. *Source*: J. Camp.

body of the city and not just the council (Figure 24.8). The evidence from assemblies suggests there was a huge difference between available capacity and the numbers of those actually eligible to attend, indicating that only limited participation was expected in many civic venues. Scholars have determined that an absolute maximum of 14 800 Athenians could have been accommodated in the Pnyx, and many estimates are considerably smaller, despite a much larger population of full citizens. Similarly, the rock-cut auditorium at Argos has a capacity of about 2300–2500, presumably too large for any representative body but well below the probable full citizen population of the city, which could field 6000–7000 hoplites.

In contrast, odeia are often large enough to accommodate spectators in the thousands. The estimated capacity of the Odeion of Herodes Atticus in Athens, for instance, is about 5000 people (diameter approximately 75 m), and there are several similarly large odeia: Lyon (3000), Sagalassos (3000), Corinth, Patras, and Pompeii (1500).

Roofing

With the larger odeia comes the problem of how they could be roofed, especially as many of them have no indications of interior supports, which would affect sight lines and perhaps acoustics. Izenour (1992) has tackled this question from a structural and engineering point of view, discussing and illustrating the possible systems for several dozen odeia. Essentially, timber truss roofs are restored, though once the span exceeds 25 m, such restorations become increasingly difficult. The expansion and contraction of the wood during alternating dry and wet seasons over time causes problems of stability. Along with Lugdunum (Lyon), the two large odeia of Roman Athens are among the most difficult to reconstruct

convincingly. M. Korres offers a reconstruction of the odeion of Herodes Atticus that uses primarily wood braced with existing piers behind the uppermost row (2014).

Summary

Despite the numerous overlaps, uncertainties, and assorted exceptions, several criteria emerge from this discussion to serve as general guides to the identification of a bouleuterion as opposed to an odeion:

1. *Plan:* A bouleuterion can have a wide variety of floor plans, depending on the number of participants to be accommodated: long and relatively narrow, square or rectangular, with or without interior supports. Odeia tend to be square or deep rectangular buildings, though occasionally they are semicircular, like a small theater.
2. *Seating arrangements*: A bouleuterion can have rectilinear or curved seating; odeia have curved seating areas. Many bouleuteria seem to have had level seating, while odeia have banked rows of seats.
3. *Internal design*: The control of traffic patterns, entrances, access to the orchestra, and the existence or absence of a raised stage are all significant. An elaborate scene building and the lavish use of colored marbles are also to be expected in an odeion.
4. *Capacity*: Odeia tend to have a larger capacity, often between 1000 and 5000 spectators, while bouleuteria are usually restricted to several hundred at the most.
5. *Date*: Odeia are generally Roman in date, no earlier than the first century BCE, whereas bouleuteria go back to the Archaic period, are common throughout the Hellenistic period, and are increasingly rare in Roman times. In several Roman cities their function was filled by a *curia*.
6. *Location*: A bouleuterion is usually closely associated with the agora of the city, whereas an odeion may be located in a central location, though it does not have to be.
7. *Geography*: Bouleuteria, reflecting their origin in the independent Greek city-state, are confined largely to areas of Greek influence, especially the Greek mainland and Asia Minor. Odeia are a feature of Roman urbanism and are found throughout the empire.

Further Research

The primary function of the odeia was to serve as a venue for concerts and musical performances, and they were surely used also for academic lectures and other small performative gatherings. The elaborate decoration preserved on some halls, such as marble revetment, imported marble columns for the stage set, marble seats, and mosaic or marble floors, suggests that the hall was intended for an elite, educated audience. Areas for further research on ancient odeia include a possible relationship between the development of musical performances and the establishment of odeia, of educational and rhetorical practices and odeia (especially in the Hellenic eastern Mediterranean), and a technical investigation and reconstruction of the acoustics of the odeia (see, e.g. Vassilantonopoulos and Morjopoulos 2009).

Compendium

Below is a composite list of small roofed theatral buildings in the Greco-Roman world, usually identified as either bouleuteria or odeia, about 115 in all. Counting those converted from a bouleuterion to an odeion as both, there are some 50 known bouleuteria and 60 odeia, with a half-dozen or so too uncertain to classify/identify. The core of the list comes from the studies on bouleuteria by McDonald (McD): *Political Meeting Places of the Greeks* (1942) and Gneisz (G), *Das Antike Rathaus* (1990). For odeia, the principal studies are those of Izenour (I): *Roofed Theaters in Classical Antiquity* (1992) and Meinel (Mn): *Das Odeion* (1980). The pages cited in those works will lead the reader to bibliographies

on specific buildings. Short references in square brackets [---] refer to Izenour, pp. 220–222, where he lists, but does not necessarily discuss, ancient roofed odeia. There are discrepancies and uncertainties in many of the specific identifications, and undoubtedly some omissions.

Other bouleuteria and odeia have been added from my own observations, which heavily favor Greece and Asia Minor. Most have been excavated relatively recently. Not surprisingly almost all the bouleuteria are located in the Greek world, just about equally divided between mainland Greece and Asia Minor. Odeia are found in roughly even numbers in Greece, Asia Minor, and Italy, with a few scattered across North Africa, Gaul, the Middle East, and elsewhere in Europe.

AGHIA PELAGIA	B?	G: 312–313
AIGAI	B	McD: 166–167; G: 301
AIZANOI	?	G: 301–302
AKRAI	B	G: 302–303
ALABANDA	B?	G: 303–304; Mn: 169ff.
ALEXANDRIA	O	
ANEMURIUM	O	I: 108–110; Mn: 234–239
ANTIOCHEA (Syria)	B?	[I: 220]
ANTIPHELLOS (Kas)	B?	G: 304–305
AOSTA (= Augusta Praetoria)	O	I: 77–83; Mn: 208–211
APHRODISIAS	B/O	I: 99–107; Mn: 321–327
APOLLONIA (Albania)	B	McD: 167–168; G: 305–306
APOLLONIA (")	O	
APOLLONIA (Cyrene)	O	[I: 220]
ARGOS	B	G: 306–307
ARGOS	O	I: 90–94; Mn: 223–225, 288–291
ARRIASOS	B	I: 61–62
ARYKANDA	B	Bayburtluoğlu (2003: 86–93)
ARYKANDA	O	Bayburtluoğlu (2003: 114–117)
ASPENDOS	?	G: 307
ASSOS	B	McD: 168–171; G: 307–308; Mn: 171ff.
ATHENS, Old	B	McD: 170–179; G: 309–310
ATHENS, New	B	McD: 170–179; G: 310–312
ATHENS, Pericles	O	I: 30–35
ATHENS, Agrippa	O	I: 84–89
ATHENS, Herodes Atticus	O	I: 132–139; Mn: 80–117
BARGYLIA	O	Bean (1971: 85)
BUTHROTON (=Butrint)	O	I: 95–98; Mn: 225–232
CALAURIA	B?	McD: 179–181
CALLION (Kallipolis, W. Lokris)	B?	G: 325–326.
CALYDON	B?	[I: 220]
CANATHOS (Palestine)	O	Mn: 294–296: inscr. *CIG* 4614.3–4
CARTHAGE	O	Mn: 312ff.

CATANIA	O	Mn: 311ff.
CIBYRA	B?	
CORCYRA	O?	[I: 220]
CORINTH	O	Mn: 59–80, 247–252, 287ff.
CORINTH	B	McD: 181–182
COS	O	Mn: 239–244
COSA	O	I: 114–118
CRETOPOLIS	B	Mn: 179
CYRENE	O	Mn: 296–298
DELOS	B?	McD: 183–184; G: 315 Mn: 157–159
DELPHI	B	McD: 185–192; G: 316
DODONA	B	G: 316–317
DOUGGA	O	[I: 221]
ELEUSIS	B	McD: 187–189; G: 318; Skias (1895: 178ff.)
EMPORION	B?	G: 318–319
EPHESOS	B/O	I: 142–143; Mn: 117–133, 315–319
EPIDAUROS	O	I: 119–125; G: 319–320; Mn: 225–229.
ES SUHBA	O	Mn: 332–334
GLANUM	?	G: 320
GORTYN	B	Mn: 177ff., 183–187
GORTYN	O	I: 126–131; Mn: 253–259
HERAKLEIA (Latmos)	B	McD: 192–196; G: 322
HERAKLEION	?	[I: 220]
IAITAS	B	G: 323
IASOS	B	G: 323–324; Baldoni *et al.* (2004: 77–79)
ISTRIUM (Crete)	O	[I: 220]
KNIDOS	O?	Mn: 370; Bruns-Özgan (2002: 93)
KYANEIAI	B	(inscription only)
LAODICEIA	B?	Traversari (2000)
LATO	B?	G: 328–330
LIBARNA	O	[I: 221]
LOUSOI	B?	McD: 196–198; G: 330
LUGDUNUM (Lyon)	O	I: 144–147; Mn: 304–309
LUNA	O	[I: 221]
LYDAE	B?	Lycia, bay of Fethiye
MAGNESIA (?)	O?	Bingöl (2007: 159)
MANTINEIA	B	McD: 198–200; G: 330–331
MEGALOPOLIS (town)	B	Paus. (8.30.5)
MEGALOPOLIS (Thersilion)	B/E	Arcadian League: McD: 200–204; G: 331–332; I: 36–41; Mn: 155ff.

MESSENE	B/O	McD: 204–211; G: 333–335; Mn: 319–320, 175–177
METROPOLIS	B	
MILETOS	B	McD: 211–217; G: 335–336; I: 50–55; Mn: 167–169, 319 ff.
MORGANTINA	B?	G: 336–337.
NEMAUSIS (=NÎMES)	O	[I: 221]
NIKOPOLIS ad Ist.	O	Mn: 231–234
NIKOPOLIS (Epirus)	O	Mn: 259–267
NOTION	B	McD: 217–219; G: 338; Mn: 170ff.
NYSA	B/O	McD: 219–224; G: 338–340; I: 111–113; Mn: 131, 319–320
OLYMPIA	B	McD: 224–231; G: 340–341
OLYNTHOS	B	McD: 231–236; G: 341–342
ORCHOMENOS	B?	McD: 236–238; G: 342–343
PAESTUM (Posidonia)	B	McD: 238–240; G: 343–344
PANIONION	B	Kleiner, Hommel, and Müller-Wiener (1967); for an alternate location: Lohmann (2007)
PARIS	O	Mn: 310ff.
PATARA	O	*CIG* 4286.10 and recent excavations.
PATRAS	O	I: 140–141; Mn: 267–280
PAUSILYPOS	O	I: 73–76; Mn: 215–219
PETRA	O	[I: 221]
PHILADELPHIA (Lydia)	O	Mn: 292–294; *CIG* 3422.17–18
PHILIPPOUPOLIS	O	Mn: 239
PHOKIKON	B	French and Vanderpool (1963: 213–225)
PIANOSA	O	Mn: 304
PINARA	B	Mn: 169
PLEURON	B?	G: 337–338
POLA	O	Mn: 313ff.
POMPEII	O	I: 66–72; Mn: 36–44, 205–207, 180–183
PONTIA	O	[I: 221]
PRIENE	B/E	McD: 88; I: 46–49; Mn: 172–175
PTOLEMAIS (Libya)	O	Mn: 330–332
RHODES	O	[I 222]
ROME	O	Mn: 298ff. (Domitian's [unexcavated]: Suet. *Dom.* 5; *Chron. Min.* 146; Jer. *Chron. A. Abr.* 2105; Amm. Marc. 16.10.14; Polemius Silvius 545; *Curiosum:* 10.600 loca = 7000 spectators)
SAGALASSOS	B	
SAGALASSOS	O	
SAMOS	B?	Mn: 154; *SIG* 976.2–11
SELGE	O	*IK* 17.14 (inscr.)
SIKYON	B	McD: 240–244; G: 351–352; Mn: 157, 166
SILLYON	O	Mn: 328ff.

SIMENA	?	Bean (1978: 117, pl. 64)
SMYRNA	O?	(Paus.)
SOLUNTUM	B	G: 352–353
SOPHIA	O	[I 221]
SPARTA	B	(Paus.)
STRATONIKAIA	B	Bean (1971: 90–91)
TAORMINA	O	Mn: 245
TEOS	B	McD: 153, 278; G: 353; Mn: 270
TERMESSOS	B	McD: 244, 284; G: 353–354; I: 56–60; Mn: 179ff.
THASOS	B?	McD: 244–247; G: 354–355; Mn: 171ff.
THASOS	O?	Mn: 370
THERMON	B	McD: 247–248; G: 355–356
THESSALONIKI	O?	Mn: 369; *SEG* 24.570
TIVOLI (Tibur)	O	Mn: 299–304
TROY	B	McD: 248–250
TROY	O	
TURIN	O	Mn: 208ff., 212ff., 219ff.
VIENNA	O	Mn: 309ff.

Appendix: Recently Excavated and/or Published Bouleuteria/Odeia

Hellenistic/Roman bouleuteria (8)

Arykanda
Iasos
Kyaneiai (inscription only)
Laodiceia
Metropolis
Panionion
Sagalassos
Teos

Hellenistic/Roman odeia (5)

Arykanda
Bargylia
Patara
Sagalassos
Thessaloniki?

Hellenistic/Roman roofed theatral buildings (5)

Aizanoi
Knidos
Pinara
Simena
Termessos

FURTHER READING

Major treatises on the bouleuterion include Krischen 1941, McDonald 1942, and Gneisz 1990. For more on the Pnyx hill, see Forsén and Stanton 1996. There is a wide variety of scholarship on the odeion. For more general information, consult Tamm-Fahlstrom 1959, Modona 1961, Meinel 1980, Rossetto and Sartorio 1994, and Isler 1997, especially see Izenour 1992. For the odeia of Athens, see Thompson (1950), Izenour 1992 (30–35, 84–89, 132–139), Gogos 2008, and Korres 2011 and 2014. See the work of Di Napoli (2010) on the use of odeia and other entertainment structures during the Roman period on the Peloponnese.

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CHAPTER 25

The Greek Theater

Jessica Paga

Theaters are among the most ubiquitous structures of ancient Greece, populating the urban centers and countryside of mainland Greece, Asia Minor, and southern Italy and Sicily. Their hemispherical forms, carefully orchestrated vistas, and integration into the surrounding landscape continue to impress and spark the imagination of scholars and visitors alike. Indeed, many ancient theaters continue to serve as venues for theatrical and musical performance. The frequency with which theaters appear in the Greek world and their relatively high level of preservation – even if the stone elements are lost, the theater itself often leaves a telling depression in the landscape – speak to the popularity of the theater in both the ancient and modern world. Theaters are symbols of ancient Greek society, structures that reflect and give voice to both religious and cultural concerns.

The development of the form of the theater in the Classical and Hellenistic periods can be traced alongside concomitant evolutions in its use and function. It is this overlap of form and function that provides one of the most fruitful avenues for exploration: theaters allow us to consider how built spaces were used in ancient Greece for a variety of purposes over an extended period. This multiplicity and adaptability in turn bolstered the popularity of the theater and helped to facilitate the replication of its architectural form throughout the Greek world. This chapter considers both the evolution of the form of the Greek theater and its changing uses and purposes. New areas of scholarship on the theater are highlighted in order to provide direction for future research and indicate questions or problems that continue to deserve attention.

Form: Space, Plan, and Design

The three distinct parts of the general theater form are canonized by their abundant representation in the later Classical and Hellenistic periods: (1) the *cavea*, also known as the *koilon* (literally, "hollow") or *theatron* ("viewing area"), was the seating area and was usually divided into horizontal tiers by *diazomata* ("girdles") and *kerkides*, or wedges of seating, which were delimited by *klimakes*, or vertical access stairways; (2) the circular orchestra, or performance area ("dancing place"); and (3) the *skene* (or *scaenae frons*), the scene building, which was used as a backdrop to dramatic performance as well as serving as an adaptable and generic façade for an interior space, capable of representing everything from a palace (as in Aeschylus' *Agamemnon*) to a cave (as in Sophocles' *Philoctetes*) (Figure 25.1). Two passageways called *paradoi* (sg. *parados*) flanked the cavea and provided access to and from the orchestra. They were used both by the spectators to enter and exit the theater, as well as by the actors or chorus

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

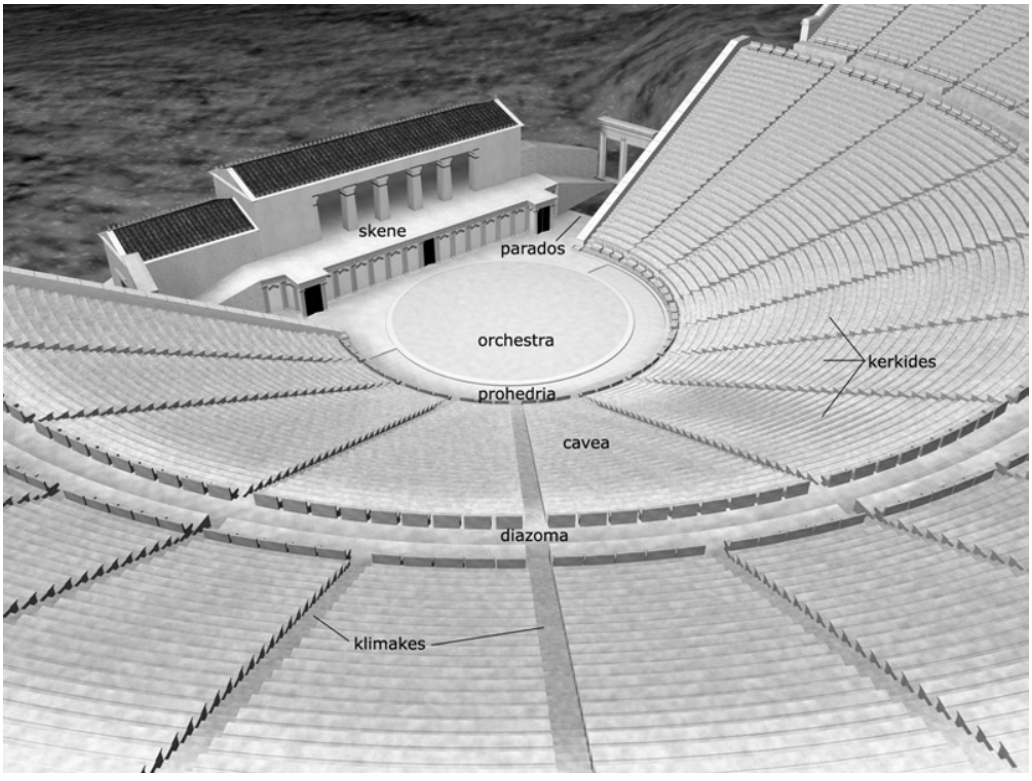


Figure 25.1 Model of a Greek Hellenistic theater, based on the theater at Epidauros, fourth century BCE, with parts labeled. *Source*: Modified from computer model created by Martin Blazeby, King's Visualization Lab, King's College London.

for dramatic entrances and exits during the course of the performance. An altar was frequently placed in or near the orchestra.

These three parts remained relatively constant throughout the Classical and Hellenistic periods, modified to varying degrees based on the topographical siting of particular theaters or specific demands of ritual and function. The cavea was generally sunk into a natural hillside, a factor that reduced construction expenses (both cost of materials and labor time) but was also predicated on preexisting landscape conditions. The slope of the hill could vary greatly and this in turn could affect the steepness of the seats, the number of rows, and the overall height of the theater. In this respect, the Theater of Dionysos in Athens, for example, can be usefully compared to the theater at Pergamon, where the steepness of the Pergamene citadel resulted in a radically sloped and steep cavea (Figure 25.2), whereas the gradually falling foothills of the Acropolis in Athens lent the theater there a gentler slope and broader cavea (Figure 25.3). The positioning of the cavea respective to the natural landscape is often considered a hallmark of Greek architectural design, whereby the built structure was adapted or modified in order to present a seamless integration between man-made object and topographic circumstances.

The recognizable and repeated hemispherical shape of the theater, the half-round cavea oriented around the circular orchestra, is well known and easily identifiable. This form, however, represents an evolution in theater design and does not appear with any regularity until the second half of the fourth century at the earliest. Indeed, since the nineteenth century, there has been much debate on the precise form of the early phases of even one of the most well-known Greek theaters, the Theater of Dionysos in Athens (Dörpfeld and Reisch 1896: 25–36; Fiechter 1935, 1936, 1950; Pickard-Cambridge 1946: 5–15; Dinsmoor 1951; Bieber 1961: 54–57; Gebhard 1974: 428–429, 432–434; Travlos 1980: 537;

Figure 25.2 Theater, Pergamon, view. *Source*: J. Paga.

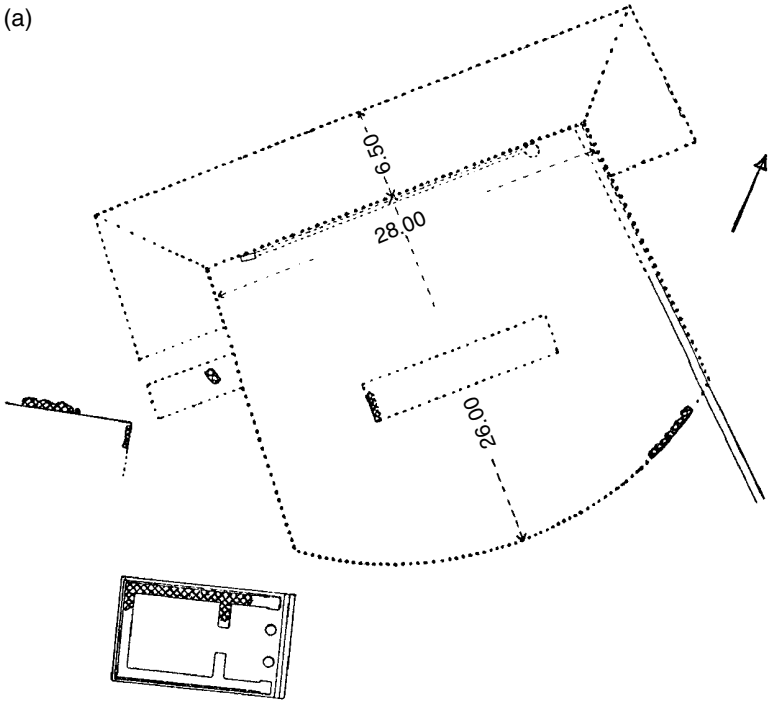
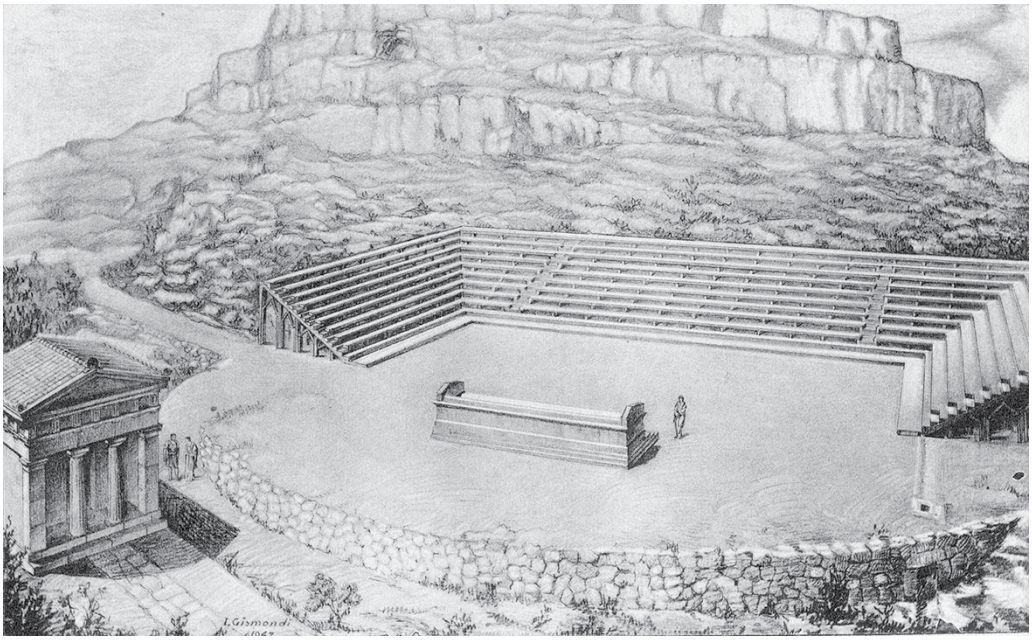


Figure 25.3 Theater of Dionysos, Athens, drawing and reconstruction of first phase with rectilinear orchestra and *cavea* (a–b), drawing of first phase with circular orchestra and *cavea* (c). *Source*: a–b: adapted from Anti 1947: fig. 17 (A), pl. II (B); c: Travlos 1980: fig. 677. The Archaeological Society at Athens.

(b)



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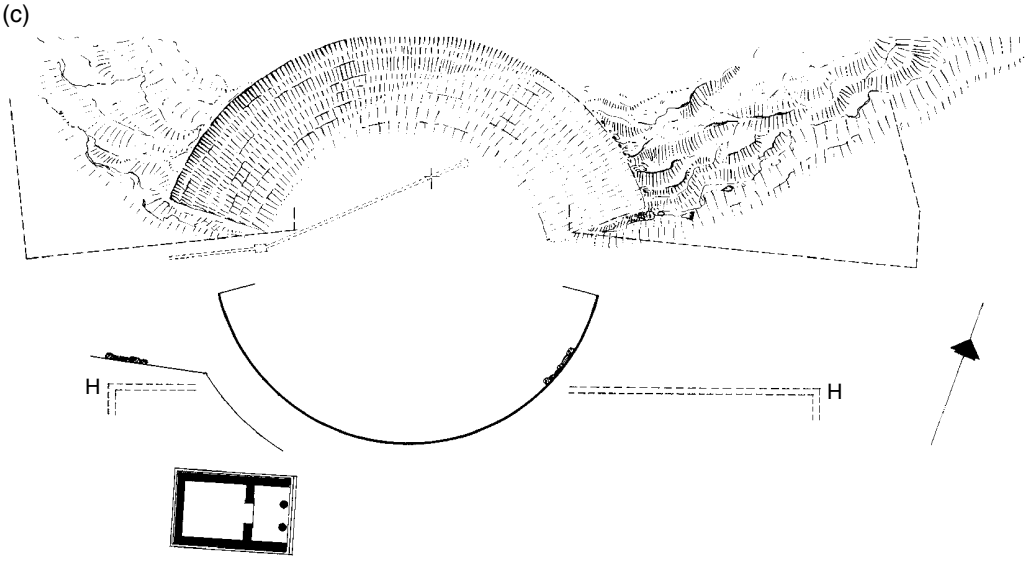

Figure 25.3 Theater of Dionysos, reconstructions of early phase. (*Continued*)

Rehm 1992: 33; Wiles 1997: 44–50; Paga 2012: 378–391) (Figure 25.3). This continued debate on such a familiar landmark demonstrates precisely how little is actually known about the early development of the Greek theater.

One reason for the controversy is that theaters of the fifth century BCE, particularly the first half of the fifth century, display a greater variety of form and plan than their fourth-century successors. The lack of canonization and the frequently ephemeral nature of the earlier theaters – many of which have been buried or obscured by subsequent expansions and elaborations – have resulted in little concrete

information about their sizes and forms. The use of mudbrick and timber for the seats of the cavea and the skene building has left little positive evidence of their forms and design. Wooden *ikria*, or bleachers, are attested for theaters from as early as the sixth century, and they would have continued in use until the cavea was provided with permanent stone seating (Csapo 2007: 98). The altar seems to have been a movable item, depending on dramatic need; it may not have been a standard part of the theater in all cases (Poe 1989: 117–137). The skene, as will be discussed in greater detail, was highly changeable and would have been built anew every year. As a result, the reconstruction of early theaters, or earlier phases of later theaters, is at times hypothetical and frequently uncertain.

Further complicating analysis of these early theaters is the very terminology that is used. The ancient Greek term "orchestra" (ὀρχήστρα) means "a place for dancing" and it has often been assumed that the dances performed were circular in nature (Hammond 1972: 396–397). A circular dance, however, can be performed in a square or rectangular space; it is not necessary for the geometric arrangement of the dance to correspond to the geometric arrangement of the space within which it is performed. Moreover, the lack of specific evidence for the circularity of these dances (their reconstruction is primarily based on the presence of figures with linked hands encircling Geometric, Proto-Corinthian, and Proto-Attic pottery, and – circular logic at its best – the circular form of the developed Greek orchestra) may lead us to question the absolute certainty with which these early circular dances are posited.

It is also worth noting that the form of the orchestra and the form of the cavea may not necessarily correspond (Wiles 1997: 48). A circular orchestra, for instance, could have an elongated or rectilinear cavea, just as a hemispherical cavea need not conform to a circular orchestra. A consideration of the three parts of the theater as discrete components, rather than as an amalgam, illuminates the functional necessities behind each part, as well as their differences in terms of purpose and individual development. Although the resulting form, brilliantly written into stone at Epidauros, shows an architectural unification of the three parts into a singular whole, examination of earlier theaters betrays their organic development over time (Figure 25.4).

