

Erik Østby: THE CLASSICAL TEMPLE OF ATHENA ALEA AT TEGEA

An exhaustive, updated study of the Late Classical temple of Athena Alea was not included in the research program of 1990–94. A catalogue of the architectural material scattered on the site was set up, however, and some formerly unknown blocks and fragments were discovered during the excavations in the northern sector. The results from this work and the new discoveries are presented in other contributions to this volume (sections xvii–xix, Pakkanen; fragments discovered during the excavation are catalogued and studied in section xv, Østby).

It has also proved possible to make use of the information included in the in many ways admirable French publication of 1924 and more scattered, later contributions (including some of the new observations from our project) for a reconsideration of some important aspects of the temple. These considerations will be presented in this contribution.

The overall dimensions

The temple of Athena Alea at Tegea was not the largest in the Peloponnese, as claimed by Pausanias (8.45.5), but it was certainly remarkable, also because of its size. While 4th-century Doric temples normally were of modest dimensions, with stylobates 10 to 12 m wide and only occasionally reaching 15–16 m, the temple at Tegea belongs to a small group of 4th-century Doric temples more than 19 m wide on the stylobate (19.16 m for Tegea) which otherwise includes only the new temple of Apollo at Delphi (21.68 m), the temple of Zeus at Nemea (20.09 m), and the little-known temple of Apollo at Thebes (20.54 m). The tholos at Epidauros, with its diameter 20.44 m on the stylobate, should also be included in this small group of exceptionally large cult buildings of the 4th century.¹

In most of these cases, it is clear that the dimensions

of an earlier building on the same site set the conditions: when a new temple replaced an older one on the same site, it was probably a primary concern that it should not be smaller than the predecessor, rather it should be larger and, in any case, at least equally impressive. This is clearly so for the temple of Apollo at Delphi, which seems to repeat the shape and dimensions of its forerunner very closely,² and should probably be assumed also for the temple at Thebes, although nothing is known about the size or shape of the early temple (or temples) at that site.³ Also at Tegea, where the early Archaic temple must have been about 16 m wide and 48.50–49 m long if it was provided with a peristasis, this seems a likely point of departure for the planning; the new temple, 49.56 m long in the foundations, is slightly longer, just enough to qualify as larger.⁴ (Fig. 2) The unusual length of the Classical temple can probably be taken as an additional argument for the existence of a peristasis of almost the same length surrounding the older one. Only for the temple at Nemea does this situation not apply in the same way: this was also built over the remains of an earlier, but much smaller, building which apparently did not have a peristasis.⁵ Instead, the slightly increased width, greater than the temple at Tegea, betrays that this

² According to the French publication (Courby 1927, 4–12, 92–5, fig. 71), the width in the foundations was practically identical in both temples (23.80 / 23.82 m), but the later temple was slightly longer (59.50 / 60.32 m; stylobate dimensions: 21.58 × 57.28 / 21.68 × 58.18 m). See also Knell 1983a, 228, and for updated information P. Amandry and E. Hansen, *Le temple d'Apollon du IV^e siècle* (FdD II.14), Athens 2010, 163, fig. 2.9, depl. XXIII. The length increase may be connected with an intentional reduction of the difference between the axial spacings on the fronts and the flanks, without completely obliterating it; see Østby 1992, 110 with n. 112.

³ See A.D. Keramopoulos, “Ο ναός του Ἰσμηνίου Ἀπόλλωνος,” *ArchDelt* 3, 1917, 33–59 for the large temple of the early 4th century, and 59–79 for the scanty information concerning the two early (Archaic and pre-Archaic) building phases of this important, but completely neglected temple; on the Classical temple, briefly, also Knell 1983a, 223–5, fig. 8.

⁴ For the probability of a peristasis in the Archaic temple and the approximate calculation of its dimensions, see Østby 1986, 94–5. See also *Tegea* I, section i (Østby), 35–9, and below, p. 326 note 51 for a recent correction to the dimensions of the foundations.

⁵ For the Classical temple at Nemea, see the publication by Hill 1966, and for the Archaic temple, without a peristasis, S.G. Miller, “The early temple of Zeus at Nemea,” in K. Kissas and W.-D. Niemeyer (eds), *The Corinthia and northeast Peloponnese, Topography and history from prehistoric times until the end of antiquity* (Athenaia 4), Munich 2013, 371–8.

¹ For convenient, recent reviews of the Doric temples of this period, see Knell 1983a and Østby 1992, with tabular presentations respectively 230 and 112–3 tabs I–II (see also 109 n. 105). The enormous Ionic temples (Ephesos, Didyma) are not relevant here, nor is the Philonian column porch in front of the Eleusinian Telesterion, since the dimensions were here given by the hall from the 5th century. The large Doric peripteros with 6 × 11 columns at Klaros (25.16 × 46.29 m) is insufficiently known and hardly relevant as a comparison; see Knell 1983a, 222.



Figure 1. The foundations of the Classical temple, seen from the south-west. (Photo: Østby)

was considered as a model to be outdone; the increase in stylobate width at Nemea can be calculated as precisely $1/21$. No attempt was made, however, to compete with the length of the Tegean temple; the contemporary trends toward shorter peristaseis and naoi without an opisthodomos here carried the day and created the shorter temple (44.64 m in the euthynteria) with its 6×12 -peristasis. There is an interesting and possibly significant, but inverse similar relationship between the Tegean temple and the tholos at Epidauros,⁶ since the proportion between the stylobate width of the Tegea temple and the stylobate diameter at Epidauros can be very precisely calculated as $15 : 16$. The close connection between these two buildings is clear from other elements as well, such as the use of decorative Corinthian column architecture in the interior, the proportional system and various technical features, and will be extensively discussed below.⁷

If the overall length of the new temple was somehow conditioned by the old one, the unusually long peristasis with 14 columns must be seen as another inevitable consequence which runs against the general trend in the period toward shorter temples mostly without an opisthodomos, and as a general rule with no more than 11 or occasionally 12 or 13 columns in the flanks.⁸ (*Pl. 1*)

⁶ For this building, see Roux 1961, 131–200; Seiler 1986, 72–89; H. Büsing, “Zur Bauplanung des Tholos von Epidauros,” *AM* 102, 1987, 225–58; Pakkanen 1996, 150–3.

⁷ Especially on pp. 329–32 and 342–4. See also note 148 p. 342, and the paragraphs on the naos and on the proportions.

⁸ See Knell 1983a for these trends, and his tabular presentation p. 230, where the only cited example of a 6×14 -colonnade, at Kalapodi, is certainly a 5th century structure; see Kienast 1988. In addition to the temples at Thebes and Nemea, 6×12 is recorded for the temples for Athena at Iliou and Asklepios at Messene; these two, however, are later (3rd and 2nd century). Ten temples are listed with a 6×11 -peristasis, four with 6×13 (the temple at Mazi is Early Classical and should be excluded, and the temple at Delos is built over a 5th-century plan). See also Østby 1992, 109, n. 105.

Repeating the 6×18 colonnade from the Archaic temple was obviously impossible in the 4th century B.C.,⁹ so the number of columns in the flank had to be reduced. The choice of 14 columns is old-fashioned even compared with the standard 6×13 -pattern of the 5th century and remained a unique solution for the 4th,¹⁰ but was clearly the only possible solution if an open intercolumniation rather than a column was wanted in the centre of the colonnade, because of the lateral porch and the platform in front of it in the middle of the northern flank.¹¹ As a consequence of these decisions, the standard axial spacings on the flanks had to reach the very impressive dimension of about 3.58 m; only a few contemporary buildings can compare with this.¹² When axial spacings of similar dimensions were

⁹ Unless there was an intentional indication of archaism, for which contemporary examples exist: Kallio near Delphi, 5×10 columns (P. Themelis, “Δέλφοι και περιοχή τον 8^ο και 7^ο π.Χ. αιώνα,” *ASAtene* 61, 1983, 237–44), temple of Apollo at Sikyon, 6×18 (K. Krystalli-Votsi and E. Østby, “The temples of Apollo at Sikyon,” in *Roma 2008, International Congress of Classical Archaeology (Bollettino di Archeologia On line* 1, 2010), Poster Session 3, 54–62). See Knell 1983a, 226–8, and Hellmann 2006, 78–82, for some useful comments on these trends. – The same argument would obviously apply to a colonnade with 6×16 columns, which is never attested in the 4th century.

¹⁰ The two peripteral phases of the temple for Artemis at Kalapodi, listed with other 4th-century temples by Knell 1983a, 230, are definitely from the 5th century (see note 8 above) and are not valid parallels. Although widely used in the Italian environment, in the Greek mainland the 6×14 -peristasis in the 5th century is limited to this example and to the early 5th-century temple at Hagios Elias near Asea (J. Forsén, B. Forsén and E. Østby, “The sanctuary of Agios Elias – its significance, and its relations to surrounding sanctuaries and settlements,” in Th. Heine Nielsen and J. Roy (eds), *Defining ancient Arcadia* (Acts of the Copenhagen Polis Centre 6), Copenhagen 1999, 170–4).

¹¹ See below, pp. 340–1, on the lateral porch. Reducing still further, to 12 columns, would have implied impossible dimensions for the colonnade and the epistyle in a marble temple.

¹² Dugas *et al.*, *Tégée*, 22, fig. 6, calculates 3.582 m, which is probably a close average of slightly more variable widths as executed. See Knell 1983a, 230 (col. V), and Østby 1992, 112 tab. I, for the comparative

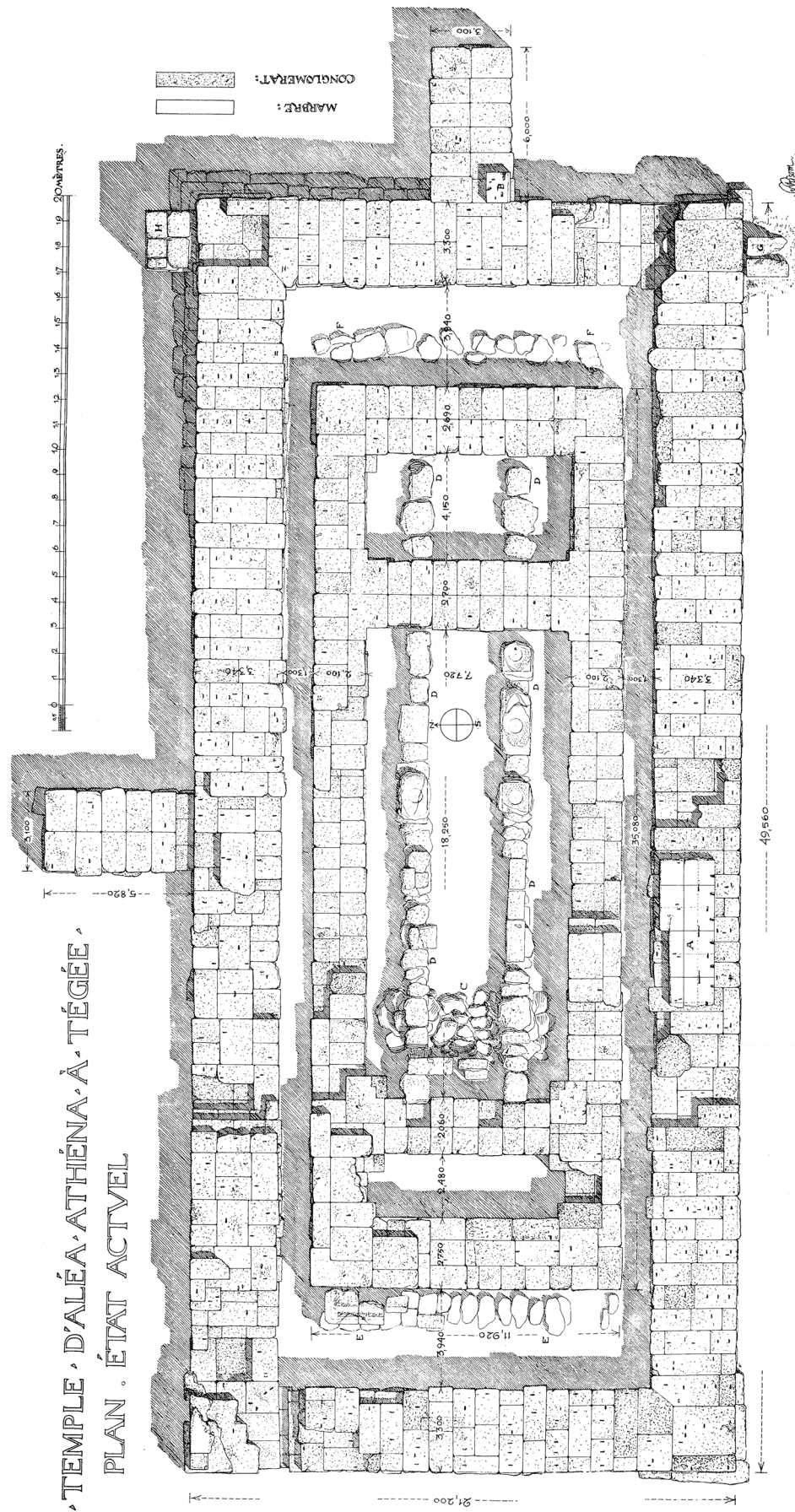


Figure 2. State plan of the foundations of the temple, as presented in the French publication. Scale 1 : 250. (After Dugas *et al.*, *Tégée*, pl. 3-5)

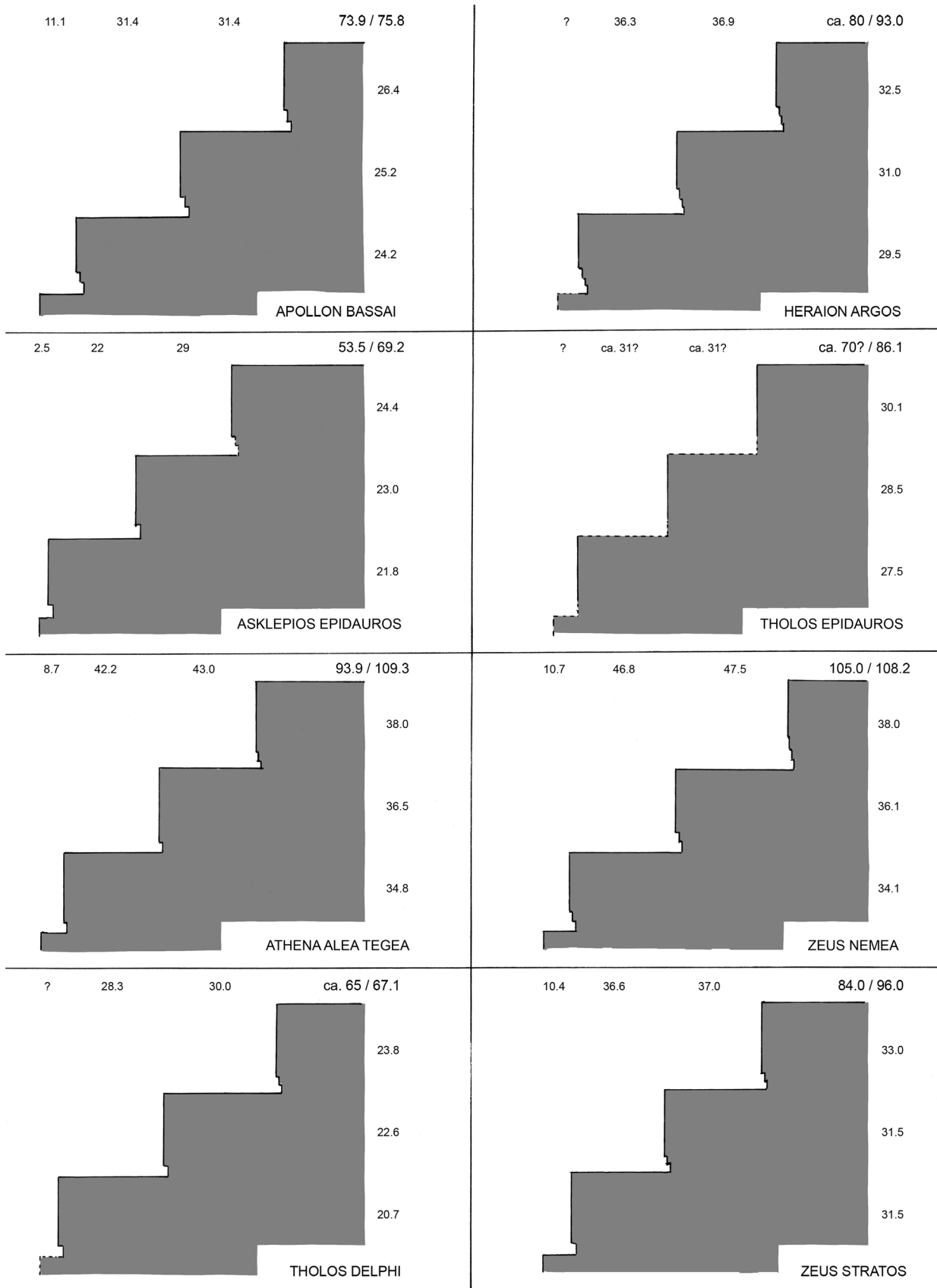


Figure 3. Sections of crepidoma-structures in some important 4th-century religious buildings, drawn on different scales to a standard height. All dimensions are in centimetres. Broken lines are used where there is no reliable evidence in current publications for shape and/or dimensions. (Drawing: Østby)

applied to a conventional hexastyle front, a considerable increase in the width of the temple, from a calculated about 16 m¹³ to 21.20 m, became an inevitable and probably appreciated result.

The overall dimensions of the two concentric rectangles of the stylobate (19.16 × 47.52 m) and the euthynteria (21.04 × 49.40 m), if correctly reconstructed with these dimensions in the French publication, come very close to simple proportions, but fall short by small margins.¹⁴ The proportion of the stylobate is almost 2 : 5, but if this was exactly executed it would have to be 0.38 m longer; the euthynteria is close to 3 : 7, but is 0.31 m too long. (Precise proportions are respectively 25 : 62 and 25 : 59; both proportions are also very close to 5 : 12, or the cathetes in a Pythagorean triangle with a hypotenuse of 13 units, a convenient way to construct a right angle.) The two basic proportions must certainly have been in the mind of the architect (also because the 3 : 7 proportion directly reflects the number of columns in the peristasis), but the result looks like a sort of compromise between the two overall proportions, neither of which was considered important enough to prevail over the other. One consequence of this decision is the small difference between axial spacings in the front and in the flanks, no more than about 2 cm; with the extra 0.38 m length and some juggling at the corners the difference could have been completely neutralized. Clearly this was not considered necessary, perhaps not even desirable if the difference was wanted as a reminder of the temple's ancient pedigree.¹⁵ There were certain consequences also for the layout of the elevation, an issue that will be discussed below.

The French mission was able to establish that the temple had a convex curvature prepared already in the foundations below the euthynteria, and it has recently been demonstrated that this curvature was also applied to the epistyle.¹⁶ In the Peloponnese, curvature in the crepidoma is attested in the temple of Zeus at Olympia, the Heraion at Argos, the temple at Nemea, and in some stoas; a curvature already in the foundation below the euthynteria, as here, is a feature which also appears in the

material. Wider axial spacings are found only in the temples of Apollo at Delphi (4.08 / 4.13 m) and Thebes (ca. 3.90 m), in the Philonian colonnade in front of the Telesterion at Eleusis (4.84 m), and in the temple at Nemea, which actively rivalled with the temple at Tegea (3.745 m); next after Tegea comes the temple of Zeus at Stratos (3.16 m).

¹³ Østby 1986, 95, and *id.* in *Tegea I*, section i, 39.

¹⁴ Pakkanen 2013, 103, 107 tab. 4.13 and 105 fig. 4.28, has slightly different dimensions based on recent fieldwork: euthynteria 20.96 × 49.51 m, stylobate 19.08 × 47.62 m. For the foundations (*ibid.* 103 fig. 4.27) he has 22.19–20 × 49.71–78 m. His dimensions for the stylobate are closer to 2 : 5, but those for the toichobate are further off 3 : 7 (quite precisely 11 : 26); he interprets the stylobate as 64 × 160 feet of 0.297 m (p. 106). It has only to a limited extent been possible to use these figures for the present analysis. Knell 1983a, 225, misunderstands the dimensions of the conglomerate foundation as the euthynteria and draws impossible conclusions concerning proportions and axial spacings from this; see Pakkanen, *Temple*, 7 with n. 37.

¹⁵ See below, pp. 323 and 339–40, for further discussions.

¹⁶ See Dugas *et al.*, *Tégée*, 10–1, fig. 1, and Pakkanen, *Temple*, 25 and 42–3, figs 15–16.

temples at Olympia and Argos.¹⁷ Curvature of the epistyle is attested at Olympia and considered possible at Argos.¹⁸

The steps of the crepidoma are disposed in a pattern with slightly increasing dimensions in width and height, from bottom to top. This pattern was apparently first introduced in the Late Archaic temple of Athena Pronaia at Delphi, and is quite widespread in the 4th century; it is found in the Heraion at Argos, in the tholos at Delphi, in the temple of Asklepios at Epidauros (for the tholos the horizontal projections are not attested), at Tegea and Nemea, and in the Philippeion at Olympia. At Bassai and Stratos the steps are organized differently, with identical dimensions either in the horizontal (Bassai) or in the vertical (Stratos) direction.¹⁹ (*Fig. 3*) As always, the sum of vertical dimensions is higher than the horizontal ones, although the difference in some cases (Bassai, the tholos at Delphi, Nemea) is very slight; the proportion 1 : 1.16 at Tegea (perhaps to be understood as 6 : 7) has its closest parallel in the Heraion at Argos. The conservative use of indents (reveals) at Tegea at the bottom of each vertical front, a single one on the two lower steps and a double one on the stylobate blocks, is unusual in the 4th century, when double reveals at all levels were extensively used; occasionally even triple reveals appear, as in the Heraion at Argos and on the stylobate blocks at Nemea. The system used at Tegea for the reveals is also found in the tholos at Delphi and perhaps in the temple of Asklepios at Epidauros, a building with which also otherwise the temple has much in common; the increased number of indents in the stylobate blocks also draws the Nemea temple into the same circle. One more, conservative, link with the temple at Nemea is the omission of decorative panels on the vertical surface of the blocks, that were otherwise very frequent in architecture of the 4th century.²⁰

¹⁷ It was not adopted in the temple of Bassai (Cooper 1996, 151; Gruben 2001, 135); but see Pfaff 2003, 51–3 and 88–90, for the Heraion at Argos, and Miller *et al.* 1990, 136–7, for Nemea. For general discussions of the feature, see Martin 1965, 352–5; Hellmann 2002, 187 (where the temples at Olympia and Argos are mentioned for the curvature beginning under the euthynteria); and the stimulating discussion by L. Haselberger, “Bending the truth: curvature and other refinements of the Parthenon,” in J. Neils (ed.), *The Parthenon, from antiquity to the present*, Cambridge 2005, esp. 101–8 and 118–20.

¹⁸ For curvature in entablatures, see Hellmann 2002, 187, where the Siphnian treasury at Delphi, the temple of Zeus at Olympia, and the Propylaea of the Acropolis are mentioned for this feature. It was also used in the Heraion at Argos: Pfaff 2003, 88–90.

¹⁹ For these arrangements, see Martin 1965, 348–50, with a useful tabular survey 336–45, and the concise survey of 4th-century parallels in Hill 1966, 37. The projections of the steps and the shapes of the vertical risers in the krepis of the tholos at Epidauros are not attested (Roux 1961, 136–8; the shapes adopted in his drawing 141 fig. 31 are an *ad hoc* approximation), and in the temple of Asklepios evidence is lacking for the front of the stylobate blocks (*ibid.*, 91). In the Heraion at Argos, the entire krepis system has now been recovered by Pfaff 2003, 73–82, fig. 54. For the Philippeion see H. Schleif and W. Zschietzschmann, “Das Philippeion,” in *OIForsch* 1, Berlin 1944, 4–6, pls 3 and 5; the vertical dimensions from below and up are 25.9, 27.7 and 30.1 cm; horizontal projections, 34.7 and 35.4 cm; double reveals at each level.

