



## Malaysian Geotechnical Society

# Half Day Webinar on Foundation and Deep Excavation – featuring selected lectures from the concluded 16th Asian Regional Conference in Taipei

28th June 2021 (Monday), 8.45 am – 1.20 pm

BEM Approved CPD Hours: 5 Ref. No.: To Be Advised

### LECTURE SPEAKERS



**Ir. Dr. Tan Yean Chin**

Senior Director / Founder of G&P Professionals Group

Ir. Dr. Tan is a Professional Engineer with Practicing Certificate and an Accredited Checker (Geotechnical) registered with the Board of Engineers Malaysia (BEM). He is a registered ASEAN Chartered Professional Engineer (ACPE) as well as an APEC Engineer and International Professional Engineer (IPEA) in Malaysia and Australia. He is also a registered Foreign Professional Engineer in Myanmar and Cambodia. He is one of the Founders and Senior Director of G&P Professionals group of multi disciplines engineering consulting firms.



**Ir. Chen Chean Sin**

Technical Director of SSP Geotechnics Sdn Bhd

Ir. CS Chen is a Professional Engineer with the Board of Engineers Malaysia. He is also a Fellow Member of The Institution of Engineers, Malaysia and a member of Malaysian Geotechnical Society.



**Ir. Liew Shaw Shong**

Senior Director / Founder of G&P Professionals Group

Ir. SS Liew obtained his Bachelor of Science Degree in Civil Engineering with First Class Honours from National Taiwan University at Taipei in 1991 and worked as a geotechnical engineer in Sino Geotechnology Inc. at Taipei for a year. In 1992, he continued his post-graduate study in University of New South Wales in Sydney, Australia and obtained his Master of Engineering Science in 1993. He is now the senior director of G&P Geotechnics Sdn Bhd. Ir. Liew was the past chairman of Geotechnical Engineering Technical Division of The Institution of Engineers, Malaysia (IEM) for Session 2010 to 2013 and is also the retired advisor of Geotechnical Engineering Technical Division of The Institution of Engineers, Malaysia (IEM) for Session 2014 to 2016. He is now the President of Malaysian Geotechnical Society (MGS) for Session 2019 to 2021 and Committee Member of Malaysian National Committee On Large Dam (MYCOLD). He is now also the member of Professional Fellow Member, Engineers Australia (EA).



**Ir. Dr. Ooi Lean Hock**

Lead Geotechnical Engineer, Design and Technical Dept, MMC Gamuda KVMRT (T) Sdn Bhd

Ir. Dr. Ooi graduated with PhD from University of Sydney, Australia. In the past he has worked as a geotechnical consultant and a specialist contractor. He is currently the lead geotechnical engineer in the Design and Technical Department of MMC GAMUDA KVMRT (T) Sdn Bhd for the second line of Klang Valley Mass Rapid Transit from Sg Buloh- Serdang- PutraJaya (SSP) line. He has extensive experience in ground treatment works, more recently in deep excavation and tunneling works. He also has a keen interest in geotechnical instrumentation and testing. He has been involved in many interesting infrastructural projects such as railways, runways, highways, tunnels and hydropower both locally and abroad.

