

**PROJECT TITLE:** Renovate Pod 3, Collections Storage Improvements  
**INSTALLATION:** Museum Support Center  
**LOCATION:** Suitland, Maryland

<u>FY 2008 COST ESTIMATE (Thousands of Dollars):</u>	
Renovate Pod 3	\$10,000
<u>PRIOR-YEAR FUNDING:</u>	
Design	2,500
<u>FUTURE-YEAR FUNDING (FY 2009):</u>	
	<u>15,000</u>
Total	\$27,500

**BUILDING BACKGROUND:**

Designed and built in 1983, the modern, precast concrete center is a research, conservation, and collection storage facility providing optimum environments for the storage, preservation, and study of Smithsonian collections. The original 524,000-square-foot facility has four large collection storage bays, referred to as pods, and an office-laboratory complex. The 120,000-square-foot fifth pod is currently under construction to provide code-compliant housing and laboratory space for natural history specimens stored in alcohol.

**PROJECT JUSTIFICATION:**

Pod 3 was originally intended for the storage of natural history specimens preserved in alcohol. The National Museum of Natural History (NMNH) engaged in a lengthy design process to complete the installation of a steel collections storage structure in Pod 3; this was necessary as the pod was not constructed with intermediate floors in order to permit maximum flexibility. In the face of fire and life-safety codes and the needs of the collections, it became impractical to upgrade Pod 3 to meet the standards required for alcohol storage. The alcohol collections now in Pod 3 will be moved to the new Pod 5 when it is completed in the spring of 2007. This will free up valuable space in Pod 3 for the storage of other Smithsonian collections requiring high-quality environmental conditions and security, including physical anthropology collections, specimens needing cold storage or special gas storage, and art works. These collections are currently stored in substandard space in the museums and in leased space that does not meet climate control requirements for long-term preservation of collections.

**PROJECT DESCRIPTION:**

Pod 3 has a gross footprint of about 36,000 square feet. It contains an attached, interior, three-level (9,000 square-foot/level) structural system for collection storage, which covers one-third of the available floor space and is being used to store part of the NMNH wet alcohol collection. The revitalization of Pod 3 will include demolishing the inefficient interior three-level structural

system, all electrical equipment, and all existing sprinkler piping systems, and reconfiguration to provide additional collection storage for NMNH (36,000 square feet) and art collections for multiple art museums (36,000 square feet). The space will be divided into two permanent floors with separate areas for each collection type, with a new mechanical system independent from the rest of the building to provide appropriate environmental conditions for each space. The new space will meet all current fire codes, with a 2-hour fire rating for floor slabs and fire walls, and new fire-detection and suppression systems. The Institution requests \$10 million in FY 2008 to begin the renovation, and will request funding in future years to complete the work under a multi-year contract.

PROGRESS TO DATE:

The Institution will use funding received in FY 2007 to design the renovation of Pod 3.

IMPACT OF DELAY:

Once the current collections stored in alcohol are moved from Pod 3 into Pod 5, Pod 3 will become a one-floor storage area with inefficient space use and limited collections storage capability. Without the planned revitalization, the physical anthropology collections (now in NMNH) requiring special environmental conditions (multiple locations), and art collections (multiple leased locations) cannot be relocated out of currently inadequate or inappropriate space. The result will be more rapid deterioration of collections items, higher security risk, and higher lease costs for the Institution. Failure to move collections from the NMNH will also delay the next major HVAC renovations of that building because work cannot be done with collections in those spaces.

**PROJECT TITLE:** Replace Electrical Systems  
**INSTALLATION:** National Air and Space Museum (NASM)  
**LOCATION:** Washington, DC

FY 2008 COST ESTIMATE (Thousands of Dollars):

Complete electrical replacement	\$1,100
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PRIOR-YEAR FUNDING

Design	376	
Replace electrical system	<u>\$8,900</u>	
Subtotal	<u>\$9,276</u>	<u>\$9,276</u>
	Total	\$10,376

BUILDING BACKGROUND:

NASM was built in 1976 to memorialize the national development of aviation and space flight and has become the world’s most visited museum, with more than 7.5 million visitors in recent years. The 636,000-square-foot building preserves and displays artifacts, aeronautical and space flight equipment, significant historical data, and related technologies.

