

Accidental Destruction & Intentional Destruction. Considerations for archaeological sites and monuments

*Original*

Accidental Destruction & Intentional Destruction. Considerations for archaeological sites and monuments / Morezzi, Emanuele; Romeo, Emanuele; Rudiero, Riccardo - In: Perspectives on Architectural Preservation. Essays 2010-2020 / Morezzi E.. - STAMPA. - Torino : Politecnico di Torino, 2020. - ISBN 9788885745445. - pp. 366-393

*Availability:*

This version is available at: 11583/2851338 since: 2020-11-11T16:25:29Z

*Publisher:*

Politecnico di Torino

*Published*

DOI:

*Terms of use:*

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

*Publisher copyright*

(Article begins on next page)



Published in Protection of Cultural Heritage from Natural and ManMade Disasters Conference Proceedings, Zagreb, Croatia, May 2014. Original title: *"Accidental destruction" and "Intentional destruction". Some thoughts on archaeological sites and monuments.*

## **Accidental Destruction & Intentional Destruction. Considerations for archaeological sites and monuments**

Emanuele Morezzi, Emanuele Romeo, Riccardo Rudiero

### **Abstract**

The research intends to investigate the link between accidental destruction due to natural disasters, such as earthquakes or spontaneous collapses, and intentional destruction operated by unfortunate conservation and restoration strategies. In order to conceptually embrace the buildings' decay as inalienable, the essay aims at establishing a parallelism between what the nature has destroyed and the strategies to fix to such damage, and what has been modified or destructed, instead, by human work, often scarcely aware of the historical, value-driven and technological properties of the asset. The article will examine many archeological realities present in Asia Minor and attributable to the Roman or late Roman age, with the purpose to provide for operational examples of intervention and modification of the archeological context and to fulfill a parallelism that proposes itself as interesting critical reading of the intervention strategies.

**Keywords:** archaeological heritage, conservation of ruins, architectural preservation

### **Accidental and intentional destruction: conservation of damaged archaeological heritage**

Over the centuries, the archaeological heritage of classical age, remaining in all countries of the Mediterranean basin, has been interested by very different phenomena, which led to destruction, abandonment, continuity of use, transformation, partial loss or even integrity of the heritage itself.

In particular, natural disasters, such as volcanic eruptions, floods and earthquakes have impacted the ruins to a point that some interventions of restoration or consolidation would

have been necessary already in the past. Nevertheless, in some cases it was preferred to leave the damaged homes and buildings and to reconstruct the urban settlements elsewhere. While looking at this damaged heritage, currently we can find two types of phenomena: accidental destruction caused by natural events that are unpredictable and unavoidable, and intentional destruction caused by human activities against the symbols of a particular population or civilization.

Today, as in the past, the archeological heritage is still affected by such phenomena, including the natural ones that remain unpredictable (accidental destruction). However, careful conservation actions limiting in many cases the damage through preventive interventions of consolidation and securing of the structures, do exist. The damage caused, instead, by human action (intentional destruction), such as abandonment, military conflicts, wars of religion and culture, or the lack of interest in what belongs to the past, can be minimized, or even cancelled, only if awareness of cultural issues contained in archaeological heritage is spread.

Even more alarming are those cases where deliberate destruction of archaeological heritage occurs due to hardly compatible restoration interventions or to wrong actions of enhancement, which irreparably damage the documentary value of what, in many cases, had survived in the past an “accidental destruction”.

The past experiences, the notes of the critics and the most recent interventions in major archaeological sites of the Mediterranean countries and especially in Asia Minor, are all meaningful in this respect<sup>1</sup>. Precisely in Asia Minor, the abandonment of sites following to seismic events has maintained a scene of devastation, and has reached us today as an original historical evidence.

On the basis of these premises, the paper analyzes: firstly, examples where the destruction of a heritage occurred due to formally as well as materially incompatible and invasive

restoration or consolidation operations through irreversible projects; secondly, examples where traces of natural events that led to destruction were preserved. This is how the memory of the events that characterized entire territories for centuries originates, leading to the creation of the archaeological and seismological park of Hierapolis in Phrygia and the seismological landscape of the coastal territories of Cilicia. Being a territory of century old experiments in the field of archaeology, Turkey has seen its assets firstly looted and then exported to European countries. Later, it has known a season where the sites were developed with reconstructions, often arbitrary, of monuments by using reinforced concrete<sup>2</sup>. Recently, the main ideas wanted to include the assets in a context that, abandoning the “archaeological desertification”, using plant material for the landscape re-function and presence for development<sup>3</sup>. However, it continued to use concrete to consolidate, to integrate the image or to replace the dismembered parts of the ruins.

