

Preserving Archaeological Mosaic Pavements: A Discussion of Context and Access

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*This article explores if and how the conservation of archaeological mosaics can be managed so that neither context nor public access is sacrificed. First, the subjects are introduced to give the reader an understanding of the role of artifacts and sites within heritage management. Then, the first of two case studies derived from the study of archaeological mosaics in Turkey discusses the potentially negative impact of time-sensitive decisions in the field on the preservation of mosaics, while the second explores the impact of dispersed mosaics from one parent site. The discussion and conclusions urge for movements towards open communication and additional guidelines from the heritage management sector, as well as a potential digital solution.**

Introduction

Mosaics are designs or images made up of smaller pieces, traditionally tesserae. Though they can occur as pavements (*opus tessellatum*) or adorn walls and vaults (*opus musivum*), this article focuses on *opus tessellatum*. The Ancient Greeks first developed mosaics into their true form as pebbled pavements. Later, the Romans introduced *opus musivum* and glass tesserae. By the fifth century C.E., mosaics had been largely appropriated by the Christian Church, which remained true until the eventual decline of mosaics during the Renaissance.

Today, mosaics face both physical and conceptual challenges. Physically, many mosaics are deteriorating in situ or within museum stores. Conceptually, mosaics tend to be presented without much explanation as to where they came from, why they are significant, and how the designs and images should be interpreted. This lack of context, whether the mosaic is in situ or in an institution, prohibits visitor understanding and contributes to a general devaluation of the medium. This article has been developed from research in response to these issues, focusing on how context is (or is not) provided for mosaics and the extent to which the public is allowed access to the material, physically or virtually.

Context and access are issues that have received significant attention in recent years. In this paper, context can be defined as the geographic, cultural, material, and archaeological setting of the artifact, both originally and as it survives today.¹ Access is understood to be the inherent right of the public to be provided with opportunities to interact with and experience material culture from within the heritage realm.² The meanings of the terms are entirely dependent upon numerous parameters individual to each situation. Thus, it is difficult to determine the role of context and the possibility of access preemptively in regards to conservation management. Any attempt at making recommendations regarding the literal and figurative space of mosaics then requires diverse discussion and consideration.

As *opus tessellatum* are pavements, they embody both decoration and function and are omnipresent to residents and visitors of the space. The art form was known as an extravagant and desirable addition to noble homes and public spaces, giving “an impression of plenty, luxury, and hedonistic living ... every visitor who stepped over [the mosaics] would know he was a man of culture.”³ Mosaics were chosen to directly enhance the specific space and décor in question, so that contemporary viewers were immersed in a total environment of decoration and opulence.⁴ Each aspect of the motif – style, materials, design, and location – communicated specific people, places, events, and beliefs. In this way, mosaics are a kind of visual language in which contemporary viewers were literate and current scholars are still deciphering. It is with all of the above in mind that the modern viewer must experience mosaics, appreciating each phase of their life from patronage to quarrying, production, and decades of use.

Archaeological Mosaics

As mosaics first began to be rediscovered and interest in the arts of antiquity grew within collections and early museums, methods were developed for lifting and transporting the mosaics, as well as for caring for and displaying them once they arrived. Various techniques developed from the late 19th century through the 20th century. Because mosaics require a large investment of resources in terms of conservation, storage, and display, many lifted mosaics were never treated, resulting in their deterioration within stores.⁵ For those that were treated, it was common up through the 1970s to re-lay the mosaics in reinforced concrete, which has caused unintentional damage.⁶ For the treated mosaics that were actually displayed within museums, it tended to be as art rather than as archaeological material culture, contorting the constructed context and public perception.⁷ Concurrently, those mosaics that were encountered but left in situ were not treated according to a set protocol, nor were reburial practices governed.⁸

By the early 1980s, conservation theory began to support preservation *in situ*.⁹ The International Committee for the Conservation of Mosaics (ICCM), other organizations, and various individuals have helped the field of mosaics conservation advance significantly by devoting numerous publications and conferences to ethical and practical guidelines.¹⁰ The contemporary western approach to mosaics conservation advocates *in situ* preservation with minimum intervention and a focus on stabilization, documentation, and environmental monitoring. *In situ* preservation occurs most commonly via reburial or protective shelter, though also through lifting and then re-laying on a new foundation *in situ*.¹¹ While lifting and relocation still occur, it is ideally only when the mosaic would be damaged or destroyed if left *in situ*.¹² There is no single, supported method of preservation because of the number of situational decisions that must be made during the process of managing and conserving archaeological mosaics.