PROJECT JUSTIFICATION:

The building and all its systems have been in operation since 1976. The electrical system is prone to failure, out of compliance with building codes, and severely overtaxed by electronic requirements that were unanticipated when the building opened. In addition, NASM was designated in 2004 as a shelter-in-place for natural and manmade emergencies, creating additional power demands from communications systems and ventilation fans. Some upgrades have been made in areas where equipment had totally failed, including the primary high-voltage transformers. The rest of the aged equipment is very expensive to keep operating and is at risk of total failure. The 15 KV incoming switchgear are of particular concern because they are old and worn and have to be operated manually with increasing risk of high-voltage arcs and explosion. The current situation is a severe fire hazard and must be remedied.

PROJECT DESCRIPTION:

The Institution will replace all high-voltage systems in the building, including the incoming feeders and switchgear; the electrical equipment, risers and wiring to operate the mechanical systems and provide power to new distribution panels; the automation of the distribution circuits; and the emergency generator. The preliminary estimate of the construction cost is \$10 million, but this number will be refined during the design process.

PROGRESS TO DATE:

Design of the project is under way, and the Institution expects to award a multi-year construction contract in late summer 2006, using the \$8.9 million provided in the FY 2007 appropriation. The Institution requests \$1.1 million in FY 2008 to complete the project.

IMPACT OF DELAY:

A delay in completing this project could increase the frequency of major electrical disruptions, with the real possibility of a total or partial building shutdown for an undetermined length of time.

**PROJECT TITLE:** Revitalize Public and Non-Public Space  
**INSTALLATION:** National Museum of Natural History (NMNH)  
**LOCATION:** Washington, DC

<u>FY 2008 COST ESTIMATE (Thousands of Dollars):</u>	
Continue HVAC/Utility System Replacement and Building Renovation	\$25,500*
<u>PRIOR-YEAR FUNDING</u>	\$149,570
<u>FUTURE-YEAR FUNDING (FY 2009–FY 2016)</u>	
Ongoing HVAC replacement and code improvements	\$178,350*
<b>Total</b>	<b>\$353,420</b>

\* Does not include funding in Planning and Design account to complete future design of revitalization project.

**BUILDING BACKGROUND:**

The NMNH building opened to the public in 1910. The East and West wings were added in the early 1960s. Two infill buildings were constructed in the original building’s East and West courtyards in the late 1990s. The gross interior square footage of the building is approximately one-and-a-half million square feet. The building includes 300,000 square feet of public museum space, collections, laboratory, office, and building services spaces filling the remaining one million square feet. The Museum typically hosts five to six million visitors annually, and is one of the most visited museums in the world.

**PROJECT JUSTIFICATION:**

The building’s mechanical and electrical systems were installed in the early 1960s, and are more than 40 years old, so they are in need of major renovations. Breakdowns of the mechanical system are frequent, repair parts are often difficult to procure, and the system does not provide the environmental air quality necessary for visitors on many crowded days, or for the display and preservation of Museum collections. The reliability of the electrical system is compromised by the deteriorated condition of the building’s three main electrical switchgears, and the antiquated distribution system poses a safety hazard. In addition, a number of long-standing health and safety violations compromise the well-being of visitors and staff. Main stairwells and auditorium exit corridors are dark, violate building code, and are insufficiently served by smoke-evacuation fans. Dozens of building elevators constantly break down, occasionally trapping staff and visitors. Asbestos-laden pipes in the utility tunnels are a health hazard and hamper proper maintenance and response to utilities failures. The windows in the original portion of the building are severely deteriorated.

### PROJECT DESCRIPTION:

Based on the master implementation plan completed in 1987, the Institution is struggling to complete a comprehensive renovation program in the NMNH building, which will replace the HVAC equipment, ductwork, electrical equipment and wiring, piping systems, and windows of the main building. Asbestos and lead will be abated or encapsulated; the fire-protection, communications, alarm, and emergency power systems will be upgraded; and stormwater systems and a hazardous-chemical control facility will be installed. To date, \$149.6 million has been appropriated for the revitalization project, including \$25.4 million in FY 2007. The total cost of renovating NMNH may exceed \$350 million through FY 2016 (at current funding levels).

The Institution requests \$25.5 million in FY 2008 to continue the renovation. Specific work will include: HVAC replacement and associated renovation of the ground floor of the East Wing (\$8.7 million) and the southeast portion of the main building (\$6 million), and the basement of the East Court (\$2 million); continuing replacement and/or refurbishment of the elevators (\$3 million) and the main building windows and north entrance (\$2.75 million); renovation of the air towers (\$1.55 million) to improve air quality; and renovation of the utility tunnels (\$1.5 million) to include removal of unused piping and conduit.

