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# PROJECT PROFILE

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## MIT N4-Bldg. Albany Street Parking Garage - Cambridge, MA

*This project earned CSI an AWARD OF MERIT from the International Concrete Repair Institute*

The facility is a 135,000 sf garage, with nine half-levels of pre-cast double tees supported by cast-in-place columns and beams. The roof level and eastern most portion of the garage is cast-in-place with an unbonded post-tensioning reinforcement system. The primary route when exiting down the structure is through the four semicircular ramps on the east end of the garage. The ramps are cantilevered off of the east and primarily supported by a bonded post-tensioning system.

Project phasing began in the basement and worked up through the outside half of the garage levels, then worked back down through the inside half of the levels. Phase 1 included the complete capture of the semicircular ramps and the roof in order to complete the concrete repairs and subsequent urethane coatings as early as possible.

During Phase 1 work on the semicircular ramp, as the cleanup crew made their way down a large demolished area on the third level, they noticed that the bonded post-tension cables were deteriorated to the point of failure. These PT cables ran perpendicular to the direction of the ramp and amounted to approximately two-thirds of all the PT cables on this level. The work was immediately stopped, the owner and engineer were called and it was determined that 18 emergency shoring towers were immediately required to shore the third level ramp down to grade level.

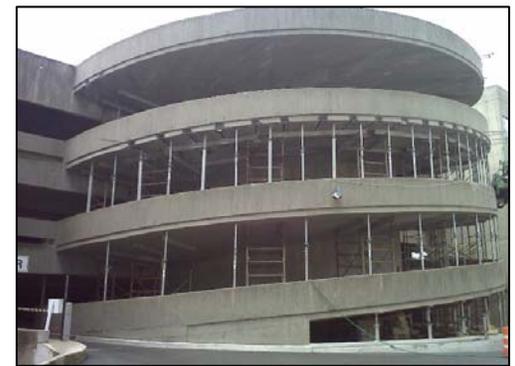
The majority of the project funding and labor was redistributed from the main garage to the replacement of the PT system at the third level of the semi-circular ramp.

Given the short summer timeframe in which to complete the project, the most challenging aspect was completing the PT replacement work, grouting the PT ducts, pouring the concrete to embed the PT ducts, curing the concrete, and applying the urethane coating to the semicircular ramps. Considering the concrete curing and time for repair, the schedule was extremely tight when including the coating application.

To the owner's complete satisfaction, the ramp PT replacement, ramp coating, and 75% of the original garage repairs were completed by the original project completion date.



**Semicircular Ramp Finish Demo**



**Semicircular Ramp with emergency shoring**



**Semicircular Ramp  
Topside Formwork**



**Semicircular Ramp  
PT Formwork**



**Completed  
Semicircular Ramp Surface**