



BUILT FOR THE Bayou



Photo taken at Laurel Valley Plantation in Thibodaux, La. by Jerod Duet. <<http://www.flickr.com/photos/erod/1164259406/>>

NCPTT workshop examines environmental adaptation in the built environment

By Sarah Jackson

Sustainability is much-discussed as a concept in preservation these days. But that concept necessarily transcends the theoretical when it comes to the practical problems facing the Gulf Coast. How do you sustain the cultural identity of a region that faces the danger of widespread obliteration each hurricane season?

To help answer that question, the National Center for Preservation Technology and Training will hold a workshop on design and construction of historic structures along the Gulf Coast on Nov. 20-21 in Lafayette, La.

"Built for the Bayou: Environmental Adaptations in Design" will cover topics critical to historic preservation and design along the Gulf Coast, including the environmental evolution of historic buildings and practical application methods that



Plantation homes were uniquely constructed to regulate temperature while maintaining an air of elegance.

can improve their sustainability.

According to Andy Ferrell, chief of NCPTT's Architecture and Engineering Program, the answer is sometimes found by looking to the past.

"Historically buildings were designed to adapt to the environment in which they were located," Ferrell said. "Before the advent of modern day heating, venting and cooling sys-

tems, buildings were designed and materials were chosen specifically for the hot, humid climate along the Gulf Coast. These adaptations and materials can now be incorporated in new construction or returned to use in historic structures for improved energy performance and sustainability."

The workshop is the first of a series focusing on the impact of natural disasters on buildings along the Gulf Coast, design adaptations of historic structures in response to the coastal environment, and ways to incorporate these ideas in sustainable design.

The training is suitable for architects, engineers, cultural resource managers and students in these fields. State and local government employees will benefit from the subject matter as well.

Several regional sustainability experts are instructing the workshop, including Edward J. Cazayoux, principal of EnvironMental Design; Eugene D. Cizek, director of the Preservation Studies Program, Tulane University; Barrett Kennedy, professor of architecture at Louisiana State University; and Mark W. Thomas III, adjunct assistant professor of architecture, Tulane University.

Workshop partners include AIA South Louisiana, Bayou Vermillionville District, EnvironMental Design, Louisiana State University School of Architecture, and Tulane School of Architecture.

The workshop will be a combination of lecture and group discussion. Participants will also be visiting structures in the Lafayette area that are representative of the principles learned during the lecture and group discussion.

Cost for the workshop is \$125 and space is extremely limited. To register, visit the NCPTT website at <http://www.ncptt.nps.gov>.



NCPTT holds Cemetery Monument Conservation Workshop



NCPTT's sixth annual Cemetery Monument Conservation Workshop was held on Oct. 7-9 in New London, Conn. The workshop's focus was brownstone and slate—two regionally common materials used in gravemarkers. The workshop also included a tour of the Portland Sandstone Quarry.

NCPTT produces video on traditional limewash applications

NCPTT's Sarah Jackson is featured in a new video about using traditional limewash recipes on historic structures. The video is available for viewing on the Center's website at <http://www.ncptt.nps.gov> and copies of the DVD can be ordered through the products area of NCPTT's website.

Arsenal and Macombe monuments are focus of cleaning study

Historic Congressional Cemetery's Arsenal and Macombe Monuments have been the focus of NCPTT's recent research into cleaning technologies for gravemarkers. As part of the study, NCPTT's Jason Church implemented a novel treatment of stone consolidation followed by intermittent water misting for cleaning. The research is being conducted in partnership with the NPS Historic Preservation Training Center and the National Cemetery Administration.

Iron Fence care video available through NCPTT website

NCPTT recently produced a new video about the care and preservation of iron fence work found in cemeteries. The eight-minute video provides basic information for documenting, cleaning, stabilizing, and painting iron fences. The video may be viewed on NCPTT's YouTube channel at <http://www.youtube.com/ncptt> or copies of the DVD can be ordered through the products area of NCPTT's website.

NCPTT hosts Cemetery Landscape Preservation Workshop



NCPTT hosted its first Cemetery Landscape Preservation Workshop Sept. 16-17 in Natchitoches, La. The workshop included cemetery managers, maintenance workers, volunteers, and educators. Workshop topics included preserving historic character, proper maintenance techniques, controlling invasive vegetation, and maintaining mature trees.

