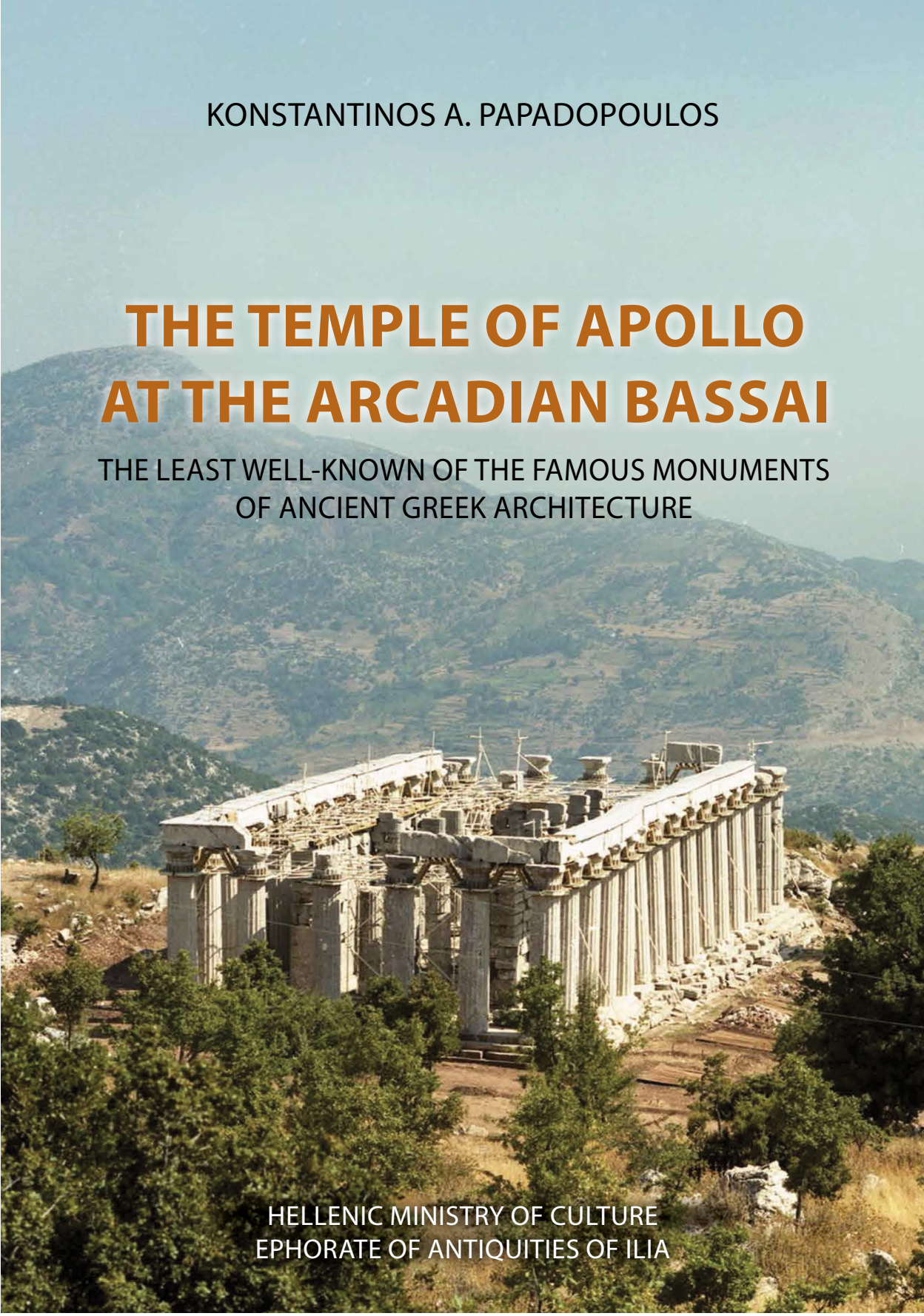
KONSTANTINOS A. PAPADOPOULOS

THE TEMPLE OF APOLLO AT THE ARCADIAN BASSAI

THE LEAST WELL-KNOWN OF THE FAMOUS MONUMENTS OF ANCIENT GREEK ARCHITECTURE



HELLENIC MINISTRY OF CULTURE
EPHORATE OF ANTIQUITIES OF ILIA

THE TEMPLE OF APOLLO AT THE ARCADIAN BASSAI

KONSTANTINOS A. PAPADOPOULOS
Civil Engineer, PhD, MSc

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Translated by Rosemary Tzanaki
Edited by Rosemary Jeffreys and Sherman Carroll

HELLENIC MINISTRY OF CULTURE
EPHORATE OF ANTIQUITIES OF ILIA

PYRGOS 2023

Unless otherwise stated, the drawings and photographs in this book come from the archive of the Committee for the Preservation of the Temple of Apollo Epikourios, which, since October 2016, has been part of the archive of the Ephorate of Antiquities of Ilia. The author was granted permission by the Committee to publish this archival material according to the decision taken at Committee Session 197/24.11.2015.

On the cover and pages 4–5: Photographs of the temple of Apollo at Bassai from the northwest, in 1986 and 1976 respectively.

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To Vasiliki and our children, Ektoras and Danai

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FOREWORD BY THE DIRECTOR OF THE EPHORATE OF ANTIQUITIES OF ILIA

The Temple of Apollo Epikourios is one of the most important monuments of Classical architecture, due to the preservation of a particularly large amount of the ancient building. In recognition of its uniqueness and the values it represents, it was the first monument in Greece to be listed as a UNESCO World Heritage Site, in 1986.

As early as the turn of the 20th century, the Archaeological Society at Athens carried out restoration work on the temple, followed by conservation work undertaken by the Directorate of Restoration in 1965–66. From 1975 to 2015, the Committee for the Preservation of the Temple of Apollo Epikourios had the responsibility for the conservation and promotion of the monument. After the work of the Multi-Disciplinary Committee was completed in 2016, the task of the protection of the Bassai monument was continued by the Ephorate of Antiquities of Ilia in collaboration with the central Directorates of the Hellenic Ministry of Culture and Sports.

More specifically, in order to correct the geometrical deformations of the building and reinforce its defence mechanisms against natural phenomena, an extensive conservation intervention was launched in 2001, focusing on the north part of the monument. By December 2015, the north pteron* and the floor within it had been restored. The inclusion by the Ephorate of Antiquities of Ilia of the 'Restoration and Promotion of the Temple of Apollo Epikourios at Bassai – Phase C' in the Operational Programme 'Competitiveness, Entrepreneurship and Innovation' in 2019 signalled the resumption of the restoration work on the monument, this time on the northern-most ends of the long sides.

This volume is the fruit of Dr. Konstantinos Papadopoulos' work on the study and restoration of the temple since 2000. He has been in charge of the successive restoration projects since 2007. The publication of this book, in the context of the work implemented by the Ephorate of Antiquities of Ilia, meets the need for an informative and thorough presentation of the

temple, addressed to both the visitors at the site and the education and academic communities.

The lively style of the text, combined with its scientific clarity and accuracy, will certainly help even the non-specialist to acquire a deeper insight into the history, architectural form and distinctive features of this unique World Cultural Heritage monument.

Ancient Olympia, November 2021
Dr. Erofili-Iris Kolia
Archaeologist

AUTHOR'S PREFACE AND ACKNOWLEDGEMENTS

This book was written between the spring of 2018 and the autumn of 2019, in the little free time afforded me by my family and professional obligations. However, its creation was motivated by the knowledge and experiences I gained from participating in the first major project of the modern restoration work on the ancient Temple of Apollo at Bassai in Phigaleia, implemented between 2001 and 2015. This project resulted in the restoration of the north pteron* of the monument and was undertaken by various bodies of the Hellenic Ministry of Culture and Sports. More specifically, it was carried out under the supervision of the Committee for the Preservation of the Temple of Apollo Epikourios, and implemented by the Credit Management Fund for the Execution of Archaeological Projects until June 2013, and subsequently by the Directorate of Prehistoric and Classical Antiquities.

Consequently, I would first like to express my warmest thanks to all those who assisted me during my participation in the project for the restoration of the Bassai monument. Although, due to the length of my employment there, it is impossible to mention them all by name, I must pay tribute to my closest longtime collaborators: stonemasons Fotios Vassilopoulos, Georgios Kokkinis, Christos Lolos, Panagiotis Tzavelas, Konstantinos Panagopoulos, Konstantinos Mikelis, Georgios Striggas, Michalis Michalakopoulos, Georgios Giannopoulos and Andreas Tzanetopoulos, skilled worker Maria Papapanagiotou, and the head guard of the archaeological site for many years, Konstantinos Papapanagiotou†. I also owe special thanks to the people whom I met through the project and who have honoured me with acts of genuine friendship: Angeliki Papadimitriou, Rosemary Jeffreys, Alick McDonnell McLean, Dimitrios Bistis and Angelos Dendrinos†. Particular mention should also be made of the Chairs of the Multi-Disciplinary Committee over the fifteen years of implementation of the project, archaeologist Dr. Yannis Tzedakis, archaeologist Dr. Alexandros Mantis and civil

engineer Dr. Dimitrios Bairaktaris, thanking them for their constructive criticism of my work and the trust they showed in me throughout. Special thanks, too, to the members of the Committee who approved my request to study and publish material from the valuable archive of the Committee: Chair Dimitrios Bairaktaris, chemical engineer Paraskevi Papakonstantinou-Zioti, architect Dr. Anastasios Tanoulas and archaeologist Kalliope Papangeli.

I am also grateful to archaeologist Georgia Hatzi, the former Director of the Ephorate of Antiquities of Ilia, civil engineer Dr Kostas Zambas and archaeologist Zaharo Leventouri, for providing bibliographical information on the ancient temple at Perivolia. Special thanks are also due to the current Director of the Ephorate of Antiquities of Ilia, archaeologist Dr. Erofili-Iris Kolia, both for renewing my permission to publish archival material of the Committee and for her decision for this book to be published within the framework of the ongoing phase of the restoration project of the monument at Bassai, which has been implemented by the Ephorate of Antiquities of Ilia since 2019.

Finally, I would like to express my gratitude to my wife, Vassiliki Savvatianou, the architect of the Bassai monument restoration project for many years (2006, 2011–2015, 2019 ongoing), not only for our close collaboration and our fruitful and constructive discussions on the subject, but above all for her multifaceted practical and moral support.

Pyrgos, August 2021
Dr. Konstantinos A. Papadopoulos
Civil Engineer

AUTHOR'S PREFACE FOR THE ENGLISH EDITION

In June 2022, a couple visiting the archaeological site of Apollo Epikourios at Bassai, seeking information about the fate of the marble Corinthian capital of the monument, had a long and lively conversation with the long-time architect of the restoration project, Mrs Vasiliki Savvatianou. The couple were Dr. Sherman Carroll, retired founder-publisher of Readers International, specialising in world literature in translation with a human rights perspective; and his wife Dr. Marie-Claude Gervais, a Canadian social psychologist living in the UK.

At first, there was nothing unusual about that conversation, as it is common for the visitors at Bassai to pose questions about the monument or about the restoration works to the members of staff of the restoration project who are working on site. However, as the conversation proceeded (according to Sherman's later description) Vasiliki's enthusiasm about the ancient temple on the one hand, and about the book on the monument which was then very recently published on the other, was so great that Dr. Carroll offered to help the book to reach an international readership, by arranging for it to be translated into English.

In fact, Dr. Carroll's undertaking was so effective that the translation was completed in less than one year. This was possible due to the work of Dr. Rosemary Tzanaki, an experienced translator of books with art historical content, who completed the task in a short period of time, and to the valuable contributions of Dr. Rosemary Jeffreys, lawyer and archaeologist, and a long-time friend of the author, who along with Dr. Carroll, edited the English text.

Obviously, the translation of the book facilitated the publication in hand, which was achieved (like the Greek edition of the book) within the framework of the ongoing phase of the restoration of the Temple of Apollo Epikourios, after a decision by Dr. Erofili-Iris Kolia, Director of the Ephorate of Antiquities of Ilia, the body of the Hellenic Ministry of Culture that is implementing the project.

I am grateful to all the aforementioned, for their actions that led to the current publication, and especially to Dr. Carroll, for his noble initiative and generous actions, and to Dr. Jeffreys, for her selfless and enthusiastic participation in the endeavour.

Ancient Olympia, September 2023
K.A.P.

NOTE FOR READERS

Due to its subject matter, this book contains many technical or specialist terms. Several of these are explained on their first appearance in the text, while a glossary is provided in the Appendix. Terms included in the glossary are marked with an asterisk on their first appearance in each chapter. Readers unfamiliar with the basic terminology of ancient Greek architecture are advised to read the Appendix before moving on to the rest of the book.

Fig. 1: *View of Bassai from the northwest, 1986.*

Fig. 2:
Relief map of the west and central Peloponnese. The blue circle marks the location of Bassai.

1 INTRODUCTION

In a mountainous region of the central-western Peloponnese, near the eastern end of the border between the modern prefectures of Ilia and Messenia, still named Bassai as in antiquity, stands one of the best-preserved temples of the ancient Greeks (Figs 1, 2). The temple was built towards the end of the 5th century BCE and was dedicated to the god Apollo.

According to Pausanias, the famous traveller of Late Antiquity (late 2nd century CE), Apollo was worshipped at Bassai with the epithet Epikourios (the Helper). Another epithet of the god was Bassitas, meaning 'of Bassai', as an ancient inscription on a bronze plaque found nearby reveals. Pausanias also informs us that the site of Bassai lay at the southwest end of the land of the ancient Arcadians,[1] djacent to the northeast part of ancient Triphylia, and that the religious sanctuary (place of worship) of Apollo there was governed by the neighbouring city-state of Phigaleia.

This well-preserved monument is one of the most important buildings of antiquity, harmoniously combining (for the first time, as far as we know today) all three main orders of ancient Greek architecture. The peristyle* is in the Doric order, while inside the monument five pairs of Ionic columns* and a single Corinthian column were surmounted by an epistyle* and an Ionic frieze*. Furthermore, the temple presents many other unusual features, the most obvious being its elongated plan in the Archaic style, its north-south orientation and the existence of a side door (on the east) in the adyton*.

With good reason, therefore, distinguished scholars have called the monument of Bassai one of the most interesting temples of antiquity[2] and one of the most im-

portant buildings of the Western World.[3] Accordingly, in 1986, the Temple of Apollo at Bassai was the first monument in Greece listed by UNESCO as a World Heritage Site.

It is also worth noting that the beauty and architectural merits of the monument were also recognised in ancient times. This is evident not only from Pausanias' comment that the temple was the most beautiful in the Peloponnese, second only to that of Athena Alea in Tegea, but above all from the fact that various architectural features clearly inspired by the Temple of Apollo at Bassai are seen in numerous later major buildings (such as the Tholos of Epidaurus).

The most obvious case is that of the temple in Tegea praised by Pausanias as the most beautiful in the Peloponnese; there, even if the famed architect and sculptor Skopas did not copy the distinctive plan of the temple of Bassai (Fig. 3), he was certainly greatly inspired by it.

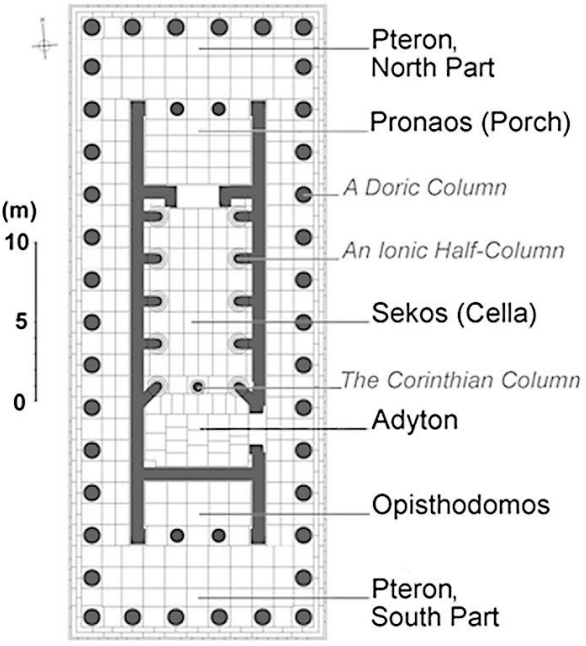


Fig. 3: *Plan of the Temple of Apollo at Bassai, noting spaces and distinctive architectural features.*

It is thus no surprise that a great many people (scholars, scientists, artists, etc.) in the modern era have studied the Temple of Apollo at Bassai, dedicating to it everything from brief mentions and a few drawings[4] to extensive articles[5] and monographs.[6] However, despite the many studies, basic questions about this unique monument still remain unanswered or partially answered.

We do not know exactly when the temple was built, nor is it certain whether Iktinos, whom Pausanias names as the architect, actually designed the building. The changes

to the original plan that were made during its construction are unclear. The form of the cult statue and its location within the temple are unknown. The arrangement of the 23 relief slabs of the Ionic frieze is uncertain, nor can we be absolutely sure that the Corinthian capital* was not flanked by another two (almost complete) Corinthian capitals. Finally, there is no known reference to the temple for 16 centuries after Pausanias and thus no written history until 1765.

Fig. 4: *The inscription on a bronze plaque referring to the deities worshipped in the wider area of Bassai.*

Various factors have contributed to the preservation of the air of mystery surrounding the monument. The most important is that the finds from the excavations carried out at Bassai to date, although not few, cannot be called revealing (with the exception, of course, of the bronze plaque mentioned above, which bears an inscription revealing the names of the deities worshipped in the area, Fig. 4). Another issue is that the severe weathering of the limestone building material (due to its nature and the prevailing bad weather conditions in the winter months) makes it very difficult when one studies the building to draw secure conclusions about it. Moreover, due to its remote and inaccessible location, most researchers have spent relatively limited time on fieldwork.

Recently, those of us who participated in the restoration work on the Temple of Bassai had the advantage of long-term involvement with the monument on the one hand and, on the other, the opportunity to study numerous stone-blocks that were dismantled from the ancient

building for the first time. Some of these blocks were almost completely un-weathered, as they had remained covered by other blocks since the monument's construction in antiquity. This meant that much new information about the Temple of Bassai was revealed during the recent restoration of its north pteron*.

More specifically:

(i) Features were revealed under the foundation of the north façade of the monument that confirm the existence of earlier structures on the same site.

(ii) Features highlighting the detailed (original) design were discovered and identified.

(iii) Traces revealing the high quality of the masonry work during its construction were found.

(iv) Features emerged that have been interpreted as strong evidence of structural curvature in the pronaos*.

(v) A large stone block was identified as a fragment of an oversized ancient pedestal. Its original location close to the monument was also determined (in front of the NE corner), indicating that it may have formed the base of the bronze statue of Apollo Epikourios that Pausanias reports seeing in Megalopolis, transferred there from Bassai.

(vi) Traces were found of an extensive structural intervention on the monument in ancient times.

(vii) The study of the uneven traces of weathering on the upper surfaces of the column capitals and the epistyle blocks on the north façade led to the first documented estimate of when the temple was destroyed by looters (c. 800 CE).

(viii) The study of the same traces of weathering also revealed that three epistyle blocks on the north façade had fallen sometime in the 13th or 14th century CE; if this was due to an earthquake, that was the only tremor to cause significant damage to the monument throughout the course of its long history.

(ix) Finally, the combined data based on the aforementioned traces of weathering clarified which epistyle blocks were deliberately knocked off the north façade of the monument in 1812 and why, and revealed that they

brought down with them a large fragment of a column capital, which probably ended up in the British Museum together with the sculptural decoration brought to light at the time.

All these new findings have been presented sporadically or piecemeal in various scientific articles[7] and, above all, in the study of the continuation of the restoration work on the long sides of the monument, published in book form by the Ministry of Culture and Sports in 2015.[8] Their consolidated presentation, together with what is in my view the most important information from previous studies of the monument at Bassai, was the main reason for writing this book.

For the sake of completeness, a brief overview of the geographical and historical context of the ancient sanctuary at Bassai is also provided. I was given the opportunity to present in writing for the first-time various views and theories that I had expounded on occasion to the groups of students who visited Bassai with their teachers,[9] usually on an annual basis. These theories cover not only most of the 'open' questions concerning the monument at Bassai, but also various archaeological issues that have a geographical or other bearing on it.[10]

Consequently, this book is addressed not only to those who wish to 'get to know' (to the extent this is possible) the Temple of Apollo at Bassai, as a short monograph, but also to visitors to the Bassai archaeological site and the surrounding area, as an archaeological guide. I have therefore attempted to ensure that any new (or not widely known) theory is documented, while most of the issues treated in this book are presented in brief.

For the reader's convenience, each chapter is largely self-contained, meaning that one can focus on any chapter without necessarily having read the others. However, the chapters follow the chronological order of the main historical events (presumed or documented) affecting the ancient sanctuary of Bassai and its resplendent monument.

I note in closing this introduction that the new findings

(as is usually the case in scientific research) raised more questions than they answered.[11] Thus, they have done little to lift the veil of mystery that shrouds the temple of Apollo at Bassai, leading to the subtitle of this book. If that veil is to be lifted, we must await future studies and, above all, the progress of the restoration work on the monument, which will undoubtedly lead to further revelations. Until that time, I hope that readers of this book will find that its contents to an extent negate its subtitle.

NOTES

1. The land of the Arcadians, as described by Pausanias in the eighth book of his ten-volume Description of Greece, occupied a series of plains and uplands in the central Peloponnese, surrounded by a rough circle of high mountains. To the north-northeast rise Mt Kyllini/Ziria and Chelmos/Aroania, extending to the River Krathi and Mt Dourdouvana/Penteleia, which form the border with Achaia. To the east lies the Argolid-Arcadian range (Mt Lyrkeio–Mt Artemisio–Mt Chtenias), running from Kyllini to Partheni. To the south, the northern foothills of Mt Parnon and Taygetos penetrate the basin of Megalopolis, separating it from Laconia and Messenia. On the western borders of Arcadia, the northern spurs of Mt Taygetos continue into the Triphylian mountains: Tetrazi/Nomia, Lykaion and Minthi. Finally, to the west-northwest, Foloi, Mt Lambeia with the peak of Kalliphoni forming its eastern end, and the Erymanthos/Olonos massif completing the mountainous 'outline', with a large gap on the west: the valley of the Alpheios.

2. Dinsmoor 1950,148. The quote is as follows: '... this architect (Ictinus)... designed the temple of Apollo at Bassae, near Phigalia, a work of the greatest interest...'

3. Cooper 1996, 80.

4. Dodwell 1819, 1821, Donaldson 1830, Penrose 1888 and others.

5. Kavvadias 1905, Romaios 1914, 1933, Dinsmoor 1932–33, 1939, 1943, Roux 1961, Petronotis 1987 and others.

6. Von Stackelberg 1826, Cockerell 1860, Pannuti 1971, Hofkes-Brukker and Mallwitz 1975, Roux 1976, Svolopoulos 1995, Cooper 1996 and others. One of the foremost experts on ancient Greek architecture, William Bell Dinsmoor, was also preparing a monograph for the Bassai temple, but he didn't complete it. After he passed away, his son, W.B.

Dinsmoor Jr., gave the material to Frederick A. Cooper, who refers to it extensively in his own monograph (1996) and devotes a few pages to describing it (pp. 31–35). Unfortunately, this material has not been fully published to date. Not only could other students of the monument have drawn on it, but it would probably have further highlighted (beyond his articles) the eminent scholar's fondness for the monument at Bassai.

7. Papadopoulos 2006, Papadopoulos 2009b, Papadopoulos 2010, Papadopoulos 2012, Papadopoulos and Savvatianou 2014, Papadopoulos and Vintzileou 2014.

8. Papadopoulos and Savvatianou 2015.

9. From Syracuse University in Florence, the British School at Athens, Dartmouth College and the Georgia Institute of Technology School of Architecture.

10. Such as the possible existence of an Archaic temple on the hilltop near the modern village of Andritsaina (p. 36) or the theory that the ancient temple found near the modern village of Perivolia in Phigaleia was dedicated to Asklepios and was surrounded by bathing installations (p. 37).

11. For example, who carried out the extensive structural intervention to the monument in antiquity and when? If the bronze statue of Apollo actually stood on the pedestal in front of the northeast corner, what other statues were set on the pedestal, and what other purpose did the pedestal serve, being unusually long?

*Fig. **5:** Bassai from the northwest (1933) and the view to the southeast.*


Sanctuary of Zeus Ithomatas
(Acropolis of Ithomi)
Messenian Gulf

2 GEOGRAPHICAL CONTEXT

The Temple of Apollo Epikourios or Bassitas is built on the south slope of a mountain that was named Kotilion in antiquity (Figs 1, 5). This mountain, in the central-western Peloponnese, is part of the Minthi massif (Fig. 2). Bassai, the site of the monument, lies approximately 1130 m above sea level, 14 km by provincial road from Andritsaina in Ilia and 5 km from the village of Sklirou in Messenia.

The ancient place name reveals, as is often the case, the basic information about the area: bassa or bessa is a Doric word meaning a wooded combe or glen.[12] The ancient Greeks called wooded levels in mountainous areas bassai in the plural.

In the modern era, extensive logging combined with sheep and goat farming denuded Bassai of its dense vegetation, probably for quite a long period of time (Fig. 5).[13] Fortunately, however, vegetation has been gradually returning in recent decades (Fig. 1), partly due to the rules for the protection of the archaeological site.

