

GSE Annual General Meeting - May 9, 2001

TOPIC: Re-design, Analysis, Field Monitoring and Performance of Highway Approach Embankments with Wick Drains

PRESENTATION BY: Ameir Altaee, Ph.D., P.Eng. - Principal, Urkkada Technology Ltd.

ABSTRACT:

The interchange between Highway 416 and County Road 19, south of Ottawa, Ontario, is built over a soft compressible Champlain clay deposit, causing concern for embankment stability and long-term settlement. The original design addressed the concerns by using lightweight polystyrene in the approach embankments. The contractor proposed an alternative design based on installing wick drains to improve stability and to accelerate consolidation settlements.

The re-design work included supplemental borings and laboratory testing, detailed Finite Element analysis of embankment performance, and a field monitoring program to verify the agreement with the design. Field instrumentation measured pore pressure, lateral movements and settlement before, during and after construction.

The talk will present the details of the analysis methods and design principles, the results of the measurements, and highlight observations of importance to future use of wick drains in highway embankment design and construction.

Venue :University of Alberta Faculty Club – Saskatchewan Rm., Main Floor

Time :Cocktail at 5:30 p.m., Dinner at 6:30 p.m., Presentation to follow.

Date :May 9, 2001

Cost :GSE Members \$ 25; Students \$20, Non Members \$ 40