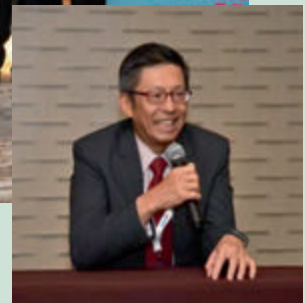


2015 IStructE INTERNATIONAL CONFERENCE in SINGAPORE



Conference Speakers



Mr. Ong See Ho

The highly-anticipated IStructE International Conference was held at the Grand Hyatt Hotel in Singapore from 3rd – 4th September 2015. The programme was filled with eminent keynote speakers from all over the world. Owing to time constraints, parallel sessions were arranged. A number of exciting topics were delivered with gusto by speakers who are experts in their field. With well over 130 participants, including past/present Presidents, Vice-Presidents and Council Members of the Institution, the conference started with a keynote address by Mr Ong See Ho who is the Deputy Chief Executive Officer (Building Control) of Building and Construction Authority of Singapore. He informed that Singapore's 2nd Construction Productivity Roadmap commencing in 2015 will build on the positive outlook of the industry and to effect a mind-set change in the way buildings are built. The Singapore's Government has set aside SGD \$450 million for the next three years to help the built-environment sector make higher investments in impactful productive technologies (such as Prefabricated Pre-finished Volumetric Construction and Cross Laminated Timber), and for improvements to the quality of its workforce.



The conference brought many wonderful lectures which delegates adsorbed with rapt attention

Prof James Ding from Tongji Architectural Design Group delivered an interesting keynote lecture on the application of viscous dampers in the structural design of super high-rise buildings in China. Faith Wainwright spoke on creativity, competence and community: developing skills and collaboration for a changing world, while Dr Robin Sham inspired the conference delegates with the elegant bridges that marry engineering and art. John Viise, Guy Wellings, Jason Tan and Joe Burns gave lectures on tall buildings; Ian Firth, Cam Middleton, Mark Green and JG Teng spoke on repair and strengthening of structures; Dong Xu, Peter Curran, Akio Kasuga, Avery Bang talked about bridges; Amr Elnashai, MC Hee and David Cormie gave lectures on extreme events.



The first day of lectures ended with the 2015 Gold Medal Address by Prof Mike Schlaich, Managing Director of [Schlaich Bergermann und Partner](#) and Professor of Structural Engineering at the Technische Universität Berlin. The address was fabulous with the many examples of lightweight and optimal designs of bridges and roofs using nets and cables.

Mike Schlaich receives the Gold Medal Award from Institution President Tim Bell

A splendid conference banquet was held at the Orchard Parade Hotel, which was a short walk from the Conference venue. President of the Institution, Prof Tim Ibell presented a certificate to a successful Singapore Professional Engineer who qualified as a Chartered Structural Engineer via the Singapore Supplementary Paper route. Midway through the dinner, the 2015 Keith Eaton Award was presented to A/Prof Francis Lok (Honorary Secretary of IStructE Singapore Regional Group).

The second day of the Conferences started with a keynote address by Prof Tim Ibell who spoke about how structural engineering should be taught in a fun way so that students would be inspired to learn more about structural behaviours. Prof Nelson Lam gave a keynote lecture on design of structures in regions of low to moderate seismicity, and Chris Wise spoke on the diatomic technologist, a keynote lecture that triggered much discussion among the conference delegates.

Glenn Bell, Andrew Mole, Jason Ingham and Goman Wai-Ming Ho spoke on topics related to extreme events, while Joe Correnza, Mike King, Laurent Ney and Wolf Mangelsdorf gave lectures on architectural engineering. There was no lack of interest by participants at all the sessions.

The Conference ended with a vote of thanks to the Conference Organisers, speakers and the Singapore Regional Group for hosting the conference in Singapore. Many participants are now looking forward to the next IStructE Conference in another part of the world.

Dear readers, thanks 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

Prof Wang Chien Ming (Chairman):
ceewcm@nus.edu.sg
 Er. Dr. Ho Kwong Meng (Vice Chairman):
hokm@surbana.com
 Er A/Prof Lok Tat Seng (Hon. Secretary):
ctslok@ntu.edu.sg
 Er Leonard Heng (Hon. Treasurer):
Lheng.IES2010@gmail.com
 Er Reve Chin (Asst. Hon. Secretary):
Jen_yee_chin@hotmail.com
 Er Ms Jeslin Quek (Asst. Hon. Treasurer):
jeslinquek@fyfeasia.com
 Er Wijaya Wong
Wijaya@arup.com
 Er Mak Yew Cheong
Mak.yew.cheong@pmlink.com.sg
 Er Mah Guan Pang
admin@mabaengineering.com
 Er Ang Chee Keong
angcheekeong@gmail.com
 Er Steve Yeung
Steve.Yeung@WorleyParsons.com
 Er Ms Cong Zheng Xia
cong_zx@wohhup.com
 Er Kang Jianhan
jianhankang@gmail.com
 Er Sam Tan Gak Peng:
tangakpeng@yahoo.com.sg
 Dr Kong Kian Hau
kongkianhau@gmail.com
 Er Michael Sien
mikesien@hotmail.com
 Ms Liu Ziyue
LIU_Ziyue@lta.gov.sg

The Structuralist Editorial Committee

Editors: Dr Kong Kian Hau
 Er Leonard Heng

Advisors: Prof Wang Chien Ming
 A/Prof Lok Tat Seng

Disclaimer:

All views and opinions expressed therein are solely those of the writers and its publication does not necessarily imply that such views and opinions are endorsed by the IES, IES/IStructE Joint Committee and the editorial committee of The Structuralist.

Copyright:

The reproduction in whole or in part of any material in this publication must obtain written permission from the editorial committee of this publication and/or from the respective author(s).

A/Prof Francis Lok received the Keith Eaton Award 2015

Named after Dr Keith Eaton, Chief Executive of the Institution of Structural Engineers from 1999 to 2008, the award is presented to individuals "for dedicated, valuable, outstanding or exceptional personal contributions towards the advancement of the Institution's international interests".



Dr Lok receiving the 2015 Keith Eaton Award from Professor Tim Ibell

The Award was presented to A/Prof Francis Lok by IStructE President Professor Tim Ibell at the Institution's International Conference Banquet on 3rd September 2015 in Singapore. The citation reads "for your much valued support of the Institution, particularly in your role as Secretary of the Singapore Regional Group and Chairman of the International Interest Group, and your involvement in Institutions Asia-Pacific activities".

A/Prof Lok follows in the footsteps of Prof CM Wang, who was the recipient of the same award in 2014. The Singapore Regional Group is honoured to have two recipients of the Keith Eaton Award of the Institution of Structural Engineers.

Prof Wang gave a keynote lecture in Sri Lankan Conference

Prof Wang Chien Ming delivered a keynote lecture on "Relationships between solutions of the classical and shear deformation beam/plate theories" at the Silver Jubilee Commemorative International Conference on Structural Conference of the Society of Structural Engineers, Sri Lanka which was held at the Cinnamon Grand Hotel, Colombo from 24-26 August 2015.



An example of Prof Wang's relationships that he shared is the deflection relationship for polygonal plates with simply supported straight edges and under any transverse loading condition

$$w^M = w^C + \frac{M^C}{\kappa^2 Gh}$$

w^M is deflection of Mindlin plate, w^C the corresponding deflection of classical thin plate, $M^C = (M_{xx}^C + M_{yy}^C)/(1 + \nu)$ the Marcus moment, κ^2 shear correction factor, G shear modulus and h plate thickness

Other keynote speakers include Prof Tim Ibell (IStructE President 2015, Bath University), Prof David Nethercot (Past IStructE President, Imperial College London), Prof John Miles (Cambridge University), Professor Campbell Middleton (Cambridge University), Prof David Thambiratnam (Queensland University of Technology), Dr Naveed Anwar (AIT, Thailand) and Eng Neville Mathias (Skidmore, Owings and Merrill). Prof Ruwan Weerasekera (President of Society of Structural Engineers, Sri Lanka) gave the welcome address for the conference with the theme on "Towards Excellence in Structural Engineering". The conference was very successful, with over 300 delegates.

THE FINITE ELEMENT COURSE BY PROF JN REDDY

World renowned Prof J.N. Reddy conducted a two-day course on the theory of the finite element method and its use in the solution of linear problems from solid and structural mechanics. Over 50 engineers, academics and students attended the course held on 21-22 May 2015 at the UTown Global Learning Room of the National University of Singapore.

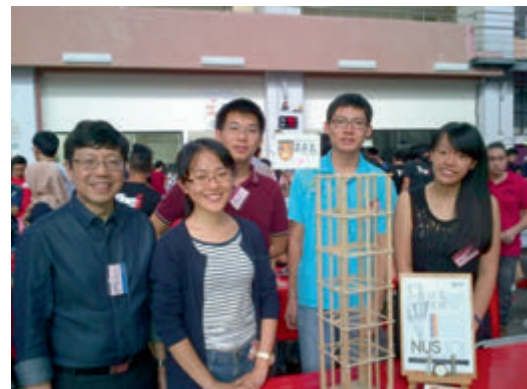


Prof JN Reddy (3rd person from the right in the front row) with course participants

