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Eglinton Maintenance and Storage Facility (EMSF)

Challenge

Built on the historic former Kodak Lands, soil conditions at the EMSF facilities main building consisted of up to 6 m of impacted “sandy” fill soils, but also silty soils and debris were encountered underlain by competent native soils. The investigation for the adjacent Operations Company (OPSCO) building uncovered a surficial layer of impacted clay fill about 3-4 m thick underlain by firm to stiff native clays. Over-excavation of the impacted fill soils was initially considered and rejected due to the huge cost. Deep foundation systems were also considered. As piles/caissons required the floor slab to be constructed as a suspended structural slab, the enormous expense rendered this option not feasible.

Solution

Ultimately, two ground improvement methods were selected for this site. Where the soils were generally sandy in nature (Maintenance Building), GeoSolv’s Rapid Impact Compaction (RIC) was used to densify the soil in place. Where clay fill soils where present at the OPSCO building that would not readily densify by dynamic methods, the Geopier Rammed Aggregate Pier® (RAP) system (Impact Method) was selected to reinforce the fill.

Outcome

Significant cost and time savings vs. over-excavation or deep foundations was realized and standard slab on grade construction was possible. RIC and Displacement RAP generated no spoil on site, saving on disposal costs and helping to deliver a very cost-effective EMSF result. By avoiding digging using GeoSolv Innovative Foundation Solutions™, significant risk was avoided by the Crosslinx team.

The EMSF a vital part of the GTA’s ongoing transit infrastructure improvement plan

Project Team

This P3 Project was delivered by Crosslinx Transit Solutions a consortium of parent companies ACS-Dragados, Aecon, EllisDon, and SNC-Lavalin. GeoSolv worked closely with geotechnical, structural and construction professionals from the consortium to deliver this project.

Ground Improvement - Rigid Inclusions - Piling Systems - Slope Stability - Ground Reinforcement

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