NCPTT begins preservation technology podcast

NCPTT recently recorded its first podcast, which features Jason Church talking about NCPTT's cemetery monument conservation initiative and his experiences growing up that led him to the field of cemetery conservation. The program is available on the NCPTT website and on iTunes as the "Preservation Technology" podcast.

Veterans Administration and NCPTT partner on research

NCPTT and the VA National Cemetery Administration have partnered to compare commercially available cleaning methods for federally-issued headstones. The most current results of this long-term study were recently featured at the Association for Preservation Technology conference on Oct. 13-17.

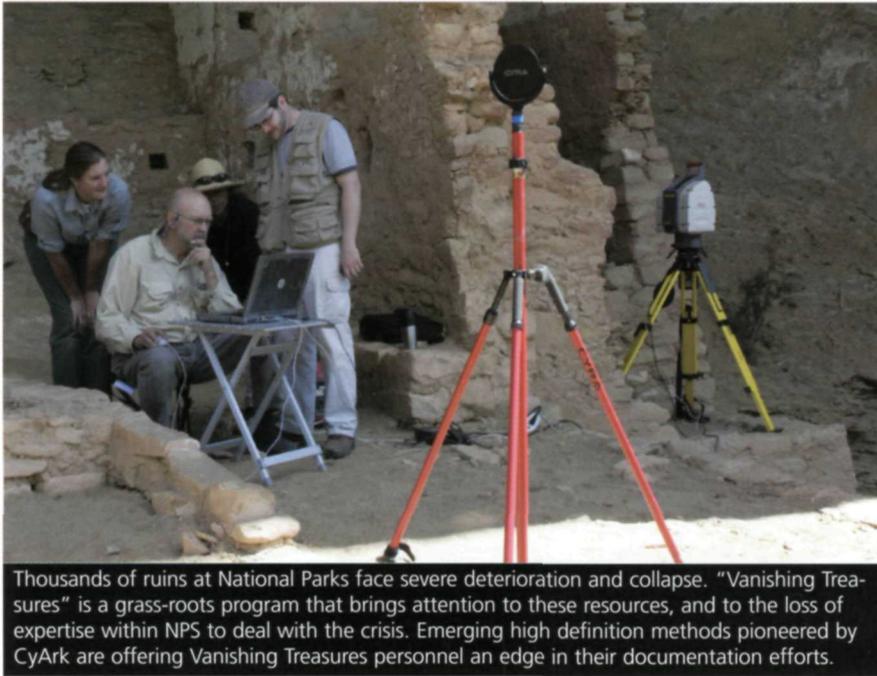
NCPTT wins its second consecutive APT research award

After winning its first Oliver Torrey Fuller Award in 2007 (see page 5) NCPTT received the award from the Association for Preservation Technology again this year. The project being recognized studied the suitability of vitrification as an alternative floor treatment in buildings of the early 1900s. NCPTT partnered with the General Services Administration on the study. The Fuller award recognizes the article that best demonstrates technical excellence and innovation published in the *APT Bulletin* during the year in which the award is conferred.

"Prospection in Depth" is held at El Presidio de San Francisco



NCPTT held its third annual workshop on archeological prospection Sept. 16-20 at the historic Presidio in San Francisco. "Prospection in Depth" integrated concepts, data collection, excavation, and interpretation.



Thousands of ruins at National Parks face severe deterioration and collapse. "Vanishing Treasures" is a grass-roots program that brings attention to these resources, and to the loss of expertise within NPS to deal with the crisis. Emerging high definition methods pioneered by CyArk are offering Vanishing Treasures personnel an edge in their documentation efforts.

ARCHEOLOGY GOES HD

New methods could speed archeological documentation time by 60 percent

Webinar trains Vanishing Treasures Personnel in high definition technology for archeology

Texas Tech University and CyArk have produced a webinar to train Vanishing Treasures personnel in the use of High Definition tools in archeology. The webinar includes an introduction to field data collection, data development, and creation of deliverables. It also explores data archiving and management using new web application software developed by CyArk: CyArk Site Manager. Using HDD, sites can be rendered virtually accessible, and will be over the CyArk 3D Heritage Archive, www.cyark.org. And by extension, America's Vanishing Treasures can potentially all be rendered more accessible to the public. For more information on the webinar, contact David Morgan at david_morgan@nps.gov

By Adam Zelasko

Documenting archeological sites has traditionally been a painstaking manual process requiring significant investments in time and personnel that few national parks have. As a result, parks like Mesa Verde are losing cultural heritage sites faster than they can document them.

A recent PTT Grant project furthers the use of high definition technology to make the documentation process simpler, cheaper and more accurate. John Loomis of the CyArk 3D Heritage Archive Network served as principal investigator on the project. He believes the high definition documentation methods his research group is modeling at Mesa Verde National Park have the potential to optimize human and financial resources through training sessions and workshops to park personnel.

"Faster tools and processes are urgently needed to document heritage sites, and archive their data into a modern database information system," Loomis said. "An integrated use

"The raw data collected will benefit researchers, scientists and the general public through a database of world heritage information on the Internet"

of high definition laser scanning and high resolution, high dynamic range photography, and other advanced tools for acquiring field data known as High Definition Documentation (HDD) are the solution to this problem, and have proven to speed up the documentation process by 60 percent."

Considering the documentation needs nationally, speed is of the essence. Loomis and his colleagues chose Mesa Verde because it has over 2,000 archeological sites, of which 700 are some form of cliff dwelling. This project marks the first time HDD has been used on a large scale at a U.S. National Park. Additionally, it is the first time that a park staff is being trained and involved in the process.

The project began as an extension of a three-year collaborative effort between CyArk, Texas Tech University and the University of California, Berkeley, to develop and apply HDD at Mesa Verde. Texas Tech first received a PTT grant and CyArk later received a grant to aid the dissemination of the HDD technology and processes to Mesa Verde park staff, and by extension disseminate them to other sites.

"The raw data collected will benefit researchers, scientists and the general public through a database of world heritage information on the Internet," Loomis said. "High definition documentation and photography will also produce data that can be transferred directly into virtual interpretation media, such as virtual dioramas, panoramas, animations, virtual reconstructions, and real-time walkthroughs."

The project researchers plan to further develop and test out the training model at Mesa Verde, eventually extending it to other interested U.S. National Parks and possibly to the international Sister Cultural Parks program in which Mesa Verde is taking a leading role.



Roane (left) and Nancy Odegaard (right), conservator and head of preservation at the Arizona State Museum, assess an artifact in the cleaning study.

NEW LIFE FOR NATIVE ARTIFACTS

Researchers investigate the use of bacteria to detoxify American Indian artifacts

By Kevin Clarkston

Say the word bacteria and images of sickness, disease and germs quickly come to mind. However, recent research reveals bacteria may be the biggest ally in the fight to preserve ancient artifacts from erosion and deterioration.

Timberley Roane, associate professor of Biology at the University of Colorado Denver (UCD) has been working on ways to safely remove harmful chemicals from artifacts under a grant from NCPTT.

“Early methods of preserving many native artifacts, such as headdresses, pipes, blankets and ceremonial masks, relied heavily on the use of pesticides,” Roane said. “Two common ingredients in those pesticides were mercury and arsenic. Concentrations of those chemicals now make it risky for humans to come into contact with the artifacts.”

Inhaling or exposing skin to artifacts contaminated with mercury can be very dangerous, and can make handling such artifacts difficult. Roane’s approach is to use bacteria to change the mercury into a gaseous form which then can be disposed of safely.

“These bacteria may be the key to helping return artifacts to the cultures that created them and to return them without endangering individuals coming in contact with the items,” she said.

Since beginning her research Roane has conducted bacterial evaluations on mercury-treated materials such as paper, agar, broth, human and horse hair. A treatment chamber was designed to control temperature and humidity during bacterial treatment and provide containment for the gaseous by-product.

“Temperature and humidity are two major factors that can influence bacterial growth and therefore potentially the rates of mercury removal. As such, we want to control the temperature and humidity for treatment efficiency,” she said.

Finding the proper method of bacteria application took some trial and error. Various techniques, including wet application of bacterial suspensions, micro-droplet application via high frequency sound waves, and application via a nebulizer were attempted.

Of these three processes, the nebulizer application appeared to be the most effective in terms of keeping the material dry, achieving an even coat of bacteria, maintaining bacterial viability, and being easy to use within the bacterial application chamber.

While experimental efforts have shown the effectiveness of some bacteria in removing mercury, the project has faced its share of obstacles. Among them: finding non-chemically treated wool. Commercially available wool, used in cloth material, is treated with a variety of preservatives and dyes.

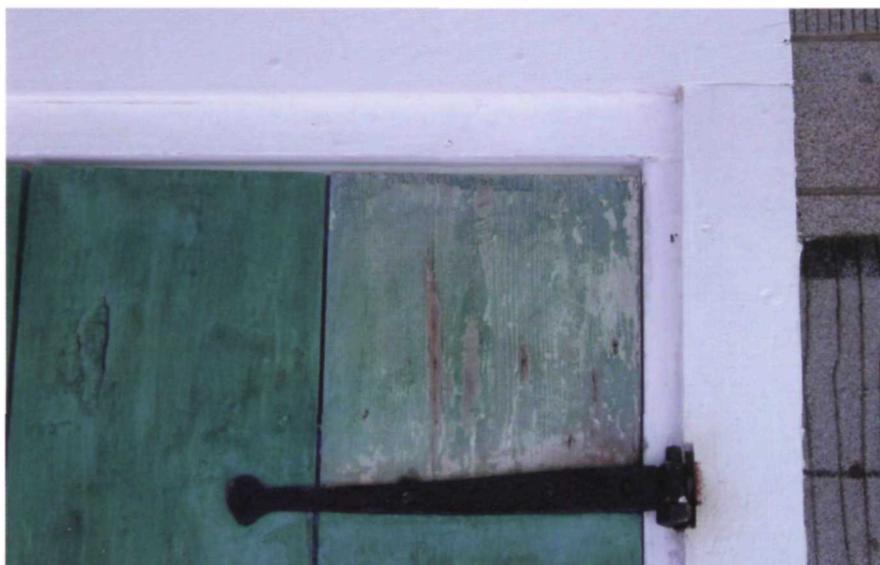
“We do not yet know how the dyes and preservatives in commercial wool will influence the bacterial removal of mercury,” Roane said. “We are currently setting up the wool studies but we will be working with untreated wool initially in order to establish a starting point for removal. We will need to ultimately address removal from treated fabrics, such as wool and cotton.”

Roane plans to conclude her research at the end of 2008. The final report will be available for download on the NCPTT website.



A researcher collects mercury-resistant bacteria from the surface of an artifact. In the top panel, a sterile swab is used to gently wipe the surface of the artifact to transfer surface bacteria to the swab. In the bottom panel, the bacteria collected on the swab are then transferred to a petri dish containing a bacterial growth medium.





A door jamb at Cane River Creole National Historical Park is coated with limewash, a traditional structural protectant. Below: Boy Scouts clean up alleys on Clean Up Day in the Near South Side community area of Chicago circa 1915. Two scouts are whitewashing a wooden bin while others look on. (DN-0064648, Chicago Daily News negatives collection, Chicago Historical Society.)

THE OTHER WHITE 'PAINT'

Award-winning NCPTT Research takes another look at historic building protectant



The Association for Preservation Technology Publications Jury awarded NCPTT's article "Durability of Traditional and Modified Limewashes" with its Oliver Torrey Fuller Award for Technical Excellence and Innovation. The research was recognized during the 2007 APT annual conference. The Oliver Torrey Fuller Award was first presented in 1985, and was created to recognize the article that best demonstrates technical excellence and innovation published in the APT Bulletin during the year in which the award is conferred.

By Adam Zelasko

Its most popular cultural reference may come out of *The Adventures of Tom Sawyer*, but limewash (also known as whitewash) is enjoying renewed interest as a protectant for historic structures, thanks in part to research undertaken by NCPTT and its partners.

Limewash has been used as a surface finish for centuries worldwide. It was widely used in the United States from the 19th to mid-20th centuries to protect structures (and fences, of course) against pests and weathering.

Seeking traditionally appropriate ways to protect their plantation buildings, staff at Cane River Creole National Historical Park (CARI) kept coming back to limewash as their solution of choice.

"Historically most of the buildings at this park were coated with limewash, and that material served multiple purposes in much the same way as the finish coating on adobe in the Southwest,"

Laura Gates, CARI superintendent, said. "It provided a layer of protection from the onslaught of wind and water that weathered buildings' exteriors."

Limewash can be made with just slaked lime and water. But over the years, tradesmen created their own recipes using a variety of additives. The use of limewash faded to nonexistence with the advent of modern paints, improved construction materials and streamlined labor practices over the latter half of the 20th century.

Unable to find modern research on which of the many traditional recipes would best protect the buildings, CARI turned to NCPTT. The two organizations partnered with Quality Finish Painters to conduct the study. Researchers used finish remnants to confirm the use of limewash on the wood and brick surfaces at the park and followed up with research to determine appropriate recipes.

While Quality Finish researched possible local recipes for limewash, NCPTT developed a series of tests for the study. Using published testing standards, researchers determined that abrasion, adhesion, and artificial weathering would provide the most applicable data for determining the most durable limewash. Four separate limes and several recipes were chosen to apply to samples of handmade brick, modern brick, weathered wood, hand-sawn wood, and epoxy.

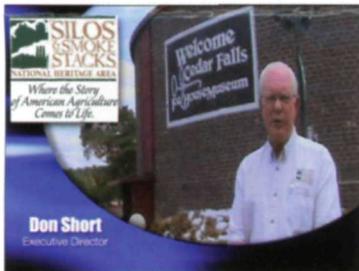
"We found that our limewash recipes performed better on the brick than the wood and similarly on the wood and epoxy," Sarah Jackson, NCPTT architectural conservator, said. "On handmade brick samples where a primer was not applied prior to limewashing the limewash performed better after weathering versus samples with a primer. None of the limewash recipes we tested were durable on wood samples. However, samples with a primer performed better, possibly as a result of wood's cell structure."

Jackson has demonstrated limewash application in several venues, including the Traditional Building conference and the International Preservation Trades Workshop.



PRESERVATION TODAY

NCPTT enters media partnership to deliver preservation news through social media channels



Above: During the first Preservation Today netcast, Don Short, executive director of Silos and Smokestacks National Heritage Area, reports the progress in the recovery of cultural resources made after the summer floods in the Midwest.

To view the Preservation Today netcast online, visit <http://preservationtoday.blip.tv>. Heritage organizations can also request a free demo DVD by contacting Jeff Guin at NCPTT: 318-356-7444 or jeffery_guin@contractor.nps.gov.

By Kevin Clarkston

NCPTT recently partnered with Northwestern State University of Louisiana (NSU) to develop a media outlet dedicated to advancing heritage preservation using the World Wide Web.

“Preservation Today,” includes an online newscast that integrates a wide variety of social media distribution platforms such as Blip.tv, YouTube and iTunes.

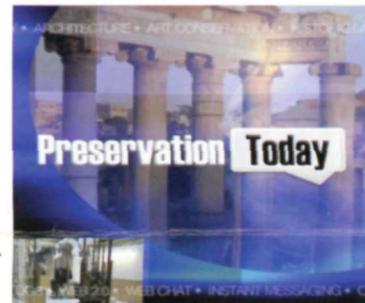
According to Jeff Guin, NCPTT marketing manager and NSU adjunct instructor of journalism, this project takes a “best of both worlds” approach to news gathering and delivery.

“The web is bringing people together based on ideas and common values, and that’s what Preservation Today is about,” Guin said. “Unlike your six o’clock news, it’s not based on where you live and it’s not designed to attract an audience through shock value. But, by maintaining those same high production values, we hope to help viewers understand how to advance heritage preservation in a Web 2.0 world.”

The Preservation Today netcast includes news briefs about heritage activities from around the world. It also features interviews with preservationists, bloggers and social media experts.

A community-based “shownotes” website allows viewers to interact around the news being reported. Among the features of the website are preservation blogs and news. The shownotes site also features a “2.0 tips” section that offers practical help on using social media to advance the conversation about heritage preservation.

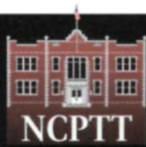
“Social media is about bottom-up grassroots collaboration that achieves a higher purpose, which makes it ideally suited to preservation causes,” Kirk Cordell, executive director of NCPTT, said. “One of the most powerful goals this partnership can achieve is to help organizations and individuals understand how social media tools work, and how those tools can be easily used to advance their preservation objectives.”



NSU is providing its studio set as well as student production assistance as part of the partnership. According to Paula Furr, head of the NSU Department of Journalism, the effort also represents a rare opportunity for NSU journalism students.

