

INCREASING PRODUCTIVITY : NEW DEVELOPMENTS IN CONSTRUCTION METHODS & MATERIALS – 6th RUN

By: Er Teo Ee Huat

Introduction

Development projects are increasingly demanding as the clients becomes more sophisticated and requires their project to be built with better productivity and sustainability. At the same time, over the years there has been a gradual accumulation of practical experience around the world on specific methods of construction like prefabricated-prefinished volumetric construction (PPVC) and materials like self-compacting concrete (SCC) and cross laminated timber (CLT).

These materials and method of construction may be considered as a means to achieve sustainability and improve productivity under the right conditions. Stakeholders (Designers, Resident Engineers, Resident Technical Officers, Site Supervisors, etc) would need to have some understanding of how these materials and method can be used as they might be handling projects involving them.

Objective

The objective of the programme is to let stakeholders understand the basic issues related to PPVC. Participants will also learn about what is SCC and the types of site/laboratory testing that can be done on SCC. The handling of CLT including connections and lifting of members together with performance attributes like sound control and fire insulation will be shared with participants. The programme will cover the different Constituent Materials with reference to the SS 544 Part 2 Concrete – Complementary Singapore Standard to SS EN 206 – Part 2: Specification for Constituent Materials and Concrete.

Speaker Profile

Er. Teo Ee Huat graduated from Nanyang Technological University with a B.ENG (Civil) degree in 1996 and has since completed his MSc in Civil Engineering (NUS) and MSc in International Construction Management (NTU). He is actively involved in education and has completed his M.Ed with University of Western Australia in 2010. He is a Singapore registered Professional Engineer and Qualified Erosion Control Professional. He is currently serving as the Co-Chairman of Qualified Erosion Control Professional Panel, IES and has trained Professional Engineers as Qualified Erosion Control Professionals and also trained construction site supervisors in implementation, inspection and maintenance of Earth Control Measures. He has written papers in International journals on issues related to Construction Management and other issues.

Programme Details

| | |
|---------------|--|
| Date: | 24 January 2018, Wednesday |
| Duration: | 6 hours |
| Course time: | 3pm – 10pm |
| Course venue: | IES Academy@Jurong East 80 Jurong East Street 21 #04-10 Devan Nair Institute (for e2i) Singapore 609607 |
| CPD: | 6 STU(Structural), 6 PDU (To confirm) |
| Course fee*: | \$246.10 (IES Members) \$288.90 (Non Members) *Inclusive of 7% GST |
| | • Certificate of Attendance will be given to participants with 100% attendance |

Course Outline

| <u>Time</u> | <u>Topics Discussed</u> |
|--------------------|--|
| 3.00pm – 4.00pm | Prefabricated-Prefinished Volumetric Construction (PPVC) |
| 4.00pm – 4.15pm | Tea Break |
| 4.15pm – 4.45pm | Introduction to Cross-laminated timber (CLT) |
| 4.45pm – 5.15pm | Connections in CLT |
| 5.15pm – 5.45pm | Performance of CLT in Fire / Sound |
| 5.45pm – 6.15pm | Lifting and handling of CTL members |
| 6.15pm – 7.00pm | Dinner |
| 7.00pm – 7.15pm | Definition and history of SCC |
| 7.15pm 7.30pm | Benefits of SCC |
| 7.30pm – 8.00pm | Constituent materials: Coarse aggregates |
| 8.00pm – 8.30pm | Constituent materials: Cements and additions |
| 8.30pm – 9.00pm | Constituent materials: Admixtures and fibres |
| 9.00pm – 10.00pm | Test for key properties of fresh SCC |

REGISTRATION FORM**Increasing Productivity: New Developments in Construction Method & Materials – 6th Run****Eligible for SkillsFuture Credit Claim*****Terms & Conditions apply***

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| Duration: | 6 hours |
| Venue: (to confirm) | IES Academy@Jurong East 80 Jurong East Street 21 #04-10 Devan Nair Institute (e2i) S(609607) |
| Course Fee: | \$246.10(IES Members); \$288.90 (Non Members) |
| CPD Programme: | 6STU(Structural) – confirmed / 6 PDU (to confirm) |
| Course Coordination: | Florence Lee Contact: 6460 4248 Fax: 6563 6030 Email: florence.lee@iesnet.org.sg |
| Closing Date for Registration: | 01 December 2017 or till class is full (whichever comes first) |

