



Members' Night of IStructE Singapore Regional Group 2012

90 members gathered at the Marriott Hotel for a night of fellowship over dinner. Honoured guests for the evening include Prof S.K. Chow (President, IES), Emeritus Prof S.L. Lee and Er. S.H. Ong (Deputy CEO of Building and Construction Authority and Commissioner of Building Control).

The evening proceedings featured:

- a talk on iconic structures in Doha and the Middle East by Mr K.R. Inbarajan (Manager, GHD)
- powerpoint presentations on IStructE Singapore Group and its activities, shortlisted structures for the IStructE UK Structural Awards, and best photographs taken in 2012
- a special Dizi and Zhong-Ruan Chinese musical instrument performance by Mr Ong Ting Kai and Mr Ser Yang
- presentation of 2012 Service Award Certificates to IES/IStructE Joint Committee Members
- presentation of Congratulatory Certificates to Mr Kong Kian Hau, Mr Yuan Zhen, and Mr Victor Yung Kwing Tai who passed their Chartered Membership Exam held in April this year. Mr. Jeremy Gilmore was the fourth candidate who passed the exam but was unable to be present due to a prior commitment elsewhere.
- presentation of Congratulatory Certificates to tertiary institution recipients of IStructE Singapore Division Gold Medal and Book Prizes, i.e. Mr Tan Kian Keng from the National University of Singapore, Mr Hoach Tuan Kiet from the Nanyang Technological University and Mr Alvin Foong Guowei from Singapore Polytechnic.
- presentation of token of appreciation to Ms Jasmine Chua, Ms Chloe Koh and Ms Angela Loke who have assisted greatly the IES/IStructE Joint Committee in organizing the activities.



Inbarajan giving a talk on iconic structures in Middle East



Chinese musical instrument performance

A grand members' night is planned for next year to celebrate the 25th birthday of the IStructE Singapore Group. So be on the look-out for the announcement of this event.

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Dear readers, Thank you for taking time to read this newsletter. We appreciate your continued support and would also like to hear from you for whatever reasons. Please direct all your correspondence and inquiries to:

IES/IStructE Joint Committee (2011-2012)

Prof. Wang Chien Ming (Chairman)
ceewcm@nus.edu.sg
Er. Dr. Ho Kwong Meng (Vice-Chairman)
hokm@starhub.net.sg
Er. Dr. A/Prof. Lok Tat Seng (Hon. Secretary)
ctslok@ntu.edu.sg
Dr. Boh Jaw Woei (Hon. Treasurer)
jwboh@hotmail.com
Er. Wijaya Wong (Hon. Asst Secretary)
Wijaya.Wong@arup.com
Er. Jeslin Quek (Hon. Asst Treasurer)
jeslinquek@fyfeasia.com
Er. Sam Tan
Sam.tan@bmtasia.com.sg
Er. Seow Hong Chiow
hc@sce.com.sg
Er. Mak Yew Cheong
Mak.yew.cheong@pmlink.com.sg
Er. Mah Guan Pang
maba.cnsac@pacific.net.sg
Er. Ang Chee Keong
angcheekeong@gmail.com
Er. Cong Zheng Xia
congzhengxia@yahoo.com.sg
Er. Steve Yeung
Steve.Yeung@worleyparsons.com
Er. Kang Jianhan
jianhankang@gmail.com
Er. Reve Chin
Jen_yee_chin@hotmail.com

The Structuralist Editorial Sub-Committee

Editor: Er. Kang Jianhan
Advisors: Prof. Wang Chien Ming
Er. A/Prof. Lok Tat Seng
Dr. Boh Jaw Woei

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Jeslin and Prof Chow



Angela and Jasmine

Trip to Ho Chi Minh City and University

Prof Wang Chien Ming, Er. Wijaya Wong and Er. Mah Guan Pang visited Ho Chi Minh City on 25 May 2012. In this visit, they

- presented the IStructE Singapore Division Gold Medals 2012 to the top civil engineering student and best structural mechanics student in Ho Chi Minh University of Technology
- introduced the Institution of Structural Engineers to 77 staff and students of HCM University and delivered lectures on "relationships between solutions of classical beam/plate theories and shear deformable beam/plate theories" and the "design and construction of the Marina Bay Sands hotel"
- discussed with several structural engineers on the formation of the IStructE Vietnam Group in the near future



Prof Wang, Mr Tran Ngoc Tu (top civil engineering student) and Prof Do Kien Quoc (Head of Civil Engineering Department)



Prof Wang and Mr Chau Van Thanh (best structural mechanics student)



Er. Wijaya Wong and Prof Wang giving their lectures



Staff and students of Ho Chi Minh University

In this trip, Prof Wang and Mah Guan Pang had the opportunity to visit Monkey Island, about 50km from Ho Chi Minh City. Monkey Island has about 1000 monkeys. On Monkey Island, they were taken on a motor-boat to the Vietcong hideout in the mangrove forest. They learned that these 1000 Vietcong guerillas staged many attacks on the US forces in the city. One notable achievement is the destruction of the huge oil storage facility that supplies fuel to 50% of military needs and 50% of civilian needs. Two of the guerillas blew themselves up to set fire to the oil storage facility and the fire burned for 12 days. In the mangrove forest, the guerillas not only had to contend with the constant shelling of their camp by the US forces but also the numerous crocodiles and the malaria-spreading mosquitoes.



