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# Frescoes of Pompeii: Excavations and Restoration Over the Centuries

Undoubtedly some of the best attractions to the ancient city of Pompeii are its frescoes, or wall paintings that adorned many buildings. Due to the *buon fresco* technique of paint application (pigments were added to the plaster while it was still wet), the use of high-quality pigments at the time such as Egyptian blue, and the sealing of the works from the elements for over one thousand years due to the infamous eruption of Mount Vesuvius in 79 AD have kept these paintings as a vibrant snapshot into life and culture at the time. Museums and collectors around the world now house many of the works found during excavations, some of which have been more damaging rather than restorative. Unfortunately, due to mismanagement and collapsing structures, only very few works remain, and even fewer remain still at the archeological site. This paper focuses on various excavation and restoration techniques regarding the beautiful frescoes of Pompeii since its first excavation in the eighteenth century.

When Pompeii was first excavated in 1748, there was little regard for how the frescoes were excavated. Unfortunately, this type of haphazard digging was "traditional in all the excavations for antiquities since the Renaissance."[1] Thus, workers dug through walls, often destroying frescoes, to search for other objects, such as statues and other ornaments for the New Museum Herculanese that the King had created in the new Royal Palace in Portici. However, for the

[1]De Caro, Sefano. "Excavation and Conservation at Pompeii: a Conflicted History." The Journal of Fasti Online: Archaeological Conservation Series, 2015. https://www.fastionline.org/docs/FOLDER-con-2015-3.pdf.

paintings that seemed worthy of display in the museum that were extracted, such as the large fresco in the house of Julia Felix, museum "restorers exercised a safe and durable fascination."[2] The restoration of these works "had become impeccable: the paintings were cut and mounted on slate supports, according to the method of detachment widely practiced in Rome."[3]

The key here, however, was that the paintings were well-cared for *after* they arrived in the museum. Excavators had little to no training when detaching the artwork from the walls, and so often the plaster was ruined when trying to remove the paintings. Since no method was particularly followed, excavators removed small pieces at a time. Often, the removed pieces were only about 30 cm large and were only a few centimeters thin, and the removal caused the rest of the walls to lose their integrity. Excavators found figurative pieces that they believed the King would like, so many of the works that are displayed in the Museo Archeologico Nazionale in Naples are very small, despite many being from the same scene. The larger panels that are displayed are often just small pieces joined together. To this day, visitors can see evidence of the haphazard hacking of the walls in various houses and buildings in Herculaneum, Stabiae, and Pompeii.[4]

Most horrific, however, was the deliberate destruction of the works deemed "useless ancient colored plasters" and not worthy of the royal collections. Thus, many works were destroyed by picks to prevent looting of the sites. Luckily, the practice had only lasted a few years, and the order was revoked by a royal edict in 1763.[5]

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[2] De Caro, 2015.
[3] De Caro, 2015.
[4]Cather, Sharon. "Conservation of Wall Paintings." Getty. Getty Conservation Institute, July 16, 1987. https://www.getty.edu/conservation/publications_resources/pdf_publications/conserv_wall_paintings.html.
[5] Cather, 1987.

Obviously the method of restoration and excavation has improved since the eighteenth century. In 1924, a new superintendent, Amadeo Maiuri, was appointed to oversee Pompeii's archaeological area. During his time in the position, important buildings such as the Villa of Mysteries and the House of Menander were excavated and restored. These paintings were left *in situ* to attract visitors. Most notably, he decided to focus on the restoration of all structures, rather than just focusing on those of particular interest. Similarly to work done on the Roman Forum, Italy's fascist government did speed up excavation and restoration due to a particular pride in the Roman past.[6]

In 1972, Pompeii was added to the UNESCO list of protected archaeological sites, which allowed the site to receive funding for more work. However, lack of adequate funding and mismanagement have led to losses.

Especially in the case of the Villa of Mysteries, which is over 4,000 square feet and has at least 60 rooms, exposure to the elements such as sun and moisture has caused the building and the frescoes to degrade. Many rooms were covered in frescoes, including scenes of landscapes, architecture, sacrifices, and gods. Moisture and salts left white splotches on the fragile paintings. Lasers have been helpful to remove some of the harmful spots. While lasers tend to be used for cleaning stone, they also can be successful in cleaning pottery and frescoes. Very carefully, often a few microns at a time, the lasers vaporize darker spots, in a process called photoablation. This

[6] Wollner, Jennifer L. (2013) "Planning Preservation In Pompeii: Revising Wall Painting Conservation Method And Management," Studies in Mediterranean Antiquity and Classics: Vol. 3 : Iss. 1 , Article 5. Available at: https://digitalcommons.macalester.edu/classicsjournal/vol3/iss1/5

process has been particularly helpful since most restoration now also has to be done *in situ* since modern conservation practices avoid removing the paintings from the walls.

Another non-invasive technique of conservation is through the use of ultrasound devices and thermography. Ultrasound devices measure the rate of ultrasonic waves along the wall's surface, which help archeologists detect cracks, water damage, and salt buildup. Thermography can take measurements of changes in the wall's heat which can also detect damage. Archeologists have also been experimenting with drones to track damages and view the site from different angles. The use of these devices to survey which walls require special attention has been spearheaded by teams working on the Villa of Mysteries, and archaeologist Immacolata Bergamasco hopes that these techniques can help "develop a methodology that can serve as a reference for all of the city's houses."[7]

In some cases, archival photographs from the past continue to aid scientists in current projects, which underscores why such thorough documentation is necessary when working on an archeological site. Photographs of Pompeii taken from 1964 through 1984 have highlighted how severely the fresco paintings continue to deteriorate. The Oplontis Project, an international and multidisciplinary team, has created a 3D model and digital reconstruction of Pompeii's sites, which is a far jump from initial computer models of the frescoes by IBM systems in 1991.[8] While these models are now considered a bit archaic, the renderings and catalog of Pompeii

[7] Lobell, Jarrett A., and Pasquale Sorrentino. "Saving the Villa of the Mysteries." Archaeology 67, no. 2 (2014): 24–31. http://www.jstor.org/stable/24364039.
[8] Bruschini, Stefano. "Imaging POMPEII." *Archaeology* 44, no. 2 (1991): 32–35. http://www.jstor.org/stable/41765937.

structures in the early 90's served as a vital predecessor for the modern Oplontis Project, which uses AI and artist renderings to digitally reconstruct many of the fading frescoes.

John R. Clarke, a researcher from the University of Texas who has contributed to this project, stated to *World Archeology* that "with every year that passes, valuable evidence disappears. Our careful and systematic work in the villa will document this endangered resource."[9] The efforts to digitally reconstruct and document the disappearing frescoes will allow future generations to appreciate the artwork despite their loss over time. The question remains, yet Pompeii serves as an example that digital reconstruction seems to be the future of modern archeological conservation.

[9] "What's New in Pompeii." World Archaeology, January 7, 2012. https://www.world-archaeology.com/issues/pompeii/.