Mosaics discovered on active excavations are further at risk in that “archaeological activities are one of the main causes of decay of archaeological sites.”¹³ This is one of the primary reasons that archaeological and conservation management plans are considered essential to contemporary responsible practice. It also indicates the important role that archaeological conservators have to play.

Archaeological Conservation

Though conservation is variously defined according to the situation, locations, and who is involved, there are unifying principles. The fundamental underpinnings of the term can be described as “the preservation, protection, care and restoration of our [*sic*] cultural heritage,”¹⁴ making a conservator someone who pursues these aims, even if not formally trained.¹⁵ However, the guiding principles for how to achieve ‘the preservation, protection, care and restoration’ are still evolving.

One of the primary goals of contemporary conservation is ‘minimum intervention,’ by which one should only choose those treatments required by the object’s needs and with the least possible effect on the object itself.¹⁶ Another is the idea that conservators must “respect the cultural context” and “clarify the artistic and historical messages therein without the loss of authenticity and meaning.”¹⁷ These tasks necessitate the use of personal judgement. However, modern conservators are trained to evaluate situations while considering the many values and stakeholders involved in order to determine the best possible outcome without sacrifice to the object or site in question.

In heritage management, the term ‘stakeholders’ refers to “the many individuals, groups, and institutions with an interest in the outcome of heritage and conservation issues.”¹⁸ Identifying and involving as many stakeholders as possible in conservation issues is a way of increasing participation and access. The term ‘the public’ can be interpreted many ways.¹⁹ The public represent the motivation of heritage professions as the users, consumers, and overall beneficiaries. Furthermore, the public is not a unanimous collective.²⁰ Understanding the public in their role as stakeholders requires accounting for the diversity as well as prioritizing the various needs in order to benefit the majority, where possible.²¹

Also indispensable to effective conservation management plans is the discussion of the significance and values of the site or object in question. Mason and Avrami propose the following typology of values: historical and artistic, social or civic, spiritual or religious, symbolic or identity, research, natural, and economic.²² While these categories are not definitive or exhaustive, they provide a framework for discussion. That values vary by culture and time adds complexity, allowing conservation to continually evolve and enhance cultural values by preserving the heritage in which they are founded and thus derive.²³

As is the case in many aspects of conservation, there is not yet a consensus as to the ideal physical or conceptual treatment of mosaic pavements. Despite dedicated conferences and publications, the excavation of mosaics inherently encounters questions yet to be answered.

Context and Access of Artifact Display

The primary difference between the effects of conserving objects in situ versus within a cultural institution manifests in terms of visitor experience. This is due to the impact of context, which is not discussed in terms of presence and absence, but in terms of the concept of originality and intent; nothing exists without context but many items are no longer seen in their original context, which distorts modern understanding and interactions.²⁴ Unfortunately, sometimes in situ preservation is impossible or no original context survives. Additionally, many museums have recreated historical contexts far beyond what would be possible on-site.

If preservation in situ is not possible, then presentation in a museum as close to the originating site as possible would seem preferable in terms of upholding context. However, the inverse is often true for access. Due to population size and ease of travel, international and national museums often reach wider audiences than regional or local museums. For those objects that remain in situ, location, the environment, and the materiality of the object in question often limit display. Further complications may arise from legal constraints or the policies of the excavation, as not all sites are open to the public, especially if the site is the subject of ongoing excavations.

The following case study illustrates the importance of the planning process and the potential impact of individuals lacking heritage theory awareness on the significance of shared culture.

Case Study One: The Decision Making Process Behind Reburial

The topic of mosaic conservation came to be of particular interest to the author after witnessing the discovery and excavation of a series of mosaics during the summer of 2011 on site in southern Turkey.²⁵ The ensuing conversations between conservation student, archaeologist, field director, and project director were illuminating in terms of the lack of consensus on what should happen to mosaics post-excavation and which qualities of mosaics are most valuable. The author was charged with devising a plan of action for the mosaics, which she developed from a series of publications, particularly the manuals published by the Getty Conservation Institute.²⁶ However, it was still largely unclear how to proceed with the excavation and how to objectively determine the future of the mosaics.