The archaeological site of Ephesus provides a series of examples of reconstructions made of concrete. It has been used as structural support for the reconstruction of the Library of Celsus (where the percentage of the original fragments is much lower than the merged portions) and for the rebuilding of dismembered parts of the Temple of Hadrian (where the reinforced concrete acts as a support for sculptural elements and combines the original structural parts)<sup>4</sup>. Today these monuments show this specific, in addition to environmental degradation and man-made decays related to the incompatibility between the traditional materials (marble and local stone) and concrete. Therefore, accidental destruction added to the intentional destruction, due to incorrect interventions. However, nowadays a restoration interventions cancelling the errors of the past and improving the conditions of the archaeological heritage could be performed<sup>5</sup>. The Nymphaeum of Trajan, the monument to Memmius, the

Fountain of Pollio, the Temple of Domitian, the columns of Marmi street and the Port street<sup>6</sup> have been restored with the use of reinforced concrete too. It can be considered a structural element, but also an innovative material for the integration of ancient fragments interpreted as “individual pieces” of a work of modern art, almost Dadaist (Monument of Memmius and Nymphaeum of Trajan)<sup>7</sup>.

This heritage should be preserved because it is the proof of a *modus operandi* that became a “model” of reference for other design solutions; but deterioration of reinforced concrete, stones and ancient marbles must be eliminated. Again, in Ephesus, the case of the Terrace Houses is different: the restoration (completed in the Eighties) aimed at protecting the painted surfaces and mosaic suggested returning to the old volumes of the houses, through covers that imitate the original ones. The original walls and columns were then reconstructed with concrete additions; reinforced concrete beams, hooked with wood elements were reconstructed on the vertical elements; finally, traditional roofs were built for enclosed spaces and skylights for the courtyards<sup>8</sup>. At the end the damage caused by the tampering of the ruins was added to the material deterioration due to intolerance of the ancient structures to the adopted solutions. Insufficient ventilation and greenhouse skylights created a microclimate that, combined with the capillary rise of water, rendered the site impracticable. Therefore, a *de-restoration* became necessary. The great courage demonstrated by the Turkish Government and the Austrian Mission, directed by Friedrich Krinzing, to create new coverage by making use of new technologies through a clear modern language is to be acknowledged.

At the same time, the demolition of previous structures and the creation of a permeable shell in polycarbonate panels supported by a frame of vertical and horizontal metal posts were decided. The whole great cover (designed by Wolfdietrich Ziesel and Otto Häuselmayr) rests on trusses



Didima and Selge: collapsed columns of the Apollo Temple and primary collapse in correspondence of the theatre cavea



Ephesus: the re\_composition of the Memmio monument and Hierapolis: the primary collapse in the external wall in the Triton Neinpheum.

that follow the trend of the slope. Finally, the structural design of the connection with the foundations is noteworthy: the structure of trusses, the needs of the excavation and the search for the least impact possible on the archaeological ground, all have suggested the use of micro piles instead of more invasive plinths. In this way, the installation is configured as a conventional stratigraphic excavation, which limited the size of the trenches<sup>9</sup>. This cover is puzzling and criticism about the impact on Via Dei Marmi and the Library of Celsus arose. This example shows how, sometimes, it is necessary to take action to eliminate the damage caused by intentional destruction through restoration awareness. The use of reinforced concrete is also present at the site of Sardis<sup>10</sup>. Here, the reconstruction of the facade of the Gymnasium with concrete blocks has caused degradation caused by the poor quality of the cement mixtures used and the poor implementation of the facilities. Also, the incompatibilities between the new materials (present at a higher percentage than the ancient fragments) and ancient marbles suggests the restoration of entire portions of the monument. The intervention is expected to improve the performance of the reinforced concrete favouring constant operations.

Moreover, in Sardis, the protection of the residential neighborhood near the temple of Artemis is interesting. Here, in order to avoid invasive covers, “sacrifice areas” in concrete have been preferred to protect the crests of the walls. These areas reproduce a sculptural composition that takes on the ‘aspect of a work of contemporary art’ (the reference to Cretto Burri in Gibellina is obvious).

In many cases the “test of time” has given a negative feedback on the use of reinforced concrete: the temple of Apollo at Didyma, the agora of Miletus, the Temple of Trajan and the Asklepeion Pergamum Library agora of Side, just to mention the critics’ most notorious cases<sup>11</sup>. Here again, accidental

destruction has been added to intentional destruction by using materials and techniques not sufficiently tested.

Although alternative solutions are there for structural and integration problems, the use of reinforced concrete is still widespread: it testifies the lack of attention by the authorities responsible for the protection and the conservation of the archaeological heritage (little willingness to experiment compatible materials, inattention to the deterioration related to the incompatibility between reinforced concrete and traditional materials, lack of maintenance of the restored buildings). Therefore, conscious destruction is witnessed because the same modalities are in place, although the need for special restoration is well-known. Therefore, a critical review of both past and current action of restoration and consolidation is desirable and necessary to the preservation of archaeological ruins in Asia Minor.

In fact, we are facing different cases: buildings that have never occurred interventions and that show signs of static instability still in place; ruins that have new structural configurations as a result of earthquakes and that although presenting deformations and cracks remain perfectly balanced; monuments already affected by consolidations (historical and newer ones) that require further consolidative techniques; partially collapsed ruins that show obvious signs of distress due to seismic forces while preserving some elements in “primary collapse”; collapsed buildings that have been reused in part or whose constituent structures have not been otherwise reused in situ; whole archaeological sites where the traces of earthquakes are still present on the monuments with interesting crack patterns and the presence of faults, landslides and deformations of the road network and the terrain, including entire portions of cultural landscape.

