



The restored ceiling of the West Hall of the Propylaea. Photo T. Tanoulas, December 2008

- Ch. Bouras, Strict and less strict adherence to the principles of anastelosis of the ancient monuments in Greece
M. Ioannidou, 2008-2009, Progress in the Restoration Works on the Acropolis
M. Ioannidou, Strategies for the anti-seismic protection of the Acropolis Monuments
R. Christodouloupoulou, Study for the anastelosis of the upper part of the entablature of the Parthenon north colonnade
E. Karakitsou, Games in the Parthenon
C. Hadziaslani, I. Kaimara, A. Leonti, www.parthenonfrieze.gr
F. Mallouchou-Tufano, News from the Acropolis

In the YSMA Department of Information and Education, we have focussed continuously over the years on the Parthenon frieze, not only because of its great significance but because it has vast educational possibilities to offer. Thus special educational programmes have been designed around the theme of the frieze, the book «Parthenon Promenades» was published, presenting all the preserved sculptural decoration of the temple, and a variety of educational material and educational games were created. All this material was incorporated in one of the educational museum kits, entitled «The Parthenon Frieze», so that it would be better known and understood by the general public.

In 2002, the museum kit was enriched by an educational tool that was especially valuable for the general public and for specialists alike. This was a photographic recomposition of the frieze by some 400 photographs at a scale of 1:20, 8 metres long, made by the YSMA photographer, S. Mavrommatis. It provides the fullest possible image of the whole.

In 2003, in the spirit of new technology, another visual tool was made, a CD ROM entitled «The Parthenon Frieze», which was issued by our Service in Greek and English, in collaboration with the National Documentation Centre (EKT). In June 2003, the CD ROM was entered in the Web, on the EKT site. Since then, this application has been consistently in the first place out of 50,000 postings in the list of world-wide searches conducted through Google.

Five years after completing the application on the subject of the frieze, we are proceeding with its renewal and upgrading, with games in digital form for the Internet. This

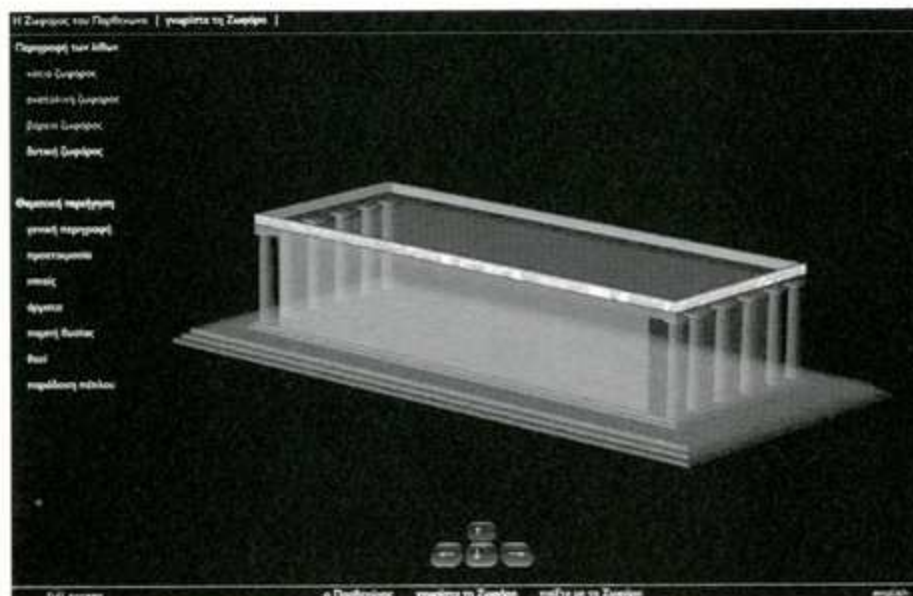
new application of our Service was carried out, as before, in collaboration with the National Documentation Centre (EKT) of the National Institute of Research (EIE). Coordinators of the work from the YSMA were C. Hatziaslani and I. Kaimara, and on behalf of the EKT, E. Sachini. Valuable also has been the contribution of the arche-

frieze, both as a data base for scholars and as digital games, for schools and their pupils. The designing of the new application was developed in accordance with contemporary ways of presenting and displaying cultural subjects on the Internet, making use of new technologies and the new educational programmes that have been developed by the Department of Information and Education and have to do with the description and deepening of knowledge about the Parthenon frieze.

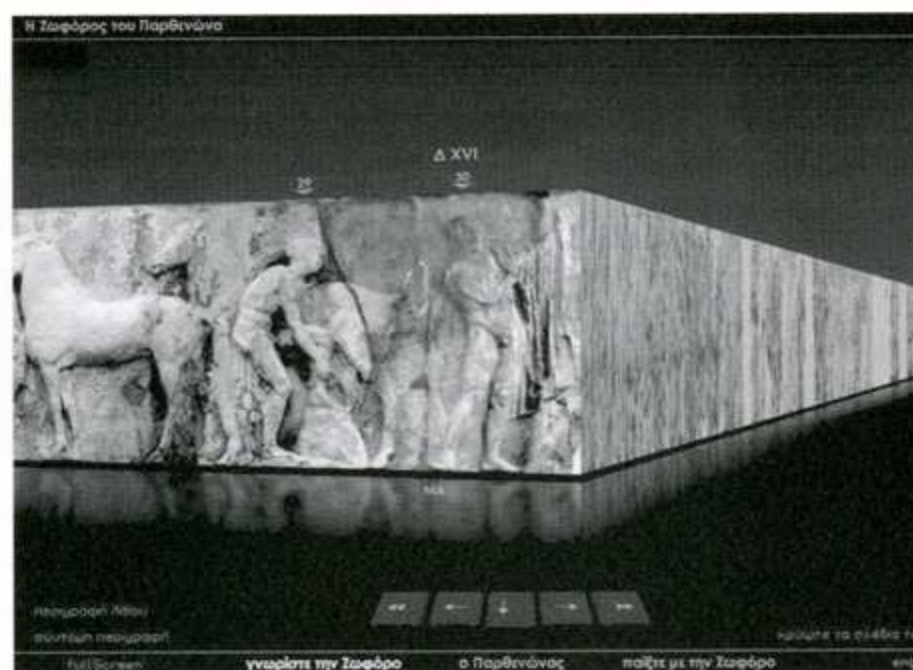
The contents have been organised in three units, entitled: *The Parthenon/ Know the Frieze/ Play with the Frieze*.

The unit *The Parthenon* includes a text and illustrations that show the architecture and sculptural decoration of the temple. The sculpture comprises the statue of Athena Parthenos, the pediments, the metopes and the frieze. The frieze is analysed under the following units: the Theme, the Panathenaia, Interpretive Theories, Designing and Construction, History, Conservation, Bibliography. The contents are presented through three-dimensional cards, that include the relevant texts and accompanying pictures.

The unit *Know the Frieze* is based on a three-dimensional model of the Parthenon, on which the four sides are distinguished. The user has two possibilities in this unit. The first possibility is to know the frieze according to side. If you choose the north side, for example, the three-dimensional model revolves and on the screen appear the preserved blocks of that side filled in by the drawings of Carrey. An explanatory text appears at the top of the screen, describing the entire north side. If you se-



The initial page of the new digital educational application "Know the Frieze"



Digital application "Know the Frieze", transition from the west to the south side

ologists of the Acropolis Education Department Assimina Leonti and Syla Paraschou. Artistic editing was done by K. Antoniadis, and the designing and development of the application by G. Koutsoukos. The application in its new form provides the possibility of immediate access to the

frieze according to side. If you choose the north side, for example, the three-dimensional model revolves and on the screen appear the preserved blocks of that side filled in by the drawings of Carrey. An explanatory text appears at the top of the screen, describing the entire north side. If you se-

lect a specific block from that side, it is enlarged and it moves into centre-screen. The user can see it from close-up and can read a text that describes the scene on the block in detail. The numbers of the blocks, the figures and the inventory numbers of the museums where the blocks actually are, accompany the picture. With the navigation buttons the user can move to the next block. All the texts have terms that are distinguished in colour, enabling the user to interpret them. With a «click», for example, on the word «petasos», a card appears with the interpretation of the term: «a wide-brimmed hat». Moving to the next side of the frieze is accomplished by the double navigation arrow (for example WF); The model revolves and the West Frieze appears on the screen.

