

KALLIKRATES

(PLATES 86-91)

IN the second half of the fifth century B.C. Athens rebuilt her shrines burnt some three to four decades before by the Persians. Great architects such as Iktinos and Mnesikles created for her some of the outstanding achievements of ancient architecture. Other men such as the "Hephaisteion architect" helped to embellish the city. Kallikrates, the little known Athenian architect of graceful Ionic buildings, belongs in this same period.¹ Plutarch in the single ancient literary reference to Kallikrates

¹ My interest in Kallikrates first developed when I was a student in the American School of Classical Studies in Athens. Many ideas evolved at that time were further developed in a paper presented to Bryn Mawr College the following year to fulfill the requirements for a M.A. degree. Since then I have re-examined and partially changed some of the arguments. During the course of this work I received invaluable aid from Dr. Lucy T. Shoe and Professor Richard Stillwell of Princeton, New Jersey, and from Mrs. Brunhilde Ridgeway of Bryn Mawr College in brief but highly informative conferences and I wish to express my deepest gratitude to them. I also wish to acknowledge my debt to my husband, T. Leslie Shear, Jr., who helped me develop many of the arguments in this paper, and to Professor Alexander Cambitoglou, of the University of Sydney, Australia.

The ground plans of Plate 87 were drawn by Dr. John Travlos, of the American School of Classical Studies, Athens, to whom I wish to express my warmest thanks. I wish also to thank Miss Shoe and M. Georges Daux, Director of the French School of Archaeology in Athens, for permission to reproduce drawings on Plates 86, 88, 89, 91. The profiles of the Doric capitals of Pl. 89, e are after Courby, fig. 128, that of the Ilissos Temple (Pl. 89, d, 2) after Dinsmoor, *A.J.A.*, XIV, 1910, p. 463, fig. 3, b. The other profiles are after Shoe, pls. XII, XIX, XVI, LXVI, LXXV. Each set of drawings on the same plate, except for the profiles of the Doric capitals on Pl. 89, are reproduced at the same scale.

The following abbreviations are used for works frequently cited:

- Amandry—P. Amandry, *Fouilles de Delphes*, II, *La colonne des Naxiens et la portique des Athéniens*, Paris, 1953.
Bohn—R. Bohn, *Die Propyläen der Akropolis zu Athen*, Berlin, 1882.
Cockerell—C. R. Cockerell, *The Temples of Jupiter Panhellenius at Aegina and of Apollo Epicurius at Bassae near Phigaleia in Arcadia*, Part 2, London, 1860.
Collignon—M. Collignon, *Le Parthénon*, Paris, 1914.
Courby—F. Courby, *Exploration archéologique de Délos*, XII, *Les temples d'Apollon*, Paris, 1931.
Dinsmoor—W. B. Dinsmoor, *The Architecture of Ancient Greece*³, New York, 1950.
Erechtheum—J. M. Paton, L. D. Caskey, H. N. Fowler, G. P. Stevens, *The Erechtheum*, Cambridge, Mass., 1927.
Hill—B. H. Hill, "The Older Parthenon," *A.J.A.*, XVI, 1912, pp. 535-558.
Judeich—W. Judeich, *Topographie von Athen*², Munich, 1931.
Orlandos—A. Orlandos, "Nouvelles observations sur la construction du Temple d'Athéna Niké," *B.C.H.*, LXXI-LXXII, 1947-1948, pp. 1-38.
Puchstein—O. Puchstein, *47. Program zum Winckelmannsfeste, Das ionische Capitell*, Berlin, 1887.
Ross—L. Ross, E. Schaubert, C. Hansen, *Der Tempel der Nike Apteros*, Berlin, 1839.
Roux—G. Roux, *L'architecture de l'Argolide aux IV^e et III^e siècles avant J.C.*, Paris, 1961.

gives us some knowledge of his career.² From this ancient source we learn that he constructed the middle long wall to Piraeus during the period of Perikles' political power.³ This same ancient reference also gives us the very important fact that Kallikrates worked with Iktinos on the Parthenon. Pausanias mentioned Iktinos alone as the architect of the Parthenon and Vitruvius informs us that Iktinos and Carpius wrote a book on the construction of that building.⁴ Neither one of these latter references makes any mention of Kallikrates. This had led some scholars to suppose that Iktinos was the chief architect and that Kallikrates served him in some minor capacity.⁵ Indeed, Furtwängler asserted that he held the position of "eines technischen Bauleiters," a mere technician supervising mechanical work.⁶ Although this argument is precarious and Kallikrates' relationship to Iktinos has never satisfactorily been explained, it has influenced scholars to think of Kallikrates as a lesser architect than Iktinos and Mnesikles.⁷

Two inscriptions have been found which give us further information about Kallikrates. One of these, dating from *ca.* 448 B.C., decrees that Kallikrates is to build a stone temple and altar for the sanctuary of Athena Nike and that he is to provide the precinct with a gate.⁸ The last lines of this inscription consist of an amendment proposed by Hestaios. It decrees that three members of the boule are to be appointed to confer with Kallikrates concerning the architectural plans of the temple and that these plans, when completed, are to be presented for approval to the boule. This amendment has been interpreted by some scholars as a rider to the decree in order to delay or stop the construction of the Temple of Athena Nike.⁹ Other scholars have maintained

Shoe—L. T. Shoe, *Profiles of Greek Mouldings*, Cambridge, Mass., 1936.

Stuart and Revett—J. Stuart and N. Revett, *The Antiquities of Athens*, I, London, 1762.

Studniczka—F. Studniczka, "Zu den Friesplatten vom ionischen Tempel am Ilissos," *Jahrb.*, XXXI, 1916, pp. 169-230.

Travlos—J. Travlos, *Πολεοδομική Ήξέλιξις τῶν Ἀθηνῶν*, Athens, 1960.

Vallois—R. Vallois, *L'architecture hellénique et hellénistique à Délos*, I, Paris, 1944.

Wiegand—T. Wiegand, *Die archaische Poros-Architektur der Akropolis zu Athen*, Leipzig, 1904.

² *Pericles*, 13, 4-5.

³ Cf. Judeich, pp. 76, 155-158, fig. 13; Travlos, pp. 48-49, fig. 19.

⁴ Pausanias, VIII, 41, 9; Vitruvius, VII, Praef., 12.

⁵ See among others: Judeich, p. 247; A. M. Lawrence, *Greek Architecture*, Baltimore, 1957, p. 156; M. L. D'Ooge, *The Acropolis of Athens*, New York, 1908, p. 110; F. Noack, *Eleusis*, Berlin, 1927, pp. 143, 311; Collignon, p. 45.

⁶ *Sitzb. München*, 1898, p. 387, note 1.

⁷ It should be noted that Pausanias mentioned Iktinos' work on the Parthenon as a means of identifying the architect of the Temple of Apollo at Bassae. Since Kallikrates did not work on the Bassae Temple, it is not necessarily significant that he was not mentioned. Vitruvius, on the other hand, was discussing books written on ancient architecture and in this context he mentioned Iktinos. Since Kallikrates does not seem to have written such a book, there was no reason for Vitruvius to include him.

⁸ *I.G.*, I², 24; B. D. Meritt, *Hesperia*, X, 1941, pp. 307-315.

⁹ Cf. M. N. Tod, *A Selection of Greek Historical Inscriptions*², Oxford, 1946, p. 80.

that such an amendment was the common practice of the period and not a device to hinder the building of the temple.¹⁰ They show that similar amendments are to be found on other building inscriptions, though it should be noted that all the parallels they cite belong to a slightly later date. However this proposal of Hestaios may be interpreted, it is clear that for some reason the construction of the temple was delayed for some twenty years.¹¹

A second inscription, dating from the same period, preserves a decree commissioning Kallikrates to make a repair of some sort of the Akropolis within a time span of two months in order to keep runaway slaves and thieves out of the Akropolis.¹² Scholars have generally interpreted the inscription as referring to a repair of the Akropolis walls.¹³

On the basis of Kallikrates' connections with Athenian fortifications and his collaboration with Iktinos on the Parthenon, it has been suggested that Kallikrates was the state architect at this time.¹⁴ We have no contemporary evidence that there was such a position as a "state architect" in Athens during the fifth century. Furthermore, had Kallikrates held this position, we might expect him to have been connected in some way, however minor it might have been, with the Propylaia and the re-organization of the Akropolis as provided for by the second decree of Kallias which appear to have been under the sole direction of Mnesikles. If there had been a single man responsible for the general supervision of all the building activities of this period, the evidence from Plutarch¹⁵ would seem to suggest that Pheidias held this position. Whatever official position Kallikrates may have held seems to remain uncertain. What concerns us more in this paper, his artistic position in the history of Athenian architecture, may become clearer by a study of temples connected with his name.

THE TEMPLE OF ATHENA NIKE

The small Ionic temple of Athena Nike (Pls. 86, b; 87, b), designed by Kallikrates in the second half of the fifth century B.C., was built on top of the old Mycenaean bastion to the southwest of the Propylaia.¹⁶ The limited space of the bastion appears to have been at least partially responsible for the unusual plan of the temple (Pl. 87, b). It no doubt influenced the proportions of the cella, which is wider than it is long,

¹⁰ G. Welter, *Ath. Mitt.*, XLVIII, 1923, pp. 190-191; Puchstein, Pauly-Wissowa, II, cols. 550 f.

¹¹ The date of this temple will be discussed *infra* p. 388.

¹² *I.G.*, I², 44.

¹³ Judeich, p. 211; Tod, *op. cit.*, p. 80. The suggestion has been made that the inscription deals with the construction of a small guard house (cf. Collignon, *loc. cit.*; P. Foucart, *B.C.H.*, XIV, 1890, p. 178).

¹⁴ Tod, *loc. cit.*

¹⁵ *Pericles*, 12-13.

¹⁶ Orlandos, pp. 1-3.

the absence of an opisthodomos, and the use of two monolithic piers "in antis" on the east side of the cella, which seem to be an attempt to combine the pronaos and the east cella wall into one unit.¹⁷ Four monolithic columns, set in a prostyle arrangement with the axial spacings of all the columns equal, form the front and back façades.¹⁸ A metal grille was erected between the antae, the piers, and the corner columns of the east façade.¹⁹

Although the temple is small, much thought was given to its construction, as seen for example in the handling of the steps. The vertical surfaces of the steps were battered inward and their horizontal surfaces were inclined downward.²⁰ In addition, the top step was made slightly taller than the two lower steps.²¹ This treatment of the krepidoma gives greater apparent stability to the base of the temple which was further emphasized by undercutting the steps. Additional refinements can be seen in the inward inclination of the side walls and the side surfaces of the antae. The west wall, however, since it was scarcely seen, is perfectly vertical as are all the front faces of the antae.²² This same distinction between areas seen and those not clearly visible is evident in the handling of the orthostates. The orthostates on the north and south walls project slightly both inside and outside, as is customary at this time. The orthostates on the west side, however, project only on the inside, whereas on the outside, where they were almost never seen, they lie flush with the wall.²³ The Ionic columns are also inclined, the side ones leaning both inwards and towards the center of the façade, and the center ones leaning in.²⁴ The refinements of this temple, however, are limited to inclinations alone and no curvature was used, perhaps because of the small size of the building.

This temple is perhaps most admired for its delicacy and the harmony of its parts which were the results of the architect's careful consideration of the scale and position. This can be illustrated in the treatment of the columns (Pl. 86,b). Although they appear slender, on account of their small size, they are in fact stocky in their proportions with their height equal to 7.82 times the lower diameter.²⁵ Dinsmoor suggested that stocky proportions were used in order to place the temple in greater

¹⁷ Cf. Ross, pl. II; Orlandos, pp. 20-22 and *Ath. Mitt.*, XL, 1915, p. 37, pl. VI; Dinsmoor, p. 186.

¹⁸ Orlandos, *Ath. Mitt.*, XL, 1915, p. 28, pl. VI; Dinsmoor, p. 340.

¹⁹ Orlandos, pp. 11-16, pl. I and *Ath. Mitt.*, XL, 1915, pp. 29-30.

²⁰ Similar inclinations occur in the steps of larger temples of this same period such as the Parthenon and the Erechtheion. Orlandos, pp. 10-11, fig. 7; *Erechtheum*, p. 18.

²¹ Orlandos, p. 10. This also occurs in other Athenian buildings; Bohn, pp. 21, 22; Courby, pl. XIII; J. Audiat, *Fouilles de Delphes*, II, *Le trésor des Athéniens*, Paris, 1933, pp. 11-12, pl. III.

²² Orlandos, pp. 16-18.

²³ *Ibid.*, p. 16.

²⁴ *Ibid.*, pp. 23-24.

²⁵ Dinsmoor, "Chronological List of Greek Temples," facing p. 340.

harmony with the heavy bastion on which it stood.²⁶ Other scholars, however, have maintained that the proportions were due to the influence of the Doric order²⁷ or to a lingering archaic influence.²⁸ Indeed, among the preserved temples of the Ionic order, the proportions of the columns of the Athena Nike Temple are the heaviest. Nearest are the columns from the archaic Temple of Artemis at Ephesos whose height is *ca.* eight times the lower diameter, whereas the height of the Ionic columns of the Erechtheion is consistently over nine times their lower diameter.²⁹ These other temples, however, are larger than the Temple of Athena Nike, which may well be the reason for the apparent discrepancy. Two sets of columns, those recently found re-used in the "Late Roman Fortification Wall" in the Athenian Agora³⁰ and the columns from the Stoa of the Athenians at Delphi,³¹ would seem to support this view. Both sets are short in comparison to columns from temples other than the Temple of Athena Nike,³² and both have stocky proportions. Those from the Agora have a height equal to 7.81 times the lower diameter for the taller pair and a height equal to 7.12 times the lower diameter for the shorter pair.³³ The Stoa columns have a height equal to *ca.* 7.83 times the lower diameter.³⁴ The original location of the Agora columns has not yet been determined; therefore, it is not known whether their stocky proportions were due to their position in the building they served. The Stoa columns were placed in front of the late sixth century polygonal retaining wall for the Temple of Apollo³⁵ and were given a very wide axial spacing,³⁶ no doubt in order that the trophies within the Stoa might be better seen.³⁷ Such evidence would seem to indicate that stocky proportions were not always a sign of archaic date or Doric influence, but could be the result of the size and position of the building.³⁸

²⁶ P. 186.

²⁷ Orlandos, p. 38.

²⁸ Studniczka, p. 200.

²⁹ Dinsmoor, "Chronological List of Greek Temples" facing p. 340, p. 186.

³⁰ These columns are four in number, two belonging to the shorter pair and two to the taller. Two capitals and one base, belonging to the shorter pair, have survived (H. A. Thompson, *Hesperia*, XXIX, 1960, pp. 351-356, pls. 76-77).

³¹ Amandry, pp. 93 ff.

³² The height of the Athena Nike columns is 4.049 m. (Dinsmoor, p. 340), whereas the heights of the columns from the Agora are 5.87 m. and 6.67 m. (Thompson, *op. cit.*, p. 353), and the Stoa columns have a height of *ca.* 3.30 m. (cf. Amandry, pp. 40-41, 45, 47).

³³ Thompson, *op. cit.*, p. 354.

³⁴ Cf. Amandry, pp. 40-41, 44, 45, 47.

³⁵ M. F. Courby, *Fouilles de Delphes*, II, *La terrasse du temple*, Paris, 1927, p. 166.

³⁶ The axial spacing is 3.58 m. which in relation to the lower column diameter of 0.421 m. gives an exceedingly large proportion of *ca.* 8.50. See Amandry, pp. 40, 45. Cf. Dinsmoor, "Chronological List of Greek Temples," facing p. 340, who gives 3.09 for the same proportion on the Ilissos Temple, 2.99 for the Athena Nike Temple and 3.05 for the East Porch of the Erechtheion.

³⁷ Amandry, p. 93.

³⁸ The proportions of the Ionic columns of the Propylaia would also seem to justify this idea,

The scale of the building also influenced the form of the column bases (Pl. 89,b). They have the Attic form of a scotia between two tori which was used for the Ionic columns on the Akropolis in the second half of the fifth century B.C.³⁹ The upper torus and the scotia are identical to those of the column bases of the now lost Ionic Temple on the bank of the river Ilissos (Pl. 90,a)⁴⁰ and very similar to those of the Erechtheion and of the Ionic columns of the Propylaia (Pl. 89,b).⁴¹ The lower torus, however, was made much smaller both in height and in width in order to allow a freer access into the temple and to bring the proportions of the base as a whole into a more harmonious relationship with the rest of the column.⁴²

The stocky proportions of the columns of the Athena Nike Temple also seem to have influenced the capitals. The height of these capitals in proportion to the total height of the columns is unusually heavy⁴³ but in proportion to the lower diameter of the columns, it shows a remarkable similarity to that same proportion of the Ionic capitals of the Propylaia and the Erechtheion, which is quite different from that of Asia Minor Ionic capitals.⁴⁴ As in the case of the column bases, these capitals are closely related to the other Ionic capitals from the Akropolis of the second half of the fifth century B.C.⁴⁵ In fact, the dimensions of the Athena Nike capitals are in large part one-half those of the Propylaia (Pl. 88,a,b; table on p. 424). Their many similarities, both in dimensions and style, suggest that either the Athena Nike capitals were copied from those of the Propylaia,⁴⁶ or else they were both based on the same model. There is, however, a variation in small details, such as the corner palmette.

for if stocky proportions were due to Doric influence, we should expect these columns, which stand in a Doric building, to have such proportions. These columns, however, have a height equal to almost 10 times their lower diameter which is even more slender than those of the Erechtheion or of any other known Ionic temple and is probably due to their interior position (Bohn, p. 21).

³⁹ Shoe, pp. 147, 179-180, pls. LXVI, LXXVIII.

⁴⁰ Stuart and Revett, chap. II, pl. VI; cf. *infra*, pp. 389, 392, notes 106, 127.

⁴¹ *Erechtheum*, pls. XXIX,1, XXX,7; Bohn, pl. XII.

⁴² Dinsmoor, p. 186.

⁴³ In the Temple of Athena Nike, the entire height of the columns is *ca.* 15.23 times the height of the capital, whereas in the Propylaia the height is *ca.* 19.31 times the height of the capital and in the East Porch of the Erechtheion the height is *ca.* 16.76 times the height of the capital. (The height of the capital used here was calculated from the distance between the bottom of the egg and dart echinus of the capital and the epistyle.) Cf. Ross, pls. II, VIII; Bohn, p. 21; *Erechtheum*, p. 20, pls. V, XVI.

⁴⁴ Cf. H. C. Butler, *Sardis*, vol. II, part I, *The Temple of Artemis*, Leyden, 1925, ill. 114. The heights of the Attic capitals are all roughly one-half the width of the lower diameter. Cf. *Erechtheum*, pls. XXIX,6, XXX,8; Thompson, *op. cit.*, pp. 354-355; Amandry, pp. 45, 47.

⁴⁵ Puchstein, pp. 14 ff.

⁴⁶ Puchstein, pp. 14-19; Dinsmoor (p. 186) believes that many of the dimensions of the Ionic order in the Propylaia were consciously reduced in the Temple of Athena Nike to a simple ratio of 1:2 in order that the two buildings might harmonize. Cf. A. Furtwängler, *Masterpieces of Greek Sculpture*, London, 1895 (English ed.), p. 444; W. R. Lethaby, *Greek Buildings Represented by Fragments in the British Museum*, London, 1908, p. 155; Studniczka, pp. 199-201.

This palmette on the Athena Nike capitals consists of four naturalistic petals which overlap somewhat the egg and dart moulding, whereas on the Propylaia the palmettes have six stiff petals, which carefully avoid any contact with the egg and dart moulding.⁴⁷ In both buildings a convex abacus crowns the capitals but the proportions vary. The height of the abacus on the Athena Nike capital is much smaller in relation to the height of the volute than is the case in the abacus of the Propylaia.⁴⁸ This may in part have been due to the higher position of the Propylaia capital which made the architect feel that a higher abacus would emphasize the capital more, thus serving to separate it visually from the epistyle. But whatever the reason, the higher abacus tends to make the capital seem heavier and the volutes less delicate than those of the Athena Nike Temple. Another variation is the added member on the Athena Nike capitals at the point where the volute swings away from the abacus. Apart from these small variations, the entire capital of the Athena Nike Temple is much richer in its form. The abacus is more rounded. The profile of the bolster is more complex with its almost double curve. The channels of the volute are more rounded and vary in depth compared to the very flat ones of the Propylaia.⁴⁹ The egg and dart moulding on the Athena Nike capital is much richer, especially in the use of a two pronged dart. The volutes make a half turn more on the Athena Nike Temple and the eye appears to have had a metal decoration attached to it.⁵⁰

These capitals, however different they may be from each other in their details, appear to be part of a new trend which differentiates them from earlier Ionic capitals found in Athens.⁵¹ The earlier capitals were much flatter and had a greater emphasis

⁴⁷ Furtwängler believed that the more naturalistic treatment of the palmettes of the Athena Nike capital was due to their later date (*loc. cit.*). Puchstein (p. 14) maintained that the overlapping of the palmettes onto the egg and dart moulding on the Athena Nike capitals was also due to the later date. It would appear, however, that this overlapping was not merely a matter of date, but was apparently influenced by the preference of the architect. On early Ionic capitals, the position of the palmette varied greatly (cf. G. Kawerau, *Jahrb.*, XXII, 1907, p. 204).

⁴⁸ Cf. Ross, pls. VII-IX; Bohn, pl. XII; Butler, *op. cit.*, ill. 114.

⁴⁹ The more shallow carving of the Propylaia capitals may have been influenced by their interior position. Cf. the use of a very low frieze technique on the Parthenon; A. S. Murray, *The Sculptures of the Parthenon*, London, 1903, p. 5; R. Carpenter, *Greek Sculpture*, Chicago, 1960, pp. 112-113.

⁵⁰ This metal decoration may well have been a palmette or flower derived ultimately from such Asia Minor buildings as the archaic Temple of Artemis at Ephesos (cf. D. G. Hogarth, *British Museum Excavations at Ephesus, The Archaic Artemisia*, London, 1908, atlas, pl. VII). Capitals with carved rosettes in the center of the volute have been found in Athens, and metal decoration may well have been used on these capitals (Möbius, *Ath. Mitt.*, LII, 1927, pp. 170, 172, ill. XIX; H. W. Inwood, *The Erechtheion at Athens*, London, 1827, pl. 24). Metal decoration occurred earlier in Athens on the poros capital found on the Akropolis, possibly from the Old Athena Temple (Wiegand, p. 173, fig. 172; H. Schrader, *Ath. Mitt.*, XXX, 1905, p. 319). This capital may have been the prototype for its use on the Athena Nike capitals.

⁵¹ Cf. Puchstein, pp. 6-13, figs. 2-7; A. E. Raubitschek, *Bulletin de l'Institut archéologique Bulgare*, XII, 1938, pp. 162-172; Amandry, pp. 99-100, pl. XXX; R. Martin, *B.C.H.*, LXVIII-

on painted detail. Frequently a vertical fascia was placed above the ovolo of the echinus⁵² and the ovolo was replaced by a cyma reversa.⁵³ The bolsters were often undecorated or had only three bands rather than the four found on the capitals of the Athena Nike Temple and the Propylaia.⁵⁴ Many of the new features which separate the Akropolis capitals from the earlier ones can be found in the capitals of Asia Minor which seem to have influenced this new trend. The bulbous volute eye which occurs on the Akropolis capital, however, appears to have had an Attic origin, since this feature does not occur in the early capitals of Asia Minor.

In later decades the earlier type of capital seems to have influenced the Ionic capitals from Bassae,⁵⁵ which have flat forms, reliance on painted ornaments, and the cyma reversa echinuses with fillets above them. The Ionic capitals of the Athena Nike Temple and the Propylaia influenced the Erechtheion capitals (Pl. 88,c,d)⁵⁶ which are similar in their proportions and emphasis on carved detail. The greater richness of the Athena Nike and the Propylaia capitals was further elaborated on the Erechtheion by the addition of an extra moulding above the echinus.⁵⁷ and the multiple ridges of the volute. The profile of the bolster has the almost double curve found on the Athena Nike bolster.

Puchstein in 1887 first recognized the similarity between the Ionic capitals from the Propylaia, the Temple of Athena Nike, and the Erechtheion.⁵⁸ To this group he added the capitals from the Temple on the Ilissos (Pl. 90,a),⁵⁹ which had the simple

LXIX, 1944-1945, pp. 340 ff., pl. XXVI; Möbius, *op. cit.*, pp. 165 ff., ill. XVIII,5; Wrede, *Ath. Mitt.*, LV, 1930, pp. 191 ff.; Stais, 'Αρχ. Ἐφ., 1917, fig. E; Thompson, *Hesperia*, VI, 1937, fig. 15.

⁵² Thompson, *Hesperia*, XXIX, 1960, p. 355.

