



GEOTECHNICAL SEMINAR

JOINTLY ORGANIZED BETWEEN
GEOTECHNICAL SOCIETY OF SINGAPORE (GEOSS)
& CENTRE FOR SOFT GROUND ENGINEERING



RECENT DEVELOPMENT IN PILE INSTRUMENTATION TECHNOLOGY FOR DRIVEN, JACKED-IN & CAST-IN-PLACE PILES

by

Ir. Lee Sieng Kai

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(PDU pending approval)

Date: Friday, 20 August 2010
Time: 6:30pm Reception
7:00pm Seminar
Venue: **Engineering Auditorium**
Faculty of Engineering
National University of Singapore

SYNOPSIS

A novel instrumentation and analysis technique, called GLOSTREXT method has recently been introduced for driven, jacked-in and bored cast-in-place piles load tests in Malaysia, Singapore and Thailand. This technique provides an innovative and improved alternative for conventional pile instrumentation methods commonly practiced for the past few decades. The technology consists of a deformation monitoring system that uses advanced pneumatically-anchored extensometers coupled with high-precision spring-loaded transducers, and a novel analytical technique to monitor loads and displacements down the shaft and at the toe of foundation piles. This technology is particularly useful for monitoring pile performance and optimizing pile foundation design. Recent case histories will be presented in this seminar to demonstrate the advantages of this novel instrumentation technology. Three features of this method would especially appeal to geotechnical engineers: (i) the method enables installation of instrumentation after pile installation and thus virtually eliminates the risk of instrument damage during pile production and installation; (ii) the post-install nature of the method enables engineers to select instrumentation levels along the as-built depth of piles using pile installation records and site investigation data as guides; (iii) the method reliably measures segmental shortening and strains over an entire section of the test pile during each loading step of a typical static load test and unlike conventional strain gauges that make just localized strain measurements, integrates individual measurements over a larger and more representative sample.

THE SPEAKER

Mr. Lee has more than 19 years of experience in the field of geotechnical engineering and pile test instrumentation technologies. He holds a Bachelor's Degree in Civil Engineering from University of Malaya. He is a Professional Engineer registered with Board of Engineers, Malaysia and a Corporate Member of the Institute of Engineers, Malaysia. Presently, he is also the researcher (PhD candidate) and industrial collaborator of University of Malaya in the field of pile instrumentation. His research has been awarded with three GOLD medals in the national and international innovation competitions. He is a director of Spectest Sdn Bhd, Glostrext Technology Sdn Bhd and Glostrext Technology (S) Pte Ltd. He started to get involved in some of the pile test instrumentation projects in Singapore and Thailand when Soil Investigation Ptd Ltd acquired Spectest Sdn Bhd and its subsidiaries in 2009.

For catering purpose, please confirm your attendance by reply e-mail to: geoss@nus.edu.sg

**** Admission is free for members of GeoSS. Non-members who join as members (S\$60 per annum) on the spot will have their membership till Dec 2010 ****

Visitors may park their cars at the cashcard operated Car Park 2A opposite Blk E3A. Take note that Car Park 3B (Kent Vale) will be permanently closed with effect from 28 February 2010 to facilitate the expansion of Kent Vale Estate.