²⁰ Dugas *et al.*, *Tégée*, pls 30 and 32; Hill 1966, pl. 13. See also Martin 1965, 351 (but the Tegea temple does not have this kind of decoration).

The axial spacings in the front colonnade

In the execution of the axial spacings in the external colonnade there exists a curious irregularity. Elements of the frieze and of the krepis ensure a reconstruction of the spacings in the flanks between 3.58 and 3.59 m; the figure from the French publication, 3.582 m, is probably more precise than the material allows,²¹ but the average dimension must certainly be very close to this figure. (*Pl. I*) With a calculated stylobate length of 47.52 m and an axial length of 45.88 m (reduced by 1.64 m for the two distances 0.82 m between the stylobate edge and the axis of the corner column, which are safely established²²), and a length of 39.38–39.49 m for the 11 normal axial spacings calculated with the slight margin tentatively suggested above, this leaves a considerably reduced dimension for the contracted spacings at the corners, from 3.19 to 3.24 m. This is very close to what a precise compensation of the triglyph conflict would require, according to the famous Koldewey-Puchstein formula $(a - t) : 2$; with an architrave 1.436 m thick and triglyphs 0.726 m wide at the corner,²³ the precise contraction would be 0.355 m. This is safely within that range between 0.34 and 0.40 m which the tentative calculation above would leave open; it is moreover, by chance or not, precisely identical to half the width of the normal triglyphs, 0.71 m, and thus may be an almost perfect example of the Vitruvian rule $(t : 2)$.²⁴ It is also almost precisely equal to one quarter of the architrave thickness. Even in the temples from the Classical period, when the problem must have been perfectly understood, an absolutely precise correction by contraction in the colonnade was rarely applied;²⁵ but in this temple it may have been, and must at any rate have come very close to being so – at least on the flanks.²⁶

²¹ Dugas *et al.*, *Tégée*, 22, fig. 6. See below, notes 26 and 35 for alternative calculations with slightly different results; and Pakkanen 1994 for useful criticism of the often excessive precision pretended in many publications of Greek architecture. *Id.* 2013, 103 and 107 tab. 4.13, ca. 3.28 m is accepted for the axial spacings on the flanks.

²² Dugas *et al.*, *Tégée*, 22–3, pl. 32.

²³ The architrave thickness: Dugas *et al.*, *Tégée*, pls 38–39; 1.430 m according to Pakkanen 2013, 107 tab. 4.14. There is a small complication: the triglyph width used as reference is not the slightly widened triglyph at the corner, which defines the problem, but the normal one. For the corner triglyphs, see Dugas *et al.* 21, pl. 43, and 22 fig. 6, where it is clear that the last triglyph was widened in order to avoid a joint in the frieze and another in the architrave so as to coincide near the corner.

²⁴ Vitr. 4.3.2. See for this rule now Osthus 2005, 115. He also states that it is hardly ever encountered in real architecture, but his table p. 150 has several examples (besides Tegea) where it is very closely approached.

²⁵ The point was clearly made by J.J. Coulton, "Towards understanding Doric design: The stylobate and the intercolumniations," *BSA* 69, 1974, 73, with the tabular presentation cols 6–8 tab. 3. See now Osthus 2005, 84–8, for the numerous examples of a correction split between the colonnade and the frieze, and 89–95 for the curious and far from infrequent examples of a contraction in the colonnade stronger than what the frieze requires, with necessary adjustments also there as a result.

²⁶ Taking the contraction 0.355 m for given, and adding this dimension twice to the axial length 45.88 m, the standard axial spacing could be calculated as $45.88 + (2 \times 0.355) = 0.71 = 46.59$ m, : 13 spacings = 3.584 m, only 2 mm off the calculation in the French publication; but none of the involved dimensions is without a margin of uncertainty. Pakkanen 2013, 103 n. 159, calculates the corner spacing as 3.291 m.

It is clear, however, that these figures cannot automatically be applied to the fronts without adjustments, as one would normally expect in a 4th-century temple. With a calculated stylobate width 19.16 m, and an axial width of 17.52 m between the corner columns to be covered with three normal and two contracted axial spacings, the dimensions from the flanks are insufficient to cover the distance: if repeated without adjustments, they would reach only $(3 \times 3.58\text{--}3.59 + (2 \times 3.19\text{--}3.24))$ m = 17.12–17.25 m. The axial spacings, or at least some of them, must have been sufficiently wider here to cover that difference of 0.27 to 0.40 m. The approach to this problem adopted by the French publication²⁷ is unsatisfactory for several reasons: it assumes that the central spacings repeated the normal spacings from the flanks, 3.582 m, that the two intermediate spacings had the same value above but became somewhat wider below since they were inwards inclined, 3.613 m, and that the corner spacings then had to cover the remaining distance making them wider than on the flanks, 3.355 m – too wide to compensate for the triglyph conflict. None of these assumptions are based on solid evidence, and some of them are certainly false. Since it has now been demonstrated that the columns were not inclined, but stood in vertical positions,²⁸ the French reconstruction where the three central spacings are equally wide above, but the two intermediate ones are somewhat wider below, can no longer be accepted: each axial spacing must have been equally wide above and below, in the entablature as on the stylobate. There is no satisfactory evidence for the simple repetition of the same basic value from the flanks, 3.582 m, for the fronts; the corner spacings would in that case have to be as wide as $17.52 - (3 \times 3.582) = 10.75$ m, : 2 = 5.375 m, much wider than those on the flanks. This would obviously be absolutely insufficient to compensate for the triglyph conflict at the corner, which is the same as in the flanks. Some slightly larger than average blocks from the krepis, 1.80 and 1.804 m wide, were used as evidence that at least some spacings on the fronts were wider than on the flanks;²⁹ but the difference from the presumed average 1.792 m is so small that it could easily fall within the normal variations to be expected anywhere in such a large and complicated structure, even on the flanks, and it is in any case far too modest to adequately compensate for the problem.

The corner conflict was actually treated in a different way on the fronts; this is demonstrated by some blocks from the frieze. One block from the north-western corner (where it can now be found), which is carved at the rear so as to join the block with the corner triglyph, shows that the last metope near the corner was wider than the normal ones, 1.145 m; the visible width, with the margin covered by the rim of the adjoining triglyph detracted,³⁰

²⁷ Dugas *et al.*, *Tégée*, 23–4.

²⁸ Pakkanen, *Temple*, 24–6. The problem for the French reconstruction posed by this result has been noticed by Knell 1983a, 225; also by Osthus 2005, 86 n. 227, but he does not pursue it.

²⁹ Dugas *et al.*, *Tégée*, 23, fig. 7.

³⁰ The width of the covering triglyph rim is on one of the French plates (Dugas *et al.*, *Tégée*, pl. 42) given as 0.018 m, but there are variations

could be up to 1–1.5 cm less, or about 1.14–1.13 m, compared with the normal average of 1.08 m on the flanks.³¹ Also, the triglyphs on the preserved corner block are slightly wider than the rest, 0.726 instead of 0.71 m.³² (Figs 4–5) It has been very convincingly proposed that another block with a metope of almost the same, slightly increased width, 1.137 m (visible width about 1.125 – 1.135 m), but with inverted positions of metope and triglyph and thus clearly from the opposite end of the frieze, and not carved to join a corner triglyph, had the second position from the corner.³³ Since there was no need for such increased metopes on the flanks, where the contraction in the colonnade took care of the corner problem, there can be no doubt that both metopes came from the western front, where they were both found. The corner spacings on the front can then be calculated as the width of the two metopes (2.26–2.27 m), one entire and one half-triglyph (0.726 + 0.36 = 1.086 m), and the 8 mm wide space between the axis of the corner columns and the edge of the corner triglyph, as identified in the French publication.³⁴ The outcome of this is a corner spacing of about 3.35–3.36 m, 0.12 to 0.16 m wider than the corner spacings on the flanks (with a contraction which has thus become insufficient to take up the entire corner conflict), and leaving $17.52 - (2 \times 3.35-3.36) = 10.80-10.82$ m to be filled by the three central spacings.³⁵ They would then be about 3.60–3.61 m wide if all were equal, 2–3 cm wider than the flank spacings.

The small difference between frontal and lateral axial spacings is far too modest to be visually noticeable, but it involves complications for the execution similar to those created by the convex curvatures of crepidoma and epistyle, which the temple also has.³⁶ In the general

in the actual execution. It is, moreover, probable that this construction allowed for a slight margin for the precise positioning of the blocks, since a physical contact between the surfaces was not necessary at this point (see the remark on this *ibid.*, 21). Small variations in the visible metope width must consequently be presumed, and at least in some cases the rims of the triglyphs apparently did not cover any significant part of the metopes at all; for this question, see also p. 334 note 108 below.

³¹ Dugas *et al.*, *Tégée*, 23, fig. 7, pl. 41 (and 21 n. 6 for a few fully documented metope widths); Pakkanen, section **xix**, 404, Block **557**. See also the reconstruction of the frieze in the western front *id.*, section **xvii**, 360 Fig. 7.

³² See above, note 30; Pakkanen, section **xix**, 398, Block **431**.

³³ Dugas *et al.*, *Tégée*, 23, fig. 7. The block, found near the south-western corner: Pakkanen, section **xix**, 400, Block **489**. Compare again his reconstruction of the frieze in the western front section **xvii**, 360 Fig. 7.

³⁴ See note 30 above.

³⁵ This corresponds with the calculation offered from a different angle by Knell 1983a, 225 (central axial spacings 3.607 m). With these figures there could be no precise correlation between the axes of columns 2 and 4 and the side walls of the naos, since it was too wide for this (10.94 m in the orthostates, 11.24 in the toichobate; see below, p. 327). These correlations were frequent, but not compulsory, and Tegea was apparently one of those temples where it was waived for other concerns.

³⁶ Dugas *et al.*, *Tégée*, 10–1, fig. 1; Pakkanen, *Temple*, 25 and 42–3, figs 15–16 (crepidoma), and 45–7, fig. 18 (epistyle). See p. 321 with note 17 above.

development of the Doric temple this was a stage in the development towards identical axial spacings, to be used as basic elements for the construction of the entire plan. Doric architecture passed through this stage in the late 6th and first years of the 5th century; by the 4th century the identical spacings had been the norm for a long time,³⁷ and the rare retrievals of this older system must have been used for particular purposes, to underline ancient traditions of the temple and/or the sanctuary, as a sort of subliminal effect akin to the curvatures. It must be thus interpreted in the temple at Bassai, and comes as no surprise in the new temple of Apollo at Delphi, where the slight increase in the length of the temple was not sufficient to eliminate the difference, although this would not have been difficult.³⁸ The same difference has also been identified, and explained by similar reasons, in the late 4th-century temple at Pherai in Thessaly. It is perhaps more unexpected for the temples of Asklepios at Epidauros and Messene, which had no such predecessors, but where the same effect of imaginary traditions may have been desired.³⁹

The analysis of the column front is further complicated, however, by the metope which was discovered by our excavation north of the temple and is included in Pakkanen's discussion of the new blocks recovered there.⁴⁰ It is exceptional because it is a single, isolated block, not worked with a triglyph as the other frieze blocks, and it is convincingly demonstrated by Pakkanen that it comes from the front, where it would have filled a gap between two types of normal, two-part frieze blocks: those with the metope to the right, starting from the left-hand corner, and those coming from the other direction where the metope is to the left of the triglyph. This metope is 1.10 m wide, and if approximately 1 cm was covered by the flanges of the triglyphs at either side, the exposed surface width would be the same 1.08 m as regularly seen in the frieze on the flanks.⁴¹ The metope thus provides an indication that some central spacings, probably the two intermediate

³⁷ Since the early 5th century, with the first temple at Cape Sounion frequently cited as the first certain case on the Greek mainland; there is, however, a half a century earlier case in the temple at Orchomenos in Arcadia. See Østby 1990-91, 329–38 on Orchomenos, and 379–87 for a general discussion of the issue.

³⁸ See p. 317, note 2 above.

³⁹ See Østby 1992 for the temple at Pherai, 110 for a discussion of this feature in 4th-century temples; also *id.* 1990-91, 382–5.

⁴⁰ See Pakkanen, section **xix**: 412, Block **795**. Since another isolated metope block of this type, found near the centre of the western front, probably filled the same function there (Block **522**; see Pakkanen, section **xix**, 402), Block **795** must be from the eastern front. The width of Block **522**, 1.11 m, is identical to Block **795** and demonstrates that the same arrangement of the columns, with a double contraction, must be presumed for both fronts.

⁴¹ See note 30 above. The triglyph edge could hardly reduce the visible width more than this, since this would imply a narrower axial spacing than those on the flanks. Pakkanen (in section **xvii**, 360 Fig. 7) puts the isolated metopes over the central intercolumniations in the two fronts; this does not seem compatible with the reconstruction proposed here. He now reconstructs (2013, 103 with n. 159 and 107 tab. 4.13) the front with equally wide central axial spacings of 3.62 m.

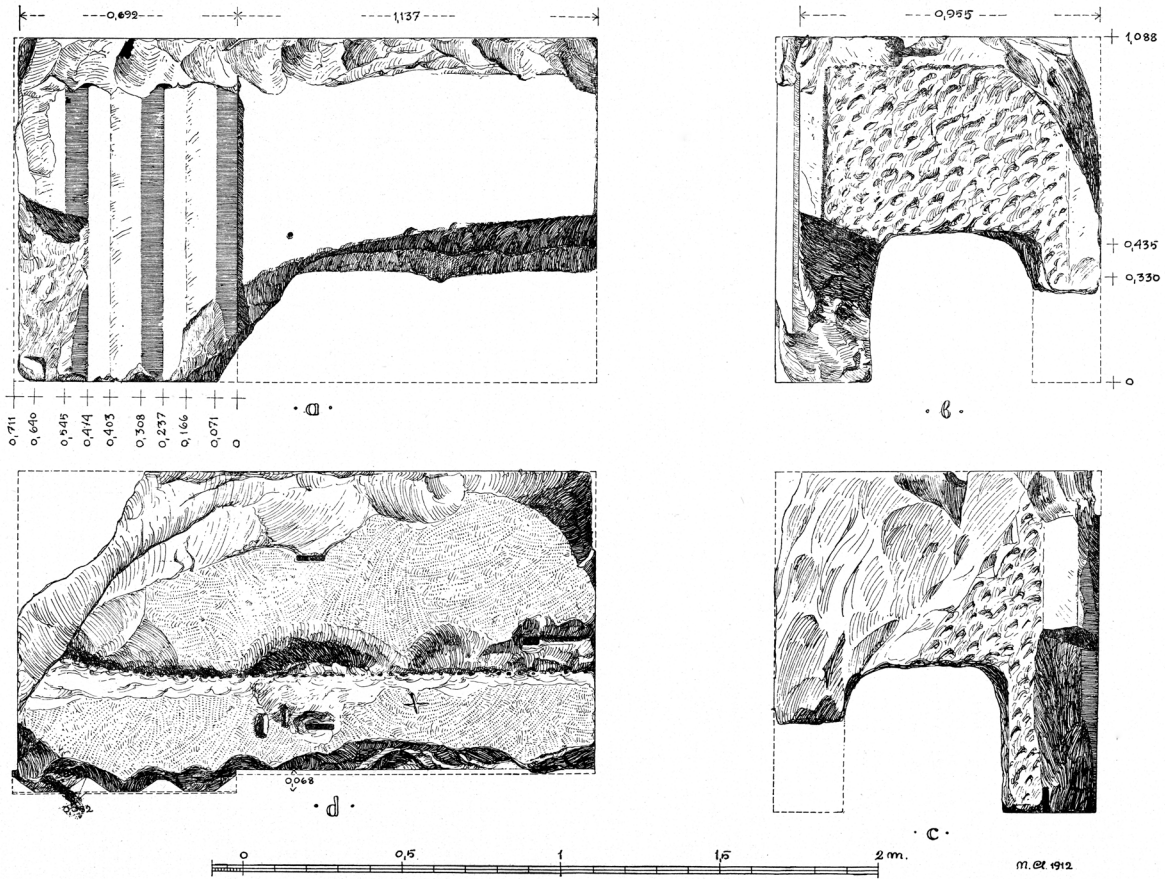


Figure 4. Frieze block from the Classical temple (Block 489). (After Dugas et al., *Tégée*, pl. 41)

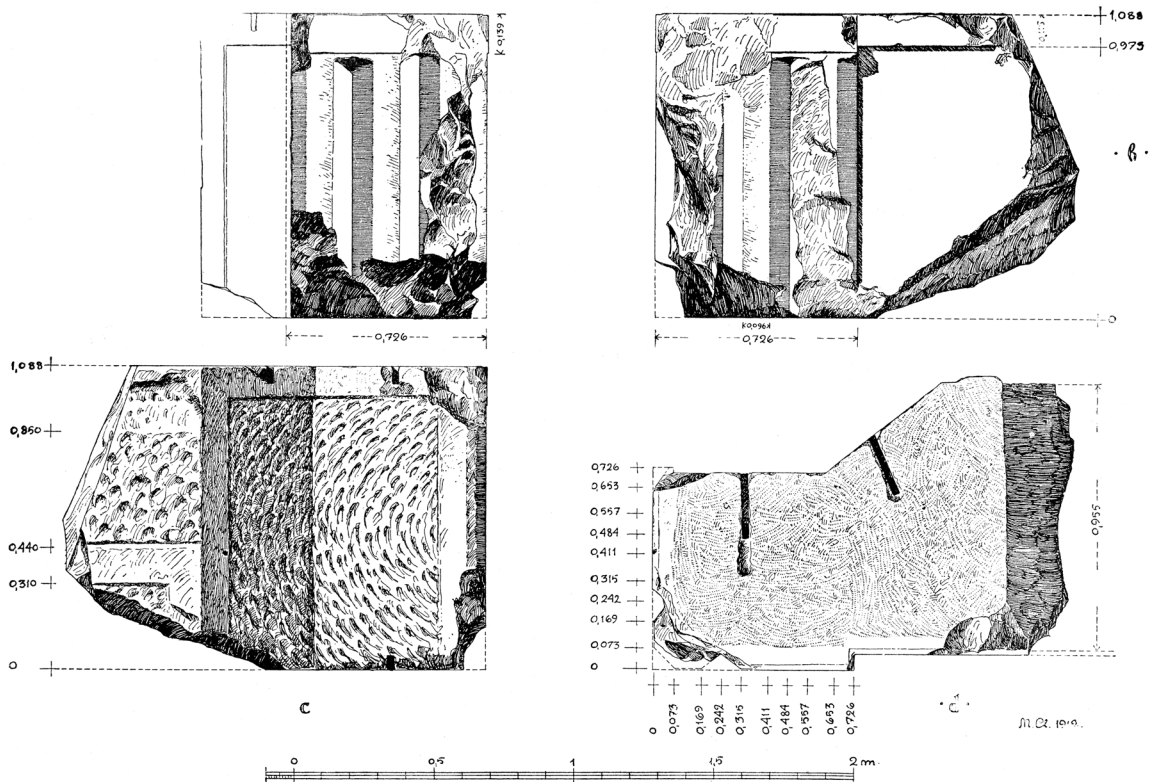


Figure 5. Frieze block from the corner of the Classical temple (Block 431). (After Dugas et al., *Tégée*, pl. 43)

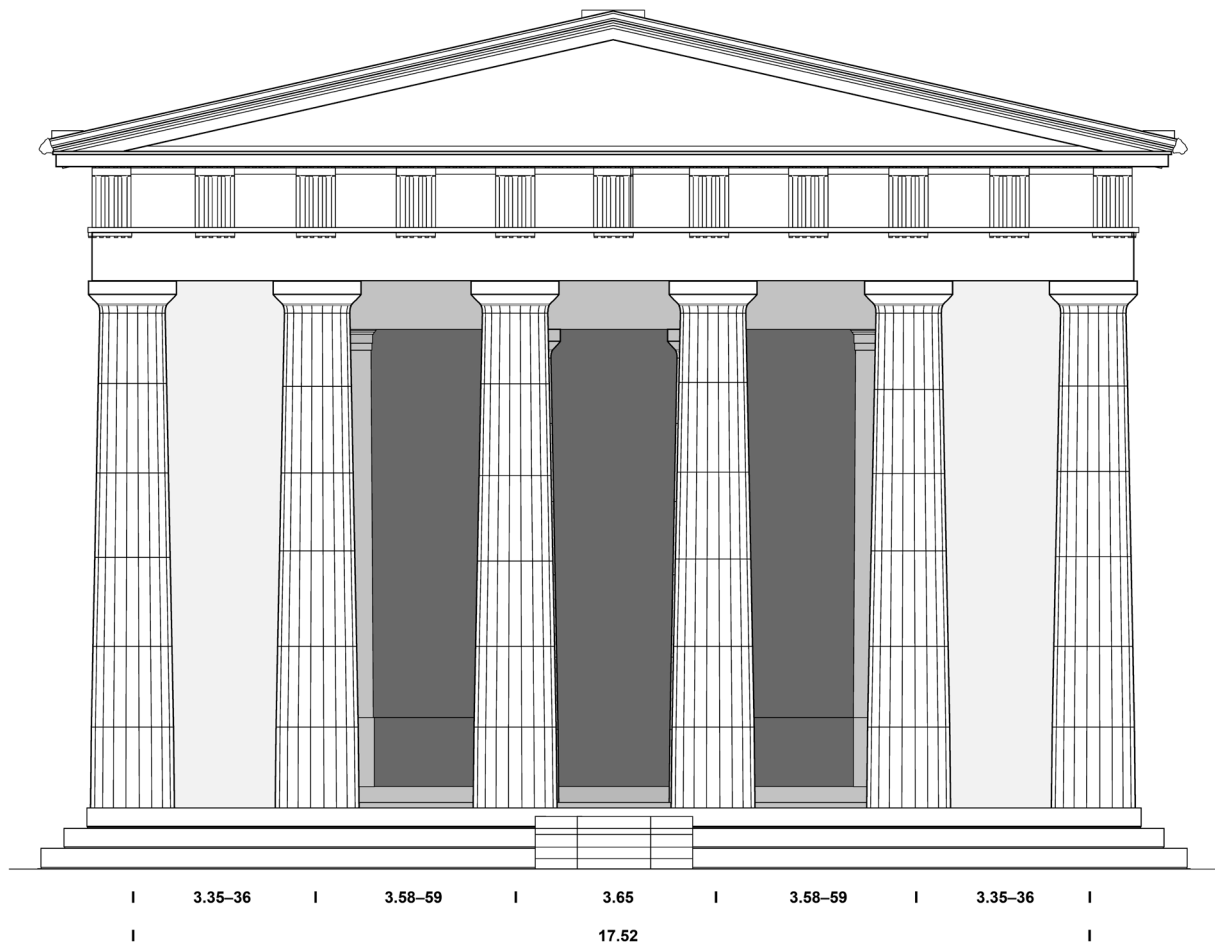


Figure 6. The reconstructed front of the Classical temple, with indications of the presumed axial spacings as reconstructed in the text. (Drawing: Østby, based on Pakkanen, *Temple*, 9 fig. 2)

ones, actually had the same width, 3.58–3.59 m, as on the flanks.⁴² In this case, they leave space for a widened central spacing which must in this case be increased to about 3.65 m. This is the reconstruction presented on *Fig. 6*.

It is of some interest, as an additional support to this reconstruction, to note that with this dimension for the central axial spacing, a precise and simple proportion 2 : 5, frequently used in Doric architecture, is obtained with the lower column diameter, 1.46 m.⁴³

Such a complicated system with three different dimensions of the axial spacings in the front is quite frequent in Classical temples of the Western Greek world, where it normally goes under the name of double contraction.⁴⁴ It is useless, however, for creating regularity

in the frieze, and this was clearly the case also at Tegea where three different metope widths would have had to accompany the different axial spacings.⁴⁵ The purpose must rather have been to put some particular, visual emphasis on the central intercolumniation. Although such “double contractions” are rare in Classical architecture on the Greek mainland, they are not completely unknown. In a 4th-century context it has been presumed for the temple of Asklepios at Epidauros, and it seems likely also for the temple at Nemea – two temples which are certainly closely related to the temple at Tegea.⁴⁶

⁴² This situation is closely comparable to the probable reconstruction of the peristasis in the temple of Asklepios at Epidauros, where it is supposed that the normal axial spacing on the flanks is not only identical to, but actually derived from these intermediate spacings on the front: Knell 1971. Osthus 2005, 93, has a different explanation.

