The Institution of Engineers, Malaysia

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Talk on Some Experience on Application of Buttressed Diaphragm Wall in Limiting Excavation-Induced Ground Movements in Kenny Hill Formation

Organised by Tunnelling & Underground Space Technical Division, IEM

BEM Approved CPD/PDP Hours: 2 Ref No: IEM19/HQ/195/T

Date : 31st May 2019
Time : 5.30pm – 7.00pm (Refreshments will be served at 5.00pm)
Venue : Auditorium Tan Sri Prof. Chin Fung Kee, 3rd Floor, Wisma IEM, Petaling Jaya
Speaker : Ir. Dr Law Kim Hing

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 Railways (Railway Protection Zone) Regulation 1998, the maximum allowable movement of railway structures/tunnel caused by adjacent development works 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 excavation in Kenny Hill formation. 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 20m deep basement excavation to limit the on-grade railway track movement. The field performance and 3D numerical analysis results for the above 3 case histories will be presented and discussed during the presentation.

ANNOUNCEMENT TO NOTE

EFFECTIVE 1st OCTOBER 2017

FEES FOR TALKS

Members

Registration Fee
Free of Charge (FOC)

Administrative Fee
Online - RM15.00
Walk In - RM20.00

Non-Members

Registration Fee - RM50.00
Administrative Fee - RM20.00

Limited seats are available on a "first come first served" basis (maximum 100 participants).
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BIODATA OF SPEAKER

Ir. Dr Law Kim Hing graduated with BEng (Hon) from University of Malaya in 1997 and obtained his MSc in 2008 and Ph.D 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 involved in the assessment and design of various aspects of geotechnical works. His experience mainly includes collaborating with the specialist foundation and geotechnical contractors in the use of 2D and 3D numerical modelling in practical soil-structure interaction problems such as the design of deep excavations, piled foundations, excavation-tunnel/excavation-pile interaction problems. He is a registered professional engineer with the Board of Engineer Malaysia and corporate member of The Institution of Engineers Malaysia since 2004.

Ir. Khoo Chee Min
Chairman
Tunnelling & Underground Space Technical Division, IEM