The mosaic pavements were discovered and excavated towards the end of the season, limiting the time and available resources for its treatment. As such, it was decided that after excavation and cleaning, full documentation would be followed by an efficient preservation campaign. After researching available techniques and recommendations from similar sites, a discussion was held between the primary stakeholders. Figure 1 illustrates the decision-making process of the student and lead archaeologists at the site.

Lifting was immediately excluded for many reasons including that the purpose of preservation of the mosaics was to continue excavating the pavement in the future. Preservation by shelter was not possible due to resources, security concerns, and the risk of environmental damage due to open exposure. Thus, reburial was the only viable solution. It was agreed that the most appropriate approach would be temporary reburial designed to last a maximum of three to five years. Synthetic woven bags were purchased locally and taken to the field. Each bag was

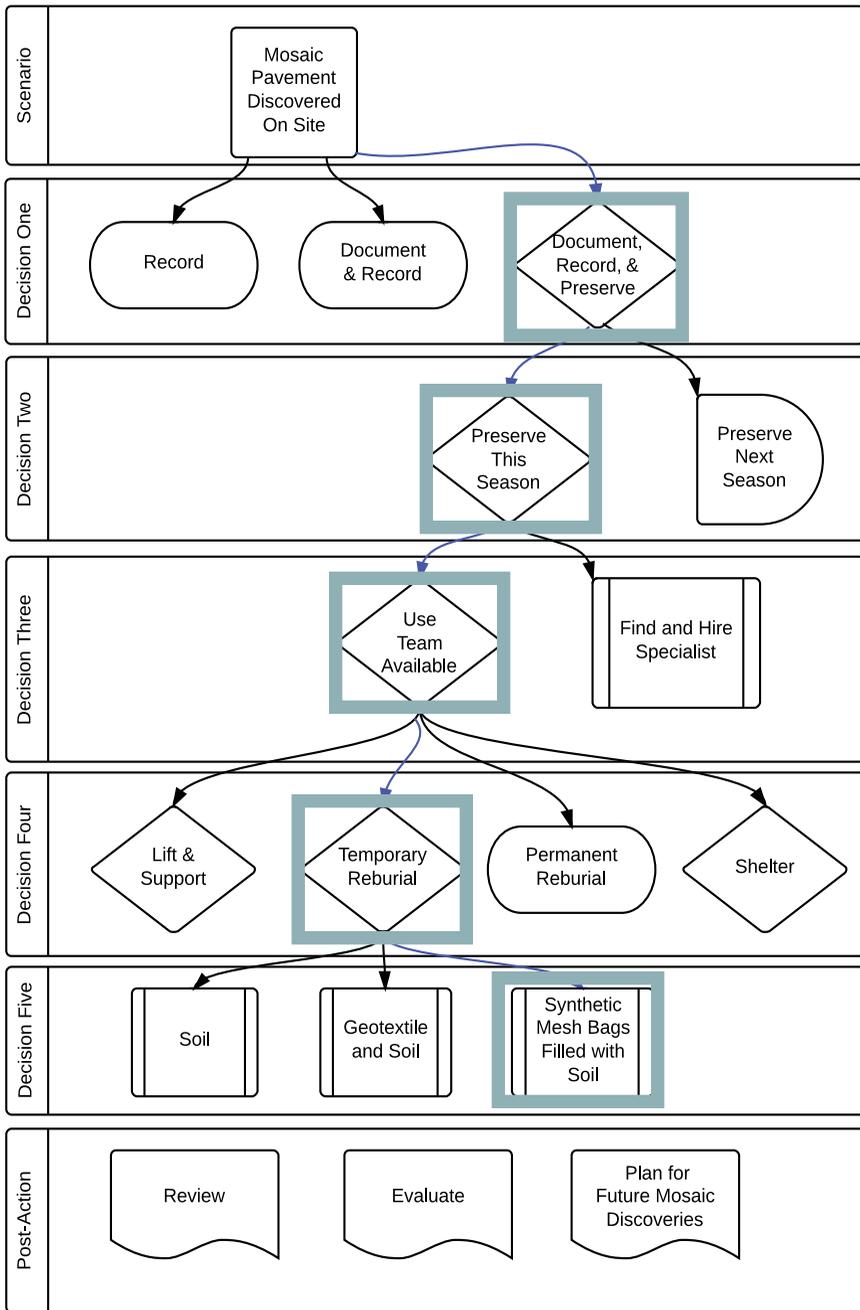


Figure 1: This decision tree illustrates the many possible responses to discovering a mosaic during excavation. The think squares highlight the choices made in case study one.



