NATIONAL ENDOWMENT FOR THE
Humanities

DIVISION OF **PRESERVATION AND ACCESS**

Sustaining Cultural Heritage Collections

Fiscal Year 2010 Grants

PLANNING GRANTS

Abbe Museum, Bar Harbor, ME Outright: $40,000
Planning for sustainable environmental conditions to protect the museum's ethnographic and archaeological collections, which focus on the history of Native Americans in Maine. A consulting engineer and a conservator will work with the museum's staff to re-evaluate target environmental conditions for collection spaces and determine if the current climate control system can be re-engineered to function more effectively and economically.

Adler Planetarium and Astronomy Museum, Chicago, IL Outright: $40,000
A planning project leading to recommendations for improving the storage of a collection of artifacts related to the history of astronomy, maritime history, and history of science. Coordinating a team that will consist of a conservator, preservation environment consultant, engineer, and collections manager, the museum will address storage conditions based upon issues of overcrowding, difficult access, lack of emergency egress, fire and smoke hazards, and poor environmental conditions due to aging mechanical systems. The team will analyze environmental monitoring data, space usage, and the building's envelope and system's performance and create a plan for a new curatorial zone with recommendations for climate management systems and the types and quantities of storage equipment to accommodate the collections.

American Precision Museum, Windsor, VT Outright: $25,348
A planning project to explore a combination of passive and mechanized methods for managing environmental conditions in a National Landmark museum building that houses a collection of historic machine tools, documenting the history of precision manufacturing in the United States. A team of museum staff, trustees, a conservator, and a preservation architect will work with a civil and a mechanical engineer to survey the site and study existing information about the museum's building and collections. They will draft architectural and engineering strategies to address concerns of high humidity in the building.

City of Ontario, Ontario, CA Outright: $40,000
A planning project leading to sustainable strategies for preserving a collection of historical documents, photographs, paintings, drawings, and sculpture documenting the material and social history of Southern California. The preservation plan will focus on collaboratively developed strategies to balance collections needs and vulnerabilities with the performance capacity of the museum's historic building envelope. A team of engineers, conservators, curators, and architects will determine reasonably achievable targets for collections environments, examine the museum's current building and a second 1950s era building designated for potential use, and explore passive and active measures the museum might implement in these spaces to mitigate risks to collections.

Columbia University, New York, NY Outright: $35,900

A planning project to analyze and recommend improvements to environmental conditions in the rare book and special collections area of the Union Theological Seminary's Burke Library, a repository documenting the history of Christianity and Western religions from the medieval era to the present. An interdisciplinary team will undertake a comprehensive study of the temperature and relative humidity conditions in the 100-year old Burke Library "Brown Tower" building and the various influences of building design and structure, existing mechanical systems, and maintenance practices. The resulting report will contain recommendations for achievable improvements to interior conditions that balance the needs of the historic building and the collections, allow for seasonal adjustments, and consider energy consumption.

Folger Shakespeare Library, Washington, DC Outright: $40,000

A planning project to develop sustainable environmental controls for one of the leading repositories of materials on Shakespeare and early modern European history and culture. Having determined through environmental monitoring data that its air handling systems are not meeting temperature and relative humidity targets, the Folger will consult with an interdisciplinary team of engineers, facilities management specialists, and preservation experts to assess the impact of optimizing the performance of several air handling units. If optimization proves effective, the library can apply this process to the building's heating, ventilating, and air conditioning system more generally. The goal is to provide a better preservation environment for collections by enhancing the performance of existing mechanical systems.

Frelinghuysen Morris Foundation, Lenox, MA Outright: $36,265

Planning for sustainable environmental conditions to preserve the Frelinghuysen Morris House and Studio and its collection of modernist art, sculpture, film and photographs, furniture, letters, and other materials from the estate of artists George L. K. Morris and Suzy Frelinghuysen. A climate control system is maintaining temperature and relative humidity at levels normally recommended for collections, but there are signs that these conditions may be harming the structure. A collections conservator, architect and engineer will work with the museum's staff to analyze environmental monitoring data, the nature of the building envelope, the collections, and the local climate and to develop a pragmatic approach to managing environmental conditions that will protect both the collections and the structure.

