# NECESSARY RENOVATIONS TO HOUSE OFFICE BUILDINGS

## HEARING

BEFORE THE

## COMMITTEE ON HOUSE ADMINISTRATION HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

HELD IN WASHINGTON, DC, MAY 6, 2009

Printed for the use of the Committee on House Administration

Available on the Internet:
*http://www.gpoaccess.gov/congress/house/administration/index.html*

U.S. GOVERNMENT PRINTING OFFICE

52–313 WASHINGTON : 2009

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

COMMITTEE ON HOUSE ADMINISTRATION

ROBERT A. BRADY, Pennsylvania, *Chairman*

ZOE LOFGREN, California
*Vice-Chairwoman*
MICHAEL E. CAPUANO, Massachusetts
CHARLES A. GONZALEZ, Texas
SUSAN A. DAVIS, California
ARTUR DAVIS, Alabama

DANIEL E. LUNGREN, California
*Ranking Minority Member*
KEVIN McCARTHY, California
GREGG HARPER, Mississippi

S. ELIZABETH BIRNBAUM, *Staff Director*
VICTOR ARNOLD-BIK, *Minority Staff Director*

# NECESSARY RENOVATIONS TO HOUSE OFFICE BUILDINGS

**WEDNESDAY, MAY 6, 2009**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOUSE ADMINISTRATION,
*Washington, DC.*

The committee met, pursuant to call, at 11:05 a.m., in Room 1324, Longworth House Office Building, Hon. Robert A. Brady [chairman of the committee] presiding.

Present: Representatives Brady, Lofgren, Gonzalez, Lungren, and Harper.

Staff Present: Liz Birnbaum, Staff Director; Charles T. Howell, Chief Counsel; Jamie Fleet, Deputy Staff Director; Matt Pinkus, Professional Staff/Parliamentarian; Kyle Anderson, Press Director; Kristin McCowan, Chief Legislative Clerk; Shervan Sebastian, Staff Assistant; Victor Arnold-Bik, Minority Staff Director; Alec Hoppes, Minority Professional Staff; Karin Moore, Minority Legislative Counsel; Andy Snow, Minority Professional Staff; and Salley Collins, Minority Press Secretary.

The CHAIRMAN. Good morning. I would like to call the hearing on House Administration to order. And the hearing room is a little bit bigger, but I like ours better. It is more cozier because I can't see, you know.

This morning we are we are going to discuss the condition of the Cannon House Office Building and the East and West Underground Garages and the Architect's recommendations for what to do with them.

Last year, we celebrated the centennial of the Cannon House Office Building, which was opened in 1908. Of course, there have been some repairs and upgrades in the last 100 years, but much of the basic infrastructure, the pipes and the conduits, is decades old. And every time a pipe breaks or a window leaks or a radiator fails, we have to cut into the walls, disrupt offices and spend thousands of dollars to repair the problem.

In addition, we recently learned that some stone decorations along the upper exterior wall have begun to fall. These obviously create a huge hazard for pedestrians and cars below. The Architect has temporarily removed the loose stone and stabilized the building, but a long-term solution is overdue.

At the same time, the House Underground Garages are now more than 40 years old and clearly have exceeded their design life. Concrete is breaking off the floors and the ceilings, exposing rusted reinforcements and threatening to damage cars. One side of the east garage is held up by extra steel supports. Leaks along the

walls have to be channeled out of the structure through special drains.

The Architect has proposed a plan to renovate the underground garages, which are in the worst shape, over the next 5 years. Then he will move on to repair the Cannon Building. Of course, we will have some disruption as cars and offices have to be moved around during construction. But in the end, our buildings will last for decades more.

So I thank you for appearing here today and look forward to hearing from the Architect and the GAO regarding the need to renovate these buildings.

I would now like to recognize the Ranking Member, Mr. Lungren.

[The statement of Chairman Brady follows:]

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

DANIEL E. LUNGREN, CALIFORNIA
RANKING MINORITY MEMBER

Congress of the United States
House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
Washington, D.C. 20515-6157
(202) 225-2061
www.house.gov/cha

**Committee on House Administration**
**"Necessary Renovations to House Office Buildings"**
**May 6, 2009, 11:00 am**

**Statement of Chairman Robert A. Brady**

The hearing will come to order.

Good morning. This morning we are going to discuss the condition of the Cannon House Office Building and the East and West Underground Garages, and the Architect's recommendations for what to do about them.

Last year we celebrated the centennial of the Cannon House Office Building, which was opened in 1908. Of course, there have been some repairs and upgrades in the last hundred years. But much of the basic infrastructure – the pipes and the conduits – is decades old. And every time that a pipe breaks, or a window leaks, or a radiator fails, we have to cut into the walls, disrupt offices, and spend thousands of dollars to repair the problem.

In addition, we recently learned that stone decorations along the upper exterior wall have begun to fall. These obviously create a huge hazard for pedestrians and cars below. The Architect has temporarily removed the loose stone and stabilized the building, but a long-term solution is overdue.

At the same time, the House underground garages are now more than 40 years old, and clearly have exceeded their design life. Concrete is breaking off the floors and the ceilings, exposing rusted reinforcements and threatening to damage cars. One side of the east garage is held up by extra steel supports. Leaks along the walls have to be channeled out of the structures through special drains.

The Architect has proposed a plan to renovate the underground garages, which are in the worst shape, over the next 5 years. Then he will move on to repair the Cannon building. Of course, we will have some disruption as cars and offices have to be moved around during construction. But in the end, our buildings will last for decades more.

I look forward to hearing from the Architect and the GAO regarding the need to renovate these buildings.

Mr. LUNGREN. Thank you very much, Mr. Chairman. I thank you for calling this hearing today.

When you said at the beginning of this year we were going to work, you were right. Just last week, we heard from officials at the Library of Congress about the technological infrastructure requirements needed to meet the Library's 21st century mission of preserving the world's largest universal collection of historical documents for future generations.

Similar to the Librarian's mission, the Architect of the Capitol is charged with the sizeable task of preserving the historical buildings throughout the Capitol grounds and ensuring the structural integrity and safety for the millions of visitors who travel here each year to experience firsthand the rich history of this Nation's government.

It always strikes me that if you don't get chills up your spine when you see the Nation's Capitol, maybe it is time for you to leave. And it is not just the Capitol itself, but it is the buildings that surround it on this campus that are important to the American people, not because we, individual Members of Congress, are here but because of the institution. And I would hope we would do our duty to ensure that these monuments to America's institutions are properly cared for.

Today, we are here to discuss the Architect's proposed plans for renovations that are necessary to preserve our oldest congressional office building, along with two underground parking facilities.

The Cannon House Office Building, completed and first occupied by the 60th Congress, did, as the Chairman said, celebrate its 100th year anniversary last year. It is rich in history. Some of the critical infrastructure systems within the building, however, have been there throughout much of that history and now are in a steady state of decline. The Architect's facility assessment for the Cannon Building identified major deficiencies in the heating and air conditioning system, plumbing, mechanical equipment, life safety and fire protection systems, electrical equipment, and the exterior stonework.

According to the Architect's assessments, those two House underground parking buildings, built in 1968, are in even more state of disrepair and are an even more urgent matter. The garages are deteriorating to the point where there is significant structural damage, including crumbling concrete and corroding steel reinforcements.

I was just thinking the other day, we ought to compare them with the new Nationals ballpark. I doubt that our parking structures would be acceptable under the standards of Major League Baseball or the NFL. And isn't that a sad comment that we wouldn't allow people to go watch ball games at a structure or park their cars at a structure, but asking people to come here to our Nation's Capitol and asking people who work here to park in such structures and to work in such structures seems to be acceptable, at least to this point in time.

We are going to work with the Architect on a bipartisan basis to assure that what needs to be done is done. The Architect's facility assessment was reviewed and validated by the Government Accountability Office, which concurred with the Architect's analysis

that the House Underground Garages require renovation within 2 to 4 years, and the Cannon Building needs to be renovated within 5 to 7 years.

So I want to first applaud the Architect. I believe under your leadership your Office has aggressively and proactively tackled difficult facility planning efforts. We have some unique circumstances here. We have to keep operating. We have to notify people. We have to provide safety, but we have to get the business of the people done, and that puts some additional strictures on us.

So I thank you for what you have done so far. I thank the Chairman for bringing this to the attention of this committee and the Congress itself, and I pledge to work on a bipartisan basis with the Chairman to make sure that we provide the leadership from our standpoint to take care of the job that needs to be done.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. Thank you.

[The statement of Mr. Lungren follows:]

***Opening Statement [After Brady's Remarks]***

I would like to thank Chairman Brady for calling today's hearing. Just last week, this Committee heard from officials at the Library of Congress about the technological infrastructure requirements needed to meet the Library's 21st Century mission of preserving the world's largest, universal collection of historical documents for future generations.

Similar to the Librarian's mission, the Architect of the Capitol is charged with the sizable task of preserving the historical buildings throughout the Capitol grounds, and ensuring the structural integrity and safety for the millions of visitors who travel here each year to experience first-hand the rich history of this nation's government.

Today, we are here to discuss the Architect's proposed plans for renovations that are necessary to preserve our oldest Congressional office building along with two underground parking facilities.

The Cannon House Office Building, completed and first occupied by the 60th Congress, celebrated its 100 year anniversary in 2008. The Cannon building is rich in history. Some of the critical infrastructure systems within the building have been there throughout much of that history, and are now in a steady state of decline. The Architect's facility assessment for the Cannon building identified major deficiencies including the HVAC systems, plumbing, mechanical equipment, life-safety and fire protection systems, electrical equipment, and the exterior stonework.

According to the Architect's assessments, the two House Underground Parking Garages, built in 1968, are an even more urgent matter. The garages are deteriorating to the point where there is significant structural damage, including crumbling concrete and corroding steel reinforcements.

The Architect's facility assessment was reviewed and validated by the Government Accountability Office, which

concurred with the Architect's analysis that the House Underground Garages require renovation within 2-4 years, and that the Cannon building needs to be renovated within 5-7 years.

I would like to first applaud the Architect. Under the leadership of Stephen Ayers, the AOC has aggressively and proactively tackled difficult facility planning efforts. These efforts allow us to get beyond the tunnel vision of daily maintenance and gain an understanding of the long-term requirements for the Capitol Campus. Although it is obvious that renovations are necessary in the Cannon building, I want to be clear that the Congress needs to exercise caution in determining the most appropriate way forward. Before we can be comfortable with the kind of commitment required of a renovation to the Cannon building, we need better cost estimates, better project requirements, and detailed operational plans for how to accommodate impacted Members.

I would also like to ensure that energy and water conservation measures are incorporated into the designs for all of these proposed renovations, and that they are incorporated in a manner that ensures long term cost and efficiency gains.

With that, I would like to thank each of our witnesses for joining us today to discuss these important matters and I look forward to your testimony.

The CHAIRMAN. Our first witness today will be Stephen T. Ayers, the Acting Architect of the Capitol. Mr. Ayers is a licensed architect, has been at the Architect's Office for more than 10 years, and has been serving as Acting Architect for the last 2 years.

Our second witness will be Terrell Dorn. Mr. Dorn has worked on physical infrastructure issues for the GAO since 2001, following many years as a civil engineer and a construction manager.

**STATEMENTS OF STEPHEN T. AYERS, AIA, ACTING ARCHITECT OF THE CAPITOL, OFFICE OF THE ARCHITECT OF THE CAPITOL; AND TERRELL G. DORN, DIRECTOR, PHYSICAL INFRASTRUCTURE ISSUES, GOVERNMENT ACCOUNTABILITY OFFICE**

The CHAIRMAN. Mr. Ayers, we would like to hear from you.

**STATEMENT OF STEPHEN T. AYERS**

Mr. AYERS. Well, thank you, Mr. Chairman, Congressman Lungren, and members of the subcommittee for the opportunity to testify today regarding the proposed renovations for the Cannon House Office Building and the House Underground Garages.

The need for these projects is easily apparent. A quick walk behind the scenes reveals serious deterioration in many areas. We are requesting funding in fiscal year 2010 to begin to address these projects as we continually work to manage the backlog of deferred maintenance and capital renewal projects throughout the Capitol complex.

Last year, we marked the Cannon's 100th anniversary. This building is historic and requires extensive maintenance to ensure that it continues to serve as a safe, functioning, and professional working environment.

The Cannon Building was completed and occupied in 1908 and is the oldest congressional office building. By 1913, the House had outgrown the office space in the building, so a new fifth floor was added. Over the course of the next 30 years, several improvements were made, but a complete top-to-bottom renovation has never been undertaken in this building. As a result, several components of the Cannon Building system date back to its original construction and are now clearly at the end of their useful lives.

