



THE INSTITUTION OF ENGINEERS, MALAYSIA

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Lecture on “TRANSFORMATION OF GEOTECHNICAL PRACTICE FROM HAND SLIDE RULE TO COUPLED FLOW COMPUTER ANALYSIS” REPEAT OF THE PRESTIGIOUS 2012 LUMB LECTURE”

(Organized by Geotechnical Engineering Technical Division)

Date : 3 June 2013 (Monday)
Time : 5.30 pm -7.30 pm (Refreshment will be served at 5.00 pm)
Venue : C&S/TUS Lecture Room, 2nd Floor, Wisma IEM
Speaker : Prof. John Endicott

**BEM APPROVED
CPD/PDP HOURS: 2
REF: IEM13/HQ/119/L**

SYNOPSIS

The lecture illustrates the development of the ground engineering profession from basic soil mechanics that Professor Peter Lumb taught before his retirement in 1986 and when engineers worked with pens on drawing boards performing graphical solutions and hand calculations to the sophisticated numerically based ground engineering technology of today.

In 1986 personal computers were almost unknown and engineers used logarithm tables and slide rules. The lecture briefly reviews the state of practice at the time, when New Town construction relied extensively on reclamations some of which created mud waves resulting in as much as 8 metres of consolidation settlement and underground railway construction started in Hong Kong. It then tracks the first use of a computer continuum numerical analysis (finite difference method) for a private building development in Hong Kong and follows with further examples of computation of movements of slopes, including slopes that move downhill in the wet season and uphill in the dry season and recent development of detailed geological models based on GIS platform where archives of over 300,000 boreholes, as well as geophysical surveys, geological logging of completed tunnels and all other geological data can be referenced electronically.

The lecture includes how analysis of tunnel performance data combined with quality directional coring for long exploratory drilling can be used to predict, not how much water would flow into a tunnel during excavation, but how many grout holes would need grouting and how much grout would be used and what is the residual flow into a tunnel after grouting for tunnels as deep as 150m below the sea.

Technical development also arises from failures. Some failures are described and the lessons learned by the profession from the collapse of the Nicoll Highway in Singapore are summarized and put into context.

BIODATA

Prof. John Endicott has specialized in geotechnical engineering since 1970 and has been practicing in Hong Kong since 1975. He is now well known as an all round geotechnical practitioner in S.E. Asia.

In Hong Kong he has had extensive involvement with design of underground railway structures, with tunnels, foundations, major earthworks, including the reclamation and preparation of the site for the Chek Lap Kok Airport and slope stability.

In S.E. Asia he has worked on many projects in Malaysia, Singapore, Bangkok, Taipei, Korea, Indonesia, India, Indonesia, and China.

He associated with Prof. Peter Lumb at the University of Hong Kong from 1976 and until Prof. Lumb retired in 1986 and he has been associated with Hong Kong University of Science and Technology since its foundation. He is Adjunct Professor at both Universities.

He has been in considerable demand as an expert in ground engineering. This work included the Arbitrations for the SSDS Stage 1 deep sewer tunnels in Hong Kong and for piling in karstic marble at Ma On Shan for Hong Kong Housing Authority, for several cases of short piles, and for the collapse of the Nicoll Highway in Singapore.

Ir. Liew Shaw Shong
Chairman
Geotechnical Engineering Technical Division

Announcement to note:

1. Talk is **STRICTLY** for IEM members only (walk in)
2. Limited seats available on a "first come first served" basis.
3. No telephone and/or fax reservation will be entertained.
4. Latecomers will not be allowed entrance, if the lecture hall is full.
5. Please bring along this flyer and membership card for confirmation of attendance (CPD purpose).

For IEM members, membership cards MUST be presented for identification purpose. Members who fail to show their membership card will be charged a fee of RM20.00.

FUNDS FOR IEM NEW BUILDING

Kindly be informed that IEM will be charging participants RM10.00 administrative fee to evening talks organised by IEM. The fee would be used for overhead costs, building maintenance expenses as well as to support the purchase of the new building.

Students are however exempted. Your understanding is greatly appreciated.

CPD HOURS CONFIRMATION

Name of Member: M'ship No:

Signature: Date :