

# WATERPROOFING & MASONRY RESTORATION PROJECT PROFILE

## PROJECT DETAILS

This waterproofing project entailed an elaborate 1.3 million dollar masonry reconstruction of the 18 story Bostonview Apartments building at 130 – 140 Bowdoin Street, across from the State House on Beacon Hill.

The project scope required Metropolitan's considerable troubleshooting on site to determine the source of water problems and the subsequent detailed masonry reconstruction of the 12th and 18th floor parapets as well as the construction of new brick veneers for the building façade in areas contiguous to the new parapets. In total, 8,000 square feet of the residential apartment complex's exterior was reconstructed. During construction, Metropolitan maintained a watertight system to all sections of the building, as the 145 unit apartment building was fully occupied.

The work was conducted for property owner Bostonview Corp. of Boston under the direction and supervision of property management firm Winn Management, also of Boston. Metropolitan worked in conjunction with the project architectural firm of Fondron & McGrath Architects of Cambridge. The fast track project commenced in May of 2001 and was completed in December, 2001.

The extremely close proximity of adjacent buildings, including the Massachusetts State House, made logistics difficult. In fact, all construction was accomplished from swing staging, and construction materials were hoisted and stored on the 12th and 18th floors. Metropolitan built a special shop/work area on the 18th floor roof, from which the firm centered its construction operations. Cranes, a carpenter shop, machine shop, and masonry work area were set up here. Metropolitan installed

safety lines to meet OSHA fall protection requirements and roof protection for the storage of bulk materials.

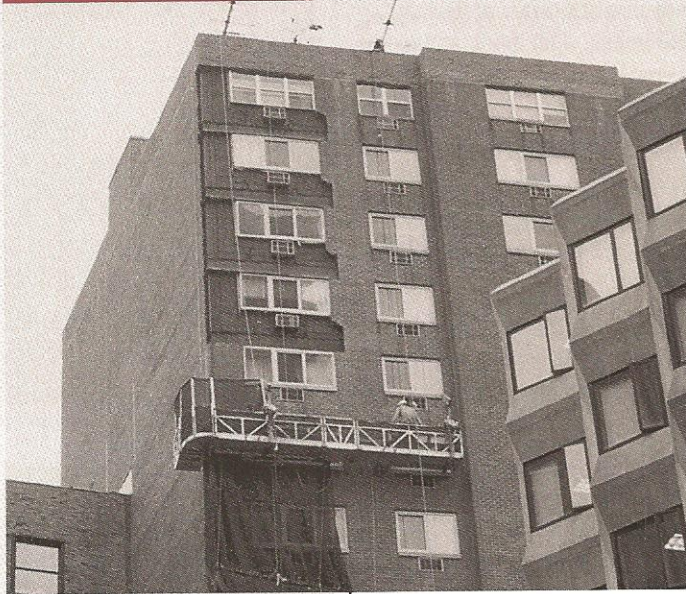
In the course of dismantling and rebuilding the 18th floor and 12th floor parapets Metropolitan installed overhead protection and safety lines at the south wall rear entrances, the east wall parking lot, north wall parking garage driveway, and the west wall front entrance of the apartment building and church on Bowdoin Street.

The extremely difficult job site access was further accentuated with project parameters that allowed for only one vehicle parking space in a public parking lot. All materials and equipment were delivered to the project via this one parking space. Significant planning of material and equipment deliveries was therefore integral to the project's success.

Staging systems were also a critical aspect of the project, as two specially designed and constructed swing staging systems rated for 3000 pounds were required. They were cantilevered 8' on 12' high staging frames. These staging systems were moved to various wall elevations that were under construction throughout the course of the project. The roof-mounted staging, uniquely assembled on dollies, eliminated the need to lower the equipment to the ground each time it was used.

The dismantling of the 18th floor parapet cavity wall consisted of removing 4" cement block and brick down to the 18th floor shelf angles. Over 80 tons of material were removed and delivered by lifting and lowering the material via one portable roof-mounted crane.

