

JOINT STRUCTURAL DIVISION

**ANNUAL
REPORT
2014/15**



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Committee Members

JSD Committee Members 2014-2015

Ir Martin TSOI Wai-tong

*Chairman
Training Committee Representative
Housing Department*

Ir Prof CHAN Siu-lai

*Immediate Past Chairman
Council Member (Division)
The Hong Kong Polytechnic University*

Ir Ken NG Kin-shing

*Deputy Chairman
Buildings Department*

Ir Ben TSE Wai-keung

*Hon Secretary
Ben Tse & Associates Limited*

Ir TSE Kam-leung

*Hon Treasurer
Architectural Services Department*

Ir Prof Paul PANG Tat-choi

Chairman of IStructE Sub-committee (Hong Kong Division)

Ir Dr Eddie LAM Siu-shu

*IStructE Council Member
The Hong Kong Polytechnic University*

Ir CHAN Siu-tack

*Chairman of Structural Discipline Advisory Panel
Housing Department*

Ir LAU Chi-kin

*Professional Assessment Committee Representative
Sun Hung Kai Properties Limited*

Ir LEUNG Kwok-tung

*Chairman of OC for Annual Dinner 2014
Architectural Services Department*

Ir Edward CHAN Sai-cheong

*Programme Organiser
AECOM Asia Company Limited*

Ir Prof KUANG Jun-shang

*Programme Organiser
Hong Kong University of Science and Technology*

Ir Paul LEE Kai-hung

*Public Relations Committee Representative
Hsin Chong Construction Company Limited*

Ir Paul TSANG Sau-chung

*CPD Committee Representative
Ove Arup & Partners Hong Kong Limited*

Ir Prof Andrew LEUNG Yee-tak

*HKIE Journal Reviewer
City University of Hong Kong*

Ir LAM King-kong

*Committee Member
Housing Department*

Ir Benny LAI Siu-lun

*Committee Member
Siu Yin Wai & Associates Limited*

Ir Thomas WONG Kam-chuen

*Committee Member
YSK2 Engineering Co. Limited*

Ir CHAN Chi-kong

*Committee Member
Atkins China Limited*

Ir Albert LEUNG Wing-keung

*Committee Member
Jacobs China Limited*

Ir LUI Yuen-tat

*Committee Member
Gammon Construction Limited*

Ir Jacky CHIONG Kam-yueng

*Committee Member
Buildings Department*

Ir Prof Ben YOUNG

*Co-opt Member
The University of Hong Kong*

Ir Kenneth CHAN Wai-yee

*Co-opt Member
Highways Department*

Mr Simon PANG Hin-lam

*Ex-officio Member (AMC Representative)
AECOM Asia Company Limited*

Mr Raymond MAK

*Ex-officio Member (YMC Representative)
Maeda Corporation*

Ir Dr LAU Chi-keung, Jackson

*Ex-officio Member (SSC Representative)
Vocational Training Council*

Chairman's Report

It is my greatest honour to be the 36th Chairman of the Joint Structural Division (JSD) for Session 2014/2015. It is also my great privilege to have inherited with an outstanding team of distinguished Structural Engineers in the Committee. With their wonderful works, we made good progress at various frontiers in this session.

Membership

In this session, we witness a steady growth in JSD membership to 6,316 as at 22 April 2015, with an overall 1.8% increase in number of Fellows and Members to 285 and 4,265 respectively.

Committee Activities

With the concerted effort of Committee Members, the JSD has organized over 43 activities in this session including:

- Technical meetings, seminars, workshops and site visits covering a range of topics
- Annual Dinner
- Structural Excellence Award
- Annual General Meeting
- Annual Seminar

Major Events

● **Annual Dinner 2014** was successfully held on 6 November 2014 at Holiday Inn Golden Miles Hong Kong, with a full house of more than 500 members and guests. Mr LEUNG Koon-kee, JP, Director of Architectural Services was the Guest of Honour of the evening. His sharing of the ArchSD Academy inspired the attendees on knowledge management and training for excellence in professional services.

● **Structural Excellence Award 2015**, with the aim to promote excellence in structural engineering and achievement by structural engineers, was conducted in April 2015. The Judging Panel assessed each project based on the project submissions, site visits and presentations by the finalists on 18 April 2015. The award winners for each category will be announced by the Chairman of the Judging Panel, Ir Prof Paul PANG Tat-choi at the Annual General Meeting to be held on 15 May 2015.

● **Annual Visit 2015** to Taiwan was held from 30 April 2015 to 3 May 2015. We attended presentations, visited construction site and special material manufacturing factory arranged by renowned consultant and material supplier, and we shared the techniques in designing and constructing complex structures. We also visited the National Taiwan University and National Yunlin University of Science and Technology, and had a very fruitful exchange on the research, development and practical application of seismic design in structures.

● **Annual Seminar 2015** will be held on 12 June 2015 with the theme "Engineering Initiatives for Construction Productivity". We are delighted to have invited Ir LEE Shing-see, GBS, OBE, JP, Chairman of Construction Industry Council, as our Guest of Honour in this important annual event. Distinguished overseas and local speakers from academia to prominent practicing professionals will share their insightful ideas and invaluable experiences at the seminar.

Inspire the Young

We have been working closely with the Institution on the theme "Inspire the Young" to attract youngsters to join the profession and assist our members in developing their professionalism and careers. A structural engineering competition for the youth "起紙" 咁簡單! (Paper Tower Challenge) will be held on 18 July 2015 to instill in secondary school students their interest in structural engineering. Career talks have been planned to conduct at local universities to introduce our profession to undergraduate students at the beginning of the next academic year. Also, we are going to co-organize a seminar and a talk to engineering graduates and young members in May and June 2015 to share the experience of prominent structural engineers in their careers and how to become a professional and competent structural engineer.



Continuous Professional Development

Two explanatory handbooks on the Code of Practice for Foundations and Precast Concrete Construction are ready to issue in May/June to enhance the understanding of these codes for their applications. Another two handbooks for the Code of Practice for Structural Use of Concrete and Structural Use of Steel are being prepared and will be issued soon. We hope our members will find these handbooks helpful for their daily works and professional development.

