



The Institution of Engineers, Malaysia

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Technical Talk on “Application of Buttressed Diaphragm Wall in Deep Excavation and Basement Construction”

(Organized by Geotechnical Engineering Technical Division IEM)

Date : 7th November 2019 (Thursday)
Time : 5.30pm to 7.30pm
Venue : Auditorium Tan Sri Chin Fung Kee, 3rd Floor, Wisma IEM
Speaker : Ir. Dr Law Kim Hing

BEM Approved CPD/PDP Hours: 2
Ref Number: IEM19/HQ/516/T

SYNOPSIS

For urban excavation, ground improvements and strengthening of lateral earth support systems are commonly adopted to control movements induced by deep excavation. According to the Malaysia Railway Protection Act (1998), the maximum allowable movement of railway structures/tunnel caused by adjacent construction should not exceed 15mm. Given the stringent requirement on the railway structures/tunnel movement, the above methods may not be the adequate measures to control the excavation-induced movements within the allowable limit of 15mm. Therefore, an additional auxiliary measure such as installing the buttress walls and cross walls may be required to control movements induced by deep excavation to a tolerable limit.

This presentation will share 3 case histories in which buttressed diaphragm wall was adopted as a support system in deep basement excavations. Case 1 involved the application of cantilever buttressed diaphragm wall for 11m deep strut-free wide excavation. Case 2 involved the application of buttress walls in combination with top-down construction method for 22.5m deep basement excavation to limit the excavation-induced tunnel movement. Case 3 involved the application of buttress walls in combination with ground anchor tie-back method for 25m deep basement excavation. The field performance and 3D numerical analysis results for the above 3 case histories will be presented and discussed during the presentation.

SPEAKER’S BIODATA

Ir. Dr Law graduated with BEng (Hons) from University of Malaya in 1997 and obtained his MEng in 2008 and PhD in 2012. He has 20 years of practical experience since graduation, and his experience includes work with specialist geotechnical and foundation contractors, and in academic research. Currently, he is the director of KH Geotechnical Sdn Bhd. In his 20 years' professional experience he has successfully completed more than 50 deep excavation projects in Malaysia under alternative design and built scheme with specialist geotechnical and foundation contractors. He is a registered professional engineer with Board of Engineer Malaysia and member of Institute of Engineers Malaysia since 2004.

FEE ANNOUNCEMENT

(Effective: 1st October 2017)

Members:

- (i) Registration Fee: No Charge
- (ii) Administrative Fee:
 - (a) Online RM15

Non-Members:

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

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