⁵³ Cf. Amandry, p. 99, note 3; Martin, *op. cit.*, pp. 366-368.

⁵⁴ Cf. Thompson, *loc. cit.* Bands do not occur on the bolsters of very early capitals. Their earliest appearances are on a capital from Geraka, where, by exception, they are four in number (Wrede, *op. cit.*, p. 198; cf. Möbius, *op. cit.*, fig. 3, pl. 27), and a capital from the Akropolis, possibly from the Old Athena Temple, where they are two in number (Wiegand, fig. 172; Schrader, *op. cit.*, p. 319). On occasion flowers were substituted for these bands (Möbius, *op. cit.*, ill. XVIII,6,8).

⁵⁵ Cockerell, pl. XIV. These capitals are especially close in type to those from the Temple of Athena at Sounion. The absence of an abacus and the upward curve of the volute cushion on the Bassae capital are, of course, innovations. Cf. Dinsmoor, *Metropolitan Museum Studies*, IV, 1932, p. 208; Roux, pp. 343-344, pls. 11-15.

⁵⁶ Cf. Puchstein, pp. 19 ff.

⁵⁷ It has been suggested that this extra moulding was the result of influence from archaic capitals with their multiple mouldings in this position (Martin, *op. cit.*, p. 373; Wrede, *op. cit.*, p. 198). The plastic feeling and the compactness of the capital places it in the Akropolis group, however. This additional moulding probably resulted from a desire for greater richness rather than from a conscious return to an earlier form.

⁵⁸ Puchstein, p. 14; cf. Martin, *op. cit.*, pp. 340-374, who accepts Puchstein's major thesis, but tries to show that this type of capital was not such a revolutionary creation as Puchstein had maintained.

⁵⁹ Puchstein, pp. 14 ff.; also, *infra*, table on p. 424.

ovolo echinus, four bands on the bolster, the more complex ridge outlining the volute, the use of carved ornament, and similar dimensions. Puchstein believed that this type of capital was developed by Mnesikles. If we accept the interrelationship of these capitals, however, the Ilissos Temple, which is the earliest, would seem to be the prototype rather than the capital from the Propylaia.⁶⁰

The toichobate and the pier and anta bases of the Athena Nike Temple repeat in almost identical form the mouldings of the column bases with only slight modifications resulting from their shorter height,⁶¹ as is the case on the Erechtheion and the Ilissos Temple.⁶² The use of a moulded toichobate has its parallels in Asiatic Ionic temples and the earlier Attic Doric temples, the Hephaisteion and the Older Parthenon.⁶³ On the Older Parthenon and the Hephaisteion, since the exterior order was Doric and the columns therefore had no bases, there could not have been the close relationship of base mouldings found on the Athena Nike Temple. On the Ionic temples of Asia Minor, the column bases were composed of different mouldings from those used for the anta base and toichobate, when it occurred.⁶⁴ Indeed, the similarity between these mouldings seems to have started with the Ilissos Temple and to have been an Attic development of the second half of the fifth century B.C. On the Athena Nike Temple, as with the other two Attic Ionic buildings mentioned above, the toichobate ties together the flanks and façade of the building as does the repetitive cadence of the colonnades on a peristyle temple. Here, almost the same moulding was used as a support for the metal grille which ran between the piers and the antae along the east side and between the east antae and the corner columns.⁶⁵

The anta capital is especially interesting with its rich combination of cavetto, cyma reversa, and ovolo which takes the place of the Asiatic triple-ovolo capital (Pl. 89,a).⁶⁶ Miss Shoe has suggested that this combination of mouldings used on

⁶⁰ The date of the Propylaia has been definitely set to the years 437-432 B.C. by the discovery of its building inscriptions (cf. Dinsmoor, *A.J.A.*, XVII, 1913, pp. 371-398). The Ilissos Temple, on the other hand, was built soon after the middle of the fifth century (*infra*, p. 398).

⁶¹ Ross, pl. V; Shoe, pls. LXVI,2, LXXV,13.

⁶² *Erechtheum*, p. 86, pls. XVI, XVII, XXII, XXIII; Stuart and Revett, chap. II, pls. VI, VIII.

⁶³ Hill, pp. 552-553; Dinsmoor, *Hesperia*, Suppl. V, 1941, p. 42.

⁶⁴ In the archaic temple of Artemis at Ephesos the column bases consisted of the usual Asia Minor form of a torus over two scotiae which rested on a plinth. The anta base was formed only by a plinth and no toichobate appears to have been used (Hogarth, *op. cit.*, pp. 257, 258, 264-266, Atlas, pls. III, XIII). The column base of the Temple of Athena at Priene was composed of a torus over two scotia resting on a plinth. The anta base was entirely different and the wall rested on a plinth alone (T. Wiegand and H. Schrader, *Priene*, Berlin, 1904, pp. 92, 95, figs. 57-58, 63). In the later Temple at Sardis, the normal Asiatic base was used for the columns. A scotia between two tori resting on a plinth was intended for the anta base and a single torus on a double plinth was to have been the toichobate (Butler, *op. cit.*, pp. 29-32, 37, 43, 53, ill. 24-25, 32, 36, 108-109). This same variety of mouldings was used in the archaic Ionic treasuries at Delphi (Dinsmoor, *B.C.H.*, XXXVII, 1913, fig. 3) and elsewhere.

⁶⁵ Orlandos, p. 15, fig. 10, pl. I.

⁶⁶ Ross, pl. X; Shoe, pp. 29, 174, pl. XVI,1. Contrast the triple-ovolo form of the late sixth

the anta capital of the Athena Nike Temple may have been inspired by the entablature of Asiatic Ionic temples where the cavetto or cyma recta is seen over the cyma reversa and the ovolo in this same order with, of course, the complete architectural members between them. This same unusual anta capital in exactly this same form has its only known parallels in Athens on the earlier Ilissos temple (Pl. 90,b) and the later Erechtheion.⁶⁷ Afterwards it occurs only once more on the Greek mainland, in the fourth century Doric Temple of Athena Alea at Tegea. Although this later anta capital can almost certainly be attributed to Athenian influence, the position of the cyma reversa and the ovolo have been reversed (Pl. 89,a).⁶⁸

We have seen that the base mouldings of the columns and antae of the Athena Nike Temple were extended along the bottom of the exterior wall as the toichobate. In a similar manner the mouldings of the anta capitals on this temple were extended along the top of the exterior wall as the epikranitis with the lower ovolo subtracted.⁶⁹ Here again the use of a combination of mouldings for the epikranitis seems to have been a mainland tradition.⁷⁰

These mouldings indicate the close connection between the Athena Nike Temple and the development of the Attic architectural style of the second half of the fifth century B.C. Another indication which in itself is part of this development is the division of the epistyle into three fasciae, occurring here for the first time on the

century and early fifth century anta capitals from Didyma (Shoe, pp. 19-20, 174, pls. C,7, X). These capitals, differing from the Athena Nike capital and its Athenian cousins, have one type of decoration on the front and a different type on the side. Although the triple-ovolo anta capital was typical of Ionic building, already in the sixth century on Kos there had developed a variant form in which the lowest ovolo was replaced by a cyma reversa (Shoe, *Hesperia*, XIX, 1950, pp. 342, 347, fig. 5 no. 9, pl. 109 no. 2). This variant, however, did not become widespread until the fourth century and later (cf. Shoe, pp. 63 ff., 174 ff.) and probably did not influence the architects of fifth century Athens. Another variant occurs in the sixth century at Delphi, where the cyma reversa crowned with a fascia was used for the anta capital of the Massiliote Treasury (Shoe, pp. 63, 174, pl. XXV,17; G. Daux, *Fouilles de Delphes*, II, *Le sanctuaire d'Athènes Pronaia*, *Les deux trésors*, Paris, 1923, fig. 62, atlas, pls. XXII, XXVII).

⁶⁷ Dinsmoor, p. 192; *Erechtheum*, pl. XXXVI,3,4.

⁶⁸ C. Dugas, *Le sanctuaire d'Aléa Athènes à Tégée*, Paris, 1924, pls. LXXVII, LXXXVIII,D. The only other preserved examples of this kind of anta capital occur on the Sarcophagus of the Mourning Women and two Hellenistic examples from Pergamon (Shoe, pp. 174-176, pls. XVI,4,6, XV,24). The Sarcophagus example follows the Athena Nike arrangement whereas the Pergamon examples follow the changed Tegea arrangement.

⁶⁹ Ross, pl. X; cf. Shoe, pls. XVI,1, XXXIX,9.

⁷⁰ This idea was later copied at Pergamon. In the earlier periods, however, before the Athenian development of the epikranitis in the second half of the fifth century B.C., a single moulding was used in this position. Afterwards, a single moulding was used again for the Doric order and in the Ionic order the final elaboration which is found in the Erechtheion epikranitis moulding never occurs again except at Pergamon (Shoe, pp. 27-28, 60-61, 173). As was the case with the toichobate, once more the epikranitis of the Athena Nike Temple finds its closest parallels in the Ilissos Temple and the Erechtheion (cf. Stuart and Revett, chap. II, pl. IV; *Erechtheum*, pl. XXXVII, 1,2; Shoe, pls. XV,15, XVI,2).

exterior of an Athenian building. Before the Temple of Athena Nike, the divided epistyle was used only in the interiors of Athenian buildings so far as we know, although it appears to have been the rule on exteriors of Asia Minor Ionic buildings.⁷¹ Asia Minor influence can perhaps be seen in its use on the exterior of the Athena Nike Temple, yet the obvious development of its use from the interior of the Ilissos Temple and the Propylaia to the exterior on the Athena Nike Temple should not be overlooked.

The major moulding of the Athena Nike sima is a stone ovolo (Pl. 89,d),⁷² which is characteristic of Athenian buildings of the second half of the fifth century B.C.⁷³ The addition of the cavetto crown on the Athena Nike sima, however, is unique.⁷⁴ This cavetto is probably an elaboration of the fascia which usually crowns the ovolo simas of this period. This same combination of an ovolo crowned by a cavetto was used in a slightly different form as the exterior epistyle crown on the Athena Nike Temple (Pl. 89,c).⁷⁵ Here again the cavetto crowning the ovolo appears in this position for the first time, although the ovolo itself is the regular crowning moulding of Ionic epistyles in Greek architecture.⁷⁶ A few years after the Athena Nike Temple, this combination of cavetto and ovolo was used for the epistyle crown on the interior of the North Porch of the Erechtheion (Pl. 89,c).⁷⁷ This combination was always rare in this position, however, and in the fifth century the Erechtheion seems to be the only parallel to the Athena Nike Temple.

The interior epistyle crown of the Athena Nike Temple is formed by the ovolo alone, following earlier usage.⁷⁸ The ceiling beams were also crowned with an ovolo, which appears, as far as can be judged by the few examples preserved, to have been the regular moulding for this position.⁷⁹ These ovolos are closer to those found on Doric buildings than to the ovolos of the Ionic order.⁸⁰

The geison soffit moulding of the Athena Nike Temple is the cyma reversa, the

⁷¹ Dinsmoor, pp. 186-187; cf. Ross, pls. II, IX. The use of an undivided epistyle on the exteriors of earlier Ionic buildings on the Greek mainland is probably due to Doric influence.

⁷² The sima of the Athena Nike Temple was first recognized by G. P. Stevens, *A.J.A.*, XII, 1908, pp. 398-405.

⁷³ Shoe, p. 163.

⁷⁴ Shoe, pp. 35, 130.

⁷⁵ Ross, pl. IX.

⁷⁶ Shoe, pp. 21-22, 170-171.

⁷⁷ Cf. *Erechtheum*, pls. XXIII, XXX, 16. At first glance the mouldings of the Athena Nike Temple would seem to be more advanced than those of the Erechtheion because of their greater projection. It is known from other evidence, however, that the exact opposite is true. Miss Shoe has suggested to me that the greater projection of the Athena Nike Temple mouldings may be due not to a later date, but more probably to a desire for a greater contrast of light and shade which the Erechtheion mouldings obtained by the carved ornaments that characterize them and make many of them unique.

⁷⁸ Shoe, pl. XXIV, 15.

⁷⁹ *Ibid.*, pp. 45, 176, pl. XXI, 27; Ross, pl. X.

⁸⁰ Cf. Shoe, p. 23.

moulding regularly employed in this position during the fifth century B.C.⁸¹ It first appears in Ionic architecture on the earliest known preserved Ionic geison soffit of the fifth century on the Temple of Athena at Sounion, where it replaces the half round which was regularly used in this position during the sixth century.⁸² The moulding of the Sounion temple, however, lacks the small projecting fillet at the base of the cyma reversa which characterizes many of the mouldings from Periklean buildings,⁸³ and which is found on the geison soffit of the Athena Nike Temple.

In accordance with the customary practice of this period, numerous painted ornaments were added to the temple which would have enhanced the decorative effect of the mouldings. Traces of paint were observed on the epistyle, anta capitals and coffers.⁸⁴ On the sima, traces of a lotus and palmette design, similar to the design used on the Parthenon sima, were noted.⁸⁵ The mouldings of this temple, however, were not decorated with carved ornaments.⁸⁶ It is usually stated that painted but uncarved ornaments are characteristic of Doric architecture, whereas those of the Ionic order were both carved and painted.⁸⁷ In the case of the Temple of Athena Nike, however, it may well be that the absence of carved ornaments was primarily determined by the small size of the building which could have been easily overwhelmed by numerous carved ornaments.⁸⁸ Their absence may also have been influenced by the location of the temple on top of a heavy bastion and next to the severe form of the Propylaia. There is also another possibility which should be considered that may well account for the absence of carved ornament on this building. In the discussion of early Athenian capitals, it was noted that one of their characteristics was the use of painted rather than carved ornaments.⁸⁹ The majority of these columns were votive rather than architectural; nevertheless, on the basis of their use of painted, uncarved ornament, we can perhaps hypothesize that during this early period painted versus carved ornaments did not primarily differentiate Doric versus Ionic but rather mainland and Attic versus Asia Minor. The scarcity of early carved ornaments from Athens would seem to justify this view. In this early period never do we find the plethora

⁸¹ *Ibid.*, pp. 68-69, 168, pls. XXX,7, LXXVIII.

⁸² *Ibid.*, pp. 68, 169, pl. XXX,1,2.

⁸³ *Ibid.*, p. 68.

⁸⁴ Ross, p. 11.

⁸⁵ Orlandos, pp. 32-33, fig. 26, pl. II. A similarity between lotus and palmette designs of the Ilissos Temple and the Parthenon has also been noted (Lethaby, *op. cit.*, p. 154, fig. 69).

⁸⁶ The only carved ornament which occurs on the Athena Nike Temple is the egg and dart moulding on the echinus of the capital and its corner palmette (cf. Stevens, *op. cit.*, p. 398 note 1).

⁸⁷ D. S. Robertson, *A Handbook of Greek and Roman Architecture*², Cambridge, 1945, p. 38; A. Marquand, *Greek Architecture*, New York, 1909, p. 148.

⁸⁸ Cf. the Siphnian Treasury at Delphi where the great quantity of carved decoration tends to obscure the basic architectural lines of the building and makes the whole appear heavy and over-weighted (Dinsmoor, pl. XXXII).

⁸⁹ Cf. *supra*, pp. 381-382.

of carving which occurs on such buildings as the Ionic treasuries at Delphi or later in Athens itself on the Erechtheion. Carved statue bases from Attica are rare.⁹⁰ Of the many architectural fragments found on the Akropolis very few have deeply carved decoration,⁹¹ and when carving was attempted, it was usually in the form of incised decoration or very flat, low relief which is very different from the technique used for the ornaments of the Ionic treasuries at Delphi.⁹² In the fifth century, before the construction of the Erechtheion, carved ornaments were comparatively rare on architecture.⁹³ Such a scarcity of carved ornament seems to indicate that Athens did not have a strong tradition of carved architectural decoration, and its absence on the Temple of Athena Nike may well be interpreted as part of Attic usage, rather than a result of Doric influence.⁹⁴

Although many of the traditional elements of Greek architecture appear in the Temple of Athena Nike, the creation of new combinations of mouldings, such as the addition of a cavetto crown on the sima, the addition of piers, and the use of the rare amphiprostyle temple plan show that Kallikrates was an accomplished architect who did not hesitate to re-evaluate the old forms and to use them in a new way which would better suit his purpose. This can also be seen in the system of refinements, which consists entirely of inward inclinations which are sometimes so slight as to be barely perceptible. Horizontal curvature, however, is completely lacking. Kallikrates' sense of proportion and scale is evident in the stocky proportions used for the columns of the small temple built on top of a heavy bastion and placed in front of the much larger and more severe form of the Propylaia. That he was very much aware of the almost overwhelming effect the Propylaia would have on his temple is indicated by the position of the axis of the temple at an angle to that of the Propylaia. Although the temple is small, the architect's tendency towards decorative forms can be seen in the mouldings, which were often composed of several elements, the elaborate column

⁹⁰ Cf. Dinsmoor, *A.J.A.*, XXVI, 1922, p. 271, note 1; Shoe, pp. 54-57, pls. C,2, IX,6. The most notable exception is the statue base of the Athena Promachos of the second quarter of the fifth century (Dinsmoor, *A.J.A.*, XXV, 1921, p. 128, fig. 1; A. E. Raubitschek and G. P. Stevens, *Hesperia*, XV, 1946, pp. 107 ff.).

⁹¹ The most notable example of archaic carved decoration is the geison soffit of the pediment portraying the Introduction of Herakles to Olympos (R. Heberdey, *Altattische Porosskulptur*, Vienna, 1919, pl. I). Dinsmoor has associated a carved egg and dart moulding with another Athenian Temple, the Alkemaionid Temple at Delphi (*B.C.H.*, XXXVII, 1913, p. 64).

⁹² Cf. Wiegand, figs. 76, 80, 176. This same flat technique was used on Attic grave stelai (G. M. A. Richter, *The Archaic Gravestones of Attica*, London, 1961, figs. 23-26, 66-71, 73-75).

⁹³ On the Parthenon, for example, which has so many Ionic features, carved decoration occurs only once, on the lower part of the anta capital (cf. Shoe, pp. 116, 174, pls. C,10, LVII,7).

⁹⁴ The decorative effect of the architectural forms was further enhanced by the addition of sculpture as was common in Greek architecture (C. Blümel, *Der Fries des Tempels der Athena Nike*, Berlin, 1923, *passim*; C. Picard, *Manuel d'archéologie grecque: La sculpture, période classique*, Paris, 1939, vol. II, part II, pp. 762-772).

capital with its inserted metal decoration, and the use of fasciae on the exterior epistyle for the first time in Athens.

Scattered epigraphical evidence connected with the Temple of Athena Nike has made the dating of the temple secure. The construction of the temple was first proposed in *ca.* 448 B.C. (*I.G.*, I², 24),⁹⁵ but for some reason it was not built at this time.⁹⁶ In 427/6 B.C. a second building decree (*I.G.*, I², 111), which has been associated with the beginning of the construction of the temple, was passed by the boule.⁹⁷ This decree was apparently followed by two inscriptions (*I.G.*, I², 88 and 89) which list some of the building expenses.⁹⁸ In 425 and 424 B.C., dedications (*I.G.*, I², 368 and 403) started to be made in the precinct,⁹⁹ and in 424/3 B.C. (*I.G.*, I², 25) the cult practices were re-established and the position of the priestess was made secure. The re-establishment of the cult practices and the dedications of statues in the precinct indicate that the temple must have been finished *ca.* 424/3 B.C.¹⁰⁰

This lovely Ionic temple, designed by Kallikrates, portrays his architectural style. In pursuing the career of Kallikrates, our attention is drawn to another small temple, the now lost Ionic temple which once stood on the banks of the river Ilissos outside the ancient city wall.

THE IONIC TEMPLE ON THE ILISSOS

When Ross, Schaubert, and Hansen first studied the Temple of Athena Nike, they immediately recognized a great similarity between it and the Ilissos Temple (Pls. 86,a; 87,a; 90,a,b). This temple was drawn in detail by James Stuart and Nicholas Revett¹⁰¹ before its complete destruction by the Turks in 1778 when its members were used as building material in the construction of a defense wall.¹⁰² All that remains of

⁹⁵ Dittenberger, *Syll.*³, 63, first associated this decree with the Athena Nike Temple. He was followed by Studniczka (pp. 199 ff.), Dinsmoor (*A.J.A.*, XXVII, 1923, p. 319) and others.

⁹⁶ Dörpfeld's work on the Propylaia clearly shows that its construction preceded the building of the Athena Nike Temple and it may well have been responsible for the delay in the construction of the temple. W. Dörpfeld, *Ath. Mitt.*, X, 1885, pp. 38 ff., 131 ff.; cf. Furtwängler, *Sitzb. München*, 1898, pp. 383-384; Studniczka, *loc. cit.*

⁹⁷ Dinsmoor, *Proc. Am. Phil. Soc.*, LXXX, 1939, p. 125. This inscription had been traditionally associated with the Erechtheion, but West has pointed out that there is no internal justification for this association. Both the lettering and the name of the presiding officer Smikythos suggest the date 427/6 B.C. This date, West said, is too early for the Erechtheion and would best be associated with another building. See *Erechtheum*, pp. 647-648, cf. pp. 279-280.

⁹⁸ Dinsmoor, *A.J.A.*, XXVII, 1923, pp. 318-321. Later Dinsmoor changed his mind concerning the date of the temple and its inscriptions. Cf. *Proc. Am. Phil. Soc.*, LXXX, 1939, pp. 123-125; *A.J.A.*, LI, 1947, p. 111 note 14. See also Welter, *Ath. Mitt.*, XLVIII, 1923, pp. 192-200; A. Pogorelski, *A.J.A.*, XXVII, 1923, pp. 314-317.

⁹⁹ Dinsmoor, *Proc. Am. Phil. Soc.*, LXXX, 1939, p. 124.

¹⁰⁰ *Loc. cit.*

¹⁰¹ Chap. II, pls. I-VIII. The accuracy of these drawings is confirmed by a drawing made by Pars in 1765, now in the British Museum (Lethaby, *op. cit.*, p. 155).

¹⁰² Dinsmoor, p. 185 note 1; Judeich, p. 420. In a revised edition of Stuart and Revett

the temple today are portions of the frieze,¹⁰⁸ pieces of the sima,¹⁰⁴ parts of the foundations,¹⁰⁵ and possibly parts of two of the column bases.¹⁰⁶ Although these pieces of the temple still exist, they do not give us any definite evidence concerning its identification.¹⁰⁷

When Ross first associated the Ilissos Temple with the Temple of Athena Nike, he pointed out that the two were very similar in plan, proportions, and decoration. He believed that the main differences between the two, such as the greater length of the cella in the Ilissos Temple, were due to the restricted area of the bastion on which the Athena Nike Temple was built.¹⁰⁸ He especially noted the similarity between the measurements of the two buildings (Pl. 87, a, b); for example, the width of the Ilissos Temple measured at the stylobate was 18'8" whereas it is 18'3½" in the Athena Nike Temple, the total height of the columns in the Ilissos Temple was 14'8" whereas it is 13'4" in the Athena Nike Temple, the interaxial spacing of the columns was 5'6" in the Ilissos Temple and 5'2½" in the Athena Nike Temple. The height of the entablature was 3'7½" in the Ilissos Temple and 3'8½" in the Athena Nike Temple. These similarities led Ross to believe that the Ilissos Temple largely copied the Temple of Athena Nike.¹⁰⁹

A closer analysis of the two buildings, I believe, will show their similarities to be so numerous that not merely the association between the two temples can be maintained but the attribution of both buildings to a single architect can be justified.¹¹⁰ Both temples have the unusual amphiprostyle, tetrastyle plan (Pl. 87, a, b).¹¹¹ The

published in 1825, its destruction was dated to the year 1780 at the order of the Voivode of Athens in order to defend the city against the incursions of the Albanians (p. 29 note c).

¹⁰⁸ Some of the slabs of the frieze were carried off by the soldiers in Morosini's army in 1688 and are now preserved in Berlin and Vienna (Studniczka, pp. 171 ff.; H. Möbius, *Ath. Mitt.*, LX-LXI, 1935-1936, pp. 234 ff. and *Ath. Mitt.*, LIII, 1928, pp. 1-8). Two other slabs were found by A. Skias near the site of the temple ('Εφ. Ἀρχ., 1894, cols. 133-142).

¹⁰⁴ Dinsmoor (p. 185, note 3) identified some of the sima fragments of this temple. Previously he had assigned one of them to the Choragic Monument of Nikias, but he immediately discarded the attribution when a second fragment was found and it became evident that the fragments were too large for the monument (*A.J.A.*, XIV, 1910, pp. 469, 483, fig. 3 b).

¹⁰⁵ A. Skias, *Πρακτικά*, 1897, pp. 73-85.

¹⁰⁶ These bases have been tentatively identified by A. Rumpf and A. Mallwitz, *Ath. Mitt.*, LXXVI, 1961, pp. 15-21.