A facility condition assessment of the Cannon Building completed this March shows that the building has been well maintained. However, major deficiencies have been identified in the heating, ventilation, and air conditioning systems, plumbing, mechanical equipment, life-safety and fire protection systems, electrical equipment and exterior stone, as the Chairman mentioned. Additionally, several building components, such as windows, doors, and lighting systems, are in need of upgrading to comply with current building codes and Federal energy standards.

Much of the plumbing in the Cannon Building is at least 40 years old and is breaking down, resulting in leaks and service outages. For example, last December a hot water pipe failed beneath the basement floor. To fix it, we had to shut off the building's heat for 4 days.

A failure in one of the main storm water pipes several years ago also resulted in flooding behind the walls in a Member's office. The

repairs took more than 4 weeks and severely disrupted work in that Member's office.

Most importantly, the Cannon Building renovation will allow us to address key life-safety issues such as egress routes, fire suppression systems, fireproofing on structural components, and smoke control systems as well.

Due to its age and deterioration, we recommend a phased renewal of the Cannon Building beginning in fiscal year 2011 or fiscal year 2012. We believe that effective stewardship requires these issues to be addressed now before they become a crisis. Our fiscal year 2010 budget request includes $5 million to undertake the critical planning process necessary for a renovation of this scale. This will enable us to estimate the costs of the design and the construction phases.

The Cannon Building renewal is planned as a multiyear renovation project. Each phase of the construction will be designed to minimize disruption to occupants and operations. The project will include a plan for temporarily housing offices which are displaced during the work. While House leadership will ultimately determine who moves and when, it is clear to everyone that all Members must remain in one of the House office buildings on the primary campus.

With regard to the House Underground Garages, which were built in 1968, serious and imminent safety deficiencies exist and must be corrected in very short order. These deficiencies include the corrosion of embedding reinforcing steel under the concrete floor slabs and the delamination of the concrete slabs themselves.

To address these issues, we have requested $37 million in our fiscal year 2010 budget for the renovation of the East Underground Garage. Funding for the West Underground Garage will be considered as part of our fiscal year 2012 budget. Each garage will take approximately 2 years to rehabilitate, and during this time the garages must be vacated. And those displaced during construction will be moved to temporary or leased parking spaces.

The timely renewal of the Cannon Building and House Underground Garages is necessary to avoid system failure and to prevent a crisis which will ultimately negatively impact Members of Congress and their staffs. For example, if we don't undertake the garage work now, the entire floor slabs will have to be removed instead of simply repairing them, as we can do today.

Mr. Chairman, I would like to conclude by thanking the committee for your continued interest and support of our efforts to maintain and preserve the Capitol complex, and I would be happy to answer any questions you may have.

The CHAIRMAN. Thank you.

[The statement of Mr. Ayers follows:]

# STATEMENT OF STEPHEN T. AYERS, AIA, LEED AP
# ACTING ARCHITECT OF THE CAPITOL

**Regarding the Renovation of the Cannon House Office Building and the East House Underground Garage**

**Committee on House Administration, U.S. House of Representatives**

**May 6, 2009**

Mr. Chairman, Congressman Lungren, and members of the Committee, thank you for the opportunity to testify today regarding two important projects for the House of Representatives: the renovations of the Cannon House Office Building, and House Underground Garages. As part of its Fiscal Year 2010 budget, the AOC is requesting funding to begin the planning process for the renovation of Cannon Building, as well as construction funding for the renovation of the East House Underground Garage.

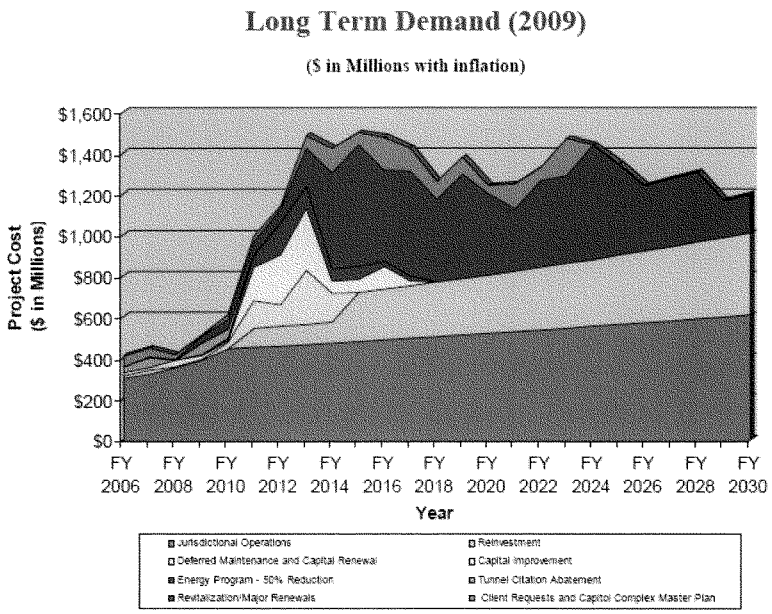
The AOC's Fiscal Year 2010 budget request reflects the massive challenge of addressing the need to preserve the functionality of the historic infrastructure on Capitol Hill, while recognizing the need for fiscal responsibility. Our Fiscal Year 2010 budget has been structured around four focus areas. They are:

- **Solving the Deferred Maintenance and Capital Renewal backlog;**
- **Following the Capitol Complex Master Plan process;**
- **Meeting Federally-mandated and Leadership energy goals;**
- **Managing and caring for the AOC work force.**

We continually work to manage the backlog of Deferred Maintenance and Capital Renewal projects, and have put into place a process by which to prioritize these projects. Not only do we face the challenge of the upkeep of aging buildings, we need to keep pace with new facility maintenance and building technologies, as well as increased security requirements.

Last year, the Cannon House Office Building reached its 100th anniversary. This building, like most on the Capitol campus, is historic and iconic and requires extensive maintenance in order to ensure that it continues to serve as a functioning, professional working environment for years to come.

The following chart — the "bow wave" chart — clearly shows that ongoing facilities requirements and new mandates have created a significant increase in resource requirements.




Our FY 2009 budget request, and subsequent appropriation, was a significant step in buying down a portion of the bow wave. This includes addressing stringent, modern-day fire and life-safety standards, and abating Office of Compliance citations to improve safety conditions throughout the complex. Life-safety projects are very high priorities for our Agency. However, we must continue to work on and to invest resources in projects that will prevent our critical facilities from further deterioration and failure. If we continue to delay Deferred Maintenance and Capital Renewal projects, the bow wave will move out and costs will increase over the long run.

We continue to invest our resources in the areas that have an "immediate" urgency rating: Deferred Maintenance and Capital Renewal projects. We continue to refine the data on which our planning is based. For example, for the past five years we have conducted independent Facility Condition

Assessments throughout the Capitol complex. These assessments identify the most critical issues in the facilities, and the objective data collected during this process helps us to identify the urgent needs that must be addressed expeditiously. Specifically, the data continues to show that "immediate" and "high" urgency Deferred Maintenance and Capital Renewal requirements will increase dramatically over the next several years. If these conditions are not addressed within a reasonable amount of time, they will continue to deteriorate to the point where they can, and will, impact Congressional operations.

The Facility Condition Assessments also are used to determine a Facility Condition Index based on the backlog of Deferred Maintenance work. The Facility Condition Assessments and Facility Condition Indexes are used to predict the positive effect of investment and the negative effect of deferring work. Our assessments are showing that, at current funding levels, Capitol complex facilities are trending toward a "poor" rating. Projects are also evaluated based upon an objective set of criteria. These criteria include:

- Preservation of historic or legacy elements or features of buildings or entire historic structures;
- Fire and life-safety, code compliance, regulatory compliance, and statutory requirements;
- Impact on mission including client urgency, and accommodation of new or changed missions;
- Economics, including value, payback, life cycle costs, and cost savings;
- Physical security, including protection of facilities and people;
- Energy efficiency and environmental aspects;
- Conditions of facilities and their components;
- Urgency to correct deficiencies.

As we developed our FY 2010 budget, we considered more than $350 million worth of projects, and are requesting $168.8 million for projects. This prioritized list includes 36 projects; 32 of which are categorized as being of "immediate" urgency. The remaining four are categorized as "high urgency." An additional 85 projects remain on the deferred list. Of particular note are two "high urgency" renewal projects: the Whole Building Renewal of the Cannon House Office Building, and the Interior Renovation of the East House Underground Garage. The following is a more detailed discussion of both of these important projects.

**History of the Cannon House Office Building**

The Cannon House Office Building was completed and occupied in 1908, making it the oldest Congressional office building. The original building featured 397 offices, one for each of the representatives in the 61st Congress, and 14 committee rooms. By 1913, the House had outgrown the office space in the building, so to create more office space, the roof was raised and a fifth floor was added to the building. In 1932, the suites and office spaces were remodeled in conjunction with the construction of a second office building.

Over the course of the next 30 years, several improvements were made to the building, including the replacement of elevators, and the installation of air conditioning in the 1930's; the construction of an adjacent car garage in 1955, and a reconfiguration of the office suites in 1966. A complete, or whole-house, renovation of the building has never been accomplished, and several components of Cannon Building's building systems date back to its construction.

**Cannon House Office Building Today**

The Cannon Building currently provides office space for members of the U.S. House of Representatives and their staffs, committee hearing rooms, space for Congressional support services, and a carry-out restaurant. The attic contains space for offices and storage, and the basement contains offices, service areas, storage, and electrical/mechanical rooms.

The AOC completed a thorough Facility Condition Assessment of the Cannon Building, which we updated in March 2009. The assessment found that the building has been well maintained. However, major systems throughout the building are nearing the end of their useful life and need to be replaced. Major deficiencies have been identified in heating, ventilation, and air-conditioning (HVAC) systems, plumbing, mechanical equipment, life-safety and fire protection systems, electrical equipment, and exterior stone. Several building components such as windows, doors, lighting, and insulation need to be upgraded to comply with Federal energy consumption standards. Also, various aspects of the building need to be upgraded to comply with current accessibility requirements. Lastly, there are several historic preservation requirements throughout the interior and exterior of the building.

As we plan for the whole building renewal of the Cannon Building, there are several major building systems on which we specifically will be focusing much-needed attention. For example, the white marble exterior of the Cannon Building is in relatively good condition, but there are several areas where we have found significant deterioration, which needs to be repaired and preserved. A recent survey of the building's exterior identified numerous modillions, which hang below the cornice and roof balustrade, that have cracked and require repair. Each winter season, these cracks widen, causing some modillions to be at risk of falling from the building.

*Deteriorated Modillion*

The windows throughout the Cannon Building were last replaced in the mid-1960s, and are single-glazed, painted wood and metal. Many do not operate as intended, and water and mold damage has occurred in several offices because of leaking widows. The windows are not insulated, do not seal well, and are the source of significant energy loss.

The majority of the Cannon Building's heating/ventilating/air conditioning (HVAC) systems were installed between 1936 and 1966. Most of these systems are now outdated, have faulty components, require constant repair, and have reached the end of their useful life. Due to the age of the components and the lack of modern controls, it is impossible to control temperatures and indoor air quality inside many Members' suites and offices. In fact, many of the HVAC components are so old we can no longer obtain parts needed to complete repairs, and there is no question that they are very energy inefficient compared to modern systems.

Much of the plumbing in the Cannon Building is at least 40 years old, and components of the system are at the end of their useful life; leading to leaks and service outages. Components of the hot water system are very old; resulting in unexpected outages in recent years. For example, in December 2008, an eight-inch diameter hot water pipe failed beneath the basement floor. To fix it, we had to shut off the building's heat for four days. Fortunately, it was unseasonably warm at the time. The storm water system is original to the building and is failing in several areas, and the resulting leaks have damaged several areas inside the building. A failure in one of the main storm

water leader pipes several years ago resulted in flooding behind the walls in a Member's suite. The repairs took more than four weeks, which disrupted work in his office significantly. Much of the plumbing throughout the Cannon Building requires complete replacement.

Several components of the Cannon Building's electrical system require modernization to meet current requirements, and to comply with modern code requirements. Existing emergency power systems are not adequate to meet current requirements. Lastly, the building does not have a lightning protection system.

Most importantly, the renovation of the Cannon Building will offer an excellent opportunity to improve important fire protection and life-safety systems. The renovation would address key safety issues such as egress routes, fire suppression systems, fireproofing for structural components, smoke control systems, firestops for floor and wall penetrations, fire alarms, and smoke detectors.

