



GEO-FOUNDATIONS Contractors Inc.

Ricoh Coliseum



Date: 2003
Technology: Micropiles

The AHL's Toronto Marlboros play their home games on the grounds of the CNE at Ricoh Coliseum, a 1920's-era covered arena converted over a span of just 10 months in 2003 by a \$38M refit into a state-of-the-art 10,000-seat entertainment complex.

The centrepiece of the refit project is the new, fully spanning roof structure, which is 6 metres higher than the original, and has an entire level of luxury suite seating suspended from its trusses. In order to support the new roof and position its columns as close as possible to the arena's original, shallow-founded perimeter walls, inside the tight confines beneath the grandstand seating slabs, a micropile foundation system was designed and constructed by Geo-Foundations.

Four different sizes of hollow bar micropiles were installed, with the highest loaded micropiles designed to resist 1175 kN service compression. A significant number of the micropiles had to be installed in just 3.5 metres of headroom; all were socketed a minimum of 2 metres into shale bedrock, which occurs consistently across this site between 6 metres and 7 metres below ground floor slab. In order to fit the new roof columns as tight as possible to the existing heritage brick masonry walls, many of the micropiles were installed less than 350mm away from the wall.



The first of nine major trusses being installed in April, 2003



Micropile installation in low headroom beneath south grandstand



Static compressive load testing of a sacrificial micropile to 2590 kN (220% of design load)