¹⁰⁷ The temple is commonly considered to have been dedicated to Demeter in Agrai (Studniczka, pp. 170-171; Judeich, pp. 420-421; Möbius, *Ath. Mitt.*, LX-LXI, 1935-1936, p. 261; G. E. Mylonas, *Eleusis*, Princeton, 1961, p. 220). Other identifications, however, are equally possible (Dinsmoor, *Hesperia*, Suppl. V, 1941, p. 160, note 339).

¹⁰⁸ Ross, pp. 10-11.

¹⁰⁹ Ross, p. 11. In view of the dates, the relationship must have been the exact opposite if Ross's idea is accepted (*infra*, p. 398).

¹¹⁰ Others have suggested this same idea. See Studniczka, pp. 200-201; Lethaby, *op. cit.*, p. 154; Dinsmoor, p. 185 and *Hesperia*, Suppl. V, 1941, pp. 159-160.

¹¹¹ The amphiprostyle arrangement in temples was always rare on the Greek mainland during the classical period. Other than the two mentioned here, the only ones which are still preserved

dimensions of the cella as given by Stuart and Revett are very unusual in that the cella is almost square,¹¹² recalling the unusual proportions of the Athena Nike Temple cella whose width is greater than its length. This square cella is especially remarkable in the Ilissos Temple, where there was in front of it an unusually deep pronaos,¹¹³ suggesting that the square cella was the result of the architect's preference and not imposed upon him by the site. There is no opisthodomos in the Ilissos Temple which is again rather unusual.¹¹⁴

today are the Temple of the Athenians on Delos and the Erechtheion though strictly speaking the Erechtheion is not amphiprostyle (Courby, p. 108; *Erechtheum*, pp. 3 ff.). Dörpfeld believed that the amphiprostyle Ionic temple was derived from the inner part of the Old Athena Temple which he believed remained standing without its peristyle after the Persian destruction of the Akropolis (*Ath. Mitt.*, XXXVI, 1911, p. 41). There is reason to believe that the Ionic porches of the Old Athena Temple did not survive the Persian destruction (Dinsmoor, *A.J.A.*, XXXVI, 1932, pp. 143 ff.). The close similarity of its plan to that of the Erechtheion, which was built to replace it, however, would seem to indicate that its plan could still be determined as late as the fourth quarter of the fifth century B.C. Thus the possibility that it was the prototype for later amphiprostyle temples still remains. An amphiprostyle arrangement also occurred in Athens in the Older Parthenon and in the Periklean Parthenon within the surrounding peristyle, and in the main building of the Propylaia (Hill, pp. 552 ff.; Collignon, p. 108; Bohn, pp. 17 ff., pl. III).

¹¹² The measurements given are 15'4.334" (4.681 m.) for the length and 15'4.234" (4.678 m.) for the width (Stuart and Revett, chap. II, pl. II). This is in direct contrast to the canonical rectangular cellas of this period. Cf. the dimensions of the Parthenon cella which was 29.80 m. by 19.19 m. or the Hephaisteion cella which was 12.145 m. by 7.752 m. (Collignon, p. 54; Dinsmoor, *Hesperia*, Suppl. V, 1941, pp. 57, 38). In Athens itself, no other known temples built in the fifth century had square cellas. Before this period, one, or perhaps two, examples have been discovered. The Old Athena Temple on the Akropolis had a square east cella. It should be noted, however, that the internal division of this temple is almost unique (Wiegand, pp. 50-53, 115-119). Dörpfeld restored the older Temple of Dionysos next to the theater with a square cella (W. Dörpfeld and E. Reisch, *Das griechische Theater*, Athens, 1896, pp. 13-14, 19). Since only the northern part of the foundations remains, however, the proportions of the east cella cannot be restored with accuracy.

¹¹³ The depth of the pronaos is, in fact, more than half the length of the cella. According to Stuart and Revett, the pronaos was 9'9.216" (2.977 m.) and the cella was 15'4.334" (4.681 m.) long (*loc. cit.*). This is in direct contrast to the Older Parthenon and the Periklean Parthenon where the prostyle arrangement of the pronaos for all intents and purposes does away with the pronaos as a separate room (cf. Hill, pp. 551 ff.; Collignon, p. 106). Where there is a regular pronaos, such as in the Hephaisteion, the length of the pronaos, which is 4.935 m., is much less than half the length of the cella, which is 12.145 m. (Dinsmoor, *Hesperia*, Suppl. V, 1941, pp. 56-57). This proportionately shorter pronaos also occurs at Bassae in the Temple of Apollo and elsewhere (cf. Cockerell, pl. II; Roux, pp. 24-25, pl. I; Dinsmoor p. 155, figs. 35, 42, 56).

¹¹⁴ Opisthodomoi are generally lacking only on small temples and in ones which have columns on one façade only, such as the Old Temple of Themis at Rhamnous and the temples of Dionysos next to the theater in Athens (Orlandos, *B.C.H.*, XLVIII, 1924, pp. 305-320; Dörpfeld and Reisch, *op. cit.*, pp. 13-14, 19). Occasionally, however, they are absent in larger temples such as the archaic Poros Temple in the sanctuary of Athena Pronaia at Delphi, the sixth century Temple of Athena at Assos, the fourth century Temple of Asklepios at Epidauros, the Temple of Athena at Miletos, some of the variants in Sicily and South Italy, where an adyton replaces the opisthodomos or the opisthodomos is lacking altogether, and in some of the oversized Ionic Temples such as the Temples of Hera on Samos (cf. R. Demangel, *Fouilles de Delphes*, II, *Le sanctuaire d'Athènes*

When Stuart and Revett visited the Ilissos Temple it had been converted into a church and consequently the two center columns on the east façade and any supports that may have stood between the antae were removed when an apse was built in the east end of the building.¹¹⁵ Stuart and Revett, however, found the setting lines for the two missing columns of the east façade and were thus able to establish their position (Pl. 86,a).¹¹⁶ In direct opposition to normal Greek practice, the center axial spacing of the columns was narrower than that of the sides.¹¹⁷ Stuart and Revett apparently found no traces of supports between the antae of the pronaos. Dinsmoor restores columns in this position¹¹⁸ whereas Travlos restores two piers.¹¹⁹

Unfortunately the subtleties of architectural refinements had not yet been investigated when Stuart and Revett made their drawings in the eighteenth century, so that their absence or presence in the Ilissos Temple remains an uncertainty. Since such refinements are generally found in temples of this period, however, they probably also existed here. Perhaps we can find the justification for this supposition in the fact that the height of the top step of the krepidoma was made slightly higher than the height of the lower steps, just as the top step was made higher on the Temple of Athena Nike.¹²⁰ The steps on the Ilissos Temple, like those of the Athena Nike Temple, were slightly undercut to give a greater feeling of monumentality to the building.

In the discussion of the Athena Nike Temple the suggestion was made that comparatively stocky proportions were used for the columns because the building as a whole was so small.¹²¹ In the Ilissos Temple, stocky proportions were again used

Pronaia, Les temples de tuf, Paris, 1923, p. 5, pl. VII; J. T. Clark, F. H. Bacon, and R. Koldewey, *Investigations at Assos*, Cambridge, Mass., 1902, pp. 139 ff.; P. Cavvadias, *Fouilles d'Épidaure*, Athens, 1891, I, pp. 16-17, pl. VI; Roux, p. 90; A. von Gerkan, *Milet*, vol. I, part 8, Berlin, 1925, pls. VI, IX; R. Koldewey and O. Puchstein, *Die griechischen Tempel in Unteritalien und Sicilien*, Berlin, 1899, p. 192; E. Bushor, *Ath. Mitt.*, LV, 1930, fig. 4, ills. XIII, XXVII; G. Welter, *Ath. Mitt.*, XLVII, 1922, pp. 61-71).

¹¹⁵ Stuart and Revett, chap. II, pl. II. The church was dedicated to St. Mary on the Rock. In about 1674 the Marquis de Nointel, in mistaken zeal, celebrated a Roman Catholic Mass in it. Thereafter the Greeks felt that the church had been desecrated and it was abandoned (Stuart and Revett, new edition, 1825, p. 29 note c; R. Chandler, *Travels in Greece*, Oxford, 1776, p. 82).

¹¹⁶ P. 9 (first edition).

¹¹⁷ The center spacing is given as 5'6.1" (1.679 m.) whereas the axial spacing between the two end columns is given as 16'10.384" thus making the axial spacing between the end columns and the center columns 5'8.124" (1.730 m.) (Stuart and Revett, chap. II, pl. II). Dinsmoor (p. 339) believes that the greater spacing at the ends was a later distortion. A narrower center axial spacing, however, is not entirely unknown in Athens, but does occur in one other instance, the North Porch of the Erechtheion (*Erechtheum*, p. 80).

¹¹⁸ Dinsmoor, p. 185; Judeich, p. 420.

¹¹⁹ This restoration was presented by Travlos in a paper on Byzantine Churches in Athens given at the Byzantine Museum in Athens to the Christian Archaeological Society on May 3, 1946 and reported by E. P. Blegen, *A.J.A.*, L, 1946, p. 374, fig. 1; cf. also Travlos, p. 68, note 1.

¹²⁰ Stuart and Revett, chap. II, pl. III; Orlandos, p. 10; Ross, pl. II; also *supra* p. 378.

¹²¹ *Supra* pp. 378-379.

for the columns,¹²² indicating the same consideration for the scale of the building which was evident in the Temple of Athena Nike. The columns of the Ilissos Temple were slightly taller than those of the Athena Nike Temple and therefore their proportions were also somewhat more slender.¹²³ However, they were not as tall as the columns from the Erechtheion and the Propylaia, nor did they have proportions as slender as those of the two later buildings.¹²⁴

In the Ilissos Temple, there is introduced into Athenian architecture, probably for the first time, the Ionic column base composed of a scotia between two tori (Pl. 90,a). The column base of the Ilissos Temple was probably derived from the Asiatic Ionic bases, particularly those from Samos, with the scotia replacing the Asiatic spira and the lower torus added below to round out the form.¹²⁵ Although the proportions have changed, and continue to do so in the later development of the Attic base, a strong similarity can be seen in the column bases of the Ilissos Temple to those of Samos. This comparison is even more striking between the Samos column base and the Ilissos anta base.¹²⁶

After the development of this new column base in the Ilissos Temple, it was repeated in the Temple of Athena Nike, not only with the same form but also with practically the same dimensions for the two upper members, whereas the bottom torus of the Athena Nike Temple is about half the height of the bottom torus of the Ilissos Temple.¹²⁷ Such a close similarity between the two buildings once more strongly

¹²² The height of these columns was 4.478 m. or 8.25 times the lower diameter of 0.543 m. (Dinsmoor, p. 339 and "Chronological List of Greek Temples," facing p. 340).

¹²³ *Supra* p. 378 and note 32.

¹²⁴ Dinsmoor, *loc. cit.*; Bohn, p. 21, pl. XII. The columns of the North Porch, the tallest in the Erechtheion, are not as slender as those of the East Porch. However, the west façade columns are both the shortest and the most stocky in proportions. This discrepancy between the North and East Porches is probably due to the greater depth of the North Porch, which caused the columns to be more isolated than those on the east and thus to appear more slender.

¹²⁵ Dinsmoor, p. 185. The Eastern inspiration for the bases seems the most probable, but the more remote possibility of influence from the column bases of the Stoa of the Athenians at Delphi or the unfinished form of the anta base of the Older Parthenon should be recognized (cf. Amandry, pp. 43, 96, pls. XXI, XXIV; Hill, figs. 18, 19; Shoe, pls. XXXVII,2, LXV,7, LXVII,1; Thompson, *Hesperia*, XXIX, 1960, p. 355). Mr. Hill (p. 552) believed that the anta base of the Older Parthenon was intended to have been finished as a scotia between two tori. Miss Shoe (p. 148) favors this interpretation, though she does allow the possibility that it was to have been a cyma reversa crowned by an astragal, similar to the base of the grille in the later Parthenon (pl. XXXVII,1). Miss Shoe further comments that had the cyma reversa been intended, it would have had proportions very similar to those used on the anta base of the Hephaisteion. Since the Older Parthenon was the primary influence for the existence of a moulded base on the Hephaisteion (Hill, p. 553), it seems more likely that the form as well as the idea was copied in the Hephaisteion.

¹²⁶ Cf. H. Johannes, *Ath. Mitt.*, LXII, 1937, pls. X ff.

¹²⁷ Stuart and Revett gave 3.825" (0.0972 m.) for the height of the center scotia and 3.65" (0.0927 m.) for the height of the top torus. Ross measured the height of the center scotia on the Athena Nike Temple as 0.113 m. and the height of the top torus as 0.111 m. The bottom torus of the Ilissos Temple, as given by Stuart and Revett, was 3.2" (0.0813 m.). The bottom torus of the

suggests that both of them were designed by the same architect who repeated a form in the Temple of Athena Nike, with only slight modifications in dimensions, from an earlier building he had designed.

The dimensions of the column capitals of the Athenian Nike Temple and the Ilissos Temple also show a remarkable similarity which is even closer than the dimensions of their column bases (*infra*, table on p. 424). Both these capitals as noted above are related to the Ionic capitals in the Propylaia (Pls. 88,a,b; 90,a). A closer comparison of these capitals may make the interrelationship between these three buildings clearer. We saw above that the Nike Temple capital, in comparison to the capital of the Propylaia, had a lower abacus, deeper carved egg and dart decoration, more rounded forms, and the added support beneath the abacus at the point where the volute swings away from it. In the Ilissos Temple the height of the abacus was practically the same as in the Athena Nike Temple. In the Ilissos Temple we find the more rounded forms as compared to those of the Propylaia, although they do not have the richness of the Athena Nike capital. The tendency towards elaborate detail is evident in the Ilissos Temple capital in the egg and dart moulding, which is carved in full relief under the bolsters of the capital, and the added support beneath the abacus at the point where the volute swings away from it. The corner palmette has the four petals of the Athena Nike capital, in contrast to the six of the Propylaia, and even though they are earlier than the Propylaia, they are more naturalistic than those of the Propylaia. Thus we see that the capital of the Ilissos Temple has some of the smaller refinements of the Athena Nike capital, which were absent from the Propylaia capital. Mnesikles used the major proportions and characteristics of the Ilissos Temple capital when he designed the Ionic capitals for the Propylaia, but he left out some of the smaller details and made the whole simpler. These are the changes we would expect from an architect who copied someone else's work. Kallikrates, on the other hand, who also used the major proportions and characteristics of the Ilissos Temple capital in the Athena Nike temple, did not leave out the smaller refinements. He included the details and when he made changes, such as in the profile of the bolster and the form of the petals of the palmette, the changes were toward a richer and more elaborate form. When Mnesikles made changes in the dimensions, such as in the height of the abacus, he made a sizable change. Kallikrates, when he changed the proportions, made small changes, such as shortening the length of the bolsters from 0.518 m. to 0.495 m., or making the two narrower bands encircling the bolsters 0.015 m. wide instead of 0.0205 m. Such slight variations in dimensions are very

Athena Nike Temple, as given by Ross, is 0.048 m., practically half of the height of the bottom torus of the Ilissos Temple (Stuart and Revett, chap. II, pl. VI; Ross, pl. VII; cf. A. Rumf and A. Mallwitz, *Ath. Mitt.*, LXXVI, 1961, pp. 15-21, where parts of two column bases have been associated with the Ilissos Temple and slightly different dimensions are given). Caution must be used both here and below where close comparisons of dimensions are made, since variations in measurements sometimes occur (cf. Dinsmoor, p. 337, note 1).

similar to the slight variations found in the dimensions of the column bases of the two temples. Are these the changes one would expect to find made by a man who copies another's work? They seem to me, on the contrary, to be the kind of changes one would expect to find in one and the same architect who was constantly striving to create a more harmonious form by keeping the general proportions he had developed and changing slightly some of the smaller dimensions to bring the whole into a more harmonious unity.¹²⁸ But the argument does not rest on the capitals alone and more can be learned by a study of the other mouldings on these two buildings.

The mouldings of the Ionic column base of the Ilissos Temple have already been discussed. The same moulding was used with slight modification for the anta base (Pl. 90,b) and the toichobate on the exterior walls and the interior pronaos wall.¹²⁹ This modification consisted mainly in compressing the lower torus slightly, whereas the upper torus and the center scotia have essentially the same height and are narrower in width only by fractions of an inch. This method of compressing the mouldings of the column base into a smaller area and repeating them on the anta base and toichobate finds its closest parallel in the Temple of Athena Nike,¹³⁰ once more indicating the close relationship between the two buildings. Curiously enough, it was again this same process that occurred when the column base of the Ilissos Temple was adapted for the Temple of Athena Nike. These three occurrences of compressing a moulding by the reduction of its lowest member seem to indicate the approach of one architect to the same problem which occurred on two different buildings.

The anta capital of the Ilissos Temple (Pl. 90,b), as was the case with the column base, introduces a new, diversified profile into Athenian architecture which replaces the somewhat monotonous triple-ovolo anta capitals of Asia Minor.¹³¹ It consists of the pleasing combination of cavetto, cyma reversa, and ovolo, which occurs elsewhere in Athens in this same arrangement only in the Athena Nike Temple and the Erechtheion (Pl. 89,a). In addition to the major forms of the anta capital, these three examples also have intermediate astragals and a crowning moulding. A projecting fillet was added beneath the Ilissos and Athena Nike capitals. The close association

¹²⁸ It may seem strange that Mnesikles should have copied the Ionic capital of the small Ilissos Temple which stood outside the city walls. If we can say that Kallikrates built the Ilissos Temple, however, we may be able to explain the connection between the Ilissos Temple and the Propylaia in a different way. Soon after the construction of the Ilissos Temple began, we know that Kallikrates worked on the Parthenon (Plutarch, *Pericles*, 13). We further know that there were Ionic columns in that temple (Collignon, p. 124; Dinsmoor, p. 164). If Kallikrates had just finished designing an Ionic capital for the Ilissos Temple, he may well have taken this design, doubled the proportions, and used it for the Parthenon. In this way, Mnesikles would not have copied the capital of the Ilissos Temple, but he would have copied the Ionic capital from the Parthenon, just as he copied many of its other features.

¹²⁹ Stuart and Revett, chap. II, pls. IV-VI, VIII.

¹³⁰ Cf. Shoe, pls. LXVI,2 (the anta base), LXXV,13 (the column base); Ross, pl. V.

¹³¹ *Supra*, pp. 383-384.

between the antae of the Ilissos Temple and the Temple of Athena Nike is further emphasized by the similarity of their dimensions.¹⁸² The handling of the epikranitis is also identical in these two buildings. In both temples, the form of the anta capitals minus the bottom ovolo was extended around the exterior of the temple.

Fragments of a marble sima, found on the south slope of the Akropolis, have been identified by Dinsmoor as belonging to the Ilissos Temple (Pl. 89,d).¹⁸³ This sima is one of our earliest examples of the transition from the terracotta sima to the stone counterpart, and it lies at the beginning of the tradition of stone ovolo simas of the Periklean period.¹⁸⁴ The crowning moulding of the ovolo, consisting of an astragal above a fascia, seems to reflect in a small way the elaboration of early terracotta simas. The use of the ovolo as the major moulding of the sima foreshadows the simpler sima of the Doric Parthenon which has as a crowning moulding only a fascia.¹⁸⁵ If we are able to identify the architect of the Ilissos Temple as Kallikrates, it should not be surprising to find a close relationship between the simas of the Ilissos Temple and the Parthenon, since we know from Plutarch that Kallikrates worked on the Parthenon and it has been suggested that he designed the sima of that temple.¹⁸⁶ The third sima associated with Kallikrates, the sima of the Athena Nike Temple,¹⁸⁷ again retains the ovolo of the earlier examples, but has as its crowning moulding a cavetto, which makes the sima more elaborate than that of the Doric Parthenon to match the more elaborate mouldings of the Ionic Temple of Athena Nike. If these three simas are correctly associated with Kallikrates, then we can see in them, as we did above in the Ionic capitals, the work of an architect who was constantly re-evaluating the forms he had created and was striving to create that moulding which would better harmonize with his building.

¹⁸² The height of the cavetto on the Ilissos Temple was 1.7" (0.0432 m.) as compared to the height of the cavetto on the Athena Nike Temple of 0.041 m.; the cyma reversa of the Ilissos Temple was 1.4" high (0.0356 m.) compared to 0.037 m. of the Athena Nike Temple; the ovolo of the Ilissos Temple was 1.466" (0.0372 m.) compared to 0.036 m. on the Athena Nike Temple (Stuart and Revett, chap. II, pl. VIII; Ross, pl. X). In the Stuart and Revett drawing the cyma reversa has greater depth, the forms have a greater roundness, and the whole capital has a greater projection which seem to indicate falsely a later date for the Ilissos Temple. It is impossible to determine whether the anta capital was more advanced or whether these differences are the result of distortion caused by the reduction of scale of the capital when it was drawn. In view of the close similarity in the dimensions and types of mouldings used on the two temples and a similar difference found between the Shoe drawings (which were taken with a template) and other drawings made by free hand and reduced in a similar manner as those of the Ilissos Temple, the latter view would seem more probable.

¹⁸³ *Supra*, note 104.

¹⁸⁴ Shoe, pp. 32-33, 163; cf. the terracotta sima of the Temple of Athena at Sounion, Stais, *Ἀρχ. Ἐφ.*, 1917, figs. Λ, Μ, Ν.

¹⁸⁵ This sima was afterwards copied by the Propylaia (cf. Shoe, pl. XIX,3,4).

¹⁸⁶ Dinsmoor, p. 185.

¹⁸⁷ *Supra*, p. 389.

The epistyle crowns of the Ilissos Temple once more indicate the imaginative personality of the architect. Earlier Ionic epistyle crowns consisted of an ovolo with a base astragal but no crowning moulding.¹³⁸ On the exterior of the Ilissos Temple, the architect took the earlier form of an ovolo with its base astragal and placed above it a fascia (Pl. 90,a), thus starting a new trend in Ionic epistyle crowns. Later the fascia of the epistyle crown was replaced on the Temple of Athena Nike by a cavetto, just as the fascia of the Ilissos Temple and Parthenon simas were replaced on the Athena Nike Temple sima by a cavetto.

In the interior of the Ilissos Temple other mouldings were used for the epistyle crowns. While retaining the traditional ovolo (this time without a base astragal) for the epistyle behind the columns of the main façade, the architect used an entirely different type for the epistyle between the rear columns and the rear cella wall (Pl. 90,b, fig. 4). This third variety consisted of a cyma reversa once more crowned by a fascia. The cyma reversa as an epistyle crown appears to have been first introduced in Attica on the Temple of Athena at Sounion and afterwards in the second half of the fifth century B.C. it rivalled the ovolo in popularity.¹³⁹

In the pronaos, a fourth type of crown was used on the course which corresponds to the epistyle (Pl. 90,b, figs. 2,3).¹⁴⁰ In contrast to the other Ionic mouldings of this temple, this crown was a hawksbeak, characteristic of the Doric order and unique here in an otherwise Ionic building. The use of a hawksbeak in this position finds its closest parallel in the hawksbeak epikranitis of Doric buildings, which, as here, normally occurred without a crown.¹⁴¹ The occurrence of four different types of epistyle crowns on a single building seems to reflect the architect's desire for greater richness and variety. But in these crowns and especially the hawksbeak we can also see the mind of the architect experimenting with the old forms in new combinations and positions.

This same experimental quality is evident in the handling of the epistyle beams themselves. On the exterior and between the rear columns and exterior west cella wall, the epistyle, reminiscent of the treasuries at Delphi, did not have fasciae.¹⁴² In the

¹³⁸ Shoe, pp. 21-22, 170. The archaic Knidian Treasury at Delphi, by exception, has a crowning moulding (*ibid.*, p. 22, pl. II,5; Dinsmoor, *B.C.H.*, XXXVII, 1913, fig. 11). Somewhat similar though different in concept, is the epistyle crown of the Aeolic Treasury in the Marmaria at Delphi, which consists of an ovolo topped by the projecting fillet of the frieze above (Daux, *op. cit.*, pl. XXVII).

¹³⁹ Shoe, pp. 58-59, pl. XXVII. Outside of Attica, at an earlier date the cyma reversa occurred in this position on Chios (*ibid.*, p. 55, pl. XXV,6). The earlier example, however, probably had little or no influence on its later use. A more likely source of inspiration is the cyma reversa frieze crown on the Ionic treasuries at Delphi (cf. *ibid.*, p. 57).

¹⁴⁰ Stuart and Revett, chap. II, pl. V. This course as drawn by Stuart and Revett is not strictly an epistyle. From the drawing it can be assumed that originally this course was continued in the interior of the pronaos across the supports which once stood between the antae, and thus its crown is considered here with the other epistyle crowns of the temple.

¹⁴¹ Cf. Shoe, pp. 126, 173, pls. LX,11-23, LXI.