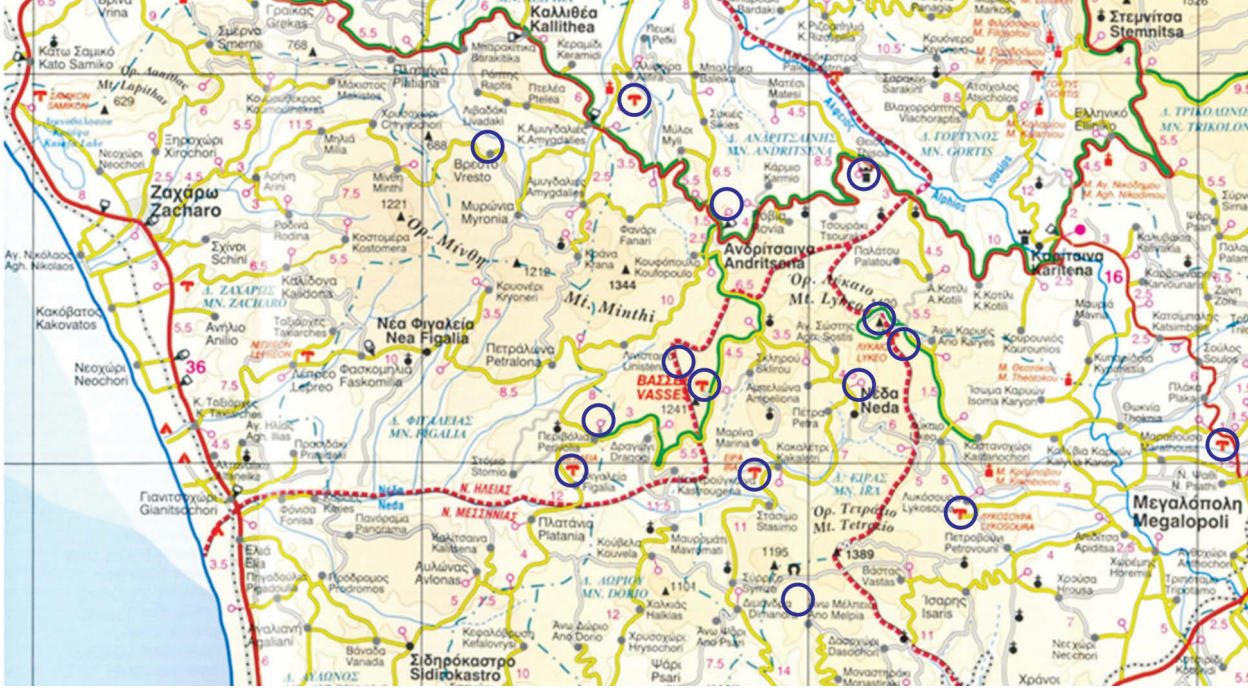
The site of Bassai has other advantages besides those indicated by its name. It is quite protected from the icy northerlies, it provides a sweeping view from northeast to west (including a view of the sea in two directions, Figs 5, 6) and, most importantly, it has two springs nearby, which are still used by local shepherds to water their flocks. The first spring lies slightly higher up than the monument, near the path leading to the top of Mt Kotilion, while the second, known as Pausanias' Spring because it is mentioned by the traveller, is a little lower down, on the ancient road leading to Phigaleia.

Fig. 6: *View from Bassai over the plain and gulf of Kyparissia.*

These advantages of Bassai are not obvious to modern visitors. Instead, those visiting for the first time have the impression that this is a rather inaccessible and particularly isolated place, partly due to its altitude and partly because it is far from the large modern urban centres of the Peloponnese. Very often the first questions asked by visitors to the Bassai archaeological site are how and why was such an important monument built in such a desolate location. I attempt to answer these questions in the Epilogue, following the presentation of the monument and its history.

It should, however, be noted straight away that in antiquity the wider region of Bassai was not desolate. On the contrary, it was relatively densely inhabited. From the end of the Archaic period, it lay within an extensive network of city-states and semi-urban or isolated sanctuaries (Fig. 7). This network probably developed gradually, as the result of the alliance between the local Arcadian populations and incomers from Messenia who, over the course of the Messenian Wars (8th–5th century BCE), fled north to escape the successive Spartan campaigns of conquest.

Clearly, one of the main aims of the populations of this



network was (besides prosperity), the creation of a cohesive defence mechanism against external threats. It is no coincidence that the city-states of the area, and also its isolated sanctuaries, were located on or around peaks rising above the main mountain passes into southwest Arcadia. Most of these places were also very close together (Fig. 7), while many were in direct line of sight of each other (Figs 5, 8) and could thus communicate directly.

One of the most characteristic examples, on a high hilltop at the southern foot of Mt Tetrazi, at the site now known as Petroula (near Ano Melpeia), stood a temple that overlooked the Messenian plain and also had a view of nearby Bassai (Figs 5, 7). This temple was excavated in 2010. Based on the movable finds, it is dated to the late 6th-early 5th century BCE, while it appears to have remained in use until the 4th or 3rd century BCE.[14] The finds also indicate that it was dedicated to a war deity, perhaps due to its strategic location.

Very close to Bassai was Eira (Figs 5, 7), the northernmost stronghold of the ancient Messenians. Its garrison obviously controlled all the nearby (south, south-eastern) passes in the narrow gorge of the River Neda. Eira, to-

Fig. 7: *Map of part of the Peloponnese, around the meeting-point of the modern prefectures of Arcadia, Ilia and Messenia. The blue circles mark the archaeological sites mentioned in the text.*

gether with the other key stronghold of the ancient Messenians, the Acropolis of Ithomi (also visible from Bassai, Fig. 5), played an important part in the Messenian Wars. Eira was finally captured and razed to the ground by the Spartans, probably in the Third Messenian War, which is thought to have taken place in the decades before and after 500 BCE.[15]

The highest peak near Bassai, rising approximately 1400 m above sea level and with a view over a very large part of the Peloponnese, is Mt Lykaion. The ancient Arcadians believed that the king of the gods was born on Mt Lykaion, where he was reared by the three nymphs Theisoa, Neda and Hagno. The Arcadians therefore built a temenos (a sacred precinct) dedicated to Zeus Lykaios on and around the peak. This was the most important sanctuary in Arcadia, considered an abaton, a 'holy of holies'.[16] Recent excavations have shown that similar animal sacrifices (mainly of sheep and goats) were made on the altar of Zeus from Mycenaean right down to Hellenistic times.[17]

The two ancient sanctuaries of Bassai and Lykaion are in direct east-west line of sight of each other, as visitors can easily ascertain (Fig. 8). What is not readily apparent is the fact that they are connected by a road (following a similar course to the ancient one) which can be covered in

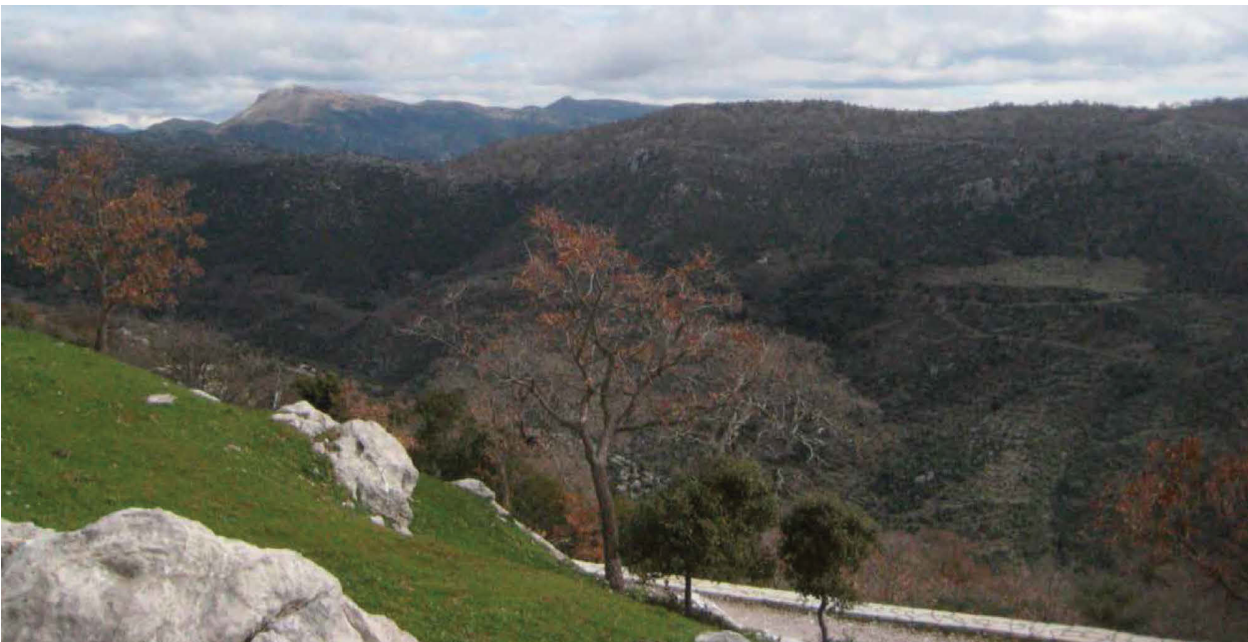


Fig. 8: *View from the Bassai monument looking east. On the furthest peak on the horizon stood a large altar on which sacrifices to Zeus Lykaios were made.*

just two and a half hours on foot. In antiquity, Lykaion and Bassai were probably also connected by religious rites.[18]

Very close to the peak of Lykaion, roughly 500 m northeast of it and 200 m lower down, is a plateau where the ancient Arcadians held the Lykaian Games[19] in honour of Zeus. There were many installations on the plateau, including a stadium, a hippodrome, a hostel and bathhouses (and, according to Pausanias, a temple of Pan). Only a few ruins survive today, although they are enough to show that this was a very impressive, if relatively small, athletic centre of antiquity.[20]

The management of the sanctuary of Zeus and the organisation of the Lykaian Games would have been the joint responsibility of the temenos priests and the inhabitants of Lykosoura, the nearest city-state. The site of this city, which Pausanias calls the oldest in Greece, attracts modern visitors with an interest in archaeology, due to the ruins of a temple of Despoina (the Mistress), the daughter of Poseidon and Demeter. Following its rebuilding circa 180 BCE, this temple (Fig. 9) contained a group of four larger-than-life-size marble statues by the famous Messenian sculptor Damophon. In the centre were Despoina and Demeter, seated on a shared throne and flanked by the goddess Artemis and the Titan Anytos, who, according to the myth, had raised Despoina.[21]

On the south side of Mt Lykaion, just an hour's walk from the peak (near the modern village of Neda), was an ancient sanctuary. Traces of it are still visible in the form of ancient architectural remains scattered around the site or built into the walls of a ruined church. Konstantinos Kourouniotis concludes, based on two inscriptions he discovered when he excavated the site in 1902, that the sanctuary was dedicated to Pan.[22] This is probably the temple mentioned by Pausanias, dedicated to Pan Nomios (named after the Nomian mountains).

The inhabitants of Lykosoura and the priests of the sanctuary of Pan controlled the passes leading from (and to) the plateau of Megalopolis, between Mt Lykaion and Mt Tetrazi. It is no coincidence that, centuries later, a vil-

Fig. 9: *The ruins of the main Temple of Despoina at Lykosoura from the southeast, with the south door and part of the south statue platform.*

lage arose around the temple of Pan, probably with a small fort, which is why the locals still call the spot 'Kastraki' (little castle).

The Arcadians applied the names of the three nymphs who reared Zeus to a city (Theisoa), a river (Neda), and a spring (Hagno). The last was probably located between the sanctuary of Zeus on the peak and the plateau where the Lykaian Games were held.

Theisoa, which lay very close to the east end of the Alpheios Gorge, on its south slope, was the first city visitors came to after passing from the basin of Megalopolis into southwest Arcadia, via the 'opening' of the River Alpheios. The city's acropolis stood on a peak of Mt Kerausios (a spur of Mt Lykaion), approximately 750 m above sea level. Until the recent restoration of its ancient name, the peak was known by its Byzantine name, Lavda. Inside the acropolis, the remains of a relatively small Doric temple are preserved, dated to the late 5th century BCE.

West of Theisoa, but within the boundaries of ancient Arcadia, was at least one other important city: Alipheira. The city, excavated by Anastasios Orlandos in the early 1930s, lies in a range of hills south of the valley of the

Fig. 10: *The ruins of the temple of Asklepios at Alipheira (bottom left) and the altar in front of it (bottom right). The photograph also shows that the Acropolis overlooks much of the valley of the Alpheios.*

Alpheios.[23] There were two temples within its walls. The earlier of the two, founded around 550 BCE, was dedicated to Athena. It was a hecatompedon (hundred-foot) temple with a Doric peristyle*. The second temple, founded in the 3rd century BCE, was dedicated to Asklepios. This was a small one-room temple with a stone altar in front of it (Fig. 10). The remains of rich tombs of the 3rd century BCE are preserved outside the city walls.

Between Theisoa and Alipheira, on a peak very close to modern-day Andritsaina, a few stones resembling the corner of the foundations of a monumental building indicate the possible existence of an Archaic temple.[24]

The ruins of an ancient walled city are also preserved at the site of Gardiki in Vrestos. Remains of houses, public buildings and a theatre, all dated to the 4th century BCE, are visible within the walls. The finds generally indicate that the city was inhabited from the Archaic period to Roman times. The site has not been identified with a specific ancient city to date, but it lies in an area that would definitely have been within the Arcadian sphere of influence up to the 3rd century BCE.

At the other opening leading from southwest Arcadia

to the west, at the upper eastern end of the Neda Gorge, stood the city of Phigaleia, the Arcadian city-state closest to Bassai. Built on the north side of the gorge, it had impressive stone walls, around 2.5–3 m thick and 4.5 km long. Large parts of these walls are still preserved to a substantial height today. At the southwest end of the city a small temple dedicated to Athena and perhaps Zeus Soter (the Saviour) has come to light, while on the east side of the city (outside the walls) a stone fountain is still preserved.

Roughly halfway along the road linking Phigaleia to Bassai, near the modern village of Perivolia, stood an ancient one-room temple measuring approximately 6 x 10 m. Its foundations and numerous orthostats* from its walls are preserved in situ, while there are abundant scattered fragments (Fig. 11). I believe it is probable that this temple was dedicated to Asklepios and that there were healing baths around it. This view is based on its similarities to the temple of Asklepios at Alipheira (its external dimensions, an offering table with carved lion's feet) and on Pausanias' information (8.41.4) that there were baths located 12 stadia above Phigaleia. The theory is also supported by the fact that the remains of other ancient constructions have

Fig. 11: *The ruins of an ancient temple near the modern village of Perivolia.*

been excavated around the temple, as well as a large water-channel.[25]

Finally, on the peak of Kotilion, around 1340 m above sea level, were two Archaic temples with a view of the acropolis of Phigaleia and much of the surrounding area.

The sheer number of these ancient cities and sanctuaries testifies to the dense habitation of southwest Arcadia from the Archaic to the Classical period if not longer, while it also indicates that the local populations flourished during that time, despite their direct or indirect involvement in successive wars (the Messenian Wars and the Peloponnesian War).

In the 4th century BCE, however, an event occurred that caused great upheaval among the inhabitants of the region. This was the foundation of Megalopolis, the 'Great City', by the Thebans, one year after their victory over the Spartans at the Battle of Leuctra in 371 BCE. The aim, of course, was to create a strong focus of resistance to neighbouring Sparta (as was the case with Messene, the other city founded in the foothills of Mt Ithomi). The city was founded by the inhabitants of 40 nearby Arcadian city-states and villages,[26] who naturally brought their cult traditions to Megalopolis together with the corresponding sacred artefacts and statues. The district with the public buildings included a bouleuterion (the Thersileion) and a theatre, their respective capacities attesting to the city's size (6,000 seated and 10,000 standing for the former and 18,000–20,000 seated spectators for the latter).

The Arcadia described above, however, did not survive into Roman times. It seems that the foundation of Megalopolis not only denuded a large part of southwest Arcadia of its inhabitants, but also created the conditions for its gradual decline. Thus, when Megalopolis was seized and destroyed by the Spartans in 223 BCE, its consequent fall in population (although the city was rebuilt a year later) was not accompanied by a corresponding revival of the surrounding regions.

Thus, when Strabo writes about Arcadia in the early 1st century CE, he describes it as ravaged by the constant

wars. For Megalopolis in particular, he quotes a typical pun by a comic poet of the time: 'The Great City is a great desert'.[27] Similarly, when Pausanias visited the area around 174 CE, he saw Megalopolis in decline, Theisoa was a village of Megalopolis, Lykosoura had only a few inhabitants, and he thought Alipheira resembled a small town.

After the Hellenistic period, although southwest Arcadia was not abandoned, it apparently never again sustained a large population, not did its inhabitants ever reach a level of prosperity matching that of their forebears.

All the sites of archaeological interest mentioned above have been familiar to scholars since the turn of the 20th century or slightly earlier. Many of them have been protected archaeological sites for decades. They are not widely known, however, nor do many people choose to visit them. This is probably because only scanty building remains are preserved there. The Temple of Apollo at Bassai, with its grandeur and its (mysterious) complexity, seems the only surviving witness to ancient southwest Arcadia at its peak.

Those who have visited the area, however, know that there is another 'silent' but equally powerful witness: its natural beauty. This land, at the meeting-point of the borders of the modern prefectures of Arcadia, Ilia and Messenia, is one of the few areas of the Peloponnese to remain essentially untouched by modern rural development and to escape being built-up. Its natural beauty, with its constantly shifting landscape, light and colours (Fig. 12), usually entrances visitors, making those with a knowledge of archaeology wonder in what dense oak forest the ancient goat-footed god will appear, or in what spring they might glimpse nymphs bathing.

Seeking elements of this elusive beauty, and wishing to admire the Temple of Apollo up close, European travellers began to visit Bassai from the late 18th century onwards, as soon as the location of the monument became widely known for the first time since antiquity. Details of the 'discovery' of the temple and the first travellers to visit it are

Fig. 12: The River Neda

provided in the following chapters. In the next chapter, I present the history of the Temple of Apollo, starting with the (presumed) establishment of the ancient sanctuary of Bassai in the 7th century BCE.

NOTES

12. LSJ, s.v. βᾶσσα, βῆσσα.

13. Photographs of Bassai from the late 19th to the mid-20th century show the monument surrounded by an almost totally bare landscape.

14. Arapogianni 2012.

15. Themelis 2014, 15.

16. This is why the area immediately surrounding the temenos was used to claim sanctuary, as we see from an episode described by Thucydides: the Spartan king Pleistoanax sought refuge there when the Lacedaemonians sought to kill him, and lived in a 'house' straddling the abaton. He was thus left undisturbed by his compatriots, who recalled him from exile 19 years later (Thucydides, The Peloponnesian War 5.16).

17. Romano and Voyatzis 2014.

18. See also p.60 bottom and n. 38, p. 85

19. The Lykaian Games, revived in 1973, are held every four years by the local inhabitants.

20. Romano and Voyatzis 2015.

21. This group was approximately 6 m high with its base. Today the heads of Demeter, Artemis and Anytos are exhibited in the National Archaeological Museum in Athens, together with part of Despoina's himation and a few fragments of the throne. Parts of the figures' torsos and arms are housed in the museum on the archaeological site of Lykosoura.

22. One inscription reads ΠΑΝΟΣ ('of Pan') and was found on a small stone base, while the other reads ΤΟΙ ΠΑΟΝΙ ('to you, Pan') and is preserved on small clay sherd (Kourouniotis 1902).

23. Orlandos 1967–68.

24. Papadopoulos 2014.

25. There was a similar place of healing relatively close by in antiquity, on the banks of the River Lousios (near the modern village of Elliniko). Excavations by the French School at Athens in 1954–55 uncovered the foundations of the temple of Asklepios and its thermal baths, belonging to the ancient city of Gortyna.

26. Pausanias, Description of Greece, 8.27.3-4.

27. Strabo, Geography, 8.8.1.

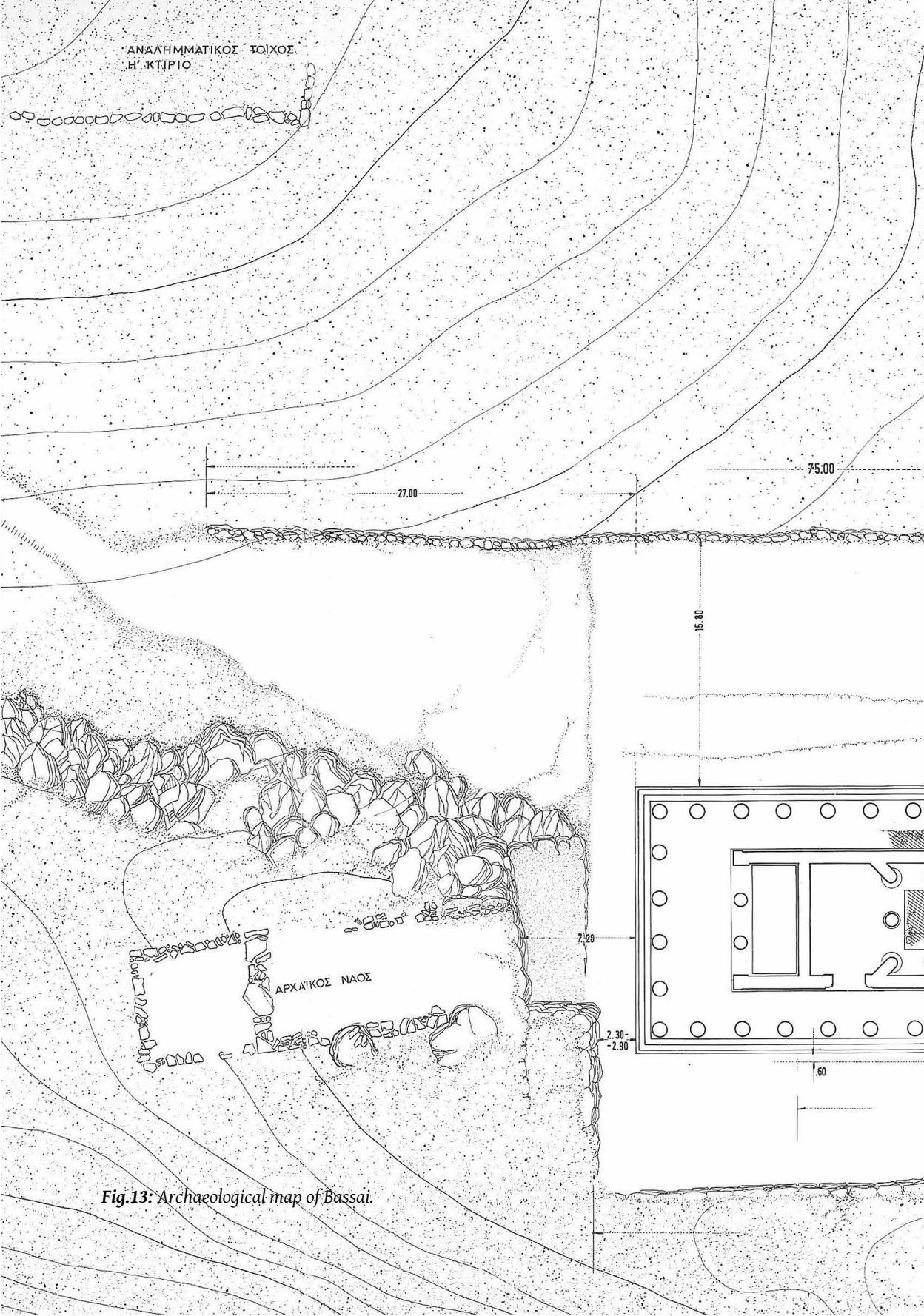


Fig.13: *Archaeological map of Bassai.*


ΛΑΤΟΜΕΙΟ
7.80
ΑΝΑΛΗΜΜΑ "Γ"
15.65
ΑΝΑΛΗΜΜΑ "Β"
ΑΝΑΛΗΜΜΑ "Α"
5.60
3.20
ΤΟΙΧΟΣ ΑΡΧΑΪΚΟΥ ΚΤΙΣΜΑΤΟΣ
ΔΑΠΕΔΟ ΑΡΧΑΪΚΟΥ ΚΤΙΣΜΑΤΟΣ
.20
.75
9.00
30.00
7.65
ΚΟΙΤΗ ΓΙΑ ΤΗΝ ΘΕΜΕΛΙΩΣΗ ΤΗΣ Α ΕΥΘΥΝΤΗΡΙΑΣ (BAUGRUBE)
7.50
ΟΡΙΖΟΝΤΙΑ ΠΛΑΤΕΙΑ
ΚΤΙΡΙΟ ΚΟΥΡΟΥΝΙΩΤΗ
26.00
ΚΤΙΡΙΟ "Α"
28.50
75.00
0
10.0
20.0
30.0
40.0 m

3 THE ARCHAIC SANCTUARIES AT BASSAI AND KOTILON

The character of the deity worshipped at Bassai

When the Lacedaemonians attacked the Arcadians and invaded Phigalia, they overcame the inhabitants in battle and sat down to besiege the city. When the walls were in danger of capture the Phigalians ran away, or perhaps the Lacedaemonians let them come out under a truce. The taking of Phigalia and the flight of the Phigalians from it took place when Miltiades was Archon at Athens, in the second year of the thirtieth Olympiad, when Chionis the Laconian was victorious for the third time. The Phigalians who escaped resolved to go to Delphi and ask the god about their return. The Pythian priestess said that if they made the attempt by themselves she saw no return for them; but if they took with them one hundred picked men from Oresthasium [an ancient city of Arcadia, probably east of Megalopolis], these would die in the battle, but through them the Phigalians would be restored to their city. When the Oresthasians heard of the oracle delivered to the Phigalians, all vied with one another in their eagerness to be one of the picked hundred and take part in the expedition to Phigalia. They advanced against the Lacedaemonian garrison and fulfilled the oracle in all respects. For they fought and met their end gloriously; expelling the Spartans, they enabled the Phigalians to recover their native land.[28]

This very interesting passage from Pausanias occurs in his description of Phigaleia. Based on this text, Panagiotis Kavvadias (1902) proposes the theory that the Phigaleians originally gave Apollo the epithet Epikourios, meaning 'helper' or 'succourer', because he assisted them in their battle against the Spartans circa 659 BCE.

Based on the same passage, William B. Dinsmoor (1933)

associates the Phigaleians' victory over the Spartans during the period in question with the founding of the first temple of Apollo at Bassai, consequently dating the second temple shortly after the first.

The excavation finds at Bassai support both these theories. Many of the movable finds from the fill in the area around the Temple of Apollo are iron weapons (mainly arrowheads and spearheads), as well as miniature models of weapons and armour (javelins, helmets, shields, etc.), which were obviously votive offerings to the god. Among the earliest votive offerings discovered are two iron male figurines dated to the early 7th century BCE, believed to depict Apollo himself. Other finds include jewellery (silver and bronze rings, fibulae of various types, earrings, etc.) and many tiny or normal-sized vases such as aryballoi and kylikes (Fig. 14).

When Pausanias refers to the Temple of Apollo at Bassai (8.41.8-9), however, he notes that the god received the name Epikourios because he protected the Phigaleians from an epidemic during the Peloponnesian War, just as he had saved the Athenians, who gave him the name Alexikakos, 'Averter of Evil' for the same reason. Pausanias also mentions that the architect of the temple was Iktinos, the builder of the Parthenon in Athens.

Attempting to interpret the various excavation finds

Fig. 14: *Finds of the Archaic period from under and around the north façade of the Bassai monument: two miniature vases (top), a black-glazed aryballos and a sherd from a black-figure kylix decorated with crescents.*

while also taking Pausanias' information into account, the archaeologists studying the temple have concluded that Apollo was originally worshipped as a war god, which explains why most of the votive offerings are weapons of all kinds. He was also a god beloved of young men, which is why they dedicated to him their favourite objects from the palaestra, such as aryballoi (small vases for the olive oil with which they anointed themselves), or from everyday life, like jewellery. Later, however, in the Classical period, his warlike character became peaceful, as occurred with other Olympian gods during the 5th century BCE.

