

Geotechnical Society of Singapore

SEMINAR

invitation

Application of Prefabricated Vertical Drains (PVD) with Vacuum Induced Preloading and Evaluation of Its Performance

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A cautious approach to the use of Calcium sulfo aluminate cement for ground improvement works

Organised by



Date 18 July 2023, Tuesday
Time 19:00 – 20:00 hours (Singapore Time)
Place Webinar Via Zoom

Scan here to register



Synopsis 1:

Application of vacuum pressure as an alternative method of accelerating consolidation has been growing exponentially. This method of consolidation is advantageous at locations where there is a scarcity of suitable fill material as it reduces the need for high surcharge. A brief introduction on the vacuum preloading methodology and also to share the comparison of the field performance of the Prefabricated Vertical Drains (PVD) with vacuum induced preloading and design computations using empirical analysis. Presentation will also include the results obtained from the empirical analysis considering the soil strength parameters derived from the soil investigation data as well as sharing of the real-time monitoring data obtained from the instrumentation installed at the site.

Speaker 1:

Ir. Allan Chwee Yew Lun
Geoinventions Consulting Services



Ir. Allan Chwee graduated from Universiti Teknologi Malaysia (UTM) with Bachelor of Civil Engineering in 2011 and obtained his Master of Engineering in Geotechnical in 2017. He started his career as a civil site engineer for a high rise project before he joined GCU Consultants Sdn Bhd (member of Aurecon), a consulting firm specializing in Geotechnical Engineering. He is currently with Geoinventions Consulting Services focusing on geotechnical consulting services. He has published many technical papers on geotechnical engineering in international and local conferences. He has more than 10 years of technical experience and has involved in major infrastructure projects such as Tanjung Jati Cirebon Power Plant (Indonesia), Indonesia Data Center, Gemas – Johor Bahru Electrified Double Track, KL – Singapore High Speed Rail (HSR), MRT Line 2 Underground, Klang Valley Double Track Phase 2, etc. He is a professional engineer registered with Board of Engineer (BEM), Malaysia and also registered as ASEAN Chartered Professional Engineer (ACPE). Ir. Allan is also active in professional community. He is currently a committee member of the Geotechnical Engineering Technical Division (GETD) and Membership Drive & Promotion (MDP) of the Institution of Engineers, Malaysia (IEM) since 2019.

Synopsis 2:

The talk about the effect of calcium sulfo aluminate cement for GI works which the presentation will cover with following outline:

1. Why there is a need for OPC replacement
2. what are the alternatives
3. why CSA cement.
4. Results on CSA improved sand.
5. Results on CSA improved clay.
6. Why caution is required when using CSA cement for ground improvement

Speaker 2:

Dr Subramanian Sathyamoorthy
Research fellow,
National University Singapore (NUS)



Dr. Subramanian Sathyamoorthy, had completed his Ph.D from National University of Singapore. The motivation for the research came from the fact that laboratory studies on artificially cemented soils were focused on either pure clay or pure sand. In contrast, the in-situ soil is seldom homogenous. Apart from his thesis work, he was also curious about exploring the possibilities of using eco-friendly cement as a substitute for OPC. Although the use of CSA and LC3 have been successful for concrete technology applications, this eco-friendly cement couldn't be used for geotechnical application without sacrificing strength (when compared with OPC) of the cemented soil.

As a research fellow, his current research focusses on non-destructive QA/QC methods to estimate the strength and permeability of cement-bentonite cutoff walls. Another aspect of the research involves converting excavated marine clay into useful 'sand-like' material for reclamation purposes. Although finding solutions to existing geotechnical problems is exciting, a greater satisfaction comes from sharing research experience and mentoring young undergrad students and post-graduate students.

His seven years of research experience with awesome mentors has helped me publish 9 journal papers and 11 conference proceedings. In these seven years he have also been an awesome mentor to 12 students. His current research group won "Star Partner Award" at Public Sector Transformation Awards.