The second possible choice, *Know the Frieze*, is entitled «thematic tours». Here the user can approach the frieze through its various themes: Preparation, Horsemen, Chariots, Sacrificial Procession, Gods/Goddesses and the Handing over of the peplos. Placing the pointer on the titles emphasises the corresponding areas of the three-dimensional model of the frieze. By selecting, for example, the unit «Gods/Goddesses», the corresponding area of the East Frieze is enlarged on the screen and the tour begins. The relevant text appears at the top of the screen and depending on the content of each phrase, the corresponding areas of the frieze are highlighted.

The third level of the application is entitled *Play with the Frieze* and it is intended for children. It begins with an introduction accompanied by a video lasting about 1 min-

ute. The user, whatever his age, can understand very quickly what the frieze was, where it was, what it represented, and he can see a number of statistical facts as well as the games contained in the application. After this, a yellow box appears. This is the museum kit of the frieze: it appears, it opens and out come the games.

in the Procession» has five parts and the child can see more carefully the faces of the figures of the frieze, the garments of the men and women and the military dress of the horsemen. In the game «The Procession to the Altar», the children observe the animals being led to sacrifice and the ritual utensils that were used in the sacrifice. In

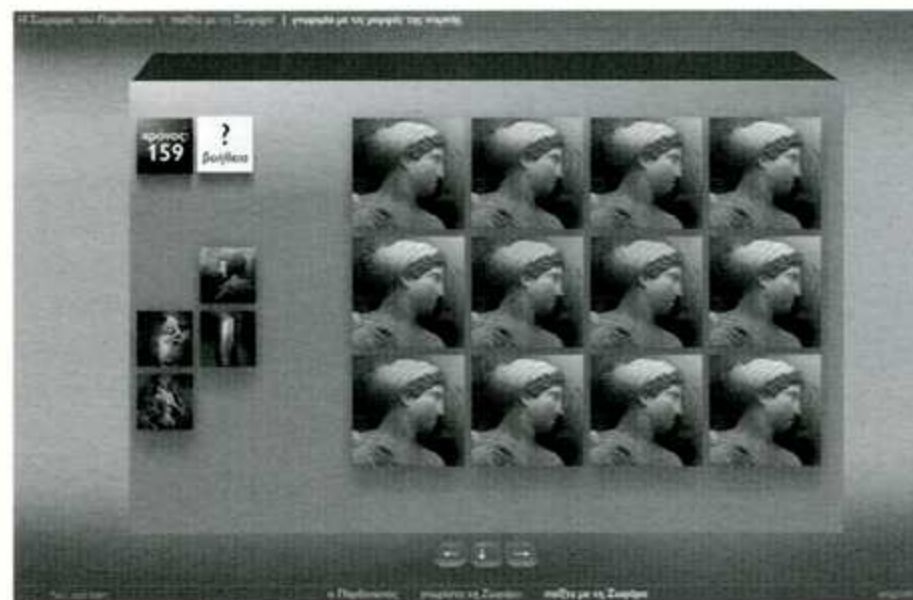
the game «Observing the Horses» they can inspect the horses that took part in the procession, and which were more than 200 in number. The heads of the horses, their manes and their movements are of great interest.

For each of the units of the above games, 12 closed cards appear that show on their reverse 6 pairs of similar illustrations. The children have to match the cards that are similar, in the time allotted according to the degree of difficulty chosen. In this same category of games, in which the children are asked to exercise their powers of observation, there are two puzzles entitled «The Hidden Chariot» and «A Gift for the Goddess Athena». The children choose a representation and are asked to put together the corresponding puzzle.

The game entitled «Colouring a Block of the Frieze» is intended to enliven the relief scenes of the frieze and to help the children to imagine their colours. To begin with they observe carefully a coloured block. The block is then shown as it is today, together with a palette of colours and a paint brush. The

children can paint it with any colours they like.