It is also worth noting a tangential aspect of the cult of Apollo at Bassai: its juxtaposition with the cult of his twin sister Artemis. We know from the inscription discovered on the peak of Kotilion (Fig. 4) that Artemis of Kotilon and (Artemis?) Orthasia were also worshipped in the area. This proximity may be because the Phigaleians probably believed that Artemis had aided them (along with Apollo) in their war with the Spartans. They had built a temple to her in a prominent part of their city, where she was worshipped with the epithet Soteira (the Saviour).[29] In addition, one of the marble blocks from the Ionic frieze* inside the Classical Temple of Apollo depicts two figures, believed to be Apollo and Artemis, riding a chariot drawn by deer and probably fighting on the side of the Lapiths against the Centaurs (Fig. 15).

Fig. 15: *The slab of the marble Ionic frieze of the Classical Temple of Apollo depicting Apollo and Artemis.*

The predecessors of the Classical Temple of Apollo

From the turn of the 20th century, when the first systematic excavations were carried out at Bassai, to the present day, many different views have been expressed on the position (or positions) of the successive temples of Apollo that preceded the surviving Classical monument. Today the prevailing theory, as it has been shaped by the finds and the conclusions of various excavators (K. Kourouniotis, K. Romaios and N. Gialouris) and scholars (P. Kavvadias, F.A. Cooper and N. Kelly), recognises the first temple of Apollo in the foundation remains of a large Archaic building south of the Classical monument (Fig. 13).

Following her study of this foundation and a few architectural fragments that probably come from its superstructure, Nancy Kelly proposes a possible reconstruction of the Archaic temple of Apollo. According to this reconstruction, the Archaic temple was apteral (with no wings) and measured roughly 7.5 x 26.1 m. It had mudbrick walls with wooden buttresses and was oriented north-south. Other features, preserved in the Classical monument, are the internal division into two rooms and the existence of a doorway on the east in the smaller (south) room, believed to be the adyton*.

The excavations also uncovered numerous fragments of terracotta roof tiles that are likewise attributed to the Archaic temple and reveal that it was richly decorated. The finds show that the temple had beautiful antefixes* (end-tiles) bearing sphinxes and anthemia (Fig. 16), as well as elaborate disc-shaped acroteria* (architectural ornaments) of particularly large diameter (approximately 1 metre).

Fig. 16: *Fragments of terracotta antefixes from the Archaic Temple of Apollo with relief sphinx and anthemion.*

The fact that these terracotta tiles can be divided into two groups, based on their quality, indicates that this temple had two building phases, perhaps because it was destroyed. Based

on the style of the remains of its two roofs, Frederick A. Cooper dates the first phase of construction to circa 625–620 BCE and the second to circa 580–560 BCE. He believes that the building was destroyed a second time, circa 500 BCE, and that a 'third' temple of Apollo was immediately erected on the site later occupied by the surviving Classical monument. Cooper bases this theory on the fact that the outer sub foundation of the west side of the surviving temple contains blocks, obviously reused, whose size, regularity and other features indicate that they may come from the building material of a large structure.[30] This would have been a limestone building, roofed (according to Cooper) with Corinthian terracotta tiles.

The dismantling of the north pteron (wing) of the surviving temple in the 2000s, as part of its restoration, revealed many different elements confirming that other structures had earlier stood on the same spot, and indicating that one of those structures was a building of monumental size. More specifically, under the central and east part of the north façade of the monument, at approximately mid-width, the linear edge of a cavity cut into the bedrock is visible (Fig. 17). This cavity was probably meant to receive the foundation of a large stone building. The possibility that the cavity was originally intended for the surviving temple, but was ultimately not used because it was decided, before construction work began, to shift the temple to the north and/or increase its length, should probably be ruled out. This is because a massive stone block was discovered under the west end of the north façade of the surviving monument, the upper surface of which was dressed to form the bedding of the euthynteria* of the temple.[31] This stone was already in place before the surviving temple was built. Its original function (like its later one) was therefore to form the base of a structure whose weight would have corresponded to its base, hence probably a large building.

It is also very interesting to note that the sub foundation stones next to the massive block appear to be set around the end of a wall of the Archaic period.

Fig. 17: *View from the southeast of the bedrock underlying the central part of the north façade of the Bassai monument. The linear edge of the cavity cut in the rock is visible at the bottom of the photograph.*

The 'village' of Bassai

Pausanias' statement that '...in the village called Bassai is the temple of Apollo Epikourios' has provided modern scholars with another important piece of information on the location of the temple, besides its name. There was a small settlement close to the temple.

Nikolaos Gialouris, who directed the excavations at Bassai over many seasons (1959, 1970 and 1975–1979), summarizing his conclusions in a fascinating article (1988), believes that there was definitely an ancient settlement there. As he remarks, 'The temple did not stand alone on the slope of Mt Kotilion; on the contrary, it was set among numerous buildings, some of them monumental, of the Archaic and Classical periods'. The evidence he provides to support his view is both strong and very interesting. First, the high density of building remains uncovered in the excavated areas, mainly north of the monument (where two large rectangular buildings were found, abutting in a line) and on the level space to the southwest (Fig. 13). The abundant pieces of smelting slag among the movable discoveries indicate that there were metallurgy

workshops near the temple. There are also plentiful small vases of friable local clay, presumably produced by local pottery workshops.

Gialouris also argues that the movable finds are another crucial piece of evidence. They include many imported miniature works (from Elis, Corinth and Laconia) and numerous lead votive objects similar to those found in the Temple of Artemis Orthia in Sparta, revealing the extremely close relationship between the sanctuary of Bassai and Laconia.

Another scholar who has studied Arcadia for many years, Argyris Petronotis, has published an article on the existence of a settlement at Bassai (1987). There he sets out the many benefits to agriculture of the valley southwest of the monument (Fig. 18): year-round potable water, suitable orientation, location at the point of convergence of mountain roads, proximity to an area suitable for pasturage or cultivation. It is in this valley that Petronotis 'places' the ancient village of Bassai.

Regardless of the exact location of the ancient village, if the excavations in the wider environs of the monument of Bassai are resumed, they will certainly bring much new information to light.

The temples on the peak of Mt Kotilion

In the autumn of 1902, on the peak of Mt Kotilion (Fig. 18), Konstantinos Kourouniotis brought to light the meagre remains of two ancient buildings (Fig. 19). The building to the north measured approximately 5.8 x 9.3 m and was oriented east-west, while the second was rather larger, measuring around 6.5 x 15.5 m, and oriented north-south. The base of a cult statue is still preserved inside the remains of the larger building, while Kourouniotis reports finding a base in the other building that consisted of a poorly preserved 'square' (presumably in section) block set on a finely worked rectangular block (1.25 x 0.65 m).

Next to the larger building, Kourouniotis discovered a bronze plaque (Fig. 4) with a manumission decree for

the emancipation of slaves. The inscription also mentions three deities – or four according to Madeleine Jost (1985): Apollo Bassitas, Pan Sinoeis, Artemis of Kotilon and Orthasia (perhaps also an epithet of Artemis). The other movable finds include many protomai (terracotta female busts), several bronze mirrors, a few ornaments and coins, and a fragment of a terracotta antefix similar to those found at Bassai (see Fig. 16 left). The excavator dated all the finds to the Archaic and Classical periods.

The excavation site was not chosen at random: it was based on Pausanias' testimony (8.41.10) that on the peak of Mt Kotilion, called Kotilon, stood a roofless temple of Aphrodite that housed a statue of the goddess.

Based on these finds and the information provided by Pausanias, Kourouniotis concludes that the two buildings were Archaic temples, the larger dedicated to Aphrodite and the smaller to Artemis, which continued in use into the Hellenistic period, when they were abandoned to the ravages of time. Another interesting theory suggested by Kourouniotis is that Pausanias did not climb up (from Bassai) to Kotilon himself, which is why he only mentions one temple there rather than two.

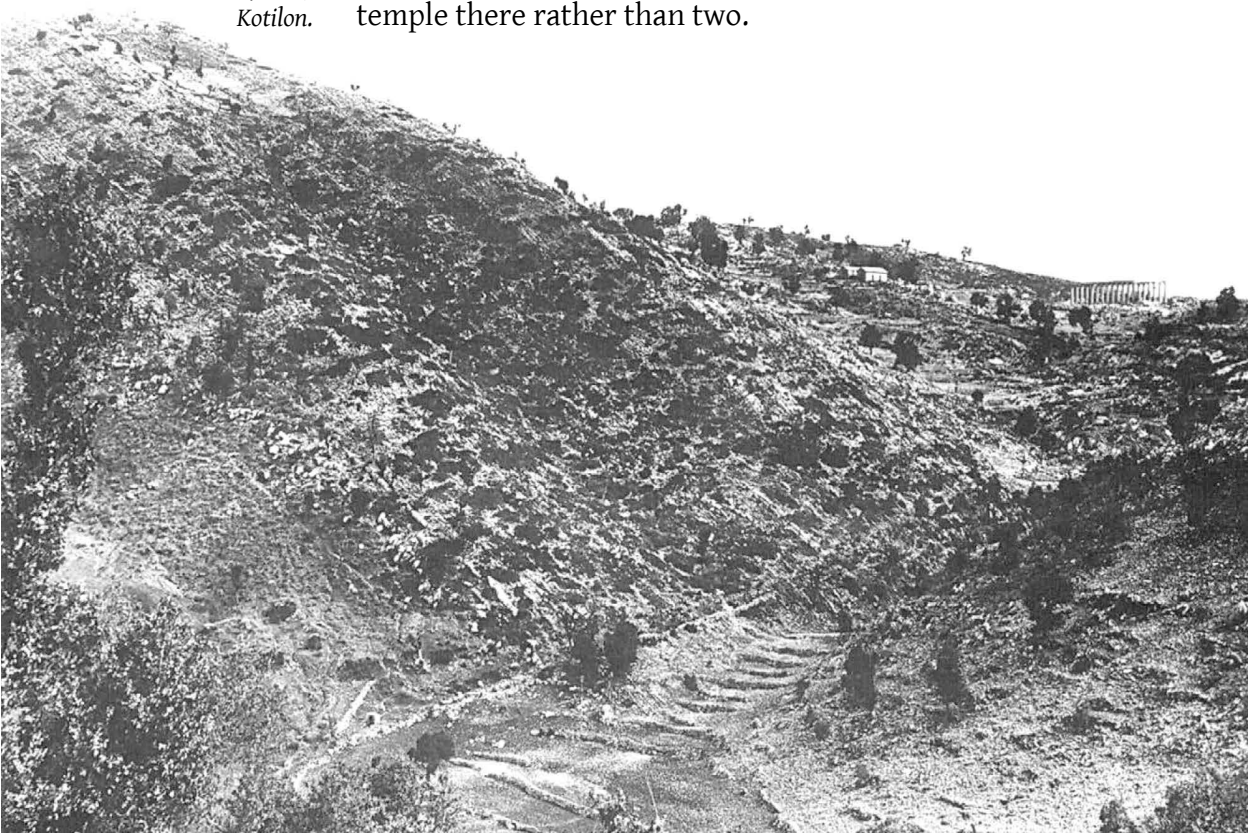


Fig. 18: *The small valley southwest of the Bassai monument in the early 20th century. At top left is the peak of Mt Kotilion, on which stood the ancient temples of Kotilon.*

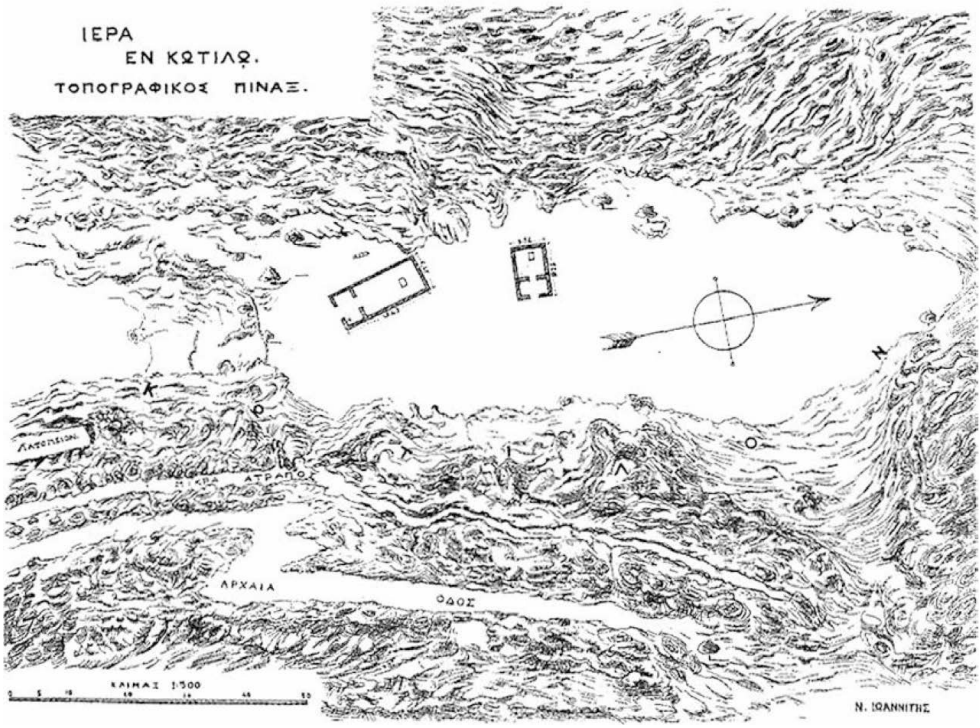


Fig. 19: *Topographical plan of the sacred site of Kotilon.*

Although no systematic excavations have been carried out at Kotilon since 1902, several researchers (based on Kourouniotis' finds) have published articles on the temples there,[32] disagreeing with some of the excavator's main conclusions. Most importantly, they argue that the larger temple was dedicated to Artemis and the smaller to Aphrodite, and that Orthasia is a separate goddess rather than an epithet of Artemis.

I, too, believe that the larger building was a temple of Artemis (otherwise it would be strange to have an inscription on the wall that does not mention the deity who 'resided' there). However, I am not convinced that the second building was a cult temple (or indeed dated to the same period as the other), as it is of much humbler construction and its doorways are set off-centre. In any case, two questions remain unanswered: why the inscription found during the excavation does not mention Aphrodite, the goddess worshipped there according to Pausanias, and

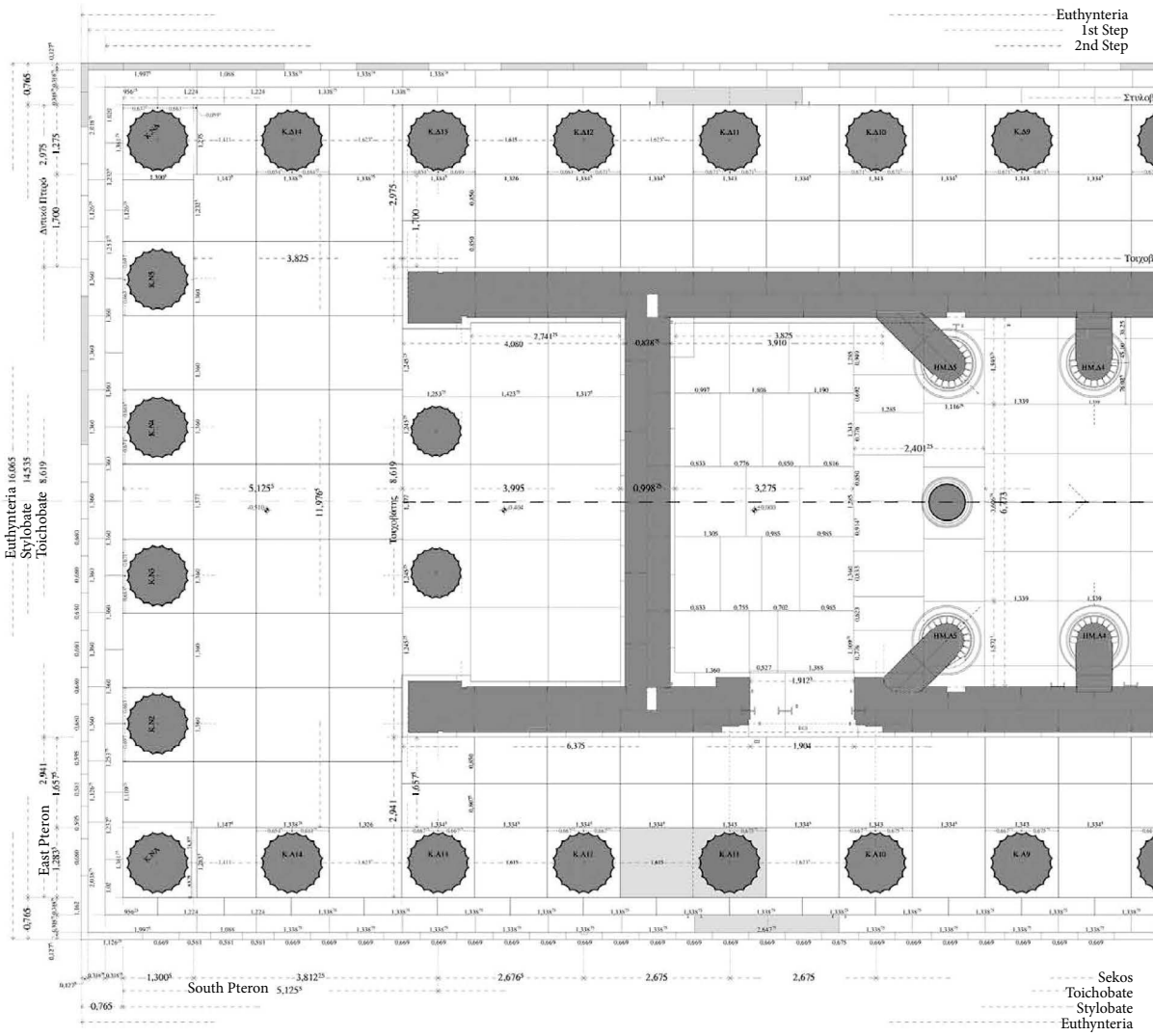
whether there were in fact temples dedicated to Pan Sinoeis[33] and Orthasia in the area (and if so, where).

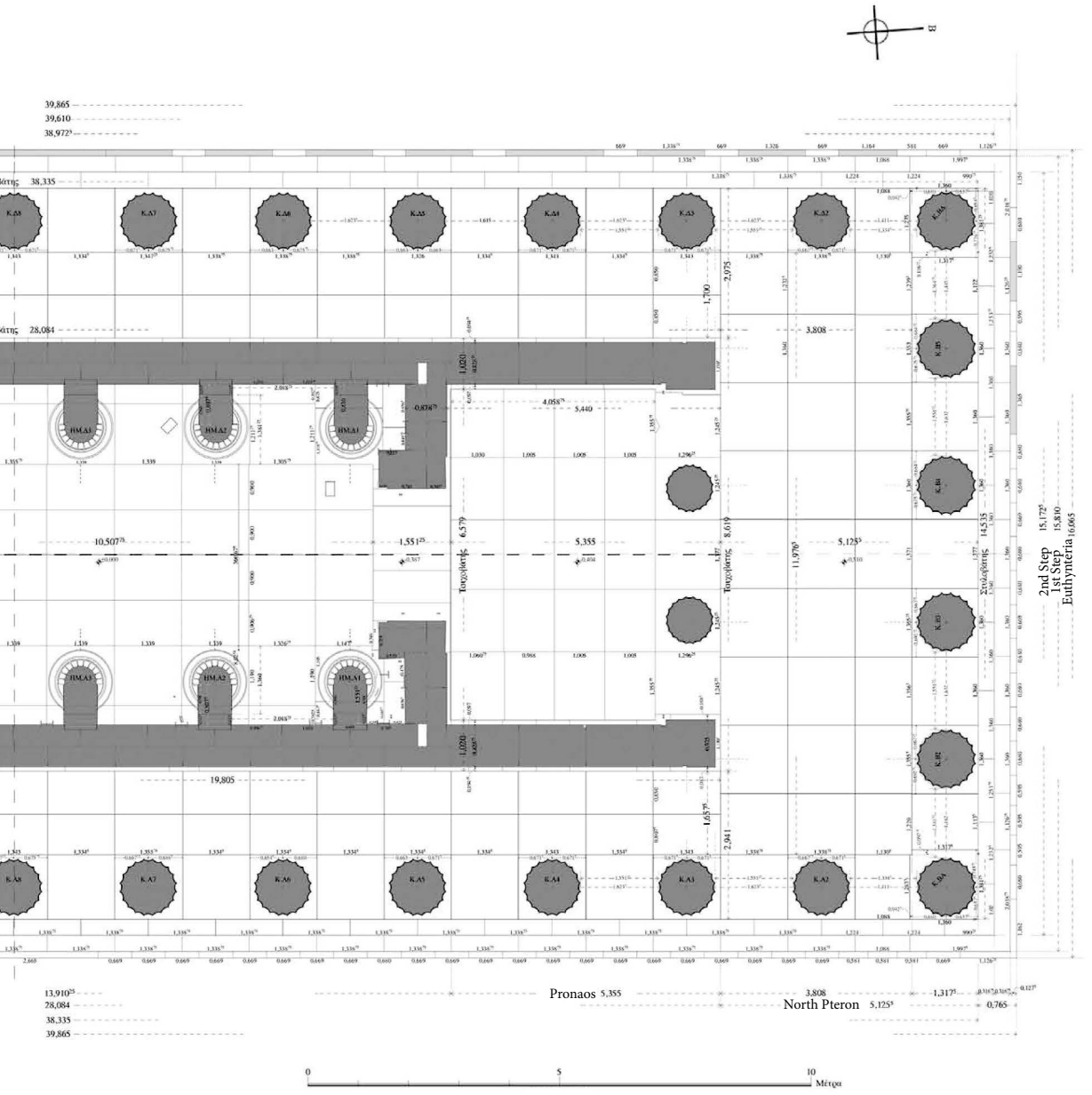
It appears, therefore, that Kotilon, like neighbouring Bassai, has kept most of its secrets! Perhaps some of them will be revealed when, as Kourounotis wrote, 'the entire area around the temples is excavated'.

NOTES

28. Pausanias, Description of Greece, 8.39.3-5.
29. Pausanias, Description of Greece, 8.39.5.
30. Cooper 1996, 96.
31. Papadopoulos and Savvatianou 2015, figs 4.12 and 4.24.
32. Jost (1985), Cooper (1996, 61–66) and others.
33. This temple was probably close to the sanctuary of Despoina at Lykosoura, as the epithet Sinoeis means 'one who harms' (punishes), while Pausanias mentions (8.37.10-11) that beyond the temple of Despoina was a grove with stairs leading up to a sanctuary of Pan, 'and this Pan too, equally with the most powerful gods, can bring men's prayers to accomplishment and repay the wicked as they deserve'.

Fig. 20 Plan of the Temple of Apollo Epikourios
Reconstruction drawing




Β
39,865
39,610
38,972⁵
38,335
28,084
19,805
13,910²⁵
28,084
38,335
39,865
Pronaos 5,355
North Pteron 5,125⁵
3,808
1,317⁵
0,765
2nd Step 15,172⁵
1st Step 15,810
Euthynteria 16,065
Ταχυδρόμης
Στυλοβάτης
0
5
10
Μέτρα

4 THE CLASSICAL TEMPLE

General description

The Temple of Apollo preserved at Bassai has a peristyle* of 38 columns, while both short sides of the main inner building end in pilasters and two columns (Fig. 20). The interior is divided into pronaos*, sekos*, adyton* and opisthonaos* (Figs 3, 20). The external dimensions of its euthynteria*, the uppermost course of its foundation, are 16.065 m x 39.865 m, making it an elongated building. The ground plan may be termed a choreography of contrasts: the long ptera*, of standard width, alternate with the short ptera which are twice as wide, the spacious and richly decorated pronaos is contrasted with the plain, narrow opisthonaos, while the uniquely shaped sekos is combined with a small, architecturally simple adyton.

The monument, uncommonly, faces north, probably due to religious reasons (see also p. 60). Its external dimensions may have been imposed on the architect by the high priests and the dedicators of the temple, as parallels have been noted with the Archaic Temple of Apollo at Delphi.[34] One of these is that the peristyle of the temple at Bassai has the same number of columns as the Temple of Delphi (6 x 15) although, if it was indeed built in Late Classical times, it should have had 6 x 13 columns in accordance with the aesthetic standards of the period. So it seems that the elongated plan was 'obligatory' to the architect, something that perhaps led him to decide to design the short ptera very wide, in order to give the main building an aesthetically pleasing length-to-width ratio.

The monument has another element that refers to the temple-building practices of the Archaic period: the col-

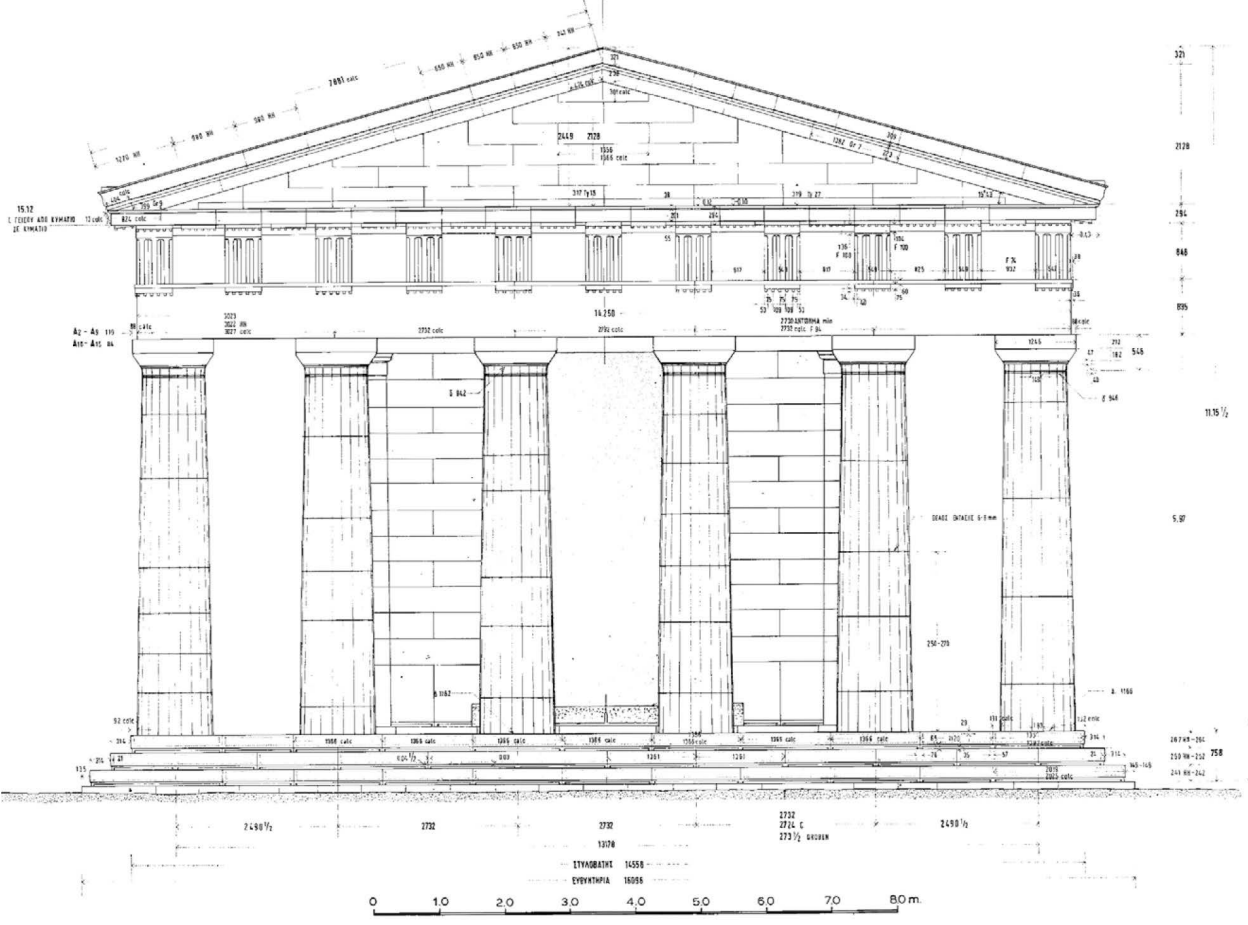


Fig. 21: *The north façade of the temple. Reconstruction drawing.*

umns of the north façade are thicker than the rest (with a diameter at the bottom of ≈1.16 m as opposed to ≈1.12 m for the others), obviously to give emphasis to the façade (Fig. 21). The accentuated façade and the deep north pteron led to a spacious pronaos which was covered with a coffered marble ceiling*, whereas its entrance was decorated with a marble Doric frieze*. The opisthonaos also featured a marble Doric frieze, but as it was not really a space designed for use, it was very small and had a limestone roof. A similar asymmetry between pronaos and opisthonaos is seen in the Temple of Hephaistos in the Agora of Athens, a similarity so pronounced that it appears that the Athenian building strongly influenced the design of the temple at Bassai.