Core Members of Future IStructE Vietnam Group



Mother's Love



Exhibit of guerillas who are planning to blow up the oil storage facility. Note the H-shape bunker in the foreground

IStructE Meetings in Edinburgh, July 2012

Council Member A/Prof Francis Lok and IStructE Singapore Group Chairman Prof C.M. Wang attended the International Interest Group (IIG) Meeting, the AGM and the IStructE Council Meeting held in the Surgeon's Hall of Edinburgh University from 19-20th July 2012. Members of the IIG discussed on what changes are to be made to the Institution's examinations to correspond with industry and world trends. Suggestions include:

- making the exam questions code-neutral and language-neutral given the fact that approximately half of 750 candidates taking the examination are from non-UK countries,
- specifying clearly the learning outcomes of the exam so that the questions may be set to test these learning outcomes, and
- tweaking the exams to use the current language such as carbon embodiment and sustainable design and construction.



Prof Wang and A/Prof Lok at the Royal College of Surgeons, Edinburgh

All suggestions have been submitted to the IStructE Executive Board for deliberation. In the AGM, members received the Financial Statements and Balance Sheet for year 2011, Auditors' Report, Board Report and the reappointment of DDO LLP as the Institution Auditors. Members also adopted the proposed annual subscriptions for 2013, i.e. £362 for Fellow, £281 for Member and Associate, £183 for Associate Member, £142 for Technician Member and £137 for Graduate, Companion and Student (working).

In the Council meeting, members met in groups to discuss a range of topics relating to membership of the Institution that includes:

- The family-friendly Institution,
- Primary purpose of Institution Regional Groups,
- Improving the support provided to members, and
- The cost of providing value added services.

Also discussed was the engineering blueprint for an international Institution that covers topics such as "An inspirational and aspirational outward facing articulation about structural engineering", "Dynamics, earthquakes and extreme events", "Exploitation of materials", and "Creating global networks of interest".

Asia-Pacific Conference: Cradle-to-Cradle Structures in Transportation Engineering on Monday 10th September 2012.

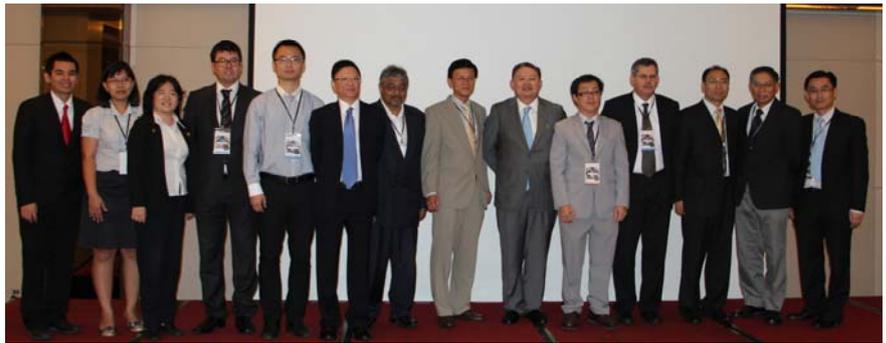
Every year the IStructE Regional Groups in Asia Pacific take turns to organise the annual Asia Pacific Conference. This year the conference was held in Kuala Lumpur, Malaysia on 10 September. The theme of the conference was "Cradle-to-Cradle Structures in Transportation Engineering" which looked at the challenges and recent developments that this 21st century have progressed in the field of transportation.

Cradle to Cradle design, often designated as Cradle to Cradle, C2C, cradle 2 cradle, is a biomimetic approach to the design of products, systems and infrastructure. It models after nature's processes in human, viewing materials as nutrients circulating in healthy and safe metabolisms. It suggests that industry must protect and enrich ecosystems and nature's biological metabolism, while maintaining a safe and productive technical metabolism for quality use and circulation of organic and technical nutrients. It is, in short, a holistic framework that seeks to create systems that are not only efficient but essentially waste free.



