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To: Mr. Stavros Benos, President of DIAZOMA non-profit association,
Mrs. Anna Karapanagiotou, Head of the Ephorate of Antiquities of Arcadia

Subject: Restoration studies and works of the ancient theater of Megalopolis (The Greatest Theater in Greece, according to Pausanias, VIII, 32, 1).

1. General

On Oct. 9, 2014 we visited together with the President of Diazoma Mr. Stavros Benos who had the initiative, and the Head of Antiquities of Arcadia, Mrs. Anna Karapanagiotou, the Ephorate headquarters in Tripolis and discussed the issue of the restoration of the ancient theater of Megalopolis. My participation in this discussion was due to many years of experience with studies on ancient monuments, including ancient theaters, and intended to form an opinion on the progress of the project and the necessary relevant studies.

Following the meeting, we studied the material we received from Mrs. Karapanagiotou with information on the already completed studies and works and the related permits, and we visited the ancient theater on January 29, 2015 (pictures 1 and 2 were taken during that visit)¹.

In recent years, various studies have been conducted on the theater's restoration, the most important of which can be seen at the attached table. In addition we found the extensive publication of the preliminary study of A. Portelanos and A. Kambourakis. Although it was conducted earlier than any other, it is a remarkable restoration study, which includes a general analysis of the monument based on bibliography from previous studies³, a general record of the existing problems of the theater and

1 Later we received the article by A. B. Karapanagiotou, *Excavations at the ancient theater of Megalopolis 1995-1997: First estimates* [Forschungen in der Peloponnes, Akten des Symposions anlässlich der Feier "100 Jahre Österreichisches Archäologisches Institut Athen" Band 38, Athen 2001, 331-42 , pi. 31.32], (hereinafter: Karapanagiotou 2001); the present second edition of the report became mandatory, since the important elements of article had not been taken into account.

3 The most important of those are: E. Fiechter, *Das Theater in Megalopolis*, Stuttgart 1931 and H. Bulle, *Untersuchungen an griechischen Theatern*, München 1928. See also the conclusions on the first excavations at the theater in E.A. Gardner and W. Loring, *Excavations at Megalopolis 1890- 1897* (JHS Suppl.

general recommendations to address these problems, based on a comprehensive mapping in a 1/50 scale. Subsequent studies analyze technical problems, like the restoration of the auditorium, the retaining walls and the Thersileion (council house of the Arcadian league), present the configuration of the archaeological site and submit relevant proposals. Based on the approvals seen in the table, from a formal point of view it is possible to proceed directly to all the restoration works on the monumental ensemble and to design the landscaping, since the studies have been approved.

In what regards the auditorium, there's provision for the preservation and restoration of the disclosed stone sections (seats, benches, steps, slabs etc.) with cleaning, fixing, bonding, sealing works, etc., and the repositioning of scattered members preferably in their original positions after welding or supplementing them.

For the retaining walls there is provision for their complete disassembly, ground strengthening, adding a new foundation and reassembling them with metal tendons reinforcements.

Regarding the Thersileion, it is provided to restore the crepis (base platform) and enhance the surrounding space.

As for the landscaping, there will be various works including the construction of buildings for the reception and service of visitors.

2. Existing situation

Based on the approvals, there have been works in several phases starting with most important being the embankment at the area of the lanes with large volumes of gravel in order to support the crumbly retaining walls⁴. This was followed by an intervention in the upper half of the eastern retaining wall, cleaning and restoring of stone parts, deforestation of vegetation, restoration of the lower rows of the Theta (Θ) tier (extreme west)⁵, while in the area there are worksite facilities with a scaffolding and crane at the orchestra, two worksite huts, a shelter etc. (images 3, 4).

In the eastern retaining wall, back-fillings of gravel that were used to brace it (image 5) had replaced the earlier wooden struts (image 6). Backfilling was removed from the upper half across the retaining

1, London 1892) 23-50, 69-100.

