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# Half-Day Webinar on “Ground Improvement”

ORGANISED BY  
GEOTECHNICAL ENGINEERING TECHNICAL DIVISION, IEM

**23<sup>rd</sup> February 2021**

**VIRTUAL Course via ‘GoToWebinar Platform’  
9.00 a.m. – 1.30 p.m.**



**BEM/IEM Approved CPD:4 Ref. No.: IEM20/HQ/303/C**

**Speakers:**  
**Ir. E.G. Balakrishnan**  
**Ir. Lee Peir Tien**  
**Mr. Richard Ong**

**REGISTRATION FEES (SST shall be at 6% with effect from 1 Mar 2019)**

	ONLINE	NORMAL (Offline)
IEM Student Member	RM40.00	RM60.00
IEM Graduate Member	RM70.00	RM90.00
IEM Corporate Member	RM125.00	RM150.00
Non-IEM Member	RM220.00	RM240.00

## REGISTRATION FORM

### Half-Day Webinar on “Ground Improvement”

Date : 23<sup>rd</sup> February 2021 (Tuesday)

(Closing Date: 18<sup>th</sup> February 2021)

Online registration at [www.myiem.org.my](http://www.myiem.org.my)

No	Name(s)	M’ship No.	Grade

\*Fees MUST be fully paid BEFORE the CLOSING DATE. Seats could only be confirmed upon payment.  
Enclosed herewith a crossed cheque No: \_\_\_\_\_ for the sum of RM \_\_\_\_\_  
issued in favour of “The Institution of Engineers, Malaysia” and crossed ‘A/C payee only’. I/We  
understand that the fee is not refundable if I/We withdraw after my/our application is accepted by the  
Organising Committee as stated in the **cancellation term**. If I/We fail to attend the seminar, the paid  
registration fee will not be refunded.

Contact Person: \_\_\_\_\_ Designation: \_\_\_\_\_

Name of Organization: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ (O) \_\_\_\_\_ (Fax)

\_\_\_\_\_ (H) \_\_\_\_\_ (HP)

Email: \_\_\_\_\_

Signature & Stamp

Date

Photocopies are acceptable

## SYNOPSIS

A good ground improvement solution should be based on sound concepts and working principles. It requires the knowledge of fundamental behavior of soils, the knowledge of various ground improvement techniques, understanding of soil-structure interaction, the knowledge of performance and limitations of available equipment and of course economics. This webinar aims to provide information on the above by presenting on the implementation of ground improvement works in civil engineering projects. Throughout the seminar, real examples of projects completed using various ground improvement methods will be used to illustrate the applications of ground improvement methods from the more common embankment constructions to more complex projects like foundations for tank farms and buildings.

## SPEAKER'S BIODATA



**Ir. EG Balakrishnan** graduated from University Malaya with honours degree in Civil Engineering in 1985. He has worked in both consulting and construction firms covering the general disciplines of civil engineering before pursuing a Master Programme in Geotechnical Engineering at Asian Institute of Technology, Bangkok from 1992 to 1994. He started his own consulting firm, GCU Consultants Sdn Bhd in 1998 providing civil consultancy services with specialist skills in geotechnical engineering. Since then, he has been involved in large civil engineering projects providing geotechnical consultancy services. His scope covered all ranges of geotechnical engineering comprising foundation, ground treatments, slopes, walls & retention systems for highways, railways, reclamation, high rise buildings, ports, oil & gas and large civil infrastructure projects. Some of the major projects that he involved in are Rail Link, Guthrie Expressway, Electrified Double Track Projects, New Pantai Expressway, Besraya Expressway, Pengerang Oil Terminal, MRT Line-1, MRT Line-2, etc.

**Ir. Lee Peir Tien** obtained his Bachelor of Engineering (Civil) from University of Technology, Malaysia in 2001. He has been involved in design and construction of various geotechnical specialist works for the past 20 years. He has published more than a dozen technical papers on geotechnical engineering in international and local conferences. His research interests include soft ground engineering, slope stabilisation, foundation and deep excavation. He was the Chairman for Geotechnical Engineering Technical Division (GETD) of IEM for Session 2017/2018 and 2018/2019. Currently, he is the advisor for GETD. He also actively involved in Malaysian Geotechnical Society (MGS) and serve as Committee Member since 2016



### PERSONAL DATA PROTECTION ACT

I have read and understood the IEM's Personal Data Protection Notice published on IEM's website at <http://www.myiem.org.my> and I agree to IEM's use and processing of my personal data as set out in the said notice.



**Mr. Richard Ong** graduated from Universiti Teknologi Malaysia with a B.Eng. in Civil. He obtained his M.Eng. (Geotechnical) from Nanyang Technological University, Singapore. He has worked in the field of geosynthetics and geotechnical engineering for the past 20 years with companies like Maccaferri Malaysia, Tensar International Limited and Menard Geosystems. Currently, he is the Regional Technical Director for Menard in South East Asia. He is currently serving a committee member in the Geotechnical Engineering Technical Division of IEM.

## TENTATIVE AGENDA

9.00 – 9.05	<b>Welcoming &amp; Introduction</b>
09:00 – 10:00 <i>*50 minutes presentation with 10 minutes Q&amp;A</i>	<b>Introduction to Ground Improvement, by Mr. Richard Ong</b>  This session shall provide an overview on common ground improvement methods adopted in Malaysia covering consolidation, compaction and reinforcement or inclusion methods. General design concepts and construction aspects shall be discussed via some case studies.
10:00 – 11:00 <i>*50 minutes presentation with 10 minutes Q&amp;A</i>	<b>Design and Construction of PVD by Ir. Lee Peir Tien</b>  Prefabricated vertical drain (PVD) is an effective and common ground improvement method to expedite the consolidation process of soft clay. The concept of PVD will be discussed in the lecture. In addition, the speaker will also discuss several important parameters in PVD design and highlight on construction control. Lastly, the speaker will present 2 case studies where PVD were adopted successfully to expedite the consolidation settlement.
11:00 – 12:00 <i>*50 minutes presentation with 10 minutes Q&amp;A</i>	<b>Design and Construction of Stone Columns, by Ir. Balakrishnan</b>  Stone columns is one of the widely used improvement technique in Malaysia particularly for road construction on weak or soft ground. The presentation on the stone column will cover the suitability of this technique to the soil types, the various construction method of forming the stone columns, the design principles and method widely used, the testing and instrumentation used to validate the performance of the improvement and presentation of some case studies on locally constructed stone column ground improvement works.
12:00 – 13:00 <i>*50 minutes presentation with 10 minutes Q&amp;A</i>	<b>Design and Construction of Rigid Inclusions, by Mr. Richard Ong</b>  Ground improvement using rigid inclusions has often been viewed as similar to the deep foundation by piles despite differences in design approach. Indeed, it might be difficult to draw the boundary between rigid inclusions and piles, especially when the construction process appears to be similar too. This presentation attempts to highlight and demonstrate the differences between ground improvement using rigid inclusions and deep foundation with piles. More importantly, the concept, design methodology and construction method of rigid inclusions shall be presented.
13:00	<b>End</b>