



# DEPARTMENT OF DEFENSE CULTURAL RESOURCE PROGRAM

## CULTURAL RESOURCES *UPDATE*

January/ February 2013 Edition

Volume 9, Number 2

### Study Confirms Modernization of Pre-World War II Masonry Buildings is Cost Effective vice New Construction

Article and photos by: Cherylyn Widell, Co-Principal Investigator for DoD ESTCP Project #0931

Can DoD's aging buildings be considered a renewable energy resource for reducing the carbon footprint of the federal government? Can pre-World War II buildings be used for mission purposes at less cost than new green construction? The results of a just-completed detailed study shows that reuse of DoD's pre-World War II masonry buildings CAN result in greater overall energy reductions than new construction and at less cost.

In FY 2009, DoD's Environmental Security Technology Certification Program (ESTCP) funded a research project entitled, "Demonstrating the Relative Cost-Benefits of Reusing Historic & Non-Historic DoD Properties Using Scientifically-Derived Data" to specifically explore and bridge the data gap used by DoD for life cycle cost analysis comparing the economic and environmental costs of building reuse vs. new construction at military installations. The study obtained a level of detail sufficient to model the rehabilitation of pre-World War II masonry buildings and analyze both capital investment and operating and maintenance costs.

Integration of this study went beyond CRM to include decision makers in mission operations, real property asset management, construction, energy and sustainability and maintenance and repair. Working with DoD cultural resource representatives, the study team (with over 200 years of practical experience with historic buildings, federal property and expertise in carbon calculation and renewable energy) set out to determine:

- 1) Whether reusing pre-World War II masonry DoD buildings can achieve energy efficiencies exceeding those of new construction at a Silver Leed Certifiable level.
- 2) Whether rehabilitation of these buildings can meet all DoD facilities and design requirements (including anti-terrorism force protection) on a cost effective basis compared to new construction.
- 3) Whether it is feasible to incorporate a life cycle assessment (i.e. determination of greenhouse gas emissions) into a life cycle cost analysis in a format that can be easily duplicated by federal facilities managers for decision-making.

A total of six buildings were chosen from among Army, Navy and Air Force and from different climate zones— 2 each at 3 military installations. All except one building was listed on the National Register of Historic Places or located in a Nation Historic Landmark District. Because there were typed buildings, found repeatedly at installations nationwide, it is estimated that they present as many as 1000 buildings in the DoD Real Estate Property Inventory.

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## CONFERENCES, MEETINGS, AND MORE

### SOCIETY FOR AMERICAN ARCHAEOLOGY ANNUAL CONFERENCE

PLACE: HONOLULU, HI

DATE: 2-7 APRIL 2013

...TO INCLUDE:

⇒ THE DoD CULTURAL RESOURCE  
PROGRAM TOWN HALL  
MEETING FOR DoD CRMS...  
**CANCELLED**

⇒ THE MILITARY  
ARCHAEOLOGICAL RESOURCES  
STEWARDSHIP INTEREST GROUP  
MEETING

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A critical criterion in the choice of buildings for this study was that they were built before World War II, before the era of cheap energy of 1960-1980. Additionally, the buildings needed to exhibit what the project team named, “original design intelligence”- features which promote efficient energy usage in the building and, if still functional or recoverable through the modernization, contribute significantly to lowering the Scope 1 and 2 emissions of greenhouse gases when combined with current technology.

Original design intelligence (ODI) features vary between buildings but can include solid brick walls with a higher thermal value than contemporary brick, externally loaded narrow floor plans and building orientation perpendicular to prevailing winds. Continued use or recovery of these original intelligence features is critical to obtaining energy efficiencies in the buildings going forward. Understanding the value of ODI is just one of the benefits of this study, which will lead to better understanding and more energy efficient use of DoD culture resources.

