



# GEOTECHNICAL SEMINAR

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



## Deep Vibro Techniques for Tank Foundations and Infrastructure Projects

by

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**&**

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<b>Date:</b>	Wednesday, 6 August 2008
<b>Time:</b>	6:30pm Reception 7:00pm Seminar
<b>Venue:</b>	<b>Engineering Auditorium</b> Faculty of Engineering National University of Singapore

### SYNOPSIS

Over the last few years, Singapore has experienced a surge in tank construction activity, primarily on Jurong Island. The high loads imposed by steel storage tanks and their relatively flexible nature has resulted in the adoption of Deep Vibro Techniques as a cost-effective and technically sound foundation solution for many of these new tanks. Vibro Compaction has been adopted where the soils underlying the tanks were predominantly reclaimed sandfill. In areas where compressible clays or silty soils were found, Vibro Replacement Stone Columns were used to support the tanks. Hydrotest results as well as settlement performance of the tanks in-service indicates that Vibro Compaction and Vibro Replacement are technically sound foundation solutions for tanks.

Vibro Replacement Stone Columns are widely used in infrastructure projects in Malaysia to support road and rail embankments over soft ground. The ground improvement solution has been shown to be effective to ensure embankment stability and allow soil consolidation in a short time, thereby reducing long term subsidence. This section of the talk will present some case histories, touching on aspects of design, construction and monitoring. In some cases, stone columns have been used in conjunction with prefabricated vertical drains, dynamic replacement and sand columns to achieve greater efficiency in the overall construction scheme.

### THE SPEAKERS

Dr. Leong graduated with B.Eng (First Class Honour) in Civil Engineering from University of Malaya, Malaysia. He obtained his PhD from the National University of Singapore. He has been active in the design and execution of Ground Improvement projects in Singapore. He is currently the General Manager of Keller Foundations (S.E.Asia) Pte. Ltd.

Yee Yew Weng is a Director for Keller (Malaysia) Sdn Bhd. He joined Keller in 2003 and has extensive experience in the design and execution of ground improvement works. He was previously attached to Arup Geotechnics for 14 years where he has carried out foundation and deep basement design for many projects. He has also been involved in numerous slope stabilisation works including anchored retaining walls up to 40m high. He has a Masters degree for research work on piezocones in offshore calcareous soils from Monash University, Australia. He is the current Chairman of the Geotechnical Technical Division of the Institution of Engineers, Malaysia.

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

\*\*\*\* Admission is free for members of Geoss. Non-members can register as members (\$\$60 per annum) on the spot \*\*\*\*

Visitors may park their cars at the cashcard operated Car Park 2A opposite Blk E3A. Alternatively, free parking is available at the Car Park at Kent Vale. Free shuttle bus services are provided to transfer commuters from this location to their campus destinations. The location of the seminar venue is indicated on the Engineering campus map.