Smithsonian Institution
Office of the Inspector General

In Brief

Facilities Maintenance Funds
Report Number A-09-03-2, September 14, 2009

Why We Did This Audit

We conducted an audit of the Smithsonian Institution's facilities maintenance to determine whether the Smithsonian (1) adequately manages risk with existing maintenance funding, and (2) is correcting safety incidents caused by disrepair.

What We Recommended

We made two recommendations to strengthen policies and procedures related to documentation of facilities maintenance. These recommendations should help OFEO better manage its critical assets using the Smithsonian's maintenance management system.

Management concurred with our findings and recommendations and has planned corrective actions to resolve both our recommendations.

What We Found

The Office of Facilities, Engineering, and Operations (OFEO) has processes in place for adequately maintaining the heating, ventilation, and air conditioning systems (HVAC) and the vertical transportation equipment for the areas we reviewed. Contracting Officer's Technical Representatives (COTRs) and supervisors test HVAC and vertical transportation equipment to ensure contractors and staff properly perform all required maintenance. By maintaining its equipment, the Smithsonian helps to protect its assets from critical breakdowns and prevent increased facilities costs.

We did not find any evidence of safety incidents caused by disrepair for HVAC and vertical transportation equipment. Various offices and mechanisms, such as safety evaluations and priority codes, are in place to prevent injuries throughout the Institution.

Although OFEO's processes for maintenance of HVAC and vertical transportation equipment are adequate for the limited systems we examined, we found several ways in which the Institution could improve the management of its maintenance program. OFEO management cannot obtain accurate information from its automated maintenance management system (known as FacilityCenter) on the maintenance performed for HVAC equipment. In addition, although OFEO has instructions for how to enter data into FacilityCenter, OFEO personnel lack written procedures requiring them to do so. Thus, the maintenance information is incomplete.

OFEO has taken steps to improve its maintenance program and associated records. We noted that there are some compensating controls to mitigate the risks of critical HVAC breakdowns that might result in damage to the collections.

For additional information or a copy of the full report, contact the Office of the Inspector General at (202) 633-7050 or visit http://www.si.edu/oig.

Smithsonian Institution

Memo

Office of the Inspector General

Date September 14, 2009

To Audit and Review Committee, Board of Regents
G. Wayne Clough, Secretary
Bruce Kendall, Director, Office of Facilities Engineering and Operations
Clair Gill, Deputy Director and Chief of Staff, Office of Facilities Engineering and Operations

cc Alison McNally, Under Secretary for Finance and Administration

From A. Sprightley Ryan, Inspector General

Subject Audit of Facilities Maintenance and Safety, Number A-09-03-2

This is the second of two reports on our audit of Facilities Maintenance and Safety at the Smithsonian Institution. The objective of the audit was to determine whether the Smithsonian could reduce overall facilities costs by maximizing the useful life of equipment while minimizing the risk of injury from equipment deterioration. We assessed, for a limited number of systems, whether the Smithsonian (1) adequately manages risk with existing maintenance funding, and (2) is correcting safety incidents caused by disrepair.

During the course of the audit, we found that the Smithsonian misused maintenance funds for capital expenditures and recorded information inaccurately in its financial accounting system. Because of their significance, we issued a separate report on these findings.[1]

We found that the Smithsonian did not keep sufficient records to verify whether the equipment had achieved its useful life. Therefore, we modified our objective and assessed whether the Smithsonian had processes in place to adequately maintain certain equipment, regardless of the equipment's useful life. Thus, in this report, we address the adequacy of the Smithsonian's processes to maintain certain systems and minimize injuries resulting from a lack of maintenance. The work we performed on two systems, including interviews, document collection, and data confirmation, required a significant amount of time. As such, we limited our scope to these two systems, and do not express an opinion on the effectiveness of the Smithsonian's maintenance program overall. We will address other maintenance systems in future audits.