¹⁴² Stuart and Revett, chap. II, pls. III,V; cf. Dinsmoor, p. 185.

area between the pronaos and the front columns, the epistyle was divided into three fasciae, in accordance with Asia Minor buildings. In the pronaos, below the hawk-beak moulding, a third variation was used. Here, the course corresponding to the epistyle was divided into two fasciae of unequal height and the top fascia was decorated with a painted anthemion (Pl. 90,b, figs. 2, 3). This unusual course has its closest parallel in the top course of the interior cella wall of the Athena Nike Temple, which also corresponds to the level of the epistyle and is formed by an unusually high course divided into two fasciae of unequal height. In both these temples, the top fascia appears to have been decorated with a painted ornament and was crowned with a moulding.¹⁴³

The geison soffit on the Ilissos Temple consisted of a cyma reversa moulding with a "Periklean fillet" at its base and a small astragal below (Pl. 90,a,b). The base astragal of the geison soffit is an unusual feature which occurs elsewhere only twice, on the horizontal geison soffit of the Erechtheion and on the soffit of the naiskos of the Temple of Apollo at Didyma.¹⁴⁴ Unlike the Ilissos Temple geison soffit, both of the later two examples have carved decoration. On the Ilissos Temple, none of the mouldings had carved decoration except for the echinus and the corner palmettes of the capitals. All the mouldings were originally decorated with painted ornaments.

In contrast to later Athenian buildings, both Pentelic and Parian marble were used in the construction of the Ilissos Temple.¹⁴⁵ This use of two kinds of marble in a single building is reminiscent of the earlier Stoa of the Athenians at Delphi and the contemporary Hephaisteion.¹⁴⁶ These buildings apparently followed the more conservative predilection of carving the more delicate portions of the building in the more easily worked stone.¹⁴⁷ Soon afterwards, on the Parthenon, all major parts of the building, including the sculpture, were made of Pentelic marble, setting the precedent for later buildings.¹⁴⁸ The use of Pentelic marble for the architecture and Parian for the sculpture would thus indicate a date earlier than the Parthenon for the Ilissos Temple.

¹⁴³ Ross, p. 11, pl. VI. Cf. the similar use of a band of painted ornament along the top of the interior cella wall in the Treasury of the Athenians at Delphi. No crowning moulding occurs there, however, and it should be noted that this course does not correspond to the exterior epistyle course as it does on the Athena Nike Temple (Audiart, *op. cit.*, pp. 45-46, atlas, pls. XXII, XXIII; Dinsmoor, *A.J.A.*, L, 1946, pp. 89-90).

¹⁴⁴ Shoe, p. 68-69, 168; pl. XXX, 9, 46.

¹⁴⁵ Stuart and Revett, chap. II, p. 7 note b; Judeich, p. 420; Möbius, *Ath. Mitt.*, LIII, 1928, p. 1; Dinsmoor, p. 185.

¹⁴⁶ Amandry, pp. 38, 40, 44, 47; Hill, pp. 537-538; Dinsmoor, *Hesperia*, Suppl. V, 1941, pp. 30, 112; Thompson, *Hesperia*, XVIII, 1949, p. 233. Parts of the Hephaisteion have recently been dated to a period after the Parthenon (C. H. Morgan, *Hesperia*, XXXII, 1963, p. 102). The Temple and presumably the type of marble were planned before the beginning of the Parthenon.

¹⁴⁷ Cf. Amandry, p. 95.

¹⁴⁸ The interior ceilings were presumably of wood and the roof tiles were carved out of Parian marble (cf. Collignon, pp. 86, 101; A. Orlandos, *Hesperia*, Suppl. VIII, 1949, p. 259).

We have seen that there are many similarities between the Ilissos Temple and the Temple of Athena Nike. In plan both are tetrastyle, amphiprostyle buildings, which were always rare in classical times. Both have unusual features in their plans, such as the lack of a pronaos and the substitution of piers for the east cella wall on the Temple of Athena Nike and the unusually deep pronaos and almost square cella on the Ilissos Temple, indicating an original architect who did not hesitate to change the canonical forms. This same originality is evident on the Ilissos Temple in the mouldings such as the column bases, the anta capitals, and the various epistyle crowns. These mouldings, sometimes with identical dimensions and forms, were used on the Athena Nike Temple, as for example the anta capital and the upper part of the column base. Others were slightly modified for the Athena Nike Temple to create a richer effect, such as the exterior epistyle crown and the sima. Many of the dimensions are very similar on the two buildings and both show the same consideration of design in relationship to the size of the structure, as for example in the proportions of the columns. These many similarities seem to strengthen the association between the two buildings which Ross first recognized and to justify their attribution to a single architect.

The close association of the two buildings has caused much controversy concerning their dates and early scholars tried to assign a similar date to both temples. The date of the Athena Nike Temple is now securely placed in the 420's on architectural, stylistic, and epigraphical evidence. On the other hand, the date of the Ilissos Temple, at least in its early stages, must be placed before the beginning of the Parthenon in 447 B.C. as indicated by the use of Pentelic and Parian marble. The style of the frieze also points to this earlier date.¹⁴⁹ A solution to this apparent discrepancy was first suggested by Studniczka.¹⁵⁰ He proposed that the plans of the Ilissos Temple were first drawn for the Athena Nike Temple in the middle of the century. When it became evident that the construction of this building had been indefinitely postponed, the architect used the plans for the Temple on the Ilissos. Later when he built the Temple of Athena Nike, he used the same basic plans, but with certain modifications, since the area had been curtailed by the construction of the Propylaia. At that time he also changed some of the details, such as the division of the exterior epistyle into three fasciae. This solution proposed by Studniczka would thus associate the Ilissos Temple with the plans originally drawn by Kallikrates for the Temple of Athena Nike in accordance with the building decree *I.G.*, I², 24. Thus the construction of the Ilissos Temple would have started *ca.* 448 B.C. This date accords well with the architectural and sculptural evidence and in general has been accepted.¹⁵¹

In our attempt to reconstruct the career of Kallikrates we have associated two

¹⁴⁹ Studniczka, pp. 197-198, 230; Möbius, *op. cit.*, pp. 5-6; Picard, *Manuel*, p. 715.

¹⁵⁰ Pp. 199-202, 229-230.

¹⁵¹ Cf. Dinsmoor, p. 185 and *Hesperia*, Suppl. V, 1941, pp. 159-160; Judeich, p. 420.

Ionic temples in Athens with his name. Excavations outside of Attica have uncovered on Delos another Athenian temple which is so similar in plan to the two already connected with Kallikrates that our next step leads us there.

THE TEMPLE OF THE ATHENIANS ON DELOS

On the island of Delos, during the second half of the fifth century B.C. the Athenians built a Doric temple which they dedicated to Apollo (Pls. 86,c; 87,c). They placed it next to the old Poros Temple and across a narrow path from the then unfinished "Great Temple." All three temples faced towards the west, looking onto one of the main streets of the city.¹⁵² Courby, who published the Athenian Temple, noted that its plan was unusual and that its amphiprostyle form was paralleled in the period of its construction only by the Temple of Athena Nike and the Ilissos Temple.¹⁵³ Dinsmoor believes that "it is quite possible—though our evidence is solely stylistic—that Callicrates likewise designed the 'Athenian Temple' at Delos."¹⁵⁴ A close analysis of the temple shows so many similarities in its architectural forms to the Parthenon and in its plan to the Temple of Athena Nike and the Ilissos Temple that I believe Dinsmoor's suggestion can be turned into a strong probability.

The plan of the temple (Pl. 87,c) is unusual in several of its features. The prostyle porches, unlike those of the Parthenon, were used here in combination with a true pronaos which is not only a separate room in itself,¹⁵⁵ but is also unusually deep in proportion to the cella, features which are paralleled in the Ilissos Temple.¹⁵⁶ As in the Ilissos Temple there is no opisthodomos. Courby noted that the use of piers in place of columns in the pronaos of the Delos Temple is somewhat similar to the piers of the Athenian Nike Temple.¹⁵⁷ The Ilissos Temple is an even closer parallel, if Travlos' restoration of piers in the pronaos is accepted.¹⁵⁸ In contrast to the classical

¹⁵² Courby, pp. i-iii, 1-2, pl. I.

¹⁵³ Courby, p. 108 and note 2, p. 203 and note 1; cf. Vallois, p. 136. The decision to place the temple where it now is no doubt influenced the choice of this form, since only a certain amount of space was available between the two other temples. The architect, however, must have had some influence in this decision and had he wanted a larger area in order to build a normal peristyle temple, the platform of the "Great Temple" was available at this time (cf. Courby, pp. 98-106, 218-220).

¹⁵⁴ Dinsmoor, p. 148.

¹⁵⁵ It should be noted, however, that in the Parthenon the separate western room, the original Parthenon of the building, in all probability was used to store the votive offerings, thus taking over one of the main functions of the pronaos. A prostyle arrangement without a true pronaos also occurs on Delos in the Poros Temple which stood to the north of the Athenian Temple (Courby, pp. 207 ff., pl. XXV).

¹⁵⁶ The depth of the pronaos is *ca.* 4.26 m. and the depth of the cella is *ca.* 7.49 m. (Courby, pp. 166, 186, pl. XII). The depth of the pronaos is thus more than half the depth of the cella as was the case in the Ilissos Temple (cf. *supra*, note 113).

¹⁵⁷ P. 203 note 2; see also Dinsmoor, p. 183.

¹⁵⁸ Cf. *supra*, note 119.

canon, the width of the cella in the Delos Temple is greater than its length, reminiscent of the proportions of the cella of the Athena Nike Temple.¹⁵⁹ Unlike the Temple of Athena Nike, however, it is clear that the proportions of the Delos cella were the architect's choice and not determined by the site of the building.¹⁶⁰

Certain features of the plan seem to have been influenced by the location of the temple. The four-stepped krepidoma was probably due to the desire to place the top of the stylobate on an equal level with that of the neighboring Poros Temple. Once the decision had been taken to place the temple where it now stands, the limited space caused the steps on the sides to be narrower than those on the front.¹⁶¹

The west wall of the cella was pierced by two windows on either side of the door.¹⁶² Although windows occur in civic architecture¹⁶³ they are very rare in religious buildings and in Athens they occur only once, in the Erechtheion.¹⁶⁴ The northwest wing of the Propylaia, the Pinakotheke, is often mentioned as a parallel to the Erechtheion and has even been suggested as the prototype for the Delos Temple.¹⁶⁵ The Pinakotheke, however, is not a temple but was designed as a picture gallery which probably accounts for its use of windows and places it in a different category. Courby noted that the Poros Temple on Delos had windows and he suggested the possibility that the architect of the Athenian Temple was influenced by these.¹⁶⁶ There is also the possibility that the use of windows in the Delos Temple was suggested by the deep pronaos whose great length would have considerably diminished the amount of light entering through the cella door. These windows, in contrast to the ones known in Athens, were placed low in the wall making it possible for a spectator to look through them.¹⁶⁷

Perhaps the most extraordinary of all the unusual features of this temple is the existence of four attached piers or pilasters on the exterior east cella wall, which echo the four free standing piers in the pronaos (Pl. 91,a).¹⁶⁸ These multiple pilasters

¹⁵⁹ The width of the cella in the Delos Temple is *ca.* 8.34 m. and the length is *ca.* 7.49 m. (Courby, p. 186, pl. XII). For the dimensions of the Athena Nike cella, *supra*, note 17. In both these temples the width of the cella equals roughly 1.1 times the length.

¹⁶⁰ The width of the Delos cella may have been determined by the decision to place in the temple the seven large statues and their single, great pedestal which previously stood in the Poros Temple. The length of the cella could have been changed by altering the proportions of the pronaos or by lengthening the temple towards the east (cf. Courby, pp. i-iii, 189-194, 203, 214, 218, pls. I-II).

¹⁶¹ Courby, pp. 111-112, 203, 204.

¹⁶² *Ibid.*, pp. 169 ff., pls. XXI-XXII.

¹⁶³ For example, the Tholos in the Athenian Agora; H. A. Thompson, *Hesperia*, Suppl. IV, 1940, p. 51.

¹⁶⁴ G. P. Stevens, *A.J.A.*, X, 1906, pp. 47 ff.; *Erechtheum*, pp. 35-45.

¹⁶⁵ Dinsmoor, p. 183.

¹⁶⁶ Courby, pp. 203, 210.

¹⁶⁷ *Ibid.*, pls. XXI-XXII.

¹⁶⁸ *Ibid.*, pp. 151-162, pl. XIX. In Athenian architecture of this period, the use of a series of attached piers is unique in the Delos Temple with the single exception of the attached piers on the

of the east cella wall are one of the few decorative touches on this otherwise severe building. Vallois believes that the use of attached piers on the exterior cella wall was a further elaboration of the antae which occur on the rear solid wall behind the columns of the Ilissos Temple.¹⁶⁹ A more direct inspiration, however, probably came from the pronaos façade with its four free standing piers placed "in antis." Although piers were frequently used in Delian architecture in later times, Vallois noted that they appear to have been first introduced to the island by the Athenians in this temple.¹⁷⁰ In Athens a free standing pier was used in the make-shift arrangement of the southwest wing of the Propylaia when difficulties with the Athena Nike precinct caused a curtailment of the plan. This pier is most frequently cited as the origin of free standing or attached piers in later buildings.¹⁷¹ At best, however, the pier in the Propylaia was never a happy arrangement but was always awkward in its relationship to the rest of the building, especially when the whole wing was intact and the roof was still preserved. It seems hardly possible that such an arrangement would have been very inspiring. Perhaps a more satisfactory origin for the piers can be found in the free standing piers restored by Travlos in the pronaos of the Ilissos Temple.¹⁷² I would like to suggest that it was these piers which were the prototype for their later use in Athenian architecture. Afterwards, it would seem that the same architect used them in place of the east cella wall in the Athena Nike Temple and still later, he employed them with further elaboration on the Delos Temple. All these piers, with the exception of the pier in the Propylaia, have in common

interior west wall of the Erechtheion (Pl. 91,b; cf. *Erechtheum*, p. 60; N. M. Konotoleon, *Τὸ Ἐρέχθειον*, Athens, 1949, pp. 50 ff.). The closest other parallel in religious architecture occurs in the attached interior columns of the Temple of Apollo at Bassae and the curious attached piers of the Temple of Zeus at Akragas (Cockerell, pp. 55, 58, pl. XI, XIII; Dinsmoor, *Metropolitan Museum Studies*, IV, 1932, pp. 208-212; Koldewey and Puchstein, *op. cit.*, p. 155, pl. XXIII). The Bassae arrangement was later followed at Tegea in the Temple of Athena Alea (Dugas, *op. cit.*, pp. 45-51; Roux, pp. 112, 395, 397, 422-423). In civic architecture of the fifth century, four attached piers were used on the interior back wall of the South Stoa in the sanctuary of Argive Hera (C. Waldstein, *The Argive Heraeum*, Boston, 1902, I, pp. 127-128, pls. XX-XXI).

¹⁶⁹ Antae occur on a solid wall for the first time in the Ilissos Temple. Later they were used again in the Propylaia as well as in the Temple of Athena Nike (cf. Stuart and Revett, chap. II, pls. II, IV; Bohn, pl. III; Ross, pls. IV, V; Vallois, p. 262, note 1).

¹⁷⁰ Vallois, p. 247; he noted that their Athenian origin is attested by Pliny who gave them the name "columnae atticae" (*N.H.*, XXXVI, 23, 179). Earlier on Delos they were used in the archaic Building D and Treasury 5, but these piers seem to have been the exception stemming from a more primitive use of piers instead of columns for ease in construction, rather than as a conscious variation from the architectural norm to create a new and interesting effect, as was the case in the Athenian Temple (cf. Vallois, pp. 24, 247, 249-250).

¹⁷¹ Bohn, pp. 26-29, pl. XVI; Dörpfeld, *Ath. Mitt.*, X, 1885, pp. 42-43; Dinsmoor, pp. 203-204.

¹⁷² *Supra*, note 119. Piers have been suggested for the western corners of the interior colonnade in the cella of the Parthenon, but these seem unlikely. Dinsmoor, p. 163 note 3; cf. C. Boetticher, *Untersuchungen auf der Akropolis von Athen*, Berlin, 1863, p. 178; Dörpfeld, *Ath. Mitt.*, VI, 1881, pp. 291-292; F. C. Penrose, *Principles of Athenian Architecture*², London, 1888, p. 9, note 4.

several important characteristics which seem to place them in one group and to justify their origin in the Ilissos Temple rather than in the Propylaia. They were always used in pairs, or in greater numbers. They always stood in a row repeating the basic form of the antae. And finally, they were placed in a position where one would normally expect to find columns or else attached to a wall echoing the antae and creating a more decorative effect.

Seven colossal statues¹⁷³ and possibly their base were taken from the old Poros Temple and placed within the Athenian Temple.¹⁷⁴ Fragments of the base have been found. It was constructed of blue Eleusinian stone, white marble, some of which apparently came from Paros, and poros blocks of a variety, Courby noted, which do not occur elsewhere in the temple. Courby believes that the somewhat archaic workmanship on the base indicates that it was originally made for another position and that, at some later date, it was moved into the Athenian Temple. The fact that the poros blocks used in the underpinning of the base in the Athenian Temple are almost identical in dimensions and material to those used in the construction of the Poros Temple led him to the conclusion that the statues with their base originally stood there. The iron clamps, in the form of a double-T, used for the base are different from the bronze clamps employed in the Athenian Temple but resemble those of the Poros Temple. The width of the cella of the Poros Temple is the same as the width of the cella in the Athenian Temple, adding further evidence for this conclusion. The use of Eleusinian stone would be curious, however, if we accept Courby's date for the base, since that stone was used in Athens only during the fifth century and once in the closing years of the sixth century.¹⁷⁵ Furthermore, if the base had been moved, we would expect to find a double set of clamp cuttings. Nor would the older clamps have been used, if indeed their slightly different form can be considered older. It seems to me that these difficulties outweigh Courby's evidence for the re-use of the base. Perhaps we should return to Courby's first suggestion, which he rejected, that

¹⁷³ Courby, p. 218. The main statue of this group was probably the colossal bronze statue of Apollo by Tektaios and Angelion. Six other statues were set up around him. Courby (p. 218, note 3) suggested that Artemis and Leto were among them.

¹⁷⁴ Courby, pp. 189-194, 214, pl. XXIV; Shoe, *Hesperia*, Suppl. VIII, 1949, p. 342.

¹⁷⁵ Its earliest use in Athens seems to be on a base commemorating the victory over the Chalkidians and Boeotians in 506 B.C. (A. E. Raubitschek, *Dedications from the Athenian Akropolis*, Cambridge, Mass., 1949, p. 193). It also occurs on a second base from the Akropolis (*ibid.*, p. 185), some unidentified fragments from the Athenian Agora (Thompson, *Hesperia*, XXIX, 1960, p. 356), the base in the Hephaisteion (Dinsmoor, *Hesperia*, Suppl. V, 1941, pp. 105 ff.), the Phidian statue base of Olympian Zeus (E. Curtius, *Olympia*, II, pp. 13-14), the base in the Tholos at Delphi (J. Charbonneaux, *Fouilles de Delphes*, II, *Athens Pronaia*, Paris, 1925, pp. 19 ff., pls. XXI f.), and perhaps for a base in the Erechtheion (Thompson, *Hesperia*, VI, 1937, p. 47, note 1). Eleusinian stone used in combination with white marble also occurs in fifth century Athenian architecture (Shoe, *Hesperia*, Suppl. VIII, 1947, pp. 341-352; Dinsmoor, *Studies in the History of Culture*, Menasha, 1942, p. 190, note 7).

the base was a copy of an earlier one.¹⁷⁶ If this was the case, then there may have been a different group of workmen who made the base and moved the statues, differing in their more conservative technique from those who built the temple.

The cella did not have a flat ceiling, but a pitched one, probably on account of the great height of the statues.¹⁷⁷ Exactly this same problem must have existed in the Poros Temple and was perhaps solved in the same way.¹⁷⁸ A few years later, a pitched ceiling appears to have been used in the Stoa of Zeus in the Athenian Agora.¹⁷⁹ Still later, on Delos, interior pediments were used in the "Hall of the Bulls."¹⁸⁰

Following the customary practice of the period, refinements were used in the construction of the temple. The stylobate and the entablature may have had a horizontal curvature.¹⁸¹ The columns, as in the Parthenon, had a double inclination towards the center of the façade and towards the interior.¹⁸² All the walls, except the west cella wall which contained a doorway, were inclined inwards.¹⁸³ The piers had a double inclination similar to that of the columns.¹⁸⁴ The antae seem to have followed the inclination of the walls.¹⁸⁵ This inward inclination of the antae is in direct opposition to those antae of the Propylaea and Parthenon standing behind columns which incline outwards towards the columns.¹⁸⁶

Eight column capitals are preserved.¹⁸⁷ Courby noted that the capitals were identical in form and reduced one-eighth in measurements from those of the pronaos of the Parthenon, which they unquestionably copied (Pl. 89,e).¹⁸⁸ It is interesting that the slender pronaos columns rather than the more visible and prominent peristyle columns were used as the model. Although the architect of the Delos Temple copied these capitals, for the proportions of his columns he used neither the peristyle columns of the Parthenon nor its more slender pronaos columns, but adopted a ratio that

¹⁷⁶ Courby, p. 194.

¹⁷⁷ *Ibid.*, pp. 186-189, 204, pl. XVIII.

¹⁷⁸ *Ibid.*, p. 204.

¹⁷⁹ Thompson, *Hesperia*, VI, 1937, pp. 36-37. The Temple of Apollo at Bassae may also have had a pitched ceiling (Roux, pp. 46-52).

¹⁸⁰ Courby, p. 203; Vallois, pp. 279-280; Dinsmoor, pp. 184 note 1, 290, fig. 105.

¹⁸¹ Courby and M. A. Gabriel restore horizontal curvature on evidence which they themselves admit is slender (Courby, pp. 117-121, 235-236). I find it curious that no evidence for such a curvature was found on any part of the foundations which remains *in situ*. This differs from the Parthenon, where the curvature starts from the foundations (Collignon, p. 89).

¹⁸² Courby, pp. 117-121.

¹⁸³ *Ibid.*, p. 144.

¹⁸⁴ *Ibid.*, p. 166.

¹⁸⁵ *Ibid.*, pp. 144-146.

¹⁸⁶ Dinsmoor, p. 166; cf. Bohn, pl. VII; Penrose, *op. cit.*, p. 106.

¹⁸⁷ Fragments of five column capitals from the east façade and three from the west façade were found (Courby, p. 116, figs. 127-128).

¹⁸⁸ Courby, pp. 204-205, fig. 128. The profile of the Parthenon capital on Pl. 89, e has been reduced in scale one-eighth more than that of the Delos Temple.

falls somewhere between.¹⁸⁹ In other details, however, he freely borrowed proportions developed for the Parthenon, such as the ratio of the lower diameter to the axial spacing of the columns, using on this occasion the peristyle as a model rather than the pronaos.¹⁹⁰ Such a close borrowing of certain details of the Parthenon combined with a complete freedom in the handling of others indicates the same attitude towards the Parthenon by the architect of the Delos Temple as was evident in Kallikrates' attitude towards the Ilissos Temple when he built the Temple of Athena Nike. We have seen that many elements in the plan of the Delos Temple, some of them rather radical, such as the use of free-standing piers and the unusual cella proportions, have their closest parallels or prototypes in the temples associated with Kallikrates. Returning to the columns, once more we find the closest parallel in a temple which we know Kallikrates helped to build.

The antae and pilaster capitals have the hawksbeak moulding, which is regularly found in this position in Doric buildings, crowned by a fascia and an ovolo characteristic of the second half of the fifth century B.C.¹⁹¹ Traces of paint were found on the moulding adding a further decorative touch, which would be expected in this period.¹⁹² One significant variation occurs, however, in the Delian moulding which separates it from other Attic anta capitals of this period. Beginning with the Treasury of the Athenians at Delphi and afterwards followed by the Stoa Poikile, the Parthenon, and the Propylaia in Athens, an additional element was added beneath the hawksbeak.¹⁹³ This addition does not occur on the Delian capital, which is less elaborate than the Attic capitals and harmonizes more fully with the simple forms of the Doric order and small size of the temple. The epikranitis of the Delos Temple again has a simpler form consisting of a hawksbeak alone as was the earlier tradition in contrast to the unusual elaboration found on the epikranitis of the Parthenon and the Propylaia which have a high fascia and cyma reversa below the hawksbeak.¹⁹⁴ A similar simplicity and use of traditional mouldings of the Doric order is demonstrable in the majority of the remaining mouldings.¹⁹⁵

¹⁸⁹ The height of the Delos columns equals 5.71 times the lower diameter. In the Parthenon, the height of the peristyle columns equals 5.48 times the lower diameter, whereas the pronaos columns equal 6.10 times the lower diameters (Dinsmoor, "Chronological List of Greek Temples" facing p. 340, p. 163).