Historic New England, Haverhill, MA Outright: $40,000

Planning for sustainable environmental conditions in a centralized storage facility that houses nearly half of Historic New England's 110,000-item collection of decorative arts and household furnishings. A team of conservators, building engineers, architects, and museum staff will develop a master plan for upgrading building systems that control the environment in which collections are stored. The team will consider humidistatic heating, conversion of the heating system from unregulated fuel oil to regulated natural gas, a more efficient distribution system for heating, improved insulation of the structure, and alternative energy sources that could be more cost effective and reduce the museum's carbon footprint.

Litchfield Historical Society, Litchfield, CT Outright: $39,500

Planning for sustainable environmental conditions in four buildings that house the Litchfield Historical Society's collections, which include textiles; drawings and watercolors; charts and maps; locally made furniture; household and decorative arts; paintings and portrait miniatures. An interdisciplinary team of experts consisting of an architect, engineer, conservator, and HVAC contractor will review each building's interior, exterior, HVAC systems, and current collections environment and provide a written report with recommendations for short-term and long-term improvements. The consultants will work with the staff to explore passive alternatives to the society's current use of active mechanized systems for managing collection environments.

Preservation Society of Newport County, Newport, RI Outright: $27,848
A planning project to explore the use of geothermal energy to improve interior environmental conditions for a collection of Gilded Age art and furnishings located in the Breakers, the National Historic Landmark home of Cornelius Vanderbilt II. Facilities, conservation, and curatorial staff will collaborate with an engineer, architect, geologist, and a drilling team to determine the feasibility of using water from a bedrock aquifer on the site as an energy source for seasonal heating, cooling, and dehumidification of the building. This project explores the potential of geothermal energy to lower relative humidity and temperature in the building, thereby increasing energy efficiency and reducing risks to collections.

Samish Indian Nation, Anacortes, WA Outright: $5,957
A planning project to improve environmental conditions at the Samish Archives and Cultural Resource Department, which holds the historical and legal records of the tribe. A consultant will assess the facility, evaluate current conditions of the building and the archival collections which it houses, and prepare a report with recommendations for re-design of the facility and procedural improvements to preserve the collection for the benefit of the tribe and community.

University of Delaware, Newark, DE Outright: $39,970
Planning for the reallocation of space to reduce energy consumption and improve environmental conditions in the care, storage, and preservation of a diverse collection of paintings, photographs, and art objects in two University Art Museum buildings. Experts in environmental management and collections conservation will work with an interdisciplinary team of museum staff, students, and faculty to analyze climate control systems, building envelopes, and collections storage needs and prepare a space allocation plan for the collections. By engaging students in the long-term planning and care of collections, the project will also help train the next generation of museum and conservation professionals in sustainable preservation practices.

University of Illinois, Urbana, Champaign, IL Outright: $13,720
A planning project to analyze the existing climate control system for the University of Illinois Archives Research Center, which holds the university's administrative and historical records; the Student Life and Culture Archival Collection on the history of national fraternities and sororities; and the Sousa Archives and Center for American Music, the largest archive of John Philip Sousa's original compositions and arrangements. An interdisciplinary team will evaluate the performance characteristics of the center's storage vault and its systems and develop a plan for improved operational effectiveness and increased energy efficiency.

IMPLEMENTATION GRANTS

Frick Collection, New York, NY Outright: $99,000
An implementation project to create a preservation environment for a collection of Renaissance Limoges painted enamels, considered one of the most important collections of its kind in the world. In 1935, working at a time when there was little scientific understanding of preservation issues relating to enamels, John Russell Pope, the eminent architect commissioned with turning the Frick mansion on 5th Avenue in New York City into a museum, designed elaborate bronze and glass historic display cases and placed them on exterior walls with no insulation or moisture barriers. A team of conservators, curators, designers, and preservation architects will retrofit the cases, insulating them to create a safe preservation environment and prevent further deterioration of the enamels, while retaining the historic facades of the original Pope cases and maintaining the integrity of the cases within the interior of the historic house.

Friends of the Middle Border, Inc., Mitchell, SD Outright: $11,054

An implementation project to modify environmental conditions in the Dakota Discovery Museum housing a collection of approximately 35,000 art and artifacts that document the history of North and South Dakota. The project will upgrade the controls of the museum's existing heating, ventilating, and air conditioning system; install improved steam humidification for its lower level storage area; adjust boiler intake and exhaust pipes; and relocate a thermostat and humidistat to an exhibit area. These modifications will increase cost efficiency and help ensure the preservation of the collections in the museum's main building.

Genesee Country Village and Museum, Mumford, NY Outright: $400,000

An implementation project to create an energy-efficient storage facility for the history and art collections of the Genesee Country Village and Museum Art Gallery. As part of the initial phase of a major renovation project, construction and facilities managers and an independent consulting conservator and an engineer will work with the museum's staff to convert two galleries in the building's west wing into a collections storage space. The new storage facility will rely primarily on passive methods of environmental control, with insulated building walls supplemented with simple, low-energy equipment to maintain targeted environmental conditions. Insulation will not be provided under the floor to permit the earth beneath the building to be utilized as a heat sink, assisting summer cooling. Mobile storage systems will economize space.

Massachusetts Historical Society, Boston, MA Outright: $351,784

An implementation project to install an updated security system in a research library holding extensive collections of American history materials. Key elements of the project include a new digital security network infrastructure, an upgrade from passive analog surveillance to dynamic analytic driven digital surveillance, improved perimeter surveillance and lighting, expansion of the access control system, a new intrusion alarm system and devices, and upgrades to life safety and fire detection. The project will ensure that the Society's National Historic Landmark building and unique collections will be protected with an appropriate security architecture.

Museum of the Shenandoah Valley, Winchester, VA Outright: $400,000

An implementation project to improve environmental conditions, fire protection, and lighting in the Glen Burnie Historic House, which exhibits paintings, furniture, and decorative arts associated with the Shenandoah Valley and the families that lived in Glen Burnie from the eighteenth century to the early 1990s. The project employs sustainable preservation strategies by combining passive and active measures to improve environmental conditions for the collections. By directing moisture away from the building, installing storm windows to reduce thermal gains, and using window shades and films to manage light levels, the museum will be able to install a simplified mechanical system that uses less energy and is more economical to operate and maintain.

Newark Museum, Newark, NJ Outright: $175,000

Installation of a fire alarm system in the museum's North Wing, which contains permanent galleries for American and Asian art, as well as storage for metals, jewelry, works of art on paper, furniture, and textiles. This new "addressable" fire alarm system will be able to pinpoint the location of an alert and will be connected to a new central monitoring station.

Public Museum of West Michigan, Grand Rapids, MI Outright: $222,390
An implementation project to install new automated control equipment for the heating, ventilating, and air conditioning system in a museum focusing on the history and culture of Grand Rapids and the surrounding region. The museum's current HVAC system is controlled by a proprietary system that has been steadily failing, with replacement parts no longer available from the manufacturer. Following recommendations of a recent preservation assessment and with ongoing involvement of preservation, engineering, and facilities management specialists, the museum will install a new open source control system, providing more effective and durable climate regulation, significant energy savings, and a reduction in the building's carbon footprint.

University of Chicago, Chicago, IL Outright: $306,507
The purchase of storage cabinetry and supplies to house 10,433 metal objects from the Near East dating from the early Bronze Age through the Islamic period. The Oriental Institute Museum's collection of ancient metal artifacts will be housed in modern, museum-quality cabinets, and acidic packing materials will be replaced with new, acid-free substitutes.

University of Michigan, Ann Arbor, MI Outright: $350,000
An implementation project to stabilize environmental conditions in the Power House at the Henry Ford Estate-Fair Lane, home of the American industrialist, Henry Ford and his family. The Power House, the site of the water-powered electrical system and other innovative mechanical systems designed by Ford to serve the needs of the entire estate, contains important archival and artifact collections. A team of engineers, architects, curators, and archivists will focus on mitigating winter climate conditions through the installation of a new heating system designed to reduce the most immediate risks to the collections. Future plans include regulation of summer temperature and humidity levels with an emphasis on the continued exploration of alternative climate management systems at the historic site.

University of North Carolina, Chapel Hill, NC Outright: $400,000
An implementation project to install a fire suppression system in the University's Louis Round Wilson Special Collections Library, a repository containing significant collections on Southern history and culture. A new wet-pipe sprinkler system will be installed in the library's stack areas for five special collections.

Fiscal Year 2011 Grants

PLANNING GRANTS

Museum of New Mexico Foundation, Santa Fe, NM Outright: $40,000
A planning project to explore energy-efficient strategies for the care of collections at two museums within the Museum of New Mexico system: the Museum of International Folk Art, which holds one of the largest collections of folk art in the world, and the New Mexico Museum of Art, with a collection of late 19th- and 20th-century art of the Southwest. An interdisciplinary team including a lighting specialist, electrician, engineer, environmental preservation specialist, collections staff, and conservators will examine options for improving lighting for both museums and upgrading climate management systems at the New Mexico Museum of Art. The project builds on previous conservation assessments and fits within a statewide effort to evaluate and manage energy consumption.

Stanford University, Stanford, CA Outright: $39,508

A planning project to identify ways to create and maintain a sustainable preservation environment for collections in the Stanford Archive of Recorded Sound. The archive possesses over 350,000 music and spoken sound items with strengths in jazz, opera, symphonic chamber music, and oral histories. The project will involve an interdisciplinary team of library staff with expertise in preserving audio collections, campus staff responsible for facilities planning and sustainability, and external consultants with experience in HVAC systems analysis, sustainable preservation environments for cultural collections, and preservation storage for audio collections. After analyzing the collections, local climate, the building envelope, the performance of the current HVAC system, and storage methods, the team will identify seasonal relative humidity and temperature targets, outline a plan for optimization or replacement of the HVAC system, as well as any necessary renovations, and suggest improvements for the storage of the archive's large grooved disc collection.

Town of Winchester, Winchester, MA Outright: $35,000

Planning for collaborative preservation of the Town of Winchester's historical collections of maps, photographs, publications, artifacts, and legal and genealogical records. The project builds on the work of the "Collaborative for Documenting Winchester's History," which is coordinating efforts of town agencies and the Winchester Historical Society to preserve and provide access to historical materials. A team of experts in the fields of conservation, architecture, archival practice, and engineering would work with the Town of Winchester's Head of Engineering, Town Clerk, Historical Commission, and the Executive Director of the Historical Society to develop plans and specifications for a storage facility on the ground floor of the Sanborn House, a National Register building currently being restored as a cultural and historical center. The planning process would focus on a review of collections and calculation of their storage needs, an analysis of environmental data for the Sanborn House, and a review of the building envelope and its capacity for employing passive and active measures to provide for an energy and cost-efficient storage environment.

IMPLEMENTATION GRANTS

Harriet Beecher Stowe Center, Hartford, CT Outright: $235,000
Matching: $100,000

An implementation project to improve conditions in the 1871 Harriet Beecher Stowe House where household furnishings, paintings, drawings, and decorative art items created or acquired by Stowe are exhibited and stored. The museum is implementing a comprehensive and integrated plan to protect the collections and the historic building that includes the installation of a water mist fire protection system as well as activities designed to improve the environment for collections. The project employs a number of sustainable strategies, including specifying realistic and achievable temperature and relative humidity conditions, seasonally adjusted; controlling moisture at its source; making improvements to the building envelope for thermal energy and moisture vapor management; reducing solar heat gain and visible and ultraviolet light through windows; reducing energy consumption and waste heat from interpretive lighting; right-sizing high efficiency equipment for heating and cooling, and separating high-efficiency equipment for dehumidification (for relative humidity control during seasons when cooling is not required); using automatic humidistatic control of the heating system in winter to depress temperature and elevate relative humidity without resorting to humidification; and using simple, easily maintained systems and controls.

