MASSIVE GRANITE STRUCTURAL REPAIRS

Intense Structural & Masonry Restoration of an Iconic Building

23rd Street Armory
Philadelphia, Pennsylvania

MPS
MASONRY PRESERVATION SERVICES, INC.
TRADITION ◆ TECHNOLOGY ◆ INTEGRITY

Fortifying a Philadelphia Landmark While Maintaining its Historic Character

23rd Street Armory

Massive Granite Structural Repairs

PROJECT BACKGROUND

- Designed by architect Gillette Woodman and built in 1901, the 23rd Street Armory is a massive granite building once used to store arms and ammunition; it is now home to the First Troop Philadelphia City Cavalry while also serving as a rental space for musical productions, weddings, athletic contests, and other events
- The Armory includes an eastern side that is highly decorative and fortified and a western portion housing the drill hall that is more mundane yet still contains robust architecture
- The First Troop Philadelphia City Cavalry is the oldest military unit in the United States and the only unit that owns its own armory building; today's members are part of the Pennsylvania Army National Guard and are appointed by election only
- Safety issues concerning the building's exterior arose that required quick and appropriate measures be put in place to begin the repair effort
- Through exterior facade repairs, the restoration project was begun to restore the Armory's historic character and enable it to better accommodate members, visitors, and tourists

PROJECT CHALLENGES

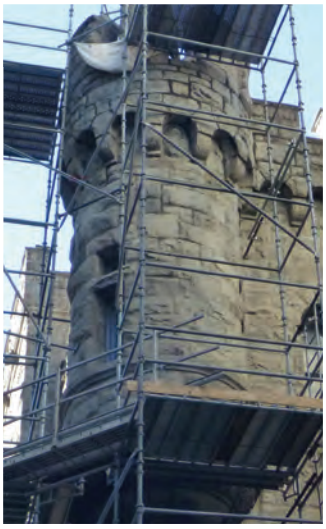
- This massive granite structure required in-depth structural repairs and special rigging to handle extremely heavy stones
- Deep historic steel bolstering and replacements were required
- Grouted anchors, each over two feet long, were needed to stabilize the embattled parapet

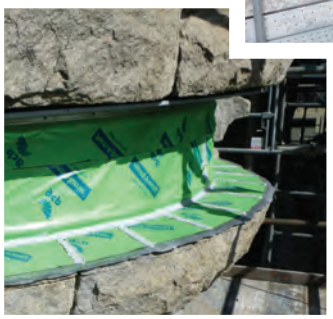
PROJECT APPROACH

- Work proceeded in a logical and phased manner in close coordination with the engineer and owner to ensure a defendable and sustainable approach to the project and future building use
- To limit future deterioration and eliminate safety concerns, repairs to street-facing exterior walls and embattlements entailed the replacement of supporting steel along with the masonry itself
- Building block phases included initial assessment, detailed assessment with exploratory probes, overhead protection installation and pedestrian protection management, pilot phase repairs, and multi-year repair and preservation work phases

"When large spalls were found on this corbelled stone structure, MPS helped us discover the cause—corroding steel hidden inside interior walls. We worked closely with MPS to temporarily support the stone work over a busy city street so they could remove and replace the steel. Their in-house steel shop allowed them to measure exactly what was needed and fabricate it the next day. It couldn't have gone more smoothly. We know of no other masonry contractor that has this capability."

Frederick C. Baumert, PE, CCS
Senior Principal
Keast & Hood Structural Engineers





Crafting a higher standard for preservation, Masonry Preservation Services is recognized throughout America for our unique approach to masonry preservation and building envelope diagnostics. MPS has been specializing in architectural maintenance and restoration since 1985.

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