4 Following the study of D. Monokroussos, see Karapanagiotou 2001, 334, note 9.

5 In the studies, tiers are numbered from east to west with Greek numbers Alpha (A), Beta (B), Gamma (Γ) ... Regarding the restoration of tier Theta (Θ), see. D. Ziro, *Ancient Theatre of Megalopolis. Fixing and enhancing the theater's auditorium*. In Maintenance, Restoration, Enhancement. The work of the scientific committees. Ministry of Culture (Fund for the financial management of archaeological works, TDPEAE), Athens 2008, 68-71.

wall, and mounting works were executed. Comparing the current situation (images 7-9) to that imprinted by Portelanos-Kambourakis shows that many of the blocks of conglomerate and breccia rocks that had collapsed in 1996⁶ are still today orderly placed on the ground north of the retaining wall (image 10). In image 11, the shadowed parts on the Portelanos-Kambourakis plan show the fragments of the outer and inner retaining wall which had survived until 1996 and must be now repositioned after finding the original location of each one of them.

Works have taken place in the western retaining wall. Behind the volumes of gravel that support the retaining walls of the auditorium and the skenotheke (store room in the skene), there are conspicuous large deformations of the walls (images 12, 13).

The stone hollow part in the section excavated is preserved in very good condition and with rare completeness (images 14-29). The full row of the proedria (VIP) front seats (images 14-23), the ending of the parapet with wall crown moldings in the east (image 14), the culvert for rainwater drainage, which has been cleaned and is in operation, are all elements of the original form that are rarely kept in such good condition. Restoration works have taken place at the lower rows of the Theta (Θ) tier, where missing stone architectural elements were filled (images 22-27).

The stone members of the auditorium are preserved up to the 7th row of the Beta (B) tier (image 15), but restoration, repair, and maintenance is required at the seats that have suffered large deformations (images 28, 29). Under the centuries-old earth fills there are probably more members like those disclosed at the lower rows. In a test pit excavation at the extension of the 7th scale between tiers ST and Z (6 to 7) stone members of the upper auditorium (image 30) have been revealed⁷. In other places, large trees (apparently up to 100 years old judging from early 20th century photographs)⁸ have grown strong roots onto the stone members, which are probably under the earth fills (image 31).

The seats and steps that are currently on the ground in the area of Thersileion (image 32) together with those which are still under the transferred debris of earth fills enable restoration and enhancement of a much larger part of the auditorium. The new stone pieces that already exist at the worksite can be used as additions to the lost parts of the scattered members (image 33).

From the crepis of Thersileion (image 34) that of the propylon (portico) is practically undisturbed,

6 Karapanagiotou 2001, 333.

7 Excavations from 1995 to 1997 in the auditorium have shown that preserved auditorium members have glided and are possibly preserved under the earth fills, while in the extension of 7th scale, four steps have also been preserved, one of them in situ (Karapanagiotou 2001, 340, 341).

8 Portelanos, Kambourakis 1991, image 8.

whereas in the west end of the southern wall there can be seen large deformations (image 35).

3. Implementation study for the restoration of the ancient theater of Megalopolis

The history of studies and works lead us to the viewpoint that it is necessary to draft a detailed implementation study for all interventions with priorities and rankings for different areas.

Preparatory works can start immediately on the basis of approved preparatory studies. Works included in the first phase of the implementation study in an area will follow and application studies for the next areas will be prepared. The areas can be seen in image 36, numbered with the proposed timetable.

The first area is defined by the lower rows of the stone auditorium that have been revealed. Work will include restorations, weldings, additions, sealing of stone members. The implementation study will include mapping in a 1/20 scale and all detailed proposals will be submitted based on those designs. It should be mentioned that there must be a complete picture of the works required in all tiers, in order to have a clear overall view of what extent there should be provisions for each type of work, especially regarding the fillings with new material. Our opinion is that the already completed fillings have also included very small pieces, which were not required for reasons of safety, stability or completion of the form.

The detailed plans of the auditorium's revealed part should depend on a generic topographic layout of the monument with fixed points. Since topographical mappings have been conducted, we should find the old layouts, identify the fixed points and add only the new necessary points.

For the works at the lower part of the auditorium, the existing overhead crane can be used, after cleaning and painting the parts of the scaffolding that have rusted. Turning the whole system to the east is possible with the help of a crane. It is also possible to add a light aluminum overhead crane for lighter weights.

