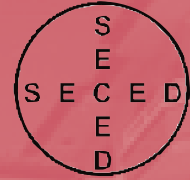


Imperial College
London
Consultants



Seismic Design to Eurocode 8

A Short Course with Design Workshops

18 - 19 September 2008



Supported by
The European Association for
Earthquake Engineering
(EAGE)

A two day course organised by the Department of
Civil and Environmental Engineering at Imperial
College London, in collaboration with the Society for
Earthquake and Civil Engineering Dynamics (SECED)



Supported by
The Eurocodes Expert
Initiative of the Institution of
Civil Engineers

A Centre for Professional Development Programme

BACKGROUND

Since this popular course was last presented in 2006, all parts of Eurocode 8 have been published by BSI as British Standards, with publication of the accompanying UK National Annexes expected by summer 2008. The course is therefore timely; it combines a presentation of the Eurocode 8 provisions for steel and concrete buildings (including their foundations) with design workshops which will give participants hands-on experience of applying the code. The course concentrates on buildings and their foundations in areas of moderate to high seismicity, but the material covered is also applicable to many other types of structure and sub-structure.

COURSE METHODS

The two day course takes the form of a series of morning lectures, presented by leading experts from both the university and consulting sectors, followed by practical design workshops on Eurocode 8 in the afternoon. Workshops on geotechnical and structural design aspects will run in parallel. Every participant will obtain a copy of an extensive course publication covering the background material. Participants are expected to have access to a copy of Eurocode 8 Parts 1 & 5; course members can purchase these at the time of booking for £180, a saving of £168 on the normal price to non-BSI members (See registration form).

COURSE CONTENT

The first day starts with presentations dealing with the fundamental elements of seismic design to Eurocode 8, covering the choice of earthquake actions, loading and spectra, scheme design of buildings, seismic behaviour of soils and the design of shallow foundations. The two parallel workshops on the first day involve application of structural and geotechnical design aspects, respectively, covered in the morning lectures. The second day lectures deal with the design of deep foundations as well as reinforced concrete and steel structures. The afternoon will take the form of two parallel workshops, one focusing on geotechnical aspects and the other on structural design. The course covers the relevant provisions of Eurocode 8 Part 1 (general rules, seismic actions and rules for buildings) and Part 5 (foundations, retaining structures and geotechnical aspects).

WHO SHOULD ATTEND?

The course will be of value to a wide range of practising civil and structural engineers at different stages of their careers, who would like to acquire a practical appreciation of the design and analysis of structures (particularly buildings) for earthquake resistance, with emphasis on the design according to the provisions of Eurocode 8. This event may be considered as contributing to a recognised CPD scheme; delegates should check their individual scheme requirements. Places on the course are limited. EARLY BOOKING IS ADVISED.

PROGRAMME

DAY ONE 18 SEPTEMBER 2008

PART I

PRESENTATIONS

09:00-09:05	Overview of Short Course	Ahmed Elghazouli
09:05-09:45	Introduction to Eurocode 8	Philippe Bisch
09:45-10:30	Loading and Spectra	Martin Williams
10:30-11:00	Coffee	
11:00-12:00	Geotechnical Design: Shallow Foundations	Zygmunt Lubkowski & Gopal Madabhushi
12:00-12:45	Structural Design: General Building Considerations	Edmund Booth
12:45-14:15	Lunch	

PART II

WORKSHOPS

14:15-15:15	Geotechnical Design (Co-ordinator: G. Madabhushi)	Structural Design (Coordinator: M. Williams)
15:15-15:45	Tea	
15:45-17:00	Workshops continued	
17:00-17:15	Day 1 Closure	

DAY TWO 19 SEPTEMBER 2008

PART I

PRESENTATIONS

09:00-10:00	Geotechnical Design: Deep Foundations	Gopal Madabhushi & Robert May
10:00-11:00	Concrete Design	Andy Campbell
11:00-11:30	Coffee	
11:30-12:30	Steel Design	Ahmed Elghazouli
12:30-13:30	Lunch	

PART II

WORKSHOPS

13:30-14:30	Geotechnical Design (Co-ordinator: G. Madabhushi)	Structural Design (Coordinator: A. Campbell)
14:30-15:00	Tea	
15:00-16:00	Workshops continued	
16:00-16:45	Closure and presentation of course certificates	

SEISMIC DESIGN OF MASONRY STRUCTURES

Evening Technical Meeting, Thursday 18 September 2008 at 6pm

INSTITUTION OF STRUCTURAL ENGINEERS, LONDON

Presented by Prof A. Plumier and Prof H. Degée

On the evening of the first day of the short course, a technical meeting will be held at the Institution of Structural Engineers (11 Upper Belgrave Street, London SW1X 8BH) which is within walking distance of Imperial College London. It will focus on the 'Seismic Design of Masonry Structures in Moderate Seismicity Regions'. Presentations will be made by Professors André Plumier and Hervé Degée from the University of Liège, and will address key technical issues related to the assessment and design of masonry construction. The meeting is complementary to the short course. Attendance at the presentation is free, and reservation can be made for the dinner held after the meeting at a cost. Further information regarding the event and the venue will be available at the website of the Institution of Structural Engineers (<http://www.istructe.org.uk>).