The Smithsonian, like many government entities, has an aging group of buildings. In its annual appropriation, it receives less than two to four percent of current replacement value for the constructed plant and infrastructure, the minimum amount recommended by the National Research Council (NRC)[2] for maintenance. Using this formula, the Smithsonian estimated that the minimum amount of annual maintenance funds it needs is approximately $100 million per year. In fiscal year (FY) 2008, Congress appropriated

[1] Facilities Maintenance Funds, Number A-09-03-1 (Sept. 3, 2009).
[2] The National Research Council is a non-profit institution that provides science, technology and health policy advice under a congressional charter.

approximately $51 million to the Smithsonian for maintenance. Consequently, the Smithsonian must show diligence in its management of limited funds.

To evaluate the Smithsonian's stewardship of its limited maintenance funding, we set out to answer these objectives, focusing on fiscal year 2008.

We assessed whether the Smithsonian's processes for maintaining two systems[3] in its facilities and minimizing maintenance-related injuries were adequate by reviewing the maintenance practices and safety histories for heating, ventilation and air conditioning (HVAC) and vertical transportation (elevators and escalators). These areas, described by Smithsonian management as some of the most problematic, consume approximately 22 percent of the $46 million[4] the Smithsonian budgeted for maintenance in FY 2008. Because the Smithsonian manages the routine maintenance in these areas differently, we designed our audit approach accordingly. To assess how the Smithsonian manages HVAC maintenance, which is primarily performed in-house, we judgmentally selected two of the Smithsonian's eight zones to review,[5] and examined the process for determining maintenance needs and documenting completed maintenance. For vertical transportation maintenance, the Smithsonian relies on a contracted service that covers all eight zones. We reviewed the contractor-performed maintenance on this equipment and spoke with officials charged with overseeing the contract. See Appendix A for a detailed description of our scope and methodology.

RESULTS IN BRIEF

We found that the Smithsonian's processes for maintaining its HVAC equipment, for the two zones we reviewed, and vertical transportation equipment, overall, were adequate and that the Smithsonian had priority plans in place for maintaining other critical equipment as well. We did not find any incidents of injury caused by disrepair of HVAC or vertical transportation equipment. However, we noted several areas in which the Smithsonian could improve its overall management of the maintenance program.

We made two recommendations to strengthen policies and procedures. These recommendations should help OFEO better manage its critical assets using the Smithsonian's maintenance management system.

[3] The Smithsonian has eight maintenance systems: Structure, Exterior, Roof, HVAC, Electrical, Plumbing, Vertical Transportation and Interior Finishes.

[4] Congress appropriated approximately $51 million for FY 2008 maintenance. The Office of Protection Services and Smithsonian Tropical Research Institute manage their maintenance outside of OFEO's primary maintenance group. Their appropriations for maintenance total approximately $5 million and are not included in the $46 million figure above.

[5] The Smithsonian divides the Institution's 26 major museums and research centers into eight zones. The Smithsonian separately manages the Smithsonian Tropical Research Institute (in Panama) and the Smithsonian Astrophysical Observatory (in Cambridge, Massachusetts). See Appendix B for more information on the Institution's zones.