As far as the retaining walls interventions are concerned, it has been proposed to disassembly them, construct a foundation plate with piles of reinforced concrete, reinforce the embankments and rebuild the walls strengthened with vertical anchors. These proposals have been approved, but I believe these are radical interventions that will have an uncertain outcome regarding the protection of the ancient material. The first step for the authorized intervention in the retaining walls is the so called soil removal in the spaces between the parallel retaining walls. It is actually an archaeological excavation, which can start immediately in parts, so to investigate the internal condition of the retaining walls⁹.

⁹ The already completed excavations from 1995 to 1997 show that there is an obvious need for systematic excavations as a preparation process for the restoration of the retaining walls: The excavation in a parallel zone to the eastern retaining wall proved that this area was full of tile-covered pit graves (kalybites);

Our opinion is that we can probably avoid the general dismantling of the retaining walls and restore them by locally dismantling their most deformed parts, restoring some other parts and reinforcing the rest with the use of internal “invisible” structures. In any case it is necessary to plan ahead and monitor closely the excavation works in order to draw the appropriate information and complete intervention proposals. Therefore when we know the actual data from the incisions it is most likely to review the studies that have been carried out already.

Especially in what concerns the disassembled upper part of the eastern section, all available information should be gathered in order to find the initial position of the stone blocks and reposition them.

Throughout the intervention and while the relevant studies are being drafted, it is possible to provide guidelines to the excavation crew in order to skillfully apply the study and at the same time recognize and evaluate the new pieces of information that arise. This will ensure a proper restoration and a simultaneous complete documentation and understanding of the monument. Besides, a restoration is never merely a technical task. It is also a scientific research work for the recognition the monument and its initial status, which should be respected during interventions.

The phases of the study with the respective contents based on everything that was analyzed above are:

1. Implementation study for the restoration of the auditorium's preserved section and preparation for intervention on the retaining walls. This includes:

Gathering, control and correlation of the data of the studies already concluded to date.

Additional topographical mapping of the entire edifice in correlation with existing imprints.

Mapping, understanding the pathology and making proposals for the restoration of the lower rows of the auditorium in a 1/20 scale.

Exploiting the existing worksite equipment (overhead crane, shelters, tools etc.)

Specifying the incision positions on the retaining walls, monitoring the works, producing additional mapping.

2. Implementation study for the rehabilitation of the eastern retaining wall.

thus, the archaeologist in charge of the excavation was right to believe that this was probably a cemetery (Karapanagiotou 2001, 338). Therefore excavation groundwork is necessary to crystallize the implementation proposals.

Reconnaissance of the position of the stone blocks of the eastern retaining wall that are on the ground and conduct a study for their reinstatement.

Based on the results of the incision research we will define the method of intervention in an implementation study phase, making the best use of studies already carried out.

3. Implementation study for the restoration of the western retaining wall and skenotheke.

Based on the results of the incision research we will define the method of intervention in an implementation study phase, making the best use of studies already carried out.

4. Implementation study for the restoration of the crepis of Thersileion and the enhancement of the site.

After systematically clearing the site, exploratory incision in the west end of the southern wall and excavation research.

5. Implementation study for the restoration of the upper part of the auditorium.

Based on the research results on the extent of preservation of the benches from exploratory incisions.

The study will be delivered in stages and will be implemented, while at the same time there will be progress in preparing the next stages of the study.

The table at the end of the report gives an estimate of the cost of the study in all detailed phases shows the staggered deadlines for its completion. In the timetable there is also an assessment of the required intermediate time for the exploratory excavation incisions.

The Engineer

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TABLE OF STUDIES ON THE ANCIENT THEATER OF MEGALOPOLIS FROM 1997 ONWARDS

