

## PROJECT CASES

### SUBARU HEADQUARTERS

*Camden, NJ*

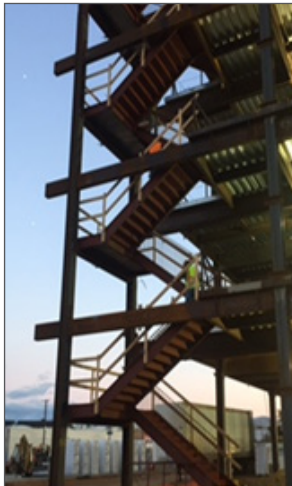
*In 2017 Subaru of America moved its North American headquarters to a four-acre site in the Gateway District of Camden, NJ. This 250,000 SF, \$118 million project was developed by Brandywine Realty Trust as part of the revitalization of Camden City.*



GeoStructures was retained by Brandywine Realty Trust to perform a peer review of a geotechnical investigation by others GeoStructures performed additional explorations including test borings with undisturbed samples (Shelby tubes) and seismic cone penetration tests (SCPT). We identified two subsurface factors governing foundation design – up to 20 ft. of loose existing fill and excessive consolidation settlement from 30 ft. of soft, normally consolidated Delaware River silt. Upon performing numerous consolidation tests on the silt and detailed geotechnical analysis, we developed a ground improvement program which would eliminate the costly piles and enable use of conventional shallow foundations. This comprises: (1) deep dynamic compaction (DDC) to densify the existing loose fill; and (2) preloading to induce consolidation of the soft silt prior to construction.

In January 2016, the entire site was treated by DDC. Then surcharge fill was placed and left for about 3 months. During this period, the ground settlement and pore pressures were continuously monitored. Once the surcharge was confirmed to have achieved its intended objectives, the surcharge was cut down to the final grade and building construction started in the summer of that year.

GeoStructures was also awarded the construction inspection and materials testing contract. The scope of inspection work included earthwork and foundations, cast in place concrete, structural steel, and fireproofing.



*Erected steel framing & decks.*



*Soil improvement using DDC (DDC crane dropping weight and DDC weight generated craters).*

**Owner:**

- *Brandywine Realty Trust*

**Architect:**

- *Granum A/I*

**Structural Engineer:**

- *O'Donnell & Naccarato*

**Construction Manager:**

- *Turner Construction*

**Service Highlights:**

- *Geotechnical Investigation*
- *Deep Dynamic Compaction*
- *Surcharge*
- *Settlement & Pore Pressure Monitoring*
- *Earthwork, Concrete, and Structural Steel Inspection and Testing.*