The Eighth Lumb Lecture

Eurocode 7– Good practice in geotechnical design

Department of Civil Engineering
The University of Hong Kong

Geotechnical Division
The Hong Kong Institution of Engineers

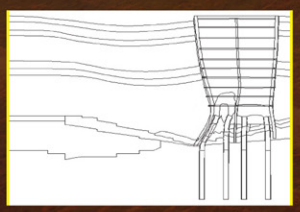
Presented by **Prof. Brian Simpson,** OBE FREng MA PhD FICE Eur Ing
Arup Fellow, Honorary Professor at the University of Nottingham

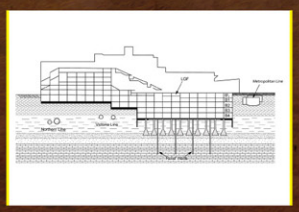
6:30 p.m. November 12, 2014 (Wednesday) | Rayson Huang Theatre, The University of Hong Kong

About the Speaker

Prof. Brian Simpson is an Arup Fellow, a principal of Arup Geotechnics and an Honorary Professor at the University of Nottingham, UK. He has worked on a wide range of geotechnical and ground-structure interaction problems, including foundations, excavations, retaining structures and tunnels. His PhD studies at the University of Cambridge were in the early development of finite element modelling of geotechnical materials and design problems, a topic in which he has remained active throughout his career. He has led the geotechnical design and analysis of a number of large basement projects in London, starting with the British Library for which innovating approaches to modelling and safety formats were developed. More recently he has advised on the design and analysis of major infrastructure developments in and around London, including the Jubilee Line, Channel Tunnel Rail Link, redevelopment of Kings Cross and CrossRail. He has been an expert witness on major disputes and investigations of collapse in the UK, Singapore and New Zealand. He presented the BGA Rankine Lecture in 1992 and a State-of-the-Art report on Geotechnical Analysis and Design at the 2009 international conference of ISSMGE.

Since the early 1980's, Prof. Simpson has been involved in the development of Eurocode 7 (Geotechnical Design), having been a member of its drafting panels and vice-chairman of the CEN (Comité Européen de Normalisation) committee on Eurocode 7 (SC7). He has authored two commentaries on Eurocode 7 and several papers on various related issues. He is the current chair of ISSMGE Technical Committee TC205 on Safety and Serviceability in Geotechnical Engineering and of the BSI committee on geotechnical codes, B/526. He is often the UK delegate to SC7 and is a member of several of the "Evolution Groups" set up to propose further developments of Eurocode 7.



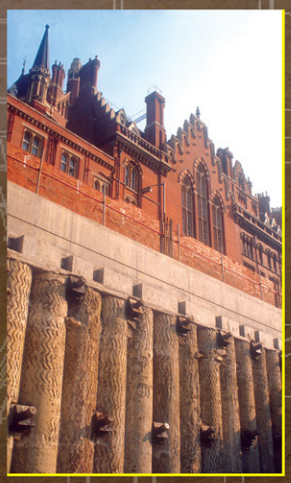


Synopsis

Safety, serviceability and economy in geotechnical design depend on careful investigation, a wide range of background information and knowledge, sound mechanics and a reasonable allowance for what is uncertain or unknown. Providing a good combination of these is very challenging for code-drafters. While many code users want a prescriptive framework, as simple as possible, it would be dangerous to dispense with the more fuzzy information contained in text books, journals, lectures and "experience".

This lecture aims to show how Eurocode 7 attempts to satisfy this diverse set of requirements. The designer is led into assessing ground conditions on the basis of all available information, so as to derive parameter values that can be used in a standardised way in calculations. Examples of foundations, retaining structures and ground anchors will illustrate the use of simple calculations and more complex numerical analysis. The particular issues of situations in which water pressure is of critical importance will also be highlighted.

In its present form, Eurocode 7 was published in 2004. In the last few years a series of "Evolution Groups" has been developing ideas for a major revision to be published, hopefully, around 2020. The additional features and trends that may come out of this process will be briefly introduced.



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Attendance certificates will be available.

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Acknowledgement:

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