

The Propylon to the Sanctuary of Demeter Malophoros at Selinous

MARGARET M. MILES

In memoriam W.B. Dinsmoor, Jr.

Abstract

This paper is an architectural study of the propylon to the Sanctuary of Demeter Malophoros at Selinous, built in the later fifth century B.C. A new actual-state plan and reconstructions of the blocks of the architrave, frieze, and geison courses are presented. The propylon is the only building of its type known in Sicily and stands as an unusual example of the Doric style in small scale. The building is of special interest for its eclectic combination of local forms and styles together with borrowed forms such as an Athenian profile for the Doric capitals and Periclean proportions for the elevations. Pythagorean associations and Athenian influence make the propylon an exemplar of internationalism in later fifth-century Greek architecture.*

The location of Selinous in a fertile area on the coast of southwestern Sicily, near the Carthaginian base at Motya and the towns of the Elymians, guaranteed the Greek city constant international contact.¹ Only some nine days' sail from mainland Greece, Selinous was a major port of call for travelers between the eastern and western parts of the Mediterranean. The advantage and prosperity reaped from this superb location are reflected in the extensive building program of seven large Doric temples during the sixth and fifth centuries B.C., in number and size rivaled within all of the Greek world only by the neighboring city Akragas. In keeping with their

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The following abbreviations are used:

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| White | D. White, "The Post-Classical Cult of Malophoros at Selinus," <i>AJA</i> 71 (1967) 335-52. |

¹ The leading role played by the Selinuntines during the sixth and fifth centuries B.C. in the internal affairs of the Western Greek cities, in dealings with both the Etruscan and Carthaginian naval powers, and Selinous's participation in the defense of Sicily from the Athenian invasion of 415 are well known: see T.J. Dunbabin, *The Western Greeks* (Oxford 1948) 300-305; M.I. Finley, *Ancient Sicily* (London 1979) 66-70; for a recent summary, Jameson et al. Thucydides remarks especially on the city's great wealth, both in private hands and publicly held, in the temples (6.20.4, in a statement made by Nikias in a speech to the Athenians).

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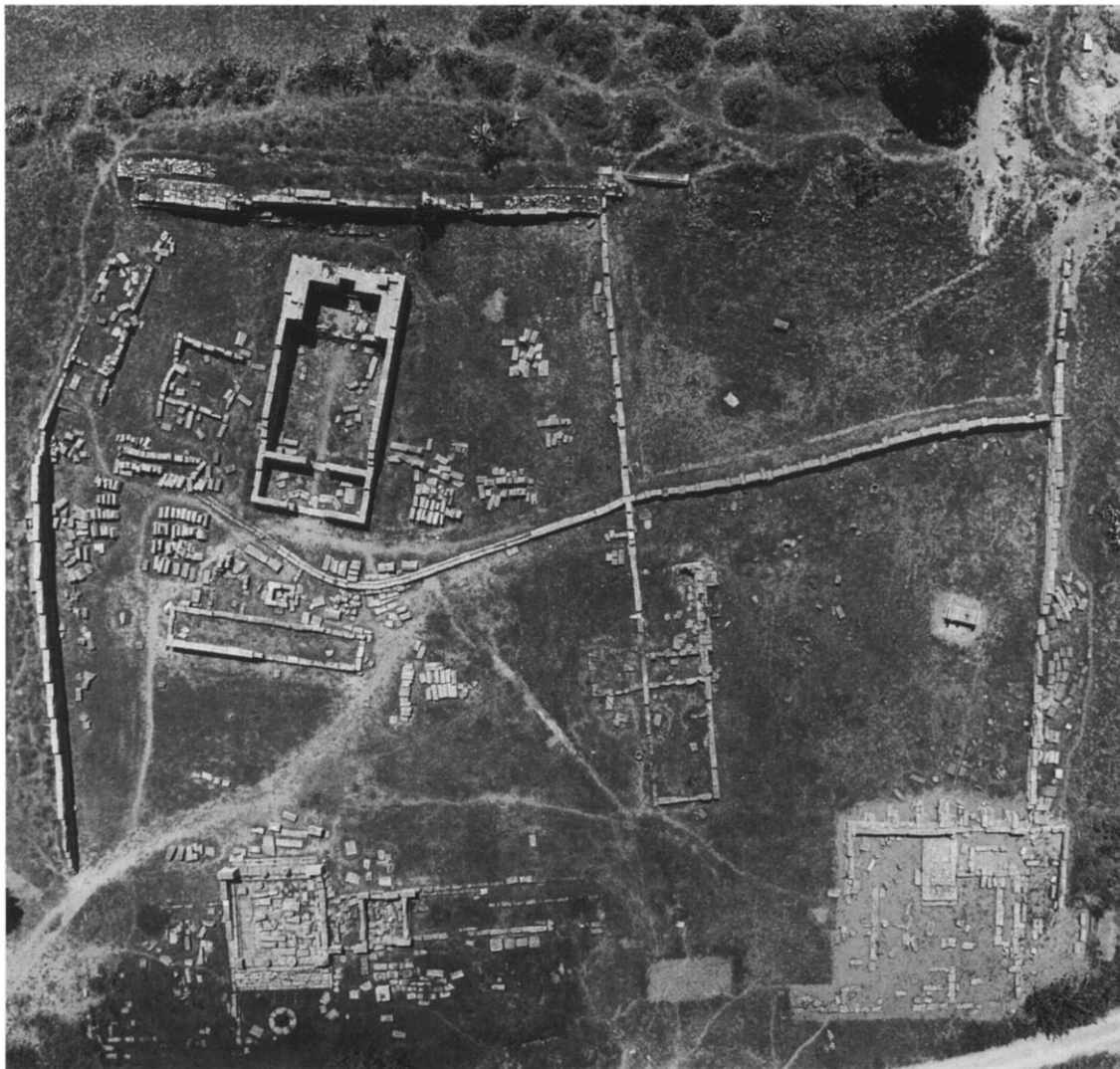


Fig. 1. Aerial view of the Sanctuary of Demeter Malophoros. The propylon is located in the lower left of the figure. (J. Wilson Myers and E.E. Myers)

vigorous engagement in the larger Greek world, the Selinuntines added in the later fifth century B.C. an exceptional building, a monumental propylon, to their most venerable sanctuary, that of Demeter Malophoros (figs. 1–3).²

² The name “Malophoros” means “apple bearing,” referring to the fruitful role of Demeter as an agricultural goddess; the name is preserved in inscriptions found at Selinous, and the archaeological finds, including miniature altars, votive figurines, and female statuettes support this identification, made in association with the attested cult of Demeter Malophoros at Megara Nisaea (Paus. 1.44.3). In the inscription carved on an anta of the naiskos in Temple G, Demeter is specifically mentioned among the most important deities whom the Selinuntines honored

Like many other sanctuaries of Demeter, this one is situated well outside the city limits, some 800 m west of the acropolis and across the Modione River. Excavations conducted in the late 19th century and in the 1920s revealed the main limits of the sanctu-

with a dedication of gold: *IG XIV*, 268; R. Meiggs and D. Lewis, *Greek Historical Inscriptions*² (Oxford 1989) no. 38; M.T. Manni Piraino, *Iscrizioni greche lapidarie del Museo di Palermo* (Palermo 1973) no. 49; *SEG XXXII*, 933, XXXIV, 970. For cults of Demeter in Sicily and Selinous particularly, G. Zuntz, *Persephone* (Oxford 1971) 97–105; G. Mar torana, *Il riso di Demetra* (Palermo 1985) 51–72; G. Sfameni Gasparro, *Misteri e culti mistici di Demetra* (Rome 1986) 144–55.

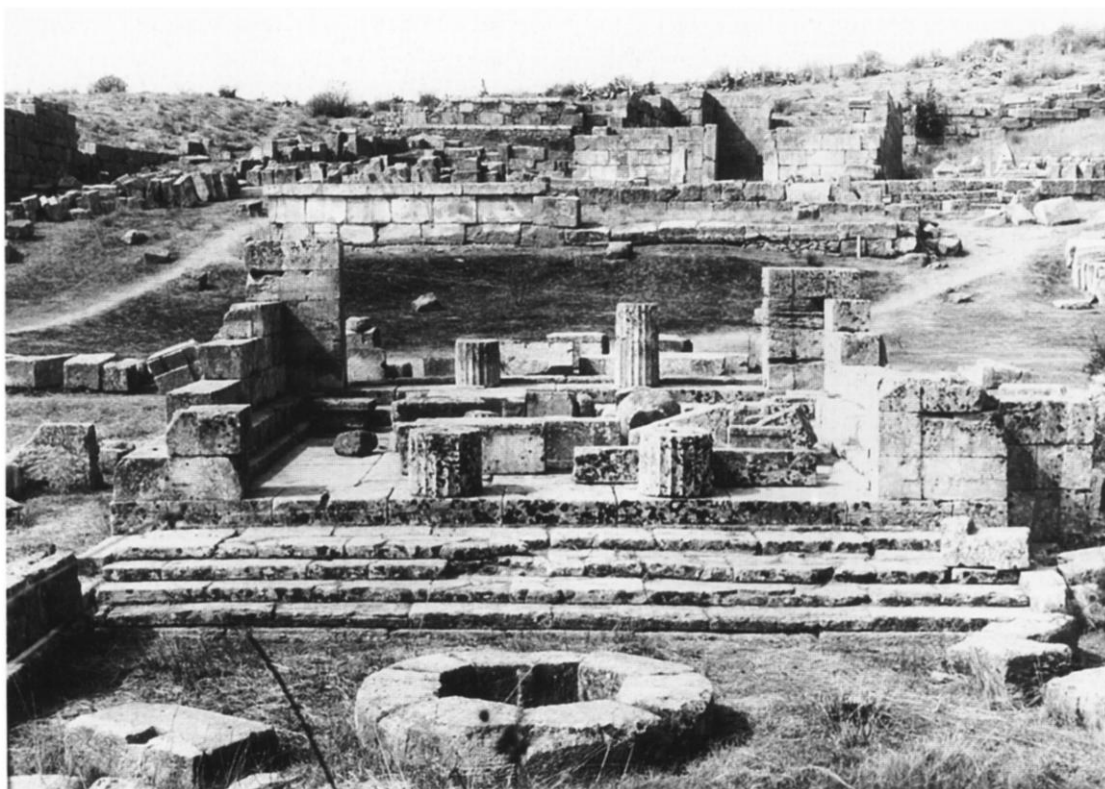


Fig 2. View of the propylon to the Sanctuary of Demeter Malophoros, east side



Fig 3. View of the propylon from the southeast

ary, with adjacent areas dedicated to Hekate and Zeus Meilichios.³ A second precinct, with a temenos wall, megaron-like temple, and large altar, was recently discovered some 50 m to the south of the Demeter sanctuary.⁴ Votive figurines and other finds suggest that a maternal female divinity, probably Hera, was worshipped there.⁵ Further to the north on the other side of the Demeter sanctuary, and close to a spring of pure water, another temple labeled "Temple M" establishes that an important sacral area extended all along this western hill, just as Temples E, F, and G dominate the eastern hill of Selinous.⁶

The earliest structure so far excavated in the Sanctuary of Demeter is a megaron-like temple built in the late seventh century B.C., facing east toward the acropolis. It was replaced in the early sixth century by a second megaron temple, which still stands (fig. 1, upper left). In the later sixth and fifth centuries, the Selinuntines embellished the sanctuary with the addition of a large altar, heavy stone walls around the boundaries, a stoa-like series of rooms facing into the sanctuary, elaborate waterworks for purification rituals, and a propylon (figs. 2–3). After the collapse of Greek control of Selinous in 409 B.C., the Carthaginian victors settled into the city and the mixed population thereafter continued to use the sanctuary.⁷

The proper demarcation of sacred boundaries is an intrinsic and necessary part of any Greek sanc-

tuary; a wealth of epigraphical and archaeological evidence from every part of the Greek world attests to the importance of the temenos.⁸ Monumental entrances, however, do not become common in Greek sanctuaries until the fourth century B.C. and later, and the propylon to the Demeter sanctuary is the only one of its kind so far excavated in Sicily. The propylon was first found under sand dunes by F. Cavallari in 1874, and was given brief notice by Koldewey and Puchstein, and by Hulot and Fougères, and a fuller description was published by Gabrici.⁹ The building is well preserved, with the steps, lower courses of the walls, and lower drums of the columns still in place, and many blocks of the superstructure lie nearby on the site. The propylon and its remaining blocks were measured in 1988 for the actual-state plan and reconstructions presented here.