Figure 2: One of the synthetic bags split with the contents emptied, one year after installation (author's own image).

then filled approximately halfway with sieved soil removed during excavation. The bags were stacked on top of the areas of exposed pavements, approximately three to four bags high and wide enough to extend beyond the boundaries of the pavements. A layer of soil was then placed over the bags to protect the material from exposure to the elements. Reversal of the reburial process was planned to occur within the three to five year window, once issues regarding land-rights had been resolved. Otherwise, the contingency plan was to lift the bags, check on the condition of the pavements, and complete another temporary reburial following a similar methodology.

When the author returned for the 2012 season, the condition of the synthetic bags was checked. Though many bags along the edges of the top layer had split, likely due to the elements, the lower rows seemed to be in good condition (fig. 2). The compacted layer of soil placed over the bags appeared to have been very effective, as the bags that had split were those not protected by the soil layer (fig. 3).

As it was not yet possible to replace the temporary reburial with a more permanent solution, the bags were left in place. Thus, the condition of the pavements could not be checked. It is possible that water retention, biological growth, and the extension of the vegetation into the pavement are currently putting the tesserae at risk for further deterioration. In the next few years, when the bags are removed, these issues can be identified

and documented so that future conservation can address them.

Reflecting on the reburial process undertaken, decision-making occurred without full consultation of a broad range of stakeholders and resulted in a plan that considered the resources of the project but little else. There were significant gaps in the author's understanding of the situation, specifically in terms of who should be involved in



Figure 3: View of the layers of bags in place and covered by soil (author's own image).

the discussion and the potential cultural significance of the pavements. Had the author been in contact with a broader range of stakeholders and experts, the decisions made would have been more inclusive and informed.

Though the mound is closed to the public due to government policy, the author now believes that attempts should have been made to make an exception prior to reburial of the mosaics. If not then, when the mosaic is uncovered and prepared for a permanent solution in the future, the site should certainly aim to allow the public access. Doing so would help create a sense of community engagement and responsibility. In addition, the project should strongly consider public dissemination of the information through publication, online or otherwise. Many projects have made illustrated discussions of their mosaic conservation projects available in order to help other projects and increase awareness of the importance of mosaic conservation.²⁷

Ultimately, the case study is not an example of faulty decisions and the actions taken did not, as far as is currently known, negatively impact the physical integrity of the mosaics. However, the processes employed to reach the decisions is not in keeping with current theory on site and conservation management. Greater awareness of these movements and a pathway to pursue them given reduced resources and limited time could help prevent future individuals and sites from making similar lapses and encourage communication within the archaeology and conservation communities.

Mosaics in Museums

Current practice dictates that mosaics should not be lifted unless the pavement would likely be destroyed and an institution has already been identified to provide storage and care. Ideally having met these conditions, the mosaic would then be lifted and transported to the accepting institution where it would undergo a significant period of care that includes backing, cleaning, and mounting.²⁸ Following these processes, the

mosaic would either be selected for display or remain in storage. If chosen for display, there are two basic approaches for mounting mosaic pavements – horizontally and vertically. Though *opus tessellatum* were typically intended to be floor pavements, this is not necessarily the factor used within a museum to determine display. Rather, available space is a key issue that guides many curatorial and design decisions.²⁹

From the author's personal experience, more mosaic pavements are displayed upon the floor, either in recesses or on plinths, in Mediterranean museums than Western museums. While this trend could have many explanations, it could also be a reflection that the closer an object is to its original location, the more of its context it retains. On the other hand, for those museums born from colonial endeavours, the display of mosaics upon walls could be interpreted as a reflection of these origins.³⁰ Rather than material culture, the pavements represent the art of idealized societies and are valuable for their appearance and what they represent more so than for their original function or archaeological significance.

However, in the modern world and in an effort to embrace values-based conservation and its guiding principles, there must be an expectation for responsible display of mosaics. Museums and institutions in which lifted mosaics are displayed have a responsibility to create an atmosphere of both context and access without sacrificing the mosaics' additional values. The following case study focuses on the dispersal of mosaic pavements excavated from Antioch in the early 20th century and the conceptual issues these pavements now face as a result.