Many of the earlier Greek theaters, the majority from the first half of the fifth century BCE, were rectilinear in plan, although this shape continued into the later fifth and early fourth century as well

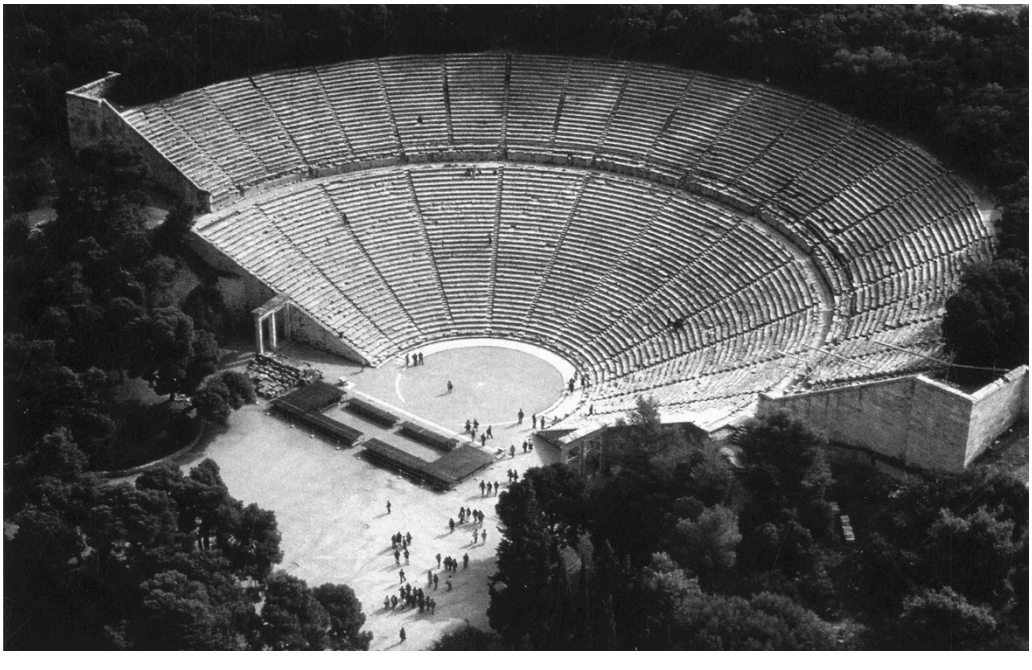

Figure 25.4 Theater, Epidauros, view. *Source*: H.R. Goette.

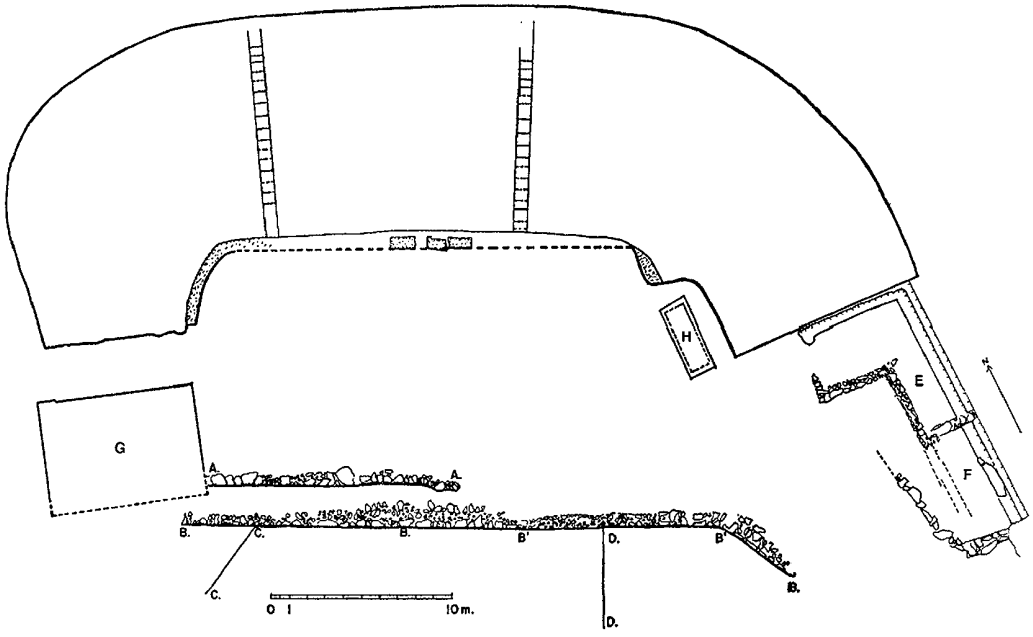

Figure 25.5 Theatral area, Thorikos, plan. A-A. early retaining wall; B, C, and D. later retaining walls; E and F. banquet rooms or changing areas; G. Temple of Dionysos; H. altar. *Source*: From Paga 2010: fig. 2; The Trustees of the American School of Classical Studies at Athens.

(Gebhard 1974; Paga 2010: 351–371). These early theaters generally assumed the form of a truncated ellipse or rounded rectangle, although more frequently the shape is not precisely defined. In many cases, the rectilinear reconstruction is based on extant remains of a rectilinear cavea or orchestra, as at Tegea (the remains, now buried, have been dated to the fourth century BCE) and Isthmia (late fifth century BCE), or both, as at Thorikos in Attica (circa 500 BCE) (Figure 25.5). In other instances, the rectilinear plan is based on the survival of retaining walls, thrones or seats of the *prohedria* (a reserved area for seats of honor), or the general layout of the site, as at Ikaria and Rhamnous in Attica (both circa 500 BCE with later, mid-fifth century phases) (Figure 25.6). The early theaters at Argos (mid-fifth century) and Syracuse (first half of the fifth century) also had elliptical or rounded rectilinear forms. The first phase of the Theater of Dionysos in Athens was also likely to have been rectilinear (Goette 2007: 116–121; Paga 2012: 381); although arguments for a circular orchestra are adduced by Senseney (2011: 94–95).

The widespread appearance of the rectilinear form in both the Greek mainland and Sicily over the course of the fifth century indicates that this form – rather than the familiar circular form – was more common in the Classical period and was only gradually displaced in the early Hellenistic period. Possible explanations for the change in form will be discussed, but it is important to note that despite the modification from rectilinear to circular, the three main components – cavea, orchestra, and skene – largely remained intact. The skene was witness to embellishment and elaboration in the Hellenistic period, often with the inclusion of a *proskenion* and other elements, seen particularly in the theater at Priene (Figure 25.7), but the overarching layout of the theater form did not fluctuate (von Gerkan 1921; Arnott 1962: 8–20, 42–44).

This tripartite division of space within the theater created distinct zones of action and activity, physically separating the audience from the performers and establishing interior and exterior settings. At the same time, the juxtaposition of the elevated cavea and low, flat orchestra created centripetal axes of viewing, directing and focusing the attention of the audience to the central performance area. In this way, the theater engendered its own practice by privileging certain types of viewing and emphasizing the

Figure 25.6 Theatral area, Rhamnous, view of theatral area from cavea, looking south toward prohedria and orchestra. *Source*: Paga 2010: fig. 8; The Trustees of the American School of Classical Studies at Athens.

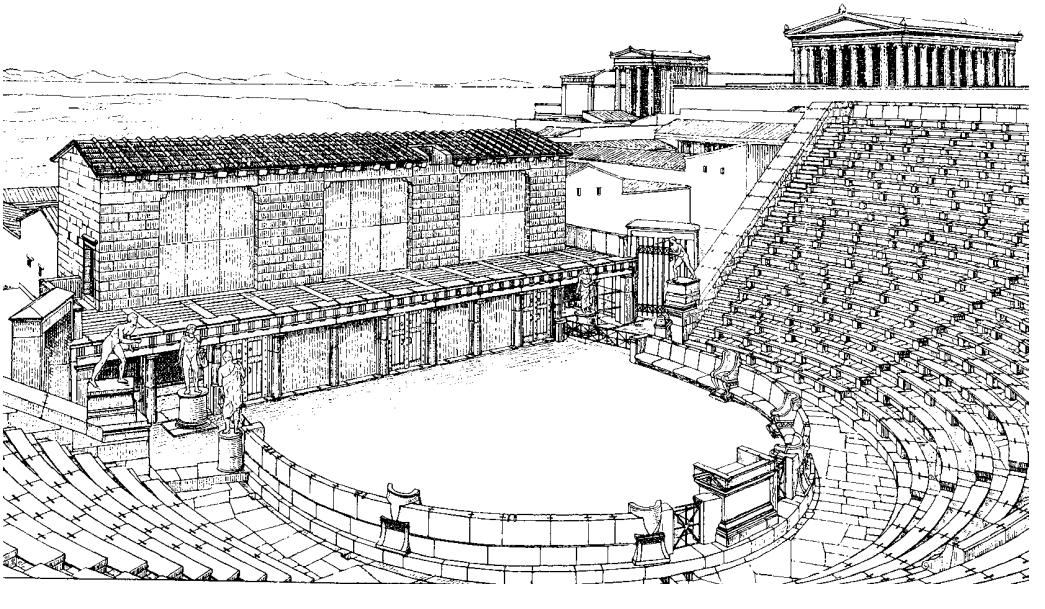

Figure 25.7 Priene, drawing of theater in late second century BCE. From von Gerkan 1921, pl. XXXV.

activity that took place in the orchestra. The form, whether rectilinear or circular, worked to establish a spatial division between performers and observers while also cultivating a particular mode of viewing. The orchestra served as the focal point, the place to which the gaze was directed, and the tiers of seats in the cavea accentuated this sight line, downward and inward (Rehm 2002: 37–38; Paga 2010: 367).

The topographic siting of theaters within the landscape frequently aided the central thrust of the sight lines. The theaters at Epidauros and Pergamon open onto expansive vistas of rolling hills and extensive valleys, respectively. In both instances, the use of the natural hillside and vast natural backdrop encouraged the centripetal focus of the cavea and orchestra, even as the skene blocked certain parts of the vista (it should be noted that the theater at Pergamon never had a permanent skene, potentially suggesting that the view outwards from the theater terrace was considered something not to be blocked, or at least not perpetually blocked). In some respects, the blocked view of the larger landscape helped to fix the gaze of the spectators on the skene or orchestra, further focalizing attention (Rehm 2002: 38). Overall, both the physical layout of the theater and its specific topographic siting facilitated the use of the space and aided in the convergence of viewing axes on the centralized area of the orchestra.

As the examples used thus far indicate, there is no major difference between theaters of the Greek mainland, western colonies in South Italy and Sicily, and areas of Asia Minor. Theaters in these various regions contain the same three elements and tripartite division of space, and they do not vary greatly in terms of size and layout. Circumstances of preservation, however, have meant that the elaborate *skenai* of the Hellenistic period are more often seen in the eastern examples, such as at Priene, Aphrodisias, and Miletos (Figure 25.7). Over the course of the fourth to second centuries, the skene grew both in size and ornamentation. The expansion of the skene laterally through the addition of *paraskenia* often meant that additional doors could be placed in the backdrop, facilitating entrances and exits of characters, while its growth vertically created unique opportunities for multiple tiers of action and greater spatial separation between actors in the orchestra and those in the upper stories of the skene. In addition, a *proskenium* could be added to the front, creating greater room within the skene and permitting the creation of multiple roof levels. These multistoried and expansive skenai were also employed in the Greek mainland and western cities, though, and so are not specific to Asia Minor (see Townsend (1986) for the fourth-century BCE skene of the Theater of Dionysos in Athens; Kowalzig (2008) for the theater at Syracuse).

In addition to the elaboration of the skene during the Hellenistic period, the overall size of theaters increased from the earlier fifth-century examples. The small fourth-century theater at Euonymon (in rural Attica) had a capacity of approximately 2600–3750 (Lohmann 1993: 288), whereas the theater at Pergamon could seat nearly 10 000 spectators. Additional tiers of seats, now rendered in stone instead of timber, were added to the Theater of Dionysos in Athens in the fourth century (Pickard-Cambridge 1946: 138–144). The size differentiation may indicate the growing importance of the theater and increased number of dramatic performances during the Hellenistic period, although it should also be noted that the small deme of Euonymon did not have a population of the same size as the massive capital of the Pergamene Empire.

The distribution, elaboration, and size of theaters throughout the Greek world indicate their importance within Greek society. The standardization of their architectural form over the course of the fifth and fourth centuries and their carefully orchestrated viewing axes demonstrate the high level of planning in their design. In many respects, the form, plan, and layout of the Greek theater is both reflective of and generative in the role of the theater in Greek society. How, then, were these theaters used?

Function: Use and Purpose

The most straightforward answer to this question of use, is that theaters were venues for dramatic performance. Theaters were, first and foremost, places where tragic and comic plays, as well as dithyrambic poetry, were performed. These performances, moreover, were frequently undertaken as part of religious festivals. There is more evidence, literary, epigraphic, and ceramic, as well as a greater amount of scholarship, concerning the use of the Theater of Dionysos in Athens than any other Greek theater, and so the following discussion of function derives primarily from that venue.

The Athenians celebrated two major festivals to Dionysos that involved dramatic performance: the Lenaia during the month of Gamelion (January) and the City Dionysia, also called the Great Dionysia, in Elaphebolion (late March). Not much is known about the Lenaia, but it seems to have been a more popular venue for comedy than tragedy (Pickard-Cambridge 1968: 25–42). The City Dionysia, on the other hand, was considerably more complex, spanning seven days, and including multiple processions, large sacrifices, and a Panhellenic audience (Pickard-Cambridge 1968: 57–101; Parker 2005: 316–318). Both comic and tragic plays were performed, in addition to dithyramb choruses of men and youths (Pickard-Cambridge 1968: 63–67). The primary venue during the City Dionysia was the Theater of Dionysos and its contiguous Sanctuary of Dionysos Eleutherios. The theater was an integrated part of the sanctuary, and the presence of shrines near other theaters (such as at the deme theaters at Thorikos (Figure 25.5) and Ikaria) also emphasizes the close links between theatral space and religious space, in addition to the frequent presence of an altar within the theater itself.

In the case of the Theater of Dionysos, prior to the construction of a stone skene in the fourth century, a timber or ephemeral skene would have been erected for the festival each year (Townsend 1986: 434–437). This skene would thus serve as the backdrop for all of the plays performed during the seven days of the festival. It is likely that many other theaters employed a wooden skene prior to the construction of a stone skene, or even exclusively, as at Pergamon. Pollux (*Onom.* 4.124) and Vitruvius (*De arch.* 5.6.8) both describe three doors in the skene: one central door, being the most important entrance and egress point, and two side doors. Although their evidence is largely derived from later (stone) examples, it is possible that the earlier timber skene also featured one or more doors. The painted decoration on or in front of the skene – the art of *skenographia*, or scene painting, which is posited by some to have been invented by Sophocles (Bieber 1961: 29) – also appears to have been an ephemeral element. These painted panels, called *katablemata* by Pollux (*Onom.* 4.131), could be changed between performances to indicate different settings. Parallel to the paradoi at the theaters at Megalopolis and Messenia are preserved tracks that would have been used for sliding the panels into place, an element referred to as the *scaena ductilis* by Vitruvius (*De arch.* 5.6.8). The built element that housed the tracks and panels was called the *skenotheke*.

The use of additional specialized machinery in the theater, namely the *ekkyklema* and the crane for the flying machine, is attested for the fifth century and was used in conjunction with the ephemeral skene (Bieber 1961: 76–79). The ekkyklema was a rolling device that allowed characters to be moved onto and off the stage via a moveable platform (notable examples include Ar. *Ach.* 408; Ar. *Thes.* 996, 265; and Eur. *Hipp.* 810–814). The crane was used to lift actors over or onto the skene, often for *deus ex machina* scenes (notable examples include: Ar. *Eirene* 174–181; Eur. *Med.* 1317–1322; and Eur. *Hipp.* 1284). These specially designed devices and the use of movable scenery made the Classical and Hellenistic theater an adaptive and easily transformable space. The use of ephemera also emphasizes the fact that the theaters were not used regularly or even frequently. In Athens, both the Lenaia and the City Dionysia occurred annually, but neither lasted long: the Lenia only a few days and the City Dionysia a week at most. In addition, the Rural Dionysia, a local counterpart to the City Dionysia, was celebrated every year during the month of Poseideon (December). This festival, however, seems to have been even more restricted than the Lenaia and City Dionysia, lasting no more than one or two days and being staged in only some demes or villages (Paga 2010: 372–378). Together, these three festivals meant that the theaters in Athens and Attica were in use for approximately three months of the year, but perhaps for a total of only two or three weeks out of those three months. We might imagine similarly brief periods of use and longer periods of disuse for the majority of Greek theaters, at least for dramatic performance or dramatic festivals.

In this way, the built form of the Greek theater was easily adapted and manipulated depending on the circumstances of its construction and use. The specific constraints of the landscape, festival calendar, and population resulted in theaters of differing sizes and capacities and with a mixture of permanent and ephemeral elements. The versatility of the form of the Greek theater within the basic tripartite schema is possibly one of the reasons for its popularity and widespread replication. The malleability of its form, though, seems to have also had ramifications for its function. As is detailed below, the festivals and dramatic performance were only one possible use of the space, albeit the most noticeable and highly attested. The overarching religious or ritual implications of the theater, however, are worth highlighting and cannot be

divorced from the general nature of the theater, regardless of its multiplicity of use. Moreover, the dramatic performances informed the other uses of the space, just as they, in turn, should affect our understanding of the festival use of the space; the relationship was more symbiotic than dialectical.

The ritual dimensions of the City Dionysia and other festivals, in addition to the incorporation of the theater within the precinct of the sanctuary, resulted in a sacralization of the theater space. In other words, the theater, by virtue of its use during the festivals and the presence of a broader sacred precinct, was not a profane or utilitarian structure but rather a specific type of religious building. This transformation, from a site of purely agonistic contestation to ritualized performance, was reinforced by the presence of an altar within the orchestra. The altar, in turn, bestowed divine approval or legitimacy on the dramatic performances themselves. The presence of an altar in many Greek theaters, like the presence of a nearby shrine or temple, underscores this connection between performance and religious festival by physically inserting the religious object *par excellence* into the very design of the theater (Arnott 1962: 43–56; Poe 1989: 137). The reciprocal relationship between the use of the space – as a venue for ritually based performance – and the design of the space – that is to say, the inclusion of an altar – underscores the close connection between form and function in Greek theaters.

The centripetal viewing axes inherent in the architectural layout and design of the theater also enhanced the ritual significance of the space. The spectators were provided with specific sight lines that directed their attention towards the orchestra, where the ritualized performance was taking place. The lowered orchestra, nestled in the foot of the cavea, focalized awareness in the same way a raised *bema*, or platform, might within a flat or level area. This directed emphasis, physically written into the design of the theater, created a cohesive link whereby the theater and festival became inseparable elements. In this light, the skene functioned as a stopping point, where the gaze of the spectators was arrested, the expansive vista beyond cut short (Rehm 2002: 38). This contrast, of directed viewing and stopping point, is similar to the experience one would have had inside a temple, with the cult statue at the far end simultaneously drawing and halting the view down the long cella.

The centralizing focus within the theater, was easily borrowed for different uses of the space. Indeed, the structure of the theater area and its inherent sight lines promoted the use of the space for a wider variety of purposes than dramatic performance. In particular, theaters were frequently the sites for political meetings and assemblies (Paga 2010: 366–371). They were built structures with large capacities, where the citizen population could meet and discuss business, where information could be communicated and dispersed, and where speeches could be delivered and debate could occur. The small rectilinear theater at Rhamnous, for example (Figure 25.6), was originally considered by excavators to be the bouleuterion of the deme (Bulle 1928: 2), and epigraphic evidence from the area indicates that in antiquity it was considered both the agora and theater of the deme (Petrakos 1999: vol. 1, 89–94; vol. 2, nos. 23, 43, and 73). In this particular case, the theatral area served at least two explicit functions, as the agora for the village and as the theater for celebrations of the Rural Dionysia. The rectilinear form and surrounding buildings, such as the stoa immediately to the south of the "cavea" area, promoted this multiplicity of use.

A recent study of the deme theaters in Attica demonstrates how theatral areas, with both circular and rectilinear orchestras, were used as multipurpose structures that helped promote key democratic tenets, such as communication and intervisibility (Paga 2010: 366–382). The distribution and mixed-use nature of these theatral areas has ramifications for how the Athenian political system was implemented and functioned during the Classical period. By paying greater attention to the variety of purposes to which theaters were put we can arrive at a better understanding of both how these built structures functioned on a more day-to-day basis and how architecture can help elucidate – or complicate – historical vicissitudes.

The political or social use of theaters is not specific to Attica. The Theater of Dionysos in Athens was also the site of political meetings and gatherings, particularly in the fourth century and throughout the Hellenistic period (McDonald 1943: 44–61; Lambert 2008). The large Hellenistic theater at Megalopolis is topographically and architecturally connected to the Thersilion, the structure used for meetings of the Arcadian League. Such a physical connection may imply shared or integrated use. The small fifth-century rectilinear theater at Argos, later converted into the Roman odeion, is likely to have functioned as the primary meeting area for the Argive council prior to the construction of a permanent bouleuterion (Tomlinson 1972: 19). Closer attention to the nuances of use would probably

reveal that many Greek theaters, if not the majority of them, were utilized for a wider variety of purposes than the performance of tragic and comic plays.

Nonetheless, it is important to emphasize that Greek theaters were primarily designed as venues for dramatic performance, often in conjunction with a festival or other ritual event. The additional or alternate uses of the space, for political meetings, general gatherings, or even as courts of law, should be considered indications of how the Greeks adapted built structures for a multiplicity of purposes. These uses do not seem to have superseded the performative aspects of the theater but rather provide a model for a lack of rigidity or strict specificity in how the Greeks conceived of a particular built structure. In addition to their formal design, the combination of permanent and nonpermanent elements in Greek theaters corroborates their selective use as venues for dramatic performance while simultaneously emphasizing their adaptability. When used for nonperformative functions, however, the theater itself could create links between ritual and nonritual or "utilitarian" events. That is to say, the ritualized nature of the theater *qua* theater affected the interpretation and meaning of the space when used for alternate purposes; a political meeting within a theatral area could appropriate the sacred nature of the ritualized theater, just as a dramatic performance was able to co-opt the political legitimacy of the polis by utilizing a shared space.

Economy, Geometry, and Multiplicity: Moving beyond Dramatic Performance

In order to consider theaters as more than simply structures where tragic and comedic plays were performed, more attention should be paid to their multipurpose nature. The very fact that these theatral areas were adaptable encourages a broader approach to their overall significance within Classical and Hellenistic Greek society. The variety of links between form and function, moreover, also sheds light on how some types of architectural structures may not fit into rigorously defined categories. In this final section, new approaches to understanding the Greek theater are presented that consider how these built structures were financed and generated revenue in turn, how their evolving plans illuminate the increasing role of geometry in architectural design, and how various sources, from epigraphy to pottery, can aid our interpretations of the role of the theater in Greek society and can shed light on the built structures themselves.

One of the ways in which theaters can be considered beyond mere venues for performance is in the income-generating possibilities that they posed. Epigraphic evidence regarding *theatropoloi* ("theater sellers") and *theatronai* ("theater buyers") indicates that theaters were often objects that could be rented or leased, resulting in revenue generation for the polis (Csapo 2007: 88–96). In an example from Piraeus (*IG* II^2 1176 + *SEG* 19.117 + *SEG* 19.521), the *theatrones* paid for the lease of the theater and, in return, was charged with provisioning wooden seats for the spectators (with the exception of the permanent seats in the prohedria) and any other alterations necessary, such as changes to the skene. The *theatrones* seems to be in charge of any and all of the ephemeral elements connected to the theater. In return, he was allowed to keep any entrance-fee profits or other concessions but was obliged to maintain the condition of the theater. Presumably, admission charges were collected by the polis in cases where the theater was not leased to a private individual (or individuals, as in the Piraeus example).

As detailed already, the highly ephemeral nature of over two-thirds of classical theaters – both the skene and seats of the cavea were constructed of timber, leaving the orchestra and any necessary retaining walls as the only permanent elements – means that these features are likely to have required repairs or even complete reconstructions on an annual basis. If the polis farmed out contracts for these repairs, the theaters become income-generating venues. If, on the other hand, the polis paid for these repairs, but then charged entrance fees, the theater again accumulated profits into the state treasury. This type of reciprocal relationship between theatral performance and economic growth has so far only been investigated for theaters in Athens and Attica (Csapo 2007; Wilson 2010), but the implications may be broadly applicable.

Dramatic festivals could also serve as income-generating facets of the theater. The City Dionysia drew a Panhellenic audience, which would have not only increased admission fees but also functioned as a general boon to commercial activity in Athens during the festival, much in the way modern sporting events (particularly the Olympics) often drive revenue production. Moreover, the possibility of yearly contracts for the upkeep and maintenance of the theater may be one of the reasons that few theaters were made permanent in stone prior to the fourth century. General prosperity and economic health may have also functioned as the impetus behind the construction of new theaters during the Hellenistic period. Such seems to have been the case in Sicily (Marconi 2012: 176–189), and it is possible that a similar period of financial burgeoning in Athens around 500 BCE spurred the construction of over four theatral areas in the city and countryside of Attica (Paga 2012: 471–472 (Rhamnous), 496–498 (Thorikos), 513–514 (Piraeus), 525–527 (Ikaria)).

The transition from a rectilinear to circular cavea and orchestra could have also been driven by economic concerns: a semicircular cavea can accommodate a larger capacity than a rectilinear seating area. The expanding size of theaters in the fourth century and Hellenistic period is concomitant with the transition from rectilinear to circular orchestra and cavea. The confluence of these factors points to the second half of the fourth century and Hellenistic period as pivotal moments of transition for the Greek theater, akin to the late Archaic and early Classical period, when the rectilinear and semipermanent theaters began to appear with regularity. An increased interest in geometry and its application to architectural structures (Senseney 2011: 60–103; see also Chapters 7 and 16) could have also had an influence on the transition to larger spaces as well as on the change from rectilinear to circular. The fourth-century theater at Epidauros illustrates all of these concepts: increased size, circular orchestra and cavea, and the use of geometry in its overall plan and layout (Figure 25.4).

Ceramic evidence can also provide valuable information about the architectural layout and design of the Greek theater, as well as its use during dramatic performance. Apulian vases, produced in southern Italy and Sicily during the Classical and early Hellenistic periods, frequently portrayed scenes from tragic and comic plays, often including stage settings and details of costuming and masks (Trendall and Webster 1971: 11–13, with accompanying catalog; now superseded by Taplin 1993 and 2007). In several of these vases, *aedicules*, or shrines, seem to be indicated, which may correspond to particular features of or additions to the skene. The distribution of the majority of these vases in southern Italy and Sicily also provides important information about the spread of tragedy and the role of dramatic performance in areas outside mainland Greece, already by the second half of the fifth century (Taplin 2007: 5–20). Komast vases also provide evidence for costuming and masks and may indicate the early stages of comic and dramatic performance and their accompanying rituals, although these scenes rarely provide evidence of setting (Csapo and Miller 2007: 12–24; Smith 2007; 2010: 242–247).

A small sherd from a *dinos* by the Sophilos painter, dated to circa 570 BCE, depicts spectators seated on ikria watching a chariot race (Athens, NM I54999). Although the scene does not represent dramatic performance, the presence of the timber bleachers provides us with an idea of what they originally looked like. (See also Chapter 24.) On the sherd, two stepped ikria, each with eight tiers of seats, are placed back to back. The rectilinear shape of these ikria demonstrates why the majority of the early theaters were rectilinear in form: if the seats in the cavea were constructed of rectangular timber bleachers, it follows that the general layout of the theater will likewise be rectangular, or at least elliptical in plan. The ceramic evidence in general can serve as a useful barometer for the popularity of the theater, particularly in South Italy and Sicily, but it also demonstrates how architectural idioms and structures were translated onto painted pottery.

The use of epigraphic and ceramic materials to enhance our understanding of both the form and the function(s) of Greek theater provides an indication that there is still much to be discovered and considered about one of the most iconic building types of ancient Greece. The evidence that we can use to arrive at a deeper or more nuanced understanding of the theater is not solely restricted to the archaeological remains or surviving dramatic and comic texts. Investigations into the geometric design and extra-ritual dimensions of the theater may help illuminate why the rectilinear orchestras of early theaters were replaced with circular plans and also help us to understand the wide variety of uses and functions that Greek theaters served. The transition from ephemeral or timber constructions to stone, when combined with the ceramic evidence of southern Italy and Sicily, helps to demonstrate the increasing

popularity of theater in the Hellenistic period, but it also has ramifications for the economic value of theaters and their reception (or perception) in other media. The study of the Greek theater, then, is a multidisciplinary endeavor that stretches across materials and media.

Ultimately, the "iconic" Greek theater should be viewed as a more complex and multifaceted structure than it has previously been considered to be. The fluctuations of its form throughout the Classical period and its multiplicity of uses – ritual, performative, political, economic – illustrate how dynamic the theater can be within the rubric of Greek architecture. In particular, the clear links between form and function transform the theater from a generic or conventional built structure in ancient Greece to a building that can illuminate the vicissitudes of ancient history and shed light on the active properties of architecture within the sociocultural and political sphere of antiquity.