⁴³ In the material collected in *Tab. 1* below, it recurs precisely with the Hephaisteion, the Heraion at Argos, and, interestingly, with the extended central spacing proposed for the temple of Asklepios at Epidauros (below, with note 46).

⁴⁴ For a penetrating discussion and analysis of the phenomenon, see Osthus 2005, 95–104.

⁴⁵ Provided that the precise axial correlation between columns and triglyphs was observed. The temple “of Concordia” at Agrigento is the standard example of such dispositions (D. Mertens, *Der Tempel von Segesta*, Mainz 1984, 112–3, fig. 60; see also Osthus 2005, 97–8). An easier solution distributed a standard size for triglyphs and metopes all over the frieze accepting the slight dislocations between triglyph- and column-axes (“autonome Lösung”: Osthus 2005, 56–61). This is exemplified by the Athenian treasury at Delphi, the unfinished temple at Segesta, and several other structures. In the admittedly limited material from Tegea there is no evidence of such dislocations, which would appear as off-centred joints through the regulae on the architrave blocks.

⁴⁶ For this phenomenon at Epidauros, see Knell 1971. In the temple at Nemea, the observation which implies a wider central intercolumniation was described by Hill 1966, 9 n. 24, but was not followed up in his further discussion of the temple; see Østby 1980, 221 n. 121. Both temples are

Earlier, after the temple of Hera at Olympia (where it has been poorly understood⁴⁷), it was documented in a late 6th-century temple at Karthaia on Kea and presumed in the Peisistratid Olympieion at Athens;⁴⁸ there are reasons to believe that it was occasionally used in late Archaic temples in Arcadia,⁴⁹ and it has recently been demonstrated that the Archaic temple of Apollo at Delphi probably had this feature.⁵⁰ A case can probably be made for also including the temple of Tegea in that group.

The naos

In the arrangement of the peristasis it is clear how the early temple could decide the shape of the later one only to a certain extent. Unlike the temple of Apollo at Delphi, where the Late Archaic plan could be repeated almost unchanged in the new one, at Tegea a precise repetition of the Early Archaic plan with 6×18 columns was not possible. The updating of the new temple is still more evident in the arrangement of the naos, but a sharp distinction has to be drawn between the general layout of the naos, which harks back to essentially 5th-century models, and the conception of the interior of the cella which was at the forefront of architectural thinking in its day.

The shape and dimensions of the naos in a Greek temple depend, to a large extent, on the principal decisions concerning the external dimensions and the layout of the peristasis, and since the peristasis plan was in this case so openly old-fashioned, much of this character was also transferred to the naos. Its general shape is clear from the well-preserved foundations, measuring according to the French publication 35.08×11.92 m or slightly less than $1 : 3$, and positioned symmetrically at equal distance from the fronts, 7.24 m.⁵¹ (See *Fig. 2* and *Pl. I*) The length is unusual for the 4th century, when the proportion of the naos normally lies between $1 : 2$ and $1 : 2.5$, as a reflection of the shorter 6×11 or 6×12 peristasis colonnades; in such temples the opisthodom

either completely omitted or reduced to almost nothing.⁵² With the long peristasis an unusually long naos became a natural consequence, and a conventional, old-fashioned and relatively deep opisthodom had then to be included if an unacceptably deep and elongated interior space in the cella was to be avoided; but it is clear from the foundation that the opisthodom was kept as less deep than the pronaos, as was normal in such cases.⁵³ In the French publication 5.23 and 6.84 m are given as the dimensions in the foundations for the opisthodom and the pronaos respectively, back to the transversal foundations which separate them from the interior, and their depth in the plan (from the anta orthostates to those in the transverse walls) is reconstructed as 5.00 and 6.35 m respectively; but a recent, slightly different reconstruction of the opisthodom as 4.79 m deep, which has the advantage of putting the wall between cella and opisthodom in a central position on the foundations, is certainly to be preferred.⁵⁴ The asymmetry remains, and it creates a problem for the interior of the cella, since the door in the side wall that coincided with the projection from the northern flank of the temple, on its transverse axis, does not coincide with the transverse axis of the interior of the cella. The disposition of the Corinthian colonnades at the walls had to take account of this, and could be reconstructed in the French publication thanks to this irregularity.⁵⁵

One important model for the planning was clearly the temple of Zeus at Olympia, which also has a naos proportioned close to $1 : 3$ in a symmetrical position inside the peristasis – both rare occurrences in later architecture, and still more rarely seen together.⁵⁶ At Olympia the

also discussed briefly by Osthus 2005, 100. In the Heraion at Argos the double contraction seems possible, but cannot be proved; see Østby 1980, 222, for the proposal, and Pfaff 2003, 76 and 83 n. 2, for the discussion based on the evidence from the recent study of the building.

⁴⁷ It can certainly not be taken as evidence for a triglyph frieze, as presumed by Mallwitz 1972, 143, but it does not disprove it either. See now the sensible discussion by Osthus 2005, 101.

⁴⁸ Østby 1980, 196–7 and 214–5, for Kea; R. Tölle-Kastenbein, *Das Olympieion in Athen*, Köln, Weimar and Vienna 1994, 78–83 for the Olympieion. On these and other examples Osthus 2005, 99–104, and Østby 1990–91, 218–23, for the possibility of a wider diffusion of this feature.

⁴⁹ See Østby 1990–91, 345, 374 and 384–5, for a discussion of these possibilities.

⁵⁰ By the Italian scholar G. Rocco in a public lecture at the university of Reggio Calabria in 2007. This important observation has not yet to my knowledge been published.

⁵¹ Dugas *et al.*, *Tégée*, pl. 9–11; reproduced here, *Pl. I*. Pakkanen 2013, 103 fig. 4.27, has slightly different measurements for the foundations: $11.90–92 \times 35.18–26$ m.

⁵² For these developments, see Knell 1983a, where, however, the dimensions of the naoi are not reported. In temples without opisthodom, naos proportions vary from almost precisely $1 : 2$ (Lepreon, ca. 6.32×12.72 m; Knell 1983b, 137) to about $1 : 2.4$ (temple of Asklepios, Epidauros, naos foundations 6.81×16.45 m; Roux 1961, 108). Some temples which follow 5th-century models with an opisthodom have longer naoi, such as the temples at Kalydon and Molykreion with proportions approaching $1 : 3$ (Knell 1973a, 452–3 figs 1–2 and 459 fig. 7: Kalydon, 7.50×21.25 , Molykreion, 7.35×20.83 , both $1 : 2.83$ or $6 : 17$). The temple at Nemea, with a naos without an opisthodom proportioned as $1 : 2.75$ or $4 : 11$ (11.26×30.90 m; Hill 1966, 24), is a marginal case, probably explained not only by the adyton behind the inner colonnade, but also by the extensive use of the Tegea temple as a model.

⁵³ Of the three 4th-century temples with opisthodom discussed by Knell 1983a, 207–13 (his “Typus A”), both the temples at Stratos and at Troizen have a pronaos deeper than the opisthodom; so also in the 4th-century temple at Delphi (ca. 4.84 and 3.50 m; Courby 1927, 25–7). In the Metroon at Olympia they are equally deep, and were probably influenced by the temple of Zeus in the same sanctuary; this was also the case for the Classical temple of Poseidon at Isthmia (O. Broneer, *Isthmia I, Temple of Poseidon*, Princeton 1971, pls 4 and 29), and in the temple at Sounion (Knell 1973b, 105 fig. 7). Initially this was also the case in the two 6×13 -temples at Kalydon and Molykreion discussed by Knell 1973a, but at Kalydon a later remodelling created a deeper pronaos. For the temple at Bassai, see below, with notes 58–59.

⁵⁴ Pakkanen 2013, 104, 105 fig. 4.28 and 107 tab. 4.13. The pronaos is reconstructed as in the French publication, 6.34 m deep.

⁵⁵ See below, p. 332 with note 96, for the side entrance and the reconstruction of the interior arrangement.

⁵⁶ At Olympia the naos was dimensioned close to three to nine standard

search for symmetry extended to the inner distribution of the naos, with pronaos and opisthodomos equally deep, but at Tegea that was avoided. Another, chronologically closer model was the temple at Bassai, where the longer peristasis with 6×15 columns created a somewhat longer naos (8.43×27.87 m in the orthostates, $1 : 3.31$; 8.63×28.08 m in the toichobate, $1 : 3.25$ or $4 : 13^{57}$), again in a symmetrical position inside the peristasis, but with a pronaos somewhat deeper than the opisthodomos, as at Tegea and almost everywhere else. At Bassai there was also a quite precise tangential correlation between the anta fronts and the circumference of the third columns in the peristasis flanks, thus creating frontal pteron precisely two intercolumniations deep, and already in the foundations it is clear that a similar alignment was at least approached also in the temple at Tegea. There are also some more precise correlations with the temple at Bassai: with the corrected depth of the opisthodomos the ratio between the depths of pronaos and opisthodomos is so close as to be almost identical ($4.79 / 6.34$ m or $1 : 1.32$ at Tegea, $4.00 / 5.42$ m or $1 : 1.36$ at Bassai⁵⁸), and this is also the case for the added depth of both spaces in relation to the entire naos length, very close to one third of the total length ($11.13 / 33.28$, $1 : 2.99$, at Tegea; $9.42 / 27.87$ m, $1 : 2.96$, at Bassai).⁵⁹ In sum, the plan of the Tegean temple represents a sort of compromise between the models from Olympia and Bassai, continues a distinctly Peloponnesian tradition from those temples, and diverges quite emphatically from the general trends of Doric peripteral temples elsewhere in the 4th century.

Since the foundations are considerably wider than the walls which they once carried, they provide only

axial spacings, although not with full precision; the dimensions in the walls can be calculated as 15.92×46.48 m or $1 : 2.92$ (see Mallwitz 1972, 226, and *Olympia* I, pl. IX). There is another interesting case in the second phase of the temple of Artemis at Kalapodi, where the dimensions are three spacings in the front and nine, plus one column diameter, in the flank (Kienast 1988, pl. 39.2); also the lengthwise, symmetrical position inside the peristasis recurs there. Otherwise, proportions close to $1 : 3$ can be found in the Hephaisteion and in the Classical Heraion at Argos: respectively 7.74×22.56 m ($1 : 2.91$; Knell 1973b, 97 fig. 1), and 9.05×26.15 m ($1 : 2.89$, $9 : 26$; Pfaff 2003, 152 fig. 84). The symmetrical position of the naos is also found in the Classical temple of Poseidon at Isthmia (see last note), but not in the Argive temple. In Attica, we have it in the temple of Cape Sounion (see note 53) and in the Parthenon, but not in the others.

⁵⁷ See Svolopoulos 1995, pl. 8, for these dimensions.

⁵⁸ Calculated at Bassai, as at Tegea, from anta orthostate to wall orthostate, based on the plan Svolopoulos 1995, pl. 8. The situation at the Heraion at Argos is very close to Bassai: ca. $4.84 / 3.50$ m, $1 : 1.38$ (Pfaff 2003, 152 fig. 84).

⁵⁹ Different if the cella length calculated by Pakkanen, 33.66 m over the antae, is applied: $1 : 3.024$. (See note 74 below.) In the Heraion at Argos the proportion is still lower, $8.34 / 26.15$ m or $1 : 3.14$ (Pfaff 2003, 152 fig. 84). At Olympia, calculating a naos length over the antae as 46.50 and the depths of the pronaos and opisthodomos as 7.45 m (see *Olympia* I, pl. IX), the ratio is about $1 : 3.1$. It is higher in the Attic temples of the 5th century, about $1 : 2.30$ – 2.34 in the temples at Sounion, Rhamnous and the Ares temple at the Athenian Agora, $1 : 2.55$ at the Hephaisteion; see the figures in Knell 1973b. In the shorter temples of the 4th century, in those cases where the opisthodomos was still used (Metroon at Olympia, Stratos: Knell 1983a, 207–11), the added length of pronaos and opisthodomos together seems to be equal to the cella, or almost so.

a very general basis for a precise reconstruction of the dimensions of the naos which was built on them; the centimetrical and even millimetrical precision suggested in the French publication definitely overestimates what the limited, preserved material available to us can support. For the width of the naos, given as 10.80 m over the orthostates (11.16 m on the toichobate),⁶⁰ Jari Pakkanen's new reconstruction of the naos wall, where the distance between the stylobate edge and the orthostate surface is reduced to 4.11 m, implies a naos width in the orthostates of ($19.16 - 2 \times 4.11 =$) 10.94 m.⁶¹ These dimensions provide, with almost perfect precision, a simple and probably intentional transverse proportion between the pteron and the naos, $3 : 8 : 3$. The width in the toichobate is in Pakkanen's reconstruction based on a slightly smaller distance from the orthostate surface to the toichobate rim, 0.15 m,⁶² so that the full toichobate width becomes 11.24 m (or $17 : 6$ to the pteron at toichobate level, 3.96 m).⁶³

In the French reconstruction, the naos fronts are linked to the peristasis flank by a beam spanning, as a direct continuation of the blocks above the frieze, the lateral pteron ending on the peristasis epistyle.⁶⁴ This beam was essential for the support of the coffered marble ceilings in the pteron. According to the French scholars it had to be placed axially above the third peristasis column, but it is not explained why this is supposed to be necessary;⁶⁵ in

⁶⁰ See Dugas *et al.*, *Tégée*, 34–5, for the width of the naos in the orthostates. The dimensions of the toichobate are obtained by adding to those given in the wall, 10.80×33.28 m, on four sides the projection of the toichobate beyond the walls and antae, consistently 0.18 m (*ibid.*, pls 21–26 and 61: 0.107 m for the projection of the basis mouldings under the orthostates, 0.077 m for the open rim on the toichobate block between the moulding and the edge). The width 10.80 m would correspond precisely with the three central axial spacings as reconstructed above, but it cannot now be maintained.

⁶¹ Pakkanen 1996, 159–61, fig. 8. In *id.* 2013, 104 with n. 164 and 107 tab. 4.13, he reconstructs the naos as 10.92 m wide over the antae and 11.12 m in the toichobate.

⁶² Obtained by adding the projection of the moulding of the block used by him as orthostate base (Dugas *et al.*, *Tégée*, 42–3, fig. 15: 0.073 m) to the same 0.077 m presumed for the open rim on the toichobate block and the edge assumed by the French publication. Pakkanen 2013, 104, reconstructs 0.103 m here.

⁶³ Norman, *Temple*, 190, also reconstructs a wider naos than the French publication, increasing the inner width from 8.944 m (Dugas *et al.*, *Tégée*, pl. 9–11: here, *Pl. 1*) to 9.552 m, in order to obtain a regularly spaced group of three half-columns on the western wall of the cella, and giving the slabs of the cella pavement a small ledge on the foundations for support. According to this theory the external width of the naos would increase by 0.61 m, to 11.41 m (in the wall) or 11.85 m (in the toichobate). Pakkanen's more cautious calculations also include the same sensible concern for the support of the pavement slabs, and are equally compatible with Norman's reconstruction of half-columns on the western wall, which is probably correct. See below (p. 329, with note 83) for the inner span of the cella as it must now be calculated.

⁶⁴ These beams are obviously derived from the Attic temples (Hephaisteion, Sounion, Rhamnous) where the epistyles of the porch fronts were also carried across the pteron in this way. At Bassai and Tegea, this feature was limited to the shift above the frieze, as support for the slabs of the coffered ceiling. In the same way the feature is used in the rear porches of the Attic temples; see the perspective drawings in Plover 1950, pls 7–9.

⁶⁵ Dugas *et al.*, *Tégée*, 30–1, pls 53 and 87.B (the beam); how it is used

other temples it was not. At Bassai a similar construction is used and may have served as a model for Tegea. Here, the beam has a slightly asymmetrical position over the third peristasis column, and this would be necessary in order to obtain another alignment: between the edge of the porch stylobate and the joint between block four and five in the flank stylobate.⁶⁶ This alignment, together with a general, precise alignment between the joints in the stylobate and between the pavement slabs in the front pteron, was apparently considered important in this environment since, besides the Bassai temple, it is documented also in the temple of Asklepios at Epidauros.⁶⁷ With this alignment, the few centimetres of open space on the stylobate block in front of the column would coincide precisely with the distance between the toichobate edge and the anta front, so that in these temples the anta fronts could be aligned precisely with the tangential line connecting the third columns in the peristasis flanks. (From a side view, the upper part of the anta would then project slightly in front of the tapered, upper part of the column.⁶⁸) But this was possible only if the beam connecting the porch epistyle with the peristasis was moved slightly forwards from the precisely axial position above the third column. If that axial position is maintained, as in the French reconstruction of the Tegean temple, the edge of the stylobate in the porches and consequently also the anta fronts had to be pulled a slight distance behind the tangential line between the third flank columns.⁶⁹ As a consequence of that, the precise correlation between the joints in the stylobate and the pteron pavement could not be applied here, making the temple a somewhat suspect exception in the Peloponnesian environment where this correlation was apparently considered important. Too little is preserved of the pavement slabs (a total of nine fragments, only three with the full dimension of a side, 1.791 m, coinciding as expected with the length of the

stylobate blocks and half an axial spacing⁷⁰) to explain how the problem with the pavement was resolved. The solution offered by the French reconstruction plan, where the correlation between the pavement slabs and the joints in the flank stylobate is abandoned in the front pteron, is by their own admission completely hypothetical,⁷¹ and it is unlikely: there would be nothing to prevent, for instance, a regular correlation between the first two rows of slabs in the pteron and the first three stylobate blocks, leaving the irregularity to be adjusted either by a slightly wider third row of slabs, the last in front of the porch stylobate, or by inserting there one row of very narrow slabs. However, the regular pavement following the pattern from other contemporary temples, as drawn (but without any explanation) in another recent and frequently reproduced plan,⁷² is not possible if one accepts the reasoning of the French publication, which imposes a cella slightly shorter than the tangential correlation discussed above would require.

Following their train of thought with a slightly different calculation, the length of the naos, over the antae, should be identical to nine standard axial spacings ($9 \times 3.582 = 32.24$ m), plus one full thickness of the beam in the ceiling (0.87 m), and two small, more hypothetical adjustments in order to transfer the naos length from the epistyle to the orthostate and toichobate levels (detracting 0.012 m for the presumed projection of the lintel in front of the porch frieze, but adding 0.057 m for the equally presumed tapering of the anta front⁷³) repeated twice: 0.09 m. This results in a total length over the antae, at orthostate level, of about 33.20 m. (The French publication arrives at 33.284 m, by subtractions from the overall stylobate length.⁷⁴) Adding 0.15 or 0.18 m for the toichobate projection in front of the antae at both ends gives a length in the toichobate of 33.50–33.56 (or 33.58–33.64) m with the two different calculations. If some leeway is allowed for the length of the axial spacings, which can hardly be as regular as the French publication assumed, there might be a margin of a couple of centimetres, hardly more. The overall proportion of the naos comes close to 1 : 3, but without hitting the mark precisely: with the naos widths calculated by Pakkanen, we have $33.20\text{--}33.28 : 10.94 = 1 : 3.035\text{--}3.042$ m in the orthostates, $33.50\text{--}33.64 : 11.24 = 1 : 2.980\text{--}2.993$ m in the toichobate. The margins which should be observed for the calculation of the toichobate permit that at this level there may have been a precise execution of that 1 : 3-proportion

for the calculation of the naos length is explained *ibid.* 34, but without giving a precise reason why the beam has to coincide axially with the column beneath. The naos length is also calculated *ibid.* 42.

⁶⁶ On the plate in Svolopoulos 1995, pl. 16, this asymmetrical position of another beam of the same type on the column below is evident; so also on the schematic drawing Cooper 1992, pl. 53.c. The same situation seems to apply to the temple at Stratos: see Courby and Picard 1924, 45–9, pl. 11. At Nemea the slightly different alignment must have increased the asymmetry; see next note. In the Classical Attic temples these beams coincided with the peristasis columns in the front, but not in the rear where the pteron were less deep; see the drawings by H. Plommer (note 64 above).

⁶⁷ For Epidauros, see the plates Roux 1961, pls 27–28; for Bassai Svolopoulos 1995, pls 8 and 20. A preparation for such a system was made also at Stratos, although the pavement slabs were probably never put down there; see Courby and Picard 1924, 25, pl. 6. In the temple at Lepreon there was a similar situation: see Knell 1983b, 131 fig. 16. At Nemea there was a slightly different arrangement with the anta front coinciding with the joints in the stylobate and the pavement, the toichobate front being pushed a little in front of that line: Hill 1966, pl. 4.

⁶⁸ See Svolopoulos 1995, pl. 12, or Cooper 1992, pl. 20.12, for illustrations of this effect. At Nemea the slightly different system mentioned in the last note made the anta more visible in front of the third flank column: Hill 1966, pl. 7.

⁶⁹ See Dugas *et al.*, *Tégée*, pl. 9–11 (here, *Pl. I*).

⁷⁰ So in the French publication: Dugas *et al.*, *Tégée*, 33. Six blocks have been more or less certainly identified by Pakkanen as pavement slabs (see the concordance to section *xix*, p. 414).

⁷¹ See last note.

⁷² Norman, *Temple*, 183 fig. 9.

⁷³ As explained Dugas *et al.*, *Tégée*, 34, and 41–2 on the evidence for the antae.

⁷⁴ Dugas *et al.*, *Tégée*, 42. Pakkanen 2013, 104 n. 169, 105 fig. 4.28 and 107 tab. 4.13, calculates the naos length as 33.862 m in the toichobate and 33.656 over the antae, with ratios width to length respectively 1 : 3.045 (width 11.12 m) and 1 : 3.027 (width 10.92 m). It is not possible to discuss here the obvious implications for the calculations in the present text.

which the entire shape of the naos somehow calls for. In any case, and as a drawback in addition to the irregularity in the pavement, this reconstruction implies that from the side view the anta front remained entirely covered by the third peristasis column and did not appear in front of its upper part, as at Bassai, Nemea, and elsewhere.⁷⁵

If, on the other hand (and for that reason), one assumes that the reasoning of the French scholars is wrong and that the beam could be displaced so that the normal correlation between the naos fronts and the peristasis flanks could be applied here as well, the calculation becomes easier. The length of the naos, over the antae, is then identical to nine axial spacings plus one lower column diameter: $(9 \times 3.582 = 32.24, + 1.46 =) 33.70$ m in the orthostates, 34.00–34.06 m in the toichobate. The proportions, 1 : 3.08 in the orthostates and 1 : 3.025–3.030 in the toichobate, can also in this case come very close to 1 : 3 at toichobate level. Such considerations, however, can hardly be used as a criterion to favour one reconstruction over another, and it seems necessary to refrain from an attempt to define the dimensions of the naos with full precision since the material at our disposal is so limited, and since there is so much uncertainty about the alignments, even with the better documented parts of the temple.

If the general disposition of the plan gives the immediate impression of a temple of the 5th century rather than one from the second half of the 4th, this impression is additionally emphasized by the unusually rich sculptural decoration, with narrative groups in both pediments and in the relief metopes above pronaos and opisthodomos. The first certain example of this distribution is the temple of Zeus at Olympia, which has often been taken as an indication that this was a Peloponnesian concept.⁷⁶ The temple at Bassai can now be ruled out as a model, since although it had relief metopes in the porches, it is now clear that it had no sculptures in the pediments;⁷⁷ but there is evidence for a similar arrangement in the Heraion at Argos, with relief metopes on both the exterior and the porches in addition to the well-known pediment groups;⁷⁸ there is also a certain possibility that there were also relief metopes in the porch of the temple of Asklepios

⁷⁵ See Dugas *et al.*, *Tégée*, pl. 15–17, for a graphical illustration of this situation.