Participant's Details:

| | | | |
|---------------------|--|-------------------------------------|---|
| Name (As per NRIC): | | Nric/Fin: | |
| Company: | | Designation: | |
| Address: | | | |
| | | Postal Code: | |
| Office No: | | Mobile: | |
| Email: | | Fax: | |
| Please indicate: | <input type="checkbox"/> IES Member No: | <input type="checkbox"/> Non Member | <input type="checkbox"/> RTO/RE/PE No: |
| | <input type="checkbox"/> Sponsored Company | by | <input type="checkbox"/> Special Meal Request ~ Vegetarian (no egg, garlic and onion) |

Contact Person (HR/Accounts Department)

| | | | |
|-----------------------------------|----------------------|--------------|--|
| Name: | | Designation: | |
| Contact Number: | | Fax: | |
| Email: | | | |
| Address (For mailing of invoice): | | | |
| Payment: | Cash/Nets/Cheque No: | Amount: | |

- Cheque to be made payable to 'ENGINEERS SINGAPORE PTE LTD'
- Written notice via email to course coordinator is required for Cancellation or Withdrawal from Course, 7 working days prior to course date
- Course fees are inclusive of 7% GST, course materials and Halal refreshments
- Certificate of Attendance will be issued to participants with 100% Attendance
- No-Show of participant would not be accepted as reason for withdrawal or cancellation from course. Thus course fee is chargeable
- One-time replacement of participant is allowed with written notice to course coordinator, 3 working days prior to course date. Fee top-up is applicable between IES member's course fee and non-member's

Acceptance of Terms & Conditions for Registration of IES Academy Courses / Events
I have read, deemed understood and accept the Terms & Conditions of IES Academy courses and events.

Name:

Signature:

Date:

TERMS & CONDITIONS COURSE REGISTRATION

Registration

Any registration, whether on-line or fax will be on a ***first-come-first-served basis*** and will only be confirmed upon receipt of full payment by Engineers Singapore Pte Ltd unless otherwise invoice to company.

All registrations must be submitted with duly completed registration form.

Closing Date & Payment

The closing date of the event will be 1 week prior to event commencement date or earlier. Cheques should be crossed 'A/C payee only' and made payable to '**Engineers Singapore Pte Ltd**', with the ***Title of The Event indicated clearly written on the back of the cheques***, and submitted with the duly completed registration forms to:

IES Academy@Jurong East
Devan Nair Institute for Employment and Employability,
80 Jurong East Street 21, #04-10
Singapore 609607

Confirmation of Registration

Confirmation of registration will be given at least 1 week before the commencement date via email. ***If you do not receive the said confirmation email, you are required to contact IESA at 6463 9211 during office hours.***

IESA reserves the right to allow only confirmed registrants to attend the Event.

Withdrawals/Refunds of Fees

Written notice ***at least 1 week in advance*** before the commencement of the event

Full course fee shall be refunded subjected to 4.5% transaction charge.

➤ **NO** refund otherwise.

No show of participant would not be accepted as a valid reason for withdrawal/refund.

One time replacement is allowed only if written notice is received by us at least 1 week before the commencement of the event. However, when an IES member is replaced by a non-member, the participant has to pay the difference in the relevant fees.

Cancellation/Postponement

Changes in Venue, Dates, Time and Speakers for the Events can occur due to unforeseen circumstances. IES reserves the full rights to cancel or postpone the Event under such circumstances without prior reasons. Every effort, however, will be made to inform the participants or contact person of any cancellation or postponement.

Fees will be refunded in FULL if any Event is cancelled by IESA.

UTAP (Union Training Assistance Programme) is an individual skills upgrading account especially for NTUC members. As a member, you enjoy UTAP funding at 50% of the unfunded course fee capped at \$250 every year.

SkillsFuture Credit (SFC) "All Singaporeans aged 25 and above can use their \$500 SkillsFuture Credit from the government to pay for a wide range of approved skills-related courses. Visit the SkillsFuture Credit website (www.skillsfuture.sg/credit) to choose from the courses available on the SkillsFuture Credit course directory."

Please visit [here](#) for more information on SFC & UTAP claim.

PERSONAL DATA PROTECTION ACT

I consent to the processing by Institution of Engineers, Singapore of personal data, including sensitive personal data as defined in the Data Protection Act 2014, about me for the proper purposes of Institution of Engineers, Singapore (IES). I undertake to observe the provisions of the Data Protection Act 2014 in relation to any personal data I may myself hold and process as a Members of Institution of Engineers, Singapore, and I agree to indemnify Institution of Engineers, Singapore from liability for any claims or damages that may arise from the processing of this data. For more information kindly refer to [here](#).

Enquiries

For further enquiries, please contact IESA general office at Tel: 6463 9211.