



The Hong Kong Institution of Engineers  
Joint Structural Division



香港  
鋼結構學會  
Hong Kong Institute of  
Steel Construction



Third announcement

## ONE-DAY WORKSHOP ON DESIGN OF BOLTED AND WELDED JOINTS TO EUROCODE 3: PART 1-8

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

Supported by  
Joint Structural Division, The Hong Kong Institution of Engineers

Organizing Sponsor  
Dextra Pacific Limited

Date:	29 July 2013 (Monday)
Time:	8:45 am (registration) for 9:00 am to 5:00 pm
Venue:	Room PQ303, The Hong Kong Polytechnic University, Hungghom, Kowloon, HK

### Overview

Connections form a very important part of any steel structure and integrity of the structure depends on them. Accurate details and specifications are required for fabrication to ensure trouble-free erection. There is a potential for achieving economy in designing and specifying connections which is the focus of this workshop. Results of recent research on steel connection detailing and fabrication will be briefly introduced. The workshop will focus on connection design specifications as set forth in the new Eurocode 3: Part 1-8: Design of joints. Course notes will include the relevant theoretical and practical background, and exemplify with worked examples which are useful and practical.

After participating in this course, you will be able to:

1. Achieve economy on your projects by the skills developed through participating on designing and detailing of connections under instructor guidance
2. Design bolted and welded connections as well as the combined bolted and welded connections for strength and stiffness
3. Apply methods learnt from the course to achieve economy in design, fabrication and erection of steel structures
4. Avoid common mistakes with lessons learned from case studies and collapse investigations

### Course Outline

- Overview of Eurocodes
- Characterisation and classification of joints
  - General information and detailing for bolted connection
  - Design of Non-preloaded bolts
    - Requirements for non-preloaded bolts
    - Shear resistance
    - Bearing resistance
    - Effect of steel packing
    - Effect of long joints
    - Bolts in tension
    - Bolts in shear and tension
    - Bolts in direct shear and torsion
    - Block shear tearing
  - Design of Preloaded bolts
    - Methods for tensioning friction-grip bolts
    - Slip resistant at ultimate
    - Slip resistant at serviceability
    - Torque on HSFG bolts

- Simple Connections
  - Simple beam-to-column connection
  - Typical beam-to-beam connection
  - Base connection resisting shear force
  - Base connection resisting compression and moment
  - Column splice
- Moment Connection
  - Rigid beam-to-column connection
- Material Weldability and common weld defects
  - o Chemical compositions and Carbon equivalent value
  - o Welding consumable
  - o Heat affected zone defects
  - o Hydrogen induced cracking
  - o Welding of special steel
- Code requirements for welded connections
  - Details of fillet welds
  - Design of fillet welds
    - Simplified method
    - Directional method
  - Partial strength and full strength butt welds
  - Welding of hollow sections
- Examples and collapse investigations

*Who Should Attend*

Structural designers, consulting engineers, detailers, specification writers, civil engineers in infrastructural industries, technicians and technologists, fabricators and erectors of steel structures.

**Speaker’s profile**

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

Richard Liew is a Professor and the Program Director of Hazard, Risk and Mitigation 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 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 5 books and generated more than 300 technical publications. He serves on the editorial boards of 10 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 numerous 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.

**Official Language and 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 workshop are devised below.

One-day Workshop Registration Fee	HKISC member	HKIE member and Group of 5 +	Others
	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](mailto:samchan@hkisc.org).



The Hong Kong Institution of Engineers

Joint Structural Division



香港  
鋼結構學會  
Hong Kong Institute of  
Steel Construction



**ONE-DAY WORKSHOP ON  
DESIGN OF BOLTED AND WELDED JOINTS TO EUROCODE 3: PART 1-8**

**REGISTRATION FORM  
(To be received on or before 25 July 2013)**

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, Hunghom, Kowloon, Hong Kong

**on or before 25 July 2013**

**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 Workshop.

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).