



GEO-FOUNDATIONS Contractors Inc.

Tip Top Lofts



Date: 2003
Technology: Micropiles



Tip Top Lofts featuring the preserved landmark Tip Top Tailors illuminated sign

steel tower structure perched atop the existing 6-storey original reinforced concrete shell. Enabling this new arrangement, 76 high capacity, tension-compression micropiles were constructed by Geo-Foundations to support and anchor the new integrated structures.

The building sits atop reclaimed land where Lake Ontario was filled in to expand Toronto lakeward in the 19th century. As a result of this infilling, the site is underlain by very loose fill deposits with the prevailing water table less than 1 metre below basement floor slab elevation. The existing 1929 structure is founded on driven timber piles terminated in the upper, weathered layer of shale approximately 6 metres below basement floor slab. Within this setting, Geo-Foundations installed each micropile with permanent casing through the overburden and weathered shale, and a 5-metre deep socket in sound rock. More than 70% of the micropile borings had to pass through reinforced concrete pile caps, and more than 50% of the micropile borings had to pass through significant sections of existing timber piles. Adding to these challenging drilling conditions, the available headroom inside the basement is just 3.4 metres.

The former Tip Top Tailors building on Lakeshore Road is a classic example of art-deco architecture, and one of the most recognized heritage structures in all of Toronto. The circa-1929 building was converted, starting in 2003, into luxury condominium residences known as "Tip Top Lofts". The conversion from industrial to residential features a new 6-storey,

The highest loaded micropiles at this site were designed to resist working compression of 2000kN and working tension of 1200 kN. Two electric-drive rigs were used to complete production micropile drilling. A load test was carried out in the early stages of the project, incorporating 3 adjacent production micropiles. The compression test micropile successfully resisted 4000 kN of static compression, while the two tension micropiles each successfully resisted 2000 kN static tension.



Electric drive drill working in just 3.4m headroom



Load testing of a production micropile to 4000 kN applied compression load