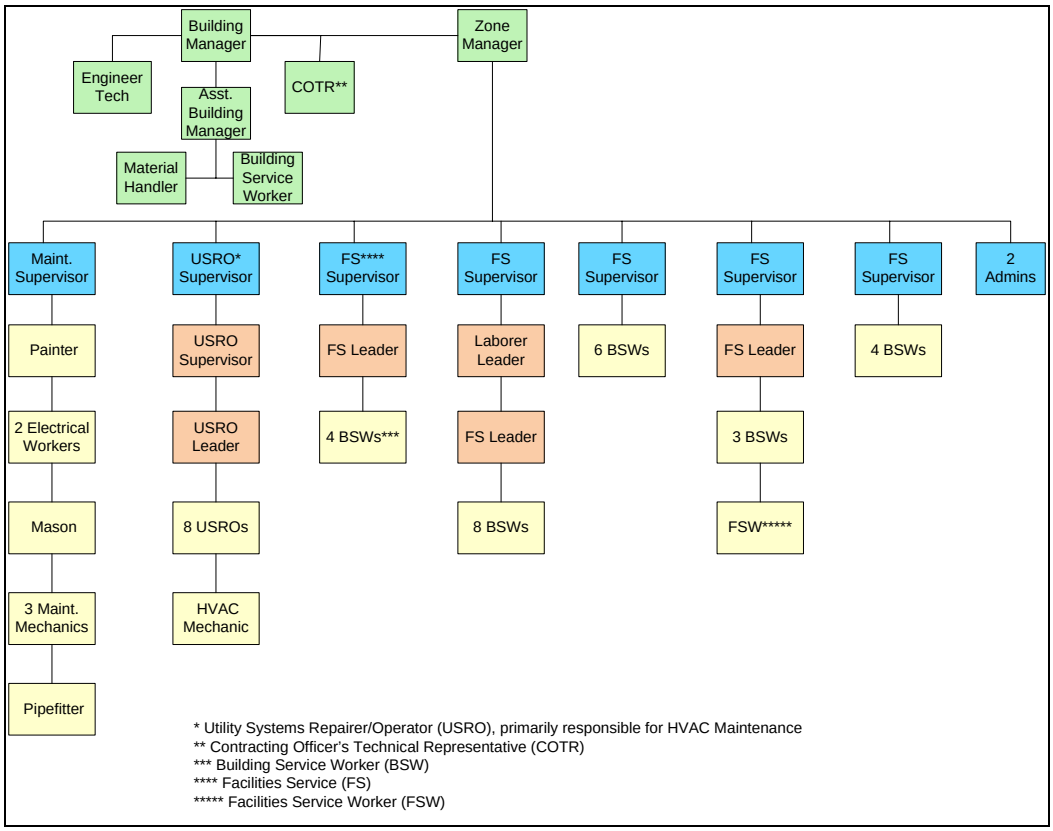
BACKGROUND

Smithsonian Maintenance Program

The Office of Facilities Engineering and Operations (OFEO) is responsible for building, operating, maintaining and ensuring a safe, secure, and healthy environment at the Smithsonian. It is the primary office tasked with performing and overseeing maintenance on the Smithsonian's critical systems, such as HVAC, vertical transportation, roofing, electrical and plumbing. Maintenance includes periodic testing and inspection; adjustment; lubrication; and routine repair and replacement of broken parts.

To effectively manage the maintenance of Smithsonian facilities, OFEO has delegated the responsibility of day-to-day facilities maintenance services to each zone. Each zone has a manager, charged with ensuring that the facilities are well maintained and safe for the collections, visitors and staff. Zone managers maintain facilities using both in-house and contracted services. In Figure 1 we show a sample organization chart for a zone, which demonstrates the personnel required to address the Smithsonian's maintenance needs.

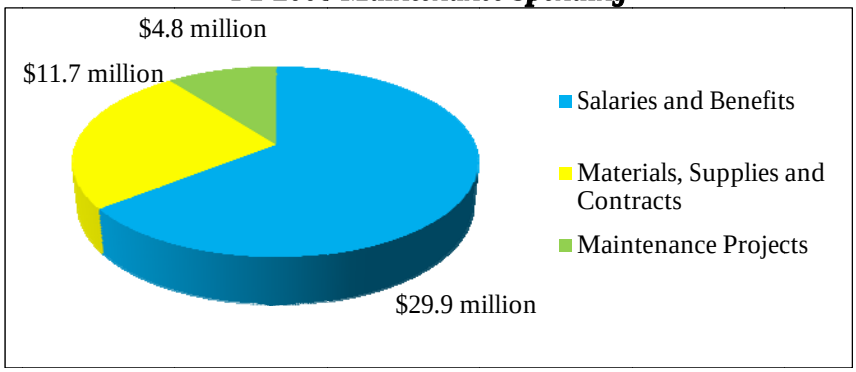
FIGURE 1
Sample Zone Organization Chart



Maintenance Expenses

In FY 2008, the total amount spent on the Smithsonian's maintenance, excluding the maintenance for the Office of Protection Services (OPS), and the Smithsonian Tropical Research Institute, was approximately $46 million. The Smithsonian records its maintenance expenses in three categories: salaries and benefits; materials, supplies and contracts; and maintenance projects (see Figure 2). The Smithsonian uses salaries and benefits, and materials, supplies and contracts funds primarily to pay for routine maintenance ***tasks*** such as lubricating or cleaning. Maintenance ***projects*** are those more significant tasks that may involve repairing or replacing component parts of Smithsonian assets. For example, repairing a section of a museum's sidewalk would be a maintenance project.

FIGURE 2
FY 2008 Maintenance Spending



Maintenance Management System

The Smithsonian uses a maintenance management system called FacilityCenter to: (1) maintain lists of equipment that require maintenance, (2) schedule maintenance tasks, and (3) record completed maintenance. The Office of the Chief Information Officer (OCIO) personnel enter the critical assets into the system, as well as the planned maintenance tasks. OFEO must match each asset to a series of tasks. Once the assets are matched to the appropriate maintenance tasks, the system periodically produces work tickets for planned maintenance, which instruct maintenance workers on which tasks to perform on particular equipment. Maintenance employees must manually create unplanned maintenance work tickets in FacilityCenter. When their work is complete, whether planned or unplanned, the maintenance employees should document their work in FacilityCenter.

Facilities Maintenance Goals

The Smithsonian Institution prepares an annual Performance Plan for review by the Office of Management and Budget (OMB), Congress, and the public, in accordance with the Government Performance and Results Act of 1993. The Performance Plan identifies the Institution's goals and performance objectives; improvements in facilities maintenance constitute one of the goals of the plan.

The plan breaks down the facilities maintenance goals by system type: HVAC, vertical transportation, roofs, electric, and fire and life safety. OFEO's goal for HVAC equipment in fiscal year 2008 was that temperature and humidity levels were within a target range 85 percent of the time. OFEO met the goal with buildings that fell within acceptable temperature and humidity bands 91.5 and 91.9 percent of the time, respectively. The goal for vertical transportation equipment was measured based on the mean time between repair calls. The goal for fiscal year 2008 was an average of greater than 70 days between repair calls. Overall, OFEO met this goal with an actual mean time between repairs of 85 days, with the exception of three facilities out of 18 that did not meet the goal.

RESULTS OF AUDIT

Management's processes for maintaining HVAC and vertical transportation equipment for the areas we reviewed are adequate

OFEO officials have processes in place for adequately maintaining the HVAC and vertical transportation equipment for the areas we reviewed. Contracting Officer's Technical Representatives (COTRs) and supervisors perform spot checks of HVAC and vertical transportation equipment to ensure contractors and staff properly perform the required maintenance. By ensuring that COTRs and supervisors oversee the maintenance performed on this equipment, the Smithsonian helps to protect its assets from critical breakdowns and prevent increased facilities costs.

We found that OFEO had processes in place for maintaining the HVAC equipment at the two zones. In one zone, the Utility Systems Repairer/Operator (USRO) supervisor ensures his staff maintain HVAC equipment in three ways: (1) he inspects the HVAC equipment at each building twice per week and instructs USRO technicians to follow up on any problems he identifies; (2) he requires his staff to document maintenance work in a logbook, which he reviews regularly; and (3) he spot checks the work tickets submitted by his staff for completion. In the other zone, OFEO primarily uses a contractor, supplemented by in-house staff, to maintain the HVAC equipment. The contractor provides OFEO with work tickets of all completed maintenance tasks. OFEO oversees the contractor by reviewing these work tickets and documenting inspections of the maintenance performed on the HVAC equipment. The COTR will follow up with the contractor to resolve any problems with the work performed.

