

Lincoln at Alexandria Apartments & Parking Garages

Alexandria, VA



Project Description: Over 2300 Geopier elements were utilized to support two, four-story, luxury apartment buildings housing 588 apartments, and two, three-level parking structures. Subsurface conditions at the site were not only poor, but they were highly variable. The site, in the Potomac Yards area of Alexandria, had apparently served a variety of industrial and commercial uses in the past. The subsurface is characterized by several feet of miscellaneous clayey fill soil overlying four feet of very soft cohesive deposits, with dense sand from ten to twenty feet below finished floor elevations. In-Situ Soil Testing, who performed cone penetration and dilatometer soundings at the site, is credited with providing a continuous profile that shows the problematic soft clay soil layer. Shallow groundwater due to proximity to the Potomac River, the very soft silt and clay layer, the variability of the fill soils which contained buried concrete slabs in a few areas, and surprise pockets of municipal solid waste, made for a challenging project. Close coordination with GeoConcepts Engineering, the project geotechnical engineer, was essential to defining and verifying the design parameters for these structures with column loads up to 430 kips on the parking garage and 4.6 kips per lineal foot for apartment strip footings.

THE GEOPIER ADVANTAGE

- Saved Time & Money by Replacing Timber and Concrete Piles
- High allowable bearing pressures up to 6 KSF were possible using Geopier support
- Provided a flexible system that could be changed in the field when changes associated with debris fills were encountered

Owner/Developer/GC: Lincoln Properties, Herndon, VA

Architect: The Steinberg Collaborative, AIA, LLT, Houston, TX

Structural Engineer: SCA Consulting Engineers, Houston, TX

Geotechnical Engineer: GeoConcepts Engineering, Inc., Leesburg, VA

Cone & Dilatometer Testing: In-Situ Soil Testing, Springfield, VA