

Session Track: Special Topics
Session Code: CS19a

Paper: Conservation at Two Urban Cemeteries: King's Chapel Burying Ground in Boston, and the Old Jewish Cemetery in Prague

Presented by

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Speaker(s) Biography

David Bittermann is a Project Manager for the Northeast Regional Office of the National Park Service, where for the past 24 years he has overseen preservation of cultural properties and monuments. He holds a Master of Architecture from the University of Illinois, a Master of Arts from Boston University, and teaches building conservation in BU's Preservation Studies Program. A long-standing APTI member, he serves on the board of APTNE and on the APT Bulletin Publication Awards Jury.

Ivan Myjer is the principal of Building and Monument Conservation, offering consulting and project management for the conservation of traditional masonry buildings, grave markers and monuments. Previously, Ivan was Director of the Conservation Center at the Society for the Preservation of New England Antiquities, and Director of Restoration for the Cathedral of Saint John the Divine in New York City. Recent projects include treatments of the Bigelow Monument in Worcester, and 15th century marble carvings from the Isabella Stewart Gardner Museum; oversight of conservation at Eliot, King's Chapel, and Granary Burying Grounds in Boston; and assessments of the Old Burying Grounds in Arlington and Nantucket.

Joshua Craine is a sculpture conservator and professional associate of AIC. He has worked for Daedalus for 12 years and has treated a variety of objects made of wood, stone, metal, plaster, ceramic, and modern materials. Daedalus is an art conservation firm focusing on antiquities, sculpture, decorative arts, monuments, architectural ornament, and grave markers. Recent projects include the treatment of 53 grave markers at King's Chapel Burying Ground in Boston, the Huey P. Long Memorial in Baton Rouge, the bronze House and Senate doors at the US Capitol Building, and a plaster cast of George Washington by Jean-Antoine Houdon.

Petr Justa is a graduate of the Department of Chemical Technology of Monument Conservation, Prague Institute of Chemical Technology, and much published in conservation techniques. He is International Projects Manager for GEMA ART GROUP, restoration and conservation specialists in Prague, a member of the Commission for Conservation and Restoration in the Czech Ministry of Culture, and senior lecturer at the Institute for Restoration and Conservation Technology, Lytomyšl. He has studied or been engaged in the restoration of St Vitus Cathedral, St Nicholas Church, and Vallenstein Palace in Prague, and many others in the Czech Republic and abroad. Since 1990 he has been an expert for the Jewish Museum in Prague in conservation of Jewish cemeteries.

Abstract

Conservation at Two Urban Cemeteries:
King's Chapel Burying Ground in Boston, and the Old Jewish Cemetery in Prague

The Old Jewish Cemetery in Prague and King's Chapel Burying Ground in Boston are very significant cultural sites that are central to their respective nations' history and identity. Both are visited by hundreds of thousands of

visitors each year; many of whom feel a profound attachment to the site as well as to the individuals who are interred there. Consequently, conservators of the stone markers and tombs at each site must find a way to preserve not only the substance, but also the meaning of these 15th to 18th century artifacts that have been altered significantly over time by broader historical forces; as well as by local politics, urban development, and evolving attitudes towards the individuals buried therein.

In this session the technical aspects of stone deterioration at both cemeteries will be examined and the effects that prior restoration treatments have had on the markers will be discussed. The conservation treatment choices will be related to a broader discussion of the cultural and historic value of each site within their respective cities and countries.

The recently completed conservation treatments at King's Chapel Burying Ground were developed after a stone by stone condition assessment and a thorough review of documentation pertaining to treatments completed over the past 30 years. All conservation work carried out by Boston's Historic Burying Ground Initiative is publicly bid, but awarded only to firms that meet rigorous pre-qualification standards. The bid documents must be precise enough to allow for fixed price bids, but flexible enough to allow for the introduction of new approaches and materials proposed by the conservator who will be completing the treatments. The process of moving from an individual treatment plan to the implementation of conservation treatments involves a dialogue between the City of Boston's Burying Ground curator and the conservator implementing the treatments. The dialogue is critical to achieving results that allow for changes in the scope and methodology laid out in the bid documents; but also guarantees that the end result will be consistent with the standards for treatment and documentation adopted by the Historic Burying Ground Initiative. This dialogue strengthens the whole program as successful innovations are then incorporated into future bid documents.

The conditions addressed at the King's Chapel Burying Ground in 2007 by the fine arts conservation firm Daedalus, Inc. are the same as those that masons, craftspeople, city maintenance workers, family members, amateurs, and conservators have been attempting to treat for well over a hundred years. Many of the markers treated in this round of work had been treated previously—some more than once—and therefore it was possible to learn from the successes and failures of prior treatments. While some of the prior repairs were poorly conceived and executed, many of them involved very conscientious workmanship and great ingenuity.

