Greek and Roman Theatres in Mediterranean area
International Seminar

Tuesday 11th June | Wednesday 12th June 2019
Palazzo Badoer, Aula Tafuri

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The current restoration program in the cavea of the Theatre of Dionysus

(fig. 1) My contribution to this seminar is entitled "The current restoration project for the cavea of the theatre of Dionysus", on the foot of the Acropolis, and will provide information about the documentation, the study and the implementation of this program. As you may probably know the first theatre in this area, which dates back to the late 6th C. BC, was a landmark in the history of theatre. The stone cavea, large parts of which are preserved today, dates back to the late 4th C. Major architectural alterations and other interventions made during the late Hellenistic and Roman periods have been substantiated in the orchestra and the stage building. The restoration of the Theatre of Dionysus has been an official research program since the 1980s.

(fig. 2) The monument, extending about 90 meters in both width and depth, comprises the dominant archaeological site on the South Slope of the Acropolis, not only in consideration of its size and distinctive architectural form, but equally due to its enormous historical significance. The theatre constitutes an integral part of the Sanctuary of Dionysus Eleuthereus, which plays an integral role in the myths and worship of this central deity.

(fig. 3) The preserved remains of the theatre's cavea, which represent only a small portion of the gigantic original complex, include: the lower rows of seats, the lower parts of the retaining walls and—much higher up, at a distance of 85 meters from the center of the orchestra—the large cutting in the bedrock, whose shape follows the arc of circle. Today, there are remnants of seats preserved up to the 34th row, while another 67 rows are estimated to have existed up to the height of the *Peripatos*—the walkway that encircled the Acropolis.

(fig. 4) The theatre's seats are formed of large well-carved stone blocks from the Piraeus coast. Piraeus is the port of Athens.

(fig. 5) The monument acquired this huge extension with its massive stone construction and circular plan only after the middle of the 4th century BC, as a benefaction by the rhetor and politician Lykourgos.

The scientific issues of the previous phases of the Dionysus theatre, for instance the pre-existence of a wooden theatre during the 5th C, are much debated subjects.

(fig. 6) The theatre of Dionysus was abandoned completely at the end of antiquity, while during the Middle Ages, its traces gradually disappeared beneath an accumulation of fill that remained in place until the late 19th century—as seen in 17th century depictions of the site.

(fig. 7) The first excavations on the site of the Dionysus Theatre were undertaken in 1862. These investigations also included the collecting of scattered architectural members and the demolishing of modern buildings and later walls. Site plans and artifact drawings produced during these excavations are credited to German architect Ernst Ziller.

(fig. 8) Subsequently, the German Archaeological Institute—under the supervision of German architect Wilhelm Dörpfeld, whose conclusions rank perhaps among the most important for the monument's interpretation—undertook successive excavation campaigns from 1885 to 1895.

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(fig. 9) Major studies of the *stage* building and orchestra were carried out in 1923 — on the screen you see views of the area of the sanctuary and stage building, the eastern part of which was occupied by newer constructions in the late 19th and early 20th centuries.

(fig. 10) Ernst Fiechter and his colleagues from the German Archaeological Institute continued the study of the orchestra and *stage* building in 1927, 1929 and 1933.

(fig. 11) The completed cleaning of the cavea and the publication of important archaeological studies concerning the Theatre of Dionysus helped to kindle greater interest in the so-called "resurgence.", i.e. the reusage for modern performances. The artist wearing an ancient-style garment, pictured in these 1902 photographs, is the renown American dancer Isadora Duncan. She was very inspired by ancient Greek art and utilized some of those forms in her movement. Due to such interest for the reuse of the Dionysus Theatre, pressure had already begun to mount on the monument from the late 19th century—especially at the time of Greece's preparations for the first modern Olympic Games in 1896. A number of practical issues related to the needs of public safety and stage production did not allow consideration of such a possibility, even during the momentous post-war period (of the late 1940s, when the cavea of the adjacent odeon of Herodes Atticus was reconstructed). Important factors in the safeguarding of the Dionysus Theatre included both the particularly vulnerable material from which it is made and its unique historical and artistic value as the Birthplace of Ancient Drama. After abandoning the idea of restoration for the primary purpose of using the theatre for performances, following years of political changeover, and under pressure from the increasing dilapidation of the theatre, a scientific committee was formed which commissioned German architect Wolfgang Wurster to study the monument.

(fig. 12) Wurster oversaw the study and restoration of the site for the period 1977-1980. These works and their new findings were published in 1979. During this period, consolidation of the *cavea's* stairways and tiers of seats was accomplished using bronze clamps. After 1980, works on the Dionysus Theatre were supervised by the architect Manolis Korres, who continued the work of Wurster while also leading interventions and additional study in the areas of the *paradoi*. In 2002, restoration of the retaining wall of the eastern *parados* was completed. Subsequently, restoration of the retaining wall of the western *parados* also took place, which involved the installation of 111 new stones or additions to existing stones, as well as the filling-in of gaps between the retaining wall and that part of the medieval-era wall which is preserved against it. Currently, the restoration of the east side retaining wall is in progress.

(fig. 13) The most recent study undertaken in the theatre's cavea is its extensive restoration and enhancement, which represent the largest restoration project ever proposed and approved for the Dionysus Theatre site. At present, the overall appearance of the theatre's auditorium is sullied by a rough, displeasing overburden, while the amorphous topography of its slopes leads to uncertainty concerning the original shape and extent of the monument. A variety of morphological and structural problems have been identified in the preserved sections of the *cavea*, especially in its higher and eastern sections.

(fig. 14) These problem areas have largely resulted from later reconstruction and appear to deviate from the original outline of the building. Complete but scattered seats or their fragmentary remnants form general rows, an arrangement left over from the cursory attempts of previous excavators to reconstruct the order of the seating rows.

(fig. 15) Unworked stones have in some cases been used to support ruined seats, while rough walls constructed with ancient building material function as retaining walls to stabilize shifting soils. This improvised method of intervention undoubtedly detracts from the monument, while, at the same time, may deceive the visitor, who could wrongly interpret the presence of a late, historical phase, characterized by simple, imperfect construction.

(fig. 16) Throughout most of the theatre's auditorium, rainwater has been allowed to drain away uncontrolled in channels that have formed naturally or with the aid of some basic external intervention.

(fig. 17) In the current project's documentation of the present condition of the theatre, the network of run-off or erosion channels evident in the slope of the *cavea* has been noted with blue lines. This data is derived from topographic survey of the monument. Based on new topographical measurements, individual, highly precise digital plans have been created and incorporated into the existing conventional site plans of the *cavea* prepared in the past by various scholars.

(fig. 18) The great extent of the monument has made it necessary to divide the current project into successive stages of restoration. Each stage focuses on a distinct spatial unit. Area A comprises the three middle cunei of the monument—with red earth— whose soil sections—today—end at the ancient *Peripatos*. Area B—indicated in blue on the plan—consists of the two adjacent cunei lying to the left and right of Area A.

(fig. 19) Area C includes cunei 1-4, which end at the western retaining wall, while Area D covers the four equivalent eastern cunei, designated in yellow.

(fig. 18) Ultimately, the current intervention will cover all areas of the *cavea*. Nevertheless, first priority was given to Area A, shown here, in the project's initial detailed proposal. This choice was due to its central location and its consequent importance to the monument.

(fig. 21) The basic principle underlying the present project is the need to minimize any interventions in undisturbed areas of the *cavea*. Thus, a very extensive part of the theatre's auditorium has not currently been targeted for intervention; the upper limit of this region is indicated in the plans with a red line. Most of the conservation works undertaken in 1977-79 were in this part of the *cavea*.

(fig. 22) The sections of the *cavea* that lie above this limit are areas in which the seating tiers will be reconfigured through the addition of new material, with further interventions also being planned for the overburden. These works will encompass both *in-situ* and displaced, loose material, which in the project proposal, are distinguished respectively using terra-cotta and other colors for differentiation.