FURTHER READING

Several of the most indispensible works on the Greek theater were written over half a century ago, but they remain both strong starting points and invaluable references for basic terminology. In particular, Pickard-Cambridge 1968 and Bieber 1961 provide excellent overviews of the ritual events that occurred in the Theater of Dionysos in Athens and, respectively, address the general form and dramatic function of theaters. For a recent survey of the epigraphic evidence for dramatic festivals that took place in the Theater of Dionysos, see Millis and Olson 2012. Interest in the spatial dynamics of the Greek theater has been driven largely by phenomenological studies, such as Wiles 1997, Rehm 2002, Paga 2010, and Meineck 2012. The interest in the economics of Greek theaters has been explored by Wilson (2006; 2008; 2010; 2011) and Csapo (2007), both of whom are currently investigating theaters outside Attica. For more on Greek theaters in the fourth century BCE, see the recent volume by Csapo *et al.* (2014), especially on theaters outside of Athens (Moretti 2014). Theaters and theatrical performance in Sicily and southern Italy have always been acknowledged to have been much loved in antiquity, but few attempts have been made to address both the architectural spaces and the festivals or performances themselves. Fortunately, that trend is changing, given the recent studies by Kowalzig (2008), and Marconi (2012). The evidence from images on ceramics for Greek theater has been most fruitfully studied by Taplin, whose bibliography is extensive: *Comic Angels* (1993) and *Pots and Plays* (2007) represent a mere portion.

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CHAPTER 26

Commemorating the Dead: Grave Markers, Tombs, and Tomb Paintings, 400–30 BCE

Olga Palagia

This chapter offers a survey of the principal types of grave markers and tombs in the late Classical and Hellenistic periods. Some, such as grave reliefs, columns, and statues, are carried over from the Archaic and Classical periods, though there was a ban on luxurious grave markers in Athens and Attica from circa 480 to circa 430, and after 317 BCE. Peribolos tombs in Athens and cist tombs in Macedonia first appear in the fifth century. Painted chamber tombs were known in Anatolia in the Archaic period (Mellink 1998). The fourth century introduces a great range of chamber tombs, including the spectacular underground Macedonian tombs with wall-paintings, which begin after Alexander the Great's conquest of Asia, and temple tombs on huge pedestals with vast amounts of sculptural decoration sponsored by the local dynasts of the western satrapies of the Persian Empire, such as the Mausoleum at Halikarnassos, which was designed by the famous architect Pytheos.

Grave Markers

Reliefs

Marble grave reliefs are the most common type of grave markers in the late Classical and Hellenistic periods. They were normally set up in funerary precincts that lined the roads outside the city gates. Large quantities of reliefs from Athens and Attica of the fourth century survive. They were banned by an anti-luxury decree imposed by Demetrios of Phaleron in 317 BCE and reappeared as late as the reign of Augustus in the first century. They consist of relief slabs set in architectural frames, which were often topped by pediments. The names of the deceased and other members of their family are usually inscribed on the architrave. The scale of stelai ranges from modest to colossal, becoming larger and more elaborate as the fourth century progressed. Low relief stelai also tend to develop into high relief towards the end of the fourth century. Their quality varies from fine art works to second-rate products. The famous fourth-century sculptor Praxiteles was credited with a sculptured grave monument of a soldier leading his horse that was erected in the Athenian Kerameikos (Paus. 1.2.3). It is not clear, however, if this was a stele or a free-standing sculpture.

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

The iconography of grave reliefs is confined to mundane scenes like family gatherings or more modest combinations of master/mistress and household slave. No gods are represented except for Hermes leading the souls to the Underworld. Handshakes symbolize close family ties. Pets may appear in the gravestones of children. The dead were characterized visually as warriors, priests, athletes, hunters, or housewives. The heads are idealized with no attempts at portraiture. The stelai are dominated by human figures, sometimes with the addition of chairs or stools. Landscape elements are rare. Family scenes include the dead, as well as the living, and it is sometimes hard to distinguish them. A good case in point is the late fourth-century grave relief of Hiero and Lysippe from Rhamnous (Athens NM 833 and Rhamnous storeroom; Kaltsas 2002: no. 409; Clairmont 1993: no. 2.480). Hiero is a mature man shaking the hand of a young woman (Lysippe). He touches his chin with his left hand, a gesture of grief. The young woman used to be interpreted as the deceased daughter of Hiero until the architectural frame of the relief came to light, bearing an inscription naming Hiero as the dead man and Lysippe as his wife. Another interesting case is the two nearly identical gravestones of the sisters Demetria and Pamphile, for each of whom a stone was erected at the Athenian Kerameikos following her death (Athens NM 2708 and Kerameikos Museum).

In Boeotia and West Greece, fourth-century and Hellenistic gravestones developed in a different direction. They were tall limestone slabs topped by pediments. Their decoration consisted of horizontal bands, e.g., a Doric frieze of triglyphs and metopes or an Ionic frieze of dentils, plus relief friezes of animals or florals. The name of the deceased acquired decorative value as it formed part of this pattern.

In the Hellenistic period grave reliefs were mass produced on the islands of the Aegean and in the cities of East Greece, picking up the thread of Attic grave reliefs. They are smaller in scale and introduce new themes, as well as a new system of proportions, with slaves portrayed on a smaller scale than their masters. In addition, there is greater variety in architectural frames, including the arch, which is inscribed within the rectangular field of the stele. The attributes of the deceased, such as weapons or baskets, for example, can be shown in the background. The frequent depiction of herms may signpost the gates of Hades, while book rolls can be interepreted as sacred texts related to mystery cults (Palagia 1997: 69–70). Book rolls are sometimes taken to denote philosophers, but, in some cases, they are even held by infants (Palagia 2008: 201). Funerary banquets, a subject that was common in votive reliefs to heroes in the fourth century, become widespread in Hellenistic grave reliefs. One of the finest examples comes from Cyzicus, and dates from the mid-second century (Paris Louvre Ma 2854; Pfuhl and Möbius 1977–1979: 2.382–383, no. 1555, pl. 225). The deceased Attalus reclines on a couch feeding a snake out of his phiale. His wife sits beside him holding a fan, while a diminutive female slave proffers a model of the Rotunda of Arsinoë on Samothrace, suggesting that the deceased was an initiate of the mysteries of the Great Gods. A basket is set on a base behind her. A slave boy serves wine from a krater at the right, while the forepart of a horse emerges from the architectural frame. A series of nails in the background must have held various attributes. The heads of the two principal figures were made separately and attached into cavities, although this does not necessarily mean that the heads were portraits.

Painted stelai

The most extensive collections of painted funerary stelai come from the Athenian Kerameikos, Demetrias, Vergina, and Chersonnesos. A fine Athenian example of the fourth century represents a loutrophoros in relief, painted with a handshake scene between a man and a woman (Munich Glyptothek; Posamentir 2006: no. 53). A painted ribbon hangs from the loutrophoros handle, while book rolls are painted in the background of the stele, along with alabastra; all can be understood as grave goods. The book rolls probably refer to sacred texts related to mystery cults which offered hopes for the afterlife.

Statues

Statues of auxiliary figures such as slaves, archers, or sirens accompanied grave reliefs on the funerary precincts of Athens and Attica throughout the fourth century. In addition, statues of the deceased with their slaves, echoing the iconography of grave reliefs, were occasionally placed in temple-like structures.

Figure 26.1 Kallithea Monument, third quarter of the fourth century BCE, Piraeus Museum. *Source*: Olga Palagia.

These lasted from about 340 BCE until they were banned by Demetrios of Phaleron's anti-luxury decree of circa 317 BCE. Extant examples represent women with their maids or men with slave boys. All are headless, but there is no reason to believe that the heads were portraits. It is more likely that they had idealized features following the conventions of grave reliefs.

The best preserved example is the Kallithea Monument (Piraeus Museum 4502; Steinhauer 2001: 305–309, figs. 458–465) (Figure 26.1). It was erected outside the long walls leading from Athens to Piraeus by a wealthy family of metics from Istria (modern Romania). This monument is a paradigm of conspicuous consumption, emulating the dynastic burials of Lycia and Caria (see, later in the chapter, Nereid Monument and Mausoleum). Even though the workmanship is not of the highest quality, it does not fail to impress on account of its size and complexity. A tall limestone podium supports a stepped marble pedestal on which rests an Ionic naiskos containing the marble statues of Nikeratos, his son Polyxenos, and a slave boy. The back wall of the naiskos is made of grey Hymettian marble. The father is represented as a citizen wearing a himation, the son as a naked athlete, with his cloak thrown over the slave's shoulder. The stepped pedestal carries an Amazonomachy frieze with an animal frieze directly under the naiskos. The now plain band in the middle may have carried a painted frieze. In addition to the marble polychromy, there are vestiges of paint on the figures, as well as painted moldings.

Figure 26.2 Lion of Chaeroneia on modern pedestal, after 316 BCE. *Source*: Olga Palagia.

Grave statues were also erected in the Hellenistic cemeteries of the islands of the Aegean and East Greece. A number of unfinished grave statues have come to light in the sculptural workshops of Rheneia (Couilloud 1974: 231–233).

Statues of animals placed on tombs or on funerary precincts are known from the sixth century BCE onwards. They functioned as guardians or served as symbols of the life and occupations of the deceased. Lions, dogs, bulls, leopards, and eagles are common in the fourth century, with lions continuing through the Hellenistic period. One of the most famous lions was erected on the tomb of Leonidas at Thermopylai (Hdt. 7.225; Clairmont 1983: 114–115). A colossal marble lion was set up on the mass grave of the Sacred Band of Thebes who fell at the Battle of Chaironeia in 338 BCE (Figure 26.2). The lion should probably date from after the refoundation of Thebes in 316 BCE and can be compared to a similar, probably contemporary lion at Amphipolis (Ma 2008). A Greek lion at Ecbatana marks the grave of one of Alexander the Great's companions, perhaps Parmenio (Palagia 2012: 370–371, fig. 1). A colossal marble lion sits on top of a tomb at Knidos, which was inspired by the Mausoleum at Halikarnassos but appears to function as a pedestal for the lion (Waywell 1998). An eagle is recorded as

marking the grave of Plato in Athens (*Anth. Pal.* 7.62). A colossal marble eagle with a snake in its claws came to light in a cemetery near Piraeus and has been tentatively attributed to the tomb of a seer (Steinhauer 2001: 279, fig. 418).

Vases in stone

Oversized marble vessels functioned as grave markers primarily in fourth-century Athens and Attica. They are not hollow; rather, they are monumental representations of specific vessel-shapes normally made of clay but sometimes of metal. We have large numbers of lekythoi representing the perfume bottles that were deposited in tombs. Marble lekythoi were occasionally decorated with relief panels. The most famous marble lekythos comes from the tomb of Lysis, Socrates' friend, who was celebrated in the homonymous Platonic dialogue (Piraeus Museum 3281; Stroud 1984). Loutrophoroi, vessels for fetching bath water, occasionally marked the graves of those who died unmarried (Dem. 44.18). Marble cauldrons are less common. Marble Panathenaic amphoras very likely marked the graves of Athenians who had served their city in some political capacity.

Columns and pilasters

Ionic or Doric columns could function as tomb markers, usually supporting a marble statue or a vase. A column with a siren was placed on the tomb of Isocrates (d. 338 BCE) at Kynosarges in Attica (Plut. *Mor.* 838c; Scholl 1994: 240–252). Sirens as musicians playing dirges tend to appear as akroteria on Attic grave reliefs or as funerary statues. Columns supporting Panathenaic amphoras are illustrated as grave markers on two sides of the grave pillar of Metrodoros from Chios in the early third century (Berlin Antikenmuseum Sk 766a; Bentz 2009: figs. 15.5–6). Columns supporting cauldrons and placed on mounds are represented in a horse race in honor of the dead taking place among the tombs, which is painted inside the early Hellenistic Tomb of the Philosophers at Pella (Lilimpaki-Akamati 2007: 63–66, fig. 52). In the fourth century an archaic Ionic column carrying a now lost sphinx (?) was inscribed by Dokimos with a dedicatory epigram and placed on the tomb of the seventh-century poet Archilochos on Paros, who was worshipped as a hero (Clay 2004: 28–29, pls. 1–2) (Figure 26.3). The second-century tomb of the sculptor Damophon at Messene included a Doric column inscribed with copies of honorary decrees issued by various cities thanking Damophon for his benefactions (Themelis 2000: 92–94).

Figure 26.3 Inscribed Ionic capital from column placed on the tomb of Archilochos on Paros. The capital dates from the sixth century, the inscription from the fourth BCE. Paros Museum. *Source*: Olga Palagia.

Trapezai

A *trapeza* is a long low block with a flat top, often carrying relief scenes. Although its name means "table," it need not have functioned as a platform for funeral offerings. The most famous trapeza stood on the tomb of Isocrates at Kynosargesdiolkos, representing Isocrates and his teachers, including the sophist Gorgias gazing at a globe (Plut. *Mor.* 838b–d; Scholl 1994: 240–252). A similar theme may appear on one of the blocks of a marble relief trapeza of the fourth century BCE that was found reused in a late Roman house on the south slope of the Acropolis. The dead man appears on all three sides. He is among his family on two sides and placed in a group of men who look like philosophers on the front face (Athens AM; Brouskari 2002: 143–148).

Sarcophagi

Marble sarcophagi were normally placed in crypts or buried underground. Some, however, functioned as tomb markers, especially on the islands of the Aegean. Hellenistic sarcophagi, mainly on Paros and Rheneia, carried busts or stelai added on top, with the finest example being the second-century sarcophagus of Tertia Horaria from Rheneia (Mykonos Museum and Rheneia, *in situ*; Couilloud 1974: no. 58, pls. 13, 93) (Figure 26.4). The name of the deceased is inscribed on the long side, accompanied by a wool basket in relief. The lid takes the form of a roof with tiles. A stele framed by Corinthian columns supporting an architrave, dentils, and a floral acroterion is inserted on top. The relief shows the deceased, seated, shaking hands with her husband, and attended by a diminutive slave girl. The small scale of the girl indicates status rather than age, as is usual in Hellenistic grave reliefs.

Altars

Cylindrical or rectangular altars decorated with garlands and boukrania, occasionally with the addition of standing figures or snakes, were a common category of grave markers, especially in East Greece and the islands of the Aegean. A special category of round altars on the island of Rheneia carry rectangular cuttings on top, indicating that they served as bases for funerary stelai.

Cinerary caskets

Round or rectangular stone caskets could be placed on graves, holding lead boxes with cremation burials (Couilloud 1974: 486–487; Fraser 1977: 12–13).

Tombs and Tomb Paintings

Peribolos Tombs

Burial precincts were common in Athens and Attica in the fifth and fourth centuries BCE. Enclosures were built on all sides, containing sarcophagi and other burials. The wall lining the road was built of fine ashlar masonry and topped by grave markers in the form of grave reliefs, stelai, or marble vases. An exceptional grave monument in the Athenian Kerameikos, the so-called Tomb at Horos 3, combines a pi-shaped precinct with a circular building in the middle (Willemsen 1977: 140–151; Koenigs, Knigge, Mallwitz 1980: 99–125; Valavanis 1999). Only half of the monument has been recovered, containing a single male burial in a poros sarcophagus. We do not know if there was another burial in the missing portion of the monument. The two wings of the precinct were topped by marble statues of dogs, while a marble Panathenaic amphora crowned the circular building. A marble cauldron with handles in the

Figure 26.4 Funerary stele of Tertia Horaria from Rheneia, Mykonos Museum. Second century BCE. *Source*: Olga Palagia.

form of griffin heads was also part of the monument. The Panathenaic amphora and the tomb's proximity to the *demosion sema* suggest a state burial of an exceptional individual or individuals. The dates proposed for the tomb range from the end of the fifth century to the third quarter of the fourth century BCE. The nearest parallel is provided by a similar monument of the early Hellenistic period in Megara, considered to be a heroön (Travlos 1988: 259, figs. 348–351).

Funerary naiskoi

This type of tomb was common in the cemeteries of Taras in the period 325–250 BCE, dated by pottery contexts. Limestone naiskoi, usually of the Corinthian order, were embellished with sculptured friezes, metopes, pedimental relief figures, and akroteria (Klumbach 1937; Carter 1975). The scenes depicted

can be mythological (e.g., Trojan War, Amazonomachies), religious (e.g., rape of Persephone, Dionysiac thiasos, Underworld), or battle-pieces, hunts, banquets, and episodes by the graveside. These tombs were small-scale, but they were occasionally large enough to house statues similar to the funerary naiskoi shown in Apulian vase-painting of the last quarter of the fourth century.

A funerary naiskos carrying a marble relief frieze can be reconstructed on Rhodes on the evidence of a frieze block commemorating Hieronymos of Tlos, dating from the late third or early second century BCE (Berlin Antikenmuseum Sk 1888; Fraser 1977: 34–36, fig. 97; Palagia 2011a: 483 n. 21 with earlier references). The frieze is exceptionally signed by the sculptor Demetrios and divided into two parts. More blocks would have completed the scene on either side. A reading of sacred texts relating to the afterlife is represented on the left, while the rest of the frieze is located in Hades. The terrestrial scene is separated from the Underworld by means of a vertical pillar. From left to right, we see Hermes standing in front of Persephone, who is followed by Pluto, enthroned. The dead Hieronymos stands behind Pluto. The scene on the right comprises the souls of the departed sitting among the reeds on the banks of the Acheron River (cf., Paus. 10.28.1). A winged woman and a female figure rising from the ground, perhaps personifications, complete the scene at the extreme right.

Temple tombs with funerary crypts

This tomb type developed in the hellenized western satrapies of the Persian Empire, Caria and Lycia in particular, in the fourth century, and became popular in the Greek world in the Hellenistic period. Only a few significant examples will be discussed here.

The Nereid Monument was the tomb of Arbinas, dynast of Xanthos, Lycia, datable to circa 380–370 BCE (see Figure 30.2). It is an Ionic temple raised on a high podium, built entirely of marble and lavishly decorated with architectural sculptures (London, British Museum). The workmanship is Greek, adapted to local taste. A frieze on the architrave represents a multiple quarry hunt evoking Persian hunts in game parks; there are also single combat scenes that may represent funeral games, as well as a procession of men carrying offerings. Another frieze running around the exterior wall of the cella depicts a banquet, where the dynast reclines in splendid isolation, and a sacrificial scene, perhaps offered to the deceased as hero. The pediments are decorated with relief scenes showing the dynast and his family in front and in heroic combat at the rear. Sculptured akroteria decorate the corners of the roof. Statues of so-called Nereids (who may be Lycian water nymphs) stand in the intercolumniations (Figure 26.5). The podium is decorated with two superimposed friezes, the upper frieze depicting a series of city sieges, which are presumably celebrating Arbinas' conquests of neighboring cities, while the bottom frieze represents a generalized battle among Greeks. It is remarkable that most of the figures represented are in Greek rather than Persian dress. Arbinas, on the other hand, is distinguished by his Oriental appearance. He chose, however, to have himself represented in a hellenized ambience.

The Mausoleum at Halikarnassos was directly inspired by the Nereid Monument, with additional features evoking the pyramids of Egypt and Greek family statue groups (see Chapter 30 and Figures 30.1, 30.3). It was commissioned by Mausolus, satrap of Caria, in the second quarter of the fourth century BCE and became one of the most influential funerary monuments of all time (much of it now in London, British Museum). According to Pliny (*NH* 36.4.30–31) and Vitruvius (*De arch.* 2.8.11–12; 7.praef.12–13), the Mausoleum was designed by the architect Pytheos and the sculptor Satyros, who also co-authored a book about it. It consisted of a podium supporting an Ionic temple, which was topped by a stepped pyramid. Mausolus' burial chamber was in an underground crypt. A four-horse chariot stood on top of the monument, perhaps carrying a statue of Mausolus. The marble horses were encased in lead, which was probably gilded. The main claim to fame of Mausolus' tomb rested on the great quantity and high quality of marble statuary that was created by the famous Greek sculptors Scopas, Timotheos, Leochares, and Bryaxis. A variety of white marbles (e.g., Parian, Pentelic, Proconnesian) and colored limestones were used for the sculptures and in the fabric of the building.

Pytheos was also responsible for the Temple of Athena at Priene, which was sponsored by Alexander the Great, and was an advocate of the Ionic style in Greek architecture. He introduced sculptured ceiling coffers to the peristyle of the Mausoleum, an experiment that was repeated in his Athena Temple

Figure 26.5 Statue of Nereid from the Nereid Monument of Xanthos. Early fourth century BCE. London, British Museum. *Source*: Olga Palagia.

at Priene and imitated in other monumental tombs like Belevi (discussed next). The pyramid of the Mausoleum was decorated with statues of lions and figural akroteria, perhaps including a statue of Apollo, who is the only Greek god featured in the Mausoleum. The pedestal of the chariot carried a relief frieze with a centauromachy, while a frieze with a chariot race (illustrating funeral games) probably ran around the exterior wall of the cella. The top of the podium was decorated with an Amazonomachy frieze. Free-standing sculptures of various sizes represented battles of Greeks and Persians, a hunt, a sacrifice, and members of Mausolus' family. The distribution of statues on the building remains controversial, while the attribution to individual sculptors is a futile exercise. The style of both sculpture and architecture is purely Greek, and the Carian aristocracy is portrayed as hellenized barbarians. The general impression of the Mausoleum would have been as a petrified funeral pyre (cf., Palagia 2000: 175); its purpose was to glorify Mausolus as a founder hero of Halikarnassos.

The Mausoleum at Belevi near Ephesos was a dynastic burial, commissioned by one of the Successors of Alexander (now in the Ephesos and Izmir Museums). It was inspired by the Mausoleum of Halikarnassos, offering a new blend of Greek and Persian elements. Its podium is partly carved out of the living rock and contains a vaulted funerary chamber and an antechamber comparable to the interiors of Macedonian tombs (see the discussion of underground built chamber tombs). The stone sarcophagus represents a Greek kline, but the footstool has Achaemenid-style legs. A man wearing a Macedonian short-sleeved chiton reclines on the lid, accompanied by the statue of a Persian attendant. The podium has a false door and was topped by a temple-like structure with Corinthian columns. The peristyle carried sculptured ceiling coffers modeled on those of the Mausoleum, showing funeral games on the

north side, a centauromachy on the others. Funeral games were common in the funerary iconography of not only the Macedonians but also the satrapal courts of Asia Minor (e.g., Nereid Monument, Mausoleum). The interior walls of the cella were articulated with engaged columns or pilasters. The entablature of the Corinthian colonnade carried pairs of Achaemenid lion-griffins flanking cinerary urns, with horses serving as corner akroteria. It may well be that the monument was topped by a stepped pyramid modeled on the Mausoleum. It is generally thought that the tomb was prepared for Lysimachos, but he was never buried in it; it probably housed the remains of Antiochos II, who died in Ephesos in 246 BCE.

The third-century Charmyleion on the island of Kos comprised a temenos, a garden, and a two-storied house tomb with a vaulted underground crypt (Figure 26.6), which functioned as a family mausoleum (Scholl 1994: 261–266). The dead were deposited in six loculi, sealed with slabs representing the short end of a kline. Charmylos had a hero cult in association with the twelve gods, as attested by an inscription found nearby.

Chamber tombs

A number of chamber tombs, cut into the bedrock, each containing several burials, were exceptionally erected within the walls of Messene in the Hellenistic and Roman periods (Themelis 2000).

Underground built chamber tombs

Macedonian tombs are built of soft limestone decorated with plaster, with their entrance often sealed with marble doors. Their materials are brittle, and they have no architectural merit except for the painted or relief decoration. They are distinguished by a barrel-vault roof; several are embellished with an architectural façade, probably imitating a palatial gateway, which does not reflect the structure behind it. The façades carry half-columns or pilasters and can be topped by a pediment and akroteria. Two-storied façades include elements of both the Doric and Ionic orders combined in non-canonical ways. Interiors too could be painted and architecturally articulated, for example, the burial chamber of the Judgment Tomb at Lefkadia and the antechamber of a tomb at Dion (Miller 1982: figs. 10, 25). The back wall of the main chamber of the so-called Tomb of Eurydice at Vergina is exceptionally decorated like a tomb façade to compensate for the fact that the tomb is encased in ashlar masonry to protect it from desecration. The lack of architectural facades also applies to a number of tombs of the third and second century BCE, such as the Tomb of Lyson and Kallikles at Lefkadia, and Pella Tomb VI (Chrysostomou 1999). It may imply that the owners did not wish to attract attention to the contents of these tombs in a time of uncertainty.

Most Macedonian tombs are covered with a mound and are accessible through a built corridor (*dromos*), though the so-called Tombs of Rhomaios and Eurydice near the palace of Vergina show no evidence of mounds (Miller 1993: 4 n. 10). Many tombs functioned as family mausolea, the most prominent example being the Tomb of Lyson and Kallikles at Lefkadia, which contains 22 niches for the storage of cremation burials, remaining in use from the third to the second centuries BCE. Even the so-called Tomb of Philip (Vergina Tomb II) remained accessible to the family, as is indicated by the opening mechanisms of the marble doors leading to the chamber and antechamber (Phaklaris 2011: 361–362). Since no two façades are alike, it is reasonable to assume that they remained visible with the painted decoration exposed to the elements. This is certainly true of the painted façades of the underground rock-cut chamber tombs of Alexandria, which were never covered by mounds.

Macedonian tombs housed elite burials. They sometimes preserve stone furniture, such as klinai, benches, and chests. Selected tombs at Vergina were also furnished with marble thrones, the significance of which remains under discussion. Marble furniture could be painted, the finest examples being the throne of the so-called Tomb of Eurydice and the kline of Potidaia (Thessaloniki Museum), which was painted in imitation of a gold and ivory couch. Fragments of actual gold and ivory klinai have come to light in just over forty tombs.

Several Macedonian tombs are decorated with figural wall-paintings on the façade or within the chambers. The façade and burial chamber of Vergina Tomb III exceptionally carried painted friezes on wooden panels. The funerary paintings of Macedonia either reflect the religious beliefs of the Macedonians or reproduce funerary furnishings, battles, weapons, and court scenes. Painted canopies and rugs can also be found on ceilings and walls (Tomb of Lyson and Kallikles at Lefkadia, Dion Tomb I: Miller 1993: col. pl. Vb; Boardman 2000: fig. 5.88a). Religious scenes involve judgments in the Underworld (e.g., Judgment Tomb and Tomb of the Palmettes, both at Lefkadia). Court scenes include a royal hunt in Vergina Tomb II and a royal banquet in the Tomb of Agios Athanasios, which has painted sentries on either side of the entrance, probably an allusion to real soldiers guarding the tomb (Tsimbidou-Avloniti 2005). Funeral games (i.e., a chariot race) are painted in the antechamber of Vergina Tomb III. Funerary paraphernalia are illustrated in the Tomb of Phoinikas, while battle scenes can be found on the façade of the Judgment Tomb; weapons are painted on the walls of the Tombs of Lyson and Kallikles and of Agios Athanasios, among others. The altar and perirrhanterion painted in the antechamber of the Tomb of Lyson and Kallikles may allude to the paraphernalia of cult employed in funerary rites.

The chronology of Macedonian tombs has been skewed on account of the controversy regarding the date of the earliest known example, the so-called Tomb of Philip at Vergina, which has been attributed to either Philip II (d. 336 BCE) or his son, Philip III Arrhidaios (d. 317, buried 316 BCE) (Philip III: Borza and Palagia 2007; Philip II: Lane Fox 2011b). The so-called tomb of Eurydice cannot predate Vergina Tomb II, despite assertions to the contrary (Palagia forthcoming). Macedonian tombs came to an end after the dissolution of the Macedonian kingdom in 168 BCE.

The diffusion of Macedonian tombs in areas under Macedonian influence, such as Epirus, Thessaly, Aetolia, Acarnania, and Euboea, is widespread in the third and second centuries BCE. Among the finest examples are the Tomb of the Erotes at Eretria and the so-called heroön at Calydon. The Tomb of the Erotes carried a tomb marker on top of its mound, along with an abundance of marble funerary furniture with painted wreaths and weapons on the walls. The heroön of Calydon is accessible via a built *dromos*, roofed with a barrel-vault, even though it was not covered by a mound. It is furnished with two stone couches in the main chamber. In the Roman Imperial period it was reused and fitted with an overground palaestra (Charatzopoulou 2006).

The Alabaster Tomb in Alexandria is the only example of a Macedonian tomb in Egypt known to-date, constructed entirely of huge alabaster blocks. It originally consisted of a chamber and ante-chamber, roofed by flat beams and decorated with a temple-like façade. Its association with the royal cemetery that contained the second tomb of Alexander the Great is entirely conjectural (Adriani 2000). Alexander's third and final tomb, constructed by Ptolemy IV within the royal compound, may now lie underwater, as Ptolemaic royal burials were on the waterfront of Alexandria (Plut. *Ant.* 86; Fraser 1972: 16).

Cist tombs are rectangular chambers built of ashlar blocks with a flat stone roof reinforced by wooden beams underneath. These tombs had no façade but were accessible through the roof. The earliest known in Macedonia are attested in Aiani in the fifth century BCE and were complemented by over-ground temple-like structures for the performance of funerary rites. The interior walls were plastered and occasionally painted with figural decoration. An exceptional cist tomb in Katerini consists of a chamber and antechamber communicating with a marble door. The walls of the antechamber are decorated with painted shields.

The most spectacularly painted cist tombs depict eschatological subjects. The wall-paintings of the fourth-century BCE Vergina Tomb I show the rape of Persephone, with Demeter and the three Fates seated on adjacent walls. A fourth-century female tomb at Aineia shows wreaths, boxes, headscarves, ribbons, and other paraphernalia painted as if hanging from the walls. The third-century Tomb of the Philosophers at Pella is decorated with male figures reading from book rolls, one of them pointing at a globe, which may be interpreted as an initiation scene (Palagia 2011a: 483–484). Funeral games are painted on a narrow frieze above the main figural panels.

Rock-cut chamber tombs in Macedonia date primarily from about 300 to the second half of the second century BCE and consist of one or two chambers that can be reached via a *dromos*. The façades are normally decorated with simple pilasters. An exceptional tomb of seven chambers opening off a

Figure 26.6 Vaulted crypt under the chamber tomb of Charmylos, Kos, third century BCE. *Source*: Olga Palagia.

corridor, accessed by a stairway, with two grave stelai and an altar above, recently came to light at Pella (Lilimpaki-Akamati 2008). It functioned as a family mausoleum from about 300 to the second half of the second century BCE and may be a predecessor of the elaborate rock-cut chamber tombs of Alexandria, which are not attested before the third century. These were not covered by mounds but were often arranged around a peristyle court open to the sky. They were accessible via a covered stairway, and the entrances to the burial chambers were articulated by means of architectural façades of half-columns or pilasters supporting entablatures, sometimes also with painted panels of figural decoration. The burial chambers contained stone klinai and/or loculi for depositing the dead. The slabs sealing the loculi had doors, windows, or garden gates painted on them. Some klinai had painted canopies over them. The extensive tomb complexes later became virtual catacombs used throughout the Roman Imperial period. The painted façades of these courtyard tombs were exposed to the elements. This same treatment of the façade also applied to the painted panel over the central doorway of the south façade of the third-century Moustapha Pasha Tomb I (Venit 2002: 55–58, fig. 42). It represents three Macedonian horsemen (two wearing kausias) and two women pouring libations around an altar. This may be an allusion to the funeral rites that took place at the actual altar in the courtyard, though it is hard to imagine that visitors to the tombs would ride down the steps to the courtyard. The horsemen may allude to the deceased in a heroised capacity.

A rock-cut tomb similar to those of Alexandria is the third-century BCE Swing Tomb of Cyrene, which is decorated with painted metopes on the façade representing scenes from the life of the deceased as well as a passage to the Underworld in Charon's boat (Rouveret 2004: 93–126).

Early Hellenistic rock-cut chamber tombs in the Greek cities of South Italy have elements in common with Macedonian tombs, especially the so-called Ipogeo Cristallini in Naples. The upper chamber was possibly used for funerary rites, while the funerary crypt is covered by a barrel-vault. Its interior walls are articulated with pilasters and decorated with painted garlands. A relief gorgoneion decorates the back wall of the cypt. Candelabra are painted at either side of the entrance, while a golden phiale is painted as if suspended from the wall. These paintings obviously allude to actual grave goods. The stone sarcophagi resemble the klinai of Macedonian tombs, but there is no evidence of Macedonian influence.

This type of tomb developed independently in the Naples area (Steingräber 2000: pls. 16.4, 19.4, 23.1, 29.3, 34.1–2, 37.1, 38.1, 41.1–2; Baldassare *et al.* 2002: 50–54).

Rupestral tombs (cut into the rock-face)

The Macedonian Alketas, younger brother of Perdikkas and a relation of Alexander the Great, died at Termessos, Lycia, in 319 BCE during the wars of the Successors. He was buried by the citizens of Termessos in a rock-cut tomb following Lycian custom. His sarcophagus was placed under a rock-cut canopy topped by the heraldic design of an eagle with a snake in its claws as a portent of victory (Hom. *Il.* 12.200–207). To the left of the sarcophagus three ossuaries were carved out of the rock in the form of a pair of houses and a throne, while to the right a relief assemblage comprises a small round table flanked by vessels, all being symposium paraphernalia. A rock-cut panel set at a right angle to the front face of the tomb depicts Alketas on horseback, with his armor and weapons shown as if hanging from the wall (Pekridou 1986).

Lighthouse tombs

A three-tiered tower tomb built above an underground crypt in a Ptolemaic cemetery at Taposiris Magna, and inspired by the Lighthouse of Alexandria, consists of a rectangular podium topped by an octagonal tower with a cylindrical top (McKenzie 2007: fig. 50). This comes at the beginning of a series of tombs drawing on the lighthouse.

FURTHER READING

Useful compendia of tombs and tomb markers can be found in Kurtz and Boardman 1971 and Fedak 1990. Marble and limestone grave reliefs of the fourth century and the Hellenistic period are collected by Fraser and Rönne (1957), Couilloud (1974), Fraser (1977), Pfuhl and Möbius (1977–1979), Schmidt (1991), and Clairmont (1993). For funerary statues of the fourth century, see Scholl 2001; Despinis 2002; of the Hellenistic period, see Couilloud 1974: 231–233. For animals on tombs, see Woysch-Méautis 1982 and Palagia 2011b. Most recently, Grossman (2013) has published the Classical, Hellenistic, and Roman funerary sculpture of the Athenian Agora.

Arvanitopoulos 1928, Saatsoglou-Paliadeli 1984, Rouveret 2004, and Posamentir 2006 and 2011 concentrate on painted gravestones. Marble funerary vessels mainly of the fourth century are discussed by Schmaltz (1970), Kokula (1984), and Valavanis (2000; 2001). Round funerary altars of the Hellenistic period are collected by Fraser (1977: 25–33), Berges (1986; 1996) and von Moock (2004). For rectangular altars, see Fraser 1977: 13–25. For columns and pillars supporting funerary monuments, see Clay 2004 and Bentz 2009.

For Tarentine naiskoi, see Klumbach 1937 and Carter 1975. For the Nereid Monument, see Jenkins 2006: 186–202. For recent discussions of the Mausoleum of Halikarnassos, see Jeppesen 2002 and Jenkins 2006: 203–227 and 2010. The Belevi Mausoleum is published by Praschniker and Theuer (1979). See also Barringer 2008: 171–202 for more on these funerary monuments in Asia Minor, especially in the commemoration of an individual ruler.

Rock-cut chamber tombs in Macedonia are published by Lilimpaki-Akamati (1994; 2008). Venit 2002 is an up-to-date monograph on the tombs of Alexandria. Von Mangoldt 2012 is the most comprehensive monograph on Macedonian tombs to date, but useful accounts can also be found in Miller 1982 and 1993 and in Ginouvès 1994, while Rhomiopoulou and Schmidt-Dounas 2010 provides a gazeteer. Macedonian tombs outside Macedonia are collected by Huguenot (2008) and von Mangoldt (2012). On the furniture of Macedonian tombs, see Sismanidis 1997 and Andrianou 2009. The only gold and ivory kline published so far comes from the Tomb of the Palmettes and is now in the Athens National Museum (Rhomiopoulou and Schmidt-Dounas 2010: 87–98). The gold and ivory klinai from the chamber and antechamber of Vergina Tomb II have been reconstructed and are on display in the Museum of the Royal Tombs at Vergina. For more on klinai in the Archaic, Classical, and Hellenistic Mediterranean world, see Baughan 2013. A monograph on Macedonian painting is in preparation by the author; for a preliminary account, see Palagia 2011a. For cist tombs in Macedonia, see Despoini 1980, Vokotopoulou 1990, Andronikos 1994, and Karamitrou-Mentesidi 2008.

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PART IV

Reception

CHAPTER 28

Pergamon and Pergamene Influence

Kristen Seaman

A visitor in Athens today, in front of the reconstructed Stoa of Attalos II, experiences the full effects of Pergamene construction as she can nowhere else (Figure 28.1). The stoa defines the eastern edge of the Athenian Agora, provides versatile spaces for archaeological storage and a museum, announces its Pergamene style through palm column capitals and other signs, beckons visitors to enter through its wide colonnade, shields them from the extremes of hot and cold weather once inside, and makes them think about the Attalids of Pergamon all the while. Although Attalos II obviously could not have predicted the presence of modern archaeologists and tourists in Athens, the Attalids did indeed plan for their construction to define space and to facilitate the goings-on of daily life at Pergamon and elsewhere.

Pergamon and Its Phases of Construction

Ancient Pergamon (Figure 28.2) was located in the Kaikos river valley of what is now western Turkey, 30 km from the Aegean coast. With second-millennium BCE origins on an acropolis that dominates the landscape, Pergamon eventually spread past its fortification walls to the surrounding plains, where the modern city of Bergama now sits, and its ties extended to the port of Elaia. As the seat of the Attalid Kingdom (241–133 BCE), the city experienced its architectural and cultural floruit in the Hellenistic period, but its political and religious significance persisted, as it became the capital of the Roman province of Asia, and, later, the home of a prominent Christian community. After a devastating earthquake and a succession of invasions, its importance waxed and waned in the Middle Ages, and its acropolis gradually transformed into a castle. At that time, the Byzantines and the Seljuks alternately ruled Pergamon, and the area ultimately became an Islamic urban center in the Ottoman Empire. Yet its ancient remains continued to attract both travelers and antiquarian interest, with modern archaeological explorations starting in 1878 and continuing until the present day (Rheidt 1998; Radt 1998; Radt 2011b). Today, though, these remains give the visitor little appreciation of the full extent of Pergamon's built environment. For the notable surviving architectural elements – most famously those from the Great Altar and the Propylon to the Sanctuary of Athena Nikephoros – were reconstructed at the Pergamonmuseum in Berlin, Germany. The excavated architecture's decoration, blocks, and contents, furthermore, are now split between the Pergamonmuseum and the Archaeological Museum in Bergama.

Most of Pergamon's architecture was built progressively in four main phases (for plans of the site, see Figure 28.3a and b). The first phase of construction, spanning the Archaic through early Hellenistic

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

Figure 28.1 Stoa of Attalos II, Athenian Agora. *Source*: K. Seaman.

periods, was concentrated on the top of the acropolis. This settlement was walled as early as the seventh–sixth centuries BCE and included structures that have been identified as religious buildings. Later, during the rule of the Gongylids in the fifth century BCE, the archaic wall's gate was renovated and one portion took the form of a tower whose remains are still visible. In the fourth century BCE, the site was abandoned, and when inhabitants returned, they appear to have built the Sanctuary of Athena as well as houses on the slope of the acropolis, above the archaic wall. During the second phase of construction that was stimulated by the founder of the Attalid dynasty, Philetairos (r. 281–263 BCE), the city was rewalled along the lines of the original archaic wall, and a grid was created for a rough scheme of narrow streets and drains that led wastewater to the city's southeast gate. The Temple of Athena and the buildings on the top of the acropolis were the center of Philetairos' city (Radt 2001; 2011b; see also Chapter 20).

The third and perhaps most ambitious phase took place during the reign of Attalid King Eumenes II (r. 197–158 BCE). New walls extended as far as the Selinos River Valley, and a new grid created a fan-shaped network of insulae, or blocks, that corresponded with the terrain of the acropolis. The area of the Lower Agora and the Gymnasium were then the focal point of civic activity, and more houses were built within the city walls. The acropolis's citadel, moreover, was restructured to incorporate such construction as the reorganized Sanctuary of Athena, additional royal buildings, the Great Altar, and the Theater. Finally, the fourth phase, undertaken during the reigns of the Roman emperors Trajan

Figure 28.2 Western side of acropolis, Pergamon, viewed from the Asklepeion. *Source*: K. Seaman.

(r. 98–117 CE) and Hadrian (r. 117–138 CE), established a new grid and expanded the city to the plain below the acropolis. The Temple of Trajan, whose orientation apparently determined the grid, was constructed on the citadel of the acropolis, while houses, the Asklepeion, the "Red Hall," the Roman theater, the stadium, and the amphitheater were built on the plain. The Roman city had no fortification walls until the third century CE, when a new wall was built along the lines of Philetairos' wall; this rebuilt fortification may suggest either a temporary or a more enduring contraction of the city's residential areas, possibly for security (Radt 2001; 2011b).

Throughout all these phases, Pergamon's architecture had a marked sculptural quality. To some extent, this is not surprising: after all, Greek architects and sculptors underwent similar training, and some prominent men were both architects and sculptors (e.g., Pollitt 1995: 20–22; Senseney 2011: 177–181). Yet Pergamene construction emphasized three-dimensionality much more than that of other poleis. In fact, we can even say that the definition of space was both its predominant aesthetic and its main organizing principle.

The Pergamene Aesthetics of Space

In a passage quoted by Strabo (13.1.44), Attalos I (r. 241–197 BCE) describes a beautiful pine tree by breaking it into defined three-dimensional parts and articulating their mathematical relationships with each other: "Its circumference is twenty-four feet; and its trunk rises to a height of sixty-seven feet from the root and then splits into three forks equidistant from one another, and then contracts again into one head, thus completing a total height of two plethra and fifteen cubits" (trans. H.L. Jones, Loeb ed.; cf. Senseney 2011: 143–145). This may give us some insight into what could be called the Pergamene aesthetics of space. Throughout Pergamon's built environment, we can observe this same aesthetic, indeed philosophical, inclination to intellectualize space by reducing it to its articulated components.

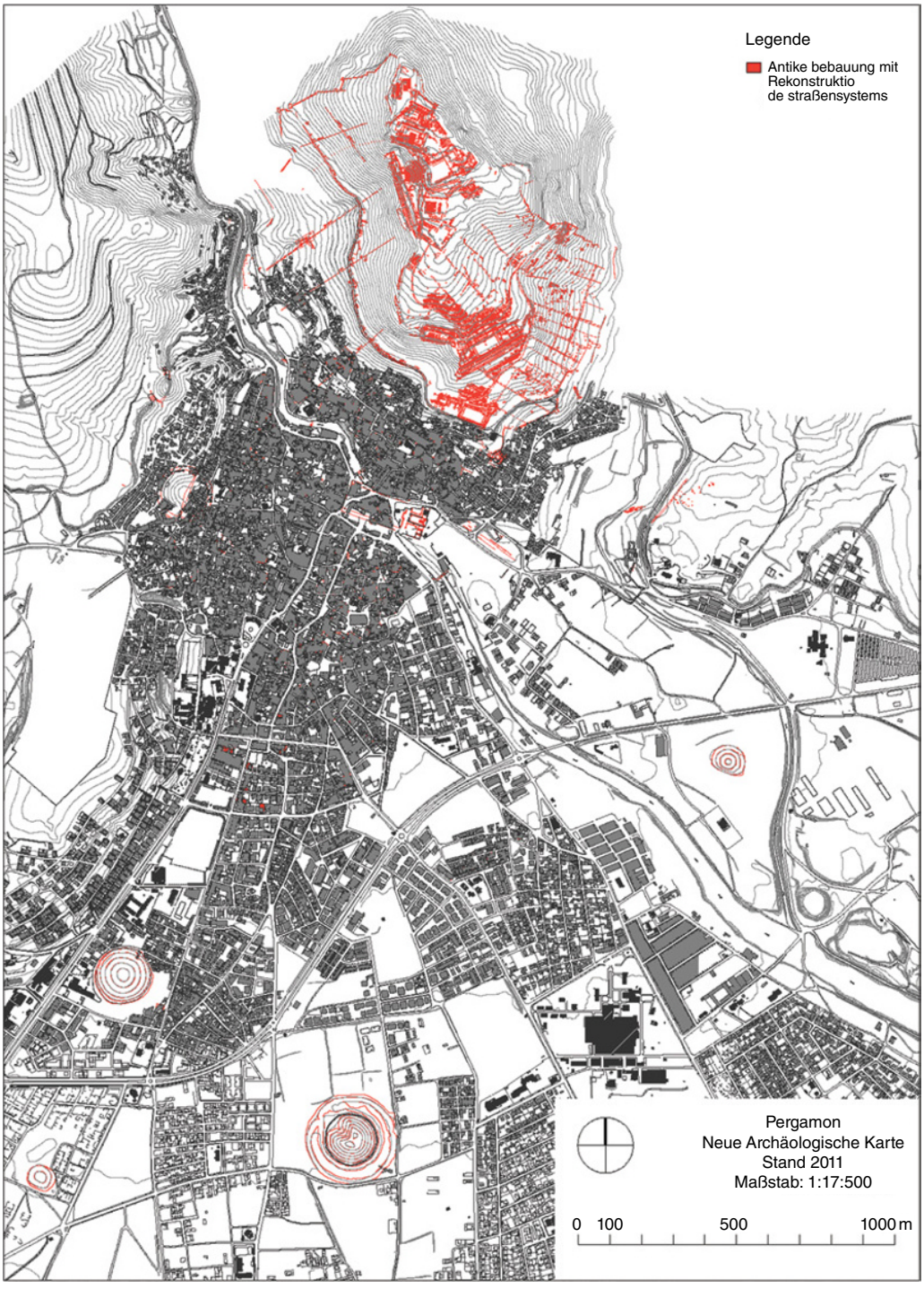

Figure 28.3a Pergamon, plan. *Source*: F. Pirson, DAI.

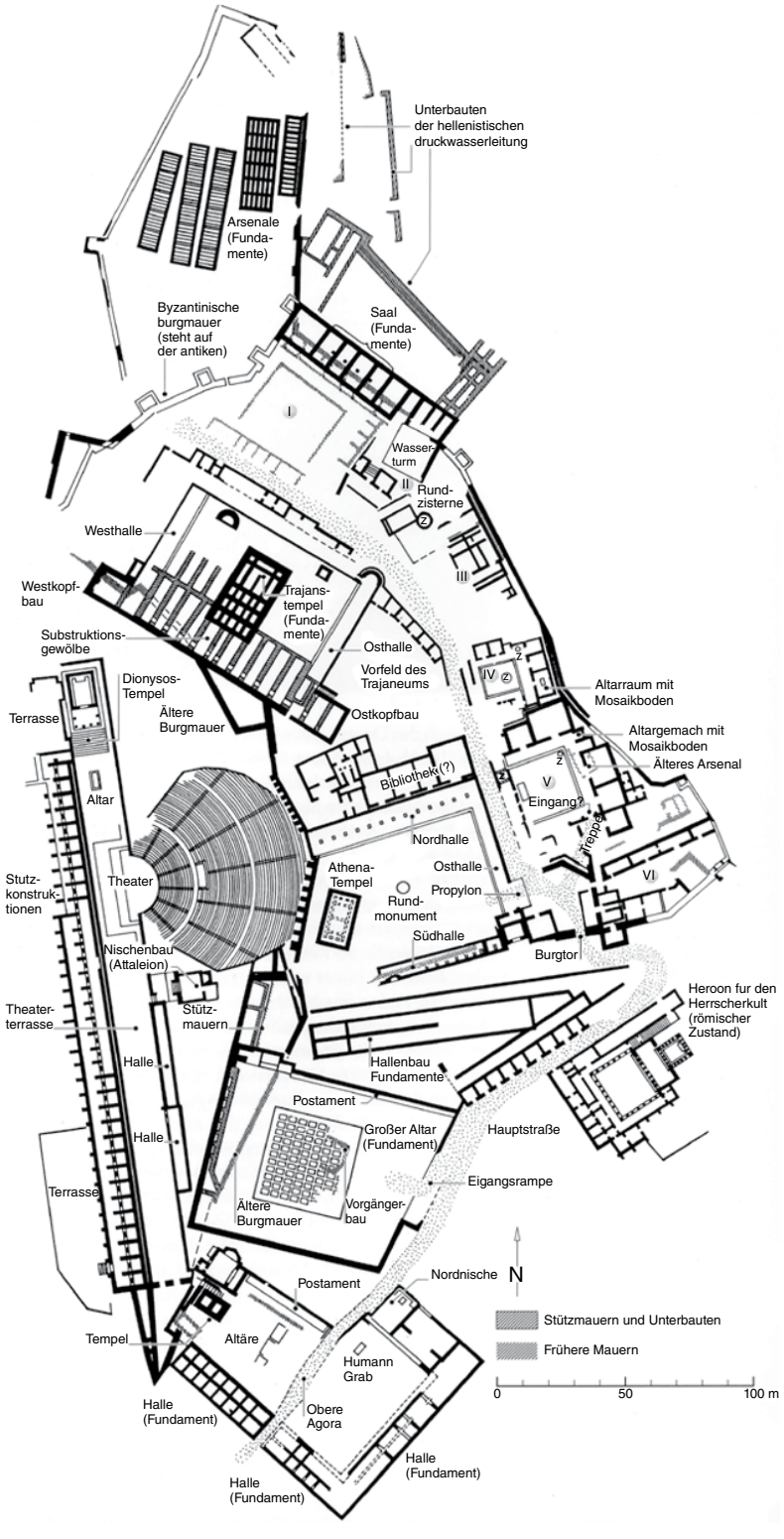

Figure 28.3b Pergamon, plan of citadel. *Source*: DAI.

By the time of its heyday during the reign of Eumenes II in the second century BCE, Pergamon had been divided into two broad spatial zones that could be clearly seen from a distance. The fortification walls divided the rulers from the ruled: the Royal District with its palaces, its arsenal, and its Sanctuary of Athena at the top of the citadel from the civilian space below (Pirson 2011). The result was a monarchal hierarchy of space that contrasted the divisions of more democratic poleis in Asia Minor such as Priene (Radt 1993). There was no functional zoning in the civilian space, but its built environment did control the flow of traffic and the overall rhythms daily life there (cf. Edensor 2010b). The repetition of walls and gates throughout the city, in fact, gave the impression not so much of a unified town plan, but of self-contained "architectural ensembles" connected by relatively narrow roads and paths. By Eumenes II's day, a gate with towers controlled the main entrance to the city. Facilitating the traffic inside were roads about 4 m wide that were constructed on axes that related to the Gymnasium. The older roads higher up the acropolis, though, remained narrower and more restrictive at about 2 m wide. And paths, rather than paved roads, were the conduits of traffic in less inhabited areas, particularly on the northeast slope (Pirson 2011). Open spaces such as the Upper Agora punctuated the flow of traffic through the city, and requisite entrance rituals such as purification undoubtedly further reinforced the partitioning of the city's religious spaces (Paus. 5.13.3; Gheorghiu 2001; Dignas 2012).

Pergamon's special attention to space was due not only to social structure but also to necessity: its location on a steep acropolis that made construction difficult. The Attalids increasingly exploited their architecture's three-dimensionality, while asserting both their Greek and their Asian cultural identities, which was especially important for a new Hellenistic dynasty with tenuous ties to both mainland Greece and Asia Minor (Gruen 2000; Tanner 2005: 222–233; Kuttner 2005). They appear to have evoked and thus competed with fifth-century Athens: like that of the Athenian Acropolis, the Pergamene skyline was asymmetrical, aggregate, and easily recognized from a distance, particularly from the west (cf. Leatherbarrow 2009). And they achieved this asymmetry by employing the sort of terracing that had been used to lesser extents at sites such as Priene and Halikarnassos in Asia Minor during the fourth-century BCE Ionian Renaissance (Pedersen 2004: 429–432).

This extensive terracing made Hellenistic construction at Pergamon possible, indeed we could even say that the city was sculpted out of its acropolis. The model in Figure 28.4 gives some idea of the jagged positive and negative spaces that were formed by construction on the Pergamene slopes. Terraces

Figure 28.4 Acropolis, Pergamon, reconstruction, after second century CE. *Source*: Art Resource 182621.

were cut into volcanic rock, yielding stone for the terrace walls and producing flat areas upon which construction took place. Most terraces were narrow and staggered up the slopes, altering orientations as they adapted to the landscape. But large terraces 60–70 m deep formed the courtyards of the Sanctuary of Athena and the Great Altar at the top of the acropolis. Architectural innovations contributed to the construction of the terraces. Builders, for example, constructed a *peristasis*, or slab-covered pathway, as a gap between terrace walls and buildings throughout the city; this network of pathways protected the buildings from water and/or from the lateral earth pressure against terrace walls. Well-preserved *peristaseis* can be found in such buildings as the North Stoa of the Sanctuary of Athena and Building Z, located in the civilian space further down the slope to the south (Hoepfner 1997: 26–28; Bachmann 2011: 80).

The steep Pergamene slopes prompted innovations in the design of stoas as well. While many Hellenistic stoas in mainland Greece and Asia Minor were straightforward one- or two-storied structures that defined flat public squares, Pergamene stoas were three-dimensional tours de force of division, containment, and definition, easily seen by viewers from the plain. Ever adaptable to the requirements of the slopes, Pergamene stoas were often both longer and higher than the stoas at other poleis, and they sometimes were irregular within the same complex in order to accommodate the terrain. Perhaps the most striking examples were the stoas on the Theater Terrace, which were constructed during the reign of Eumenes II: a short one-story stoa abutted the hillside, while another, the so-called West Stoa, helped to form the terrace wall that faced the plain. At over 200 m, the West Stoa was the longest in the Hellenistic world, and it consisted of three stories, two of which were basements below the terrace; even its substructures' buttresses were distinctly articulated and visible from the plain. Similar multistoried stoas were constructed in the Upper Agora, the Lower Agora, and the Sanctuary of Demeter (Coulton 1976: 67–69; Hoepfner 1997: 27–28; Bachmann 2011: 75–76). Yet stoas did more than merely articulate Pergamon's rocky verticality. They also compartmentalized the spaces on the horizontal terraces themselves, most notably in the Sanctuary of Athena Nikephoros. And many Pergamene structures, especially during the reign of Eumenes II, generally echoed the stoa form in their courtyards throughout the city. The stoa, then, was the building block of Pergamene architecture, and its ubiquity allowed it to recede into the background, to become the setting of daily life, and to be almost forgotten by viewers – thus demonstrating its true architectural significance (cf. Rossi 1982).

The Royal District

Located at the top of the acropolis, the Royal District is the most prominent part of Eumenes II's building program. Its identity is secured by a Hellenistic roof tile that is impressed with the stamp *basileion*, or "of the court" (Grüßinger, Kästner, and Scholl 2011: no. 3.45). Eumenes II reorganized this space in the second century BCE, at the same time as he constructed the Theater and the Great Altar at Pergamon. In fact, the Royal District appears to have radiated out from the Theater as part of a unified design, divided from the rest of the city by a wall with a gate in its southern section (Senseney 2011: 80). A narrow paved road passed through this gate into a small courtyard-like space, and it continued across the center of the district. To the right of the road, a row of six building groups extended to the very northern tip of the acropolis, where the Arsenal's rectangular buildings stored grain with the help of a venting system. To the left of the road was the Sanctuary of Athena Nikephoros, followed by storerooms or residential quarters, which were later supplanted by the Temple of Trajan in the second century CE (Radt 2011a: 63–78; Zimmer 2011). As we think about the Royal District's architecture, we should keep in mind that the area was actually quite small and probably did not have adequate living accommodations for everyone who was associated with the court. The Attalids and the "friends of the king" – their courtiers – most likely had additional residences elsewhere in the city and its environs (Evans 2012: 124).

The architectural remains of Building Groups I–VI (numbered consecutively from north to south) are meager, but it is possible to reconstruct their basic configuration in the time of Eumenes II. Building Groups I–III appear to have supported the courtly goings-on of the Royal District. Building Group I, just south of the Arsenal, consisted of a possibly multistoried building that perhaps served as barracks

or a residence hall for staff and guests. What is probably the first Pergamene palace – a house with a peristyle court –had previously been constructed in this area, but its date is uncertain. Building Group II has been connected with the worship of Zeus, Kybele, and the Kabeiroi and, more securely, with Pergamon's waterworks and pipes. Next, Building Group III has an assemblage of enigmatic foundations whose functions have not been identified (Zimmer 2011: 144–145). They appear to be similar to a prostas house, that is a house with a porch in front of its rooms (Radt 2011a: 66–67). This area might have supported aspects of Pergamon's administration such as record keeping (Hoepfner 1997: 37).

Building Groups IV–V were the most lavish structures of the building groups, and thus they have been identified as "palaces." The configuration of Palace IV was based on that of a peristyle house: a central courtyard, with a tiled floor and cistern, surrounded by rooms. Two of these rooms have yielded notable finds. Room A, in the southeast corner of the complex, had a hearth or an altar and was decorated with a mosaic floor that depicted fish (Grüßinger, Kästner, and Scholl 2011: no. 5.41), painted stucco walls that imitated marble (Grüßinger, Kästner, and Scholl 2011: no. 5.16), and a miniature stucco entablature with a figural frieze (Grüßinger, Kästner, and Scholl 2011: no. 5.46). Room D featured colored plaster walls, and a terracotta bull's head protome was attached to one of them. In addition, a *peristasis* was created between the south wall of Palace IV and the north wall of Palace V (Zimmer 2011: 145–146).