Total 33 technical meetings, seminars and site visits etc. have been or will be held in this session to address the great demand of members on continuous professional development. In addition to those organized by our own, we collaborated with over 12 other professional institutions and bodies in conducting seminars, workshops, conferences and technical visits for professional development, and through these activities we built stronger links with external parties for promoting our profession. We will also arrange delegations to international conferences in Portugal and Singapore in July and September this year respectively to showcase the advancement and achievement of structural engineering in Hong Kong.

Participation of JSD in Serving the Community

The JSD has active participation in serving the community. Members are nominated to various Government committees and panels with an aim to render our professional advice to the Government in different aspects and at various stages of policy formulation. Some of their contributions such as in the APSEC Discussion Forum of the Buildings Department can now be downloaded from JSD website. Moreover, JSD members also play an important role as experts in the accreditation of university programmes, training schemes, and the assessment of application for registration as Registered Professional Engineer under the Engineers Registration Board.

Professional Recognition and Training

Written examination of the HKIE Structural Examination was successfully held on 28 November 2014 with 365 attendees. Professional interview will be held in June/July 2015. A seminar has been held on 18 October 2014 for candidates' preparation of the Structural Examination. Candidates have to pass the Structural Examination before admission to Corporate Membership under the Structural Discipline of HKIE.

IStructE Matters

Mr Nick RUSSELL, the President, and Mr Martin POWELL, Chief Executive of the IStructE, came to Hong Kong in late November 2014 for the Presidential Visit. They visited HKIE and were received by the President of HKIE, Ir Victor CHEUNG. On 24 November 2014, Mr RUSSELL delivered his Presidential Address to a full house of audience followed by presentation of certificates to newly elected Fellow Members and Chartered Members.

Starting from 2015, two Chartered Membership Examinations will be held in Hong Kong each year. The first one in 2015 has been held on 9 January 2015 with 155 candidates attended the examination. The second one will be held on 10 July 2015.

Appreciation

Finally, I would like to thank all Committee Members for their invaluable efforts throughout this session in conducting the business of the Division. Without their strong and unfailing supports, the works of JSD would not have been progressing smoothly and satisfactorily. I would also like to thank all fellow members for your active participation and support of JSD activities. Your continual strong support makes the Division grow and flourish and also gives us impetus to scale new heights.

Ir Martin TSOI Wai-tong
JSD Chairman
Session 2014/15

Discipline Matters

The HKIE Structural Examination

The HKIE Structural Examination consists of TWO parts: (a) written examination and (b) professional interview. Applicant passing both parts and meeting the experience requirements under the relevant routes to membership will be eligible to become Corporate Member of the HKIE in the Structural Discipline (subject to meeting other requirements in the HKIE Constitution). Passing the written examination is not a pre-requisite for taking the interview or vice versa.

The written examination of the HKIE Structural Examination (2014) was held on 28 November 2014 at the Kowloon Bay International Trade & Exhibition Centre. It consisted two sections in the form of multiple choice questions (one hour) and design questions (six hours). 365 candidates attended the written examination and 62 passed with a passing rate at 17%. Examination results were announced in April 2015 and the professional interview will be held in June/July 2015.

Chairman of Examination Board:

Ir Prof Paul PANG Tat-choi

Chief Examiners of Design Questions:

Ir Benny LAI Siu-lun
Ir Prof James LAU Chi-wang
Ir Prof LAU Ching-kwong
Ir Prof LAW Kwok-sang
Ir Paul TSANG Sau-chung
Ir WONG Chi-ming

Chief Examiners of Multiple Choice Questions:

Ir KWAN Kin-kei
Ir Dr Eddie LAM Siu-shu
Ir NG Kin-shing
Ir Dr SU Kai-leung

Lastly, I would like to express my heartfelt thanks to the Examination Board Chairman, Chief Examiners, Examination Markers and Interviewers and, in particular, the JSD Committee, for the dedicated efforts throughout.



Ir CHAN Siu-tack
Chairman of HKIE Structural Discipline Advisory Panel
Dated 15 May 2015

Examination Markers:

Ir CHAN Chi-kong
Ir Edmond CHAN Chu-fai
Ir CHAN Chung-ming
Ir Winifred CHAN Ho-wai
Ir Eric CHAN Kar-lock
Ir CHAN Pak-wing
Ir CHAN Sai-cheong
Ir CHAN Wai-ching
Ir Tony CHAN Wai-tong
Ir CHAN Wood-biu
Ir CHENG Pui-wan
Ir CHEUNG Kwok-choi
Ir Wilson CHEUNG Yiu-sun
Ir Jacky CHIONG Kam-yueng
Ir CHIU Koon-man
Ir CHIU Tze-ming
Ir Anthony CHIU Yan-mong
Ir CHIU Yue-leung
Ir Tony CHOI Chi-keung
Ir CHOY Chun-chuen
Ir Prof CHOY Kin-kuen
Ir Thomas CHOY Ping-chi
Ir Prof Adam CHOY Siu-chung
Ir CHUI Wai-ming
Ir Robinson CHUNG Kam-yin
Ir CHUNG Kim-chun
Ir CHUNG Kwong-nung
Ir CHUNG Lung-to
Ir FOK Wing-huen
Ir FUNG Chi-keung
Ir FUNG King-cheong
Ir Dr HO Cheung-shing
Ir Joseph HO Chung-leung
Ir Humphrey HO Hon-kit
Ir HO Koon-ho
Ir Dr Goman HO Wai-ming
Ir David HOWE Wing-chi
Ir Dr Lilian HUI Ming-fong
Ir IEONG Kwok-lun
Ir Nandi IP Kwong-fat
Ir Eric KAN Shiu-kay
Ir KANG Man
Ir Terence KONG Hon-wai
Ir Dr KOON Chi-ming
Ir KU Kwai-yau
Ir Prof KUANG Jun-shang
Ir KUNG Shu-hang
Ir KWAN Kai-sing

Ir KWAN Kin-kei
Ir Helen KWAN Po-jen
Ir Philip KWOK Chi-tak
Ir Derek KWOK Yiu-fai
Ir KWONG Po-lam
Ir Otto LAI Hou-shun
Ir Kevin LAM Chun-yin
Ir LAM King-kong
Ir LAM Nga-yan
Ir Dr Eddie LAM Siu-shu
Ir LAM Yiu-choi
Ir Albert LAU Chi-ming
Ir LAU Kwok-chu
Ir LAU Wai-ming
Ir LAU Wing-yin
Ir Alexis LEE Chi-chuen
Ir Peter LEE Kai-kwong
Ir Walter LEE Kin-sun
Ir LEE Ping-kuen
Ir LEE Wing-hong
Ir Dr Andy LEE Yuk-nin
Ir LEE Yun-choi
Ir Ben LEUNG Chi-hung
Ir Francis LEUNG Chi-suen
Ir LEUNG Siu-ming
Ir LEUNG Yu-wah
Ir Li Ting-fan
Ir Albert LIU Chi-kwun
Ir LIU Sik-wing
Ir LIU Tai-chuen
Ir LIU Yuk-shing
Ir Stephen LO Gon-fai
Ir Raymond LO Man-chiu
Ir Bernard LOONG Chun-wah
Ir LUK Nai-ching
Ir MAK Kwok-shing
Ir MAK Tsz-yee
Ir Martin MOK Chi-wah
Ir James MOK Hing-wah
Ir NG Hon-keung
Ir NG Kin-shing
Ir NG Tim-yeung
Ir NGAN Yok-ming
Ir John PAK Chung-hing
Ir PAO Wai-hong
Ir Peter TO
Ir PUN Chupman
Ir Anthony PUN Wing-chiu

Ir SHAM Sai-wah
Ir Carmine SIU Koon-hoi
Ir Simon SIU Sik-lam
Ir SO Wah-wai
Ir SO Yan-wing
Ir Dr SU Kai-leung
Ir SZE Wang-cho
Ir TAI Kwok-kuen
Ir William TANG Chung-ming
Ir William TANG Ka-hung
Ir Kevin TANG
Ir Chezy TANG Wai-chau
Ir Raymond TANG Wai-ming
Ir TONG Fung-ming
Ir TSANG Kwok-leung
Ir Kelvin TSANG Ping-fai
Ir TSE Kam-leung
Ir TSE Pak-kin
Ir TSE Tak-ming
Ir TSE Wai-keung
Ir Martin TSOI Wai-tong
Ir WAI Sai-chong
Ir WAN Yiu-lun
Ir Patrick WONG Che-ming
Ir WONG Chi-kong
Ir WONG Kam-chuen
Ir Thomas WONG Kam-chuen
Ir WONG Kin-yan
Ir WONG Kong-loi
Ir Richard WONG Kwok-chuen
Ir WONG Man-wai
Ir WONG Nai-kwok
Ir WONG Po-chi
Ir Francis WONG Tsz-kin
Ir WONG Wai-hing
Ir WONG Woon-ki
Ir Andes WONG Yiu-wang
Ir WU Chung-kei
Ir Eric WU Chung-shing
Ir Alex WU Po-tak
Ir Alan YAU Hoi-ngan
Ir YAU Yiu-fong
Ir YEUNG Chi-man
Ir YEUNG Yiu-wing
Ir YIK Yiu-wah
Ir YIM Chung-wah
Ir Gabriel YU Lin-keung

Event Highlights

Technical Meetings & Visits 2014-2015

Date	Details
25 July 2014 (Friday)	Half day workshop on "Minor Works Control System" by Sr. Bishop W K Chung Jointly organized <i>The Hong Kong Institute of Steel Construction & Hong Kong Polytechnic University</i>
8 August 2014 (Friday)	Technical meeting on "The Design and Construction of CCTV in Beijing" by Dr Goman Ho of ARUP
18 August 2014 (Monday)	Technical meeting on "The Design and Construction of Jockey Club Innovation Tower" by Ronald Choi of ARUP
1 September 2014 (Monday)	Technical meeting on "URA Revitalization Project at Mallory Street and Burrows Street, Wan Chai" by Ben Leung of C M Wong
15 September 2014 (Monday)	Technical meeting on "Redevelopment of Lower Ngau Tau Kok Estate Phase 1" by Ir Albert Leung and YY Yu of Jacob
23 September 2014 (Tuesday)	Half day seminar on "Quality Assurance of Structural Sealant in Building Construction" by Various Speakers Jointly organized <i>The Hong Kong Institute of Steel Construction & Hong Kong Polytechnic University</i>
6 October 2014 (Monday)	Technical meeting on "Application and Design of Post-Tensioning Structures in Building Projects" by Ir Mark Goldsworthy, Freyssinet Hong Kong Ltd.
20 October 2014 (Monday)	Technical meeting on "Design and Construction of Cruise Terminal Building" by S P Chin of AECOM and Ir Christian Venetz of VSL
29 October 2014	One day Conference – Hong Kong BIM Conference 2014 Jointly organized <i>The Hong Kong Institute of Building Information Modeling (HKIBIM)</i>
6 November 2014 (Thursday)	Annual Dinner



▲ Presented by Dr Goman Ho of ARUP



▲ Presented by Ir Albert Leung and YY Yu of Jacob



▲ Presented by Ir Mark Goldsworthy, Freyssinet Hong Kong Ltd



▲ Presented by Ir S P Chin of AECOM and Ir Christian Venetz, VSL

Date	Details
7 November 2014 (Friday)	Half day seminar on "High Performance Steel Materials" by Various Speakers Jointly organized <i>The Hong Kong Institute of Steel Construction & Hong Kong Polytechnic University</i>
7 November 2014 (Friday)	One day Seminar on "Special Concrete and their Applications" Jointly organized <i>The Hong Kong Concrete Institute</i>
24 November 2014 (Monday)	IStructE Presidential Visit – Presidential Address: "An institution for everyone?" by Nick Russell, President of IStructE
1 December 2014 (Monday)	One day seminar on "Recent Advance in Steel and Composite Structures 2014" by Various Speakers Jointly organized <i>The Hong Kong Institute of Steel Construction & Hong Kong Polytechnic University</i>
12 December 2014 (Friday)	Technical meeting on "Sustainable Materials to Complement Current Practices in Green Building Development" by Mr Quick Zeng of Wo Lee Steel Co., Ltd. and Mr Sarankorn Amornrutrujee of Syler Group Co., Ltd.
5 January 2015 (Monday)	Technical Meeting on "Civil and Structural Engineering – Much Success and Some Failures" by Frank Weare Jointly organized <i>Centre for Asian Tall Buildings and Urban Habitat, HKU</i>
January 8-9, 2015	Two day seminar Hong Kong Wind Engineering Society 2nd Workshop by Various Speakers Jointly organized <i>Business Environment Council Tat Chee Avenue Kowloon Tong Hong Kong</i>
9 January 2015 (Friday)	Technical Seminar "Recent Code Development for Employing 2nd Order Analysis – Direct Analysis Method" by various speakers Jointly organized <i>The Hong Kong Institute of Steel Construction & Hong Kong Polytechnic University</i>



▲ Presented by Mr Quick Zeng of Wo Lee Steel Co., Ltd. and Mr Sarankorn Amornrutrujee of Syler Group Co., Ltd.