Litchfield Historical Society, Litchfield, CT Outright: $320,000

An implementation project to improve environmental conditions in the society's 1901 Noyes building, the primary exhibition space for fine and decorative arts, furniture, textiles, and other historical artifacts that document the history of Litchfield. The museum is implementing the recommendations of an interdisciplinary team that included the museum's staff, an engineer, an architect, and a conservator, whose work was supported by an NEH planning grant awarded in 2010. With the goal of creating a preservation environment that provides the best possible conditions for the collections with the least possible consumption of energy, the museum is adopting a combination of passive and active measures to manage the collection environment. Degraded brick and masonry and defective gutters and leaders will be repaired to tighten the building envelope and minimize air and water penetration. The existing HVAC system will be repaired and upgraded to more efficiently maintain acceptable ranges of temperature and relative humidity that are seasonally adjusted. In addition, an energy management system and energy-efficient LED lighting will be installed.

Museo de Arte de Ponce, Ponce, PR Outright: $149,800

An implementation project involving the purchase and installation of high-density mobile storage equipment for the Museum's collection of 1,259 three-dimensional objects, which include 19th-century Western sculpture, pre-Columbian Caribbean cultural artifacts, and modern Puerto Rican folk art. A major renovation and expansion in 2010 provided the Museum with dedicated storage space for its object holdings but did not permit the acquisition of appropriate shelving. Based on recommendations from a comprehensive strategic planning process, including an assessment of conservation needs and natural disaster risks, the Museum determined that high-density mobile shelving would offer optimum protection for its internationally significant artifacts. The space and equipment will be part of the Museum's publicly visible storage areas, allowing visitors an inside look at the means and requirements of long-term care for museum collections.

Museum of Northern Arizona, Flagstaff, AZ Outright: $139,858

An implementation project involving the purchase of storage furniture and supplies to consolidate and rehouse 3,566 linear feet of anthropological archives currently held in several locations on the museum's campus. Founded in 1928, the museum is the regional center for prehistoric and ethnographic collections that document past and living cultures of the Colorado Plateau. Currently housed in acidic or unstable containers, the archival collection includes journals, letters, notebooks, sketchbooks, artist studies, legal documents, cartographic records, photographs, and audiovisual materials. The collections will be moved and rehoused in the Easton Collection Center, which incorporated green building strategies in its design and construction, achieving LEED certification at the Platinum level.

National Czech and Slovak Museum and Library, Cedar Rapids, IA

Outright: $175,000

The purchase of storage furniture and environmental and light monitoring equipment to preserve library and artifact collections on the history and culture of Czech and Slovak immigrants and their descendants in the United States. Following a disastrous flood in 2008, portions of the institution's collections that could be salvaged have been stored in temporary quarters, awaiting the rehabilitation, relocation (to higher ground), and expansion of its building. The project will enable the applicant to take maximum cost-effective advantage of this improved space through the use of mobile shelving equipment and will result in improved environmental monitoring and pest management systems.

Rhode Island Historical Society, Providence, RI Outright: $300,000

An implementation project to improve environmental conditions and protect collections held in the society's library. The building was constructed in 1874 and adapted for library use in 1928. It houses 600,000 collections including printed books and ephemera, manuscripts, photographs, negatives, maps, sound recordings, video recordings, and such special collections as microfilm and motion-picture film that document the history of Rhode Island from pre-European contact to the present. The building's envelope will be repaired to prevent moisture infiltration, security and fire protection systems will be upgraded, and an environmental and humidity control system will be installed that utilizes geothermal and solar components to improve efficiencies and long-term sustainability. Some collections will also be relocated within the library to take advantage of variations in conditions from floor to floor identified through years of environmental monitoring and analysis. Film collections will move to a floor that is naturally cooler and drier. The library anticipates that this could help reduce energy costs by placing less demand on the HVAC system.

