



Rex Hospital Parking Deck

Raleigh, North Carolina

The Geopier X1® system solution was ideal for rapid installation of deep Rammed Aggregate Pier® (RAP) elements to save money on the project.

Description: Construction of a four-level parking deck structure at Rex Hospital (one level below ground) was just one phase of extensive new construction, joined by a new patient tower and a new diagnostics and testing center. The completed parking deck features 446 parking spaces.

Subsurface Conditions: Soil conditions generally consisted of 2 to 5.5 feet of clayey silt fill underlain by stiff to hard residual sandy and clayey silt, followed by partially weathered rock. Groundwater was encountered near elevation 415 ft.

Geopier Solution: Auger-cast in-place piles (ACIPs) were recommended initially, but the project's geotechnical engineer recommended a Geopier solution as a more cost-effective alternative to ACIPs. Because elements needed to be installed at depths of up to 44 feet below ground level, the X1 system was selected as the best option. 275 Geopier X1 elements were installed at the site, measuring 30" in diameter and between 8-32' in length. The parking deck was then built on top of a typical spread-footing.



PROJECT TEAM

Owner:

UNC Health Care System

Geotechnical Engineer:

SGME

Structural Engineer:

Stewart Engineering, Inc.

General Contractor:

Skanska USA Building, Inc.

Geopier Installer:

GeoConstructors, Inc.

Geopier Designer:

GeoStructures, Inc.