



ACES SEMINAR 25 July 2019 - INNOVATIONS, CHALLENGES AND REGULATORY DEVELOPMENT



Date: **25 July 2019 (Thu)**
Duration: **8.30 am to 6.00 pm**

Venue: **Balestier Ballroom, Level 2**
Ramada Hotel Singapore
Zhongshan Park, 16 Ah Hood Road, Singapore 329982

ACES Member / RE & RTO / CIJC Member:	\$180 / pax
Non- Member:	\$240 / pax

CPD approved: 7 PDU / 6 STU (Structural)

INTRODUCTION

As Consultants, we are facing daily challenges of regulatory changes, keeping in pace with technology advancement, continual effort to improve efficiency in our works and ensuring core competency is always maintained as well as continual progression in learning from engineering challenges faced in the industry. ACES as a representative of practitioners is always looking for ways to keep our members well informed of the industry practices, advancements and changes via these seminars to meet the challenges above.

OBJECTIVES

Our target audience are Professional Engineers & Practitioners (QPDs QPSs), Engineers, RE/RTOs and Builders in the industry. The focus of this seminar is to provide a platform for sharing of innovative experience in line with productivity; share challenges in underground / infrastructure projects; and updates of regulatory requirements. In order to achieve this objective for the better of the industry, there will be speakers from Government Agencies, Consultants and Contractors to share the insights and experiences with the audiences.

PROGRAM OUTLINES

TIME		CONTENT	SPEAKERS
8.30 am		Registration of participants and invited guests	
9.00 am		Welcome Address by ACES President	Er. Chua Tong Seng (ACES)
9.05 to 9.55 am	50 mins	Challenges on pile design and installation	Er. Dr. Yet Nai Song, BCA
9.55 to 10.45 am	50 mins	Challenges and Lessons Learnt from Singapore Power Transmission Cable Tunnel Project	Mr. Chin Yong Kok, Michael Chairman, SP POWERGRID
10.45 to 11.00 am		Tea Break	
11.00 to 11.50 pm	50 mins	Innovative solutions in Reclamation Projects	James LAM Pei Wei (SJ)
11.50 to 12.40 pm	50 mins	Advancement in Integrated Digital Delivery	Eugene Seah (SJ)
12.40 to 1.00 pm	20 mins	Panels Discussion / Q&A	Moderator: Er. Yong Fen Leong
1.00 to 2.00 pm		Lunch Break	
2.00 to 2.50 pm	50 mins	Lessons Learnt in Deep Excavations and Tunneling in Singapore	Dr. Jeyatharan KUMARASAMY (LTA)
2.50 to 3.40 pm	50 mins	Recent Developments in Reinforcement Solutions & Technology	Mr. Natarajan Saravanan (Natsteel)
3.40 to 4.00 pm		Tea break	
4.00 to 4.50 pm	50 mins	Infrastructure Protection against the Threat of Terrorism	Dr. Ang Choon Keat (Prostruct)
4.50 to 5.40 pm	50 mins	PPVC Development in Singapore	Ms. Aurelie Cleraux (Dragages)
5.40 to 6.00 pm	20 mins	Panels Discussion / Q&A	Moderator: Er. Chua Tong Seng
6.00 pm		End of Seminar	

THE SPEAKERS AND THEIR SYNOPSES

1. Challenges on pile design and installation

Synopsis

In land scarce Singapore, many of our buildings are built taller to optimise the land use. It is a tall order to ensure the safety of foundation for highrise buildings, such that the building settlements are within the permissible limits throughout their intended life span. Piles designed and constructed to support the buildings need to fulfil the performance requirements as stipulated under the Building Regulations, through complying with the code of practice set out under the Approved Document issued by the Commissioner of Building Control.

This presentation will cover the challenges faced in design and installation of piles in Singapore, the control framework, and some of the initiatives taken to enhance the confidence level on the foundation piles constructed in Singapore. Lessons learnt from past excessive building settlement cases will also be shared.

Speaker: Er. Dr. Yet Nai Song

Director, Foundation Engineering Department,
Building Engineering Group, BCA

Dr. Yet has more than 20 years of experience in geotechnical engineering, and has worked in design consultant, geotechnical specialist contractor, academic institution prior to joining BCA. His present role in BCA include formulating guidelines relating to deep foundation work and pile load testing in Singapore, regulating the safety of building work involving deep foundation, deep excavation and tunnelling in Singapore.

Dr. Yet was graduated from University of Malaya in 1991 with a first class honours in Bachelor of Civil engineering. He obtained his PhD degree from National University of Singapore in 1998. He is a registered PE, PE (Geo), and AC (Geo) in Singapore.



2. Challenges and Lessons Learnt from Singapore Power Transmission Cable Tunnel Project

Synopsis

Tunnelling projects require good design and thorough planning; however even when an underground construction project is well planned at its inception, conditions and requirements change during execution. The key to a project's ultimate success is the identification and management of risks during construction through acquiring pertinent geological data, providing the appropriate machinery and experienced work crew, but more importantly, having stakeholders sharing common objectives for a successful project delivery. Through a discussion of issues encountered and lessons learned on the recently completed transmission cable tunnel project, this presentation shares how owners and contractors can better identify and manage risk during construction, implement reasonable management actions to avoid potential time and cost impacts, and bring a project to a successful conclusion. It covers among others the use of technology, a structured safety review process, a pragmatic approach to project management and the importance of 3Cs (client, consultant and contractor) to overcome challenges and achieve the desired outcome for the project.

Speaker: Mr. Chin Yong Kok, Michael

Chairman, SP POWERGRID

Mr. Michael Chin is the Chairman of SP PowerGrid Ltd. He holds a Bachelor of Science First Class Honours and a Master of Science from the University of Manchester, UK and a Master of Business Administration from the National University of Singapore.

He has extensive project management experience and assumed major roles in successful development of numerous projects including the Paragon, SPH Print Centre, SPH Corporate Office, Sky@Eleven condominium, and Resorts World at Sentosa. In SP Group, Mr Chin manages the development of 40km of underground cable tunnels, completed SP's new HQ and spearheads the development of underground substations.

He sits on the LTA and SG HSR Board. He is a development committee member of the Mandai Park redevelopment project and a management committee of the Turf Club.



3. Innovative solutions in Reclamation Projects

Synopsis

Reclamation projects had evolved through the years. The presentation will show various changes in reclamation planning and methodology of some notable projects from past to present. How these innovative solutions overcome project challenges, meet stringent new port requirements and comply with environmental requirement and sustainability considerations.

Speaker: James Lam Pei Wei, Surbana Jurong

James is responsible for the Coastal Engineering Business Unit in Surbana Jurong. Amongst other coastal development projects, he is currently managing the ongoing large scale port development project at Tuas, once of the deepest mega ports in the world when completed. He is also managing other reclamation projects in Tuas and Jurong Island to cater for the needs of marine and the oil & gas industry in Singapore.



4. Advancement in Integrated Digital Delivery

Synopsis

Integrated Digital Delivery may mean different things to different organizations as it depends on the make up of the disciplines, that is, Architecture, Engineering, Cost and Project Management. SJ is uniquely placed in the IDD process because SJ has most if not all of the engineering and design disciplines as well as program, project, cost, facilities and asset management. This topic discusses the journey that SJ took on IDD (and in support of the ITM) and the progress we have made so far.

Speaker: Seah Hsiu-Min, Eugene

Surbana Jurong Group

Eugene joined the Surbana Jurong Group on 1 January 2017 as Senior Director, Group CEO's office, to spearhead and oversee the Group's special projects, in particular the Group's Sustainability, BIM and Productivity initiatives. He is also a Director on the Boards of Threesixty Cost Management and Threesixty Contract Advisory, for which his knowledge and expertise help to fortify the business thrust of the Group.

Eugene graduated with a Bachelor of Science (BSc) (1st Class Hons) from the University of Portsmouth in 2002. He also completed a Master of Science (MSc) in Construction Law and Arbitration from the joint NUS and King College London programme, an MSc in Development Program from Harvard Business School.

