



The Institution of Engineers, Malaysia

Bangunan Ingenieur, Lots 60/62, Jalan 52/4, Peti Surat 223, 46720 Petaling Jaya, Selangor Darul Ehsan
Tel: 03-79684001/2 Fax: 03-79577678 E-mail: sec@iem.org.my IEM Homepage: <http://www.myiem.org.my>

Talk on Analysis for Slope Stability

Organised by the Geotechnical Engineering Technical Division, IEM
BEM Approved CPD/PDP Hours: 2 Ref No: IEM14/HQ/286/T

Date : **10 November 2014 (Monday)**
Time : **5.30 pm – 7.30 pm** (Refreshments will be served at 5.00 pm)
Venue : **Tan Sri Prof. Chin Fung Kee Auditorium, 3rd Floor
Wisma IEM, Petaling Jaya**
Speaker : **Professor Jim Graham**

SYNOPSIS

Even with excellent site characterization, assumptions are needed to enable reliable analysis of slope stability. Commonly, in what are known as *General Limit Equilibrium (GLE)* methods, the slide mass, with circular or non-circular slip surface, is divided into slices. Assumptions then have to be made about inter-slice forces and the safety factor is assumed to be the same in all slices. Recent analyses replace the assumption of inter-slice forces with finite element analysis of stress distributions and permit evaluation of variable safety factors along slide surfaces.

Analyses that rely on total stress strengths are known to be unreliable. Effective stress strengths provide more reliable answers but require a sound understanding of pore water pressures when failure did occur, or will occur. This means that consideration must be given to transient hydraulic potentials at the toe, in the slope itself, at the ground surface in the form of rainfall or evapotranspiration, and in underlying aquifer(s).

The lecture will provide an overview of this background material and present short case studies of riverbank instabilities, a highway cut that failed after rainfall destroyed suction forces, and a water-retention dike that failed when seepage dissolved gypsum cementation.

PROFILE OF SPEAKER



Jim Graham holds PhD and DSc degrees from Queen's University, Belfast, N.Ireland. He is a Fellow of the Engineering Institute of Canada, and a Professional Engineer in the Province of Manitoba. He has been Scientific Editor of the Canadian Geotechnical Journal; and President and Secretary General of the Canadian Geotechnical Society. He is currently Professor Emeritus, in the Civil Engineering Department, University of Manitoba, where he spent many years developing innovative courses for teaching geotechnical engineering at undergraduate and postgraduate levels. He has published widely on this topic and received the Saunderson Award for Excellence in Teaching.

Dr. Graham has received awards from the Engineering Institute of Canada, the Canadian Council of Professional Engineers, and the R.F. Legget Medal from the Canadian Geotechnical Society.

He has published over 200 articles on a wide range of topics in geotechnical engineering and has been a consultant for local engineering consulting companies.

Ir. Yee Thien Seng
Chairman
Geotechnical Engineering Technical Division, IEM

ANNOUNCEMENTS TO NOTE:

- Preferential admission to talk shall be accorded to IEM members (**pre-registration and online registration are NOT required**). (**telephone and/or fax reservation will NOT be entertained**)
- **Non members** may also attend the talk but will be charged a registration fee of **RM50** and an administrative fee of **RM10**.
- For affiliate members, there will be no registration fee. However, they are requested to produce their membership card as proof of membership. For the list of affiliates, please refer www.myiem.org.my/content/memorandum_of_understanding-469.aspx.
- Limited seats are available on a "first come first served" basis (maximum 110 participants).
- IEM members are required to produce your membership cards for confirmation of attendance (CPD purpose).
- Latecomers will not be allowed to enter if the lecture hall is full nor be entitled to CPD.
IEM members who fail to produce their membership cards will be charged a fee of RM20.00.

FUNDS FOR IEM BUILDING FUND (WISMA IEM)

- Kindly be informed that IEM will be charging participants **RM10** as administrative fee for talks organized by IEM.
- The fee would be used to cover overhead costs, building maintenance expenses as well as to support the purchase of the new building.
- All contributions will be deeply appreciated by IEM
- Students are however exempted.
Your understanding is greatly appreciated.

CPD/PDP HOURS CONFIRMATION

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Membership No:

Signature: