The Advantages of Using High Damping Natural Rubber Bearing under Seismic Action for Infrastructure Project in Malaysia

By

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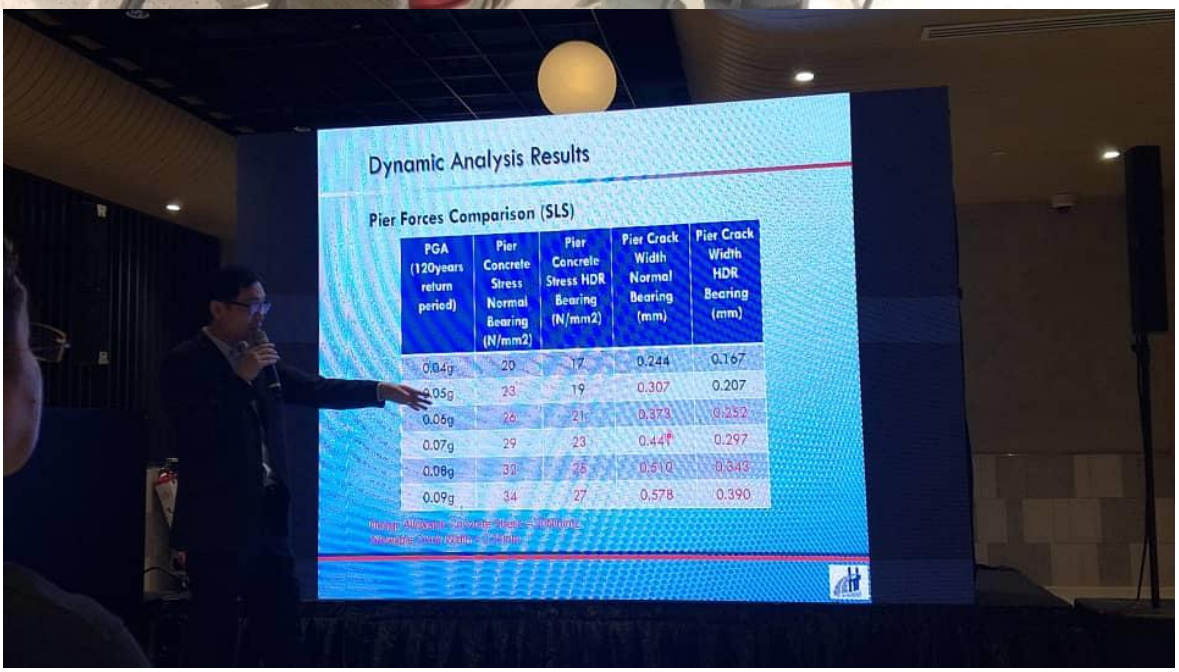
The Civil and Structural Engineering Technical Division (CSETD) successfully organised a talk on 9th September 2025, titled "The Advantages of Using High Damping Natural Rubber Bearing under Seismic Action for Infrastructure Project in Malaysia". The physical power talk was held at SPACE 5, HALL 5, KLCC in conjunction with Engineers 2025 and chaired by Ir. Lo Seng Ling. The talk has recorded attendances of close to 40 participants. Attendees comprised professionals from diverse industry backgrounds, including practicing consultants, contractors, academicians, and developers.

The talk was delivered by Ir. Dr. Teh Tzyy Wooi, Director of H&T Consulting Engineers Sdn Bhd, sharing his knowledge and experience on 'The Advantages of Using High Damping Natural Rubber Bearing under Seismic Action for Infrastructure Project in Malaysia'. Seismic design considerations were made mandatory in Malaysia after the 2017 National Annex to MS EN 1998, a response to the 2004 Indian Ocean tsunami and the 2015 Ranau earthquake, both of which exposed the country's seismic vulnerability. These events highlighted the limitation of conventional reinforced concrete and timber structures in seismic zones.

As a result, High Damping Rubber Bearings (HDRB) have emerged as an effective seismic protection solution, reducing structural deformation and improving safety. Supported by international codes such as ASCE and JSCE, HDRB have been successfully applied worldwide and in Malaysia, notably in the Malaysia's Penang Second Crossing. This study analyses an HDRB-equipped infrastructure project to demonstrate how HDRB enhance structural performance, mitigation strategies, and overall seismic resilience, underscoring their importance in modern, durable infrastructure.

The talk was an engaging session with active participation from the participants, an exchange of ideas and knowledge during the presentation as well as during Q&A session. The seminar was concluded at 12:30PM with CSETD Deputy Chairman, Ir. Dr. Anizahyati Alisibramulisi presenting the token of appreciation to the esteemed speaker. HDRB's effectiveness in minimisng deformation and enhancing occupant safety. Their integration is supported by international design codes, including guidelines from ASCE and JSCE, which advocate HDRB's use in seismic-prone regions. Malaysia's Penang Second Crossing stands as a pioneering example of HDRB application, reinforcing the importance of adaptive design for long-term infrastructure durability.

This study examines a seismic-prone infrastructure project utilising HDRB, analysing its structural behavior, mitigation strategies, and overall benefits. Through detailed evaluation, we aim to enhance understanding of HDRB's role in resilient construction and promote best practices for seismic preparedness in Malaysia. In conclusion, HDRB remain essential in modern infrastructure, offering a proven, adaptive approach to safeguarding against seismic forces.



Photos taken during the power talk & token of appreciation to Ir. Dr. Teh Tzyy Wooi