The next game is entitled «Be a Conservator». It offers the children the possibility of using a model of the laser equipment used for cleaning the blocks. The children are



“Play with the Frieze”. Game “Acquaintance with the figures in the procession”



“Play with the Frieze”. Game “Observing the horses”

The games «Acquaintance with the Figures in the Procession», «The Procession to the Altar», and «Observing the Horses» are games of memory and they are designed to attract children to closer observation of the details of the frieze.

The game «Acquaintance with the Figures



"Play with the Frieze". Game "Colouring a frieze block"



"Play with the Frieze". Game: "Be a conservator"

provided with a frieze block to be cleaned by laser. With the pointer they move the head of the instrument and place it on the surface of the stone, cleaning it in stages. When they have finished their work successfully, on the monitor, which appears in the right hand part of the screen, they watch a video showing the actual process of cleaning the block by one of the YSMA conservators. They then have the possibility of watching another short video about the history of the damage to the block. Three phases of damage are shown, ending with the appearance of the block before it was cleaned.

In the game «I Compose the West Frieze»,

the children try to find the correct position of the 16 blocks of the west frieze that represent the preparation for the procession of horsemen in the Great Panathenaia. Each block appears randomly in the centre of the screen. The user observes the block and then tries to find which of the 16 blocks it is, reading a short description about each block that appears on the upper part of the screen with the relevant number. When the user makes the right connection between picture and text, the block appears in its correct position and at the end the user can see the entire west frieze, just as it was on the monument.

Likewise in the games entitled «Olympian

Puzzles: Find the Gods/Goddesses» and «Contests that Remained... on the Vases», the children have to match text with picture. On the right of the screen a text describing briefly the god or the contest wanted appears randomly each time. The child reads the text and then hunts in the cards, which appear at the left of the screen, for the picture that belongs with it. When he chooses the right picture, the image enlarges and he can see it more clearly. The card is then replaced by a new card so that the game can continue, until all the cards are finished. In the first game, the children hunt for the gods and at the end they see them as they are illustrated on the east frieze of the Parthenon. In the second game, the children learn about the contests that were included in the Great Panathenaia, and they try to identify them on the Panathenaic Amphorae. At the end of the game another screen appears showing some of the Panathenaic contests as they were represented on the Parthenon frieze.

In addition to the video already mentioned, the unit «Play with the Frieze», has also been enriched by an animation entitled «And Suddenly my Horse became Marble». Here, one of the riders of the frieze has come «alive» and, galloping, tries to find his place in the procession. The moment he finds his place, he turns into marble.

Included in the unit of the games are materials in digital form (leaflets in pdf style and a presentation of slides in power point). These are intended mainly for school classes to provide greater depth on the subject of the frieze.

While the museum kit has been used by a total of some 35,000 pupils and has been given to 120 institutions in Greece and 90 abroad, the new application provides the possibility of practically open access to all who are interested.

Cornelia Hadziaslani
Architect-Archaeologist, Head
Irini Kaimara, Assimina Leonti
Archeologists

Department of Information and
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Educational Activities

In 2008, the Information and Education Department of the YSMA carried out educational programmes based on the theme of «Let's go to the Acropolis» for 2,200 pupils and 88 schools. The programmes were held in the Centre for Acropolis Studies. In the context of the educational programmes was a visit by the school to the New Acropolis Museum, where the pupils «search for the gods of Mt. Olympus» on the pottery in the exhibition «ΝΟΣΤΟΙ/ΝΟΣΤΟΙ». A special leaflet has been issued for this exhibition, entitled «Looking for the Gods of Mt. Olympus».

Likewise in the New Acropolis Museum, Sunday educational programmes were held for 480 pupils of the 4th, 5th and 6th classes of Primary School on the subject of «The Parthenon and its Sculptural Decoration».

Educational programmes were also carried out in Washington, in the USA, in the framework of the festival «KidsEurofestival», from October 9 to November 9, 2008. The festival was organised by the French Embassy and the 27 countries of the European Union as well. It was intended for children and their families. The purpose of the exhibition was to acquaint the younger generation of the United States with the common tradition of Europe and America. Our Section, representing Greece, held 2 educational programmes for 80 American pupils in the National Gallery of Art in Washington, on the theme «Searching for Ancient Gods in Painting and Sculpture of the Renaissance». Another programme on «The Twelve Gods» was carried out in a public school and a seminar was held for educators of that area. Museum kits and educational material connected with «The Twelve Gods» were distributed.

