

**TALK ON LESSONS LEARNED FROM DETAILED DESIGN SERVICES FOR JAKARTA MRT
CONSTRUCTION PACKAGE CP101/102 AND CP106**

Organized by Tunnelling & Underground Space Technical Division, IEM

BEM Approved CPD/PDP Hours: 2 Ref No: IEM17/HQ/284/T

Date : 17 August 2017 (Thursday)
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 : **Mr. Lee Chu-Yuan & Mr. Ma Fu-Chiang**

SYNOPSIS

The Phase 1 of the Jakarta MRT N-S Line Network, being 15.7km long, with 13 stations, and one depot, is mainly constructed in the alluvium and diluvium soils, with some volcanic soils beneath. The civil, structural, and station M&E works of the project was divided into 6 design and build packages, all under an expected construction period of 54 months.

As there had been no similar such large-scale infrastructure project delivered in Jakarta before the Jakarta MRT, this detailed design of the station proved to be challenging for the local lead consultant. Details of the design of Package CP101/102 of the elevated section, and CP106 of the underground section of the Jakarta MRT N-S Line will be briefly described, and several key design issues will also be explored and discussed. Challenges faced for CP101/102 include limited ROW, determination and validation of soil parameters, and seismic design of viaduct and elevated station structures. As for Package CP106, challenges and design issues such as determination of earthquake motion level and design response spectra, methodology to carry out nonlinear structure-soil interaction analysis under seismic loads, use of JIS code, impacts on soil parameters from sample disturbance, an economic retaining structure which consists of very short embedded wall depth (approximately 1/4 of the maximum excavation depth), and a 2-to-3-layers of reinforcement of the RC floor slabs which also serves as a lateral support system, will be discussed. Besides, Building Information Management (BIM) technology was adopted for interface design and conflict check of structural, architectural, and M&E designs of two underground stations in Package CP106, which will be described in detail.

ADMINISTRATIVE FEE

- Kindly be informed that an administrative fee of RM15 is payable for talks organized by IEM. GST is inclusive.
- Student Members are however exempted.

ANNOUNCEMENTS TO NOTE:

- Non-member may also attend the talk but will need to pay a registration fee of RM50 and an administrative fee of RM15. GST is inclusive.
- 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.

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BIODATA OF SPEAKERS

Mr. Lee Chu-Yuan obtained his Bachelor's Degree from the Civil Engineering Department of Tamkang University in Taipei, Taiwan in 1987 and his Master's Degree from the same university in 1989. He has approximately 26 years of working experience in underground and viaduct structures planning and design, building and depot design, among other areas of civil engineering. Currently, he is the project manager for CECI Engineering Consultants, Inc., Taiwan. He has participated in the detailed design of several well-known Mass Rapid Transit (MRT) projects in Taiwan; such as Design Lot DL162 in the Taipei Rapid Transit System (TRTS) Xindian Line; Design Lot DK193 in the TRTS Xinzhuang Line, Design Lot DB145 in the TRTS Neihu Line and Design Lot DA115 Project for the Taoyuan International Airport Link. Mr. Lee is also a Taiwan-registered Professional Structural Engineer.

Mr. Lee was also involved in projects abroad. He was the third-party verifier of design-build of Package CP101/102 project of Jakarta MRT, mainly in charge of the design verification of the detailed design including major temporary works, viaducts, bridge over JORR, and elevated stations. Mr. Lee is currently the project manager of SSP MRT Line 2, Package DDC7, the C&S detailed design package of underground stations.

Mr. Ma Fu- Chiang obtained his Bachelor's Degree from the Civil Engineering Department on National Cheng Kin University in Tainan, Taiwan in 1987. He has more than 28 years of professional experience, mainly in civil and structural design of various infrastructure projects, such as highway, rail, LRT, underground metro, and power and steel plants. Currently, he is the deputy project manager for CECI Engineering Consultants, Inc., Taiwan. In addition, he served as the project manager of several projects, and manager of the engineering consultancy companies in Taiwan and overseas. He was appointed as the deputy project manager for the Jakarta MRT Package CP106 in January 2015, and was stationed in Jakarta, Indonesia until 31st August 2016, in charge of the detailed design coordination internally and externally across disciplines, involving, the project owner, general consultants and the contractor. Mr. Ma is currently the deputy project manager of SSP MRT Line 2, Package DDC7, the C&S detailed design package of underground stations.

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