▲ Presented by Frank Weare



▲ Technical meeting "Design of the C903 South Island Line Viaducts" Presented by Ir Douglas Simmons of Atkins

Event Highlights

Date	Details
12 January 2015 (Monday)	Technical meeting on "Technical meeting on "Non-Residential Project: Domain" by Ir Kenith Ho of Meinhardt and Ir David Tsang of HA
2 February 2015 (Monday)	Technical meeting on "Design of the C903 South Island Line Viaducts" by Ir Douglas Simmons of Atkins
13 February 2015 (Friday)	Symposium "Future Development of Seismic Design" by various speakers Jointly organized <i>Canadian Society of Civil Engineering (HK Branch) & Hong Kong Polytechnic University</i>
13 March 2015 (Friday)	Symposium "Wind Tunnel Testing for Air Ventilation Assessment and Sustainable Building Design" by various speakers Jointly organized <i>The Hong Kong Institute of Steel Construction & Hong Kong Polytechnic University</i>
24 March 2015 (Tuesday)	Technical Meeting "Engineering Failure – The Role of 'Human' Factors" by Dr Sean Brady, Managing Director of Brady Heywood Venue: HKPU Rm Y 302
28 March 2015 (Saturday)	Technical Site Visit "Pok Oi Interchange Improvement"
11 April 2015 (Saturday)	Joint Institutes Competition on "Green Living in Hong Kong" Jointly organized <i>The HKIE Student Chapter</i>
17 April 2015 (Friday)	Half day introductory seminar for latest Mainland and Hong Kong Steel Codes Jointly organized <i>The Hong Kong Institute of Steel Construction & Hong Kong Polytechnic University</i>
24 April 2015 (Friday)	One day Conference on "Thinking out of the Box in Infrastructure Development and Retrofitting" Jointly organized <i>The Institution of Civil Engineers Hong Kong Association</i>



▲ Presented by Dr Sean Brady of Brady Heywood



▲ Technical Site Visit "Pok Oi Interchange Improvement"

Date	Details
20 April 2015 (Monday)	Technical meeting on "Design Ground Motions and Seismic Evaluation of Non-seismically Designed Tall Buildings in Hong Kong" by Dr Gang Wang and Ir Prof J S Kuang of HKUST
25 April 2015	Technical Site visit – Factory of Precast Concrete Elements – by Gary Wong of Yau Lee Wah at Huizhou
30 April – 3 May 2015	Annual Visit – Taiwan
9 May 2015 (Saturday)	Technical Site Visit – Hong Kong - Zhuhai - Macao Bridge Jointly organized <i>HKIE Civil Division and YMC</i>
15 May 2015 (Friday)	Annual General Meeting
22 May 2015 (Friday)	One day Seminar on "Soil Structure Interaction: From Modelling to Observations" Jointly organized <i>HKIE Geotechnical Division and Hong Kong Geotechnical Society</i>
6 June 2015 (Saturday)	Half day seminar on "Examination Techniques for the IStructE Chartered Membership Examination" by various speakers Jointly organized <i>Hong Kong Polytechnic University</i>
10 June 2015 (Wednesday)	Technical meeting on "From Fundamental Mechanics to Advanced Structural Computations" by Prof S H Lo of HKU
12 June 2015 (Friday)	Annual Seminar on "Engineering Initiatives for Construction Productivity"
18 July 2015 (Saturday)	"Inspire the Young" – Structural Engineering Competition for the Youth – Paper Tower Challenge "起紙" 咁簡單！"



▲ Presented by Dr Gang Wang and Ir Prof J S Kuang of HKUST



▲ Presented by Gary Wong of Yau Lee Wah at Huizhou



▲ National Yunlin University of Science & Technology Taiwan



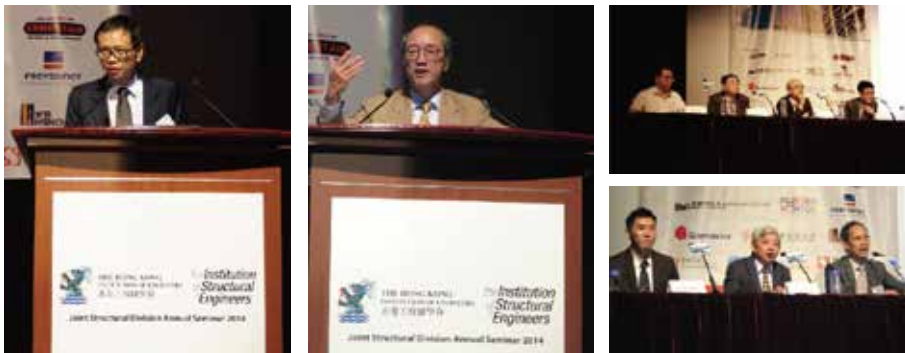
▲ National Taiwan University, Taiwan



▲ Taipei Tennis Centre – Site

Event Highlights

Annual Seminar 2014



The Annual Seminar 2014 was successfully held on 19 May 2014 at the Jockey Club Auditorium of the Hong Kong Polytechnic University. The Seminar with the theme "Advances In Seismic Engineering", was overwhelmingly received with over 300 participants.

Mr Prof CHAN Siu-lai, Chairman of the Structural Division (2013-2014), started the Annual Seminar with the Welcome Speech. Opening Address was delivered by Prof Tony F CHAN, President of the Hong Kong University of Science and Technology. Distinguished speakers of the Annual Seminar included both local and overseas professionals and academia (in order of presentation): Prof WANG Yo-yong, Dr Robert MAY, Ir CHIU Sing-lok, Dr TSANG Hing-ho, Ir Dr Goman HO Wai-ming, Ir Adam CHOY Siu-chung, Mr ZHOU Zhan, Ir Dr Ray SU Kai-leung and Ir Prof KUANG Jun-shang. Questions & answers sessions open to the floor were hosted by Ir Martin TSOI Wai-tong, Ir LAU Chi-kin, Ir Gabriel YU Lin-keung and Ir Dr Eddie LAM Siu-shu and closing remarks was delivered by Ir CHAN Siu-tack to conclude the Annual Seminar.

