## **APT Bulletin**

THE JOURNAL OF PRESERVATION TECHNOLOGY

Volume XL Number 2

Published by Association for Preservation Technology International

Association pour la préservation et ses techniques

BULLETIN EDITOR and ADVERTISING Diana S. Waite, Editor Melissa Miščević Bramble, Project Manager Maya E. Rook, Editorial Assistant Mount Ida Press 111 Washington Avenue Albany, NY 12210 Tel.: 518-426-5935 Fax: 518-426-4116 E-mail: info@mountidapress.com

MEMBERSHIP INFORMATION, PUBLICATIONS ORDERS, and OTHER INQUIRIES

Categories of membership are listed on page 54.

3085 Stevenson Drive, Suite 200 Springfield, IL 62703 Tel: 217-529-9039 Fax (toll-free): 888-723-4242 www.apti.org

APT 2009 Annual Conference Los Angeles, California November 2-6

## **COPYRIGHT**

Articles from the *Bulletin* are copyrighted and may be reprinted only with permission of the editor. Please submit requests in writing to Diana S. Waite, Mount Ida Press, 111 Washington Ave., Albany, NY 12210.

The Bulletin is indexed on APT's Web site, www.apti.org, and in Art Index, Architectural Periodicals Index, Art and Architecture Technical Abstracts, Avery Index to Architectural Periodicals, Garden Literature, America: History and Life, Historical Abstracts, Ulrich's, and the University of Maryland-National Trust Library Index to Historic Preservation Periodicals. Past issues of the Bulletin are available on JSTOR, the Scholarly Journal Archive.

Responsibility for the methods and/or materials described herein rests solely with the contributors and should not be considered official statements or endorsements of APTI.

© 2009 by Association for Preservation Technology International. ISSN 00449466

Postmaster: Send address changes to APT, 3085 Stevenson Drive, Suite 200, Springfield, IL 62703

Cover: Dhangker Monastery, Spiti Valley, India. Courtesy of Charu Chaudhry.

Printing: Fort Orange Press. Printed in U.S.A.

All Bulletin articles undergo peer review.



Timber in Historic Structural Lumber and Ronald W. Anthony, Kimberly D. Dugan, and Deborah J. Anthony	3
An Analysis of the Thermal Performance of Repaired and Replacement Windows	11
Robert Score and Bradford S. Carpenter	
Sustainable Solutions for Historic Buildings: Geothermal Heat Pumps in Heritage Preservation Thomas Perry and Carl A. Jay	21
Practice Points Number 7 Follows page 28 Mortar Analysis Part 2: Analytical Methods Lorraine Schnabel	
Did It Work? Post-Restoration Evaluation of Terra Cotta at Atlanta City Hall Sven E. Thomasen	29
Conservation Treatments for Earthen Structures in the Western Himalayas of India Charu Chaudhry and Sandeep Sikka	35
Lee Nelson Award Winner 2008: Preservation of Modern Architecture Theodore H. M. Prudon	45
Book Reviews Frances Gale, Book Review Editor	49
Directory of Advertisers	51
Endowment List	52
APT Membership Information	54