At the upper level construction area, Metropolitan dismantled the brick veneer wall from the 18th floor shelf angle to the 17th floor shelf angles. Structural steel relieving angles on both the 17th and 18th floor were replaced. (over)



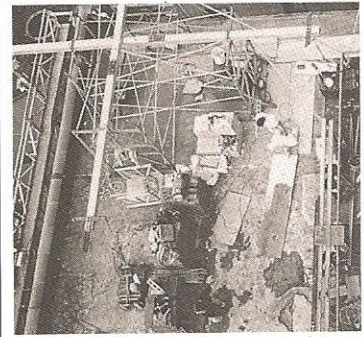
## BOSTONVIEW APARTMENTS, BEACON HILL — BOSTON, MA

### PROJECT SIZE & SCOPE

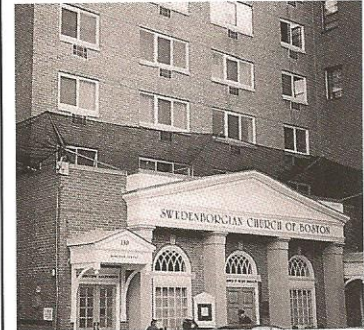
*Elaborate reconstruction of an 18 story apartment building on an extremely tight site in the historic Beacon Hill area of Boston. The project included total reconstruction of building's parapets and extensive brick veneer exterior reconstruction in contiguous areas.*

### PROJECT BACKGROUND

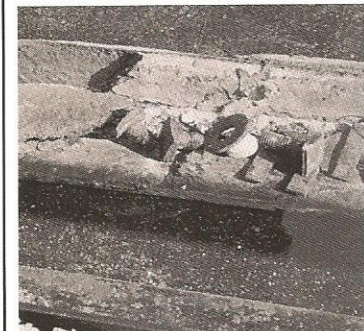
*This 1960's building had extensive water infiltration problems stemming from faulty parapet construction, and the project required extensive troubleshooting of the brick veneer exterior façade to determine the source of the water problems.*



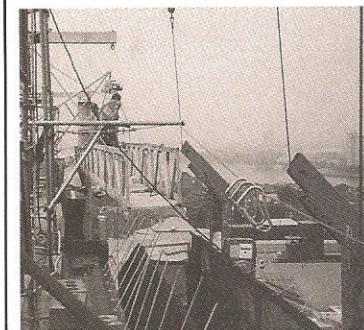
*18th floor roof served as the center for construction operations*



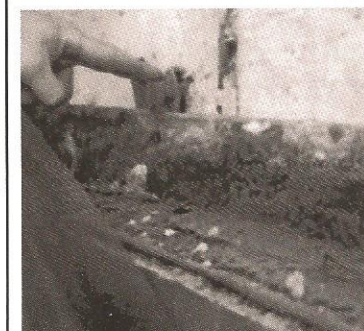
*Overhead pedestrian protection suspended from above to keep sidewalks uninhibited*



*Water trapped beneath brick veneer corroded steel angles*



*Staging platforms suspended from wire cables for demolition and reconstruction*



*Corroded anchors failing at structural relieving angles*

**METROPOLITAN**  
Restoration & Waterproofing Corp.

**WATERPROOFING  
& MASONRY  
RESTORATION  
PROJECT PROFILE  
(CONTINUED)**

**BOSTONVIEW  
APARTMENTS,  
BEACON HILL —  
BOSTON, MA**

**Property Owner:**  
*BostonView Corp.*

**Property Manager:**  
*Winn Management,  
Boston, MA*

**Project Architect:**  
*Fondron & McGrath Architects,  
Cambridge, MA*

The project required the installation of a new EPDM waterproofing membrane in the cavity wall from the 17th floor shelf angle over the spandrel beam. This system tied into the existing 18th floor vapor barrier and the existing roof membrane. Brick veneer was rebuilt on the 17th floor.