### PROGRESS TO DATE:

Renovation of Halls 7–10 and 23–25 for the future \$22 million *Ocean Hall* exhibit, which is being funded by the National Oceanic and Atmospheric Administration (NOAA), is more than 80 percent complete. Renovation of Halls 27–30 is 10 percent complete. This \$5 million project includes demolition, asbestos abatement, and installation of HVAC and other utilities. Design is nearing completion for other work planned for FY 2007, which includes the HVAC renovation of the West Wing basement and the southwest portion of the Third Floor of the Main Building. Design has begun on FY 2008 projects. The master and space plans continue to be updated, and they form the basis for the sequencing of infrastructure renovation.

### IMPACT OF DELAY:

If funding is delayed, building systems would continue to deteriorate and fail, and environmental conditions required for the Museum's collections and the visiting public could not be maintained. In addition, the Museum's exhibit re-installation program would not proceed according to the planned schedule, causing the continued prolonged closure of several important exhibition areas to the public.

**PROJECT TITLE:** Asia Trail  
**INSTALLATION:** National Zoological Park (NZP), Rock Creek Park  
**LOCATION:** Washington, DC

FY 2008 COST ESTIMATE (Thousands of Dollars):

Construction, Phase II: Elephant Trails	\$9,000
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PRIOR-YEAR FUNDING:

Facilities Planning and Design	8,580	
Construction, Phase I	41,030	
Site Work and Construction Phase II	<u>22,240*</u>	
Subtotal	\$71,850	<u>\$71,850</u>

Total            \$80,850\*\*

\* Reflects the reprogramming of \$867,588 appropriated in FY 2006 for design of critical NZP life-safety projects.  
\*\* Does not include \$23.8 million in privately raised funds (\$7.5 million for Phase I; \$16.3 million for Phase II).

BUILDING/SITE BACKGROUND:

The NZP in Washington, DC, a National Historic District, was built in the 1890s and was expanded in the 1930s with such historic buildings as the stone Elephant House. The 167-acre NZP is now more than 110 years old and its age and popularity have taken a visible toll. The Zoo's physical environment has vastly deteriorated. More than half of the buildings have seriously compromised structural, mechanical, electrical, and fire and life-safety systems. During its last accreditation review, the American Zoo and Aquarium Association (AZA) stated: "It is critically important that forward momentum is maintained in all areas and on all levels at a pace that will see the Zoo complete its strategic plan, and facility renovations, as quickly as possible." The National Academy of Sciences study of Zoo animal care and regular U.S. Department of Agriculture (USDA) inspections confirm this requirement.

PROJECT JUSTIFICATION:

The National Zoo is a leader among the few institutions with a strong multi-disciplinary program focused on elephant management and reproductive studies, both on site and in the field. To continue this progress, a larger facility is needed to create a multi-generational herd that will enable the elephants to live in a more natural social structure and thus encourage more normal behaviors and interactions among the elephants, while promoting the overall health and welfare of elephants held in captivity.

Standards for elephant care have changed drastically since 1930. As ethical concerns are raised about maintaining captive elephants, NZP must lead by example, providing a top-notch facility of sufficient size that is flexible to ensure both animal well-being and keeper safety, while providing an engaging and educational visitor experience. Arrangement of the elephant housing, flexibility in enrichment opportunities, and space for exercise are major issues influencing the health and welfare of elephants. Furthermore, the birth of a male

elephant in November 2001 has increased the urgency for moving toward NZP's goals of housing and exhibiting elephants as recommended by current zoological standards. An adult male elephant needs more space and stronger housing, and he and the keeper must be separated at all times. The current facilities do not meet those requirements.

#### PROJECT DESCRIPTION:

Phase II of the Asia Trail project will provide the larger complex that is needed to meet NZP's long-range commitment to the Asian elephant program. The new facilities will include renewal of the existing Elephant House and construction of a new elephant-holding facility. The project will encompass nearly 10 adjacent acres and provide adequate year-round housing, new exhibit yards, safe primary containment, and heavily landscaped perimeters. An innovative series of elephant habitats will provide exercise for the animals as well as sensory stimuli outside their daily routine. Large pools and multiple enrichment devices in the animals' indoor and outdoor enclosures will enable the elephants to exhibit behaviors currently restricted by space limitations. Accessible areas will let the public observe the elephants, and keeper demonstrations with new and exciting interpretive programs, including scientific research on elephants. FY 2008 will complete the federal funding of the project.

