



Malaysian Geotechnical Society

WEBINAR (via Zoom) | ORGANISED BY THE MALAYSIAN GEOTECHNICAL SOCIETY

“Characterisation of Granular Geomaterials For Soil-Structure Interaction Problems”

by Ir. Dr. Dominic Ong

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SYNOPSIS

This paper presents case studies of the performances of micro-tunnelling via pipe-jacking drives in weathered geology and floating stone columns in thick, soft clay, based on careful characterisation of granular geomaterials interfacing with structural elements during the installation process. The paper will detail the methodology proposed, namely (i) direct shear test using reconstituted granular geomaterials followed by interpretation using (ii) Power Law function and (iii) Generalised Tangential Method to derive the equivalent shear strength parameters of the granular materials, capturing the effect of apparent cohesion and dilatancy. Subsequently, back-analyses are carried out to benchmark the results against field cases studies to demonstrate the reliability of the methods used. Finally, the fundamental discussion of the geomaterial behaviour is presented with reference to the developed methodology.

ABOUT THE SPEAKER

Ir. Dr. Ong has particular interests in the field of traditional geotechnical engineering, specialising in underground space technology, soil-(infra)structure interaction involving deep excavation, tunneling, pipe-jacking, pile foundations, soft soil treatment, field instrumentation & finite element modelling. In recent years, he has developed great interests in resource engineering and bio-engineering, specialising in granular & clay-based geomaterial characterisation, application of binder technology via microbially induced calcite precipitation, geopolymer & biopolymer, as well as pavement recycling & technology.

Dr. Ong is a Fellow member of both Engineers Australia and The Institution of Engineers Malaysia (IEM). He is a Chartered Professional Engineer (CPEng) & a Registered Professional Engineer, Queensland (RPEQ). He is also the co Editor-in-Chief of *Geotechnical Research*, a journal of the Institution of Civil Engineers (ICE), UK, as well as an Adjunct Associate Professor of Swinburne University of Technology.

Dr. Ong is also an expert member of Technical Committee, TC104 Physical Modelling in Geomechanics (Category: Fundamentals) and TC207 Soil-Structure Interaction and Retaining Walls (Category: Applications) in the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE). As a soil-(infra)structure interaction specialist, he won the American Society of Civil Engineers (ASCE) Outstanding Reviewer Award of the Journal of Waterway, Port, Coastal & Ocean Engineering (2018 & 2019) as well as The Institution of Engineers Malaysia (IEM) Best Technical Paper Award (2018).

10th July 2020 (Friday) | 5.00 pm – 6.00 pm
CPD Hours Approved: 1 Ref: IEM20/PP/026/T (w)
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Ir. LIEW Shaw Shong
President
Malaysian Geotechnical Society

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