



## GEO-FOUNDATIONS Contractors Inc.

# Aeroquay Stormwater Management Facility



Date: 2001

Technology: Anchored Shotcrete

Toronto's Pearson International Airport was the recipient of a multi-year, multi-billion dollar redevelopment of the entire airport infrastructure during the two half decades book-ending the end of the twentieth century. The area's comprehensive network of stormwater interceptor reservoirs includes Aeroquay Stormwater Management Facility that lies hidden underground beneath busy Aeroquay Crescent. The entire project to construct this facility was completed between January and August of 2001. Excavation shoring using anchored shotcrete was completed by Geo-Foundations in two phases from February to April.

The dense clay till overburden prevalent at the airport is one of many types of soil that is extremely well suited to shoring using anchored shotcrete. Excavation shoring was an absolute necessity to construct the reservoir's 7-metre deep excavation considering the crowded confines of the airport property where space is at a premium. By burying the soil anchor heads within the shotcrete facing, the general contractor was able to make additional use of the shoring wall as the back form for construction of the permanent reservoir walls.

In total, 496 hollow core soil anchors were installed, varying in embedment from 6 to 10 metres. The excavation was advanced in 4 benches typically 1.8m high; total surface area of shoring exceeded 1700m<sup>2</sup>. The entire excavation was completed to its full depth in just six and a half weeks. The anchored shotcrete shoring system was designed by geo-structural consultant engineers Isherwood Associates of Mississauga, Ontario.



*Anchored shotcrete shoring of 7m deep excavation with new mega-terminal construction in progress in background*



*Excavation shoring complete – construction of reinforced concrete reservoir floor slab and walls in progress*



*Applying shotcrete at C-level bench*