THE PROPYLON IN SITU

The propylon is in the form of a square building of the Doric type, distyle in antis on two sides, with a flight of low steps leading to the eastern entrance. The foundations of the propylon have not been fully excavated, but we may speculate that they are several courses deep in the sandy soil, at least at the inner, western end where the hillside slopes up gently to the temple. The propylon, oriented northeast-southwest, was set through the temenos wall of the sanctuary, which had already existed for some time,

³ Gabrici, esp. 75–87. For illustrations and discussion of a selection of terracotta figurines, busts, sculpture, and other objects from the Malophoros sanctuary, see N. Allegro, "Le terrecotte figurate," and "Catalogo," in *Lo stile severo in Sicilia* (Palermo 1990) 123–31, 224–27, 230, 286–89, 291, 303–309; and M. Dewailly, *Les statuettes aux parures du sanctuaire de la Malophoros à Selinonte* (Cahiers du Centre Jean Bérard 17, Naples 1992). In more recent excavations and studies of the findings, V. Tusa has found clear ceramic evidence of pre-Greek occupation of the site before its founding in the mid-seventh century, and further, that the Sanctuary of Zeus Meilichios continued to receive offerings during the Carthaginian reoccupation of Selinous in the fourth century B.C., with their own chief goddess, Tanit Pene Ba'al, placed as Zeus's consort: V. Tusa, "Testimonianze fenicio-puniche in Sicilia," *Kokalos* 10–11 (1964–1965) 589–602; Tusa, "Sicilia," in *L'espansione fenicia nel Mediterraneo* (Rome 1971) 175–91; Tusa, "Selinunte punica," *Riv. IstArch* 18 (1971) 47–67; A. Di Vita, "Le stele puniche dal recinto di Zeus Meilichios a Selinunte," *Annuario dell'Accademia etrusca di Cortona* 12 (1961–1964) 235–50; White 335–52. For the cult of Zeus Meilichios, see now Jameson et al. 132–41; I thank M. Jameson for showing me the text of the *lex sacra* and his manuscript before publication.

⁴ V. Tusa, "Sulla 'Missione Malophoros': Nuovi rinvenimenti nell'area del santuario della Malophoros a Selinunte," *SicArch* 17 (1984) no. 54–55, 5–15; S. Tusa et al., "Selinunte, Malophoros: Rapporto preliminare sulla prima campagna

di scavi, 1982," *SicArch* 17 (1984) no. 54–55, 17–58; Parisi Presicce 1984, 19–24, 114–18; Parisi Presicce 1986; S. Tusa et al., "Selinunte-Malophoros: Rapporto preliminare sulla II campagna di scavi," *SicArch* 19 (1986) no. 60–61, 13–96.

⁵ Parisi Presicce 1986; Dewailly (supra n. 3).

⁶ Parisi Presicce 1984; F. Coarelli and M. Torelli, *Sicilia* (Guide archeologiche Laterza, Rome 1984) 102–103; C. Masseria, "Ipotesi sul 'tempio M' di Selinunte," *AnnPerugia* 16 (1978–1979) 63–88.

⁷ Di Vita (supra n. 3); Tusa (supra n. 3); R.J.A. Wilson, *Sicily under the Roman Empire* (Wiltshire 1990) 285. Among the hundreds of lamps found in and near the propylon by the early excavators were many bearing the ligature chi-rho, suggesting that the sanctuary was still used in the post-Constantinian period.

⁸ W. Burkert, *Greek Religion* (Cambridge, Mass. 1985) 84–87; B. Bergquist, "The Archaic Temenos in Western Greece: A Survey and Two Inquiries," in A. Schachter ed., *Le sanctuaire grec* (Fondation Hardt, Entretiens sur l'antiquité 37, Geneva 1992) 109–58.

⁹ Koldewey and Puchstein 82–84; J. Hulot and G. Fougères, *Selinonte: La ville, l'acropole, et les temples* (Paris 1910) 263–71; Gabrici 75–87, with discussion of the earlier excavations, 7–13; the moldings of the propylon are discussed in Shoe 13, 36, 41, 52, 100; some details of its construction are discussed in C. Corgoni et al., *Selinunte I* (Rome 1993) 93–100.



Fig. 4. View of rooms adjacent to the propylon on the north side



Fig. 5. Side of geison block **G15**, with U-shaped channel for lifting and inserts in mutule

as Gabrici's excavations showed.¹⁰ It was the only entrance to the sanctuary, and was aligned so that the center of its axis fell somewhat south of the center of the altar and temple in the sanctuary (fig. 1). Adjacent to the propylon on the south is a precinct prob-

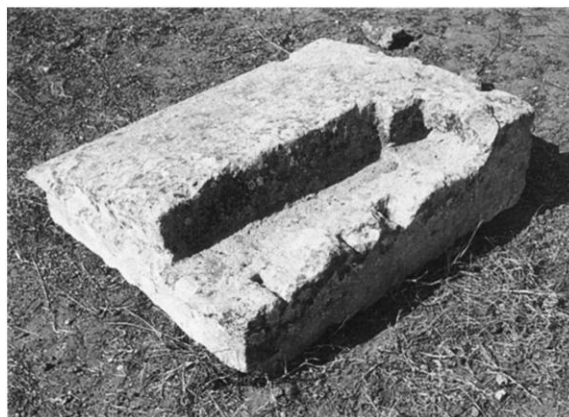


Fig. 6. Top of northwest corner geison block **G1**

ably dedicated to Hekate, identified on the basis of an inscribed anta capital found nearby.¹¹ The north wall of the propylon is contiguous with a series of rooms that face northeast in a stoa-like arrangement, probably constructed after the propylon (fig. 4). Their

¹⁰ Gabrici 74–76, fig. 43 (illustrates part of the foundations), 87–89, and pl. II.

¹¹ For the inscription, Manni Piraino (supra n. 2) no. 53; L.H. Jeffery, *The Local Scripts of Archaic Greece*² (Oxford 1990) 271, 277, no. 41 (*SEG* XXXIV, 971). For Hekate as

a guardian of liminal places, see S.I. Johnston, *Hekate Sotheira* (Atlanta 1990) 21–28. The anta capital is very similar to those of the propylon in form and profile, but the dimensions differ.

purpose is uncertain, but they may have been used for ritual dining.¹² In front of the propylon and directly on its central axis is a circular curbing (fig. 2), 2.48 m in diameter, that has been interpreted as a symbolic bothros or sacral pit, or an echo of the well at Eleusis.¹³

The propylon is constructed from blocks of limestone quarried locally, which would have kept the cost of transportation of the blocks to a minimum.¹⁴ The limestone is somewhat grainy and pitted, and occasionally the builders had to carve separate pieces and insert them into the blocks, e.g., part of a mutule on G10; another geison block (G15, fig. 5) required seven such inserts for the guttae of one mutule. Visible outer surfaces were then covered with a fine white stucco that is well preserved on many blocks and on the south wall of the building.¹⁵ U-shaped channels were cut on many blocks for ropes to lift the blocks up onto the building (fig. 5), and pryholes were cut to receive crowbars for laying and setting the blocks into position. Joining surfaces were usually treated with anathyrosis, and numerous but not all individual blocks of the entablature were clamped with C-clamps, especially at the corners (fig. 6). The overall high quality of the workmanship (despite the soft stone) is demonstrated at every course in the precision of the cutting and the fine detail.

The propylon was entered on the east by a broad flight of six low steps leading to the stylobate, which average 0.375 m deep and 0.133 m in height. The blocks of the upper two steps are missing, and the pryholes for the course below the top step are visible in the plan (fig. 7). The stairs are framed on both north and south ends by low cheeks, which vary in width, 0.285–0.321 m (fig. 3). On the south side,

the cheek is stepped and probably formed part of the support for the wall of the precinct of Hekate, perpendicular to the steps; on the north, the cheek is cut to slope with the steps. The effect of the low, broad flight of steps on the east end is much like a ramp, and it would have made more convenient the leading of sacrificial animals inside the sanctuary. On the west end of the building, an interior step 0.233 m high and ca. 0.45 m deep leads up to the west stylobate (fig. 8). A section of a water channel, which appears to have been added later, is preserved along the outer edge of the west end of the building.

The pavement of the interior of the propylon is well preserved, for only one complete block has been pried out of position, as well as part of an adjacent block. A narrow filler course that underlies the interior step adjacent to the west stylobate is also mostly missing and was composed in part of a coarser poros stone used as underpacking for the step (figs. 7–8); the step blocks are shifted slightly out of position. A low bench, 0.438 m high, including a foot rest 0.15 m high and 0.187 m deep, runs along the inside of the north and south walls. Cavallari, Koldewey and Puchstein, and Gabrici report abundant traces of red and yellow stucco on the benches, and some traces of red stucco are still visible today. In the northwest corner of the propylon, the bench was modified to include a support for a base, presumably for a dedication or statue. Cuttings in the stylobate of the propylon on both east and west ends show provisions for grilles between the antae and the Doric columns, and cuttings in the uppermost drums and in the abaci of the capitals show that the grilles extended to the full height of the columns. The grilles consisted of three sets of double-leafed doors on each end, one for each interstice, and each

¹² Gabrici 87–92 discusses the rooms and suggests a reconstruction based on a Hellenistic model (figs. 50–52); the original temenos wall forms the west side of the series of chambers, and a wall punctuated with pilasters was built facing east. The area was rebuilt at least twice, and several of the blocks of the entablature of the propylon are now immured in a late rebuilding. The early excavators found a great many lamps and terracotta figurines in the room adjacent to the propylon, as in the propylon itself. Remains of sacral meals were found buried inside the sanctuary and especially in the area of the adjoining precinct of Zeus Meilichios, where they may be connected with gentilitia cults: Tusa (supra n. 3); for discussion and bibliography, B. Berquist, "A Particular, Western Greek Cult Practice?" *OpAth* 19 (1992) 41–47. For dining rooms in sanctuaries, see Berquist, "Symptotic Space: A Functional Aspect of Greek Dining-Rooms," in O. Murray ed., *Symptotica: A Symposium on the Symposion* (Oxford 1990) 37–65; and in the

Sanctuary of Demeter at Corinth, N. Bookidis, "Ritual Dining in the Sanctuary of Demeter and Kore at Corinth: Some Questions," in Murray (supra) 86–94; Bookidis, "Ritual Dining at Corinth," in N. Marinatos and R. Hägg eds., *Greek Sanctuaries: New Approaches* (London 1993) 45–61.

¹³ Gabrici 110. It is possible that the circular curbing supported a round altar. For discussion of the general layout of the sanctuary, see M.T. Le Dinahet, "Sanctuaires chthoniens de Sicile de l'époque archaïque à l'époque classique," in G. Roux ed., *Temples et sanctuaires* (Lyons 1984) 147–48.

¹⁴ For the quarries in and around Selinous, see A. Peschlow-Bindokat, *Die Steinbrüche von Selinunt* (Mainz 1990), with earlier bibliography on 13 n. 16.

¹⁵ The stucco was applied in varying thicknesses; on some blocks the stucco can add as much as 0.011 m more to an overall dimension than that given by the bare stone.

