

*The Use of and Need for
Preservation Standards*

in

ARCHITECTURAL CONSERVATION



STP 1355

LAUREN B. SICKELS-TAVES
EDITOR

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ASTM Stock #: STP1355



ASTM
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Printed in the U.S.A.

Library of Congress Cataloging-in-Publication Data

The use of and need for preservation standards in architectural conservation / Lauren B. Sickels-Taves.

p. cm. — (STP : 1355)

“ASTM stock #: STP1355.”

Includes bibliographical references and index.

ISBN 0-8031-2606-9

1. Historic buildings—Conservation and restoration—Standards

Congresses. I. Sickels-Taves, Lauren B., 1955- II. Series.

III. Series: ASTM special technical publication : 1355.

TH3301.U4485 1999

720'.28'8—dc21

99-29820

CIP

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Foreword

The International Symposium on the Use of and Need for Preservation Standards in Architectural Conservation was held 18–19 April 1998 in Atlanta, GA. The symposium was sponsored by ASTM Committee E6 on Performance of Buildings and Subcommittee E06.24 on Building Preservation and Rehabilitation Technology. The event was held in cooperation with the International Council on Monuments and Sites (ICOMOS) and the Association for Preservation Technology. Lauren B. Sickels-Taves chaired the symposium and served as editor of this resulting publication.

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Overview

International Cooperation

In the recent past, international preservation-oriented professionals have been developing testing programs, writing government documents, and adapting restoration techniques to fit within current standards geared towards new or modern materials and systems, and their testing and evaluation. This work has shown the need for and use of preservation standards that would coexist with current standards.

Admittedly, international documents geared towards preservation have existed since 1931, and have worked well for preservation. Four well-known examples are the *Carta del Restauro* (Athens 1931); the *International Charter for the Conservation and Restoration of Monuments and Sites* (Venice 1964); The Secretary of the Interior's *Standards for Rehabilitation* (United States 1974); and the *BURRA Charter* (Australia 1981). They provide a strong base from which to work, but often more detailed standards are necessary. To this end, several countries have developed documents to aid preservationists. English Heritage in the United Kingdom and the National Park Service in the United States are two examples. The latter's *Preservation Briefs* are constantly serving as standards. However, preservation professionals are still faced with the lack of standards similar to building codes—which many clients erringly believe to be the only documents with any legitimacy and legality.

Increased interest in preservation, reflected through new preservation programs at universities, new preservation-oriented magazines and journals, the Internet, the establishment of the National Center for Preservation Technology and Training, and additional conferences and symposiums dealing with preservation issues, has validated the supposition that much of what has already been done in the field of historic preservation could be universally used as a base to aid countries in developing legitimate preservation standards. There is a need to learn about concurrent international research and to evaluate the necessity of developing these preservation standards geared towards older structures, existing materials analyses, and under specific guidelines and constraints, validating field laboratories.

An ASTM international symposium on “The Use of and Need for Preservation Standards in Architectural Conservation” was held in Atlanta, GA, in April 1998 in an effort to cull international information on preservation activities. The symposium was the outgrowth of work within ASTM Subcommittee E6.24 on Building Preservation and Rehabilitation Technology, a subcommittee of ASTM Committee E6 on Performance of Buildings. It was sponsored by these committees as well as the International Council on Monuments and Sites (ICOMOS) and the Association for Preservation Technology (APT).

The goals of the symposium were to examine many common international preservation problems and assess them in terms of potentially developing loose standards or guidelines devoted to preservation, not new construction. Increased international awareness of preservation activities would preclude countries “reinventing the wheel” simultaneously. While flexible standards would best meet historic preservation situations, no two situations are ever alike; there are only commonalities. Accomplishing the ambitious goals set for this symposium required a careful balance between broad brush approaches to historic preservation, and case studies that provide specific information about the kinds of challenges confronting preservationists working in an international context.

This Special Technical Publication (STP) contains the proceedings of the symposium, and focuses on new techniques, the many variables encountered by preservation projects, and the international organizations working towards developing preservation standards. It is clearly an extension of the ASTM Symposium on Standards for Preservation and Rehabilitation, chaired by Stephen J. Kelley in 1993.

The 17 papers published in this volume represent ten countries: Belgium, Canada, Germany, Italy, Japan, the Netherlands, New Zealand, Portugal, the United Kingdom, and the United States. (Many more countries were present at the symposium.) The organizations represented range from private architectural firms to educational institutions to government agencies such as Public Works and the National Board of Antiquities. The preservation professionals ranged from students just beginning their careers to those at their peak. The common thread throughout was that all were keenly interested in sharing information and gaining preservation knowledge with application potential in their individual countries.

This collection of papers has been grouped into four major categories: theory and practice that underpin historic preservation; building assemblies and systems; building materials; and structural repairs. The latter three sections delve into specific hands-on issues of preservation by presenting new technology or adaptations based on case studies.

Theory and Practice

This section covers a gamut of philosophical issues, but ultimately all the papers have a common goal of organizing data for practical use in historic preservation. The information ranges from generic to specific, from static to dynamic, and from country-specific to international application. In one paper, specific methodology of organizing historic building information lends uniformity to report formats and elemental estimating, while another addresses one country's efforts towards defining standard methods and how this grew into the development of actual and invaluable standards with potential European interest. An additional paper compares existing international documents, examining the extent of guidance and proposed treatment, and their suitability in aiding a practitioner.