PRESENTERS

● PHILIPPE BISCH (IOSIS)

Philippe Bisch is a specialist in structural analysis and presently Professor in charge of "Structural mechanics" courses at the Ecole Nationale des Ponts et Chaussées in Paris. In 1976, he joined SECHAUD & METZ, Consulting Engineers, as Technical Director and now occupies the post of Scientific Director with the IOSIS group to which SECHAUD & METZ belongs. He was formerly President of the European Association for Earthquake Engineering and also Vice-President of CEN sub-committee TC250/SC8 on Eurocode 8, for which he is the current French National Technical Contact. He was also involved in CEN committee TC340 for the antiseismic devices standard. Mr Bisch is presently an active member of the French Aseismic Construction Standards Committee and of the governmental group (GEPP) related to seismic safety.

● EDMUND BOOTH (Consulting Engineer)

From 1982 to 1995, Edmund Booth was Ove Arup & Partners' designated structural specialist in earthquake engineering and he has subsequently run his own consultancy in this field. He is the UK National Technical Co-ordinator for Eurocode 8, in which he has maintained an active involvement for over fifteen years, and he is a past chairman of SECED. He has prepared a completely revised edition of the textbook 'Earthquake Design Practice for Buildings', published by Thomas Telford in 2006.

● ANDY CAMPBELL (Sellafield)

Andy Campbell is currently head of British Nuclear Group's Independent Structural Assessment Section, which is responsible for the review and approval of structural engineering input to nuclear safety cases at Sellafield. The critical areas generally involve abnormal or extreme environmental loading, with seismic effects frequently forming the dominant action. He has many years' experience of seismic design and appraisal, with a particular interest in reinforced concrete structures and performance-based design. He is a SECED committee member and also serves on the Research and Education Sub-Committee.

● AHMED ELGHAZOULI (Imperial College London)

Dr Elghazouli is Reader in Engineering Structures and Head of the Structural Engineering Section at Imperial College London. After spending several years as a design engineer, he has been involved in numerous research and consultancy projects whilst working at Edinburgh University and Imperial College London. His main research interests are related to the response of structures to extreme loads, with emphasis on the seismic behaviour and design of buildings. He has participated in international code development activities, including those related to the Eurocodes. He is the UK National Delegate of the International Association of Earthquake Engineering and is the current vice chairman of SECED.

● ZYGMUNT LUBKOWSKI (Arup)

Mr Lubkowski is the seismic business and skills leader for Arup in Europe, Africa and the Middle East. He has over 20 years specific experience of civil, geotechnical and earthquake engineering. He has carried out seismic design, analysis and assessment for a range of structures in the energy, infrastructure, manufacturing and humanitarian sectors. He has acted as the seismic specialist for major projects such as offshore platforms in New Zealand and Russia, an immersed tube tunnel in Turkey, building assessments in the Georgia, Armenia and Aceh and numerous seismic hazard studies around the world.

● GOPAL MADABHUSHI (University of Cambridge)

Dr Madabhushi is a Reader in Geotechnical Engineering at the Department of Engineering, University of Cambridge and a Fellow of Girton College, Cambridge. He is also the Assistant Director of the Schofield Centre that houses the centrifuge facility with earthquake modelling capability. He leads the research of the Earthquake Geotechnical Engineering group that focuses on soil liquefaction, soil structure interaction, pile and retaining wall performance, dynamic behaviour of underground structures and performance of earthquake remediation strategies. He has an active interest in field investigations following major earthquakes and was the past Chairman of the Earthquake Engineering Field Investigation Team (EEFIT). He is also a member of the SECED Research and Education Sub-Committee.

● ROBERT MAY (Atkins)

Dr Robert May is the Chief Geotechnical Engineer of Atkins Ltd. He has 25 years' experience in geotechnical engineering with a particular interest in seismic design. Recent seismic design projects have included major retaining walls, foundations and slopes. Robert is a former SECED Committee member and chaired the 12th European Conference on Earthquake Engineering in 2002. He is currently on the Géotechnique Advisory Panel.