⁷⁶ It includes, however, also Temple E at Selinus, where the temple at Olympia is an obvious model. See a sensible discussion of the issue by Junker 1993, 103, who does not, however, include in his discussion the possible cases at Argos and Epidauros (see the next notes); he mentions (p. 155) the temple at Kalydon which also otherwise seems to closely follow 5th-century models, but there is nothing to indicate that there were pedimental sculptures here. In the new temple of Apollo at Delphi, where there was sculpture in the pediments, he mentions inscriptional indications that also the porch metopes perhaps had reliefs (*ibid.* 179); the Archaic temple had this, and set the model if the hypothesis is correct. See Ridgway 1997, 25–77, for a general review of architectural sculpture on the Greek mainland in the 4th century.

⁷⁷ Cooper 1996, 249–50.

⁷⁸ It has now been demonstrated that there were relief metopes in the porches as well as in the exterior, and sculpture in the pediments: Pfaff 2003, 155–6.

at Epidauros.⁷⁹ For Tegea, both Olympia and Epidauros are interesting and possible models. The decision is in any case easier to understand if the architect in charge also had a renown as a sculptor, and the unusual idea puts some weight behind the assumption that Skopas also had power of decision behind the planning and composition of the sculptural decoration, although he may have entrusted the material execution to a local workshop.⁸⁰

The conscious references to 5th-century temples omit one detail which a temple of these dimensions would not then have lacked: inner colonnades in the cella.⁸¹ That decision must have been taken already when the foundations were laid out, and for that reason most of the foundations for such colonnades in the Archaic temple were simply left in place: they did not disturb the new plan.⁸² For the tension which the architect wanted to create between the conservative and rather rigid exterior and the abundantly decorated cella interior with its profusion of Ionian-inspired ornaments and the Corinthian half-columns along the walls, which goes far beyond anything the 5th century could offer by way of models, such colonnades would have been nothing but destructive. But by removing the interior columns from the space and integrating them with the walls, following a concept initiated and inspired by the smaller temple at Bassai where it was also more cautiously excuted, the architect must have known from the beginning of the project that he had to face the challenge of spanning the 9.11 m wide interior without inner supports.⁸³ This feat of engineering was almost certainly completed without the use of a trussed roof construction, which does not seem to have been adopted in Greek mainland architecture until Hellenistic times, although it had been used since quite early in Sicily.⁸⁴ Even so, still larger

⁷⁹ Where inscriptional evidence has been taken as evidence that the metopes over the pronaos porch had reliefs (G. Roux, “Sur quelques termes d’architecture,” *BCH* 80, 1958, 518–21); but W. Pösch, “Die Typoi des Timotheos,” *AA* 1991, 69–73, explains it rather as evidence for reliefs on the base of the cult statue.

⁸⁰ See below, pp. 346–8, for Skopas as architect of the temple.

⁸¹ It has now been demonstrated that the new temple in the Heraion at Argos had inner columns: Pfaff 2003, 169–74. In larger temples (Nemea, Apollo at Delphi, Stratos, Kalydon, Molykreion) they were still used in the 4th century, although they were mostly closer to the walls than before; in smaller temples they had become superfluous and were omitted. See note 85 below for the case of the temple of Apollo at Thebes.

⁸² Some blocks from the old temple were reused in the foundations of the new one; see Østby 1986, 91–2 (particularly the marble stylobate block fig. 28 – also in *Tegea* I, section i (Østby), 35 Fig. 15). It seems clear, however, that the other marble blocks discussed and illustrated in the 1986 paper (91–2, figs 26–27) must come from some other, later building.

⁸³ 8.94 m between the wall faces, according to Dugas *et al.*, *Tégée*, pl. 9–11 (here, *Pl. I*); but after the recent adjustment of the cella width in the orthostates to 10.94 m (above, p. 327 with note 61), and twice subtracting the wall thickness 0.90 m and the projection of the orthostate in front of the wall 0.017 m (Dugas *et al.*, *Tégée*, 41), the open span is increased to 9.11 m. See note 63 above for another recent recalculation of this dimension.

⁸⁴ For this issue, see A. Trevor Hodge, *The woodwork of Greek roofs*,



Figure 7. Marble flower, probably from the coffered ceiling of the pteron, discovered during the last season of the excavation. (Photo: Østby)

spans had been covered in certain Periclean buildings; but apart from those, the temple at Tegea has one of the widest unsupported, inner spans ever found in Classical Greek architecture.⁸⁵ It is for this reason of considerable interest that the tholos at Epidauros provides a precise parallel: the diameter of the open space between the inner columns, which in this case stood free in front of the wall, is 9.11 m, identical to the open width which can now be calculated between the walls at Tegea.⁸⁶ This can hardly be understood in any way other than as a conscious and intentional repetition, more probably from Epidauros

Cambridge 1960, 38–40 (with a useful table of documented spans), and Hellmann 2002, 288–91. The Sicilian origin of the truss roof has recently been supported with strong arguments by N.J. Klein, “Evidence for West Greek influence on mainland Greek roof construction and the creation of the truss construction in the Archaic period,” *Hesperia* 67, 1998, 335–74.

⁸⁵ In Trevor Hodge’s table (see last note), the central space of the Parthenon cella is cited as 11.05 m, the spans in the (unfinished) Iktinian project for the Telesterion at Eleusis as 10.60 m, and the Erechtheion as 9.80 m. Gruben 2001, 182 and 243, has 10.60 and 10.06 m for Parthenon and the Telesterion respectively. Otherwise, the Tegea temple (cited as 8.94 m, following Dugas) is at the top of the list, when the Sicilian temples with 11–12 m wide spans are disregarded. Of the large 4th-century temples mentioned above, only the temple at Thebes with its distance of about 11 m between the cella walls apparently managed to cover similar spaces without inner columns; but the interior arrangements there are insufficiently known for inner colonnades to be excluded. See the references to this temple above, p. 317 note 3.

⁸⁶ See note 83 above. The diameter in the tholos: Roux 1961, 153 (diameter of the central pavement within the Corinthian colonnade; axial diameter of the colonnade, 10.11 m); Seiler 1986, 79.

to Tegea than the other way round.⁸⁷ In this context the marble flower which was discovered in the northern area, but unfortunately disintegrated before it could be restored, must be understood: it must have decorated the coffer in a particular part of the ceiling, as similar flowers did in the tholos at Epidauros. Even the detail of the nerve in the centre of the petal recurs in both places.⁸⁸ (Fig. 7)

In the light of the ample evidence for contact, rivalry and imitation between the tholos at Epidauros and the temple at Tegea, it is all the more interesting that the execution of the Corinthian capitals in the interior is so different in the two buildings.⁸⁹ (Figs 8–9) On both capitals the importance of the acanthus has proceeded much from the early examples at Bassai and in the tholos at Delphi, and the double row of acanthus leaves surrounding the lower part of the capital is common to both and, from now on, to practically all successive developments of this capital type. But otherwise the two capitals represent different and separate lines of development. The flower above the inner volutes on the Epidauros capital has no botanical connection with the acanthus; it is derived from the central palmette in the same position on the Bassai capital, and the two separate sets of inner and outer volutes, springing from behind the lower leaves without sheaths, are also developed from the capital at Bassai and have no real connection with the acanthus leaves underneath. At Tegea, an effort has been made to obtain full botanical consistency in the use of acanthus: instead of the inner volutes and the dainty flower above them we find a large acanthus leaf rising triumphantly above the others, and the strong and heavy, external volutes spring from fluted caules sheaths clearly identified as acanthus by the small leaves at the rim. Rather illogically, such leaves also grow on the upper surfaces of the volutes themselves and emphasize their botanical identification still further. This creation is quite clearly based on the way acanthus was treated ornamentally elsewhere in the Epidaurian buildings, on the sima reliefs of the tholos and the Asklepios temple (Fig. 10) and in the wedge-shaped spaces between the coffers in the marble ceiling of the tholos.⁹⁰ The caules with its rim leaves recurs in these places, after appearing probably somewhat earlier on

⁸⁷ The precise chronological relation between the two buildings is not clear, and their building periods almost certainly overlapped; but if the tholos was planned and started earlier than the temple at Tegea, it probably provided the inspiration. See below, p. 343 with notes 153–154, for the issue.

⁸⁸ See section iii (Luce), 52 and Fig. 20; and Roux 1961, 152, pl. 46, for the tholos at Epidauros.

⁸⁹ See for the Tegea capital Dugas *et al.*, *Tégée*, 49–50, pls 76 and 90–92; later, with some adjustments, Norman, *Temple*, 177–8, fig. 5 (this after Hill 1966, pl. 29.b), and Bauer 1973, 65–71, 94 and 103–4, pls 21–23, Beil. 9–11. For the capital from Epidauros: Bauer 87–93 and 104, Beil. 15 and Roux 1961, 153–6, pls 47–49, also 362–7 for a good, general comparison of the early Peloponnesian Corinthian capitals.

⁹⁰ Roux 1961, 105–6, pl. 34.1–2 (temple of Asklepios), 145, pls 43.c and 51.1–2 (the tholos). For the development of these raking simae, see Hellmann 2002, 303–4.

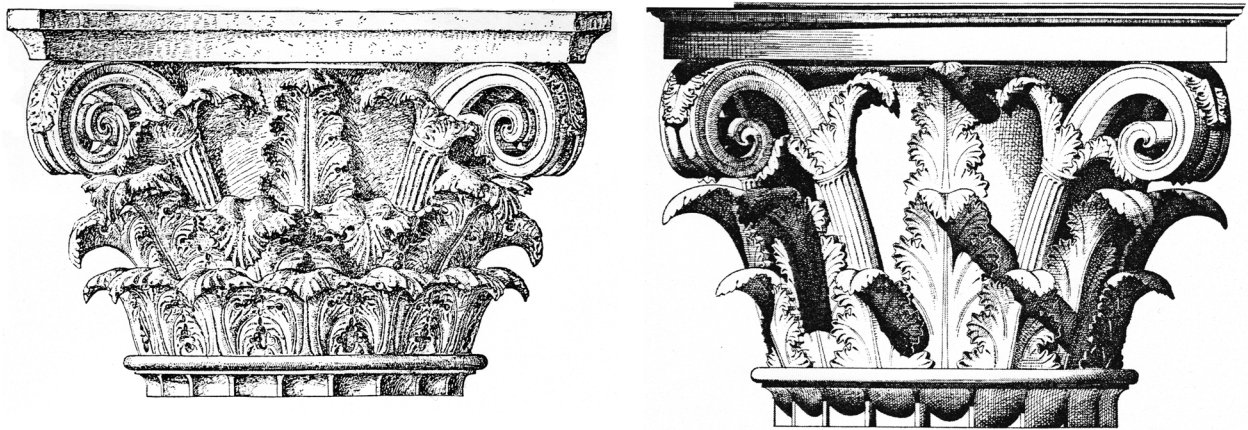


Figure 8. Two reconstructions of the Corinthian capitals in the interior of the Classical temple. Left, after Dugas *et al.*, *Tégée*, pl. 76; right, after Hill 1966, pl. 29.b.



Figure 9. Corinthian capital from the tholos at Epidauros.



Figure 10. Sima with acanthus ornaments from the temple of Asklepios at Epidauros, in the National Museum in Athens. (Photo: Østby)

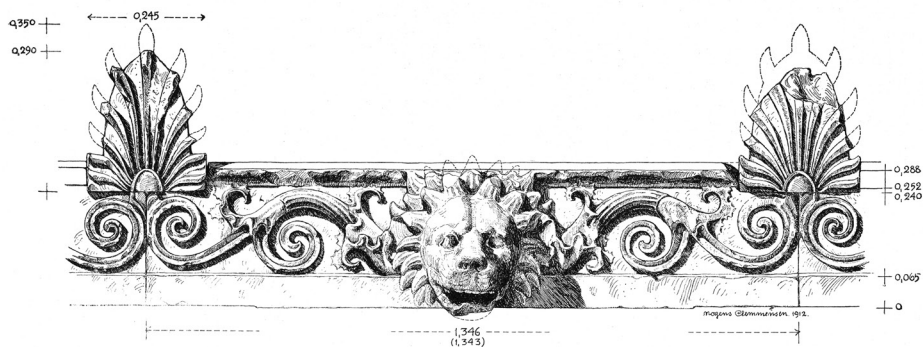


Figure 11. Sima block, with antefixes, from the Classical temple. (After Dugas *et al.*, *Tégée*, pl. 39)

the simae from the tholos at Delphi;⁹¹ the theme has an earlier pedigree on acroteria, stretching back probably to the central acroteria on the Parthenon.⁹² Such an acanthus ornament also decorates the marble sima of the Tegean temple.⁹³ (*Fig. 11*) The person who created the capital for the Epidaurian tholos did not follow these leads, however, and instead made an original creation so successful that it led the further development of the Corinthian capital in an entirely new direction. The path indicated by the Epidaurian sima ornaments was followed far more closely at Tegea, as far as we know for the first time on a capital. The result is coherent and logical, more so than the tholos capital, but it lacks the brilliant, inventive creativity of the Epidaurian capital. Perhaps for that reason it had a more limited and mostly local, later following – immediately in the temple at Nemea and in the Philippeion at Olympia,⁹⁴ and in the 3rd century in certain capitals in Asia Minor.⁹⁵

The precise arrangement of the unusually rich inner decoration of the cella has been the object of some discussion, since the preserved fragments are insufficient for a complete reconstruction. The disposition of the Corinthian half-columns, with seven on each wall placed so that the asymmetrical side entrance in the northern wall does not disturb the rhythm, was well presented and argued in the French publication and is probably correct.⁹⁶

⁹¹ See for the two simae from the tholos at Delphi J. Charbonneaux and K. Gottlob, *Le sanctuaire d'Athéna Pronaia, Le tholos* (FdD II.4), Paris 1925, 6–9, figs 9–12; J.-Fr. Bommelaer (ed.), *Marmaria, le sanctuaire d'Athéna à Delphes*, Athens 1996, 64 fig. 57. Bauer 1973, 94 with n. 158, sees the origin of the theme here (see Seiler 1986, 67, for the early 4th-century date). The entire group of simae with such decorations is analyzed by M. Schede, *Antike Traufleisten-Ornamente*, Strassburg 1909, 41–75, pls 4–6 (Ionian examples: 76–80, pls 7–8).

⁹² For these acroteria, where fluted caules and rim leaves already appear, see H. Gropengiesser, *Die pflanzlichen Akrotere klassischer Tempel*, Mainz 1961, who also discusses the acroteria from the Classical Heraion at Argos and presents (29–42, pl. 29) a new reconstruction of the acroteria from Tegea. The top acroterion from the tholos at Epidauros must also be included in this group: Roux 1961, 166–8, fig. 40. On the connections with simae and stele ornaments, *ibid.* 45–8; see also H. Möbius, *Die Ornamente griechischer Grabstelen*, Berlin 1929, with much relevant material in the plates.

⁹³ See Dugas *et al.*, *Tégée*, 24–5, pls 46–47. The sima from the temple at Nemea is so similar that it may be a work by the same craftsmen: Hill 1966, 17–9, pls 13 and 17, and p. 348 note 197 below.

⁹⁴ Nemea: Hill 1966, 31, figs 33–35, pl. 23; Bauer 1973, 98–100 and 105–6, Beil. 18. The Philippeion: *ibid.* 96, Beil. 17.

⁹⁵ See Bauer 1973, 94, discussing capitals from the Belevi mausoleum (pls 31.2–4 and 32.2–3) and from the agora at Smyrna (pl. 32.3).

⁹⁶ Dugas *et al.*, *Tégée*, 51 and 53, and pl. 9-11 (here, *Pl. 1*) for the proposed arrangement. See above, p. 326, for the asymmetrical position of the northern porch created by the different depth of pronaos and opisthodom. Norman, *Temple*, 189 and 183 fig. 9, reconstructs a wider door and for that reason replaces the two half-columns framing the door with small pilasters, but on no real evidence; the rhythm of the remaining half-columns remains identical with the French reconstruction. Büsing 1970, 31–2, fig. 45, argued for a reconstruction of the cella interior with six rather than seven half-columns on either side, but this reconstruction disregarded and omitted the northern porch. See section xvii (Pakkanen), 367–9 with *Fig. 22*, for a new reconstruction of the porch with some previously unknown material (although its precise dimensions remain uncertain), and *ibid.*, 358 *Fig. 4* for an updated plan of the temple incorporating these results.

On the rear wall, against the opisthodom, this decoration was then omitted since a different spacing would have been necessary there; but since inner colonnades in the 4th century are always elsewhere carried across the rear end of the cella when they exist, there is no valid reason not to accept this also at Tegea.⁹⁷ The French publication made no serious attempt to consider the treatment of the upper part of the walls, above the level which could be reached by the Corinthian colonnade if its bases were at floor level, as they presumed, and the half-columns were of normal height in relation to their attested lower diameter.⁹⁸ This situation has left the field open for a later suggestion of a double arrangement of half-columns, Corinthian in a lower and Ionian in an upper tier, of a pattern which was used somewhat later in the two-tiered inner colonnades in the temple at Nemea.⁹⁹ Fragments of Ionic columns have been found at the site, and one such presumed fragment was used in support of this reconstruction; however, the fragment in question has later been identified as Doric.¹⁰⁰ But there is no doubt that that other buildings and monuments existed in the sanctuary,¹⁰¹ and some material from them certainly exists in the excavated area. It is important in this connection to remember the altar, which may have been a column altar of Ionic type; Ionic capitals were discovered in early excavations and have later been dispersed.¹⁰²

Although it involves some problems and can hardly be considered as definitively demonstrated, the reconstruction proposed some years ago by Jari Pakkanen, of Corinthian half-columns standing on a podium high enough to let the colonnade and its entablature cover the space up to the ceiling, is likely to be essentially correct.¹⁰³ It is supported by evidence for similar arrangements in the tholos at Delphi, probably also in the temple of Asklepios at Epidauros, and somewhat later in the Philippeion at Olympia.¹⁰⁴ A recent

⁹⁷ As argued by Norman, *Temple*, 181–3 with fig. 9. Dugas *et al.*, *Tégée*, touches the question p. 51.

⁹⁸ Dugas *et al.*, *Tégée*, 54, pl. 18-20.

⁹⁹ Norman, *Temple*, 179–80, figs 4 and 8 (n. 67 for other, more or less vague proposals going in the same direction), and *ibid.* notes 71–72 for the situation at Nemea (also Hill 1966, 30–6). Gruben 2001, 139 and 142, accepts this arrangement at Tegea.

¹⁰⁰ Norman, *Temple*, 180, pl. 31.10, discusses the fragment, but has the wrong identification; see Pakkanen, *Temple*, p. A27, for a full description. It is Block **319** in his catalogue here (section **xix**, 393). The recently discovered column fragment **ArchN-MT 1** with Ionic fluting may be from the Corinthian half-columns in the cella, but another, similar fragment, **ArchN-MT 2**, is too large for that and must belong elsewhere; see for these pieces Østby, section **xv**, 309.

¹⁰¹ See section **xv** (Østby) for recovered material which demonstrates this.

¹⁰² See for the altar the discussion in section **i** (Østby), 18–20.

¹⁰³ See section **xvii** (Pakkanen), 357 with *Figs 2–3* for updated discussion and drawings of this reconstruction, which was first explained by *id.* 1996, 158–64, fig. 8, and later with some small corrections *id.* 1998, 5 n. 19. A similar reconstruction of the interior was also proposed by Büsing 1970, 32, fig. 46, but with some errors; see note 90 above.

¹⁰⁴ For the tholos at Delphi and the Philippeion at Olympia, see conveniently Seiler 1986, 56–71, figs 28 and 30 (also Pakkanen 1996, 145–9, fig. 5), and 89–103, figs 37 and 40. For the temple at Epidauros: Roux 1961, 112–4, fig. 25, pl. 28.

Horizontal dimensions	Euthyneria	Stylobate	Axial width	Axial spacings (corner)	Lower column diameter
Hephaistos, Athens	15.42 m	13.708 m	12.58 m	2.58 (2.42) m	1.018 m
Poseidon, Cape Sounion	ca. 15.20 m	13.47 m	12.31 m	2.522 (2.374) m	1.043 m
Apollo, Bassai	16.096 m	14.558 m	13.176 m	2.732 (2.490) m	1.158–162 m
Hera, Argos	ca. 18.56 m	ca. 17.10 m	15.70 m	3.252 m (ca. 2.971) m	ca. 1.308 m
Asklepios, Epidauros	13.20 m	11.90 m	10.93 m	1 × 2.31, 2 × 2.26, (2 × 2.052) m	0.92 m
Athena Alea, Tegea	21.04 m	19.16 m	17.52 m	1 × 3.65, 2 × 3.58, (2 × 3.35) m	1.456 m
Zeus, Nemea	22.17 m	20.085 m	18.345 m	1 × 3.84, 2 × 3.75 (2 × 3.505) m	1.628 m
Dodekatheon, Delos	9.90 m (first step crepidoma)	8.58 m	7.79 m	1.65 (1.42) m	0.69 m
Zeus, Stratos	18.32 m	16.64 m	15.17 m	3.16 (2.845) m	1.29 m

Vertical dimensions	Crepidoma height	Column height	Architrave height	Frieze height	Geison height <i>Geison, flanks</i>	Pediment (tympanon/geison, + sima) <i>Sima + antefixes, flanks</i>
Hephaistos, Athens	1.054 m	5.712 m	0.84 m	0.828 m	0.32 m	2.01 (1.78 + ca. 0.23) m
Poseidon, Cape Sounion	1.08 m	6.024 m	0.836 m	0.829 m	0.39 m	2.075 (1.83 + 0.245) m
Apollo, Bassai	0.758 m	5.97 m	0.835 m	0.848 m	0.294 m	2.45 (2.128 + 0.321) m
Hera, Argos	0.93 m	ca. 7.32 m	ca. 1.036 m	1.063 m	0.417 m <i>0.346 m</i>	ca. 2.43? (2.17? + 0.26) <i>0.233 m</i>
Asklepios, Epidauros	0.692–696 m	5.705 m	0.61 m	0.688 m	0.285 m <i>0.21 m</i>	ca. 1.87 (ca. 1.64 + 0.23) m
Tholos, Epidauros	0.86 m	6.88 m	0.70 m	0.785 m	<i>0.24 m</i>	<i>0.28 m</i>
Athena Alea, Tegea	1.093 m	(9.55–67) 9.58? m	0.968 m	1.088 m	0.365 m <i>0.295 m</i>	2.37 (2.117 + 0.254) m <i>0.288 (+ 0.302) m</i>
Zeus, Nemea	1.082 m	10.325 m	1.034 m	1.151 m	0.40 m <i>0.317 m</i>	2.44 (2.21 + 0.234) m <i>0.285 (+ 0.285) m</i>
Dodekatheon, Delos	0.735 m	4.62 m	0.415 m	0.575–580 m	0.155 m	1.17 (1.04 + 0.127) m
Zeus, Stratos	1.265 m	7.88–93 m (first planned 8.67–73 m)	0.825 m	0.946 m	0.305 m <i>0.248 m</i>	Ca. 1.76 m (+ sima, unknown)

Table 1. Principal dimensions in the elevations of important temples of the late 5th and 4th century B.C. Above, horizontal; below, vertical dimensions. The dimensions of the geisa (if visible height is different from the front) and simae (and antefixes, if relevant) on the flanks are separate and italicized.

drawing by the American artist C. Smith exemplifying this reconstruction is included elsewhere in this volume (section xvii (Pakkanen), 356 Fig. 3).

Proportional system of the elevation

Today it is normally easier to study a Greek temple in the dimensions, the proportions and the layout of its plan rather than in the execution of its elevation, although the visual impact of these temples (as of any other buildings) was first of all linked to the elevation when the building was complete. The temple at Tegea is one where a considerable effort of imagination is needed to visualize the original aspect of the building, since only its foundations are preserved *in situ*, with fragmentary material from the elevation scattered on and around the building. The material is, however, rich enough to allow an almost complete reconstruction of the elevation on paper; this was admirably done in the French publication of 1924, where practically all relevant elements are presented with millimetric precision of all essential dimensions. No correction seems necessary for all those elements, the vast majority, where the heights could be measured directly on one or more single blocks. But for one important dimension, the height of the columns, this was not possible in the same way since they were composed of a number of drums, where irregularities of height and composition occurred. If no column of a temple is preserved standing, and if no entire set of drums from it can with full certainty be attributed to one column, there is bound to be some margin of uncertainty when the column height is reconstructed. This is the situation with the temple at Tegea, and it was not acknowledged in the original publication where the column height was calculated with the same absolute, millimetric precision as 9.474 m.

As a part of our project the preserved column drums were thoroughly studied, in order to reconstruct the entasis curve in the first place, but it was also observed that this column height had to be slightly adjusted. With the 12 cm large range of possible heights which could be established, between 9.55 and 9.67 m, the columns turned out to be slightly higher, but with a less precise definition.¹⁰⁵ In a later study, where the reconstruction of the cella wall was also considered, the range of probable heights has been restricted to 9.56 to 9.58 m. In this publication (section xvii, Pakkanen) the suggested range is somewhat wider, between 9.544 and 9.580 m.¹⁰⁶ For the purpose of this study the wider range will be used as point of departure.

¹⁰⁵ Pakkanen, *Temple*, 49–73. The previous calculation of the column height was presented by M. Clemmensen in Dugas *et al. Tégée*, 18–9, pl. 21–26.

¹⁰⁶ This calculation is published in Pakkanen 1996, 153–64, fig. 8. The issue is briefly discussed in his contribution here (section xvii, 355 with note 32 and Fig. 1); in *id.* 2013, 107 tab. 4.14, he applies 9.56 m without further discussion.

The margin of uncertainty for the column height creates immediate problems for any attempt to reconstruct a proportional or metrological system for the elevation of this temple. In any such system the height of the column obviously plays an essential part, but without a fixed value for the column height the possible results of a proportional study become too vague for comfort. It is, for example, obviously tempting to consider the width of the stylobate, 19.16 m, as twice a column height of 9.58 m, safely within the range of accepted possibilities with either calculation; but with slightly different values other apparently convincing proportions can be established with the axial rectangle, 17.52 m (11 : 6 to a column height of 9.556 m) or with the “normal” axial spacing of 3.582 m (3 : 8 to a height of 9.552 m). Too many possible proportions, involving different values within the range of 12 cm for the column height, exist for such isolated attempts to be of any value; they can be seriously considered only if it can be demonstrated that they are part of an overriding, general system.

One possible approach to such a system might be first to investigate the proportions in the part of the building where the dimensions have been safely established: in the epistyle. At Tegea, such an attempt can involve not only the complex of architrave, frieze and geison, but also the tympanon with its complement of raking geison and sima; and it gives results which are not influenced by the uncertainties of the column height.

The proportion between the heights of architrave and frieze, as presented in *Tab. 1*,¹⁰⁷ is 8 : 9, with full precision. The geison is only a negligible 2 mm off 1/3 of the frieze height, so that the chain of proportions through all three elements comes out as 8 : 9 : 3, 20 units of 12.1 cm. The entire height of the epistyle comes very close to 2/3 of the central axial spacing as calculated above, 3.65 m, but without coinciding completely. The frieze height is similarly close to the proportion 3 : 10 to the same axial spacing which theoretically results if the basic proportions in the frieze (2 : 3 between triglyph and metope width, 1 : 1 for width to height of the metope) are precisely observed. In this temple, they come close to being so: triglyphs 0.71 m wide, metopes 1.08 m, for an axial spacing 3.58 m.¹⁰⁸ The height of the frieze, with only half a centimetre difference, is repeated in the crepidoma above the euthynteria; logically this emphasizes the importance of the axial spacing, but among the other temples this repetition can only be noted in the Epidauros temple. A different approach can be noted in the tholos, where the crepidoma is 1/10 of the height of the order (without the sima).

¹⁰⁷ Dimensions taken from Dugas *et al., Tégée*, pls 39 (architrave), 41 (frieze) and 45 (horizontal geison); pp. 20–4 for the discussion.

¹⁰⁸ See above, 322–6 for the details concerning the disposition of the frieze. One well preserved geison block, with both a mutulus and a via fully preserved (Dugas *et al., Tégée*, pl. 44.Ab: 0.710 and 0.185 m respectively) seems to confirm 1.08 m as the visible width of the metope, which, strangely, leaves no room for covering any part of the margins of metope blocks 1.08 m wide behind the 0.018–0.019 m projecting flanges at the sides of the triglyphs.

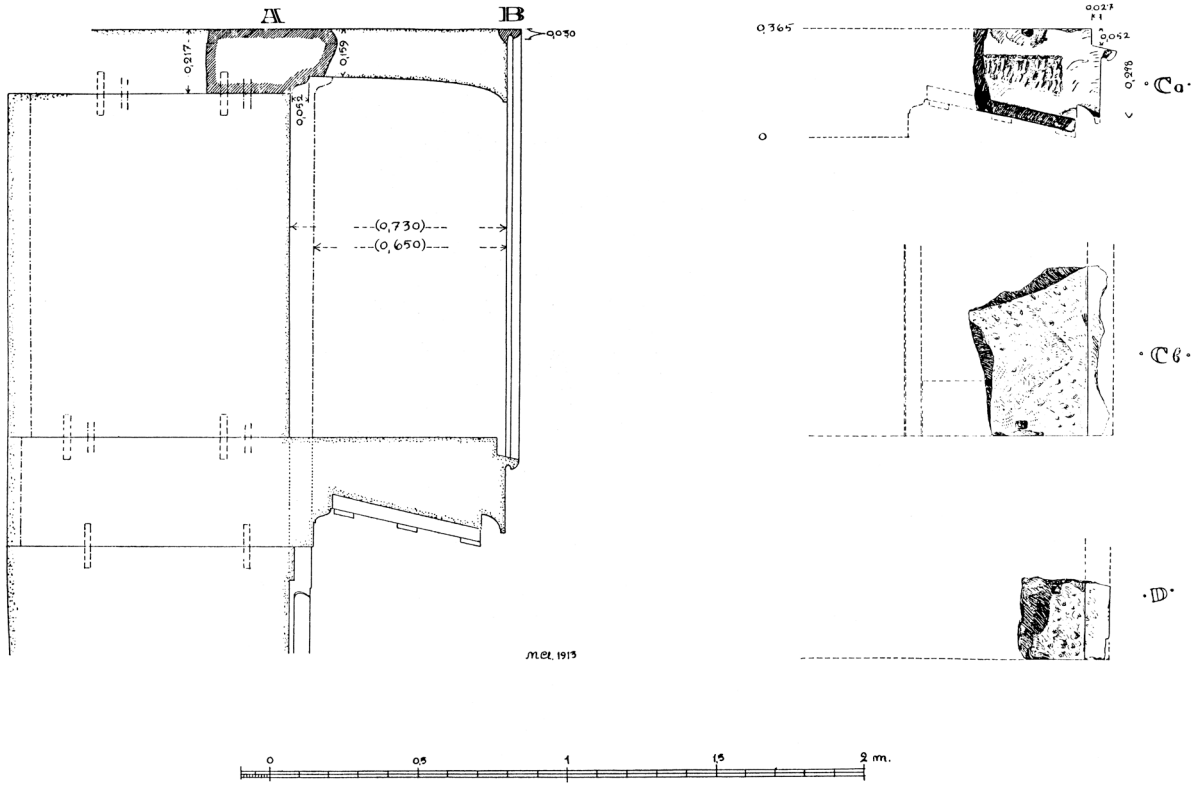


Figure 12. From the tympanon area of the Classical temple: section, with fragments of the raking geison (left), and fragments of the horizontal geison (right). (After Dugas et al., *Tégée*, pl. 45)

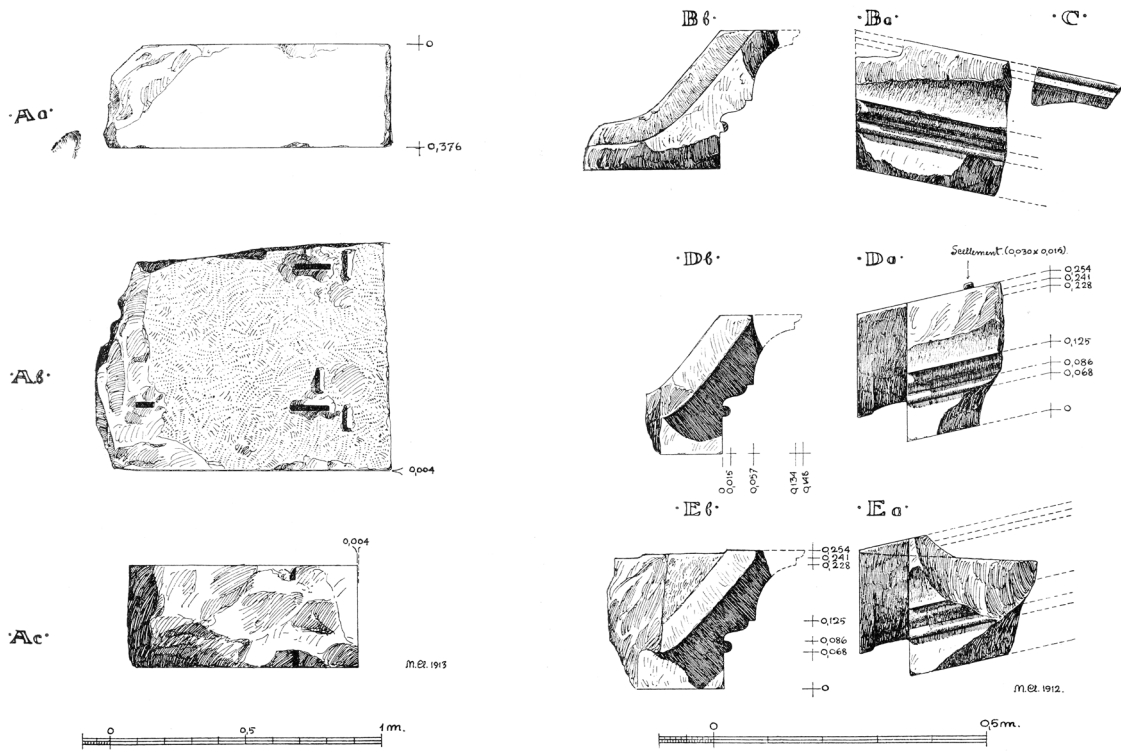


Figure 13. Fragment of a block from the tympanon (left) and from the raking sima (right) from the Classical temple. (After Dugas et al., *Tégée*, pl. 51)

The heights of the pediment area (the tympanon with the raking geison, plus the raking sima) are also listed in *Tab. I*.¹⁰⁹ Some important fragments are illustrated in *Figs 12–13*. The proportion between the tympanon field and the geison and sima on top comes out quite precisely as 4 : 1, the sima to the tympanon with the geison as 3 : 25. Between sima and geison the ratio is 6 : 7.

A difference of only 5 cm separates the two groups, the epistyle and the pediment, and it seems likely that they were considered of basically equal height. The difference can be explained in two ways: either as a recognition that the 5.2 cm high rim on the top of the horizontal geison could alternatively be counted with the pediment and the epistyle, or that the curvature of the epistyle, probably about 5 cm as in the foundations, was accounted for in this way.¹¹⁰ This double position of the geison is still more evident if it is counted entirely with the pediment area: the two resulting heights, 2.056 m for the epistyle and 2.736 m for the pediment, are related precisely as 4 : 3, with a unit of 0.674 m. This proportion will appear again below.

On the flanks, the dimensions, and with them the proportional system, become slightly different; the visible front of the geison is lower here, because the upper surface is cut down to a slanted angle to support the sima which is, on this temple, also provided with antefixes above. The basic unit of the three uppermost elements is 0.295 m, precise for the geison front, slightly reduced for the sima, but correspondingly increased for the antefixes – or rather, for the part of them which is not embedded into the sima and emerges above it. (See *Fig. 11*) This unit is 1/7 of the combined height of architrave and frieze, but does not fit either of these; the architrave, however, can be calculated as precisely 12 : 11 to the sum of the three top elements, filling in that case a similar connecting function as the geison does in the front elevation. Counting the architrave and frieze as

a single element (with the same inner proportion of 8 : 9 as on the front), we have a chain of 10 units, 7 : 1 : 1 : 1 – with slight adjustments of the two upper elements, probably to avoid a precise repetition of the same dimension three times. The height of the crepidoma including the euthynteria, 1.39 m, is precisely 1/9 of the total height of this order, 12.52 m with a column height 9.58 m; and it also has a function in the layout of the front elevation, to be explained below.

The unit of 0.295 m is repeated in the height of the euthynteria, thus creating a sort of frame with the lowest and the highest parts of the elevation. The tholos at Epidauros seems to be the only parallel that can be cited for this, with the height of the first step of the crepidoma, 0.275 m high, repeated in the sima. The two buildings at Epidauros share with Tegea the same proportion 8 : 9 between the architrave and the frieze, and in the tholos the chain is completed with a geison height 1/3 of that of the frieze, as at Tegea. At Nemea the proportion between architrave and frieze is reduced to 9 : 10, and the geison is not included. A precise proportion between the crepidoma and the order above (but without the sima), 1 : 10, is also found in the tholos, where the heights of geison and sima are laid out with the same subtle play with both a reduced and an increased dimension from the basic unit, the average size 0.26 m or 1/3 of the frieze height, which recurs in the top level at Tegea. Nothing similar can be observed in any of the other temples used for comparison.

The almost identical height of epistyle and pediment at Tegea is interesting, since it repeats what seems to be a 5th-century pattern attested both in the Hephaisteion and in the temple of Poseidon at Cape Sounion.¹¹¹ (See *Tab. I*) In later temples that are sufficiently preserved to be compared, the values in *Tab. I*¹¹² show that the pediment area is either higher (Bassai, Epidauros) or lower (Argos, Nemea) than the epistyle, too much so for an identical height to be considered.¹¹³ A precise correlation between

¹⁰⁹ Dugas *et al.*, *Tégée*, 26 and 29, pls 45 (*Fig. 12*: reconstructed section of the pediment area, with a few fragments of the raking geison) and 51 (*Fig. 13*: the raking sima); five preserved, off-centred tympanon blocks are drawn on pls 49–51. The height of the tympanon, at the mid-axis, is based on a trigonometrical calculation from the angle of these blocks (not stated; between 11° and 13° on the plates) and from a calculated width of the tympanon field 16.45 m, and it is in any case a theoretical one; as actually executed it would have to be about 5 cm less, to absorb the 5.4 cm rise of the epistyle in the centre because of the curvature. (See Pakkanen, *Temple*, 45–6, and 43 where this figure is given only for the foundations; it must be assumed to be identical in the epistyle.) The height 1.90 m as calculated in the French publication, and adopted here, concerns the height from the top of the tympanon field to the horizontal line between the external corners of the field; the total height 2.40 m for the tympanon with raking geison, given on p. 29, is not explained and is not compatible with the geison height 0.271 m on pl. 45.

¹¹⁰ See the drawing of the geison block in Dugas *et al.*, *Tégée*, pl. 45.Ca; and the last note for the curvature. The basic unit is close to the foot-standard 0.297 m which has repeatedly been proposed for this temple, but perhaps not close enough to support it. For this question, see J. Pakkanen, “The temple of Athena Alea at Tegea: Revisiting design-unit derivation from building measurements,” in Østby (ed.), *Arcadia*, 167–83, with a convenient review of previous research and proposals; although unable to provide full proof, Pakkanen gives reasons for cautiously proposing a basic design unit of 0.099 m, 1/3 of a foot of 0.297 m; this is now repeated in his contribution here, section xvii, 357–8, and *id.* 2013, 106–7, tab. 4.13.

¹¹¹ See the dimensions in *Tab. I*, taken from H. Koch, *Studien zum Theseustempel in Athen*, Berlin 1955, pl. 51 (Hephaisteion) and Plommer 1950, 78–94 (Cape Sounion). In addition to the Dodekathéon on Delos (see below) the same relation has been suggested as likely for the temple at Pherai, but on very slim evidence; see Østby 1992, 102 with n. 59 and 105 fig. 24, and 112–3 tabs I–II for a general survey of the known evidence.

¹¹² The dimensions in *Tab. I* are taken from Svolopoulos 1995, pl. 9 (Bassai); Roux 1961, 90–107, fig. 17, and Knell 1971 (Asklepios, Epidauros); Roux 1961, 141 fig. 31, reproduced Seiler 1986, 74 fig. 32 (tholos, Epidauros); Hill 1966, 4–20 (Nemea); Pfaff 2003, 83–120 (Argos); Courby and Picard 1924, 23–35, pl. 7; J. Pakkanen, “The temple of Zeus at Stratos: New observations on the building design,” *Arctos* 38, 2004, 102–8, and *id.* 2013, 82–4, for the change in column height. See notes 107, 109, 111 and 125 for Tegea, the Attic temples, and the Dodekathéon on Delos. For the column height in the tholos I have preferred to follow Roux, rather than the suggested revision with one more drum and a higher column proposed by J. Pakkanen, “Entasis in fourth-century BC Doric buildings in the Peloponnese and Delphi,” *BSA* 92, 1997, 326–31 (also *id.* 1996, 150–1, fig. 6).

¹¹³ At Argos, the difference is small, and the two elements would probably be identical if the front geison had the same front height as those on the flanks. The size of the tympanon is not properly documented; see Pfaff 2003, 116 for an estimate between 1.77 and 2.19 m, with reasons

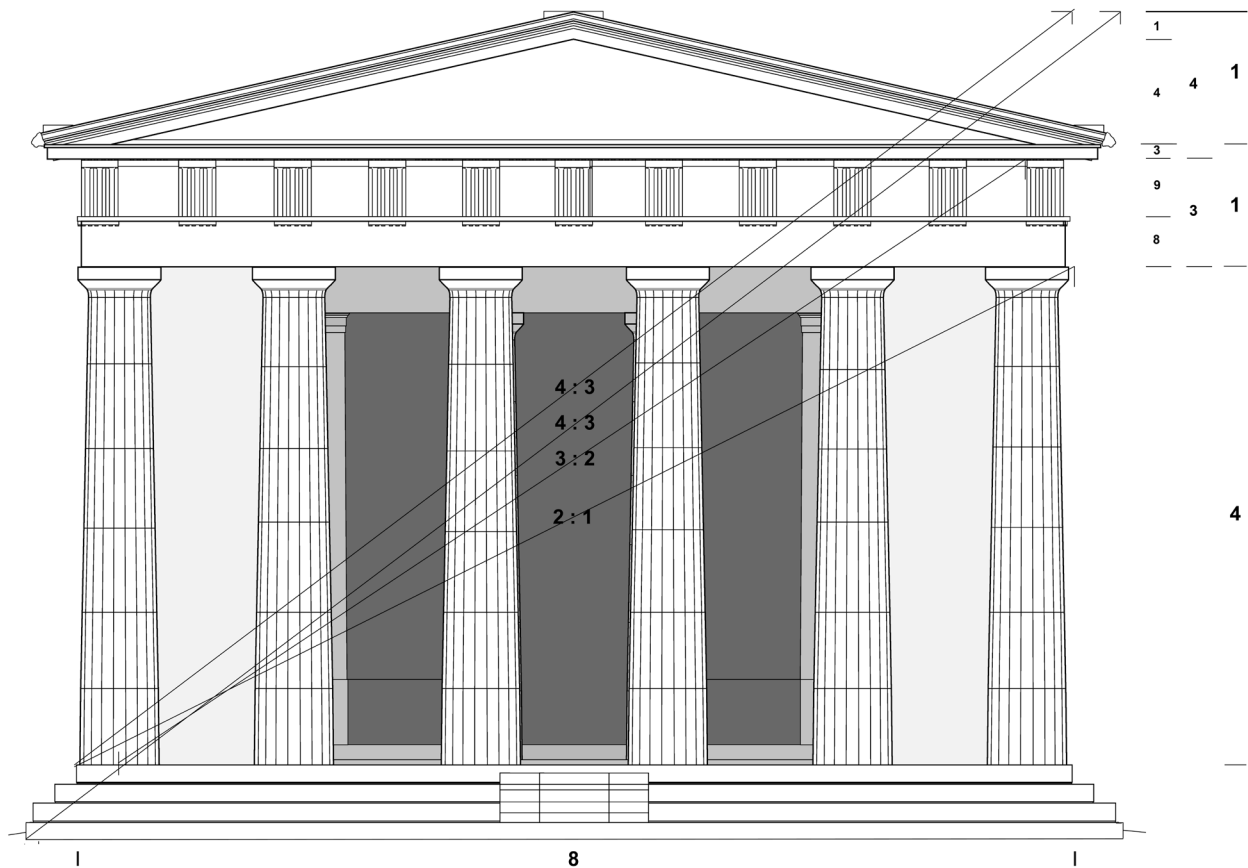


Figure 14. Reconstruction of the proportional system in the elevation of the Classical temple of Athena Alea at Tegea. (Drawing: Østby, based on Pakkanen, *Temple*, 9 fig. 2)

the height of the epistyle and the columns is found in the temples at Bassai and (in the flank) at Argos, with the proportion 1 : 3; it is then replaced by the 1 : 4 proportion which appears with the tholos at Epidauros (without the sima), where it is easily explained by the need for higher columns which the circular plan creates, and continues at Nemea.¹¹⁴ If such a simple proportion between epistyle and column was applied also at Tegea, it would have to be the 1 : 4 proportion found at Epidauros and Nemea. This would provide a column height of 9.68 m if the measured epistyle height was applied, slightly beyond the upper margin of the wider range for the column heights; or 9.48 m, below that range, if the upper 5 cm of the horizontal geison is calculated with the pediment, as discussed above. But, if the actual, executed heights of epistyle and pediment are added, to obtain 4.79 m, and then doubled, we have a column height of 9.58 m, within (but at the upper limit of) what the more restricted calculation of possible margins allows, 9.56–9.58 m.

This dimension, it should be remembered, is also precisely half the width of the stylobate, and that

for proposing 1.92 m as likely. The raking geison is documented, 0.248 m high (p. 117); also the raking sima: 290 fig. 182.

¹¹⁴ See Roux 1961, 321–2, for the increased column height in circular buildings. The relation is also close to 1 : 3, but less precise, in the two Attic temples: 7 : 20 in the Hephaisteion, perhaps 14 : 41 at Cape Sounion. In the Asklepieion at Epidauros it can be understood as 5 : 18.

connection can now be taken seriously since it is part of a general system. We have now recovered a simple and elegant system connecting the three elements of the elevation with the horizontal dimension of the stylobate: 8 : 4 : 1 : 1 for the stylobate, the column, the epistyle and the pediment, with the 5 cm on top of the horizontal geison creating a small irregularity at the top level. The overall proportion between the stylobate width and the total height of the elevation above the crepidoma, 14.37 m, is a simple and elegant 4 : 3. The same proportion is repeated between the euthynteria width, 21.04 m, and the full height including the crepidoma with the euthynteria, in that case increased with 1.39 m to 15.76 m; the height of the crepidoma is precisely chosen in order to make this possible, and it has a key function also in the flank as explained above. (See the sketch, *Fig. 14*) The euthynteria has a proportion of 11 : 10 to the stylobate. At a modest level, the play of proportions in the elevation, 1 (epistyle) : 2 (epistyle and tympanon) : 4 (with the column), can be seen reflected in the proportions between guttae, regula and taenia on the architrave, but with margins of a few millimetres: 0.022, 0.050 and 0.096 or 0.098 m respectively. (*Fig. 15*) This is an apparently unique and possibly significant variation of the far more common pattern 1 : 2 : 3 for those elements.¹¹⁵

¹¹⁵ See Dugas *et al.*, *Tégée*, pls 38.a (reproduced here as *Fig. 13*) and

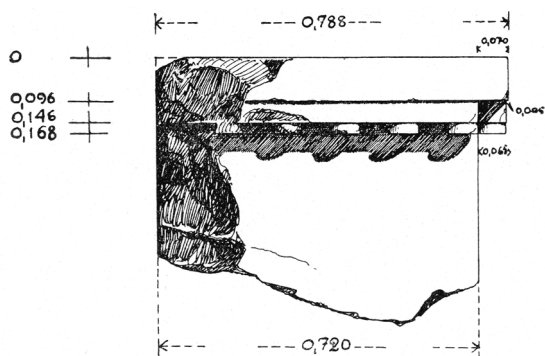


Figure 15. Fragment of a corner architrave (Block 1), with dimensions of the guttae, regula and taenia. (From Dugas *et al.*, *Tégée*, pl. 39)

Returning for a moment to the flanks, the picture is less clear. If the proportion of the stylobate rectangle had been precisely 2 : 5, and not reduced in length by 0.38 m,¹¹⁶ the proportion between column height and stylobate could have been equally close on the flanks as the front, or 1 : 5; it is 25 : 124, so the length has been reduced by 1/25 of the column height. In the epistyle, the reduction of visible height in the geison is more than outweighed by the height of the sima, and of the antefixes which projected above it; the total height of the epistyle thus reaches 2.64 m, or 2.94 if the antefixes are also included. With the former dimension and 12.22 m for the elevation (but now without the antefixes) we have a precise proportion to the stylobate, 9 : 35 or close to 1 : 4; but proportions between the flank stylobate or the euthyteria and the full height, with or without the krepis, do not provide convincing results. Clearly the emphasis in the project was on the front elevation.

Similarly simple and convincing proportions between the column height and the front stylobate can be found in several of the temples used for comparison. In earlier buildings it stays below the 1 : 2-proportion presumed at Tegea (Hephaisteion, 5 : 12; Heraion at Argos, 3 : 7; Bassai, 16 : 39; Epidauros, 12 : 25); but following the general development towards higher columns in the 4th century it rises to the 1 : 2-proportion of Tegea,¹¹⁷ and at Nemea, where this proportion can be calculated as 18 : 35, it has grown beyond that figure. In the originally intended project at Stratos this had also happened.¹¹⁸ The relation between the epistyle (with pediment) and the stylobate follows the same trend beginning at or near 1 : 3.5 (7 : 24 in the Hephaisteion, 7 : 23 at Bassai, close to 2 : 7 at Argos

and also, perhaps 9 : 31, at Epidauros), but ending at 1 : 4 at Tegea and Nemea. This development coincides with the tendency to reduce the height of the pediment in relation to the epistyle, as mentioned above. If only the epistyle is calculated in relation to the stylobate, the same development can be followed, from less than 1 : 7 in the earlier cases (Hephaisteion, Sounion, Bassai, Argos) to between 1 : 7 and 1 : 8 later on (Asklepieion Epidauros and Nemea); but these proportions are not generally clear (apparently 2 : 15 at Epidauros) and never reach the 1 : 8-figure which appears at Tegea as a consequence of the general system. The overall proportions between euthyteria width and the full height, including the krepis, is convincingly simple in some, but not all the cases: Hephaisteion, 10 : 7; Sounion, perhaps 23 : 17; Bassai, 13 : 9; Heraion at Argos, perhaps 17 : 12; Nemea, perhaps 27 : 20. All of these are close to the 4 : 3 proportion and could be derived from it, but apart from Tegea only the temple at Epidauros has it precisely, and in none of these temples does this proportion repeat the relation between the stylobate width and the height above it, as seems to be the case at Tegea.¹¹⁹

A search for the basic unit of the Tegean system reveals a surprise: the stylobate width can with full precision be understood as 27 times the triglyph width, 0.71 m. This means that the presumed column height of 9.58 m represents 13 1/2 times this modular unit, and the epistyle and the pediment respectively 3 3/8 such units. Vitruvius in his treatise uses precisely the triglyph width as a basis for the proportional system of the Doric temple, and recommends 27 such units for the stylobate of a tetrastyle and 42 for a hexastyle front since he uses three metopes per intercolumniation;¹²⁰ but 27 is the result if his procedure, based on a precise proportion 2 : 3 between triglyph and metope and axial spacings of five modules, is applied to a normal, Classical hexastyle front. At Tegea, this use of the triglyph width does not seem to go any further; the proportion between triglyph and metope is close to 2 : 3, but not precise, and neither the axial spacings nor the column diameter agree with this unit. In the 4th century, the stylobate width of 27 triglyph modules seems to recur only in the temple of Asklepios at Epidauros (triglyphs 0.441 m wide¹²¹); somewhat more frequent is a value of 27 1/2 triglyph units, used at Bassai, at Nemea, and occasionally elsewhere.¹²² With

39.Aa; and Østby 1992, 13 tab. II, for a survey of comparative material. The proportions would be exact with the dimensions 0.024, 0.048 and 0.096 m. The same pattern seems to be followed on a fragment of an architrave from the pronaos, where the dimensions are slightly reduced (Dugas *et al.*, *Tégée*, pl. 58): 0.022, 0.045 and 0.085 m.

¹¹⁶ See above, p. 321, with note 14 where a precise stylobate proportion 2 : 5 is considered.

¹¹⁷ This relation has also been hypothesized for the temple at Pherai, but on slim evidence. See Østby 1992, 105–6 with n. 69 and fig. 24, and 112–3 tabs I–II for a general review of 4th century evidence.

¹¹⁸ See for the two phases at Stratos above, with note 112.

¹¹⁹ This may be possible for the front of the temple at Stratos as first planned, if the not documented, raking sima was 0.24 m high and the column 8.70 m, halfway between the two calculated extremes. In that case, both the larger and the smaller rectangle would have the proportion 13 : 17. But this is admittedly hypothetical to the extreme.

¹²⁰ Vitr. 4.3.3–4. See the edition by P. Gros, A. Corso and E. Romano, *Vitruvio De architectura* I, Turin 1997, 464–9, for important comments to this text, and Wilson Jones 2001 where the use of triglyph modules is traced back to the Early Classical period.

¹²¹ The building has 30 such units in the euthyteria and 24 3/4 in the axial width; but they do not give useful results when applied to the elevation, with the proportions indicated above. This seems also to be the case for most of the other buildings discussed here, with the Tegea temple as an exception.

¹²² Wilson Jones 2001, 697 with notes 100–101, discusses briefly a few

this addition, the slightly increased width of the stylobate against the frieze is taken care of; this is not the case at Tegea, where the reduced width in the frieze may be responsible for the not perfectly precise proportions there, and the double contraction would in any case have made a precisely canonical layout of the front frieze in Vitruvian terms futile. However, the temple at Tegea seems to be exceptional in the period by using the same module to some extent also in the elevation, and can in this way provide some support for the conclusion that at least parts of Vitruvius' rules for the Doric order have a background in Classical architecture.¹²³

Most of these temples exhibit fragments of the simple, overall system which it seems possible to identify at Tegea, but none of them applies it fully – not even the Peloponnesian sister buildings at Epidauros and Nemea, although the tholos in some respects comes very close.¹²⁴ The temple at Argos would be another very close parallel if the geison height on the fronts were identical to the visible height on the flanks, and if the estimated dimensions for the pediment area are correct: the epistyle/pediment unit is in that case repeated both in the column height and in the stylobate, but with a lower column height: 1 : 1 : 3 : 7. This makes the Heraion at Argos an interesting and possibly important forerunner in the Peloponnesian environment to the system developed further at Tegea, but unfortunately the documentation of the elevation is too meagre to allow any conclusions to be drawn from this.

Another, still closer and well-documented parallel to the Tegean system can be found in a different part of Greece and a few decades later: in the hexastyle and amphiprostyle Doric colonnades of the Dodekathion on Delos.¹²⁵ The epistyle height, ca. 1.15 m, corresponds almost precisely with the pediment, 1.17 m, and the added height, 2.32 m, is only 1 cm off half the column height, 4.62 m. This height fits precisely the stylobate width 8.58 m, not as 1 : 2, but as 7 : 13; the tendency towards higher columns has apparently taken one more step forward here as well. The proportion 1 : 2 is still

4th-century temples, but finds good evidence for the triglyph module in vertical dimensions only in the tholos at Delphi. In addition to the temple at Nemea, 27 1/2 triglyph units in the stylobate seem to recur in temples at Lepreon and Thebes; see Østby 1992, tab. I p. 112, for the dimensions.

¹²³ This is argued by Wilson Jones 2001 for a number of well-preserved 5th-century temples. He presents good evidence for this system in the basic horizontal dimensions (euthynteria, stylobate, axial width), but it is less convincing for the vertical ones; in the temples also included in my survey (Hephaisteion, Sounion, Bassai) those units do not coincide well with the proportional analyses sketched above.

¹²⁴ Observe also the probable double contraction in the fronts of the two temples at Epidauros and Nemea, discussed above, p. 325 with notes 43 and 46; and p. 330 with note 86 for the tholos, on the identical width of the inner span of the cella. These connections will be further discussed below, pp. 342–4.

¹²⁵ For this building, see E. Will, *Le Dôdékatheon (Délos 22)*, Paris 1955, 15–6 for the crepidoma, and 36–66 for the elements of the elevation. The measures in *Tab. I* are mostly taken from the tabular survey 147 tab. II, where they are interpreted in terms of a presumed foot unit 0.33 m. The suggested date is about 300 B.C. (p. 154).

present, however, although rather craftily disguised: it appears if the two projections of the intermediate step in the crepidoma, ($2 \times 0.33 =$) 0.66 m, are added to the stylobate width: 9.24 m. Without that addition, the proportion between stylobate width and full height above the stylobate can be understood as 26 : 21, corresponding to the presumed numbers of modular or metrological units of 0.33 m; it is derived from the simpler 5 : 4. 9 : 7 is the proportion here between full width in the lowest step of the crepidoma, 9.90 m, and the full height including the crepidoma, 7.67 m; the latter dimension is as 17 : 19 to the stylobate width.¹²⁶ Both these proportions are derived from 1 : 1, with the subtraction and addition of an identical, small unit. Although at this level the horizontal dimensions still retain a certain supremacy, it is clear that the trend towards higher columns and elevations has now shifted the layout of the elevation beyond the simple relation between horizontal and vertical dimensions found at Tegea, and apparently nowhere else. But the pattern from Tegea is impressively present in the vertical proportions, thus providing support for the analysis proposed for that temple. It is also of some importance that the same slight deviations from the precise proportions, by no more than a centimetre or two, also recur in the Dodekathion. They can also, as the figures in *Tab. I* show, regularly be found in the other temples used for comparison.

With general and all-embracing systems such as these, some small irregularities in the documented or executed dimensions have to be accepted as inevitable; this is clearly the case not only at Tegea and in the Dodekathion. Such irregularities, however, can have serious consequences when they are found in the elevations. For the horizontal dimensions – axial spacings, stylobate or toichobate blocks, and the like – small inaccuracies in the execution could be tolerated and easily compensated for on adjoining blocks. Numerous such inaccuracies can also be observed in the Parthenon, the ultimate Doric prestige building.¹²⁷ But this apparent carelessness was not possible in the same way in the elevation, where a precise execution of calculated dimensions was necessary not only for aesthetic, but also for purely statical reasons; and this need for extremely precise execution was further enhanced by the additional complications imposed by the curvature, in a building such as the Tegea temple. The small deviations from a rigidly executed proportional pattern, one which was too simple and elegant not to have been in the mind of the architect and easy to execute

¹²⁶ 27 1/2 triglyph modules of 0.360 m appear not in the stylobate, but in the width of the lowest step of the crepidoma. They do not seem useful for the analysis of the elevation.

¹²⁷ Where there are, for instance, quite considerable differences in the axial spacings – discussed and convincingly explained by M. Korres, “Der Plan des Parthenon,” *AM* 109, 1994, 59–62 and 65–72. See for a full survey of the various “inaccuracies” also *id.*, “The architecture of the Parthenon,” in P. Tournoukiotis (ed.), *The Parthenon and its impact in modern times*, Athens 1994, 79.

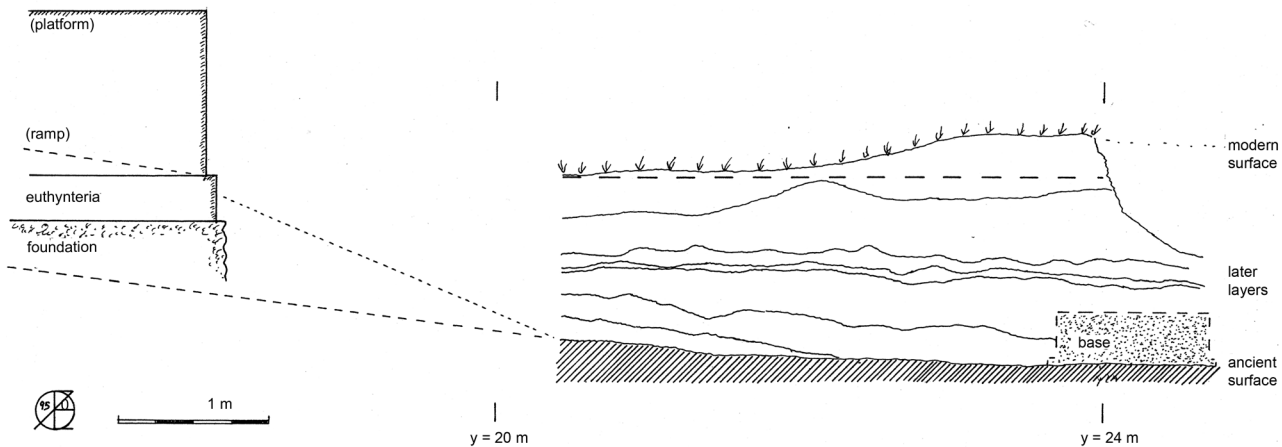


Figure 16. The stratigraphical connection between the levels in grid square C5 and the foundation emerging from the northern flank of the temple. Scale 1 : 50. (Drawing: Østby)

with full precision if that was what he wanted, may for that reason probably have to be explained otherwise: as intentional, in order to give the life of small irregularities to a rigid, geometrical system, in a way common to all living organisms. (The 5 cm distorting the 1 : 1 proportion between epistyle and pediment at Tegea, and the small differences from the basic unit observed in the uppermost levels on the flank at Tegea and in the tholos at Epidauros, can hardly be explained in any other way.) They are in that case related to features such as the curvatures and the entasis, to the different axial spacings on flanks and fronts, and perhaps also to such a complicated and apparently illogical feature as the double contraction in the fronts.¹²⁸ But it is also evident that if such irregularities were a general rule, it becomes extremely difficult to carry out a satisfactory and convincing analysis of the proportional arrangements if it was a complicated one, or if the documentation is incomplete or faulty. For the temple at Tegea this has been possible only because the basic system seems to have been so unusually simple and logical, and the documentation is so basically reliable and complete.

The one important lacuna in this documentation, the column height, has not been definitively filled; that

¹²⁸ These considerations may also be of value to explain one confusing feature in the 5th-century temples, where the heights of the architrave and the frieze are in some cases absolutely identical, in others different only by a centimetre or two. (See *Tab. 1* for some examples: Hephaisteion, Sounion, Bassai, Argos.) The same may be true for those small deviations which are regularly seen in the frieze, from the strict 2 : 3-shape of the triglyph and 1 : 1-shape of the metope which the basic rules for those elements imply; this can be seen also in the Tegea temple (see above, p. 334). These differences are too small to be explained by a proportional or metrological relation, but there can be no doubt that they were intentional; they have not received much attention from students of Classical architecture. J.J. Coulton, "Towards understanding Greek temple design: General considerations," *BSA* 70, 1975, 94–7 (tab. 4) has collected a wide range of such inaccuracies from a number of important temples and other prestige buildings; see also Pakkanen 1994 for a generally critical review of various proposed proportional systems – confined, however, to the horizontal dimensions. For an interesting example of the precision which the Tegean masons could observe when it was useful or necessary: Pakkanen, *Temple*, 28–30, and *id.* section xvii, 365 with *Fig. 16*.

can only happen if future excavations in the sanctuary bring forth all the drums and the capital from one single column, all sufficiently preserved for the precise heights to be taken. In the meantime, since the approach followed by this study clearly points to 9.58 m as the probable column height, and since this result coincides so nicely with the upper limit of the restricted area 9.56–9.58 m which has been established by other means, there seems to be a good case for accepting this as the dimension which was actually executed.¹²⁹

The northern "ramp"

The foundation projecting from the centre of the northern flank represents a curious problem. It has in the French publication, and without hesitation later, always been considered as evidence for a second entrance to the interior of the temple, from the north, served by an inclined ramp similar to the one whose foundations remain at the eastern front.¹³⁰ Their dimensions are almost identical: both are 3.10 m wide, projecting respectively 5.82 and 6.00 m from the foundations.¹³¹ (See *Fig. 2*) The existence of the northern doorway, which had not previously been documented by relevant building material, can now be considered as safely established by the discovery of a heavily decorated block which can only come from that porch.¹³² The concept can

¹²⁹ If the foot unit 0.297 m cautiously proposed by Pakkanen was used (see p. 336 note 110 above), this height is precisely 32 1/4 foot. It performs well with the stylobate width, 64 1/2 foot; less so in the upper part of the elevation, if the distribution is not to be understood as 8 1/4 feet (epistyle) and 8 feet (pediment), which may provide a metrological explanation to the small asymmetry between the two parts. The purely proportional explanation offered above is more precise, however. Expressing in metrological terms the small intentional deviations from precise dimensions, discussed above, seems hopeless.

¹³⁰ Dugas *et al.*, *Tégée*, 43–4 and 52; Norman, *Temple*, 188–90, for an updated discussion.

¹³¹ Dugas *et al.*, *Tégée*, pl. 3–5 (here, p. 319 *Fig. 2*).

¹³² Block **804**, discussed in section xvii (Pakkanen), 361–2 with *Figs 9–11*. See *ibid.*, 365–9 with *Fig. 22*, for the reconstruction of the porch based on this and other, previously known fragments.

be compared to and may be connected with the lateral entrance to the temple of Apollo at Bassai, where it is, however, far more modestly executed; it is also possible that the Archaic temple at Tegea had a lateral entrance to the adyton which must be assumed there.¹³³

The access to the door by a ramp or a flight of stairs located on the projecting foundation has, however, turned out to be a different matter altogether. The investigations in the area north of the temple have demonstrated that the level of the surface in front of the presumed ramp, at the point where the two marble bases are located, was about 1.20 m below the euthynteria of the temple, at a distance only about 5 m from the end of the projection.¹³⁴ This surface can be followed in the western trench wall of square C5 with a very slight, upwards slope to $y = 20.40$ m, about 2.30 m from the start of the foundation; at this point, the soil has risen to a level of -1.05 . (See *Fig. 16*) The same slope could comfortably be continued to join the euthynteria level of the temple flank, behind the projection, at 0.15 m below the 0 level corresponding to the visible, worked surface of the euthynteria front above the soil.¹³⁵ But if the slope of the surface was meant to reach the same level on the projecting foundation – where euthynteria blocks must in any case be presumed upon the conglomerate foundation which is now visible – the slope would all of a sudden, just beyond the point where the soil level is still documented, become inconveniently and impossibly steep (about $1 : 2.2$, or 24°), more than twice what would have been the modest inclination ($1 : 5.12$, or 11°)¹³⁶ of a ramp starting from the level of the euthynteria, on that foundation. When carried all the way up to the euthynteria of the northern flank, the natural slope beyond $y = 20.40$ m stretches over a total of 8.30 m with a comfortable inclination of $1 : 7.9$, or 7° , directly continuing the beginning of the slope as it is documented in the last stretch of the trench wall in square C5.

Only one conclusion can be drawn from these observations: the projecting foundation was not intended at all for a secondary access to the temple on the northern flank and to the lateral porch, from a part of the sanctuary which seems on the whole to have been very little used.¹³⁷ A ramp in that position could not join that surface, in spite of the porch. It seems more likely that the foundation carried a platform, at the level of the colonnade or perhaps slightly lower. It must have been intended for some ritual use connected with the temple, but not involving its immediate surroundings –

perhaps somehow connected with that unbroken view which could be enjoyed from the platform towards the hills north of the town (including the probable acropolis with the ancient sanctuary of Athena Poliatis¹³⁸), towards Mount Lyrkeion, or more generally to the northern sky.¹³⁹ There would also be a close, visual contact with the sacred fountain, and with the river as long as it ran in a loop around the sanctuary on three sides.¹⁴⁰ Perhaps, on certain occasions, the not very large or heavy ivory statue by Endoios could have been taken out here – but not as part of events involving crowds of participants standing in front of the platform, since there is no evidence for heavy traffic in that part of the sanctuary. The lack of buildings and other structures in the 10–15 m wide trench which was opened through the northern sector in 1990–94, continuing the direction of the presumed ramp, may perhaps be explained by an intention not to obstruct the open view northwards. Secondary buildings or structures, which certainly existed also in this part of the sanctuary, may in that case more probably await discovery to either side of the trench.¹⁴¹

The date

There has never been any doubt that the temple at Tegea is one of the principal monuments of Doric architecture from the 4th century B.C., but pin-pointing its date more precisely within that century has proved to be more of a problem. One safely established point of departure is the date for the destruction of the earlier Archaic temple, in 395/94 B.C., as provided for us with unusual precision by Pausanias.¹⁴² Beyond this point, however, proposals oscillate within the second and third quarter of the century, attempting to take account of the following types of evidence:

– the position of the temple within the general development of Doric temple architecture in the period. The old-fashioned character of the plan, which made extensive use of the temple of Zeus at Olympia as a model, must be seen as a conscious archaism and is useless as chronological evidence. It is easier to see a natural line of development from the temple at Bassai to Tegea, particularly for the shape of the interior. Particularly relevant is the close relationship with the temple of Asklepios and the tholos at Epidauros, of which the temple is generally accepted as earlier than

¹³³ Østby 1986, 86; also *id.* in *Tegea I*, section i, 40–1.

¹³⁴ See section iv (Tarditi), 57.

¹³⁵ See Dugas *et al.*, *Tégée*, pl. 29.

¹³⁶ Length of the projection 5.82 m + projection of the crepidoma 0.525 m = 6.35 m; height of crepidoma 1.09 m, + euthynteria visible above the soil 0.15 m = 1.24 m. See *Pl. 1* and *Fig. 16*. The same inclination must be presumed for the ramp at the temple front, since it was equally long. The level of the euthynteria on the projection coincided with the euthynteria of the temple: this was established by Dugas *et al.*, *Tégée*, 17.

¹³⁷ See sections iv, 64 and 86, and vi, 105 (Tarditi).

¹³⁸ For this sanctuary and its possible location, see *Tegea I*, section i (Østby), 14–5 with note 31.

¹³⁹ See the illustration 18 *Fig. 6* in *Tegea I*, section i (Østby).

¹⁴⁰ For the course of the river, see section ii (Ødegård and Klempe), 27–32.

¹⁴¹ For this discussion, and for the discovery of architectural material from such buildings, see section xv (Østby).

¹⁴² Paus. 8.45.4, establishing the date in Attic and Olympian chronology. There is no way to know if this destruction was connected with events in the Corinthian war, where Tegea participated on Sparta's side (Xen. *Hell.* 4.2.13).

the temple at Tegea, and the temple at Nemea which is unanimously considered as influenced by the Tegea temple, and consequently later. The relation with the tholos at Epidauros was certainly close, but not easy to interpret in terms of chronology;

– the information, also provided by Pausanias, that the famous sculptor Skopas was the architect of the temple. This unexpected piece of information will be discussed in the last part of this section; but it is accepted by most scholars and is probably correct. A probable date for the temple at Tegea must then be inserted at a convenient moment of this man's life and career as otherwise known. Essentially, this means whether the temple should be dated before or after his well documented activity at the Mausoleum of Halikarnassos in the 350s;

– our knowledge of the historical and political situation at Tegea and in Arcadia generally in the middle part of the 4th century. Arcadia was in this period a theatre of wars and political unrest where Tegea was heavily involved, and the question arises in what circumstances Tegea may have wanted to and had the opportunity to invest substantial resources in a project as ambitious and expensive as this temple.