I have highlighted only a handful of the building components that have reached the end of their expected lives, and need to be updated as part of the renovation of the Cannon Building. Repairs are required to avoid disruption of key services and the corresponding impact on Members of Congress and their staffs. Once building components reach this stage, we see a dramatic increase in the occurrence of disruptive and costly problems such as water leaks, power outages, restroom closures, and indoor air quality problems.

I want to assure you that the AOC will continue to respond quickly to repair any problems that arise, but the negative impact on Congressional operations will be unavoidable, and will likely grow exponentially. If the major deficiencies in the 100-year-old Cannon Building are not addressed expeditiously, system failures could render parts of the facility unusable.

**The Cannon House Office Building Renewal Project**

For these reasons, I recommend we begin the planning for a phased renewal of the Cannon Building, starting in Fiscal Year 2011. The Architect of the Capitol's FY 2010 budget request includes $5 million to begin the planning of the renovation project. This will enable us to estimate the costs of the design and construction phases. The Cannon Building renewal project is planned as a multi-year renovation project, and will correct issues identified by the Facility Condition

Assessment. Each phase of construction will be designed as a stand-alone project in terms of facility infrastructure and operations to minimize disruption to occupants and operations. The project design will include a plan for temporarily housing offices which are displaced during the work.

Preliminary phasing plans suggest we will need up to 60,000 net square feet of swing space in which to relocate offices displaced during the renovation. The following swing space options were proposed and evaluated:

- Lease and fit-out available space in Federal Office Building (FOB) 8;
- Construct a temporary facility on Lot 1, or on the roof of a House Underground Garage;
- Construct a temporary facility in the Rayburn Building courtyard, Cannon garage roof, or in the lawn area between the Cannon Building and First Street;
- Fit-out of existing space in Capitol complex buildings.

In the first two options described above, committee staff currently housed in the Cannon, Longworth, and Rayburn House Office Buildings would be relocated to the swing space. This would avail rooms in the existing House Office Buildings which then would be configured to accommodate Members' offices that are displaced during the renovation. In the third and fourth options listed above, it would be possible to house Members' suites in the swing space. At this time, we are pursuing the Federal Office Building 8 option. This option appears to best meet Members' needs while being the least costly, least disruptive, and least time consuming.

**Federal Office Building 8**

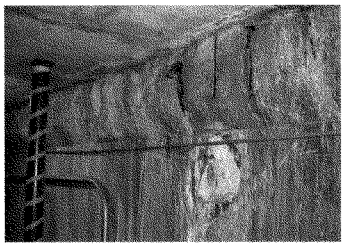
Federal Office Building 8 was built for the Food and Drug Administration in 1965. The General Services Administration now owns and manages the facility, and will begin a renovation of the building this year; converting it into a modern, efficient office building. At the conclusion of the renovation, scheduled for summer 2012, approximately half of the building (~200,000 usable square feet) will be leased by the House of Representatives for use as swing space, and to accommodate future growth. The proposed design will provide a flexible, high-quality work environment, including offices, committee rooms, conference rooms, administrative functional areas, and support spaces. FOB 8 will provide the quantity and quality of space needed to support Congressional

offices dislocated as a result of renovations to the Cannon Building and future renovation projects, as well as accommodate additional space requirements for the House of Representatives.

**House Underground Garages**

The second high urgency renewal project I would like to highlight is the Interior Renovation of the East House Underground Garage.

The House Underground Garages were built in 1968 to provide parking for Members of Congress and their staffs. The garages consist of multi-level parking areas, ramps between levels, associated offices, egress stairways, and roof top plazas. They are constructed of cast-in-place, reinforced concrete with a main structural system of perimeter load bearing walls and interior concrete encased structural steel columns. The exterior is covered in stone, and the rooftops are landscaped.



*Deteriorated Garage Concrete*

The House Underground Garages have been identified by the Facility Condition Assessments as having serious deficiencies. They are rated "poor" in terms of their Facility Condition Index, and they are nearing the end of their useful lives. The major deficiencies identified in the assessments include: concrete floor slabs that contain high chloride levels which cause corrosion of embedded reinforcing steel; delamination of slab concrete; deteriorating expansion joints; and code deficiencies for mechanical, electrical, plumbing, hazardous materials, and fire prevention systems.

*Spalling Garage Roof*

Subsequently, we have been working to address these deficiencies and rehabilitate the garages. We requested $37.6 million in the Architect of the Capitols Fiscal Year 2010 budget request for required renovations in the East House Underground Garage. Funding for the West House Underground Garage is being considered for submission as part of the Fiscal Year 2012 budget.

Plans include replacing concrete floor slabs, reinforcing expansion joints, and upgrading mechanical, electrical, and fire prevention systems.

Each garage will take approximately two years to rehabilitate. During this time, the garages will need to be vacated. Phasing the interior renovation of each garage to allow a portion to remain operational during construction would create circulation and safety concerns and lengthen the renovation period. Consequently, to accommodate Members and staff who will be displaced during construction, we are planning to lease temporary parking spaces.

The renovation will prolong the life expectancy for the garages, provide safe structures, return their conditions to reliable levels of facility maintenance, and avoid the high cost of total replacement. For instance, the deterioration of the concrete parking decks has progressed to the point that five inches of the 10-inch thick concrete decks must be removed and replaced. If the deterioration is allowed to progress further, this less-costly repair will no longer be possible, and the decks will have to be removed and replaced in their entirety. This would significantly increase the cost and lengthen the schedule of the projects.

**Conclusion**

The renewal of the Cannon House Office Building and the House Underground Garages are high urgency projects that are required in the near term to avoid building system failures which will negatively impact the work environment for Members of Congress and their staffs. The conditions of critical building systems in each facility continue to degrade at an increasingly rapid rate. Plumbing breaks, rain leaks, electrical problems, spalling concrete, hot water outages, and heating and air conditioning issues will become increasingly more common and severe.

As the rate of degradation increases, so does the scope of repairs. Failing systems cause collateral damage to other components of the building. This, in turn, will increase the projects' scopes and costs. Some failing building systems, such as the House Underground Garage concrete decks that can be repaired now might require complete replacement if repairs are deferred much longer. The AOC will continue to maintain the aging infrastructure, but in the most urgent cases, impact on Members of Congress and their staffs will become unavoidable.

In addition to correcting the failing building systems I have described, the renewal of the Cannon Building and House Underground Garages will provide the opportunity to significantly improve the energy efficiency of the buildings, integrate sustainable design features, accommodate modern technology, address safety and security shortfalls, and create a more adaptable infrastructure. These changes will better support congressional operations and improve the quality of the work environment.

Mr. Chairman, I want to thank you and the Committee for your continued interest and support of our efforts to maintain and preserve the Capitol complex. Our goal is to provide a high quality, comfortable, efficient, and safe work environment for Members of Congress and their staffs.

We look forward to working closely with the Committee and our House and Senate Oversight Committees to attain this goal, as well as to address the backlog of maintenance and repair projects, and to continue to protect and preserve the U.S. Capitol for generations to come.

Thank you.

The CHAIRMAN. Mr. Dorn.

**STATEMENT OF TERRELL G. DORN**

Mr. DORN. Thank you, Mr. Chairman, Congressman Lungren, members of the committee.

In spite of regular appropriations from Congress and good maintenance by the Architect of the Capitol, the Cannon House Office Building and the East and West Underground Garages have deteriorated over time and are in need of additional capital investment.

In the garages, the structure is exposed and wear is easy to see. For example, water and salt have combined over the years to corrode some of the steel that is used to reinforce the concrete parking decks. The steel rusts and expands, popping off the concrete and exposing the underlying steel to even further corrosion. In some cases, concrete has popped off of a parking garage ceiling unexpectedly, disrupting the parking spaces below until inspections and emergency repairs can be made. In other cases, regular AOC walkthroughs of the decks have spotted damaged concrete that was loose but had not yet fallen. Removal or repair of the damage could happen in a planned manner with minimal disruption to Members and staff.

A similar situation exists in the Cannon House Office Building, but in most cases the wear and corrosion over the years is harder to see. The marble floors still shine and the heating still works and the lights still come on when you flip the switch. But behind the walls and in the mechanical rooms in the attics, the infrastructure supporting the building, such as the plumbing and heating system, are deteriorated and subject to failure in the near future.

Like with the parking deck example, repair and replacement of the building infrastructure in a planned and orderly fashion rather than through emergency fixes will be cheaper and least disruptive to operations of the Cannon House Office Building.

In addition, life safety codes, energy codes, accessibility codes and increased security requirements have raised the minimum requirements for a building that was never designed to handle them. For example, the Cannon Building will not likely be able to meet the energy conservation measures of the Energy Independence and Security Act of 2007 without repairs to its heating and air-conditioning systems and replacement of the single pane windows. Accommodating these mandates, while minimizing the impact to House operations and to the historic fabric of the monumental Cannon Building will be challenging and will require significant thought and planning.

The AOC has taken important initial steps to accomplish that goal. They have commissioned studies to examine what needs to be done to bring existing systems up to current code. They have hired independent consultants to look over their shoulders and give a third-party assessment of the building's condition, and they hired an independent company to estimate the cost to do all of this work based on the design data that was available so far, all those good practices.

Based on the conceptual information available to date, the AOC and its consultants have estimated the cost to finish the design and then renovate the Cannon Building over the next 5 years will be

about $752 million, which includes an amount for contingency and temporary swing space that is needed to phase the project and minimize disruption.

There are still too many unknowns at this stage of design, however, to consider that to be a realistic number for appropriation purposes. For example, the Construction Industry Institute cautions that the conceptual level estimate such as this may vary as much as 40 percent from the final cost. As described by AOC in its testimony this morning and in the fiscal year 2010 budget, additional design and planning is needed to resolve the project's scope of work and to work out the details and to provide the Congress with a better-quality estimate on which to base its future decisions.

In summary, based on inspections by independent consultants, the House East and West Underground Garages are badly deteriorated and in need of extensive repairs over the next couple of years. Similarly, as previously recommended by GAO, an independent facility condition assessment of the Cannon House Office Building has been conducted and recommends that the necessary capital reinvestment be made over the next 5 to 7 years to protect the asset and to reduce the likelihood of unplanned disruption to building operations.

Additionally, code issues in the Cannon Building need to be addressed to ensure that Members and staff have a safe and accessible place to work. The Cannon Building design is not far enough along to give an estimate, but it is accurate enough for appropriations. Additional design and planning will need to be accomplished over the next 2 years in order to provide Congress with the better information it needs to make future decisions.

Mr. Chairman, that concludes my statement, and I am prepared to answer any questions.

The CHAIRMAN. Thank you.

[The statement of Mr. Dorn follows:]

United States Government Accountability Office

GAO

Testimony before the Committee on House Administration, House of Representatives

For Release on Delivery
Expected at 11:00 a.m. EDT
May 6, 2009

# ARCHITECT OF THE CAPITOL

# Plans for Renovating the Cannon House Office Building and Garages

Statement of Terrell G. Dorn, Director
Physical Infrastructure Issues

GAO
Accountability * Integrity * Reliability

GAO-09-673T

Mr. Chairman and Members of the Committee:

We appreciate the opportunity to participate in this hearing to discuss renovations of the Cannon House Office Building and Garages. The Cannon House Office Building (Cannon Building)—completed in 1908—and the East and West House Underground Garages (East and West Garages)—built in 1968—have deteriorated over time and will need to be repaired, according to assessments conducted for the Architect of the Capitol (AOC). AOC plans to renovate these three facilities over approximately the next 8 years as part of a long-term effort to reduce maintenance backlogs and execute major renewal projects to sustain all Capitol Complex facilities. My statement today is based on work we conducted over the past several months to assess AOC's plans for renovating the Cannon Building and East and West Garages. To conduct this work, we toured the facilities, analyzed AOC documents—including facility condition assessments (FCA),[1] planning studies, and project development documents—and interviewed AOC officials. We relied on the information in AOC's project documents and cost estimates, which was largely based on the work of professional consultants, and did not independently evaluate the condition of the facilities, determine repair needs, or estimate costs.

