



Talk on Development Challenges in Singapore MRT Projects

Jointly Organised by the Geotechnical Engineering Technical Division, IEM &
 Malaysian Geotechnical Society (MGS)

BEM Approved CPD/PDP Hours: 2 Ref No: IEM14/HQ/127/T

Date : **18 April 2014 (Friday)**

Time : **5.00 pm – 6.30 pm**

Venue : **Seminar Room, Royal Institution of Surveyors Malaysia, Bangunan Juruukur, Petaling Jaya
 (next to Bangunan Ingenieur, above Restoran Jati Corner)**

Speaker : **Dr. Ng Tiong Guan**

SYNOPSIS

The development of Singapore Mass Rapid Transit (MRT) System started in early 1980's with the construction of the North South Line. Four more lines, namely the East West Line, North East Line, Circle Line and Downtown Line Stage 1, have been added to the operation over the past 30 years. A few more lines are either under-construction or in the detail design phase currently. The total length of the operating rail network at the present moment is approximately 160km, linking over 80 MRT stations. The Land Transport Authority of Singapore plans to expand the current MRT rail network to 360km in 2030 so that 8 in 10 households will live within 10 minutes of the nearest MRT station. Despite the small land area in Singapore, the geological setting is relatively complex. This poses great challenges to the geotechnical engineers in designing and constructing the deep foundations, tunnels and underground structures for the MRT system. The degree of difficulty increases exponentially when the tunnels or underground structures are to be constructed at close proximity to the existing buildings/structures, which is inevitable in this relatively built-up city-state. Examples of challenges faced by the engineers in the design and construction of the MRT projects will be shared and discussed in this seminar. Details of a recent case history involving excessive ground movement due to water ingress will be presented.

PROFILE OF SPEAKER

Dr. Ng Tiong Guan is the current President of Geotechnical Society of Singapore. He graduated from the University Technology Malaysia (UTM) with first class honors in Bachelor of Civil Engineering degree in 1992. He obtained his PhD degree in the research of Spud Can Foundation on Sand in 1999 from the National University of Singapore (NUS). He left NUS to join a specialist ground engineering company as design engineer in 2000. In Feb 2002, he co-founded GeoEng Consultants, a consultancy firm specializing in civil and geotechnical works, which grows to become one of the largest geotechnical consultancy firms in Singapore in a few years. In Nov 2011 GeoEng Consultants was acquired and became part of Golder Associates, a global consultancy company with more than 9000 employees worldwide.

Dr. Ng Tiong Guan is currently the Executive Director of Golder Associates (Singapore) Pte Ltd in-charge of the geotechnical business unit. Dr. Ng specialises in analysis and design of earth retaining system, and has special interest in back-analysis and interpretation of instrumentation. He had involved in the design and supervision of earth retaining structures for several major projects in Singapore which include the world 1st underground MRT Depot (LTA Circle Line Contract 821), Geylang River Cross for Kallang Paya Lebar Expressway (LTA Contract 421), the deepest excavation within MBS Sands Integrated Resort below Bayfront Avenue and Construction of Downtown Line 1 Promenade Station (LTA Contract 902). He also involved in the forensic study of several high profile failure cases in Singapore for instance excavation failure at Lengkong Empat, foundation failure at Church Street and the collapse of excavation at Nichol Highway Station.

CPD HOURS CONFIRMATION

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