For a better understanding of what is being described, the example of the theatre stage of Selge, kept in full collapse, is to be mentioned<sup>12</sup>. It represents an exceptional evidence of

the dynamics of the collapse and the effects of the seismic loads on structures: from the total collapse of the stage, to the prompt collapse of substructures of the *summa cavea*; from the perfect preservation of the *ima cavea*, dug into the hillside, to cracking and deformation of the tunnel's entrance..

The example of the collapses of well-preserved Byzantine basilicas of Perge<sup>13</sup>, where the columns of the nave still lying in the original position. In fact, it is likely that this feature is not just due to security interventions. The proof is the consolidation of one of the columns of the temple of Aphrodite in Aphrodisias<sup>14</sup>, where the will to evoke the earthquake that destroyed the building has led to maintaining/replacing the drums by creating sliding of the same barycentric axis. The result generates disarray, as the balance is not guaranteed for subsequent adaptation of the elements to the new static condition because of the portions of the stem are built with concrete and connected inside with metal reinforcement. If this type of intervention may be questionable, the position, all artificial, of the drums of the collapsed columns of the temple of Apollo at Didyma appears absurd<sup>15</sup>: integrated with concrete elements, connected with metal armour and supported by reinforced concrete walls, simulating a crash primary winding in the form of skeletons of prehistoric animals displayed in a museum.

An intervention on the Meander in Magnesia deserves to be mentioned. Here the opportunity to retain the primary collapse of the temple of Artemis<sup>16</sup> was lost due to a policy focusing more on the immediate response rather than on a proper touristic cultural approach. The collapsed facade of the temple had been imprisoned in the solidified mud (as well as most of the ruins of the city), while the eardrum had been preserved exactly in the point where it ruined. A special feature that could have a strong impact on the characterization of the archaeological site, presenting a different scenario compared to other archaeological sites. The

ability to document a page of history when the city tried to survive after the earthquake and flooding by implementing protection systems and functionalizing strategies related to previous events that had transformed the area and the site. The decision, however, was to reconstruct the eardrum in situ but not near the temple, rather, in a clear area in front of the entrance of the archaeological site., In this case, the reinforced concrete structure, supporting the ancient fragments, degrades the beauty of the “classical architectural element”, complaint operability in the field of conservation unscientific technical and cultural sensitivity.

However, the shift of the elements in the collapse of the eardrum has revealed that its print was left in the consolidated mud. This evidence is unique and interesting since, looking out from the stylobate of the temple to the place of the collapse, the (negative) pattern of the eardrum itself can be recognized. Unfortunately, this testimony is not sufficiently valued; rather, the location of the impression can be easily trampled by visitors, who are more attracted by the reconstructions of other important monuments.

Regarding, instead, the standing buildings that have recently showed obvious signs of static instability, in addition to more traditional methods of intervention with traditional materials and technique or use, is still too high, of cement mixtures and concrete structures showed the first signs of a different approach more related to solutions that consider the consolidation as an opportunity to experiment innovative materials and technologies.

In fact, the conservation work should find solutions by testing new technologies that are compatible with traditional materials and techniques, thus highlighting the modernity of the intervention without altering the value of the formal documentation and the ruin.

Only in this way, the intentional destruction of archaeological sites happened over time can be compensated. This is achieved

through a restoration process based upon awareness and able to keep the effects of accidental destruction as evidence of the history of the ruin.

### **Conscious conservation of accidental destruction: the case of Hierapolis in Phrygia**

The numerous traces of repeated accidental destruction may represent, therefore, evidence of the history of the ruin. We are, then, faced with the possibility to avoid deleting, by consolidating the marks left by the earthquakes. Real parks, where the seismic effects have been preserved and are clearly visible, could be created. In this sense, the ancient cities of Hierapolis, Perge, Aspendos, but also other sites less affected by mass tourism, would have the opportunity to become archaeological parks, whose feature would be the permanence of the signs of the seismic events themselves, which impacted the landscape and monuments. This aspect accentuates the aesthetic value of the formal-built town from the Hellenistic and Byzantine eras and the documentary value of the archaeological sites, because this feature can be distinguished from others: those which restored at the beginning at the late nineteenth century has lost these traces because of the reconstructions. So, the conservation agreement would show some peculiarities. It would stimulate research to find new solutions and alternatives to secure facilities without removing the traces of their primary collapses, deformations and cracks. In this sense, the ancient city of Hierapolis still possesses enough elements to become an “*archeo-seismological park*”: “... *we think to realize - says Francesco D’Andria - an archeo-seismological park where enhancing, along the falls of Pamukkale, all historical earthquakes tracks, the first of its kind in the world.*”<sup>17</sup> In fact, although many reconstructions undertaken since 1957 have cancelled the seismic traces in the territory, the city keeps many monuments that display “primary collapses” and

obvious traces of the falls, both along the road network and on the limestone formations.

