

Second Order Analysis and Design of Steel Structures

The benefits of EC3 global analysis and design integration with BIM

Introduction

This half day course presents an understanding of the strategy involved with current structural code provisions and presents a comprehensive treatment of the second order analysis and design of sustainable, safe and economic steel structures.

Course participants will be provided with an overview of the provisions of Eurocode 3. An explanation of the various types of structural analysis and conventional design to Eurocode 3 will be covered. Emphasis will then be placed on analysis and design techniques including the treatment of frame and member imperfections, second order $P\Delta$ and $P\delta$ effects and the interpretation of analysis results.

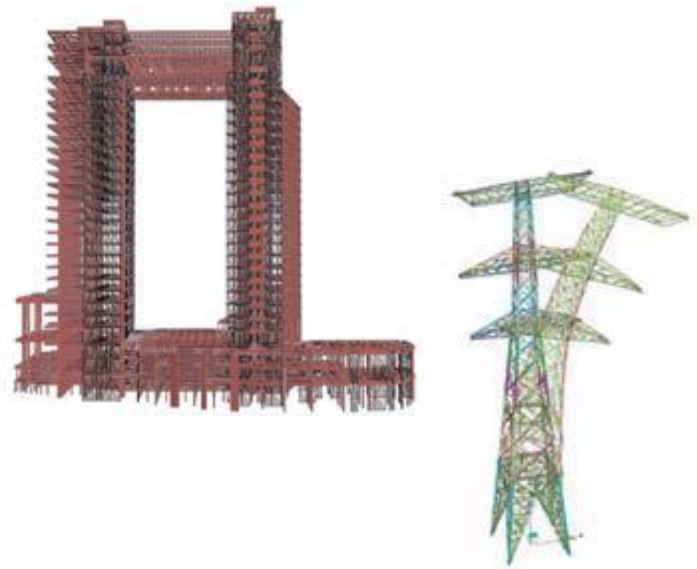
Modern software will be demonstrated to deliver Eurocode 3 global ultimate limit state and serviceability limit state analysis and designs for Eurocode reliability requirements.

The following topics will be covered:

- Introduction to structural design with Eurocode 3 global analysis provisions
- Load combinations
- Conventional design of structural steel elements
- Structural analysis techniques
- Eigenvalue analysis & modelling of imperfections
- Second order $P\Delta$ & $P\delta$ effects
- Nonlinear analysis & design of steel structures
- Practical worked examples
- Practical design integration with **BIM** ready software NIDA for direct structural efficiency and element/detail design.

Presenters

- Professor Sui-Lai Chan is Chair Professor in Computational Structural Engineering at The Hong Kong Polytechnic University.
- Leroy Gardner is Professor of Structural Engineering in the Department of Civil and Environmental Engineering at Imperial College London.
- Stephen McCrory is a Director and Engineer with NIDA Europe Limited.



Date: Monday 29th of June 2015

Time: 1.30pm to 5.30pm

Venue: School of Planning, Architecture and Civil Engineering, David Keir Building, Queen's University Belfast BT9 5AG

Fee: £150.00 Students: £50.00

Course materials and tea breaks will be provided.

A certificate of attendance will be awarded to all delegates who complete the course together with a 30 day license for NIDA EC3 global analysis software

Target Audience

Designers
Structural Engineers
Civil Engineers
Safety Engineers
Consultant Engineers
Contractors
Specification Engineers
Cost Engineers and Quantity Surveyors
Steel Fabricators and Erectors

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Application examples of global direct second-order design of steel structure: long span portal, frame, modular assembly and pylon