The new 18th floor parapet was built with 4" cement block and brick veneer to meet Massachusetts seismic codes. Subsequently, the 18th floor brick veneer was rebuilt. In conjunction with the masonry reconstruction, 21 new expansion control joints and Dur-A-Wall anchors were installed so as to stabilize the brick veneer at the new control joints.

A similar construction process occurred at the east/north elevation corner of the building. It required the parapet on the north wall to be dismantled, while brick veneer was temporarily stabilized by installing Dur-A-Wall anchors every 3 square feet. Then, the brick veneer was dismantled on the 17th, 16th, 15th and 14th floors in the northeast corners of the building.

A 1/2 inch exterior crack on this side of the building extending from the 13th floor to the 1st floor required the installation of Dur-A-Wall Spiral Anchors to the brick veneer and spandrel beams. The crack restoration was finished by the utilization of a soft movable joint sealant.

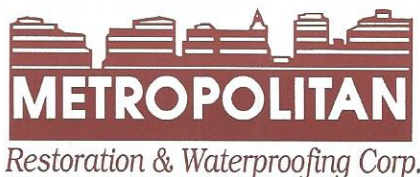
Again, on these upper level floors at the east/north corner, a new EPDM waterproofing membrane was installed that tied into the existing 18th floor vapor barrier. The parapet was also rebuilt here, again to meet seismic codes. Metropolitan then handled masonry construction of brick veneer on this elevation.

In the lower section exterior reconstruction of the building, on the south wall elevation, the swing staging was lowered to the 12th floor roof. Project equipment that had been located on the 18th floor roof was also relocated to the 12th floor roof. Parapet and brick veneer reconstruction was handled here in accordance with the upper level exterior construction procedures.

Strict construction parameters were met to ensure watertight construction in the parapet areas. As the parapet wall was being constructed, a new flashing membrane was simultaneously being installed on the parapet and tied into the existing roof. Thus, the building was kept watertight throughout the entire demolition and construction process. The waterproofing of the parapet areas also included the installation of a metal coping to the leading edge of the parapets.

Metropolitan President, Dennis Kulesza, discussed the fast track nature of the project and the firm's effectiveness in meeting logistical demands. He said, "The building façade had to be dismantled and then reconstructed prior to the onset of winter. The key to meeting the aggressive project completion schedule was Metropolitan's employment of solid management techniques – construction scheduling, assembling an experienced construction team, access to material supply, and the use of innovative access techniques." Metropolitan managed a construction crew of 12 masons, laborers, carpenters, and roofers.

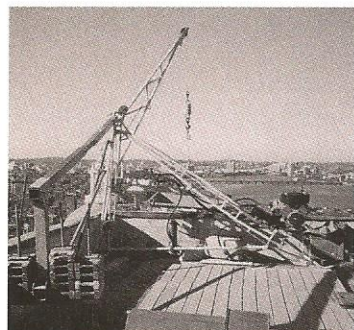
Michelle Moriello, on-site property manager for Winn Management, commented on the project, saying, "Determining the scope of the problem through thorough investigation was demanding. As Metropolitan investigated the façade and moved down the wall and inside the walls, they determined the nature of the problem, and what would be required in the reconstruction process. We were pleased with their workmanship."



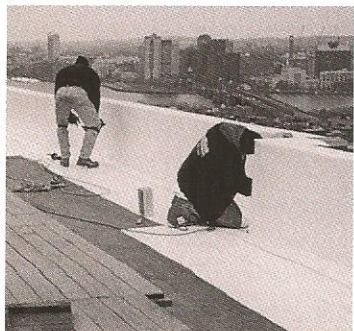
*Damage within building façade required new waterproofing systems*



*1/2" crack in brick veneer required repair*



*Roof mounted crane used to lower and raise construction materials*



*New parapet waterproofing systems tied to roof EPDM membrane*