



The Institution of  
**StructuralEngineers**

# **1-DAY WORKSHOP ON “CONCEPTUAL DESIGN OF STRUCTURES”**

**SPEAKER:**

**Mr Rajavel Inbarajan**

**Date** : 02<sup>ND</sup> OCTOBER 2019 (Wednesday)  
**Venue** : Ballroom, Level 3  
ARMADA HOTEL, Petaling Jaya, Selangor  
**Time** : 9.00 a.m. – 5.30 p.m.

**BEM Approved CPD/PDP Hours: 6.5  
(IEM19/HQ/256/W)**

**Closing Date: 27<sup>TH</sup> SEPTEMBER 2019**

**NO online registration will be allowed after the Closing Date**

**Jointly Organized & Hosted by:**

**Civil & Structural Engineering Technical Division (CSETD), IEM and  
The Institution of Structural Engineers, Malaysia Regional Group (IStructE)**

**Cancellation Policy**

No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with 7 days prior notification and substitute will be charged according to membership status.

**Personal Data Protection Act**

I have read and understood the IEM's Personal Data Protection Notice published on IEM's website at <http://www.myiem.org.my> and I agree to IEM's use and processing of my personal data as set out in the said notice.

## SYNOPSIS

The workshop, *inter alia*, mainly covers the essentials for the Conceptual Design of Buildings and Structures. It is a well known and accepted fact that appreciation of the history of civil/structural engineering and the need for maintaining the structural heritage always offer the vital inspiration needed for the cumulative development of arts and science of conceptual design of structures.

The workshop covers the conceptual design process adopted in real practice and will give candidates the opportunities to appreciate the creativeness demanded by the functional requirements and other inherent conditions in the development of structural design. The workshop also covers the guide to structural robustness and disproportionate collapse in buildings.

Concept design example will be explained in the Workshop and participants are expected to solve design examples. Therefore, the participants are requested to bring their own calculators. In addition, probable solutions for past years Chartered Membership Examination questions will be explained for the benefit of the enthusiastic young engineers who wish excel in the concept design of structures and for those aspiring engineers who wish to sit the world renowned 7-hour Chartered Membership Examination of the IStructE in future.

## WHO SHOULD ATTEND

This workshop is suitable for practicing civil and structural engineers, young engineers in their formative years, engineering students and academics who wish to enhance their knowledge and understanding on the conceptual design of buildings and structures.

## SPEAKER

**Mr Rajavel Inbarajan**  
**MIStructE, DIC, MSc(Lond), BE(Madras)**

**Mr Rajavel Inbarajan** obtained his BE (First Class with Distinction) in Civil Engineering from the University of Madras in 1988 and then obtained his MSc and DIC in Concrete Structures from the University of London and Imperial College London in 1997. He is a Corporate Member of the Institution of Structural Engineers (IStructE), UK, since 2004. The IStructE appointed him as an Examiner for the Chartered Membership Examination (CME) in 2008. He continues in this prestigious role ever since. He is one of the Chief Examiners for the January 2019 CME.

He has more than 25 years of quality and varied experience in conceptual design, detailed design and project management of very large structural and civil engineering projects in international and cross cultural set-up. He had been working with reputable International Consultants and Contractors in very large engineering projects with increasing responsibilities in Qatar, United Arab Emirates, Saudi Arabia, Oman, Singapore, Sri Lanka and India since 1988. His experience broadly covers the design and construction of high rise buildings, bridges, underground/above ground metro stations, mega water retaining structures/reservoirs, and the investigation/rectification of very large marine structures.

He had conducted seminars on Advance Structural Engineering, Water Retaining Structures and Investigation and Strengthening of Concrete Structures in Malaysia, Qatar and Sri Lanka previously. He has been delivering talks on CME and training enthusiastic candidates globally in their preparation for CME. Recently, he provided probable solution for the CME questions for publication in the examination preparation CD and the website of the IStructE.

## PROGRAMME

08:30 - 09:00	<b>Registration of Participants</b>
09:00 – 10:30	<b>Session 1:</b> <b>Inspiration - History and Heritage</b> <ul style="list-style-type: none"> <li>❖ Overview of history of civil/structural engineering</li> <li>❖ Appreciation of structural heritage</li> <li>❖ Structural forms/systems adopted in ancient structures</li> </ul>
10:30 – 10:50	Morning Tea Break
10:50 – 12:30	<b>Session 2:</b> <b>Creativity - Conceptual Design Process</b> <ul style="list-style-type: none"> <li>❖ Aim &amp; Communication of structural design</li> <li>❖ Formulating design criteria</li> <li>❖ Various structural forms and their selection/optimization</li> <li>❖ Tools – Thumb rules/approximate analysis/ 2D &amp; 3D analysis/ parametric design</li> </ul>
12:30 – 1:30	Lunch Break
1:30 – 3:30	<b>Session 3:</b> <b>Guide to Structural Robustness and disproportionate collapse</b> <ul style="list-style-type: none"> <li>❖ Concept of robustness</li> <li>❖ Regulations / codes/supporting documents and their interpretation</li> <li>❖ Designing for robustness</li> <li>❖ Issues and solutions – RC, PC, Steel, Timber and Masonry</li> </ul>
3:30 – 3:50	Afternoon Tea Break
3:50 – 5:15	<b>Session 4:</b> <b>Case Studies/Tutorials based on IStructE Chartered Membership Examination</b> <ul style="list-style-type: none"> <li>❖ Library building</li> <li>❖ New generator building</li> <li>❖ New city centre office block</li> <li>❖ Water tank</li> </ul>
5.15 – 5:30	Feedback / Questionnaires End of Workshop