Despite the Archaic-style features of the Bassai monument, however, and the various elements clearly influ-

enced by other temples, it also includes many innovations for its time. Most of these are found in the sekos, making it an interior space unique in the history of ancient architecture.

Specifically, in front of the long walls of the sekos are set five Ionic half-columns, in the form of tongue-shaped spurs engaged with the wall. In the centre, between the last pair of half-columns, which stand out because they are placed at an angle of 45° to the lateral walls, was a free-standing column with a Corinthian capital* (Figs 3, 22). This inner colonnade was surmounted by an Ionic epistyle* and a relief frieze (Fig. 22).

The two rows of half-columns and the Corinthian column form a Π shape; this, with the Doric peristyle and the many Ionic features inside the building are also features reminiscent of Athenian temples of the period (the Temple of Hephaistos and the Parthenon). However, the placement of a frieze inside a temple for the first time (to our knowledge), and the addition of a prominent feature of the third main Classical order, the Corinthian column, automatically render the sekos and, by extension, the whole Temple of Apollo at Bassai, a unique building in the history of ancient architecture. The adyton is also an extremely interesting part of the monument, as it is not only connected to the sekos but also has a door on the east, exactly facing the tenth intercolumniation (space between columns) from the north in the east pteron. This door probably served a cult purpose, while, as mentioned above, it is very probable that the predecessors of the Classical temple also featured a similar opening on the east.[35]

The temple is mostly made of the local white to whitish-grey limestone.[36] Exceptions ar the limited sculptural decoration (the relief metopes* of the pronaos and the opisthonaos, and the slabs of the interior Ionic frieze), some prominent architectural features higher up (such as the Ionic half-capitals, the Corinthian capital, the beams and the coffers of the pronaos), and the roof tiles, which were all of marble, probably from a quarry on Cape Tainaron.[37] The roof supports were wooden, while the clamps*

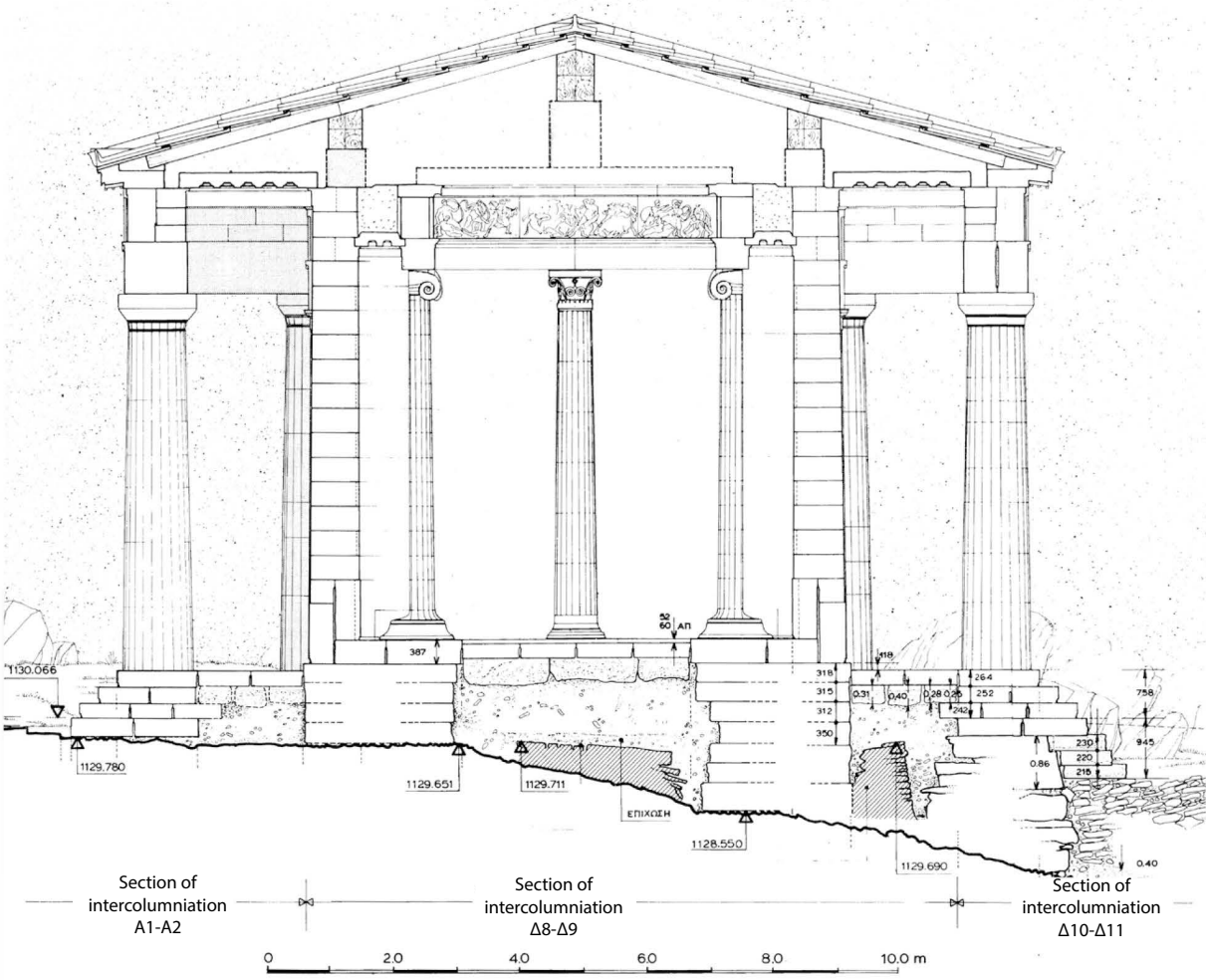


Fig. 22: *Transverse section of the temple foundations.*

securing the stone blocks were made of iron encased in lead, except for those of the columns (the poloi* and empolia*), which were made of wood.

The foundation system of the temple consists solely of the foundations of the load-bearing features (columns and walls), while the loads of the superstructure are transferred to the bedrock via a foundation of varying height (Fig. 22). The depth of the foundation ranges from a few centimetres on the east side and part of the north and south sides, to a maximum of ≈2.5–3.0 m in the southwest corner of the building, as the bedrock naturally slopes downwards from northeast to southwest.

To level the area under and around the building, the

bedrock was suitably cut along the east side and the east half of the short sides. Three retaining walls were constructed on the west side of the building, parallel to its longitudinal axis, forming an elongated plateau approximately 16 m wide.

Orientation

As we have said, the temple is oriented north, unlike most ancient temples, which face east. This is probably due to local religious traditions, as other Arcadian temples also have the same unusual orientation: for example, the Temple of Athena at Alipheira, the Temple of Athena Soteira and Poseidon at Asea, and the Doric temple at Prasidaki, near Lepreon.

N. Gialouris (1988) provides an interesting explanation for the orientation of the temple at Bassai. He links it to the cult of the 'Hyperborean' Apollo, a name indicating that the god came to Greece from the 'lands beyond the north' in the spring and returned there in the autumn. This cult is similar to that of Demeter, the goddess of the harvest and agriculture, and her daughter Persephone, the goddess of vegetation, in which the alternation of the seasons, from the flowering and fruiting of the earth to its dormancy, is linked to the beneficial presence or the departure for the Underworld of Persephone.

F.A. Cooper, meanwhile, associates the northerly orientation of the temple (and its small deviation to the east), as well as the presence of the east door, with a phenomenon he observed himself: at the summer solstice, the rising sun shines directly into the northwest corner of the adyton, where the cult statue probably stood.

I have a similar view, that the orientation and the adyton door served for the 'communication' between Zeus at Lykaion and Apollo at Bassai (Fig. 23). As I have suggested (p. 34 top), Lykaion and Bassai may have been connected in antiquity not only because they were in line of sight of each other but also by religious rites. The fact that no altar has yet come to light at Bassai, together with the fact

Fig. 23: *View from the southwest corner of the Adyton looking towards the temenos of Zeus Lykaios through the opening in the east wall of the temple.*

that there was no temple, only an altar, at the sanctuary of Lykaian Zeus, naturally suggests the thought that sacred ceremonies may have been performed in both places simultaneously. In any case, Pausanias refers to a 'link' between Lykaion and Apollo Epikourios through a sacred ritual.[38]

The detailed original design

During the final period of restoration of the north pteron of the temple (2011-2015), the project architect Vassiliki Savvatianou[39] offered new suggestions about typical dimensions of parts of the building (beginning with the height of the epistyle of the peristasis*), which allowed her to draw conclusions as to the correlations between the dimensions of different architectural features or structural groups (Fig. 24). Her work ultimately led to estimates of the symmetries and proportions in the original design of the ancient temple (Figs 25, 26).

Her study shows, among other things, that the whole temple was planned in detail, at least before the uppermost course of the foundation (known as the euthynteria)

was constructed. This is demonstrated by the fact that the widths of the blocks in the façade row of the euthynteria in the north pteron were predetermined in detail, as these blocks clearly form three distinct zones/sections matching the main parts of the building: the east pteron, the main building and the west pteron (Fig. 24).

The same study also calculates the embates (the 'module' or design unit) and the system of measurement used in the construction of the ancient building (Fig. 25). It is also established that the temple was designed on the basis of two measurements from its north side: the width of the façade blocks of the euthynteria, and the width of the triglyph* (Fig. 26).

Modifications to the original design

It is very probable that the original design was modified during the course of its construction. This supposition is chiefly based on the fact that many of the slabs of the Ionic frieze bear marks of chiselling on their sides, to reduce their length and consequently the originally planned

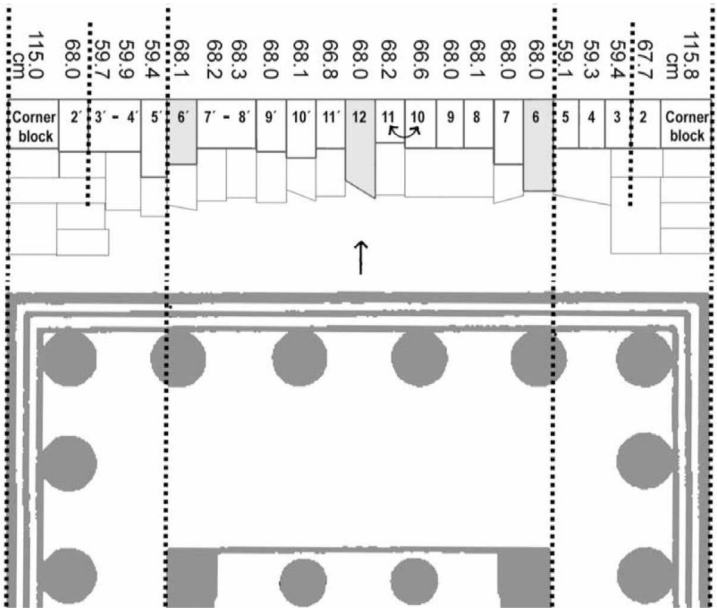
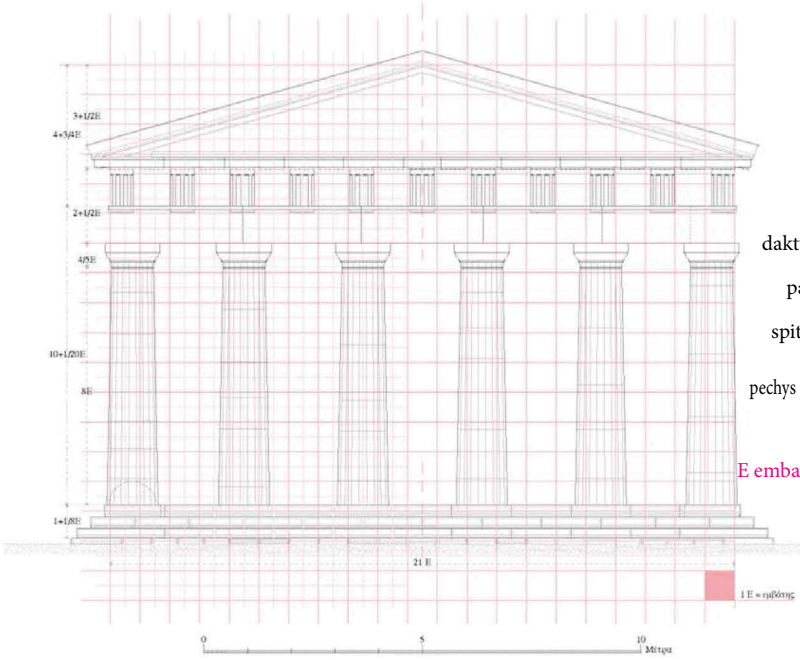
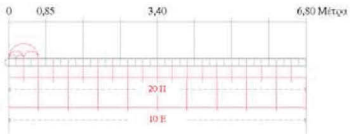


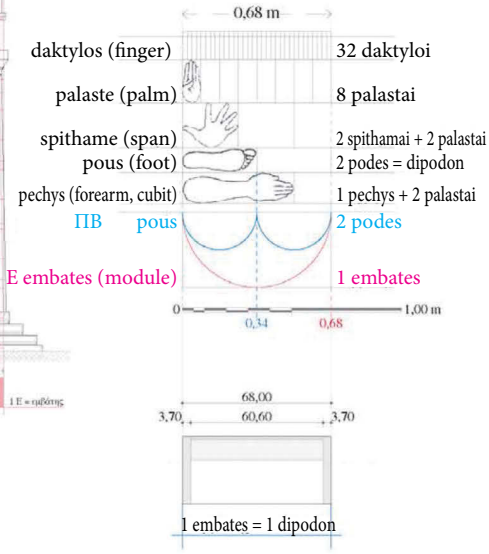
Fig. 24: *Plan of the north euthynteria of the temple, with the thicknesses of the blocks of the outer course, and with a sketch showing the relationship between this layer and the plan of the building.*



North Façade
Proportions of densely-columned Doric temple
(Vitr 4.3,3-4.3,7 & 3.3,1-4)



Long Canon
IG VII 3073 (Leivadeia)135 to the long canon, no less than
twenty feet, thickness of six daktyloi, height of half a foot



Euthynteria Block of the
North Façade (EY.B7)

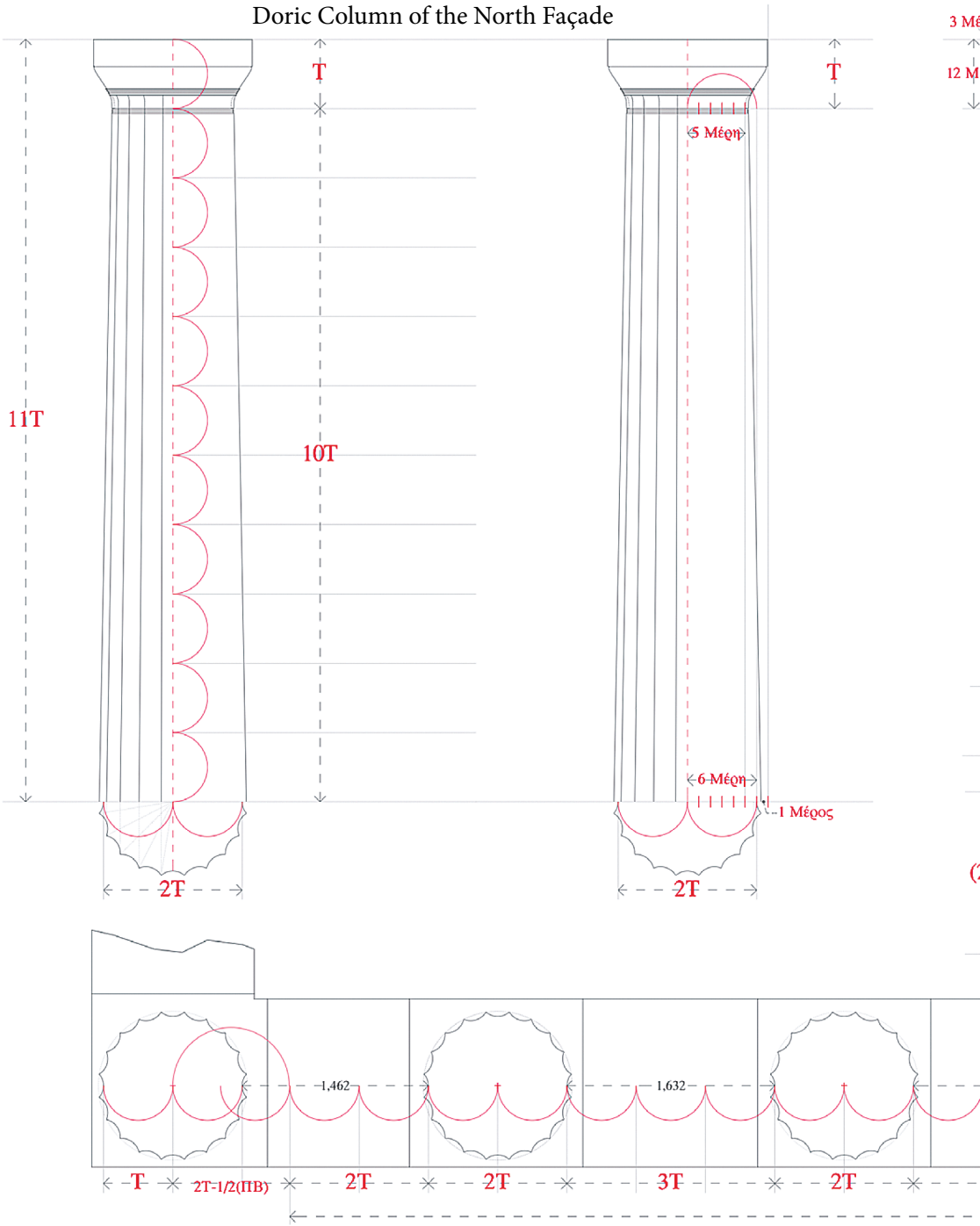
Fig. 25: *Drawing of the module and the units of measurement believed to have been used in the planning (and construction) of the temple.*

overall length of this course, which encircles the largest interior space of the building. There is also other tangible evidence, such as the fact that in the floor of the sekos, near the east wall, there are partially or fully visible cuttings for clamps, as though it was decided at the last minute to build the east wall a few centimetres further east.

Based on the evidence and the hypotheses that arise from the logic of an architecturally 'neat' and statically 'correct' original design, various theories on the modifications to the original planning of the Bassai monument have been put forward over the years,[40] some more likely than others. I believe that three modifications to the original design are so plausible that they may be considered almost certain. They are described below.

Fig. 26

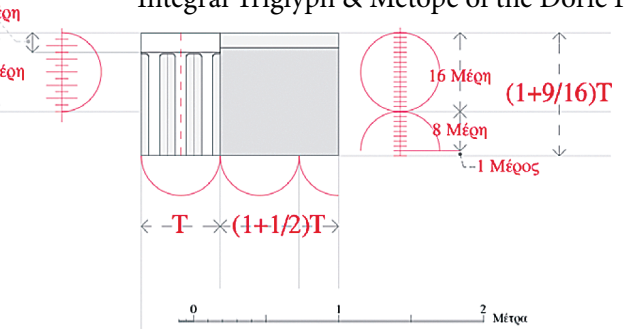
Temple of Apollo Epikourios at Bassai
Geometric Relationships (Proportions)



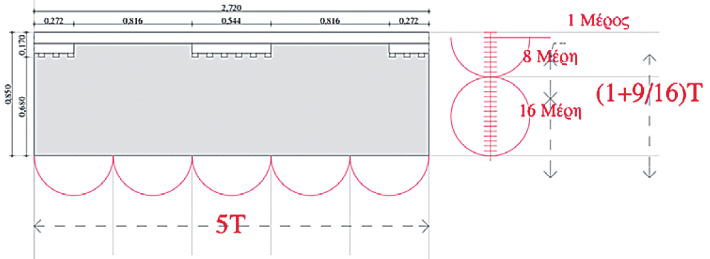
Stylobate of the North Façade

In the plan the dimensions of the intercolumniations (MK) and the diameters (D) are measured at the centre of the flutes, as seen above.

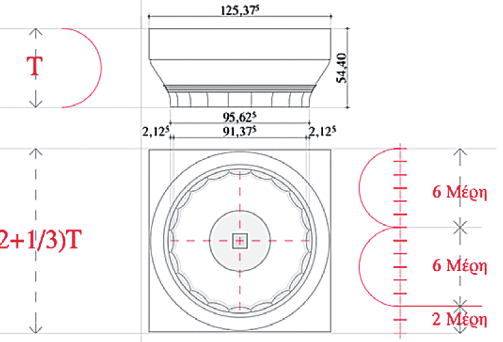
Integral Triglyph & Metope of the Doric Frieze of the North Façade

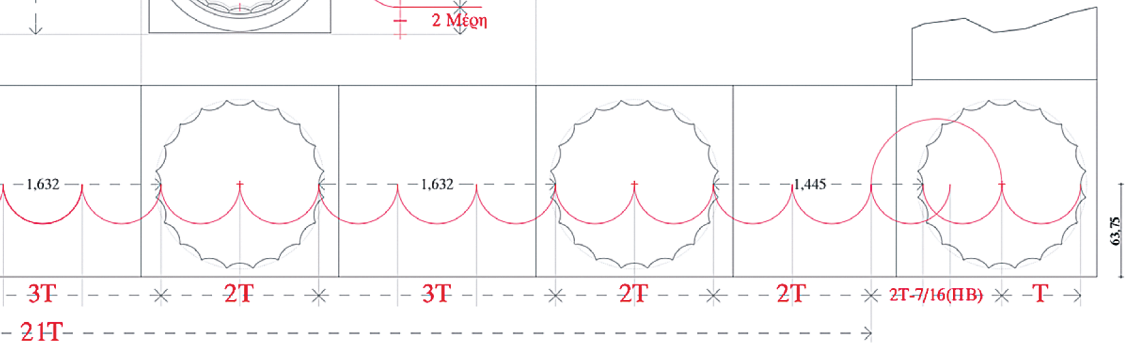


Epistyle of the North Façade



Column capital of the North Façade





ENLARGEMENT OF THE PRONAOS – REDUCTION IN LENGTH OF THE MAIN TEMPLE

The north wall of the sekos (with the entrance door) is very close to the first pair of half-columns to the north, a positioning which serves no purpose relating to structural stability and also creates two unnecessary 'niches' on either side of the doorway (Fig. 20). This indicates that the wall was originally meant to be built about half an intercolumniation further to the north, making the pronaos and the opisthonaos roughly symmetrical and of the same size. However, with the evident aim of architecturally enhancing the pronaos, the door wall was moved southwards, significantly increasing the area of the pronaos (and reducing that of the sekos). The ceiling of the pronaos was also decorated with marble beams and marble coffers.

This theory is strongly supported by the reduction in size of many of the slabs of the Ionic frieze. These were clearly intended, in their original form, for a longer (and/or wider) sekos. This modification of the original plan is not definite, as there is no foundation under the presumed originally planned location of the entrance wall. This theory was proposed by W. Hoepfner[41] (without being universally accepted, mainly due to this lack of a foundation),[42] who attributes the modification to a chance factor: the temple builders were unable to find a tall enough tree for the axial roof-beam running down the centre of the building (from the entrance wall to the Corinthian column), so they reduced the length of the sekos.[43]

If this change to the original design of the temple actually occurred, I do not believe that it was due to the reason put forward by Hoepfner. There are features throughout the building which attest not only to the technical expertise of the ancient builders but also to their ability to source building materials from very far afield. The change is more likely to have been made for a purely architectural reason: the 'enhancement' of the pronaos, inspired (as were other features of the ground

plan) by the Temple of Hephaistos in the Agora of Athens.

ROTATION OF THE LAST PAIR OF HALF-COLUMNS

The cutting in the inward surface of the orthostats* adjoining the last (southernmost) pair of half-columns of the monument indicates that these half-columns were also intended to be set at right angles to the long walls. At some point after the orthostats were dressed, it was apparently decided that this pair of half-columns should be placed at a 45° angle to the walls of the sekos (Fig. 20), without essentially altering their position (so the engaged spur walls 'invaded' the adyton).

I believe that this modification was made in order to give those standing in the pronaos and looking towards the interior of the sekos the impression that the Corinthian column was flanked by a pair of Ionic columns rather than half-columns. This illusion is still apparent today: if one looks towards the interior of the sekos from the pronaos, one sees only the fluting on the shafts of the last pair of half-columns, and not their flat sides (Fig. 27).

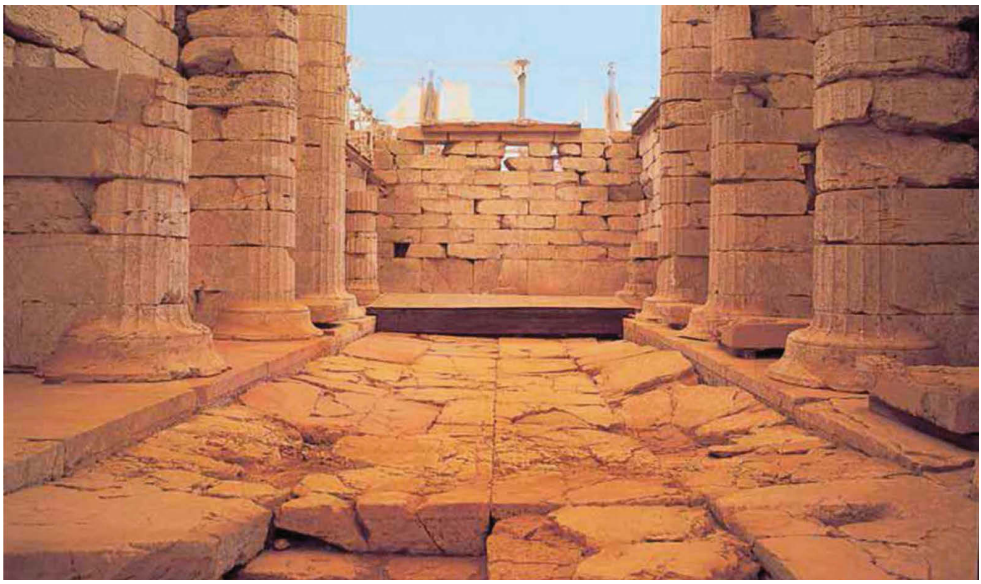


Fig. 27: *View from the north entrance to the sekos towards the inside (1987).*

SMALL SHIFT OF THE CORINTHIAN COLUMN TO THE SOUTH

The block on which the Corinthian column stood 'invades' (with a small projection to the south) the adjacent paving slab of the adyton, presumably to facilitate the slightly off-centre (southwards) seating of the column on the block (Fig. 20). This suggests at least a small change to the original plan in relation to the position of the column.

Dating

One of the most interesting yet intractable problems of the Temple of Apollo at Bassai is determining when the monument was built. The lack of ancient written sources, and the fact that the monument includes features found in temples from all three periods of Greek antiquity (Archaic, Classical and Hellenistic), make any theory on the subject precarious.

William B. Dinsmoor, mainly basing his argument on the external architectural features of the temple, believes that it began to be built around 450 and was completed around 425 BCE. Commenting on Pausanias' information that Iktinos, the builder of the Parthenon, was the architect of the monument, he suggests that Iktinos may have worked at Bassai in the years before 447 BCE, when the construction of the Parthenon began.[44]

Frederick A. Cooper, on the contrary, bases his dating of the temple on Pausanias' information that the epithet Epikourios (the Helper) was applied to Apollo because the god helped the Phigaleians escape an epidemic during the Peloponnesian War (as he had helped the Athenians, who named him Alexikakos, the Averter of Evil). Cooper believes that the Arcadians who fought on the Athenian side as mercenaries (known as Epikouroi) in the Peloponnesian War undertook the cost of building the Classical temple at Bassai. He places the beginning of the construction between 429 and 427 BCE. After a brief hiatus due to the occupation of the area by the Spartans in 421–415, the work

resumed and was completed shortly before 400 BCE.[45]

My own view is that until new, tangible evidence emerges, these two theories should be combined. I base this on my conjecture, mentioned above, that the original design of the temple at Bassai was modified during the course of construction to emphasise the pronaos, which was modelled on the Temple of Hephaistos in Athens. This Temple began to be built between 460 and 448 BCE, and was completed belatedly (probably due to the construction of the Parthenon in 447–438 and the Propylaea in 437–432) around 420 BCE.[46] According to this approach, the monument at Bassai began to be built around the middle of the fifth century and was completed (also belatedly) at some point in the two final decades of the century.

The delay in completing the building work on the Temple of Bassai may be due not only to the military conflicts of the period in which the Phigaleians took part, but also to the very high cost of the enterprise. Large quantities of marble had to be brought to Bassai from a great distance (Doliana or Cape Tainaron), and we know that in antiquity the transport of building materials was the most expensive aspect of major construction works. Cooper's theory that the Arcadian mercenaries of Athens paid for the Classical Temple of Apollo Epikourios from their pay may thus be indirectly supported.

The cult statue

Another issue that has occupied the scholars studying the Bassai monument over the years is the location of the cult statue inside the temple, and what the statue actually looked like. The little available evidence is: (a) Pausanias' statement that in Megalopolis he saw a bronze statue of Apollo Epikourios, around 3.5 m high, which had been brought there from Bassai when Megalopolis was founded,[47] and (b) the discovery of fragments of life-size marble hands and feet in front of the Corinthian column in 1812.

Based on this information, the statue described by Pausanias may have originally stood opposite the east door

of the adyton, near the west wall of the monument (as drawn by C.R. Cockerell), or slightly further down, in the east corner of the adyton (as F.A. Cooper argues), or in the place which would be expected, in front of the Corinthian column (as W.B. Dinsmoor believes). In the last case, following the 'relocation' of the statue to Megalopolis, it would have been replaced by a new, slightly smaller acrolithic statue (with a wooden trunk and marble head, hands and feet). However, there are also other theories. Panagiotis Kavvadias[48] thinks that the bronze statue mentioned by Pausanias stood somewhere in the precinct of the temple at Bassai, with only a xoanon (a wooden cult statue) inside the temple, while Nikolaos Gialouris[49] proposes the theory that the temple did not contain a statue at all, but that Apollo was aniconically represented by the Corinthian column.

A recent discovery I have made, however, reinforces Kavvadias's view. Based on a reliable drawing of the monument made by Edward Dodwell in 1805, we can be certain that in front of the northeast corner of the temple was a particularly large, elongated stone block (Fig. 28 left), which must have formed the pedestal of a bronze statue (or statues, due to its length). The fact that it was deliberately placed here is evidenced by the pry holes used to shift the block into position in its side (Fig. 28 bottom right), which, according to Dodwell's drawing, faced the building, while its probable function is indicated by the

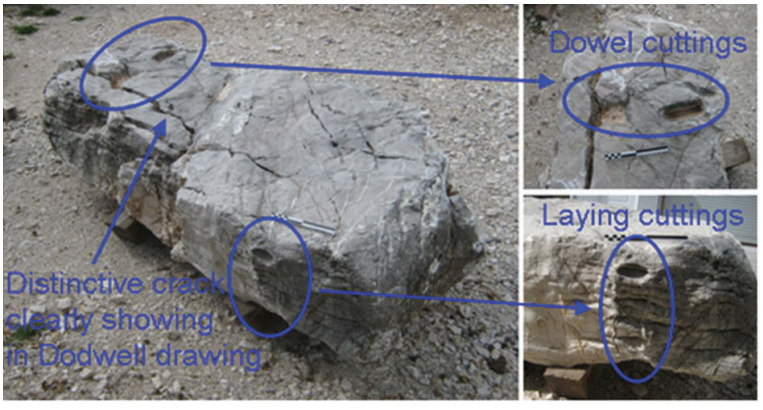


Fig. 28: *The fragment of the massive stone block which lay in front of the northeast corner of the temple according to Dodwell's drawing of 1805.*

large mortises for dowels* in its upper surface (Fig. 28 top right). It was quite common in antiquity for statues to be placed in front of a corner of the temple façade. Typical examples of this are seen at neighbouring Alipheira, where statues stood in this position in front of both temples on its Acropolis, dedicated to Athena and Asklepios.[50]

Sculptural decoration

THE SCULPTURES OF THE PEDIMENT

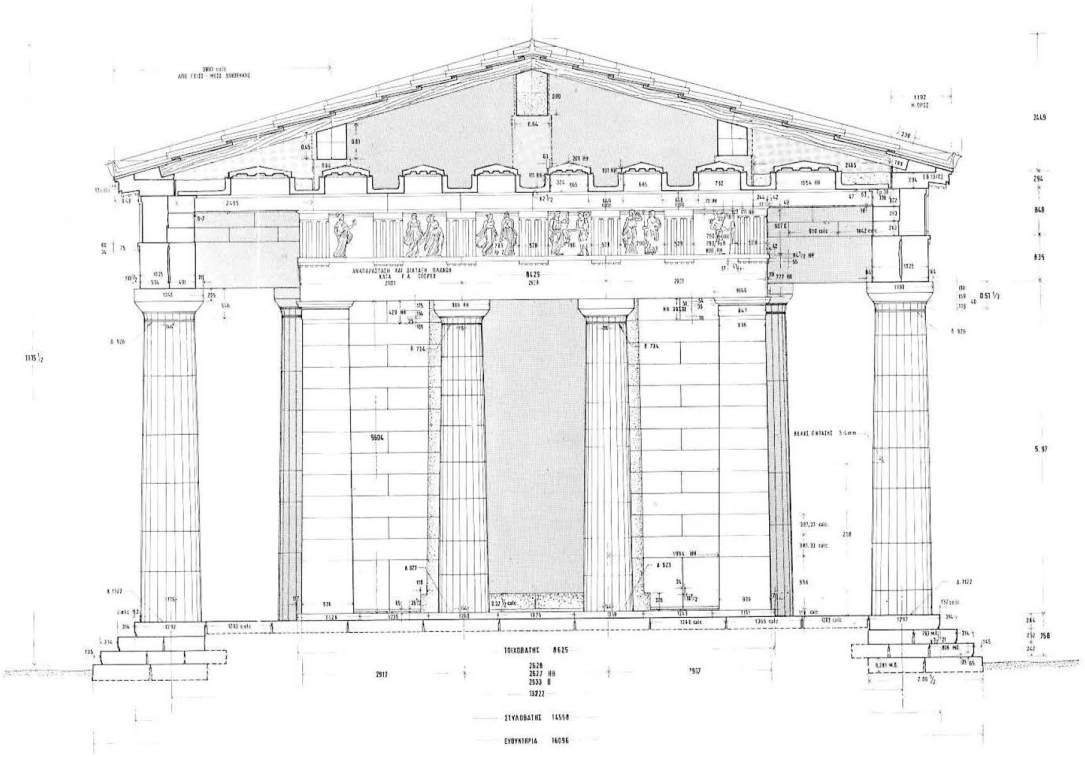
The existence or otherwise of pedimental sculptures at the temple of Bassai is another question that remains unresolved to this day. Based on a recess in some blocks of the tympanon* which could have served for sculptures, W.B. Dinsmoor proposes the theory that there were originally pedimental sculptures which were stolen by the Romans. F.A. Cooper and D. Svolopoulos, on the other hand, argue, due to the shallowness of the pediment and the absence of other evidence, that the monument did not have pedimental statues (Fig. 21).

Although the evidence is indeed very scanty, it is very hard to imagine this richly decorated temple lacking sculptures on its two main façades, so I believe that Dinsmoor's theory is the correct one.

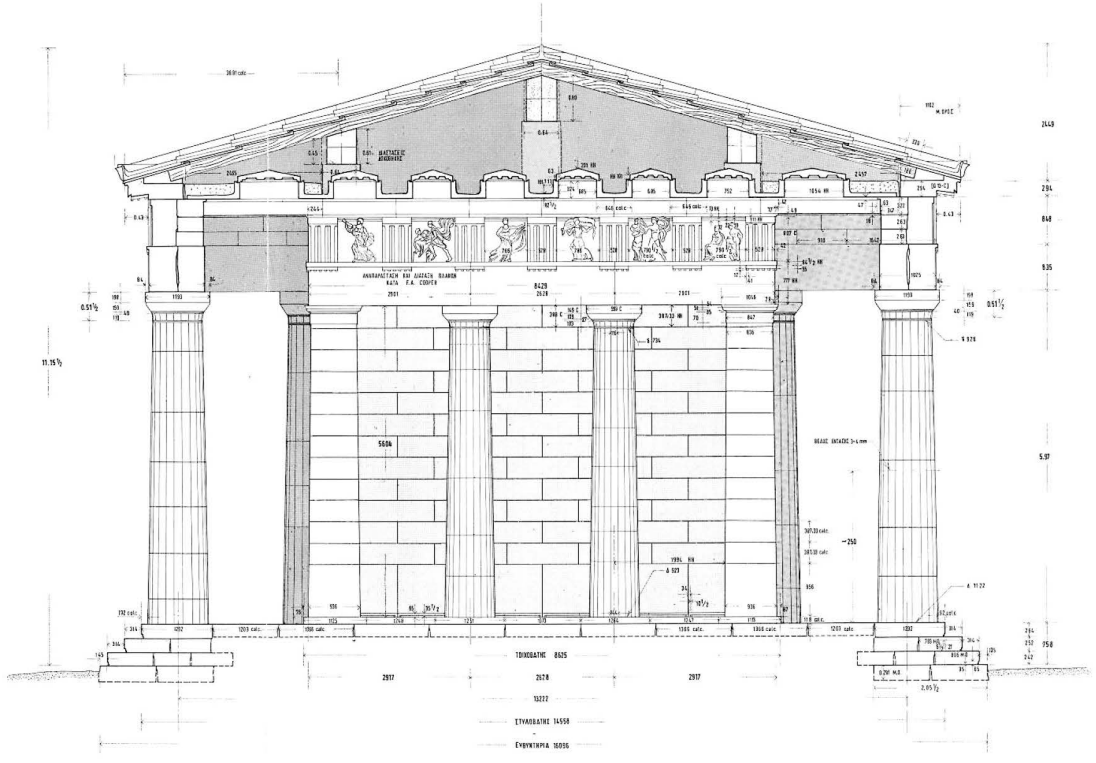
THE METOPES OF THE PORCHES

What is certain, however, is that the pronaos and opisthonaos of the Temple of Apollo at Bassai were adorned with triglyphs and marble metopes, the latter richly decorated in relief (Fig. 29), as we see from the surviving fragments displayed in the British Museum.

Although there are not many of these fragments, the metopes of the pronaos, as Brian Madigan showed in 1992, probably depicted the return of Apollo to Olympus from the Hyperborean lands, while those of the opisthonaos represented the abduction of the daughters of the Messenian king Leukippos by the Dioskouroi.



Transverse Section of North Pteron – Plan of Pronaos



Transverse Section of South Pteron – Plan of Opisthonaos

THE IONIC FRIEZE

Fig. 29: *Reconstruction drawing of the pronaos (above) and opisthonaos (below).*

One of the main decorative features of the temple (and a ground-breaking one due to its position) was undoubtedly the marble Ionic frieze that surmounted (with the interpolation of an epistyle) the Ionic half-columns in the sekos (Fig. 22). It measured 31 m in total and consisted of 23 marble slabs. 12 of these depict the Amazonomachy, the battle of the Athenians, led by Herakles, against the Amazons. The other 11 depict the Centauromachy (Fig. 30), the battle between the Centaurs and the Lapiths, a Thessalian tribe, during a wedding feast when the drunken Centaurs attempted to ravish the Lapith women.
The Centauromachy slabs were placed on the north and east sides of the sekos (according to the most probable arrangement, proposed by F.A. Cooper). They include the slab depicting Apollo and Artemis (Fig. 15), which was on the north side.

These slabs were discovered in 1812, when a heterogeneous group of Northern Europeans (including architects, artists, noblemen and diplomats) investigated the monument at Bassai. Their discoveries included its surviving sculptural decoration. The leaders of the group later sold their most important finds to the British. In 1815 the artefacts arrived at the British Museum, where they remain to this day.

Fig. 30: *Slab of the Ionic frieze depicting Centauromachy scene.*

The survey of the monument in 1812 also revealed the marble capital of the central, free-standing column inside the temple. Fortunately – as it was later destroyed – the capital was drawn by Carl Haller von Hallerstein (Fig. 31). This is the earliest known example of a Corinthian capital. According to Haller's drawing, there were two rows of small, dense acanthus leaves around its lower part, with volutes (later a common theme) in the corners, crowned by a large central anthemion. It also certainly had painted decoration, as another leader of the 1812 expedition, Charles Robert Cockerell, mentions in his book on the temple (1860).

Unfortunately, this architectural feature, so important to the history of Greek architecture, was fated to be destroyed soon after its discovery, as were almost all the marble architectural features revealed by the 1812 survey. They were probably burnt in kilns by local people to make lime. Just two small fragments of the capital have been identified (by several modern archaeological investigations at Bassai) and are now in the National Archaeological Museum in Athens.

It is also worth mentioning here that Dinsmoor's discovery, in 1925, that the last ('inclined') pair of half-col-

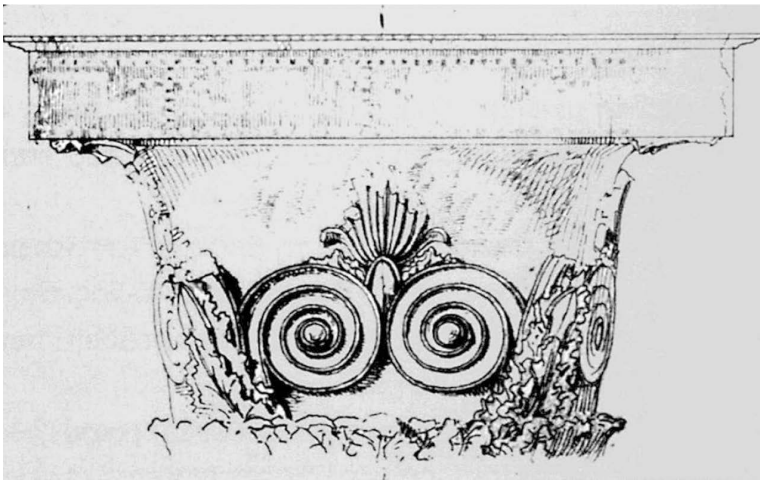


Fig. 31: *The Corinthian column capital of the Temple of Bassai drawn by Carl Haller von Hallerstein in 1812.*

umns bore taller capitals than the others led him to suggest that those capitals were in the Corinthian style. This theory has been repeated by subsequent scholars of the monument. However, it is difficult to accept that the very distinctive central Corinthian column was not in fact that special, or that the last two half-columns were crowned with different capitals from the other, almost identical half-columns, which differed from them only in their orientation. Cooper's view[51] that a fragment of a limestone Ionic capital of distinctive dimensions, known from an earlier date, comes from a half-column of the last pair thus seems quite natural.[52]

THE IONIC HALF-CAPITALS

The Ionic half-capitals that crowned the pairs of half-columns inside the temple are also very interesting, both in their architectural design and in their sculptural execution. Eight were made of marble, while the last pair, which were taller and more extensively decorated (as they were almost full capitals due to their position), were made of limestone.

THE COFFERED SLABS

The ceilings of the temple were stone throughout, constituting another impressive decorative feature of the building. Fragments of coffered slabs of seven different types have been preserved, two of limestone and the rest of marble. The coffers (the sunken panels in the ceiling slabs, intended to reduce their weight and as decoration) are square, of two types (Fig. 32), while there are also diamond-shaped coffers and two types of lozenge-shaped ones.

THE MARBLE ROOF

The marble roof of the monument undoubtedly contributed to the elegant aesthetic effect which the builders were

Fig. 32: *Photographs of two fragments of ceiling slabs with different sculptural decoration.*

aiming for. The roof is of the Corinthian type, consisting of almost flat pan tiles and corner cover tiles. The cover-tile rows terminated (on the long sides of the building) in antefixes with relief anthemion decoration. The roof probably did not have an opaion (a deliberately made opening or discontinuity), as no firm evidence of such a hole has come to light from the research to date.

Painted decoration

A few photographs taken in 1907, as part of the restoration work carried out on the monument, confirm something that was only to be expected: the temple also featured significant painted decoration. The photographs show that the outer side (facing the ptera) of the epikranitis, the topmost course of blocks of the wall of the main temple, was painted. Other parts of the temple would obviously have borne painted decoration. Unfortunately this has not survived, and ultimately neither have the paintings seen in the photographs.

It is almost certain, moreover, that the columns of the peristasis* of the monument were coated with marble stucco, to protect the limestone from rainwater and conceal any imperfections. The white of the columns would have contrasted with the colourful painted decoration and

harmonised with the marble roof tiles, greatly enhancing the overall impact of the building in ancient times.

Architectural refinements

We know that most ancient Greek temples were built, from the Archaic period onwards, in such a way as to display architectural refinements. This is the term for the subtle, almost imperceptible curves and slight deviations from the vertical or horizontal plane, of courses of blocks or groups of architectural features which one would expect to be level or practically vertical or horizontal.

In the case of the Temple of Apollo Epikourios, the very severe distortions suffered by the building during the course of its long history, together with the extensive weathering of its fabric, continue to present significant obstacles to the research and study of its architecture. It is therefore no surprise that efforts to trace the famous refinements of ancient Greek architecture in the Bassai monument have led to contradictory conclusions.

Opinions differ even as to one of the best-known and most closely studied architectural refinements of ancient Greek temples, entasis in columns (the slight convex curve of the column shaft). W.B. Dinsmoor (1950) and D. Svolopoulos (1995) argue that it was present in the columns of the temple at Bassai, while F. Penrose (1888) and especially F.A. Cooper (1996) strongly dismiss it.

During the recent restoration of the monument, the capital of one of the columns on the north side (the fifth from the east) was removed. This column is one of those with the least weathering on their flutes. The removal of the capital allowed detailed measurements of the four main faces of the column to be made (Fig. 33). These measurements revealed that the column does have entasis, with a maximum of 10 mm at the centre of the shaft, confirming Dinsmoor and Svolopoulos's claim.

Another fundamental and widely studied refinement of ancient temples is the curvature of the stylobate* (the curve formed by the upper faces of the blocks under the

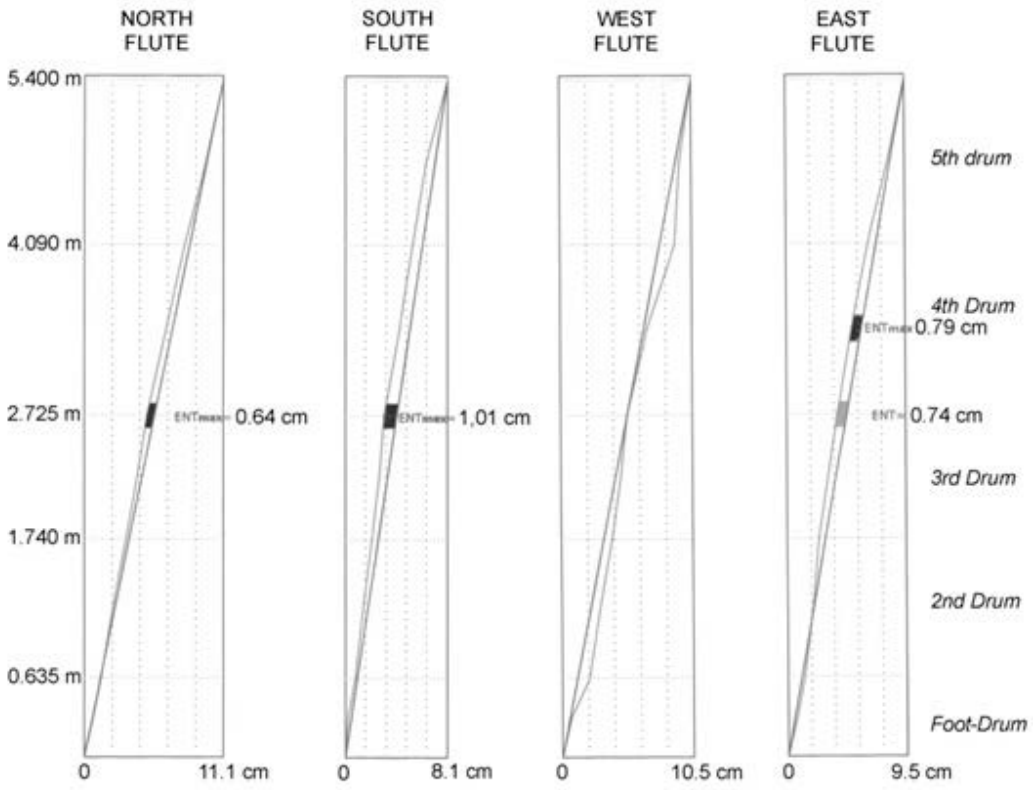


Fig. 33: *Shaft profile measurements of the 5th column from the east on the north façade of the temple, revealing entasis in the column.*

columns), which is usually accompanied by curvature of the epistyle. Almost every scholar of the Bassai monument has rejected the existence of such refinements, either because it has not been ascertained that the lowest drums* of the columns of the peristasis are of different heights around their circumference (Svolopoulos 1995), or because no non-right angles have been observed in epistyle blocks (Cooper 1996). Only Argyris Petronotis (1987) makes a counter-argument, having discerned a possible maximum curvature of around 2.1 cm in the levelling measurements determining differences in height in the crepis* of the north façade of the monument.

As part of the restoration work on the paving slabs of the north pteron, in July 2013, levelling measurements were made for the adjacent stylobate of the pronaos and the upper surfaces of the underlying foundation blocks, at their north ends (the north upright face of these blocks was visible due to the removal of the paving slabs of the north pteron). The heights of the lowest drums of the col-

umns of the pronaos were also measured where possible (Fig. 34).

