

## SEMINAR

on

## Rainfall-induced Slope Failures

by

**Dr David Toll**

Durham University, UK

<b>Date:</b>	Thursday, 27 March 2008
<b>Time:</b>	6:30pm Reception 7:00pm Seminar
<b>Venue:</b>	EA-06-02 (Block EA Level 6) Faculty of Engineering National University of Singapore

### SYNOPSIS

The rainfall patterns that have led to slope failures in Singapore in the past will be discussed in the Seminar. The role of unsaturated soil mechanics in understanding rainfall-induced slope failures will be the focus of the talk. It will be shown that the assumption of saturated soil behaviour will wrongly predict the failure mode for slopes where the water table is at depth within the slope. The pore-water pressures are controlled by infiltration and evaporation at the slope surface, and are independent of the water table location. New high capacity tensiometers capable of direct measurement of pore-water pressure down to -2MPa will be described, as well as their installation in the BIONICS embankment in the UK (an instrumented embankment being used to study the effects of climate change on infrastructure slopes).

### THE SPEAKER

Dr David Toll is currently Visiting Professor at the National University of Singapore (on leave from Durham University, UK). He graduated with a BSc in Civil Engineering from Cardiff University before working for Soil Mechanics Ltd and Engineering Resources Consultants (ERCON) in the UK. He then joined Imperial College, London as a Research Assistant where he gained his PhD. Since he joined Durham University in 1988 he has had two periods working in Singapore, at NTU (1998-2000) and NUS (2006-2008). He has been a member of the organising/technical committee for many international conferences on unsaturated soils including the organisation of the 1st Asian Conference on Unsaturated Soils in Singapore in 2000. He serves as:

- Chair of Joint Technical Committee 2 (JTC2), the international committee responsible for defining data standards for geo-engineering (a joint committee of ISSMGE, ISRM and IAEG)
- Core member of the Technical Committee TC6 on Unsaturated Soils of ISSMGE
- Past member of Commission C18 on Collapsible Soils of IAEG (now renamed Problematic Soils)
- Research Supervisor for the European Research Network Mechanics of Unsaturated Soils for Engineering (MUSE)
- Organiser of the 1st European Conference on Unsaturated Soils to be held in Durham in 2008

For catering purpose, please confirm your attendance by reply e-mail to: [geoss@nus.edu.sg](mailto:geoss@nus.edu.sg)

\*\*\*\* Admission is free for members of Geoss. Non-members may register as members (S\$60 per annum) on the spot \*\*\*\*

Visitors may park their cars at the cashcard operated Car Park 2A opposite Blk E3A. Alternatively, free parking is available at the Car Park at Kent Vale. Free shuttle bus services are provided to transfer commuters from this location to their campus destinations. The location of the seminar venue is indicated on the Engineering campus map.