

*The International Journal of Nautical Archaeology* 33: 137-48.

MCCARTHY, M. 1989. The excavation continues. . . in the laboratory. *Bulletin of the Australian Institute for the Conservation of Cultural Materials* 15: 21-26.

SEIFERT, B. 2000. The design of an archaeological conservation laboratory: three case studies. Paper presented at the 28<sup>th</sup> Annual Meeting of the American Institute for Conservation, Philadelphia, PA, June 8-13.

### Further Reading

CONN, D. n.d. Project management for the construction of conservation laboratories. Available at: [http://www.ala.org/alcts/sites/ala.org.alcts/files/content/resources/pubs/chapter1\\_free.pdf](http://www.ala.org/alcts/sites/ala.org.alcts/files/content/resources/pubs/chapter1_free.pdf) (accessed September 28 2012).

CONSIDINE, B. 1998. The design of the decorative arts and sculpture conservation laboratory at the Getty Center. Available at: [http://cool.conservation-us.org/coolaic/sg/wag/1998/WAG\\_98\\_considine.pdf](http://cool.conservation-us.org/coolaic/sg/wag/1998/WAG_98_considine.pdf) (accessed 25 September 2012).

FREEMAN, J.K. 1989. Rome wasn't built in a day: design of an archival conservation laboratory. Available at: <http://cool.conservation-us.org/coolaic/sg/bpg/annual/v08/bp08-03.html> (accessed 25 September 2010).

HENRY, W. 1992. Notes on conservation lab design. Available at: <http://cool.conservation-us.org/byauth/henry/labdesgn.html> (accessed 26 September 2012).

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## Conservation, Restoration, and Preservation in Classical Archaeology

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### Introduction

A common terminology developed for the conservation of cultural heritage, adopted at the 2008 ICOM-CC (International Council of Museum Committee for Conservation conference, New Delhi), has removed ambiguity and helped conservation and restoration specialists to communicate more clearly and accurately. Museum managers, art historians, conservators, archaeologists, the public, and the media use the ICOM-CC definitions in order to preserve archaeological

and cultural sites and artifacts more effectively than they were able to do previously by relying on encyclopedias and dictionaries. Different cultures and languages – including the Anglo-Saxon languages and Latin in particular – assigned different meanings to terms, which created confusion and led to misunderstanding about how preservation should be carried out.

### Definition

The ICOM-CC terminology was developed during a decade of consultation among conservation and restoration specialists.

*Conservation* – all measures and actions aimed at safeguarding tangible cultural heritage while ensuring its accessibility to both present and future generations. Conservation embraces preventive conservation, remedial conservation, and restoration. All measures and actions should respect the significance and the physical properties of the cultural heritage item.

*Preventive conservation* – all measures and actions aimed at avoiding and minimizing future deterioration or loss. These are carried out within the context or on the surroundings of an item, but more often a group of items, whatever their age and condition might be. These measures and actions are indirect – they do not interfere with the materials and structures of the items. These methods do not modify their appearance. Examples of preventive conservation are appropriate measures and actions for registration, storage, handling, packing and transportation, security, environmental management (light, humidity and pollution, and pest control), emergency planning, education of staff, public awareness, and legal compliance.

*Remedial conservation* – all actions directly applied to an item or a group of items aimed at arresting current damaging processes or reinforcing their structure. These actions are only carried out when the items are in such a fragile condition or deteriorating at such a rate that they could be lost in a relatively short time. These actions sometimes modify the appearance of the items. Examples of remedial conservation are disinfestation of textiles, desalination of

ceramics, deacidification of paper, dehydration of wet archaeological materials, stabilization of corroded metals, consolidation of mural paintings, and removing weeds from mosaics.

*Restoration* – all actions directly applied to a single and stable item aimed at facilitating its appreciation, understanding, and use. These actions are only carried out when the item has lost part of its significance or function through past alteration or deterioration. They are based on respect for the original material. Most often, such actions modify the appearance of the item. Examples of restoration are retouching a painting, reassembling a broken sculpture, reshaping a basket, and filling losses on a glass vessel.

