

Geotechnical Society of Singapore

Seminar on:

State of the Practice for Vibro Compaction in Singapore

By Dr Leong Kam Weng

Organised by



- Date** Thursday, 26 August 2021
- Time** 19:00 – 20:00 hours (Singapore Time, GMT+8)
Pending PDU Points
- Place** Online Meeting via Zoom – You will receive the link after you have successfully registered your attendance

About the Speaker

Dr. Leong Kam Weng
Keller Foundations (S.E.Asia) Pte Ltd



Dr. Leong graduated with Bachelor of Engineering (First Class Honour) in Civil Engineering from University of Malaya, Malaysia. He obtained his PhD from the National University of Singapore. He has more than 20 years of experience in Geotechnical Engineering. He has been active in the design and execution of Ground Improvement projects in South East Asia (ASEAN) for Keller like Neste Biodiesel Plants in Singapore and KVMRT project in Malaysia. He is currently the BD Director of Keller Foundations (S.E. Asia) Pte Ltd, overseeing the business development of the Ground Improvement business in ASEAN. He is a member of the Geotechnical Society of Singapore (GeoSS) since 2008, served as committee member since 2012 and Vice President for 2014-15. He was the President of GeoSS for 2016-17. He received the Outstanding Geotechnical Engineer award in 2018 from GeoSS in recognition of his contributions to the geotechnical society and industry in Singapore.

SYNOPSIS

Densification of sand is a commonly used ground improvement method in Singapore. When land is reclaimed using sand fill for infrastructure developments, the hydraulically placed sand fill is often in a loose state with relative densities in the range of 30 to 40% (Raju and Sondermann, 2005). Densification of the sand fill is often necessary to increase the relative density so as to increase the shear resistance and reduce the compressibility of the sand fill.

Vibro Compaction was introduced in the Changi airport reclamation and Changi East reclamation project to densify the sand (Choa et al. 1980; Bo et al. 2005). Since then, vibro compaction has also been implemented extensively in Singapore for reclamation projects such as Tekong reclamation and Jurong reclamation; airports such as Changi Airport Runway No. 3 and Taxiway; highways and chemical plant in Jurong Island (Raju and Sondermann, 2005) and in Pasir Panjang Container Terminals, Tuas Megaport, Tuas extension and development projects, Changi Airport Terminal 5, Jurong extension project and Changi East airfields. In Singapore, the total volume of Vibro Compaction works has exceeded 300 million m³.

This webinar will give an overview of Vibro Compaction technique which is used extensively to improve reclaimed sandfill in Singapore. Case studies will be presented to illustrate the applications of Vibro Compaction for infrastructure and Industrial projects in Singapore. Attention will be given on the suitability of soil for Vibro Compaction, post-evaluation method on effectiveness of Vibro Compaction work, impact of vibration from vibrator and the sustainability benefit of Vibro Compaction.

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