

2017 AOE WINNER: THIRD AVENUE GARAGE RENOVATION, PUBLIC PARKING AUTHORITY OF PITTSBURGH

Category V: Best Parking Facility Rehabilitation or Restoration

Third Avenue Garage Renovation
Public Parking Authority of Pittsburgh
Owner

The Third Avenue Garage was first in a series of multi-tier facilities built following the formation of the Pittsburgh Parking Authority. During a 14-month period starting mid-2015, it was the focus of the largest capital repair project in the organization's 73-year history.

With just five stories of above-ground spaces – a basement level is designated for the exclusive use of premium leaseholders – Third Avenue fails to reach the height of other high-rise authority locations. Importantly, however, its architectural profile remains attractively compatible with the streetscapes that surround it and its interior floor plan is sufficiently broad to accommodate the nearly 600 customer vehicles—very much the capacity standard for its construction time more than 70 years ago. Today, the building also houses the organization's busy Parking Court function, a shoe repair service, and a bicycle parking and maintenance area for both free and subscription use. Third Avenue's customers, largely transient demographically, reflect the eclectic mix of destinations that rim the building's location and include attendees of daytime and evening classes at Point Park University, visitors and diners, and those attracted by the seasonal water feature and ice skating installations at PPG Place. With one of its structures literally sharing an exterior garage wall, the PPG complex functions as the core of the building's use by commuting workers and its presence is a guarantor of the sector's long-term vitality. Critically, the project's lengthy period of mobilization and construction had to occur without damage to any PPG venue.



Levels of customer demand required that no more than 200 spaces be removed from service at any time as traffic in non-construction zones continued uninterrupted. The proximity of Point Park student dormitories required that each day's construction progress be concluded by 10 p.m. and complete closures of the facility were scheduled for holidays and weekends only. The principal nature of the project's direction, however, was determined by a building footprint and configuration – each parking deck is flat and spans a full 3,300 square feet – that favored the use of hydro-demolition techniques that doubled the pace of work from that required for conventional jackhammer drilling. The hydro mode also created a white-noise effect and nearly eliminated the need for dustproofing sequential work areas. Applied at a pressure level of 20,000 psi throughout construction, the approximately 8 million gallons of water involved in the demolition phase passed through an on-site filtration system to ensure compliance with prevalent quality standards. Additional water control functions requiring temporary piping, settling tanks, filtration systems, sump pumps and water diversion materials to be installed as work progressed.



This structure's configuration was not without obstacles to easy repair. Parking levels are accessed by two one-way helix ramps situated on opposite corners of the building. Construction activity led to a scheduling strategy limiting their periods of two-way use together with the adoption of a traffic light system to ensure worker and patron safety. The importance of maintaining Parking Court's annual revenue stream required that it remain open despite the severely damaged condition of the first-level slab beneath it; a structural support system was placed

below the slab and injected with a sufficient volume of flowable fill to create a monolithic condition that would permit loads to be transferred to the newly installed steel frame. At Third Avenue, all interior and exterior repair objectives – including several that materially improved its aesthetic appearance and operating efficiency – were achieved.

Project Participants:

- DESMAN Inc., Architect & Structural Engineer
- Nathan Contracting, Contractor

Total Cost: \$7.4 million.



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