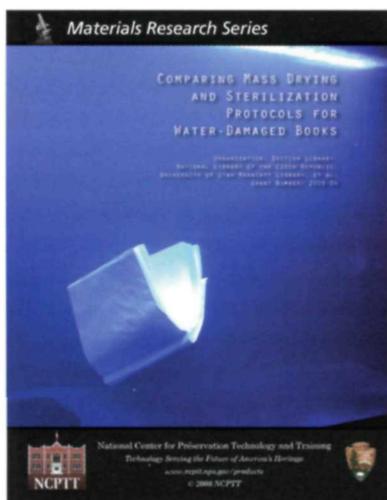
“I don’t think anyone can quantify exactly how much social media is changing journalism but we know the change is fundamental,” Furr said. “This partnership will challenge our students to analyze the broader impact of the stories they report. Today, their audience is the world.”

As with all social media efforts, Preservation Today depends on feedback from its audience to remain sustainable. Guin says heritage organizations can help simply by contributing video and news reports from their projects. Viewers can also help by tagging their online media with “preservationtoday” which will allow it to be easily found and used for the Preservation Today netcast.



Newest Titles

From the NCPTT Catalog of Research Products: www.ncptt.nps.gov/products



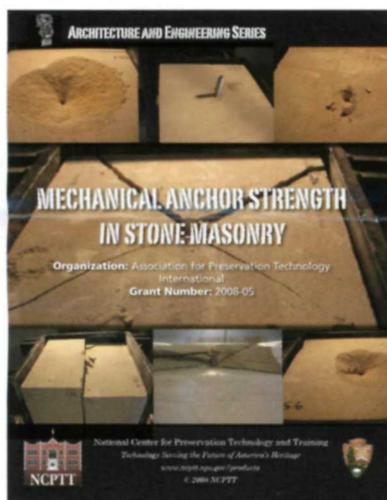
COMPARING MASS DRYING AND STERILIZATION PROTOCOLS FOR WATER-DAMAGED BOOKS

Organization: British Library, National Library of the Czech Republic, University of Utah Marriott Library, et al.

Product Number: 2008-04

Recovery specialists need to have a clear sense of the pros and cons of existing treatment options before they can respond effectively. This information is critical to making event-specific decisions so that collection permanence is optimized and distortion minimized within fiscal and operational constraints. Questions addressed in reaching those event-specific decisions include: What is the optimal approach to drying water-damaged books given the amount of material affected? And also, what constraints are imposed by the availability and capacity of environmental controls, labor, equipment and vendors?

Available for download at <http://www.ncptt.nps.gov/Product-Catalog/Product.aspx?ProductID=2008-04> in PDF format.



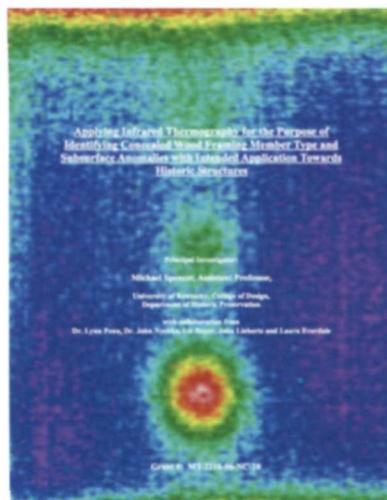
MECHANICAL ANCHOR STRENGTH IN STONE MASONRY

Organization: Association for Preservation Technology International

Product Number: 2008-05

The main objective of this research project is to better understand the failure strength and the modes of failure of different types of mechanical anchor systems in stone masonry. It also explores whether various non-destructive methods for evaluation of physical properties applied to the stone specimens helps to predict the tension and shear strength of the mechanical anchors.

Available for download at <http://www.ncptt.nps.gov/Product-Catalog/Product.aspx?ProductID=2008-05> in PDF format.



APPLYING INFRARED THERMOGRAPHY FOR THE PURPOSE OF IDENTIFYING CONCEALED WOOD FRAMING MEMBER TYPE AND SUBSURFACE ANOMALIES WITH INTENDED APPLICATION TOWARDS HISTORIC STRUCTURES

Organization: University of Kentucky

Product Number: 2008-06

This report looks into the ability of infrared thermography (IRT) to distinguish the wood species of framing members within wall systems. Its purpose is to better inform building professionals about the capabilities and condition of wooden members within historic structures, hopefully resulting in more effective and efficient restoration, rehabilitation and preservation efforts.

Available for download at <http://www.ncptt.nps.gov/2008-06/> in PDF format.



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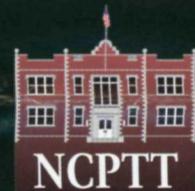
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