Case Study Two: Dispersal of the Antioch Mosaics

Antioch-on-the-Orontes is an archaeological site in modern Turkey well known for the prolific Roman mosaic pavements.³¹ American teams excavated the site from 1932 to 1939, during which time many mosaics were lifted

due to their quality and condition.³² The removal process involved “gluing a sheet of burlap or canvas to the face of a mosaic, undercutting the mosaic to free it from the bed, turning it over, and reinforcing the back with iron rods and concrete.”³³ As necessary, larger mosaics were “cut and lifted in sections.”³⁴ The lifted mosaics were then separated into groups by a nominated committee who took “subject matter, decorative design, and chronological span” into account.³⁵ Three groups resulted: one remained at the Antioch museum and/or in situ, one was shipped to Paris, and the other to America.³⁶ Within America, the lifted mosaics were eventually dispersed to various institutions, including the Princeton Art Museum, the Worcester Art Museum, the University of Oklahoma, the Metropolitan Museum of Art, and the Virginia Museum of Fine Arts in Richmond.³⁷ Within these institutions, the manner of display included wall mounting and floor display, both elevated and as useable pavements.³⁸ In the various publications, if not in the display itself, effort was made to describe and illustrate the original context of the mosaic pavements.³⁹

Though the excavation intended to separate the mosaics, as proven by their division and sale, the dispersal of pavements within America was not anticipated and occurred largely due to shortage of space and funds.⁴⁰ In the case of the pavements of the ‘House of Cilicia,’ the component parts were divided up and dispersed to at least three institutions, where they still remain.⁴¹ While recent efforts have been made to rejoin separated component parts such as during the *Antioch: The Lost Ancient City* exhibit in 2000, the majority of the mosaic sections from Antioch remain in disparate institutions with no guarantee of reference to their original context and associated parts (fig. 4).⁴²

Furthermore, as Dobbins demonstrates, it is only through consideration of the individual sections as parts of a whole that the significance of the mosaics is revealed.⁴³ By at least theoretically returning the pavements to their original context, it is possible to better understand the Antiochean individuals and society, as well as the way the city corresponded to the Classical world at large.⁴⁴ Thus, while the current dispersal of mosaics enables greater access and awareness of the city and its art,



Figure 4: . The Antioch hunt mosaic in Worcester, Massachusetts. The pavement is displayed horizontally, inset into the museum floor. Visitors can circumnavigate the pavement while a barrier prevents anyone from walking across the pavement. The hunt pavement is the largest Antioch mosaic in America (image taken on January 7, 2012 by Peter Eimon).

much of the value of the mosaics is lost. Still, the pieces do not have to be removed from their current institutions in order to reinstate context. Rather, further work in the vein of Becker, Dobbins, Kondoleon, and Smith can achieve such while also serving to reaffirm the cultural and academic values of the Antioch mosaics and discourage the future division of mosaic pavements.⁴⁵

Discussion

When unexpectedly excavating a mosaic, there is no single answer as to which methodology should be pursued, as each situation is rife with variables. Therefore, Case Study One is not advocating for the creation of a recipe approach to mosaics preservation. Rather, heritage professionals and organizations need to actively disseminate the importance of inclusivity in the decision making process. Additionally, more publications are needed that address the impact of conservation on the more abstract aspects of the object (or pavement) in question with practical suggestions for ways to maintain both material and conceptual authenticity and integrity.

Case Study Two illustrates the complexity of mosaic display within museums, as well as the impact location and display has on the conceptual nature of the pavements. Despite the issues surrounding the removal of mosaics from their original context, mosaics face far fewer mechanisms of decay inside institutional storage, meaning that mosaics on display in a museum may survive significantly longer than those preserved in situ. Though original context has been destroyed by relocating the pavement, the material itself survives and is available for research and appreciation. Berducou states that the authenticity of archaeological objects “is in their structure, their physiochemical makeup, [and] the potential source of new learning.”⁴⁶ If relocation does not remove or alter the original material and indisputably provides greater access and possibility for discovery, then perhaps museum display is the ‘new’ authentic. The paradox demands a

prioritization of values, which can only occur from a thorough discussion with a range of stakeholders on a case-by-case basis.