As of the Theater, collapsed in the seventh century (now reconstructed as regards stage and auditorium) and then re-used until the twelfth century, the situation of the primary collapse appeared compromised. In contrast, the Monumental Latrine keep the primary collapse before anastylosis interventions. The seismic actions themselves decreed cessation and total collapse of the structure. This is evident, from the images taken before reassembling the position of the back wall with square blocks, collapsed as well as the Doric columns of the facade facing Frontinus street<sup>18</sup>. If no intervention had taken place, this situation would have allowed for the analysis of the dynamics of the collapse and the type of seismic activity, providing valuable information for the study of earthquakes and the understanding of construction techniques reagents to earthquakes. In addition, the location of the Latrine right along the fault lines that ran through the city put it in relation with the other monuments also completely or partially collapsed, i.e. the Thermae-Church, the Nymphaeum of the Tritons, the Byzantine Cathedral, and the Sanctuary of Apollo.

The Nymphaeum of the Tritons shows the back wall still in primary collapse though, while the facade is broken up into its elements: they are still partly in situ and partly reused in the further construction<sup>19</sup>. However, although not having addressed the reassembly of the back wall yet, some recent restoration works integrated extensive portions of the facade with the relocation of a column of the architectural order. If limited to what has already been executed, such intervention would allow for a clearer reading of the monument, while leaving, at the same time, the documentary traces of the earthquake. The same goes for the Thermae-Church: the imposing building keeps the partial collapse of the wall, extensive cracking and especially an interesting bulge in the Eastern part of the walls, which allows reading a crack



Hierapolis: the Thermae pillars deformed by the earthquake and the walls of the Thermae-Church deformation



Elaiussa Sebaste: architectural elements emerging from the sand.  
The temple on the promontory of Elaiussa Sebaste: telluric effects.

pattern unique in its kind<sup>20</sup>. For centuries, the structure has held up, having assumed a new static equilibrium that must be continually monitored. Currently, however, it has been proposed for static consolidation to secure the property and allow visiting by tourists. Now the thermal baths can be enjoyed only externally. But the ingenious scaffolding system has already changed the look of the ruins, which have lost their authenticity and their main feature, i.e. the incorporation into the landscape<sup>21</sup>. It would be desirable that any intervention does not delete the traces of the earthquake (cracking and warping) and does not remove primary collapses assuming reconstructions. Especially that implementing a minimal intervention for improvement and adaptation but, above all, that the technologies used in any consolidation are recognizable and non-invasive such that the documentary value of the monument.

The same philosophy of conservation of seismic traces was applied to the Byzantine Cathedral. Here, of the columns of the baptistery was made only because they did not show up in most primary collapse and because their recomposition allowed locating the building within the archaeological area. On the contrary, the primary collapse of the walls of the apse and the presbytery has been preserved for that portion that has not been rebuilt during the restoration of the Sixties and Seventies<sup>22</sup>. For other structures, whose architectural elements lie scattered around the perimeter of the church, an anastylosis on the ground at least of the order of the nave was assumed, with the aim of improving the reading of the monument: a metal grid where to place the fragments, which would avoid extensive additions and invasive static interventions. Consequently, the intervention appears distinguishable and the operation reversible<sup>23</sup>. Instead, in the Apollo Sanctuary area, traces of the earthquake still appear in some walls and especially in the pavements<sup>24</sup>. This ensures the reading of the seismic effects on the structure in relation to the surrounding

buildings, also partially collapsed: the Nymphaeum of the Temple, the nearby Basilica in Pillars, the Theater itself.

It is worthy, finally, reporting the story of the Theater of Hierapolis in Phrygia. The building, designed and rebuilt under the direction of Paolo Verzone and Daria De Bernardi Ferrero<sup>25</sup>, had undergone an intervention of stage consolidation designed by Ferdinando Indelicato in the Eighties. At that time, the sensitivity of the designer had suggested reconstructing only half of the upper surface of the scene in reinforced concrete: this left the remaining half untouched to let visitors admire the ancient arches in travertine that served as structural support elements of the entire stage platform. This allowed distinguishing the ancient from the modern intervention in a balanced way. However, the modern intervention, achieved with great mixes and implemented with technical expertise, showed no signs of specific decays other than those caused by lack of routine maintenance. Therefore, the structure was preserved through simple maintenance operations, where necessary, and could have been accompanied by removable wooden structures at the end of shows, solely at the occasion of theatrical events (as in the cases of the theatres of Priene, Aphrodisias and Aspendos). This would have guaranteed the possibility of perceiving the monument in its authenticity and formal integrity, including the most recent addition, which in turn respected the structural features of the ancient stage. Since 2004, however, it was decided to mask the reinforced concrete structure, which is considered formally incompatible and hides the sequence of the structural arches. This has been achieved through a metal structure covered by a travertine floor (which mimics the old platform). Although defined reversible, it is actually difficult to remove it and to keep it only during performances.

