



Oxley Wind Farm

Essex County, Ontario

The Geopier Armorpack® system allowed for a cost effective solution to support Wind Farm towers

Description: A wind farm consisting of three 100 m tall wind turbines founded on 19.2 m diameter spread footings constructed near Harrow, Ontario.

Subsurface Conditions: Soils consisted of loose to compact silty sand over firm to stiff silty clay, underlain by compact to very stiff silt to clayey silt till over dense silty sand. Groundwater was encountered between 1 and 2.7 m below grade.

Geopier Solution: The Geopier ground improvement provided improved bearing capacity to support the maximum pressures exerted on the tower of 275 kPa at ULS, 180 kPa at SLS, limiting total settlements to less than 50 mm and differential settlements to less than 3 mm/m, resulting in a max tilt of less than 0.17 degrees. Geopier Armorpack® Piers were chosen for two tower sites as the most cost-efficient alternative to support the proposed towers in place of deep foundations. The Geopier solution allowed the two turbines to be supported on footings of the same design as the third tower, eliminating the need for deep foundations and providing for improved cost and schedule for the project.



PROJECT TEAM

Geotechnical Engineer:
LVM

Structural Engineer:
MMM Group

EPC General Contractor:
Carlsun Energy Solutions Inc.

Geopier Designer and Installer:
GeoSolv Design/Build Inc.