The Department's Museum kits were lent in 2008 to 278 schools (835 classes) from 22 different prefectures throughout Greece where they were used by 16,816 pupils. In addition, this year, 40 museum kits have been given to institutions both in Greece and abroad.

During the past year, as well, the Department participated in symposia both in Greece and abroad, and organised lectures and seminars for 300 educators and stu-

dents. On invitation from the World Bank in Washington, a lecture was presented on the subject of «Education and Cultural Heritage Partnership: Contribution to Local, Social and Human Development. The case of Educational Programmes of the Museum of Acropolis» by Cornelia Hatziaslani to the Committee of the Bank's Urban Development Network Cultural Heritage and Sustainable Tourism Thematic Group.

Two digital films were also made, the first on the subject «Let's Go to the Acropolis» and the second «An Ancient Temple». Both were based on educational books of the Department on the corresponding themes. Each film is accompanied by two digital games.

Finally, in 2008, in collaboration with the National Documentation Centre (EKT) of the National Research Institute (EIE), the digital application of the theme «The Parthenon Frieze» was re-designed for the Internet. It too has been enriched by the addition of twenty digital games.

Events connected with the Acropolis Works

During the past year, the well known photographic exhibition of the Acropolis restoration works by the YSMA photographer, S. Mavrommatis, was presented in Germany, at the University of Heidelberg, from

October 30, 2008 to January 30, 2009 and at the Institute of Archaeology of the University of Freiburg, from April 29 to June 10, 2009.

In the context of the exhibition, lectures or one-day conferences were organised on the subject of the restoration works of the Acropolis. Thus, on 30 October 2008, the President of the ESMA, Professor Emeritus Ch. Bouras, spoke at the University of Heidelberg on the subject of the Acropolis Works, and on 29 April a Scholarly One-day Conference was held on the Works at the Albert-Ludwigs University of Freiburg, in which the following presented papers: M. Ioannidou (The Works of Restoration on the Acropolis and The Restoration of the Propylaea), F. Mallouchou-Tufano (The Restoration of the Erechtheion), N. Toganidis (The Anastelosis of the Parthenon), D. Michalakopoulou (The Restoration of the Athena Nike Temple), E. Papakonstantinou-Zioti (The Conservation of the Surfaces of the Acropolis Monuments – Cleaning by Laser), Sp. Oikonomopoulos (The Technology of the restoration Works of the Acropolis), and C. Hatziaslani (The Restoration of the Acropolis in Education). The above events were organised in cooperation with the Foundation for Hellenic Culture.

A special conference dedicated to the Acro-



Educational programme about the Acropolis, conducted by C. Hatziaslani at the National Gallery of Art in Washington D.C., USA, October 2008

polis, entitled «Recording and documenting the Acropolis of Athens. From classical, ancient Greece to modern Olympics» was included in the international congress on «The International Archives of Photogram-

ed there: D. Moullou, D. Mavromati, B. Tsingas, K. Liapakis, L. Grammatikopoulos, S. Raikos, A. Sarris, E. Baltsavias, F. Remondino, J.-A. Beraldin, S. El-Hakim, L. Cournoyer, M. Picard, «Recording, Mod-



Photographic exhibition of the Acropolis restoration works at the University of Heidelberg, October 2008-January 2009



Photographic exhibition of the Acropolis restoration works at the University of Freiburg, April-June 2009

metry, Remote Sensing and Spatial Information», organised by the ISPRS (International Society of Photogrammetry and Remote Sensing) from 3 to 11 July, 2008, in Beijing. The following papers were present-

ing, Visualisation and GIS Applications Development for the Acropolis of Athens», S. El-Hakim, J.-A. Beraldin, M. Picard, L. Cournoyer, «Surface Reconstruction of Large Complex Structures from Mixed Range

Data – The Erechtheion Experience», F. Remondino, E. Baltsavias, S. El-Hakim, M. Picard, L. Grammatikopoulos, «Image-Based 3D Modeling of the Erechtheion, Acropolis of Athens», D. Englezos, D. Moullou, D. Mavromati, «Geostructural Analysis of the Athenian Acropolis Wall Based on Terrestrial Laser Scanning Data» and B. Tsingas, K. Liapakis, V. Xylia, D. Mavromati, D. Moullou, L. Grammatikopoulos, K. Stentoumis, «3D Modelling of the Acropolis of Athens Using Balloon Images and Terrestrial Laser Scanning».