We also found that OFEO had processes in place for maintaining the vertical transportation equipment throughout the Smithsonian. A contractor performs routine maintenance and required repairs. The contractor performs periodic maintenance tasks, including checks of controller connections, lubricating the hoist motor, and checking safety switches. The COTR inspected and validated the contractor's work regularly using procedures described in the contract and OFEO checklists. The COTR stated that he has 20 years of experience in the vertical transportation industry, which we believe contributed to the satisfactory performance of the equipment.

According to OFEO, the average time between unscheduled service calls has improved by 41 percent by increasing from 68 to 96 days from 2007 to 2009. This average time compares favorably to the national average of 60 days. Moreover, during this same period, OFEO reported that availability of vertical transportation increased from 99.4 percent to 99.6 percent.

Proper contract oversight and adequate supervision of OFEO employees, in our judgment, contributed to the Smithsonian effectively reducing the risks of critical equipment breakdowns and increased facilities costs in the future. Furthermore, OFEO mitigated the risks of damage to collections or injury to visitors and staff by ensuring the performance of adequate maintenance.

No Evidence Found of Safety Issues Caused by Disrepair

We did not find any evidence of safety incidents caused by disrepair for HVAC and vertical transportation equipment. Various offices and mechanisms, such as safety evaluations and priority codes, are in place to prevent injuries throughout the Institution.

OFEO's Office of Safety, Health and Environmental Management (OSHEM) regularly performs comprehensive safety evaluations at each facility. These evaluations address safety, risk management, training, injury reporting, and recordkeeping. We reviewed all 18 evaluation reports available at the time of testing for FY 2008, noting that eight of these reports cited safety violations related to HVAC and vertical transportation. However, after careful consideration, we determined these were isolated incidents and not the result of poor maintenance.[6]

As a supplement to OSHEM's evaluations, OPS personnel act as first-responders to safety incidents in each of the museums. They are required to document any emergencies they respond to, including the date, time, and a detailed description of what occurred. OPS provided 10 safety incident reports from 2008, relating to vertical transportation and HVAC. We reviewed these reports, noting that all of the emergencies described were the result of user error or negligence, such as running up the descending escalator, rather than poorly maintained equipment.

To identify the maintenance projects requiring attention at each zone, OFEO develops a detailed maintenance plan, which lists the projects it intends to accomplish over five years and assigns a priority-code ranking to each project to identify the most urgent maintenance projects. These projects may address problems with any critical equipment at the Smithsonian. While executing the projects listed in the maintenance plan, OFEO completes unplanned maintenance projects if they pose a significant safety risk to the collections or to Smithsonian visitors and staff. In FY 2008, 42 percent of the amount spent on maintenance projects addressed safety issues; 70 of the 87 safety-related projects were unplanned. We believe that the programs, evaluations and procedures in place are adequate for OFEO to address the Smithsonian's major safety issues related to HVAC and vertical transportation.

[6] Examples of the safety violations included obstruction of HVAC ventilation and lack of written Confined Space Entry plans for elevators.

OPPORTUNITIES TO IMPROVE

Although OFEO's processes for maintenance of HVAC and vertical transportation equipment are adequate for the limited systems we examined, we found several ways in which the Institution could improve the management of its maintenance program.

FacilityCenter is an Underutilized Tool

OFEO management cannot obtain accurate information from the FacilityCenter system on the maintenance performed for HVAC equipment. Management cannot obtain accurate information for two reasons: (1) maintenance employees do not enter the completed maintenance data in the system, and (2) for two of the eight zones, FacilityCenter is not fully operational because maintenance tasks have not been assigned to specific assets. In addition, although OFEO has instructions for how to enter data into FacilityCenter, OFEO staff lack written procedures requiring them to do so. Thus, the maintenance information is incomplete. OFEO and an outside contractor are currently developing written procedures for maintaining the HVAC systems.

Without complete records, it is not possible for OFEO management to accurately assess whether staff perform sufficient maintenance on HVAC equipment. Management relies on discussions with zone managers to control the maintenance process. However, since the data in FacilityCenter is incomplete, OFEO management cannot use the system to verify that maintenance work was performed. Information in the system such as the start date, end date, location, task status, and maintenance description for a period is not reliable. In the absence of an automated system, OFEO relies on manual records to monitor these actions.

