

Opening Speech
Seminar on Geotechnical Earthquake Engineering
Royale Chulan Hotel, Kuala Lumpur, Malaysia
01 March 2016

YB Dato Sri Hj. Fadillah Bin Hj. Yusof
Minister of Works

- YB Datuk Rosnah Binti Abdul Rashid Shirlin, Deputy Minister of Works, Malaysia.
- YBhg. Dato Sri Zohari Bin Hj. Akob, Secretary General, Ministry of Works, Malaysia.
- YBhg. Datuk Ir.Hj. Adanan Bin Mohamed Hussain, Director General, Public Works Department of Malaysia.
- YBhg. En Mior Sallehuddin Bin Mior Jadid, Director General, Minerals and Geoscience Department of Malaysia.
- YBhg. Dato' Che Gayah Binti Ismail, Director General, Malaysian Meteorological Department.
- YBhg. Dato' Sr. Hj. Abdull Manaf Bin Hj.Hashim, Deputy Director General (Specialist Sector), Public Works Department of Malaysia.
- YBhg. Dato' Ir. Dr. Hasnul Bin Mohamad Salleh, Deputy Director General (Building Sector), Public Works Department of Malaysia.
- YBhg. Dato' Ir. Dr. Roslan Bin Md Taha, Deputy Director General (Infrastructure Sector), Public Works Department of Malaysia.
- Yang Berusaha, Ir. Dr. Hj. Mohamad Nor Bin Omar, Director, Geotechnical Engineering Branch, Public Works Department of Malaysia.
- Distinguished Guests
- Esteemed Speakers
- Participants of this seminar
- Ladies and Gentlemen

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
السَّلامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

Selamat Sejahtera, Salam 1 Malaysia and Selamat pagi.

- 1) First and foremost, let me congratulate KKR, JKR, REAM and their collaborative partners for a remarkable effort in organising this event which will serve as a platform to better understand the topic on Geotechnical Earthquake Engineering amongst industry players and stakeholders in the construction industry.
- 2) I am happy to note that this event has gathered many eminent speakers locally and regionally with diverse area of knowledge and expertise related to the topic. I am confident your presence in this event will be a fruitful experience and that this event will be another greater success for all of us.
- 3) As you may be aware, Malaysia was rocked by an earthquake with a magnitude of 6.0 at Ranau, Sabah on 5th of June 2015 which was recorded as the strongest earthquake Malaysia has experienced since 1976.
- 4) The earthquake and subsequent aftershocks ranging in magnitudes from 1.6 to 5.2 triggered several massive landslides around Mount Kinabalu which caused severe debris flow and mudslides in the surrounding areas creating much mayhem and chaos to the people living around the area.
- 5) The immediate impact of the earthquake was the loss of life of 18 climbers with some of the infrastructure and buildings damaged which included hostels and rest houses in six different districts. In the Kundasang and Ranau areas, tremors resulted in main water supply pipes being damaged which led to water supply disruption to consumers in both region.
- 6) As a consequence, the affected buildings and infrastructure were required to be demolished or temporarily closed for repair and rehabilitation works which

required huge sums of money. Ultimately, this further escalated to major inconveniences for the public and the loss of lives which are irreparable.

Ladies and gentlemen

- 7) Prior to this catastrophic calamity, we used to believe that Malaysia's strategic geographical location is shielded from major natural disasters particularly earthquakes apart from the risk of flooding, landslides and prolonged droughts. However this incident has proven us wrong and that we have to now re-look and re-define the way we operate and function as a country.
- 8) In the context of the construction industry, all the stakeholders involved must not take for granted that whatever built previously are safe. As we can see today, except for a number of critical buildings or infrastructure projects that have taken the seismic effects into consideration in their designs, many others have only slightly considered or totally ignored this element.
- 9) In recent years, we have become increasingly aware of the fact that tremors of an earthquake that occurred within our region which can be strongly felt in many parts of the country. Together with the fact that experts around the globe are still unable to predict exactly where or when an earthquake will hit, we Malaysians have all the reasons to be concerned and vigilant about the risks and consequences of an earthquake disaster.
- 10) The impact of one earthquake to another varies and the hazards and damage also varies. As pointed out by many experts, tremors are not the only hazard associated with earthquakes as past experiences have shown that most earthquake-related deaths are caused by the collapse of structures.