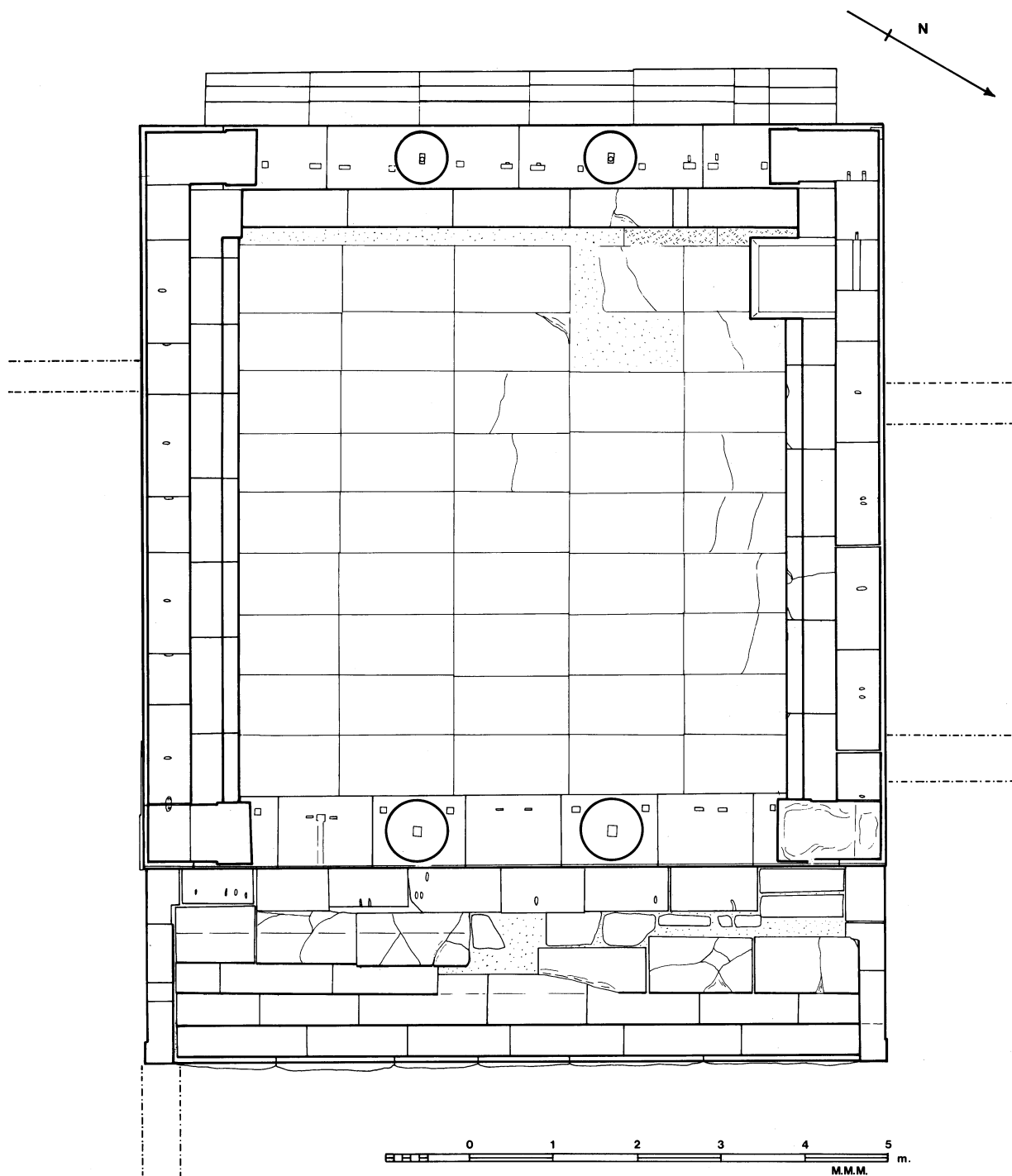


Fig. 7. Actual-state plan of the propylon

could be locked into the stylobate. The grilles were framed by rails, securely braced into the bottom of the antae at all four corners (fig. 8).

The lower-courses of the walls of the propylon are still preserved. The blocks are cut and laid in regular courses of ashlar masonry, most of them 1.215

m long (with occasional variations, 0.84–1.264 m), an average of 0.43 m high and 0.535 m wide. They were clamped with C-clamps near the corners, where they bonded in alternate courses with the return of the antae. The anta of the southwest corner is the best preserved, to five courses. Its face is tapered,



Fig. 8. Stylobate of the west facade, from the southeast

from 0.661 m wide at the bottom (close to the 0.66-m lower diameter of the columns on the west end) to 0.629 m at the topmost-preserved block. The taper continued on to the bottom of the anta capital, now on the pavement beneath the anta, where the width below the moldings is 0.623 m. The southeast anta, preserved only to two courses, has a lower width of 0.762 m, close to the 0.76-m lower diameter of the eastern columns.

One of the striking characteristics of the propylon is that without the ramplike flight of steps on the east end, its plan forms a nearly perfect square, 8.84×8.86 m. This may correspond to a design of 27 Doric feet (DF) to a side, or 3^3 (the unit of measurement seems to have been 0.328 m). The use of a square plan for a propylon is unparalleled, and given its location in the Greek West it is not unreasonable to interpret the play with the geometric

shape and the number 27 as significant and deliberate. Recent studies of temples and temple decoration in the Greek West have pointed to plausible instances of the expression of Pythagorean ratios and number lore. The Temple of Athena at Paestum, built ca. 510 B.C., may have been designed both in plan and elevation to express numbers with Pythagorean significance: 4, 10, and 24.¹⁶ The Temple of Zeus Olympios at Akragas, a giant temple with a unique plan of 7×14 engaged Doric columns, seems to have been designed to have a perimeter of 1,000 DF, as Bell has demonstrated, and in its stylobate a proportion of 13:27.¹⁷ As Bell remarks, the number 27 not only represents a triad of $3 \times 3 \times 3$, but also was thought to have peculiar significance for musical ratios, an idea attributed in antiquity to the fifth-century Pythagorean Philolaos of Croton.¹⁸ In Selinous itself, sculpted metopes of the Late Archaic

¹⁶ R. Holloway, "Architettura sacra e matematica pitagorica a Paestum," *PP* 106 (1966) 60–64; amplified further by N. Nabers and S.F. Wiltshire, "The Athena Temple at Paestum and Pythagorean Theory," *GRBS* 21 (1980) 207–15, with earlier bibliography. For bibliography on all aspects of Pythagoreanism, see L.E. Navia, *Pythagoras: An Annotated Bibliography* (New York 1990).

¹⁷ Bell 368–72.

¹⁸ Bell 369. In frag. A26 (Diels-Kranz) Philolaos is said to have given special significance to the numbers 1, 3, 9, and 27 and the various properties in ratios and musical tones of these numbers; the fragment is accepted as authentic by W. Burkert (*Lore and Science in Ancient Pythagoreanism* [Cambridge, Mass. 1972] 386–400), who points out the unmathematical and unphilosophical characteristics

of the numerological enthusiasm attributed to Philolaos; the fragment is rejected as inauthentic in a convincing, critical reassessment of Philolaos by C. Huffman (*Philolaos of Croton: Pythagorean and Presocratic* [Cambridge 1993] 367–74). Other fragments attributed to Philolaos and argued to be inauthentic by Huffman associate plane geometrical figures and their angles with particular deities: Demeter is associated with the angles of squares (Huffman 381–91). What is important here is not whether the ideas are worthy of Pythagoras and his serious students, but whether these ideas could have influenced the patrons of building projects, as Bell has argued in the case of Theron, the tyrant of Akragas who sponsored the Olympieion, or even simply the architects in charge of design. It would seem that the abstractions and commensurable nature of

and Early Classical periods have also been thought to be expressive of Pythagorean themes, perhaps made public via Empedocles of Akragas, who is said to have given neighborly assistance to Selinous.¹⁹ In this ambience it seems likely that the small propylon to the Malophoros sanctuary may have been designed with special ratios and numbers in mind.²⁰

ELEVATION OF THE PROPYLON

Columns

On each end the stylobate slopes outward slightly, 0.02 m on the east end and 0.005 m on the west end, and the stylobates themselves show slight curvature (ca. 0.015–0.03 m). The difference in height between the center of each stylobate is 0.43 m, necessary because of the sloping site of the propylon. The difference had to be made up under a roof at a single level, with an entablature at a uniform height around the perimeter of the building, and so the discrepancy was taken up in the height of the columns. Consequently the architect chose to make the lower diameter of the columns on the east end larger than that of the western columns by about 15%. The lowermost drums of all four columns are in situ, and the second drum is also preserved in place in the northwest column. On the west end, the lower diameter of the southwest column is 0.656 m (or 2 DF

of 0.328 m) and of the northwest column, 0.657 m; on the east end the lower diameter of the southeast column is preserved to 0.744 m (with no stucco) and the northeast column to 0.756 m.²¹ Gabrici estimates the height of the columns on the west at 3.44 m, on the east, 3.87 m.²²

The effect on a person approaching the propylon from the east of the diminishing diameter in the more distant western columns would have been a heightened perspectival view that would have made the building seem somewhat deeper (fig. 2). Such effects are thought to have been recognized in painting by at least ca. 450 B.C.; Vitruvius credits Agatharchos with interests in optical effects for stage design in Athens (Vitr. 7, praef. 11).²³ Here the perspectival effect may have been incidental to the necessity of varying column proportions under the same roof.

Both eastern capitals are missing, but the two column capitals from the west end are preserved and lie inside the building near the west end (figs. 9–10).²⁴ Their dimensions are given in table 1.²⁵ The ratio of height:width of the abacus is 1:2.18, and that of the upper column diameter to the width of the abacus is 1:1.52 (ca. 2:3). In profile and proportion, the capitals resemble most closely the "Periclean" type developed in Athens during the third quarter of the fifth century B.C.; the correspondence was proven by Coulton in his extensive study of the propor-

Doric elements are well suited for expressing such ideas. For an assessment of changing views and concepts of proportion among architects and architectural historians, see R. Wittkower, "The Changing Concept of Proportion," *Daidalos* 1960, 199–215.

¹⁹ L. Giuliani, *Die archaischen Metopen von Selinunt* (Mainz 1979) 79–80; E. Østby, "The Sculptural Program of Temple E at Selinus," in *Praktika: 12th Congress of Classical Archaeology III* (Athens 1988) 200–208; C. Marconi, *Selinunte: Le metope dell'Heraion* (Modena 1994); for Athenian influence in sculpture, and the metopes of Temple E, see M. Bell III, "The Motya Charioteer and Pindar's *Isthmian* 2," *MAAR* 40 (1995) 14–15, 29–30. Empedocles is said to have saved Selinous from a plague by diverting the course of one of her rivers (Diog. Laert. 7.2.70).

²⁰ For discussion of ratio and number elsewhere in the Greek world, see, e.g., M. Korres, "The Architecture of the Parthenon," in P. Tournikiotis ed., *The Parthenon and Its Impact in Modern Times* (Athens 1994) 78–83; J. Bousquet, "La tholos de Delphes et les mathématiques préeuclidiennes," *BCH* 117 (1993) 285–313; L. Käppel, "Das Theater von Epidauros: Die mathematische Grundidee des Gesamtentwurfs und ihr möglichen Sinn," *JdI* 104 (1989) 83–106; and generally in Greek architecture, P. Kidson, "A Metrological Investigation," *JWarb* 53 (1990) 71–97; Kidson, "Architectural Proportion, before c. 1450," *The Dictionary of Art II* (London 1996) 343–52.

²¹ All four lowermost drums show a small degree of inward inclination, even taking into account the outwardly

sloped stylobate. Koldewey and Puchstein pl. 11 give the lower diameter for the east columns as 0.76 m, for the west, 0.64 m; Gabrici 79–81 gives the lower diameters as 0.756 m and 0.66 m.

²² Gabrici 79–81.

²³ The perspectival effect given by diminishing the diameters of columns was used brilliantly ca. 400 B.C. by the designer of the small stoa in the Sanctuary of Apollo at Delphi, which displayed the offerings of the Arcadians (or of Lysander) on the right side of the Sacred Way, just after the base for the Corcyrean Bull (Paus. 10.9.6, 9). The eight Doric columns have decreasing diameters from east to west, as is evident from the weathered lines of their flutes preserved on the stylobate. The lowest drums were fastened into the stylobate with square empolia-like dowel cuttings exactly like those commonly used in Sicilian temples. For detailed discussion of "refinements" and their interpretation, see H. Büsing, "Optische Korrekturen und Propyläenfronten," *JdI* 99 (1984) 27–73.

²⁴ The west end of the building is more fully represented on the site at every course of the superstructure; it would have been more deeply buried in the slope and apparently was less subject to later scavengers for building material.

²⁵ These dimensions vary slightly from those in Koldewey and Puchstein (Ht. 0.367 m) 83 fig. 58; Gabrici (Ht. 0.365 m) 80; and Mertens (Ht. 0.368 m) 218; in each case one height is given.