**\* IEM reserves the right to postpone, reschedule, allocate or cancel the course.**

# REGISTRATION FORMS

## 1-DAY WORKSHOP ON "CONCEPTUAL DESIGN OF STRUCTURES"

Jointly Organised by : Civil & Structural Engineering Technical Division & The Institution of Structural Engineers, Malaysia Regional Group (IStructE)

02<sup>ND</sup> OCTOBER 2019 (Wednesday)

Fax: 03-7957 7678      Email: [shahrul@iem.org.my](mailto:shahrul@iem.org.my)

REGISTRATION FEE (SUBJECT TO 6% SST)		
	ONLINE FEE (RM)	NORMAL FEE (RM) (via Email/Walk In)
IEM Student Members	150.00	180.00
IEM Graduate Members	250.00	300.00
IEM Corporate Members	400.00	450.00
Non-IEM Members	550.00	600.00
IStructE Members	Strictly Registration via Normal as per IEM's Members Rates	

No	Name(s)	Membership No.	Grade	Fee (RM)*
SUB TOTAL				
ADD 6% SST				
<i>Total Payable</i>				

**PAYMENT DETAILS :**

Cash RM \_\_\_\_\_

Cheque no. \_\_\_\_\_ for the amount of RM \_\_\_\_\_ (non refundable) and made payable. **"THE INSTITUTION OF ENGINEERS, MALAYSIA"** and crossed 'A/C Payee Only'  
**Bank Account No. : 640320010020215, Bank Name: Alliance Bank Malaysia Berhad**

**FULL PAYMENT must be settled before commencement of the seminar**, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participant fails to attend the course, the fee is to be settled in full. If the participant failed to attend the course, the fee paid is non refundable. The Registration Fee includes lecture notes, refreshment and lunch.

For **ONLINE REGISTRATIONS**, please note that payment **MUST** be made **BEFORE the closing date**. If payment is not received within the stipulated time, the registration fee will be reverted to the normal registration fee.

Contact Person: \_\_\_\_\_ Designation: \_\_\_\_\_

Name of Organization : \_\_\_\_\_

Address : \_\_\_\_\_

Telephone No. : \_\_\_\_\_ (O)      Fax No : \_\_\_\_\_ (O)

Handphone: \_\_\_\_\_ (HP)      Email: \_\_\_\_\_

Signature & Stamp \_\_\_\_\_

Date \_\_\_\_\_

**Terms & Conditions:**

- For ONLINE REGISTRATIONS, only ONLINE PAYMENT is applicable [via RHB and Maybank2u –Personal Saving & Personal Current ; Credit Card - Visa/Master.
- Payment via CASH / CHEQUE / BANK-IN TRANSMISSION / BANK DRAFT / MONEY ORDER / POSTAL ORDER / LO / WALK -IN will be considered as NORMAL REGISTRATION
- **FULL PAYMENT** must be settled before commencement of the course, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participants fail to attend the course, the fee is to be settled in full. If the participant failed to attend the course, the fee paid is non refundable. Registration fee includes lecture notes, refreshment.
- The Organizing Committee reserves the right to cancel, alter, or change the program due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, intending participants are advised to send their registrations as early as possible so as to avoid disappointment.

**For further details, kindly contact:**

The Institution of Engineers, Malaysia  
Bangunan Ingenieur, Lots 60/62, Jalan 52/4, P.O. Box 223 (Jalan Sultan), 46720 Petaling Jaya, Selangor  
Tel: 603-7968 4001/2 Fax : 603-7957 7678 Email : [shahrul@iem.org.my](mailto:shahrul@iem.org.my)

# ADVERTISEMENT BOOKING FORM (PROCEEDING MATERIALS)

## 1-DAY WORKSHOP ON “CONCEPTUAL DESIGN OF STRUCTURES” 02<sup>ND</sup> OCTOBER 2019 (Wednesday)

Jointly Organised by :  
Civil and Structural Technical Division (CSETD), The Institution of Engineers, Malaysia &  
The Institution of Structural Engineers, Malaysia Regional Group (IStructE)  
No. 60/62, Jalan 52/4, P.O. Box 223 (Jalan Sultan), 46720 Petaling Jaya, Selangor  
Tel No. 03-79684001/26 Fax No. 03-79577678 Email: [shahrul@iem.org.my](mailto:shahrul@iem.org.my)

**Ir. Chong Chee Meng,**  
Chairman, Civil & Structural Engineering Technical Division (CSETD)

We would like to place an advertisement in the bound volume of the **1-DAY WORKSHOP (02<sup>ND</sup> OCTOBER 2019)** materials as indicated below and attach herewith a cheque no. .... for the sum of RM ..... made payable to “**THE INSTITUTION OF ENGINEERS, MALAYSIA**” being our booking fees:-

Tick (v)	Location	Advertisement Rates (PLS ADD-IN 6% SST CHARGES)	Complimentary Participant Seat
	Outside Back Page (Colour)	RM 6,000.00	3 seats
	Inside Front Page (Colour)	RM 4,500.00	2 seats
	Inside Back Page (Colour)	RM 4,500.00	2 seats
	Inside Run of Page (Colour)	RM 2,500.00	1 seat

**\*Advertisement Artwork must be accompanied with Payment before printing.**

**For Company that would like to take up 'Exhibition Booth', kindly contact the CSETD Secretariat directly as the price for Exhibition Booth is different than the above.**

**Payment information:**

✓ Account Name : THE INSTITUTION OF ENGINEERS, MALAYSIA
✓ Account Number: 6403-200-1002-0215
✓ Bank Name : ALLIANCE BANK MALAYSIA BERHAD
✓ Bank Address : NO 53 & 55, JALAN SS2/55, 47300 PETALING JAYA, SELANGOR
✓ Swift Code : MFBBMYKL

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Company Stamp: