

The Problem

The soil conditions encountered at a residential infill site consisted of fill over a peat layer overlying a competent native deposit which was an average 19 feet (5.8 m) below grade.

Considering the relatively deep loose fill and compressible peat deposits encountered at the site, normal spread or strip footings were not considered suitable to support the proposed residential structure. There was concern that vibration associated with driving piles could damage adjacent homes. In addition, the residences adjacent to the lot line made excavation of the fill and peat, and placement of engineered fill impractical. The situation was further exacerbated by a high water table.



The Solution

Chance[®] Helical Piers were designed to support the residential structure. Each pier had to sustain a design load of 22 kips (88 Kn). The piers selected were a three helix configuration, type SS150. Twenty two piers were installed into the native layer with hand held portable equipment. Installation torque was monitored to ensure pier capacity. Pier lengths varied in length up to a maximum of 35 ft. (10.7 m) below grade. The piers were cut to the finished level of the proposed footing and a construction bracket was placed on the shafts.



The foundation was designed to transfer the load onto the piers. Substantial savings were realized over other foundation support methods evaluated