● MARTIN WILLIAMS (University of Oxford)

Dr Williams is Reader in Structural Engineering at the University of Oxford, Department of Engineering Science. He is a graduate of Bristol University and worked in industry with Atkins for several years before moving to Oxford. His research interests include mitigation of building response to earthquakes, structural vibrations, dynamic human-structure interaction and real-time hybrid test methods. Besides leading research projects, he has played an active role in SECED over many years, and has contributed to numerous courses on earthquake engineering and structural dynamics.

ORGANISERS

THE SOCIETY FOR EARTHQUAKE & CIVIL ENGINEERING DYNAMICS

The Society for Earthquake and Civil Engineering Dynamics (SECED) is the UK national section of the International and European Associations for Earthquake Engineering and is an affiliated Society of the Institution of Civil Engineers. SECED was established in 1969, to provide a focal point for technical activities in the fields of earthquake, blast and impact engineering. SECED is sponsored by the Institution of Structural Engineers, the Institution of Mechanical Engineers, and the Geological Society.

The objective of the Society is to promote co-operation in the advancement of knowledge in the fields of earthquake engineering and civil engineering dynamics including blast, impact and other vibration problems. The activities of SECED do not only fulfill its role as a learned society, but also promote the case for dynamics within the civil engineering profession, thanks largely to the voluntary dedication of its officials, and the enthusiasm of its membership.

SECED organises informal discussions on a wide range of topics related to seismology, earthquake engineering and civil engineering dynamics on a monthly basis, as well as many half-day and one-day workshops on similar topics. SECED hosts the prestigious Mallet-Milne Lecture every two years. SECED has also organised seven major conferences on earthquake engineering including the Twelfth European Conference on Earthquake Engineering held in London in 2002.

• **For further information about SECED, please contact:**

Ms Jade Donovan
SECED Secretary,
The Institution of Civil Engineers,
One Great George Street,
Westminster,
London SW1P 3AA,
Tel +44 (0)20 7665 2233
Fax +44 (0)20 7799 1325

Email: Jade.Donovan@ice.org.uk,
or visit the SECED website: <http://www.seced.org.uk>

DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING, IMPERIAL COLLEGE LONDON

The Department of Civil Engineering and Environmental Engineering at Imperial College is recognised nationally and internationally as one of the leading centres of education and research in civil and environmental engineering and achieved the highest possible rating in all national assessments of research. It has extensive links with Industry, universities, research and professional organisations throughout the world. Many of its staff hold positions on Technical and Code Committees, Government and Professional Bodies, as well as acting as advisors or consultants to UK and overseas Research Institutes, Companies and Governments.

The Department offers a 4 year MEng undergraduate programme, the aim of which is to provide a high level undergraduate course which prepares the brightest and best students to work at the highest level in the profession, either as practitioners or researchers. It also runs a number of specialist one-year MSc programmes within the main areas of Environment, Geotechnics, Structures and Transport.

Research in earthquake engineering covers seismological, geotechnical and structural aspects including seismotectonics, seismic hazard assessment, strong motion characterization, earthquake loss modeling, soil dynamics and liquefaction, seismic performance of steel, concrete and composite structures, structural vulnerability assessment and upgrading, experimental and computational methods. The Department also offers two internationally respected Master of Science courses, one concentrating on structural aspects and the other on geotechnical aspects of earthquake engineering. The courses have a duration of one calendar year of full time study, but can also be attended on a part time basis over two or three years.

• **For further information, please contact:**

Dr Ahmed Elghazouli,
Head of Structures Section,
Department of Civil and Environmental Engineering,
Imperial College London
London SW7 2AZ,

Tel +44(0)20 7594 6021,
Fax +44(0)20 7594 5934,

Email: a.elghazouli@imperial.ac.uk
or visit the website: www.imperial.ac.uk/civilengineering

The course is supported by the European Association for Earthquake Engineering (further information available at website: www.eaee.boun.edu.tr/eaee.htm) and Eurocodes Expert (further information available at website: www.eurocodes.co.uk)

REGISTRATION FORM

SEISMIC DESIGN TO EUROCODE 8
18 - 19 SEPTEMBER 2008

Delegate's Details:

Title:	First Name(s):
Surname:	
Job Title:	
Organisation:	
Address:	
Postcode:	Email:
Tel:	Fax:

Course Fees:

<input type="checkbox"/> Industrial <input type="checkbox"/> £600 plus VAT £105 Early Booking before 18/8/08 <input type="checkbox"/> £700 plus VAT £122.50 Late Booking after 18/8/08	<input type="checkbox"/> Academic / SECED Members <input type="checkbox"/> £550 plus VAT £96.25 Early Booking before 18/8/08 <input type="checkbox"/> £600 plus VAT £105 Late Booking after 18/8/06
<input type="checkbox"/> £180 Copy of BS EN 1998-1:2004 & 1998-5:2004 (discounted price covers both Part 1 & Part 5)	Please indicate your interest in either: <input type="checkbox"/> Geotechnical Workshop <input type="checkbox"/> Structural Workshop

Methods of Payment: **Overseas delegates should either pay by STERLING BANK DRAFT drawn on a UK bank, or add £25 to cover bank charges**

CHEQUE: I enclose the fee of: £ _____
* Please make draft/cheques payable to "IC CONSULTANTS LTD" *

CREDIT CARD: Please charge the following credit card for the total fee of: £ _____
Type of card: Visa Mastercard Switch Delta
(these cards ONLY) Issue No (Switch Only): _____

Card No:	Expiry date:	Security Code*:
Card in the name of:		

*Security code refers to last 3 digits on signature strip

INVOICE: Please invoice the following person/organisation for the sum of £ _____

Invoice/Ref. No.:	VAT No:
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Organisation:

Company Address:

For the attention of:

Position: Tel:

Other Information: Please delete where appropriate

◇ I heard of this course from; _____
.....
◇ I will / will not require special meals (e.g. Vegetarian). Please give details; _____
.....
◇ I will / will not need special facilities for a disability. Please give details; _____
.....
For accommodation booking, please contact Imperial College Accommodation Link on
Tel: +44 (0)20 7594 9507/11 Fax: +44 (0)20 7594 9504/5

I agree that if payment is not received from the above organisation, I will be personally liable for the full fee.

Applicant's Signature:

Please send completed form (or original if faxed) to:

Ulrika Wernmark,

Centre for Professional Development, Imperial College London Consultants,
South Kensington Campus, 58 Prince's Gate, London SW7 2PG, UK.

Tel: +44 (0)20 7594 6886; Fax: +44 (0)20 7594 6883;

Email: cpd@imperial.ac.uk

GENERAL INFORMATION

● Registration

Booking in the first instance can be made by

- Tel: +44 (0)20 7594 6886
- Fax: +44 (0)20 7594 6883
- Email: cpd@imperial.ac.uk,

and then by completing and returning the attached registration form to the address shown. Detailed joining instructions, including a map, will be sent to all participants 10-14 days prior to the commencement of the course. Places on the course are limited, EARLY BOOKING IS ADVISED.

● Fees

The full fee plus VAT for this two day course is £600 plus VAT £105 if booked before 18 August 2008 and £700 + VAT £122.50 after 18 August 2008, with discounts for academic and SECED members - please refer to registration form. The fee covers attendance at the course, course materials, lunches and light refreshments. Please note all fees must be received before the course start date.

● Team Attendance

A 20% discount on the course fee (applicable at the time of the booking) is available for the third and any subsequent applicants from the same organisation who enrol together.

● Venue

The course will be held at Imperial College London, South Kensington. Imperial is located in a pleasant part of London, close to Hyde Park, the Royal Albert Hall and world-renowned museums.

● Accommodation

Single bedroom accommodation is available in local hotels within easy access to the College. Minimum cost of a room with shower/bath will be in the region of £85 per night. A limited number of basic student accommodation is also available. This is additional to the course fee, and participants are responsible for payment of their hotel bills. For further details and reservations, please contact:

Accommodation Link
Imperial College London
Sheffield Building
London SW7 2AZ.

■ Tel: +44 (0)207 594 9507/11

■ Fax: +44 (0)207 594 9504/5

■ Information is available at: www.imperial.ac.uk/conferences

● Cancellations

A 10% administration fee will be levied for cancellations made up to two weeks prior to the start of the course. Cancellations thereafter will be liable to the loss of the full fee. Notice of cancellation must be given in writing by letter or fax and action will be taken to recover, from the delegates or their employers, that proportion of the fee owing at the time of cancellation.

Imperial College Consultants reserves the right to cancel an advertised course at short notice. It will endeavour to provide participants with as much notice as possible, but will not accept liability for costs incurred by participants or their organisations for the cancellation of travel arrangements and/or accommodation reservations as a result of the course being cancelled or postponed. If the course is cancelled, fees will be refunded in full. The College also reserves the right to postpone or make such alterations to the content of the course as may be necessary.

● Queries

Queries regarding the technical contents of the course may be addressed to:

Dr. Ahmed Elghazouli; Email: a.elghazouli@imperial.ac.uk

Queries regarding registration matters contact:

Ulrika Wernmark, Centre for Professional Development
Imperial College London Consultants,
58 Prince's Gate, London, SW7 2PG, UK

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