



ONE-DAY SEMINAR ON DESIGN OF COMPOSITE STEEL & CONCRETE STRUCTURES

Organized by
Hong Kong Institute of Steel Construction
Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University

Supported by
Civil and Joint Structural Divisions, The Hong Kong Institution of Engineers

Date:	24 February 2017
Time:	8:45 am (registration) for 9:00 am to 5:00 pm
Venue:	Room Z206, The Hong Kong Polytechnic University, Hungghom, Kowloon, HK

Introduction

Design of steel-concrete composite structures is a sustainable trend for building and civil engineering structures. It covers many forms of composite structural design and includes the most comprehensive and up-to-date set of design guidance currently available. This seminar aims to provide civil and structural engineers an insight to the various code provisions for the design of steel-concrete composite building structures. The seminar will cover behaviour and design of composite beams, columns, slabs, shear connectors, joints and frames as used in modern building construction. Cross references will be made between various codes, which are needed to develop design solutions. Practical examples with direct reference to the code clauses will be used to illustrate the application of the code requirements. Valuable experience in Singapore about the adoption of Eurocode and the textbook recently written by the speaker will be shared in this seminar.

Objectives

After attending the seminar, participants will be able to:

1. Understand the basic principles for the design of steel-concrete composite structures. In particular, they will develop an understanding of the procedures required for the design of composite beams, slabs, columns and connectors.
2. Design steel-concrete composite structures and their components to satisfy ultimate and serviceability limit states.
3. Navigate around Eurocode 4 and other related documents necessary for the design of building structures and
4. Develop economical design using the advantages of steel and concrete materials to achieve service integration with long-span floor construction.

Official Language

English will be the official language in the presentation. The notes of the seminar will be printed in English.

Programme

- Overview of Eurocodes; Key design principles in EC 4; Basis of design; Load combinations; Composite construction
- Simply supported composite beams; Moment and shear resistance; Examples.
- Shear connectors; partial composite design; Transverse reinforcement in slab; Examples.
- Serviceability design based on transformed section; Deflection and vibration checks; Prop and un-propped construction.
- Continuous composite beams; Hogging moment resistance; crack and uncrack analysis; Lateral torsional buckling check; Example.
- Types of metal decking; Composite floor construction; Construction and composite stage design; Shear bond tests.
- Efficient beam layout; Long span floor systems and options
- Composite columns; Design methodologies; Column Buckling; Members subject to axial force and moments; Method of analysis and column imperfection effect; Examples.
- Lateral load resisting systems; Outrigger and belt truss system; Joints types and detailing; Case studies

Speaker's profile

Er Prof. RICHARD LIEW *PhD, CEng, PE, ACPE, FSEng, FHKISC, FSSSS, StEr*

Richard Liew is a Professor in the Department of Civil & Environmental Engineering at the National University of Singapore. He is a Chartered Engineer in UK, a Professional Engineer in Singapore, and a Chartered Professional Engineer of the Association of Southeast Asian Nations. He is a Fellow of the Academy of Engineering Singapore, an Honorary Fellow and the Past President of Singapore Structural Steel Society and an Honorary Fellow of Hong Kong Institute of Steel Construction.

He has been involved in research and practice in steel concrete composite structures covering a wide spectrum of interests, including light-weight and high strength materials and advanced analysis of structures subject to extreme loads, for applications in offshore, marine, defence and civil infrastructural works. Arising from this work, he has co-authored 6 books and generated more than 400 technical publications. He serves on the editorial boards of 9 international journals.

He interacts closely with the industry in the Asia Pacific region serving as an expert and technical advisor and has been involved in numerous iconic steel projects. He chairs several international and national committees related to standards and specifications of steel and composite structures. He is a key person responsible for the development of Singapore's national annexes for the design and steel and composite structures using Eurocodes 3 and 4.

Registration fees

Please make your reservation as soon as possible. The registration includes lecture notes, CPD certificate and tea refreshment. Lunch is not included. The fees of the seminar are devised below:-

Programme	HKISC member	HKIA/HKIE/HKIS member	Others
One-day Seminar	HK\$ 900	HK\$ 1,000	HK\$ 1,200

Should you have further query, please do not hesitate to contact Mr. Sam CHAN at samchan@hkisc.org.

**ONE-DAY SEMINAR ON
 DESIGN OF COMPOSITE STEEL & CONCRETE STRUCTURES
 REGISTRATION FORM
 (To be received on or before 18 February 2017)**

Please follow the 2-step registration procedure:

1. Fax the completed registration form to *Mr Sam CHAN* (Fax: 852-2334 6389) for preliminary registration.
2. Post the completed registration form within 7 days together with a crossed cheque payable to **Hong Kong Institute of Steel Construction Limited** to *Mr Sam CHAN*, at:

The Hong Kong Institute of Steel Construction
 c/o Room ZS945, Department of Civil and Environmental Engineering,
 The Hong Kong Polytechnic University, Hungghom, Kowloon, Hong Kong
on or before 18 February 2017

To: Mr Sam CHAN

Fax: 852- 2334 6389

Personal Details:

Title	Name in full (Block Letter)	Name of Company	Tel.	Fax	E-mail address	Institution/ Membership No.
1.						
2.						
3.						
4.						
5.						

Item	Total no. of registration	Sub-total
1. Special registration (HKISC Member 's price)	_____ person(s)	= HK\$ _____
2. Special registration (HKIA/HKIE/HKIS Member's price)	_____ person(s)	= HK\$ _____
3. Regular registration (Other's price)	_____ person(s)	= HK\$ _____

Postal Address
(for official receipt):

I enclose a crossed cheque (no. _____) with a sum of HK\$ _____ for the registration fee of the captioned Seminar.

Signature: _____ Date: _____

CPD Certificate of Attendance Please tick the appropriate box to indicate your choice:

Yes, I/ we would like to have CPD certificate(s).
 Not request for certificate(s).