These measurements revealed several features hinting at curvature of the pronaos stylobate of the Bassai monument. Firstly, the outline of the level of the stylobate, despite the obvious settling of its central (and perhaps also its western) section, is consistent with curvature at both ends. Also, the levelling measurements of the underlying layer of blocks, rather than eliminating any possibility of curvature, provide a very strong piece of evidence in its favour. The westernmost block of the layer (conventionally named Θ1.BΔ, see Fig. 34) was found to have a perfectly horizontal upper surface, while the upper surface of the overlying block (TB.BΔ) is higher at its east end than its west end: taken together (since the two blocks fit together well), these measurements show that block TB.BΔ was cut with non-parallel upper and lower surfaces, consist-

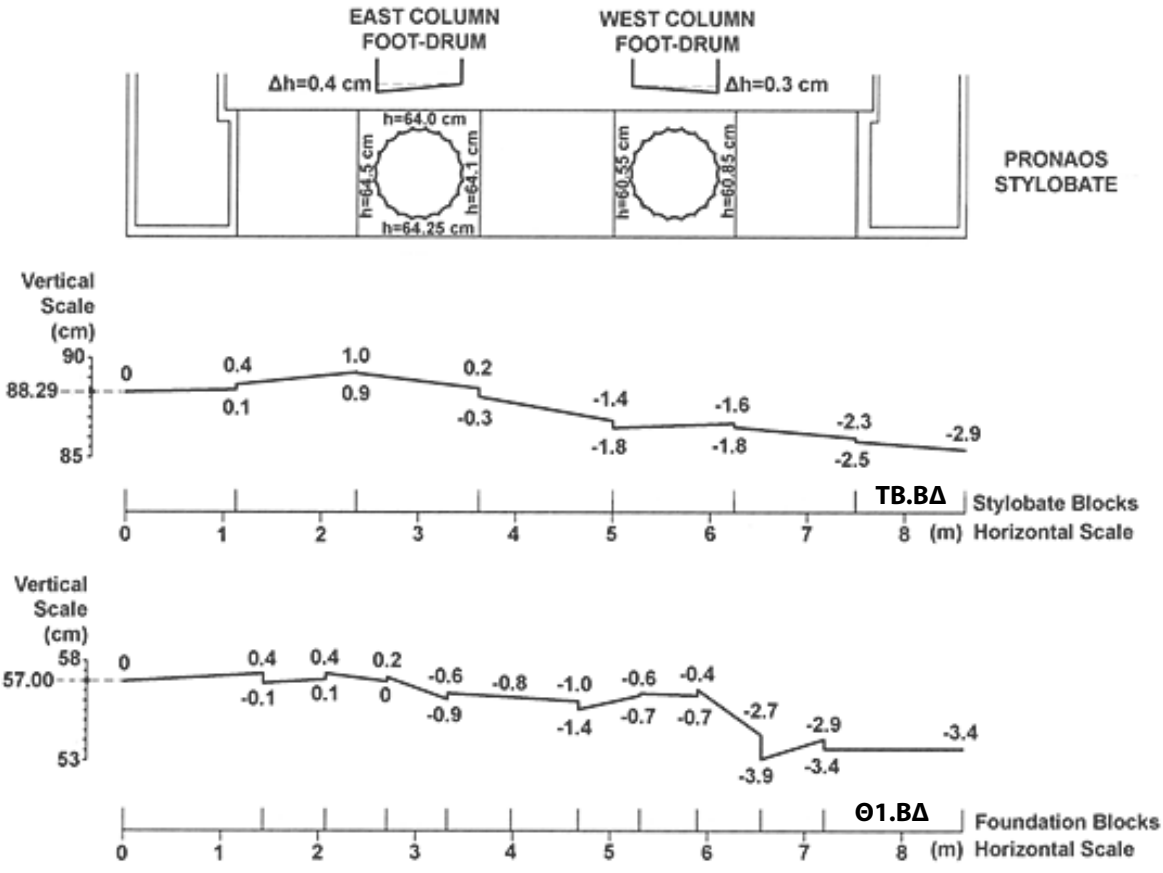


Fig. 34: *Measurements of the foot-drum heights of the pronaos columns and diagrams of the levels of the blocks under the columns.*

ent with the suspected curvature.

Finally, the heights of the lowest drums of the two columns of the pronaos also indicate that the underlying stylobate is curved (Fig. 34). This would normally be proof of curvature. However, because these columns were partially restored in 1903, using plaster to achieve a better fit between the meeting surfaces, these measurements must be considered unsafe, at least until the columns are dismantled for restoration and can be remeasured. In any case, the indications in favour of the curvature of the pronaos are too many to be considered purely coincidental.

To this discussion of the refinements of the monument at Bassai should be added the meiosis* (tapering) of its columns, which is visible to the naked eye, and the observed reduction in width of the sekos walls. So it is reasonable to suppose that the fact that other refinements have not been traced is chiefly due to the severe weathering of the exposed surfaces of the stone blocks of the monument. Consequently, as the restoration work continues and more pieces of the ancient building are dismantled for consolidation, I believe that more evidence will almost certainly come to light, demonstrating that the monument at Bassai featured further refinements besides those mentioned above.

Aspects of structural design

Alongside this refined architectural design, the temple at Bassai (like all important buildings in ancient Greece) appears to have been built following a structural design. This design may have been rudimentary but it was certainly 'solid', based on the accumulated experience of the builders of the age.

This is evident from many features of the monument. Apart from the generally applicable features (use of high-strength building materials, avoidance of eccentric loading, connection of blocks with metal clamps to increase earthquake resistance), the most important special features include: reinforcement of corners by using larger

blocks than those in the rest of the course and double the usual number of metal clamps (Fig. 35), cutting cavities in non-visible areas of many bridging blocks, to reduce their individual weight without significantly reducing their bending strength, and not placing clamps in the beams and ceiling slabs connecting the peristyle to the main temple, presumably because they were thought to be detrimental if the building were to be shaken by a large earthquake.

The ancient temple-builders' efforts to make the building structurally sound are also evident from the care with which they laid its foundations, especially under the main temple, where the foundation consists of many layers of large, rectangular blocks, standardised and fine tooled to fit together well. The foundation of the peristyle, although not as carefully made as that of the sekos, also displays evidence of the particular attention paid to ensure its stability: the builders compacted the layer of clay they laid between the foundation and the bedrock before raising the superstructure. In any case, and in spite of significant settling, the foundation of the monument must also be considered 'successful', as it continues to support the standing peristyle, around 2,500 years after its construction!

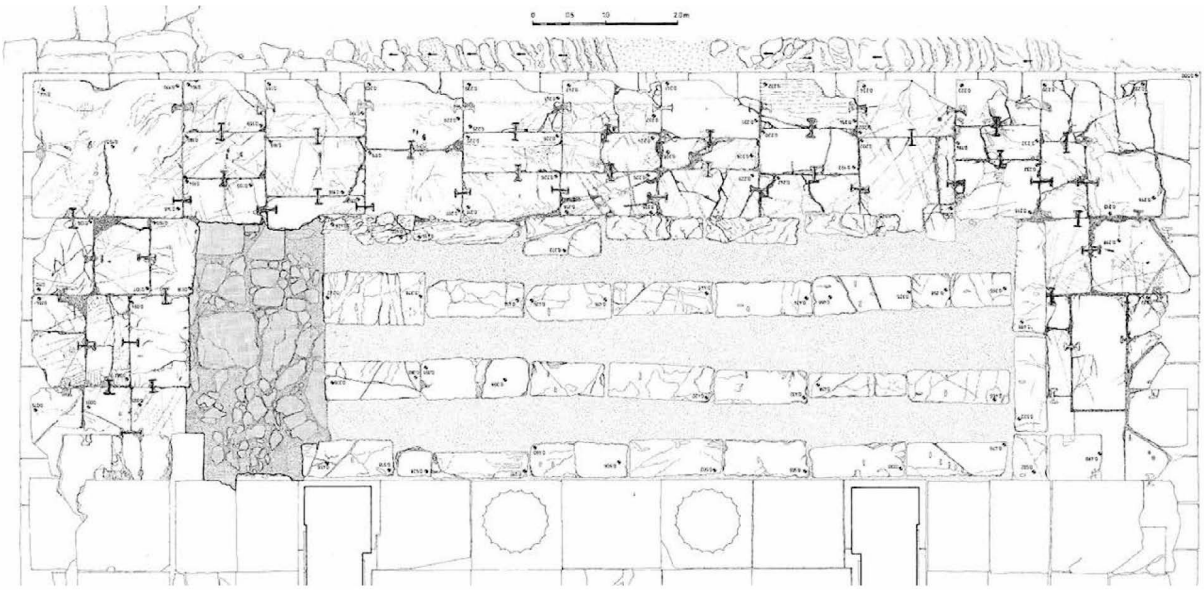


Fig. 35: *The 1st step of the crepis and the sleepers of the north pteron of the monument before their restoration. The drawing also shows an excavation trench in the inner northwest corner of the building.*

Transporting the marble

One of the most costly aspects of building a monumental structure in antiquity was transporting the building materials. In most cases, the builders chose to source most of these nearby. Otherwise, they ensured that materials brought from far afield were transported by water, which was easier and consequently cheaper than transporting them by land.

Most of the Temple of Apollo Bassitas, as mentioned above, was built of local limestone. However, many individual parts (the roof tiles and many important architectural features) were made of marble which was brought, according to Cooper's study, from a quarry on Cape Tainaron.

If this was indeed the case, the blocks of marble were transported by sea from Cape Tainaron to the Gulf of Kyparissia. They were then loaded on smaller vessels and brought as far as possible up the River Neda, which was navigable in antiquity. [53] There they were loaded on mules and perhaps donkeys, and carried along the roads of the time, via Phigaleia, to Bassai.

The largest blocks of marble that had to be transported to Bassai are those forming the beams of the pronaos. These beams are Π-shaped in section, presumably to reduce their weight as much as possible, making them easier to transport.

Quarrying the limestone

On the slopes of Mt Kotilion, close to and around the Bassai monument, are many ancient quarry faces (Fig. 36), revealing the source of the limestone building material of the temple. Despite the ravages of time, these quarries preserve traces indicating that at Bassai, besides the known quarrying techniques of the ancient artisans (cutting channels around the blocks and using wedges to export them from the rock), drills were also used, mainly along fissures in the rock strata.

Fig. 36: *In the foreground and background (bottom left and top right) are the faces of an ancient quarry at Bassai, northwest of the monument.*

At various sites it is also clear that the quarried blocks were roughly cut into shape nearby, both in order to reduce their weight and to assess whether they were structurally sound. This was more often the case with the larger (and also the medium-sized) blocks, and those quarried lower down the mountain than the monument.

The blocks were then transported close to where the monument was being built. The small blocks were probably carried on wooden stretchers, while the medium-sized blocks (if their original site and the state of the road to the temple permitted it) were moved on wooden rollers. Otherwise, like the large blocks, they were either carried on carts drawn by mules or donkeys, or loaded directly on the backs of the patient, good-natured animals.

Aspects of construction

The final shaping of the stone-blocks and their architectural features took place near the monument under con-

struction or, where possible, after they had been placed on it. This minimised the risk of their suffering minor damage as they were shaped. In order to protect the edges of the blocks from chipping and flaking, either when they were joined together or if they were subsequently shifted or shaken by a strong earthquake, the stonecutters carved shallow bands several millimetres wide around the edges of their faces.

All architectural elements were placed in a predetermined sequence: for example, the placement of the outer courses of the layers of blocks under the columns began at both ends, usually ending with the central block. The blocks were pushed into their final positions using levers, as can be seen from the pry holes* in the upper surface of many blocks. They were hoisted using ropes and wooden cranes, as evidenced by the protrusions preserved on the lateral surfaces of a stone block which was originally intended to form part of the sekos wall, but was finally laid as a sleeper* under the paving slabs of the north pteron (Fig. 37). Fine lines were incised into the upper surface of blocks for the precise placement and correct orientation of the overlying stones, while red ochre (miltos) was rubbed on the surfaces of the column drums to locate tiny, invisible uneven spots and remove them.

Fig. 37: *Foundation block originally intended for a side wall of the sekos.*

Although brief and incomplete, the above description of the advanced construction methods deployed in the erection of the Bassai monument demonstrates that the Temple of Apollo Epikourios was not only an aesthetically pleasing building but also a high technical achievement of its time.

NOTES

34. Gruben 2000, 137.
35. See also p. 47
36. Limestone elements of different shades have been used in the building, especially in the north wing, where there are several stones of a shade somewhere between light greyish-red and light greyish-violet.
37. Cooper 1996, 107-114.
38. The famous ancient traveller says that east of the Lykaion was a sanctuary dedicated to the Parrhasian or Pythian Apollo. He also states that there was an annual festival at which a wild boar was sacrificed to Apollo Epikourios in the agora (although he does not mention which agora). The boar was then carried in procession, to the accompaniment of the aulos (reed pipe), to the sanctuary of Parrhasian Apollo. There parts of the slaughtered animal were burnt, completing the sacrifice, and the rest was eaten (Pausanias, Description of Greece, 8.38.8).
39. Papadopoulos and Savvatianou 2015, 91–104.
40. Hahland 1948, Hofkes-Brukker and Mallwitz 1975, Hoepfner 1997.
41. Hoepfner 1997.
42. Cooper 1996, Madigan 1992.
43. Hoepfner 2001.
44. Dinsmoor 1950, 154.
45. Cooper 1996, 80.
46. Camp 2005, 39-45.
47. Pausanias, Description of Greece, 8.30.3-4 and 8.41.9.
48. Kavvadias 1905.
49. Gialouris 1988, 38.
50. Orlandos 1967–68, 46–47 and 171.
51. Romaios 1914.
52. Cooper 1996, vol. I, 290–291.
53. 'Near the sea the Neda is navigable for small ships.' Pausanias, Description of Greece, 8.41.3.

Fig. 38:
The Bassai monument from the northeast in 1806, watercolour by Edward Dodwell.

5 IMPORTANT EVENTS IN THE HISTORY OF THE TEMPLE

Structural intervention in antiquity[54]

Pausanias' reference[55] to the Temple of Apollo Epikourios, having visited Bassai around 174 CE, is the sole mention of the monument in an ancient written source. Although Pausanias does not provide an extensive description of the temple, he calls it the most beautiful in the Peloponnese, second only to that of Athena Alea in Tegea, and admires the beauty and harmony of its stones.[56] This last comment indicates that around 500 years after its construction, the temple was a sight worth seeing, free of distortions or other damage, presumably either thanks to its durability or because someone ensured that it was maintained. Recent evidence suggests the latter.

The new data indicate that the temple underwent quite an extensive structural intervention, probably repair work, at some unknown point after its construction but definitely in antiquity.

This intervention was carried out on at least the southwest corner of the building, and included the second column from the north on the west side, the underlying and overlying blocks, the adjacent floor slabs of the pteron*, and the foundation stones on which the floor slabs were set. These deductions are based on the fact that, when part of the north pteron was dismantled in order to consolidate it, many blocks were revealed which had either been reused after recutting one of their faces (like the lowest drum of the column mentioned above), or were made of much poorer-quality stone than their neighbours (like the backer block of the epistyle* in the northern corner of the

west side), or had had a vertical surface roughly worked so they could be wedged into place (like the sleeper* in the northwest corner of the north pteron).

Another strong piece of evidence for the presumed intervention is the difference between the sleepers at either end of the north pteron of the temple: at the east end, the lengthwise and transverse courses of blocks meet in a very carefully designed pattern, while this is not the case at the west end (Fig. 39). The sleepers at the west end would almost certainly have originally been arranged as neatly as those at the east end, as we can see from the orderly layer of sleepers at the west end of the south pteron, visible where two floor slabs are missing (Fig. 40).

Yet another supporting fact is that the second column from the north on the west side stands out from the whole peristyle because it has ten drums, more than any other column, while its capital also differs (due to its dimensions) from any other in the building.

Based on the information available today, it is difficult to estimate the date of the intervention or how much of the building it covered, so the above observations are just a preliminary approach to this fascinating issue. When the ongoing restoration project is extended to other parts of

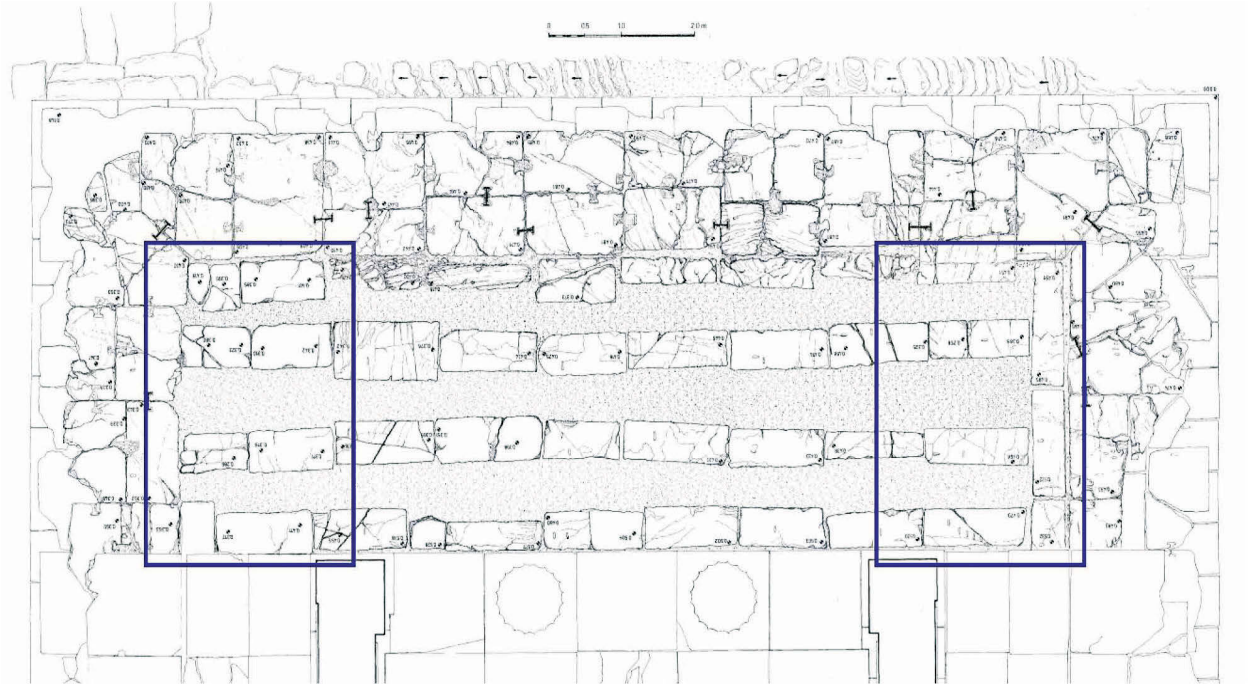


Fig. 39: *Plan of the 2nd step of the crepis and the sleepers of the north pteron. The rectangles enclose the segments of the courses of sleepers which they are in non-accordance regarding the arrangement of blocks.*

Fig. 40:
The west end of the south pteron of the monument seen from the east.

the monument, further data can be sought and will probably be discovered, to be studied alongside the information already available.

The destruction by looters

After Pausanias, the next historical testimony referring to the monument of Bassai was recorded sixteen centuries later, in 1765. That was when the French architect Joachim Bocher, wandering in the mountains of Arcadia, chanced upon the ruins of an ancient temple which he correctly identified as that of Apollo Epikourios mentioned by the ancient traveller.

What Bocher saw was a destroyed monument: a pile of stones on the site of the sekos*, surrounded by a standing peristyle* (Figs 38, 41). However, even the peristyle was not completely undamaged; the two corner columns on the south façade had collapsed, along with a few stones from the epistyle (mostly on the south side), while not a single stone remained in place above the course of the epistyle blocks.

So what had happened in the roughly sixteen centuries between the first two known historical testimonies, turning the temple from an attraction into a ruin? It seems

Fig. 41: *Drawing of the monument by C.R. Cockerell, 1811.*

that the temple was probably destroyed in a single historical period, by people who removed the lead and iron clamps securing the stones for their metal.

This can be inferred from the fact that the metal clamps are missing from all the destroyed parts of the temple, while only the solid core of the building (rather than its 'flexible' peristyle) has collapsed, and inwards at that, indicating deliberate rather than accidental destruction.

It is very probable that the two corner columns on the south side were knocked down by the same looters in their first efforts to determine the locations of the metal clamps on the building, presumably starting with the south façade. This hypothesis is based not only on the fact that the south side of the monument is the first that visitors to Bassai see, but also on the fact that this is the area which has suffered the most damage. It seems that, as there were no metal clamps in the interfaces of the drums (only wooden polia* and empolia*), the looters did not pull down the rest of the surrounding colonnade (which is still standing today!). However, they broke all the intercolumnar slabs of the crepis on which the columns stood, and every exposed corner of all the blocks forming its outer courses, in order to remove the metal clamps from

there, too.

Thus the ancient temple of Bassai was transformed, in a single moment of its history, from what was probably quite a well-preserved building into an open ruin. But when was that moment? In the absence of any historical data, the most widely accepted theory until recently was that of F.A. Cooper, who, based on the dating of the similar destruction caused to the temples of Zeus at Olympia and Nemea, places the vandalising of the Bassai monument somewhere between the 5th and the end of the 6th century CE.[57] However, information which has come to light during the recent restoration work has revealed that the temple remained intact and with its roof (at least on the north pteron) for several centuries longer.

42: *The southeast fragment of the 4th column from the east of the north façade, with clearly visible lines on the upper surface delimiting three(!) unevenly weathered areas.*

More specifically, the study of the uneven (in extent and location) weathering of the upper surfaces of a column capitals (especially, of one fragment, Fig. 42) and the epistyle blocks of the north façade of the monument,[58] revealed that both the uncovered inner part of the upper surface of the capital and the upper surfaces of the blocks began to be weathered simultaneously, around the 8th or 9th century CE. This indicates that the temple was actually destroyed around 800 CE.

Damage due to environmental factors

Immediately after the destruction of the temple, a fresh process of deterioration began. Slow but unhindered until the 20th century, this process reduced the monument to

the condition it was in before the modern reconstruction work began.

The problem was weathering, a process repeated over the course of the seasons. Snow settled and rain fell on the exposed upper surfaces of the stones, eroding them and opening cracks in their joints. Via these cracks, the rainwater penetrated the foundations at a gradually increasing rate, heavily eroding and deforming them. The damage to the foundations, in turn, led to the settling and fracturing of the blocks of the crepis; and the fracturing further facilitated rainwater penetration, while the settling caused tilting of the columns (Fig. 43) and deformation of the course of blocks forming the epistyle.

It seems, however, that this was not the only damage due to natural causes suffered by the monument during the period when there is no information on its history.

The study on the eroded upper surfaces of the column capitals on the north façade of the temple also revealed that blocks had collapsed from the epistyle* during three different periods. Only the collapses of the third period can be attributed with certainty to human intervention.

The first of these collapses occurred at some point between the 13th and 14th centuries CE. Three blocks (numbered A.B1, A.B3 and E.B4 as part of the modern restoration project, see Fig. 44) and two very large fragments (one from block A.B4 and the other from E.B5) fell,

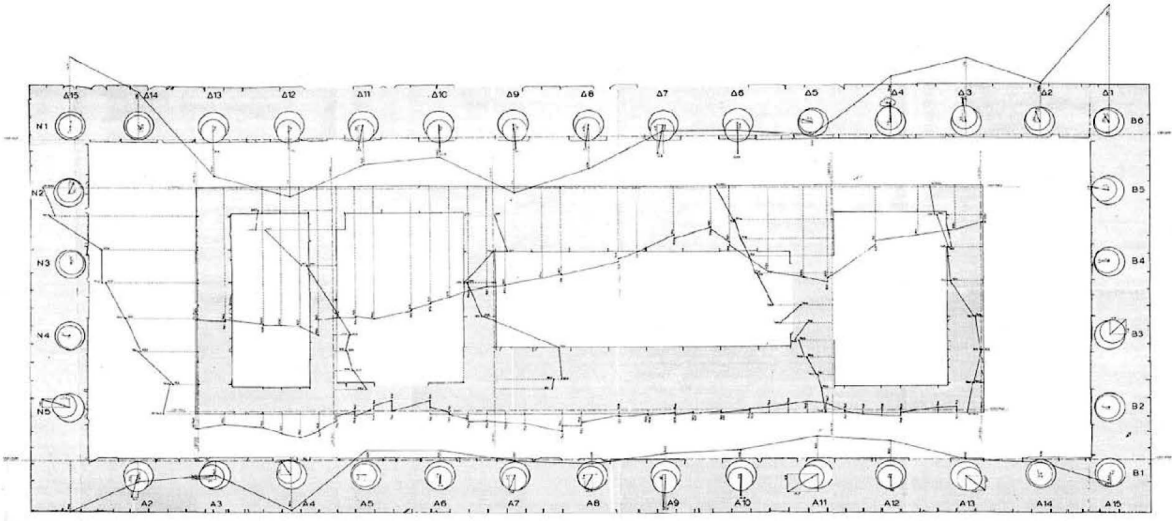
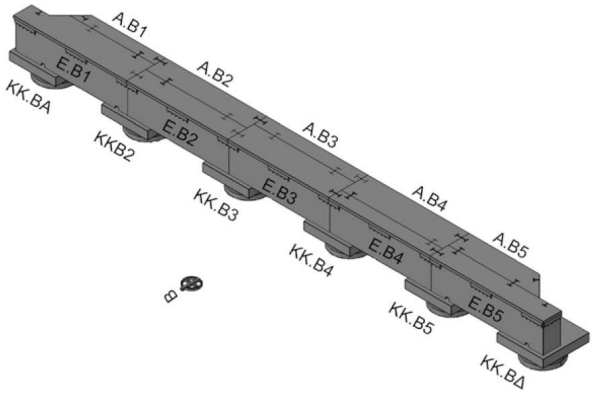
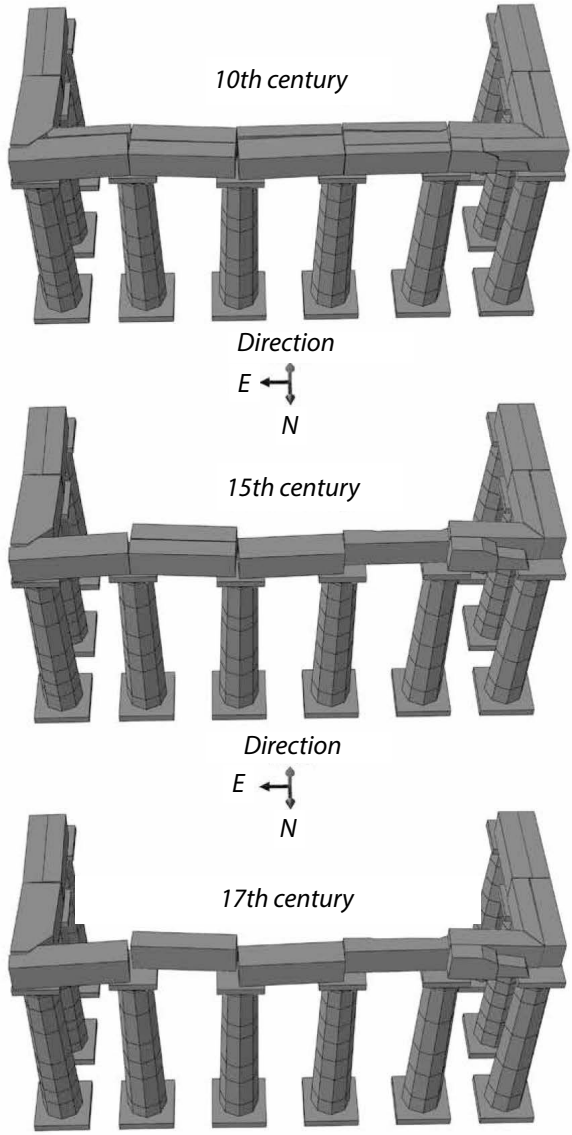


Fig. 43: *The differential settlement of the temple and the tilting of the columns of the peristasis prior to the recent conservation of the north pteron. Settlement scale to titling scale of 1/50.*

probably simultaneously (compare Fig. 45 top and centre). If they were indeed simultaneous, these collapses were probably caused by a strong eart hquake. It is no coincidence that the fallen pieces were the three narrowest blocks of the whole peristyle (≈30-35 cm), a fragment (the south piece of A.B4) which, after cracking away from the main mass, essentially formed a separate, very thin stone (≈20 cm), and a fragment (from E.B5) located in the northwest upper corner of a ruined building.

Later, around the 16th century, another block of the north epistyle, E.B2, fell (compare Fig. 45 centre and bottom). This probably happened at the same time as the collapse of the northeast fragment of the capital of the third column from the east of the north façade (column K.B3). It seems that, over the centuries, the steady divergence of columns K.B2 and K.B3, as they tilted strongly in opposite directions (Fig. 45), gradually reduced the bearing surface of the overlying epistyle blocks and increased the stress on the column capitals. This poor load-bearing arrangement meant that column K.B3 lost a large part of its capital in the northeast corner (or its whole east side), rendering the position of epistyle block E.B2 precarious. At some point that block collapsed, taking with it the detached piece of the capital of column K.B3, either exclusively due to gravity or following even a





minor earthquake.

The third collapse of blocks from the north façade of the building occurred in 1812 and is discussed in the section after next.

Fig. 44: Conventional names of column capitals and epistyle blocks of the north façade.

The 'discovery'

A few years after his crucial discovery in 1765, Joachim Bocher returned to Arcadia, presumably in order to study the Bassai monument more extensively. Unfortunately, he was murdered by local bandits (probably from the Lalas area). He had, however, already reported his discovery to English scholar Richard Chandler, whose book (first published in 1776) made Bocher's discovery and the location of the monument widely known.

So, in the first decades after the location of Bassai was made public knowledge, European antiquarians (many of them with dubious intentions) flocked to Bassai to admire the monument, without, however, causing any significant alteration to its state of preservation.

Several of these travellers mention the temple in their writings and/or produce drawings of the monument. The French scholar Louis-François-Sébastien Fauvel travelled to Bassai in 1787 and describes the ruin and its location in his diary. François Charles Hugues Laurent Pouqueville, another Frenchman, not only refers to Bocher's 'discovery' of the Bassai monument in his book on the Morea and other parts of the Ottoman Empire,[59] but also provides the relevant information on the death of the French architect. The English architect Robert Smirke produced two beautiful (but rather unreliable) drawings during his visit to the temple in 1803 (Fig. 46), while the Irish scholar and painter Edward Dodwell, who spent six days in and around Bassai in 1806, records his impressions of the temple in his two-volume work on his travels in Greece (1819).

Fig. 45: The state of preservation of the north epistyle in three different periods.

Dodwell actually provides quite a clear description of the state of the monument during that first phase of its known early modern history. He not only mentions the

Fig. 46: *Watercolour of the monument by Robert Smirke, 1803.*

number of standing columns and the fact that almost all still bear their epistyle blocks, but also remarks that many columns are tilted and that the joints of the epistyle are broken in several places, rendering the blocks unstable.[60] He also includes, in his supplementary volume of drawings of Greek landscapes (1821), what is probably the most reliable contemporary drawing of the ruin and its surroundings (Figs 38, 47).

The reliability of this drawing is due not only to the care with which Dodwell approached the subjects he wished to record, but also to his use of a camera obscura, a precursor of the camera, which gave his sketches an almost photographic accuracy.[61] The device was used to equally good effect by his colleague, the Italian artist Simone Pomardi (who was unfortunately taken ill during the visit to Bassai and remained behind in the village of Ambelionas, where they stayed overnight).

The undertaking of 1812

The first phase of the early modern history of the Temple of Apollo Epikourios came to an abrupt (and, in many people's view, dramatic) end in the summer of 1812. That was

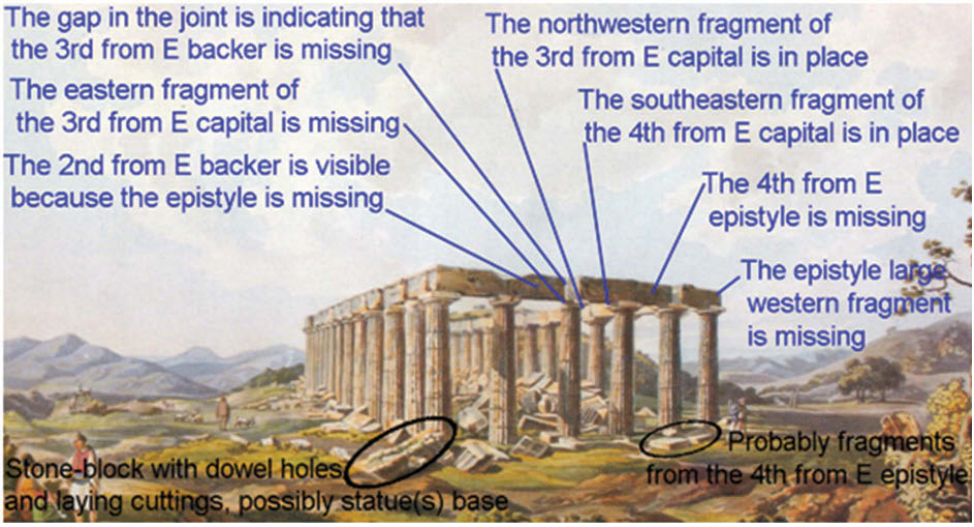


Fig. 47: *The drawing of Fig. 32 with comments on the state of preservation of the column capitals and epistyles of the north façade of the temple (Study - Digital processing: K. Papadopoulos, 2012)*

when, following their visit to Bassai a year earlier (Figs 41, 48) with a slightly smaller group, a band of Northern European adventurers (scientists, artists, etc.), including Carl Haller von Hallerstein, Charles Robert Cockerell, John Foster and Jacob Linckh,[62] carried out an extensive 'excavation' operation at Bassai. This essentially involved clearing the area around the monument and moving the fallen stones from the interior to just outside it. It also included the study of the ancient building (von Hallerstein's being the most in-depth report) and drawings by many of the participants (von Hallerstein, Foster, Cockerell and others) (Fig. 49).

This undertaking would not have been possible without the permission (on payment of a substantial amount) of the Turkish governor of the Peloponnese, Veli Pasha, and the paid manual labour of 50 to 80 local workers, according to Cockerell[63] – who was not actually present, as he was in Sicily that summer.

We know that the most important outcome of the operation was the 'discovery' (in fact the removal from the lower layers of the heap of stones inside the peristyle) of the sculptural decoration of the temple: particularly the slabs of the Ionic frieze, found almost intact, and frag-

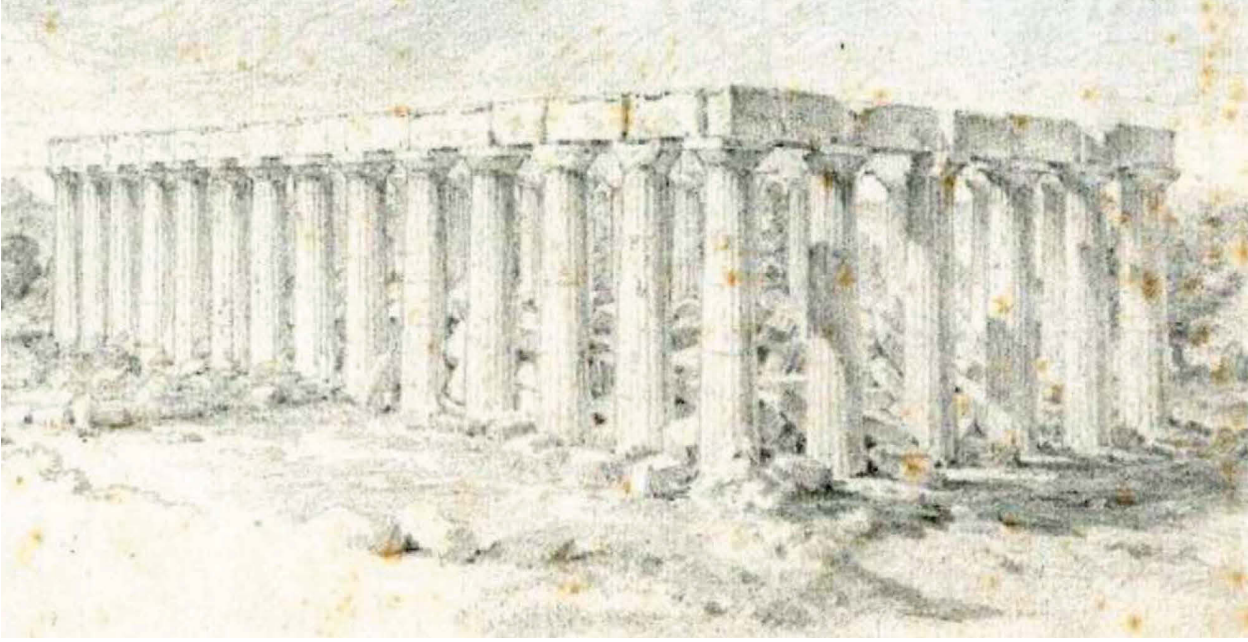


Fig. 48: *Sketch of the monument from the northeast by C.R. Cockerell, 1811.*

ments of the Doric metopes* of the pronaos* and opisthonaos*. With a second large bribe to Veli Pasha, these finds were carried off to Zakynthos, where they were sold off in 1814, finally ending up in the British Museum in 1815.

What is not generally known, however, is that in order for this to be done, almost all the collapsed architectural features had to be moved from the places where they had fallen due to natural causes or human action.

Thus, although this was not its participants' intention, the operation of 1812 brought about major changes to the shape in which the monument was preserved and proved highly detrimental to the state of preservation of the underlying blocks, as a multitude of marble architectural features of great importance to the history of architecture, and many painted limestone elements, were uncovered by the 'excavation' and abandoned to their fate. Over the following decades, the former were destroyed, probably burned for lime by the locals,[64] while the latter lost their decoration under the relentless dissolving action of rainwater.

The participants in the 'excavation', however, also caused deliberate damage to the shape and condition of the ruin. As Dodwell informs us, 'Some pieces of the north-

Fig. 49: *Watercolour of the monument from the north after the 1812 operation, by J. Foster.*

ern front (of the architrave) have been thrown down since I quitted Greece, as the insecurity of their position made the discoverers of the marbles apprehensive that they might fall on the excavators' (compare Figs 41 and 46-48 with Fig. 49). [65]

The recent study, mentioned above, of the various traces of weathering on the upper surfaces of the column capitals of the north façade, also revealed that the blocks which fell last of all from the north epistyle are A.B2 and E.B3. This clearly indicates that these were the blocks knocked down by the participants in the operation of 1812.

Indeed, we have the testimony of one of those responsible for bringing down the blocks, Baron Otto Magnus von Stackelberg. In his book on the monument published in 1826, he notes: 'On this occasion a stone [from the clearing of the peristyle], which was clearly about to fall [he means epistyle block E.B3], had to be removed from the architrave between the third and fourth columns on the right on the north front of the temple, in order to prevent an accident; at the same time a second one [the backer A.B2], the danger of which had not been foreseen, fell of its own accord.'[66, 67]

So, knowing the details of the collapse of the two epistyles, it is clear that the most reliable contemporary drawings of the Bassai monument are those of C.R. Cockerell (Figs 41, 48) and Carl Haller von Hallerstein from their visit to Bassai in the summer of 1811, now in the British Museum, and above all Dodwell's drawing (Figs 38, 47).

Careful examination of these drawings, combined with the study of the upper surface of the drums underlying the capitals of columns K.B4 and K.B3, has shown that the standing part of the monument suffered further damage in 1812. As the two epistyle blocks were falling, they carried away the southeast fragment of the capital of column K.B4, and probably the northwest part (or the whole west side) of the capital of column K.B3. The latter probably ended up in London together with the sculptural decoration of the building, as one of the two fragments of a Doric capital from the temple now in the British Museum (Fig. 50).[68]

Based on the above information, the state of preservation of the epistyle blocks and column capitals of the north façade of the monument, before and after the events of

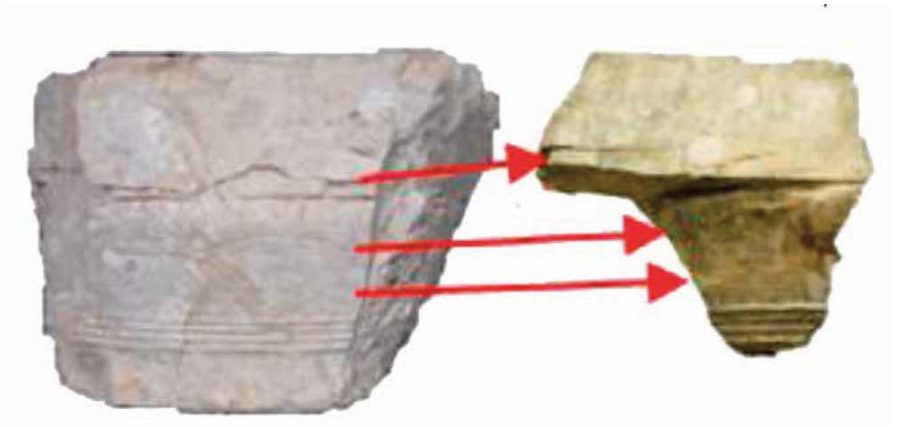


Fig. 50: *The north side of the capital of column K.B3 as preserved on the monument (left) and the large fragment of a Doric capital now in the British Museum (Museum number 1815,1020.24). The locations of the discontinuities in the stratification of the block and fragment strongly indicate that the latter comes from the former.*

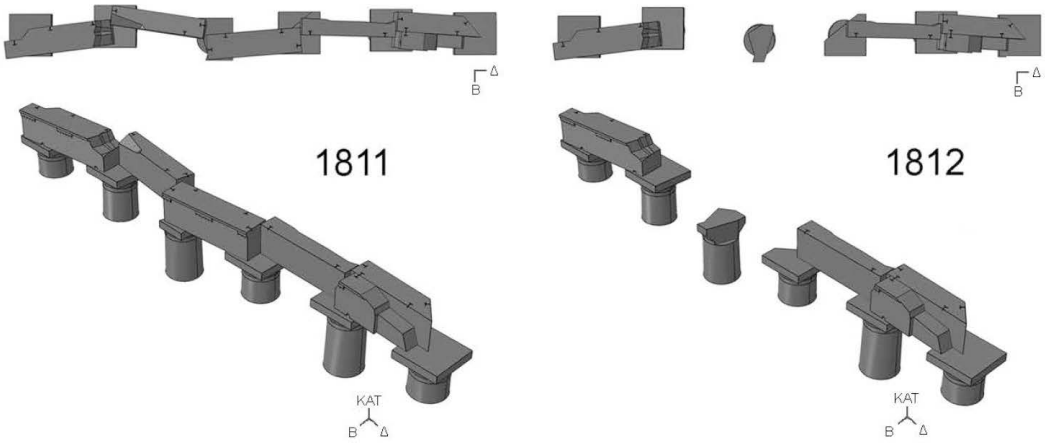


***Fig. 51**: The state of preservation of epistyle blocks and column capitals of the north façade of the temple before and after 1812, in perspective views (below) and in plan.*

the summer of 1812, is summed up in the comments on Dodwell's drawing in Fig. 47 and presented in full in the sketches in Fig. 51.

Collapse of a column on the west side in the 1820s

In the decades that followed up to the turn of the 20th century, many Europeans, mainly scientists and artists, continued to visit Bassai and produce drawings and reconstructions of the temple. The most thorough of these were made by Abel Blouet, a member of the French scientific expedition that toured the Peloponnese in 1829, whose drawings were included in the second volume of the monumental Expédition Scientifique de Morée (1833), and Denis Lebouteux, another Frenchman, who visited Greece in 1853 on a scholarship from the École des Beaux-Arts in Paris. Over that period, the alterations to the standing ruin (rather than the fallen blocks) were few, yet damaging, associated with limited metal robbing by local inhabitants.

The worst of this damage occurred in the 1820s, when

the second column from the south on the west side collapsed, together (of course) with the inner epistyle block surmounting it. The column may have been toppled by Greek fighters during the Greek Revolution of 1821, in the mistaken hope of acquiring lead for smelting from the interfaces of the drums.[69]

NOTES

54. The first paragraph of this chapter is based on observations I made together with architect Vassiliki Savvatianou. The other new information on the structural adventures of the Bassai monument presented here is derived from my own observations, measurements and study (Papadopoulos and Savvatianou 2015, pp. 207-229).

55. Although it is not covered in a separate section in this volume, Pausanias' visit to Bassai is, indirectly but indisputably, one of the most important events in the history of the Temple of Apollo Epikourios. This is because Pausanias' references to it are the only surviving mentions from antiquity, forming the springboard for all modern attempts to study the monument.

56. Pausanias, Description of Greece, 8.41.8.

57. Cooper 1996, p. 121. Cooper's theory is referenced by scholars including D. Svolopoulos (1995, p. 59) and X. Arapogianni (2007, p. 30).

58. Papadopoulos and Savvatianou 2015, pp. 216-226. My measurements show that the rate of erosion of the upper surfaces of the column capitals and the epistyle blocks of the north façade (until they were covered for their protection) was approximately 1 mm per 60 (±10) years and 1 mm per 40 years respectively.

59. Pouqueville's Voyage en Morée, à Constantinople, en Albanie, et dans plusieurs autres parties de l'Empire Ottoman pendant les années 1798, 1799, 1800 et 1801 was published in 1805.

60. Dodwell writes: 'There are at present thirty-six columns standing, besides some of the frusta of the pilasters. The lower part of the epistylia is almost entire; but many of the columns are out of the perpendicular. The architrave has consequently been disjointed in several places, and menaces an approaching fall' (Dodwell 1819, Vol. II, 386).

61. Camp et al. 2013, 15-16, 31-43 and 114-117.

62. F.A. Cooper documents all the participants and their roles (1996, 12-27).

63. Cockerell 1860, 44.

64. Roux 1961.

65. Dodwell 1819, vol. II, 386.

66. von Stackelberg 1826, 18.

67. In an effort to mitigate any negative impression this attestation might make on his readers, Stackelberg continues: 'But this did not detract from the picturesque effect of the ruin, but rather enhanced it.'

68. The fact that not only epistyle blocks but also fragments of column capitals collapsed in 1812 explains why Dodwell refers (see pages 101-102) to 'pieces' of the north front rather than 'architraves' or simply 'blocks.

69. Papathanassopoulos 1988, 16.

Fig. 52:
The Temple of Apollo at Bassai from the northeast, 1891. The buttressing of the column on the west side carried out in 1880 is partly visible.

6 PROJECTS FOR THE PRESERVATION OF THE MONUMENT

The first preservation works in the modern era

Although the necessity of examining the state of preservation of the Temple of Apollo at Bassai and taking measures for its repair had been recognised in official documents from at least as early as 1867, the first intervention for its protection in the modern era did not take place until 1880.

This intervention was carried out during a period (1864–1884) when the ambitious plans for the raising and restoration of antiquities in Greece drawn up by the Archaeological Society at Athens in the preceding period (1834–1863) had given way to purely rescue interventions on the monuments.

Consequently, the work carried out at Bassai, in line with the prudent spirit of the time, concerned: a) the buttressing with oak beams of the sixth column from the north on the west side (Fig. 52), which was (and still is) strongly tilted, and b) the restoration of the missing fragments of a few drums of the second and third columns from the west on the south side, securing the drums with metal hoops (Fig. 53).[69] These three columns were obviously judged to be the most at risk of collapse in the whole peristyle*.

The work was carried out by two builders from Athens, Konstantinos Margaritis, described in contemporary documents as 'experienced', and Leonidas Ioannou,[70] who were proposed by the German architects of Olympia to the heads of the Archaeological Society at Athens.[71] The

Fig. 53: *The temple from the southwest, c. 1891. The hoops around the two columns on the south side are visible.*

work was funded by the Society under the supervision of Konstantinos Dimitriadis, the Greek overseer of the Greek excavations at Olympia. The metal hoops used in 1880 and the filling materials used to restore the drums remained in place on the southern columns until 1965, when they were removed as part of the conservation work carried out at the time.

In 2012, during the course of work to arrange various materials on the Bassai archaeological site, I found and identified three hoops dating from the 1880 intervention. Two are preserved almost intact, still bearing many of the rivets used to secure them to the wooden inserts between the hoops and the drums (Fig. 54).

Fig. 54: *The two hoops used to secure columns in 1880, seen in the Bassai archaeological site in 2012.*

The anastylosis of 1902–1908

At the turn of the 20th century, a general spirit of progress and modernisation prevailed in Greece. This naturally included the field of Greek archaeology, which was entering a more scientific phase. Consequently, interventions on ancient monuments during this period were characterised by attempts at a scientific approach, with the establishment of more objective processes for the planning, execution and supervision of the works.[72]

Against this background, the Archaeological Society at Athens carried out an ambitious anastylosis (reconstruction) programme on the Bassai monument between 1902 and 1908. The work was particularly extensive in 1905 but relatively limited in the following years. In effect, the restorers implemented the vision of William Martin Leake, who had visited Bassai a century earlier, in May 1805. Impressed by the wealth of structural material from the monument, both in situ and scattered around the area, he wrote that it was the best-preserved ancient temple after that of Hephaistos in Athens, and that '... both the peristyle and the cell might be restored to their original state without much deficiency, if wealth and power, taste and science should ever be restored to Greece'. [73]

During the first year, the restoration work was accompanied by excavations to reveal the monument in full and discover its surviving materials. Also, the fallen blocks were moved again and spread out in the surrounding area to make it easier to study them and identify their position in the building (Fig. 55). The overall director of the excavation was General Ephor of Antiquities Panagiotis Kavvadias, while the direct supervisors were Ephors Konstantinos Kourouniotis and Konstantinos Romaios.[74] Kavvadias was responsible for the restoration and its supervision at a distance, in consultation with the prefectural civil engineer Nikolaos Balanos, who was in charge of the works on the Parthenon,[75] while the main mover of the project was illustrator Nikolaos Ioannitis, who had experience of such projects after working on the Acropolis of Athens as

Fig. 55: *The temple from the northeast during the first period of restoration (1903).*

Balanos's assistant.[76]

It was then that the monument acquired the form we see today. Apart from other, smaller interventions, the two southernmost columns on the west side were re-erected, the walls of the sekos* were reconstructed, and the columns of the pronaos* and opisthonaos* were partially restored (Figs 56, 57).

Mortar was used to restore ancient building elements and join fragments, while new pieces of limestone were used to replace a few shattered ancient blocks.

The restoration work of this period has been both

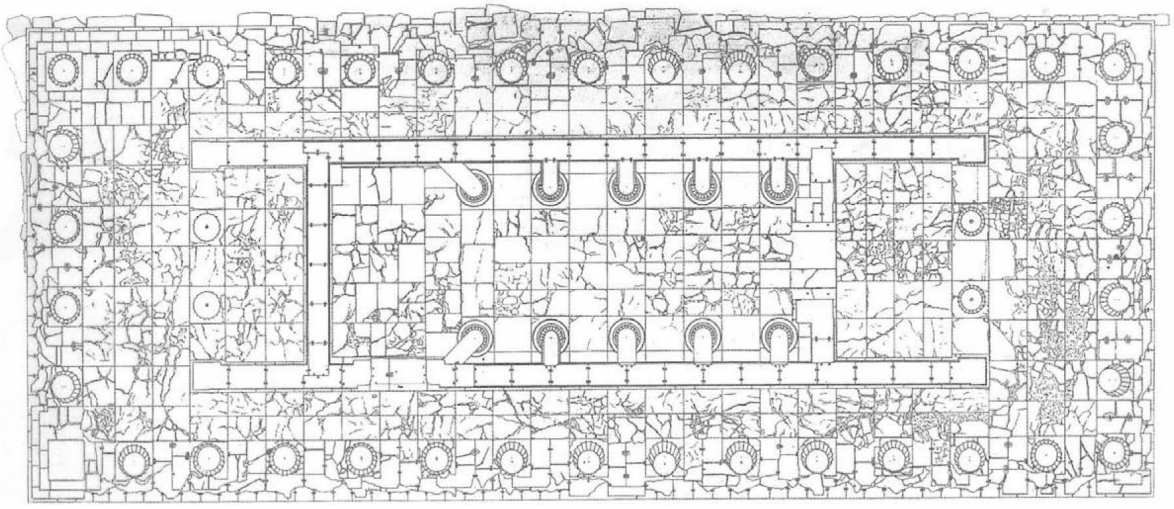


Fig. 56: *Plan of the temple (probably by N. Ioannitis) at the end of the restoration, without the additions of new materials.*

Fig. 57: *The temple at the end of the restoration work of the 1902-1908 period.*

praised[77] and deservedly criticised.[78] In any case, however, and in spite of the damage to some reinstalled blocks caused by their restoration, it must be stressed that the head of the works, Nikolaos Ioannitis, probably isolated and lacking specialist colleagues, managed to bring the building to something very close to its original form in a short amount of time, restoring the temple to much of its former glory. Since then, informed visitors to Bassai have been able to understand the layout of the singular interior spaces of the monument, its ingenious combination of the three orders of ancient architecture, and the fascinating coexistence of features of different historical periods.

The consolidation works of 1965–1966

The last important changes to the Bassai monument before the mid-1970s (the date marking the beginning of the contemporary era of the protection and restoration of ancient monuments in Greece) took place in 1965. That year, following a destructive earthquake that struck the wider Andritsaina region, restoration work was carried out on three epistyles* (two of them at the ends of the north façade) and a capital, all with cracks right through them. Moreover, the heavily tilted second column from the east

on the north side was dismantled and reconstructed, following the restoration of the underlying block.

The work was carried out according to the study drawn up by the Director of Restoration Charalambos Bouras, based on his first-hand examination of the state of the monument between 28 June and 1 July 1965, in collaboration with Petros Themelis, the curator of the 7th Ephorate of Antiquities, and with the assistance of head technician Nikolaos Skaris. Skaris also led the small team of technicians and workers who carried out the work. Similar work was carried out the following year, for the repair of the damage of an epistyle on the east side (Fig. 58), caused by a lightning strike in December 1965.