Eugene works on enhancing productivity in Design and Construction and research on Computational BIM, VR/MR and other productivity enhancement topics for the Surbana Jurong Group.

Passionate about teaching, Eugene is also an Adjunct Associate Professor at the Department of Building, School of Design and Environment, National University of Singapore.



5. Lessons Learnt in Deep Excavations and Tunneling in Singapore

Synopsis

Construction challenges would differ depending on the construction methods as well as the construction sequences. Various construction methods such as cut and cover methods, mechanised and non-mechanised tunnelling methods, etc are being adopted for the construction of Singapore underground land transport infrastructures depending on the ground condition and constraints at site. Typically, most of the MRT stations and wide tunnels, such as road tunnels, are constructed using cut and cover methods whereas most of the MRT tunnels are constructed using the tunnel boring machines. Several smaller length tunnels such as cross passages are constructed by conventional tunnelling methods such as NATM method. Lessons learnt in the design and construction from those projects will be highlighted in the presentation.

Speaker: Dr. Jeyatharan KUMARASAMY, LTA

Jeyatharan (Jeya) obtained BSc in Civil Engineering from Peradeniya University, Sri Lanka in 1985 and PhD degree in Soil Mechanics from Cambridge University, UK in 1991. He has over 25 years of experience in the field of geotechnical engineering, including deep excavations, tunnelling, soil improvement, deep foundations, slope stabilisation, instrumentation and monitoring, and site investigation works. Jeya has been working with design consultant firms including Parson Brinckerhoff Pte Ltd and Arup (Singapore) Pte Ltd for more than 10 years on major infrastructure projects. Over the last 15 years he has been working with Singapore's Land Transport Authority (LAT) in the planning, design and construction of several major rail and road projects.



He is currently the President of the Tunnelling and Underground Construction Society of Singapore (TUCSS). He is also the Chairman of the Technical Committee for Site Investigation under the Singapore Accreditation Council.

6. Recent Developments in Reinforcement Solutions & Technology

Synopsis

There is a constant need for higher construction productivity which demands for superior solutions, manufactured and delivered digitally. High strength Grade 600 rebar, Carpet Reinforcement and IDD are some of the latest happenings in the industry, which will be covered in this presentation.

Speaker: Mr. Natarajan Saravanan

Asst. Vice President, Natsteel

Mr. Saravanan Natarajan is working with NatSteel Holdings Pte Ltd for the past 20 years. During his tenure, he has contributed to the various functions in NatSteel and is currently the Asst. Vice President in the Marketing department responsible for development and marketing of new products and services. He is also the member and secretary of SS560 work group and also plays an active role in SEAISI (South East Asia Iron & Steel Institute) Subcommittee on Steel Application in the construction industry. Prior to joining NatSteel he has worked with various engineering firms across Asia. He also delivers guest lectures at BCA Academy, IES and Tertiary institutes in Singapore.



7. Infrastructure Protection against the Threat of Terrorism

Synopsis

The threat from terrorism to our society is at its highest level in recent years. Terrorist attacks frequently involved explosive devices or ballistic attacks. Vehicle bombs and homicide bombers with improvised explosive devices (IED), vehicle ramming, shooting and other physical attacks have become common mechanisms for terrorist attacks. In response to the persistent threat of terrorism, the Infrastructure Protection Act (IPA) was passed in Parliament on 2 Oct 2017 and took effect from 18 Dec 2018. The IPA is part of the Ministry of Home Affairs' (MHA) counter-terrorism strategy to keep Singapore safe and secure, by protecting Singapore's critical infrastructure, and buildings that are iconic or have high public footfall. These are especially attractive targets for terrorists. Any successful response to protect society from such incidents will require a well-planned, multi-layered approach that strikes a fine balance between assuring a nation's security and maintaining the freedoms that modern societies enjoy. Technology has and will continue to play a major role in these efforts, and innovative and comprehensive protective technologies must be developed to achieve this objective.

