

Evening Talk on Reactive Powder Concrete

CIVIL AND STRUCTURAL ENGINEERING TECHNICAL DIVISION



by Ir. WC Hooi

THE evening talk on Reactive Powder Concrete (RPC) organised by the Civil and Structural Engineering Technical Division was held at Wisma IEM on 17 August 2010. The event attracted over 50 participants.

The speaker, Engr. Dr Voo Yen Lei, one of the pioneer researchers involved in the development of RPC, also known as Ultra High Performance Concrete (UHPC), holds a PhD degree from the University of New South Wales (UNSW), Australia. While completing his PhD thesis on this cutting edge material, he worked closely with the team of experts that was responsible for commercialising RPC in Australia.

After having accrued 10 years of experience working with RPC, Dr Voo returned to Malaysia and created DURA®, the first Malaysian formulation of RPC, and also founded Dura Technology Sdn Bhd. He has since designed and built the world's first RPC portal frame building, Wilson Hall in Chemor, Perak, using DURA® and is presently developing RPC bridge girders for JKR. Dr Voo, together with Professor Steven Foster from the UNSW, recently authored the book "Reactive Powder Concrete – Analysis and Design of RPC Girders".

The speaker began by taking the participants through the developmental history of RPC. He explained how the material had evolved over the years through research and development. He then proceeded to elaborate on the properties of RPC, which has the characteristics of both

concrete and steel. Next, he clarified the definition of RPC (UHPC) in contrast with that of High Performance Concrete (HPC).

Dr Voo highlighted the efficacy of structural designs in RPC and the simplicity of the design approach as a result of the homogeneity of the material. Participants were then shown photographs of structures that had been built using RPC from various parts of the world including Europe, the United States and Japan. He also provided the participants with an insight into the potential applications of RPC as well as a preview of several upcoming local projects.

The speaker emphasised on the exceptional durability of RPC and how its attributes could lead to a lower lifecycle cost of the structures and a reduction in the consumption and extraction of fuel and materials for sustainable construction. In so doing, RPC promises to be the "green" building material of the future. To further illustrate this, Dr Voo compared the embedded energy, CO₂ footprint and Global Warming Potential calculations for three structurally equivalent beams from Reinforced Concrete, Structural Steel and RPC.

Having gained insight into the new material, the audience actively participated in the Q&A session, posing many questions to the speaker. At the close of the session, the Chairman, Ir. WC Hooi, presented Dr Voo with a token of appreciation from IEM. In return, he received, on behalf of the IEM CESTD, Dr Voo's gift of a copy of his book. ■

THE CUSTOMS APPEAL TRIBUNAL

On 21 June 2011, IEM Deputy President Ir. Choo Kok Beng attended a briefing on the Customs Appeal Tribunal and was thoroughly impressed with the pro-active attitude of the Tribunal in assisting business organisations appeal against the Royal Malaysian Customs on duty related matters.

Members of IEM in the course of their careers may have encountered issues with the duty imposed by the Customs. An awareness of how the Tribunal can assist to sort out such matters, guidance on the way to go about registering an appeal and how to deal with the outcome will be very useful.

A leaflet distributed by the Custom Appeal Tribunal provides the following information:

Objective of Customs Appeal Tribunal

- 1) Provide an appeal system which is fair, transparent and speedy for any person aggrieved by the decision of the Director General of Customs.
- 2) Enhance the efficiency of the tax administration appeal system to make it more business and client friendly.

Who Can Appeal?

Any person aggrieved with the decision of the Director General of Customs under the Customs Act 1967, Excise Act 1976, Sales Tax Act 1972 and the Service Tax Act 1975, except for matters relating to the compound and subsection 128 (3) of the Customs Act 1967.

It should be noted that notwithstanding its name, the Tribunal which was established in 2007 is not part of the Royal Malaysian Customs Department and acts as an independent judicial body. The decision of the Tribunal is final and binding on all parties.

For more information, their portal is <http://tribunalkastam.treasury.gov.my>