



The Seventh Lumb Lecture Peter Lumb's Legacy

Soil mechanics = Simple concepts + mathematical processes + lateral thinking

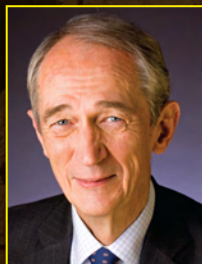
$$Q = \frac{k \delta h}{s r} 2 \pi r z$$

Presented by **Dr. John Endicott**

AECOM Fellow | Geotechnical Engineering and Tunnelling, Asia | AECOM Asia

6:30 p.m. October 10, 2012 (Wednesday) • S421, Hong Kong Convention & Exhibition Centre

About the Speaker



Prof. John Endicott is an AECOM Fellow. This award recognises a lifetime of professional achievements and contributions to the industry.

He has specialised 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 SE Asia.

In Hong Kong he has had extensive involvement in design of MTRC underground stations and tunnels, foundations, major roads including viaducts and tunnels, and site formation and infrastructure development for New Town Development at Shatin, and Tai Po with extensive reclamations and development of the container port.

He has managed major civil engineering projects including the Site Preparation Contract for the new Chek Lap Kok Airport and MTRC 611 tunnels, West Rail DB350 tunnels. He is currently working on three new metro lines in Kolkata and Chennai. In Hong Kong he is working on HATS 2A Sewage Tunnels and Lai Chi Kok Drainage Tunnel.

Overseas, he led the design of ground engineering works for some fifteen underground railway stations and twelve railway tunnels in Taipei. He has worked on many projects in Singapore as well as in Bangkok, Malaysia, Korea, Indonesia, and China. He has provided specialist consulting services relating to four underground railway lines in Singapore, for nine underground stations and associated tunnels in Bangkok and six underground stations and tunnels in Delhi.

He was the Project Director for writing the GEO Publication 1/2007 "Engineering Geological Practice in Hong Kong".



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

He has been an Adjunct Professor at Hong Kong University of Science and Technology since 2003.

John worked on a number of Committees, Working Parties, and Review Panels relating to Regulations and Guidelines for foundations, slope stability and site investigation.

FREE ADMISSION – ALL ARE WELCOME

Registration is required -

http://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?quest=Y&ueid=19356

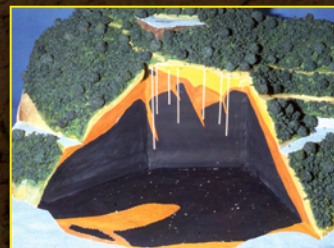
Attendance certificates will be available.

For further details, please contact Ms. Bridget Lam

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Synopsis

Peter Lumb's legacy to Hong Kong was 32 year's of service at Hong Kong University. For this he is fondly remembered by his many students as a quiet teacher, a contemplative man. The majority of his time Peter had grappled with tropical weathering and its consequence in engineering properties and performance of soils and rock in an industry that was mostly not very enlightened for some 24 years before GCO, as it was called, came into being.



In his early days reliable testing was not common. Peter built up a testing laboratory. Computers were under development and not in use. Peter taught assessment, insight and auditable hand calculations. Faced with a heavily regulatory system designed to compensate for inadequacies of the not well informed amongst the practitioners, he shied away from getting involved with day to day projects. As a profound thinker, when Ken Roscoe was working on Critical State and Alan Bishop was trying to perfect un-axial compression, Peter realized that statistics was a means of handling variation, uncertainty and risk. Like some other geotechnical people, trained to investigate, he branched out into a new field and became a worldwide specialist in statistical theory not related to applications to soil mechanics.

He retired 26 years ago. What have been the fruits of his legacy? The most obvious results are dozens of his former students who have carried on his tradition, not necessarily in soil mechanics, and have achieved high positions and led worthwhile lives. The industry has changed. Testing laboratories are accredited. Deep excavations with lateral support, and foundations are designed rationally. Many reclamations have been completed without the mud waves of the kind that were generated in the 1970's. The stability of slopes has been taken up by GEO. The subject is complex and there is fascinating on-going research into the performance of slopes. Computers are taken for granted. Computations can be carried out quickly and more intricately than he imagined. Mathematics was a predictive tool, now it is hidden behind icons which can be invoked without thought.

Mathematics has been a principle tool behind the soil mechanics that Peter taught. Coulomb and Terzaghi were mathematicians. However solutions have given place to processes. Numerical modeling is very useful. It is also made freely available to Engineers. The collapse of the Nicholl Highway in Singapore was initially blamed on the mis-use of numerical modelling. Within limits debris flow can be analysed but prediction of flow remains difficult. Numbers can model slopes moving uphill in the dry season.

Statistics are being adopted to a limited degree. Quantified Risk Assessment and Fractal Analysis require large supplies of relevant data. Today gigabytes of data are transmitted in minutes. One wonders whether Peter would have approached statistics in a less theoretical way had he been working 26 years later?

Geotechnical Engineers file data spatially as Geographic Information Systems. Very much as Peter thought laterally and was attracted to statistics so GIS people, thinking laterally, have moved into asset management and other fields.

The legacy of Peter Lumb lives on; it is the better side of human nature.