



**Workshop
on
EUROCODE 8
Seismic Design of
Buildings and Bridges**
(17 to 19 September 2009, New Delhi)

**Organised by
Indian Concrete Institute
(NEW DELHI CENTRE)**

REGISTRATION FORM

(Please type or use Block Letters)

Name.....

Designation.....

Organisation.....

Mailing Address.....

Phone / Mobile.....

Fax..... E-mail ID.....

Please tick the appropriate category

- ICI Member Academician Research Scholar
 Sponsors/Co-sponsors, free Delegates Others

ICI Membership No.....

Details of Demand Draft / Cheque*

DD/Cheque No..... Date.....

Amount (Rs.)..... Drawn on.....

(Photocopies of Registration form can also be used)

Date _____ Signature _____

* The payment is to be made in the form of Demand Draft / Local Cheque drawn in favour of 'Indian Concrete Institute, New Delhi' payable at New Delhi.

The Registration form along with workshop fee shall be sent to :

**Ms. Sehba Azhar
Upfront Promotions & Merchandising Pvt. Ltd.
306, Gupta Arcade, Shreshtha Vihar, Delhi - 110092**

Workshop Fee

- a) ICI Members and Delegates from Academic & Research Institutions Rs. 10,000
b) Other Delegates Rs. 12,000

Looking at the past experience the response has been overwhelming. As the seats are limited, kindly register before 18th August, 2009 to avoid disappointment.

Mode of Payment

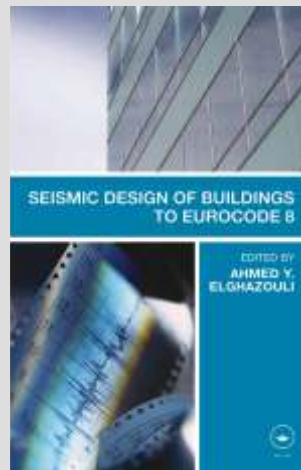
By Demand Draft or local cheque drawn in favour of the **Indian Concrete Institute, New Delhi** payable at New Delhi, latest by 18th August, 2009.

Organising Secretary

T. Viswanathan
Vice President
Aarvee Associates
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**Event Managers &
Correspondence Address**

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Indian Concrete Institute

(NEW DELHI CENTRE)

in association with

Central Public Works Department



**Workshop
on
EUROCODE 8**

**Seismic Design of
Buildings and Bridges**

17 to 19 September 2009

at
Vigyan Bhawan, New Delhi

Objective

Entire land area of India is prone to earthquakes. The Himalayan region is considered to be vulnerable to high intensity earthquakes of magnitude exceeding 8 on the Richter scale. A major part of Peninsular India, which is hitherto considered stable has been visited by strong earthquakes and also by Tsunami which was unknown to our country. The recent earthquakes occurred between the year 1991 and 2005 at Uttarakashi, Latur, Jabalpur, Chamoli, Bhuj, Jammu & Kashmir and Andaman were all major earthquakes. A total of 23000 lives have been lost besides causing enormous damage to property and public infrastructure in these earthquakes.

Today's challenge is to design bridges and buildings for various disasters that can occur during an earthquake. Particularly problematic are near fault effects that may cause very large demands and challenge the traditional method of seismic analysis and design.

In India the seismic design of the buildings are based on IS 1893 and Bridges on IRC 6. After the Bhuj earthquake the seismic zones were redefined, PGA has been increased and Seismic provisions in both these codes were revised. Time History Analysis, Non Linear Dynamic Analysis, Plastic Hinge Formation, Capacity Design, Push Over Analysis and Ductile Detailing are some of the new concepts that are being adopted in the International codes. Devices such as Viscous Damper, Spring Loaded Damper, STU and Seismic isolation devices have been extensively used to mitigate the seismic effect.

The international codes are constantly under revision to take care of these new concepts based on research findings. In this context Eurocode 8 which is being adopted in 28 countries across Europe is one of the latest and most modern standards which covers all these latest concepts and detailing techniques. The code has two parts covering buildings and bridges.

The ICI New Delhi Centre has taken the initiative of organising a Workshop on Seismic Design of Buildings and Bridges based on Eurocode 8. The Workshop will focus on the latest methods of analysis, design, detailing and the seismic mitigation measures through devices. The practicing Engineers, Academicians and persons actively engaged in research will be greatly benefitted from this Workshop.

