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TALK ON FACTORS TO BE CONSIDERED DURING DESIGN AND CONSTRUCTION STAGE FOR URBAN SUBWAY IN DENSELY POPULATED AREA – CASE STUDY FOR SEOUL METRO SUBWAY

Jointly organized by WTC 2020 Organizing Committee and Tunneling & Underground Space Technical Division, IEM
BEM Approved CPD/PDP Hours: 2 Ref No: IEM18/HQ/051/T

Date : 27 February 2018 (Tuesday)
Time : 5.30pm – 7.00pm (Refreshments will be served at 5.00pm)
Venue : TUS and C&S Lecture Room, 2nd Floor, Wisma IEM, Petaling Jaya
Speaker : **Mr. Lee, Jae Hoon**

SYNOPSIS

The Seoul Metro-Subway No.00 is 1.56km long and runs through under densely populated area e.g. high-rise buildings, underpass structure, underground utilities and the trunk road (8~10 lanes). Etc., hence shield TBM method was adopted. At design stage, to mitigate civil complaints, ground settlement and third party damage, various schemes were come up with as regards ground improvement, operational scheme of TBM and mucking /disposal method of slurry, etc. In particular, to minimize the settlement or damage of the building and underpass structures, stability analysis was carried out and ground improvement techniques were adopted at design stage. In order to secure passenger safety, fire safety measures were applied, e.g. escape tunnel and cross passage. However, during construction due to malfunction of TBM and inefficient grouting from inside TBM, hence water draw-down/soil erosion, the undetected existing cavities were enlarged, causing ground loss and damage to the near-by structures. By applying grout method from the ground surface, the damaged part was satisfactorily reinstated and the whole project was successfully completed. The lessons from this project stress the importance of geological investigation, detection of underground features, efficiency in grouting techniques, and constant instrument monitoring during design and/or construction of tunnel under the densely populated area.

The talk will cover :

- ✓ The outline of Seoul-Metro subway No.00.
- ✓ The construction method of tunnel (Shield TBM)
- ✓ Overall operation scheme of TBM (Fabrication, Launching, Dismantling scheme)
- ✓ Considerations for safety of tunnel & third parties (e.g. geotechnical investigation, detection of underground utilities and cavities, stability analyses, ground improvement method, instrumentation and monitoring)

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).
To secure your seat, kindly register online at www.myiem.org.my

PERSONAL DATA PROTECTION ACT
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BIODATA OF SPEAKERS

Mr. Lee, Jae Hoon obtained, in 1973, his Bachelor of Science degree in civil engineering from Seoul National University in Korea. After graduation, he worked with engineering/consulting firms for approx. 7 years for design of foundations and structures for power plants and chemical/petrochemical plants in Korea. From 1982 through early 1992, he joined contractors for construction of various infrastructures e.g., structural foundations, bridges, tunnels, slope protection works and roads in Saudi Arabia, Hong Kong and Korea. After obtaining a certified professional license in geotechnical engineering in 1992, he joined again engineering/consulting firms in Korea, in charge of geotechnical/tunnel engineering for railway, subway and HSR projects. He obtained his master degree in geotechnical engineering from Seoul National University in 1995. He is currently vice president of Dongil Engineering Consultants in Korea, and taking part in the reference design (RDC 04) of MyHSR project as a team leader of geotechnical/tunnel engineering for Ranhill - Korean consortium.

Ir. Dr Ooi Teik Aun
Organising Chairman
ITA-AITES WTC 2020

Ir. Syed Rajah Hussain Shaib Bin A.H. Mohd Haniff
Chairman
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