STUDY TITLE	RESEARCHER	YEAR	APPROVALS-COMMENTS
Fastening and Restoring Retaining Walls	Irene Ventura	1997	Geotechnical Design & Ground Improvement – Research Works on the Eastern & Western Retaining Wall
Fastening and Restoring Retaining Walls of the Ancient Theater of Megalopolis - Geotechnical Design & Ground Improvement - Structural Research Works on the Western Retaining Wall	Arvanitakis	1997	Culture Ministry/Directorate of Restoration of Ancient Monuments (DAAM)/862/37285/22-7-1998
Fastening & Restoration Study for the Auditorium of the Theater of Megalopolis	A. Giannakopoulos	1998	Topographic Mapping
Mapping of scattered members - benches Δ	Kaigier, Mitsiou, Georgiadis, Arvanitakis	1999	
Architectural Mapping	Kaigier, Mitsiou, Georgiadis, Arvanitakis	1999	
Architectural Preliminary Study	Kaigier, Mitsiou, Georgiadis, Arvanitakis	1999	
Fastening and Restoration Study - Architectural Mapping of the Auditorium. Final Architectural Study	Kaigier, Mitsiou, Georgiadis, Arvanitakis	1999	Culture Ministry/Directorate of Restoration of Ancient Monuments (DAAM)/405/18731/14-4-1999
Preliminary Study for the Layout of the Surrounding Area – Service Buildings	Kaigier, Mitsiou, Georgiadis, Arvanitakis	1999	Culture Ministry/Directorate of Restoration of Ancient Monuments (DAAM)/1969 c./4579/28-1-2002
Fastening Study of the Western Retaining Wall	Arvanitakis	2002	
Fastening Works at the Eastern Retaining Wall	Arvanitakis	2002	Structural Design
Fastening Study of the Western Retaining Wall of the Ancient Theater	Arvanitakis	2002	
Fastening and Restoration Study for the Auditorium of the Theater of Megalopolis	Arvanitakis	2002	
Preservation Study	Cleopatra Papastamatiou	2004	Culture Ministry/Directorate of Conservation of Ancient and Modern Monuments (SYNT)/ F82/2755/113009/1-8-2008
Research for the Protection and Security of the Structure of the Retaining Wall and the benches in the Ancient Theater of Megalopolis	Arvanitakis	2009	
Research Works on the Retaining Walls and the Auditorium of the Ancient Theater of Megalopolis	Bressiakas	2009	



Image 1. General view of the theater from the Thersileion (under rain).



Image 2. General view of the theater from above. In the background the foundations of the Thersileion.



Image 3. General view of the theater from SE. Visible is the overhead crane at the western edge of the orchestra.



Image 4. General view of the theater from SW. Visible in the background are the worksite huts and the shelter.



Image 5. General view of the theater with the earth fills for the protection of the retaining walls (c. 1999 before the intervention) <http://www.diakopes.gr/destinations/peloponnisos/arkadia/megalopoli/?cid=43924>