#### PROGRESS TO DATE:

The Zoo has completed exhaustive studies of all potential sites for the elephant facility, comparing costs and attributes for each location to maximize the elephant habitat while minimizing the costs of this project. Final analysis indicates that the best housing habitat, and the most cost-effective approach, is to extend the existing building to provide new holding areas and then to renovate the historic Elephant House and adjacent yard areas. This will enable the Zoo to keep elephants on site and on exhibit during construction, avoiding the very costly prospect of sending them off site during the renewal work. A design-build contract for the renewed facility was awarded in September 2006. It is anticipated that design efforts will be complete by summer 2007 and construction will follow immediately. The new elephant housing will be complete in early 2009, and project completion is projected for spring 2011.

#### IMPACT OF DELAY:

A delay would seriously impair the Zoo's effort to improve the quality of life for the Asian elephants in its care, and place the overall elephant program at risk. Temporary improvements have been made to the existing facility to continue housing the young male until 2009, but deferral of this project will require the Zoo to search for a new home for him. In addition, the Zoo's one reproducing female is a valuable breeder in the U.S. Asian elephant population. Shanti will be artificially inseminated in 2007 and is expected to calf in 2009. Ultimately, a delay in renovating the elephant facility will ripple into subsequent projects intended to bring the Zoo's facilities into compliance with USDA and AZA standards, and to correct extensive infrastructure deficiencies throughout NZP.

**PROJECT TITLE:** Upgrade Fire Suppression, Life Safety and Infrastructure  
**INSTALLATION:** National Zoological Park, Rock Creek Park and Front Royal  
**LOCATION:** Washington, DC

<u>FY 2008 COST ESTIMATE (Thousands of Dollars):</u>	\$6,300
<u>PRIOR-YEAR FUNDING:</u>	\$7,808
<u>FUTURE-YEAR FUNDING (FY 2009–FY 2012):</u>	<u>\$37,200</u>
Total	\$51,308

PROJECT JUSTIFICATION:

Much of NZP's current utility and fire-protection infrastructure is obsolete and failing, and does not meet the needs of the Zoo to protect and support its animals' safety. Correcting deficiencies in water service mains is crucial in providing critical fire-suppression systems in many of the unprotected areas of the Zoo, and to provide adequate water for the animals.

PROJECT DESCRIPTION:

The Institution requests \$6.3 million to install critical fire-protection and life-safety systems, at both Rock Creek Park and the Front Royal, Virginia facilities, including fire systems in the Bird House, Research Building, Visitor Center, and Panda Plaza (\$2 million); replacement of the water main to the lower Zoo area to support future fire-sprinkler upgrades (\$2 million); installation of emergency generators at Rock Creek and Front Royal (\$0.7 million); and other fire-suppression and life-safety improvements at Front Royal (\$0.1 million). The requested funds will also replace the water, electrical, and other systems at the Veterinary Hospital and research buildings (\$1.5 million).

PROGRESS TO DATE:

The Institution has used previous funds to upgrade the high-voltage electrical service for the upper section of the Rock Creek facility, including new transformers and a new ductbank, as well as conduits, electric feeders, and switchgear from Connecticut Avenue to the Elephant House. Funds were also used to upgrade the fire-protection water supply and install fire hydrants at the Bird House Hill. Additional fire-alarm, smoke-detection, and fire-suppression systems also will be installed in critical areas of the Rock Creek Park and Front Royal facilities. During FY 2006, the Zoo updated its fire-protection master plan and developed concept designs for upgrading underground utilities for the park. The Zoo is coordinating projects in priority order with renewal efforts that were identified in the master plan, which is also well under way. A life-safety systems analysis of Front Royal was also completed in FY 2006 and is the basis of their future budget requests.

IMPACT OF DELAY:

A delay in completing this work would endanger the animals, visitors, and staff, and would hamper the care and safety of the live animal collections.

**PROJECT TITLE:** Repair Structural Systems, General Services Building  
**INSTALLATION:** National Zoological Park, Rock Creek Park  
**LOCATION:** Washington, DC

FY 2008 COST ESTIMATE (Thousands of Dollars): \$3,500

PRIOR-YEAR FUNDING:

Design \$472

FUTURE-YEAR FUNDING (FY 2009): \$1,500

Total \$5,472

PROJECT JUSTIFICATION:

The General Services Building houses numerous critical functions at NZP, including the animal nutrition commissary, the maintenance and repair shops, and offices for safety, horticulture, exhibits, project management, engineering design and construction staffs, as well as parking for staff and visitors. Recent studies identified critical structural deficiencies that, if not repaired, will cause structural failure and localized collapse. The structural deficiencies are responsible for the cracks in the foundation walls that allow water into the commissary, which was cited by the USDA in November 2005 as a deficiency requiring immediate attention.

