

The Sixth Lumb Lecture

LESSONS LEARNED FROM

TYPHOON MORAKOT AND

HAZARD PREVENTION / MITIGATION IN TAIWAN



Department of Civil Engineering
The University of Hong Kong



Geotechnical Division
The Hong Kong Institution of Engineers

Presented by

Dr. Za-Chieh Moh, Chairman, MAA Group Consulting Engineers

7:00 p.m. October 14, 2010 (Thursday), Rayson Huang Lecture Theatre, The University of Hong Kong

• ABOUT THE SPEAKER



Dr. Za-Chieh Moh is the founder and Chairman of MAA Group Consulting Engineers with offices in Bangkok (Thailand), Beijing (China), Hong Kong, Penang (Malaysia), Shanghai (China), Singapore and Taipei. He received Bachelor's and master's degrees in Civil Engineering from the National Taiwan University and Iowa State University respectively. In 1961, he received Doctor of Science degree from the Massachusetts Institute of Technology.

Before establishing the MAA Group, Dr. Moh was Professor of Geotechnical Engineering, Provost & Vice President at the Asian Institute of Technology in Bangkok. Prior to his career at AIT, he was a faculty member at the Yale University. Dr. Moh is a Fellow of many institutions including the HKIE, ICE, ASCE etc. He was the founding President of the Southeast Asian Geotechnical Society and Vice President of the International Society for Soil Mechanics and Geotechnical Engineering. At present, Dr. Moh is serving as the Chairman of the Chinese Taipei APEC Engineer Monitoring Committee and Chinese Taipei EMF Engineer Monitoring Committee and Board Member of many professional institutions. He is now also an Adjunct Professor of the Hong Kong University of Science and Technology.

Dr. Moh has received numerous awards including an Honorary Doctor of Technology from the Asian Institute of Technology, Honorary Member of the Japanese Geotechnical Society, and the Road Engineering Association of Asia and Australasia, 2008 Engineer of the Year of the Federation of Engineering Institutions Asia & Pacific.

• ABOUT PROFESSOR LUMB

Professor Lumb became a lecturer in the Department of Civil Engineering, The University of Hong Kong in 1954. After 32 years of service at the University, he retired in 1986. Many of his ex-students have fond memories of him as a modest teacher who preferred to keep a low profile. He dedicated his life towards the 'dawning' of geotechnical engineering in Hong Kong and received numerous awards in recognition of his great contributions.

• SYNOPSIS

The steep terrain and fragile geology make the Island of Taiwan vulnerable to many natural hazards. According to the book, entitled 'Natural Disaster Hotspots: a Global Risk Analysis' published by World Bank, Taiwan may be the place on Earth most vulnerable to natural hazards, with 73 percent of its land and population exposed to three or more hazards.

The Island is located on the path of warm ocean currents and is swept by, on an average, 3.7 typhoons per year. Destructive typhoons accounted for 65% of the natural hazards and resulted in huge losses. On the other hand, the Island needs a couple of typhoons each year to fill up the reservoirs, or it will face serious drought in the coming year. For this reason, Typhoon Morakot of 8 August 2009 was much anticipated beforehand, however, it unfortunately caused unprecedented damages in Southern Taiwan at the end. Intense rainfall caused inundation destroying tens of bridges and numerous sections of roads were destroyed by debris flows. Many villages were flooded for a couple of weeks and more than 20 thousands of people were evacuated. The death toll reached 619 and the economical loss is estimated to exceed NT\$400 billions (US\$13 billions).

Due to global warming, extreme weather is expected to be a reality with severe drought and floods to occur more and more frequently. The rainfall of 3,005mm accumulated in 3 days during Typhoon Morakot exceeded the annual average of 2,500mm and no one can be sure that it will not be exceeded. To prepare for similar, or even worse, events in the future, the government is reviewing the laws and regulations governing hazard prevention and mitigation and is also seriously reconsidering the land development policies. Besides, the various agencies responsible for hazard mitigation are to be consolidated and integrated to form a new administration with more authority given so emergencies and natural hazards can be dealt with promptly and more efficiently.

This lecture discusses damages made by Typhoon Morakot with emphasis on engineering aspects such as debris flows, inundation and impacts to environment and infrastructure. Also discussed are the measures taken by the government for hazard prevention and mitigation, including assessment and prediction, monitoring and warning systems.

FREE ADMISSION – ALL ARE WELCOME

No prior registration is required. Attendance certificates will be available.

For further details, please contact: Ms. Bridget Lam

Tel: (852) 2859 2666 Fax: (852) 2559 5337 Email: lumb@hkucc.hku.hk

Website: <http://www.hku.hk/civil/h4d.htm>