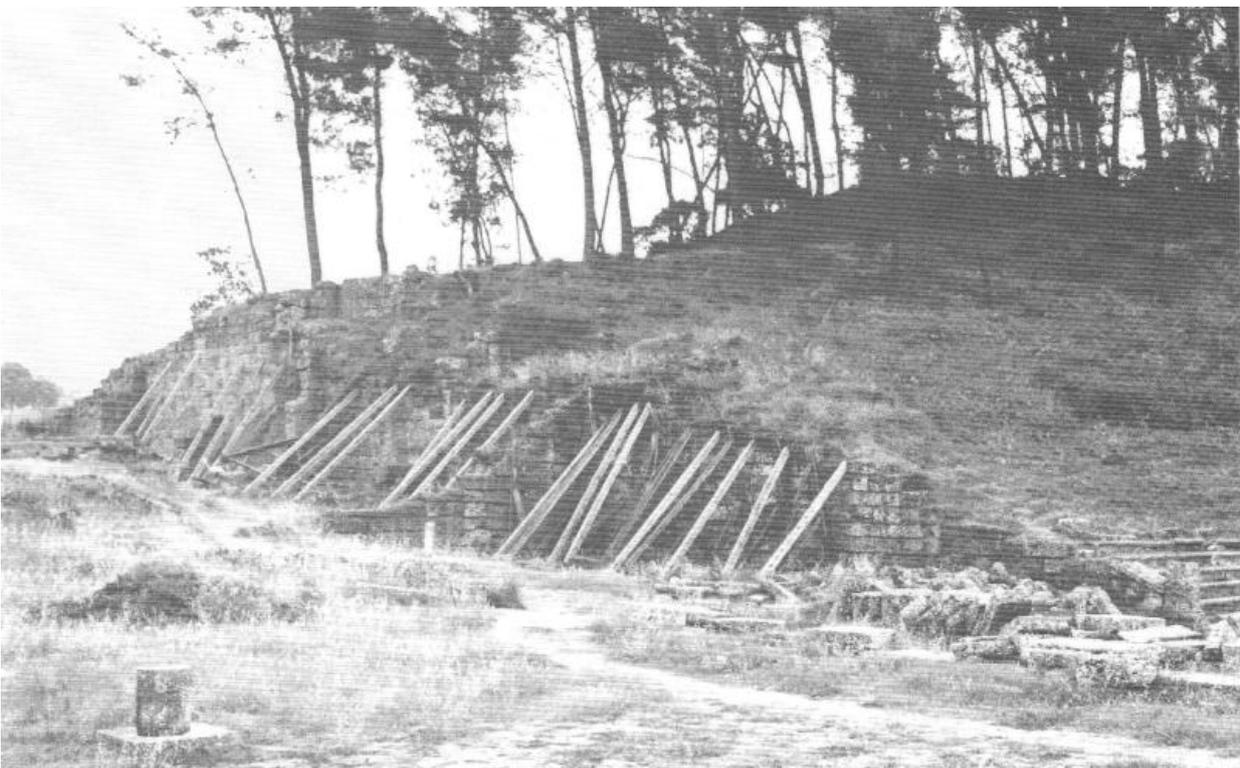


Image 6. The eastern retaining wall with the struts before the earth fills (Portelanos, Kambourakis 1993, 49).



Image 7. The upper part of the eastern retaining wall.



Image 8. The area of the upper part with no upper layers.



Image 9. Internal transverse wall in ramshackle condition.



Image 10. Orderly stone plinths of the eastern retaining wall.

