

PORTSMOUTH NAVAL SHIPYARD



FY14 SECDEF EV AWARDS

CULTURAL RESOURCES MANAGEMENT—SMALL INSTALLATION

Introduction

Portsmouth Naval Shipyard (PNSY) was established by Congress in 1800. Selected for its geographic advantages and the availability of experienced shipbuilders, PNSY began by producing wooden ships for the Navy. Evolving with Navy requirements, the Shipyard mission significantly transformed during World War I. In 1917, PNSY designed and constructed the L-8, the first government-built submarine. Six years later, PNSY became the Navy's primary submarine shipyard. World War II (WWII) brought massive expansion to PNSY in support of the increased demand for submarines. During WWII, PNSY produced 77 submarines, or approximately half of the US submarine fleet. PNSY continued to build submarines until 1969 when the mission was realigned to function exclusively as a submarine overhaul facility.



Installation Mission

The primary mission of PNSY is to overhaul, repair, and modernize the U.S. Navy's nuclear-powered submarine fleet in a safe, timely, and cost effective manner. As only one of four remaining naval shipyards in the nation, PNSY has three dry docks capable of docking all active classes of submarines, including the Los Angeles, Trident, and Virginia.

Approximately 4,700 civilian employees currently work at PNSY, along with 1,000 active duty military personnel assigned to submarine and coast guard cutter crews and an additional 1,000 civilians assigned to tenant commands. Although PNSY functions primarily as an industrial facility for the overhauling of submarines, it also provides support facilities for the U.S. Navy Survival, Evasion, Resistance, & Escape (SERE) School, the Naval Branch Health Clinic Portsmouth, U.S. Army New England Recruiting Battalion, the Defense Logistics Agency, and the U.S. Coast Guard. PNSY also supports military personnel with on-base berthing, family-oriented programs, and recreational opportunities.

Location

PNSY is located in the Town of Kittery, Maine at the southernmost tip of the state, approximately 50 miles north of Boston, Massachusetts. PNSY fully encompasses Seavey Island, which is situated at the mouth of the Piscataqua River. The Piscataqua River is a tidal estuary that forms a natural boundary between Maine (ME) and New Hampshire (NH). This federally-owned island is located across the harbor from Portsmouth, NH, with access to the mainland via two bridges connected to Kittery, ME. The main base of PNSY is approximately 288 acres in size, over 62 acres of which is managed as the Controlled Industrial



Area (CIA). Industrial activities are concentrated at the western portion of the base within the tightly-controlled CIA, which includes all dry docks, vessel berths, and numerous buildings that house trade shops supporting maintenance activities. Areas outside the CIA generally include additional trade shops, administration offices, officers' residences, vehicle parking, and recreational facilities.

Program Management

Due to PNSY's historic significance in architecture and engineering and as the oldest continuously operating naval shipyard in the nation, the Portsmouth Naval Shipyard Historic District was listed in the National Register of Historic Places in 1977. The district was subsequently expanded in 2007 to encompass approximately two-thirds of PNSY's 288 acres. The period of significance for the Historic District spans from PNSY's establishment in 1800 to 1987 in capturing PNSY's involvement in the Cold War. The Historic District includes 116 contributing historic buildings and 11 contributing landscape features. In addition, PNSY has 17 known archaeological sites, including historic and prehistoric, and 38 areas of archaeological sensitivity.

In 2009, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic (MIDLANT) Public Works Department - Maine (PWD-ME), located at PNSY, established the Environmental Division which began managing cultural resources compliance for five installations and five naval reserve centers with support to the USS CONSTITUTION. With its vast history, recent facility modernization, and dynamic mission, PNSY requires the most extensive support for cultural