Like Palace IV, Palace V took the form of peristyle house, but it was larger at over 2400 m^2. Because a rejected block from the Great Altar was found in Palace V's foundations, we know that the two buildings were built around the same time; this is unsurprising, because Pergamene buildings appear to have been planned in advance, block by block, using mason's marks (e.g., Korres 1984: 204–205; Kästner 1998: 148–149). The two-storied colonnades around Palace V's courtyard probably resembled the contemporary stoas of the Sanctuary of Athena Nikephoros and (more generally) the Great Altar's interior colonnade, suggesting that Eumenes II and his architects planned for the Royal District and the Great Altar to be unified visually. Because Palace V was relatively large and ornately decorated, it is likely that it was Eumenes II's main seat in the Royal District. Indeed, it seems to have been exceptionally suitable for royal entertaining. Its walls were faced with marble orthostates, and its floors were paved with mosaics. Room H, in the northeast corner, had metal grating at its entrance as well as an altar or a statue base, thus suggesting a religious function for the room (Radt 2011a: 68–72; Zimmer 2011: 146–147). Mosaics were found here, too. Their surviving fragments indicate that two emblemata depicted theatrical masks above the main composition: an elaborate border surrounded a long panel that depicted a garland with detailed birds and a butterfly below three small emblemata, one of which represented a hyperrealistic parrot (Grüßinger, Kästner, and Scholl 2011: no. 5.42).

Two other rooms appear to have served as dining rooms, owing to their off-centered doors that could have accommodated klinai, or dining couches, around the walls (Hoepfner 1997: 37–39; Radt 2011a: 68–72; Zimmer 2011: 146–147). Excavations of one of these, Room K in the northwest corner, yielded both the "Dancer" marble statuette (Grüßinger, Kästner, and Scholl 2011: no. 5.24) and the Hephaistion Mosaic. Although much of this mosaic is now lost, its extant portions include an elaborate border as well as an emblema representing the artist Hephaistion's signature on a piece of parchment that appears to be fluttering off the pavement (see Chapter 20). This signature ("Hephaistion made [me]") is the mosaic's most celebrated feature, but its border is not without interest. For example, an especially lifelike grasshopper is represented among one band's vegetation (Grüßinger, Kästner, and Scholl 2011: no. 5.43). Klinai most likely sat on this border, encircling the room (Zimmer 2011: 146–147).

We also may speculate that the most famous mosaic in antiquity was once in Room I, the larger room next door to the east. Pliny (*HN* 36.184) states that the *Unswept Room* by Sosos was displayed at Pergamon. He tells us that it depicted a meal's realistic detritus and was associated with another scene that represented birds preening themselves around a kantharos, or drinking vessel. Roman copies of both scenes have been identified – and have strongly suggested a *trompe l'oeil* hyperrealism (Parlasca 1963; Andreae 2003: 161–175). As a copy at Aquileia attests, the trash most likely surrounded the central avian scene in Sosos' original composition (Torlo 2005: 16–17). Klinai probably sat on or around the depiction of this trash, and tables possibly stood on top of it, too, making diners seem especially messy – and the host especially lax with etiquette – at symposia, or drinking parties. Through the

process of elimination, I believe that Room I is the most likely candidate of all excavated Pergamene dining rooms for Sosos' mosaic: no other mosaics were found there *in situ*; its grand setting would have been a fitting place for such an eye-catching mosaic; and, as we saw with the Hephaistion Mosaic, Eumenes II had an established interest in mosaicists who made their names known in antiquity. All the mosaics that are associated with Palace V, then, helped create the Pergamene aesthetics of space: because of their hyperrealistic details (including shadows), they emphasized three-dimensionality within a bound architectural area.

Between Palace V and the Royal District's gated entrance was Building Group VI. Owing to excavated finds such as arrows and spear tips as well as its suggestive location, this complex is thought to have had a military function, which included guarding the king and his courtiers (Zimmer 2011: 145, 147).

Directly across the Royal District's paved road from Building Groups V–VI was the Sanctuary of Athena Nikephoros. Here, the marble L-shaped North-East Stoa and the South Stoa created a pi-shaped boundary opposite the Temple of Athena that framed the sanctuary. Visitors entered the sanctuary through a Propylon that faced the courtyard-like area right at the entrance to the Royal District. Now on display at the Pergamonmuseum in Berlin, the Propylon took the innovative form of a two-tiered stoa surmounted by a frieze of garlands and bucrania and, finally, a pediment. Its architectural configuration was repeated throughout the sanctuary's stoas: a lower story with an outer Doric colonnade and an upper story with an outer Ionic colonnade connected by reliefs that formed a balustrade. Both stories also had an inner row of columns, with Ionic capitals on the first story and distinctive Pergamene palm capitals on the second, much like those of the Stoa of Attalos II in Athens (Kästner 2011c; Radt 2011a: 159–168).

An inscription on the Propylon's architrave announced the sanctuary's patronage: "King Eumenes [dedicated this] to Athena Nikephoros" (Kästner 2011c: fig. 9). And the architectural sculpture of the Propylon and the stoas alluded both to the Attalids' victories and to their mythical past, especially their founder Telephos and his Trojan War that took place not far away. Most of the extant balustrade reliefs, for example, depict spolia, or captured weapons, thus monumentalizing the Greek custom of displaying real spolia in stoas (cf. Coulton 1976: 12–13). Other panels represent the Greeks building the Trojan Horse, Athena with Telephos or his father Herakles, and a gigantomachy that includes Zeus and Athena (Grüßinger, Kästner, and Scholl 2011: nos. 6.24–26). Although scholars most often associate these mythological reliefs with the stoas, it is worth keeping in mind that the reliefs currently displayed in the Propylon are actually plaster casts. Thus it is possible that the three mythological reliefs were originally displayed in the Propylon's second-story balustrade; their varying lengths do fit its spaces for a longer central relief flanked by two narrower ones. This allusion to the Attalids' mythical past appeared elsewhere in the stoas as well. The North Stoa's niches displayed relief panels that carried figures such as Prometheus, Herakles, and the personified mountain Caucasus (Grüßinger, Kästner, and Scholl 2011: no. 5.31).

As the ancient visitor walked through the Propylon, he faced the Temple of Athena Nikephoros within the area enclosed by the sanctuary's stoas. Probably dating to the fourth century BCE, the temple had actually been the original part of the sanctuary and thus was a fitting focal point. Combining Doric features with local techniques and materials, the design of the temple suggests that patrons and builders were interested in fusing elements from both mainland Greece and Asia Minor at the very start of monumental architecture on the Pergamene acropolis in the fourth century BCE. This Doric peripteral temple was oriented north–south, with a plan of 6 × 10 columns, on a two-step krepidoma. The cella, most likely divided by a cross wall, was framed with a pronaos and an opisthodomos, both of them distyle in antis. The unusually slender columns of the peristyle were spaced further apart than usual, and therefore its Doric frieze required three metopes and two and two half triglyphs per interaxial space; together with a low epistyle, this resulted in a proportionally low entablature, with the result that the elevation had a light, Ionic appearance. Its manufacture, moreover, was highlighted: the columns were deliberately left unfluted, and pi-shaped clamps remained visible in dovetail-shaped cuttings on the blocks of the stylobate and the krepidoma step. It was constructed of local andesite stone, with local tuff Doric capitals. Overall, its construction seems deliberately similar to other temples in Asia Minor such the Temple of Athena at Assos and buildings at Labraunda (Hoepfner 1997: 30–35; Pedersen 2004: 415–427; Kästner 2011b; see Chapter 27).

The sanctuary's courtyard, moreover, was full of sculpture. Most notably, the sanctuary bound and contained three monuments that commemorated Attalos I's victories in the 230s–220s BCE: the Kaikos Monument, in the center of the courtyard; the Greater Attalid Dedication, which ran parallel to the South Stoa; and the Epigenes Monument, whose exact location is unknown. The Kaikos Monument most likely consisted of a colossal Athena Promachos atop a round base. The Greater Attalid Dedication, furthermore, probably displayed a Gallic and Seleucid bronze battle group on a long base. And the Epigenes Monument possibly carried a portrait of Attalos I. The sanctuary also enclosed numerous other military dedications as well as expropriated sculpture by such classical Greek artists as Myron and Praxiteles (Brogan 1999: 67–119; Marszal 2000; Stewart 2004: 197, 213–214; Tanner 2005: 222–233).

The famous Library of the Royal District has been tentatively identified as the building that joins the North Stoa on its north side, accessible through the stoa. This building had one large room, with three smaller rooms to its west. A 50-cm-wide stone podium ran along three walls of this large room, and holes suggest that these walls might have displayed bookcases, paneling, or pinakes (plaques) that perhaps were inscribed with the Library's catalogue. A one-third scale representation of Pheidias' Athena Parthenos from the Parthenon in Athens also was found here. The podium might have carried other artworks, too. The smaller rooms, furthermore, could have accommodated the 200 000 scrolls that the Library possessed (Plut. *Ant.* 58.5–59; Wolter-von dem Knesebeck 1995: 45–56; Hoepfner 2002b; Brehme 2011; Radt 2011a: 165–168). Together with the Library of Alexandria, the Library at Pergamon was one of the two preeminent intellectual centers in the Hellenistic world. Although the archaeological evidence does not conclusively prove that it was located in the Royal District, its connections with the Attalid court support its tentative association with this building. And this building's location directly across the street from Palace V – the probable main palace of Eumenes II – is suggestive for the social courtly life of the intellectuals who used the Library.

Overall, then, the sanctuary's – and thus the Royal District's – bounded space, with its sculptural emphases on commemoration, retrospection, and the mythical past, constructed a site of memory, a place where the viewer could visit the Attalids' version of the past – and where the Attalids were the triumphant patrons of Classical Greek art and, possibly, literature (cf. Crang and Travlou 2001; Ma 2009).

The Great Altar

Less than 200 m from the gate to the Royal District was the Great Altar (Figure 28.5), which is perhaps the most extraordinary – and certainly the most famous – example of Pergamene architecture. It was a pi-shaped monument (for it is more like a squared temple than a typical altar) that consisted of a colonnaded courtyard supported by a stepped podium, with a grand central stairway up one side. The altar proper (of modest size) was in the center of the courtyard. At 36.80 × 34.20 m (approximately 100 Ionic feet square, or a hekatompedon), it sat within a large enclosed terrace, just past the Upper Agora, to the left of the road that led up to the Royal District. After entering the terrace from the road, visitors had to walk around the monument to access its entrance-stair because the monument faced the broad plain to the east. The dates of the pottery in its construction fill, the style of its column capitals, and the first known dedication on the terrace suggest that the building was built between the mid-160s BCE and 149/8 BCE, but it was never entirely finished, perhaps owing to Eumenes II's death in 158 BCE (Stewart 2000; Kästner 1998, 2011a). An inscription on the architrave is phrased in the language that the Attalids used to commemorate victory: "[King Eumenes son of King Attalos and Q]uee[n Apollonis fo]r the blessing[s befallen us to Zeus and Athena Nikephoros]" (Green 2000: 177–179). Although strikingly new as an enclosure for an altar, it does resemble monuments in Asia Minor such as the Nereid Monument at Xanthos and the mausolea at Halikarnassos and Belevi, which commemorated the lives of dynasts in the fourth–third centuries BCE (Sturgeon 2000; see Chapter 26). When creating the Great Altar's new form, Eumenes II and his architects, then, probably alluded to these older monuments in order to commemorate his military achievements – especially his defeat of the Gauls in 166 BCE – in a local Asian-Greek way. What is more, we may perhaps associate the construction of the Great Altar, if

Figure 28.5 Great Altar of Pergamon, second century BCE. *Source*: Art Resource 4965.

not his entire building program, with his attempt to assert his own importance for Ionian Greeks in the mid-160s (cf. *Orientis Graecae Inscriptiones Selectae* [*OGIS*] 763).

From top to bottom, the Great Altar was both sculptural and Pergamene in conception, with clearly articulated parts. Within its enclosed terrace, it was framed much like the bound and contained temple and sculpture in the contemporaneous Sanctuary of Athena Nikephoros. Akroteria that represented gods, horses, lions, tritons, griffins, and centaurs sat on its roof, leaving marks on the extant roof blocks that prove their ancient presence. The next register had an Ionic colonnade with Asiatic-Ephesian bases that consisted of a flat plinth, a spira with a double scotia, and a convex torus. The capitals on these Ionic columns were varied; one conspicuous type depicted a scroll with Zeus's thunderbolt. Below this, a baroque sculptural frieze represented a gigantomachy, or battle of the gods and giants, around the monument's exterior. Inside the courtyard, an Ionic colonnade stood in front of a frieze that depicted the life of Telephos on the courtyard's walls. Finally, in the center of this courtyard was an altar (Kästner 1998, 2011a).

This interior altar was a rectangular podium flanked by wings and covered with a (now-lost) fire-resistant layer of plaster (Kästner 2011a: 207). Literary and numismatic evidence indicate its sacrificial function in at least the Roman period, but, because of cuttings on the top, it appears to have displayed spolia during the time of the Attalids. Such a display was consistent with the exhibition of arms and armor in the Greek world, especially in stoas. The colonnade around the interior courtyard made the space resemble a stoa, and the spolia themselves echoed the representations of weapons on the balustrades of the stoas in the Sanctuary of Athena Nikephoros (Lucius Ampelius *Liber memorialis* 8.14; Stewart 2000: 46–49).

Yet the exterior and interior friezes were surely the monument's most memorable features. Carved *in situ*, the exterior Gigantomachy Frieze was originally 113 m long and 2.30 m high. It represented the

battle of the Olympian gods and the giants, who were the children of Gaia (Earth) and Ouranos (Sky). Although some portions are lost, its basic order is known from the extant inscribed blocks that gave identifications of gods and giants (and the names of artists below). These inscriptions were indispensable because the frieze was assuredly just as overwhelming in antiquity as it is today. It continues to impress viewers with its deep carving; snaky scaled legs, feathers, and hair; and seemingly unending presentation of obscure mythical figures. Even with the inscribed glosses, the ancient viewer probably needed to consult the stoic philosopher Kleanthes' *On Giants* (circa 250 BCE) if he wanted to understand the figures and their individual set pieces within the broader battle. Its sculptural techniques were wide-ranging, drawing upon the history of Greek sculpture up to that point (Stewart 1990: 210–212; Queyrel 2005). Particularly impressive was the choice to make the gigantomachy's figures spill onto the stairs, entering the viewer's space and joining him as he goes up to the courtyard. In fact, one could say that the Great Altar's centrality in Eumenes II's building program was highlighted by this sculptural passage. For here, the Pergamene aesthetics of space were violated: the sculpture was no longer contained in its articulated compartment. Using every trick in the book of Greek sculpture, the Gigantomachy Frieze suggested that there was nowhere left for architectural sculpture in the Greek world to go – except to the innovative Telephos Frieze in the center of the building.

At first glance, the Telephos Frieze might have appeared old-fashioned when compared with the gigantomachy. But, to be sure, the ancient viewer quickly realized that the Telephos Frieze was doing something new in Greek sculpture: it told the life story, or *bios*, of its main protagonist, from conception through apotheosis. Originally 59.6 m long and 1.58 m high, the frieze now is missing many portions. In antiquity, the ancient viewer first saw the complete frieze through the interior colonnade, whose columns framed the individual scenes in its running narrative. Then, to see the frieze up close, he turned to his left and entered the space between the colonnade and the frieze, encircling the courtyard clockwise. Telephos was a fitting choice for this monument, for not only was he a mythical founder of Pergamon but also he was a focal point for discussions about Greek identity. Although he was born in Greece, he moved to Asia Minor as an adult. Details on the frieze such as clothing and footwear highlighted his Asian-Greek identity and that of other figures. Thus, like Eumenes II (and the Attalids more generally), Telephos was both Greek and Asian (Eur. *Telephus*; Stewart 1996; Kuttner 2005).

Pergamene Architecture outside Pergamon

The Great Altar was (and is) dazzling, but the Attalids and their architects did not restrict their innovative architecture to Pergamon itself. As we saw with the Stoa of Attalos II at Athens at the beginning of this essay, the Attalids were heavily involved in architectural projects outside Pergamon, too: stoas, fortifications, temples and sanctuaries, gymnasiums, harbor moles, and probably a stadium (Hansen 1971: 284–298; Winter 1993; Winzor 1996: 63–144). They were active in Asia Minor and were donors at heavily visited places such as Athens, Delos, and Delphi. Indeed, their beneficence was well known throughout the Greek world, though their motives were occasionally questioned (Livy 42.5.3; Polyb. 22.8.5). They funded construction and maintenance in both Asia Minor and mainland Greece, sometimes providing a steady stream of revenue through donations of money or grain for a system of loans (e.g., Polyb. 4.65.6; *Clara Rhodos* 9: 190/208; *Miletos* 45). Micromanaging their projects, they hired overseers and supplied craftsmen as well as materials (e.g., *FD* III 3:239; *Miletos* 44; *Sammlung Griechischer Dialekt Inschriften* II 2001). Masons' marks and stamps even indicate that some blocks and roof tiles might have originated in Pergamon (e.g., Welter 1954: cols. 45–46; Korres 1984: 204–205; Pirson 2004: 207–208).

Many people throughout Greek areas, then, experienced the Attalid built environment on a daily basis. And, to be sure, some obvious labels such as dedicatory and honorific inscriptions indicated the origins of such beneficence. But to what extent did viewers recognize the construction as Pergamene? Most viewers, especially those in mainland Greece, had no first-hand knowledge of Pergamon. Therefore they could have identified Pergamene style only through perceiving the commonalities of Attalid construction closer to home. For a start, Attalid architecture throughout Asia Minor and Greece exhibited the Pergamene aesthetics of space. The stoa, to be sure, was a ubiquitous element

in public spaces. The best preserved (and certainly most thoroughly reconstructed) example is the Stoa of Attalos II at Athens (circa 150 BCE, Figure 28.1). It not only defined the Agora's horizontal space by making a border on its eastern edge, but it also defined and articulated uneven ground by including a subterranean level (Kohl 2001). Attalid patronage was especially successful with making steep slopes look Pergamene and thus marking Attalid presence at the whole site. The Attalids and their architects certainly contributed to, and perhaps even dominated, the southern skyline of the Athenian Acropolis. They erected colossi of an Attalos and a Eumenes and the Lesser Attalid Dedication (200 BCE), a long battle monument with under lifesize giants, Amazons, Persians, and Gauls, on top of the Acropolis (Stewart 2004). And, on the South Slope, the Stoa of Eumenes II (circa 170–160 BCE) provided a façade for the gymnasium in front of it (Calligas 2009; Tofi 2010). The Terrace of Attalos I in the Sanctuary of Apollo at Delphi (circa 210 BCE) also defined and articulated the verticals and the horizontals of the sanctuary's rocky incline, and it even framed pillar monuments of Attalos I and Eumenes II (Roux 1987; Jacquemin and Laroche 1990, 1992). More grandly, Eumenes II probably subsidized the construction of the pi-shaped upper stoa and the terrace at the Sanctuary of Asklepios at Kos, Rhodes, which transformed the spatial orientations of the entire site (Winter 2006: 216–217).

The Attalids favored construction that receded into the background of daily life, just as they did at Pergamon. Thus, the majority of their known projects used such stoas. Ancient literary and epigraphical evidence suggests how everyday people experienced these versatile buildings, sometimes in ways that deviated from original intentions. In the Roman period, for example, audiences knew the Stoa of Attalos II to be a backdrop for public speaking in the Athenian Agora (Ath. 5.212f). By this time, too, the Stoa of Eumenes II at Athens afforded theatrical storage and a place for theatergoers to escape inclement weather (Vitr. *De arch.* 5.9.1). And the stoa in the Terrace of Attalos I at Delphi was apparently such a popular (and perhaps ill-treated) place that the Amphictyonic League had to regulate its use (*Corpus d'Inscriptions de Delphes* 485). The Attalids also demonstrated a clear interest in building walls and fortifications, and even this utilitarian construction was appreciated (Polyb. 4.65.6; Winter 1966). Other practical works such as post-earthquake repairs were noted on publicly displayed inscriptions as well (*FD* III 3:239).

Informed by such inscriptions, visitors undoubtedly connected these projects with the Attalids, but the Attalids' interest in facilitating the mundane was indeed subtle (and thus all the more politically effective). Certainly more noticeable were the details that viewers saw when standing next to Attalid construction. Pseudo-isodomic masonry – that is masonry that alternates wide and narrow courses and incorporates small blocks – is seen in Attalid construction projects both at Pergamon and elsewhere (see Chapter 18). In Athens, it appears in the Stoa of Attalos II and in the bases of at least two pillar monuments on the Acropolis, one at the northeast corner of the Parthenon (Figure 28.6) and one near the Propylaia (Korres 2000; Kohl 2001: 247–252; Monaco 2010). These pillar monuments were probably honors from the Athenian demos that responded to Attalid benefaction (cf. Goette 1990; Korres 2000). Their masonry, then, suggests that the Attalids facilitated construction, just as Eumenes II did when the Milesians honored him with a gold statue (*OGIS* 763). At Delphi, this masonry appears throughout the Terrace of Attalos I, including the stoa, the so-called oikos building, and the bases of the pillar monuments (Roux 1987; Jacquemin and Laroche 1990, 1992). What is more, the lower parts of columns were left unfluted at such buildings as the Stoa of Attalos II and the Stoa of Eumenes II at Athens as well as at the Stoa of Attalos I at Delphi (Roux 1987: 55–58; Kohl 2001: 247–250). Pseudo-isodomic masonry and unfluted column drums had practical functions: ensuring sturdiness and minimizing damage from passersby (Winter 1966: 130). But they also tied Attalid construction together visually. Less functional and thus even more obviously a Pergamene marker were the palm capitals that appear in both the Stoa of Attalos II and the Stoa of Eumenes II at Athens (Kohl 2001: 249). These are similar to the capitals in the North Stoa in the Sanctuary of Athena Nikephoros at Pergamon itself. Yet it should be noted that Pergamene architecture on mainland Greece did differ from that at Pergamon in other respects. For example, the Athenian stoas used the local proportions of the Doric order and not those of Pergamon (Winter 1993: 261). Therefore, we know that the Attalids and their architects were selective when giving Pergamene architectural signs to viewers outside Pergamon.

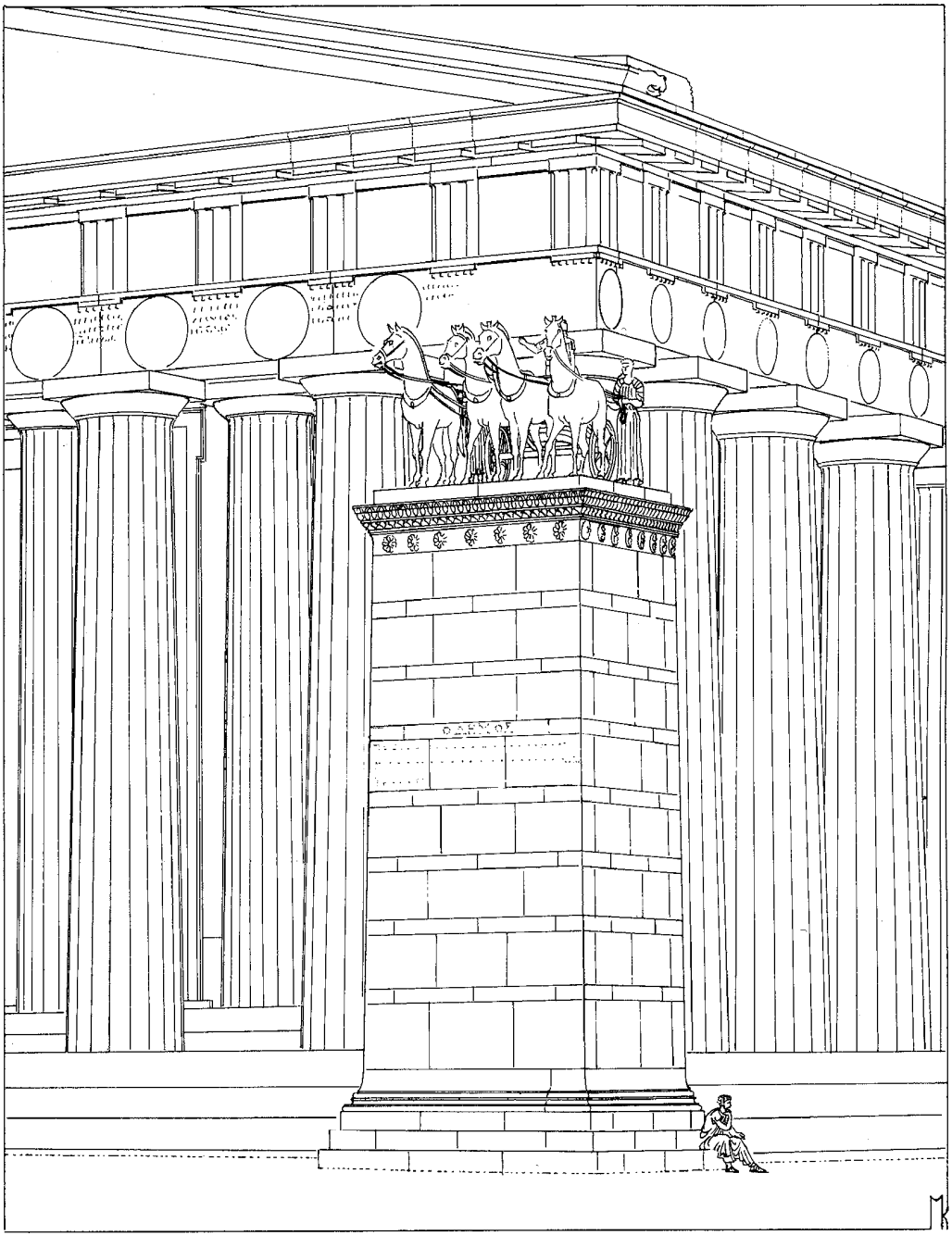

Figure 28.6 Attalid pillar monument, Athenian Acropolis, reconstruction, late third–early second century BCE. *Source*: M. Korres.

Of course, at some sites it is difficult to differentiate Attalid patronage from architecture that merely appropriates Pergamene elements. For this reason, scholars have often used the catchall phrase "Pergamene influence" to describe architecture that looks Pergamene but cannot be directly connected with the Attalids through inscriptions or literary references. Falling under this heading, for example, are stoas in the agoras at Aigai and Assos (circa mid-second century BCE), which had not only subterranean levels but also *peristaseis* that responded to the terrain (Coulton 1976: 70–71, 213–214, 218–219). The most notable example of Pergamene influence is, perhaps, the Sanctuary of Athena Lindia at Lindos, Rhodes. Here, circa 200 BCE, colonnaded terraces were added to its propylaia, which ascended the acropolis until it reached the temple at the top. Together with steps, they defined and articulated the slope with vertical and horizontal lines, much as the stoas at Pergamon did (Winter 2006: 217–218). Given that they were constructed around the very beginning of Eumenes II's reign, one does wonder, though, whether such "influence" worked both ways and the work histories of architects and workmen – not to mention the mechanisms of patronage – were more dynamic and fluid than we usually consider.

More explicit references to Pergamon's architecture and its contents continued throughout the Hellenistic and Roman periods, too. Often they involved the display of Hellenistic rulers. At the beginning of his reign and the closing of the Hellenistic world, the Roman emperor Augustus presented himself as a Hellenistic ruler though his residential architecture. A peristyle house complete with a library and a nearby temple, the House of Augustus on the Palatine Hill in Rome seems to have been modeled on Palace V and its proximity to the Library and the Sanctuary of Athena Nikephoros (Hoepfner 1997: 38–39). Private Roman individuals appear to have consciously emulated Attalid display as well. Roman villas, according to Cicero (*Verr.* 2.127), were decorated with Pergamene art (Kuttner 1995: 166). And the many copies of the *Unswept Room* mosaic attest to the popularity of one such artwork (Moormann 2000; Andreae 2003: 161–174). Because Pliny mentioned its Pergamene context, we know that the mosaic's Pergamene associations were well known in the Roman world. The sculptural contents of Pergamene architectural spaces also had a long afterlife – copies of vanquished figures in the Greater and Lesser Attalid dedications were displayed, for example, in Republican and Imperial Rome – though there the specifically Pergamene associations seem weaker (see Stewart 2004).

Allusions to Pergamene architecture also dealt with cultural identity. It is not surprising that inhabitants of Asia Minor selected Pergamene architecture – especially the Great Altar – as a reference point. One frieze on the second-century BCE Temple of Hekate at Lagina, for example, recalled the Great Altar's gigantomachy (Kuttner 1995: 167; Baumeister 2007). And, later, the second-century CE Parthian Monument probably echoed the Great Altar's pi-shaped form, sculptural friezes, and broad themes of negotiating Greek identity (Winkler-Horaček 2009). Like the Great Altar itself – indeed all Pergamene architecture – these monuments helped to construct Asian-Greek identity in Asia Minor, which was made even more complex by Rome's increasing presence in the area.