In addition, once the travertine gets old (and it will not take too long given the lack of routine maintenance), a difference between the old parts and new parts will no longer exist:

thus, the requirements of reversibility and distinctness become less necessary for a proper restoration work in the field of archaeology. The cultural difference between the first surgery, critical, even respectful of the material value and structure of the Roman Theater (witness to a practice that had characterized the interventions between the Sixties and the Eighties of the twentieth century) stands out comparing to the second intervention, which reflects choices related more to tourism and cultural and conservative logics rather than to scientific and methodological rigouris<sup>26</sup>. The latter, no longer the primary collapse, was reconstructed in the pillared front of the stage and in the first order. The anastylosis of the Theater is the result of careful studies that have identified the originating fragments and integrated them with new elements<sup>27</sup>. With exception for the latrine, the interventions on the Theatre and the Martyrion (partially reconstructed) in Hierapolis, then<sup>28</sup>, represent the basis for the creation of an archeo-seismological Park. The choice to keep all earthquakes traces (cracks in the soil and paved road, the cracks between the blocks of the religious and civil buildings, the instability present in the tombs of the necropolis and in the Byzantine fortifications) within the city and in the surrounding landscape characterizes Hierapolis in comparison to many other sites such as Ephesus and Pergamum (just to mention the more touristic ones) that do not possess this characteristic anymore. The actions of exploitation, therefore, should be addressed in this regard; it would not be necessary to reconstruct the monuments to speed up an immediate image as for the Ephesians and Pergamum models. Hierapolis has a great cultural potential and documents related to the characteristics of the site and the landscape of which it is an integral part. Although not as extensive as in the Hierapolis case, numerous other archaeological sites possess examples of collapses that may be retained as they appear to support an understanding of the earthquakes that have affected the territory of Asia Minor.

This would provide an opportunity to start new and special studies on late antique and classic construction techniques.

### **Accidental destruction in Cilicia: a proposal for an archaeo-seismological landscape**

The territories of Cilicia's coasts have architectural characteristics that could be enhanced as well. In Elaiussa Sebaste<sup>29</sup>, for example, there are more than shreds of evidence related to seismic events: deformation and crack patterns, primary collapses, situations of extraordinary static equilibrium. These features coexist with ruins emerging from the sand, as a result of the erosive action and of aeolian deposits mostly due to the marine environment. In fact, thanks to the *marquis* (spontaneously grown on the peninsula of Elaiussa), the sandy layer naturally attenuates the action of marine corrosion on the ruins. Such a scenario, where natural events (even though not as destructive as earthquakes) have left an indelible mark, must be preserved today<sup>30</sup>. Along with the signs of seismic destruction, all this becomes an instrument to better understand territorial modifications.

Particularly surprising is one of the columns of the temple on the promontory: during the collapse caused by seismic forces, one of the drums fell transversely on the one below, creating a configuration that characterizes the monument<sup>31</sup>. Equally interesting is the position of the columns of the façade of the same temple: they lie on the ground in primary collapse. In this case, no consolidation would be necessary, because the minimum intervention would erase the value of authenticity that the ruin possesses.

Unfortunately, the recent restoration in Elaiussa has eliminated many traces of natural events, through interventions such as: installation of the safety setting of the facade of the Agora<sup>32</sup>, which is necessary for tourist visits; the consolidation of the port's *thermae*, which is essential to read the architectural complex and the restorations made in the past; the reconstruction of a portion of the theatre, and the

removal of collapsed elements of the scenic building from the orchestra, necessary to carry out excavations and studies; the reconstruction of a portion of the Byzantine aqueduct, in the part that crosses the city<sup>33</sup>.

Although many traces are lost, based on the experience of Hierapolis, it is possible to plan in Elaiussa and nearby towns an “archaeo-seismological landscape”. As a matter of fact, the effects of the earthquakes on monuments and ruins are still clear throughout the territory. Among them, the primary collapse of the Byzantine palace of Akkale; portions of walls in precarious balance in the proto-Christian basilicas of Kanytelleis; the stone blocks of the castle of Korykos; the temple-tombs on the road that leads from Silifke to Olba; the arches of the aqueduct in the same city, are all worth mentioning. An “archaeo-seismological landscape” would ensure the historical continuity, in a compatible equilibrium with all cultural presences in the area.

Particularly, in the Byzantine Palace of Akkale<sup>34</sup>, the collapse of one of the rooms that faced the inner courtyard is still preserved. After centuries, the quoins of the arches still draw the geometrical pattern on the ground and the entire wall is still visible above them. In the same building, the spiral staircase leading to the upper floors of the palace also deserves to be conserved: it still keeps the masonry central element, where the steps are anchored and the whole structure got deformed due to seismic forces. The outstanding balance of the Byzantine aqueduct that runs from Korykos to Kanytelleis deserves as much attention, not only for its structural instability but also for the ancient techniques of consolidation used to preserve the structure. The static instability of the Olba’s Roman aqueduct, that crosses the valley, is interesting as well for the evident traces of the primary collapses and some large stone blocks still in the balance.

The masonry techniques of Korykos castle should be enhanced, as they demonstrate the ability of medieval builders.

Their structures have not collapsed and have kept the balance exclusively thanks to the friction between the materials and to the cohesion of the mortar.

Between Korykos and Kanytelleis, interesting phenomena of static instability of the Byzantine basilicas are there: on the ruins, not only the primary collapses can be found, but also exceptional examples of deformation and crack patterns that have been preserved for centuries<sup>35</sup>.