Springfield Library and Museums Association, Springfield, MA

Outright: $320,000

An implementation project to improve environmental conditions in the George Walter Vincent Smith Art Museum. Smith, who made his fortune in the carriage manufacturing business in New York City during the mid to late 19th century, amassed a collection of some 6,000 items, including Japanese armor, Tiffany glass, Chinese cloisonné, Middle Eastern textiles and carpets, and 19th-century American paintings. This museum, one of five museums managed by the Springfield Association, was built in 1896 to house Smith's collection. An interdisciplinary team has developed a preservation plan that balances the requirements of the collections and the historic building and aims to temper the large seasonal changes in relative humidity and to improve air filtration.

University of Texas, Arlington, Arlington, TX Outright: $300,000

Construction of a cold storage vault for ca. 5 million photographic negatives held by the library's special collections department providing a visual record of the history and culture of Texas from the late 19th century to the present. The applicant engaged in a strategic planning process, assisted by consultants in photo conservation and building engineering. They determined that long-term maintenance in cold storage presented the most cost-effective means of preservation, in comparison with other alternatives such as mass digitization. The resulting plans for a new preservation area, comprising an office area, a "cool" staging room, and a cold compartment, will extend the life of the negatives while meeting state and federal mandates for energy consumption and environmental sustainability.

Wadsworth Atheneum, Hartford, CT Outright: $325,000

An implementation project to improve storage for the museum's American and European furniture, metalwork, ceramics, glass, and sculpture. These 12,600 objects would be rehoused in new storage furniture in the basement of the Morgan building. This project represents one phase of a strategic plan to improve the care of collections by removing collections from spaces with a high risk of water infiltration, relocating them from upper floor galleries allowing former exhibition spaces to be reclaimed, and consolidating holdings into one zone organized by type and environmental needs. The museum would also improve security, install new shelving and storage systems to maximize space use; create well insulated new spaces with efficient and sustainable climate control systems; and create work spaces for staff and scholars.

Fiscal Year 2012 Grants

PLANNING GRANTS

Albuquerque Museum Foundation, Albuquerque, NM Outright: $18,378
A planning project for improved environmental conditions and storage for a diverse collection of 25,000 Native American, Spanish Colonial, and Anglo-American objects and documents relating to the history and art of the Rio Grande Valley and the Albuquerque area. An interdisciplinary team of consultants will make recommendations for improving the HVAC systems in the new and existing storage areas and produce architectural drawings for a new storage configuration.

Carnegie Museum of Natural History, Pittsburgh, PA Outright: $39,521
A planning project for improved storage and environmental controls in the Carnegie Museum of Natural History's annex building, which houses a large anthropological and ethnological collection representing North, Central, and South American cultures, as well as those of Africa, Asia, and Oceania. A team consisting of a conservator, facilities personnel, mechanical and structural engineers, and an architect, working in consultation with storage equipment advisors, will assess ways to consolidate collections and make best use of space. The team will explore sustainable and energy-efficient solutions that are appropriate for these collections.

Colonial Williamsburg, Williamsburg, VA Outright: $50,000
A planning project to evaluate climate control and lighting systems in the DeWitt Wallace Decorative Arts Museum and the Abby Aldrich Rockefeller Folk Art Museum, which house collections of fine and decorative art objects made or used in America or Great Britain between 1680 and 1830, and folk art holdings of paintings, sculpture, carvings, textiles, and pottery crafted by minimally trained and untrained American artists between the early 18th century and the present. The aim of the project is to identify the best methods to meet preservation goals, while doing so in energy-efficient and cost-effective ways. The planning team of conservators, engineers, architects, and facilities staff from the museum, working with a consulting engineering firm, would evaluate the condition and performance of mechanical equipment and the chiller plant; review environmental targets for relative humidity and temperature; explore optimum control strategies and programming for the building automation system (BAS) that would maintain museum environmental conditions with minimal energy use; identify options for upgrading lighting in ways that would reduce energy use and light exposure to collections; and develop a master plan to guide system upgrades and replacements. The project's budget includes $10,000 to implement one or more recommendations made by the planning team, and this might include programming changes to BAS sequences, commissioning or other quick payback measures identified during the study. The museum's staff would measure and monitor results of this work so that it can inform the next steps.