PROJECT DESCRIPTION:

This project will repair structural cracks and deficiencies in the General Services Building and in the retaining wall that supports the North Road, the major public and private thoroughfare through the Zoo. The Institution requests \$3.5 million in FY 2008 to begin this work in two stages. Future-year funding will complete the structural repairs.

PROGRESS TO DATE:

Studies to assess the condition of the structure and to develop concept solutions were completed in 2005. Funding for design of the structural repairs was requested through a reprogramming request, using funds appropriated in FY 2006 for the Wetlands project, which has since been deferred based on the Zoo's master plan.

IMPACT OF DELAY:

Delay of the project will risk structural failure in the building and injury to staff or visitors. Additionally, the NZP will not be able to comply with the USDA requirement to stop water infiltration into the commissary.

**PROJECT TITLE:** Replace Greenhouses  
**INSTALLATION:** Suitland Support Facility  
**LOCATION:** Suitland, Maryland

<u>FY 2008 COST ESTIMATE (Thousands of Dollars):</u>	\$6,000
<u>FUTURE-YEAR FUNDING (FY 2009):</u>	<u>\$6,000</u>
Total	\$12,000

**BUILDING/SITE BACKGROUND:**

The Smithsonian has leased a 55,000-square-foot greenhouse complex for its horticultural operations on the property of the Armed Forces Retirement Home (AFRH) in northwest Washington, DC since 1974. The complex includes 12 greenhouses, a headhouse for administrative and logistical functions, and a shade house. The complex houses the Institution's world-class orchid collection, and provides space to grow a wide variety of plant materials for exhibits, gardens, and special events that would be costly or impossible to obtain commercially.

**PROJECT JUSTIFICATION:**

The AFRH plans to lease the property where the greenhouse complex is located to commercial, residential, or institutional developers. AFRH could turn the site over to a developer as early as September 30, 2008, when the current lease expires, and the Smithsonian will require a new greenhouse facility. A thorough analysis of the horticulture program and greenhouse functions and operations determined that the most cost-effective method of maintaining the orchid collection and providing the needed plant materials is to replace the current greenhouses with a new facility at the Institution's Suitland, Maryland site.

**PROJECT DESCRIPTION:**

The proposed 55,000-square-foot facility will replace the existing complex space with comparable administrative and growing space. Although the Institution's space requirement will actually grow in future years due to such new activities as the anticipated Butterfly House at NMNH—whose plant materials must be grown without pesticides to protect the live butterflies—other operating efficiencies will allow the horticultural function to stay within the same greenhouse square footage as that now occupied. The greenhouses will be built of a polycarbonate plastic material to reduce costs, and off-the-shelf prefabricated building kits will be used to reduce design requirements and expedite construction time. The Institution requests \$6 million in FY 2008 to design and construct the utility infrastructure and the first increment of new greenhouses. This will provide vital space for the orchid collection and growing space to support exhibit activities, such as the Butterfly Exhibit that is scheduled to open in 2008. Future-year funding will complete the remaining greenhouse components.

PROGRESS TO DATE:

The Institution will complete preliminary planning for the greenhouses in FY 2007, in order to be ready to complete the initial phase of the project under a design/build contract by September 2008.

IMPACT OF DELAY:

Delay in funding this project will leave the Institution without a greenhouse facility when the AFRH turns the current complex over to its developer. As a result, the Institution will not be able to maintain its valuable orchid collection or provide interesting plantings in and around the monumental buildings on the National Mall without incurring significant additional operating costs such as leasing alternative space or buying a more limited selection of plant materials from commercial growers.

**PROJECT TITLE:** Construct/Install Anti-terrorism Protection, NMAH  
**INSTALLATION:** Mall and off-Mall Facilities  
**LOCATION:** Washington, DC and New York City

FY 2008 COST ESTIMATE (Thousands of Dollars):

Construct permanent barriers at National Museum of American History (NMAH)	\$8,000 *
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PRIOR-YEAR FUNDING (includes S&E and supplemental funding):

Design	3,100	
Construction of permanent physical security barriers at Mall facilities	17,325	
Anti-shatter film (window hardening)	1,400	
	<u>\$21,825</u>	\$21,825

<u>FUTURE-YEAR FUNDING (FY 2009–FY 2012)</u>	<u>\$99,450</u>
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Total	\$129,275 *
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\* Does not include design funding for future work included in Facilities Planning and Design.

