Preservation Engineering Technical Committee

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The Association for Preservation Technology International, with the creation of five technical committees (on preservation engineering, sustainable preservation, modern heritage, documentation, and materials), devised an international interdisciplinary forum to cultivate the proper practice of historic preservation. The formation of the Preservation Engineering Technical Committee (PETC) was inspired by the vast interest and work product among APT members that had led to a preservation-engineering workshop held at the 1991 APT annual conference in Montréal.

Though preservation engineering remained a topic of discussion and area of practice presented at the annual conferences, the PETC was not formally organized until 2003 through the diligent efforts of several ranking members in APT's preservation-engineering community and with an APT ad hoc committee on preservation-engineering certification (including contributions from Suzanne Pentz, Derek Trelstad, Donald Friedman, H. Thomas McGrath Jr., S. Patrick Sparks, Stephen Kelley, Rick Ortega, and David Woodcock). Since that time, the PETC has concentrated on engineering issues related to historic preservation and conservation. The committee's focus and goals are as follows:

> Establish the PETC as a leading resource in the practice of thoughtful engineering in the complex field of historic preservation.

> Provide a forum for discussing the role and practice of engineering in the field of historic preservation.

> Promote the awareness of preservation engineering to younger practitioners through student-outreach initiatives.

> Encourage active and continuous education for professionals from many disciplines who seek a better understanding of historic-preservation-engineering techniques and philosophy.

> Recognize excellence in preservation engineering and identify areas of practice where further study and/or research is required to improve parameters of practice.

> Create a process and repository for the dissemination of information related to the practice of preservation engineering and work toward a consensus standard for treatment of historic engineering systems.

With the support of APT, the PETC membership has made significant contributions to the field of preservation engineering through education, publication, and outreach programs. The committee's long-standing tradition of technical workshops was initiated at the 2004 APT annual conference in Galveston, Texas. At this conference, an ad hoc PETC committee on preservation-engineering training (Patrick Sparks, David Woodcock, Ron Anthony, Michael Schuller, and Jonathan Spodek) organized a new technical workshop model focusing on "Diagnostics: Non-Destructive Testing for the Evaluation of Historic Structures." The goal of the workshop was to provide technical, hands-on content accessible to practicing engineers, students, and non-engineers alike in a format that could be replicated in various locations. This modular workshop has become one of the most popular offered by APT, with versions having been presented in California, Hawaii, Maryland, South Carolina, and elsewhere. Additionally, the National Center for Preservation Technology and Training (NCPTT) became and has remained a sponsor. Since this initial effort, the PETC has developed other workshops at the annual conferences and with local chapters and partner organizations. Workshops developed and guided by the PETC membership over the last decade are listed below. Preparations for more workshops are underway.

> Preservation of Wood Workshop in Historic Structures: Architecture, Engineering and Craft. APT 2007 Conference, San Juan, Puerto Rico

> Writing Specifications for Wood in Existing Buildings. 2008, Delaware Valley Chapter. Philadelphia, Pennsylvania

> Nondestructive Evaluation Methods for Historic Structures. 2008, Charleston, South Carolina

> Repairs and Specifications for Wood in Existing Buildings. 2009, Northwest Chapter. Seattle, Washington

> Investigation of Wood in Historic Structures. 2009, Texas Chapter. Austin, Texas

> Engineering Diagnostics: Nondestructive Evaluation. 2009, Frederick, Maryland

> An Interdisciplinary Approach to Preserving Wood in Historic Structures. 2010, Taliesin, Spring Green, Wisconsin

> Engineering Diagnostics: Nondestructive Evaluation. 2010, Presidio, San Francisco, California

> Foundations and Soils in Historic Preservation. APT 2010 Conference, Denver, Colorado

> Nondestructive Methods for Evaluating Historic Structures. 2011, Taliesin, Spring Green, Wisconsin

> Nondestructive Evaluation Methods for Historic Structures. 2013, Honolulu, Hawaii