(fig. 23) The criterion established is that the highest surviving *in-situ* seat in every cuneus be designated as the upper limit of each restored area. The restructured sections of each individual cuneus, *marked in light yellow in the plan below*, are designed so as to reinforce statically the corresponding higher surviving individual seat or part of a row of ancient seats. Only in the extreme eastern cunei is this criterion not respected, since, in that area, the surviving *in-situ* remnants of seats are too low to offer acceptable limits for a symmetrical restoration of the entire area. These cunei are to receive a treatment comparable to that planned for the western side of the auditorium, the theory behind which has been extensively presented in the preliminary study.

(fig. 24) Both scattered, loose seats outside the monument and those that have been misplaced inside the *cavea* are documented in detail in an electronic database that accompanies the study. This database includes photographs and drawings, but also a full set of general and precise individual measurements. In particular, about 480 seats or fragmentary sections thereof have been measured in the *cavea*, in addition to 495 seats arranged in two specific locations in the archaeological site.

(fig. 25) As a basic restoration principle, all individual preserved seats, as well as those that retain their original full length or width, are reintegrated into equivalent (but not original) positions. Also presented in the study are methods proposed for successfully joining architectural members when faced with difficulties arising from the small observable differences that exist between the seats.

(fig. 26) In cunei VI, VII and VIII, respectively, which constitute the first areas to undergo intervention, 19, 31 and 8 displaced ancient seats will now be reintegrated. On the plan, see the surviving in-situ material designated in terra-cotta color; the displaced ancient stones for reintegration, in brown; and the new material, in off-white. The selection of displaced, loose seats was made by combining their measured dimensions with those of the surviving *in-situ* seats.

(fig. 27) The new seats and the prosthetic additions are being crafted from natural stone. The Central Archaeological Council's previous decision to use travertine stone, from north Peloponnese, as a substitute for the sedimentary lime stone from Piraeus in the restoration program of the Sanctuary of Asklepieios on the South Slope provided a solution to the problem. Here, you see a successful amalgamation of Piraeus stones stone on the top with travertine stone on the bottom.

(fig. 28) The work completed so far includes the mending of fragmented architectural members; (fig. 29) the addition of new material to partly preserved ancient stones; (fig. 30) the crafting of seats completely from new stone; (fig. 31) as well as the reintegration of scattered members. Thus, until today it has been possible to test all the planned types of restoration and to check the efficiency of the present intervention's results. At the same time there has been an opportunity to obtain precious know-how in every type of the proposed restoration works and to create the infrastructure necessary for the work-site.

(fig. 32) The present works have been accompanied by research aimed at identifying fragments that can be joined together not only throughout the full extent of the *cavea*, but also in the dumps containing loose, displaced ancient material. This research has focused on identifying fragments that might be joinable to those fragmentary seats targeted for completion. Close scrutiny of the fragmentary material, however, has led to other unexpected identifications, in which reassembly could be made also between fragments that lay a great distance apart—not only between those found adjacent to each other. As a result, thirty fragments of widely scattered members have been found to be joinable.

(fig. 33) The joining process employed during the present restoration project follows principles established by the restoration works also being conducted on top of the Acropolis. Titanium rods, 6-8 mm in diameter, which ensure durability against corrosion, are used for reinforcement, while white cement from Denmark has been found to eliminate the problem of salts. With every joining procedure, an individual report or file is generated in which all the details of the work are documented and analytical drawings and photos are included. The seams of the joins are sealed with a special plaster.

(fig. 34) Works of joining are carried out in the monument. In certain cases joining procedures have been carried out after the ancient stones have been transferred out of the theatre to an adjacent area where it is possible to conduct the work in the most efficient way.

(fig. 35) For the crafting of the new additions, gypsum molds are constructed, the shapes of which are copied to the new stone—sometimes by means of a digital pointer (after the mold has been scanned by a 3-D digital scanner and at other times by the traditional method employing a hand-held pointer.