PROJECT BACKGROUND:

The Institution is responsible for the security and safety of an extensive and complex physical plant that houses museums and galleries in Washington, DC and New York City; a National Zoological Park in Washington; and restoration and storage buildings and centers for research and education in numerous locations throughout the country and in the Republic of Panama. Since the terrorist attacks on New York City and Washington on September 11, 2001, the Institution has developed a comprehensive plan for reducing the risk of a terrorist attack occurring at a Smithsonian museum, and for minimizing the damage to people, collections, and buildings should such an event take place. A series of consultations and risk assessments resulted in the following recommendations to mitigate against vulnerabilities: installation of physical barriers between the buildings and the street; installation of anti-shatter window film or interior retrofits to mitigate the effects of glass windows shattering during a blast event; increased building perimeter camera surveillance; improved building emergency voice systems; secured nonpublic building areas with electronic access control; electronic screening of mail and visitors for the most heavily visited museums; protection against chemical, biological, and radiological attack; and mitigation against the effects of blasts and progressive collapse of buildings.

The Institution used funding from the FY 2002 Anti-terrorism Supplemental appropriation to install temporary physical barriers around most major museum buildings and increase security officer presence outside its buildings. Permanent capital improvements are included in the Capital Program.

### PROJECT JUSTIFICATION:

The Smithsonian is included in the "National Strategy for the Physical Protection of Critical Infrastructures," dated February 2003, and the subsequent "Interim National Infrastructure Protection Plan," dated February 2005. Risk assessments conducted at the Smithsonian since September 11, 2001 recommended new security measures for all Smithsonian museums and facilities. As stated in the June 2005 GAO report, "National Mall — Steps Identified by Stakeholders Facilitate Design and Approval of Security Enhancements," the National Mall encompasses some of our country's most treasured icons and serves as a public gathering place for millions of visitors each year. Furthermore, the popular recognition of the Smithsonian name, the American icons contained in its facilities, and the high level of public access and visitation distinguish the Smithsonian facilities from other Government office buildings and elevate the level of risk.

### PROJECT DESCRIPTION:

The anti-terrorism program consists of Mall-wide site adaptations, modifications to building perimeters, and additions and modifications to building systems. The program will be implemented during multiple fiscal years, with an emphasis on the highest priority projects to reduce the Smithsonian's vulnerability to attack. The Institution requests \$8 million in FY 2008 to construct permanent physical barriers around the NMAH. Additional funds are included in Facilities Planning and Design to begin design for glass mitigation at several locations.

### PROGRESS TO DATE:

The Institution has completed risk assessments of all its major facilities; completed blast assessments of NASM, NMNH, NMAH, HMSG, SIB/AIB, and DWRC; installed temporary barriers around NASM, NMNH, and, NMAH, and partial barriers at HMSG, AIB/Quadrangle/Freer and the Udvar-Hazy Center; and completed installation or awarded contracts for select closed-circuit television (CCTV), emergency voice (or PA) systems and glass mitigation projects. Construction of permanent perimeter barriers at NASM is substantially complete, and work has started at NMNH and will be complete in the fall of 2008. NMAH is in final design and the balance of the Mall facilities are designed to 35 percent. Glass mitigation is complete or partially complete at some facilities through film application. Facilities requiring window retrofits are at various stages of design: DWRC is 100 percent; SIB, Freer and Renwick are at 35 percent design.

### IMPACT OF DELAY:

If the requested funding is not provided, there is an increased likelihood of damage and injury to people, collections, and buildings in the event of a terrorist attack. The Smithsonian name, symbols of American culture and achievements, and the large numbers of public visitors make the Institution an attractive target to terrorists. The lack of necessary anti-terrorism protection increases the Institution's vulnerability.

## Other Revitalization Projects

**PROJECT TITLE:** Complete Miller-Fox Renovation  
**INSTALLATION:** Cooper-Hewitt, National Design Museum  
**LOCATION:** New York City, New York

FY 2008 COST ESTIMATE (Thousands of Dollars): \$1,650

PROJECT DESCRIPTION: This project will renovate the last remaining apartment in the Fox House, recently vacated, into sorely needed office/conference space for the Museum, and integrate it into the rest of the building to facilitate the movement of collections. Delay in project execution will delay the return of administrative space in the Carnegie Mansion to public use and perpetuate the substandard quality of space in the Fox House.

**PROJECT TITLE:** Improve Fire Detection and Protection  
**INSTALLATION:** Museum Support Center  
**LOCATION:** Suitland, Maryland

FY 2008 COST ESTIMATE (Thousands of Dollars): \$2,500

PRIOR-YEAR FUNDING (FY 2007): \$2,600

PROJECT DESCRIPTION: The fire-detection system is obsolete and unsafe, and its lack of reliability is putting the collections stored in the building at increasing risk. Repairs are needed more frequently and parts for the aged system are becoming more difficult to locate. Unexplainable system failures have increased substantially this past year, tripping false alarms. Major repairs were made to the fire-alarm panel in 2005 to upgrade terminal units and provide uninterruptible backup electrical power so that the frequent loss of incoming electrical service from the utility company no longer causes the alarm system to fail. This project will totally replace, in two phases, the balance of the existing fire-detection system with current state-of-the-art equipment, to include the capability for anticipated expansion during the next 20 years. It will incorporate the 2005 upgrades, and it will be connected to the central control panel for the Suitland campus. The first phase will begin with funds provided in FY 2007, and the contract will include a bid option for continuing with the second phase in FY 2008. A delay in funding this option will require stopping work at the end of the first phase, which would leave the building operating on two different terminal systems. In addition, such a delay would increase the cost of installation and create difficulties in matching the system components.

**PROJECT TITLE:** Waterproof Terrace at Perimeter  
**INSTALLATION:** National Air and Space Museum (NASM)  
**LOCATION:** Washington, DC

FY 2008 COST ESTIMATE (Thousands of Dollars): \$1,500

PROJECT DESCRIPTION: A few years after GSA completed construction of the NASM in 1976, leaks into the garage began to appear, causing rusting of structural steel members and damage to insulation on pipes and ducts as well as to materials stored in the garage. Several leaks have been corrected. The waterproofing around the planters has been replaced. The stone façade has been cleaned, repaired, and resealed, and the window wall, along with its base flashing, has been replaced. Although this has stopped most of the leaks, several still exist, especially at corners and the exterior stairwells. Recent tests revealed a major design and construction flaw in the northwest corner and determined that no flashing was installed under the stone along the perimeter. Flashing in the test area has been in place for four years and no leaks in that area have returned. This project includes the removal of the bottom course of marble, two courses of the granite pavers, and all the setting beds down to the basic building structure; installation of flashing at the base of the building; replacing the setting beds; and resetting the salvaged stone around the perimeter of the building. It also includes waterproofing the stairwells and repairing the leaks through the foundation walls. Completion of this project will arrest the leaks and protect against further damage to the structural steel, insulation, and stored materials.

**PROJECT TITLE:** Replace Gamboa Old Schoolhouse, Phase I  
**INSTALLATION:** Smithsonian Tropical Research Institute (STRI)  
**LOCATION:** Republic of Panama

FY 2008 COST ESTIMATE (Thousands of Dollars): \$1,500

PROJECT DESCRIPTION: Terrestrial Tropical Science at STRI has historically been housed at the Tupper Center in Panama City and on Barro Colorado Island (BCI). STRI has outgrown the space available in these facilities, given the high profile and explosive success of STRI's scientific enterprise. Gamboa, a settlement located on the east bank of the Panama Canal midway between both sites (17 miles north of Panama City and 13 miles south of BCI), provides an excellent location for terrestrial scientific investigation. The Santa Cruz School, built in the 1930s, is a three-story structure of composite construction — having a concrete base with wooden superstructure — of around 35,600 square feet. Given the building's age and damage caused by termites, the building today is unusable. STRI has leased the land and all the buildings in it, with an option to buy, and has performed some basic extermination to rid the building of termites and other pests. A recent structural assessment determined that it would be more cost effective to replace the old structure with a comparably sized building made of concrete and/or steel, with low-maintenance, pest-free materials that meet the

full requirements for use as a laboratory building. The Institution requests \$1.5 million in FY 2008 to complete demolition and sitework, and will request an additional \$2.3 million in FY 2009 to complete the building. Replacing this building will complete a strategic step to provide appropriate scientific space and will free up areas in the Tupper facility and BCI to accommodate other research activities. In addition, consolidating terrestrial research programs in Gamboa will reduce operating costs and improve interaction among scientists and in the different programs.

**PROJECT TITLE:** Provide Central Fire Pump and Upgrade Mains  
**INSTALLATION:** Suitland Support Facility  
**LOCATION:** Suitland, Maryland

FY 2008 COST ESTIMATE (Thousands of Dollars): \$1,700

PROJECT DESCRIPTION: When the Smithsonian received the Suitland Support Facility from GSA, most of the buildings did not have fire detection or suppression. Over the years, the Institution has improved the buildings and added fire systems to provide minimal protection to the collections, but water pressure is inadequate to service sprinklers within the buildings. This project will install a single fire pump for the entire complex. The pump will not only enhance the fire protection in the buildings themselves, but also increase the pressure at the fire hydrants, improving the ability to fight fires both inside and outside the buildings. The pump will be sized to allow installation or improvement of additional fire-suppression systems as renovation of other buildings proceeds. The project will also upgrade fire mains and related fixtures to provide cross-connections to ensure needed pressure when multiple valves are in use. The project will greatly reduce the risk of fire damage to Smithsonian collections stored at the Silver Hill facility.