¹⁹⁰ Dinsmoor (p. 183, "Chronological List of Greek Temples" facing p. 340), calculated that the axial spacing of both temples equals 2.25 times the lower column diameter and that the diameter and the axial spacing of the Delos columns are three-sevenths of those of the Parthenon.

¹⁹¹ Courby, p. 166, fig. 256; Shoe, pp. 116, 120, 174, pls. LVIII,1,2, LVII,7,9,12-14.

¹⁹² Courby, *loc. cit.*; Shoe, p. 117.

¹⁹³ Shoe, pp. 116, 174, pl. LVII,6,7,12-14; Thompson, *Hesperia*, XIX, 1950, p. 327, pl. 103. A similar addition beneath the hawksbeak of the anta capital also occurs on the Hephaisteion and presumably on the other buildings of that architect (cf. Shoe, p. 120, pl. LVII,9).

¹⁹⁴ Shoe, p. 173, pls. LX, 21-23, LXI, 6-11; Courby, pp. 162-165, figs. 206, 211, 255.

¹⁹⁵ Cf. Courby, p. 194. Contrast the many Ionic elements usually found in Attic Doric buildings of this period.

The architect of the Delos Temple, however, did on occasion create new combinations of mouldings. His approach to these new combinations may be illustrated perhaps most easily by the lintel of the door. Normally in the Doric order the lintel is without ornament, but consists simply of a plain block of stone usually two courses high.¹⁹⁶ The architect of the Delos Temple appears to have found the plain lintel dull and thus adorned it with a hawksbeak crowned by a cavetto,¹⁹⁷ just as Kallikrates in the Ilissos Temple appears to have found the normal triple-ovolo moulding of the Asia Minor Ionic anta capital dull and thus created a more interesting form with the cavetto, cyma reversa and ovolo. In the Ilissos Temple Kallikrates used forms for the antae capital which were characteristic of Ionic buildings. Similarly, when a new form was created for the Delos Temple, Ionic elements were not borrowed as was the case in the Parthenon and the Propylaia when further elaboration was felt necessary, but Doric forms were used which in fact closely followed the other mouldings on the building.¹⁹⁸

Another unusual feature of the mouldings is the addition of a separate, carved course above the exterior frieze. Although no remains of this moulding have been found, the evidence for its presence is quite clear. Its existence was first indicated by the dowel cuttings on the top of the triglyphs which did not match the dowel cuttings on the soffit of the cornice. In addition, when the entablature was reconstructed on paper the tops of the triglyphs were *ca.* 0.08 m. lower than the tops of the stone backers. Since no fragments of stone were found which would fit this space, Courby restored this moulding in bronze.¹⁹⁹ It is difficult to understand, however, why this course, if it was made of bronze, extended half way through the wall. It would have required far less work and much less metal for it to have been a simple bronze sheathing.²⁰⁰ Furthermore, the use of dowels as indicated by the dowel cuttings would have been extremely troublesome in the attachment of the bronze course, especially since they were not uniformly placed on the top surfaces of the triglyph blocks.²⁰¹ If

¹⁹⁶ Shoe, p. 177; cf. Bohn, pls. VIII, IX.

¹⁹⁷ Courby (p. 177, fig. 256), on the basis of the anta capitals, restored the crown of the hawksbeak as a fascia with a small ovolo above. Miss Shoe's drawing (pp. 105, 140, 177, pl. LII, 18) shows over the hawksbeak the concave surface of the lower part of the moulding crowning it; this seems to favor the cavetto she restores rather than the fascia, and hence has been accepted here.

¹⁹⁸ The use of a cavetto, which became primarily a secondary moulding of the Ionic order after the sixth century, may at first seem to contradict this. It should be remembered, however, that the cavetto was originally the Egyptian moulding for the lintel. In Greek architecture, whenever the lintel had a moulding, the cavetto was almost always used (cf. Shoe, pp. 130, 134, 140).

¹⁹⁹ Courby, pp. 121, 122-124, figs. 135-137, 211. Later in the "Great Temple" this same element appears, though there it was much thicker, some 0.245 m. thick, and made of stone (*ibid.*, pp. 25-30, fig. 34).

²⁰⁰ This difficulty was pointed out to me by Professor R. Stillwell. He further pointed out that plaques of stone 0.08 m. thick would have been the perfect size for paving stones and may thus have been among the first to be carried off.

²⁰¹ Courby, fig. 135. These dowels appear to have been similar to the others used in the building.

we accept these objections, then Courby's bronze course must be discounted. Yet it remains difficult to understand why so much additional labor was expended to carve and lay a separate course if that course was made of marble. Perhaps the answer lies in the hypothesis that the course was not made of marble but of another material, i.e. Eleusinian stone, foreshadowing its use in the frieze of the Erechtheion.²⁰²

The sima of the Delos Temple with its cyma recta profile and carved lotus and palmette ornament is another interesting and unusual feature.²⁰³ This type of sima was first used on sixth century Ionic buildings, but during the fifth century it was relatively rare until it was used by Mnesikles in the southwest wing of the Propylaia. Thereafter it occurs not infrequently in Attic, Doric buildings.²⁰⁴ The strong projection of the cyma recta on the Delian sima makes it different from the other fifth century examples.²⁰⁵ Its carved lotus and palmette ornament is even more unusual, since it occurs on an otherwise severe building²⁰⁶ on a moulding which was usually uncarved in this period.²⁰⁷ It was noted above that in Athens before this time carved decoration was the exception and occurred rarely.²⁰⁸ It is striking suddenly to find it here in a prominent position on a Doric building when carved decoration is supposedly a characteristic of the Ionic order. It is tempting to try to place the sima at a later date when this profile was normally carved,²⁰⁹ but no signs of later repair can be detected and the presence of fifth century akroterial figures shows that this cannot be the case. Another explanation can be found, however, if we return to our original hypothesis that carved versus painted decoration was not a characteristic of Ionic versus Doric, but rather a characteristic of Asia Minor versus Athens and the Greek mainland. The carved decoration on the Delos Temple, a Doric building, seen within this framework then becomes understandable and forms the link between Athens and Asia Minor. The Athenian architect, under this scheme, would have gone to Delos with the plans of the temple designed within the more severe tradition of Attic architecture and its painted ornaments. Once on Delos with the temple

Had this course been made of bronze, we might expect a different type of dowel to have been designed.

²⁰² Architectural fragments made of dark marble, such as has been hypothesized for the Athenian Temple, have in fact been associated with the neighboring "Great Temple," which was strongly influenced by this earlier building (Courby, pp. 26, 86, fig. 105).

²⁰³ *Ibid.*, pp. 135-137, figs. 156-161, pl. XXVI,B; Shoe, pl. XLI,4.

²⁰⁴ Shoe, pp. 92, 163, pl. XLI.

²⁰⁵ *Ibid.*, p. 93.

²⁰⁶ The only other carved mouldings on this temple occur on the coffer frames, which is another unusual place for carved decoration (Courby, p. 139, fig. 164) and a fragment identified by Miss Shoe as the base for the pronaos grille (p. 84, pl. XXXVI,1; cf. Courby, p. 209, fig. 214 left, fig. 258 below, who had previously tentatively associated this moulding with the Poros Temple).

²⁰⁷ Cf. Shoe, p. 92. The only other fifth century carved cyma recta sima comes from the Temple of Apollo at Bassae (Shoe, pl. XLI,2; Cockerell, pl. VI).

²⁰⁸ *Supra*, pp. 386-387.

²⁰⁹ Cf. Shoe, p. 92.

already begun, the architect would have become swayed by Asia Minor architecture and in the last stages of construction he would have incorporated carved decoration wherever possible, i.e. the sima, the coffer frames, and the possible grille base, thus foreshadowing the sudden abundance of carved decoration which makes its first appearance in Athens a few years later in the Erechtheion.

Courby noted that both sculpture²¹⁰ and architecture indicate a date for the construction of the Delian Temple sometime in the fourth quarter of the fifth century B.C. after the construction of the Propylaia.²¹¹ Courby further limited the date by the observation that the temple was built of Pentelic marble, thus placing its construction in the period of Athenian supremacy of the sea when large-scale transportation of marble would have been feasible. Within these limits he sought some suitable historical event that might have inspired the construction of a temple on Delos. Such an event he found in the second purification of Delos by the Athenians in the winter of 426/5 B.C., which was followed in the spring of that year by the establishment of the Athenian festival, the Delia.²¹² Apparently it was also at this time that the Athenians started dedicating golden crowns to the Delian Apollo. The third crown of this series appears to have been unusually large and to have been dedicated with some ceremony by the general Nikias in the year 417 B.C. Courby suggested that it was during the celebration of the Delia in the year 417 B.C. that the temple was dedicated and that the occasion was marked by an unusually large crown provided by prominent Athenians. Thus the temple would have been finished sometime between 417 B.C. and 421 B.C., the celebration of the preceding Delia.²¹³ Scholars have generally accepted this date of 425-417 B.C., established by Courby, as the period within which the temple was constructed.²¹⁴

We have seen that there are many similarities between the Delos Temple and the style of Kallikrates as known from the Ilissos Temple and the Temple of Athena Nike. All three are amphiprostyle, lack opisthodomoi, employ piers, and have cellas which tend to be square. The almost square cellas of the Ilissos Temple and the Delos Temple are combined with unusually deep pronaoi. The three temples are remarkable for the originality of their mouldings which combine old forms with new, adding a greater richness to the building. On the Ilissos Temple there is the creation of a new

²¹⁰ Elaborate groups of akroterial figures are preserved (Courby, pp. 137-138, 237-241, figs. 270-278, pls. XIV, XV, XXVII). It is uncertain whether the pediments had sculpture (*ibid.*, pp. 134-135, 202). It seems probable that the unusually large akroteria were used in place of sculpture as Mr. Thompson suggested (*Hesperia*, XVIII, 1949, p. 242, note 31), though some scholars believe that the temple had pedimental sculpture (Courby, p. 135) which may have been carried off by the Romans (Dinsmoor, *A.J.A.*, XLIII, 1939, pp. 27-28).

²¹¹ Courby, p. 205.

²¹² *Ibid.*, p. 220.

²¹³ *Ibid.*, pp. 221-224.

²¹⁴ Cf. Dinsmoor, p. 184; Vallois, p. 30; Picard, *Manuel*, p. 788.

anta capital which combined for the first time the cavetto, cyma reversa, and ovolo. On the Temple of Athena Nike the fasciae of the Ilissos Temple mouldings were changed into cavettos imparting a more delicate harmony to the temple which was enhanced by the use of an exterior epistyle divided into three fasciae. On the Delos Temple the addition of a moulding on the lintel of the door marks a new departure in Athenian Doric architecture. In both the Temple of Athena Nike and the Delos Temple the antae standing behind columns do not incline forward as do those of the Parthenon and the Propylaia, but they are either vertical or inclined inward. The association of the Delos Temple with Kallikrates is further strengthened by the Doric column capitals which repeat exactly the form and proportions of the column capitals in the pronaos of the Parthenon on which building Kallikrates is known to have worked. Surely we cannot attribute it to mere chance that the Delos Temple has so many close parallels to buildings connected with one architect. Thus the only conclusion possible is that Kallikrates be named the architect of the Temple of the Athenians on Delos.

Certain new features appear on the Delos Temple for the first time in Athenian architecture, such as attached piers on the exterior east cella wall, the use of windows in a temple, and the introduction of carved decoration on a prominent moulding. Such innovations accord well with the imaginative personality of Kallikrates evident throughout the entire design of the Temple of Athena Nike. These innovations lead directly to the Erechtheion where they also occur and immediately the question arises whether Kallikrates may have also designed that temple.

THE ERECHTHEION

Towards the end of the fifth century B.C. the Erechtheion with its graceful Ionic columns and abundance of beautiful detail was constructed on the Athenian Akropolis (Pls. 86,d; 87,d).²¹⁵ The unusual asymmetric plan of the building led Dörpfeld to believe that the temple was never finished and he attempted to reconstruct the architect's original plan.²¹⁶ This attempt proved unsuccessful.²¹⁷ Work on the Erechtheion by American archaeologists has shown that the internal arrangement of its rooms duplicated the unusual arrangement of the Old Athena Temple.²¹⁸ Since the Erechtheion was built to replace the Old Athena Temple,²¹⁹ the close similarity of their

²¹⁵ For the history of the building see Dinsmoor, *A.J.A.*, XXXVI, 1932, pp. 143 ff., LI, 1947, p. 111, note 14; *Erechtheum*, pp. 423 ff.

²¹⁶ *Erechtheum*, p. 458, note 2 where the bibliography is cited.

²¹⁷ C. H. Weller, *A.J.A.*, XXV, 1921, pp. 130-141; G. Rodenwaldt, *Neue Jahrbücher*, XLVIII, 1921, pp. 1-13; *Erechtheum*, p. 459.

²¹⁸ *Ibid.*, pp. 146-159, pl. I.

²¹⁹ *I.G.*, I², 372 (the so-called Chandler stele) clearly indicates this. See also Dinsmoor, *A.J.A.*, XXXVI, 1932, pp. 318-320; D'Ooge, *op. cit.*, p. 195. Dörpfeld, however, never accepted this (*Ath. Mitt.*, XXVIII, 1903, p. 468).

ground plans indicates that whatever alterations may have occurred, the basic scheme of the architect's original plan for the Erechtheion was maintained.²²⁰

Dörpfeld mainly on the basis of his reconstructed, original plan of the Erechtheion believed that Mnesikles was its architect.²²¹ The construction of the Erechtheion and the Propylaia on uneven ground levels, the supposedly unfinished state of each of them, and the addition of projecting porches made him feel that one architect had designed both buildings. Such a similarity unquestionably occurs between the Propylaia and Dörpfeld's hypothetical, original plan of the Erechtheion, but if this plan is discounted and the Erechtheion as it now stands is compared to the Propylaia, the attribution seems less certain. In the Propylaia the west wings project boldly forward enclosing the space between them in such a way that they draw the spectator inward and portray in visual terms, for the first time in Greek architecture, the function of the building. In the main part of the building the transition from one level to another is marked by the use of steps at the center cross wall and the different roof levels over the eastern and western parts.²²² This stepped roof level would have formed an interesting contrast to the low hipped roofs and varying directions of the wings had the building been finished as it was first designed. Each section of the building was articulated by its own roof line, which expressed in much the same manner as the domes of Byzantine churches the various units of the floor plan within. The architect of the Erechtheion, on the other hand, seems to have made every effort to conceal the difference of levels and to de-emphasize the space around the building. In contrast to the multiple roof lines of the Propylaia, in the Erechtheion a single major roof line was used.²²³ The columns of the east façade were repeated with the same form and similar dimensions on the west, where they were placed on a high wall in order that

²²⁰ Unquestionably some alterations occurred during the course of constructing the Erechtheion, but these were few and much less extensive than those Dörpfeld suggested (*Erechtheum*, pp. 167-169, 458-459; Dinsmoor, *A.J.A.*, XXXVI, 1932, pp. 319-323).

²²¹ His main arguments for this attribution are to be found in *Ath. Mitt.*, XXXVI, 1911, pp. 39 ff. Dinsmoor and Paton subscribe to this theory but do not set forth their arguments (Dinsmoor, pp. 148, 188; *Erechtheum*, p. 455). Miss Shoe also accepted this identification. She further adds to Dörpfeld's arguments the use of Eleusinian stone in both buildings (*Hesperia*, Suppl. VIII, 1949, p. 347). The technique of the frieze, however, associates it with those cult statue bases which were of blue stone with attached relief sculpture (*supra*, note 175 and *infra*, p. 421); these bases, rather than the Propylaia, may have inspired its use on the Erechtheion. After the completion of the first version of my study on Kallikrates and the Erechtheion, Professor George E. Mylonas drew my attention to the fact that Dr. John Travlos had mentioned Kallikrates as the architect of the Erechtheion (Πολεοδομική Ἐξέλιξις τῶν Ἀθηνῶν, Athens, 1960, p. 60), but in a letter Travlos stated that apparently this was due to a typographical error.

²²² The difference between the two levels was reduced to some extent by placing smaller columns on the east than on the west and by the use of one step on the east in contrast to four on the west (cf. Bohn, pp. 19, 21-22, pl. VII).

²²³ Cf. Inwood, *Erechtheion*, p. 101; *Erechtheum*, pls. XIII-XIV.

they would stand at almost the same level as the columns on the east.²²⁴ When the precinct walls of the Pandroseion and the Tomb of Kekrops still existed, the wall beneath the west columns would have looked like a high artificial terrace. A spectator approaching the temple from the Propylaia would have been entirely unaware of the great difference in the levels concealed within the building until he had walked entirely around it, nor would he have had the slightest indication of the interior plan until he actually entered it both from the east and from the north. The projecting porches on the south and the north may have warned him that there was something unusual about the building, but the porches, especially the one on the south, are so richly decorated that the spectator usually stops to admire the details, forgetting to ask himself why the porches are there. Thus we see that although both the Erechtheion and the Propylaia were built on uneven ground, the architect of the Erechtheion attempted to conceal the two different floor levels of his building, whereas Mnesikles' building provided a clear accentuation of the various floor levels and different units of the building. Furthermore, the porches of the Erechtheion are asymmetric decorative appendages, whereas the projecting west porches of the Propylaia form an integral part of its symmetrical plan.

Unquestionably both buildings were restricted to some extent on account of religious prohibitions, as Dörpfeld argued,²²⁵ but surely this reflects the antiquity of the site rather than the choice of the architect. Here again, it seems to me, two different attitudes can be seen. Mnesikles' original plan for the Propylaia disregarded the existing precincts of the area. Had the southeast wing been built as the architect planned it, a large section of the sanctuary of Artemis Brauronia would have been curtailed. Nevertheless, the existence of the half built anta at the southeast corner of the south façade indicates that Mnesikles had hoped to build this wing. We do not know whether the architect of the Erechtheion had originally hoped to disregard the holy areas on the site, but as the building was actually constructed, great care seems to have been taken to accommodate the earlier shrines.²²⁶

Dörpfeld in his attribution also pointed out the fact that both the east façade of the Erechtheion and the Pinakothek of the Propylaia had windows.²²⁷ The Erechtheion, however, is a temple, whereas the Pinakothek is a secular building and windows do occur in secular buildings, such as the Tholos in the Athenian Agora.²²⁸

²²⁴ The columns of the west façade are some 0.973 m. shorter than those of the east façade (*ibid.*, pp. 20, 66; cf. Picard, *L'acropole: le plateau supérieur*, p. 37). The shorter west columns were no doubt due to the necessity of placing a door in the wall beneath, leading into the Pandroseion. This wall was made just high enough to allow for the door and the normal lintel two courses high (cf. *Erechtheum*, pls. IV, XIII).

²²⁵ *Ath. Mitt.*, XXXVI, 1911, p. 53.

²²⁶ Dörpfeld, *Ath. Mitt.*, XXVIII, 1903, pp. 465-469; cf. D. S. Robertson, *C.A.H.*, V, p. 455.

²²⁷ *Ath. Mitt.*, XXXVI, 1911, p. 53.

²²⁸ Thompson, *Hesperia*, Suppl. IV, 1940, p. 51.

After Dörpfeld made his attribution, windows were discovered in the Temple of the Athenians on Delos. If the criterion of windows is to be used for the association of two buildings, it should be used to associate the Erechtheion with the Delos Temple, rather than with the Propylaia.

Dörpfeld's final piece of evidence for the attribution of the Erechtheion and the Propylaia to the same architect was the use of a pier formed by setting two antae back to back in the southeast wing of the Propylaia and on the west side of the North Porch of the Erechtheion.²²⁹ The similarity of their forms cannot be denied, but are we going to attribute the Erechtheion to Mnesikles on this one similarity alone? We have seen that Mnesikles may have copied Kallikrates' Ionic capital. It would not be surprising, therefore, if the architect of the Erechtheion had copied one or two ideas from the Propylaia. Thus, unless more arguments can be presented, the possibility must be admitted that another architect may have designed the Erechtheion and we are free to pursue the suggestion set forth above that that architect was Kallikrates.

The internal division of the Erechtheion does not follow the normal temple arrangement, but parallels the unusual internal division of the Old Athena Temple, which it was built to replace (Pl. 87,d).²³⁰ Although this close relationship between the two buildings exists, the Erechtheion was made somewhat smaller, no doubt because of the construction of the Parthenon which probably took over some of the functions of the earlier temple.²³¹ During the process of this reduction the whole temple was made slightly wider in proportion to its length.²³² This change in proportion is rather extraordinary since already the Old Athena Temple tended to be wider in proportion to its length than was customary in Greek peristyle temples.²³³ The almost

²²⁹ *Ath. Mitt.*, XXIX, 1904, p. 101; cf. Bohn, pp. 27-28, pl. XVI; *Erechtheum*, pls. IV, XXIII left; Dinsmoor, p. 203.

²³⁰ *Supra*, note 219 and Wiegand, fig. 117.

²³¹ Cf. Dinsmoor, *A.J.A.*, XXXVI, 1932, pp. 311 ff.

²³² The Old Athena Temple, measured at the stylobate, was 21.30 m. by 43.15 m. (Dinsmoor, p. 337). In other words, the length of the building equaled slightly more than twice the width of the façade. The Erechtheion, discounting for the moment the North and South Porches, has a length of 22.507 m., measured at the stylobate, and a width of 11.634 m. (*Erechtheum*, pl. II) or a length which equals slightly less than twice the width. It should be noted that had the west wall of the Erechtheion been placed two Attic feet further west, as was originally planned, the length of the temple would have equaled *circa* twice the width. A similar proportion with the width equalling slightly less than twice the length occurs in the Delos Temple (Courby, pl. XII).

²³³ Instead of the normal peristyle of six by thirteen columns of the classical period, the peristyle of the Old Athena Temple had six by twelve columns, resulting in a square east cella in order to allow sufficient space for the western rooms (cf. Wiegand, pp. 118-119, fig. 117; Dinsmoor, "Chronological List of Greek Temples" facing p. 340). Such ratios of width to length are unusual in both the Old Athena Temple and the Erechtheion when contrasted to the Temples of Apollo at Bassae and at Delphi, and the Older Parthenon. In all three of these temples, when additional room was needed, the length of the building was simply extended and the width remained the same, retaining the canonical hexastyle façade and rectangular cella (cf. Hill, pp. 556-557; Dinsmoor, pp. 89, 91-92, 149-150, 155; Cockerell, pl. II).

square east cella of the Old Athena Temple was changed in the Erechtheion to make its width greater than its length.²³⁴ Such a change is entirely consistent with Kallikrates' temples. We saw that earlier in his career, in the Ilissos Temple, he made the cella square. Some two and a half decades later, in the Delos Temple, the cella was made wider than its length, with the width equal to roughly 1.1 times the length, similar to the proportions of the cella in the Temple of Athena Nike. In the Erechtheion the ratio increases and the width of the cella was made equal to *ca.* 1.34 times the length. As in the case of the Delos Temple, there seems to have been nothing to the east of the Erechtheion to prevent its extension in that direction, had the architect wished to build a cella with normal proportions.²³⁵ Thus in the proportions of the east cella we find another link with Kallikrates, just as we do in the use of the prostyle Ionic form of the building and the use of windows in the east façade. When the west rooms of the Erechtheion were designed, the proportions of the west rooms of the Old Athena Temple were more or less retained. The west entrance vestibule was made slightly narrower, no doubt due to the existence at the west of the building of sacred objects which could not be moved.²³⁶ A porch was added to the north to provide a monumental entrance into the western part of the building, since such an entrance on the west was made impossible by the sacred objects there. This porch projects slightly to the west of the building and also served as an entrance into the Pandroseion. On the south the Porch of the Maidens was added to counterbalance the northern entrance.²³⁷ The use of Caryatids finds earlier parallels in the treasuries at Delphi. Here for the first time, however, Caryatids were used in a prostyle porch, rather than "in antis."²³⁸ They were placed four in front and two behind, following the arrangement of the columns of the North Porch.

²³⁴ The east cella of the Old Athena Temple was 10.50 m. by 10.65 m. (Wiegand, p. 117, fig. 117). The east cella of the Erechtheion was 9.837 m. wide and 7.318 m. long (*Erechtheum*, pl. II).

²³⁵ It may be objected that such an extension was not made in order to avoid an extremely long south wall which would have appeared dull in its great extent, undecorated except for mouldings and the sculptured frieze. In religious architecture, it is hard to find parallels with a similar situation, since, as already noted, large temples were rarely made amphiprostyle. The Telesterion at Eleusis and the later "Hall of the Bulls" at Delos both had extremely long walls which were undecorated except for the mouldings, windows, and doors (cf. Dinsmoor, pp. 195, 290; Lawrence, *op. cit.*, pp. 252-253, 263-265). On the Akropolis itself the east halls of the Propylaia, as restored by Dinsmoor, would have had long walls pierced by two doors and perhaps windows (Dinsmoor, p. 204, fig. 75). However, if we admit that such a wall would be unpleasing, the architect still had other possibilities he could have explored, such as placing columns along the south side, in much the same manner as was done on the Temple of Athena at Sounion (Stais, *Ἀρχ. Ἐφ.*, 1917, figs. A, Γ; Travlos, p. 66, fig. 33).