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FURTHER READING

Up-to-date archaeological information about Pergamon and its architecture is found on the website of the Deutsches Archäologisches Institut (www.dainst.org/en/project/pergamon) Results of the archaeological excavations have been published in the *Altertümer von Pergamon* and the *Pergamenische Forschungen* series. The most comprehensive recent publications about the site are Radt 2011a and Grüßinger, Kästner, and Scholl 2011, with useful new computerized reconstructions. The older architectural summaries of Hoepfner 1997 and Radt 1998 are still useful, as are more specific studies about planning and urbanization (e.g., Radt 1993, 2001; Pedersen 2004). Winter 1993 and

the unpublished dissertation of Winzor (1996) collect the evidence for Attalid architectural patronage both at Pergamon and elsewhere. Discussions about architectural sculpture and other aspects of Pergamon's visual culture appear in Schalles 1985, Dreyfus and Schraudolph 1996–1997, de Grummond and Ridgway 2000, Marszal 2000, Queyrel 2003, Stewart 2004, Kuttner 2005, Queyrel 2005, Massa-Pairault 2007, Massa-Pairault and Sauron 2007, Kohl 2008, Massa-Pairault 2010, Petersen and von den Hoff 2011, and Coarelli 2014. In addition, Köse 2012 provides an overview of art and architecture in Asia Minor. Hansen 1971 remains a fundamental resource for the study Attalid history, and to this we may now add the more recent work of Gruen (2000), Dmitriev (2005), Habicht (2006), Kosmetatou (2006), Dignas (2012), Evans (2012), and Thonemann (2013).

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CHAPTER 29

New Directions in Hellenistic Sanctuaries

Bonna D. Wescoat

Alexander the Great financed building projects in sanctuaries and allegedly had grand plans to construct lavish temples in the future, all of which his successors quietly set aside as "extravagant and hard to achieve" (*Memoranda of Alexander*, Diod. Sic. 18.4.1–6). Nevertheless, rulers in the centuries following the death of Alexander in 323 BCE keenly realized the power of architecture to shape and connect the vast and heterogeneous territory they now governed, which stretched from Macedonia and Greece to Egypt and Bactria (in modern Afghanistan). Sanctuaries developed in synchronicity with the major drive to urbanize, but they were also an independent phenomenon. Because they marked the inviolate place of the god(s) on earth, and thus served as points of connection with divine forces, sanctuaries continued to play a vital role as international gathering places and centers for the reception, transmission, and dissemination of religious, political, social, and cultural ideas. Serving as repositories of memory and agents of change, sanctuaries provided an environment where individuals and communities could forge identity, exert regional authority, negotiate diplomatic issues, channel competition and celebration, demonstrate financial or military success, or respond to mutable social and spiritual demands (see Chapters 9 and 10). Their architectural elaboration facilitated human interaction with the divine by coordinating acts of worship, celebration, and commemoration.

Architectural trends in both new and refurbished sanctuaries of the Hellenistic period emerged from developments already in motion in the fourth century, but they were also deeply affected by the changes in the political, economic, religious, and social climate following the breakup of Alexander's empire. The shift in political authority from the Greek polis to kings, whose commitment was territorial rather than civic (a shift that reaches back to Philip II and the second third of the fourth century BCE), changed the dynamics of patronage. Hellenistic royalty not only realized the potency of architecture but also had the resources to deploy it, particularly in international sacred venues. Royal patrons left their imprint on almost every important sanctuary, old and new, across the eastern Mediterranean. Moreover, they advertised their donations with large dedicatory inscriptions written prominently across their buildings. The increasingly wealthy merchant class also played a role in funding dedications. Changing religious interests also affected sanctuaries and sanctuary design. The rise of cults emphasizing personal transformation and cults merging Greek and foreign gods occasioned the need for new building types and complexes that shaped a new experience for participants.

Several consistent themes emerge in this investigation of Hellenistic sanctuaries. While the sanctuaries remained organic and their buildings cumulative, key innovations centered on overall composition and hierarchy. In the paratactic design of Archaic and Classical sanctuaries, each building made a discrete statement both in design and function, with the temple taking pride of place. In Hellenistic sanctuaries,

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individual components were often subordinated to a hypotactic, orthogonal plan for the larger temenos. By working not just with structures but also the spaces and connective tissue between them, Hellenistic architects realized the design potential in "connecting the sacred dots." This kind of composition was not merely an attempt to tidy up the Archaic and Classical temenos (although that may have been one objective) but rather emerged from the desire to craft and control visitors' experience of the sacred environment. The approach was also pragmatic. Integrated and interlocking building components were financially viable and technically achievable, with the whole becoming greater than the sum of the parts. They enabled Hellenistic architects to reach a level of scale and grandeur that suited the patrons and clientele who lived among wonders such as the Mausoleum at Halikarnassos, the Pharos at Alexandria, and the Colossus of Rhodes (see Chapter 30).

This new concept of spatial composition encompassed a number of important qualities associated with Hellenistic sacred space, including: a willingness to exploit and even recraft the natural environment in order to achieve desired effects; a strong tendency for orthogonality and axiality; an emphasis on framing buildings, vistas, and views; a more conscious manipulation of space and mass, level, distance, scale, and light and shadow; and a more overt application of geometry, both legible and imbedded (Senseney 2011). These creative and highly expressive developments clearly aimed at shaping the experience of the participant, both visually and kinetically. Such objectives were not absent from earlier sanctuaries, but they were not so explicitly the driving force. Hellenistic sanctuaries are often called "theatrical," a concept to which we shall return.

A new hierarchy among buildings accompanied the changed conception of sacred space. The temple became *an* element, not *the* element of the new sacred space. In most cases it continued to be the principal object, but more often by virtue of its focal position within the composition than by its size or isolation (exceptions were the colossal temples of Artemis at Ephesos and Sardis, Apollo at Didyma, and Zeus at Athens, which in fact revived Archaic traditions). A growing interest in the power of the façade accompanied increased attention to interior space; prostyle façades did not entirely replace the venerable peripteros, but they increasingly were attached to a wide range of new building types. With the heightened emphasis on sacred experience, the altar achieved new prominence, especially in the Aegean islands and coastal Asia Minor, and the space around or leading to the altar took on more formal importance. In shaping space, the stoa and its architectural cousin, the colonnaded portico, became the workhorses of Hellenistic design. More than any other structure, they defined the shape of new Hellenistic sanctuaries and effectively "modernized" the space of older sanctuaries.

Flexibility and adaptability were further hallmarks of Hellenistic sacred architecture. Functionally different buildings could have similar plans, for example, the winged stoa, propylon, or altar. Axiality in Greek sanctuary design was not the strictly bilateral experience it would become on Italic soil (see Chapter 32). The orders found new loci of innovation. Despite the apparent criticisms of Late Classical and Hellenistic architects Arkesios, Pytheos, and Hermogenes (Vitr. 4.3.1), the Doric order was not only alive but now also flourished in Asia Minor, formerly the domain of Ionic (Tomlinson 1963). The combined entablature of the Ionic order became standard. And perhaps most significantly for the history of Western architecture, the Corinthian made its debut as a monumental structural order. Hellenistic architects were also adept at manipulating scale within the same order – an idea already deployed in the Classical period on the Propylaia in Athens – to highlight a structure or frame space (e.g., Temple A on the upper terrace of the Sanctuary of Asklepios on Kos). This idea, too, became a hallmark of Western architectural thinking.

Our chief interest centers on the development and diffusion of Greek architectural design in sanctuaries that either rose to prominence or were largely rebuilt under the successors of Alexander. The sanctuaries of Athena Lindia on Rhodes, Asklepios on Kos, and the Great Gods on Samothrace serve as models; the equally important sanctuaries of Apollo at Didyma, Artemis at Magnesia, and Zeus at Labraunda appear in other chapters in this volume. Smaller Hellenistic sanctuaries at Priene, Megalopolis, and Pergamon repeat key features that appear consistently in Hellenistic sanctuary design, while Delos, Delphi, and Olympia bear additions that give them a Hellenistic "facelift." In non-Greek regions, sacred architecture both reflected and served as a means of working out worship within the different religious systems of the Hellenistic world. While we cannot pursue the richly diverse trends occasioned by these encounters, we may, in closing, examine one of the more synthetic forms that emerged, the Serapeion.

The Offset Axis: The Sanctuary of Athena Lindia, Rhodes

The Archaic polis shrine of Athena, set precipitously close to the southeastern edge of the 380-ft-high acropolis of Lindos on Rhodes, probably marked the sanctity of the cave in the cliffs below. After the temple was destroyed by fire in 392/1 BCE, the Lindians reaffirmed ancient religious traditions by replacing it in the early Hellenistic period with a new Doric temple set on the same spot with the same tetrastyle amphiprostyle plan as its predecessor (Dyggve and Poulsen 1960; Lippolis 1988–1989; Hollinshead 2012: 36–41; for the ancient roots, see Higbie 2003; Shaya 2005). The Hellenistic designers, however, completely transformed the experience of reaching the temple (Figure 29.1). They replaced the Archaic diagonal flight of stairs with a succession of axially coordinated and symmetrically balanced winged colonnades, stairs, landings, and entranceways through which the visitor ascended to the temple. The main components consisted of a lower precinct framed by a Lower Stoa with deep wings, which was connected by a grand stairway to a narrower upper precinct entered through the winged Propylaia. All of the buildings were in the Doric order and built of limestone. They formed a unified, hypotactic design, orthogonally aligned with the temple, but offset to the north and west to take best advantage of the uneven topography.

Whether or not the entire complex was planned from the start (Lippolis 1988–1989: 134, 148–153) or cumulatively came to define the entrance to the sanctuary (Hollinshead 2012: 40), the impetus for it emanates from the temple (Figure 29.2). The Propylaia created a monumental entranceway for the temple, which physically and visually channeled the visitor's approach while effectively screening off the inner sanctum. The design recalls its namesake, the Propylaia in Athens, but with important differences. The Lindian Propylaia rested on a high, artificial platform. Its tetrastyle prostyle wings, framing a broad landing, faced forward and echoed the design of the temple beyond. The façade's closer parallel

Figure 29.1 Sanctuary of Athena Lindia, Rhodes. View of stair leading to acropolis. *Source*: Bonna D. Wescoat.

Figure 29.2 Sanctuary of Athena Lindia, Rhodes. View of temple. *Source*: Bonna D. Wescoat.

is, in fact, skene design. These once ubiquitous temporary structures have all but disappeared; we may glimpse their design in a Gnathian kalyx krater fragment in the Martin von Wagner Museum in Würzburg (Figure 12.7, *CVA* Würzburg 4.57–59, pl. 52.1).

Within, asymmetrical porticos shaped a temenos with the temple in the southeast corner. The diagonal approach to the naos deliberately recreated the angle of the Archaic path, another reassertion of the ancient shrine. Traces of a structure in the court seem likely to be the altar. Architects closed the temenos on the west with a series of square (dining?) rooms and on the east with a blind colonnade running right to the façade of the temple. The south side remained open until the Roman period, however, so that visitors could approach the rear of the temple with its magnificent, unobstructed views along the coast.

The Lower Stoa, perhaps part of the rebuilding campaign following the devastating earthquake of 227/6 BCE, transformed the sanctuary from a small, tightly organized complex into a paradigm of Hellenistic sacred design. The 87-m-long building presents a unified façade across the lower acropolis, but in fact it consists of a continuous colonnade joining two deep, separately roofed L-shaped wings set on each side of the great stairway. The screen of columns across the stairway created a permeable boundary to the upper precinct. By broadly embracing the entrance to the acropolis and tightly framing the great stairway, the stoa funneled visitors toward the main objective: the temple on the summit. Like the Propylaia, its wings have tetrastyle prostyle Doric façades that mirror the temple (Winter 2006: 217–218). These sets of ascending temple-front façades on progressively narrower buildings create sharp contrasts of scale, heighten the perspective, and give the illusion of grander height and distance.

The terrace framed by the Lower Stoa supported a rich array of dedications including exedra monuments, group statues, trophies, tripods, and a naval dedication in the form of a ship's prow supporting a statue (perhaps of Nike or the *trierarch*). Another naval monument, in the form of a ship's stern, was cut in the rock at the entrance to the acropolis (Gabrielsen 1997: 88, pls. 4–5). In the first century BCE, the terrace was roughly doubled with a platform supported by a barrel-vaulted substructure and bisected by yet another flight of stairs aligned with those leading to the Propylaia.

The Sanctuary of Athena at Lindos employs not only contrasts of scale and elevation characteristic of Hellenistic design but also elements of surprise and unveiling. The initial narrow ascent to the acropolis offers no hint of the orchestrated terracing on the summit. The banks of stairs and embracing wings of the buildings shape a direct ascent that is screened by colonnades and a door-wall. Passing into the inner precinct, the viewer expects the temple to fall on axis; instead, pulled to the edge of the cliff, the temple hovers precipitously at the pinnacle of the rock. Its bifocal design draws visitors to its south façade, where their own position in the landscape, as well as the spectacular position of the naos, is best appreciated. Man-made interventions restrict some views but open others in spectacular panoramas; a corollary effect is the view of the temple from far out to sea.

The Bent Axis: The Sanctuary of Asklepios at Kos

The healing Sanctuary of Asklepios on the nearby island of Kos arose in the salubrious environment of a sacred grove of cypress trees and natural springs in the hills just inland from the coast. The site was originally sacred to several deities, including Paian, Apollo Pytheos, and Apollo Kyparissios (Sherwin-White 1978: 336–346). The site gained importance following the synoikism and foundation of Kos city and the death of the island's most famous physician, Hippokrates, around the middle of the fourth century. By the first half of the third century BCE, the temenos incorporated three ascending terraces; the major monuments belong chiefly to the second century BCE (Figure 29.3).

The core sacred space developed on the narrow intermediate terrace, where the main cult buildings – an altar and a distyle in antis Ionic Temple of Asklepios (Temple B) – faced one another on the east–west axis. The temple's Asiatic column bases and entablature combining both frieze and dentils follow third-century BCE design. Other structures clustered on the terrace included another temple beneath the Roman Temple C, a springhouse and wells, an oikos (Building D, identified as an abaton or dining facility), an exedra, and Building E, which likely held dedications (Herod. *Mime* IV for the altar and works of art; Schazmann and Herzog 1932).

On either side of this middle terrace, facing pi-shaped porticoes – wooden to enclose the sacred grove on the upper terrace and stone to create a broad terrace on the lower – created an architectonically

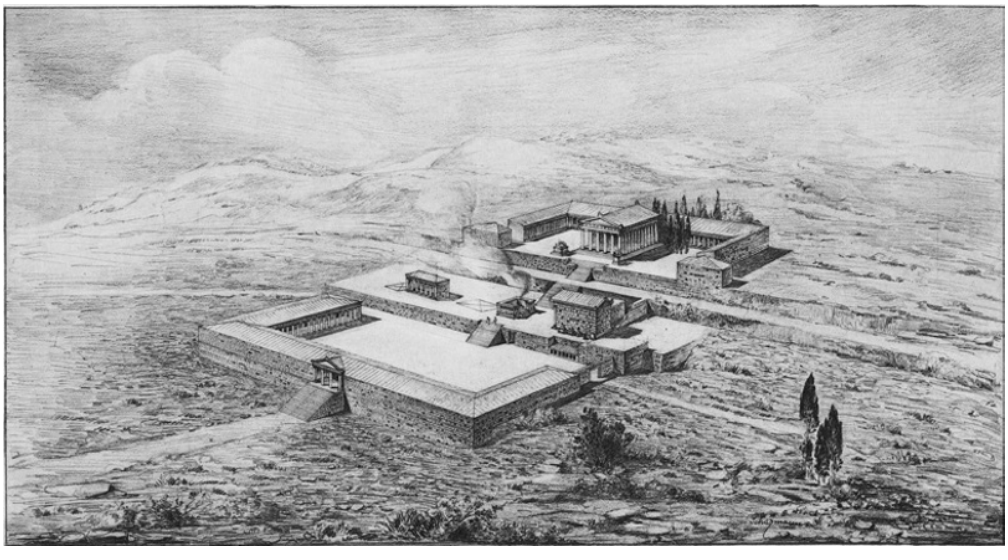

Figure 29.3 Sanctuary of Asklepios, Kos, restored bird's-eye view. *Source*: adapted from Schazmann and Herzog 1932, pl. 40.

framed environment. To level the sloping ground, the lower northern portico was set on a high foundation, its exterior unadorned save for a small tetrastyle propylon approached by a steep flight of stairs. The impact differs radically from the embracing stoa in the Sanctuary of Athena on Lindos. At Kos, the exterior emphasized exclusion, but, inside, the sacred space opened to a spacious but focused experience appropriate to a healing cult. The axial focus also differed. The lower terrace was perceptibly skewed from the north–south axis of the middle and upper terraces, and its propylon was not aligned with the stairways between terraces. The bent axis introduced a subtle tension to the experience of ascending from one terrace to the next.

In the second century BCE, the upper terrace was redeveloped to feature a marble hexastyle peripteral Doric temple (Temple A) approached by a monumental stairway and framed on three sides by stone porticoes that gave on to rooms for patients visiting the sanctuary. Temple A communicated directly with the earlier Temple B and a newly built altar on the middle terrace via two broad flights of stairs separated by a deep landing. The new construction emphatically oriented the sanctuary along a dominant north–south axis. Unlike many Hellenistic temples that were set against the back of or even incorporated within framing colonnades (see Priene or Megalopolis later in the chapter), Temple A at Kos pressed right to the front, so that it was prominently visible from the lower terraces and more distant views. The smaller scale of the Doric framing colonnades accentuated the grandeur of the temple. Such play of scale, first explored by Mnesikles in the Propylaia on the Athenian Acropolis, became a key element of contemporary shrines in Italy (e.g., Juno at Gabii or Hercules Victor at Tivoli) and a hallmark of Roman public architecture (e.g., the Forum of Augustus).

The design of Temple A reflected several ideas already present in Archaic Greek sacred architecture, including the hexastyle façade with deep eastern pteroma, or walkway (e.g., the Temple of Athena at Assos), but the deep pronaos and flank composed of only 11 columns ties directly to the fourth-century Temple of Asklepios at Epidauros. The connections forged with the venerable sanctuary reflect an underlying historicity characteristically Hellenistic, but the considerably greater scale of the Koan temple was perhaps a directly competitive gesture. Its design has a dry elegance that suggests an underlying geometric basis (Senseney 2007). The Attalid king Eumenes II, a generous patron of architectural donations, may have underwritten the project (for patronage, see Winter 1993: 267–69; 2006: 216; more cautiously, Hollinshead 2012: 44–45).

Connecting the terraces, the grand stairway not only shaped the processional route but also served as excellent stands for witnessing the sacrifices at the new Ionic altar, which belongs to the class of elaborate, architectonically framed offering tables that became the focal points of many Hellenistic sanctuaries in Asia Minor and adjacent islands. Although monumental altars reach back to the Archaic period, the Ionian Renaissance of the fourth century BCE brought renewed vigor to the form, and the second century witnessed its flowering (e.g., the Great Altar of Pergamon, see Chapter 28; for others, Linfert 1995). There are also a number of elegant altars to Athena at Priene, Artemis at Magnesia, Dionysos and Asklepios on Kos, Apollo Karneios at Knidos, Dionysos at Teos, Zeus Lepsynos at Euromos, and Apollo at Klaros. In the kinetically driven designs of the Hellenistic period, such altars represent an important shift of architectural energy from the relatively static temple to the performative center of the cult where sacrifices took place. The Koan altar rose on a podium and was enclosed by framing walls and a surrounding colonnade that opened to a broad entry ramp on the west. Freestanding marble statues occupied the intercolumniations. The elaborate barrier would have limited viewing the sacrifice to certain vantages, although the sounds, visible smoke, and smell of roasting meat would have permeated the sanctuary.

The second-century elaborations – altar, stairs, temple, and upper portico – transformed the Sanctuary of Asklepios from a loosely framed space into a tightly integrated architectural complex with a dynamic spatial progression punctuated by three separate ascents, each generating a different meaning: segregation, reorientation, and, finally, culmination in a temple within a framed sacred grove, a natural expression of the divinity within the temenos. From here, the pilgrim not only enjoyed a bird's-eye view of the sanctuary but also the panoramic vista of the surrounding countryside, sea, and coast of Asia Minor.

The Intentionally Circuitous: The Sanctuary of the Great Gods on Samothrace

The Sanctuary of the Great Gods on the northern Aegean island of Samothrace rose to prominence in the second half of the fourth century when, possibly through the patronage of Philip II, it received its first marble building (the Hall of Choral Dancers: Figure 29.4, no. 17). Thereafter, driven chiefly by royal ambition, a dozen new buildings, most in marble and all of unusual design, transformed the sanctuary from a regional to international shrine. Samothracian buildings offer new paradigms of Hellenistic architectural and engineering ingenuity in a site-specific context; the Sanctuary of the Great Gods is one of the most innovative Hellenistic sacred places in the eastern Mediterranean.

The sanctuary grew up at the convergence of three deep mountain streams on the north coast of the island. The rugged topography generated specific zones within the sanctuary: an elaborate gathering place on the Eastern Hill, the cult buildings sequestered in the narrow central valley, and buildings for social congregation on the Western Hill. Like their counterparts on Rhodes and Kos, architects on Samothrace adeptly manipulated topography and architecture to heighten the sacred experience physically and visually, but here the kinetic energy worked on a downward, chthonic trajectory. Moreover, descent into the heart of the sanctuary was deliberately circuitous, with monuments, topography, and passages working in concert to conceal or reveal key loci to prospective initiates as they underwent the secret rites that promised protection at sea and moral betterment.

The Propylon of Ptolemy II, gifted by the king in the 280s BCE and prominently bearing his name on both sides, made the experience of entering and leaving the sanctuary especially dramatic (Figure 29.4, no. 26). The architect maximized the experience of descent by raising the Propylon on a massive foundation thrust westward into the ravine; he diverted the stream that formed the boundary of the temenos into a vaulted tunnel that cut through the foundations of the building. The amphiprostyle superstructure of the Propylon is further remarkable in combining an Ionic hexastyle prostyle façade facing outward toward the ancient city with a Corinthian one facing into the sanctuary, connected by walls enlivened with drafted margin masonry. This is one of the earliest appearances of the Corinthian order as a monumental exterior order, possibly contemporary with the Belevi Tomb in Asia Minor, which bears a monumental Corinthian colonnade atop a podium (Frazer 1990: 218–225). But why does Corinthian appear on only one side? Vitruvius (*De arch.* 1.2.4) offers an etiology for the Corinthian order that connects it with the grave; the cyclical life of the acanthus plant carries symbolic overtones of regeneration. The Corinthian façade faced into the sanctuary and therefore was best appreciated when leaving; perhaps it was intended to signal passage into a world of different prospects for the newly initiated. Such would be Hellenistic architecture at its most evocative (Wescoat 2012).

From the Propylon, a wide, stepped ramp plunged precipitously into the Theatral Circle (Figure 29.4, no. 25), where banks of statues and the sanctuary's first Hellenistic building, a Doric hexastyle pavilion dedicated by Philip III and Alexander IV, formed a visual screen for the cult buildings below (Figure 29.4, no. 24). Pilgrims then circumnavigated the rim of the ravine to descend another steep ramp to the narrow valley with the cult buildings, also only serially revealed. Such manipulation of charged topographic features marks a new level of intervention in the landscape.

The main cult buildings were densely grouped in the narrow valley forming the heart of the sanctuary, with the Hall of Choral Dancers in the center (Figure 29.4, no. 17). Its winged prostoon with slender Ionic columns gave passage to two deep chambers; the entirety was circumscribed by an entablature including dentils and, notably, a frieze of dancing maidens in archaistic style. Tucked behind the hall rose the Hieron, with its long cella and deep Doric hexastyle prostyle porch with two rows of columns (Figure 29.4, no.15). The main building is probably later than circa 325 BCE; and, the second-century BCE date proposed for the porch, based on West Slope ware pottery and classicistic style, could perhaps be pushed back to the third century BCE (P.W. Lehmann 1969: 84–93, 208–236; K. Lehmann 1998: 79–86; des Courtils 1999: 366–368). Like the Propylon, its exterior walls bore drafted margin masonry; the interior offered a more colorful version in plaster. The deep porch,

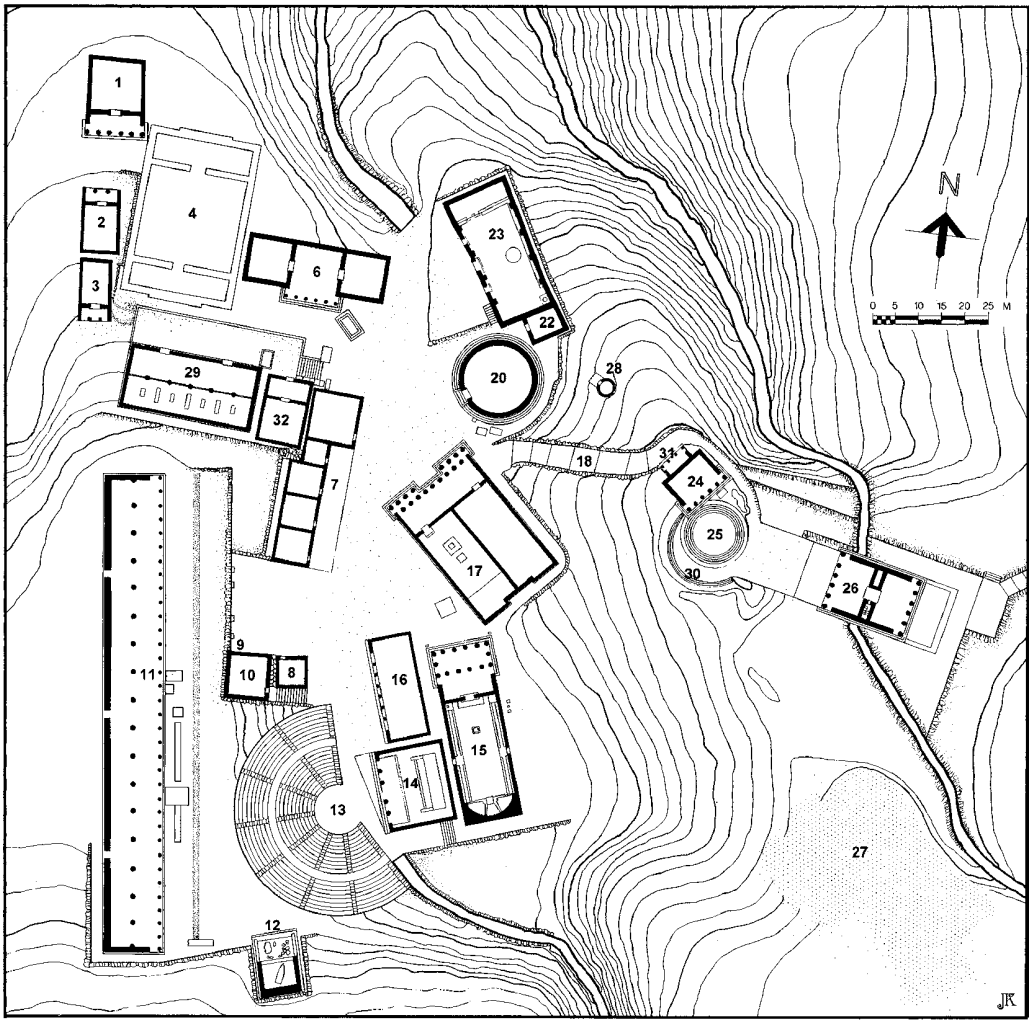

Figure 29.4 Sanctuary of the Great Gods, Samothrace, restored plan. 1, 2, 3. Unidentified late Hellenistic buildings. 4. Unfinished early Hellenistic building. 5. Byzantine Fort. 6. Milesian Banquet Hall. 7, 8, 10. Dining rooms. 9. Faux Bronze Age niche. 11. Stoa. 12. Nike Monument. 13. Theater. 14. Altar Court. 15. Hieron. 16. Hall of Votive Gifts. 17. Hall of Choral Dancers. 18. Sacred Way. 19. Sacred Rock. 20. Rotunda of Arsinoe II. 21. Orthostate structure. 22. Sacristy. 23. Anaktoron. 24. Dedication of Philip III and Alexander IV. 25. Theatral Circle. 26. Propylon of Ptolemy II. 27. Southern Necropolis. 28. Doric Rotunda. 29. Neorion. 30. Stepped retaining wall. 31. Ionic Porch. 32. Hestiatorion. *Source*: © American Excavations, Samothrace/ J. Kurtich.

benches lining the sides, internal apse, eschara (hearth for small burnt offerings), drain, and side doors suggest the building, as well as the Hall of Choral Dancers, was connected with the most sacred aspects of the cult, even if we cannot specifically define them.