Speaker: Er. Dr. Ang Choon Keat

Specialist Professional Engineer (Protective Security)
Professional Engineer (Civil)

Er. Dr. Ang Choon Keat is a registered Professional Engineer (Civil) in Singapore with two decades of experience in design consultancy and project management for building and infrastructure projects in the public and private sectors. He is also a registered Specialist Professional Engineer (Protective Security) in Singapore and provides blast consultancy for protective structures in both private and public sectors. He has a strong track record in analysing and designing of buildings and infrastructure to resist blast and weapons effects, including safe storage of explosives. Choon Keat is highly experienced in performing Security by Design (SBD) studies. His portfolio includes blast consultancy for transportation, social and community, data centres, military and police, healthcare, and industrial and infrastructure projects, in Singapore as well as overseas.



Choon Keat is also active in the Research and Development and Testing for protective structures. He was a member of international committees for experts in explosive safety and has collaborated with local and international partners from other technical agencies, universities and research centres on research into protective structures and explosive safety. He frequently shares his work in publications and speaking at conferences and seminars. Prostruct Consulting Pte Ltd is the only Testing Laboratory in Singapore accredited for the testing of building elements under blast loading.

8. PPVC Development in Singapore

Synopsis

To raise construction productivity and fundamentally change the design and construction processes, BCA encourage the industry to embrace the concept of Design for Manufacturing and Assembly (DfMA), where construction is designed such that as much work may be done off-site in a controlled manufacturing environment as possible.

PPVC is one of the game changing technologies that support the DfMA concept to significantly speed up construction. It can potentially achieve a productivity improvement of up to 40% in terms of manpower and time savings, depending on the complexity of the projects. Furthermore, dust and noise pollution can be minimised as more activities are done off-site. With the bulk of the installation activities and manpower moved off-site to a factory controlled environment, site safety will also improve.

Speaker: Ms. Aurelie Cleraux

Dragages / Bouygues Construction

REGISTRATION FORM

For enquiry, please call ACES Secretariat at Tel: 6659 5023

Kindly sign and submit your completed registration form to secretariat@aces.org.sg

Code	Title	Fee per pax	Schedule	Venue
S28	ACES Seminar: INNOVATIONS, CHALLENGES AND REGULATORY DEVELOPMENT 2019	ACES Member: \$180 RE & RTO / CIJC: \$180 Non-Member: \$240	25 July 2019 (Thu) 8.30 am to 6.00 pm	Balestier Ballroom, Level 2 Ramada Hotel Singapore 329982

S/N	Full Name	PE No.	ACES M'ship No.	RE / RTO No.	Non-Member
1.					
2.					
3.					

Company:

Address:

Contact Person:

Mobile No.:

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PAYMENT MODE (please tick one):

- Cheque No.** _____ payable to “**Association of Consulting Engineers Singapore**” and mail to “18 Sin Ming Lane #06-01 Midview City, Singapore 573960, Attention: ACES Secretariat”.
- Bank transfer to Association of Consulting Engineers Singapore’s UOB Bank A/C No. 918-340-5361.**
Kindly indicate the course code “**S28**” and your name, and forward the bank transaction details for our records.

Terms and Conditions

By submitting and signing this application form, the company and individual applicant agree to the following:

- a) The company and individual applicant has read and understood the terms of the flyer (if available) and the application form.
- b) Payment for the course must be made (in form of cheque or cash) **two weeks** before the course commencement date.
- c) ACES reserves the right to amend any details relating to the course, revise the course fees without prior notice, cancel or postponed the course.
- d) Cancellation – In the event that participant is not able to attend, please inform us in writing at least **3 working days** before the event date. Otherwise **full payment** is still applicable even if the participant did not turn up for the course.

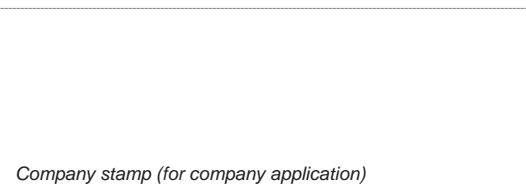
To be completed by Company and Individual Applicant

COMPANY APPLICANT

Name: _____

Signature: _____

Date: _____



INDIVIDUAL APPLICANT

Name: _____

Signature: _____

Date: _____