

# Cannon House Office Building Garage Restoration

By Brian Daley

**S**tart with political power on Capitol Hill. Add an underground movement that shakes the very halls of the U.S. Congress. Top it off with a terrorist threat of deadly disease. It all sounds like the plot of the next Hollywood blockbuster movie. In fact, however, those are the ingredients of a unique and challenging garage restoration project at the Cannon House Office Building in Washington, DC.

The Cannon House Office Building is home to the offices of many members of the U.S. House of Representatives. In late 2000, the Architect of the Capitol (AOC) solicited bids for concrete repairs

to the Cannon Building's underground garage. Goals of the project were selective concrete repair of joists of the waffle-pan garage structure and complete replacement of the 135,000 ft<sup>2</sup> (12,540 m<sup>2</sup>) of 4 in. (10 cm) deck slab on three elevated levels. Additionally, garage lighting and a heat system were to be replaced, and four new mechanical rooms were to be constructed on the roof plaza above the garage.

Because of a lack of replacement parking in the Capitol Hill area, a compressed schedule for the garage repairs was a major issue from the outset. Minimizing disruption to the building residents was also critically important (disturbing important congressmen was likely to result in new legislation to criminalize our entire industry!).

## Security and Logistics

Following the receipt of bids, the AOC met with the low responsible bidder to confirm that the responding contractor had both the experience and the resources to take on a project of such size and complexity. A Notice to Proceed was issued in late March 2001. The garage was to be closed and the contractor to mobilize after the 4th of July, allowing time for submittals and equipment fabrication. Completion was set for January 21, 2002, providing less than 30 weeks to complete over \$5 million in work.

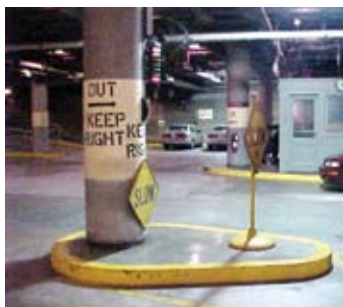


Fig. 1 and 2: Garage before repairs, dark and deteriorating



Fig. 3: Cannon House Office Building

Security was an important issue because the members of the House of Representatives would continue to work in the building while the restoration took place. Restoration technicians had to undergo security screenings, were issued identification badges, and had to enter and leave through a guarded entrance. Deliveries to the site required 48 h prior notice and first had to stop at a government inspection station remote from the Cannon Building.

First, existing mechanical duct, piping, and conduit were removed. Because there was only one access gate in and out of the garage, the logistics of several specialty subcontractors doing cap-off work, while the demo subcontractor removed and disposed of abandoned equipment, had to be carefully planned.

The work constructing the new mechanical enclosures was even more constrained because only a 4 x 6 ft (1.2 x 1.8 m) roof hatch existed for access to the roof plaza. The opening had to be expanded to 10 x 9 ft (3.0 x 2.7 m) to get equipment and materials onto the rooftop plaza. However, the opening had to be weather-protected to prevent flooding in the garage from rains.

The contractor carefully scheduled work sequences, breaking the garage into nine separate phases. An early obstacle was discovering lead paint and

asbestos in the garage, both of which had to be abated. By late July, most of the electrical and mechanical demo work had been completed, so concrete repairs could begin. Hydrodemolition had been specified for the project, so a water supply and recovery tanks were set up on a side street by the garage egress gate. Due to the noise and impact vibration transferred to the main building structure, all hydrodemolition work was performed during nighttime/weekend hours. Waffle slab pans and the topping deck were reconstructed during the day.

## September 11 and the Anthrax Scare

By early September, work sequences had become routine and the project was progressing very efficiently. Then came the September 11, 2001, terrorist attacks in New York City and at the Pentagon. Work was halted in the middle of that morning as the building and garage were evacuated. The project remained stopped for days while government security agencies assessed further risks to federal buildings and employees. Work was allowed to proceed again the next week, but increased security precautions slowed progress. Identity checks were slower and more deliberate so guards could make sure no unauthorized persons snuck in. Delivery inspections changed from routine to exacting.