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## PROGRAMME

Time	Topic of Lecture
08.45 – 09.45	<p><b>Lecture 1 (16ARC Theme Lecture IV) - Experiences and Innovations for Foundations, Tunnels and Underground Developments in Malaysia</b>  <b>By Ir. Dr. Tan Yean Chin</b></p> <p>This presentation describes and shares some of the recent experiences and innovations from Mass Rapid Transit (MRT) development in Kuala Lumpur. The Klang Valley Mass Rapid Transit from Sg. Buloh to Kajang (KVMRT-SBK Line) is one of the major infrastructure projects launched in 2011 and completed in 2016. It is the first MRT project in Malaysia. The underground section of the project comprises of a total of 9.8km long twin tunnels from Semantan to Maluri with 7 underground stations and associated structures such as portals, ventilation shafts, escape shafts and crossovers constructed in the city areas. The second line of the MRT from Sungai Buloh to Serdang to Putrajaya (KVMRT-SSP Line) commenced in 2016 and targets to be completed by 2021. When completed, this line will have 10 underground stations and 13.5km long twin tunnels (from Jalan Ipoh to Desa Water Park) alongside with several shafts for emergency escape and ventilation purposes.</p>
09.45 – 10.45	<p><b>Lecture 2 (16ARC Paper) – Construction of Bored Pile in Hawthornden Formation Using Different Stabilising Fluid</b>  <b>By Ir. Chen Chean Sin</b></p> <p>Bored piles had been adopted as the foundation for an infrastructure project located on Hawthornden Formation of Middle Ordovician to Middle Silurian which generally overlain by the Kuala Lumpur Limestone Formation. This Hawthornden Formation is a mixture of quartz-mica amphibolites and carbonaceous schists, phyllites and quartzites. At most of the areas, the formation is usually highly to completely weathered and become residual soil. The design of bored pile is based on empirical method commonly adopted in local practice. Two numbers of Preliminary Test Piles (PTP), one constructed using Bentonite stabilizing fluid and the other one using Polymer stabilizing fluid had been carried out. Static maintained load tests conducted on these two PTP showed significant different in the pile capacity especially the mobilized unit shaft friction. This paper briefly describes the empirical method adopted for bored pile design and presents the soil investigation results carried out at these two PTP locations. The test results will also be presented and discussed. Recommendation is also presented based on this study.</p>
10.45 – 10.50	<b>Break</b>
10.50 – 11.50	<p><b>Lecture 3 (16ARC Paper) – Common Problems of Basement Excavation Projects in Malaysia</b>  <b>By Ir. Liew Shaw Shong</b></p> <p>This presentation covers the common problems in design and construction practices of basement projects in Malaysia. Water leakage remains as practical issues in basement projects during construction and post-construction stages. Arguments on acceptance criteria of wall leakage is not uncommon among the designers, contractors and owners/operators. Sustained water leakage with fine migration can be serious if unattended. Excessive piezometric uplift can be dangerous for basement slab failure or even possibly uplifting the basement of inadequate deadload. Capping beam design is not well established among the designers. Construction monitoring with maximum predicted wall deflection is also a blind spot as it does not relate to important wall stresses. Forensic investigations of distressed basement, innovative basement design likes drained basement concept and, also prestressed wall system with merits of higher unsupported cantilever wall, free encumbrance of temporary shoring obstruction to improve working space for excavation, higher flexural and shear capacity under prestressing are presented.</p>
11.50 – 12.50	<p><b>Lecture 4 – The Challenges of Diaphragm Wall Construction in Complex Geology</b>  <b>By Ir. Dr. Ooi Lean Hock</b></p> <p>The Sungai Buloh-Serdang-Putrajaya (SSP) Line traverses through a stretch of highly complex geology. The complex geology for the purpose of this paper is deemed to be the interfaces between geological boundaries, faults, weathering patterns and lithology that deviates from common expectations. The depth to limestone bedrock for some of the stations located in the complex geology section is found to be relatively deep. Hence the option of using diaphragm walls as the retaining structures both under temporary and permanent conditions become plausible and attractive options. However, it is not uncommon that most designers will avoid the use of diaphragm wall in limestone in view of the variability and uncertainties normally associated to limestone. This talk presents the challenges associated to the construction and design of diaphragm wall construction in complex geological conditions. The dynamic nature of the subsurface conditions and the influence of probing and investigation methods including pre-treatment works prior to diaphragm wall construction are briefly discussed. Some of the possible measures that have been undertaken to complete the diaphragm wall with the intention to ensure safety and to minimise the potential impacts of the works to third party properties will also be presented.</p>
12.50 – 13.20	<b>Q&amp;A</b>

### Registration Fees

MGS / IEM / GeoSS Members : RM100.00 per person  
 Non Members : RM200.00 per person

Closing date for registration is 25th June 2021

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Registration fee must be paid in full before the participant is allowed to join the webinar.

Payee: **Pertubuhan Geoteknikal Malaysia**  
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**Ir. Liew Shaw Shong**  
**President**  
**Malaysian Geotechnical Society**



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