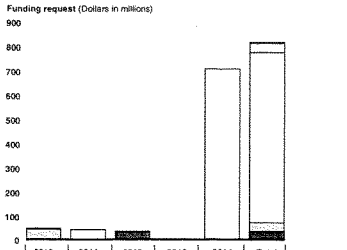
## Summary

Renovations of the Cannon Building and East and West Garages are needed to maintain the integrity and safety of these facilities and reduce the likelihood of unplanned outages and associated costs. According to comprehensive FCAs completed for AOC by an expert consultant, most of the deficiencies identified in the Cannon Building—such as 70-year-old hot water heating and building ventilation systems and damaged, often nonfunctional windows—should be corrected within the next 5 to 7 years. The deficiencies identified in the garages are more urgent structural problems—including cracking concrete and corroding reinforcing steel—and, according to the FCAs, should be addressed within the next 2 to 4 years. In addition to correcting these and other identified deficiencies, the renovation projects will address other considerations, such as energy conservation, historic preservation, hazardous materials abatement, and fire safety. AOC anticipates that each of the garage renovation projects

[1]Condition assessments provide information on a facility's state of repair and are developed from inspections of structural, electrical, mechanical, plumbing, and other building systems. FCA reports typically catalog all of the deficiencies identified during the inspections along with the estimated cost to correct the problems.

will last approximately 2 years while the Cannon Building renovation will be completed in phases over 5 years. In order for these renovations to occur within the time frames specified in the FCAs, AOC has requested or plans to request $38 million for construction of the East Garage renovation in fiscal year 2010, $30 million for construction of the West Garage renovation in fiscal year 2012, and $753 million for the planning, design, and construction of the Cannon Building renovation beginning in fiscal year 2010. (See fig. 1.) Limiting the scope of the renovations by deferring some work could reduce near-term costs; however, such action may result in the need to make more expensive emergency repairs in the future that could disrupt operations.

**Figure 1: AOC's Planned Funding Requests for Cannon Building and East and West Garage Renovation Projects**




| | 2010 | 2011 | 2012 | 2013 | 2014 | Total |
|---|---|---|---|---|---|---|
| | Fiscal year | | | | | |
| Cannon Building planning | $5 | | | | | $5 |
| Cannon Building design | | $37 | | | | $37[a] |
| Cannon Building construction | | | | | $711 | $711[a] |
| East Garage construction | $38 | | | | | $38 |
| West Garage construction | | | $30 | | | $30 |

Total Cannon Building requests: $753 million

Source: GAO analysis of AOC data.

[a]The table indicates that AOC will request full funding for the Cannon Building's design and construction for fiscal years 2011 ($37 million) and 2014 ($711 million), respectively. However, AOC will likely request this funding over multiple years, beginning in 2011 for design work and 2014 for construction.

To date, AOC has followed a reasonable process to plan the renovations of the Cannon Building and East and West Garages, and the agency's current and planned requests for funding are timed to move the renovations forward within the time frames recommended in the FCAs. However,

because the Cannon Building renovation is at an early stage of development—meaning that the plans lack definition and the cost estimate is preliminary—AOC's current estimate of $711 million for the renovation work should not be considered sufficiently accurate for funding purposes. To renovate the Cannon Building within the time frame recommended in the FCA and to provide Congress with better cost information for making future renovation decisions, it is important that AOC continue, as planned, to refine the project's scope and cost estimate over the next 2 years. AOC's request for $5 million in 2010 and planned request for $37 million beginning in 2011 should allow the agency to proceed with planning and design and position it to award a contract for and complete the Cannon Building renovations within the recommended 5- to 7-year time frame. For the East and West Garages, cost estimates are more reliable because the projects are at a later stage of development and are based on more complete information than the Cannon Building and—with updates planned by AOC—are at an appropriate level of development to justify funding to enter into a contract for construction.

## Background

To develop and execute capital projects, AOC assesses the condition of its facilities; plans the work necessary to correct identified deficiencies and address other requirements; completes detailed design documents, including engineering plans and specifications; and awards contracts for construction services.[2] As a project progresses through these stages—which generally take about 5 years to complete—its scope matures and its estimated cost is refined until, at the detailed design stage, the estimated cost should be fairly close to the actual cost of the awarded construction contract. AOC controls the timing of these project development activities through its project prioritization process—a standard approach for scoring projects that considers the project's urgency, type, and importance—and then prioritizes funding requests for planning studies, design, or construction work in its annual budget submission. In the past, we have recommended improvements to AOC's processes for developing projects and prioritizing their execution; AOC has implemented these recommendations. For example, in response to recommendations we made in January 2003 and December 2004, AOC has completed FCAs of most of the facilities under its jurisdiction and developed a process for

[2]Construction could include any demolition, maintenance, repair, or restorative work completed at a facility. In some cases, construction work could also include building an addition to or expanding a facility.

prioritizing projects. More detailed information on AOC's process for developing and prioritizing projects appears in appendix I.

## Cannon Building Renovation Is in the Planning Stage, and Its Estimated Cost Is Expected to Change

According to AOC's FCA of the Cannon Building, most of the identified deficiencies should be corrected within 5 to 7 years.[3] For example, hot water heating and air-handling systems, which are not publicly visible, have components dating back to the 1930s that are deficient and in need of replacement. Other deficiencies identified in the FCA include an outdated fire alarm system for which repair parts are difficult to obtain, worn and stained marble tile in corridors, and original windows that are damaged and often nonfunctional.

AOC plans to correct most of the identified deficiencies through a comprehensive renovation project that will also consider requirements such as energy conservation, physical security, hazardous materials abatement, and historic preservation. The project is expected to include replacement windows, a new copper roof, and work to preserve and repair the building's stone exterior. On the interior, the project is expected to provide new wall and floor finishes in some areas; refurbish restrooms and make them more accessible to disabled people; and allow for complete replacement of all plumbing, heating and cooling, fire protection, electrical, and alarm systems. Included in the project is work to remove asbestos that may be contained in insulation used on hot water pipes in the building's heating system. In addition, the renovation will address fire safety issues related to work that AOC plans to complete through a separate project.[4]

[3]AOC's consultant, ENTECH Engineering, Inc., is currently updating the FCA prepared as part of a planning study of the Cannon Building completed by another consultant, URS Corporation, in December 2004. We referenced a draft copy of the final ENTECH Engineering study in conducting our work.

[4]AOC intends to execute a House Alternative Life Safety Approach (HALSA) project in fiscal year 2011 to address egress issues that are the subject of an Office of Compliance citation. According to the citation, exit stairwells in the building are unprotected against fire and smoke—thereby posing a safety risk to occupants—because they are either completely open or not equipped with fire-rated doors. To correct this problem while preserving the historic character of the building, AOC plans as part of the HALSA project to install cross-corridor fire-rated doors at each of the corner stairs and stairs adjacent to the rotunda to create compartments designed to protect occupants in the event of a fire. AOC will incorporate the HALSA design solution into its planning of the Cannon Building's renovation to determine whether there are any additional egress requirements that need to be addressed during the renovation.

To enable continued use of a part of the building during construction, AOC plans to complete the project in phases—a preconstruction phase and four construction phases (with each phase of construction roughly including one side of the four-sided building)—over 5 years. Accordingly, the project's cost will include an allowance for the construction (or renovation) of a temporary facility for displaced occupants in the preconstruction phase. AOC's preliminary planning studies suggest that this four-phase construction approach would allow for the most efficient operation, the fewest moves, and the shortest schedule of all phasing options considered.[5] We have found in previous work that this method of phasing construction—renovating a portion of the building while keeping the remaining sections of the building operational—can be successful when the facility under construction must remain operational. For example, in renovating Bancroft Hall—the only residence facility at the United States Naval Academy—Navy officials executed a $251 million nine-phase renovation project over 9 years by making one section available for construction while the other eight sections were in use.

Because the Cannon Building project is still in the planning stage, its scope and cost estimate are expected to change. For a project in the planning stage, the expected accuracy of its cost estimate is generally plus or minus 40 percent.[6] As more is learned about a project during the planning process, the accuracy of its cost estimate is expected to improve. For example, we found some recommended work elements listed in AOC's draft planning study for Cannon Building renovations that were not addressed in the conceptual cost estimate included with the same study.[7] AOC officials indicated that these work elements will be addressed in the

[5]Other options considered were a vertical phasing plan that would include more phases than the preferred four-phase approach and a horizontal phasing plan under which one-half of a floor would be renovated at a time. Because implementing either of these alternative phasing plans would require utility system bypasses that are not required under the preferred four-phase approach, AOC estimates that project costs would increase between $50 million and $125 million depending on which alternative approach was used.

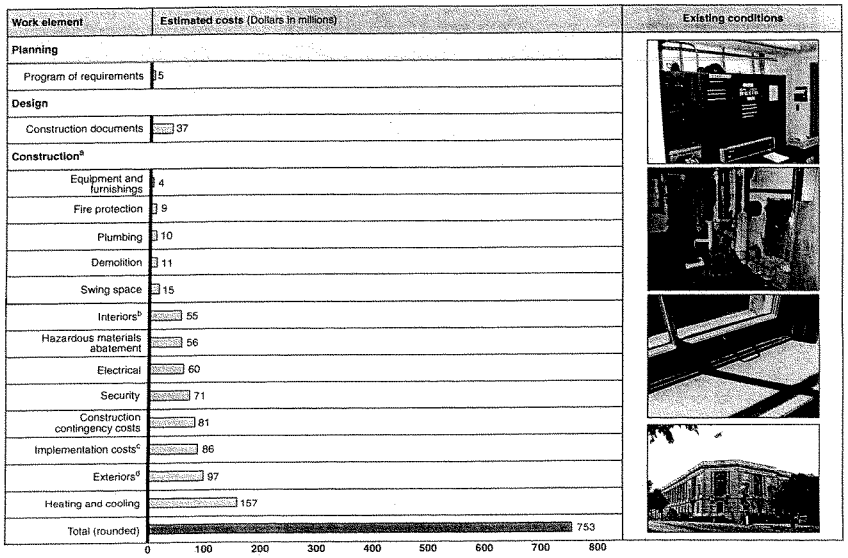
[6]Office of Management and Budget, *Planning, Budgeting, Acquisition, and Management of Capital Assets*, OMB Circular A-11, Part 7, Section 300,"Planning Budgeting, Acquisition , and Management of Capital Assets," Supplement to Part 7, "Capital Programming Guide" (Washington, D.C.: June 2006) refers to the Department of Energy's "Cost Estimating Guide," DOE G 4301.1-1 (Washington, D.C.: Mar. 28, 1997).

[7]AOC's consultant, URS Corporation, completed a planning study and cost estimate for the renovation of the Cannon Building in December 2004 and is currently updating the study to reflect changes to project requirements and applicable codes and standards, as well as updating the cost estimate. We based our analysis on a draft copy of the final study.

updated cost estimate that will be provided in the final study. If conducted properly, AOC's planning actions should enable criteria to be developed such that users' needs are identified and satisfied within the overall constraints affecting the project.[8] AOC currently estimates that the total cost to complete the planning work, develop the project's design, and construct the project will be $753 million. Specifically, AOC has requested $5 million for fiscal year 2010 to fund the development of a program of requirements to further refine the project's scope and intends to request $37 million beginning in fiscal year 2011 for design, and subject to scope determinations, $711 million beginning in fiscal year 2014 for construction. See figure 2 for more detailed information on the planned project's estimated costs.

[8]For additional information on the planning stage of the project development process, see GAO, *Guide to the Building Development Process, the First Phase: Conceptual Planning,* GAO-04-859G (Washington, D.C.: July 2004).

**Figure 2: Estimated Costs for Cannon Building Renovation**




Sources: AOC (data); GAO (analysis); AOC (images).

[a]Construction costs are based on a March 2009 draft report of a planning study conducted by AOC's consultant, URS Corporation. The cost estimate assumes a 2014 construction contract award and includes a 3.5 percent annual escalation factor from 2009 (the year the estimate was prepared) to the estimated midpoint of each phase of construction).

[b]Interiors includes costs for floor and wall repair work related to window replacement and restroom refurbishment.

[c]Implementation includes costs for construction contract administration, testing, inspection, and quality control.

[d]Exteriors includes costs for window replacement, copper roof replacement, and stone preservation.