### Key Issues/Current Debates/Future Directions/Examples

Conservation measures and actions can sometimes have more than one purpose. For instance, varnish removal, the application of protective coatings, and the reburial of mosaics can be both preventive and remedial conservation. Conservation is complex and demands the collaboration of qualified professionals. In particular, any project involving direct actions over cultural heritage requires a conservator/restorer.

The word “conservation” embraces in its present definition three different disciplines that indicate different activities linked by a common aim represented by the preservation of tangible heritage and of the cultural message embedded in archaeological assets. These disciplines have a very distinct history that, in some respects, goes back to ancient times; however, they can now be interpreted as a unified whole.

Traces of restoration have been found on monuments and items brought to light by means of archaeological fieldwork. Such traces show us that people always have had an impulse to repair materials that constitutes today’s cultural heritage (Cagianò De Azavedo 1952). Damage occurred during the execution of art works, for example, the breaking down of sculpted elements of the monumental funerary art. Damage also

occurred by accident due to robberies, wars, or by the prolonged use of objects and surfaces. We often encounter simple repairs such as those to damaged parts of mosaic floors, which were fixed with new *tesserae* without paying attention to the motifs, the welding of broken vases with bronze staples, or the mimetic replacement of lost or broken marble elements to recover the functionality and aesthetic of sculptures or monumental architecture also constitute examples of ancient repairs.

The Roman town of Pompeii itself, for example, was undergoing a series of restorations at the moment of the fatal eruption of Mt. Vesuvius in 79 BCE. These repairs were part of a plan to recover from the earthquake of c. 62 BCE. Even ancient sources describe restoration as a habitual activity.

In ancient literary sources, we can find names of restorers and examples of restoration, such as the one mentioned by Pliny on the statue of Janus in the Roman Forum (Plin. *HN* 34.33). The hand of Janus had been reconstructed; his fingers indicated the number of days in a year after the calendar reform promulgated by Caesar in 46 BCE (Pliny). All of these works were characterized by the will to restore either the function of the artwork, its aesthetic appearance, or both, all the while erasing the damage.

In ancient times, together with the activities defined as restoration, great care was taken to lengthen the durability of art work through constant maintenance, an activity that today we would call “remedial conservation.” As maintenance, the surfaces were cleaned and the most appropriate kind of protective films were applied according to the material of the artwork. It is now taken for granted that lime was used on Roman monuments with a protective function; painted surfaces of marble sculptures were periodically replaced and protected with waxes, while oils and bituminous resins were applied to the damaged gilding of bronzes. During the Middle Ages, the attitude toward ancient art is one of reutilization, recycling the materials in order to build modern artworks instead of restoring the lost function of the works of art (Rossi Pinelli 1986). This attitude was already present in

the ancient world; parts of sculptures and monuments were modified or replaced according to ideological aims. For instance, the *damnatio memoriae* led to the modification of the bronze statue from Cape Misenum in order to transform the face of Domitian into that of Nerva; the statue is on exhibit at Naples' Museo Nazionale today; heads of heroic statues have been replaced to glorify the virtues of Roman emperors. Sculptural elements have been reused or reprocessed to build monuments and artworks of high symbolic value.

The main archaeological discoveries during the Italian Renaissance led to a series of activities that we can define as "restoration": the increasing requests of art works by collectors and enthusiasts of the ancient led sculptures and artists to "embellish" and "complete" archaeological remains; special care was dedicated to the statues through reconstructions and mimetic integrations of mutilated parts. Concerning the repairs of Palazzo della Valle's court conducted in 1520 by the Tuscan sculptor Lorenzo Lotti (known as Lorenzetto) in Rome, Vasari himself wrote:

*E nel vero hanno molta più grazia queste anticaglie in questa maniera restaurate che non hanno que' tronchi imperfetti e le membra senza capo o in altro modo difettose e tronche* (These antiquities restored in this way have more grace compared to those imperfect trunks and bodies with no head or with other imperfections) (Vasari 1568).

Many artists and architects were engaged in prestigious restorations in this period such as the Antonine Column in Rome, where the works were directed by Domenico Fontana and commissioned by Pope Sixtus V. The Laocoön statue group, discovered on Rome's Esquiline hill in 1506, was restored first by Baccio Bandinelli and then by Giovanni Angelo Montorsoli. The reconstructive intent of the restorations combined the willingness to maintain philological rigor in respecting the ancient with the aim to reconstruct the original appearance of the artworks. To achieve this final goal, people involved in restorations emulated the technical methodology used to create the artworks in the first place. The profession of the restorer started

to emerge when integrative restoration became common in the seventeenth century; being a restorer was previously considered not as important as artistic activity. Benvenuto Cellini was a sixteenth century artist who restored the sculpture collection of Cosimo de Medici in Florence. He defined restoration as *occupazione di artista mediocre, onde egli adattossi a condurre un restauro solo per far cosa grata al suo Principe* ("an occupation for a mediocre artist, often done just to please his Prince") (Cellini 1985).

It was the century of the restoration of the collection of Ludovisi's sculptures with Gian Domenico Bernini, Ippolito Buzzi, and Alessandro Algardi all involved in the works. The first specialist treatises on the topic emerge in this period, a first effort to systematize and standardize from the technical point of view the interventions on artworks. Orfeo Boselli, sculptor and restorer, wrote his *Osservazioni sulla scultura antica* between 1642 and 1663 and dedicated the thirteenth chapter to restoration. The chapter has become a precious source of documentation on methodology of integration, techniques, and material used at the time of the sculpture's restoration (Boselli 1978). The restorer's profile had a slow evolution until a proper recognition in the 1700 s. Large numbers of travelers visited archaeological and art sites at that time during their Grand Tour, fostering a new blooming antiques market. During this century, the antiquarian discipline evolved into archaeological science, thanks to the work of the German scholar Johann Joachim Winckelmann. His theories led to a new concept of restoration; this development incurred with the encounter of Bartolomeo Cavaceppi, sculptor and restorer engaged with the restoration of the Albani collection. Winckelmann, being an expert, was in charge of his training as requested by the Cardinal. Antiquities started to be seen as original documents that needed to be studied in order to be fully appreciated for their historic and literary values. Restoration according to Winckelmann had become a cognitive experience, requiring careful study and knowledge of the ancient work before an intervention; this meant that

professionals had to renounce any creative personal interpretation.

The professional relationship between Winckelmann and Cavaceppi led to the development of the discipline as an autonomous activity with respect to artistic disciplines, anticipating today's interaction between the art historian, the archaeologist, and the restorer – a fundamental combination of expertise to complete the conservation cycle. Cavaceppi dedicated a long chapter to restoration in his work published between 1768 and 1772. He gives technical indications together with indications of theoretical and methodological nature such as *Non per altro si restaura che per apprendervi* (“We restore to learn”), marking a turning point in the emerging profession of the restorer (Cavaceppi 1772).

The emergence of the discipline of Classical archaeology in the 1800s assisted in the development of a trend against the uncontrollable reconstructive restorations conducted to satisfy a flourishing market for ancient art, the new trend that would promote respect of the integrity of the original artwork and of the historical message carried by it. This school of thought spread among the field of monumental architecture. John Ruskin and William Morris founded the Anti-Restoration Movement and the Society for the Protection of Ancient Buildings with the aim of protecting monuments from “restoration in style,” and progressively, the movement included sculpture and artworks in general. The culture of “the beauty of a ruin” and the taste for fragments developed and consequently the basis for a different theoretical model of restoration emerged. Antonio Canova refused Lord Elgin's commission to work on the Parthenon marbles; he instead preferred to leave them as fragments and he promoted some de-restorations when he was curator of restoration for the Vatican Museums. The distinction between the word “restoration” and “conservation” started in this period; “restoration” acquired a negative meaning being associated with a concept of reconstruction and consequently falsity, while “conservation” was interpreted as protection of the original material (Melucco 1998).

Many schools of thought emerged between hundreds of interventions of restoration from the end of the 1800s to the first decades of the 1900s. Cesare Brandi came up with a conclusive concept stating that each technical-scientific data, concerning the artifact's material object of the intervention, had to be object of critical aesthetic and historical reflection itself. Cesare Brandi's theories were published as “Teoria del Restauro” in 1963, more than two decades after the author started working on the book in the 1940s. This work constituted the methodological starting point for the operative activities of the Istituto Centrale del Restauro (ICR); Brandi founded the institute in 1939 and directed it until 1959. In his book, Brandi defines restoration as:

*un momento metodologico del riconoscimento dell'opera d'arte, nella sua consistenza fisica e nella sua duplice polarità estetica e storica, in vista della sua trasmissione al futuro* (a methodological moment of recognition of the artwork, in its material consistence and double aesthetic and historical polarity, before his transmission to future generations) (Brandi 1963).

In his *Teoria*, the author clarified that *si restaura solo la materia dell'opera d'arte* (“only the material of the artwork is restored”) and that

*il restauro deve mirare al ristabilimento dell'unità potenziale dell'opera d'arte nella sua consistenza fisica, purché sia possibile raggiungere ciò senza commettere un falso artistico o un falso storico, e senza cancellare ogni traccia del passaggio dell'opera d'arte nel tempo* (the aim of the restoration is to recover the physical consistency of the artwork; it should be done without committing artistic or historic falsity and without erasing any signs of the artwork's history).

In Brandi's *Teoria* are collected all elements that would lead to the development of conservation as we conceive it today: reversibility and identification of the interventions, status quo's conservation, and principles of what the author calls *restauro preventivo* (“preventive restoration”); an entire chapter is dedicated to this last concept.



Brandi's theories of respect for the artworks and identification of the interventions have been fully applied through the high-level technical interventions for the large, postwar restorations of the 1950s. In this period, restoration became an essential instrument for the study and publication of historical and technical instances that were previously ignored. In the following years, we progressed toward a further evolution brought by Giovanni Urbani, an important figure in the restoration scene in the 1980s. Urbani saw the limits of a discipline that intervenes directly on a single monument at the time, with often long and expensive operations; the efficiency of those operations was compromised by the absence of "structural" intervention over the context that originated the damage restored.

It is the beginning of the evolution from restoration to conservation, development, and change of scale that would lead to this evolution at the end of the 1970s. Urbani, director of the ICR from 1973 to 1983, promoted the analysis of the causes of artwork damage in order to start working on the causes and prevent the damage, the value of the restoration and conservation benefit of the contribution of various professionals: chemists, biologist, geologist, physics that work together with specialists in restoration and conservation supporting them in understanding the microscopic scale of degrading mechanisms, materials' reactions, and efficiency of operational techniques. On the other hand, Urbani, according to Brandi's indications on preventive restoration, promotes the concept of "planned conservation" as an activity of preservation and protection of heritage on a large scale, characterized by prevention of environmental hazards and routine maintenance (Urbani & Zanardi 2000).

More and more accurate techniques of documentation emerge in this period (Nardi 1992): what was previously the occasional activity of an operator, it slowly become a systematized practice both in language and procedures; public administrations report these kind of activities in their balance sheets. Examples of application of these techniques are the identification and recorded evidence of the working process in the interpretation of marks left by historical events



**Conservation, Restoration, and Preservation in Classical Archaeology, Fig. 1** Arch of Septimius Severus in the Roman Forum, 1983. Table of stone's deterioration mechanisms. The documentation regarding the state of conservation of monuments has slowly become a fundamental instrument for the curator/restorer. (Pictures Nardi, Copyright CCA)

(Rockwell 1989), the identification of old restorations, mistakes and second thoughts, the interpretation of monuments' vertical surfaces (Nardi 1987). The documentation became the main instrument to record activities carried on during the interventions. It constituted a precious instrument to record the state of conservation of monuments and artworks, instrumental to the study of deterioration to prevent corrective measures, preservation, and protection activities (Figs. 1 and 2).

With the contribution of Gael de Guichen (ICCROM, the International Centre for the Study of the Preservation and Restoration of Cultural Property in Rome), we progress to the birth of the state of art of the discipline 30 years later: preventive conservation. During the last few decades, parallel to the methodological evolution of restoration into conservation followed by the evolution of conservation into preventive conservation, the restoration changes operational scale: the interest in a single coating developed into interest for its building, from the repairs of

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**Fig. 2** Arch of Septimius Severus in the Roman Forum, 1995. The ordinary maintenance of marble surfaces is an integral part of the preventive conservation process of the monuments. (Pictures Nardi, Copyright CCA)