Building 99 c. 1891

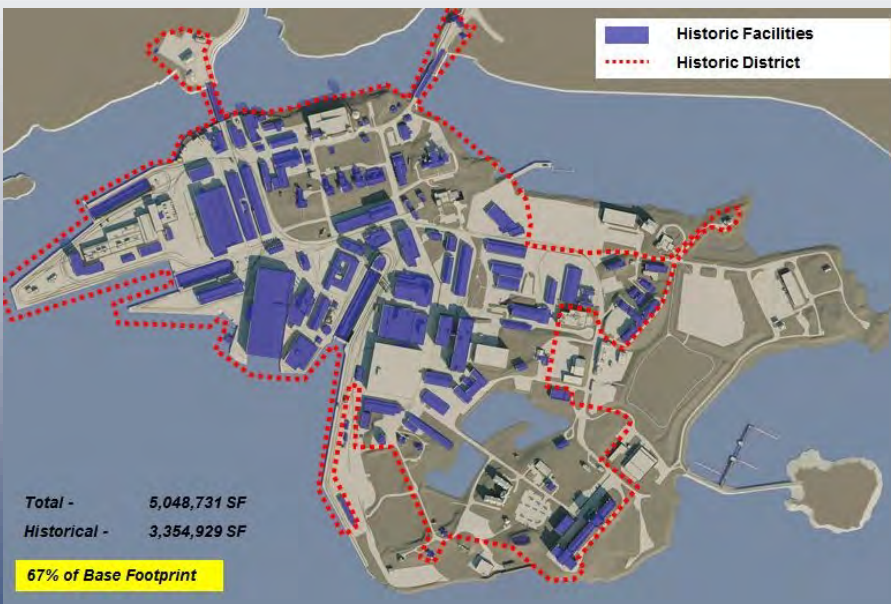


resources management within the PWD-ME Area of Responsibility.

In May 2011, the first full-time Cultural Resources Manager (CRM) joined the PWD-ME Environmental Division team. With a BA in Historic Preservation and an MS in Architectural Studies as well as years of preservation project management experience, the CRM fully meets the Secretary of the Interior's Professional Qualifications.

With a fully dedicated CRM, the PNSY cultural resources program has advanced substantially in a very short period of time. In September 2012, PNSY's first official Integrated Cultural Resources Management Plan (ICRMP) was signed by the Commanding Officer. The ICRMP is a living document and is updated at least annually with resource and contact changes. The most recent update was completed in September 2014.

Program support is received from NAVFAC MIDLANT as well as from various divisions in PWD-ME, including Environmental, Construction, Engineering, Planning, and Acquisition. Command support is provided by the Commanding Officer, Base Support Office, and Public Affairs Office, which staffs the base historian.



At PNSY, cultural resources compliance is integrated in all phases of project planning, design, and construction. From reviewing 1391s for compliance requirement inclusion to attending design charrettes, commenting on designs and plans, and conducting in-construction field visits, the CRM is fully integrated in all facets of facility construction and maintenance. By attending the Work Induction Board meetings and reviewing Work Permit

applications, the CRM gains early visibility of upcoming work, including self-help projects. Through close coordination between the CRM and the PWD-ME NEPA Compliance Manager, cultural resources compliance is fully considered in environmental planning. This internal integration bodes well for comprehensive compliance evaluation and resource management and extends to regulatory and stakeholder integration. The CRM has established an excellent collaborative working relationship with the State Historic Preservation Officer (SHPO) that includes partnership from design development through complete execution of project Memorandums of Agreement (MOAs).



Technical Merits & Impacts/Outcomes

With more than 300 years of known pre-Navy and Navy historic development at the site and a dynamic shipyard mission, proactive identification of cultural resources and development of management practices are essential. Through close coordination between the CRM, MIDLANT, and PWD-ME Planning Branch, the PNSY cultural resources program has successfully executed or completed nine studies identified in the ICRMP to further cultural resources management, with projects totaling over \$1.3 million. The goal of these efforts is cost avoidance by obtaining data and assessments to better define resources and associated requirements. To better support cultural resources management, PNSY has developed a series of tools:

* Cemetery Condition Assessment (completed 2013): The Naval Cemetery is a small burial ground with 186 stones dating to the 1820s and is a contributing resource to the Portsmouth Naval Shipyard Historic District. The assessment provided a baseline condition report of the cemetery and provided recommendations for future preservation and rehabilitation.

* Georeferencing of Historic Maps (completed 2013): Due to the urban nature of the Shipyard, understanding its historical development is important in determining the potential for intact archaeological resources underneath impervious surfaces such as building footprints and paved areas to avoid inadvertent discoveries during ground-disturbing activities. This study resulted in the creation of GIS shape files and a

Technical Merits: Building 74 Energy and Building Repairs (Under Construction)

Originally constructed in 1902 as a sawmill, Building 74 retains its primary brick rectangular form and is capped with a slate gable roof. Building 74, a contributing resource to the Portsmouth Naval Shipyard Historic District, houses the central tool shop. Designed and awarded in FY14, this \$1.65-million no adverse effect project focuses on exterior envelope maintenance, marrying sustainability with preservation needs. Utilizing the recently completed Shipyard-wide Historic Window Conditions Assessment to inform the design, the work will include sensitive wood window repairs and installation of interior storm windows. Work will also selectively repoint historic masonry, repair the slate roof, and upgrade MEP systems to save 2,422 MBTU annually. While providing project concurrence, the Deputy SHPO commented that the Section 106 letter was “An excellent submittal for an excellent project.”



