2 Day Workshop on Understanding Geo-Natural Disasters Arising from Earthquake, Tsunami and Volcanic Activities in Southeast Asia and Seismic Design using Eurocode 8

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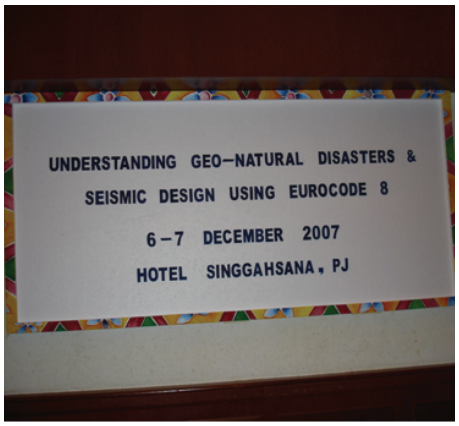
The two-day Workshop on 'Understanding Geo-Natural Disasters Arising from Earthquake, Tsunami And Volcanic Activities in Southeast Asia and Seismic Design using Eurocode 8' was held successfully on 6 to 7 December 2007 at the Singgahsana Hotel, Petaling Jaya.

The workshop was jointly organised by the Association of Southeast Asian Geotechnical Societies in Southeast Asia (AGSSEA) and IEM Training Centre Sdn. Bhd., and is supported by the Geotechnical Engineering Technical Division, IEM and The Institution of Civil Engineers, United Kingdom. A total of 51 participants, including one from the Vietnam International Society for Soil Mechanics and Geotechnical Engineering (VSSMGE), attended the workshop.

Engr. Dr Ooi Teik Aun, Chairman, Organising Committee opened the workshop by welcoming all the participants and introducing the first facilitator, Professor Tjia Hong Djin. The workshop consisted of two sessions. Figures 1, 2 and 3 show the workshop in progress.



Session 1: Understanding Geo-Natural Disasters Arising from Earthquake, Tsunami and Volcanic Activities in Southeast Asia

This session was conducted by Professor Tjia Hong Djin, who is the Honorary Senior Fellow at LESTARI (Institute for the Environment and Development), Universiti Kebangsaan Malaysia. He has published original university-level textbooks on Tectonics, and on Geomorphology; Regional geology Southeast Asia; articles in technical journals on Structural geology, Tectonics, Geomorphology, Sea-level changes, Regional setting of petroleum basins in Southeast Asia, Geological stress analysis of the Southeast Asian region.

His professional activities include field studies (including the preparation of detailed geological maps to quadrant scales) on various aspects of geology of many localities throughout Indonesia, Malaysia and southern Vietnam; integrated petroleum geoscience studies in the Southeast Asian region and the assessment of petroleum basins (Malaysia, Indonesia, Sudan, Vietnam, Morocco, Caspian Sea).

He has conducted workshops on regional geology Southeast Asia, tin placers in Quaternary context, seismotectonics of Southeast Asia, integrated field and subsurface studies of 'fractured basement petroleum reservoirs' and prepared numerous field guides and conducted field instruction for technical, and also non-geoscience personnel.

Will the world come to an end with so many natural disasters? The increasing public outcry on how safe we are in Malaysia is good enough reason for us to increase our knowledge and understanding of the causes of geo-natural disasters. This session familiarised the participants with the basic update on the geological factors that

give rise to increasing natural hazards and disasters in Southeast Asia. Topics include regional plate tectonic framework (including relative crustal stability), recognising active geological structures, earthquake hazards, tsunamis and volcanic hazards.

Tutorials on analysing fractures (including faults) in terms of *density (which correlates with rock type), *pattern and orientation (which may indicate tensional, compressional and shear fracture types, and thus provide further information on the respective hazardous potential) and characterising features associated with faults (potential earthquake location) and volcanoes on topographic maps were held.

Session 2: Seismic Design using Eurocode 8

Session 2 was conducted by Dr Jack Pappin, who is the Director of Ove Arup & Partners, Hong Kong Ltd. He is responsible for seismic hazard assessment and geotechnical earthquake engineering in Arup worldwide. Some of the projects he has been involved with include the seismic hazard assessment of a major existing nuclear power plant in Hungary, nuclear facilities in the UK, advising the IAEA on nuclear power plants in China and Slovakia, buildings and power stations and geohazard studies in the Philippines and various structures in China, Indonesia, Taiwan, Japan and the United States. Recently, he lead a seismic risk study on the existing building stock in Hong Kong which lead to recommendations for the introduction of a seismic code of practice in that moderately seismic region.

As a result of increasing seismic activities in and around the region, Malaysia is experiencing more tremors and there is a need to design for seismic loading. This session shed some light on how to deal with such situations and the use of Eurocode 8. A practical example using the Petronas Twin Towers as an illustration was made.

The workshop comprised the following topics:

1. The fundamentals of building response to earthquake ground motion.
2. Methods to assess seismic hazard.
3. Methods to allow for site specific soil conditions.
4. Implications to the design of buildings.
5. Standard approaches used in seismic codes of practice illustrated by the United States code IBC2006 and Eurocode 8.
6. The workshop which used the Petronas Twin Towers as an illustration of the response of buildings to seismic ground motion.

The workshop was successfully completed on 7 December 2007 at 5.00 p.m. Engr. Dr Ooi Teik Aun presented the Certificates of Attendance to the participants, and thanked them and the facilitators for the support and closed the workshop. ■