**Conservation,  
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Archaeology,**

**Fig. 3** Zippori, Israel, 1994. The conservation in situ is the result of the encounter between archaeologist, art historian, architect, restorer/curator: their contribution is essential to bring together technical operative choices to the original nature of the monument and express its historical message. (Pictures Nardi, Copyright CCA)



a single object to entire collection, from the intervention on a monument to its site, from the single restorer to multidisciplinary groups. The archaeologist, the art historian, and the architect more and more often work side by side with the curator/restorer adding a fundamental humanistic contribution to connect operational technical choices to the original nature of the monument – its historical message. Examples of this interaction are the definition of the conservation principle in situ and the use, in current restorations, of materials and techniques belonging to original practices. In the past, restoration

privileged the aesthetic appearance of the artwork, often destroying the context of its origin and historical message such as the destruction of monuments and sites to remove frescos and mosaics – the aim of the conservation in situ is to promote a different scenario (Fig. 3).

In the same way when it comes to materials and techniques to use in present interventions, the contribution of humanistic literature is of fundamental importance since it has led to the technical-conservative debate. For instance, in the choice of materials based on original formulas (such as the use of lime-based mortars instead



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**Fig. 4** Ostia Antica, 1989. The reburial of delicate archaeological surfaces, such as mosaics, represents a very efficient measure of preventive conservation. (Picture Nardi, Copyright CCA)



**Conservation,  
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**Fig. 5** Musei Capitolini, 2000. The project “Aperto per Restauro” has allowed thousands of visitors to the museum to see the works of conservation and restoration of the Centaurs from the Villa of Hadrian at Tivoli. (Picture Costanzi Cobau, Copyright CCA)

