

CHANCE®

HELICAL PULLDOWN® Micropiles Report

A CASE HISTORY

Project: Condominium Building Richmond Hill, Ontario	Geotechnical Consultant: Soil Mat Engineers and Consultants Hamilton, ON	Consultant: The SPG Engineering Group Ltd. Oakville, ON	Contractor: EBS Engineering Construction Breslau, ON
-------------------------------------------------------------------	---------------------------------------------------------------------------------------	----------------------------------------------------------------------	-------------------------------------------------------------------

The Problem:

An 11-story condominium building north of Toronto had been constructed less than 10 years on a dense clay till capping an artesian aquifer. Large open-bottom sumps (installed during the initial construction to control groundwater) had undermined four shear walls, two columns and the parking garage foundation walls on the southwest corner of the structure and had disturbed the dense sand layer under the clay till.

Considering the limited access in the parking garage and the artesian aquifer, pile driving and caisson installation were not viable underpinning options.

The Solution:

Chance Helical Pulldown® Micropiles were determined to comprise the best solution to underpin the structure. An ASTM D 1143-S1, 24-hour standard test method for piles under static axial compressive load was completed prior to project startup to confirm the capacity of the Helical Pulldown® Micropiles.

The Helical Pulldown® Micropile size and configuration used was the SS200 with 8", 10" and 12" diameter helices. A 6" diameter grout column around the shaft was sleeved with PVC pipe above the helices to increase lateral stability and prevent negative skin friction on the piles if the clay till were to continue to settle. Installation depths varied from 34 to 44 feet on the 83 piles installed to a 60-kips minimum allowable working load or a 120-kips minimum ultimate load capacity.

The Results:

Four times a year, the structure has been monitored for movement since the project was completed. No settlement movement has been recorded since the structure was underpinned with Chance Helical Pulldown® Micropiles.



A.B. Chance Email: hpsliterature@hps.hubbell.com Tel: 573-682-8414 Fax: 573-682-8660 ISO 9001:2000



www.abchance.com

A.B. Chance,
a Division of Hubbell Power Systems, Inc.

POWER SYSTEMS, INC. 210 N. Allen, Centralia, MO 65240 USA

NOTE: Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.

RGS5M7/04

Printed in USA



Bulletin No.
01-0003
Rev. 7/04

Certificate No. 001136

©Copyright 2004 Hubbell, Inc.