

## TECHNICAL TALK ON INVESTIGATING AND MITIGATING MEASURES TO PEAT FIRE, SINKHOLES IN LIMESTONE FORMATION AND BOULDER FALL

(Organised by the Geotechnical Engineering Technical Division, IEM)

**BEM Approved CPD/PDP Hours: 2.0 Ref No: IEM18/HQ/XX/T**

**Day/Date** : 22<sup>nd</sup> March 2018 (Thursday)  
**Time** : 5:30 pm – 7:30 pm  
**Venue** : Tan Sri Ir. Prof. Chin Fung Kee Auditorium, Wisma IEM, PJ  
**Presenter** : Ir. Liew Shaw-Shong

### Abstract:

The talk will discuss the apparently inherent contributing factors and triggering factor(s) possibly due to either natural processes or interventions by human activities leading to the occurrence of natural disasters. As a result of the discussion, three case studies are referred to illustrate the investigation and solutions to deter or mitigate the risks of these natural hazards. The first case study involves the peat fire hazards in the coastal flood plain where excessive clearing of the fertile land for planting economic crops resulting in loss natural balance of soil-water conservation. The changes in both hydrological and hydrogeological conditions of the affected land lower the ambient groundwater table increase risk of underground peat fire, in which the provoked organic peat decomposition produces abundant supply of methane gas. Unexpectedly, the subsequent channel construction for irrigation and transportation helps in controlling the groundwater table with primary objective of increasing plantation yield. The second case study presents the sinkhole incident at the lined monsoon drain constructed on the alluvial deposit overlying a limestone formation. The drawdown of groundwater profile by the excavation pit eventually provoked excessive loss of alluvial overburden materials with excessive inflow of the monsoon drain water into the solutioning channel in the limestone rock mass flooding the excavation pit. Subsequently, sinkholes had developed and surface up causing part of the river wall collapsed. The measures to plug the leaking solution channel with active inflow of surface drain water was somewhat challenging, but a successful attempt finally. The third case study involves the incident of rolling diorite boulders destroying the buildings along their traverse path after detaching from the steep slope where they were initially embedded. It is interesting to observe the shrinkage and swelling characteristics of the weathered surface materials during the processes of detaching the round boulders by the repeated weather cycles.

### Profile of Speaker:

Ir. Liew Shaw Shong obtained his Bachelor of Science Degree in Civil Engineering with First Class Honours from National Taiwan University at Taipei in 1991 and worked as a geotechnical engineer in Sino Geotechnology Inc. at Taipei for a year. In 1992, he continued his post-graduate study in University of New South Wales in Sydney, Australia and obtained his Master of Engineering Science in 1993. He then returned to Malaysia to work as geotechnical engineer in a multi-discipline engineering consultant firm. During the six years of working, he has exposed himself to numbers of major infrastructure projects, likes Lebuhraya Damansara Puchong, Tanjung Pelepas Port, Kuala Lumpur International Airport, etc. In 1999, he jointly established a geotechnical specialist consulting firm with another two partners to continue the consultancy practice till now. He is now the senior director and founder of G&P Geotechnics Sdn Bhd. In the past twenty five years of his professional career, he has involved in numbers of forensic investigations of landslide problems at mountainous roads. Ir. Liew was the past chairman of Geotechnical Engineering Technical Division of the Institution of Engineers, Malaysia (IEM) for Session 2010 to 2013 and the advisor of Geotechnical Engineering Technical Division of the Institution of Engineers, Malaysia (IEM) for Session 2014 to 2015. He is also presently the deputy president of Malaysia Geotechnical Society.



### ANNOUNCEMENTS TO NOTE

**ADMINISTRATIVE FEE**  
(Effective 1<sup>st</sup> October 2017)

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##### Administrative Fee:

- a) Online : RM15
- b) Walk In : RM20

#### Non-Members

- (a) Registration Fee : RM50
- (b) Administrative Fee : RM20

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- Limited seats are available on a "first come first served" basis (maximum 100 participants). **To secure your seat, kindly register online at [www.myiem.org.my](http://www.myiem.org.my).**
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**Ir. Lee Peir Tien**

**Chairman, Geotechnical Engineering Technical Division, IEM**