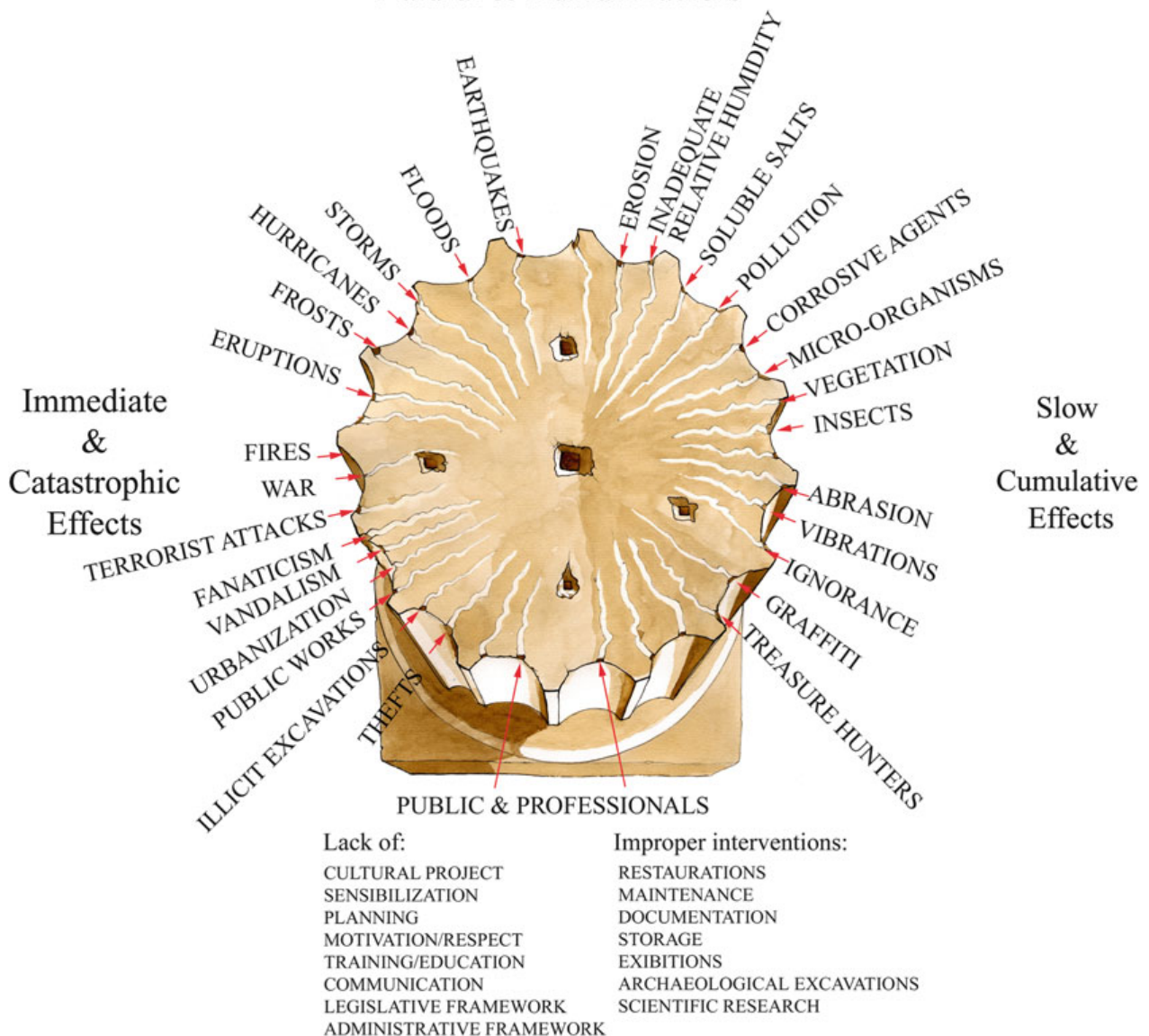


of synthetic industrial products) and similar techniques to the original techniques of construction with the result of diminish the impact of invasive operation in favor of practices closer to routine and emergency maintenance rather than restoration or reconstruction (Fig. 4).

The principle of conservation led to a new approach adopted by some institutions in the 1980s. The old Istituto Centrale del Restauro, called Istituto Superiore per la Conservazione del Restauro nowadays, conducted mainly technical courses, while the ICCROM first followed by the CCI (Canadian Conservation

Institute) in Ottawa, the Université Paris-Sorbonne (Paris IV) in France, the Getty Conservation Institute in Los Angeles, and the Institute of Archaeology of University College London took the distances from the purely technical field of restoration and started new multidisciplinary courses about control of context of exhibition of artworks and study of deterioration mechanisms according to the latest methodological indications. The need to preserve, enhance, and pass on the cultural message of archaeological heritage has become an important part of the recent evolution of the

## MAIN AGGRESSORS OF ARCHAEOLOGICAL HERITAGE Natural & Human Factors



**Conservation, Restoration, and Preservation in Classical Archaeology, Fig. 6** Table of the aggressors. It collects and divides by categories the possible agent of deterioration of cultural heritage (Gael de Guichen). (Copyright CCA)

profession. For example, several interventions of conservation and restoration have been conducted with free access for the public, with specific initiatives that have transformed technical intervention in cultural operations of great success (Nardi 1999) (Fig. 5). The contribution of de Guichen in supporting preventive conservation, the public acknowledgement of his ideas, and the application of his methodologies have played an important role in the modern development of the field (Fig. 6).

### Conclusion

Despite the general acceptance of all this, supported by literature on the subject and various didactic programs, a lot of work needs to be done in order to spread the concept of preventive conservation among administrators and technicians, public administrations, and the daily life of monuments and sites. Doubtless, this is the path that we all should follow as curators, archaeologists, architects, art historians, and administrators, for we all



have to move forward in the interest of archaeological heritage that is both unique and nonrenewable.

## Cross-References

- ▶ [Aesthetics in Archaeology](#)
- ▶ [Art Studies: Normative Approaches](#)
- ▶ [British Museum](#)
- ▶ [Classical \(Greek\) Archaeology](#)
- ▶ [Classical Greece, Archaeology of \(c. 490–323 BCE\)](#)
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- ▶ [Conservation in Archaeological Practice](#)
- ▶ [Mosaics: Conservation and Preservation](#)
- ▶ [Parchment: Preservation and Conservation](#)