Finally, the Acropolis Works (the interventions on the Parthenon, the Propylaea, the Temple of Athena Nike and the Circuit Wall) were presented on a poster at the 2nd Panhellenic Conference on the Restoration of Monuments, organised 21-24 March at the Benaki Museum (at Piraeus Street) by the Society for Research and Scholarly Promotion of the Restoration of Monuments (ETEPAM). The participants were guided around the illustrations of the various works by the engineers in charge.

Lectures

As every year, this year too the members of the scholarly personnel of the YSMA gave lectures and communications in Greece and abroad on general or specific subjects connected with the restoration works and the Acropolis monuments.

In the context of collaboration between the YSMA and the Japanese University MIE on the anti-seismic protection of monuments, M. Ioannidou, presented a paper entitled «The Acropolis of Athens: principles and methodology for the structural restoration of the monuments». She also spoke about current research on the anti-seismic protection of the Acropolis monuments in a paper entitled «Strategies for the anti-seismic protection of the monuments», at a two-day symposium, organised in Athens, 26-27 February 2009, by the Council of Europe, the European Centre for Detering and Predicting Earthquakes, and the Organisation for Anti-seismic Planning and Protection (OASP). In March 2009, she spoke in Athens at the symposium held by the Hellenic Guides on the subject «Application of ancient and contemporary technology to the restoration interventions on

the Acropolis». Finally, M. Ioannidou presented the works of the Acropolis, in Patras on May 15, at an one-day symposium organised by the Technological Educational Institute (TEI) Patras in collaboration with the Technical Chamber (TEE) of West Greece, and, on 28 May, at a lecture organised by the Friends of the Acropolis at the Centre for Acropolis Studies.

T. Tanoulas spoke in February 2008, on the «Problems of the circulation of visitors on the Acropolis: proposals and applications» at the Seminar on the subject of the «Management and Display of Archaeological Sites» in the context of the Interdepartmental Programme for the Protection, Conservation and Restoration of Cultural Monuments of the University of Thessalonike. He also spoke on the «Acropolis and its Monuments under the Latins» at a scholarly conference on «The Latin Domination of Athens» held at the National Historical Museum in Athens, April 2008. Again, in May he gave a talk on the «Byzantine phases of the Propylaia» at the Symposium organised for Cyril Mango's 80th Birthday at the Byzantine Museum of Athens. In October 2008, he presented the «Restoration in the Propylaia» at the International Collaborative Workshop of the University of Thessalonike entitled «Restoration and Re-use of Historical Buildings and Complexes».

L. Lambrinou gave a lecture entitled «The preservation of a ruin: the Parthenon» at the Archaeological Institute of America (AIA) in January 2009. She also took part in the 2nd Panhellenic Conference for Restoration of Monuments, organised 21-24 March 2009 at the Benaki Museum (at Piraeus Street) by the Society for Research and Scholarly Promotion of the Restoration of Monuments (ETEPAM) with a paper entitled «Adherence to and Deviation from the Original Form: the case of the Parthenon».

Three members of the technical office of the Parthenon work-site, who have now left the work, also participated with papers in this same conference: R. Christodoulou, who presented the «Study for Restoration of the Upper Entablature of the North Colonnade of the Parthenon», and the civil engineers M. Mentzini and E. Toubakari, who spoke, respectively on «Be-



Conference about the Acropolis, at the University of Freiburg, 30-4-2009. From the top: M. Ioannidou, F. Mallouchou-Tufano, S. Oikonomopoulos, D. Michalopoulou, E. Papaconstantinou-Ziotsi

haviour in Bend of a Marble Restored Architrave Beam» and the «Analysis of Failures and the Understanding of Structure in the Areas where Joining Elements have been placed in the Parthenon».

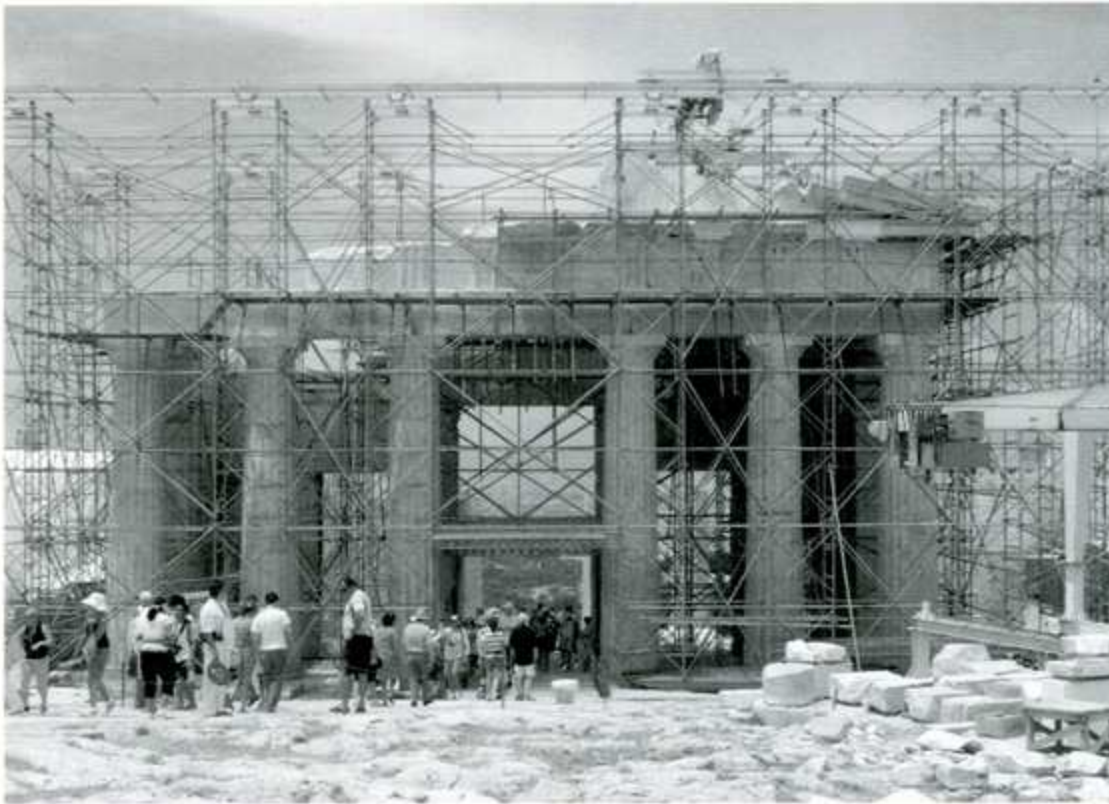
D. Englezos presented «Rescue Backfilling of the Arrephorion on the Acropolis of Athens» at the 3rd National Conference on the subject «Mild interventions for the Protection of Historical Constructions», held in Thessalonike in April 2009. At the same conference, D. Mavromati and D. Moulou spoke on the «Application of contemporary methods of plotting and geometric documentation on the Athenian Acropolis».

Evi Lebidaki gave a lecture at the Centre for Acropolis Studies in February 2009 that was organised by the Friends of the Acropolis. Her subject was the cult of Athena Nike on the Acropolis.

In October 2008, F. Mallouchou-Tufano taught the Anastelosis Works of the Acropolis in a post-graduate programme of studies at the School of Architecture of the University III in Rome. She also gave a lecture, in January 2009, on the «Parthenon (the monument and its later fortunes)», in the context of a lecture cycle entitled «Great Monuments» organised by the School of Architecture of the University «La Sapienza» of Rome. In June 2009, she spoke on the Acropolis Restoration (past and present) at the University IUAV of Venice in a seminar on the Conservation of Stone that was organised in collaboration with the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) of Rome.

Fani Mallouchou-Tufano
Archaeologist, Ph.D.

Head of the YSMA Documentation Office



Works being completed during 2009

The restoration of the East Portico
of the Propylaea (above)

The restoration of the north colonnade
of the Parthenon (below)



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