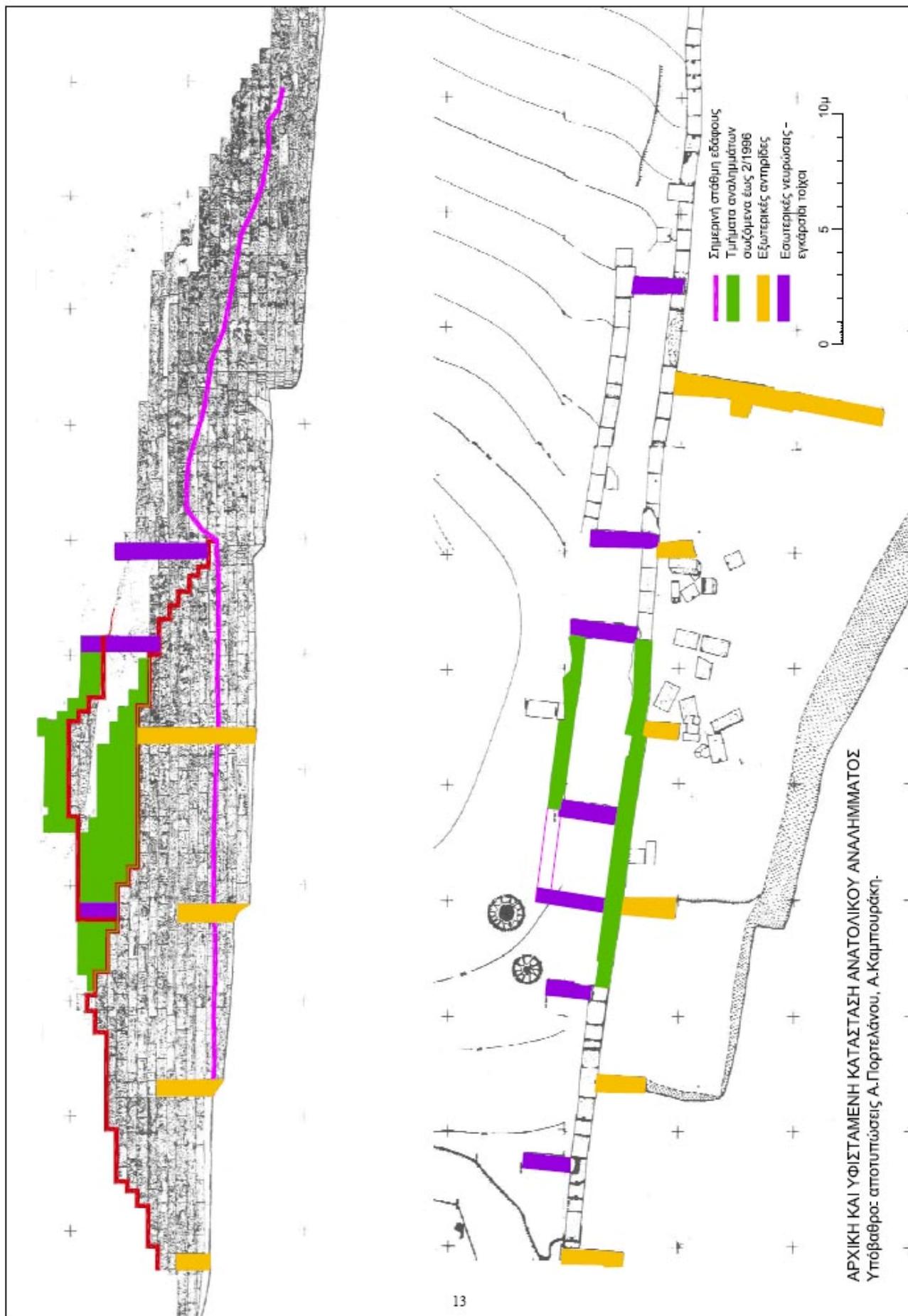




Image 12. The western retaining walls with the earth fills.



Image 13. The western retaining walls from tier A. Visible are the large deformations.



Image 14. Tier Alpha (A).



Image 15. Tier Beta (B).



Image 16. Tier Gama (Γ).



Image 17. Tier Delta (Δ).



Image 18. Tier Epsilon (E).



Image 19. Tier Sigma Tau ($\Sigma\tau$).



Image 20. Tier Zeta (Z).



Image 21. Tier Eta (H).



Image 22. Tier Theta (Θ).



Image 23. The edge of tier Theta (Θ).



Image 24. Fillings with new stone in tier Theta (Θ).



Image 25. Fillings with new stone in the western staircase.



Image 26. Fillings with new stone in proedria (VIP) front seats of tier Theta (Θ).



Image 27. Detail of filling.



Image 28. The western half of the upper part of the auditorium.



Image 29. Large deformations of benches and stairs in tier Sigma Tau (ΣT).



Image 30. Revealed parts of the stone auditorium at its upper edge.



Image 31. Old pine tree in the upper part of the auditorium.



Image 32. Sorted seats in the Thersileion.



