

Structural Engineering: Beyond Ordinary

GEOTECHNICAL ENGINEERING TECHNICAL DIVISION



reported by
Ir. Dr Ng Soon Ching

Ir. Dr Ng Soon Ching is the Deputy Chairman, Civil and Structural Engineering Technical Division.

The talk on "Structural Engineering: Beyond Ordinary" was jointly organised by IEM's Civil & Structural Engineering Technical Division (CSETD) and the Institution of Structural Engineers, Malaysia Regional Group. It was held on 27 May, 2015. The speaker, Prof. Tim Ibell, is President of the Institution of Structural Engineers. Prof Ibell is the Associate Dean of the Faculty of Engineering and Design, University of Bath. This talk was chaired by Ir. Hooi Wing Chuen, Chairman of CSETD and was attended by 54 participants.

FABRIC FORMWORK FOR CONCRETE STRUCTURES

The talk focused on the research work of Prof. Ibell in the area of fabric formwork for concrete structures. Prof. Ibell has been actively involved in concrete and structural engineering research for more than two decades and he worked closely with his research collaborator from the University of Manitoba to develop the fabric formwork.

The research on fabric formworks for reinforced concrete construction and architecture is an emerging technology with the capacity to transform concrete



IEM President Dato' Ir. Lim Chow Hock presenting a memento to Prof. Ibell

architecture and reinforced concrete structures. The inherited natural tension geometries given by flexible fabric membranes provide extraordinarily light and inexpensive formworks which are useful to the construction industry.

In some instances, the use of fabric formworks utilises far less material than conventional formworks (Figure 1). Some

offer zero-waste formwork systems. The use of a permeable formwork fabric produces improved surface finishes and higher strength concrete as a result of a filtering action that allows air bubbles and excess mix water to bleed through the formwork membrane.

At the end of the talk, the audience raised questions which Prof. Ibell answered and clarified further. The talk ended with the presentation of a memento to Prof. Ibell by the President of IEM, Dato' Ir. Lim Chow Hock. ■

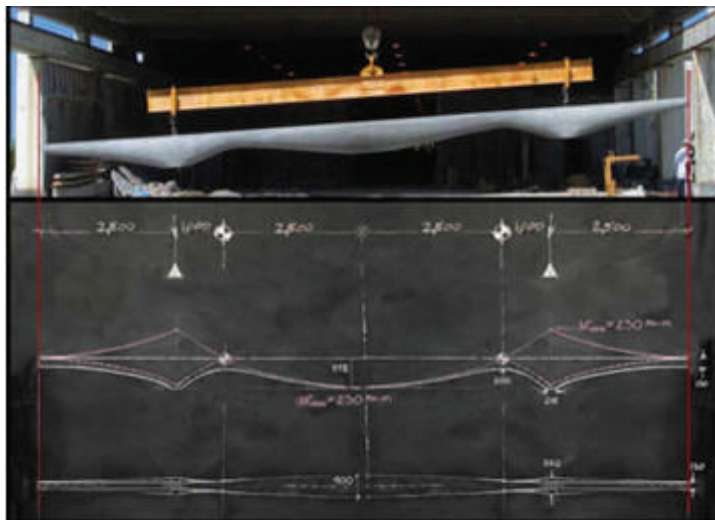


Figure 1: Saving of materials by shaping the beam to follow specific curves dictated by the structure's natural force path
(Source: http://www.umanitoba.ca/cast_building/research/fabric_formwork/beams.html)