Fig. 9. Doric capital A from the west facade of the propylon

tions of 214 Doric capitals.²⁶ This clear borrowing of a type developed elsewhere indicates that the architect of the propylon was well enough informed about architectural styles in Athens that he could design capitals according to those principles (fig. 11a).

For the anta capitals that served as visual brackets for the Athenian-style Doric capitals, however, the architect used a Sicilian type. One anta capital is preserved, now lying just below the southwest anta, to which it surely belongs (figs. 11b, 12). A large-scale shallow hawksbeak is crowned with a vertical fascia, a design that shows characteristics common in the sixth century in mainland Greece, but was also used in fifth-century Sicily, according to Shoe.²⁷ The vertical fascia below the hawksbeak is 0.656 m wide (equal to the lower diameter of the western columns, or 2 DF).

Architrave

The architrave was carefully designed with blocks of three different widths as it served as the transitional element of the entablature, spanning different courses and providing the crucial support for the frieze, geison, and roof. The outer configuration of the blocks is standard, with a regula 0.306–0.308 m wide placed beneath each triglyph, and a taenia 0.046 m high crowning the entire face of the blocks.

²⁶ J.J. Coulton, "Doric Capitals: A Proportional Analysis," *BSA* 74 (1979) 81–153, esp. 91, 93, 102; he began the study with the capitals of the propylon in an intermediate group, but then found that they belonged with the Periclean group. The significance of this study is that it shows that the development of the Doric capital does not follow a slow evolutionary model, but changes abruptly in different times and regions. Coulton concludes that this indicates the importance of proportional rules (which were



Fig. 10. Doric capital B from the west facade of the propylon

The regulae are 0.064 m high, each with six guttae 0.28–0.30 m high and 0.025 m wide, spaced 0.052 m center to center. The backer blocks for the architrave are crowned with a taenia in the form of vertical fascia, 0.10–0.103 m high. The overall height of the blocks averages 0.54 m, with a variation of only 1–2 mm; the blocks of this course were cut with considerable precision and uniformity, especially considering the soft stone. The blocks for the east facade were cut with a bottom width of 0.34 m, with backer blocks of equal width, for a total of 0.68 m. Blocks for the west facade have a bottom width of 0.29 m, and backers of the same width, for a total of 0.58 m. Blocks designed for the north and south sidewalls of the propylon have a bottom width equal to the full depth of the wall, an average of 0.535 m, and were carved with a taenia as a crown on the inside surface, so

Table 1. Dimensions of Column Capitals, West Side

Dimensions	Column A (m)	Column B (m)
Height	0.370	ca. 0.365
Upper diameter	0.527	ca. 0.510
Width abacus	0.807 (stucco)	0.802
Height of abacus	0.150	ca. 0.147
Height of echinos	0.137	ca. 0.133

occasionally modified) for their design (p. 103).

²⁷ Shoe 52 (VII.10). The anta capital bearing a dedicatory inscription to Hekate (usually dated to ca. 450 B.C.) is very similar in design to the anta capital from the propylon, but it is smaller; it may have crowned a door in the wall of the precinct. Gabrici thought that the precinct of Hekate already existed when the propylon was built; possibly the anta capitals of the propylon were deliberately modeled after types that already existed nearby.

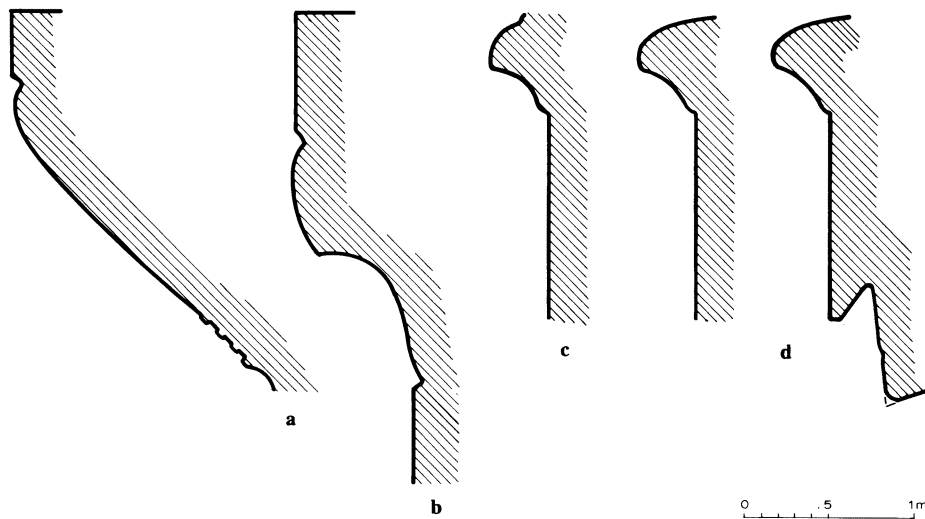


Fig. 11. Profiles of capital and moldings: a) profile, Doric capital B; b) profile, anta capital; c) hawksbeak geison crown, corner block **G2**, front and lateral; d) profile, front of flank geison **G12**

that they continued the molding from the backer blocks of the east and west ends. To these dimensions must be added 0.04–0.058 m for the top width of the course, the depth of the regula and taenia on the front, plus the depth of the crowning taenia on the backer block, which vary from block to block. This sum yields maximum top widths of 0.72–0.738 m, 0.62–0.638 m, and 0.575–0.593 m for the three different sets of architrave blocks.

The architrave is preserved in 14 blocks, representing 36% of the total exterior length of the architrave (ca. 8.60 m) and 43% of its interior length (ca. 7.53 m). The southwest corner block is preserved (fig. 13), three blocks for the sidewalls, four outer blocks of the architrave at the east and west ends, and six of their backer blocks. They may be placed within the reconstruction on the basis of their dimensions, configuration, the position of cuttings for clamps to adjacent blocks on the sides and backs, and in some instances, the pryholes on their top surfaces for the frieze course above.²⁸ The present location of the blocks also provides a general indication of their original position.²⁹ The dimensions of the architrave blocks are given in table 2, and their reconstructed positions in figure 14.

The configuration of the two facades is established by the preserved southwest corner block (**A1**, fig. 13) and the center block (**A7**), which spanned the cen-

tral intercolumniation across the facade. Each corner block had one and a half regulae on the facades and one regula on the side return. This arrangement leaves space for three blocks, each with two complete and two half-regulae. The east facade was designed the same way, in mirror image. The configuration of the architrave over the sidewalls can be reconstructed on the basis again of the southwest corner block (**A1**) and the block adjacent to it over the wall (**A4**, linked here because of the matching



Fig. 12. Anta capital, from southwest anta

²⁸ Weathered lines indicating the placement of the abaci of the capitals could potentially provide further evidence, but the bottom surfaces of many blocks were not accessible.

²⁹ The blocks do not seem to have been moved much

since their original excavation by F. Cavallari, as the photograph of himself (?) and his assistant (?) among the blocks attests (*Bollettino della Commissione di antichità e belle arti di Sicilia* 7 [1874] 1–14, pl. 1).



Fig. 13. Southwest corner blocks of frieze (T1) and back of architrave (A1)

cuttings for the clamp that joined them). The two blocks together included three regulae and two and a half intervals in between (corresponding to the metopes of the frieze); if blocks cut similarly formed the mirror image on the southeast corner, four spaces are left for blocks with one and a half regulae, and one and a half intervals. No such blocks are preserved for the south wall, but two architrave blocks of this

shape and length are preserved from the north wall (A5, A6), and confirm the design suggested here.

Frieze

Originally the triglyph and metope frieze of the propylon presented 12 triglyphs and 11 metopes over each side of the building, for a total of 48 triglyphs and 44 metopes. Of these, 14 triglyphs and 10 met-

Table 2. Dimensions of the Architrave Blocks

Block	Position	Depth (m)	Length (m)	Height (m)
A1	southwest corner (west (wall)	0.633 0.538	0.946 0.597	0.545 0.545
A2	west facade	0.290	2.275	0.540
A3	west, backer	0.299	2.300	0.540
A4	south wall (likely)	0.540	1.277	0.539
A5	north wall (likely)	0.545	1.219	0.540
A6	north wall (likely)	0.537	ca. 1.210	0.523
A7*	west facade	0.289	2.272	0.538
A8	east, backer	0.336	2.278	0.540
A9	east facade	0.340	max. 1.682	0.540
A10	east, backer	0.342	2.371	0.541
A11	east, backer	0.334	max. 0.720	0.523
A12	west, backer	0.292	max. 0.832	max. 0.498
A13	west facade	0.290	max. 0.782	0.537
A14	west, backer	0.285	max. 0.890	0.540

* A7 represents center block, in two joining pieces.

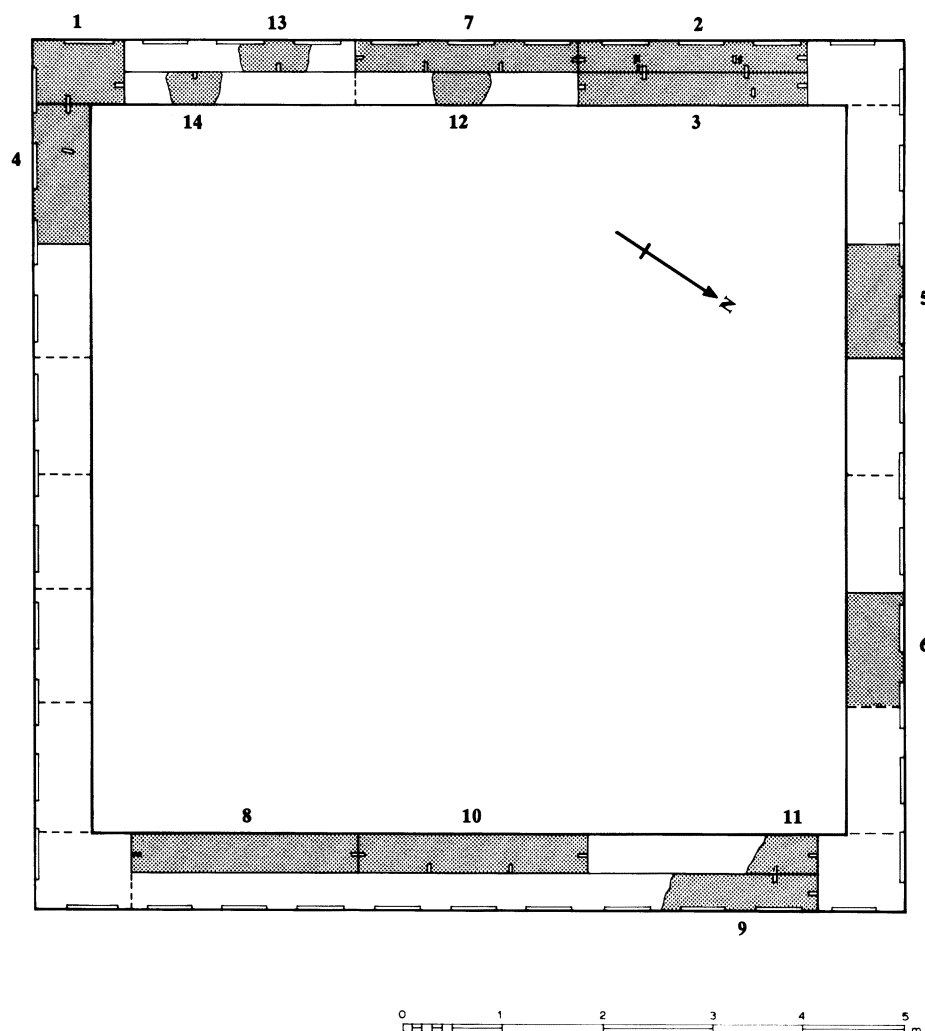


Fig. 14. Reconstruction of the architrave blocks

opes survive, carved on eight blocks, or about 26% of the frieze. Most of the blocks of the frieze were blocks of three units, either triglyph-metope-triglyph (TMT) or MTM, but there is indirect evidence for blocks of two units. Two corner blocks survive, the southwest corner (**T1**, TTMT), now on the ground close to its original position (fig. 13), and the north-

east corner (**T2**, MTT), now on the east steps below the northeast corner. In addition, there are four blocks with the configuration TMT (one restored), and two blocks with the configurations MTM. Descriptions are given in table 3, with the widths of the metopes and triglyphs.

A reconstruction of the frieze course is possible

Table 3. Dimensions of the Frieze Blocks with Widths of Triglyphs and Metopes

Block	Position	Depth (m)	Widths of Triglyphs (T) and Metopes (M) (m)
T1	southwest corner	0.411, 0.452	TTMT: T(0.285) T(0.301) M(0.445) T(0.302)
T2	northeast corner	0.394, 0.483	MTT: M(0.458) T(0.322) T(0.307)
T3	west facade	0.389	TMT: T(0.304) M(0.451) T(0.302)
T4	west facade	0.375	MTM: M(0.462) T(0.302) M(0.470)
T5	east facade	0.422	MTM: M(0.474) T(0.302) M(0.462)
T6	east facade	0.421	TMT: T[0.288] M(0.447) T(0.301) (broken)
T7	north wall	0.466	TMT: T(0.304) M(0.447) T(0.301)
T8	north wall	0.435	- MT: - M[0.423] T[0.292] (frag.)

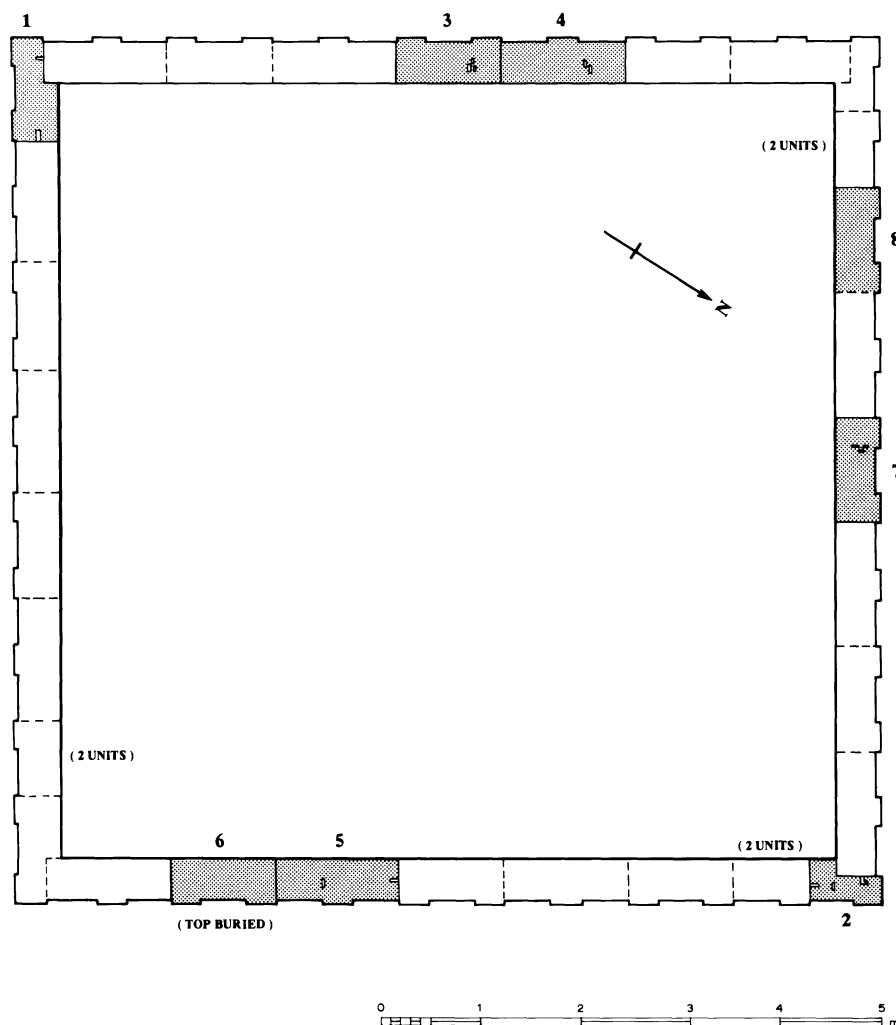


Fig. 15. Reconstruction of the frieze blocks

on the basis of the eight remaining blocks, and each can be restored to its original position with a high degree of probability (fig. 15). The position of the two corner blocks is secure, since they were found near their respective corners. Their lengths and configuration help establish the system of joining for the rest of the frieze. The widths of the blocks vary according to whether they were over the east facade (ca. 0.42 m), the west facade (ca. 0.38 m), or the walls (ca. 0.45 m). Further evidence is provided by the pryholes on the top surfaces of the architrave blocks for shifting the frieze blocks above into position; this in some instances provides the length of the frieze course. Similarly the pryholes on the top surfaces of the frieze blocks themselves can be related to the reconstruction of the geison course, which is much better preserved. In the three courses of the entablature, no two vertical joints should occur immediately above or below each other, to ensure that the joining would be staggered within the three levels. Hence the three reconstructions are necessarily inter-

dependent. As with the reconstruction of the architrave, the findspots of the frieze blocks are respected as much as possible; no block is restored to a distant position. The two preserved corner blocks provide the models for restoring the two missing corner blocks: on the southeast, a block with its length over the south wall is restored (TMTT), and on the northwest, a block with its length over the north wall is restored (MTT).

The frieze consisted primarily of blocks of three units (MTM or TMT), but on the south, east, and north sides one block of two units is restored to make up the needed number of triglyphs and metopes without using longer blocks of four units, for which there is no evidence. Indirect evidence for the actual placement of a block of two units, adjacent to the northeast corner, is given by the position of the pryholes on the architrave block below it (A9). With the northeast corner in place and a block of two units restored adjacent to it (MT), there remains space on the east side for six blocks of three units each, up to the south-

east corner, which would have included only the corner triglyph for the east side. The east side, then, was designed with the following scheme: [TMT]T, MTM, TMT, MTM, TMT, MTM, TMT, MT, MT[T]. Two preserved blocks, **T5** and **T6**, are positioned near the south side because of their findspots on the south side and east of the propylon, and because of pryholes for the geison course above them. The position of **T5** is secure, **T6** less so as its top surface is buried.

The frieze of the west side has a more elegant system with seven blocks of three units, because it is framed by the two single triglyphs of the corner blocks: [MT]T, MTM, TMT, MTM, TMT, MTM, TMT, MTM, T[TMT]. Two preserved blocks, **T3** and **T4**, are restored to central positions in the frieze because of their findspots and pryholes for the geison course above them. The position of **T4** is certain, but **T3** possibly could have been set on the north side of **T4** rather than its south side. It is restored here in the southern position because it now lies just south of the center of the west facade, opposite the southwest column.

The frieze of the south side is represented by only one block, **T1** (fig. 13), the southwest corner (TTMT). Its position is confirmed by the location of pryholes for it on the top surface of the architrave block below its east end, **A4**. With the southeast corner restored in mirror image to the southwest corner (TMTT), the entire frieze would have had the following configuration: [T]TMT, MTM, TMT, MTM, TMT, MTM, TM, TMT[T]. Because of the jointing of the geison course above, and the principle that a joint should not fall over a joint, the block of two units can only have been positioned adjacent to the southeast corner.

For the northwest corner, a block like the northeast corner is restored, with its length over the north wall. (If a longer block had been used, like that of the southwest corner, then a block with only a single metope would have been needed, which would have been too small for secure jointing.) Adjacent to the corner block would have been a block of two units (MT), and thus the entire frieze would have had the following configuration: [MT]T, MTM, TMT, MTM,

TMT, MTM, TMT, MT, MT[T]. Except for the return of the corners, this is identical to the arrangement on the east facade. Two preserved blocks, **T7** and **T8**, are restored to this side on the basis of their dimensions and findspots: **T7** is now lying inside the propylon immediately below its presumed position, and **T8** lies north of the northeast corner. Their assigned positions are the most likely ones, but are not certain.

The average width of an enclosed triglyph (fully preserved) is 0.302 m, while the average width of an end triglyph is 0.303 m. The average width of the open metopes is 0.467 m, for the adjacent triglyphs overlapped them by about 0.02 m. The four preserved enclosed metopes average 0.448 m. The ratio of the widths of the elements of the frieze is thus about 2:3, and a restored length calculated per side of ca. 8.607 m would indicate an inward inclination of the frieze course of ca. 0.05 m on each side. The height of the blocks of the frieze course ranges from 0.525 to 0.54 m, with an average of 0.53 m, close to the height of the individual wall blocks, and nearly equal to the height of the architrave (0.54 m). The full height of the entablature, then, is 1.07 m, above columns with a height of 3.44 m on the west, for a proportion of 1:3.2, and columns 3.87 m high on the east, for a proportion of 1:3.6.

The depth of the frieze blocks varies according to their positions, ca. 0.45 m for those over walls, ca. 0.42 m for those on the east facade, and ca. 0.38 m for those on the west facade. When these dimensions are compared to the widths of the architraves of 0.535, 0.68, and 0.58 m (without projecting moldings), it is clear that a "shelf" for the wooden ceiling of the propylon was provided, with a minimum width of 0.085 m over the wall blocks, 0.27 m over the east architrave, and 0.205 m over the west architrave. An alternative to the placement of the ceiling along the "shelf" thus created would be the insertion of backer blocks to the frieze. No backer blocks for the frieze exist on the site, however, nor were any found or mentioned by Koldewey and Puchstein or Gabrici.³⁰ Given the narrow width of a hypothetical backer course, it seems preferable to reconstruct the ceiling at this level.³¹

³⁰ Koldewey and Puchstein 83 fig. 58 illustrate a section presenting a mixture of blocks belonging to the east and west facades, but with no backer block for the frieze; Gabrici 83–84 does not discuss the frieze in detail or provide a section.

³¹ Fragments of four terracotta slabs found near the propylon are discussed by E. Van Buren: *Archaic Fictile Revetments in Sicily and Magna Graecia* (London 1923) 60, 163, no. 3, with earlier bibliography; she dates them to the sixth or fifth century B.C., and describes them (163) as follows: "Fragmentary slabs with figures in relief. One consists of

a projecting lower border forming the ground upon which are the bare feet of two persons walking to right. In front of them is the leg of a third standing figure. Another fragment shows a man, from waist to thigh, in impetuous movement to right. He wears a short chiton with wavy folds. A third bit contains only part of an arm and hand which grasps the right arm of another figure clad in a chiton with short sleeves. The fourth slab has the head of a Gorgon." Van Buren suggests that they may have been metopes, yet so far no building has been found near the propylon to which exterior terracotta metopes could be assigned.