(fig. 36) For the setting of the seats, it has been necessary in some cases first to remove the overburden down to the natural rock. This foregoing archaeological research, conducted by the project's archaeologists, has provided an opportunity to study the construction methods employed during the theatre's 4th-century-BC reconstruction by Lykourgos, but also to draw conclusions concerning the *cavea's* earlier configuration, as well as later uses of the space during the subsequent Roman and medieval eras.

(fig. 37) Once the necessary archaeological research has been completed, the substructure required for the setting of the seats is created. This newly laid fill is comprised of earth produced by excavations, which is deposited in thin layers and packed down according to the ancient method.

(fig. 38) Before the final placement of seats can be achieved, the new stone elements are crafted. The curves inherent to the plan and section of the ancient seats within a single row are recorded with absolute precision, so as to be reproduced in the new stones. In some cases, this work has been accomplished by means of a digital pointer (that is, by transferring the digital plan to the final shape of the stone) and at other times by hand with the aid of wooden or metal forms. This is followed in turn by theremoval of the main mass of the stone, using a cutting disk, and the final shaping of the seats' surfaces with smaller hand tools.

(fig. 39) As in antiquity, all the seats' surfaces are shaped, including those that remain unseen. This means that th surfaces of seats to be joined together are carved with *anathyrosis*—with a thin, level zone of raised material around the perimeter of the stones' sides, while remaining surface areas are only roughly carved. The backs and lower sides of the stones, in accordance with ancient practice, are also roughly carved.

(fig. 40) The stones are placed in their final positions with all of their surfaces having been carved except for the upper one. The final carving of the upper surface, then, is executed *in situ* after the seats' placement—firstly, using mechanical means and, (fig. 41) secondly, by hand with a toothed chisel, as the ancient stonemasons did it. This *in-situ* carving of the final, upper surface is necessary to ensure an architecturally accurate result and a close fit between new stones and every facet of the ancient stones.

(fig. 42) The transfer of stones away from and back to the theatre, the necessary trial positioning and the stones' placement in their final positions remain the greatest challenges for the current project, since the weight of the individual stones is significant, sometimes reaching as much as two tons. Ancient methods also employed for these works require the use of pulleys, straps and metal and wooden levers.

(fig. 43) Here, it should be noted that even though all of these restoration works are presently on-going, the Theatre of Dionysus remains open to the public—every day receiving many Greek and foreign visitors, as well as frequent student groups from Athenian schools. In light of these visits, each phase of the works is limited to a single sector of the theatre, thus permitting continued circulation by the public throughout the rest of the building.

(fig. 44) With regard to the overall restoration program of the *cavea*, the theoretical basis for the current project is relatively well supported through the individual articles of the international conventions that govern interventions on ancient monuments. The application of the approved proposal may require much time and monetary resources, however, it is designed to be a minimal intervention—relative to the enormous scale of the monument.

Changes to the monument will become apparent in stages:

(fig. 45) First, restoration works will be completed in the middle section of the *cavea*—designated Area A in the study—of which a small area has now already been finished.

(fig. 46) Restoration of the auditorium's adjacent *kerkides* will follow.

(fig. 47) The intervention will then be extended to the western end of the auditorium

(fig. 48) Finally, the project will conclude with the restoration of the eastern part of the monument, which, as previously mentioned, is in a very difficult situation.

(fig. 49) In closing, I would like to apologize for the slight violation of allotted time. Furthermore, I would like to point out that the possibility always exists for the systematic restoration of an ancient theatre to be misconstrued as simply an effort to promote its present-day reuse. At the Theatre of Dionysus, many significant factors have prevented the possibility for reuse of the restored theatre. This is not necessarily the case, however, for the many other ancient theatres preserved today in Greece.

Personally, I believe that the "compromise" that has long existed between the restoration of an ancient theatre and its revival for reuse is no longer a modern cultural imperative and that society's preference now leans rather more towards the single goal of preserving and enhancing historical monuments—especially ancient theatres—regardless of any potential utilitarian value or new conditions and facilities that their restoration may offer.