The Rotunda of Arsinoë II, which had the greatest unobstructed span of any Greek round building, claimed pride of place at the base of the Sacred Way (Figure 29.4, no. 20). Scholars disagree on whether the building was built between 288 and 281 BCE, when Arsinoë was married to Lysimachos, or between 276 and 270 BCE, when she returned to Egypt and was married to Ptolemy II (K. Lehmann 1998: 62–70; McCredie 1992: 16, 93, 231–239). Her Rotunda exploited the orders by combining

Figure 29.5 Rotunda of Arsinoe II, exterior gallery parapet decorated with boukrania, rosette, and sash, the last perhaps connected specifically to the cult of the Samothracian mysteries. *Source*: Bonna D. Wescoat.

a Doric exterior with a Corinthian interior, here applied to a gallery surmounting a tall, smooth drum. The Doric pilasters framed a faux parapet decorated with boukrania and rosettes, supporting an entablature proportioned to the scale of the entire building (Figure 29.5). The Corinthian half columns framed engaged altars decorated with pairs of boukrania or phialai. A conical roof with scale-shaped tiles crowned the whole. The unusual design of the Rotunda was carefully calibrated to its location. From the valley floor it presented a formidably closed structure, but from the higher vantages of the stoa or Sacred Way, the gallery operated visually like a traditional tholos. The play of order, scale, and topography distinguish Hellenistic architectural thinking. The Rotunda's form may have derived from cultic actions, but its function remains obscure.

To the west, a theater and dining rooms lined the slopes (Figure 29.4, nos. 7, 8, 10, and 13), while above stood the 104-m-long, mid-third-century BCE stoa, constructed in local stone and framing the western side of the sanctuary along the ridge of the hill (Figure 29.4, no. 11). This region housed the finest dedications to the Great Gods, including the second-century BCE Winged Victory poised atop the prow of a ship (now in the Louvre; Figure 29.4, no. 12). Set at the highest vantage and rising over 5.5 m tall, the statue would have been visible across the sanctuary. Although no longer thought to be part of a fountain, the statue's wings and windblown drapery respond to the prevailing winds, and the contrast between the luminous Parian marble statue and the dark blue Lartian marble ship create a powerful aesthetic rooted in the phenomenon of place (Hamiaux 2001; 2007). On a lower terrace stood another remarkable naval monument, a Neorion designed to accommodate an entire votive ship (Figure 29.4, no. 29). Such buildings are very rare; the Monument of the Bulls on Delos appears to have a similar function, although a different design (Wescoat 2005; Bruneau and Ducat 2005: 191–193). Yet another distinctive Samothracian building is the Banquet Hall donated by a woman from the city of Miletos (Figure 29.4, no. 6). It consists of a marble Ionic hexastyle prostyle pavilion flanked by wings entered through offset doorways. The three-room arrangement finds parallel in Macedonian royal palaces for example, Vergina, and elite houses at Pella, as part of the larger structure, although Nielsen questions the grouping generally (1999: 87–88).

Throughout the sanctuary, massive polygonal boulder walls retain the terraces and channels, blending with the environment so that the buildings appear to emerge seamlessly within a natural sacred glen. They give the sanctuary a venerable aspect that is enhanced by other archaisms. The faux-Mycenaean

niche built into a terrace wall intentionally conjures up a Bronze Age past connected to the mythical foundations of the cult (Figure 29.4, no. 9), and the archaistic frieze of dancing maidens decorating the Hall of Choral Dancers alludes to an earlier sculptural style. Thus, while engaging the most innovative designs of the period, the Samothracians, like the Lindians and the Koans, also invested their sanctuary with a historicity and ancient aura.

Smaller-Scale Urban and Suburban Precincts: Priene, Megalopolis, and Pergamon

While the orchestrated, multilevel sanctuaries at Lindos, Kos, and Samothrace offer splendid but highly individual expressions of Hellenistic sacred space, dozens of smaller sanctuaries give Hellenistic design its overarching imprint. Inspired by parallel developments in urban planning (see Chapter 17), these sanctuaries share several characteristics, the most striking being orthogonal organization of the components within a rectilinear temenos. The idea appears already in the fourth century with the Sanctuary of Athena in the city of Priene, where the urban grid shapes the sacred precinct and determines the temple's alignment. The sanctuary adjacent to the agora of Priene (to Zeus or Asklepios) works even more emphatically within the grid system. The enclosed temenos has a small Ionic temple (either tetrastyle prostyle or distyle in antis; Ferla 2005: 112–124) set at the back of the precinct and framed north and south by Doric stoas of a smaller scale. Although orthogonally organized, the formal arrangement is not axially symmetrical. However, the late fourth-century Sanctuary of Zeus Soter at Megalopolis, designed as an independent complex in a large urban scheme, does operate bilaterally along a central axis. Its Doric hexastyle temple is fused with the surrounding peristyle court; only the columnar façade projects beyond the architectural frame (Lauter-Bufe 2009).

The quintessentially Hellenistic design of the (originally) suburban Sanctuary of Demeter at Pergamon was realized in the major elaborations that Apollonis, wife of Attalos I, introduced in the second half of the third century to the original sanctuary (a distyle in antis temple and altar) established by Philetairos and Eumenes earlier in the century in honor of their mother, Boa (Figure 29.6; Bohtz 1981; Piok Zanon 2007). A massive western retaining wall supported a long, level precinct, with framing stoas, enclosure wall, propylon, and a bank of seats that allowed participants to witness the secret rites, which

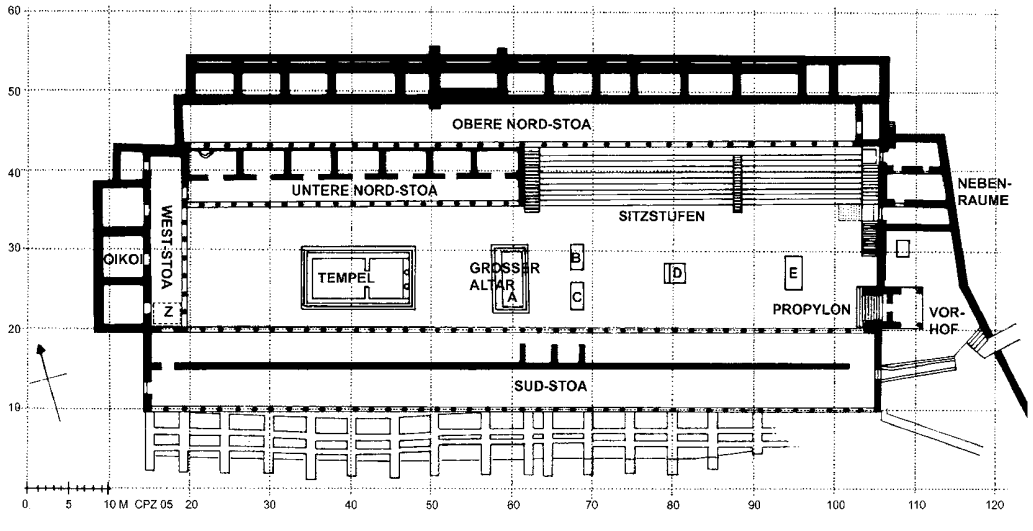

Figure 29.6 Sanctuary of Demeter, Pergamon, plan. Drawing by Cornelie Piok Zanon. *Source*: C. Piok Zanon.

presumably were enacted in the area in front of the altar. The narrowness of the precinct heightened the spatial tension between the spectator area, the altar, and the temple. On the main level the structures defined an inwardly focused space, but from the top steps and the upper north stoa, viewers could look down on the precinct or beyond to the great expanse of the lower city. The narrow precinct and orthogonal arrangement of components – temple, theatron, and stoa – bring to mind the Hellenistic Sanctuary of Despoina at Lycosura, although the shrine in the remote Arcadian highlands was not enclosed. Within these diverse designs we witness an overarching interest in framing space, organizing along orthogonal principles, creating complexes rather than individual structures, and manipulating scale to create internal hierarchies.

Hellenistic Interventions in the Old Sanctuaries: Stoas and Votive Monuments

Although largely built up by the late Classical period, the older international sanctuaries of Greece remained highly visible centers where personal, dynastic, or commemorative monuments effectively promoted the aims of the donor. A favorite Hellenistic building type, the stoa, not only provided sheltered gathering spaces in these Panhellenic sanctuaries but also helped to frame their sacred precincts and shape human actions. The Hellenistic stoas added to either side of the Sanctuary of Apollo at Delphi expanded the limits of the temenos with buildings that also served as victory monuments. The West Stoa once held captured Gallic arms dedicated by the Aetolians, who drove the Gauls out of the sanctuary in 278 BCE. A pendant stoa donated by Attalos I (241–223 BCE), which breaks through the ancient temenos wall to expand the sacred precinct to the east, was likely erected to honor his victories over the Gauls. Its substructure, a subterranean exedra bearing a barrel-valuted roof, demonstrates the facility of Pergamene architects in handling multiple stories and steep terrain. The Antigonid dynasty built stoas on the sacred island of Delos that dramatically transformed the loose-knit temenos of Apollo into a more integrated sacred space. The stoa with projecting wings donated by Antigonos Gonatas (246–239 BCE) spatially defined the north side of Apollo's precinct, its wings effectively framing the temenos. The bull's heads decorating its triglyphs tie the building iconographically to the nearby Monument of the Bulls, an early-third-century-BCE dedication of extraordinary dimensions and decoration (see below). Just outside the temenos, the South Stoa (circa 270–230 BCE) and the Stoa of Philip V (original construction, circa 216–200 BCE) combined to create a monumental processional passage from the harbor and Agora of the Competaliasts to the entrance of the sanctuary (Figure 29.7). At Olympia, the back side of the enormously long (212 m) East Stoa of the Gymnasion, built in the second century, further defined the processional route entering the sanctuary of Zeus.

Personal, dynastic, and commemorative monuments also left a strong Hellenistic imprint on the older sanctuaries. A particularly impressive form of dedication that developed in the third century consisted of a portrait statue set on a monumental column. At Olympia, the monument honoring Ptolemy II and his sister-queen, Arsinoë II, included a long base with Ionic columns set at the ends, each crowned with a portrait statue. In the middle of the third century at Delphi, the wealthy private woman Aristaineta set up an Ionic double column monument, which excerpted the entire elevation of an Ionic peripteros, including steps, a pair of closely set columns, and a combined entablature, crowned with statues representing Aristaineta, her parents, and her son. Doric column monuments were equally popular dedications; the Macedonians erected one in honor of Philip V in front of the stoa at Samothrace. Although bulkier, Hellenistic pillar monuments served a similar purpose. Several stood on the terrace before the temple at Delphi, one honoring Eumenes II of Pergamon and another Prusias of Bithynia. A third was originally begun to honor Perseus of Macedonia, but Aemilius Paullus expropriated the monument after his victory at the Battle of Pydna, recrafting the frieze to represent his victory over Perseus and placing an equestrian statue of himself on top.

Figure 29.7 Delos, view over houses toward the Sanctuary of Apollo, with the Stoa of Philip V and South Stoa framing a processional way at center right. *Source*: M.M. Miles.

Hellenistic Directions in Sacred Architectural Sculpture

The sculptural decoration of sacred buildings continued in the Hellenistic period, but with different emphases. While a wider range of buildings and building elements were adorned, the subjects and complexity of composition were more limited, with the important exception of altar decoration. In the latter, Hellenistic architects brought sculpture more immediately into the space and experience of the viewer by introducing monumental figures in high relief set closer to eye level and using colonnades as structuring frames for the display of large-scale statues (e.g., altars from Pergamon, Priene, Kos, and Magnesia). Venerable iconographic themes (e.g., Amazonomachy, gigantomachy, centauromachy, and Ilioupersis) continued to find a place along with the occasionally site-specific narrative (e.g., on the Temple of Hekate at Lagina). The temples of Dionysos at Teos and Knidos bore predictably Dionysiac motifs, as did the altar connected with his worship on Kos. The pedimental sculpture of the Hieron on Samothrace seems to be connected with the local cult as well, although fixing on the theme remains difficult (P.W. Lehmann 1969: 253–317). The lavish sculptural adornment of the Monument of the Bulls on Delos matched the building's innovative architectural design; nearly every part of the building bore sculptural decoration, including a marine thiasos frieze, sculptured metopes, akroteria, a Celtomachy decorating the lantern, and the bull protome capitals that give the building its name (in general, Webb 1996).

Increasingly, non-narrative, symbolic imagery connected with sacrifice or victory, including boukrania, phialai, rosettes, garlands, tripods, and captured arms, was knit into temples, altars, stoas, propyla, and other buildings within sanctuaries (e.g., Temple of Demeter, Pergamon, or the Rotunda of Arsinoë and Propylon of Ptolemy II at Samothrace). Occasionally, these symbols were accompanied

by representations of specific cult objects (Miles 2012: 129–143). Vegetation figures, usually the upper half of a winged woman wearing a polos and emerging from floral elements, now enlivened compositions that previously were purely floral (e.g., the frieze and akroterion of the Temple of Artemis at Magnesia). Symbols connected with the divinity also became architectural motifs: at the Temple of Apollo at Didyma, griffins and lyres ran in a rinceaux frieze across the pilaster capitals of the inner precinct; at the Temple of Artemis Leukophryene at Magnesia (see Figures 31.1, 31.2), deer heads replaced boukrania in the opisthodomos frieze. On the whole, the symbolic imagery reflects a preference for definition rather than allegory; it signaled purpose or communicated place in a decorous manner that merged seamlessly with more abstract architectural ornament.

Responses to the Larger Hellenistic World: The Sanctuaries of Foreign Gods and Sanctuaries in Foreign lands

We have chiefly addressed sanctuaries in the heartland of Greece; other essays in this volume address the architectural connections between Greece and Italy (see Chapter 31 and Chapter 32). A signal feature of the era, however, was the Greco-Macedonian encounter with other cultures encompassed by Alexander's empire. Sanctuary architecture provides an important point of mediation demonstrating how these cultures interacted with and affected one another. Ptolemaic rulers built in both the Greek (e.g., Sanctuary at Hermopolis Magna) and Egyptian style (e.g., temple complexes at Philae and Edfu), depending on the location or divinity honored (McKenzie 2007: 56–58, 119–146). The Temple of Indented Niches at Ai-Khanoum in modern Afghanistan, once part of the Seleucid Empire, represents a grafting of Greek influences on native Near Eastern forms (Mairs 2013). A particularly successful synthesis of Hellenic and Egyptian traditions obtained in the sanctuaries of Serapis, a god invented by Ptolemy I as a union of the Egyptian gods, Apis and Osiris, and the Greek Olympian, Hades; he also became associated with Asklepios and Dionysos. The Serapeion in Alexandria (built by Ptolemy III Euergetes, 246–221 BCE) consisted of a rectangular colonnaded court entered on the long side through two tetrastyle prostyle propyla. At the northern end, but off the central axis, stood a small tetrastyle prostyle temple that combined Corinthian columns with a Doric triglyph frieze. The precinct contained additional buildings, some of which were connected by a subterranean passage. Outside the temenos, a stairway led to the Nilometer, which measured the level of the annual flood.

Cults of foreign gods found particular traction at the Hellenistic emporion of Delos. The tiny island had three Serapeia as well as a sanctuary of the Syrian gods, all architecturally distinct from the classical Sanctuary of Apollo. Serapeia A and B were a loose collection of rooms, but the grander Serapeion C, built around 180 BCE, operated around two courtyards; the northern one had a tetrastyle prostyle temple, and the southern had a long narrow, trapezoidally shaped colonnaded court, with an internal avenue of altars alternating with sphinxes leading to a small temple. The precinct of the nearby Sanctuary of the Syrian Gods, built by Diophantos, son of Alexandros, to honor Atargatis and Hadad (second century BCE), ran along a terrace enclosed with an inward facing portico; a cult theater framed at the top by a pi-shaped portico faced onto the terrace and was aligned with a small exedra. The design of these shrines reflects architectural influences from the Ptolemaic and Seleucid kingdoms, but traditional Greek elements continued to find a place. Within Serapeion C, the Athenians (after 166 BCE) donated a small temple to the Egyptian goddess Isis, its marble Doric façade with two tall columns in antis supporting a light entablature, now with mutules decorating the raking cornice.

Conclusions

For scholars who admire the splendid isolation (real or imagined) of the Archaic or Classical temple, Hellenistic sanctuary design appears oppressively controlling (Kostoff 1985: 170–174). It is also found guilty of artificiality, exaggerated self-display, staginess, and histrionic overacting: in short, theatricality. For some, theatricality means an imitation of the experience ancient Greeks had long enjoyed at the

theater (Spawforth 2006: 85). More frequently, it has the decidedly pejorative overtones of secularizing and trivializing authentic religious experience: the awe generated by the great Archaic temples degenerated into touristic thrill (Pollitt 1986: 230).

Were Hellenistic architects and patrons really that cynical? Spiritual motives are always difficult to tease out of archaeological data, and sanctuaries were from their inception religious centers that attracted pilgrims who were also tourists (witness the chorus in Euripides' *Ion*). However, we have no basis for claiming that the deft manipulation of sacred space in the Hellenistic period was staged merely to thrill passersby rather than to heighten their religious experience. Hellenistic sacred architecture foregrounds the participant, and it is best understood within the context of the human actions and experiences – festivals, sacrifices, processions, and other rites – that it aimed to shape. These experiences differ fundamentally from theater; the pilgrim is a participant as well as a witness. The most ingenious aspects of Hellenistic sanctuary design – exploiting the natural environment, shaping the temporal and spatial experience of the sacred space, employing multiple orders and hierarchies of scale to guide the pilgrim from one station to the next – are all governed by the overarching aim of achieving the sensory effects that might generate the awe and wonder vital to a successful encounter with divine forces. Hellenistic sanctuary design works to build expectations and create heightened emotional responses through sudden or striking (i.e., dramatic) effects. These strategies remain in the service of fundamental religious aims that are no less authentic for having been architectonically embraced.

FURTHER READING

Wescoat and Ousterhout 2012, on sacred space, has essays by Miles, Hollinshead, and Wescoat that examine the dynamics of sacred space, ritual, and experience in Hellenistic contexts Hollinshead's ideas are expanded in her 2015 book on monumental steps and the shaping of ceremony. For Hellenistic architecture, Lauter 1986, approaches buildings typologically while addressing guiding design principles; on sanctuaries, Felten 1996. Winter's approach is also typological, but his chronology does not always reflect current research and some assumptions, especially concerning patronage, often go beyond the available evidence (1993, 2006). Coulton 1976 remains essential reading on the stoa. For a fresh examination of Hellenistic and Roman design theory and practice, see most recently Senseney 2011. In otherwise excellent books devoted to the Hellenistic period, for example Pollitt 1986, discussion of architecture tends to be abbreviated; see also Onians 1979, 1988. Although dated, Martin 1973 still offers a richly written history of Hellenistic sacred architecture. The foundational resources remain the excavation volumes addressing individual buildings or complexes within sanctuaries, e.g., at Lindos, Kos, Samothrace, Pergamon, Megalopolis, Priene, or Delos. For Lindos, they are augmented by Lippolis 1988–1989, and at Kos, by Sherwin-White 1978, Senseney 2007 and Interdonato 2013. New material has been presented in guides to the sites at Samothrace (K. Lehmann 1998) and Delos (Bruneau and Ducat 2005). See also Wescoat 2010 for excavation history of Samothrace.

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CHAPTER 30

Three Seaside Wonders: Pharos, Mausoleum and Colossus

Ingrid D. Rowland

Seven Sights or Seven Wonders?

Like most ancient lists, from the dozen or so Nine Muses to the nine-odd Seven Sages, the Seven Wonders of the World had many more candidates for the distinction than seven. The standard modern list only became standard in 1721, when the Austrian Imperial architect Johann Bernhard Fischer von Erlach produced marvelous Baroque engravings of the Pyramids of Egypt, the Hanging Gardens of Babylon, the Temple of Artemis at Ephesos, the statue of Zeus at Olympia, the Mausoleum of Halikarnassos, the Colossus of Rhodes, and the Lighthouse of Alexandria as part of his comprehensive *Outline for an Historical Architecture* (*Entwurff einer Historischen Architektur*). The idea of the Seven Wonders, on the other hand, was genuinely ancient. Herodotus, writing in the fifth century BCE, mentions several of these monuments, and the earliest lists of seven seem to have been drawn up during the Hellenistic Age. The ancient textual tradition preserves eight different honor rolls of "seven sights to see" (ἑπτὰ θεάματα in Greek, *septem spectacula* in Latin), as well as a number of partial rosters preserved in papyrus or manuscript (Hornblower 1982: 233–234). Frequent alternative candidates for the Seven Sights to See included the Walls of Babylon, a Babylonian ziggurat described by later writers as a tower or obelisk, and the Palace of Cyrus at Ecbatana in Persia. No matter their differences in detail, the lists always concentrate exclusively on works of architecture and sculpture; wonders of nature evidently exerted a less powerful pull on Hellenistic imaginations than did the fruits of human labor.

The *theamata* (*spectacula* in Latin) were large, shiny, and expensive, all qualities much sought after by ancient tourists, artists, patrons, and critics. Importantly, too, the wonders, scattered across a vast geographic area including Egypt, Mesopotamia, Persia, Caria, and Greece, reflected an international, intercontinental Mediterranean world. As a further clue to the dating of these heptads, all the individual theamata themselves were created before the rise of Rome to international prominence in the mid-second century BCE. Women commissioned three of the Seven: Semiramis of Babylon ordered the Walls of Babylon and the Hanging Gardens, and Artemisia, Queen of Caria, sponsored the Mausoleum of Halikarnassos.

The Seven Wonders of the World may always have existed more as a romantic idea than as a serious tourist's itinerary, but intrepid travelers did seek them out as such. One Lebanese-born Greek,

A Companion to Greek Architecture, First Edition. Edited by Margaret M. Miles.

Antipater of Sidon, brags in the mid-second century BCE of having seen all seven, and being a better man for the experience:

> I have gazed on the walls of impregnable Babylon, along which chariots may race, and on the Zeus by the banks of the Alpheios. I have seen the Hanging Gardens and the Colossus of Helios, the great man-made mountains of the lofty pyramids, and the gigantic tomb of Maussollos. But when I saw the sacred house of Artemis that towers to the clouds, the others were placed in the shade, for the sun himself has never looked upon its equal outside Olympus. (*Anth. Pal.* 9.58, trans. Clayton and Price 1989: 12)

Antipater's list includes the Walls of Babylon rather than the Lighthouse of Alexandria, which may not have been built at the time he wrote (it was completed in about 250 BCE). And writers continued to use this list even after the construction of the lighthouse, like the fourth-century CE author whose work has passed down under the name "Philo of Byzantium" (also a late third-century BCE writer on mechanics). The pseudo-Philo's version of the Seven Wonders continued to prevail through the seventeenth century thanks to a critical edition of the text produced by the Greek-born Vatican librarian Leone Allacci in 1640 (Allacci 1640). This edition, in turn, inspired Allacci's friend Father Athanasius Kircher to discuss the wonders in his spectacular picture book, *Turris Babel*, of 1679, the last word on the Seven Wonders before Fischer von Erlach brought them into something resembling the modern world (Kircher 1679). The monuments that comprise our standard list of wonders, including the Lighthouse of Alexandria, existed as an intact group for less than a generation, for the Colossus of Rhodes collapsed in an earthquake in 226 BCE, twenty or thirty years after completion of the Lighthouse in Alexandria. The date of this early collapse suggests that the first standard list of Seven Sights to See may have been drawn up between 250 and 226 BCE. These middle decades of the third century provided an especially favorable temporal and cultural environment for an idea like that of the Seven Sights, linking diverse cultures, histories, and continents in a shared vision of the world that had particular appeal in the wake of Alexander the Great's far-flung conquests.

Vision is certainly the faculty that these seven monuments engaged most actively: ancient writers consistently characterized them as things to be seen, theamata, rather than things to be marveled at, *thaumata* or *mirabilia*. The wonderment, as we shall see, came with the Christian era and late antiquity.

Structurally speaking, the architectural sights were mostly huge piles of masonry: mudbrick for Babylon's walls and towers, and stone for the Pyramids of Egypt and the great buildings of Greece and Persia. Roman concrete, with its marvelous lightness, soaring vaults, hollow spaces, and fantastic shapes, had yet to appear on the horizon. Seaside constructions like the Mausoleum of Halikarnassos, the Colossus of Rhodes, and the Lighthouse of Alexandria were all built without the help of hydraulic cement, a material that the ancient author Vitruvius praised as a wonder of the world in its own right. The secret ingredient of Roman concrete, the volcanic stone called *pozzolana*, came from Italy, and that peninsula is conspicuously absent from the map of wonders, along with Sicily, whose gigantic Greek temples would surely have qualified for inclusion on the list of world-renowned "things to see" had they not been toppled by war or earthquake earlier – yet another indication that the Seven Wonders are a distinctively Hellenistic concept, preserved in their Hellenistic integrity by respectful Roman writers like Varro, Vitruvius, Pliny the Elder, Diodorus Siculus, and the late Antique writer Philo of Byzantium.

Greek artists are prominent among the makers of the Seven Sights, yet another indication that the list derives from the third-century Hellenistic world. Greeks created the Temple of Artemis, the Statue of Zeus, the Mausoleum of Halikarnassos, the Colossus of Rhodes, and the Lighthouse of Alexandria. Most of these craftsmen, moreover, belonged to a particular group of Greeks: Ionians from the southwest coast of Asia Minor, part of an active, influential "Ionian Renaissance" that sprung up in this region in the fourth and third centuries BCE, a generation or two before the rise of Alexander the Great. As we shall see, no fewer than four of the Seven Wonders (i.e., the Mausoleum, the rebuilt Temple of Artemis, the Colossus, and the Lighthouse) take us into the heart of this Ionian world, an area perpetually poised between the competing cultures of Greece and Persia.

The Mausoleum of Halikarnassos (circa 350 BCE)

It was in Ionia, a zone locked between the Greek Aegean and the Persian mainland, that a shrewd local ruler named Hekatomnos of Caria maneuvered himself and his family into a brilliant political position early in the fourth century. All around him, the traditional balances of power were in flux. Athens, the chief naval power of fifth-century Greece, had come to grief in its war against Sparta, but then the invincible Spartans had shown themselves incapable of ruling an empire. Ever watchful and immensely powerful, the Great King of Persia had taken advantage of the confusion to move in on Ionia as his ancestors had done in previous centuries. But the Persian generals he had set in place as satraps, or provincial governors, had proven too ambitious on their own accounts and hence troublesome for the monarch. The king was ready to try awarding satrapies to local rulers, among them Hekatomnos of Caria, smart, opportunistic, and far-sighted; not only did he himself serve as satrap from 395 to 377 BCE, but he also ensured that every one of his four children would eventually rule as satraps of the Persian Empire as well as monarchs of Caria (see Chapter 27; Karlsson and Carlsson 2011).

Culturally, the Hekatomnids were more Greek than Persian, but they continued to maintain some ancestral customs, of which the most exotic to Greek eyes was marriage between siblings. Like the pharaohs of Egypt, the kings of Caria would marry only royal spouses, and the four children of Hekatomnos solved the problem by marrying each other: the eldest son, Maussollos, married his sister Artemisia, and their brother Idrieus married their sister Ada. Shortly after ascending the Carian throne himself in 377, Maussollos decided to move his capital from inland Mylasa to Halikarnassos, a coastal city that had been founded half a millennium earlier by Greek colonists from Troezen in the northern Peloponnese and was home, by the fourth century, to a cosmopolitan, mixed Greek and Carian population. Halikarnassos may have been most famous as the birthplace of the historian Herodotus, but it was also a splendid port, situated along the trade route that passed from Egypt to Crete, Rhodes, and on to Ephesos.

Together with an Ionian Greek architect, Pytheos, Maussollos transformed old Halikarnassos into a modern fourth-century capital, liberally spending the Persian money he earned through his satrapy and the vast funds he amassed through his other activities, including warfare, trade, piracy, and, as his subjects complained, outright larceny. In addition to improving fortification walls, harbor facilities, public buildings, and city streets, he commandeered an old burial ground in the center of Halikarnassos as the site for a monument that would act as his tomb, a shrine, and a tourist attraction all at once: the *Maussolleion*. This descriptive Greek word, which meant nothing more than "the building of Maussollos," soon became a Latin term in its own right for lavish funeral monuments, but there has never been another mausoleum quite like the Mausoleum of Halikarnassos (see Chapter 26).

Very little of that wondrous monument survives today. Ancient writers attributed the project to the king's sister and widow Artemisia, who survived Maussollos for only two years, 353–351 BCE. If she did commission the monument, she is unlikely to have seen much of it built; her first weeks of rule gave her no time to think about anything but survival. Immediately after the death of Maussollos, the islanders of Rhodes tried to take Halikarnassos in a lightning raid, assuming that the queen would be a weaker ruler than her husband, and perhaps hearing about her extravagant expressions of grief, which were probably legendary, as Artemisia could hardly have drunk her husband's ashes every day if he were buried under the Mausoleum. They must have forgotten that an earlier Artemisia of Halikarnassos had captained fighting ships at the Battle of Salamis in 480; these Carian women, unlike their Greek counterparts, were used to wielding authority. In any event, the fourth-century Artemisia turned the Rhodian siege of Halikarnassos into a rout, boarded the enemy ships with her own forces, sailed them back to Rhodes, and conquered the would-be-conquerors. Only then, presumably, did she have time to think about a memorial for Maussollos.

