CASE STUDY

EBS ENGINEERING & CONSTRUCTION LIMITED

Chance® Helical Piers® used to Underpin Condominium – Toronto, ON July 2009

The Problem:

- A parking structure needed to be constructed under an existing building
- Support of the existing structure was necessary while the soil beneath the foundations was removed and the foundations extended deeper
- Soil profile consisted of a layer of fill changing to silty clay
- Pile and lagging was not an option as it could not be constructed close enough to the existing structure
- Conventional underpinning was determined to be too costly as depth of the new foundations was 4-5 meters below existing foundation

Warehouse structure before renovations

- Access was limited due to existing structures in close proximity
- Vibrations during construction had to be minimized due to the condition of the surrounding structures

Piers installed – excavation beginning

The Solution:

- Chance® Helical Piers® were chosen for the project based on several reasons:
  - No vibration during installation
  - More cost effective solution than traditional technologies
- Helical pier shaft enclosed by a steel casing to provide lateral support once soil beneath foundation was removed (approximately 4.6 meters (15 feet) below underside of footings)

Sleeved helical piers during excavation operations

Product Used: (30) Chance® Helical Pulldown Micropiles® with 150 mm (6″) diameter grout column inside steel casing

Length: 8.0 to 11.0 m (26 to 35 ft)

Loads: 163 KN/meter (11 kips/ft) of wall ULS in compression

Finishing: All helical piers were furnished with a foundation repair bracket mechanically fastened to existing footing

Entrance to parking garage ready for use

Structural Engineer:	Blackwell Bowick Partnership Limited
Soil Investigation Engineer:	Alston Associates Inc.
Inspection Engineer:	Coffey Geotechnics
Chance® Helical Pier® Installer:	EBS Engineering and Construction Limited

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