South Elevation



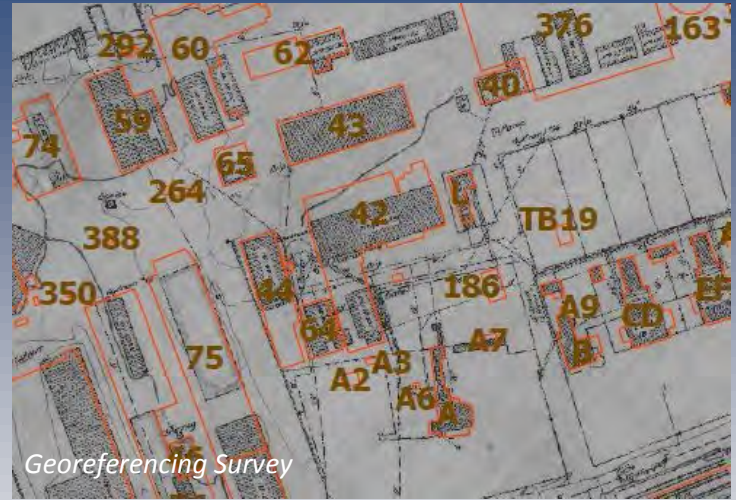
Building 74 (Right) c. 1910

PDF overlaying the modern PNSY map with 30 historic maps depicting development from 1800-present. Due to the success of this study, Hampton Roads Naval installations are initiating this same scope of work.

* Seavey's Island Literature Search (completed 2013): This narrative analyzed historic documents and maps to identify the purpose and function of Seavey's Island prior to and immediately after its acquisition by the Navy. The report identified former dwelling sites and burial grounds, providing a valuable tool to identify potential archaeological resources during project planning. This is now used to create project-specific procedures outlining the process to be followed should archaeological resources be encountered. These procedures are incorporated into the Section 106 process to avoid in-construction delays.

* Historic Landscape Survey (completed 2014): The survey identified and inventoried landscape features and groups of features (lawn spaces), circulation features (roads and sidewalks), and structures (stone and concrete walls). The survey included a National Register of Historic Places eligibility evaluation for each landscape. A total of 11 landscapes were recommended as eligible with the SHPO providing concurrence.

* Shipyard-Wide Historic Window Conditions Assessment (completed 2014): Funded through the Planning Branch and managed by the CRM, this comprehensive report documented conditions of windows in historic buildings and identified repair needs. Utilizing appropriate National Park Service Preservation



Briefs and AutoCAD drawings, recommended treatments were prescribed for each window. This proactive assessment is continuously used to guide design teams on how to properly address historic windows.

* Curation Study (ongoing): This study located and assessed PNSY's archaeological collections, included recommendations for collections' rehabilitation, and identified repositories which meet 36 CFR 79 in order to guide future collections strategies.

* Phase I Archaeological Survey (awarded Summer 2014): A Phase I archaeological survey of four archaeologically sensitive areas will be conducted. Confirmation of archaeological sensitivity will better facilitate planning efforts to meet facility requirements for the increasing PNSY workforce and will minimize impacts on archaeological resources.

Technical Merits: Building 92 Structural Shop Repairs and Energy Improvements (Under Construction)

Building 92 Production Shop is a contributing building within the Portsmouth Naval Shipyard Historic District. Constructed in 1905 with additions of a mid- and high-bay in 1939 and 1941, the 158,000-square foot (SF) brick building is located in the CIA. The \$19.87-million project repairs and modernizes the mission-essential building and will save a projected 53,000 MBTU annually. The chief cultural resources challenge was identifying a solution for replacement of nearly 30,000 SF of failing corrugated wire glass, a character defining feature no longer manufactured. After a comprehensive analysis of options, an aluminum polycarbonate curtain wall system was selected as best replicating the fenestration pattern of the original and allowing for maximum retention of historic steel framing, while being energy efficient. A section of the original corrugated wire glass will be restored, maximizing retention of historic materials.



