

Half-Day Seminar

Design Faster, Check Smarter:

AI & Automated Workflows for Structural Engineers

From global analysis models to detailed steel connection checks, complex RC verification, and **AI-assisted automation**.

 Global Analysis |  Steel Connections |  Complex RC Verification |  AI Automation

 Learn today. Lead tomorrow.
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Synopsis

Modern structural engineers are expected to move efficiently from global analysis models to detailed design verification, while maintaining accuracy, traceability, and sound engineering judgement.

This 4-hour technical seminar introduces practical workflows for connecting global analysis results to steel connection checks, complex reinforced concrete verification, and AI-assisted automation. Engineers will explore how automation can support repetitive tasks, design checking, connection optimization, and clearer documentation.

WHO SHOULD ATTEND

- Structural engineers involved in steel and RC design
- Engineers using global analysis software, spreadsheets, or manual checks
- Consultants handling steel connections, RC detailing, and code verification
- Senior engineers, design managers, and teams seeking more efficient design workflows

4-HOUR SEMINAR OBJECTIVES

By the end of this seminar, engineers will be able to:

- Understand practical applications of FEM, CBFEM, and CSFM in structural design
- Apply DAM concepts for modern steel frame analysis and design
- Link global analysis results to detailed steel connection checks
- Understand semi-rigid connections, tension-only bracing, and frame behaviour
- Review complex RC elements using advanced numerical verification methods
- Explore AI-assisted scripting to support repetitive tasks, automation, and documentation



The Institution of Engineers, Malaysia
(Penang Branch)

This Event is brought to you by:



 **23 Sept 2026 (Wed)**

 **8.30am – 1.00pm**

 **IEM Penang Office**
1-04-02 E-gate, Lebuhr Tunku Kudin 2
11700 Gelugor, Penang

BEM CPD Hours: 4

Ref: IEM26/PG/301/S

IEM Member : FOC
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Seminar Outline

08.30am - 9.00am: Registration

09.00am – 9.50am Session 1: Introduction to Modern Verification Workflows

- FEM, CBFEM, and CSFM concepts
- From global analysis to detailed design verification
- Limitations of manual and spreadsheet-based checks

9.50am – 10.10am Tea Break

10.10am – 11.00am Session 2: From ELM to DAM — A Modern Steel Design Approach

- Direct Analysis Method for steel frame analysis and design
- Modelling second-order effects, stability, and frame behaviour
- Semi-rigid connections and tension-only bracing
- Concept illustration using a global analysis model and detailed connection design workflow

11.00am – 11.45am Session 3: Connected Workflow and AI-Assisted Automation

- From global FEA models to detailed connection design
- BIM-linked workflow for transferring geometry, forces, and connection data
- 3D steel frame example with steel-to-steel and steel-to-concrete connections
- Stiffness classification and modelling of semi-rigid frame connections
- AI-assisted scripting for connection optimisation, repetitive tasks, and documentation

11.45am – 12.40pm Session 4: Complex RC Verification Using CSFM

- Code check of RC walls and beams with openings
- Local check for inverted T-beams and nibs supporting secondary beams
- Advanced numerical checks to confirm design correctness and adequacy
- Interpretation of results, design confidence, and documentation quality

12.40pm – 1.00pm Q&A / Open Discussion



About the Speaker

Speaker:

Er. CHOO JUNE SHYAN, P.E., MSCE, MPW, BSCE, M.ASCE (USA), M.SEI (USA), MIES, MSSS

Technical Director

Otte Utama (M) Sdn Bhd

Otte International Pte Ltd

IDEA StatiCa Certified Trainer

Er. Choo June Shyan is a Singapore-registered Professional Engineer with more than 30 years of experience in the analysis and design of reinforced concrete, structural steel, and light-gauge steel structures. As Technical Director of Otte, he oversees the company's technical services and training initiatives for the built environment industry.

Over the past three decades, he has trained thousands of structural engineers and engineering professionals across Singapore, Malaysia, and the wider region through Otte's technical training programmes. His areas of expertise include advanced computer-aided structural analysis and design, nonlinear and dynamic analysis, performance-based design, and the implementation of practical engineering workflows that enhance design accuracy, productivity, and confidence in structural engineering and detailing.

He is particularly passionate about helping engineers leverage modern engineering software, process automation, and numerical design technologies to deliver safer, more efficient, and more innovative structural solutions