## East and West Garage Renovations Are Awaiting Construction, and Estimated Costs Are Firmer

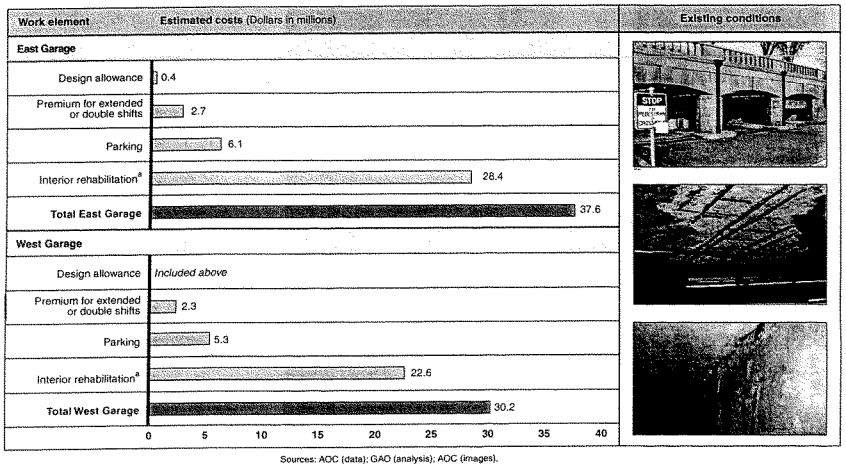
AOC's FCAs of the East and West Garages identify structural deficiencies, including cracking and delaminating[9] concrete and corroding reinforcing steel, that have weakened the structures. According to the FCAs, repairs should be completed within the next 2 to 4 years. AOC plans to make the needed structural repairs to the garages as part of comprehensive renovation projects that will also provide new drainage systems, energy-efficient lighting, ventilation and heating equipment, and fire protection systems. AOC expects a 2-year duration for each of the garage renovation projects.[10]

AOC initially completed the designs of both garage projects in 2005 and updated the cost estimates for the projects in November 2008. Based on its current cost estimates, AOC has requested $38 million for fiscal year 2010 to fund construction of the East Garage renovation and plans to request $30 million for fiscal year 2012 to fund construction of the West Garage renovation. AOC has included a premium for extended shifts (overtime) or double shifts (back-to-back 8-hour shifts) in its project cost estimates so that each project can be completed in 2 years. In addition, AOC has included a $400,000 allowance in its fiscal year 2010 funding request for updates to the projects' 5-year-old designs to account for further deterioration that may have occurred to the facilities and to incorporate work needed to address any code changes. As a result of the design updates, specifications for new equipment—such as that planned to be part of the lighting and ventilation systems—can then reflect current technologies. AOC's funding requests also include or will include an allowance to provide temporary parking while the garages are being renovated, which will likely involve leasing space in nearby lots and busing people to the Capitol Complex. See figure 3 for additional information on the scope of the projects and their estimated construction costs.

[9]Delamination is a splitting, cracking, or separation of a cementitious material (concrete) on the surface of a concrete structure.

[10]AOC intends to award a contract for construction to renovate the East Garage. This contract will include an option to renovate the West Garage.

**Figure 3: Estimated Costs for East and West Garage Renovations**




Sources: AOC (data); GAO (analysis); AOC (images).

[a]Interior rehabilitation includes structural repairs and the provision of new drainage systems, energy-efficient lighting, ventilation and heating equipment, and fire protection systems. The estimate (for both East and West Garages) is based on probable construction costs in 2010 and includes mark-ups for construction contingency and implementation costs for services such as construction management, inspection, and quality control.

Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to any questions that you or other Members of the Committee might have.

We conducted our work from November 2008 to May 2009 in accordance with all sections of GAO's Quality Assurance Framework that are relevant to our objectives. The framework requires that we plan and perform the engagement to obtain sufficient and appropriate evidence to meet our stated objectives and to discuss any limitations in our work. We believe that the information and data obtained, and the analysis conducted, provide a reasonable basis for any findings and conclusions.

For further information on this statement, please contact Terrell G. Dorn at (202) 512-6923 or dornt@gao.gov. Contact points for our Congressional Relations and Public Affairs offices may be found on the last page of this statement. Individuals making key contributions to this testimony were Sara Vermillion, Assistant Director; Michael Armes, John Bauckman, George Depaoli, Elizabeth Eisenstadt, and Joshua Ormond.

# Appendix I: AOC's Capital Projects Development and Prioritization Process

The Architect of the Capitol's (AOC) capital projects development process is based on sequential stages that include assessing the condition of facilities and identifying deficiencies, conducting planning work to develop the scope of projects to correct identified deficiencies and address other requirements, completing detailed design work, and awarding contracts for construction services. The timing of a project's progression through these development stages is affected by AOC's project prioritization process—a standard approach for scoring projects that considers the project's urgency, type, and importance. This process enables the agency to prioritize funding requests for planning studies, design, or construction work in its annual budget submission.

## Project Development Process

*Facility Condition Assessments (FCA).* As we recommended in 2003, AOC periodically assesses the condition of each of its facilities using a consultant that specializes in such work.[1] Information on each deficiency identified at a facility through an FCA is stored in a database, along with an assessment of the urgency of the problem and the estimated cost to correct it. The urgency rating—immediate, high, medium, or low—assigned to each deficiency indicates the recommended time frame for corrective action: immediate (within 2 years), high (between 2 and 4 years), medium (between 5 and 7 years), or low (between 8 and 10 years).

*Planning.* Approximately 3 to 5 years prior to construction, AOC contracts for planning studies that consider facility repair needs identified through the FCA and other factors in establishing conceptual plans and cost and schedule estimates for the project. In some cases, planning studies may include the development of a program of requirements—that is, a detailed framework of requirements to guide the project's designer and ensure a smooth transition from the planning to the design stage. The program of requirements sets functional requirements for space layouts and may outline requirements for other areas, such as telecommunications, physical security, energy conservation, historic preservation, fire safety, hazardous materials abatement, and accessibility.

*Design.* At least 2 years prior to construction, AOC procures architectural and engineering services for the development of construction documents, including final plans, specifications, and a detailed cost estimate for the

[1] GAO, *Architect of the Capitol: Management and Accountability Framework Needed for Organizational Transformation,* GAO-03-231 (Washington, D.C.: Jan. 17, 2003).

project. AOC uses these documents to solicit and evaluate construction contract bids. AOC's professional staff review the design periodically during its development to ensure that it fully meets project requirements.

*Construction.* AOC procures construction services by following a solicitation process during which it requests proposals from contractors interested in performing the work detailed in the construction documents, evaluates the contractors' proposals, and awards the contract to the winning contractor in accordance with its acquisition regulations.

## Project Prioritization Process

As we recommended in 2003, AOC prioritizes projects through a standardized process that assesses each project's urgency, type, and importance.[2] AOC scores each project's importance in six areas—preservation of historic resources, regulatory compliance, mission accommodation, economics, physical security, and energy efficiency and environmental quality—and uses these scores to determine the project's overall urgency—immediate, high, medium, or low—for prioritization. AOC also considers the type of project—deferred maintenance, capital renewal, capital improvement, or capital construction—to further differentiate projects in the prioritization process. AOC annually evaluates funding requirements for developing its portfolio of projects and submits a budget request that identifies project-specific needs for each stage of the development process.

[2]GAO-03-231.

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

| | |
|---|---|
| GAO's Mission | The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability. |
| Obtaining Copies of GAO Reports and Testimony | The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday afternoon, GAO posts on its Web site newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to www.gao.gov and select "E-mail Updates." |
| Order by Phone | The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's Web site, http://www.gao.gov/ordering.htm.<br><br>Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.<br><br>Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information. |
| To Report Fraud, Waste, and Abuse in Federal Programs | Contact:<br><br>Web site: www.gao.gov/fraudnet/fraudnet.htm<br>E-mail: fraudnet@gao.gov<br>Automated answering system: (800) 424-5454 or (202) 512-7470 |
| Congressional Relations | Ralph Dawn, Managing Director, dawnr@gao.gov, (202) 512-4400<br>U.S. Government Accountability Office, 441 G Street NW, Room 7125<br>Washington, DC 20548 |
| Public Affairs | Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800<br>U.S. Government Accountability Office, 441 G Street NW, Room 7149<br>Washington, DC 20548 |

Please Print on Recycled Paper

**United States Government Accountability Office**
**Washington, DC 20548**

March 31, 2009

The Honorable Nancy Pelosi
Speaker of the House of Representatives

Re: CCAR 09-0004

Subject: *Architect of the Capitol: Cannon Building Renovations Are in the Planning Stage, and House Garage Renovations Are Approaching the Construction Stage*

Dear Madam Speaker:

The Cannon House Office Building (Cannon Building)—designed in 1904 and completed in 1908—and the East and West House Underground Garages (East and West Garages)—built in 1968—have deteriorated over time and will need to be repaired, according to assessments conducted for the Architect of the Capitol (AOC). AOC, which is responsible for the maintenance, care, operation, and construction of the Capitol Complex, plans to renovate these three facilities over approximately the next 8 years as part of a long-term effort to reduce maintenance backlogs and execute major renewal projects to adequately sustain all Capitol Complex facilities.

In light of ongoing fiscal constraints, you asked that we review AOC's information related to the renovations. Accordingly, we assessed AOC's plans for renovating the Cannon Building and the East and West Garages. To conduct this work, we toured the facilities and analyzed AOC documents, including facility condition assessments, planning studies, and project development documents. In addition, we interviewed AOC's House Office Buildings Superintendent and Director of Project Management, as well as other AOC officials involved in the projects' development. Our work focused on AOC's process for obtaining and using information about the facilities to develop its approach for executing their renovations. As such, we relied on the information in AOC's project documents and cost estimates, which was largely based on the work of professional consultants, and did not independently evaluate the condition of the facilities, determine repair needs, or estimate costs.

## Results in Brief

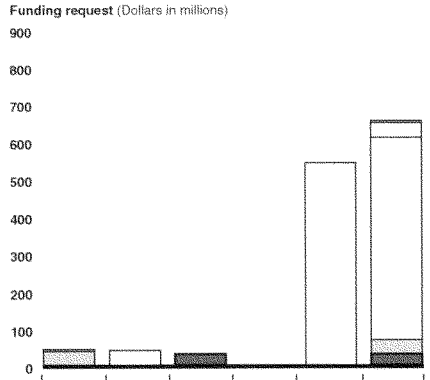
Renovations of the Cannon Building and East and West Garages are needed to maintain the integrity and safety of these facilities and reduce the likelihood of unplanned outages and associated costs. According to comprehensive facility

condition assessments (FCA) completed for AOC by an expert consultant,[1] most of the deficiencies identified in the Cannon Building—such as the need to replace original windows and 70-year-old hot water heating and building ventilation systems—should be corrected within the next 5 to 7 years. By contrast, the most significant deficiency noted for both garages—structural problems visible throughout the facilities that include cracking concrete and corroding reinforcing steel—should be repaired within the next 2 to 4 years. In addition to correcting deficiencies identified at the Cannon Building and garages, the renovation projects will address other considerations, such as energy conservation, historic preservation, hazardous materials abatement, and fire safety. AOC anticipates that each of the garage renovation projects will last approximately 2 years, while the Cannon Building renovation will be completed in phases over approximately 3 years.[2] In order for these renovations to occur in the time frame specified in the FCAs, AOC has requested or plans to request $38 million for construction in the East Garage renovation in fiscal year 2010, $30 million for construction in the West Garage renovation in fiscal year 2012, and $591 million for continued planning, design, and construction in the Cannon Building renovation beginning in fiscal year 2010. (See fig. 1.) Limiting the projects' scope by deferring some work could reduce near-term costs; however, such action may result in the need to make more expensive emergency repairs in the future that could disrupt operations.

[1]Condition assessments provide information on a facility's state of repair and are developed from inspections of structural, electrical, mechanical, plumbing, and other building systems. FCA reports typically catalog all of the deficiencies identified during the inspections along with the estimated cost to correct the problems.

[2]Documents pertaining to the Cannon Building renovation that we reviewed were based on a 3-year construction duration. However, AOC officials indicated that they now expect phased construction to occur over a 4-year period. While future planning documents and cost estimates will likely reflect a 4-year construction duration, our report is based on currently available information that indicates a 3-year construction period.

**Figure 1: AOC's Planned Funding Requests for Cannon Building and East and West Garage Renovation Projects**




| | 2010 | 2011 | 2012 | 2013 | 2014 | Total |
|---|---|---|---|---|---|---|
| | Fiscal year | | | | | |
| Cannon Building planning | $5 | | | | | $5 |
| Cannon Building design | | $40 | | | | $40[a] |
| Cannon Building construction | | | | | $546 | $546[a] |
| East Garage construction | $38 | | | | | $38 |
| West Garage construction | | | $30 | | | $30 |

Total Cannon Building requests: $591 million

Source: GAO analysis of AOC data.

[a]Full funding is shown as being requested for Cannon Building design and construction in fiscal years 2011 ($40 million) and 2014 ($546 million) respectively. However, AOC will likely request this funding for design and construction over multiple years, beginning in 2011 for design and 2014 for construction.

To date, AOC has followed a reasonable process to plan the renovations of the Cannon Building and East and West Garages; the timing of the agency's current and planned requests for funding are important to moving forward with these renovations within the time frame specified in the FCAs. However, because the Cannon Building renovation is at an early stage of development—meaning that plans lack definition and estimated costs are limited in their accuracy—AOC's current estimate of $546 million for the renovation work should not be considered sufficiently accurate for funding purposes. To renovate the Cannon Building within the time frame recommended by the consultant who conducted the FCA, and to provide Congress with better cost information on which to base future renovation decisions, it is important for AOC to continue with plans to refine the project's scope and cost estimate over the next 2 years. AOC's request for $5 million in 2010 and planned request for $40 million beginning in 2011 should allow the agency to proceed with planning and design and position it to award a contract for and complete Cannon Building renovations within the 5- to 7-year time frame recommended by its consultant. For the East and West Garages, FCAs indicate that the condition of the garages is generally worse than that of the Cannon Building and that repairs are needed over the next 2 to 4 years. AOC has accordingly placed higher priority on the

garage renovations. Cost estimates for the garages are at a later stage of development and based on more complete information than that for the Cannon Building and—with design updates planned by AOC—are at an appropriate level of design to justify funding to contract for construction.

**Background**

The Cannon Building—completed in 1908—is a historically significant building that provides about 817,000 square feet of space for offices, committee hearing rooms, and other services for House of Representatives members and staff. The East and West Garages were constructed in 1968, and each includes six levels that, combined, provide approximately 1,300 parking spaces. The garage facilities also include restrooms, maintenance shops, mechanical rooms, stairways to exits, and a rooftop plaza.

To develop and execute capital projects, AOC assesses the condition of its facilities; plans the work necessary to correct identified deficiencies and address other requirements; completes detailed design documents, including engineering plans and specifications; and awards contracts for construction services.[3] As a project progresses through these stages of the development process, which generally takes about 5 years to complete, its scope matures and its estimated cost is refined until, at the detailed design stage, the estimated cost should be fairly close to the actual cost of the awarded construction contract. AOC controls the timing of these project development activities through its project prioritization process—a standard approach for scoring projects that considers the project's urgency, type, and importance—and then prioritizes funding requests for planning studies, design, or construction work in its annual budget submission. In the past, we have recommended improvements to AOC's processes for developing projects and prioritizing their execution that AOC has implemented. For example, in response to recommendations we made in January 2003 and December 2004, AOC has completed FCAs of most of the facilities under its jurisdiction and developed a process for prioritizing projects. More detailed information on AOC's process for developing and prioritizing projects is provided in enclosure I.

**The Cannon Building Renovation Is in the Planning Stage and Its Estimated Cost Is Expected to Change; the East and West Garages Are Awaiting Construction and Estimated Costs Are More Firm**

On the basis of information from facility condition assessments, planning studies completed for the Cannon Building renovation, and design work completed for the East and West Garage renovations, AOC has requested or plans to request funds to sequentially renovate these facilities between fiscal years 2010 and 2017.[4] Limiting the projects' scope or deferring some work could temporarily reduce costs; however, operations may be adversely affected by taking this action—unplanned shutdown of

[3]Construction could include any demolition, maintenance, repair, or restorative work completed at a facility. In some cases, construction work could also include building an addition to or expanding a facility.

[4]AOC also plans to correct some of the deficiencies at each of the facilities through other projects completed separately from the renovation projects.

sections of the Cannon Building could occur, for example, if its heating system fails—and deferred repairs may be more expensive to make in the future. Because the Cannon Building renovation is early in the development process, and its plans and estimated costs are not fully developed, AOC's next steps in planning for the Cannon Building renovation—to be funded by the $5 million requested in its fiscal year 2010 budget—are important to refining the project's requirements and estimated costs.

Cannon Building Renovation Plans

According to AOC's FCA of the Cannon Building. most of the identified deficiencies should be corrected within 5 to 7 years.[5] For example, hot water heating and air-handling systems, equipment that is not publicly visible, have components dating back to the 1930s that are deficient and in need of replacement. Other deficiencies identified by the FCA include an outdated fire alarm system for which repair parts are difficult to obtain, worn and stained marble tile in corridors, and original windows that are damaged and often nonfunctional.

AOC plans to correct most of the identified deficiencies through a comprehensive renovation project that will also consider requirements such as energy conservation, physical security, hazardous materials abatement, and historic preservation needs. The project is expected to provide replacement windows, a new copper roof, and preservation and repair of the building's stone exterior. On the interior, the project is expected to provide new wall and floor finishes in some areas; refurbish restrooms and make them more accessible to disabled people; and allow for complete replacement of all plumbing, heating and cooling, fire protection, electrical, and alarm systems. Included in the project is work to remove asbestos that may be contained in insulation used on hot water pipes in the building's heating system. In addition, the renovation will address fire safety issues related to work that AOC plans to complete through a separate project.[6]

To enable continued use of a part of the building during construction, AOC plans to complete the project in four phases—each phase roughly including one side of the four-sided building—over 3 years. Accordingly, the project's cost will include an allowance for the construction (or renovation) of a temporary facility for displaced occupants. AOC's preliminary planning studies suggest that this four-phase approach

[5]AOC's consultant, ENTECH Engineering, Inc., is currently updating the FCA prepared as part of a planning study of the Cannon Building completed by another consultant, URS Corporation, in December 2004. We referenced a draft copy of the final ENTECH Engineering study in conducting our work.

[6]AOC intends to execute a House Alternative Life Safety Approach (HALSA) project in fiscal year 2011 to address egress issues that are the subject of an Office of Compliance citation. According to the citation, exit stairwells in the building are unprotected against fire and smoke—thereby posing a safety risk to occupants—because they are either completely open or not equipped with fire-rated doors. To correct this problem while preserving the historic character of the building, AOC plans as part of the HALSA project to install cross-corridor fire-rated doors at each of the corner stairs and stairs adjacent to the rotunda to create compartments designed to protect occupants in the event of a fire. AOC will incorporate the HALSA design solution into its planning of the Cannon Building's renovation to determine whether there are any additional egress requirements that need to be addressed during the renovation.

would allow for the most efficient construction operation, the fewest moves, and the shortest schedule of all phasing options considered.[7] We have found in previous work that this method of phasing construction—renovating a portion of the building while keeping the remaining sections of the building operational—can be a successful approach when the facility under construction must remain operational. For example, in renovating Bancroft Hall—the only residence facility at the United States Naval Academy—Navy officials executed a $251 million nine-phased renovation project over 9 years by making one section available for construction while the other eight sections were in use.

Because the project is still in the planning stage, its scope and cost estimate are expected to change. For a project in the planning stage, the expected accuracy of its cost estimate is generally plus or minus 40 percent.[8] As more information about a project becomes known during the planning process, the more accurate its cost estimate is expected to be. For example, we found some recommended work elements listed in AOC's draft planning study for Cannon Building renovations that were not addressed in the conceptual cost estimate included with the same study.[9] AOC officials indicated that these work elements will be addressed in the updated cost estimate that will be provided in the final study. If conducted properly, AOC's planning actions should enable criteria to be developed such that users' needs are identified and satisfied within the overall constraints affecting the project.[10] AOC currently estimates that the total cost to complete the planning work, develop the project's design, and execute construction will be $591 million. Specifically, AOC has requested $5 million in fiscal year 2010 to fund development of a program of requirements to further refine the project's scope and intends to request $40 million beginning in fiscal year 2011 for design and, subject to scope determinations, approximately $546 million beginning in fiscal year 2014 for construction. See figure 2 for additional information concerning planning, design, and construction elements of the planned project.

---

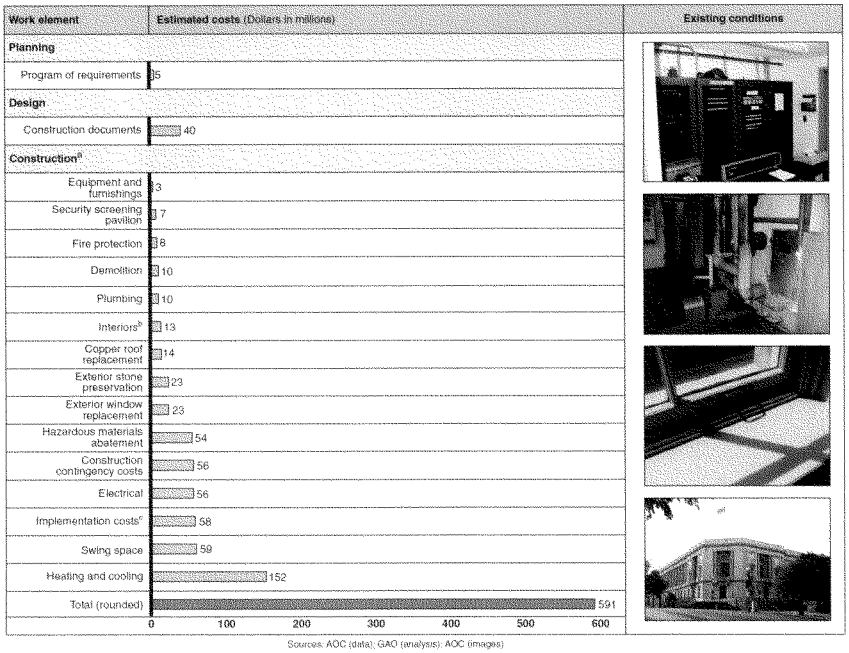
[7]Other options considered were a vertical phasing plan that would consist of a greater number of phases than the preferred four-phase approach and a horizontal phasing plan under which one-half of a floor would be renovated at a time. Because implementing either of these alternative phasing plans would require utility system bypasses that are not required under the preferred four-phase approach, AOC estimates that project costs would increase between $75 million and $100 million depending on which alternative approach was used.

[8]Office of Management and Budget, *Planning, Budgeting, Acquisition, and Management of Capital Assets*, OMB Circular A-11, Part 7, Section 300, "Planning Budgeting, Acquisition, and Management of Capital Assets," Supplement to Part 7, "Capital Programming Guide" (Washington, D.C.: June 2006) refers to the Department of Energy's "Cost Estimating Guide," DOE G 4301.1-1 (Washington, D.C.: Mar. 28, 1997).

[9]AOC's consultant, URS Corporation, completed a planning study and cost estimate for the renovation of the Cannon Building in December 2004 and is currently updating the study to reflect changes to project requirements and applicable codes and standards and update its cost estimate. We based our analysis on a draft copy of the final study.

[10]For additional information on the planning stage of the project development process, see GAO, *Guide to the Building Development Process, the First Phase: Conceptual Planning*, GAO-04-859G (Washington, D.C.: July 2004).

**Figure 2: Estimated Costs for the Cannon Building Renovation**




Sources: AOC (data); GAO (analysis); AOC (images)

[a]Construction costs are based on a December 2008 draft report of a planning study conducted by AOC's consultant, URS Corporation. The cost estimate assumes a 2013 construction contract award and includes a 4.75 percent annual escalation factor from 2008 (the year the estimate was prepared) to 2014 (the estimated midpoint of construction). AOC intends to include an additional year of escalation in future estimates to reflect its current expectation of beginning construction in 2014.

[b]Interiors includes floor and wall repair work related to window replacement and restroom refurbishment.

[c]Implementation includes costs for construction contract administration, testing, inspection, and quality control.

## East and West Garage Renovation Plans

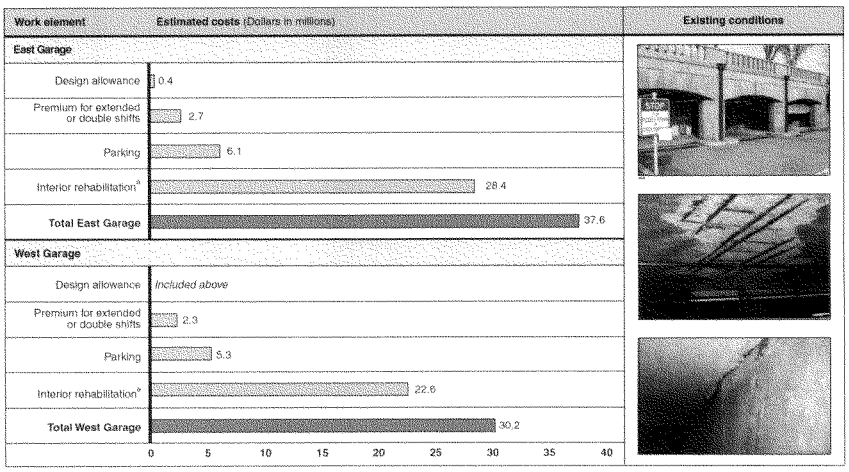
AOC's FCAs of the East and West Garages identify structural deficiencies, including cracking and delaminating concrete and corroding reinforcing steel, that have weakened the structures.[11] According to the FCAs, repairs should be completed within the next 2 to 4 years. AOC plans to make the needed structural repairs to the garages as part of comprehensive renovation projects that will also provide new drainage systems, energy-efficient lighting, ventilation and heating equipment, and

[11]Delamination is a splitting, cracking, or separation of a cementitious material (concrete) on the surface of a concrete structure.

fire protection systems. AOC expects a 2-year duration for each of the garage renovation projects.[12]

AOC initially completed the designs of both garage projects in 2005 and updated the cost estimates for the projects in November 2008. On the basis of its current cost estimates, AOC has requested $38 million in fiscal year 2010 to fund construction in the East Garage renovation and plans to request $30 million in fiscal year 2012 to fund construction in the West Garage renovation. AOC has included a premium for extended shifts (overtime) or double shifts (back-to-back 8-hour shifts) in its project cost estimates so that each project can be completed in 2 years. In addition, AOC has included a $400,000 allowance in its fiscal year 2010 funding request for updates to the projects' 5-year-old designs to account for further deterioration of the facilities that may have occurred and to incorporate any code changes. As a result of the design updates, specifications for new equipment—such as that planned to be part of the lighting and ventilation systems—can then reflect current technologies. AOC's funding requests also include or will include an allowance to provide temporary parking while the garages are being renovated, which will likely involve leasing space in nearby lots and busing people to the Capitol Complex. See figure 3 for additional information on the projects' scope and estimated construction costs.

**Figure 3: Estimated Costs for East and West Garages Renovations**




Sources: AOC (data), GAO (analysis), AOC (images)

[a]Interior rehabilitation includes structural repairs and the provision of new drainage systems, energy-efficient lighting, ventilation and heating equipment, and fire protection systems. The estimate (for both East and West Garages) is based on probable construction costs in 2010 and includes markups for construction contingency and implementation costs for services such as construction management, inspection, and quality control.

[12]AOC intends to award a contract for construction to renovate the East Garage to include an option to renovate the West Garage.

**Agency Comments and Our Evaluation**

We provided a draft copy of this report to the Acting Architect of the Capitol for review and comment. AOC officials agreed with the report's findings. In addition, they provided comments, technical suggestions, and clarifications via electronic mail, which we incorporated into the report, as appropriate.

---

Should you or your staff have any questions on matters discussed in this report, please contact me at (202) 512-6923 or dornt@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were Sara Vermillion, Assistant Director; Michael Armes; George Depaoli; and Elizabeth Eisenstadt.

Terrell G. Dorn, P.E.
Director, Physical Infrastructure Issues

**Enclosure I**

**AOC's Capital Projects Development and Prioritization Processes**

AOC's capital projects development process is based on sequential stages that include assessing the condition of facilities and identifying deficiencies, conducting planning work to develop the scope of projects to correct identified deficiencies and address other requirements, completing detailed design work, and awarding contracts for construction services. The timing of a project's progression through these development stages is affected by AOC's project prioritization process—a standard approach for scoring projects that considers the project's urgency, type, and importance—which enables the agency to prioritize funding requests for planning studies, design, or construction work in its annual budget submission.

Project Development Process

*FCAs.* As recommended by GAO, AOC periodically assesses the condition of each of its facilities using a consultant that specializes in such work. Information on each deficiency identified at a facility through an FCA is stored in a database, along with an assessment of the urgency of the problem and the estimated cost to correct it. The urgency rating—immediate, high, medium, or low—assigned to each deficiency indicates the recommended time frame for corrective action: immediate—within 2 years, high—between 2 and 4 years, medium—between 5 and 7 years, low—between 8 and 10 years.

*Planning.* Approximately 3 to 5 years prior to construction, AOC contracts for planning studies that consider facility repair needs identified through the FCA and other factors in establishing conceptual plans and cost and schedule estimates for the project. In some cases, planning studies may include the development of a program of requirements—that is, a detailed framework of requirements to guide the project's designer and ensure a smooth transition from the planning stage to the design stage. The program of requirements sets functional requirements for space layouts and may outline other requirements for telecommunications, physical security, energy conservation, historic preservation, fire safety, hazardous materials abatement, and accessibility, among other areas.

*Design.* At least 2 years prior to construction, AOC procures architectural and engineering services for the development of construction documents, including final plans, specifications, and a detailed cost estimate for a project. AOC uses these documents to solicit and evaluate construction contract bids. AOC's professional staff review the design periodically during its development to ensure that it fully meets project requirements.

*Construction.* AOC procures construction services by following a solicitation process during which it requests proposals from contractors interested in performing the work detailed in the construction documents, evaluates the contractors' proposals, and awards the contract to the winning contractor in accordance with its acquisition regulations.

Project Prioritization Process

AOC prioritizes projects through a standardized process that assesses each project's urgency, type, and importance. AOC scores each project's importance in six areas—preservation of historic resources, regulatory compliance, mission accommodation, economics, physical security, and energy efficiency and environmental quality—and uses these scores to determine the project's overall urgency—immediate, high, medium, or low—for prioritization. AOC also considers the type of project—deferred maintenance, capital renewal, capital improvement, or capital construction—to further differentiate projects in the prioritization process. AOC annually evaluates funding requirements for developing its portfolio of projects and submits a budget request that identifies project-specific needs for each stage of the development process. (See fig. 4.)

*Prioritization methodology.* A prerating panel—composed of experts in the six project importance areas—makes an initial determination on project urgency, type, and importance that leads to a composite score that sets prioritization. A project prioritization panel—composed of all jurisdiction superintendents and directors—makes final determinations on urgency, type, and importance and provides recommendations to the Architect, who determines final prioritization, upon which a budget submission is based.

The overriding criterion for prioritization is project urgency. Projects with the maximum score in any of the six importance categories are considered immediately urgent. Projects with the maximum score in the regulatory compliance category are usually the result of an Office of Compliance (OOC) citation and are the highest priority.[13]

*Prioritization assessment factors.* AOC coordinates with officials responsible for the Capitol Complex jurisdictions to identify projects that are assessed by urgency, type, and importance to determine their priority.

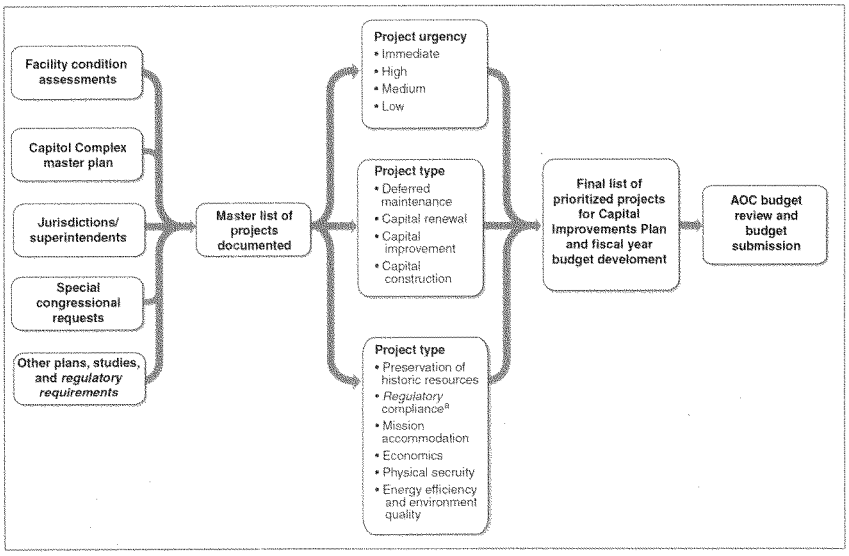
- **Project urgency**
  - Rated as immediate, high, medium, or low.
  - Indicates when a project needs to be accomplished—immediate, within 2 years; high, between 2 and 4 years; medium, between 5 and 7 years; and low, between 8 and 10 years—to prevent detrimental effects to the facility.
  - Urgency rating affected by a maximum score of 100 in any of the project importance categories.

[13]OOC is an independent legislative branch office responsible for enforcing section 5 of the Occupational Safety and Health Act.

- **Project type**
  - Classified as deferred maintenance, capital renewal, capital improvement, or capital construction.
  - Absent other factors, deferred maintenance projects—which involve past due maintenance or repairs to return a facility to an acceptable condition—take precedence over capital renewal projects—which return the facility to a like-new (capital renewal) or modern (capital improvement) condition—and capital construction projects.

- **Project importance**
  - Projects assessed in terms of impact on (1) preservation of historic resources; (2) regulatory compliance, including health and safety code compliance; (3) mission accommodation; (4) economics; (5) physical security; and (6) energy efficiency and environmental quality.
  - Projects assigned points (between 0 and 100) in each of these categories.

**Figure 4: AOC's Project Prioritization Process**




Source: GAO analysis of the AOC process.

[a]Includes OOC findings, citations, and complaints associated with occupational safety, health, and fire issues.

**(545082)**

The CHAIRMAN. Mr. Ayers, is there any major safety concerns that we need to be concerned about right now until the building is renovated?

Mr. AYERS. We certainly have some outstanding fire and life-safety issues in the building right now. We have current appropriations to take care of those. So I don't think there is anything new from a life-safety perspective that we need to do until we undertake a major building renovation.

The CHAIRMAN. No stones falling anymore?

Mr. AYERS. Certainly we have taken a look at all of the stone around the building, and we have done a thorough inspection of that. We do think that there is some stabilization on that stone that needs to be undertaken, but I don't think that is an outrageously unsafe condition today. I think that is under control, and we can take care of that with existing appropriations.

The CHAIRMAN. You have the funds to do that?

Mr. AYERS. Yes.

The CHAIRMAN. How long will the Members have to be out of their offices when you start the Cannon? Will it be done in phases?

Mr. AYERS. I think the best approach is for the building to be done in phases, and most importantly, the success of any project really lies in the effective development of a plan up front. And that is what the $5 million we have requested in 2010 will enable us to do, to really map out an effective plan, whether that is renovating the building floor by floor or vertical zone by vertical zone. Today, we think vertical zone by vertical zone, a wing of the building at a time, is probably the best solution, and to do that, it is approximately a year per phase.

The CHAIRMAN. Because you have a real nice office over in the Capitol and I would hate to take that away from you, you know.

Mr. AYERS. It is a very nice office, you're right, Mr. Chairman.

The CHAIRMAN. And you deserve it, sir.

Mr. AYERS. Thank you.

The CHAIRMAN. But I think you may be a little bit more lower on the ranking if we get some more Members in here.

Mr. AYERS. Absolutely true.

The CHAIRMAN. And I don't mind also voting from home if we need to do that. I wouldn't mind, but I thank you.

Mr. Dorn, you say the cost is uncertain, and you want to try to get a certain cost that you think we will need to do this. But how about the design? Can we start with the design? Wouldn't that help? If we start the design now, wouldn't that save money? Would you know the design cost? At least we can try to get that up and running now instead of waiting for another year or so, and then that will be more expensive.

Mr. DORN. Certainly we need to—like Stephen said a minute ago, we need to invest money right now to do additional planning, and part of that planning is what they call programming to find out what the Members need in the Cannon Building going forward. In getting the input from you all, from Office of Compliance, from Capitol Police, all these requirements need to be brought together so that you can then complete the design. But to start design until you know exactly what you need to incorporate in the building from a programmatic point of view would be premature.

The CHAIRMAN. You would need to know exactly what you are doing with the building before you try to put a design out there, preliminary design?

Mr. DORN. Not exactly. But you do need to know a lot more than what we know right now.

The CHAIRMAN. I am saying that quicker is better. Every year costs go up.

Mr. DORN. Absolutely.

The CHAIRMAN. Okay. Mr. Lungren.

Mr. LUNGREN. Thank you, Mr. Chairman.

As I was hearing Mr. Ayers there, I thought maybe he was the one that I ought to go to for my medical exam. His words were, "The assessment found that the building is well-maintained; however, major deficiencies have been identified in heating, ventilation, air conditioning, plumbing, mechanical equipment, life safety, fire protection systems, electrical equipment, exterior."

A doctor would tell me I am in good shape but there is something wrong with my heart, my liver, my knee, my head. I mean, I guess what you are saying is we have done the best we can in maintaining the building, despite the fact that we haven't done the capital investment necessary to basically bring it up to where we need to be; is that correct?

Mr. AYERS. That is exactly right.

Mr. LUNGREN. Will we incorporate, or do you plan on incorporating in terms of your plans things such as energy efficiency, water conservation, those kinds of things that we are trying to say ought to be done in the private sector? Would that be encompassed as opposed to just bringing it back to where it was, incorporating these kinds of things as well?

Mr. AYERS. Absolutely, Mr. Lungren. We think that it is a great opportunity to incorporate sustainability initiatives in both of these projects. Our basic design standards for renovation of this nature in both of these projects will bring it to LEED silver standard, and we think we may be able to get that to the gold level standard. So we think we will certainly be incorporating a wide range of sustainability measures in both projects from water conservation to energy conservation as well.

Mr. LUNGREN. You mentioned $752 million for Cannon as sort of a ballpark that some people talk about thus far; is that correct?

Mr. AYERS. Mr. Dorn did, yes.

Mr. LUNGREN. Mr. Dorn did, excuse me. And yet there is talk about it could deviate 40 percent. I guess that means 40 percent up or down. Usually up.

Mr. DORN. It is usually—there are many more opportunities to raise the cost of anything than there are opportunities to bring the costs down.

Mr. LUNGREN. The reason why I want to put that on the record is this. Look, there is a lot of criticism still about CVC, how much it cost and so forth. A lot of people don't understand we started that before 9/11. We had to change a lot after 9/11, the standards, what Congress asked for, the size of the space differed and so forth. I mean, you are comparing apples and oranges instead of apples and apples. But nonetheless, there still is that out in the public domain, that it was too expensive, it took too long.

We have got to be very careful that we don't fall into that trap again. And that is, I think we ought to be very up front about what the serious costs may be, why those costs are there, and then try and see where we can legitimately save money as much as possible. I don't think we ought to crimp on preserving this national treasure here that belongs to the people of the United States. At the same time, they are very, very concerned about undue expenses.

And this committee, I think, will give you authorization for that initial planning. I don't want to speak for the Chairman, but he and I have worked very well together on doing what needs to be done in this place. But at the same time, we have got to make sure that you understand that the American people are looking at us and making sure that we are spending our pennies wisely here.

And so when you come to us with plans, I think one of the things the Chairman has said is very important—it probably will be cheaper if we do it is sooner rather than later. But we need to know with confidence that when we proceed it is going to be what needs to be done, so that we are not hanging out there and the American people aren't hanging out there, you know, 5 years from now when you complete a project, and instead of $752 million, it is $2.3 billion, and we are trying to say, hey, this is what it cost. I don't think that is going to wash.

So I am willing to work with the Chairman, and I am sure others are, to give you the authorization for what needs to be done, but we are going to be very careful about how that money is spent.

The last thing I would say is, you know, the Cannon Building has stood the test of time and we have Members here who have Cannon Building offices. We also have Members who have sleeping quarters there now, and it is kind of interesting to see how you are going to do some of the work at night that causes a lot of noise when you have Members who are attempting to get some peace and quiet.

Please take my remarks as they are meant. And that is, I support the effort to do this, but we are going to have to be looking as vigorously as we can on making sure these costs do not go out of kilter, and the GAO is going to help us in doing that, but this committee and our committee staff is going to help us in doing that as well.

I thank the Chairman.

The CHAIRMAN. Thank you. Ms. Lofgren.

Ms. LOFGREN. Thank you, Mr. Chairman. I think echoing the comments of the Chair and Ranking Member, it is absolutely important for us to know what we are getting into before we begin. And if we take a look at the CVC, as Mr. Lungren has said, the added security after 9/11 changed a lot and also the need for additional space for committees. And I mean it was the might-as-well-as's that got us there, and obviously we have confined space here. That is a whole different situation.

But on the security issue, I am hopeful that we can not just talk to the Capitol Police, but go a little bit farther than that to explore what we might want to build in from the beginning because, right now, the police are out there in sweltering weather, in freezing weather, doing visual inspections. There are some other alternatives to what we are doing now in terms of security for vehicles

coming in and out, and I am hopeful that we can explore that fully, not just with the Department but maybe Lawrence Livermore Lab and some of the other technology alternatives that are available so that we know completely what is available before we move forward.

I want to mention energy conservation. Last year, the CAO came out to my district and spent time looking at a company in downtown San Jose, Adobe Systems, not because of their great technology—although they have it—but because of what they have done in their building. They cut their energy consumption by half. It is just astonishing what they have done, and many of the things they did paid for themselves, I mean they put, you know, thousands of sensors out. The sensors paid for themselves in less than 2 months.

And so what I would like to do is, we wrote—Congressman Honda, myself and Mr. Beard, wrote a report after this review, and I would like to give you that report, because there are some very low-cost things that can be done that have a huge impact on energy consumption.

And in the energy consumption arena, I do know that the windows and other things need renovation, but we have got to end up with a building where you can still open the windows, you know. And that is an energy conservation thing as well because there are times in this city where you don't need the heat and you don't need the air conditioning. All you need to do is open the window, and it also improves air quality. So I want to make sure that that is understood as we move forward.

And although there may be a structural reason why it can't be done, I have always wondered why you couldn't get the windows to open in the Rayburn Building as well. It may be that the windows are built into the structure of the building, as they are in some high-rises, but I think that would be an improvement.

In terms of moving people around, I am assuming that the non-Member offices are going to be moved first so that Members will still be proximate to the Capitol itself for voting purposes; is that correct?

Mr. AYERS. That is correct.

Ms. LOFGREN. Okay. And I assume also that we will have a large number of Members all of the sudden deciding that they will move to Rayburn after all, myself perhaps among them.

Nobody likes to spend money, but it is important that we do this project, that we do it well, that we adequately map out the program before we begin the actual project, and I think I don't want any surprises. So the more we know about what we are going into the better off we are going to be. And certainly just as the Capitol itself, I mean the Cannon Building is a historic building. It needs to be treated with a great deal of respect. It is a national treasure, and we are just here temporarily taking care of it. It belongs to the American people.

So thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentlelady. Mr. Harper.

Mr. HARPER. Thank you, Mr. Chairman. How often will these cost projections—how often will they be reevaluated?

Mr. AYERS. Well, I think most importantly, Congressman, is that we undertake the planning process that will start next year that

we have included funds for in our 2010 budget. It is really at the end of that planning process that we will have a good conceptual number of what this project will cost. Then we will proceed into the design work, and it is, quite frankly, not until the end of the design work until we know exactly what it is and then we can determine how much it will cost.

Mr. HARPER. And the projected time at the end of the time design period would be when, best-case scenario?

Mr. AYERS. Three years from now.

Mr. HARPER. If you did this vertically, you would do, I assume, a fourth of the building each time; is that the general plan basically?

Mr. AYERS. Correct. Yes, sir.

Mr. HARPER. And it would take at least a year, year and a half, I guess, to do each phase of that?

Mr. AYERS. We think it would take about a year. We think we ought to include some time up front for some sort of preconstruction work to get us ready to begin to undertake those phases. That work could take a year, but once we get started we think it is probably a year per phase.

Mr. HARPER. And as an occupant of Cannon, this is certainly going to require an ordeal. Was there any consideration—and I know this is a logistical nightmare to move offices and Members and staffs and different committees. It is going to be quite an undertaking, but was there any consideration given to, if it was possible, to do it all at one time and completely upset the apple cart? But what time frame would it—I am sure you looked at doing it as one complete project. What time length would it take, then, versus, say, 4 years or more now?

Mr. AYERS. Well, we did look at constructing new buildings and stick-built buildings and swing space in various locations throughout the Capitol campus so that we can move everyone out. We really found that to be cost-prohibitive.

Mr. HARPER. Okay.

Mr. AYERS. Most importantly, it will certainly save some time. I don't have a good number of how much time it will save, but it will save some time, but we found it to be much more expensive to do that.

Mr. HARPER. Thank you. That is all the questions I have, Mr. Chair.

The CHAIRMAN. I thank the gentleman. Mr. Gonzalez.

Mr. GONZALEZ. Thank you very much, Mr. Chairman.

I have been in Cannon since I got here 11 years ago, and depending on when you start, I guess I will be leaving Cannon when it is my choice. I think Ms. Lofgren was making reference to that. All of us are thinking, all right.

But as a practical matter, when we go to our colleagues, I think first that we are all going to be on the same page, recognizing the necessity. This is something that has to be done and can't be delayed, and it has to be done on the scale that you are proposing. I don't believe that there is going to be any argument there. So then we are going to go into cost and duration and such that other members on the committee have brought to your attention.

When we talk to Members they are going to want to know who is going to be impacted and how long they are going to be impacted. So we are going to get into the swing space. And in your reference here, and I know in your response to Mr. Harper, you have indicated that there wasn't really any other viable alternative but to phase it in a way, because it does make sense if you could just get everybody out and just do all of the work. I mean you are not working around people and so on. That is not going to be an option, but I think we are going to need enough information to present it when these questions are posed that we will be able to answer it. And I think Members are going to be very cooperative, and especially those that haven't been elected yet. They are going to be real cooperative because they don't have any choice because, in essence, we have taken that space.

Mr. Dorn, you had pointed something out in the 2007 Energy Act. We had a 2005 Energy Act, 2007, and we are going to have another one. Not real sure what the next one looks like. Unless, Dan, you have got a copy and I don't, it remains to be seen. Are there any mandates at this point prescribed by any legislation which we would not be meeting? I know that we had language that instructed GSA to be reporting all sorts of efficiency data, but I am not real sure that we said once you report that data and we find out we are not that efficient that we are supposed to do anything about it. When, Mr. Dorn, you made some reference that we wouldn't be up to certain standards, what specifically were you making references to?

Mr. DORN. I will start off, and maybe Stephen would want to add to that. The act does require Federal agencies to go in and reduce their energy consumption by a certain percentage, almost 2 or 3 percent each year. And these guys are doing a good job of using energy saving performance contracts and their own people on other contracts to try and find low-hanging fruit and reduce energy costs and consumption where they can, but eventually you sort of run out of low-cost ideas. You need to do major things like replace all the air handlers, heating and air-conditioning equipment in the building. You can't do that without disrupting with a major renovation, and you will never get to where you need to be, I think, unless you can do those major things.

Mr. AYERS. I think the specifics of the act, that was Energy Independence and Security Act of December 2007, requires us and every other Federal agency to reduce energy consumption by 3 percent per year over the course of 10 years, for a total of 30 percent. That is the first baseline that is in law. And secondly, of course, the Speaker's Green the Capitol Initiative requires 5 percent energy reduction per year over 10 years, for a total of 50 percent. So those are our current operating guidelines.

Mr. GONZALEZ. And it would be ironic, of course, because we are out here as government setting the example and asking the private sector to follow suit and such, even though it does increase costs, and there are these renovations and such that are necessary. But it comes down to basically practicing what we preach, practicing that which we legislate, and which I think is going to be very important.

In San Antonio, I will tell you now that we have a Federal building that is approximately the same age as Cannon. And I know we are going to spend about $62 million on improvements very soon, and right now, we say we are going to make it more green, making it in essence more efficient. There is only so much you can do with changing light bulbs.

So we are at that point, just on the efficiency standards. I think that is important. There is greater emphasis on that. We are also talking about the use of energy and such, and our own energy producing plant and, again, greenhouse gases, pollution and so on.

So all of it is linked. But I think we go back—I am going to yield back by just making, again, the observation that we all recognize the necessity. We just have to be looking at the costs and the duration. Historically speaking, I know we are going to try our very best to keep within certain projections, and we can't anticipate everything, as Mr. Lungren pointed out when we were doing the Visitors Center. But thank you very much for your testimony and we will continue to work closely together.

The CHAIRMAN. I thank the gentleman. You know, we do work real well together here. The problems that we have, as Mr. Lungren explained, is cost overruns, extras. We will be taking advantage and having some people—some Members might be a little bit difficult; maybe some of the same Members we don't want to go back and say we have to get a little bit more money. They will be a little irritated from the beginning. So we don't want to have to say—so if you could just, again, take that into consideration and get one opportunity to get this thing done.

I do have to piggyback on Ms. Lofgren. My father was a police officer so I am a little bit favoring toward them. A lot of times I see them out there in the cold and it is pretty cold out there, and they have got to sit out there and wait for us to go scurrying back and forth and when they have got to check our cars. And we can be a little bit—a little more sympathetic toward their life and what they do, because they do protect us.

I was here on 9/11 and we were running out and they were running in. So we can make their life a little bit easier. I don't know if the Senate hears me, but I had to steal an umbrella from the Senate side—they weren't using it—to bring it over to our side when it was like 100-degree weather, so our police officers have a little bit of shade, you know, and getting water coolers. So that is real important.

But I am in the Cannon, I am stuck in here. I am not leaving. When we had that little anthrax scare, I staked out a park bench for 3 days and it was the best 3 days of my life. I didn't mind it. I was okay. But we do understand that it is going to be a tough issue, and we will work with you heartily every step of the way.

Anybody else have any other questions? Thank you. Thank you for your time. This hearing is now adjourned.

[Whereupon, at 11:43 a.m., the committee was adjourned.]

○