> Principles and Practice in the Assessment and Treatment of Heritage Structures. APT 2014 Conference, Québec City, Québec

> Preserving Fortifications in the 21st Century. APT 2014 Conference, Québec City, Québec

> Building Science Workshop, in collaboration with APT Technical Committee on Sustainable Preservation. APT 2016 Conference, San Antonio, Texas

> Flood Design Symposium in collaboration with NCPTT. APT 2016 Conference, San Antonio, Texas

> Big Sticks: Log and Timber Frame Conservation. APT 2017 Conference, Ottawa; Château Montebello, Québec

In addition to developing workshops, the PETC has actively assisted conference committees in developing tracks of preservation-engineering sessions at most annual conferences—Los Angeles (2009), Denver (2010), and Charleston (2012)—and more complete preservation-engineering tracks in New York (2013) and Kansas City (2015). The committee assisted conference committees in developing the abstract solicitations and abstract reviews. Most recently the PETC collaborated with the Ottawa conference committee to identify preservation-engineering topics to align with the conference committee's goals of examining diagnostics, design, delivery, and the joint effort between APT and the National Trust for Canada (NTC) that examined practice and policy in preservation; the PETC also assisted with the development of abstract solicitations to aid the Conference Committee's development of a preservation-engineering element to the Ottawa sessions with the NTC. The preservation-engineering tracks at Ottawa helped practitioners to properly assess, strengthen, and maintain archaic systems while responding to modern needs. Topics have included "When It May Be Time to Intervene" and "When Time-Tested Structures Can Be Left Alone." Sessions have dealt with modern codes and criterion that may be imposed on historic structures as part of required upgrades or that may have triggered requirements with adaptive reuse and restoration approaches.

The PETC membership has been instrumental in developing technical publications, contributing articles to the *APT Bulletin*, *Practice Points*, and special issues of the *Bulletin*. Engineering articles and books by committee members have received numerous APT publication awards, and special *Bulletin* issues on preservation-engineering topics have been well received. The special issues on preservation-engineering education, guest-edited by Doug Porter and Ronald Anthony, and iron and steel, guest-edited by Richard Ortega and Justin Spivey, were produced in 2010 and 2011, respectively. The committee is currently developing relationships with partner organizations for distribution of preservation-engineering content produced by APT. In 2017 the PETC formally initiated a technical publication award, the David Fischetti Preservation Engineering Award, to recognize outstanding peer-reviewed preservation-engineering articles. The award recognizes the late David Fischetti's outstanding efforts and contributions to the field of preservation engineering and the PETC.

As a result of the 2014–2015 strategic-planning initiative undertaken by the APT Board of Directors, the PETC recognized that outreach to students is critical to the future of the committee and to the preservation-engineering community. In response, the PETC, in coordination with the APT Conference Committee, developed a student engineering-design competition focusing on preservation-engineering topics and principles. The PETC student design competition task force secured sponsorships to offset the expenses of the student participants. At the first competition, held during the 2016 San Antonio conference, two universities (Texas A&M University at Kingsville and Carleton University) participated in the competition finals, which included the analysis and construction of a historic timber bridge utilizing construction techniques from the early twentieth century. For 2017 the design competition task force prepared specifications for the construction of a masonry-arch competition, which was held at the Ottawa conference. Eleven teams submitted entries for 2017, and five of the teams were selected; they came from engineering, architecture, and preservation-trades programs. The 2018 PETC student design competition at the Buffalo Niagara conference will deal with a nineteenth-century timber bridge.

The PETC has been successful in the education and outreach for preservation engineering due to the determined efforts of the PETC members, task groups, and collaborations with other APT committees. The PETC leadership thanks the individuals who have continuously shown support for its initiatives. The committee looks forward to its next 50 years of APT.

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Fig. 1. Soils workshop with field session at Hayward Baker, Denver, 2010. Photograph by Timothy Crowe.

Fig. 2. PETC Student Design Competition, San Antonio, 2016. Photograph by Becky Wong.