Although OFEO is not entering all data into FacilityCenter, there are some compensating controls to mitigate the risks of critical HVAC breakdowns and resulting damage to the collections. There are Building Automation Systems throughout the Smithsonian's buildings, which OFEO personnel use to monitor temperature and humidity. Curators at the museums also monitor temperature and humidity independently of OFEO and they notify OFEO if they believe the building environment could expose the collections to damage.

We observed that OFEO has taken steps to improve its maintenance program and associated records. OFEO is working with OCIO to upgrade FacilityCenter, which OFEO management believes will resolve the issues we identified. The upgrade will feature the use of hand-held input devices, and additional self-service and call center features, which will help to ensure that all maintenance is entered into FacilityCenter. The upgrade will also feature improved reporting functionality, which will help OFEO manage its maintenance program more efficiently.

RECOMMENDATIONS

To improve the effectiveness of the maintenance management system through better use of FacilityCenter, we recommend that the Director of OFEO:

1. Implement policies and procedures to ensure that OFEO enters all maintenance tasks into FacilityCenter.

2. Use available resources to promptly update and upload all critical assets' scheduled maintenance tasks into FacilityCenter.

MANAGEMENT COMMENTS

The September 8, 2009 response to the draft audit report from the Deputy Director and Chief of Staff, Office of Facilities Engineering and Operations (OFEO) concurred with both of our audit recommendations.

OFEO's Office of Facilities Management and Reliability (OFMR) and the Office of the Chief Information Officer (OCIO) worked to identify requirements for upgrading FacilityCenter. The new version, launched in June 2009, makes the system easier to use, and provides more accurate information. OFEO/OFMR is conducting reviews of all asset data and preventive maintenance schedules in the system, and expects the system to be fully functioning by February 2010.

In addition, OFEO/OFMR began updating the maintenance procedures manual in August 2008. The manual, which became available on September 11, 2009, expands upon the information in the 2007 version.

OFEO/OFMR has enlisted the help of a contractor to develop a maintenance-training program for all employees. The program will teach the fundamentals and theory of maintenance, and will instruct employees how to use FacilityCenter. Training will begin in December 2009 and will target over 200 maintenance employees.

We include the full text of management's response in Appendix C.

OFFICE OF THE INSPECTOR GENERAL COMMENTS

Management's current and planned actions respond to the recommendations, and we consider the recommendations resolved. We appreciate the courtesy and cooperation of Smithsonian representatives during this audit.

APPENDIX A. SCOPE AND METHODOLOGY

We set out to determine whether the Smithsonian can reduce overall facilities costs by maximizing the useful life of major equipment while minimizing the risk of injury from equipment deterioration. To accomplish these objectives, we interviewed management and staff from the Board of Regents; Office of Facilities Engineering and Operations (OFEO); the Office of the Comptroller; the Office of Planning, Management and Budget; the Office of Contracting; and the Office of the Chief Information Officer. We reviewed Smithsonian policies and procedures, industry standards, and federal statutes related to facilities management and funding.

The Office of Facilities Management and Reliability (OFMR) within OFEO was our primary contact during the course of this audit. We only reviewed maintenance activity managed by OFMR. Accordingly, we did not review maintenance conducted by the Office of Protection Services, the Smithsonian Tropical Research Institute or the Smithsonian Astrophysical Observatory.

Vertical Transportation
Since OFEO identified vertical transportation as one of the Institution's top three problematic areas, the initial scope of our audit was to identify the prioritization of maintenance requirements for vertical transportation equipment with limited funding. Assuming that Smithsonian staff performed maintenance work, our intent was to select a representative sample of vertical transportation equipment and examine the historical maintenance documents for each piece of equipment to determine if they achieved their expected useful lives. We found that a contractor performed maintenance on vertical transportation equipment Institution-wide, except for the Steven F. Udvar-Hazy Center in Dulles, Virginia. We excluded this facility from our scope. Because of incomplete internal record-keeping, we were unable to validate the actual age of the vertical transportation equipment overall, to determine if it is functioning beyond its expected useful life. Consequently, we focused our efforts on reviewing the contract, the work performed by the contractor, and the oversight of the contractor by the Contracting Officer's Technical Representative (COTR). We looked at elevators and escalators, but not other vertical transportation equipment such as cranes and hoists. However, we refer to elevators and escalators as vertical transportation equipment.

Specifically, we obtained and reviewed the plan that outlines the frequency and maintenance tasks for vertical transportation equipment. We then reviewed the maintenance records available for a judgmental sample of vertical transportation equipment to verify whether maintenance took place as scheduled.

HVAC
We expanded our scope to review the maintenance work performed on Smithsonian heating, ventilation and air-conditioning (HVAC) systems. We examined the process for determining maintenance requirements and documentation of completed maintenance tasks. Based on meetings with OFEO staff, we found that HVAC maintenance records are incomplete. However, OFEO has a partially operational computerized maintenance management system known as FacilityCenter, which is designed to schedule planned and unplanned maintenance tasks. We conducted meetings with two zones that have either fully or partially implemented FacilityCenter to track and schedule maintenance activities to determine how they oversee the maintenance workload for HVAC equipment.

For the zone that has implemented FacilityCenter, we obtained copies of the planned maintenance schedules for selected units generated from Facility Center, a report of maintenance work performed on the equipment, as well as the manual log book the zone uses to record unplanned maintenance in order to enter into FacilityCenter upon completion. We also obtained a report generated from FacilityCenter that the zone Manager uses to identify the status of work orders for HVAC equipment within the zone.

The zone that has not fully implemented FacilityCenter uses both in-house and contractor services to maintain HVAC equipment. For this zone, we reviewed the contract of the work performed and the COTR's oversight of the contract.

Safety

To determine the Institution's progress in correcting safety issues due to disrepair, we conducted interviews with OFEO staff and reviewed safety and incident reports related to vertical transportation and HVAC equipment produced by the Office of Safety, Health and Environmental Management and the Office of Protection Services.

* * * * *

We conducted our work in Arlington, Virginia and Washington, D.C. from November 2008 to July 2009 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence we obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

APPENDIX B. BUILDINGS BY ZONE

Zone	Buildings
East Mall	National Air and Space Museum, Mall Steven F. Udvar-Hazy Center, Dulles Airport, Virginia National Museum of the American Indian, Mall Building 380, Herndon, Virginia
Gallery Place	Donald W. Reynolds Center, Washington, DC Victor Building, Washington, DC Renwick Gallery, Washington, DC
North Mall	National Museum of Natural History, Mall
Smithsonian Environmental Research Center	Smithsonian Environmental Research Center, Edgewater, MD Carnegie Mansion, New York City Fox-Miller House, New York City National Museum of the American Indian – US Customs House, New York City
South Mall	Arthur M. Sackler and Freer Buildings, Mall Arts and Industries Building, Mall Smithsonian Institution Building, Mall Hirshhorn Building and Sculpture Garden, Mall National Museum of African Art, Mall S. Dillon Ripley Center, Mall
Suitland	Anacostia Museum, Washington, DC National Museum of Natural History – Museum Support Center and related facilities, Suitland, MD National Museum of the American Indian – Cultural Resources Center, Suitland, MD National Air and Space Museum – Paul E. Garber Preservation, Restoration, and Storage Facility, Suitland, MD
Upper Northwest	National Zoological Park, Washington, DC National Zoological Park, Front Royal, VA
West Mall	National Museum of American History, Mall National Museum of American History Storage Facility, Newington, VA

APPENDIX C. MANAGEMENT RESPONSE

Smithsonian Institution — Memo

Office of Facilities Engineering and Operations

Date September 8, 2009

To A. Sprightley Ryan, Inspector General

cc G. Wayne Clough, Secretary
Alison McNally, Under Secretary Finance and Administration
Bruce Kendall, Director, Facilities Engineering and Operations

From Clair Gill, Deputy Director and Chief of Staff, Office of Facilities Engineering and Operations

Subject Management Response on Audit of Facilities Maintenance and Safety, Number A-09-03-2

On August 28, 2009, you issued a report on Audit of Facilities Maintenance and Safety (the "Report"). The objective of the audit was to determine whether the SI could reduce overall facilities costs by maximizing the useful life of equipment while minimizing the risk of injury from equipment deterioration. The auditors assessed the adequacy of the SI's processes to maintain certain systems and minimize maintenance-related injuries.

Thank you for the opportunity to respond to the Report. Management would like to bring to your attention its perspective on some of the issues raised and highlight recent actions taken and actions underway.

Recommendation #1: Implement policies and procedures to ensure that OFEO enters all maintenance tasks into Facilities Center. Concur. See management response below.

Recommendation #2: Use available resources to promptly update and upload all critical assets' scheduled maintenance tasks into Facility Center. Concur. See management response below.

Management Response:

Upgrades and Data Updates
From September of 2008 through June of 2009 OFEO/OFMR and OCIO worked on identifying requirements and designing upgrades for our Integrated Workplace Management System, Facilities Center. These upgrades provide a more user-friendly system and additional controls to increase data accuracy. The new version of the system was launched in June of 2009.

Smithsonian Institution Building, Room 320
1000 Jefferson Drive, SW
Washington DC 20560-0017
202.633.1873 Telephone
202.786.2330 Fax

APPENDIX C. MANAGEMENT RESPONSE (CONTINUED)

OFEO/OFMR is conducting a complete review and update of all building asset data in the system. The schedule for completion of this process is as follows:

- Physical review (walk through of each mechanical room) in progress.

Status of each Zones physical review:

- South Mall Zone, 95% complete
- Gallery Place Zone, 75% complete
- East Mall Zone, 65% complete
- SERC Zone, 100% complete
- North Mall Zone, 0% complete
- West Mall Zone. 15% complete
- Suitland Zone, 75% complete
- Upper Northwest Zone, 0% complete

- Building asset data updates are scheduled for completion by December 30, 2009.
- Review scheduling of preventive maintenance tasks and create schedules for new assets added to the system by January 2010.
- System generation of all preventive maintenance work orders beginning February 2010.
- Begin monthly metrics measuring the number of work orders completed per zone and the number of work orders over 120 days in March 2010.

Maintenance Procedures Manual:

In August 2008, OFEO/OFMR began a project to upgrade its current maintenance procedures manual. This manual contains a wide range of information for our maintenance employees on various maintenance procedures from the Lock out Tag Out process to procedures that must be followed in the event of a building emergency. It has been greatly expanded since the first version was written in 2007. There will be a hard copy manual in each shop location Smithsonian wide. The manual will also be available via the OFEO/OFMR website on PRISM. This newly revised manual was completed on August 31, 2009 and will be distributed on September 11, 2009.

Maintenance Training Program:

In April of 2009, OFEO/OFMR began a project with the support of a contractor to develop a training program for all maintenance employees. This program will take the participants from the very beginning and teach them why we do maintenance, how to prioritize maintenance requests, instruct them on how to use the automated maintenance management system and train them on the processes and procedures from the maintenance manual. The training program is expected to begin in December of 2009 and the Assistant Building Managers, Building Managers and Zone Managers will make up the first class. This class will be held for half of a day for 10 consecutive weeks, as it is a 40 hour class. The maintenance supervisors will be the next group trained, followed by all the maintenance employees. Over 200 maintenance employees will eventually take this training program.

2

APPENDIX D. CONTRIBUTORS TO REPORT

Daniel R. Devlin, Assistant Inspector General for Audits
Brian W. Lowe, Supervisory Auditor
Teena R. Propst, Auditor-in-Charge
Katie L. Bruckner, Auditor
Michelle S. Uejio, Auditor