The treatments completed in 2007 ranged in complexity from the simple application of mortar caps preventing water infiltration into separating layers of slate, to reattaching as many as 30 fragments from a single marker. Depending on the amount of original material remaining, it was sometimes necessary to fill large areas of loss or to cast missing sections so that the conserved marker could be self-supporting when reset in the ground.

The treatments utilized modern materials such as Acrylic B-72 that were unavailable during previous rounds of conservation treatments. The acrylic polymers offered a degree of reversibility that had previously been unachievable with epoxies, polyester resins and some cement-based products. They also made it possible to treat conditions such as the paper-thin exfoliation of the weathered layer of slate that had been previously untreatable.

A key component of the project was documentation of conditions prior to treatment as well as during and after treatment. The documentation had to be very specific regarding the existing conditions as well as the specific location of each treatment. The documentation employed annotated hand drawn sketches and three forms of archival photography, as well as a searchable database.

The Jewish Community has a long tradition in the Czech lands. In addition to Prague there were Jewish settlements in most towns throughout the country. Many Jewish cemeteries were destroyed; and from the beginning of the Nazi occupation in 1939 to the end of the Communist regime in 1989 there was little or no attempt to preserve the remaining cemeteries. The work undertaken since 1989 has involved the participation of conservation scientists, restorers and art historians, as well as consultations with the Rabbinate in Israel. The approach to the treatments had to take into account not only the material degradation of the stones themselves, but also their cultural, historical, religious and spiritual significance. The tombstones are preserved not merely as a collection of individual markers but as a unique cultural and commemorative whole that has a quality that

cannot be easily communicated with words. As part of the process, replication of missing or severely deteriorated markers with natural and/or artificial stone was evaluated and rejected. Rather, combinations of cleaning, repair and preventative treatments were employed. The discussion will underscore the challenges of carrying out emergency stabilization at a much loved and visited cultural site located in the heart of a European capital that is undergoing a tremendous surge in tourism and many major restoration projects.⁷

Session Track: Special Topics
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Paper: Mount Auburn Cemetery: The Evolution of Preservation Thinking and Practice

Presented by

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Speaker(s) Biography

David Gallagher is currently employed as the Chief of Conservation at Mount Auburn Cemetery in Cambridge, Massachusetts. David, who has a B.A. in Business Administration from St. Michael's College, graduated from the Preservation Carpentry Program at North Bennet Street School in Boston in 1995. He was employed by Webb Architectural Preservation from 1995 to 1999, specializing in all aspects of the preservation of 18th and early 19th century homes. In the summer of 2000 he studied with Tim Meek of Scotland, a noted practitioner in use of traditional lime mortars. After two years as sole proprietor of Gallagher Historical Restoration, he joined Mount Auburn Cemetery as their Preservation Craftsman. David was a 2002 Quinque Fellow, studying stone conservation practices with Historic Scotland as well as private stone conservators. He has studied with Nick Micros, a sculptor, preservation mason and a 2006 Guggenheim Fellow. He has practiced preservation craftsmanship for 15 years, while focusing on the conservation of stone monuments and sculpture the last 7 years.

Abstract

Mount Auburn Cemetery is a designated National Historic Landmark. Recognized as one of the country's most significant cultural landscapes, and founded in 1831, it was the first large-scale designed landscape open to the public in the United States. The challenges we face are not unique to cemeteries yet our cemetery context, age, scale and anticipated longevity can bring into sharpened focus a number of the preservation issues dealt with by all. Our diverse landscape of living, changing horticulture and myriad of built works has the potential to be a laboratory where materials and techniques might be explored and might ultimately inform preservation challenges beyond our gates. Our past informs the decisions we make today, we also keep an eye to the future. Our mission is to commemorate the dead in a tranquil landscape-simultaneously protecting our heritage while providing comprehensive, contemporary cemetery services. We expect to remain viable for generations to come yet our monuments will decay. In the context of perpetuity, we moderate that decay, embrace the changing landscape and integrate new burial space-all while focused on preserving the overall character and place that is Mount Auburn.

Past Practices and Conditions:

- " When headstones presented a problem, many were buried in place. This practice was preferable to removal and may have actually slowed decay.
- " Incompatible materials have been used such as non-breathable mastics and pinning that used ferrous pins or sulfur based anchoring material.
- " Horticulture tended to take precedence over monument care.
- " Changing taste as well as a need to decrease costs led to the removal of cast iron fencing and ornate granite curbing.
- " Washing monuments with detrimental materials and techniques.
- " Financial constraints dictated preservation decisions.
- " Lack of qualified preservation staff.

Present Practices and Conditions:

- " We do not remove or bury monuments. They are preserved or brought in to be stored until they can be worked on.
- " Compatible and suitable materials are used such as lime putty based mortars and stainless steel pins. We try to match traditional materials such as lead wool and poured lead that was used to point some curbing, monuments and mausolea.
- " There is an integrated approach to the landscape as a whole including horticulture and monuments.