²³⁶ Wiegand, p. 117, fig. 117; *Erechtheum*, pls. I, II.

²³⁷ Dinsmoor believes that the porch was designed to fill the awkward angle between the Erechtheion and the Opisthodomos (*A.J.A.*, XXXVI, 1932, p. 322). Concerning any possible symbolic meaning of the Caryatids see Holland, *A.J.A.*, XXVIII, 1924, p. 429, note 2.

²³⁸ Dinsmoor, p. 193; Holland, *loc. cit.*

The intercolumniations of the columns of the east façade are all equal (Pl. 86,d).²³⁹ Inwood stated that the axial spacing of these columns had the same ratio to the lower diameter as did the axial spacing of the columns on the Ilissos Temple to their lower diameter.²⁴⁰ On the North Porch the axial spacing of the columns varies.²⁴¹ In contrast to the normal Greek practice, the center intercolumniation is narrower than those at the sides.²⁴² This arrangement of the columns appears to have been determined by the roof construction.²⁴³ In Athenian architecture there is usually no connection between the position of the columns and the ceiling beams.²⁴⁴ It is interesting, however, that the narrower center intercolumniation of the Erechtheion finds its only Athenian parallel in a building most probably designed by Kallikrates, i.e. the Ionic Temple on the Ilissos, and we might wonder whether a similar roof construction might also have caused the narrower center intercolumniation in that building.²⁴⁵ It is also of interest that the axial spacing of the North Porch is twice that of the columns on the Temple of Athena Nike.²⁴⁶ I do not think it is accidental that the axial spacing of the columns finds such close parallels both in actual dimensions on the North Porch and in relative proportions on the east façade with the two Ionic buildings constructed by Kallikrates. Of course, the architect of the Erechtheion may have been copying these buildings, but it would seem extraordinary that he should have picked two small and relatively unimportant temples as his models which both happened to be designed by the same architect. It would seem much more sensible to attribute this similarity to the fact that a single architect designed all three buildings and that for the later temple he re-worked and re-used some of the dimensions and forms of his earlier buildings.

²³⁹ *Erechtheum*, p. 19.

²⁴⁰ Inwood, *op. cit.*, pp. 101-103. Dinsmoor gives the axial spacing of the columns as 3.05 times the lower diameter for the east façade of the Erechtheion and 3.09 times the lower diameter for the Ilissos Temple ("Chronological List of Greek Temples" facing p. 340). It should be noted, however, that Dinsmoor does not believe the center intercolumniation of the Ilissos Temple was narrower than the side intercolumniations (*supra*, note 117). 3.05 times the lower diameter of the Ilissos Temple gives the measurement of 1.6561 m., whereas the center axial spacing of the Ilissos Temple as measured by Stuart and Revett was 1.6789 m., some 0.0228 m. more than the measurement Inwood's ratio would give. Such a slight variation of little more than two cm. would seem to be due to error in calculation or workmanship rather than to different ratios used by the architect.

²⁴¹ Cf. *Erechtheum*, pl. II.

²⁴² *Ibid.*, p. 80; Inwood, *op. cit.*, p. 103.

²⁴³ *Erechtheum*, p. 80.

²⁴⁴ Cf. J. Durm, *Die Baukunst der Griechen*³, Leipzig, 1910, fig. 156. The correspondence found on the North Porch may be due to the unusual length of the beams and thus their greater weight. This is probably the reason for this same correspondence found in the interior of the Propylaea (cf. Bohn, pp. 21-22).

²⁴⁵ *Supra*, p. 391.

²⁴⁶ Dinsmoor, p. 188; see also p. 340.

One very unusual and frequently overlooked feature of the Erechtheion is the internal face of the west wall (Pl. 91,b). The columns and windows as they appear today are one of the many Roman repairs of the building. The lower parts of the columns were originally only half columns for a height of *ca.* 2.00 m. and a low parapet ran behind them for the full length of the façade. Above the parapet the columns were carved in the round. On the interior a series of six attached piers adorned the parapet, forming the lower part of the external columns and antae.²⁴⁷ The use of a series of attached piers to decorate a wall is unique for this period in Athenian architecture with the single exception of the Temple of the Athenians on Delos (Pl. 91,a) probably built, as we hope to have shown above, by Kallikrates in the years immediately preceding the construction of the Erechtheion. I do not believe that it is mere chance that two buildings constructed at almost the same time should use this form of decoration, which as far as we know had never been used before in Athens and was not to be used again in Athenian architecture until the construction of the Odeion in the Athenian Agora several centuries later in the Roman period.²⁴⁸ It seems much more probable that we have a single architect repeating in the Erechtheion a decorative element he had designed for the Delos Temple. This probability seems to be strengthened by the incongruity of the piers in the Erechtheion. In the reconstructed drawing of the interior west wall, the columns appear truncated and seem to lack bases. The thin piers below them make the columns appear to lack adequate support. A much more satisfactory arrangement would have been to carve the columns in the round and to place the parapet in the intercolumniations only. This was not done, but attached piers were used in a way which lent an unstable appearance to the interior of the façade, suggesting that the architect was experimenting with an earlier idea which had been developed more successfully in the Delos Temple.

The Erechtheion, although a small temple, was constructed with great care and much thought was given to its design. Delicate refinements are found throughout the building which greatly enhance its beauty. The steps were given a slight batter of 0.003 m. per course and the horizontal surfaces were inclined downward, recalling the treatment of the krepidoma of the Athena Nike Temple and the Parthenon.²⁴⁹ The north and south walls were given an extremely delicate batter,²⁵⁰ just as was the case in many Periklean buildings. Inclination is also found in the columns. On the east façade the columns were inclined inward toward the building. The corner columns have an added inclination sideways toward the center of the façade.²⁵¹ The columns of the North Porch incline both towards the building and towards the center of the

²⁴⁷ *Erechtheum*, pp. 60-66, pls. XIII, XV.

²⁴⁸ Thompson, *Hesperia*, XIX, 1950, p. 43.

²⁴⁹ *Erechtheum*, p. 18; Orlandos, p. 10; see also *supra*, p. 378.

²⁵⁰ *Erechtheum*, pp. 34, 46, 214. The east and west walls, which contain doorways, and the east cross wall were vertical (*ibid.*, pp. 34, 214).

²⁵¹ *Ibid.*, pp. 19-20.

porch.²⁵² This same system is found in the inclination of the Doric columns of this period;²⁵³ but it is striking to find it here, in an Ionic building, since it has been stated that inclination of columns occurs only in Doric buildings.²⁵⁴ Only one other example of inclined Ionic columns has been noted and this is in a building constructed by Kallikrates, the Temple of Athena Nike. Do we have here another indication that Kallikrates built the Erechtheion?

The antae of the east façade have vertical front faces, whereas the anta face adjoining the north and south walls is inclined inwards and tapers towards the top without entasis.²⁵⁵ The antae of the North Porch incline inward and are without entasis.²⁵⁶ The principle faces of the antae on the west façade incline inward and their adjacent faces are either vertical or incline towards the north.²⁵⁷ In general it can be said that the antae of the Erechtheion are vertical when they stand alone or are adjacent to a vertical wall and that they are inclined inwards when they are adjacent to an inclined wall. In the Athena Nike Temple, as already mentioned, the principal faces of the antae, which either stand alone on the east or are adjacent to a vertical wall on the west, are vertical and have no diminution. The side faces of the antae on the Athena Nike Temple which are adjacent to the inclined walls, incline inward and have diminution.²⁵⁸ In the Delos Temple, although the restoration is not absolutely certain, it is clear that the antae, as well as the piers and the attached pilasters, inclined inward at least in part.²⁵⁹ It is interesting that these three buildings, which I am trying to associate with a single architect, Kallikrates, all have antae which are either vertical or incline inward. In contrast to this group of buildings, the antae of the Propylaia, which stand behind columns, and the antae of the Parthenon incline outwards, towards the columns.²⁶⁰ Such a distinction in the inclination of the antae seems to be significant in as much as the effects resulting from the two different types of inclination are directly opposite. This would seem to indicate that different purposes were in the minds of the architects. The forward inclination of the antae towards the columns emphasizes the natural perspective of the view upwards between the columns

²⁵² *Ibid.*, p. 80.

²⁵³ Bohn, p. 19; Courby, p. 117; Dinsmoor, p. 165; Lawrence, *op. cit.*, pp. 172-174.

²⁵⁴ Dugas, *op. cit.*, p. 19, note 4; Durm, *op. cit.*, p. 298. This is in contrast to Vitruvius, III,5,4. In the publications of the major Asia Minor Ionic temples, inclination of columns is not mentioned, except in Wiegand and Schrader, *Priene*, p. 89, where it was definitely stated that the columns of the Temple of Athena do *not* incline.

²⁵⁵ The north anta of the east façade is not "in situ" and hence it cannot be tested, but presumably it followed the same inclination as the south anta (*Erechtheum*, pp. 30, 46, 214).

²⁵⁶ *Ibid.*, p. 86.

²⁵⁷ *Ibid.*, p. 62. The antae of the Porch of the Maidens seem to have inward inclination (cf. *ibid.*, pl. XXVI).

²⁵⁸ Orlandos, p. 18.

²⁵⁹ Courby, pp. 144-146, 166; *supra* p. 403.

²⁶⁰ Dinsmoor, p. 166; Penrose, *op. cit.*, p. 106; cf. Bohn, pl. VII.

and the antae, thus creating an effect of greater height. The inward inclination of the antae away from the columns emphasizes the visual stability of the buildings in much the same manner as do the inward inclinations of the walls. However, it de-emphasizes the height of the building since it tends to counteract the natural perspective of the view upwards.

One refinement, that of horizontal curvature usually found in buildings of this period, is lacking in the Erechtheion.²⁶¹ The architect of the Erechtheion depended almost entirely for his refinements on inclinations, some of them so slight that they were barely perceptible. All the inclinations were inwards, creating an almost pyramidal effect which gave greater monumentality to the building, recalling the same handling of refinements by Kallikrates on the Temple of Athena Nike.

A very delicate entasis occurs on the columns of the North Porch.²⁶² The use of entasis on Ionic columns is paralleled in Athenian architecture by the Ionic columns of the Propylaia and some Ionic columns from the Athenian Agora.²⁶³ On the columns from the east façade of the Erechtheion, however, no entasis occurs. These columns are some 1.049 m. shorter than those of the North Porch and the architect probably felt that entasis was not necessary on the shorter columns.²⁶⁴ Such a consideration of scale is important. A similar consideration of scale can be seen in the proportions of the columns. On the east façade, the columns have a height of 6.586 m. or 9.52 times the lower diameter whereas those of the North Porch have a height of 7.635 m. or 9.35 times the lower diameter.²⁶⁵ This difference in the proportions would seem to indicate that the architect was constantly striving to find those proportions which would best serve the needs of a particular place.²⁶⁶ A similar attitude on the part of Kallikrates seems to have been evident in his work on the Ilissos Temple and the Temple of Athena Nike.

The most indicative argument for the authorship of the Erechtheion lies in its mouldings. The column capitals, as argued above, developed from the column designed by Kallikrates for his Ionic Temples and copied by Mnesikles in the Propylaia (Pls.

²⁶¹ *Erechtheum*, pp. 18, 214.

²⁶² *Ibid.*, p. 81; Penrose, *op. cit.*, p. 33; Dinsmoor, pp. 168-169.

²⁶³ Dinsmoor, *loc. cit.*; Thompson, *Hesperia*, XXIX, 1960, p. 354.

²⁶⁴ *Erechtheum*, pp. 20, 80-81. There seems to have been no established practice in this matter, however, since the Ionic columns from the Agora, which have entasis, are shorter than those of the East Porch. No doubt another reason for giving entasis to the North Porch columns was that they bore a greater weight than the East Porch columns and it seemed desirable to give them greater apparent strength by entasis (*ibid.*, pp. 81-82).

²⁶⁵ *Erechtheum*, pp. 20, 80; Dinsmoor, p. 340 and "Chronological List of Greek Temples" facing. A similar variation is demonstrable in all the measurements and proportions of the porches.

²⁶⁶ As noted *supra*, note 124, heavier proportions were probably given to the columns of the North Porch since they stand further from the wall and are thus more isolated than the columns of the East Porch.

88,a-d; 90,a).²⁶⁷ The compact proportions, the graceful downward curve of the volute cushion and the emphasis on carved detail are the characteristic features of these capitals which place them in one group. Furthermore, the Erechtheion capitals use the small supporting member below the abacus at the point where the volute swings downward which was found on the capitals of the Ilissos Temple and the Temple of Athena Nike. The bolsters of the Erechtheion capitals repeat the almost double curve seen in the profile of the bolsters of the Athena Nike capitals. In keeping with the greater amount of decoration on the Erechtheion, a band of carved lotus and palmette and a carved guilloche were added to the capital.²⁶⁸ These capitals were further embellished by the use of metal decoration and glass paste.²⁶⁹

The column bases of the Erechtheion with their scotia between two tori developed from the trend apparently started in the Ilissos Temple (Pls. 89,b; 90,a).²⁷⁰ The mouldings of the column bases were repeated on the bases of the antae and then extended along the wall as the toichobate, recalling the similar treatment on the Ilissos Temple and the Temple of Athena Nike.²⁷¹ These base mouldings on the Erechtheion, in accordance with the greater richness of the temple, have more elaborate and varied decoration than those of the earlier examples.

The anta capitals of the east façade and the North Porch consist of a cavetto, cyma reversa, and ovolo following the type developed by Kallikrates for the Ilissos Temple and occurring elsewhere in this same form only on the Temple of Athena Nike (Pls. 89,a; 90,b).²⁷² The later anta capital shows only minor changes from the earlier ones, such as the use of a small cyma reversa as a crown in place of the earlier ovolo and the replacement of the earlier fillet below the capital by an astragal, which is in keeping with the greater degree of ornament on the Erechtheion. The mouldings of the anta capitals were extended along the upper part of the wall as the epikranitis on the main building, minus the astragal below the anthemion.²⁷³ Both the anta capitals and the epikranitis were slightly varied on the Porch of the Maidens, although their

²⁶⁷ *Supra*, pp. 380-383, 393-394.

²⁶⁸ The carved lotus and palmette band may have been inspired by the Temple of Apollo at Naukratis (Dinsmoor, p. 126). This band also occurs on columns from Ephesos, Samos, and Locri (*ibid.*, p. 193).

²⁶⁹ The volute eye of the capitals was gilded. Bronze strips and glass paste occurred only on the capitals of the North Porch (*Erechtheum*, pp. 22-23, 82-85). In addition, bronze rosettes may have adorned the coffers of the North Porch and the frame of the North Door (*ibid.*, pp. 89, 102; Inwood, *op. cit.*, p. 127, pl. XX). The incipient use of metal decoration in Athenian architecture can be seen in the Athena Nike Temple and the archaic Ionic capital probably from the Old Athena Temple (*supra*, note 50).

²⁷⁰ *Supra*, p. 392. The Erechtheion bases have more rounded forms and greater projection as is fitting in the larger temple and later date (Shoe, p. 156).

²⁷¹ *Supra*, p. 394, *Erechtheum*, pls. XVI, XXII, XXXVIII. No toichobate occurs on the North Porch (*ibid.*, p. 86, note 3).

²⁷² *Ibid.*, pl. XXXVI,3,5; Dinsmoor, p. 193; see also *supra*, pp. 383-384, 394.

²⁷³ *Erechtheum*, pl. XXXVII,1,2; Shoe, p. 173.

basic elements and their relative positions remain.²⁷⁴ The cavetto was greatly reduced in size, turning it into a crowning moulding, and a second ovolo was added to the anta capital.

The various epistyle crowns of the Erechtheion also show a close relationship with those used by Kallikrates. The interior epistyle crown of the North Porch consists of an ovolo crowned with a cavetto, similar to the exterior epistyle crown of the Athena Nike Temple (Pl. 89,c).²⁷⁵ Both these mouldings appear to have developed from the Ilissos Temple where the exterior epistyle crown was an ovolo crowned by a fascia.²⁷⁶ On the exterior, more suitable to the greater amount of decoration on the Erechtheion than on the Athena Nike Temple, a more elaborate moulding was used. It consists of a small cyma reversa crowning a cavetto and a large cyma reversa with a base astragal below.²⁷⁷ The cyma reversa was regular in this period as an epistyle crown.²⁷⁸ As noted above, it appears first in Attica in the Temple of Athena at Sounion which was followed by the Ilissos Temple. A third type of epistyle crown consisting of a simple ovolo was used in the Erechtheion in the interiors of the East Porch and the Porch of the Maidens.²⁷⁹ The use of three different types of epistyle crowns in the Erechtheion seems to reflect the same decorative tendency seen in the Ilissos Temple where we noted four different types of crowns. Perhaps we can see another similarity between the Erechtheion and the Ilissos Temple in the use of an epistyle with two fasciae of unequal height in the interior of the Porch of the Maidens in the Erechtheion and the interior of the pronaos in the Ilissos Temple.

Although the Erechtheion is so rich in mouldings, it is interesting that it lacks an exterior frieze crown,²⁸⁰ even though a crown was used over the Ionic frieze in the Parthenon, the Hephaisteion, and the Temple of Apollo at Bassae.²⁸¹ It should be noted, however, that the exterior frieze crown is also lacking on the Temple of Athena Nike.²⁸²

The geison soffit of the Erechtheion has the regular fifth century B.C. form of the cyma reversa. The raking geison soffit is uncarved as usual, but the horizontal soffit is unique for its carved ornament which occurs elsewhere only on the geison soffit of the Naiskos at Didyma a century later.²⁸³ The horizontal soffit is also unusual

²⁷⁴ *Erechtheum*, pl. XXXVI,1; Shoe, pl. XV,15.

²⁷⁵ Ross, pls. IX, X; *Erechtheum*, pls. XXII, XXX,16.

²⁷⁶ Stuart and Revett, chap. II, pl. VI.

²⁷⁷ *Erechtheum*, pls. XVI, XXII, XXIX,6, XXX,14; Shoe, p. 59, pl. XXVII,5.

²⁷⁸ *Ibid.*, p. 58.

²⁷⁹ *Erechtheum*, pls. XVI, XXVI.

²⁸⁰ Cf. *ibid.*, pls. XVI, XXII.

²⁸¹ Cf. Shoe, p. 170, pls. XXVI,16 (Parthenon), XXIII,12 (Hephaisteion), XXVI,18 (Bassae).

²⁸² Cf. Shoe, pl. LXXVIII; Ross, pl. VI.

²⁸³ *Erechtheum*, pls. XVI, XXII, XXXVII,7, XXX,15; Shoe, pp. 68-69, pl. XXX,8,9.

in its use of a base astragal below the cyma reversa. As noted above, such a base astragal occurs elsewhere only on the other example of a carved geison soffit, i.e. the Naiskos of the Temple of Apollo at Didyma, and the uncarved geison soffit of the Ilissos Temple.

The geison crown of the Erechtheion is an ovolo, the regular Ionic geison crown of the fifth century.²⁸⁴ The earliest ovolo geison crown preserved from an Ionic building comes from the Temple of Athena Nike.²⁸⁵ The Stuart and Revett drawings show that the Ilissos Temple also had an ovolo in this position.²⁸⁶ The geison crown of the Erechtheion is unusual in its use of a carved ornament.²⁸⁷

Except for the Porch of the Maidens, the sima on the building with its cyma recta profile dates from a Roman repair.²⁸⁸ The Greek sima on the Porch of the Maidens differs from the others on the building. It has an ovolo profile carved with a large egg and dart motif, unusual in this position.²⁸⁹ This decoration was probably used as a parallel to the carved egg and dart of the podium crown, and it was no doubt inspired by the Propylaia.²⁹⁰ As in the Propylaia, the rain water drained off the roof through triangular cuttings placed at intervals between an egg and a dart of the moulding rather than through the normal lion-head water spouts.²⁹¹ The ovolo of the Propylaia is crowned by a fascia,²⁹² whereas an astragal crowns the Erechtheion ovolo recalling the astragal of the sima from the Temple on the Ilissos.²⁹³

The crown of the ceiling beams in the Erechtheion has an ovolo profile and carved decoration. In the North Porch the ovolo has an astragal above and a second one below it. In the second half of the fifth century the ovolo was normal in this position, but the additional astragals and the carved decoration on the Erechtheion are unusual.²⁹⁴ The steps of the Erechtheion coffers also have the ovolo profile commonly

²⁸⁴ *Erechtheum*, pls. XVI, XXII; Shoe, pp. 37, 165, pl. XX, 2,3.

²⁸⁵ Shoe, p. 37, pl. XX,1; Stevens, *A.J.A.*, XII, 1908, fig. 10.

²⁸⁶ Stuart and Revett, chap. II, pl. VI.

²⁸⁷ The only other examples of a carved geison crown are from the later Temple of Aphrodite at Messa and the Ionic Colonnade of the Portico of Philip at Delos (Shoe, pp. 37, 165).

²⁸⁸ Fragments of the original sima may still be preserved, although the attribution is somewhat uncertain (*Erechtheum*, pp. 78-79, 96-97, pls. XVI, XVII,3, XVIII, XXX,13; Penrose, *op. cit.*, p. 93; Dinsmoor, *A.J.A.*, XIV, 1910, p. 181, note 3; Möbius, *Ath. Mitt.*, LII, 1927, pp. 181 ff.).

²⁸⁹ Dinsmoor, *A.J.A.*, XIV, 1910, p. 154; cf. *Erechtheum*, p. 115, pls. XXVI, XXIX,8.

²⁹⁰ Dinsmoor, *loc. cit.*

²⁹¹ Bohn, p. 20, pl. XIV; Dinsmoor, *A.J.A.*, XIV, 1910, fig. 7 on p. 168; *Erechtheum*, p. 115, pl. XXVI.

²⁹² Shoe, pl. XIX,4. The sima over the central gable is without a crown (*ibid.*, p. 35, pl. XIX,5).

²⁹³ An astragal crowning an ovolo sima was also used by the Hephaisteion architect. It occurs in Rhamnous on the Temple of Nemesis (Shoe, pl. XIX,6) and in Athens on the Hephaisteion and the Temple of Ares (Dinsmoor, *Hesperia*, Suppl. V, 1941, pp. 110-116; Shoe, pl. LXXXVI,2 which was later identified as the sima of the Temple of Ares by Dinsmoor, *Hesperia*, IX, 1940, p. 32).

²⁹⁴ *Erechtheum*, pls. XVI, XXIII, XXX,17; Shoe, pp. 45, 176, pl. XXI,22-29. Most of the beams date from Roman repairs, but these seem to have copied the original mouldings (*Erechtheum*,

used in Athens during this period. The Roman coffers of the East Porch were decorated with a carved egg and dart design, usually found painted in this position, whereas the coffers of the North Porch and the Porch of the Maidens were decorated by a painted design.²⁹⁵

The lintels and jambs of the east windows and the major doors were decorated with a rich combination of mouldings consisting of ovolos and cyma reversas combined with cavettos, astragals, and fasciae, which harmonize with the other rich mouldings of the temple where the same elements occur.²⁹⁶ On the Erechtheion, the ovolo appears on the jambs and lintels of the east façade windows and the North Porch door for the first time (to our knowledge). Both the ovolo and the cyma reversa on the Erechtheion have carved decoration, in contrast to most of the later jambs and lintels which have these mouldings.²⁹⁷ Pilasters flank the doorway leading from the Porch of the Maidens into the interior of the building.²⁹⁸ The capitals of the pilasters consist of a cavetto and a cyma reversa and are an abbreviated form of the anta capital. The use of pilasters flanking an opening with capitals closely related to the capitals of the antae has its earlier parallels, such as the windows of the Pinakothek.²⁹⁹

The crowning moulding of the balustrade in the Porch of the Maidens is an ovolo surmounted by a cavetto.³⁰⁰ The ovolo with a fascia crown is frequently found in this position and its use here may well have been inspired by the ovolo crowns on the pedestals of the sixth century caryatids at Delphi.³⁰¹ The crowning moulding of the west wall beneath the column bases consists of a large cavetto followed by a very small cavetto and a cyma reversa with a base astragal below.³⁰² The use of a cyma reversa as a crowning moulding on low structures has its parallels both in the sixth century and later,³⁰³ though it commonly does not occur in combination with as many elements as are found on the Erechtheion where the use of the small cavetto between a large cavetto and a cyma reversa seems to be unique.

pp. 28-29, 87). The uncommon use of astragals and carved decoration on ceiling beams occurs again in the second half of the fourth century in the Temple of Athena at Priene (Shoe, p. 45, pl. XXI,30).