Er Mak Yew Cheong giving his lecture

Four IES-IStructE Joint Committee members represented the Singapore Regional Group in the conference. In addition, Er Mak Yew Cheong from the Committee presented a paper on “Design and Build Construction of North East Line Chinatown MRT Station in Singapore”. He was the design manager of the project. He talked about the planning, design and construction as well as some of the technical challenges experienced. The presentation was well received by the audience.



Conference organising committee and speakers

The IStructE Singapore Group will organize the next IStructE Asia Pacific Conference in November 2013. The theme for the conference is on Future Cities.

Course on Seismic Analysis and Design of Buildings, 26 Sep 2012

Although *Singapore* is at some distance from any tectonic plate boundaries, large magnitude earthquakes generated from the neighbouring island of *Sumatra*, and from offshore of *Sumatra*, have been widely felt in the city. In recent years, the level of ground shaking has become more intense. So it is not surprising that the course on Seismic Analysis and Design for Buildings attracted over 80 structural engineers.

Prof Nelson Lam, Reader in the Department of Civil Engineering, Melbourne University, who is an expert on earthquake engineering and structural dynamics, presented the latest estimates of seismic loading associated with various critical projected earthquake scenarios in Singapore and Malaysia which should be considered by engineers. He also covered the *Theory and Practice of Structural Dynamics*, *Seismic Design Principles and Analysis Methodology of Buildings* as per the *Eurocode (EC8)* and *Response Spectrum Modal Analysis* procedure which is particularly suited to the assessment of tall buildings.

Prof Koh Chan Ghee, who conducts extensive research and in the provision of consultancy services on structural dynamics, also gave a great lecture on various major seismic Codes of Practices such as UBC97, IBC2006 and EC8, and presented a case study of a 20-storey reinforced concrete building to show the similarities and the differences in the various Codes.

The participants enjoyed the course because a “complicated academic subject was delivered at the level suitable for practicing engineers to appreciate and understand”.



Prof Nelson Lam from Melbourne University



Prof Koh Chan Ghee from National University of Singapore



Participants of the course on Seismic Analysis and Design for Buildings

Interview of Successful Candidates of CME 2012

IStructE Singapore Group conducted an interview on the successful candidates who passed the Chartered Membership Exam 2012. The new chartered structural engineers, Mr. Yuan Zhen (YZ) and Mr. Victor Yung (VY) shared their insights on CME and experiences during preparation.

Q: How do you find the IStructE CME 2012 paper?

YZ and VY: This year's question was reasonably difficult and gave the candidates a fair chance to demonstrate their knowledge and experience.

Q: How long did it take you to prepare for the exam this year?

YZ: Preparation for the exam lasted about 4 months on part-time basis. One candidate shared his experience that collection of relevant documents took about 3 months. This is followed by intensive mock-exam practices about 4 weekends and another 4 full-days before the exam.

Q: Did you take any course to prepare yourself for the CM exam? If you have taken the IStructE Singapore Group CME preparatory course, was it helpful?

YZ: I took the IStructE Singapore Group CME preparatory course two years ago in 2010. Although I did not sit that year's exam, I found it was really helpful in content & experience-sharing and also in setting right mind-set and boosting self-confidence.

Q: Which one of the questions did you choose and why did you choose it?

YZ: I chose Question 1 because the building has a fairly regular layout and section. It also fits nicely with a steel-framed structure.

VY: Question 5, mixed use development with basement. I have experience in both mixed use development and deep basement construction.

Q: Which part of the exam do you find most difficult?

YZ: The drawing part is the most difficult. I did not manage to complete all the required parts.

VY: Time management is very important. Would be nice if we have another 30 minutes.

Q: What is your advice to those who are preparing to sit for the CM exam in 2013?

YZ: Nothing can replace good preparation:

- He/she just need to spend sufficient time to prepare his/her own set of materials (to build up your own set of first-hand knowledge);
- Do the mock exams a few times (to improve the endurance and technique);
- Buy the right writing tools & an A3 size drawing pad (to save time in exam).
- If possible, take a day off to have good rest before the exam day.

VY: Candidates shall gain sufficient experience in various structural design and procurement in daily work environment.

- Practice the last 15 years of past papers.
- Stick to the time.
- Read the question 5 times before writing anything.

IStructE Singapore Group wishes to congratulate the four candidates for passing the CME 2012, and appreciates Mr. Yuan Zhen and Mr. Victor Yung's sharing their experiences on the CME exam and preparation.



New IStructE members: Victor Yung, Yuan Zhen, Kong Kian Hau (Jeremy Gilmore was not present)

New Fellow of IStructE

The IES/IStructE Joint Committee congratulates Er. Ong See Ho on his election as a Fellow of the Institution of Structural Engineers.

