International Course on Stone Conservation SC13

SESSION: Conservation field work at the Non-Catholic Cemetery, Rome

INSTRUCTOR: Various

DATE/TIME: Periodic visits & 6 days fieldwork Wednesday, 18th June – Tuesday, 25th June

SESSION OUTLINE

ABSTRACT

The fieldwork component of the stone course is held primarily at Rome's Non-Catholic Cemetery. This highly significant historic site offers participants the opportunity to apply what they learn in the classroom to a real world setting, and to learn best practice in practical conservation methods. During the course, participants use the cemetery and its tombs as a field laboratory, carrying out a conservation project from start to finish including documentation, conditions assessment and diagnosis, materials and structural analysis, treatment testing, and finally the implementation of conservation interventions. These interventions range from structural repairs and resetting of lost or broken elements to surface treatments such as mortar integration, poulticing, laser cleaning, and stone consolidation.

OBJECTIVES

- To gain practical experience in planning and implementing a stone conservation project.
- To learn technical conservation skills and become familiar with a broad range of stone conservation tools and materials.

CONTENT OUTLINE

Historic tombs in the cemetery are chosen for conservation based on stone type, size, location and the diversity of conditions represented such as structural problems, soiling, biological growth, etc.. The participants are divided into working groups of 2-4 based on their profession and experience, and an attempt is made to place participants that have more hands on conservation expertise with those who have less experience.

The sequence of work at the cemetery during the course includes the following activities, carried out *before* implementing conservation treatment (these activities are summarized in more detail in other session outlines):

- Documentation and condition mapping – Participants create plans, elevations, and rectified photographs of their tombs using a variety of software. During this activity, participants research the history of each tomb, including translating and recording any inscriptions. Using the documentation developed, conditions are recorded using a standardized legend based on the *ICOMOS-ISCS: Illustrated glossary on stone deterioration patterns*.
- Assessment of biological growth and other soiling – each tomb presents a variety of soiling types, ranging from

Figure 1 Assessing biological growth with a portable microscope, Rome. ©2013 J. Paul Getty Trust

deposited particulates to lichen, algae and other biological growth. Participants take samples of each form of soiling for analysis under a microscope in the laboratory. Once identified, tests of various biocides are carried out.

- Materials analysis - Participants carry out basic visual analysis of stone type on site, as well as taking mortar samples and analyzing them in ICCROM's laboratory. Analytical methods include microscopy and acid digestion.
- Structural analysis – Some tombs present structural problems such as settling, shifted components or broken and corroded metal anchors which hold stone units together. Participants work with a structural engineer and a conservator to diagnose structural issues and develop appropriate treatment solutions.

Conservation implementation

In the final two weeks of the course participants work in the field full time, carrying out a series of interventions on the tombs. The working groups are provided with a tool kit, stone conservation materials, and a workshop space. The working groups are supervised by the course coordinators and Cemetery staff. Conservation treatments vary according to the stone type and conditions present at each tomb, but typically include:

- Higher plant removal and application of a biocide, generally a product based on quaternary ammonium salts which is applied via brush or poultice. Biocide application is carried out in stages over several weeks.
- Removing particulate deposition and staining with brushes, non-ionic detergent, and ammonium carbonate poultices based on cellulose or attapulgite.
- Removal of gypsum crusts with scalpels and ammonium carbonate poultices.
- Laser cleaning to remove gypsum crusts or severe soiling from delicate or friable carved marble surfaces.
- Pinning and joining broken pieces of stone with various epoxies or mortar.
- Removing and resetting shifted or broken stone elements.
- Integrating areas of stone loss with mortar. Mortars are generally based on non hydraulic lime or colloidal silica.
- Consolidation of friable stone surfaces with a consolidant such as ethyl silicate, nanolime, or fluorinated elastomer.

At the end of the fieldwork, each working group is responsible for writing a final report which is submitted to the cemetery directors and the Italian Superintendent of Cultural Heritage. The reports include: a summary of the tomb's history and pre-treatment condition; all documentation carried out by the participants; a summary of the conservation treatments; a list of conservation materials used; and a bibliography of references.

Figure 2 Cleaning a marble figure.

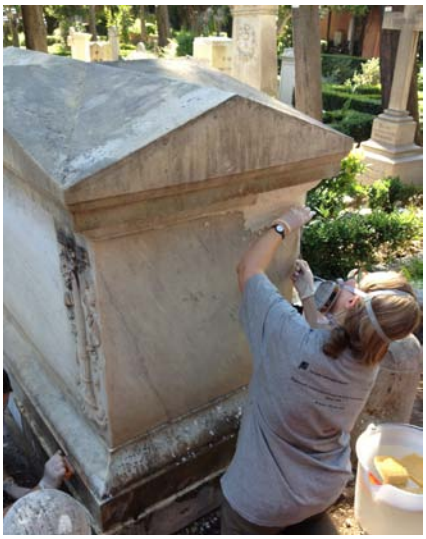

Figure 3 Applying a poultice.

Figure 4 A travertine sarcophagus before treatment (left) and afterwards (right).

READINGS

🕮 = Essential reading material
💻 = Available online

🕮 Anson-Cartwright, Tamara, ed. 1997. *Landscapes of Memories: A Guide for Conserving Historic Cemeteries, Repairing Tombstones*. Toronto: Ministry of Citizenship, Culture and Recreation.

💻 King, Gregg, Susan Kosky, Kathleen Glynn, and Gladys Saborio. 2004. *Michigan Historic Cemetery Preservation Manual*. Lansing, Mich: Michigan State Historic Preservation Office. https://www.michigan.gov/documents/hal_mhc_shpo_Cemetery_Guide_105082_7.pdf

Maxwell, Ingval, Ratish Nanda, and Dennis Urquhart. 2001. *Conservation of Historic Graveyards*. Historic Scotland Guide for Practitioners, 2. Edinburgh: Historic Scotland.

Strangstad, Lynette. 2013. *A Graveyard Preservation Primer*. 2nd ed. American Association for State and Local History book series.

💻 White, Jenifer, and Hodson Joan, ed. 2007. *Paradise Preserved: An Introduction to the Assessment, Evaluation, Conservation and Management of Historic Cemeteries*. Swindon: English Heritage. http://www.english-heritage.org.uk/publications/paradise-preserved/paradise_preserved_20081010174134.pdf/