Second announcement

香港理工大學, 土木及環境工程學系
THE HONG KONG POLYTECHNIC UNIVERSITY
Department of Civil and Environmental Engineering

香港
鋼結構學會
Hong Kong Institute of Steel Construction

Structural Division

HALF-DAY SEMINAR ON MODULAR CONSTRUCTION AND PREFABRICATION – INNOVATION, SUSTAINABILITY, EFFICIENCY AND QUALITY

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

Supported by
Structural Division, The Hong Kong Institution of Engineers

Date:	20 September 2018
Time:	8:45 am (registration) for 9:00 am to 12:30 pm
Venue:	Y305, The Hong Kong Polytechnic University, Hunghom, Kowloon, Hong Kong

Introduction

Due to the shortage of workforce and limited land use, many cities like Hong Kong is heading to the direction of improving construction efficiency by adopting more efficient construction method such as DfMA to building high-rise buildings. The traditional prefabricated/precast 2D construction is now being migrated to prefabricated prefinished volumetric construction (PPVC), whereby free-standing volumetric (3D) modules, completed with finishes for walls, floors and ceilings, are constructed and assembled at site. However, PPVC is not commonly used in high-rise buildings because of the joints' flexibility as well as stringent requirement for manufacturing and construction tolerance, which have significant impact on the overall stability of the building. This seminar highlights the existing challenges of PPVC of high-rise buildings and provide pointers to address these challenges. Firstly, the weight of a module is constrained by the transportation and lifting crane capacities. For this reason, lightweight material is introduced together with structural steel section to form lightweight steel-concrete composite system to reduce the weight of the module without compromising the strength and stiffness. Secondly, to speed up the site assembly of modular units, special joints are developed to resist the forces due to gravity and horizontal loads. Fast and easy joining techniques with acceptable tolerance control are essential to ensure the structural integrity and stability of the building. Finally, the innovation for productivity can be maximized by implementing automation technologies in the manufacturing and construction of the modular units. The seminar will discuss several projects that utilise PPVC technology for multi-storey construction. The construction of a large span roof structure using bolted design concept and prefabricated steel components and semi-rigid joints will be presented to illustrate the benefit of prefabrication technology.

Objectives

The seminar provides essential information to engage the design team, subcontractors, and owner to plan for prefabrication in the design phase. After the seminar, the participants should be able to

- Recognize opportunities to implement a prefabrication strategy in different project delivery methods
- understand how BIM plays an important role in early decision making, collaboration, and coordination of multiple trades
- understand the potential cost savings and productivity increase when implementing modular construction
- Learn how to design for modular construction and understand how to implement in construction
- Learn from projects that adopt prefabricated modular construction.

Programme

Time	Topics
0900-1000	Overcoming shortages of skills and land. Advantages of modular construction. Prefabrication and prefinished volumetric construction of building. Design issues related to manufacturing and assembly. Weight and size limitation. Transportation and installation.
1000-1030	Load bearing concrete modular system. Corner supported steel modular system. Advanced structural design using steel-Concrete Composite for prefabrication. Slim Floor and composite columns. Novel Joints for fast installation. Structural analysis and modelling. Robustness requirement. Fire safety requirement. Case study: modular construction in health care and aged case sector. Case study on multistory buildings.
1030-1100	**Tea Break**
1100-1230	Advances on architectural and structural design for prefabrication. Factory automation and robotic welding. Bolted design and fast installation technique. Case study on long span roof structure.

Official Language

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

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 in 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. He 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$ 700	HK$ 800	HK$ 900

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

Department of Civil and Environmental Engineering
土木及環境工程學系
香港理工大學, 土木及環境工程學系
The Hong Kong Polytechnic University
Department of Civil and Environmental Engineering

香港
鋼結構學會
Hong Kong Institute of Steel Construction

HKIE The Hong Kong Institution of Engineers 香港工程師學會
Structural Division

HALF-DAY SEMINAR ON MODULAR INTEGRATED CONSTRUCTION REGISTRATION FORM

(To be received on or before 9th September 2018)

Please follow the 2-step registration procedure:
1. Fax the completed registration form to *Mr Tommy LI* (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 Tommy LI*, 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 befor 9 September 2018

To: Mr Tommy LI **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).