### Summarized Findings:

- 1) Actual construction costs were less than new construction in ALL alternatives employed.
- 2) Modernization of Pre-World War II buildings can fully correspond with all DoD requirements and meet an installation’s mission critical needs.
- 3) Cost savings are sensitive to the level of interior improvements required and the degree of prescriptive compliance to ATRP requirements.
- 4) Modernization of Pre-World War II buildings with a high level of prior interior improvements (i.e. gutting of the original interior) may cost more than modernization of existing buildings with an open or intact historic interior.
- 5) The presence of original design intelligence features or the ability to recapture them through modernization reduces construction costs and greenhouse gases
- 6) Reuse of Pre-War buildings can offer significant (at least 15%) CO<sub>2</sub>e emission savings over new construction through avoidance of new emissions.
- 7) Scope 1 emissions (direct energy use on site) were found to be non-material factors in GHG emissions after a comprehensive modernization of a pre-World War II building; Scope 2 and 3 GHG account for 99% of total metric tons for both new construction and modernization.

### Recommendations:

- 1) Incorporate life cycle GHG emissions analysis into DoD Military Construction (MILCON) and Sustainment Restoration and Maintenance (SRM) programs.
- 2) Give more emphasis to reuse of DoD’s Pre-World War II masonry buildings as a viable project alternative to meet mission requirements.
- 3) Give more emphasis to DoD’s Pre-World War II masonry buildings as a viable project alternative to reduce DoD energy use.
- 4) Invest in formulation of carbon calculator system which tracks with existing cost estimating systems such as RS Means; current process not yet ready for use by military planners.
- 5) Avoid modernization treatments that result in loss of original design intelligence features in Pre-World War II Buildings; Keeping or recovering original design intelligence contributes to energy savings.
- 6) Use design professionals with practical experience in archaic building materials and systems to develop accurate planning level specifications.

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- 7) Avoid applying ATFP and Progressive Collapse requirements rigidly and prescriptively to Pre- World War II masonry buildings, this raises construction costs and introduces additional Scope 3 GHG emissions.
- 8) Cost estimates and construction bid requests should include materials quantities in addition to costs to evaluate and validate GHG impacts.
- 9) GHG emission tradeoffs of proposed new materials and building options should be evaluated early in the conceptual design process.

The Study has resulted in 24 data sets (four for each of six buildings) and a 200 page report which has been submitted to DoD ESTCP and will be posted on their website for DoD personnel and the general public in the next thirty days. The team is also preparing an Executive Summary for distribution. The data will enable DoD cultural resources staff to show asset managers and facilities planners how reuse of pre-World War II masonry buildings can reduce military construction costs for mission uses and can help reduce the carbon footprint of the Department of Defense. Further, the study will help cultural resource managers and military planners justify the integration of historic assets into facilities plans to support mission rather than setting them aside as costly and unusable.

For more information please contact Cheryl Widell, Seraph LLC, Co-Principal Investigator at [cwidell809@yahoo.com](mailto:cwidell809@yahoo.com) or David Shiver, Bay Area Economics and Co-Principal Investigator at [dshiver@bae1.com](mailto:dshiver@bae1.com).

## New HABS Guide to Field Documentation

*From the NPS Heritage Documentation Programs*

The Field Guide offers step-by-step instructions regarding observation, taking field measurements, creating field notes and short-form reporting about a historic site or structure to HABS standards. These guidelines are intended for use by those without professional experience and/or training in the production of drawings and the undertaking of field work. They address floor plans, elevations, and details to help develop basic note taking and delineation skills. Once these skills are mastered, recorders can refer to the HABS Guidelines for Measured Drawings to learn about site plans, sections, axonometric, and other more complex types of drawings. This guide is supplemented with a “Field Observations” (Appendix B) and “Short-format Report” (Appendix A) sections, using a singular example, the “Secondary House”, to assist the recorder with learning to “read” a building and to report on findings. The Field Observations are applicable to both the preparation of informed drawings and to the analysis put forth in the accompanying historical report. The field analysis should be combined with preliminary research into primary and secondary sources for a concise report of a few pages in length. As with the drawings component, further investigations of the historical and architectural context of a site or structure can be expanded to produce a full outline report according to HABS Guidelines for Historical Reports. View the Field Guide and its corresponding Appendices at:

[www.nps.gov/history/hdp/standards/HABSGuideFieldDoc.pdf](http://www.nps.gov/history/hdp/standards/HABSGuideFieldDoc.pdf)  
[www.nps.gov/history/hdp/standards/HABSGuideFieldDocAppendixA.pdf](http://www.nps.gov/history/hdp/standards/HABSGuideFieldDocAppendixA.pdf)  
[www.nps.gov/history/hdp/standards/HABSGuideFieldDocAppendixB.pdf](http://www.nps.gov/history/hdp/standards/HABSGuideFieldDocAppendixB.pdf)

## SEMINARS, COURSES, AND MORE

DoD ADVANCED HISTORIC PRESERVATION LAW & SECTION 106 COMPLIANCE (VIA NAVAL CECOS)

<https://www.netc.navy.mil/centers/csfe/cecos/Courses.aspx?ID=1>

...  
PLACE: FT. BELVOIR, VA  
DATE: 7-9 MAY 2013

...  
PLACE: NS GREAT LAKES, IL  
DATE: 4-6 JUNE 2013

ALSO SEE THE NEW ACHP SECTION 106 TRAINING SCHEDULE FOR 2013 AT [WWW.ACHP.GOV/106SELECT.HTML](http://WWW.ACHP.GOV/106SELECT.HTML)

ALSO SEE THE NEW NATIONAL HISTORIC LANDMARK'S WEBINARS AT [WWW.NPS.GOV/TRAINING/NRS](http://WWW.NPS.GOV/TRAINING/NRS)

ALSO SEE THE NATIONAL PRESERVATION INSTITUTE'S SEMINAR LISTING AT [WWW.NPI.ORG/SEMINARS](http://WWW.NPI.ORG/SEMINARS)

## New GAO Report on Sustainable Performance

*From the Advisory Council on Historic Preservation*

On December 11, 2012, the U.S. Government Accountability Office (GAO) released a report entitled “Improved Data Needed to Strategically Manage Historic Buildings, Address Multiple Challenges”. GAO’s report recommends that the Acting Administrator of GSA—in collaboration and consultation with the ACHP, NPS, VA, and Federal Real Property Council (FRPC) member agencies, work on an action plan to improve Federal Real Property Profile (FRPP) data with regard to historic properties.

Focusing on GSA, NPS, and VA, the GAO report concluded that while many historic buildings successfully meet mission needs, agencies face an array of challenges in managing historic buildings, including functional limitations of older buildings in relation to contemporary mission needs and current building codes, budgetary limitations, and competing stakeholder interests. Compounding these property management challenges, the report concluded that data on historic buildings in agencies’ FRPP is not complete.

Despite its focus on historic preservation at non-defense agencies, the report does speak to federal “agencies’ efforts to preserve, use or lease, and improve the sustainable performance of those buildings.”

The GAO report can be found at: [www.gao.gov/products/GAO-13-35](http://www.gao.gov/products/GAO-13-35)

Agencies have undertaken portfolio-wide efforts to identify historic buildings they hold, nominate some of those buildings to the National Register of Historic Places, and manage their historic buildings in compliance with the requirements in the National Historic Preservation Act and relevant executive orders. Nevertheless, GAO concluded that agency reports to the FRPP database should be improved to better convey to the public and stakeholders (including Office of Management and Budget and Congress), the extent of historic buildings held by agencies, and to enhance the FRPP’s usefulness in federal decision making.

The ACHP pledged to work with the FRPC on developing benchmarks for use by federal real property managing agencies to measure progress in the identification, protection, and use of historic properties.

### Check-out the [new NPS website for tribes!](#)

According to the website, the goal of the site is to provide information to American Indians, Alaska Natives, and Native Hawaiians about NPS Cultural Resources programs. (The NPS info card is to the right.)