Also, most of the funerary monuments of Silifke and Diocaesarea have significant structural instabilities. In a series of such buildings, the seismic stress has produced extraordinary phenomena of equilibrium. Like those found in the necropolis north-west of Elaiussa, they emphasize the value of “city of deads” the extensive necropolis has taken over the centuries. In the latter site, different phenomena can be spotted: the primary collapse of the columns of the temple-tombs; the collapse of the walls in “home” or “fence” funerary buildings; subsidence of the foundations of the sarcophagus tombs.

The conservation of these examples is necessary in order to learn, study and promote all the historical events that have affected the region, including natural disasters. This requires the adoption of strategies regarding the archaeological heritage undertaking minimal interventions, where the recognisability of old and new is not represented by the ‘sign’ of the architect, but is entrusted to simple consolidations that respect the signs of the telluric events. Therefore, it is essential that the intervention is compatible, favours maintenance operations, and implements re-functionalization (if necessary) and enhancement (especially cultural) of the heritage.

Regarding the ruins that after the earthquakes have taken a new structural configuration and, despite the cracks and deformations, are still perfectly balanced, a minimal intervention -simply aimed at securing them- would be much more preferable than an invasive seismic retrofitting. In these

cases, it may be more appropriate to limit the influx of visitors or prevent it. The conservation reasons should outweigh economic needs and “instant image feedback”; these, in fact, are usually satisfied to the detriment of the cultural heritage. So, these complexes could become an archaeo-seismological park, as in the case of Hierapolis. But, taking into account the extension of the sites affected by telluric events and the location of monuments spread throughout the territory of Cilicia, an archaeo-seismological *landscape* could be rather proposed. This would provide an opportunity to carefully study the seismic phenomena, the static properties of the structures, the specific qualities of the materials used in the Hellenistic, Roman and Byzantine architecture. This approach is innovative compared to traditional methods of intervention on ruins, and involves actions that may not lead to an immediate economic advantage related to tourism.

This method would also favour the needs of local and foreign scholars, who would see the opportunity to deepen scientific research, creating a true “educational camp”, also thanks to the public organizations and the local population.

The systematization of this cultural heritage – interpreted within an extensive landscape complex – must take place through careful restoration of each element (from the most monumental to the most utilitarian), also focusing on the philological re-proposition of the ancient routes.

In this concern, several routes departing from Elaiussa (and linked to the sacredness of the places, the port and the military settlements) could be identified, as it has been done in some European settings that use large-scale actions as strength of their goals<sup>36</sup>. Nevertheless, an excessive theming must be avoided, since it could induce people into errors of perception and judgment with respect to vernacular architecture.

Some considerations on the management of this fragile heritage arise from this approach. A technical and archaeological team should be established, supported by

volunteer staff, who must be specially instructed by the public and university authorities responsible for the excavation. This training should foresee constant updates, just to ensure the “Integrated Conservation” expressed in the Declaration of Amsterdam (1975). Moreover, the presence in the workplace would give these volunteers both theoretical and operational knowledge that could also be useful in the subsequent phases of maintenance.

The visits to the archaeo-seismological park should include educational tours for groups and schools. To improve the traditional system of explanatory panels (appropriately integrated with *QRcode* applications), multimedia tools could be used to help in the visit (e.g. digital media comparable to smartphones, tablets, walkie-talkies). They should be available in several parts of the archaeo-seismological park, for instance at the museum and at study centres located throughout the territory. Finally, volunteers, experts and teachers could organize events to make the students acquainted with the territory, through tours and visits on the site. The performance of the volunteers could also be a virtuous trial of peer education<sup>37</sup> in the field of Cultural Heritage, shortening the distance between students and heritage.

Through this enhancement in progress (where all phases are programmatically interconnected), it would be possible to reach the so-called Integrated Conservation of cultural heritage, even within the more fragile elements like the archaeological ones. In conclusion, the deep local roots, the active participation of the population and the systematic circulation of knowledge could certainly be the most appropriate ingredients to ensure the perpetuation of the civilization values whose Elaiussa (and other sites associated with it) is the holder.

## Notes

1 The chapter *Accidental and intentional destruction: conservation of damaged archaeological heritage*, was written by Emanuele Morezzi. *A conscious conservation of accidental destruction: the case of Hierapolis of Phrygia* was written by Emanuele Romeo. *Accidental destruction in Cilicia: a proposal for an archaeo-seismological landscape* was written by Riccardo Rudiero.

G. CARBONARA, *Restauro fra conservazione e ripristino: note sui più attuali orientamenti*, in Palladio n°6, luglio-dicembre 1990, pp.43-76. S. GIZZI, *Reintegrazioni di superfici e di strutture lapidee in area greca e microasiatica. Riflessioni sul restauro archeologico*, Roma 1996.

2 M. DEZZI BARDESCHI, *Anastilosi: abusi e pretesti*, in ANAΓKH, n°6 giugno 1994, pp.2-3.

3 M.A. GIUSTI, *Restauro dei giardini. Teorie e storia*, Firenze 2004, pp.111-116.

4 P. SCHERRER, *Ephesus*, Istanbul 2000, pp.88-93 e pp.114-139

5 R. IENTILE, *Per un consolidamento consapevole dei beni architettonici*, Torino 2001.

6 S. GIZZI, *Reintegrazioni di superfici e di strutture lapidee ... cit.* pp. 212-221.

7 *Ibidem*, pp.214-217.