Through the course, the participants were able to bridge the gap between the theoretical finite element knowledge and its industrial applications. This is because Prof Reddy took great pains to provide a clear understanding of the formulative steps involved in the finite element model development of problems of solid and structural mechanics, and of certain heat transfer problems. He also explained how to generate the finite element data (e.g., selection of elements and mesh, computation of nodal forces), how to impose the boundary conditions, how to carry out post-computation of stresses and strains, how to exploit the problem symmetries, and how to interpret and evaluate the computed results. The course contents included the Introduction to Numerical Methods; Generalization of the basic concepts to two dimensions; 2-D Elasticity Problems; 3-D Elasticity; Plate Bending Problems; the Introduction to Non-linear Problems; Nonlinear Formulations of Plate Bending Problems; and Continuum shell finite elements. The participants not only received Prof Reddy's excellent set of powerpoint slides for the finite element course, but also his seminal book "*An Introduction to the Finite Element Method*", 3rd edition, published by McGraw-Hill in 2006.

IDEERS 2015 Competition

The NUS team comprising Liu Chong (team leader), Wang Zengyao, Zhang Yiran and Zhang Xiaoyang received the 8th prize in the recently held IDEERS (Introducing the Demonstrating Earthquake Engineering Research to Schools) competition in Taipei. The composite columns of their structure had rubber bands glued in between timber pieces, making the columns flexible but strong. Together with strategic glue base joints for the composite columns, their timber structure of 7 levels, carrying the maximum possible of 40 weights, was able to withstand 1000 gal easily. Their structure was the only structure out of 42 structures in the competition left standing on the 5m x 5m shake table without any damage or visible tilt. If the design criterion had been for the strongest structure, the team would have won the first prize. However, this year's efficiency ratio penalized structures that survived over 900 gal. Liu Chong pointed out that valuable lessons were learnt; such as to be really prepared and yet, to also ensure that a structure is globally optimized. On behalf of the team, he would like to thank IStructE Singapore for partially sponsoring their air tickets to Taipei.



Prof C.M. Wang (Mentor), Wang Zengyao, Liu Chong (Team Leader), Zhang Xiaoyang and Zhang Yiran with their timber structure named NUS 101 at National Centre for Research in Earthquake Engineering, Taipei

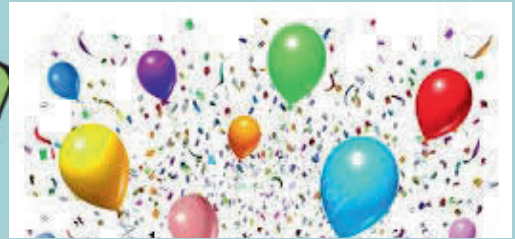
ISTRUCTE SINGAPORE MEMBERS' NIGHT 2015

More than 90 IStructE members attended Members' Night held on 9 October 2015 at the Raffles Town Club. VIP guests included Prof Seeram Ramakrishna (former Engineering Dean of National University of Singapore), Er Chong Kee Sen (President, IES), Er Ho Siong Hin (President, PEB), Ir David Ng (Chairman, IStructE Malaysia Regional Group), and Er David Lau (Past-Chairman, IStructE Malaysia Regional Group).

In his welcome address, Prof Wang Chien Ming informed that the Singapore Regional Group has expanded to over 600 members. He added that there is a quantum leap of new Corporate Members as a result of the introduction of the Chartered Membership Supplementary Examinations, held in Singapore in April and September 2015. About 30 Corporate Members were added to the Singapore family in this year alone.

WELCOME

The IStructE Family
is growing fast!



Inaugural batch of successful candidates in the IStructE Supplementary CM Examination

L-R : Mr. Kuncha V Channakeshava, Ms. Lim Lay Joo, Mr. Kang Wee Ping, Mr. Zhang Liping



Second batch of successful candidates in the IStructE Supplementary CM Examination held in Sep 2015

Mr Chin Kheng Ming, Mr Choy Chung Han, Mr Andrew Henry, Dr Md Rafiqul Islam, Mr Kee Ching Guan, Mr Lim Kheng Guan, Mr Loh Kar Kheng, Mr Luo Xiangyue, Mr Jeffrey Ng Thiam Yong, Mr Pham Thanh Hai, Mr Sun Qingguo, Mr Tan Wai Hiong, Mr Tee Liou, Mr Wong Ling Chye, Mr Vincent Zhang Ning, Mr Zhao Zhe

With a renewed thrust into the two Institutions of Higher Learning at NUS and NTU, more students are now joining the Institution each year.

Next year, members can expect a number of professional courses organized by the Joint Committee. These include courses on (1) EC5 – Design of Timber Structures by Professor John Harris on 26 February 2016, (2) EC9 – Design of Aluminum Structures by Professor John Bull on 8 April 2016 and (3) Workshop on Avoiding Design Errors by Dr Sean Brady in September 2016. These courses are useful to all structural engineers to better understand such materials, advancing their knowledge and making them more innovative and precise when designing structures. Prof Wang also announced that IStructE Singapore will be presenting IStructE Singapore Structural Awards 2016, to highlight the outstanding structures in Singapore, and to acknowledge the contributions of Singapore’s talented structural engineers, who have made these structures become reality. Award categories include Buildings, Industrial Structures, Infrastructure and Special Structures Awards. Structure entries will be judged for their Innovation, Buildability, Sustainability and Aesthetics. More detailed information and submission forms will be sent to IStructE members in January 2016. The award winners will be announced in the 2016 Members’ Night.



Prof Seeram Ramakrishna giving his talk on longevity

Before dinner, Prof Seeram Ramakrishna delivered a thought-provoking talk on “How one can live beyond 100 years?” He compiled the secrets of longevity by speaking to centenarians all over the world. Their secrets are simply to be actively involved in daily matters, to be happy and to eat appropriately. Prof Seeram advised that with continuous biomedical engineering breakthroughs, one could almost repair or replace any worn-out body part. There are even media reports suggesting head transplantation next year.

Members were next treated to a magical set of personal photographs by Ir. David Lau, who explained how he twirled his camera with the appropriate speed settings to create artistic light paints on lit structures, against dark backgrounds.

Thus inspired by the talks beyond mere engineering, everyone settled into a sumptuous dinner, punctuated by energetic Bollywood and Hip Hop performances by NUS dancers.



Members tucked into the delicious dishes



(top) NUS dancers doing the Bollywood thingy, (Left) NUS Dance Blast with their hip hop number



The members' night was also an occasion for recognizing excellence of our young in engineering studies, and to encourage them to continue and contribute to the IStructE family. Congratulatory certificates were given to Mr Lim Chin Yong (of NUS) and Mr Ngho Jun Wei (of NTU) for clinching the IStructE Singapore Gold Medal prize.



Mr. Lim Chin Yong and Mr. Ngho Jun Wei receiving their congratulatory certificates from Prof Wang

Finally but not least, the members night was an occasion to remember and thank special friends and people who have contributed to the Singapore Regional Group over the past years.



Mr. Sim Moh Wee receiving the Friend of IStructE Singapore Award, and Dr Boh Jaw Woei, our immediate past Hon Treasurer receiving a token of appreciation from Prof Wang

And so the ISTRUCTE SINGAPORE MEMBERS' NIGHT 2015 came to pass, with welcomes for new members, warm fellowship, acknowledgement of special friends, and hope for the future...



The 2014/2015 Institution of Structural Engineers Prize

There are many pathways today to an engineering career, and to membership in the Institution of Structural Engineers. Through various awards, the best and most promising are encouraged to consider Structural Engineering more seriously, and in the process, we hope to encourage others to strive harder.



Daryl Chew Shi Han is the recipient of the 2014/2015 Institution of Structural Engineers Prize, the Pavement Engineering Society Singapore Prize and the GeoEng Consultant Prize. In May 2015. He graduated from the Singapore Polytechnic with a Diploma in Civil Engineering with Business (with Merit) and a Certificate in Quantity Surveying (Post Diploma).

Daryl also participated in the "Living aRRRt from Urban Waste Competition" in AY1314S2, and his team won the merit award. Participation in the competition, which required the team to build a sculpture using recycled materials, has seen Daryl's interest in structure using recycled materials structures grow by leaps and bounds. Though this competition, Daryl also learned to appreciate Nature, becoming more aware of environmental issues.

Daryl believes in contributing to society. He has been playing his part by actively volunteering his services as a peer tutor in AY13/14 Semester 1, to assist academically weaker students achieve, under the Peer Tutoring Programme. He had also volunteered as class treasurer for AY1314/S1 & S2.

Daryl will be pursuing his degree in Civil Engineering (Global Engineering Programme), at the National University of Singapore after his National Service.

Coming soon to you ...

- **26 February 2016, One-Day Course on Timber Engineering**, 9am to 5.30pm, @ Emerald Ballroom 1, Parkroyal on Kitchener Road, **Prof Richard Harris, Professor of Timber Engineering, The University of Bath, UK**
- **8 April 2016, One-Day Course on Aluminium and Eurocode 9**, 9am to 5.30pm, @ Cinnamon Room, Novotel Singapore Clarke Quay, **Prof John W. Bull, Brunel University, UK**

Fees for each one-day course: \$450 for IES/IStructE members, \$350 for Retired IStructE Members, Unemployed IStructE Members and IStructE Graduate Members, \$250 for full time students of NUS, NTU and student members of IES/IStructE and \$550 for non-members.

For Enquiries & Registration of the Courses:

Please contact Ms. Angela Loke for more information at Tel: +(65) 6516 5408, Fax: +(65) 6775 4710 or E-mail: esplmh@nus.edu.sg