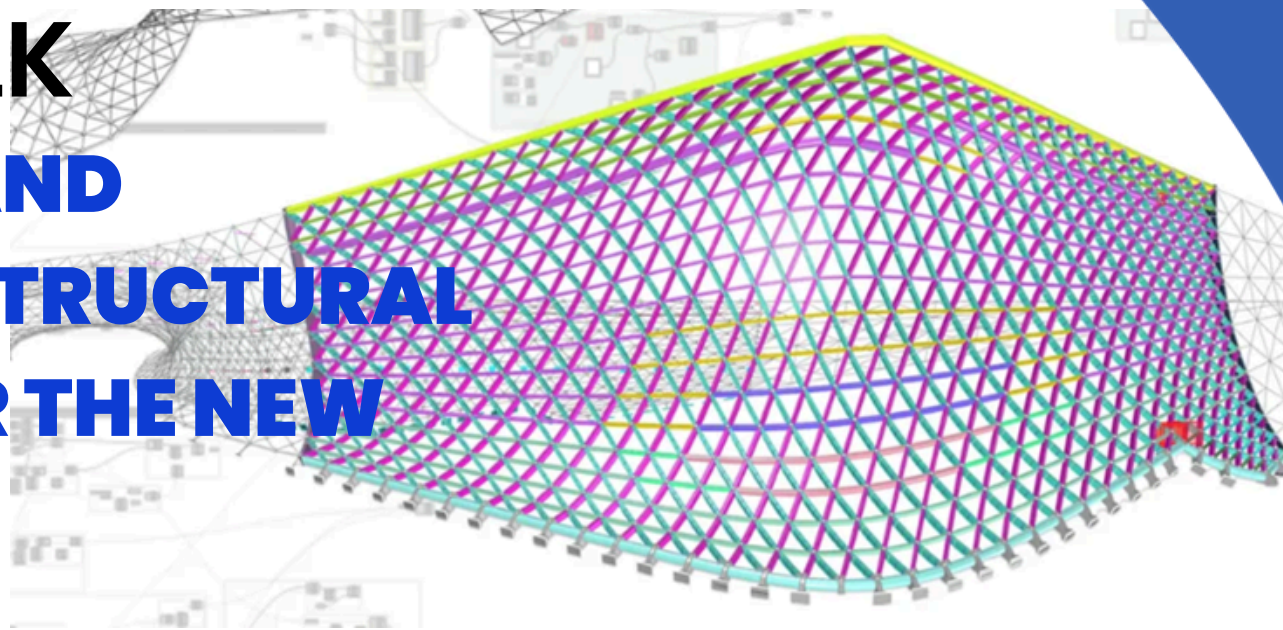
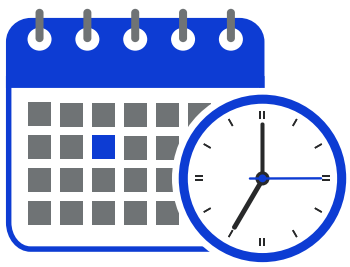
The Institution of Engineers, Malaysia

PHYSICAL TALK

DIGITAL DESIGN AND INNOVATION IN STRUCTURAL ENGINEERING FOR THE NEW NORMAL ERA



DETAILS



7th Oct 2025, Tuesday
5.30pm to 7.30pm

Malakoff Auditorum,
Ground Floor, Wisma IEM

Speaker **Dong Chen**
Partner, APAC Structures Lead, Cundall

Registration Fees
IEM Students : Free
IEM Members : RM 15
Non-IEM Members : RM70

BEM Approved CPD Hours : 2 | Ref No. : Applying

Organised By:
Civil & Structural Engineering Technical Division, IEM

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Synopsis

This presentation explores the application of digital design and innovative workflows in structural engineering for the 'new normal' era, contrasting conventional methods with a parametric approach. Traditional structural design (topology, shape, sizing, and material optimization) is juxtaposed with a modern parametric methodology. This advanced approach enables extensive design iterations, delivers efficient solutions, and facilitates real-time structural behaviour analysis, revolutionizing engineering practices.

Case studies highlight practical applications, including a complex freeform steel structure with over 2,000 unique connection nodes using Grasshopper, and AI-assisted structural topology optimization guiding bridge design. A collaborative three-step process (design intent, engineered improvements, iterative refinement with clients and fabricators) underscores the transformative potential of digital tools to deliver efficient engineering solutions.

Biodata

Dong is a Structural and Bridge engineer chartered in UK and registered in Switzerland, Fellow of Institution of Civil Engineers, with over 20 years of project experience across Europe, MENA, Asia, and the Americas. He has collaborated with world-leading architects on landmark projects, including stations, bridges, long-span roofs, museums, opera houses, theatres, high-rise mixed-use developments, theme parks, education facilities, and stadiums.