11) Evidently, a larger earthquake that struck a highly-populated and economically developed area such as California resulted in less damage and caused fewer injuries compared to a smaller earthquake in Peru. This can be related to the fact in whether the region is dominated by more advanced building construction practices or easily collapsible structures.

12) In another classic case, a larger magnitude earthquake that struck San Francisco in 1906 killed about 2000 people compared to the smaller magnitude earthquake in Messina, Italy a few years later where the death toll was about 86,000. Apparently, the collapse of buildings due to poor quality construction materials were blamed for the majority of casualties in the Italian city.

13) Similarly, landslides, liquefaction, tsunamis, building and structure failures under the stresses of seismic waves caused by earthquakes are of serious concerns and consequences which we must take seriously and religiously to protect lives and our well-being. As such, the right building and construction practices must be adopted and employed in reducing death and the level of disruption in emergency and rescue operations from an earthquake.

Ladies and gentlemen,

14) As proclaimed by experts, even a mild earthquake many kilometers away from a city with structures unprepared for tremors can produce tens of thousands of casualties.

15) In this aspect, there are normally two approach that can be adopted in preparing buildings for earthquakes of which are to secure building components such as walls, floors and foundation where the entire structure can behave as a single unit that moves with the ground or construct a strong and flexible structure that distorts but doesn't break and absorbs the energy from such tremors.

16) However, both approaches are expensive and the level of investments are of critical importance on a social and political perspective. Strategically, to ensure cost optimization and avoidance of unnecessary large investment of resources, it is critical for us to take realistic and measurable solutions in addressing the potential threats of an eminent earthquake attack.

17) Hence, designers must adopt well calculated risk factors in employing earthquake resistance criterias in their designs to ensure that all critical structures such as hospitals, power plants, water-treatment plants and dams will be able to survive tremors and remain in operation following an earthquake.

Ladies and gentlemen,

18) In the face of these challenges, the Ministry of Works through the Public Works Department of Malaysia and other construction related agencies and institutions are proactive and committed in making appropriate adjustments to current practices and policies of the industry in order to minimize the risk and threats of future earthquakes.

19) As a way forward, a national hazards road map that covers all natural disasters including earthquakes must be drafted to examine earthquake histories of the region to predict the probability of an earthquake. Following that, a detailed study must be conducted to predict an accurate tremor intensity or peak acceleration produced by probable earthquakes.

20) The security of a nation as well as the safety and socio-economic well-being of the public must always be at the top of our priorities and agenda. As such, appropriate standards and buildings codes which regulates the design and construction of buildings or structures must be established in accordance to the demands and expectations of a given region in accordance to established hazards map. The objective of which is to firstly, protect building occupants and secondly building integrity.

Ladies and gentlemen,

21) It is indeed timely for us to organize this seminar to enhance our knowledge in understanding lessons learned on geotechnical earthquake engineering which includes the safety requirements and precautions needed in dealing with an earthquake disaster.

22) In view of the current trend, an earthquake disaster or emergency management plan is essential for the relevant authorities in addressing and reducing vulnerabilities associated with these disasters. Disaster management focuses on creating plans to decrease the effect of disasters.

23) I am hopeful that all the participants and industry players present here today will take this opportunity to strengthen their networking and seek ways for future collaboration in this seminar. It is important that the public and private sectors come together to work collaboratively and synergistically in improving our technical readiness in enhancing our departmental and organizational competitiveness.

24) Finally, I would like to express my greatest appreciation and gratitude to the organizers for the opportunity to address our distinguished participants at this seminar and pray that it will yield us all meaningful outcomes which we all desire.

On that note, I hereby declare the Seminar on Geotechnical Earthquake Engineering open.

Thank You and

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