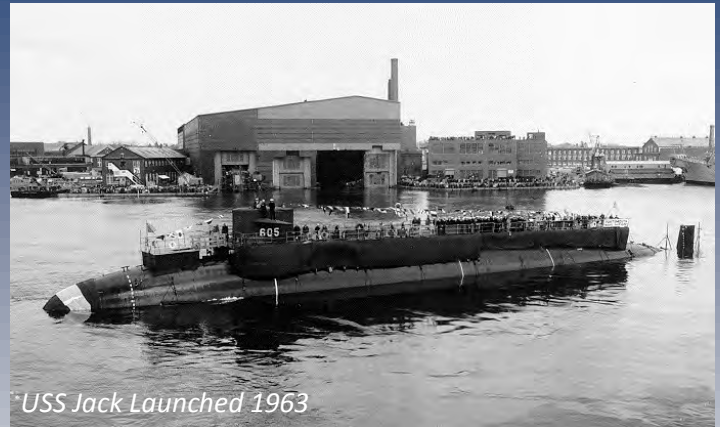
* Cultural Affiliation Study (awarded Summer 2014): In order to comply with American Indian consultation procedures, PNSY is part of a regional cultural affiliation study which will identify American Indian tribes that have ties to PNSY.

* Artifact Curation (Awarded Fall 2014): This project will rehabilitate approximately three boxes of artifacts which were identified as not being properly housed in the curation study. Artifacts will be cleaned, curated, and stored at a repository meeting 36 CFR 79.

Orientation to Mission

In FYs 13-14, PNSY was responsible for awarding or constructing more than \$127.5 million of projects on historic facilities which directly support PNSY's mission. These projects were supported by the preparation of over 200 Section 106 consultation packages facilitating compliant work on mission-critical facilities, such as Dry Dock #1, Building 92 (Structural Shops), Building 178 (Covered Submarine Component Storage), Building 184 (Deep Submergence Testing), Building 240 (Electronics Shop), and Building 29 (Fire Station) which have all been repaired and renovated over the past two years. These projects included 10 major renovation projects funded through the Energy Program which has successfully enabled adaptive reuse of several historic facilities while meeting energy efficiency requirements by reducing usage over 114,000 MBTUs annually.

Working closely with the SHPO and the Navy design



USS Jack Launched 1963

team, PNSY successfully avoided an adverse effect on eight of the 10 energy projects, saving the Navy nearly \$1 million in avoided NEPA and mitigation costs and significantly shortening the project timelines between design and award. While the Buildings 178 and 92 energy projects ultimately resulted in an adverse effect on historic resources due to the unavailability of corrugated wire glass, the substantial effort undertaken to minimize the adverse effect has resulted in these buildings remaining contributing resources within the historic district while meeting the critical mission and energy efficiency goals.

Transferability

Stemming from the efforts to identify a suitable corrugated wire glass replacement material for Buildings 178 and 92 and a subsequent presentation at the 2012 DoD Historic Buildings Workshop, PNSY participat-

Technical Merits: Building 178 Structural Repairs and Energy Improvements (Under Construction)

Building 178, constructed in 1939-1944 and 1960-1961 as a submarine assembly and building ways facility, is a contributing resource to the Portsmouth Naval Shipyard Historic District. The approximately 170,000 SF building is located in the CIA and was previously seasonally condemned due to snow loads and sections of roof failure. The \$42.6-million project rehabilitates the exterior envelope and reconfigures the interior to adaptively reuse the buildingways as a needed submarine component storage facility. Use of sensitively placed renewable energy technologies such as photovoltaic panels and solar walls as well as incorporation of energy efficient insulated corrugated metal panel siding and a new curtain wall system will save a projected 25,000 MBTU annually while maintaining the building's historic character.



Before



Construction Photo

ed as a case study for the 20th Century Materials and Suitable Substitutes: Windows Legacy Project. WWII era buildings are fast becoming the largest portion of the DoD building portfolio, bringing their own unique preservation challenges. This widely applicable guide will identify repair and sensitive replacement options for windows in the most common 20th century DoD buildings.

Due to the success of the PNSY historic map georeferencing project as a program management tool, other installations including those in Hampton Roads, VA are beginning their own georeferencing projects. Furthermore, in an effort to make this information readily available to planners and design staff, the Georeadiness Center plans to create standard, print-ready maps overlaying current configurations over historic maps and to publish these through the GRX portal.

An innovative procedure outlining protocols for archaeological monitoring, developed as part of the PNSY ICRMP, has been a critical tool in addressing the unique challenges posed by urban archaeology. This has since been integrated into other Maine ICRMPs and has served as a template for other installations in the MIDLANT Area of Responsibility.