All the work was accompanied by drawings and photographs that were quite detailed for the time (Fig. 59). In any case, it was subsequently found that the strong earthquake of 1965 had not caused any major new damage to the monument.[79]

A 'memento' of this intervention was discovered recently and identified on the Bassai archaeological site: the manual lifting mechanism (winch and hoist) used by

Fig. 58: *View from the south of the scaffolding erected for conservation work on the epistyle and column capitals of the east side of the temple (1966).*

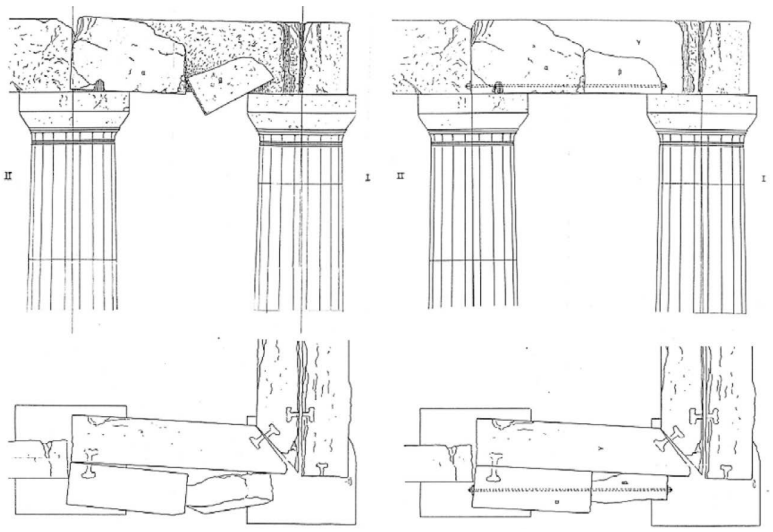


Fig. 59: *Drawing of the west epistyle of the north façade of the temple, in situ, before (left) and after the restoration work of 1965.*

Skaris and his team, which was made in 1960 and had a lifting capacity of 7,500 kg.

A glance at this machine (Figs. 58, 60) is enough to reveal the difficulties faced by those who laboured for the protection of the Temple of Apollo at Bassai (and other monuments in Greece), in times with far fewer available mechanical and other means than today. However, it also increases the sense of duty and responsibility of those of us who are fortunate enough to be the successors of those dedicated and brilliant scholars and their outstanding co-workers (technicians and others) in the not-so-distant past.

Fig. 60: *The lifting mechanism used in the conservation work of 1965 and 1966, seen in the Bassai archaeological site in 2012.*

The work of the Committee for the Preservation of the Temple of Apollo Epikourios

The systematic efforts for the protection of the monument in the modern era began in 1975, with the establishment of the Committee for the Preservation of the Temple of Apollo Epikourios, with the goal of planning and oversee-

ing the necessary conservation work.

The Committee originally operated in 1975–1979, when important work was carried out on the research, study and documentation of the temple and its environs. The work of the Committee continued, after a three-year pause, until 2016,[80] when the first major project for the restoration of the monument, the conservation of its north wing, was completed and delivered to the Ephorate of Antiquities of Ilia.

THE PASSIVE CONSERVATION PROJECTS

Several projects for the passive conservation of the Bassai monument were carried out in the 1980s. The most important of these were the erection of an anti-seismic scaffolding around the peristyle (1985), connecting the tilted columns to the reconstructed walls of the sekos and supporting the epistyles which were on the point of collapse; the installation of a lightning protection system (1986); and the erection of the canopy that has enclosed the ancient building since 1987 (Fig. 61), to protect it from environmental impacts.

A rainwater drainage system was constructed around the canopy and preparations for the construction of visitor facilities were also carried out during this period.

The works done in this period have been presented in several publications of the Committee, documenting the need for their implementation and outlining the reasoning behind them.[81] The construction of the canopy, in particular, has been criticised (justly, insofar as the building has been enclosed and cut off from the light and atmosphere of its natural environment). However, it is worth noting that this project has drastically slowed the weathering of the ancient Temple of Bassai, by preventing rain and snow from falling on the fragile limestone building material, preventing water from penetrating the foundations, and reducing the extreme fluctuations of temperature inside the canopy.

It should also be stressed that the canopy provides the necessary protection for the unhindered implementation

Fig. 61:
The canopy protecting the Bassai monument seen from the west, 2012.

of the conservation work on the ancient building even in the winter, and it will be removed once the intervention is complete.

PREPARATORY ACTIONS AND WORKS FOR THE INITIATION OF THE RESTORATION

In the early 1990s, the basic studies for the restoration of the monument were completed and published (1995). These included the architectural study, the structural restoration study and the study for the conservation of the building material.[82] These studies examined all the main issues connected with the preservation of the Bassai monument, documenting the need for an extensive intervention and describing how that intervention was to be implemented.

The main aims of the intervention are the following: a) reversing the geometric shifts in the load-bearing structure of the building and reinforcing its defence mechanisms against natural phenomena; b) halting the damage to and conserving the building material; and c) increasing the value of the monument.[83] These studies were presented at the 1st Meeting on the Conservation of the Temple in 1995 (Fig. 62), at which the need for extensive interven-

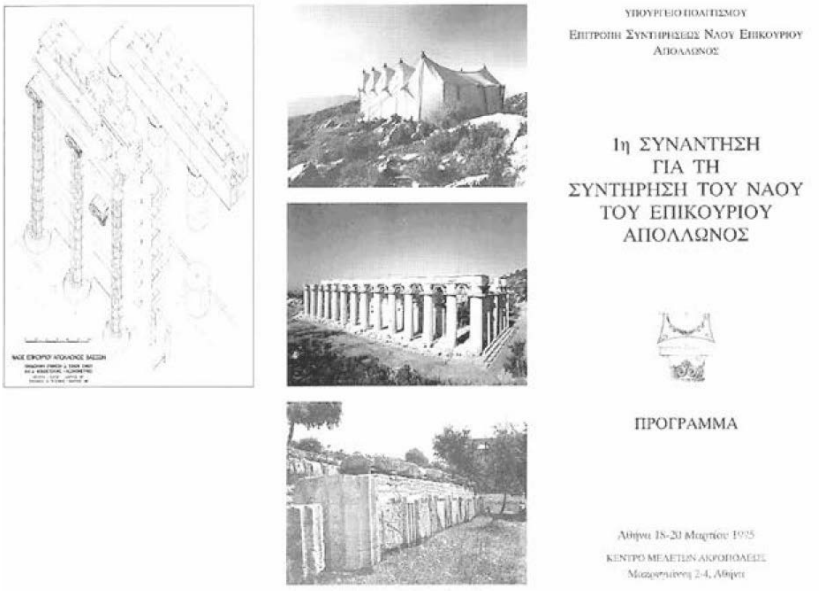


Fig. 62: *The cover of the information leaflet on the 1st International Meeting on the conservation of the temple.*

tion was widely accepted. The basic studies for the restoration of the Bassai monument were officially approved in 1997.[84]

The overall restoration project was divided into two major programmes based on the two structural units of the temple itself: the peristasis* and the sekos*. The peristasis programme was divided into five parts, the first being the restoration of the north pteron* in 2001–2015 (see following section).

The years that followed the approval of the basic studies, up to 2000, were a period of preparation for the restoration work. A large overhead crane was installed around the monument, a works building was erected in the archaeological site, construction equipment (including a strong forklift and a small overhead crane) was acquired, and the visitor facilities were completed (2001). Meanwhile, the architectural study for the restoration of the north pteron was drawn up[85] and subsequently approved.[86]

RESTORATION OF THE NORTH PTERON, 2001–2015

The restoration programme of the Bassai monument includes the following steps: removing the epistyles and the columns to their full height, dismantling the stone blocks of the three steps of the crepis* and the top course of the foundations (the euthynteria*), restoring and conserving the dismantled stone blocks, repositioning them using new titanium clamps, reinstalling the columns, and lastly restoring, reinstalling and re-connecting the epistyles.[87]

The project is mainly to secure the monument with the following aims: a) the reinforcement of the foundations of the monument; b) the full restoration of the stone blocks; c) the eradication of the load-bearing irregularities between the superstructure and the foundations by reinstalling the restored blocks in close contact with each other, in strictly horizontal and vertical positions and d) the reconnection, with new titanium clamps, of the blocks that were originally clamped together.

The work began in January 2001. By 2009, when the

2000–2006 Community Support Framework (CSF) financing was completed, the north façade of the monument had been restored except for the capitals and epistyles. From the latter half of 2011 to the end of 2015, the project was financed by the 2007–2013 National Strategic Reference Framework (NSRF). During this period, the restoration of the north pteron was completed: this part of the ancient building includes the north façade (with six columns), the northern ends of the long sides (with one column each), and the floor within them. [88]

During the restoration of the north pteron of the Bassai monument (2001–2015), 212 architectural elements were restored in total, while 190 pieces of dressed stone were used, as supplementary pieces, to reinstate the integrity of the ancient stone elements, 1,204 fragments were joined, and 10 fully carved new blocks were added. If we take into account the dismantling of architectural elements, the removal and reinstallation of full-height columns, the reinforcement of the foundations and the rearrangement of stone blocks, the restoration of the north pteron is comparable to the full restoration of a small ancient monument like the Temple of Athena Nike on the Athens Acropolis.

CONTINUATION OF THE RESTORATION WORK

The obvious next step for the continuation of the completed Bassai project is the conservation of the long sides of the monument. This work has already been planned, with a study[89] approved by the Minister of Culture in September 2015 with the unanimous assent of the Central Archaeological Council.[90] The first phase of conservation of the long sides has been included in the current National Strategic Reference Framework,[91] while its practical implementation began in September 2019 (Fig. 63), as a project for which the Ephorate of Antiquities of Ilia is directly responsible.

Fig. 63: *Removal from the monument of the 4th column from the north on the west side, in order to conserve the north ends of the long sides (2019). The west part of the restored north pteron is visible on the right.*

I believe that the extensive construction site infrastructure developed at Bassai in recent years, and the

important experience gained by the project staff during the restoration of the north pteron, will prove extremely useful for the successful execution of the next phases of the project. Meanwhile, the longterm, active interest shown by the Greek State in the protection of the Temple of Bassai is the best guarantee of the continuation and successful completion of the overall efforts for the study, preservation and legacy to future generations of one of the most important monuments of the ancient world.

NOTES

69. Other similar rescue interventions of the time include the securing of pillars of the Temple of Athena Nike in 1866, and the securing of columns of the Temple of Aphaia on Aegina with 18 metal hoops in 1873 (Mallouchou-Tufano 2014, 5).

70. Mallouchou-Tufano 1998, 68.

71. Koumanoudis 1880–81, 20–21.

72. Mallouchou-Tufano 1998.

73. W.M. Leake 1830, chapter VII, 5.

74. In 1902, on Kavvadias's instructions, Kourouniotis also excavated the peak of Mt Kotilion, at the sacred site of Kotilon (Kourouniotis 1903), while limited new excavations were carried out at Bassai, by Kourouniotis in 1907 (Kourouniotis 1910), and Romaios in 1908 (Romaios 1933).

75. Kavvadias 1902,23–27 and 1905,171–179.

76. Ioannitis's personality and his duties as Balanos's assistant, based on his writings, were outlined by Fani Mallouchou-Tufano in her speech at the 1st Meeting on the Conservation of the Temple of Apollo Epikourios at Bassai in 1995: 'Educated, a speaker of French and Italian [...] he oversaw every type of work – from the supply of materials to the layout and fencing of archaeological sites and also administrative work – he drew up plans, not only for the monuments intended for conservation but also for excavations [...] he oversaw the restoration of monuments, even, in the case of the restoration of the Temple of Epikourios, literally replacing Balanos and becoming the sole restorer of the monument. In his reports (on the progress of the restoration work at Bassai), he appears to have broader and quite ambitious archaeological and architectural interests [...] in a two-page supplementary note he disputes the existence of the Corinthian capi-

tal inside the temple and argues for an Ionic capital.'

77. Cooper 1996, 125.

78. Svolopoulos 1995, vol. 1, 74, 77–78.

79. Papantonopoulos 2000, 4.15–4.16.

80. The following have served as Chairs of the Multi-Disciplinary Committee: Dr. Nikolaos Gialouris, archaeologist (1975–1979), Dr Ioannis Travlos,† architect–archaeologist (1982–1985), Dr. Theodora Karagiorga Stathakopoulou, † archaeologist (1985–1997), Dr Yannis Tzedakis, archaeologist (1998–2003), Dr. Alexandros Mantis,† archaeologist (2004–2010) and Dr. Dimitrios Bairaktaris, civil engineer (2003–2004 and 2010–2016).

81. See Karagiorga 1995, 17–19; Papantonopoulos 1995, vol. 1, 107–114; Theoulakis 1995 and Tzortzi 2000, pp. 63–71.

82. These studies were drawn up by the long-term members of the Technical Office of the CCTAE, architect Demosthenes Svolopoulos, civil engineer Dr Kostas Papantonopoulos and mining engineer Dr Panayiotis Theoulakis.

83. Svolopoulos 1995, vol. 1, 95–101.

84. Central Archaeological Council Meeting 28/24–6–1997, document ΥΠΠΟ/ΔΑΑΜ/919/36343/22–7–1997.

85. The study was carried out by architect Sofoklis Alevridis with the collaboration of surveyor Maria Skourtsidou.

86. Central Archaeological Council Meeting 36/26–9–2000, document ΥΠΠΟ/ΔΑΑΜ/1547/66417/18–12–2000 and Central Archaeological Council Meeting 29/17–7–2001, document ΥΠΠΟ/ΔΑΑΜ/1910/55945/23–10–2001.

87. The total cost of the project financed by the 2000–2006 CSF was €2,834,734.86. The project was implemented by the Credit Management Fund for the Execution of Archaeological Projects of the Ministry of Culture and Sports.

88. The cost of the project financed by the 2007–2013 NSRF was €1,117,883.26. The Supervisory Authority was originally the Credit Management Fund for the Execution of Archaeological Projects, and subsequently, from June 2013 to the completion of the project, the Directorate of Prehistoric and Classical Antiquities of the Hellenic Ministry of Culture and Sports.

89. Papadopoulos and Savvatianou 2015.

90. Central Archaeological Council Meeting 19/21.07.2015, document ΥΠΟΠΑΙΘ/ΓΔΑΜΤΕ/ΔΑΑΜ/ΤΜΑΜ/ 248275/22244/ 1944/615/21–09–15.

91. Decision no. 8980/2984/Α3/27–12–2018 by the Special Secretary for the Management of Sectoral Operational Programmes of the European Regional Development Fund and the Development Fund of the Ministry of Economy and Development, on the inclusion of the Act 'Restoration and Promotion of the Temple of Apollo Epikourios at Bassai – Phase C' in the Operational Programme 'Competitiveness, Entrepreneurship and Innovation 2014–2020'.

Fig. 64:
View of Bassai from the road ascending to the peak of Mt Kotilion, 2004. Two circular threshing floors are visible at extreme right and left.

7 EPILOGUE

As has already been mentioned, the questions most frequently asked by visitors to the archaeological site of Bassai are how and why such an impressive and apparently costly[92] building as the Temple of Apollo Epikourios was constructed in such a remote and inaccessible place.

The probable answers to the first question follow on from the theory (also mentioned previously) that, in spite of its mountainous landscape, southwest Arcadia was densely populated in Archaic and Classical times. Naturally, its many inhabitants earned their livelihood mainly from sheep and goats, as the ancient Arcadians were famously shepherds.[93] However, it seems that they also were cultivating the land, as indicated by a prophecy recorded by Pausanias. In the prediction given by the Delphic Oracle to the Arcadians when their country was suffering from famine, it is stated that: 'It was Deo who made you pasture again after being farmers and eaters of bread.'[94] Indeed, there were extensive grain fields in the wider area of Bassai up until the early 1980s, as attested by the artificial terraces and the numerous circular threshing-floors still preserved there (Fig. 64).

It seems, therefore, that the ancient inhabitants of southwest Arcadia were numerous and self-sufficient, conditions which always favour the creation of major collaborative works, usually building projects. The latter, however, also require a large public surplus. For the temple of Apollo Epikourios, this surplus probably could not have come from herding and/or farming. It may well, however, have come from the wages of the Epikouroi, the Arcadian mercenaries who fought for Athens during the Peloponnesian War, as F.A. Cooper surmises.[95] Or perhaps

it was gradually accumulated from the 'influx of foreign currency' to the area, thanks to the visitors to the oracle of the dead at Phigaleia.[96] Whatever the case, the lack of written sources means that these are no more than possible scenarios. Exactly how the building of the Classical Temple of Apollo at Bassai was funded remains yet another mystery.

Why it was built, on the other hand, is quite easy to assume. As we know, temples in ancient Greece were symbols of religious belief and political power. So it is reasonable to suppose that, by creating a resplendent 'house' of Apollo, the dedicators wished to thank the god who had aided them in their military conflicts with the Spartans and to ensure that he would continue to do so in future wars. They also very probably believed that by carrying out such an impressive and complicated building project, they would show their enemies that they had attained such high levels of social organisation and economic power, and by extension military force, that any potential new invader would find them a formidable opponent.

However, apart from these aspects of the answer to the question of why the monument was built, based on the social and collective dimensions of the work, there is also an aspect based on the aspirations and ideas of its creators as individuals. It is common with outstanding human achievements (intellectual, technical, etc.) that their creators aspire, from the beginning of the projects, to surpass all previous similar works. They are driven by a double aim: the desire for their skills to be recognised, probably bringing them material benefits and moral satisfaction, and the desire for posthumous fame, the possibility of which usually offers an ephemeral sense of immortality.

The Bassai monument, in my view, typifies such an achievement. It contains many elements 'stolen' from important earlier temples, most of them drawn from the architectural wonders of Classical Athens (the combination of different orders, the enlarged pronaos*, the inner Π-shaped colonnade, etc.), incorporated into the building in such a way that they appear to be new ideas.[97]

At the same time, there is an obvious movement towards the original and new (the sculptural narrative decoration inside the building, the Corinthian capital). Besides their other aims, the architects clearly intended to build an exceptional monument at Bassai.

The remarkable final outcome, however, must have been determined also by chance factors. The building of the temple, if it was not undertaken in two (or more) phases, probably lasted a long time,[98] involving groups of people of different generations with different knowledge and ideas.

Whatever happened, the result vindicated its creators, regardless of and beyond their intentions. The Temple of Apollo Epikourios not only survives almost unchanged 25 centuries after it was built (Fig. 65), but is also admired in the modern era, probably as much as it was in antiquity. Furthermore, as it is one of the most important buildings of Western civilisation – as long as that civilisation and this monument exist – it will be studied and admired for many centuries to come.

NOTES

92. Mainly due to the use of large quantities of marble which surely came from far away.

93. Sheep farming is still one of the main sources of income of the few remaining inhabitants of the villages near Bassai.

94. Pausanias, Description of Greece, 7.42.6.

95. Cooper 1996, vol I, 80. See also p. 68

96. Pausanias indirectly informs us of the existence of a nekromanteion, an oracle of the dead, at Phigaleia in his book Laconica (Description of Greece, 3.17.9). There he says that Pausanias the Spartan, the victor of Plataea, did all he could to be purified of the murder of a Byzantine maiden, 'and went to the psychopomps (guides of souls) at Phigaleia in Arcadia', but to no avail.

97. It has been said that theft is justified in art only when it is accompanied by murder.

98. See p. 69.

Fig. 65:
The temple of Apollo at Bassai from the northeast, in 1986.

APPENDIX

On the construction of ancient Greek temples

Every temple in ancient Greece was believed to be the dwelling place of a god, whose statue (standing or seated) was located within the sacred building. For over eight centuries (from the Archaic period to the Late Roman era), the Greeks built their most important temples of stone, and laid them out, almost without exception, on the same plan. In its full form, that of the peripteral temple, this plan comprised two almost separate structural units: the surrounding colonnade (peristyle or peristasis), arranged in three horizontal zones (crepis/columns/entablature); and the inner building (the main temple or sekos), a rectangular structure with few openings, usually limited to one or two doors. The whole edifice was covered with a gabled roof featuring triangular pediments, forming a portico (porch) on all four sides (the pteron).

The principle of construction of these buildings was relatively simple: the stone blocks were dressed to fit together as closely as possible, with no gaps, and laid without mortar. The shape of the blocks was defined by their predetermined function (and position) in the building. Thus each block constituted a distinct architectural element (e.g. drum, epistyle, etc.).

Finally, almost all the stone blocks were joined together by metal connectors in order to reinforce the building's 'defences', mainly against earthquakes. There are only a few exceptions where such fasteners were not placed because they were considered unnecessary (for example in the columns, where wooden elements were generally used only for the accurate centering of the drums) or detrimental in the event of an earthquake (e.g. in the beams of the ptera).

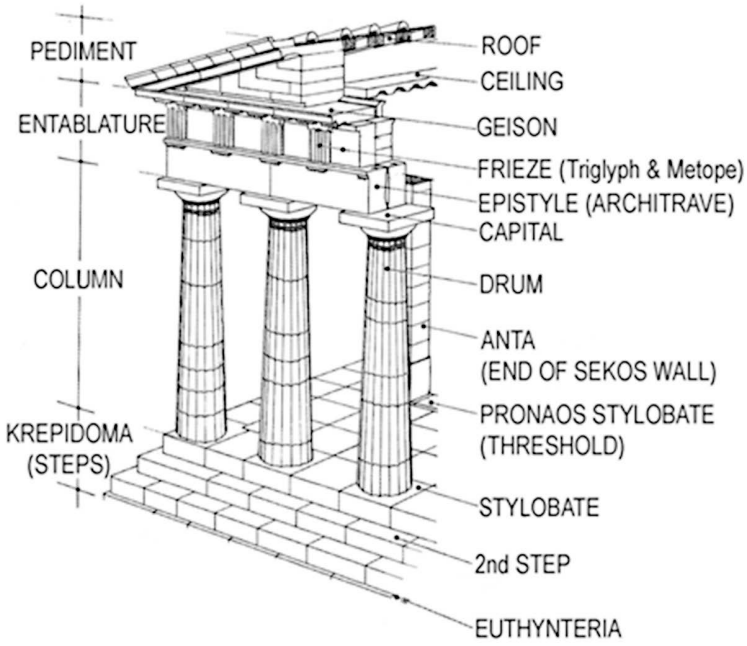


Fig. 66: *Perspective view of a section of the temple of Apollo Epikourios at Bassai with architectural terms.*

Glossary

Acroterion: Architectural ornament at the apex or corner of a pediment.

Adyton or abaton: The inner sanctum at the back of the sekos of the temple, which was only accessible to priests.

Antefix: An ornament on the eaves of a tiled roof, concealing the joints between the tiles.

Architrave: see epistyle

Ashlars: The stone blocks forming the walls of the sekos.

Capital: The uppermost section of a column, which determines the order of the building. The Doric capital consists of the abacus, the top square slab; the echinos, a rounded moulding with a curved profile (parabolic or hyperbolic); and lastly the hypotrachelion lower down. The Ionic capital consists of the abacus, the volutes and the hypotrachelion.

Ceiling: The pteron is covered by a ceiling. When the space is small (long sides), the ceiling is formed of adjoining one-piece coffered slabs, while larger spaces (narrow sides) are roofed with beams covered with coffered slabs laid widthwise across them.

Cella: see sekos

Clamp: Fastener, usually of metal, used to secure the stone blocks of

the superstructure on the horizontal plane. Mortises were cut into the upper part of the joining surface, in the shape of the clamp to be set into them but slightly larger. In the case of iron clamps, the iron was protected from corrosion by having molten lead poured into the mortise around the clamp.

Column: The structural element supporting the entablature. The Doric column consists of the shaft and the capital. The shaft features meiosis and entasis. Meiosis is the tapering from bottom to top, while entasis is the slight swelling of the column shaft about two-thirds of the way up, making the straight lines of the truncated cone shape slightly curved (parabolic).

Cornice (or geison): The horizontal and uppermost part of the entablature, which projects above the frieze and protects it from rainwater.

Crepis (or crepidoma): The base of the temple on which the columns of the pteron stand. The crepis is set on the euthynteria and usually consists of three steps. The topmost step is called the stylobate ('column mount') because the columns stand directly on it.

Dowel: Metal connector used to secure the stone blocks of the superstructure on the vertical plane. Dowels are rectangular prisms set in the thrust joints of the blocks, at the bottom and in the middle of their width, to connect them to the underlying block. Molten lead was poured around the dowels to damp-proof them.

Drum: The cylindrical sections forming the shaft of the column.

Empolion: A cubic-shape element placed in cuttings (mortises) in the centre of both circular surfaces of a drum. In the centre of the empolion there was a cavity, for the insertion of a centring pin, the polos. These three elements (placed at each joint of the columns) allowed for the upper drum to be rotated on top of the lower drum in order to achieve a perfect alignment. From the end of the Archaic period and throughout the Classical period, empolia and poloi were made of wood.

Entablature: The part of the temple above the columns. The entablature consists of three parts from bottom to top: the epistyle, the frieze and the cornice.

Entasis: See column.

Epistyle: The horizontal beam set directly on top of the capitals. It is usually made of two parts running parallel along the width (in which case the rear course is called the antithema).

Euthynteria: The uppermost part of the stereobate, serving as the levelling course of the superstructure. The euthynteria projects slightly above ground, forming the lowest (partly) visible part of the temple.

Frieze (Doric): The part of the entablature between the epistyle and the cornice. The Doric frieze consists of alternating, evenly spaced elements known as triglyphs and metopes, while the Ionic frieze is continuous.

Meiosis: See column.

Metope: The rectangular space between two triglyphs in a Doric frieze, usually adorned with carvings.

Opisthonaos: The rear inner porch of the main temple (sekos).

Orthostat: A tall, rectangular stone block set upright, standing on the toichobate, the foundation of the sekos.

Pediment: The triangular gable on the façades of the temple. Pediments are usually decorated with sculptural compositions known as pedimental statues, while the triangular space behind these is blocked off with a vertical surface, the tympanon.

Peristyle (or peristasis): The colonnade surrounding the temple.

Polos: see empolion

Pronaos: The antechamber of the main temple (sekos).

Pry hole: A shallow cutting in the side or upperside of a stone block, used to insert a lever to shift a block of the overlying course into position.

Pteron (or peristyle): The walkway with a roof structure supported by columns (the portico), surrounding the main temple.

Raking cornice: The element crowning the pediment.

Sekos: The core of the temple (also known as the cella or naos) surrounded by the peristyle in peripteral temples. This is a masonry edifice usually lacking openings apart from the door or doors (two at the most). In many cases the sekos consists of two chambers: the main sekos and the adyton. The base of the wall, corresponding to the stylobate, is the toichobate.

Sima: The gutter, formed from the upturned edge of the eaves tiles of the roof. Eaves tiles are the lowest tiles just above the cornice. Simas running along the raking cornices of the pediments are called raking simas (epaetides), while those on the long sides are called lateral simas (paraetides).

Sleeper: A stone block laid flat as part of the foundations of a building, underneath the floor slabs.

Stereobate: The foundation of the temple, i.e. the part in between the crepis and the solid ground or bedrock.

Toichobate: The structure upon which the walls rest: the foundation of the sekos.

Tympanon: See pediment.

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Ευρωπαϊκή Ένωση
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Περιφερειακής Ανάπτυξης

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Υπουργείο Εθνικής Οικονομίας
και Οικονομικών
Ειδική Γραμματεία Διαχείρισης
Προγραμμάτων ΕΤΠΑ & ΤΣ
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