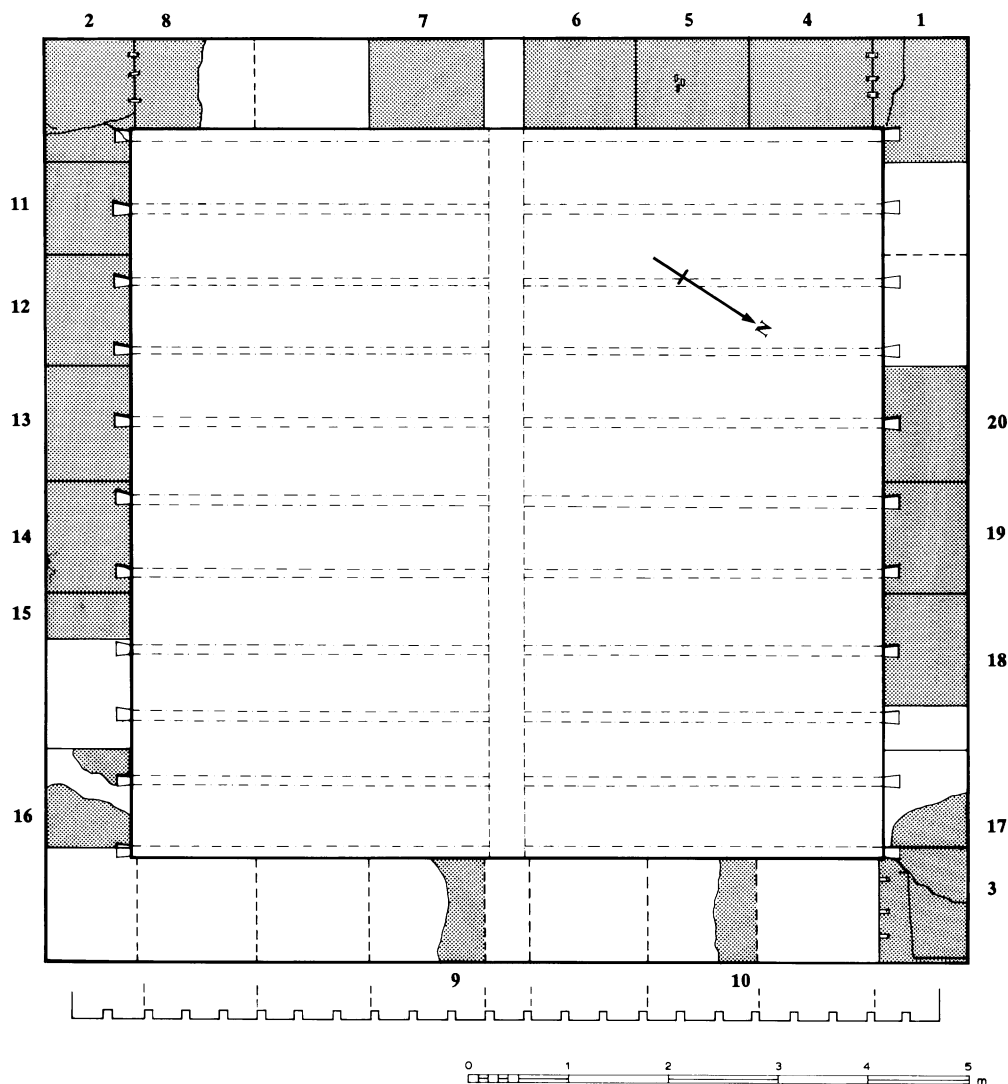


Fig. 16. Reconstruction of the geison blocks

Geison

About 64% of the perimeter of the geison of the propylon is preserved, in 20 blocks, of which three have been “joined” on paper from fragments found apart. Three corner blocks, seven blocks from the horizontal geison, and 10 blocks from the flank geison can be assigned positions within the course (fig. 16). Distinguishing characteristics include the height of the blocks, which differed slightly between the horizontal and flank geison, the presence of cuttings for the beams of the roof, found only on the flank blocks, cuttings for clamps, pryholes for the tympanon, and most importantly, the configuration of the

mutules and viae on the soffit of the overhang of the geison (fig. 17). Most of the blocks have U-shaped channels cut into their sides, for lifting with ropes (fig. 5). C-clamps were used only at the corners, for the corner blocks and those contiguous to them on the horizontal geison. The front overhang of the blocks is crowned with an unusual hawkbeak molding, an eclectic new combination of forms (fig. 11c-d).³²

Most of the blocks are cut with three mutules ca. 0.306 m wide and three viae ca. 0.072 m, for a total length of ca. 1.135 m. These figures are averages, for the actual mutules vary, 0.302–0.335 m, and the

³² Shoe 36, 41 (IV.110); Shoe points out the unusual shape that could be archaic, but actually forms a new combination of curves, and she comments (37) further on

Selinuntine profiles in general: “call it eclecticism, provincialism, or what you will, no form is ever a direct copy of a Greek form.”



Fig. 17. Typical intermediate flank geison block (**G18**)

viae, 0.069–0.076 m. The total length of the geison per side would have been about 9.176 m. On this building, the joints between the geison blocks usually fell at the junction between a mutule and a via, but on the corner blocks and those adjacent to them, the joint falls within a mutule, usually in the center. This then allowed a regular sequence of standardized blocks to be set from each corner toward the center of the sides (fig. 16). On the two facades, the center position was occupied by a short block with one mutule and two viae (neither block is preserved, but blocks of that length are required to accommodate the other preserved blocks). The two flanks also require a shorter block, of which one is preserved (**G15**, fig. 5), positioned on the south side east of center, and a fourth short block is also restored on the north side. The shorter blocks were probably the last to be laid into position on each side by the masons. Because they end in a via on each side, adjacent blocks must end in mutules; hence the sequence of mutules and viae alternates, and on this basis it is possible to assign the blocks of each side to a general area, left or right of the shorter block.

An important factor in the reconstruction of the flank geison is the spacing of the cuttings that received the roof rafters at the backs of the geison blocks. These cuttings are ca. 0.13–0.153 m wide at the back edge and slightly wider at their full depth, so that the wooden beams could be keyed into position. The cuttings slope down slightly into the geison blocks. They were spaced on average 0.61 m apart, for a total of 11 sets of rafters across the propylon. The rafters were supported at their peak by a large crossbeam that ran the full length of the propylon and was set into the blocks of the tympanon (fig. 18). The sockets for the rafters are carefully spaced but



Fig. 18. Block of tympanon, with cutting for central beam

otherwise irregularly finished, and the backs of the geison blocks were not meant to be seen, as they would have been concealed by the horizontal wooden ceiling supported by the backers of the architrave course.

Both corner blocks of the geison, **G1** and **G2**, are preserved from the west facade of the propylon. **G1** was clamped in three places to the adjacent block of the horizontal geison, **G4**. Part of the slope for the support of the raking geison is integral with the top surface of the corner block (fig. 6). The southwest block, **G2** (fig. 19), was also clamped in three places to the adjacent block, **G8**. Block **G5** is set next to **G4** because of the pryholes for the tympanon above, which can fit only in this position. Because of the configuration of the mutules and viae on its undersurface, the only space left for **G6** is the next adjacent position. Block **G7** could fit either of the two remaining spaces south of the center.

Only two fragmentary horizontal geison blocks can be assigned to the east facade, **G9** and **G10**, and their positions can only be given generally as left or right of center. The northeast corner block, **G3**,



Fig. 19. Bottom of southwest corner geison block **G2**

is preserved in two pieces and, like the corners on the west facade, was clamped to the adjacent block of the horizontal geison, which is now missing. The design of its top surface is identical to that of the corner blocks on the west end, with an integral sloping element for the support of the raking geison.

On the south side of the propylon, the geison is well preserved, and lacks only the southeast corner and one other intermediate block. Blocks **G11** and **G16** are securely restored to positions adjacent to the corners because each has a partial mutule on one end, to be completed by the partial mutules of the corner blocks. The remaining blocks are given positions according to the cuttings for roof beams and the configurations of their mutules and viae; each has a secure position (**G12**, **G13**, **G14**, and the shorter block, **G15**).

Four intermediate flank blocks are assigned to the north side between the two corner blocks **G3** and **G1**. Block **G17** is fragmentary and its position here is uncertain. Blocks **G18**, **G19**, and **G20** are linked by the configuration of mutules and viae on their undersurfaces (all have to be placed to the west of the shorter block), and by the cuttings for rafters, but the sequence and position within the course is not fixed. They are shown here in positions that are the optimum for regular spacing of the rafters (fig. 16).

Two blocks of the raking geison are now lying against the north side of the propylon at the west end. They are cut from a softer limestone than that used for other blocks, and are finely stuccoed. Their overall width is 0.791 m, with a resting surface of 0.511 m and an overhang of 0.28 m. The soffit bed molding is an ovolo, and the geison is crowned with a hawksbeak, dated by Shoe to the late fifth century B.C.³³ Many rooftiles from the propylon were found by Cavallari in his excavation, but he gives no precise description of them.³⁴

DATE OF THE PROPYLON

The propylon has been dated almost unanimously to the later fifth century B.C.³⁵ Although the profiles

of the moldings are eclectic and archaistic, they are dated to the later fifth century by Shoe, and this date is supported by the profile of the Doric capitals, which is clearly modeled on the Periclean type developed in Athens during the third quarter of the fifth century (figs. 11 and 20).³⁶ The more extensive use of clamps than is common in Sicily, the precise workmanship, and the careful cutting and joining of the blocks also indicate a date in the fifth century. In form and proportions, the propylon has its closest affinity to the temple at Segesta in Sicily, and Periclean Doric buildings of the same period. Mertens has demonstrated the close relationship of the temple at Segesta and Athenian Doric buildings, especially the small temple of the Athenians on Delos, itself modeled after the Parthenon.³⁷ The propylon at Selinous, though much smaller in scale, is most closely related to the temple at Segesta in the proportions of the entablature: whereas the overall height of the columns in earlier temples in Western Greece is about 1:3, both the west facade of the propylon and that of the temple at Segesta have a proportion of about 1:3.2, lighter and closer to the proportions characteristic of temples in Athens. The proportion of the east facade of the propylon, 1:3.6, creates an even lighter effect. Certainly the propylon was constructed before the sack of Selinous by Carthage in 409 B.C. Given its various characteristics, the propylon should be dated to ca. 420 B.C.

OTHER PROPYLA

Within the orbit of mainland Greece, a close parallel to the propylon at Selinous is the propylon of the Sanctuary of Poseidon at Sounion.³⁸ Though this propylon, also distyle in antis, is somewhat simpler in design and lacks a paved interior, the scale and particularly the profiles of the capitals are clearly related to those of the propylon at Selinous. Another later fifth-century propylon at Eleusis, reconstructed by Giraud, is also an important parallel since it led to the Sanctuary of Demeter.³⁹ Its marble Doric facade, distyle in antis, with a widened central inter-

³³ Shoe 13 (IV.12, XVI.4). Ominously, the smaller piece of the raking geison shows cuttings from a modern saw, which helps to explain why so little of this course is preserved.

³⁴ Cavallari (supra n. 29); Koldewey and Puchstein 83.

³⁵ A dissenter is W.B. Dinsmoor, who suggests a date in the Hellenistic period without specifying why: *Architecture of Ancient Greece*³ (New York 1975) 284–85. He comments on the influence of the Athenian Propylaia on this propylon, but evidently he lowers the date because the frieze has three metopes and two triglyphs over each intercolumniation. That very configuration, however, was already used in the center intercolumniation of the Athenian Propylaia

and may have been used by its predecessor: W.B. Dinsmoor, Jr., *The Propylaia to the Athenian Akropolis I: The Predecessors* (Princeton 1980) pls. 15–16.

³⁶ Shoe 13, 36, 41, 52, 100; Coulton (supra n. 26).

³⁷ Mertens 179–83, 220–26.

³⁸ J. Travlos, *Bildlexikon zur Topographie des antiken Attika* (Tübingen 1988) 406–407, 415 ill. 519, s.v. Sounion (the propylon is dated by Travlos to the period of the Temple of Poseidon). W.B. Dinsmoor, Jr., dates the propylon after the Propylaia on the Acropolis (post-432): *Sounion* (Keramos Guides, Athens 1974) 25–28.

³⁹ D. Giraud, *Ελεύσις: Η Κυρία Είσοδος του Ιερού της Ελευσίνος* (Athens 1991) 57–85.