In addition, the [2012 Tribal Preservation Annual Report](#) has been released... visit [www.nps.gov/tribes/reports/2012\\_Tribal\\_Preservation\\_Annual\\_Report\\_web.pdf](http://www.nps.gov/tribes/reports/2012_Tribal_Preservation_Annual_Report_web.pdf)

### Connecting Native Americans with National Park Service Cultural Resource Programs



Photos: Bag (unfringed), Its Backside, Nez Perce, Nez Perce National Historical Park Collection; Rug Painting, Florida Zuni Burial, Hubbell Trading Post National Historic Site; Collector's Basket and Lid, Panamint Shoshone, Death Valley National Park Collection; National Park Service Museum Management Program

- \* Grants and Financial Assistance
- \* Tribal Historic Preservation Officers
- \* Quick Guides for Preserving Native American Cultural Resources
- \* National Programs and Park Programs
- \* Publications and Preservation Resources

[www.nps.gov/tribes](http://www.nps.gov/tribes)

## DoD Continues to Support Tribal Sacred Sites

*From the DoD Cultural Resource Program, Office of the Under Secretary of Defense for Installations and Environment*

On March 5<sup>th</sup>, 2013 the Departments of Defense, Interior, Agriculture, Energy and the Advisory Council on Historic Preservation released an interdepartmental Action Plan for the implementation of the December 5, 2012 Memorandum of Understanding (MOU) on the protection of Indian Sacred Sites. Under the MOU, a working group of signatory agency representatives is tasked with identifying impediments to Sacred Site protection, consulting with Tribal governments, and promoting interdepartmental communication and efficiency when dealing with Sacred Sites.

Military Service representatives worked alongside Department of Defense work group members to ensure Military Service input toward the creation of the Action Plan. Consideration of how the different military components interact with federally recognized tribes is crucial for successful implementation of the Sacred Sites MOU. DoD and Military Service representatives will continue to be involved as steps are taken to implement the Action Plan through ongoing collaboration with the other signatory agencies to protect Indian Sacred Sites and landscapes. The Sacred Sites MOU and Action Plan are available on the DENIX ([www.denix.osd.mil/na](http://www.denix.osd.mil/na)) and the Advisory Council on Historic Preservation websites ([www.achp.gov](http://www.achp.gov)), respectively.

## Native American Traditional Cultural Landscapes Action Plan

*From the Advisory Council on Historic Preservation*

The action plan, adopted by the Advisory Council on Historic Preservation (ACHP) members in November 2011, calls for the ACHP and the Department of the Interior (DOI) to promote the recognition and protection of Native American traditional cultural landscapes and the address the challenges in the consideration of these historic properties in the Section 106 process and in National Environmental Policy Act (NEPA) reviews. Since adoption, much has been accomplished. Recent activities include outreach with the Federal Communications Commission, conducting a webinar on traditional cultural landscapes, and hosting a roundtable discussion on the topic at the annual National Alliance of Tribal Historic Preservation Officers meeting.

Status: The National Park Service (NPS) is conducting consultation regarding traditional cultural landscapes and potential revisions to “Bulletin 38: Traditional Cultural Properties”. These steps are fundamental to the remainder of the action items in the plan.

## ACHP and CEQ Release NEPA/ Section 106 Handbooks

The long awaited NEPA/Section 106 Handbook, a collaborative effort on behalf of the Advisory Council on Historic Preservation (ACHP), the Council on Environmental Quality (CEQ), and several federal agencies (including DoD), is now available. The handbook discusses both the integration of NEPA reviews with NHPA Section 106 reviews, as well as the substitution of one review for the other. We encourage anyone working with DoD’s cultural resources to download the handbook and use it!