## References

- BRANDI, C. 1963. *Teoria del restauro*. Rome: Edizioni di Storia e Letteratura.
- BOSELLI, O. 1642/1978. *Osservazioni sulla scultura antica opera di Orfeo Boselli, sculture romano divisa in 5 libri 1642-63: Libro V, capitolo XIII*. D. Weil (a cura di). Florence.
- CAGIANO DE AZAVEDO, M. 1952. Conservazione e restauro presso i Greci e i Romani. *Bollettino dell'Istituto centrale del restauro* 9-10: 53-60.
- CAVACEPPI, B. 1772. *Raccolta d'antiche statue, busti, bassorilievi ed altre scultrestaurate da Bartolomeo Cavaceppi scultore romano*. Rome.
- CELLINI, B. & E. CAMESASCA. 1985. *Vita*. E. Camesasca (a cura di), (BUR Classici italiani 532). Milan: Rizzoli.
- MELUCCO VACCARO, A. 1998. Restauro e conservazione, in *Enciclopedia archeologica*. Rome: Istituto dell'Enciclopedia Italiana.
- NARDI, R. 1987–1988. Il Tempio di vespasiano: un palinsesto nella storia del Foro Romano. *Rendiconti della Pontificia Accademia di Archeologia* 60: 71-90.
- 1992. Una tecnica grafica assistita da computer per il disegno e l'archivio di documentazione archeologica in G. Urbani (a cura di) *Materiali e strutture*: II, 1. Roma.
- 1999. Going public: a new approach to conservation education. *Museum International* 51(1): 44-50.
- ROCKWELL, P. 1989. *Lavorare la pietra: manuale per l'archeologo, lo storico dell'arte e il restauratore*. Rome: La nuova Italia scientifica.
- ROSSI PINELLI, O. 1986. Chirurgia della memoria: scultura antica e restauri storici, in S. Settis (ed.) *Memoria dell'antico nell'arte italiana* 3: 183-250. Turin: Einaudi.
- URBANI, G. & B. ZANARDI. (ed.) 2000. *Intorno al restauro* 31-35. Milan: Skira.
- VASARI, G. 1568. *Le vite de più eccellenti pittori, scultori e architetti, IV*. Florence: Giunti.

## Further Reading

- AARAFU. 1992. *La conservation preventive. Atti del convegno, Paris, 8-10 octobre 1992*. Paris.
- BERDUCOU, M. C. 1990. *La conservation en archeologie. Methodes et pratique de la conservation-restoration des vestiges archeologiques*. Paris: Mason.
- CAGIANO DE AZAVEDO, M. 1948. *Il gusto nel restauro delle opere d'arte antiche* (Bollettino dell'ICR). Rome: Olympos.
- CASSAR, M. 1995. *Environmental management guidelines: for museums and galleries*. London: Routledge.
- DE GUICHEN, G. 1982. Conservation: a challenge to the profession. *Museum International* 34(1): 4-5.
- 1999. Preventive conservation: a mere fad or far-reaching change? *Museum International* 51(1): 4-6.
- 2001. Rencontre avec un précurseur. *Techné* 30.
- 2007. Forbes Prize lecture. A common definition of conservation and restoration: agree or disagree, but we are living in the Tower of Babel. *Studies in Conservation* 52(1): 69-73.
- DE GUICHEN, G. & C.P. D'ETEREN. 2009. Raising awareness for better conservation. *Museum International* 61(3): 98-106.
- KARSTEN, I. 2011. *The role of risk management in sustainable collections preservation, reflections on conservation*. Ottawa: CCI, IIC.
- MELUCCO VACCARO, A. 1989. *Archeologia e restauro: tradizione e attualità*. Milan: Il Saggiatore.
- MORA, L., P. MORA & P. PHILIPPOT. 1984. *Conservation of wall paintings*. London: Butterworths.
- ROCKWELL, P. 1993. *The art of stoneworking: a reference guide*. Cambridge: Cambridge University Press.
- ROY, A. & P. SMITH. (ed.) 1994. *Preventive conservation practice, theory and research: preprints of the contributions to the Ottawa Congress, 12-16 September 1994*. London: International Institute for Conservation of Historic and Artistic Works.
- URBANI, G. 1976. *Piano pilota per la conservazione programmata dei beni culturali in Umbria*. Rome: Ministero per i beni e le attività culturali. Istituto centrale per il restauro.
- WALLER, R. & S. MICHALSKI. 2005. A paradigm shift for preventive conservation, and a software tool to facilitate the transition. in I. Sourbès-Verger (ed.) *ICOM Committee for Conservation, preprints of the 14th Triennial Meeting, The Hague*: 733-38. London: James & James.