About the Workshop

The workshop will be conducted by **Mr. Edmund Booth**, Consulting Engineer, UK and **Mr. Basil Koliass**, Chairman & Director Buildings, Bridges & Tunnel section of DENCO S.A., Athens.

Both Mr. Edmund Booth and Mr. Basil Koliass were extensively involved with the drafting of Eurocode 8 : Design of structures of Earthquake resistance - Buildings and Bridges.

The course will be interactive and allow participants to test their understanding of the lecture material through a series of examples to be solved by them.

The workshop will be spread over 16 sessions and the main topics which will be covered are :

- **Seismic Design of Buildings** (EN 1998, Part 1, Eurocode 8) covering analysis of Building structures designing and detailing of Concrete Buildings, Steel Buildings, Masonry Buildings, Seismic isolation devices, Geo Technical aspects and design of foundation.
- **Seismic Design of Bridges** (EN 1998, Part 2, Eurocode 8) covering seismic design actions on bridges, analysis, detailing, seismic isolation, special issues, analysis and strength verification of bridges with deck connected monolithically to the piers and a deck supported on substructures through movable bearings.

Lecture notes, copies of presentation slides, Book Titled- Seismic Design of Buildings to Eurocode 8, edited by Ahmed Y. Elghazouli (about to be published) will be distributed to all registered delegates.

About the Speakers

Edmund Booth

Mr. Edmund Booth graduated from Cambridge University. For the last twelve years, he has acted as an independent consultant specialising in earthquake engineering, a subject he has been involved in since the early 1980's. He worked for 20 years with Ove Arup & Partners (latterly as Associate) and 5 years on site in UK and overseas. He has been involved in the seismic design, analysis and assessment of a wide range of buildings, industrial and offshore structures, nuclear power related structures and bridges. He is a fellow of the Institutions of Civil and Structural Engineers and was for five years a visiting professor at Oxford University. He teaches a module for the earthquake engineering MSc-course at Imperial College, London.



He has been involved since the mid 1980s with the development of Eurocode 8, for which he is the UK National Co-ordinator / Technical Co-ordinator.

Basil Koliass

Mr. Basil Koliass graduated from National Technical University of Athens. He is one of the founders and presently Chairman of DENCO S.A., managing the Buildings, Bridges and Tunnels design section. He has over 50 years of experience in the structural design of bridges, buildings, marine and industrial structures, including prestressed and composite bridges in Greece and abroad.



He has worked in the area of earthquake resistant structures and has an important role in code drafting. He is one of the principal members of the CEN drafting team of Eurocode 8 : Design of structures for earthquake resistance - Part 2 : Bridges.

WORKSHOP PROGRAMME

DAY 1

Inauguration

EN 1998 -1 Design of structures for earthquake resistance

Buildings - Mr. Edmund Booth

01 An Introduction to Earthquake Engineering

Break

02 An overview : Design of structures for earthquake resistance

Lunch

03 Analysis of building structures

04 Design and detailing of concrete buildings

Break

04 Design and detailing of concrete buildings (contd.)

05 Interactive session

DAY 2

06 Design and detailing of steel buildings

07 Design of masonry buildings

Break

08 Seismic isolation devices for buildings

09 An introduction to geotechnical aspects and design of foundations

Lunch

10 Workshop - deriving seismic forces and designing concrete structure for an 8 storey hotel building

11 Interactive session

DAY 3

EN 1998 -2 Design of structures for earthquake resistance

Bridges - Mr. Basil Koliass

12 - Scope of EN 1998 -2

- Basic requirements and compliance criteria

- Seismic design actions with emphasis on bridges (Time histories, spatial variability of motion, hydrodynamic effects)

- Analysis (Linear, non-linear static and dynamic)

- Strength verification (and capacity design)

- Detailing

- Bridges with seismic isolation

Break

13 Special issues of EN 1998-2 (Non linear analysis. Restoring capacity of isolation systems)

Lunch

14 Workshop

- Bridge with deck connected monolithically to the piers

* Analysis

* Strength verification, Capacity design

* Pile foundation

* Detailing (Plastic hinge region etc.)

Break

15 - Bridge with deck supported on substructures through movable bearings (seismic isolation)

* Bridge on elastomeric bearings

* Bridge on FPS bearings

16

Interactive session

Registration will start at 8:30 am on 17 Sept. 2009.