Environmental constraints at PNSY have prompted cross-program collaboration to enable adaptive reuse of historic properties. In FYs 13-14, some highly successful examples include coordination with the Envi-



Building 184 before Renovations

ronmental Restoration program. Soils within a brick-lined tank vault were removed from Building 184, the 1943 Galvanizing Plant, facilitating reuse of this historic building in an FY14 energy project. The Navy consulted with the SHPO on the remediation project and documented the exposed tank vault with large format HABS level photography. Re-use of this facility with no land use controls will allow the Deep Submergence Team to utilize the renovated facility.

Stakeholder Interaction

Prior to the establishment of PWD-ME Environmental Division and a dedicated, qualified CRM position in 2011, cultural resources compliance was uniquely challenging at PNSY, as requirements could not be comprehensively managed for the growing investment in renovation and maintenance of historically significant facilities. Since 2011, effective partnerships have been established with internal and external stakeholders to proactively manage program requirements while supporting the mission.

One of the most beneficial accomplishments during FYs 13-14 has been the establishment and continuation of an excellent relationship with the SHPO. At least once per month, the CRM meets with the Deputy SHPO in Augusta, ME. At least annually, the Deputy SHPO travels to PNSY to tour upcoming project sites and in-construction projects. The Shipyard Commander met with the SHPO during his most recent visit to PNSY in May 2014, affirming senior leadership's commitment to cultural resources compliance. Through these meetings, PNSY has successfully integrated SHPO input considerations into the design process, thereby reducing consultation timelines and facilitating compliance in a more expeditious manner than the 30 days stipulated by law. During the End of Year (EOY) contract award rush when 15 consultation packages were released within two weeks in August



USS Sea Dragon Launching from Building 178 in 1959

2014, consultation timeframes averaged 9.5 calendar days from submission of the package to receipt of concurrence, with the shortest consultation period being one day and the longest being 15 days. These shortened consultation timelines enabled additional projects to be awarded by EOY, directly supporting PNSY's mission. This collaborative effort has also been beneficial for a myriad of emergency repair actions, including those for utilities which directly impact PNSY's ability to conduct its mission. While some informal agreements have been reached with the SHPO, PNSY is currently in the process of developing a Programmatic Agreement to further streamline consultation practices.

Attributed to the trust between PNSY and SHPO, emergent and inadvertent discovery consultations were completed electronically within a matter of hours minimizing in-construction project delays, saving the Navy contract costs. For example, when an unanticipated concrete vault was discovered during work within Building 92, the Navy electronically consulted with the SHPO on the discovery and proposed plan forward. The SHPO provided concurrence in only 90 minutes, resulting in no delay to construction.

In addition, PNSY continues to foster strong relationships with the five federally recognized tribes in Maine as well as with the Portsmouth Historical Society, the most active of the six interested parties. In conjunction with an ongoing cultural affiliation study, PNSY is cultivating a program which will better define tribal areas of interest and outline preferred consultation procedures. Tribes are invited to review all draft work plans and reports for archaeological investigations allowing for early integration of specific research areas and approval of methodologies, ensuring concurrence with final findings.

In FY13, the CRM presented the cultural resources program requirements at the PWD-ME All Hands Meeting to specifically educate the workforce of planners, architects, engineers, contract specialists, and shop personnel about PNSY's historic resources and associated stewardship requirements. In addition, all civilian employees receive training on the Shipyard's history during orientation. Through presentations like



these and those provided to the Occupational Safety, Health, and Environment (OSHE) Council on the cultural resources program, PNSY has strived to create a culture that takes pride in our collective past and understands the federal laws associated with cultural resources management. While public access to PNSY is restricted, special tours highlighting its history are often arranged through the Public Affairs Office. As part of the community outreach program, the CRM offered a public presentation on the Building 178 Energy Project to a crowd assembled at Strawberry Banke Museum (SBM) in January 2014. Located directly across the Piscataqua River in Portsmouth, N.H., and with a view of ongoing construction at Building 178, SBM was an interested party during the Section 106 consultation and enthusiastically received this presentation.

During the past two years, PNSY has made a concerted effort to educate the workforce about its historic significance by celebrating anniversaries of milestones in its history. Momentous events such as the 70th anniversary of the launching of four submarines on the same day during WWII have been marked with All Hands e-mails, PNSY Periscope magazine articles, banners at the main gate, and production of commemorative stickers for hard hats or toolboxes. Taking pride in its cultural resources significance and embracing its critical mission exemplify the essence of PNSY. After all, the motto of Portsmouth Naval Shipyard is its creed: "Proud of our Past. Ready for the Future."

PORTSMOUTH NAVAL SHIPYARD
ESTAB. 1800



PROUD OF OUR PAST. READY FOR THE FUTURE.