- " There is a building commitment to saving what we have if possible.
- " Washing is done with less aggressive materials and techniques.
- " While financial constraints remain, we are developing a method of establishing priorities within a comprehensive, cemetery-wide plan of action.
- " We are codifying the philosophy and practices that were to a large extent already in place, albeit informally, including a Board level Statement of Values and Commitments for the Preservation of Structures.
- " We have sought the advice of outside experts who have offered thoughtful and pertinent insights on which we can base future preservation discussion and action.
- " In the context of perpetuity, we look to retain the character as a whole while realizing we will lose some of the parts.
- " A commitment to increase the size and professionalism of the in-house staff.

The Future:

- " Revisit and possibly resurrect buried monuments.
- " Integrate new commemorative space within the historic fabric.
- " Commitment to Mount Auburn as a center of community programs, education and advocacy.
- " Allow for adaptation as burials and cremation may give way to alternative ways of commemoration, and embrace new developments in end-of life services.
- " Generate new revenue streams through services and public programs.

We will continue with sound preservation practice, while monitoring and recording previous repairs.

Although much work is still to be done we feel we ve built a solid foundation to ensure that Mount Auburn Cemetery is viable into the 22nd Century.⁷

Session Track: Special Topics
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Paper: Comparative Study of Commercially Available Cleaners for Use on Federally-Issued Headstones

Presented by

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Speaker(s) Biography

Jason Church is a Materials Conservator in the Materials Research Program at the National Center for Preservation Technology and Training in Natchitoches, LA. Jason's focus is in the coordination and development of the Center's national cemetery training initiative and related research. His love of cemeteries started at an early age with a fourth grade project on Oakdale Cemetery in Wilmington, NC. Since then he has concentrated his training as a conservator on the care of cemeteries with special attention placed on cemetery ironwork. Before joining NCPTT, he was a conservator and historic metals expert for the City of Savannah, Ga., Department of Cemeteries. He earned his M.F.A. in Historic Preservation from Savannah College of Art and Design.

Abstract

"Comparative Study of Commercially Available Cleaners for use on Federally-Issued Headstones"

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The National Center for Preservation Technology and Training (an office of the National Park Service) compared five commercially available cleaners for their use on outdoor marble elements. Through this in-depth study, researchers evaluated chemical and physical effects of the cleaner to the marble and biocidal properties of the cleaners. Cleaners were evaluated on marble upright gravemarkers in five different geographic and climatic locations.

In 2004, the National Center for Preservation Technology and Training entered into a cooperative agreement with the National Cemetery Administration (an office of the Department of Veterans Affairs) to study the effectiveness of commercially available cleaners to remove biological growth from federally-issued marble headstones. The project goal was to test cleaning products for effectiveness and appropriateness and to make recommendations of products and methods best suited to both clean and preserve the headstones. The work included both field and laboratory testing over a two-year period.

This study incorporates five national cemeteries, including Alexandria National Cemetery in Pineville, LA; Bath National Cemetery in Bath, NY; Jefferson Barracks National Cemetery in St. Louis, MO; San Francisco National Cemetery, in San Francisco, CA; and Santa Fe National Cemetery, in Santa Fe, NM.

NCPTT canvassed a variety of cemetery stewards in both private and NCA administered cemeteries to determine the variety of cleaners currently being used in the field. Products chosen for the study included surfactants, chelating agents, and biocides, and offered a range of pH from acidic to basic. Five cleaners were selected including D2 Architectural Antimicrobial, Daybreak, Kodak Photoflo, H2Orange2 Grout Safe cleaner, and World Environmental Group's Marble Cleaner. Water from the site was also used as a control cleaner.

The two main goals of the study were to evaluate the biological regrowth properties of the cleaners and to monitor any chemical or physical change to the marble. Tests were conducted on both headstones and specially-cut lab samples exposed in the field. Two stone types were studied -- Colorado Yule marble and Georgia Cherokee White marble.

Micro Biological Laboratories of Harvard University conducted biological analyses. Before any work was performed each headstone was swabbed and counted for bacteria, fungi, and algae. Each time the stone was cleaned it was again swabbed for any biological regrowth. This information was used to compare the biocide properties of the chosen cleaners.

Physical or chemical changes in the stone were examined in a variety of ways. Visual changes were documented using photography and colorimetry. Chemical residues from cleaners were examined using a portable X-Ray Fluorescence Analysis. Possible long-term changes were examined by accelerated weathering tests using a QUV weatherometer. Samples were mapped before and after treatment using a laser profilometer to determine surface texture changes caused by the cleaners. A variety of other analytical tests, such as nitrogen absorption, mercury porosimetry, conductivity, and SEM-EDS were performed to document changes in the stone samples.

This study provides NCA with recommendations that provide cleaner choices that are user friendly, suitable for large scale cleaning studies, environmentally safe and cost-effective. These recommendations will help the NCA to write new maintenance standards for their historic and modern grave markers.⁷