Organizing Committee of Annual Seminar 2014

Chairman

Ir Martin TSOI Wai-tong

Members

Ir Prof CHAN Siu-lai
Ir Ben TSE Wai-keung
Ir Ken NG Kin-shing
Ir Dr Ray SU Kai-leung
Ir LAM King-king
Ir Albert LEUNG Wing-keung
Ir LAU Chi-kin
Ir TSE Kam-leung



Annual Dinner 2014



▲ Annual Dinner 2014

The Annual Dinner 2014 was successfully held on 6 November 2014 at the Holiday Inn Golden Mile Hong Kong drawing attendance of over 500 members and guests. JSD is privileged to have Mr LEUNG Koon-kee, JP, Director of Architectural Services, as the Guest of Honour. Other distinguished guests included Ir Dr Hon LO Wai-kiwok, BBS, MH, JP, Legislative Councilor (Engineering Functional Constituency), Mr HUI Siu-wai, JP, Director of Buildings, Ms Ada FUNG Yin-suen, JP, Deputy Director of Housing Authority (Development & Construction) and Ir Victor CHEUNG, Chi-Kong President of the HKIE.

Organizing Committee of Annual Dinner 2014

Chairman

Ir LEUNG Kwok-tung

Members

Ir Edward CHAN Sai-cheong
Ir Benny LAI Siu-lun
Ir TSE Kam-leung
Ir Ben TSE Wai-keung
Ir LAM King-king
Ir Jacky CHIONG Kam-yeung
Ir LAU Chi-kin



▲ Keynote Speaker

Mr. Leung Koon-kee, JP
Director
Architectural Services Department
HKSAR Government

Structural Excellence Award 2015

The Structural Excellence Award (formerly Structural Awards) aims to promote excellence in structural engineering demonstrated through the design and construction of buildings and structures completed in the last two years. The first award was held in 1998 / 1999 and this year is the 17th event. On 31 March 2015, the Judging Panel short-listed 8 finalists. Following site visits and project presentations on 18 April 2015, awards were decided with emphasis on engineering approach, integration, innovation / unusual features, buildability, energy efficiency / environmental consideration / sustainability and aesthetics.

There are two categories of entries, namely Hong Kong Projects and Mainland (including Macau & Taiwan) / Overseas Projects. Grand Award of Hong Kong Project goes to Hong Kong Velodrome (under Non-residential Category) and Transformation of Police Married Quarters Site on Hollywood Road into a Creative Industries Landmark (under the Heritage Category). Grand Award of Mainland (including Macau & Taiwan) / Overseas Project goes to Pazhou 1301 & 1401 Developments.

Grand Award

Hong Kong Projects

- Hong Kong Velodrome (Non-residential Category)
- Transformation of Police Married Quarters Site on Hollywood Road into a Creative Industries Landmark (Heritage Category)

Mainland / Oversea Project

- Pazhou 1301 & 1401 Developments

Members of the Judging Panel

Chairman

Ir Prof Paul PANG Tat-choi

Member

Ir Martin TSOI Wai-tong

Ir Prof LAU Ching-kwong

Ir Prof TSUI Tack-kong

Ir Prof Christopher LEUNG Kin-ying

Ir Prof CHAN Siu-lai

Ir CHAN Siu-tack

Organizing Committee

Chairman

Ir Ken NG Kin-shing

Member

Ir LAU Chi-kin

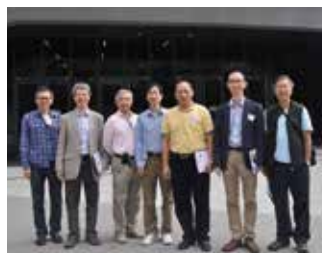
Ir LEUNG Kwok-tung

Ir Ben TSE Wai-keung

Ir TSE Kam-leung

Ir Edward CHAN Sai-cheong

Ir CHAN Chi-kong



HONG KONG PROJECT

COMMENDATION MERIT

Category: Residential

Public Rental Housing Development at Kai Tak 1B – Tak Long Estate



Client: Hong Kong Housing Authority
Structural Engineer: AECOM Asia Company Limited
Architect: Chau, Ku & Leung Architects & Engineers Limited
Contractor: Yau Lee Construction Company Limited & Hsin Chong Construction Group Joint Venture

Project Description

- The project is located at Kai Tak Redevelopment Area, sitting on a site of 5.7 hectares which is remembered as Kai Tai International Airport.
- 9 Residential Blocks providing 8,164 units that accommodate more than 22,000 residents. Covered walkways linking a 3-storey carport, a 2-storey commercial centre and a 1-storey kindergarten. Greening ratio over 30% with 700 planted trees.
- Steel footbridge link to Kai Ching Estate
- The project offers unique opportunities to innovate the delivery of public housing flats within a short period. It is a pilot Hong Kong Housing Authority (HKHA) project that uses the Integrated Procurement Approach (IPA) contract. The client, contractor and the design consultants collaborated together as a team to achieve an efficient and buildable structure.

Project Features

- Project integrates design and contractor's expertise to tailor to client's needs, flexibility incorporated in every part of the process, buildability and maintainability, high efficiency of structure, fast-track construction and well budget control.
- Design integrated with construction technology, extensively use of innovative precast elements such as Volumetric Precast Bathroom (VPB), semi-precast slab, staircase, covered walkway, water tank etc., over 150 number of precast elements adopted at typical floor.
- Optimization of structural form, elements and structural innovations on using mesh reinforcement.
- Reuse of 2,575 existing piles in foundation design.
- Sustainable Building: over 30% green area, transformed solar energy, District Cooling System, Rainwater harvesting irrigation system, electric vehicle charging facilities

Structural Excellence Award 2015

HONG KONG PROJECT

GRAND AWARD

Category: Non-Residential

Hong Kong Velodrome



Client: Leisure and Cultural Services Department
Project Management: Architectural Services Department
Architect: P&T Architects & Engineers Ltd.
Structural & Geotechnical Engineer: Ove Arup & Partners Hong Kong Ltd
Building Services Engineer: WSP Hong Kong Ltd.
Main Contractor: Shui On Construction Company Limited