With the assistance of technology, solutions are possible that unite the artistic and archaeological aspects of mosaics in an effective and unobtrusive display. Given a room in which mosaics are safely mounted on walls, it would be entirely possible to project images onto the floor. The projected images could include the mosaics on display, as well as any associated pavements and photographs of the original setting, as available. This, in conjunction with adequate wall text, could effectively recreate an archaeological excavation within a museum without forcing the viewer to choose between art and archaeology. The number of adaptations of this scenario that take advantage of projectors and interactive computer screens are infinite and provide creative opportunities to enhance visitors’ experience and understanding of mosaics.

Digital Solution to Increase Access to Mosaics

With in situ preservation as the predominant recommendation for contemporary mosaic conservation, context is inherently preserved to some extent. Thus, access becomes the more elusive principle. Richards proclaims “it is no longer sufficient just to preserve heritage resources, digital or otherwise. We must make sure that they are accessible, and this means taking the resource to the world, rather than expecting the world to come to us.”⁴⁷ Many factors may interrupt or prohibit public access to archaeological mosaics, whether lifted or in situ, demanding a solution be proffered in which access can be provided while upholding the integrity of both the archaeological sites and/or the institution in possession of the pavements. As context and access are both location dependent and are often inversely related, the most convenient solution would be some form of online archive. There are many successful prototypes for online archives and databases.⁴⁸ An archive with a similar mission

could then provide a possible model and a thorough survey of available resources would be highly informative as to useful fields and the most reliable platforms.

An archive dedicated to archaeological mosaics would require procedure and objectives to be agreed upon by a large body of stakeholders. Certain requirements would be required logistically, which could include: public access, searchable by multiple criteria, standardized entry format, a strong preference to the inclusion of images, and the provision of background information to communicate original context. Achieving these objectives would require the cooperation of many people, projects, and countries as well as a thorough assessment of intellectual property rights and copyright law. If the archive were configured so that individuals directly associated with mosaic pavements could submit entries for approval, the resources mandated by such a project would be greatly reduced, though the issue of individuals' authority to release information would have to be addressed.

While the logistical issues of designing and launching an archive of this scale are complex, the benefits of investing in the process would be numerous enough to validate the resources and difficulties. An archive would provide access to information, particularly for those sites that are under-published and those museums that do not include their mosaic holdings in their collections databases or are lacking such. It would undoubtedly facilitate the study of archaeological mosaics and all aspects of their contemporary society, in part by creating the potential for the comparison of pavements discovered in different countries and centuries, allowing for potential identification of operating workshops, patterns of the diffusion of motifs, and even unknown colonies and spheres of influence. Additionally, a joint-effort, digital enterprise would spark public interest in mosaic pavements, archaeology, and conservation. Potentially, demonstrating leadership in terms of open access to mosaics could encourage the creation of similar archives and cooperation

in other areas of heritage management, such as in the identification and preservation of other outdoor artifacts including rock art, cave paintings, and in situ fossils. A mosaics archive would make it possible to continue supporting minimum intervention and the preservation of mosaics in situ without sacrificing public gain or archaeological data from the discoveries.

Though an archive does not rectify the lack of public access to many archaeological in situ mosaics, it offers a potential solution that not only does not sacrifice context, but also potentially enhances it. The resulting mosaics archive could be highly effective as a means of digital display, encouraging in situ preservation and avoiding the complications of archaeological display in institutions by trading storage of tesserae with storage of bits.

Conclusions

The conservation of mosaics has been a long discussed topic, and yet there are still many areas requiring further research and clarification. Resource effective, ethically founded techniques for in situ preservation are highly relevant needs. However, it is possible that despite physical damage and material degradation, the primary hindrance to the contemporary conservation of mosaics is awareness. Thus, it is important to increase communication between experts and novices in a setting that is not judgmental of past decisions but supportive of facilitating improvements to future thought and action. Wider dissemination of current and progressive publications on a values-based approach to planning would also improve knowledge and thereby facilitate sustainable decision-making.⁴⁹ The continued publication of technical manuals for conservation treatment of mosaics such as The Getty Conservation Institute is also important, especially as improvements to current practice are discovered.⁵⁰ Discussions also need to continue regarding the issues of context and access and how the two components can be managed so as to best provide for the material and the public, a topic that is applicable to many objects in addition to mosaics.