National Society of Colonial Dames of America, Washington, DC
Outright: $37,965
Planning for sustainable environmental conditions to preserve humanities collections in Dumbarton House, a Federal period historic house museum with holdings of furniture, fine and decorative arts, household goods, clothing and textiles, as well as books, manuscripts, and maps that document the history of Georgetown and Washington, D.C., in the early 1800s. The planning team would include a preservation architect, conservator, museum sustainability consultant, engineer, and a representative from the museum's HVAC company, along with the museum's director, curator, facilities and security manager, and a trustee. The team would review environmental conditions records, and all assessments, and then explore and recommend a holistic approach to improving the care of collections while reducing energy consumption. Passive measures that combine thoughtful space use, buffering, and changing human practices would be fully explored. The project's budget includes $10,000 to implement one or more of the

planning team's recommendations, which might include energy and staff audits and geothermal assessment.

Northern Kentucky University, Highland Heights, KY Outright: $50,000
A planning project for a sustainable preservation environment in the W. Frank Steely Library, which houses the university's archives and special collections that focus on the history and culture of northern Kentucky. A planning team consisting of staff from the university library and archives, the university architect, and the facilities manager as well as engineering consultants and experts on sustainable preservation environments would evaluate existing climate data and performance characteristics and operational practices for the library's HVAC system and develop a plan with specific steps for improved operation, effectiveness, and energy efficiency. It is anticipated that the $10,000 budgeted to implement recommendations made by the planning team might be used to improve the HVAC system's capacity for dehumidification.

Swarthmore College, Swarthmore, PA Outright: $32,000
A planning project to evaluate environmental conditions and climate control systems and to develop recommendations for sustainable preservation strategies for the college's special collections: the Friends Historical Library, the Peace Collection, and the McCabe Library Rare Book Room. The library's staff will work with consultants who specialize in managing collection environments in sustainable ways. The planning team will investigate the design, controls, function and performance of the mechanical system serving the special collections and develop a report that characterizes the preservation quality of collection spaces, assesses the capabilities of the mechanical system, calculates energy usage, and recommends both operational and capital improvements designed to improve preservation quality and reduce energy use.

University of Minnesota, Minneapolis, MN Outright: $31,068
A planning grant to develop options for improved storage and environmental conditions for 12,950 historic textiles and pieces of apparel from around the world, which are housed in the university's Goldstein Museum of Design. The museum's staff, an environmental engineer, a textile conservator, and the university's facilities manager will evaluate the museum's mechanical systems and the set points for relative humidity and temperature, and they will explore ways to achieve preservation goals while reducing the museum's carbon footprint. The team will also develop a plan for renovating the storage space and rehousing the collections.

Wilderstein Preservation, Rhinebeck, NY Outright: $50,000
A planning project to identify ways to create and maintain sustainable environmental conditions in Wilderstein, a historic house museum with collections of fine and decorative arts, manuscript materials, books, photographs, maps, deeds, sheet music, and architectural and landscape drawings that were acquired and preserved by four generations of the Suckley family who lived in the house from 1852 to 1991. A team composed of museum staff and trustees, with consulting conservators and an architect/engineer, will analyze climate data recorded over a two-year period and examine the building's structure and systems, and conditions in which collections are stored and exhibited. The team will investigate the environmental management features of the original architecture, especially those related to ventilation and control of solar gain, and consider natural variations in conditions throughout the mansion to identify spaces best suited for collections. A phased plan would be developed for improving the environment for collections in ways that balance the needs of the collections and the historic building.

IMPLEMENTATION GRANTS

Baltimore Museum of Art, Baltimore, MD Outright: $300,000
An implementation project to install a new building automation system that would enable more effective control and continuous monitoring of environmental conditions for the protection of the museum's collection of 90,000 works of art. The collection includes significant holdings of European and American works on paper, African art, Asian art, American fine and decorative arts, and European and American modern and contemporary works.

Denver Museum of Nature and Science, Denver, CO Outright: $300,000
An implementation project to purchase up to 135 custom-designed cabinets to house a portion of the 21,996 Native American cultural artifacts in the American Ethnology Collection, which would be relocated to a new state-of-the-art Rocky Mountain Science Collections Center in late 2013.

Folger Shakespeare Library, Washington, DC Outright: $350,000
An implementation project to improve environmental conditions in the library's storage facility and reading room containing 256,000 books; 75,000 rare manuscripts; 250,000 playbills; 50,000 prints, photographs and drawings; and audiovisual materials, all of which pertain to the literature, history, and art of Shakespeare and the Elizabethan period. This project is based on an extensive planning phase, during which the mechanical systems and environmental conditions were thoroughly evaluated. The project will involve upgrades to air handlers serving core collection spaces and operational changes. Implementing overnight shut-downs of air handlers serving well-insulated underground vaults, correcting the year-round sub-cool and reheat that needlessly cooled already-dry winter air, keeping lower winter temperatures in the underground vaults, and taking advantage of the heat recovery possible from the new booster chiller will reduce energy consumption while ensuring that preservation goals are met.

Juneau-Douglas City Museum, Juneau, AK Outright: $275,000
An implementation project to install a heating, humidity, and ventilation system to improve the preservation environment for a collection of art, artifacts, and historic documents and photographs relating to the history of the city of Juneau. The existing oil-fired boiler and hydronic heating system will be replaced by a displacement ventilation system with an all-electric, resistance-heat baseboard system comprised of two separately controlled humidity zones. This system was chosen because it is less intrusive in the historic building and easier to maintain, and it uses green, renewable hydro-power electrical energy. The displacement system has been designed to allow for the addition of a cooling coil in the future, if ongoing environmental monitoring data demonstrates that this is necessary.

Moravian Archives, Bethlehem, PA Outright: $148,085
An implementation project involving the purchase of storage furniture, the replacement of lighting fixtures, and the rehousing of more than 100 art works and 450 ethnographic objects and textiles documenting the history of the Moravian Church in North America from the 18th century to the present.

Minneapolis Institute of Arts, Minneapolis, MN Outright: $60,415
An implementation project to upgrade the current lighting system by replacing halogen with LED bulbs in galleries that exhibit light-sensitive works, including prints and drawings, textiles, African, Asian, and Native American art.

State of Georgia, Georgia State Archives, Morrow, GA Outright: $122,147

An implementation project to upgrade environmental control and lighting systems to improve energy efficiency and reduce costs, while improving preservation environments for government records and manuscripts documenting nearly three centuries of Georgia's history and culture. The archives' environmental management team has undertaken a systematic study of sustainable practices, conducted extensive environmental monitoring, and carried out a series of mechanical tests, shutdowns, and variations in temperature set points. The team's work culminated in an "archives energy savings plan" that balances cost savings with the preservation needs of the archival collections. This project would enable the archives to further automate the management of environmental conditions by updating the computer control system and adding variable frequency drives to the HVAC system that allow for adjustment of fan speeds and automatic shut downs, recommissioning the system. Lighting in the research library and original documents reading room would also be updated. Data on conditions and energy use would be gathered during the course of the project and shared with other cultural institutions seeking to maximize energy efficiency while achieving preservation goals.

Stearns History Museum, St. Cloud, MN Outright: $33,503

An implementation project to install a heating, ventilating, and air conditioning (HVAC) system for the museum's archival storage area, which contains 1,300 linear feet of documents and business records; over 500,000 photographic images; 1,800 taped oral histories; and 400 architectural blueprints documenting the history of the central Minnesota region.

Winterthur Museum, Winterthur, DE Outright: $350,000

An implementation project to improve the management of environmental conditions for the protection of the museum's collections, which include nearly 90,000 fine and decorative arts objects made or used in America between 1640 and 1860. New wireless controls would be integrated with monitoring data, using the Image Permanence Institute's eClimate Notebook, which will allow conservators, facilities management, and engineering to share data in real time and actively manage the HVAC systems in ways that can reduce energy use, save money, and still achieve quality preservation environments. Once the controls and monitoring system are in place, the museum will implement and evaluate new HVAC operational protocols, such as managed HVAC shutdowns or setbacks, that are keyed to seasonal changes, dew point, and building buffering capacity and the lessons they learn will be shared with the cultural heritage community.