The Mausoleum may have been finished in the reign of Idrieus, the couple's younger brother, or perhaps under Alexander the Great, who became a protégé of the last surviving Hekatomnid sibling and ruler, Ada. Some parts of its temenos, or precinct, seem to have been left incomplete. After Alexander's time, the Mausoleum seems to have stood largely intact for well over a thousand years, until a twelfth-century earthquake began to break it apart. The Knights Hospitallers of St. John (also known then as the Knights of Rhodes) began to quarry the crumbling monument for building blocks to reinforce their

Figure 30.1 Mausoleum of Halikarnassos, inner foundations, Bodrum, Turkey. *Source*: M.M. Miles.

fortress of St. Peter, part of their last stand in Asia Minor against the Ottoman Turks (Figure 30.1). In contemporary Italy, the Renaissance may have revived a reverence for the works of antiquity, but on the coast of Turkey these Christian knights threw the Mausoleum's pagan statues into kilns to bake them into lime for whitewash and mortar. An English antiquary, Charles Newton, explored the site on behalf of the British Museum in 1856–1858, and from 1966 to 1977 the Danish archaeologist Kristian Jeppesen led an extensive scientific excavation (Jeppesen 1981–2002). Both the British and Danish expeditions recovered immense quantities of architectural and sculptural remnants from the great Mausoleum. Typically of their respective eras, Newton shipped his finds off to London, where they reside in the British Museum, except for the heavy, undecorated stones he left behind in Malta in 1858 to be incorporated into the Cospicua Docks (Hammond 2009). Jeppesen's discoveries, on the other hand, are displayed in the local museum of Bodrum. Despite Jeppesen's painstaking, well-documented efforts, our understanding of this monument still remains frustratingly conjectural. The pieces are too fragmentary, too worn, and in many cases too poorly documented to compose into an entirely satisfactory whole.

Some information about the Mausoleum is certain. It belonged, albeit on an unprecedented scale, to a recognizable class of funerary monuments in Asia Minor, works that adapted Greek artistic forms to indigenous traditions. A probable precedent, for example, is the Nereid Monument from Xanthus, erected circa 380 BCE by the Lycian ruler Erbinna (Arbinas in Greek) and now in the British Museum (it was removed to London not long after the fragments of the Mausoleum; Sturgeon 2000: 59–60; Jenkins 2006: 186–188; Figure 30.2).

Figure 30.2 Nereid Monument, Xanthos, reconstruction in the British Museum. *Source*: Jastrow, https://commons.wikimedia.org/wiki/File:Reconstruction_Nereid_Monument_BM.jpg. CC public domain.

The monument to Maussollos also clearly stood above an underground tomb chamber, rediscovered by the Knights of St. John in 1522. The building's tapered superstructure consisted of solid masonry, topped by a colonnade, surmounted in turn by a stepped pyramid with 24 steps. Both the tomb chamber and the exterior boasted a wealth of sculpture meant not just to rival but specifically to outdo the Parthenon. Like so many works of Greek architecture, the Mausoleum was conceived with two ideal viewpoints in mind: people on the ground in Halikarnassos, of course, but also seafarers in their ships, who might view the city's distinctive new skyline as an impressive statement of its wealth and power, as well as an attractive reason to stop. At the top of the monument stood the man who made it all possible, immortalized in a colossal sculpture as he drove a four-horse chariot against a background of sky and sun. Was he celebrated as man or god? He may well have been celebrated as both; one theory holds that the crowning sculptural group with Maussollos driving his quadriga was meant to assimilate the king to Helios driving the chariot of the sun.

Jeppesen's excavations at the site of Bodrum have confirmed most of the dimensions given for the monument by the first-century Roman magistrate, admiral, and polymath Pliny the Elder. Pliny reports in his vast, encyclopedic *Natural History* that the Mausoleum's great mass sat on an oblong foundation measuring 440 feet around – and, in fact, if Satyros and Pytheos, the architects, used a foot of 32 cm, as Jeppesen supposes they did, then that dimension is exactly correct. Despite its grandiose scale, the structure's proportions were carefully calibrated: the height of the colonnade, with its 36 columns, equaled the height of the pyramidal cap with its 24 steps, and the whole Mausoleum – not including its crowning charioteer, must have reached an impressive 140 feet into the heavens, just under 45 m.

Above and beyond its tremendous size, however, the Mausoleum impressed contemporaries with the richness of its sculptural decoration, all of which would have been painted and perhaps highlighted with

touches of gold or gilded bronze. According to Pliny, whose *Natural History* provides the most detailed surviving account of the monument, Maussollos and Artemisia, or their successors, engaged four different sculptors to work simultaneously: the Greeks Scopas, Leochares, and Timotheos, and the Carian Bryaxis, with the versatile Greek Pytheos contributing the marble chariot group that crowned his whole design (Plin. *NH* 4.36; for more on Pytheos in Pliny, see Robertson 1981: 178 and Carter 1990: 129–136). Pliny reports that each sculptor was assigned one side of the building, a report impossible to validate on the basis of the battered fragments that have survived the depredations of time, weather, vandals, and the Knights of St. John. The Roman writer may well have been thinking of the Colosseum, which was under construction at the very moment when he was writing his *Natural History* and was assigned to four different teams of builders, each one responsible for one quarter of the arena. It was reasonable, therefore, for Pliny to assume that Maussollos and Pytheos might have used a similar system four centuries earlier (Lancaster 2002; 2005). The results of this division of labor can still be seen clearly in the Colosseum (the teams use slightly different techniques and one was notoriously sloppier than the others), but the Mausoleum is too damaged to reach any comparable conclusions about who did what where. Furthermore, each of these four famous sculptors would then have handed assignments to a whole team of craftsmen, each with an individual style. The Parthenon, far better preserved, and with a single overall designer, Pheidias (Plut. *Per.* 13.4), still displays radical differences of technique among its various kinds of sculpture (e.g., metopes, frieze, pediments) and a range of techniques even among the individual types of sculpture. The Mausoleum, sadly, is simply too battered and too fragmentary to permit identification of single sculptors' hands, however famous those hands might once have been.

The freestanding sculpture from the Mausoleum is executed on three different scales, life size, "heroic" (one and a half times life size), and "colossal" (nearly twice life size). There are also remnants of three continuous friezes carved in relief. The superb quality of what survives makes its poor state of preservation all the more tragic. If we are to believe most modern reconstructions, the monument was crammed to bursting with carved decoration, a superabundance that some recent scholars have clearly taken to mean that Maussollos, for all his Hellenizing taste, remained a barbarian at heart. He certainly remained an unapologetic Carian, as we can see from a colossal portrait statue, now in the British Museum, that may well represent the man himself or one of his ancestors (Figure 30.3). Handsome, dapper, and well-fed, sculpted with Greek refinement but dressed in Carian fashion, this figure sports a luxuriant shock of long hair, a detail that would have been regarded as hopelessly unkempt by Greek standards – but then most mature men in the Mediterranean would have loved to have such a mane at that age. The colossal Carian's consort is dressed in Greek fashion, and it is tempting, therefore, to associate the two with the cross-cultural pair of Maussollos, with his Carian name, and his sister-wife Artemisia, whose Greek name may well have been a tribute to the great goddess worshipped in neighboring Ephesos (although this deity was not entirely Greek herself); sadly, the queenly figure's face is missing. The most likely placement for these colossal figures is probably between the columns of the pteron, the monument's crowning colonnade of 36 Ionic columns (the Mausoleum was in Ionia, after all). Thirty-six columns (9×11, or 8×12?) meant 36 spaces for 36 of these colossal statues, a quantum leap in size and quantity beyond the sculptural decoration of its probable source of inspiration, the Nereid Monument in Xanthos, with its three statues, four columns, and single pedimented façade. The large-scale statues presumably represented ancestors, heroes, or gods; we do not know enough about Carian beliefs to know with any precision where along the spectrum of divinity these sculptures actually stood.

A series of marble lions guarded the great tomb of Maussollos from malevolent spirits, either stalking across its roofline (as the lions pace in Babylon and Nimrud) or standing guard in heraldic pairs (as on the Lion Gate at Mycenae). The lions' poses and their exact positions are as uncertain as their symbolism is plain; from city gates to the façades of Greek temples, lions were a universal image of power and majesty. The large number of surviving fragments indicates that the Mausoleum's muscular, fierce, and beautifully modeled lions must have adorned all four sides of the monument. Most scholars place them on the building's pyramidal cap, but the German architect Fritz Krischen (1956) envisioned them in the colonnade.

Many reconstructions of the Mausoleum postulate a multistoried structure with one or more ledges to carry the two remaining sets of freestanding statues, crowded closely together. As archaeologist

Figure 30.3 Portrait of a Carian man (Maussollos?), Mausoleum of Halikarnassos, British Museum. *Source*: Carole Raddato, https://commons.wikimedia.org/wiki/File:Colossal_statue_of_a_man,_traditionnally_identified_with_Maussollos,_king_of_Caria,_ca._350_BC,_from_the_north_side_of_the_Mausoleum,_Mausoleum_at_Halicarnassus,_British_Museum_(8244597217).jpg. Used under CC-BY-SA 2.0. https://creativecommons.org/licenses/by-sa/2.0/.

Walter Voigtländer has pointed out, however, none of the later structures that imitate the Mausoleum are so densely packed with sculpture; the statues are so close together in modern reconstructions that they lose their visual impact to crowding (Lindner and Hellström 1989: 43). To complicate matters further, fragments have been found of three continuous friezes life-size friezes, an Amazonomachy, a centauromachy, and a chariot race. With these subjects, comparisons with the Parthenon must have been inevitable, and perhaps eagerly sought out, as Scopas and his cohorts worked to restore Ionia to the forefront of Greek art. The molding that crowns the Amazon frieze has been preserved, and was bound to it with a distinctive type of dovetail clamp. But how all these elements fit together on the architectural structure remains the subject of heated debate. To thin out the monument's statue population, some scholars have suggested that a certain number of these sculptural fragments might have come from the *temenos* and tomb chamber of the Mausoleum rather than its four façades.

With the current state of the evidence, reconstructing the Mausoleum is like assembling a gigantic jigsaw puzzle that happens to be missing half its pieces. Rearranging the various parts of the design, therefore, is an enjoyable, stimulating exercise, but for the moment it is an exercise without hope of a

definitive solution. The choices eventually come down to individual ideas of what constituted Greek architecture in the fourth century, and whether this milestone of Greek architecture was garish, tasteful, or something in between. The Roman poet Martial described the monument as "hanging in empty air" (Mart. *Spect.* 1.1); for all its tremendous bulk, the structure may have been more light and transparent than most reconstructions suggest.

Current debates about the Mausoleum's original appearance begin with its general shape. Tombs like the earlier Nereid Monument and a slightly later monument at Belevi, Turkey suggest a broad, compact structure rather than the sleek lines of an early twentieth-century skyscraper (many of which were inspired by the Mausoleum). The most recent reconstructions favor a gentle slope for the pyramid, but scholars in the seventeenth and eighteenth century tended to make the Mausoleum's roof mimic the steep slope of the Pyramid of Caius Cestius in Rome, the pyramid most of them knew best. With the exception of fountain houses, most Greek façades have an even number of columns and an odd number of intercolumniations, as well as sides of differing lengths; the Mausoleum presumably did as well. Once the colonnade has been set in place above the plinth, tall or squat, smooth or stepped as that may be, then a place must be found for the lions, the three friezes, and the three different ranges of statues, and with each place a significance in the larger scheme of the Mausoleum's decoration. Are the life-sized statues set near ground level as human ancestors, or are the colossi lowermost? What do the friezes mark as they wrap around the building? Do the lions parade along the cornice or stand alert on different levels of the pyramid? What were the plans for the precinct surrounding the monument? How much could anyone really see from the ground, or from a ship at sea?

The Mausoleum of Halikarnassos brought the man buried beneath it a deathless reputation but an ironic one: in the end, ancient writers remembered Maussollos more for his greed than for his magnificence. The seventeenth-century scholar Leone Allacci summed up centuries of ancient testimony in one pithy sentence: "He was a man of yawning avarice." The French lexicographer Pierre Bayle reached the same conclusion, cited here in the pungent eighteenth-century translation of Pierre des Maiseaux:

> It appears that, in favor of the Persians, but chiefly out of a desire to enrich himself, [Maussollos] committed many piracies upon the neighboring isles. He was one who took money with both hands, and gave no quarter to the purse of his best friends, but made use of sly artifices to enrich himself at their expense. He engaged himself for money in all sorts of wicked actions. (Bayle 1737: 174–175)

Ironically, then, the Mausoleum of Halikarnassos redounded far more to the honor of Artemisia than to that of her husband, both in antiquity and in Pierre Bayle's *Dictionary* (though Pliny reported that she, too, was "gloriae avidissma," as greedy for glory as her husband was for loot): "Neither his conquests, nor his good mien, nor his bravery, nor any of his actions procured for him such an immortal name as his wife did by the stately monument she built for him, and by the tender and friendly respect she preserved for his memory" (Bayle 1737: 174–175).

The Colossus of Rhodes

Like the Mausoleum of Halikarnassos, the Colossus of Rhodes was designed to impress seafarers as well as local residents, and like the Mausoleum it drew tourists from the whole Mediterranean world. The gigantic bronze statue of Helios, the sun god, was a civic thank offering for his divine help in warding off an invasion in 305 BCE. The would-be-invader, Demetrios I of Macedon, was a formidable foe, known to his contemporaries as Demetrios Poliorketes, "the Besieger of Cities." The capture of Rhodes was to crown a campaign that had already brought Athens, Egypt, and Cyprus under the Macedonian yoke, thanks to his well-trained fleet and his crack Macedonian pikesmen. A master of siegecraft, Demetrius deployed the latest in military technology: huge bronze-beaked battleships with as many as 30 men to each oar, catapults to pulverize city walls, borers to penetrate mudbrick, bronze-tipped battering rams forged to the highest standard of purity. Most terrifying of all were the rolling siege towers, beaked with battering rams and bristling with catapults and archers, moving staircases that allowed his troops to scale the tallest city wall. The most ambitious of these may have been the famous

"Helepolis," "The Taker of Cities," built with intimidating fanfare just outside the walls of Rhodes in 305 BCE – for psychology was yet another weapon in the Besieger's formidable arsenal. But the story of the Helepolis had a surprise ending, one Vitruvius tells with relish, for the battle for Rhodes in 305 BCE hinged, ultimately, on the stratagems of two military architects like himself:

> King Demetrios, who was called Poliorcetes, "Besieger of Cities," because of his obstinate temperament, prepared to make war on Rhodes, and brought Epimachos, a famous Athenian architect, along with him. Now Epimachos outfitted a siege tower at huge expense, with the greatest exertion and labor, 120 feet high and 60 feet wide. This he reinforced with goatskins and rawhide, so that it could withstand the impact of a 360-pound shot launched from a ballista. This machine itself weighed 360,000 pounds … The Rhodians … once they saw the enemy stubbornly challenging them, the war machine readied to capture their city, the devastation in store for the community … threw themselves at the feet of Diognetos, the architect, begging him to help his homeland … In the spot where the war machine was to approach the city, he pierced the city wall and ordered everyone, by public proclamation and personal appeal, to take whatever supply they had of water, sewage, and mud, and dump it through that aperture, where it passed through sluices out in front of the walls. Because a huge quantity of water, mud, and sewage had been dumped in that place during the night, when the siege tower began its approach the following day, it churned up a sinkhole in the slime and stopped dead before it ever neared the wall, unable either to advance or retreat. And so Demetrios, when he saw that he had been outwitted by the wisdom of Diognetos, withdrew with his fleet …Thus, in defense, it is not so much machines that should be put at the ready, but strategies. (Vitr. *De arch.* 10.16.4–8)

For Vitruvius, who had spent his youth building catapults for Julius Caesar, the moral of the story was clear: besieged cities, more often than not, owed their victories to "the cleverness of architects pitted against various types of machines" (Vitr. *De arch.* 10.16.12). The grateful Rhodians in 305 let their architect, Diognetos, have the Helepolis as war booty, which he duly dedicated on the acropolis of the city. But they also made certain to acknowledge the help of their patron deity with a tribute in finer, more durable materials than the Helepolis, which had been designed as a temporary structure, albeit a sturdy one. The lucky sculptor, Chares of Lindos, was a native of the island who had worked with the great Lysippos (*Plin. NH* 34.41). According to Pliny, it took Chares more than twelve years to complete the statue of Helios, with its stellar cost, 300 talents, financed by selling the "engines of war abandoned by Demetrios after his futile siege" (Plin. *NH* 34.42).

The war machines provided more than money; as marvels of technology, they also provided ideas about how to build a statue on an unprecedented scale. At 70 cubits, the Colossus would eventually rise to virtually the same height as the 120-foot Helepolis, and, in fact, the Helepolis may have served as scaffolding during construction of the Colossus (Rieger 2004:78).

Giant statues had long been a familiar sight in the Greek world. The towering seventh-century Apollo at Amyklai in Arcadia rose like a column in the center of its elaborate throne. Pheidias, before producing the 60-foot seated Zeus at Olympia, had already produced colossal standing statues in different media. His bronze Athena Promachos on the Athenian Acropolis must have stood 9 m high; the gold and ivory Athena Parthenos reached a towering 13 m. For both of these images, Athena's skirts would have provided a wide, stable base. Chares of Lindos, however, showed both skill and daring when he opted for a nude Helios standing on two feet, gilded to shine almost as brightly as the sun himself (and surely to outshine the gleaming Proconnesian marble of the Mausoleum).

According to the writer Philo of Byzantium, Chares assembled the Colossus from mold-made parts, the same technique that Pheidias had used to create his chryselephantine statues of Zeus and Athena, and perhaps the Athena Promachos as well (Lapatin 2001). Philo described the framework of stone and iron rods that stabilized the structure from inside:

> On the interior, the artist joined the Colossus together by means of iron tie-beams and squared stones; the connecting rods show traces of Cyclopean hammer blows. There is more workmanship hidden from view than there is to be seen on the exterior … After setting down a base of pure white marble, he first mounted the feet of the Colossus up to the top of the ankle, calibrating the proportions with exquisite care so that they could support a god of seventy cubits, for the base itself already exceeded the height of other statues. And

> because it was impossible to install the rest of the statue by hoisting it up in pieces, he finished the ankles of the feet *in situ*, and the whole project was constructed on top of them, just as in buildings. (Ph. *Bel.* 4.2; translation IDR)

The idea that the Colossus straddled the harbor of Rhodes first appears in a late fourteenth-century traveler's account. In 1393, Nicola de Martoni, an Italian notary from Carinola, a little town in the hills north of Naples, made a pilgrimage to Egypt and the Holy Land together with two friends. Sailing from Gaeta on June 17, 1394, they landed in Rhodes on July 13. Local guides were soon assuring Nicola and his friends that in ancient times, ships in full sail had passed between the legs of "the idol" on their way into the harbor. The notary's vivid description of the long-lost statue would prove irresistible for Renaissance artists, though most of them probably knew that his harbor-straddling Colossus was pure fantasy. In the seismic zone of the Mediterranean, Chares of Lindos would never have entrusted so massive a statue to masonry jetties. His Helios rose above a stone base anchored in a foundation of bedrock within the city itself. Its sturdy legs must been ranged side by side, like two closely placed columns, and firmly planted, as Philo's description specifies, on two feet. Those durable feet and the giant's ankles would maintain their position even after the rest of the Colossus fell in the earthquake of 226 BCE. The fallen giant was so immense, Pliny reported that "only a few can clasp their arms around his thumb." The bronze body weathered into a series of artificial caves, where visitors could pick out the remains of its metal armature and the stones that Chares had used as stabilizers.

An elegant engraving of 1554 by the French Franciscan André Thevet shows the collapsed statue amid a veritable horde of camels, its right heel raised off the ground in a stylish *contrapposto* (Figure 30.4). Evidently, then, most scholars in the Renaissance knew that the harbor-straddling

Figure 30.4 Antonio Tempesta, *The Colossus of Rhodes.* Etching from *Septem Orbis Amiranda*, 1608. Los Angeles County Museum of Art, Department of Prints and Drawings, Los Angeles County Fund (65.37.290). *Source*: http://commons.wikimedia.org/wiki/File%3AThe_Colossus_of_Rhodes_LACMA_65.37.290.jpg. CC public domain.

Colossus was too good to be true, but artists, tour guides, and travelers have always hated to waste so beguiling a story. Today, visitors to Rhodes still scour the harbor for traces of the great straddling statue despite all the efforts of historians, art historians, and archaeologists to convince them that the search will be futile.

Modern reconstructions of the Colossus normally show him nude or wearing a cape, in any case less thoroughly clothed than Thevet's toga-clad divinity, whose garment is as foreign to Greece as it is anachronistic. The purity of sunlight was normally thought to have no need of dressing up – with one exception. As an image of the sun, the Helios of Rhodes is always reconstructed with a crown of stylized rays radiating from his head. Some reconstructions keep the figure's arms close to his body; some stretch one arm upward or outward to hold a burning lantern. Thévet certainly understood one important point: whatever pose the Colossus took, it must have been as graceful as artistry could contrive on so immense a scale.

Frédéric Bartholdy's *Liberty Lighting the World* of 1886, the Statue of Liberty in New York Harbor, is directly inspired by the Colossus of Rhodes, and provides a cogent example of the freedom with which a confident artist can exploit the strength and flexibility of wood and metal, together with the sturdy support of stone, to create a work that is both sculpture and architecture. Both of these ambitious monuments to political freedom, the ancient Helios of Rhodes and the modern Liberty of the United States of America, are thus also tributes to the freedom of art and imagination. As an *agalma*, a dedication to the gods, and as a civic attraction to rival the chief Sights to See along the coast of Asia Minor, the blazing golden Colossus of Rhodes succeeded brilliantly. "Indeed," Philo of Byzantium tells us, "it presented with world with a second Sun" (Allacci 1640: 15).

But the shiniest of all the Seven Wonders was yet to come.

The Lighthouse of Alexandria

The Nile Delta is a broad, flat plain almost devoid of distinguishing features. In antiquity, however, a work of human hands provided the Delta with a landmark of international fame. Above the low-lying monotony of the Egyptian coastline, the Lighthouse of Alexandria beamed day and night, guiding ancient seafarers directly to the capital. A marvel of architecture and technology, this lighthouse, set on the island of Pharos, served as an inspired prelude to the city that was itself one of the marvels of the world. Vitruvius listed the advantages of Alexandria as "a naturally secure port, a thriving marketplace, the wheatfields of Egypt, and the immense usefulness of the great river Nile" (Vitr. *De arch.* 2.praef.4). But those natural resources were more than equaled by the human resources of Alexandria's people: Greeks, Macedonians, Egyptians, Phoenicians, and Jews mingling with merchants from the whole world. The palace of the Ptolemies and its Mouseion, the shrine to the Muses, contained a library and study center for 100 scholars. Alexandrians were deeply learned, but they were also masters of technology, of machines both clever and useful, and the most remarkable of all those machines, in many ways, was the Pharos Lighthouse.

Today, Pharos is no longer an island, for the rocky outcrop has long since been joined to the mainland by a sandbar that turned into solid ground. A pink stone fortress stands on the site of the lighthouse, built by the fifteenth-century Arab general Qait Bey from pieces of the ancient structure, some of them still clearly visible today. Originally, however, the island of Pharos lay some distance offshore. Here, according to Homer, Proteus, the Old Man of the Sea, wrestled with the hero Menelaus, shifting his shape to escape the grip of the stubborn Greek. Menelaus held fast, and the Old Man rewarded him with a story. The hero's description of the locale is vivid and precise:

> There is, besides, a certain island, called
> Pharos, that with the high-wav'd sea is wall'd,
> Just against Ægypt, and so much remote,
> As in a whole day, with a fore-gale smote,
> A hollow ship can sail. And this isle bears

> A port most portly, where sea-passengers
> Put in still for fresh water, and away
> To sea again … (*Od.* 4.354359; Trans. G. Chapman, 1616)

When Alexander set his new capital in this windswept tract of lake and sea, the island of Pharos was no longer a day's sail off the Egyptian coast (though it may not have been in Homer's day, either; the *Odyssey* is full of tall tales); instead, its sandbar virtually completed the curve of Alexandria's bay, still "a port most portly," with its twin harbors. Ancient sources report that the builder of the enormous lighthouse was named Sostratos of Knidos, who proudly proclaimed his benefaction to the city and the world in a large inscription on the side of the structure (Strabo 17.1.6). A diplomat in the new Greco-Egyptian court, Sostratos may have begun financing the project in the 290s under Ptolemy I, Alexander's immediate successor to the throne of Egypt. The work was completed, however, in 283/2 BCE, during the reign of his son Ptolemy II, nicknamed "Soter" ("The Savior").

At 100 m, the Pharos stood twice as high as the tallest lighthouses then extant in the Mediterranean. Our earliest evidence for these buildings in the Greek world dates from the sixth century BCE, and their chief use was to protect daytime traffic, for Greek mariners rarely sailed by night.

From what ancient records tell us, the design of Alexandria's lighthouse aimed for style as well as practicality. It rose in three tiers: a tall, sturdy square base pierced with windows that rose to some 60 m, an octagonal superstructure some 25 m high, and a round, colonnaded tholos (perhaps 15 m high) that housed the signal fire. Above the tholos, a pinnacle of gilded bronze portrayed a god and goddess in a chariot, a pair identified either as Zeus Soter and his consort, Hera, or Ptolemy II Soter and his queen, Berenice, or, as is most likely, both (Figure 30.5). Just as Alexander had "become" Zeus Ammon after

Figure 30.5 Roman Mosaic of the Pharos Lighthouse, Alexandria. Qasr Libya Museum, Libya. *Source*: © Gilles Mermet/Art Resource, NY.

his visit to the Siwa Oasis in the Egyptian desert, so the Ptolemies, while retaining their basically Greek culture and language, also "became" living gods on the Egyptian model, Olympian divinities in the form of human monarchs. The four foghorns installed on the towering lighthouse exemplified the combination of beauty and practicality for which Alexandrian machinery would quickly become famous: gilded bronze statues of tritons with curling scaly tails set at the four corners of the structure's lowermost tier, each merman poised to trumpet his warning to sailors from a long, spiraling gilded bronze shell.

Ancient mosaic images of the Pharos show a roaring fire at its summit; mirrors or glass may have enhanced the brightness of the blaze, but no evidence survives either to confirm or to refute the idea. Neither do we know what the Alexandrians burned for fuel in Egypt's desert environment: imported wood, reeds, dung, brush? Ancient authors claim that the beacon could be seen for 300 miles; in any case, it cast an impressive glow over the waters of the southeastern Mediterranean.

The Pharos also served Alexandrians as a splendid watchtower; incoming ships could, and did, use flashing lights to communicate information long before they pulled into the harbor. With the Roman conquest of Egypt in 31 BCE, the Pharos became the property of the emperors: Domitian, Trajan, Hadrian, Antoninus Pius, and Commodus all issued coins showing the lighthouse, often with special emphasis on its decorative sculpture.

A Wonderful Afterlife

In the third century BCE, just at the time when the first lists of Seven theamata were taking shape, the famous poet Callimachus of Cyrene (third century BCE) wrote a treatise on *Thaumasia*, "a collection of wonders in lands throughout the world" (Pollitt 1986: 147–148). This work, now lost, seemed to have concerned weird natural phenomena, rather than human inventions. In the heady days of the Ionian Renaissance, the wonders of human creation were things to be seen, to be sure, but they were also to be emulated and eventually surpassed. The citizens of Ptolemaic Alexandria and Imperial Rome would feel exactly the same way about past human achievements: they were a stimulus to still greater accomplishments. Most ancient writers therefore spoke of "things to see," rather than marvels and wonders.

By contrast, early Christian and Arab writers often discuss these ancient monuments explicitly as wonders, technological marvels they have no hope, and no intention, of emulating, triumphs of a pagan world for which neither Christianity nor Islam nurtured much tolerance. In the early ninth century, the Byzantine chronicler Theophanes (d. 818) reported that a troop of Muslim invaders under Caliph Uthman (r. 644–656) had destroyed the Colossus of Rhodes and sold the scrap metal to a Syrian Jewish merchant, enough to load 900 camels (Conrad 1996: 166–187). The account was pure fiction, but the idea that the Colossus was a vulnerable pagan idol accurately reflected medieval attitudes for all three great monotheistic religions (Conrad 1996: 181–187). The fourth-century pseudo-Philo's criticism of the Mausoleum as a monument to one man's vanity shows the beginnings of that cultural change. The Knights of Rhodes show the final burst of iconoclastic Christianity before the advent of the Renaissance. The Pharos of Alexandria, on the other hand, was a useful structure, although an expensive one to maintain; hence the fifteenth-century general Qait Bey could decide that it was more practical to dismantle the historic monument and use its blocks to build a new fort. The Renaissance fascination with Classical antiquity, combined with early modern advances in technology led to a revived interest in the Seven Wonders that gained momentum in the later sixteenth century, with important reconstruction attempts by Maerten van Heemskerck (1572), Antonio Tempesta (1608), Marten de Vos (1614), and Athanasius Kircher (1679), before Fischer von Erlach (1721) ushered in the modern archaeological fascination with these amazing works (Kunze 2003; Merz 2005).

FURTHER READING

Clayton and Price (1989) and Romer and Romer (1995) are excellent books aimed at the general reader. Kunze (2003) is especially to be recommended for its lavish illustrations.

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