



Ingleside at King Farm Retirement Community

Rockville, Maryland

To control total and differential settlement, the Geopier GP3® system was used to support spread footings on a site with sandy and silty soil

Description: Construction of a seven-story assisted living facility that will house 242 independent living apartments, 35 assisted living units, and 45 skilled nursing beds. Column loads range from 200 to 2,180 kips, with wall loads ranging from 1.8 kips/ft. to 2.6 kips/ft.

Subsurface Conditions: Subsurface conditions consist of fill comprised of sandy silt to depths ranging from 2.5 to 8.5 feet below ground level. The fill is underlain by residual soils generally composed of sandy silt and silty sand to depths of 38 feet. Decomposed rock was encountered below the residual soils to depths of 83 feet.

Geopier Solution: Controlling total and differential settlement was a top concern for this project, as part of the site with natural soils could provide 8 ksf but other areas of the site were unsuitable to build on. The geotechnical engineer recommended the use of a Rammed Aggregate Pier® (RAP) based on his positive experience using the system in the past. The Geopier® solution was to use RAP elements to support spread



footings of 5 ksf in the poor soils to match the spread footings of 5 ksf in the natural soils so as to control differential settlement. More than 700 piers ranging in shaft length from 8 to 20 feet were installed. Two modulus tests revealed less than 0.36 inches of deflection at 100% of the design stress of 16,941 psf, reflecting the strength of the Geopier elements.

PROJECT TEAM

Owner:

King Farm Presbyterian Retirement Community, Inc.

Geotechnical Engineer:

ECS Mid-Atlantic, LLC

Structural Engineer:

Morabito Consultants, Inc.

General Contractor:

Turner Construction Company/
Konover Joint Venture

Geopier Installer:

GeoConstructors, Inc.

Geopier Designer:

GeoStructures, Inc.