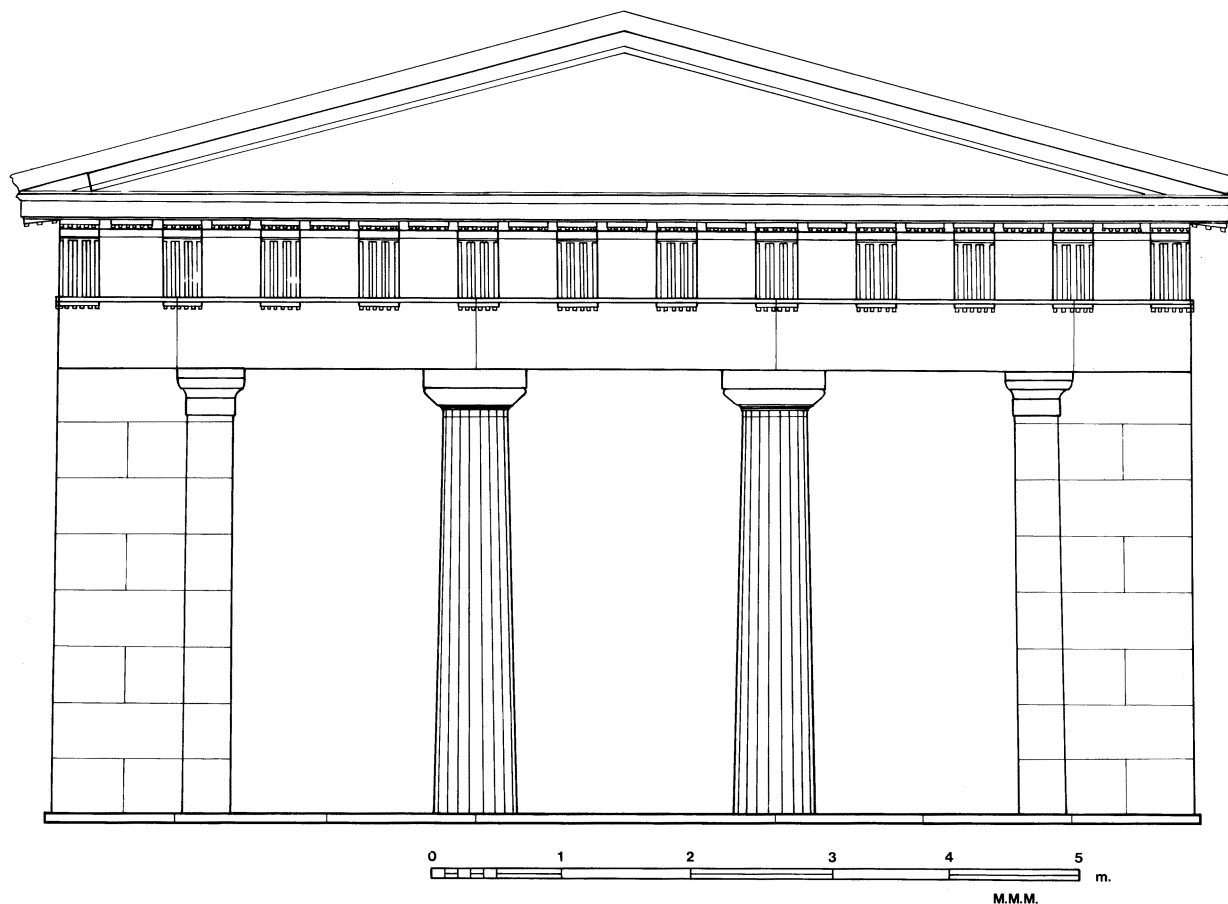


Fig. 20. Elevation of the west facade of the propylon

columniation, served as a decorative entrance to the fortification wall of the sanctuary. An anta capital helps provide a date in the later fifth century.⁴⁰ Although the propylon at Eleusis is not a complete, freestanding building, its facade as reconstructed by Giraud is similar to that of the propylon to the Malophoros sanctuary. Given the other Athenian associations recalled in the Selinuntine propylon, it seems possible that its architect knew of the Eleusinian gateway and may have wished to evoke the same monumentality for the Selinuntine Sanctuary of Demeter. The anonymous architect of the propylon at Selinous was familiar with Athenian technical practices and Athenian profiles for Doric capitals and

moldings, and yet chose proportions in the plan of the building that have Pythagorean associations. A similar combination of interests—Sicilian and Athenian—is expressed in the design of the temple at Segesta.⁴¹

EMULATION AND INTERNATIONALISM IN ARCHITECTURAL DESIGN

Older surveys of Greek architecture tend to emphasize a presumed superiority and dominance of ideas developed in mainland Greece, and give less attention to the achievements of the Greek West and the interconnections between regions.⁴² In this now outdated (and Athenocentric) perspective, the so-

⁴⁰ Giraud dates the anta capital, and the propylon, to 437–431 B.C., primarily on the basis of the close similarity of the anta capital to those of the Temple of Nemesis at Rhamnous, now to be dated to ca. 430–420 B.C.: M.M. Miles, "A Reconstruction of the Temple of Nemesis at Rhamnous," *Hesperia* 58 (1989) 226–35.

⁴¹ Mertens 179–83.

⁴² Dinsmoor 1975 (supra n. 35) 75–112 characterizes the temples in the Greek West as "provincial," "backward," "peculiar," and "barbaric," e.g., "As we proceed westward among

the colonies we find even more emphasis on the tendency toward ostentation, accompanied however by a certain amount of provincialism or 'cultural lag' and also, especially on the Italian mainland, by barbaric distortions resulting from the intermixture not only of colonists of various origins but also of native taste" (p. 75). G. Gruben's *Die Tempel der Griechen*² (Munich 1976) and A.W. Lawrence's *Greek Architecture*⁴ (rev. by R.A. Tomlinson, New Haven 1983) are somewhat less critical of architecture in the Greek West.

called colonies are viewed as dependent on the mainland for cultural inspiration and artistic "progress," with the result that emulation in architecture is thought to occur only in the areas deemed peripheral to the mainland of Greece.⁴³ Moreover, the simplistic biological model implicit in standard histories of Greek architecture (birth, growth or "rise," culmination, decadence, wherein the Parthenon represents the greatest evolutionary achievement with all predecessors regarded as merely experimental and everything built later as decadent) no longer seems adequate for interpreting an architectural style of such duration and impact as the Greek, and may obscure the intended significance of variations in design. Increasingly, architectural historians are recognizing "internationalism" in the design and details of Greek architecture, while the old notions of "colonial" or "provincial" design are falling away as buildings are more thoroughly studied.⁴⁴

We should expect the design of temples (an inherently conservative artistic medium in the Greek world) to recall that of their predecessors, and in some instances they do so conspicuously. "Emulation" in Greek temples ranges from the adoption of closely similar external details, such as the profiles of moldings or capitals or carved ornament, to the occurrence of similar technical devices, such as the placement and frequency of the use of clamps and dowels or the design of the woodwork, and may include the appropriation of larger concepts in the design, such as identical proportions, or more general similarities in the plan or elevation of the buildings. Evidence for emulation of characteristics previously con-

centrated in one region found in a temple of a quite different region may fairly be considered an example of internationalism, and while this begins as simple borrowing in the Archaic period, emulation accelerates in the fifth century, when contact within areas of the Mediterranean became more frequent and intense, and when certain buildings acquired special prestige. Building a temple was a major, costly, communal project, yet builders and their patrons became receptive to ideas from other regions. That architects, sculptors, and masons traveled from one area to another is well documented in literary and epigraphical evidence for the fifth and fourth centuries; they must have traveled for their own education and for commissions.⁴⁵ The principal conduits of diffusion, however, must have been the Panhellenic sanctuaries, especially those at Delphi and Olympia, and the principal motives, the admiration and rivalry fostered in such splendid settings.

The participation of Western Greek cities in the sanctuaries at Delphi and Olympia is manifest archaeologically in the treasuries, military trophies, and the bases for statues commemorating athletic victories and bursts of prosperity.⁴⁶ Architectural remains, including the foundations of treasuries and the architectural terracottas for them, provide conclusive evidence for Western Greek buildings in the sanctuaries at least as early as the first half of the sixth century. The roofs for these buildings were either imported from the West, or they were manufactured nearby with imported molds.⁴⁷ This practice in the Archaic period clearly shows awareness of distinctive regional styles of architectural deco-

⁴³ For a discussion of the problems of terminology, and the word "colony" in particular, see M.I. Finley, "Colonies—An Attempt at a Typology," *Transactions of the Royal Historical Society* 26 (1976) 167–88; for ancient views of new foundations, see C. Dougherty, *The Poetics of Colonization* (Oxford 1993).

⁴⁴ This discussion is based in part on a paper given at the Annual Meeting of the AIA in 1990: M.M. Miles, "Panhellenic Exchange of Architectural Ideas," *AJA* 95 (1991) 298 (abstract). "Internationalism" in sculpture is discussed by B. Ridgway, *Severe Style* (Princeton 1970) 6–8; in architecture, J.J. Coulton, "The Parthenon and Periklean Doric," in E. Berger ed., *Parthenon-Kongress Basel* (Mainz 1984) 40–44; B.D. Wescoat, "Some Architectural Evidence for Sources and Program of the Athena Temple at Assos," in *Praktika* (supra n. 19) 215–21; B.A. Barletta, "An 'Ionian Sea' Style in Archaic Doric Architecture," *AJA* 94 (1990) 45–72; N.L. Klein, "Evidence for Regional Building Practices and Western Greek Influence on Roof Construction in the Archaic Period," *AJA* 96 (1992) 364–65 (abstract).

⁴⁵ A. Burford, "The Economics of Greek Temple Building," *PCPS* 191 (1965) 21–34 emphasizes the international character of traveling architects and crews documented

in ancient sources. J.J. Coulton, "Greek Architects and the Transmission of Design," *Architecture et société de l'archaïsme grec à la fin de la République romaine* (CEFR 66, Rome 1983) 453–70 emphasizes the role of books or manuals such as those written by Iktinos (and Karpion) and Theodoros of Phokaia.

⁴⁶ B. Pace, *Arte e civiltà della Sicilia antica* 3 (Milan 1945) 723–31 provides a basic list of dedications known from literary and epigraphical sources. For early history, see I. Malkin, *Religion and Colonization in Ancient Greece* (Leiden 1987) 17–91; and C. Morgan, "The Origins of Panhellenism," in Marinatos and Hägg (supra n. 12) 18–44. Political implications are discussed by A. Hönl, *Olympia in der Politik der griechischen Staat* (Bebenhausen 1972); and K. Adshead, *Politics of the Archaic Peloponnese* (Hampshire 1986). The relationship between the Greek West and the Panhellenic sanctuaries was the subject of a conference at Taranto in 1991: *Atti del XXXI Convegno: La Magna Grecia e i grandi santuari della madrepatria* (Taranto 1996).

⁴⁷ M. Mertens-Horn and L. Viola, "Archaische Tondächer westgriechischer Typologie in Delphi und Olympia," *Hesperia* 59 (1990) 238; N. Winter, *Greek Architectural Terracottas* (Oxford 1993) 288–99.

ration as a point of pride and a form of display in an international setting. During the Archaic period, the architects from cities in the Greek West contributed ideas to the mainland, such as the use of carved metopes in the friezes of Doric buildings.⁴⁸

After the Battle of Himera, supposedly won on the same day as the Battle of Salamis in 480 B.C. (Hdt. 7.166), the patronage of Western Greek cities at Delphi and Olympia escalated, and both in mainland Greece and the Greek West the two victories stimulated new construction in city sanctuaries as well as new offerings in the Panhellenic sanctuaries. In the context of this intensified sense of a wider Greek community, newly triumphant over foreign menace, artistic and architectural ideas could be discussed, challenged, and adapted. Two major temples constructed in the quarter-century that followed provided new inspiration in architectural forms that spread widely across the Greek world: the Temple of Zeus at Olympia and the Temple of Apollo on Delos, the latter serving as an exemplar in Athens for the Attic Doric style of the Periclean period. The impact these temples had on subsequent buildings serves as an illustration of the increasing internationalism in Greek architecture of the fifth century, which spread also to Selinous in Sicily, and is manifest in the propylon to the Demeter Malophoros sanctuary.

Graced with lucid proportions and superb sculp-

ture, and as a large and imposing presence in one of the two chief Panhellenic centers, the Temple of Zeus at Olympia must have had a profound impact, especially in the Western Greek cities, whose citizens were always avid participants in the Olympics. They were now even more wealthy with war booty after defeating Carthage, and were eager to continue their impressive building programs of the sixth century.⁴⁹ Several temples built toward the middle of the century are thought to show the influence of the Olympia temple, foremost among them Temple E at Selinous and the second Temple of Hera at Paestum.⁵⁰ The Hera temple, like the Temple of Zeus, is a "pure" Doric building, with none of the Ionicisms characteristic of Western Doric.⁵¹ Similar borrowings from the Olympian design have been noted at Agrigento in the Temples of Juno and Concord and in Temple A at Selinous. Libon of Elis won admirers in the Greek West, but he himself may have been trained in the West, since certain technical features of the Olympia temple, such as the design of the geison course, are distinctively Western Greek in detail.⁵²

The Temple of Apollo on Delos was probably begun after 475, coinciding with the start of the Delian League, whose treasury was to have been kept on the island, presumably in this temple, and may have served as the meeting-place of the League (Thuc. 1.97).⁵³ In Courby's thorough publication of the

⁴⁸ J. de la Genière, "À propos des métopes du Monopptère de 'Sicyone' à Delphes," *CRAI* 1983, 158–71; G.N. Szelega, "The Composition of the Argo Metopes from the Monoppteros at Delphi," *AJA* 90 (1986) 297–305.