Ultimately, excavation and conservation are ineffective if the potential knowledge and experiences embedded within that material remains inaccessible to the collective owners.⁵¹ While the current push for in situ conservation ensures the maintenance of context, equal energy must be applied towards the provision of access in order for the perceived value of the material not to exceed the value of its impact. The idea that “it is the public, after all, that benefits and is served by the world-wide conservation movement” should be embraced as a sector-wide mission.⁵² By pursuing open communication, digital sharing, as well as by accepting that the decision-making process in itself is a significant step towards achieving better practice in conservation, heritage professionals have the potential to improve the future of in situ and relocated mosaics, as well as conservation theory as a whole.

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Endnotes:

- 1 Caple 2001, 36.
- 2 Potter, Jr. 1997, 39.
- 3 Westgate 2000, 270.
- 4 Dobbins 2000, 60-1; Westgate 2000, 271.
- 5 de Guichen and Nardi 2006, 4; Roby 2010, 1.
- 6 Roby 2010, 1.
- 7 Scott 2006, 636.
- 8 Ling 1997.
- 9 de Guichen and Nardi 2006, 4-6.
- 10 de Guichen and Nardi 2006; Roby 2010; see for example, ICCROM *Mosaics N°1-5*.
- 11 For a reburial example see the Lod Mosaic website (<http://www.lodmosaic.org/conservation-1.html>); and Demas 2012b. For shelter examples see Stewart et al. 2006; Demas 2012a. For lifting see Sease 1994; Waelkens and Loots 2000, 438.
- 12 Roby 2010, 1.
- 13 Palumbo 2002, 8.
- 14 Icon 2012, ¶3.
- 15 Muñoz Viñas 2005.
- 16 Caple 2001, 64-65.
- 17 ICOMOS Training Guidelines, ¶ 3 cited by Jokilhetto 2007, 6.
- 18 Mason and Avrami 2002, 21.
- 19 See Merriman 2004, 1-2.
- 20 Keene 2002, 21.
- 21 Ambrose and Paine 1993; Jameson, Jr. 2000, 288-97; Merriman 2004, 1-9.
- 22 Mason and Avrami 2002, 16-17.
- 23 Child 1994, 141; Demas 2002, 49.
- 24 Berducou 1996, 256-57.
- 25 The name and location have been withheld in the interest of site preservation.
- 26 Getty Conservation Institute and The Israel Antiquities Authority 2003; Getty Conservation Institute 2008.
- 27 See as examples: The Getty Conservation Institute 1991; Piqué 2004; Kolataj et al. 2007.
- 28 Sease 1994, 72.
- 29 Jones 1981, 3; Bradley et al. 1983, 161.
- 30 Scott 2006.
- 31 See Levi 1947; Campbell 1988; Kondoleon 2000; Becker and Kondoleon 2005.
- 32 Alexander 1940, 245; Becker and Kondoleon 2005.
- 33 Jones 1981, 2.
- 34 Jones 1981, 2.
- 35 Jones 1981, 13; Smith 2011, 12.
- 36 Jones 1981, 14.
- 37 Alexander 1940; Jones 1981; Becker and Kondoleon 2005; Smith 2011; see the Appendix in Jones (1981, 16-26) for a full account of the American dispersal.
- 38 Smith (2011) discusses elevated display; see Alexander (1940) and Jones (1981) for information on useable pavement displays.
- 39 Alexander 1940; Jones 1981; and Smith 2011.
- 40 Smith 2011, 12.

- 41 Smith 2011, 12-13.
42 For the exhibition see Kondoleon (2000) and Becker and Kondoleon (2005, 17).
43 Dobbins 2000.
44 Dobbins 2000, 60-61.
45 Becker and Kondoleon, 2005; Dobbins, 2000; Kondoleon, 2000; and Smith, 2011. These works have given holistic catalogues and interpretations of the Antioch mosaics and discussed the roll of the lifted mosaics in museums, both historically and currently. Dobbins and Smith bring the issue of separated pavements and ways for creating context to light, important topics that should be addressed by more art historians.
46 Berducou 1996, 250.
47 Richards 2008, 189.
48 See, for example: the Beazley Archive (<http://www.beazley.ox.ac.uk/index.htm>); ARTstor (<http://www.artstor.org/index.shtml>); JSTOR (<http://www.jstor.org/>); the Portable Antiquities Scheme (<http://finds.org.uk/>); and the Corpus Vasorum Antiquorum (<http://www.cvaonline.org/cva/default.htm>).
49 Demas 2002.
50 For example, the Getty Conservation Institute 2008.
51 Davis 1997, 85.
52 ICCROM 1977 cited by de Guichen and Nardi 2006, 6.

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