**See the following pages for more information on how to access the Handbooks...**



**EXECUTIVE OFFICE OF THE PRESIDENT  
COUNCIL ON ENVIRONMENTAL QUALITY  
WASHINGTON, D.C. 20503**

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**Contact: Taryn Tuss (CEQ): 202-456-6998  
Bruce Milhans (ACHP): 202-606-8513**

**FOR IMMEDIATE RELEASE  
March 5, 2013**

**CEQ Releases Handbooks on Improving Efficiency of Federal Environmental Reviews**

WASHINGTON, D.C. – Consistent with the goals of President Obama's 2012 Executive Order on Improving Performance of Federal Permitting and Review of Infrastructure Projects, the Council on Environmental Quality (CEQ) today released two new handbooks that encourage more efficient environmental reviews under the National Environmental Policy Act (NEPA). Together, the guides will promote informed Federal decisions on projects that impact American communities and help agencies improve efficiency, maximize staff resources, and reduce costs.

The handbooks complement the suite of guidance and memoranda to agencies that CEQ has issued to reaffirm the NEPA principles of early coordination and collaboration to promote efficient Federal environmental reviews. By highlighting how to take advantage of existing provisions for integrating NEPA with other planning and environmental reviews, they will help agencies avoid duplicative or inconsistent processes and facilitate quicker, more informed decision-making.

“NEPA encourages collaboration among Federal agencies, stakeholders, and the public to arrive at the best-informed decisions in the fastest timeline,” said Nancy Sutley, Chair of the White House Council on Environmental Quality. “This partnership between CEQ, California’s Office of Planning and Research, and the Advisory Council on Historic Preservation to help agencies make efficient, informed decisions on projects that grow our economy and protect the health of our communities exemplifies the spirit of NEPA.”

The first handbook, created by CEQ and the Advisory Council on Historic Preservation (ACHP), provides advice to Federal agencies, applicants, project sponsors, and consultants on how to take advantage of existing regulatory provisions to align the NEPA process and the National Historic Preservation Act (NHPA) Section 106 review process. Federal agencies have independent statutory obligations under NEPA and NHPA. For many projects, agencies can use the procedures and documentation required by NEPA to comply with NHPA Section 106, instead of

undertaking a separate process. The handbook explains how to align NEPA and NHPA Section 106 processes for maximum efficiency and public input, and provides a series of roadmaps for coordination of the two statutes.

In collaboration with the California Governor's Office of Planning and Research, CEQ is also releasing a draft handbook on integrating NEPA and California Environmental Quality Act (CEQA) review processes. The guide provides practitioners with an overview of NEPA and CEQA as well as valuable suggestions for developing a single environmental review process that can meet the requirements of both statutes. It will be available for 45 days of public comment to encourage a comprehensive final product that promotes maximum efficiency.

By integrating NEPA with NHPA Section 106 and CEQA reviews, these handbooks will encourage efficient processes without adding any new requirements or sacrificing the effectiveness and transparency of environmental reviews.

To view the handbooks, please visit:

<http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/handbooks>

To learn more about the Administration's efforts to modernize implementation of NEPA, [click here](#).

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## New UFC Published on Sensitive Compartmented Information Facilities

*From the DoD Cultural Resource Program, Office of the Under Secretary of Defense for Installations and Environment*

“UFC 4-010-05 Sensitive Compartmented Information Facilities Planning, Design, and Construction” was recently published and is available on the Whole Building Design Guide Website for download at: [www.wbdg.org/ccb/DOD/UFC/ufc\\_4\\_010\\_05.pdf](http://www.wbdg.org/ccb/DOD/UFC/ufc_4_010_05.pdf).

This UFC provides unified criteria for the planning, design, and construction of Sensitive Compartmented Information Facilities (SCIF). The Director of National Intelligence issued policy for the planning, design, and construction of SCIF. There was no previous UFC document that prescribed facility criteria for SCIF. The UFC is one of a series of security engineering criteria documents covering physical countermeasures for the current threat environment. The design of physical security measures is a specialized technical area that does not fall in the normal skill record and resume of commanders, architects, engineers, and project managers. This document provides guidance to those parties tasked with implementing existing and emerging physical protection system requirements for SCIF.

### New SAA Journal - Do You Want to Publish?

The Society for American Archaeology has launched a new journal catered to the needs of applied archaeologists in government and private practice.

*Advances in Archaeological Practice* publishes peer-reviewed articles that are pragmatic and problem-oriented.

Knowing that the DoD is innovative and proactive in its cultural resource management and programming, the journal welcomes articles from the DoD CRM community.

To find out more, visit [www.saa.org](http://www.saa.org) or email the editor, Christopher Dore, at [editor@dore.us](mailto:editor@dore.us)

### Welcome the new DoD Legacy Program Cultural Resource Lead!

Kelly Merrifield joined the Department of Defense Legacy Management Resource Program as the Cultural Resources Lead in December 2012. Prior to joining Legacy, Kelly assisted the Department of Veterans Affairs Historic Preservation Office with its historic preservation requirements. She also assisted in the development of a new National Park Service American Indian Liaison Office website.

A native North Carolinian, Kelly graduated from Wake Forest University with a double major in history and German and a minor in education. Following graduation, she taught English in Stainach, Austria via the Austrian Fulbright Commission. She then received her Master's in Historic Preservation from the University of Maryland, College Park in 2009. She looks forward to working on Legacy Program proposals and projects with the DoD cultural resource community. Please feel free to get in touch with her at: [Kelly.Merrifield.ctr@osd.mil](mailto:Kelly.Merrifield.ctr@osd.mil)

### Inquiry to installation CRMs —

A private scholar is conducting research on German POWs at military installations during WW2...  
do you have publically available historical documents, photos, etc. on this topic?

If you would like to assist this research effort, email: [write.forfreedom@yahoo.com](mailto:write.forfreedom@yahoo.com)

## CULTURAL RESOURCES UPDATE

### To Contribute to this Newsletter:

The DoD Cultural Resource Program welcomes information, news, briefs, announcements, photos, articles, suggestions, questions, etc. that relate to cultural resource activities on installations, within regions or information that generally pertains to DoD and Military Service cultural resource endeavors.

To contribute, email [Serena.Bellew@osd.mil](mailto:Serena.Bellew@osd.mil).

### Office of the Deputy Under Secretary of Defense for Installations and Environment, Environmental Management Directorate, Cultural Resources Program



The Department of Defense maintains thousands of historic and cultural resources, which form an integral part of mission support and readiness. The Department's cultural resources are the Nation's assets and the Department holds these resources in trust for future generations. As stewards of the nation's largest inventory of Federally owned or managed historic properties, DoD strives to maintain, promote, and interpret the resources it manages, both to support the mission and to preserve military heritage for future generations. Cultural resources are mission enhancing assets, connecting our fighting men and women with their proud history and traditions. The Department continues to use and maintain some of the nation's most prized cultural properties as an integral part of mission support and readiness.

The DoD historic property portfolio includes a total of 73 National Historic Landmarks, 694 entries on the National Register for Historic Places, and over 19,000 individual historic properties, including over 16,700 known archaeological sites and 3,200 historic buildings. The majority of these resources are managed at the installation level by the Services, working closely with various stakeholders, including Indian tribes, State Historic Preservation Offices, and the Advisory Council on Historic Preservation. This ensures DoD's compliance with applicable Federal laws, Executive Orders, and regulations, while simultaneously supporting the multiple missions of DoD.

### Office of the Deputy Under Secretary of Defense for Installations and Environment, Environmental Management Directorate, Legacy Resource Management Program



The Legacy program was established by Congress in 1990 to provide financial assistance to DoD to preserve our natural and cultural heritage. The program assists the DoD in protecting and enhancing resources while supporting military readiness. A Legacy project may involve regional ecosystem management initiatives, habitat restoration and enhancement efforts, invasive species control, monitoring species at risk and species of concern, economics of historical preservation, cultural resources data management, communication, partnerships and public awareness, and/or context and model development.

Visit [www.DoDLegacy.org](http://www.DoDLegacy.org) for more information.

The *DoD Cultural Resources UPDATE* is sponsored by the DoD Cultural Resource Program.

Requests to be added to or removed from the Cultural Resources *UPDATE* distribution list may be sent to [Serena.Bellew@osd.mil](mailto:Serena.Bellew@osd.mil).

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