⁴⁹ The two temples in Sicily built immediately after Himera, the Temple of Athena in Syracuse and the Temple of Victory at Himera, include in their plans an opisthodomos, which had been an integral part of temple plans much earlier in many mainland temples. But they are still primarily Sicilian creations in design and detail, as are the two giant temples, Temple G at Selinous and the Temple of Zeus at Agrigento, also built or continued soon after Himera.

⁵⁰ Temple E is very slightly narrower and longer than the Temple of Zeus, with an extra column on the flanks to accommodate an opisthodomos as well as an adyton, and the cella is placed symmetrically within the peristyle of 6 × 14 columns. There is less emphasis on the east end, which had been traditional in Sicily, and the sculpted metopes are placed over the pronaos, just as in the Temple of Zeus at Olympia (yet already in the sixth century Temple C at Selinous had metopes over the pronaos). The points of adaptation to the norm as expressed at Olympia are well known (e.g., Gruben [supra n. 42] 284–88), yet it should be noted that Sicilian requirements for cult are present, such as the adyton and the pair of interior stairs, and Sicilian inventiveness is not suppressed: the returns of the antae on all four corners of the cella culminate in tetraglyphs.

⁵¹ This temple includes (for the first time in the Greek West in a building of this scale) a double interior colonnade of superimposed columns. The front columns have been slightly thickened, as at Olympia. An interior staircase leading to the attic was included (a Sicilian feature), and the architect experimented with the fluting, using 24 flutes for the outer columns, 20 and 16 for the interior columns. That the Temple of Zeus at Olympia was influential in its design was observed long ago (discussed by Gruben [supra n. 42] 248–55; and Mertens 193–95).

⁵² Klein (supra n. 44); N.L. Klein, "Western Greek Influence on Mainland Greek Roof Construction in the Archaic Period," *Hesperia*, forthcoming. In addition to the technical details discussed by Klein, it should be noted that all the major projects on which Libon could have been trained were in Sicily. I thank N. Klein for showing me her text before publication.

⁵³ F. Courby, *Délos XII: Les temples d'Apollon* (1931) 1–106; R. Vallois, *L'architecture hellénique et hellénistique à Délos I* (Paris 1944) 27, 110. Courby's detailed interpretations of the inscriptions have been corrected and revised by J. Tréheux, but the essential dates still stand: at least as early as 304, money was dispersed for work in the temple. Ceiling coffers and roof beams are paid for, and paving blocks, wooden partitions, and a door mechanism are installed. The lists of treasures begin in 279 B.C., and include directional notations of their location, for example, inside the pronaos, the cella, on the wall, or above the lintel. No major construction is mentioned in the preserved accounts:

temple in 1931, he concluded that the peristyle and inner building were mostly completed in the fifth century up to the top of the frieze course, based on the workmanship, profiles of the capitals and moldings, and techniques of construction. Dinsmoor stated that the temple was started as an Ionic building, that the order was switched to Doric, and that the Doric superstructure dates in its entirety to the late fourth century (even though Shoe had already dated the moldings up to the level of the frieze to the mid-fifth century).⁵⁴ Further evidence in support of Courby's dating was presented by Coulton in his 1979 study of the profiles of all Doric capitals, in which he shows that the capitals of the peristyle are close to those of the Temple of Zeus at Olympia, while the capitals of the inner building are similar to those of Periclean temples in Athens.⁵⁵ Both Courby and Coulton also point out that many features of the Temple of Apollo have their best or only parallels in the Greek West. In turn, Coulton proposes that the temple at Delos was a major source of inspiration for the Attic Doric style, and a conduit for West Greek influence.⁵⁶

Dinsmoor's scenario of switched orders is even less plausible in view of the work of Gruben and others, who have systematically studied the architectural remains on Paros, Naxos, and neighboring islands and have found several examples of Doric buildings dating to the Late Archaic and Classical periods.⁵⁷ These new studies have completely upset older assumptions that builders on those islands were confined strictly to the sphere of the Ionic style, and they offer further proof that tradition, region, or ancestry did not necessarily dictate the orders to be used in temples. Furthermore, my inspection of the

crepidoma and blocks of the temple at Delos showed that the distinctions drawn by Courby between two phases of workmanship, quality of chiseling, types of clamps and dowels, and other techniques are still easily made and readily visible. Hence we should picture this Temple of Apollo completed and standing for the most part up to the tops of the triglyphs and metopes at the time that the Periclean building program was underway in Athens.

An examination of the plan, elevation, and details of the Temple of Apollo does provide evidence of West Greek characteristics, as Courby first noted.⁵⁸ The arrangement of the peristyle includes virtually equally spaced columns, paralleled in the Temple of Athena at Paestum, the Temple of Herakles at Agrigento, the Tavole Palatine (Temple of Hera) at Metaponto, and the Archaic temple at Pompeii. The two columns of the pronaos are spaced more widely apart (a feature first found in the Temple of Apollo at Syracuse) and would have had an extra triglyph and metope in the frieze above. In elevation, there is an extra course above the frieze (included also in the later Temple of the Athenians at Delos), which recalls the crowning course above the frieze in the Temple of Athena at Paestum.⁵⁹ The columns are slender, about five and a half lower diameters in height, and the ratio of their height to the interaxial space, 2.27, is also close to that of the Athena temple at Paestum. Furthermore, Courby notes the unsystematic clamping of the courses, which he finds astonishing for a fifth-century temple, but in Sicilian temples of the sixth and fifth centuries, often only the corners and blocks near the corners are clamped.

The pronaos had a triglyph and metope frieze around its interior, an unusual design that looks for-

J. Tréheux, "Une nouvelle lecture des inventaires d'Apollon à Délos," in *Comptes et inventaires dans la cité grecque* (Neuchâtel 1988) 29–35. T. Kalpaxis, *Hemiteles, akzidentelle Unfertigkeit und "Bossen-Stil" in der griechischen Baukunst* (Mainz 1986) 115–22 unpersuasively argues for a lower date (ca. 450) for the krepis and 460–430 for the capitals of the peristyle, based on details of the steps, but see Coulton (supra n. 26) 90–91. The profiles of the capitals are illustrated in Courby (supra) fig. 23.

⁵⁴ He suggested this because the columns of the temple are equally spaced and lack the corner contraction Dinsmoor 1975 (supra n. 35) 184 expected of a temple "so close to the centre of development" (meaning Athens?), and, at the time of his writing, the use of the Doric order in the islands seemed very rare. Dinsmoor's viewpoint is apparently accepted by Gruben (supra n. 42) 149; R.A. Tomlinson, *Greek Sanctuaries* (London 1976) 74–75; and D. Mertens, "Der ionische Tempel von Metapont, ein Zwischenbericht," *RM* 86 (1979) 123 n. 26; for the moldings, see Shoe, *passim*.

⁵⁵ Coulton (supra n. 26) 90–91 reasserts Courby's orig-

inal dating (supra n. 53) 99, with a lengthening of the initial phase into the third quarter. Courby had already suggested a range for the first phase of 475–430 on the basis of an extensive analysis of the proportions, but he had preferred the historical date of 454 for the end of construction. Kalpaxis (supra n. 53) also sees a longer period of construction of the temple.

⁵⁶ Coulton (supra n. 44) 44.

⁵⁷ G. Gruben, "Naxos und Paros. Dritter vorläufiger Bericht über die Forschungskampagnen 1970 und 1971," *AA* 1972, 319–79; G. Gruben et al., "Naxos und Paros. Vierter vorläufiger Bericht über die Forschungskampagnen 1972–1980," *AA* 1982, 159–290, 621–89; M. Schuller, *Der Artemistempel im Delion auf Paros* (Berlin 1991).

⁵⁸ Courby (supra n. 53).

⁵⁹ The added course above the frieze was carved in the Hellenistic period but designed in the fifth century as the profiles are typical of that century: R. Vallois, *L'architecture hellénique et hellénistique à Délos II.1* (Paris 1966) 251–55; Shoe 51, 58.

ward to later Athenian interest in interiors, and recalls the Old Archaic Temple on Aegina, which had a similar interior frieze.⁶⁰ The frieze across the pronaos and opisthodomos was probably extended along the long walls of the cella, an extended form of decoration that anticipates the Ionic frieze of the Parthenon.⁶¹

Western Greek features in Attic Doric temples include the use of slender columns and a readiness to combine Doric and Ionic forms.⁶² The progression of steps up into the interior of the Parthenon, especially from the pteron to the pronaos, is also found very frequently in the Greek West, for example, in Temple E at Selinous. The abandonment of freestanding interior colonnades in the original plan of the Hephaisteion and in the Temples of Poseidon at Sounion and Nemesis at Rhamnous probably reflects knowledge of Western Greek roofing practice, and all Doric temples in mainland Greece built after the Hephaisteion and Parthenon omit the colonnade, until the mid-fourth century.

In addition to these general features, a specific detail borrowed from the Greek West and seen in two Attic Doric temples of the Periclean period is the design of the marble flank sima of the Temple of Poseidon at Sounion and the Temple of Apollo Delphinios in Athens: both have a pierced design, with a cutout lotus and palmette punctuated with lion's head spouts, a type without parallel in mainland Greece, but found frequently (in terracotta) in Italy.⁶³ Other striking details in the Sounion temple include a raking sima with a profile borrowed from Aegina, the unusually slender columns, and the use of only 16 flutes. The willingness to add such decorative elaborations and experiment with forms could itself be regarded as a Western Greek inclination.

The architectural characteristics noted above include examples of emulation in both details and general features, and they reflect a close understanding of the two prestigious temples at Olympia and Delos. Internationalism in architecture required adapt-

ability and ingenuity without sacrificing vigorous regional style. Just as the date 480 marks a turning point in sculptural styles, so too did these two major temples in Panhellenic sanctuaries stimulate new directions in architecture. The Temple of Zeus set standards and changed norms further westward in Sicily and South Italy, and the Temple of Apollo affected the Attic Doric style westward in Athens. In Sicily, the Attic Doric style was quickly absorbed and its influence is especially evident in the temple at Segesta, where Mertens finds close parallels in proportions between it and the temple of the Athenians on Delos, and concludes that the Sicilian architect must have had a deep knowledge of contemporary Attic architecture.⁶⁴ The propylon at Selinous is another clear example of how a versatile architect could combine local interests (e.g., the Pythagorean expressions of number), styles (e.g., the profile of the anta capital and of other moldings), and techniques (e.g., the woodwork of the roofing system) with borrowed forms like the Doric capital and the style of using lighter proportions in the elevations of the facades. A major source of inspiration of the Attic Doric style of the Periclean period had been the earlier forms and proportions developed in the Greek West, as Coulton has argued. With borrowed Athenian traits, these two buildings in western Sicily in effect close the circle of reciprocal architectural influence begun soon after the battles of Himera and Salamis. By the later fifth century, architects in both the mainland and the Greek West designed temples with traditional features based in regional identity combined with forms developed elsewhere, and thus began the cosmopolitan awareness in temple design characteristic of later periods.

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⁶⁰ Courby (supra n. 53) pls. 97, 101, 102; E. Schwander, *Der ältere Porostempel der Aphaia auf Aegina* (Berlin 1985) 98, figs. 41, 59, 62, 68.

⁶¹ For discussion of the "Cycladic" features in the Parthenon, see Korres (supra n. 20) 84–88.

⁶² Coulton (supra n. 44).

⁶³ The one other somewhat similar mainland example cited by Dinsmoor in his study of the sima from Sounion is the flank sima of the central building of the Propylaia on the Acropolis, with cutouts on the lower edge to allow

rainwater to run out: W.B. Dinsmoor, Jr., "The Temple of Poseidon: A Missing Sima and Other Matters," *AJA* 78 (1974) 226 n. 38; for the sima of the Temple of Apollo Delphinios (dated to 450 B.C.), see Travlos 83 and fig. 110. In addition to the Sicilian and South Italian parallels cited by Dinsmoor, see Winter (supra n. 47) 277, 282–83: the earliest known example of a perforated flank sima is that from Temple E1 at Selinous (ca. 580 B.C.).

⁶⁴ Mertens 179–83, 220–27.