Project Description

- Hong Kong's first-ever indoor cycling facility built to international UCI standard
- Centrepiece of the 6.6ha town park providing leisure and recreational amenities for the people of Hong Kong
- Housing a 250m long & 7m wide indoor cycling track with supporting facilities and a multi-purpose arena
- Seating for up to 3,000 spectators (2,000 permanent seats plus 1,000 temporary seats)
- Featuring a 12,000m² iconic lightweight and long span roof

Project Features

- An elegant and structurally efficient 3-D truss system was devised to realise a cyclist's helmet shaped roof, enhancing its aesthetics, constructability and cost effectiveness.
- Eight main steel trusses of triangular form with varying geometry along their length span 57m to 90m across the arena, with pin support provided by reinforced concrete columns along the peripheral. The roof structure is also stabilised by perimeter belt trusses.
- Maximum truss depth up to 7.0m was designed at mid-span to suit the curvilinear shape of the roof while maintaining clearance to the arena below.
- A cost-effective roof structure with only 70kg/m² steelwork ratio was achieved through wind tunnel tests, rigorous structural analysis and optimisation.
- Integrated roof comprising of skylights, smoke ventilators, metal cladding, drainage channels, catwalks and building services was assembled.
- Buildability was well considered during the design process. As a result, the 12,000m² roof was successfully installed within four months.

HONG KONG PROJECT

COMMENDATION MERIT

Category: Non-Residential

Hong Kong Science Park Phase 3a + 3b



Client: Hong Kong Science & Technology Parks Corporation (HKSTP)
Structural Engineer: AECOM Asia Company Limited
Architect: Simon Kwan and Associates Limited
Main Contractor: Gammon Construction Limited

Project Description

- With the success of Phases 1 and 2 developments, Hong Kong Science Park Phase 3 will provide a new home for many technology start-ups and giants alike. Phase 3, a new eco-friendly development in Science Park, showcases the client's commitment to a sustainable future.
- With a site area of 6.24 hectares, Hong Kong Science Park Phase 3 comprises five buildings with a total gross floor area of 105,000 square meters.
- Buildings in phase 3a and 3b, including 15W of 8 stories, 12W and 16W of 9 stories to accommodate R&D offices and laboratories are also interlinked with curved footbridge and landscaped podium with car-park basement to provide a user-friendly working environment.

Project Features

- Integrated design concept of 3 "S" strategies (Standardization, Simplification and Single Integrated Element) to improve buildability and enables fast track construction.
- Special design and vibration assessment of building structure with advanced analytic tools to ensure meeting Class C Sensitive Equipment for Research and Development laboratory use.
- Buildings are linked with a 45m Long Curved Footbridge with floating roof supported by fabric structure.
- Two way truss grillage system to provide high efficiency roof structure to Exhibition Hall (27m x 33m).
- Optimized foundation design by adopting various foundation schemes in considering site geological condition, constraints, cost and effects to nearby sensitive laboratory facilities.
- Bridge link slab design to accommodate differential settlement between Podium structure and adjacent office building structures.

Structural Excellence Award 2015

HONG KONG PROJECT

GRAND AWARD

Category: Heritage

Transformation of Police Married Quarters Site On Hollywood Road into a Creative Industries Landmark



Client: Development Bureau and Musketeers Education and Culture Charitable Foundation Limited
Project Manager; Architect; Structural Engineer; Building Services Engineer; Landscape Architect & Quantity Surveyor Architectural Services Department
Fire Engineering Consultant: WSP Hong Kong Ltd
Heritage Consultant: Centre for Architectural Heritage Research, The Chinese University of Hong Kong
Tree Preservation Consultant: Dr Jim Chi Yung, Chair Professor of Geography, The University of Hong Kong
Contractors: Techoy Construction Company

Project Description

Functional and Design Concept

The project aims to transform the former Police Married Quarters (PMQ) into a landmark for creative industries where the existing buildings are revitalized for re-adaptive use as designer's studios, restaurants and shops. This project serves as a pioneering example of synchronizing heritage conservation, commercial, and creative industry in one site.

Historical Value

The site was first the campus of Central School (now Queen's College) opened in 1889 and then redeveloped to become the first police married quarters in 1951. The quarters were left unused in 2000 and the site was accorded as Grade III Historic Building in 2011, after remains of the former school were found in series of archaeological investigation.

Project Features

Key Features

- Remnants of Central School, including granite shafts and plinths of the boundary walls, retaining walls and foundation stones, were exposed and preserved. The foundation stones were retained in their original position throughout construction and visitors can now experience these features in an undisturbed state at the underground interpretation area.
- The existing quarter buildings were modified and strengthened for adaptive reuse, while structural defects were repaired and protected with sacrificial anode where required.
- An exhibition hall block was constructed in linking the existing quarter buildings while bridging over the historic features underground. As bedrock was over 100m deep below ground, frictional mini-piles with shaft post grouting was adopted to achieve economy and ease of construction.
- A glass cover spanning 20m across the courtyard was added with support provided by the existing buildings. The lightweight steel frames display the steel members at their optimum configuration and slenderness.

HONG KONG PROJECT

COMMENDATION MERIT

Category: Infrastructure & Footbridges

C903 South Island Line (East) Viaducts



Client: Mass Transit Railways Corporation (MTRC)
Structural Engineering Firm: Atkins China Limited
Contractor: Leighton Asia Limited

Project Description

- The Viaducts will form part of the new South Island Line (East) (SIL(E)) of Hong Kong's Mass Transit Railway (MTR). The 3km viaduct will connect the Nam Fung Tunnel Portal of Ap Lei Chau Island.
- The SIL (E) line will ease congestion along the north shore of Hong Kong Island with its root cause being at the Aberdeen Tunnel.

Project Features

Constructible and Innovative

- Viaduct mixture of precast segmental and in-situ post-tensioned concrete box girders, typically 2 to 5 continuous spans;
- Balanced cantilever method adopted to simplify deck fabrication and erection;
- Elements individually designed and modelled in 3-D to suit constraints at each pier location;
- Standard section sizes adopted to facilitate constructability;
- Choice of design allowed programme flexibility and minimise construction duration;
- Large diameter mono piles adopted to reduce foundation footprint;
- Monolithic superstructure connected to the intermediate piers eliminating bearings and rail movement joints;
- Multiple deck alignments integrated with a single substructure to reduce foundation impacts;
- Work closely with MTRCL management team and the Contractor to deliver high quality on time.