In addition to these considerations, our excavation now provides some potentially useful stratigraphical evidence.¹⁴³

It has generally, and probably correctly, been assumed that after the fire in 395/94 B.C., no immediate attempt to reconstruct the temple was made. The destruction was hardly complete, since the Archaic ivory figure of the goddess, and several of the old memorial objects stored in the temple, were saved and could be admired by Pausanias in the new temple six centuries later.¹⁴⁴ Irregular tooling on the preserved marble stylobates from the interior of the cella, which in some cases respects and in other cases invades the circular areas for the wooden columns, must have been made at a moment when some columns were still standing and others had been destroyed or removed, so probably after the fire.¹⁴⁵ Quite possibly this tooling has some connection with a makeshift partial repair of the old building, to provide a provisory shelter for the cult figure and the ancient objects awaiting a more definitive solution. Some such intermediate arrangement would be needed, because the definitive solution with the new temple seems to have come only after a fairly long period, of several decades.

There can be no doubt that there must have been an intention to rebuild the temple and re-establish it as the principal monument of Tegea's main sanctuary, but it

¹⁴³ See for previous discussions note 154 below.

¹⁴⁴ See Paus. 8.46.1 for the later fate of the statue by Endoios and the tusks of the Calydonian boar (brought to Rome by Augustus), and 8.47.2, where the hide of the Calydonian boar, the fetters of the Spartans, and Marpessa's shield are among the ancient dedications which he still could see in the temple. He does not mention the mangers from Mardonios' camp at Plataiai, seen by Herodotos (9.70.3); they may have been lost in the fire in 395.

¹⁴⁵ Østby 1986, 85, figs 10 and 13–17.

may be questioned if that was possible or convenient in immediate terms. It has been observed that the restless times do not seem to have permitted any large-scale temple building in mainland Greece in the first quarter of the 4th century.¹⁴⁶ It is likely that there were discussions and probably even some preliminary plans for a new temple as far back as the years immediately after the destruction of the old temple, and these may perhaps in some part be responsible for some surprisingly old-fashioned elements in the plan of the new one. There has, however, to my knowledge only been one serious attempt to push at least a part of the new temple project as far back as the years before the battle at Leuctra in 371 B.C.¹⁴⁷

The architectural environment or tradition in which the new temple was created, is clearly indicated by the close connection between the temple at Tegea and those at Epidauros and Nemea. This connection was recognized almost immediately and is supported also by various observations which have already been made elsewhere in this text.¹⁴⁸ It is useful because it provides some fairly reliable dates between which the less well-documented temple at Tegea should find its place. The upper limit is by general consensus set with the temple of Asklepios at Epidauros, which according to epigraphical evidence was concluded about 370 after a building period estimated from only five to as much as 20 years.¹⁴⁹ The lower limit is set by the temple of Zeus at Nemea, a project which was probably triggered by, and cannot in any case precede, the return of the Nemean games to the sanctuary after the events of 338 B.C..¹⁵⁰ This temple imitates and to some extent rivals with the temple at Tegea; this is clearest in

¹⁴⁶ This point was made by Burford 1969, 32–4. She argues, however, perhaps correctly, that shortage of qualified manpower may have been an even more serious obstacle to ambitious building projects in this period.

¹⁴⁷ See below, p. 344 with note 166, for this hypothesis.

¹⁴⁸ This connection with Epidauros was discussed by Dugas *et al.*, *Tégée*, 62–4, and it has been convincingly argued by Roux 1961, 177–8 and 326; see also his proportional tables 410–3, where the close connection between Tegea and the Epidaurian buildings is striking. The same position is taken by Svenson-Evers 1996, 400. Additional arguments for particular links between these buildings (overall dimensions, the crepidoma structures, the possible double contractions, the proportional systems) are discussed above. Roux 1961, 164, mentions some technical features; lewis holes have now been identified at Tegea as at Epidauros (see Pakkanen, section xvii, 360, *Fig. 6*). Tegean workmen were employed at Epidauros, as documented by the inscriptions: see *ibid.*, 365 note 69. For Nemea, see Hill 1966, 44–5 with notes 107–108; he does not consider this connection as particularly close.

¹⁴⁹ Roux 1961, 129–30, with a date 380–370; Tomlinson 1983, 27, places it within the period 390–370. Burford 1969, 54–5, accepts this as a frame, but presumes that the international situation in the early 4th century will not have allowed building to start before ca. 375, and deduces from the epigraphical evidence that the building was completed in slightly less than five years. Stewart 1977, 88, gives solid reasons for considering 370 as a reliable *terminus ante quem*.

¹⁵⁰ See Hill 1966, 44–6, with solid evidence for a date about 330; so also Miller *et al.* 1990, 130 (ca. 330–320) and Gruben 2001, 140 and 142, who presumes that it must be later than the completion of the Tegea temple since certain workmen seem to have been employed on both projects, but first at Tegea (see p. 348 note 197 below).

the not entirely successful repetition of the Corinthian capitals in its interior colonnade,¹⁵¹ but also in the overall dimensions, and in the marble sima. That limit does not exclude that the temple at Tegea might still have been under construction while the temple at Nemea was being built, but it must have been sufficiently advanced in the years around or slightly before 330 to be useful as a model for the other temple.

With these considerations in mind, the useful time span for the beginning of the project at Tegea stretches between the decades 370–360 and 340–330 B.C.

The close relationship between this group of buildings is well demonstrated by a survey of proportions in capitals and entablatures in 4th-century Doric buildings, where it repeatedly appears that the figures for the temple at Tegea and those for the buildings at Epidauros and Nemea are very close. With the tholos, and occasionally also with the temple of Asklepios, they are so close as to be almost identical, and consequently useless for establishing a relative chronology for these buildings.¹⁵² The tholos is certainly later than the temple of Asklepios in the same sanctuary, so it was probably started in the 360s, but with a long building period that is epigraphically documented without being chronologically fixed; estimates vary from about 370–330 to 360–320.¹⁵³ To a large extent its building period must have overlapped with the project at Tegea; they could even have coincided if the Tegea temple is also dated as early as from about 360 onwards, as some authorities still prefer. (In the French publication the two monuments were considered as exactly contemporary, built from about 360 to 330.¹⁵⁴) In this case it is difficult to establish which building had a priority and influenced the other, since impulses of competition and inspiration may have been going in both directions; but some indications may exist. The stylobate diameter of the tholos is larger than the width at Tegea, with a precise proportional definition of 16 : 15; if this was intentional, for the purpose of making one building “larger” than the other, this would normally indicate that

¹⁵¹ See the references p. 332 note 94.

¹⁵² See the tables Roux 1961, 410–3, where this situation can repeatedly be observed. There is also a fairly close alignment with the temple at Bassai.

¹⁵³ See e.g. Dugas *et al.*, *Tégée*, 128 (ca. 360–330); Roux 1961, 171–84 (ca. 360–335); Burford 1969, 63–4 (from ca. 365–360 and lasting at least 27 years); Bauer 1973, 87–8 and 106–8 (ca. 375–345); Tomlinson 1983, 29 (ca. 360–330); Seiler 1986, 80–4, and Svenson-Evers 1996, 422–4 (ca. 370–320); Gruben 2001, 147 (ca. 360–20).

¹⁵⁴ Dugas *et al.*, *Tégée*, 127–8; see also Roux 1961, 184 and 322 on the connection between them. Fairly early dates for the Tegea temple before the mid-4th century have been proposed also by Shoe 1936, *passim* (ca. 360), Roux 1961, 184 and 413 (after ca. 360), Büsing 1970, 31–2 (ca. 360); Burford 1969, 28, suggests about 350. Stewart 1977, 66–9, argued for an early date (before the tholos) for the architecture, ca. 370–355, based on our knowledge of Tegea’s history in the early 4th century, but a later date in the 340s for the sculpture; he has later (*id.* 1990, 182 and 345) accepted this date also for the building. Norman, *Temple*, 191–3 (with ample references to earlier proposals n. 130), suggests the decade 345–335 after a thorough discussion of the evidence. See below, with note 166, for the particular proposal by Svenson-Evers 1996.

the tholos is the later monument.¹⁵⁵ On the other hand, it seems more likely that the identical inner span in the cella is copied from the tholos to Tegea than the other way round; a conical roof constructed with beams supporting one another at the top is a natural solution for a circular building, challenging the architect at Tegea to attempt the same dimensions for a normal, rectangular room.¹⁵⁶ But with that decision, which was certainly more of a technical feat, he had set so narrow limits for the external width of the building that he could not compete at that level. If this interpretation is correct, the tholos is the earlier building.

The element of competition between the two buildings is evident in another way in the solutions used for the Corinthian capitals: they are so different that it is hardly possible to put them in a chronological sequence, although one such attempt has been made, setting the Epidauros capital about two decades earlier than the one from Tegea.¹⁵⁷ If this is correct, it supports the conclusion suggested above. If the Epidaurian capital is the earlier, it is also the more innovative one; the Tegea capital leans more heavily on other elements of the architectural decoration at Epidauros, particularly the simae. But since the two capitals clearly belong to different lines of development, a reliable, relative chronology of the two buildings cannot be based on them.

The temple of Asklepios at Epidauros was a fairly small building, and could perhaps for that reason be built in no more than five years. If the much larger Nemea temple was actually begun perhaps in the late 330’s and completed within the decade 330–320, as most authorities assume,¹⁵⁸ it, too, had an exceptionally short building time; but for such a project in a sanctuary of international renown, sponsor funding may have been easily forthcoming. Otherwise, when there is available evidence for this, the time spans needed for such ambitious constructions in the 4th century tended to be long: for the tholos at Epidauros it has been noted that estimates range from 30 to 50 years,¹⁵⁹ and the old temple of Apollo at Delphi, which was destroyed by a landslide in 373, had not been completely replaced until about 330 or later after a long building period full of complications.¹⁶⁰ As for size and ambitions these are

¹⁵⁵ See above, 318 with note 6. Competition at this level was probably widespread; see Østby 1990–91, 361, for another such case in the same environment.

¹⁵⁶ For an admittedly rather hypothetical discussion of the carpentry in the roof of the tholos, see Roux 1961, 169–70. Generally on roof carpentry in circular buildings: J.J. Coulton, *Greek architects at work*, London 1977, 158–9; Hellmann 2002, 296–7.

¹⁵⁷ Bauer 1973, 103–4 and 124, dates the Corinthian capital from Tegea in the 340s, later than the capital from Epidauros which he sets before 350, and earlier than the Philippeion immediately after 338. See above, pp. 330–2, for a discussion of these capitals.

¹⁵⁸ See above, with note 150.

¹⁵⁹ See note 153 above.

¹⁶⁰ Courby 1927, 112–5 (ca. 370–30). J.-Fr. Bommelaer, “La construction du temple classique de Delphes,” *BCH* 107, 1983, 191–216, dates the roofing of the temple to 337/36 after a thorough

the contemporary projects with which the Tegea temple should be compared, and this was a local project, not one which could draw advantage from the fame and prestige of an internationally renowned, special sanctuary. It is for that reason necessary to keep in mind that a fairly long building period may have been needed for the temple at Tegea¹⁶¹ no less than for the tholos at Epidauros, and that there would certainly have been an overlapping with the tholos and probably also with Nemea.

One architectural feature which has recently been pointed out, may serve to pull the date of the Tegea temple to the later part of this time span: a particular type of Ionic column base consisting of only a cavetto beneath a torus, used for the Corinthian half-columns in the cella. This type of base was used at Nemea and in the bouleuterion at Sikyon, which certainly dates as late as about 300, after the urbanistic reshuffling of that city in 303.¹⁶² It should, on the other hand, be kept in mind that the acknowledged expert on Greek architectural mouldings, L.T. Shoe, preferred to date those from the temple at Tegea as early as about 360.¹⁶³

We should conclude that within the time span as indicated above, the evidence from the architecture is too ambiguous to provide a reliable, narrower definition of the date; but there are at least some indications in favour of the later part of the period under discussion. One such indication comes from an indirect source, or from what we believe that we know – rather than what we actually know – about the altar, if it is contemporary with the temple; this is a reasonable guess, although by no means safely established.¹⁶⁴ If it is correctly understood as a column altar with statues or reliefs placed in the intercolumniations, it was clearly inspired by similar altars and monuments from the Ionian environment, with the Mausoleum of Halikarnassos as the certainly most impressive example; and these monuments appear in the 350s.¹⁶⁵ The entire plan and realization of the Tegea project then goes into the 340s, coinciding also with the date which has been proposed for the Corinthian capital, and provides one more element to support a date when the work on the tholos at Epidauros had reached a stage

discussion of the epigraphical material; *id.*, *Guide de Delphes, Le site*, Athens 1991, 180–1, he dates the general completion at 334/33, with sculptural decoration going on until 327/26. Gruben 2001, 77–8, assumes that it stood finished only about 320.

¹⁶¹ This point was well made by Svenson-Evers 1996 in his long and thorough discussion of the date of the temple, 397–405.

¹⁶² For these bases, see Roux 1961, 336–9, and Norman, *Temple*, 193; also Hill 1966, 31–3, illustrating samples from Tegea, Nemea, Epidauros, Sikyon and Vergina fig. 6. The bouleuterion at Sikyon: A. Philadelphus, “Note sur le Bouleuterion (?) de Sicyone,” *BCH* 50, 1926, 174–82.

¹⁶³ Shoe 1936, *passim*.

¹⁶⁴ For the altar, see the discussion and references in section i (Østby), 18–20. Observe that the mouldings on some blocks probably from the altar are probably later than those from the temple; see note 39 to that section.

¹⁶⁵ Although with some modest forerunners, such as the Nereid monument from Xanthos. See for this discussion Norman, *Temple*, 190–1, and the references section i (Østby), 19 notes 41–43.

where it could be a source of inspiration and rivalry.

The possibility of a long building period with interruptions, similar to what is better documented for the tholos, certainly cannot be ruled out. However, if for instance the work in the 340s was limited to constructing the elevation on foundations laid out 20 or 30 years before, the basic plan must have been conceived from the outset. This is best demonstrated by the omission of foundations for inner colonnades in an interior so wide as to be on the very limit of what a traditional roof construction would be able to cover, inspired by the tholos at Epidauros, which must already have been sufficiently known at the moment when the foundations were planned and laid at Tegea.¹⁶⁶ The genius of the architect is apparent already at this point, and argues rather for a unitary project executed in a fairly short time under the supervision of a brilliant artist and engineer.¹⁶⁷

Some of the reasons for the long delay before the temple was reconstructed may have been of a political nature. In the 390s, and until the aftermath of the battle at Leuctra in 371, Tegea was still a faithful ally of Sparta, and if there was already in the old temple (and in the objects kept there, which were to a large extent saved from the fire) an element of anti-Spartan ideology,¹⁶⁸ that may have been one additional reason why there was a reluctance to take up such a project immediately. Moreover, if there was from the outset an intention to build a temple no smaller and less impressive than its predecessor, but on a scale adequate for the period, substantial financial resources would have been needed. The building inscriptions from Epidauros give an idea of the expenses that would be involved, and the time spans that were needed.¹⁶⁹ The temple of Asklepios was built in a remarkably short time if the construction lasted for only five years, but it was a fairly small building; the larger tholos required several decades. Tegea, before the Spartan defeat at Leuctra and the resulting political reorganization in Arcadia, would hardly have been in a good position for such expenses.

While at Epidauros the large building project could certainly be started in the less troublesome years after

¹⁶⁶ Confirming, if this conclusion is correct, the chronological priority of the tholos. See above (pp. 329–30, with notes 84–86) for the interior span compared to other unsupported spans in contemporary architecture and for the exact replica of the inner space in the tholos; and note 153 for the estimates of the time of construction of the tholos. A similarly long building period with a long interruption has been proposed for the temple at Tegea by Svenson-Evers 1996, 402–5, suggesting that the foundations were laid already before 371, but the rest of the temple was built by Skopas some time after 350. This is obviously excluded if the process is correctly understood as suggested here.

¹⁶⁷ For a discussion of his career and background, see below.

¹⁶⁸ For this aspect of Tegean identity, see *Tegea I*, section i (Østby), 000–000.

¹⁶⁹ For these inscriptions (*IG* IV.2, 102–103), and for the wealth of information concerning ancient Greek building enterprises recovered from them, see best Roux 1961, 84–9 (temple of Asklepios), 171–6 (the tholos), and 424–32 for the translated text; also Burford 1969, 207–21 (81–5 on expenses).

about 375, if not before,¹⁷⁰ this was hardly then any easier at Tegea than it had been before, since the polis became heavily involved in complicated events of political and military character precisely in the years after the battle at Leuctra in 371. After a short civil war Tegea chose to take part on the Theban side in the battles against her former ally and master Sparta, participated in the foundation of the Arcadian confederacy and the foundation of Megalopolis, and was again involved in a war with Elis when the sanctuary at Olympia was occupied for some time by Arcadian forces in 364 and robbed of much of its treasure. A considerable part of this booty must have gone to Tegea, and may have been of some importance for the expensive reconstruction of the temple.¹⁷¹ Two years later the confederation collapsed in another wave of conflict and warfare, triggered by disagreements over the use of the booty from Olympia, and in this conflict Tegea sided with Megalopolis and the Thebans against Mantinea and states supporting her. On this side she took part in the battle at Mantinea in 362, where Epaminondas lost his life.¹⁷² By that time the Arcadian confederation had split into two parts, with Mantinea as head of the larger group of Arcadian states, but there is reason to believe that Megalopolis continued to act as if it was still head of the confederation. In this situation it still had a few allies in the southern part of Arcadia, among them probably Tegea.¹⁷³

If the construction of the temple, or at least the start of it, dates as far back as the years of the confederation from 371 to 362,¹⁷⁴ it belongs in a context where the temple, its decoration and the altar in front of it would certainly make excellent sense as an immediate, monumental signal of the political turn which Tegea had now made.¹⁷⁵ It could also be understood as a Tegean attempt to preserve a local identity within the new federation, perhaps even with an intention of making the sanctuary a common Arcadian religious focal-point in addition to, and perhaps in competition with, the old, traditional ones at Lykosoura and Mount Lykaion, both of which were within the sphere of the new Arcadian capital.¹⁷⁶

¹⁷⁰ See above, p. 342 with note 149.

¹⁷¹ The complicated process involved in these events and their possible consequences at Tegea cannot be discussed here. See I.A.O. Larsen, *Greek federal states*, Oxford 1968, 180–95, and the extensive, recent discussion by Nielsen 2002, 414–97. On the war with Elis and the occupation of Olympia, see Mallwitz 1972, 98, and Nielsen 2002, 490–1; the source for those events is Xen. *Hell.* 7.4.12–32.

¹⁷² For the collapse of the confederacy, see Nielsen 2002, 490–3; the principal source is Xen. *Hell.* 7.4.32–40, and 7.5 for the Theban incursion and the battle at Mantinea.

¹⁷³ See Nielsen 2002, 493–7, where the sources concerning the two confederations are assembled. There is no clear evidence that they ever reunited.

¹⁷⁴ See for these proposals note 154 above.

¹⁷⁵ Stewart 1977, 66–9. The extensive sculptural decoration of the altar, precisely described by Pausanias (8.47.3), has also been understood in this context, even as a monument to the newly established Arcadian confederacy. See the discussion and references in section i (Østby), 19–20.

¹⁷⁶ See M. Jost, “The religious system in Arcadia,” in D. Ogden (ed.),

However, since Tegea had become so heavily involved in the unruly events of those years, it is an open question whether this would have been a good moment for such a prestigious building project. As far as financial resources are concerned, the Tegean involvement in the Arcadian attack on the sanctuary at Olympia may have secured for the city treasure which could be useful or even essential for the construction of the new temple. Tegea was not defeated in the battle at Mantinea and was probably able to keep her part of the booty from Olympia after the situation had calmed down; she may even have kept that part in reserve for an appropriate moment to start a project which may have been conceived during the years of the confederation, even if it could not be carried out until many years later. In that later context it could serve as a memory of a political experience which the polis had felt as positive and wanted to preserve, perhaps even hoping to restore it. The anti-Spartan bias of the decoration would certainly be relevant also in the later situation.

Events such as the peace between the Arcadians and Philip of Macedon in 343, and the return to Tegea in 338 of some frontier districts which had been annexed by Sparta at an earlier moment in Tegean history,¹⁷⁷ suggest that the polis enjoyed the benevolence of the Macedonian monarch, perhaps as a useful bulwark against the irreducible Spartans. If this was the case, perhaps the 340s and 330s may have been a convenient period for Tegea to go ahead with her ambitious project.¹⁷⁸ This would also be true if the relief with Idrieus and Ada found at Tegea and now in the British Museum, which is safely dated in the 340s, can be understood as an indication that also the Hekatomnid rulers in Karia, following perhaps the career of the Mausoleum artist Skopas, had also become interested in the Arcadian sanctuary and came forth with means for sponsoring its reconstruction.¹⁷⁹ It can at any rate be seen as a confirmation of a connection between Karia and Tegea in the 340s, quite likely tied up with Skopas’ involvement with the temple and sculptures at the site, provided that the source which gives us his name can be considered as reliable. This question will be discussed in the final part of this section.

An additional argument for a date fairly late in the 4th century is now forthcoming from the stratigraphical excavation north of the temple. If the “layer and surface with marble chips” identified there is correctly associated with the final work on the Classical temple, the pottery from that layer gives a valuable indication for the date of

A companion to Greek religion, Malden and Oxford 2010, 266–9. The sanctuary at Lykeion had a dependency inside Megalopolis, which Athena Alea had not: Paus. 8.30.2–3; M. Jost, *Sanctuaires et cultes d’Arcadie* (Etudes péloponnésiennes 5), Paris 1985, 221.

¹⁷⁷ See *RE* V A.1 (1934) s.v. Tegea, 113–4 (Hiller von Gaertringen).

¹⁷⁸ See note 154 above for earlier proposals in this direction.

¹⁷⁹ This is argued by G.B. Waywell, “The Ada, Zeus and Idrieus relief from Tegea in the British Museum,” in O. Palagia and W. Coulson (eds), *Sculpture from Arcadia and Laconia*, Oxford 1993, 79–86.

those works: they must be set late in the 4th century, since the material included sherds from the end of the 4th and the very beginning of the 3rd centuries. This indication is all the more valuable since there is a certain concentration of such pottery, while sherds from even later periods, while the surface was open and used, are extremely scarce and chronologically scattered.¹⁸⁰ The date must also be seen in connection with the material from the two “layers with bronze objects” underneath, where a large quantity of small votive objects from the Geometric and Orientalizing periods, present also in the layer with the marble chips, suggests that the soil for these layers was taken from the excavations for the foundations of the Classical temple, which disturbed early votive deposits and brought up material from them.¹⁸¹ Interestingly, the upper and later of these two layers contains pottery which is hardly later than the mid-4th century, while the lower, earlier layer has pottery of the same late 4th- to early 3rd-century date as the marble-chips layer. This somewhat surprising state of affairs can perhaps be explained if the excavated soil from the foundation trenches had been stored in heaps somewhere else in the sanctuary during the long decades while the building process had been going on, so that some fairly late material could also have found its way to the surface of those heaps. If then this surface material was first used for the final covering operation, and only later the material from the covered, inner parts of the heaps, a situation similar to what we have found would be the result. This can hardly be considered as definitive evidence, since the relevant material is so scarce compared to the early objects brought up from the deposits; and essentially the late sherds in the lower layer give a date *post quem* to the final works of tidying up the immediate surroundings north of the temple, rather than to the building itself. As far as it goes this material argues for a building period late in the century, suggesting, however, that the first steps may have been taken not much later than mid-century, and some initial planning even before.

As a final conclusion, the balance of the evidence seems to support a date for the temple in the third quarter of the 4th century. The comparison with the Nemea temple seems to exclude a later date, although quite possibly some final touches (such as the carving of the column flutes) only took place toward the end of the century. It remains to be seen how such a date can be linked up with the source which is supposed to give the name of the architect of the building.

The architect: Skopas from Paros?