Er. Ong See Ho is the Commissioner of Building Control and Deputy CEO (Building Control) of the Building and Construction Authority of Singapore, the Vice-President of Institution of Engineers, the Chairman of the Engineering Accreditation Board, the Chairman of APEC/EMF Monitoring Committee, and Chairman of the IES-ACES Joint Registry.



Er. Ong See Ho receiving the FIStructE Certificate from Prof Wang

IStructE Gold Medal and Book Prize Winners 2012



Tan Kian Keng
National University of Singapore



Hoach Tuan Kiet
Nanyang Technological University



Foong Guo Wei, Alvin
Singapore Polytechnic

Singapore Regional Group is pleased to announce the winners of the 2012 IStructE Gold Medal and Book Prize. The recipients are:

Tan Kian Keng is honoured to be presented with the 2012 IStructE Medal and Book Prize (NUS). Apart from this prize, he has also been awarded the Professional Engineers Board Gold Medal and the Continental Steel Gold Medal & Book Prize. During his four years at NUS, Kian Keng won several Book Prizes and was recorded on the Dean's Lists. Kian Keng has a deep interest and passion for structural engineering and is currently serving as an engineer in Beca Carter Hollings & Ferner (SE Asia) Pte Ltd.

Hoach Tuan Kiet is proud and honoured to be the recipient of the 2012 IStructE Medal and Book Prize (NTU). He graduated from NTU in July 2012 with a 2nd Upper Class Honours Degree in Civil Engineering. Besides this prestigious award, he also received the Book Prize from the Singapore Structural Steel Society. Tuan Kiet participated in the Undergraduate Research Experience on Campus (URECA) and this continued into his Final Year Project. His primary interest is in Geotechnical Engineering. He has recently submitted two papers to the Journal of ASCE which are currently under review. Currently, he is a Project Engineer with HSL Constructor Pte Ltd.

Alvin is the recipient of the 2012 IStructE Medal and Book Prize (SP). He pursued his interest after secondary school by enrolling into the Diploma in Civil Engineering & Management (DCEM) course at the Singapore Polytechnic. In May 2012, he graduated from the course with a Diploma in Civil Engineering and Management (DCEM). Currently, he is undertaking a course leading to the Bachelor of Engineering Degree in Civil Engineering at the National University of Singapore.

The Chairman and Committee Members of the Singapore Regional Group congratulate the winners of the IStructE Medal and Book Prize 2012.



The IES/IStructE Joint Committee is organizing this Conference on Structural Wonders to celebrate the innovativeness and achievements of Structural Engineers. The conference will feature an impressive list of structural wonders in Singapore as well as other parts of the world that will undoubtedly interest structural engineers, contractors and architects. These structures have been the talking point not only in their country of origin but also throughout the world. The conference will provide an opportunity for the delegates to present as well as to learn the latest developments in modeling, analysis, design and construction of surface and underground structures. There will be ample opportunities during coffee breaks, lunches and a dinner banquet for delegates to discuss the engineering problems and innovative solutions directly with the principal engineers/designers of these structures.

There will be a total of 8 invited lectures presented during the 1-day conference. The topics and speakers for the lectures are:

- Supreme Structures: Reflections on the IStructE Structural Awards – Prof David Nethercot (Imperial College, UK)
- The Engineering of Structural Wonders in UAE – Matthew Esther (Atkins, UAE)
- Bitexco Financial Tower and Crescent Residence 2 in Ho Chi Minh City of Vietnam – Dr Luong Van Hai (Golden Base Construction, Vietnam)
- Singapore Sports Hub : Designing the World's Largest Dome – Clive Lewis and Mike King (Arup Singapore)
- Structural Design & Construction of the Gardens by the Bay - Allan Teo and Gunasekaran (Woh Hup Pte Ltd)
- The Interlace : A Bridge Engineering Integrated Building - Serena Yap (TY Lin) and Iwan Susanto (Woh Hup Pte Ltd)
- South Beach Development – Edwin Ong (Arup, Singapore)
- Down Town Line 3 – Michael McGowan (Arup, Singapore)

REGISTRATION FEES (INCLUSIVE OF 7% GST)

The fee is inclusive of a copy of Conference proceedings (in colour), coffee break, lunch, reception, banquet and admission to the lectures

- IStructE and/or IES Members : S\$295.00
- Non-IStructE/IES Members : S\$395.00
- Full Time Students : S\$100.00

CONTACT PERSON

Ms Angela Loke
Engineering Science Programme
Faculty of Engineering, National University of Singapore
Blk EA #06-10, 9 Engineering Drive 1
Singapore 117576
Tel: +65 6516 5408 E-mail: esplmh@nus.edu.sg