8 S. ERDEMGIL, *Les maison du flanc a Ephese*, Selcuk 1988.

9 F. KRINZINGER, *Ein Dach für Ephesos. Der Schutzbau für das Hanghaus 2*, Österreichischen Archäologischen Instituts, Vienna 2000.

10 H. DEDEOGLU, *The Lydians and Sardis*, Istanbul 2003, pp.99-114.

11 S. GIZZI, *Reintegrazioni di superfici e di strutture lapidee ... cit.* pp. 101-106.

12 J. FREELY, *The eastern Mediterranean coast of Turkey*, Istanbul 1998, pp.85-89.

13 *Ibidem*, pp.57-78.

14 K.T. ERIM, *Afrodisia*, Istanbul 2002, pp. 19-21

15 E. AKURGAL, *Civilisations et sites antiques de Turquie*, Istanbul 1986, pp.238-246

16 *Ibidem*, 193-197.

17 F. D'ANDRIA, *Paolo Verzone e l'archeologia di Hierapolis*, in D. RONCHETTA (edited by) *Paolo Verzone 1902-1986. Tra Storia dell'Architettura, Restauro, Archeologia*, Torino 2005, p.149.

18 F. D'ANDRIA, *Hierapolis di Frigia (Pamukkale)*, Istanbul 2003, pp.80-85.

19 L. CAMPAGNA, *Le recenti indagini al Ninfeo dei Tritoni (Regio II): nuovi dati per lo studio del monumento*, in F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, Istanbul 2007, pp.311-332; F. SILVESTRELLI, *Il Ninfeo dei Tritoni (Regio*

- II): *le fasi di età bizantina e postbizantina. Relazione preliminare delle campagne di scavo 1994-2001*, in F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, cit. pp.333-357.
- 20 M. L. DE BERNARDI, *Le Terme-Chiesa a Hierapolis di Frigia: Analisi della fabbrica e proposta di metodologia di rilievo a fini restaurativi*, in D. DE BERNARDI FERRERO, *Hierapolis scavi e ricerche IV. Saggi in onore di Paolo Verzone*, Bretschneider, Roma 2002, pp.265-281.
- 21 P. MIGHETTO, F. GALVAGNO, *Le Terme-Chiesa e la sfida della conservazione dei segni dell'attività sismica: i primi interventi di messa in sicurezza e di consolidamento del complesso monumentale*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, Istanbul 2012, pp.469-494.
- 22 L. PALMUCCI-QUAGLINO, G. CIOTTA, *La cattedrale di Hierapolis*, in D. DE BERNARDI FERRERO, *Hierapolis scavi e ricerche IV. Saggi in onore di Paolo Verzone*, cit. pp.179-211.
- 23 E. ROMEO, *Interventi per il restauro e la conservazione della Cattedrale di Hierapolis*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, cit., pp.585-590.
- 24 F. D'ANDRIA, *Hierapolis 2003 (26.Kazi Sonuclari Toplantisi 2.Cilt)*, Ankara 2004, pp.148-149. G. SEMERARO, *Ricerche archeologiche nel Santuario di Apollo (Regio VII)2001-2003*, in F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, cit. pp. 169-210.
- 25 D. DE BERNARDI FERRERO, *Teatri classici in Asia Minore*, I, Roma 1966, pp.55-67. F. D'ANDRIA, *Hierapolis di Frigia (Pamukkale)*, Istanbul 2003, pp.147-161.
- 26 P. MIGHETTO, *Il cantiere del nuovo palcoscenico*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, cit., pp.235-248.
- 27 F. MASINO, G. SOBRÀ, *Ricerche e interventi nel teatro*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, cit., pp.207-248234.
- 28 F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, Istanbul 2007.
- 29 Elaiussa Sebaste (Turkey) is the old archaeological site in Cilicia Trachea, near to the actual coastal city of Ayaş.
- 30 Cfr. "Rinterro" in L. MARINO (edited by), *Dizionario di restauro archeologico* cit., pp. 188-189.
- 31 E. EQUINI SCHNEIDER (edited by) *Elaiussa Sebaste I. Campagne di scavo 1995-1997*, Roma 1999, p.117.

- 32 E. MITCHELL, *Attività di conservazione e restauro*, in E. EQUINI SCHEIDER, *Elaiussa Sebaste II. Un porto tra Oriente e Occidente*, Roma 2003, pp. 795-797.
- 33 *Ibidem*, pp.797-799.
- 34 C. TASKIRAN, *Silifke and environs*, Ankara 1993, pp.119-121.
- 35 *Ibidem*, p.112-117.
- 36 The archaeological itinerary of the defensive system of the Roman limes represents an example of what is being envisaged. The above includes: the British section of Hadrian's Wall, the Scottish Antonine Wall and the Germanic-Rhaetian border. These complexes are already included in the UNESCO list, but others could be added if equally enhanced: the Dacian limes in Romania and the Danubian one in Austria.
- 37 Joint Interagency Group on Young People's Health Development and Protection in Europe and Central Asia (IAG). Training for Trainers, Peer Education (<http://www.bdp.it/content/index.php?action=read&id=1133>). Pellai, Alberto; Rinaldin, Valentina, Tamborini, Barbara. Educazione tra pari. Manuale teorico-pratico di empowered peer education. Trento: Edizioni Centro Studi Erickson, 2002.

## Bibliography

E. AKURGAL, *Civilisations et sites antiques de Turquie*, Istanbul 1986

L. CAMPAGNA, *Le recenti indagini al Ninfeo dei Tritoni (Regio II): nuovi dati per lo studio del monumento*, in F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, Istanbul 2007, pp.311-332

G. CARBONARA, *Restauro fra conservazione e ripristino: note sui più attuali orientamenti*, in Palladio n°6, luglio-dicembre 1990, pp.43-76. S. GIZZI, *Reintegrazioni di superfici e di strutture lapidee in area greca e microasiatica. Riflessioni sul restauro archeologico*, Roma 1996.

F. D'ANDRIA, *Hierapolis di Frigia (Pamukkale)*, Istanbul 2003

F. D'ANDRIA, *Paolo Verzone e l'archeologia di Hierapolis*, in D. RONCHETTA (edited by) *Paolo Verzone 1902-1986. Tra Storia dell'Architettura, Restauro, Archeologia*, Torino 2005, p.149

- F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, Istanbul 2007
- D. DE BERNARDI FERRERO, *Teatri classici in Asia Minore*, I, Roma 1966
- M. L. DE BERNARDI, *Le Terme-Chiesa a Hierapolis di Frigia: Analisi della fabbrica e proposta di metodologia di rilievo a fini restaurativi*, in D. DE BERNARDI FERRERO, *Hierapolis scavi e ricerche IV. Saggi in onore di Paolo Verzone*, Bretschneider, Roma 2002, pp.265-281
- H. DEDEOGLU, *The Lydians and Sardis*, Istanbul 2003
- M. DEZZI BARDESCHI, *Anastilosi: abusi e pretesti*, in ANAΓKH, n°6 giugno 1994
- F. D'ANDRIA, *Hierapolis di Frigia (Pamukkale)*, Istanbul 2003
- S. ERDEMGIL, *Les maison du flanc a Ephese*, Selcuk 1988
- E. EQUINI SCHNEIDER (edited by) *Elaiussa Sebaste I. Campagne di scavo 1995-1997*, Roma 1999
- K.T. ERIM, *Afrodisia*, Istanbul 2002
- J. FREELY, *The eastern mediterranean coast of Turkey*, Istanbul 1998
- M.A. GIUSTI, *Restauro dei giardini. Teorie e storia*, Firenze 2004, pp.111-116
- F. KRINZINGER, *Ein Dach für Ephesos. Der Schutzbau für das Hanghaus 2*, Österreichischen Archäologischen Instituts, Vienna 2000
- R. IENTILE, *Per un consolidamento consapevole dei beni architettonici*, Torino 2001
- F. MASINO, G. SOBRÀ, *Ricerche e interventi nel teatro*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, cit., pp. 207-248
- P. MIGHETTO, *Il cantiere del nuovo palcoscenico*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, cit., pp.235-248

P. MIGHETTO, F. GALVAGNO, *Le Terme-Chiesa e la sfida della conservazione dei segni dell'attività sismica: i primi interventi di messa in sicurezza e di consolidamento del complesso monumentale*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, Istanbul 2012, pp.469-494

E. MITCHELL, *Attività di conservazione e restauro*, in E. EQUINI SCHEIDER, *Elaiussa Sebaste II. Un porto tra Oriente e Occidente*, Roma 2003, pp. 795-797

L. PALMUCCI-QUAGLINO, G. CIOTTA, *La cattedrale di Hierapolis*, in D. DE BERNARDI FERRERO, *Hierapolis scavi e ricerche IV. Saggi in onore di Paolo Verzone*, cit. pp.179-211

E. ROMEO, *Interventi per il restauro e la conservazione della Cattedrale di Hierapolis*, in F. D'ANDRIA, M.P. CAGGIA, T. ISMAELLI (edited by) *Hierapolis di Frigia V*, cit., pp.585-590

F. D'ANDRIA, *Hierapolis 2003 (26.Kazi Sonuclari Toplantisi 2.Cilt)*, Ankara 2004

P. SCHERRER, *Ephesus*, Istanbul 2000, pp.88-93

G. SEMERARO, *Ricerche archeologiche nel Santuario di Apollo (Regio VII)2001-2003*, in F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, cit. pp. 169-210

F. SILVESTRELLI, *Il Ninfeo dei Tritoni (Regio II): le fasi di età bizantina e postbizantina. Relazione preliminare delle campagne di scavo 1994-2001*, in F. D'ANDRIA, M. P. CAGGIA (edited by) *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 200-2003*, cit. pp.333-357

C. TASKIRAN, *Silifke and environs*, Ankara 1993