A short remark by the invaluable, but never completely trustworthy Pausanias is supposed to give us the name

of the architect of the temple: Skopas from Paros, better known as a sculptor (which Pausanias expressly states, thus removing the possibility of confusion with some other less known, homonymous architect), and also mentioned in the same text as the author of the cult statues of Asklepios and Hygieia preserved in the temple in Pausanias' days.¹⁸² Among the names preserved for us of architects from antiquity, his stands out for this reason: he was also, and probably better, known for his work in another field. As usual, Pausanias tells us nothing about the sources he had for this information when he picked it up five centuries after the temple was built; but his choice of the imperfect tense for the verb, *ἐπυθάνομην*, rather than the more obvious aorist, suggests that he took some trouble to discover this and perhaps consulted more than one source. However, Skopas as architect of the temple, and as an architect at all, depends on this single remark by Pausanias alone, who did make mistakes.¹⁸³ There may consequently be reason to discuss whether this sculptor with his origin in the Aegean world of marble islands and his attested activity as a sculptor on the Ionian coast, at Halikarnassos and elsewhere, but also at several places in mainland Greece,¹⁸⁴ can be considered a likely author for the architecture of this eminently Peloponnesian temple.

As the preceding discussion has demonstrated, the temple is built in a squarely mainland-Doric tradition, with the temples and other buildings at Olympia, Bassai and Epidauros as the principal models and sources of inspiration.¹⁸⁵ Skopas, if it was him, worked at Tegea as an essentially Peloponnesian architect and must have had some renown as such in order to be entrusted with such a prestigious commission. Some conditions were certainly

¹⁸² Paus. 8.45.5 (...ἀρχιτέκτονα δὲ ἐπυθάνομην Σκόπαν αὐτοῦ γενέσθαι τὸν Πάριον, ὃς καὶ ἀγάλματα πολλαχού...), and 8.47.1 for the cult statues. For the statues of Asklepios and Hygieia, see Stewart 1977, 66–7; N.J. Norman, “Asklepios and Hygieia and the cult statue at Tegea,” *AJA* 90, 1986, 425–30; Calcani 2009, 38–40 and 101–2. See section i (Østby), 24 note 67, for a possible preserved torso fragment from the statue of Hygieia.

¹⁸³ See for Skopas as an architect at Tegea the unusually thorough discussion by Svenson-Evers 1996, 389–405, and 515–20 for a critical discussion of the concept “architect-sculptor” in antiquity. Doubts on Skopas' authorship have been expressed: see the references *ibid.* 393 n. 12, and note 191 below where Pausanias' information in a similar situation does not seem to make sense. For the classical discussion concerning Iktinos and the temple at Bassai, see Cooper 1996, 369–79, and Svenson-Evers 1996, 182–7.

¹⁸⁴ On Skopas' activity as a sculptor: Stewart 1977, 90–122; Ridgway 1997, 251–8; Calcani 2009, 3–46. The fragments from the pediment sculptures have generally been taken as indicative and even as fundamental for the understanding of his style (Dugas *et al.*, *Tégée*, 77–116; Stewart 1977, esp. 81–3; Calcani 2009, 34–7 and 89–100). Critical voices have so far been limited to generic arguments: Ridgway 1997, 51–2, and *ead.*, *Prayers in stone*, Berkeley, Los Angeles and London 1999, 19–20 and 193, prefers to see them as local workshop products, perhaps correctly, but this does not exclude that the general conception and composition may have been provided by Skopas as drawings or small-scale models.

¹⁸⁵ See especially the comments by A. Mallwitz in Ch. Hofkes-Brukker, *Der Bassai-Fries*, Munich 1975, 42 with n. 116, who rightly emphasizes the essentially Peloponnesian character of the Tegean temple; so also Calcani 2009, 34–5.

¹⁸⁰ The layers mentioned here are thoroughly described and discussed in section iv (Tarditi), 59–64. See for the pottery section viii (Iozzo).

¹⁸¹ See the report section iv (Tarditi), 64 and 67–8, for this explanation.

put to him by his Tegean sponsors, such as the general size of the temple (no smaller than the Archaic temple which it should replace, so a length of no less than about 49 m), the Doric order, and probably the material, the same Doliana marble quarried near Tegea which had been used in the early temple and in several Late Archaic buildings in the region.¹⁸⁶

The models for such a large Doric temple, if they were not to be Attic, could only be Peloponnesian; the Cycladic environment where Skopas originated had no tradition for such large peripteral temples, neither Doric nor Ionic.¹⁸⁷ That environment did however have a solid tradition for building in marble, and marble was also what the architect of the new temple was expected to use. If his Tegean sponsors now wanted to restore an ancient Arcadian tradition by creating a large, all-marble temple, unique in the Peloponnese where only limestone was used for such buildings elsewhere in this period, they needed a man with experience of work in this material. Skopas probably had such experience from his early years on Paros; marble always remained his favourite material also for sculpture.¹⁸⁸

We do not know if his previous work as an architect, which must be assumed although not attested anywhere, involved the use of this material. He may have gathered such experience at Halikarnassos, where he is generally supposed to have been working in the 350s.¹⁸⁹ He worked there as a sculptor, but it is quite possible that he also worked to some extent on the building and developed his competence in this field there, since marble was used in the architecture of the Mausoleum.¹⁹⁰ The strong analogies with the tholos at Epidauros, where marble was also used (although to a far more limited extent), may

¹⁸⁶ Largely overlooked, but a precious source for the otherwise scarcely documented development of Peloponnesian temple architecture in the late 6th and early 5th centuries B.C.: see Østby 1990–91. Of the temples discussed there, those at Mavriki, Vigla and Hagios Elias were all-marble buildings, while marble was used at least to some extent in the temple at Orchomenos (the capitals) and in the Early Archaic temple of Athena Alea at Tegea (stylobate and toichobate).

¹⁸⁷ To our knowledge, no peripteral temple of similar size was built in the Cyclades apart from the unfinished Ionic Hekatompedon on Naxos (Gruben 2001, 371–5) and the large Doric temple for Apollon on Delos where work was interrupted for a long time (*ibid.*, 158–9). Smaller peripteral temples could occur, such as the Athenaion of Karthaia on Kea (Østby 1980; M. Schuller, “Die dorische Architektur der Kykladen in spätarchaischer Zeit,” *Jdl* 100, 1985, 371–80).

¹⁸⁸ Only with some occasional works in bronze; but with few exceptions he seems to have used Pentelic, not Cycladic marble. See Ridgway 1997, 252; Calcani 2009, 12–3; and the collection of ancient sources Stewart 1977, 127–35.

¹⁸⁹ Calcani 2009, 28–33; Ridgway 1997, 112–35; Stewart 1977, 95–8.

¹⁹⁰ Not only for the sculpture and the Ionic column order, but also as an external dressing of the crepidoma and the tower. See K. Jeppesen, *Paradeigmata*, Aarhus 1958, 16–26, for a presentation of some evidence, and Svenson-Evers 1996, 132–5, for a survey, and, updated, K. Jeppesen, “Tot operum opus, Ergebnisse der dänischen Forschungen zum Mausoleum von Halikarnassos seit 1966,” *Jdl* 107, 1992, 85. The architect, Satyros, was also from Paros if he is identical with the Satyros from a sculptor’s signature at Delphi, but the name is fairly common; see Svenson-Evers 1996, 116–31, for a critical discussion (125–6 on the inscription).

indicate that he had also been involved in that project, for which, however, Pausanias gives a different (but problematic) name for the architect.¹⁹¹ If he was active here, this would probably have been in the early years of the tholos project, before the invitation to Halikarnassos.

Halikarnassos could not, however, be the place where he gained the necessary experience in Doric temple architecture, including refinements such as curvatures, not only in the crepidoma, but also in the epistyle. The Cycladic and generally the Ionian architecture had no tradition for this extremely challenging refinement, this was a Peloponnesian tradition stretching back at least to the temple of Zeus at Olympia.¹⁹² With this and other feats, such as the unusually wide, unsupported span of the roofing over the cella, Skopas thus revealed himself at Tegea not only as one of the very finest architects of monumental Doric buildings in his time, but also as an unusually accomplished and experienced engineer who relied on very advanced and strictly Peloponnesian traditions. This part of his training probably took place at Epidauros.

Stylistic similarities between Skopas’ sculptures and those from the temple of Asklepios at Epidauros have been pointed out long ago,¹⁹³ and tend to confirm that a period of apprenticeship at that site may have been part of his background. He may in that case have come to Epidauros as a follower of Thrasymedes from Paros, the sculptor who created the chryselephantine cult statue of Asklepios for his temple there early in the 4th century and did other work for the sanctuary as well.¹⁹⁴ He probably brought with him some basic training in working marble from his island of origin. When he was invited to use this material at Tegea to create an essentially Peloponnesian temple, he could have followed the example from earlier Cycladic architecture, and also from the tholos at Epidauros, in making use of Ionian ornaments and mouldings far beyond what conventional Doric architecture would accept. The lavish ornamentation of the interior of the cella, with its Corinthian half-columns, is only one part of this tendency; the richly ornamented, coffered ceilings in the ptera, and the ornamented antae and tops and bases of the wall, another part. The recently discovered fragment from the lintel of the northern porch

¹⁹¹ Paus. 2.27.5, gives here the name of Polykleitos, apparently thinking of the famous mid-5th-century sculptor (so Roux 1961, 184–7); but since this is impossible for chronological reasons, the name is mostly explained as the name of a homonymous, later artist. See Svenson-Evers 1996, 415–33, for the discussion of this name (420–4 for the information concerning the tholos).

¹⁹² See above, p. 321 with note 17. In Ionic architecture a curvature appears only with the temple of Athena at Priene: Gruben 2001, 421.

¹⁹³ Stewart 1977, 90; Calcani 2009, 14–5, and 44–5 for contacts with the art of Timotheos; Ridgway 1997, 53–4. Timotheos was also included by some ancient sources among the artists who worked at the Mausoleum of Halikarnassos (Vitr. 7, *praef.* 13).

¹⁹⁴ On Thrasymedes: Paus. 2.23.7 for the cult statue (citing an inscription as his evidence); *RE* VI.A1 (1936), 594–5 (Lippold), *s.v.* Thrasymedes. On the cult statue: Burford 1969, 59–61; B. Krause, “Zum Asklepios-Kultbild des Thrasymedes in Epidauros,” *AA* 1972, 240–57.

with its splendid ornaments of Ionic type¹⁹⁵ connects with another traditional feature of Cycladic marble architecture, the richly ornamented porches.¹⁹⁶ These tendencies were not followed in the far more prosaic Nemea temple, where only the decoration of the marble sima is so close to the Tegean model that perhaps, for this particular task where men with experience from working marble were needed, the same craftsmen may have been at work.¹⁹⁷ Skopas in person cannot have been responsible for the Nemea temple, however. Neither is it likely that he could have created, at the end of the 4th or beginning of the 3rd century, the Doric building which most closely reflects the proportional system of the temple at Tegea, the Dodektheon on Delos discussed above (p. 339). Nonetheless it is interesting, and possibly significant, that another example of this system turns up in the Cycladic environment where Skopas originated.

With these admittedly rather vague, independent indications of the architect's Cycladic background, and following the general principle of accepting Pausanias' information unless there are solid reasons for doubting it, Skopas should probably keep his position as the architect of the temple at Tegea.¹⁹⁸ With his active life supposed to stretch from the 370s to the 330s or 320s, and with a date for the Tegea temple which for other reasons seems to fall in the third quarter of the century,¹⁹⁹ the temple thus becomes a product of the artist's mature and late years. For such a prestigious project, this is eminently reasonable.

With the general scarcity of attested names for ancient architects²⁰⁰ it is impossible for us today to link him up with any other, earlier architectural achievements, although certain attempts have been made.²⁰¹ This fact

does not exclude that other more or less impressive, unknown or for us anonymous buildings may have been works of his hand, but it is certainly possible that in antiquity the temple of Tegea was considered his real masterpiece. It leaves no doubt that also as an architect he was a genial artist. Sadly scarce as they are, the remains are those of one of the finest buildings ever created in the Doric order, and a worthy conclusion to this noble architectural tradition at the same site where its Archaic forerunner had been created almost three centuries earlier as an equally important monument to its beginning.

The destruction of the temple

The surface on which the metope Block **795** rests is certainly later than the destruction of the Classical temple, since marble fragments with traces of worked surfaces, carved off the temple blocks after the collapse, are present in it. The destruction can quite tentatively be dated to the 6th or 7th century A.D.,²⁰² it is in any case earlier than the medieval silt layers above that surface.

The destruction may reasonably be connected with one of the large earthquakes which affected Central Greece and the Peloponnese in the 6th century A.D. Two such events are recorded by historical sources in 543, when Corinth was damaged, and again in 551 north and south of the Corinthian gulf, when Patras was damaged and perhaps the temple of Zeus at Olympia was destroyed.²⁰³ Other events of this kind may have taken place without being recorded, this is the case particularly for the 7th century when sources are particularly scarce. This remains a more likely explanation than the extremely destructive Slavic invasions in the later 6th and 7th centuries,²⁰⁴ since there are no significant traces

¹⁹⁵ See section xvii (Pakkanen), 361–2 with *Figs 9–11* (Block **804**).

¹⁹⁶ See for these A. Büsing-Kolbe, "Frühe griechische Türen," *Jdl* 93, 1978, 66–174.

¹⁹⁷ See Hill 1966, 44–5 for a useful comparison between the two temples, and a summary of previous attempts to ascribe both to Skopas in his n. 107. He concludes, rightly, that the differences are too substantial for this to be likely; Gruben 2001, 142, shares this opinion. However, there are structural similarities to indicate that certain craftsmen from the Tegea project may have been active also at Nemea; see Miller *et al.* 1990, 146–7 with n. 89, for useful remarks, and above, p. 332 with note 93, for the marble sima.

¹⁹⁸ Observe the suggestion by Svenson-Evers 1996, 402–5, that Skopas only took care of the final work on the temple, at the end of a long building period. But the wide span of the cella was planned already in the foundations (see above); and if the use of marble and Ionic ornaments is to be connected with his artistic competence and background, this proposal obviously cannot be correct.

¹⁹⁹ See for his life-span Calcani 2009, 3 (lifetime 395–390 to 330–325); Stewart 1977, 1 with notes 1–4 (active life 375–370 to 335–330); so also Svenson-Evers 1996, 397.

²⁰⁰ The available evidence has now been collected and thoroughly analyzed by Svenson-Evers 1996.

²⁰¹ Skopas has been proposed for the propylon to the so-called Temenos on Samothrace: P.W. Lehmann and D. Spittle, *Samothrace* 5, *The Temenos*, Princeton 1982, 144–7. See Stewart 1977, 107–8; Calcani 2009, 43, n. 170. Another suggestion concerns the prytaneion on Paros with a sanctuary for Hestia, which would have been a very early work in his career: Gruben 2001, 137; *id.*, "Wandernde Säulen auf Naxos,"

in N.Chr. Stambolidis (ed.), *Φως κυκλαδικόν. Τιμητικός τομός εις μνήμη του Νίκου Ζαφειροπούλου*, Athens 1999, 311. For proposals to connect him with the temple at Nemea, see note 197 above.

²⁰² See section iii (Luce), 49–54 ("Phase V").

²⁰³ See H.-V. Herrmann, *Olympia, Heiligtum und Wettkampfstätte*, Munich 1972, 198, and Adler in *Olympia* I, 96. Generally on earthquakes in antiquity: A. Nur (with D. Burgess), *Apocalypse. Earthquakes, archaeology and the wrath of God*, Princeton and Oxford 2008, ch. 4 (88–140). In the catalogue by E. Guidoboni, A. Comastri and G. Traina, *Catalogue of ancient earthquakes in the Mediterranean area up to the 10th century*, Rome 1994, the two earthquakes in 543 and 551 are listed and discussed as nos 212 and 217 (pp. 328 and 331–2); the source is in both cases Procopios (*Anekd.* 18.41–42 and *Aed.* 4.2.24, and *Bell.* 8.25.16–23 respectively). A large earthquake which hit Syria in 526 has probably because of some confusion in the text by Procopios occasionally been understood as destructive also in Greece; see Guidoboni *et al.*, 314–21 no. 203. 37 documented earthquakes are listed for the 6th century, but only 12 for the 7th, none concerning Greece.

²⁰⁴ For these events, see e.g. P. Heather, *Empires and barbarians*, London 2010, 399–404; P.M. Barford, *The early Slavs*, New York 2001, 60–2, 69, 91; J.V.A. Fine jr., *The early medieval Balkans*, Ann Arbor 1991, 59–64. F. Curta, *The making of the Slavs*, Cambridge 2001, 67–9, discusses the difficult source situation concerning their arrival and presence in the Peloponnese. Typically Slavic pottery has been found at nearby Pallantion: M. Iozzo in *ASAtene* 68–69, 1990–91, 197–9 nos 138–141.

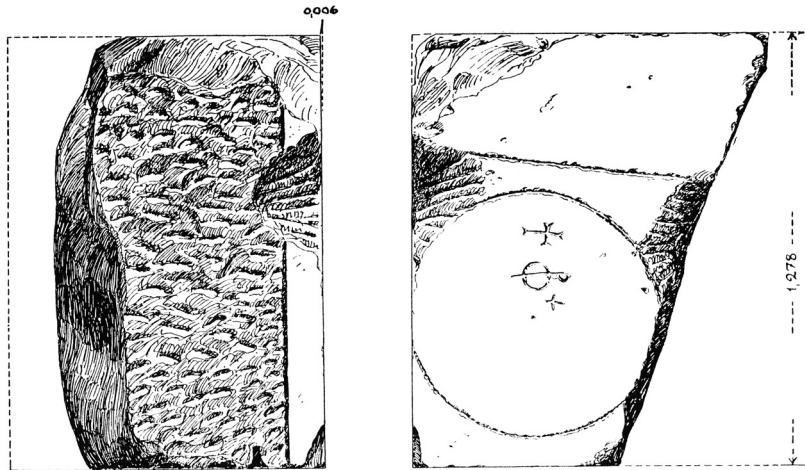


Figure 17. Orthostate block from the Classical temple, with medieval Christian incisions (Block 43). (After Dugas *et al.*, *Tégée*, pl. 67)

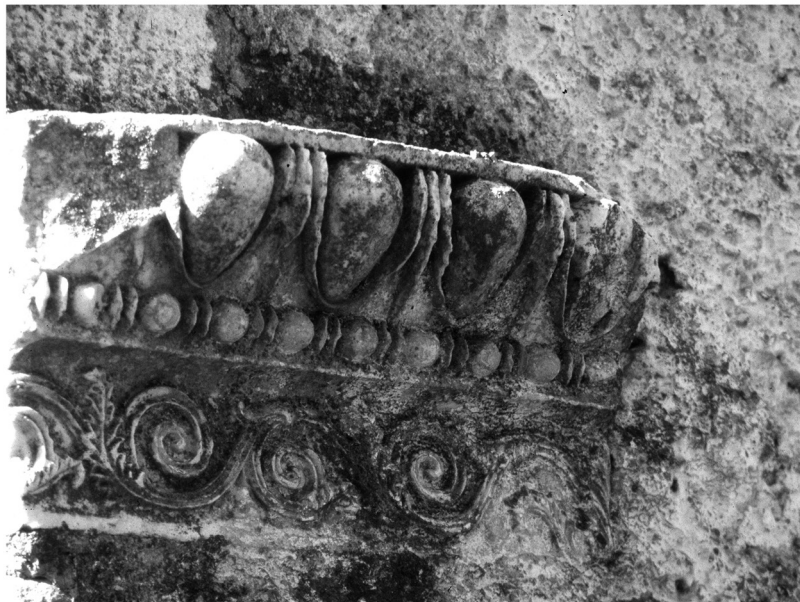


Figure 18. Fragment from the decoration of the interior of the cella (cf. Dugas *et al.*, *Tégée*, pl. 79), inserted in the wall of a village house near the site. (Photo: Østby)

of burning on the marble blocks, as one might expect if this had been the case. Although some pottery and other evidence of their presence have been identified in recent excavations at the agora, no such evidence has so far been forthcoming from the sanctuary or its immediate surroundings.

Nevertheless, the earthquake hypothesis involves some problems. It cannot be expected that the positions of the architectural blocks today reflect their positions when the building fell; they may do so in some cases, but generally they are the result of the extensive reutilization of the blocks in medieval and later times, including the construction of walls and buildings in the Byzantine period, of more recent village houses, and a quite extensive removal and reorganization of blocks and

groups of blocks during the archaeological activity at the site in the early 20th century. There are, however, a few cases which call for an explanation.

One such problem concerns precisely the metope Block 795, which is so important for the reconstruction of the front colonnade of the temple. It was found off the centre of the northern flank and resting on a layer from the 7th century A.D., but it certainly comes from the front of the temple.²⁰⁵ For that reason its position cannot be where an earthquake would have launched it; but it must have been moved to this position quite soon after it fell down, and certainly before the silting began. As on many

²⁰⁵ See section xvii (Pakkanen), 360–1 with *Fig. 7*, and above, p. 323 with note 41.

other blocks, there is evidence for the carving of marble chips from the block, but it is difficult to understand why anyone in the early medieval times would have bothered to haul it for such carving from the front when other marble blocks close by were certainly available for such activity. More of those blocks certainly remain to be discovered in the area north of the temple, and may contribute to explain the phenomenon.

The site of the temple must always have remained known in later periods. It was a source of easily available building material at a place where there is no stone to be found in the immediate area, and material from the temple was to a large extent used for the ambitious building or buildings which were constructed probably in the 11th or 12th century, between the temple and the church and under the latter.²⁰⁶ The place was probably chosen because of this resource. Because so much ancient material was used in those walls, including fragments of the temple sculptures, they were demolished in the early 20th century wherever they were accessible.²⁰⁷ There is, however, only one mention of Byzantine walls discovered on the foundations of the temple;²⁰⁸ one orthostate block formerly standing on the foundation of the southern peristasis colonnade, with a cross and other symbols incised on it (*Fig. 17*), may be what remains of those walls.²⁰⁹ Apparently the temple foundations were used only to a very limited extent as such by the medieval builders, although their excellent quality would have been eminently useful for an ambitious building project in this waterlogged area. But marble blocks, ancient as well as medieval, were taken from the site and used in the village church of Hagios Nikolaos when it was constructed next to the temple site in the early 19th century, and again when it was amplified and supplied with a bell-tower late in the same century.²¹⁰ Various village houses were built on the temple site in the 18th and 19th centuries,²¹¹ using the foundations and the ancient building material; some pretty blocks were inserted as decorations in the walls of these houses, where some of them can still be seen. (*Fig. 18*)

²⁰⁶ For these remains, see section **i** (Østby), 25–6, and the discussions sections **iii** (Luce), 45, and **xx** (Drocourt), 418–20.

²⁰⁷ K.A. Rhomaios, “Ἀνασκαφαὶ τοῦ ναοῦ τῆς Ἀλέας,” *Prakt* 1909, 307.

²⁰⁸ Milchhöfer, *Untersuchungsausgrabungen*, 54: on his plan pl. 2 (reproduced in section **i**, 13 *Fig. 1*) there are such indications (“Spätere Mauern”) on the southern stylobate near the eastern end, and in the pronaos area.

²⁰⁹ Also in Dugas *et al.*, *Tégée*, pl. 67.Ba; listed in section **xix** (Pakkanen), 381, as Block **43**. It is now kept in the new shelter south of the temple.

²¹⁰ This situation is clearly stated by Milchhöfer, *Untersuchungsausgrabungen*, 52 (see also *id.* in *AM* 4, 1879, 130 and 137–9), and W. Dörpfeld, “Der Tempel der Athena in Tegea,” *AM* 8, 1883, 275. Numerous small marble pieces with medieval carvings can be seen in the walls of the church, particularly in the apse.

²¹¹ An impression of that situation is best obtained from Milchhöfer’s pl. 2 (see note 208). The more extensive state plan from the French excavations (Dugas *et al.*, *Tégée*, pl. 1–2; reproduced section **i**, 13 *Fig. 3*) shows the situation in the early 20th century, when the houses on and immediately next to the temple had been removed.

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