
October, 2014

2014 Seminar for
Structure Engineering

# MIDAS TECHNICAL WAVE in Singapore

Accreditation: PDU Points

Organized by
MIDAS Information Technology Co., Ltd, Korea

Sponsored by
Korea Trade-Investment Promotion Agency

MIDAS

kotra
Korea Trade-Investment
Promotion Agency

# MIDAS TECHNICAL WAVE in Singapore

## Novotel Clarke Quay

Oct 14th, 2014(Tue)
01:00 PM - 05:00 PM

## About this Seminar

Singapore Engineers will face a significant change of the circumstances for Eurocode and SS EN soon. Only for this 2nd Quarter, more than 20 companies decided to adopt Eurocode and SS EN and many other organizations are organizing Eurocode preparation unit inside of the company and working on it. Eurocode Technical Seminar which MIDAS is planning for Singapore Engineers will help you to smoothly shift to the Eurocode and Singapore National Annex.

The purpose of this seminar is to set the stage for experts from Europe and Singapore to speak about the key issues of Eurocode. Key-notes and technical sessions will be provided for the benefit of our attendees. And MIDAS will introduce the practical aspects of the Eurocode and Singapore National Annex on applying it to the software.

This seminar will bring together practicing structural engineers, so benefit from this large gathering by developing your professional network. Connect with new faces to share your knowledge and improve the engineering practice.

## PROGRAM.

| Session I. | Key Note Session | |
|---|---|---|
| 13:20-14:00 | General Introduction to Eurocodes (Eurocodes 0&1) | Dr. Roberto Scotta Dicea (Italy) |
| 14:00-14:40 | RC building design as per Eurocode2 | Dr. Jaroslav Navrátil (Czech) |
| 14:40-15:20 | Case studies on analysis of steel structures using Eurocodes | Dr. CHIEW Sing-Ping (Singapore) |
| 15:20-15:40 | *Refreshment Break* | |
| **Session II.** | **MIDAS Session** | |
| 15:40-16:20 | Efficient design process using midas Gen as per Eurocode 3 & BC 1 : 2012 | Kapil Dev Bansal (MIDAS IT) |
| 16:20-17:00 | Modeling and Loading considerations on EC 1,2,8 | Ravi Kiran (MIDAS IT) |

# Technical Seminar on Eurocode and Singapore Annex

MIDAS

kotra
Korea Trade-Investment Promotion Agency

# Presenters

## Speakers' Presentation & Profile

**Novotel Clarke Quay**

Oct 14th, 2014(Tue)
01:00 PM - 05:00 PM

### General Introduction to Eurocodes (Eurocodes 0&1)

by Dr. Roberto Scotta

The lecture will focus on how Eurocodes pursue the objective of a "safe structural design". The basic notions of probabilistic and semi-probabilistic approaches to structural design will be given, together with their practical implementation according to Eurocodes. The load combinations at Ultimate and Serviceability Limit States will be explained. Finally in the last part of the lecture the evaluation of materials' characteristic and design strengths will be shown. The main differences and analogies between ECs and BSs will be also highlighted along the lecture.

- Assistant Professor of Structural Construction at the Department of Civil, Architectural, Hydraulic and Environmental Engineering (DICEA) of the University of Padova (Italy).
- Member of the Faculty of the Ph.D. School in Civil and Environmental Engineering Sciences (SIC&A) of the University of Padova.
- His research activity cover the following fields:
1. Durability of r.c. structures and historical buildings;
2. Non linear mechanics ofmaterials
3. Dynamics of structures and soils – soil-structure interaction and coupled problems
4. Computational methods for the design of complex buildings
5. Seismic analysis and strengthening of historical buildings
6. Hybrid steel-concrete structures
7. Timber Structures

### RC building design as per Eurocode2

by Dr. Jaroslav Navrátil

Eurocode became an official regulatory standard for Singaporean construction industry in April 2013 with a two-year transition period. The lecture will explain foundations of Eurocode 2 and what changes it brings to daily work of engineers/consultants in Singapore. The lecture will summarize the assumptions for the analysis and design of reinforced and prestressed concrete cross-sections subjected to axial force and bending moments, shear and torsion design, and interaction of internal forces. The principles of stress limitation check, crack width control, and deflection calculation will be clarified. There will be practical examples of designing tasks according to Singaporean national annex.

Jaroslav Navrátil is technical director of IDEA RS Ltd, which develops structural engineering software solutions. He also works as Associate Professor at VSB–Technical University of Ostrava, where he gives the lectures on Prestressed Concrete. He is Chartered Engineer in Statics and Dynamics of Structures and Forensic Expert in Civil Engineering. He is recognized expert in the field of concrete and prestressed concrete structures and his specialization is the development of methods for the design and analysis of structures. He published many technical papers, research reports and the textbook Prestressed Concrete Structures.

### Case studies on analysis of steel structures using Eurocodes

by Dr. CHIEW Sing-Ping

This presentation will use a few practical case studies on analysis of steel structures to illustrate how to apply and combine design actions, when to include the global and local imperfections and the type of structural analysis to carry out to obtain the correct design effects of action.

Head of the Division of Structural Engineering and Mechanics in the School of Civil and Environmental Engineering, Nanyang Technological University, Singapore. He is a Past President and Honorary Fellow of the Singapore Structural Steel Society. He has served the industry and profession in various other capacities and currently a Member of the Panel of Expert Advisors of the Land Transport Authority, a Member of the Building and Construction Authority Academy Advisory Panel and a Board Member of the Professional Engineers Board of Singapore. His major areas of research interest are in fatigue and fracture of steel structures, steel materials and construction.

# Presenters

## Speakers' Presentation & Profile

**Novotel Clarke Quay**

Oct 14th, 2014(Tue)
01:00 PM - 05:00 PM

### Efficient design process as per Eurocode 3 & BC 1 : 2012

by Kapil Dev Bansal

The presentation will focus on design concepts for steel as per SS EN 1993-1-1: 2010 & SS EN 1993-1-5: 2009 & BC1:2012.
Flowchart for the design process as per EC3 will be presented.
The practical approach to incorporating the imperfection into analysis & design will be discussed.
The need for the second order analysis will be explained.
Alternative ways to incorporate the second order moment in analysis will also be discussed. The overall steel design process for the Eurocode will be demonstrated including BIM.

Kapil Dev Bansal is a civil/structural engineer working with MIDAS and his expertise is focused on practical building engineering using Eurocodes. He worked as a technical support engineer and has contributed towards the development and documentation of MIDAS programs. He has provided online and onsite training to engineers using MIDAS family programs. He was involved in the development of Singapore National Annex & BC1:2012 in midas Gen. In Singapore he is continuously interacting with Civil & Structural Engineers and has managed to become well aware of the general consensus and the present situation regarding the adoption of the Eurocode.

### Modeling and Loading considerations on EC 1,2,8

by Ravi Kiran

The details of wind load generation as per Eurocode will be discussed.
Seismic requirements as per SS EN 1998-1 & BC3:2013 will be looked into. A practical approach toward performing the response spectrum will be presented. The difference in time dependent material properties as per CEB-FIP & Eurocode will be discussed. The calculation algorithms of creep, shrinkage & compressive strength properties as per CEB-FIP & Eurocode will be compared and the results will be presented.

Mr. Ravi Kiran is the finite element analysis specialist and senior civil/structural engineer with ten years' experience in buildings & infrastructure projects. He joined MIDAS IT in the year 2007 as Structural Design Engineer; at present he is working with International Support and looks after midas Gen.

# Technical Seminar on Eurocode and Singapore Annex

MIDAS kotra Korea Trade-Investment Promotion Agency