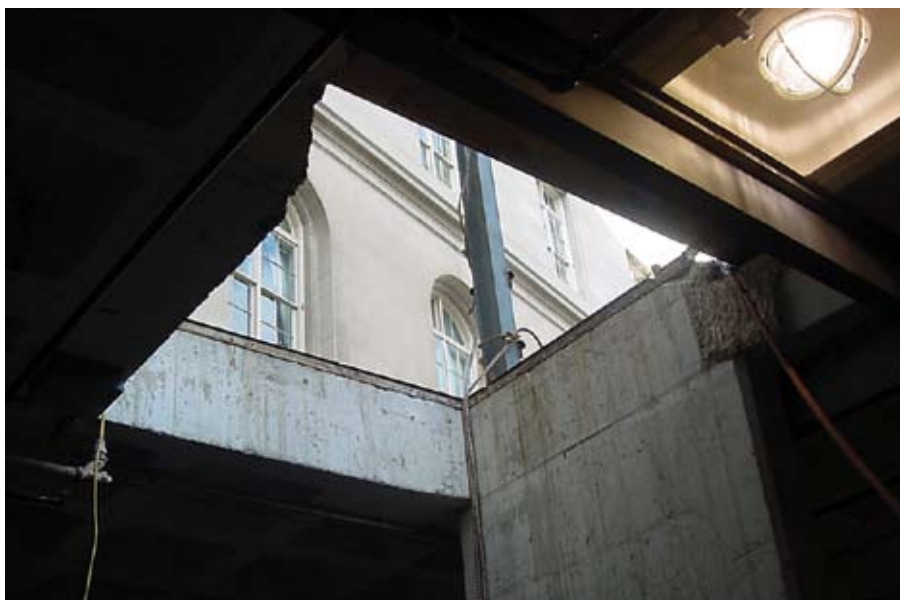
Shortly, though, a routine began to be restored and momentum was gained. A continuing cycle of nighttime demolition and daytime concrete placement allowed the contractor to move into intermediate phases of the project. With nearly four months until completion, it was hoped the lost days could be absorbed. But in the first week of October, following receipt of envelopes carrying deadly anthrax spores at the mailroom of the nearby Hart Senate Office Building, work was again stopped as the Cannon Building was closed.

The building and garage remained closed as toxicologists tested for anthrax. Finally determining that no danger existed, the building was reopened on October 25 and work on the garage restoration resumed. Ready-mixed concrete delivery trucks, covered as they frequently were with white powdery concrete dust from loading at the plant, drew special attention.

The several weeks lost during the anthrax investigation could not simply be absorbed into the progress schedule. The AOC, however, did not want to subject building residents to any more hardship by extending the completion date of the project. The AOC and the contractor met frequently to discuss how delays could be minimized and the project finished most quickly. The restoration contractor and subcontractors, sensitive to the unique events that had occurred, developed a strategy to work overtime, increase manpower, overlap tasks, and find all means possible to finish



*Fig. 4: Mechanical equipment removal prior to concrete demo*



*Fig. 5: Existing roof access hatch*

more quickly. At the same time, the AOC worked closely with the contractor toward a change order to compensate for the added expenses caused by the acceleration efforts.

## Restoration Moves Forward

As the first phases of concrete restoration were finished, specialty subcontractors followed to install new wiring and light fixtures, and to install new duct and air handling units. At the same time, the restoration contractor was constructing the mechanical penthouse structures. Faced with limestone block and ornamental precast roof coping stones, the mechanical penthouses echoed the beaux-art style of the original building construction.

Through a concerted effort by the AOC and the restoration contractor, the first garage areas were





*Fig. 6 and 7: Mechanical penthouses under construction*



*Fig. 8: Garage completed*



re-opened and cars were again allowed to park on January 21, 2002, the original contract completion date! The appearance of the Cannon House Building's garage is vastly improved and its structural integrity renewed. Lighting is much brighter, and the new fixtures are visually cleaner and neater looking. The heating equipment is improved dramatically, providing a comfortable environment during the cold Washington, DC, winter.

The AOC was so pleased with the restoration contractor that prior to closeout of the contract, another change order was issued adding replacement of waterproofing on the garage roof plaza to the project's final scope.

By job's end, the restoration contractor had successfully executed and managed over \$7 million of work in less than 40 weeks. Under the best circumstances, this project would have been a challenging endeavor. Its size and aggressive schedule, the limited access for such a large quantity of material and equipment, and the planning needed to avoid disturbing the office building above all would make the project noteworthy even without the terrorist threats that transpired.



Fig. 9 and 10: Garage and mechanical penthouses in use



## Cannon House Office Building Garage

### Owner

Architect of the Capitol  
Washington, DC

### Project Engineer/Designer

Cagley & Associates  
Rockville, Maryland

### Repair Contractor

C.A. Lindman, Inc.  
Jessup, Maryland

### Material Suppliers

Restoration East, Inc.  
Baltimore, Maryland

Sika Corporation  
Lyndhurst, NJ



**Brian Daley** is manager of C.A. Lindman Inc.'s Southern Region office in Pompano Beach, Florida. Prior to his current position, he was national sales manager at the company's headquarters in Jessup, Maryland, where he also served on the

Board of Directors for the ICRI Baltimore/Washington, DC, Chapter. Daley is an associate

member of the American Conservators Institute, an associate member of the Association for Preservation Technology, and is his company's representative to the Sealants, Waterproofing, and Restoration Institute. He has a BA from James Madison University and has more than 20 years of sales, project management, and operations management experience in base building construction and repair/restoration.