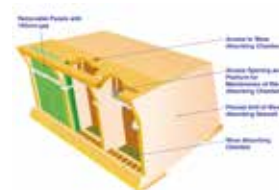
Structural Excellence Award 2015

HONG KONG PROJECT

COMMENDATION MERIT

Category: Infrastructure & Footbridges

Contract No. HK12/02 Central Reclamation Phase III – Engineering Works



Client: Civil Engineering and Development Department
Structural Engineer: Atkins China Limited
Contractor: Leighton – China State – Van Oord Joint Venture

Project Description

Central Reclamation Phase III (CRIII) provides 18 hectares of land for essential transport infrastructure to relieve traffic congestion in the busy Central and Wan Chai districts. This major infrastructure project includes the following:

- Central–Wanchai Bypass (CWB) - 1 km long cut and cover tunnel structure;
- Re-provision of cooling water pumping stations, with viewing platforms;
- Wave absorbing seawall - 1 km long innovative wave-absorbing seawall comprising of a precast caisson with a wave attenuation chamber;
- Star Ferry Central Terminal Building - echoes the design of the historic Clock Tower;
- New Public Piers 7 and 8 and Man Yiu Street Footbridge.

Project Features

- Absolute minimal reclamation;
- Maximisation of land available for public use including continuous promenade access, viewing spots, landscaped decks and depressed roads;
- Integrated design of the ventilation shafts of the cooling water pumping stations into viewing platforms and become an accessible open space for public enjoyment of the waterfront with stunning harbour views;
- Innovative design on wave absorbing seawall to dissipate wave energy;
- Use of Wan Chai breakwater for helipad;
- Energy efficiency design on the new cooling water pumping system to include integrated building management systems to allow automatic control of the pumps to suit air-conditioning demand.

HONG KONG PROJECT

COMMENDATION MERIT

Category: Infrastructure & Footbridges

Terminal Doppler Weather Radar Station



Client: Hong Kong Observatory
Project Manager: Architectural Services Department
Structural Engineer: Canwest Consultants Limited
Architect: Thomas Chow Architects Limited
Building Services Engineer: ISPL Consulting Limited
Landscape Architect: Team 73 HK Limited
Contractor: Sun Fook Kong Construction Limited

Project Description

- A station for the new Terminal Doppler Weather Radar (TDWR) for Hong Kong Observatory (HKO) to house and to operate new Terminal Doppler Weather Radar equipment.
- The new TDWR is for monitoring wind shear at the Hong Kong Airport at Chek Lap Kok.
- The TDWR Station has a single storey main building, with a radome enclosing the radar antennae of the new TDWR on rooftop.
- A new access road of 305m length is constructed to link up the TDWR Station to an existing waterworks access road leading downhill to the Tai Lam Chung Road via Luen On Lane.

Project Features

- As the radome of the new TDWR Station is located on top of the hill, visual impact is a matter of concern, particularly the psychological impact in terms of "Fung Shui" as raised by residents of local rural areas. The radome was shifted to the south as much as physically possible away from the rural areas to the north.
- To make the radome less prominent, the site formation level was lowered, but still striking the balance between cutting in site formation and filling in forming the access road at the entrance to the TDWR Station.
- A 12m high air permeable Green Screen is constructed along the northern boundary of the TDWR Station campus to hide the radome from the rural areas, and also as compensation to the greenery of the natural environment.
- Many green features were incorporated in the design and construction of the building and site formation works.

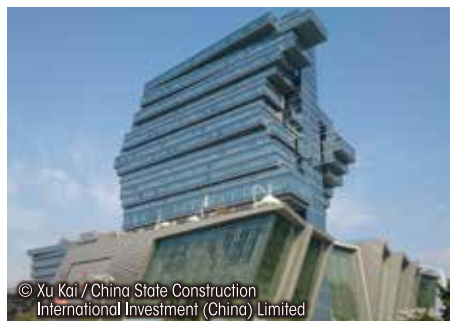
Structural Excellence Award 2015

MAINLAND / OVERSEAS PROJECT

GRAND AWARD

Category: Mainland / Overseas Project

Pazhou 1301 & 1401 Developments



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Client:	Nan Fung China Development Limited
Architect:	Aedas
Structural, Geotechnical & Façade Engineer:	Ove Arup & Partners Hong Kong Ltd
Local Design Institute:	Guangzhou Design Institute
Main Contractor:	Guangzhou Zhanfeng Real Estate Development Co. Ltd

Project Description

- Two iconic mixed-use developments in Guangzhou's exhibition centre zone
- PZB1301, named The Place, houses retail space at the podium and an office tower above, rising 100m in height with a GFA of 133,000m².
- PZB1401, named Nan Fung International Conference and Exhibition Centre, provides exhibition halls, hotel facilities at the podium levels and a hotel tower above. It's 120m tall with a total GFA of 163,000m².
- The two buildings share a common architectural language of staggered blocks stacked on top of each other, both require a very challenging and unique structural solution.
- The "spectacular, irregular" buildings exceed several limits of the China National / Provincial Code and the structural design requires seismic expert panel review at the provincial level.

Project Features

- The structural solutions integrate with the architectural needs, and address the client's functional and cost concerns.
- The stability structure combines shear walls and moment frames in realising their regular and distorted forms, ensuring both earthquake-endurance and economic feasibility.
- A combination of cantilevers, braced trusses, vierendeel trusses, and transfers are used to create the complex architectural massing.
- The structural system has been meticulously developed to produce the architectural form and internal spaces without compromise, providing the occupants with the desired spatial experience free of structural interventions.
- The buildings are of mainly reinforced concrete construction, with structural steel limited to form "outcrop" areas and transfer elements, economical solutions.
- 50m long span roof trusses for the ball room at the podium with 30m high inclined columns, creating large uninterrupted space inside.
- Large-scale shaking table tests to verify the structural robustness and redundancy under earthquakes.
- Wind tunnel tests to examine how such an irregular building envelope affects the wind loading characteristics of the structural system, the façade elements, and the wind environment to the users on the podium and ground.

Awards

JSD AWARDS 2014

Joint Structural Division Awards are established to recognize the best Hong Kong candidates who scored the highest marks in the professional examinations including the HKIE Structural Examination and the Chartered Membership Examination of the IStructE.