²⁹⁵ Some of the original coffers still remain in the North Porch and the Porch of the Maidens. The others preserved are Roman (*Erechtheum*, pp. 29-30, 89 note 2, 115-116, 223-224; Shoe, pp. 43, 177, pl. XXI,16).

²⁹⁶ *Erechtheum*, pls. XVII, XXV, XXIX,3; Shoe, pp. 48, 49, 177, pls. XX,53 (East Porch window jamb), XXXV,2 (North Porch jamb; the lintel dates from a Roman repair). A further elaboration of the door and window decoration of the Erechtheion can be seen in the use of consoles (*Erechtheum*, pp. 41, 99-100; Schultz and Gardner, *J.H.S.*, XII, 1891, p. 8). Consoles were used earlier at Delphi (Dinsmoor, *B.C.H.*, XXXVII, 1913, p. 59).

²⁹⁷ Shoe, pp. 48, 49, 82.

²⁹⁸ *Erechtheum*, p. 119, pls. VII, XXVI,6; Shoe, pl. XXIX,1.

²⁹⁹ Cf. Bohn, pp. 23-24, pl. IX; Shoe, pl. LVII, 12.

³⁰⁰ *Erechtheum*, pls. XXVI, XXIX,11; Shoe, pp. 51-52, 178-179, pl. XXII,16,17.

³⁰¹ Shoe, pp. 17-18, 19, 141, 178, pls. VI,13, VIII, IX; Dinsmoor, *B.C.H.*, XXXVII, 1913, fig. 3.

³⁰² *Erechtheum*, pls. XIX, XXX,1.

³⁰³ Cf. Shoe, pp. 55, 84, pls. XXV,12, XXXVI,1-3.

The form of the cushion on top of the heads of the Caryatids should also be noted.³⁰⁴ The large ovolo decorated with a carved egg and dart motif recalls the echinus of an Ionic capital. Below it is a small astragal and above a large cavetto crowned by a cyma reversa.

The numerous mouldings embellished with carved ornaments on the Erechtheion are one of its major features. This abundance of carved decoration is in marked contrast to the Attic tradition of uncarved mouldings reflected in the Temple of Athena Nike and in the early Ionic capitals.³⁰⁵ It was foreshadowed, however, by the Delos Temple³⁰⁶ and if we are able to call the architect of the Erechtheion Kallikrates, then the plethora of carving evolves from a logical development. Kallikrates it would seem first designed the Ilissos Temple and the Temple of Athena Nike with uncarved mouldings in accordance with earlier Attic tradition. Afterwards under Asia Minor influence, he added carved decoration in a prominent position on the Delos Temple during its final stages of construction, and finally, these ornaments reached their full flowering on the Erechtheion. The carved details on the Erechtheion serve not only a decorative purpose, but also are responsible in large part for the success of the building. The beautiful Caryatids, the rich epikranitis of carved lotus and palmette, and the great variety of mouldings soften the architectural lines and create a pleasant diversion which keeps the spectator from regarding the building as a whole, with all its irregularities.

The decoration of the building was enhanced by the use of blue Eleusinian stone for the background of the frieze.³⁰⁷ The use of blue stone in this position is not as revolutionary as it seems at first glance, since normally white marble backgrounds were painted blue.³⁰⁸ The technique of making the figures of a different material from the background was used for the statue bases of the Olympian Zeus and the cult statues in the Hephaisteion.³⁰⁹ These may well have inspired the Erechtheion frieze. Numerous fragments of the Pentelic marble figures from the frieze have been found³¹⁰ but these do not compare in quality to the beautiful Caryatids. The latter are very similar in style to the frieze from the Temple of Athena Nike. Especially striking are the similarities between the Caryatids and the frontal, standing female figures in Doric peploi on the east side of the Athena Nike Temple.³¹¹

³⁰⁴ *Erechtheum*, pls. XXVI, XXIX, 8.

³⁰⁵ *Supra*, pp. 381-382, 386-387.

³⁰⁶ *Supra*, pp. 406-407.

³⁰⁷ *Erechtheum*, pp. 181, 239 ff. For the use of Eleusinian stone see note 175.

³⁰⁸ *Erechtheum*, p. 239; Shoe, *Hesperia*, Suppl. VIII, 1949, p. 347.

³⁰⁹ Dinsmoor, *A.J.A.*, XXV, 1921, p. 129; *Olympia*, II, pp. 13-14; Dinsmoor, *Hesperia*, Suppl. V, 1941, p. 106. Cf. the earlier use of applied frieze figures which appear to belong to the Hekatompedon (Dinsmoor, *A.J.A.*, LI, 1947, pp. 149-151, pl. XXVIII, 3.).

³¹⁰ *Erechtheum*, pp. 241-276, pls. XL-XLVI. In addition to these, several references were made to them in the building inscriptions (*ibid.*, pp. 413-416). Various suggestions concerning the subject matter have been made (see Picard, *Manuel*, pp. 744-757, where the main bibliography is cited).

³¹¹ Furtwängler, *Masterpieces*, p. 450; Blümel, *Der Fries des Tempels der Athena Nike*,

A long series of building inscriptions dealing with the later stages of the construction of the temple have been found.³¹² These inscriptions give us important evidence concerning the date of the Erechtheion. From them it is clear that the work on it was resumed in 409/8 B.C. after it had been interrupted probably in connection with some event in the Peloponnesian War. The beginning of the building has been variously placed before the outbreak of the Peloponnesian War, attributing the interruption to the beginning of the war, or during the Peace of Nikias, attributing the interruption to the Sicilian campaign.³¹³ Scholars of more recent times have favored the later date, making the interruption of short duration.³¹⁴ The architectural forms of the building, especially the mouldings, seem to reaffirm the later date.³¹⁵ The mouldings of the Erechtheion form a homogeneous group and none appear later in design than the others, except for the obvious Roman repairs. A similar homogeneity appears in the sculptures, although the inscriptions tell us that some of them were made after the interruption while others were made before. Had the work on the Erechtheion started before the Peloponnesian War, resulting in an interruption of some two decades, surely indications of it would have been evident, at least in the mouldings and sculpture. The expensive undertaking of the Propylaia, which appears to have utilized most of the available funds,³¹⁶ would also seem to argue for the later date. These considerations make it almost certain that the Erechtheion was begun at the later date, i.e. after the beginning of the Peace of Nikias.

During the Peace of Nikias, then, the Erechtheion was started and for its overall design a single architect must have been responsible.³¹⁷ This architect I would like

pp. 14-19. Furtwängler suggested that Kallimachos was responsible for the sculpture on both temples as well as for the designs of the carved ornaments of the Erechtheion. He noted that Kallimachos designed a golden lamp for the Erechtheion. This lamp, as described by Pausanias (I,26,7), had a palm leaf over it which caught the smoke. This means of catching the smoke suggested to Furtwängler that the lamp must have been installed while the building was being constructed in order that the smoke might be led, by the branch, out through the roof. By this means Furtwängler associated Kallimachos with the construction of the building (*op. cit.*, pp. 437-441, 449). Other scholars have not always agreed with Furtwängler (see Picard, *Manuel*, p. 742, where the main bibliography is cited) and indeed, so little is known about Kallimachos and his lamp that his connection with the Erechtheion must remain a matter of conjecture only.

³¹² See *Erechtheum*, pp. 277-422, 647-650; A. H. Smith, *J.R.I.B.A.*, XXXIV, 1926-1927, pp. 134-137.

³¹³ *Erechtheum*, pp. 452-456.

³¹⁴ Picard, *L'acropole: le plateau supérieur*, p. 47; Dinsmoor, *Proc. Am. Phil. Soc.*, LXXX, 1939, p. 125 and *A.J.A.*, LI, 1947, pp. 111 note 14, 135 note 139.

³¹⁵ Cf. e.g. the column bases (Shoe, pl. LXVI,3,4).

³¹⁶ Even the number of men working on the Parthenon and the amount of money was reduced when the Propylaia was started (cf. Dinsmoor, *A.J.A.*, XVII, 1913, p. 79).

³¹⁷ The names of two architects are preserved on the building inscriptions of the Erechtheion, Philokles of Acharnai, for the year 409/8 B.C., and Archilochos of Agryle, for the year 408/7 B.C. (*Erechtheum*, pp. 286-287, 300, 378-379). These men, however, were not the designing architect, but held the position of supervising architect, which appears to have become a common position

to identify as Kallikrates, the man who seems to have designed the Ionic Temple on the Ilissos, the Temple of Athena Nike, and the Temple of the Athenians on Delos. All these buildings are similar in their prostyle plan, their tendency towards a square cella, and their numerous innovations such as windows constructed in the façades of temples and an almost unique use of piers, both free-standing and attached. The refinements used are similar. In all, with the possible exception of the Delos Temple (and possibly the Ilissos Temple whose refinements are not known) no horizontal curvature was used, but a strong emphasis was placed on inclinations inwards, sometimes so minute that they were barely perceptible, yet they all act in unison to give an almost pyramidal form to the buildings, making them monumental even though small in scale. The only two known examples of inclined Ionic columns are found in this group, in the Temple of Athena Nike and the Erechtheion. In other buildings, such as the Parthenon and the Propylaia, where the prostyle arrangement occurs, the antae were inclined forward, towards the columns. In this group, when a prostyle arrangement occurs, the antae and piers are either vertical or they incline inwards away from the columns. In all these buildings great care concerning the proportions of the individual parts in relationship to the overall size of the building is evident, and no two columns were given the same proportions since no two buildings were the same size. Yet a certain repetition of dimensions occasionally occurs, for example, in the column capitals and bases, and the anta capitals of the Ilissos Temple and the Temple of Athena Nike. A direct relationship of dimensions also occurs in the axial spacing of the columns in the North Porch of the Erechtheion which was twice that used in the Temple of Athena Nike, while the ratio of the lower diameters of the columns to their axial spacing is the same on the East Porch of the Erechtheion and the Ilissos Temple. The only known Athenian examples of a center intercolumniation being narrower than the side intercolumniation occur in this group, in the Ilissos Temple and the North Porch of the Erechtheion. Finally the mouldings were found to be similar. The Ionic buildings are notable for the variety of mouldings which are often bold in their innovations. The Ionic column bases and capitals were seen to form a closely related group which was inspired by the Asia Minor temples and differed from the earlier Attic tradition. These received their final form in the Erechtheion. The anta capitals on the Ionic buildings of this group are almost identical in their form and are unique to this group. The close relationship between the anta capital and the epikranitis and between the column and anta bases and the toichobate was first started in this group and appears in all its Ionic buildings. The epistyle crown of the Athena Nike Temple is closely related to those of the Ilissos Temple and the Erechtheion. These many similarities seem to lead to only one conclusion—the con-

towards the end of the fifth century and later (*ibid.*, p. 300; Waldstein, *The Argive Heraeum*, I, pp. 219-221; T. Homolle, *B.C.H.*, XIV, 1890, pp. 477-478; E. Fabricius, *Hermes*, XVII, 1882, p. 17).

clusion that Kallikrates was the architect of the Ilissos Temple, the Temple of Athena Nike, the Temple of the Athenians on Delos, and the Erechtheion. Such a conclusion would make Kallikrates the major designer of Ionic buildings in Athens and the man who was mainly responsible for the evolution of the Attic Ionic form of the second half of the fifth century B.C.

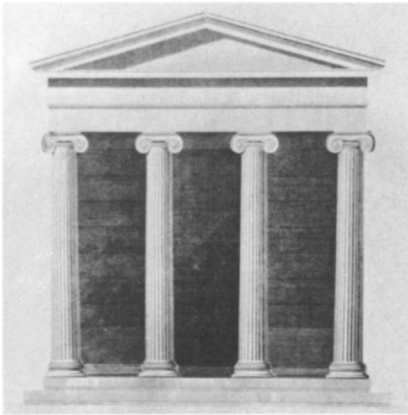
A TABLE OF MEASUREMENTS OF IONIC CAPITALS ³¹⁸

| | <i>Athena Nike Temple</i> | <i>Ilissos Temple</i> | <i>Propylaia</i> | |
|--|---------------------------|-----------------------|------------------|-------------------|
| Maximum length of the capital on front face: | 0.830 m. | 0.8445 m. | 1.660 m. | (= 2 x 0.830 m.) |
| Width of volute: | 0.264 m. | 0.2667 m. | 0.517 m. | (= 2 x 0.2585 m.) |
| Diameter of eye: | 0.058 m. | 0.0584 m. | 0.110 m. | (= 2 x 0.055 m.) |
| Height of abacus: | 0.04 m. | 0.0347 m. | 0.097 m. | (= 2 x 0.0465 m.) |
| Maximum height of volute cushion: | 0.137 m. | 0.138 m. | 0.293 m. | (= 2 x 0.1465 m.) |
| Height of egg and dart moulding: | 0.068 m. | 0.0699 m. | 0.125 m. | (= 2 x 0.0625 m.) |
| Length of abacus: | 0.58 m. | 0.6121 m. | — | |
| Length of bolster: | 0.495 m. | 0.5182 m. | 1.000 m. | (= 2 x 0.500 m.) |
| Width of raised edge on end of bolster: | 0.025 m. | 0.0203 m. | 0.035 m. | (= 2 x 0.0175 m.) |
| Width between bands on bolster: | 0.04 m. | 0.0415 m. | 0.065 m. | (= 2 x 0.0325 m.) |
| Thickness of center bands on bolster: | 0.021 m. | 0.0271 m. | 0.043 m. | (= 2 x 0.0215 m.) |
| Thickness of side bands on bolster: | 0.015 m. | 0.0205 m. | — | |
| Height of capital: | 0.267 m. | 0.254 m. | 0.533 m. | (= 2 x 0.2665 m.) |

IONE MYLONAS SHEAR

PRINCETON
NEW JERSEY

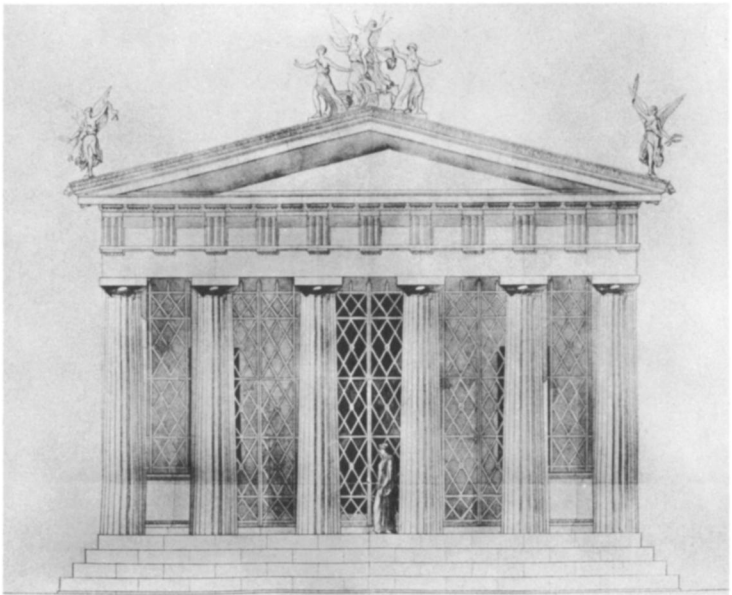
³¹⁸ The measurements of the capitals of the Athena Nike Temple were taken from Ross, pls. VII-IX, those of the Ilissos Temple from Stuart and Revett, chap. II, pls. VI-VII, those of the Propylaia from Bohn, pl. XII.



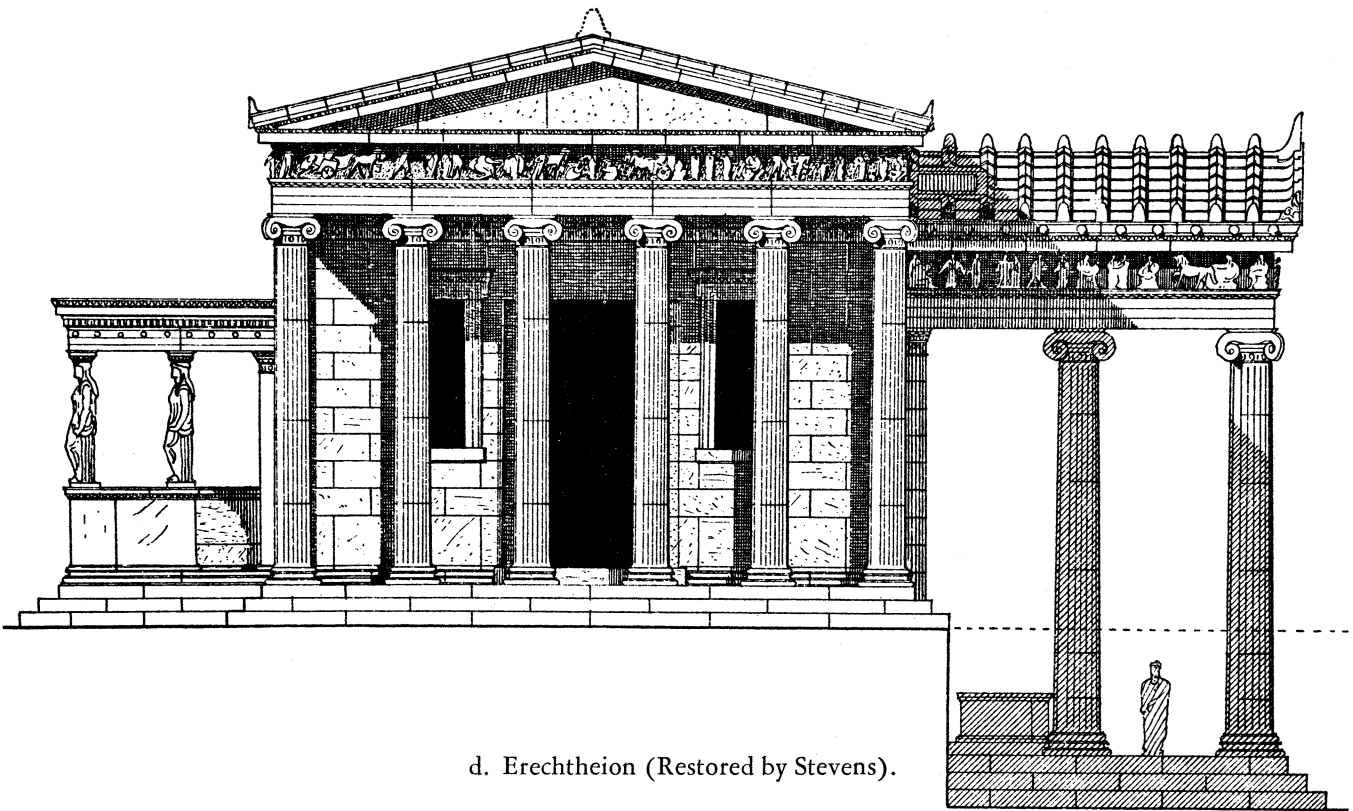
a. Ionic Temple on the Ilissos (Restored by Stuart and Revett).



b. Temple of Athena Nike (Restored by Hansen).

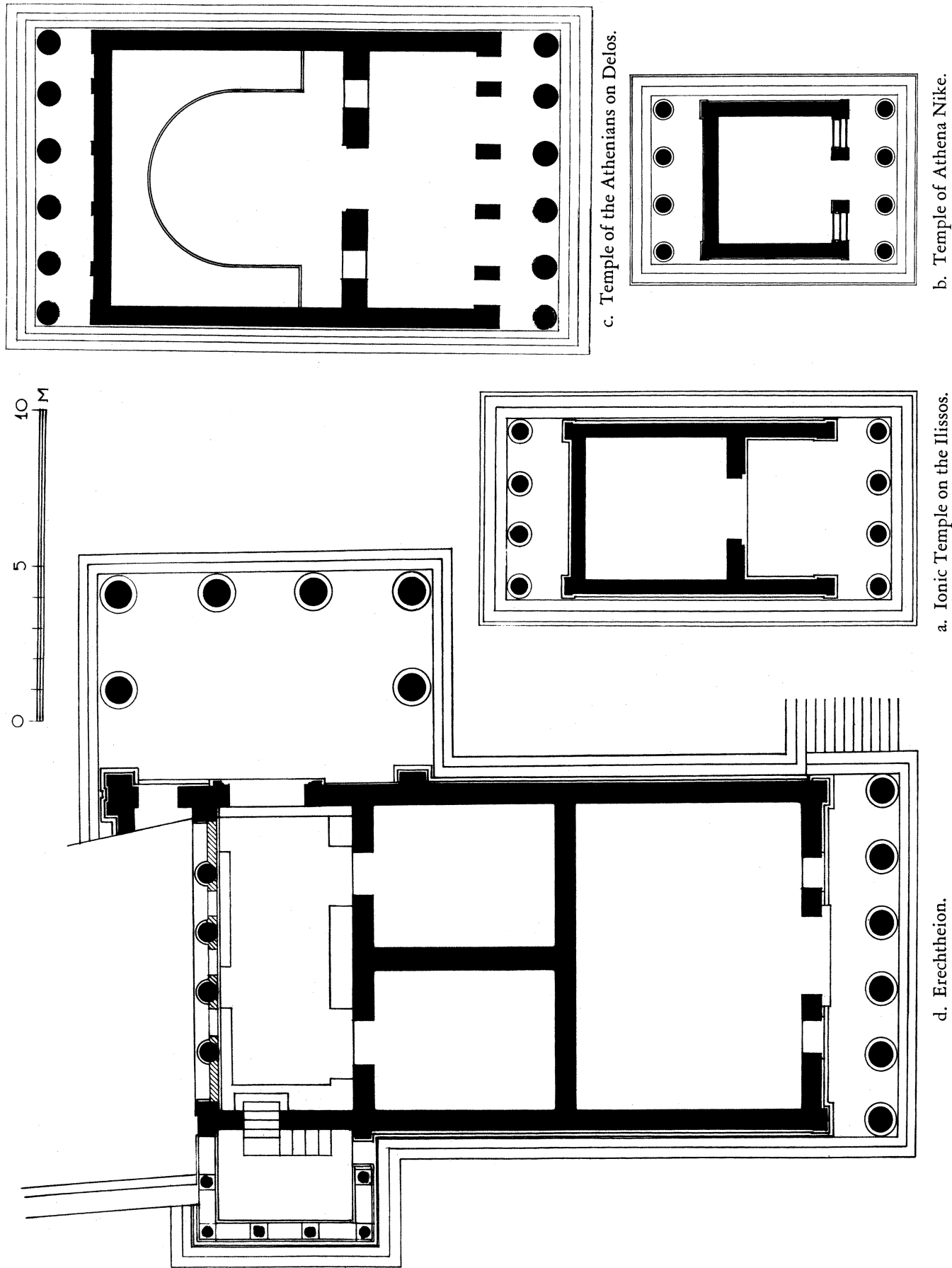


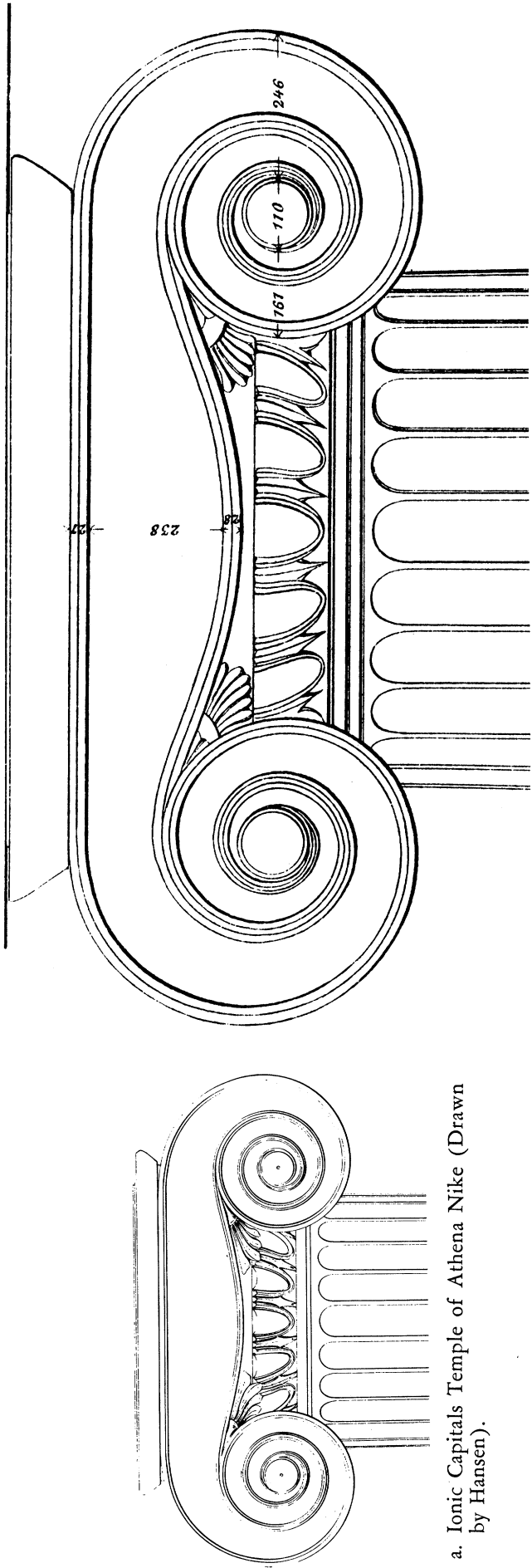
c. Temple of the Athenians on Delos (Restored by Courby).



d. Erechtheion (Restored by Stevens).

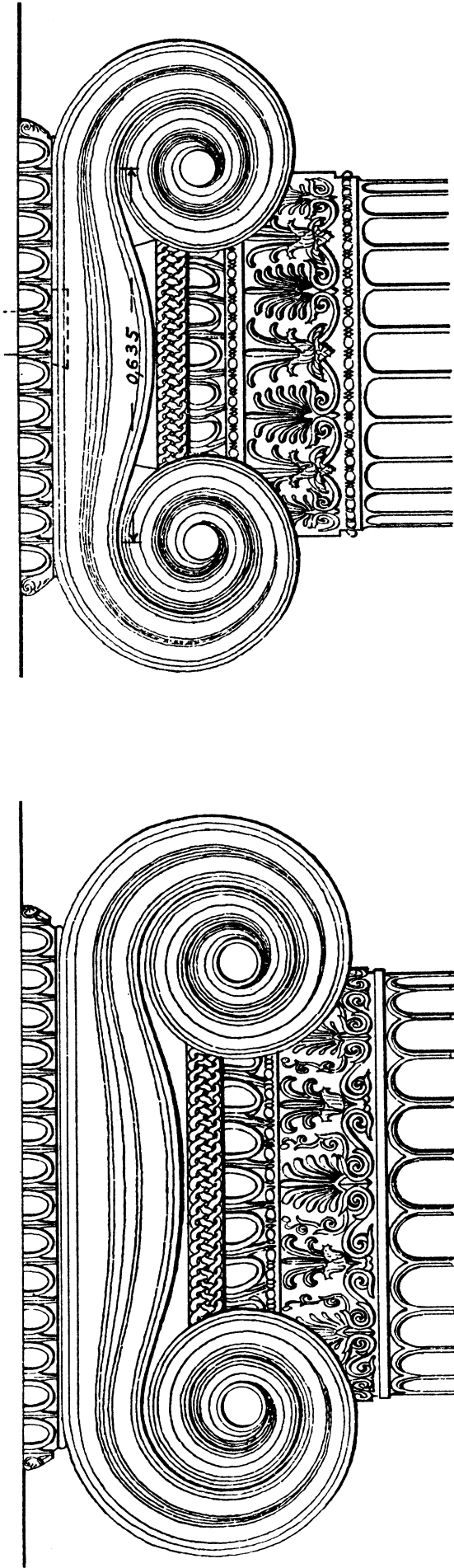
IONE MYLONAS SHEAR: KALLIKRATES



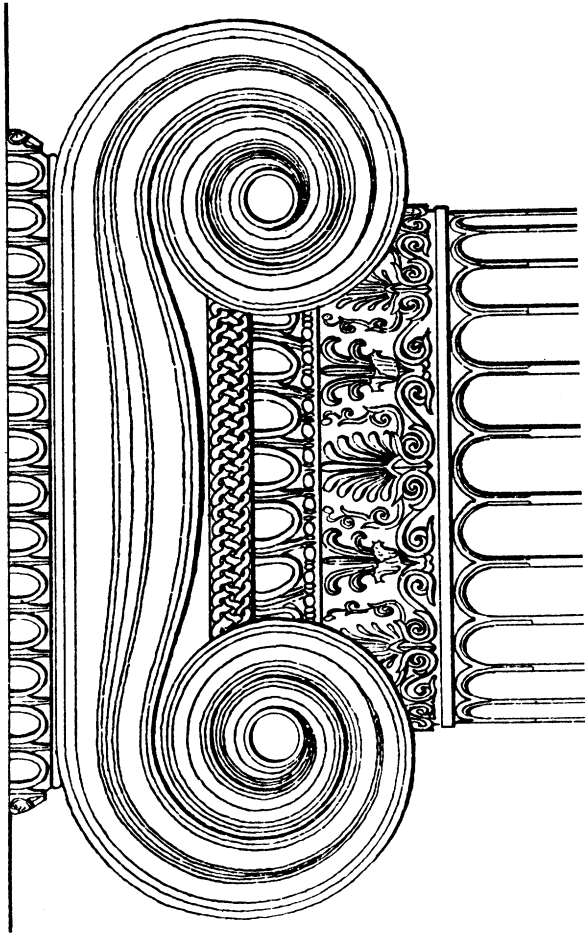


a. Ionic Capitals Temple of Athena Nike (Drawn by Hansen).

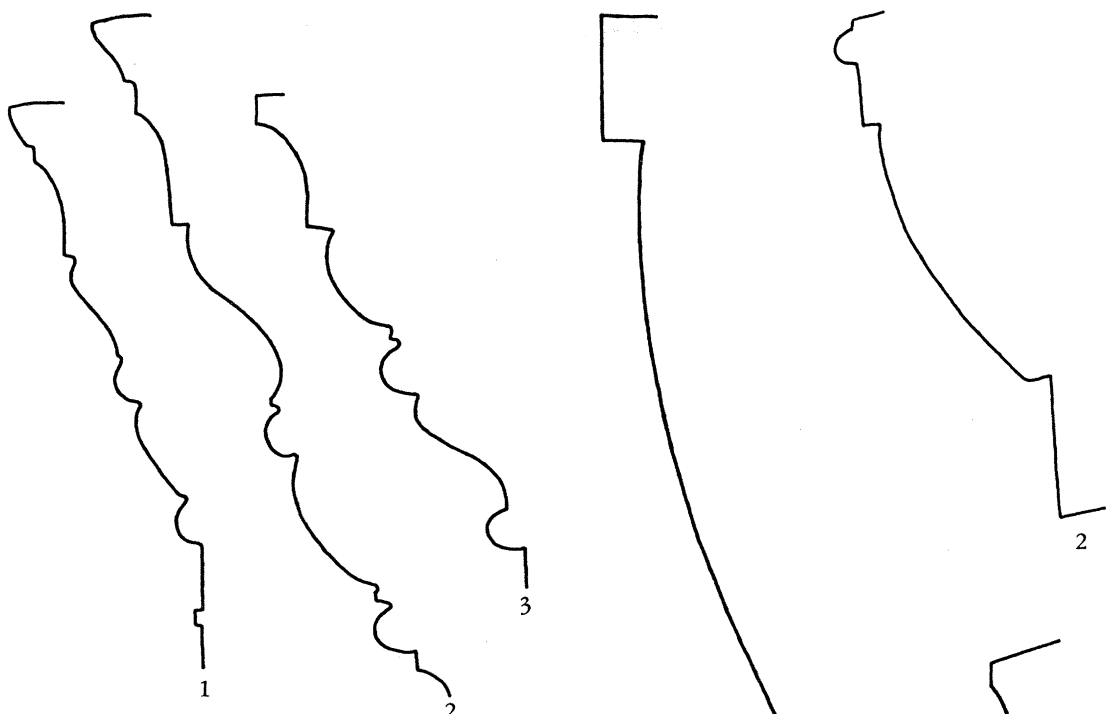
b. Propylaia (Drawn by Bohn).



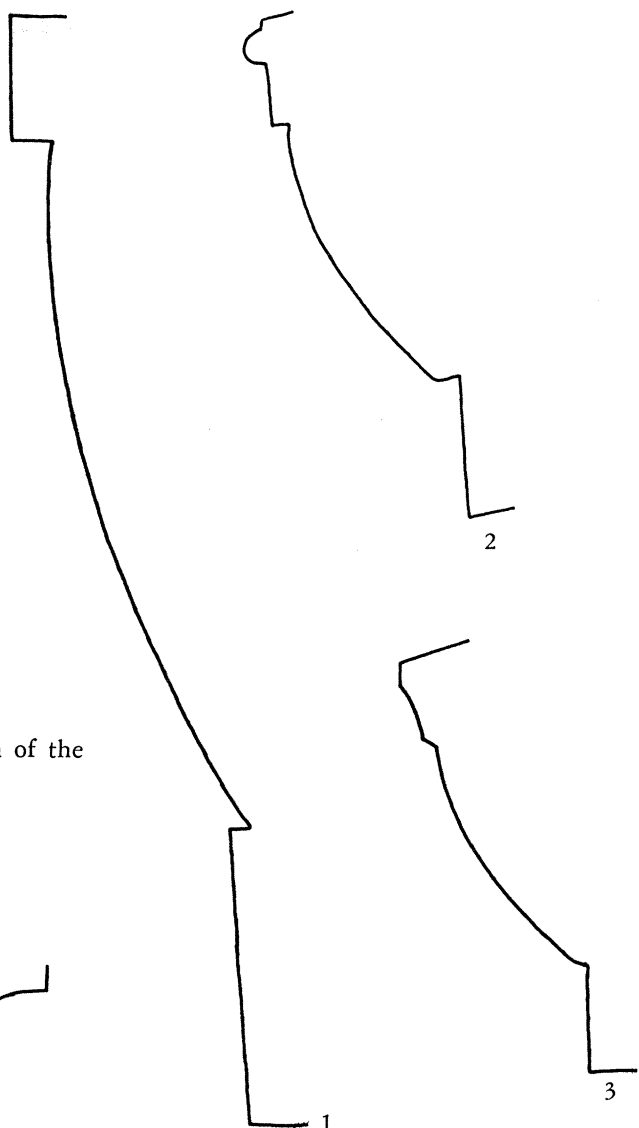
d. East Porch of Erechtheion (Drawn by Stevens).



c. North Porch of Erechtheion (Drawn by Stevens).



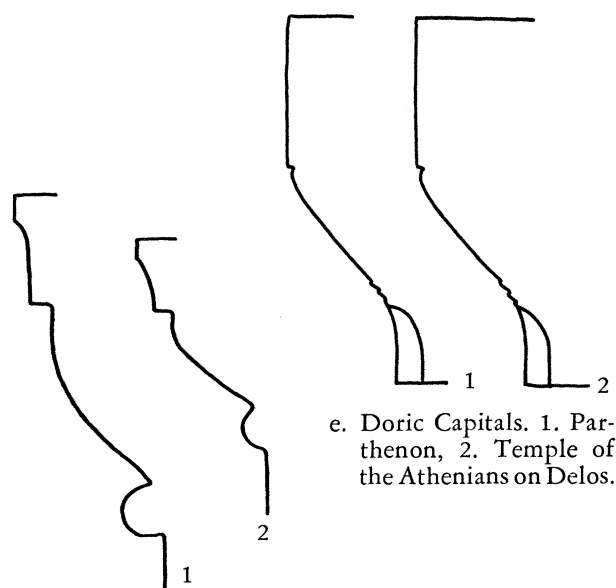
a. Anta Capitals. 1. Temple of Athena Nike, 2. East Porch of the Erechtheion, 3. Temple of Athena Alea at Tegea.



d. Simas. 1. Parthenon, 2. Ilissos Temple, 3. Temple of Athena Nike.

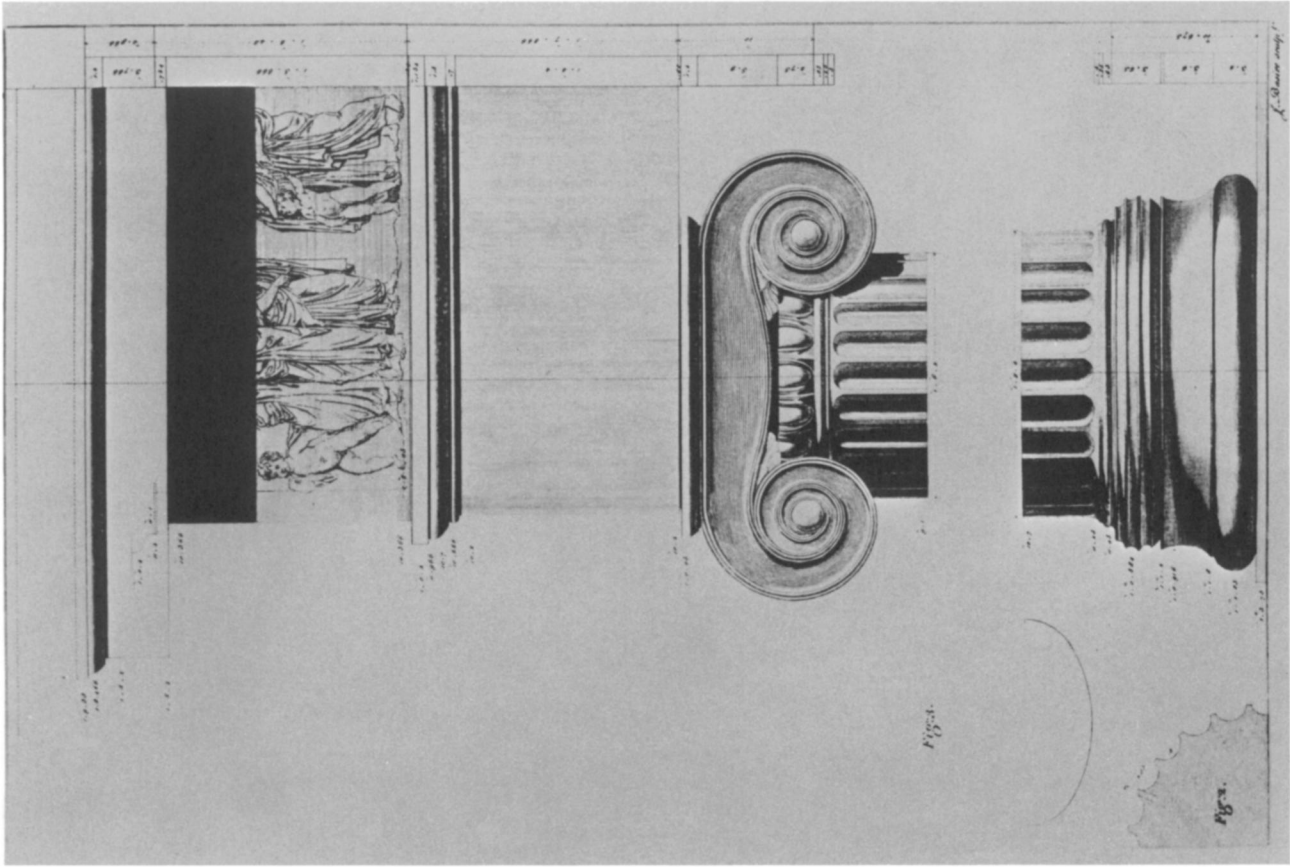


b. Column Bases. 1. Temple of Athena Nike, 2. Propylaia, 3, 4. East and North Porches of the Erechtheion.

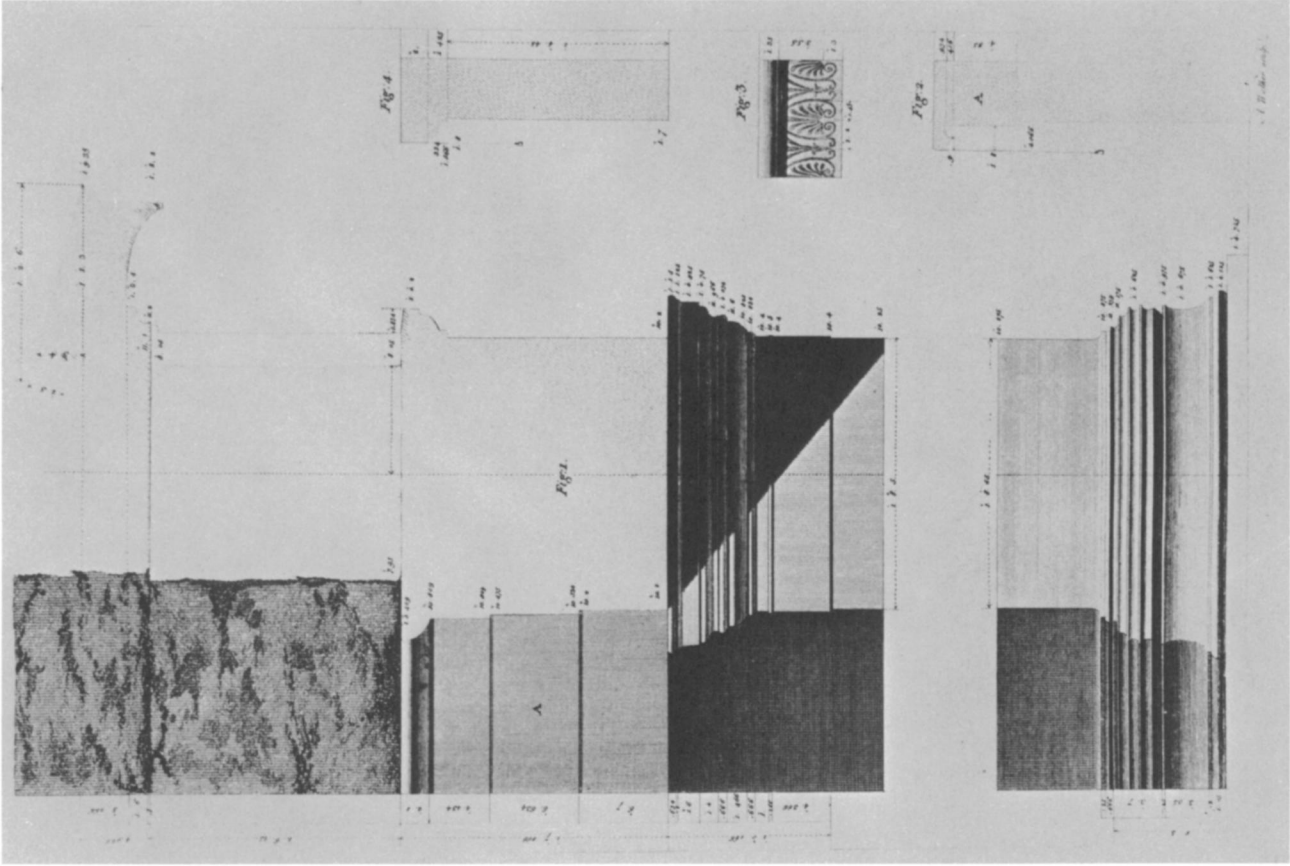


e. Doric Capitals. 1. Parthenon, 2. Temple of the Athenians on Delos.

c. Epistyle Crowns. 1. Erechtheion, 2. Temple of Athena Nike.

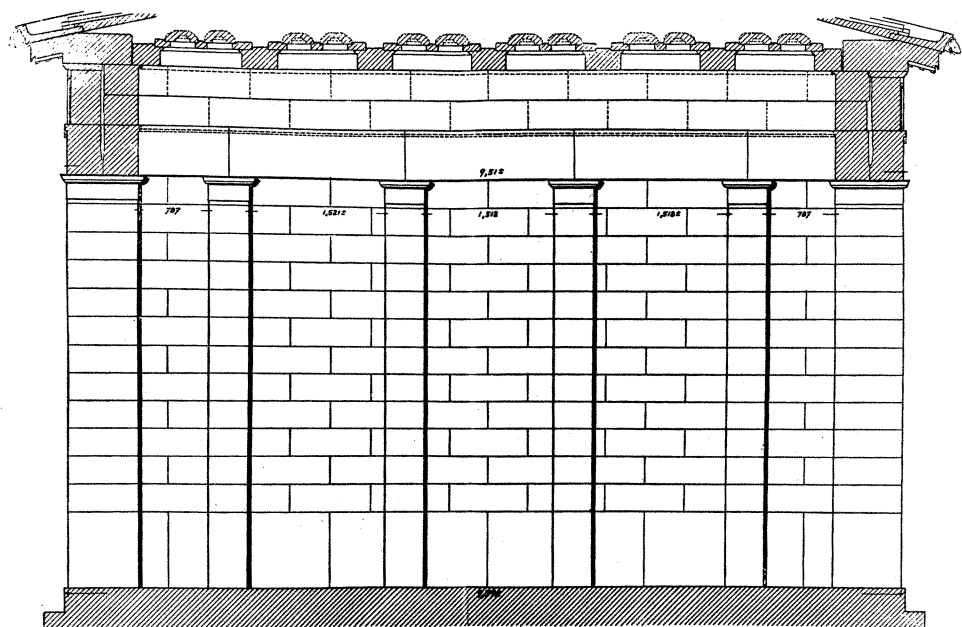


a. Ionic Column of Ilissos Temple (Restored by Stuart and Revett).

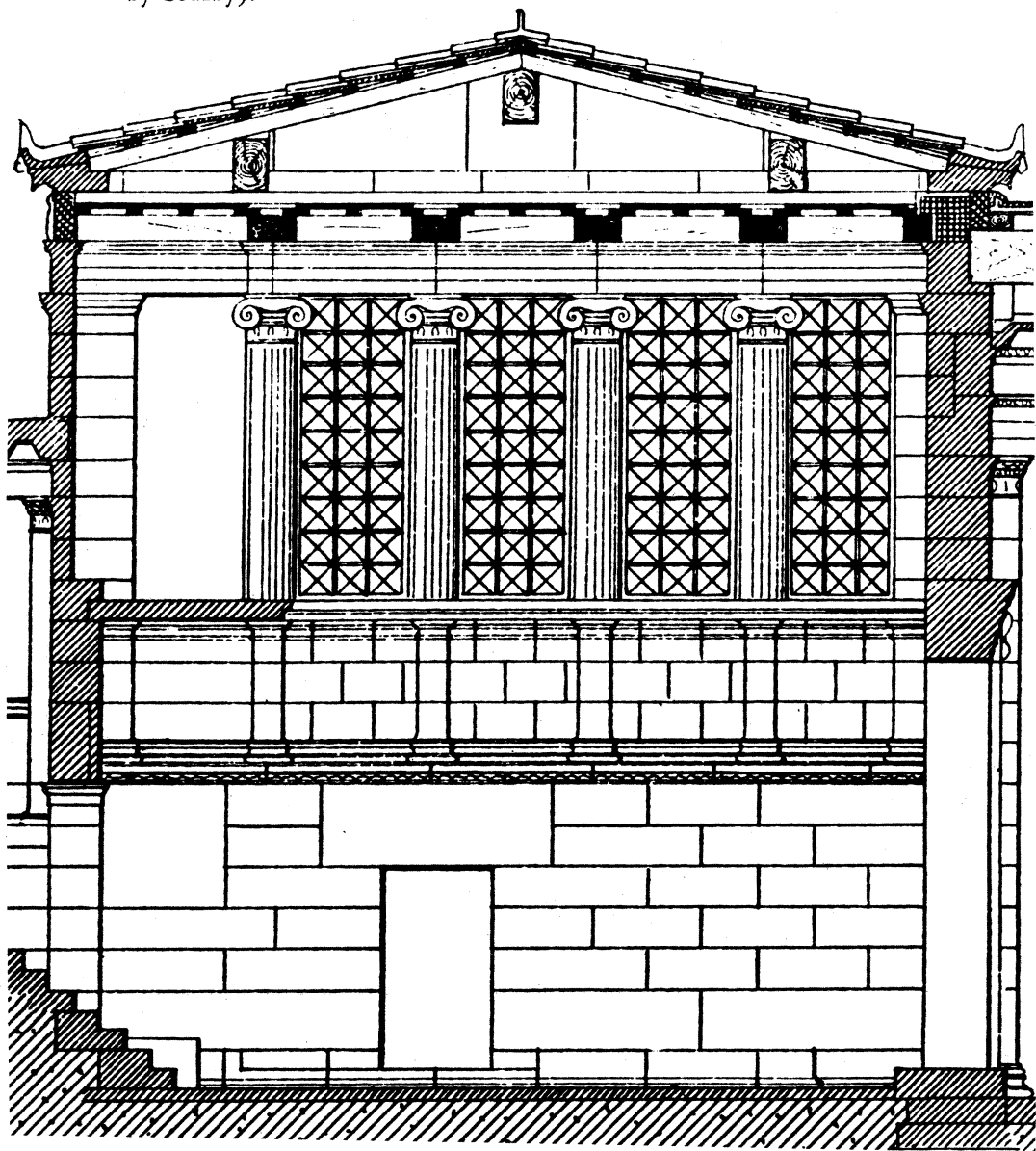


b. Anta Capital of Ilissos Temple (Restored by Stuart and Revett).

IONE MYLONAS SHEAR: KALLIKRATES



a. Exterior of East Cella Wall of Temple of the Athenians on Delos (Restored by Courby).



b. Interior of West Wall of Erechtheion (Restored by Stevens).