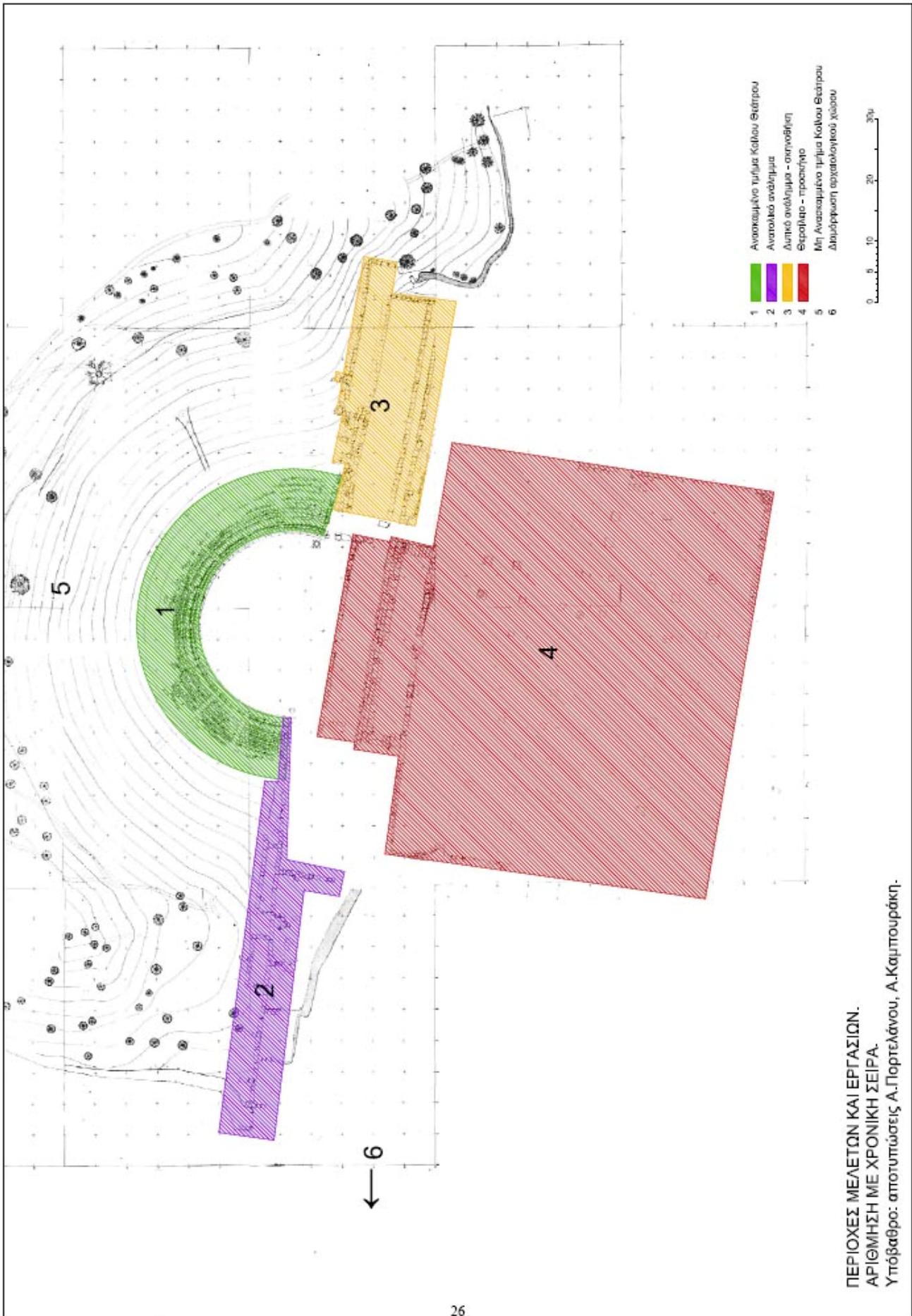
Image 33. New volumes of marble for fillings.



Image 34. General view of the crepis of the Thersileion and its propylon (portico).



Image 35. Large deformations in the western edge of the crepis of the Thersileion.



STUDY OF APPLICATION FOR THE RESTORATION OF THE ANCIENT THEATER OF MEGALOPOLIS

PHASES	FEE	TIME LIMIT	PERIOD
<p>1. Implementation study for the restoration of the preserved part of the auditorium and the preparation for interventions on the retaining walls. It includes:</p> <p>Assemble, check and correlate data from the research that has been done to date.</p> <p>Additional topographical mapping of the entire site in correlation with existing mappings.</p> <p>Mapping, understanding the pathology and making proposals for the restoration of the lower rows of the auditorium in a 1/20 scale.</p> <p>Making use of the existing worksite equipment (overhead crane, shelters, tools etc.)</p> <p>Specifying locations for the incisions on the retaining walls, monitoring the works, additional mapping.</p>	80000	4 MONTHS	Mar-15 Jun-15
<p>2. Implementation study for the restoration of the eastern retaining wall.</p> <p>Identifying positions of the stone blocks of the eastern retaining wall that have been taken down and conducting a study for their reinstatement. Based on the results of the incision research we will define the method of intervention in an implementation study phase through the use of studies already carried out.</p>	30000	2 MONTHS	Oct-15 Nov-15
<p>3. Recovery Implementation study western retaining wall and skenotheke.</p> <p>Based on the results of the incision research we will define the method of intervention in an implementation study phase through the use of studies already carried out.</p>	30000	2 MONTHS	Mar-16 Apr-16
<p>4. Implementation study for the restoration of the Thersileion and the enhancement of the site.</p> <p>After systematically clearing the site and conducting exploratory incision in the west end of the southern wall.</p>	10000	2 MONTHS	Mar-16 Apr-16
<p>5. Implementation study for the restoration of the upper part of the auditorium.</p> <p>Based on the research results on the extent of preservation of the benches from exploratory incisions.</p>	30000	2 MONTHS	Sep-16 Oct-16
	180000		