Name of Examination	Name of Awardee
HKIE Structural Examination	Ir CHOI Yiu-chung
IStructE Examination	Ms CHANG Fang

BEST REPORTER AWARDS 2014

Best Reporter Awards were introduced in November 2005 to encourage participation in the events organized by the JSD; to promote interests in the respective themes of the events; and to promote report writing skills among members.

Date	Winner	Report Title
15 September 2014	Mr Raymond MAK	Redevelopment of Lower Ngau Tau Kok Estate Phase 1
5 January 2015	Ms TO Wing-man	Civil and Structural Engineering – Much Success and Some Failures

BEST STUDENT AWARDS 2014

Sponsored by structural engineering firms in Hong Kong, Best Student Awards have been announced to commend our undergraduates who demonstrated excellent overall academic results and high level of competence in structural engineering.

Sponsor	University	Awardee
AECOM Asia Company Limited	The University of Hong Kong	Mr HU Tsz-fung
ATKINS	The Hong Kong Polytechnic University	Mr TAM Wing-man
C M Wong & Associates Limited	The Hong Kong University of Science and Technology	Ms SO Wai-han
Siu Yin Wai & Associates Limited	City University of Hong Kong	Mr FUNG Yuk-pan

JSD COMMITTEE MEMBERS 2014-2015

● Report by Chairman of the IStructE Sub-committee (Hong Kong Division) 2014-2015 Session

It is my honour to serve our structural engineering community as Chairman of the IStructE Sub-committee (Hong Kong Division). Council Members from Hong Kong include Ir Prof CHUNG Kwok Fai, Ir Dr Eddie LAM Siu-shu, Ir Prof CHAN Siu-lai and Ir Prof KUANG Jun-shang. The Council Members and I have been serving as the link between the IStructE and the HKIE for the best interest of our members.



● Chartered Membership Examination

Following a briefing session for the 19 lead assessors and coordinators of Chartered Member Professional Review on 21st July 2014, 130 Initial Professional Development Interviews were conducted in late summer last year.

Starting from this year, there are 2 Chartered Membership Examinations, one in January and one in July, each year. Candidates must answer one question from a choice of five. New regulations are also enforced in that electronic devices are prohibited. Candidates can no longer bring any wireless-capable electronic devices into the examination rooms. The prohibited devices include mobile phones, laptops, notebooks, tablets, etc.

The last examination was held on 9th January 2015 with 155 candidates in attendance. In respect of the Hong Kong Division, Ir Prof James LAU Chi-wang is Chief Examiner, Ir Dr H T Cheng, Ir Ir Dr LAW Kwok-sang, Ir Helen KWAN Po-jen and Ir KWAN Kin-kei are Marking Examiners.



▲ The President's Address on 24 November 2014

● The IStructE Presidential Visit 2014

On 24-26 November 2014, the President, Nick Russell and the Chief Executive, Martin Powell visited Hong Kong. In the first evening, Nick delivered the President's Address and presented certificates to 1 fellow and over 40 members. He visited the University of Hong Kong and gave a seminar to the Civil Engineering students and talked to the faculty members. Apart from meeting the President and the Vice-Presidents of The Hong Kong Institution of Engineers, Nick visited the Architectural Services Department of the HKSAR Government and two construction sites of the department. In respect of the latter, the first was a foundation site at Kowloon Bay for the Centre of Excellence in Paediatrics (with over 1600 socketed H-piles and one of the largest design and build contracts to date from the department, when measured by contract sum) and the other was the recently completed Kai Tak Cruise Terminal Building which has received the Grand Structural Excellence Award in 2014.



▲ The President and the Chief Executive visited the foundation site of the Centre of Excellence in Paediatrics



▲ The President at the Hong Kong Institution of Engineers

Final Remarks

I would like to thank the IStructE Sub-committee and Committee Members of the Joint Structural Division for their devotion in organizing the various meaningful activities of the Hong Kong Division. In particular, I would also like to express my deepest appreciation to all senior members who have conducted the Initial Professional Development Interviews and to those who have assisted in the Chartered Membership Examination held in Hong Kong Centres.

Ir Prof Paul PANG Tat-choi
Chairman, IStructE Sub-committee
15 May 2015

Joint Structural Division

List of Chairmen

Session	Name of Chairman	
1st 79/80	Ir TSUI Tack-kong	
2nd 80/81	Ir Prof Fred NG Sai-ho	
3rd 81/82	Ir Dr Raymond HO Chung-tai	
4th 82/83	Ir Andrew NGAI Bick-yau	19th 97/98
5th 83/84	Ir David George HOLMES	20th 98/99
6th 84/85	Ir Brian POON Hon-yin	21st 99/00
7th 85/86	Ir David CHAN Wing-keung	22nd 00/01
8th 86/87	Ir Barry John STUBBINGS	23rd 01/02
9th 87/88	Ir Dr LAW Kwok-sang	24th 02/03
10th 88/89	Ir Patrick YIM Chun-nam	25th 03/04
11th 89/90	Ir Dr Joseph CHOW Ming-kuen	26th 04/05
12th 90/91	Ir Bruce Malcolm FOX	27th 05/06
13th 91/92	Ir TSE Pak-kin	28th 06/07
14th 92/93	Ir Ricky SO Yau-chi	29th 07/08
15th 93/94	Ir Hugh WU Sai-him	30th 08/09
16th 94/95	Ir Ignatius LAU Yik-sum	31st 09/10
17th 95/96	Ir WONG Chi-ming	32nd 10/11
18th 96/97	Ir CHEUNG Kwok-ming	33rd 11/12
		34th 12/13
		35th 13/14
		36th 14/15
		Ir Prof KO Jan-ming
		Ir Prof James LAU Chi-wang
		Ir Kenneth LAU Kwong-hon
		Ir Prof Reuben CHU Pui-kwan
		Ir Prof Paul PANG Tat-choi
		Ir Johnny FAN Siu-kay
		Ir Helen KWAN Po-jen
		Ir Joseph MAK Yiu-wing
		Ir Prof CHOY Kin-kuen
		Ir CHENG Yan-kee
		Ir KWAN Kin-kei
		Ir CHAN Siu-tack
		Ir LAU Chi-kin
		Ir Dr KOON Chi-ming
		Ir Dr Eddie LAM Siu-shu
		Ir Gabriel YU Lin-keung
		Ir Prof CHAN Siu-lai
		Ir Martin TSOI Wai-tong