**PROJECT TITLE:** Demolish Buildings 15 and 18, and Move Collections  
**INSTALLATION:** Suitland Support Facility  
**LOCATION:** Suitland, Maryland

FY 2008 COST ESTIMATE (Thousands of Dollars): \$2,000

FUTURE-YEAR FUNDING (FY 2009): \$3,000

PROJECT DESCRIPTION: Several buildings at the Garber facility are insulated with a sprayed-on asbestos lining that was encapsulated with visqueen plastic sheeting in the late 1980s as a "temporary" measure. The sheeting has deteriorated due to age and heat, becoming very fragile and breaching without notice. So far, the encapsulation in Buildings 15 and 18 remains intact, but a recent failure in a nearby building pointed out the urgency of removing the American History collections from these two buildings before they become contaminated and inaccessible. This project will stabilize, pack, and move the collections now stored in these buildings to new leased space (for which funding

is requested in the Salaries and Expenses portion of this budget request). Future funding will be requested for the actual demolition of the buildings and disposal of the asbestos. Delay of this project will continue to put staff at risk of health hazards and collections at risk of further contamination, thereby making asbestos abatement more costly and risky with time.

**PROJECT TITLE:** Construction Supervision and Administration  
**INSTALLATION:** Multiple Locations  
**LOCATION:** Smithsonian-wide

FY 2008 COST ESTIMATE (Thousands of Dollars): \$4,900

PRIOR-YEAR FUNDING (FY 2007): \$3,600

FUTURE-YEAR FUNDING (FY 2009): \$4,950

PROJECT DESCRIPTION: This request includes staff costs for permanent construction management staff required to supervise and administer construction contracts, as well as term and temporary staff required to perform specialized work associated with revitalization projects. A total of 48 FTEs will be funded from the \$4.9 million. Forty-three of the 48 FTEs are construction management engineers and will cost approximately \$4.3 million in FY 2008. The engineers directly supervise construction contractors to ensure that quality work is performed safely. In addition, they resolve issues that arise during construction, negotiate change orders, approve payments, and perform other administrative functions as contracting officer's technical representatives. These necessary "owner functions" are critical to ensure that quality work is completed safely, on time, and within budget.

This request also funds five contract specialists who will support all aspects of the procurement process for acquiring the necessary contract services to execute the Capital Program. These five positions will cost approximately \$600,000 in FY 2008, and will provide essential expertise to ensure the timely award of planning, design, and construction contracts for the Capital Program.

## ***FACILITIES PLANNING AND DESIGN***

Feasibility studies, needs assessment, and design for capital projects are required before work can take place. Resources in this category include all costs for contract facility master planning, preliminary and final design for all revitalization and construction projects, special studies, and a small amount for facility engineering, capital leveraging, and research activities, similar to Department of Defense and National Aeronautics and Space Administration (NASA). The funding will enable development of project baselines, including costs, scope, and schedule, prior to receiving funding to perform the work.

In order to plan and design ahead of Capital Program execution, funding of about 10 to 15 percent of the following year's program is required each year. The funding requested for FY 2008 will provide necessary planning and design to at least the 35 percent stage for most projects included in the planned FY 2010 program, and will complete design for projects planned for FYs 2008 and 2009. This will move the Institution closer to meeting the National Academy of Public Administration's (NAPA) recommendation that firm baselines be established before funding requests to provide more accurate cost estimates and to enable timely award of construction contracts upon receipt of future-year funding.

The Institution requests a total of \$15,700,000 for planning and design in FY 2008. These funds will be used to design several major revitalization projects (at the National Museum of Natural History, the National Museum of American History, and the National Zoological Park) and prepare designs for numerous smaller revitalization projects. This budget request will also enable the Smithsonian to begin the programming for the new National Museum of African American History and Culture; prepare comprehensive facilities master planning studies to guide future facilities decisions; and allow more effective use of existing space.

If these resources are not provided, the Institution will be unable to proceed with vital planning and design activities to ensure the successful execution of the long-range Capital Program. The result will be a significant delay in meeting the Institution's goals to return Smithsonian facilities to full functionality in the next decade.