Building Assemblies/Systems

This section, as do subsequent sections, contains papers dealing with cutting-edge technology. The focus here is on assemblies or systems using historic buildings in a general context, and the methodology presents a new twist to existing knowledge. Though diverse in topic, the uniform theme is application of innovative techniques and developing technology to recurring preservation issues. Consolidant penetration of stone is not a new topic, having been around for several decades or longer; however, two papers examine its effectiveness by minimal drilling and nondestructive means. Lighting systems is an age-old topic covering a plethora of devices for illumination; evolution has brought us to glass fiber-optics. Weathering is another issue of concern in historic buildings. It has always been difficult to assess weathering as it occurs; one paper attempts to quantify this abstract concept.

Materials

Though individual building materials is the theme of this third section, mortars, caulks, and epoxies were the focus. Timber was also represented. While all the papers in this STP discussed standards of one form or another, this section proved the strongest impetus for establishing criteria now. Together the papers create a thoughtful mix of philosophy and current laboratory data. The preservation adage of reversibility is also brought into play as

one paper addresses the development of a technique for rejoining fractured stone that would ensure that future breakages would occur at the location of the repair. The increased visibility of historic building mortars over the past decade has continued within this STP, and no less than three papers discuss strategies for ensuring that mortars used in the repair of historic structures are compatible. The lone paper on timber imparts a similar theme: the strength of wood used in a repair must be matched to the strength of the original wood fabric. It also reinforces one of the initial goals of the symposium: to investigate the need to develop standards or guidelines devoted to preservation, not new construction.

Structural Repairs

This final section examines structural repairs, a common preservation issue, but provides a new twist by addressing the safety factors that might prevent future problems. All of the papers address some form of structural problem, ranging from mere settlement to risks attributed to natural hazards such as earthquakes. Ancient masonry monuments and historic wooden buildings are the key case studies. One paper discusses retrofit techniques as a means of withstanding damage, while another delves into vibration testing as a means of calculating structural performance under stressful conditions. Another technically examines different methods—micropiles versus jet grouting—to limit settlement of any kind. Foremost in the preservation of ancient or historic structures should be the diagnosis and evaluation of a structure's safety, paramount to making educated decisions on its repair.

International Awareness

At the close of the symposium, a roundtable was held to investigate the practicality of developing international standards. Intended to be an open forum, it allowed participants to integrate and synthesize many of the ideas generated in the preceding sessions.

The criteria used in creating modern standards include conformity, precision, and productivity, items that do not always work in the field of historic preservation. Issues more appropriate in developing preservation standards and guidelines were proposed: philosophical, technical, and procedural. Italian participants suggested subjective evaluation as an additional criteria, while the Japanese felt safety was a critical component. Canadians have developed a master specification to use as a base for developing their specific specifications to avoid the 'umbrella' effect.

Organizations such as ISCARSAH (International Scientific Committee on the Analysis and Restoration of Structures of the Architectural Heritage) and RILEM (The International Union of Testing and Research Laboratories for Materials and Structures) were mentioned. These are structured, professional associations with international membership whose recent meetings have focused on specific topics for general use in all countries.

All countries agreed that working with existing codes is difficult, but harmonizing subjects for international use is advantageous as long as no one country loses its uniqueness. The need for some form of preservation standard is apparent; the time is now.

The symposium, which prompted this STP, received a warm response from the international preservation community. This level of commitment to historic preservation, on an international level, will benefit all of us. Preservationist William J. Murtagh once stated that the 20th century "has seen an accelerating parade of preservation strategies," and the following 17 papers justify this in no uncertain terms. ("Janus Never Sleeps" in *Past Meets Future: Saving America's Historic Environment*, A. Lee, Ed., Preservation Press, 1992.) Topics covered philosophical issues or specific problems, but all participants attempted to address the need for preservation standards to serve practitioners. Now it remains to develop

them, and to this extent, work is underway in many countries. The groundwork for common international standards is laid, but more work is needed to determine the authorizing body and the full scope of such a task. ISO (International Organization of Standards in Switzerland) or ICOMOS (International Council on Monuments and Sites) are just two potential bodies. Information sharing and subsequent symposiums between countries are excellent avenues of progression.

Ultimately, this STP hopes to open the lines of communication across all international boundaries. In doing so it will ensure that no one is “reinventing the wheel” and that new and useful techniques or ideas will be disseminated in a timely fashion. Stephen Kelley, in *Standards for Preservation and Rehabilitation*, STP 1258, aptly worded the ever-changing field of preservation and the need to continually share information by stating (p. 4): “Though comprehensive, the STP only scratches the surface of this interesting, controversial, and ever-evolving topic. It will define the focus of ASTM Subcommittee E6.24 in the coming years.” Similarly, this STP follows suit: updating information, laying vital groundwork, but acknowledging the need to know more. In a significant way, this STP should define the focus of international preservation efforts in coming years.

Acknowledgments

Special thanks to the reviewers who gave freely of their time, and to session moderators Michael Sheehan, Lonnie Hovey, David Wessel, Alan Winterfeldt, and Stephen Kelley.

Lauren B. Sickels-Taves

Architectural Conservator
Henry Ford Museum & Greenfield Village
Dearborn, MI
Symposium Chairman and Editor

ISBN 0-8031-2606-9