

Technical Talk on
“Finite Element Analysis of a Deep Excavation in Kenny Hill Formation with consideration of Small Strain Stiffness.”

(Organised by Geotechnical Engineering Technical Division, IEM)

BEM Approved CPD/PDP Hours: APPLYING

Date : 25 April 2019 (Thursday)
Time : 5.30 pm – 7.30pm (*Refreshments will be served at 4.45 pm*)
Venue : Tan Sri Prof. Chin Fung Kee Auditorium,
3rd Floor, Wisma IEM, PJ
Speaker : Ir. FRANKIE CHEAH

SYNOPSIS

Deep excavations give rise to movements in the surrounding ground with consequent potential for damage to surrounding structures and buried services. When the excavations are in the vicinity of existing buildings and structures, it is necessary to assess the influence of these excavations on the existing buildings such as building settlement and distortion. This paper presents a deep excavation case history for a metro station which has been built in the Kuala Lumpur city centre. In this paper, the complexity of the excavation sequences and challenges faced, especially on the excavation works carried out under live traffic condition will be described. The performance of the deep excavation was also back analysed with Hardening Soil Small Strain model, an advanced constitutive model with the consideration of small strain stiffness of the soil. The results demonstrate that reasonable agreement between measured and back-calculated building settlement and wall displacement could be achieved when small strain stiffness of soil is taken into consideration. It is demonstrated that to obtain a reasonable agreement with measure building settlement, building stiffness needs to be taken into consideration in the numerical modelling on top of the small stiffness of soil.

SPEAKER'S BIODATA

Ir. Frankie obtained his BEng (Civil) from University Malaysia Sabah in 2004. He obtained his MSc in Civil (Specialized Geotechnical) Engineering from Nanyang Technological University (NTU) of Singapore in 2012. Frankie has more than 15 year experience in large scale mass transit, railway design and construction projects in Singapore, Malaysia and other parts of Asia. His involvement in various projects include deep excavations for mass transit structures and basements of various buildings, tunneling, deep foundations, instrumentation for excavations, test piles and structures. He also has extensive experience in the use of finite element and other numerical programs in the analysis and design of geotechnical structures. Currently, he is the lead geotechnical engineer for the detailed design team for AECOM in the underground package 4 & 6 for KVMRT Line 2 of 52.2km railway as well as geotechnical engineer in KVMRT Line 1 with 51km of railway. He is also a Committee Member of TUSTD, The Institution of Engineers Malaysia (IEM) and participate the as a speaker in finite element user days since 2015.

Ir. LEE PEIR TIEN
Chairman,
Geotechnical Engineering Technical Division, IEM

FEE ANNOUNCEMENT
(INCLUSIVE SST)

Members:

- (i) Registration Fee: No Charge
- (ii) Administrative Fee:
 - (a) Online RM15
 - (b) Walk-In RM20

Non-Members:

- (i) Registration Fee: RM50
- (ii) Administrative Fee: RM20

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