ACES WEBINAR 2023

TRANSFORMATION & THE FUTURE

25 & 26 MAY 2023

ASSOCIATION OF CONSULTING ENGINEERS SINGAPORE

Mode of Delivery: Zoom Webinar

Register in advance for this webinar:
After registering and payment being made, you will receive a confirmation email containing information about joining the webinar.

If you have any queries concerning this webinar or need further clarification or assistance, please email
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Registration Link & QR Code
https://us02web.zoom.us/webinar/register/WN_WRmpseXlRA6ye5y57xUofA

CPD: PDU / STU (Structural) to be confirmed / 7 STU (M&E)

Note to all participants: CPD points will be awarded based on the actual duration of the session that they have attended.

Day 1	Day 2	Nett Fee per Person
25 May 2023 (Thu) 9.00 am to 6.00 pm	26 May 2023 (Fri) 9.00 am to 6.00 pm	ACES Member S$80 RE/RTO/ CIJC Member S$120 FACE / FIDIC Member S$120 Others / Non-Member S$150

INTRODUCTION

As consultants we face 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 and Builders in the industry. The focus of this seminar is to:

1. provide a platform for sharing of innovative experience in line with productivity and digital delivery,
2. share challenges in underground / infrastructure projects and
3. update of regulatory requirements.

PROGRAM OUTLINES

DAY 1: 25 May 2023 (Thu)

C&S -1			CONTENT	SPEAKERS
9.00 am			Welcome Address by ACES President	Er. Chuck Kho (ACES)
9.05 to 9.55 am	50 mins	1.	Product Conformity Assessment, Factory Production Control Certificate and SAC Specialist Builders (SB) Certification Schemes in Singapore	Mr. Yap Chin Seng CARES Certification Pte. Ltd.
9.55 to 10.45 am	50 mins	2.	Variance of Slope Instability Problems in Malaysia and Lessons Learned	Ir. Liew Shaw Shong G&P Geotechnics Sdn Bhd
10.45 to 11.00 am			Short break	
11.00 to 11.50 am	50 mins	3.	Connected BIM and Cloud-based Design: The Key to Digital Transformation in the Construction Industry	Mr. Stephan Gumpert Autodesk
11.50 to 12.40 pm	50 mins	4.	Ground Improvement: An Alternative to Pile Foundation	Ms. Eleonora Di Mario Keller Foundations
12.40 to 1.00 pm	20 mins		Q&A	Moderator: Er. Gwee Siong Mong (ACES)
1.00 pm			End of C&S Session 1	

MEP - 1			CONTENT	SPEAKERS
2.00 pm			Welcome Address by ACES Imm. Past President	Er. Teo Yann (ACES)
2.05 to 2.55 pm	50 mins	5.	New Trends/Technology - Data Centre	Er. Lim Boon Keong (DSCO)
2.55 to 3.45 pm	50 mins	6.	Regulatory Aspects to Ensure Supply of Good Water and Effective Collection of Used Water	Mr. Roland Chan (PUB) Mr. Christian Budiman (PUB)
3.45 to 4.00 pm			Short break	
4.00 to 4.50 pm	50 mins	7.	To Thrive Through Innovations	Er. Steven Tay (WSP)
4.50 to 5.40 pm	50 mins	8.	The Industrialized Revolution-Shifting from prefabrication to Productization	Mr. Danny van Rij-Roks (Walraven)
5.40 to 6.00 pm	20 mins		Q&A	Moderator: Er. Yeow Mei Leng (ACES)
6.00 pm			End of MEP Session 1	

DAY 2: 26 May 2023 (Fri)

C&S – 2			CONTENT	SPEAKERS
9.00 to 9.50 am	50 mins	9.	Working with the Industry to Expedite the Handover of Road Assets	Mr. Jesse Lim LTA
9.50 to 10.40 am	50 mins	10.	Towards Digital Sharing of Verified Global Warming Potential Data In Constructional Steel Products	Mr. Ladin Camci CARES Certification Pte. Ltd.
10.40 to 10.55 am			Short break	
10.55 to 11.45 am	50 mins	11.	AFRO ASIA Designing a sculpted structure in CBD terraced office environment	Er Lim Kok Kim KK Lim & Associates Pte Ltd
11.45 to 12.35 pm	50 mins	12.	Revolutionizing Building Inspections: The Power of AI Façade Inspection Drones	Mr. Ronen Sharashov Dynamic Edge AI Ltd.
12.35 to 12.55 pm	20 mins		Q&A	Moderator: Er. Yong Fen Leong (ACES)
12.55 pm			End of C&S Session 2	

MEP - 2			CONTENT	SPEAKERS
2.00 to 2.50 pm	50 mins	13.	MEP Design Automation Trend	Er. Ricky Chan (ANR Design Engineer)
2.50 to 3.40 pm	50 mins	14.	Strategic portfolio decarbonisation with building services improvement	Mr. Dion Anandityo (MM)
3.40 to 4.00 pm			Short break	
4.00 to 4.50 pm	50 mins	15.	Connecting to District Cooling Systems District Cooling: Decoupling cooling from the energy and climate crisis	Ms. Anne Miclo (Engie)
4.50 to 5.40 pm	50 mins	16.	Digital Twin Smart Building	Mr. Suzuki Ippei (Azbil)
5.40 to 6.00 pm	20 mins		Q&A	Moderator: Er. Soh Kai Yea (ACES)
6.00 pm			End of MEP Session 2	

THE SPEAKERS

1. Product Conformity Assessment, Factory Production Control Certificate And SAC Specialist Builders (SB) Certification Schemes In Singapore

Synopsis

Product conformity certification and factory production control certificates are crucial for ensuring that products meet the necessary standards and regulations for use in construction projects. In Singapore, the requirements for these certificates are set out in various standards, including Reinforcing Steel SS 560:2016, BC1:2012 Alternative Structural Steels, and Mechanical Couplers to SS ISO 15835.

The Singapore Accreditation Council (SAC) Specialist Builders Schemes (SBS) are programs designed to provide industry-specific accreditation to builders in Singapore. These schemes seek to ensure that builders have demonstrated a high level of competence and adherence to the relevant standards and regulations for specific construction works.

Precast Concrete Products, on the other hand, are pre-made concrete elements that are manufactured in a controlled factory environment, then transported to the construction site for installation. The SBS for Precast Concrete Products requires builders to demonstrate that they have the necessary experience in designing, manufacturing, and installing these products, as well as meeting the relevant quality standards and environmental regulations.

Ground Support and Stabilisation Works (GSSW) for Earth Retaining Stabilising Structures (ERSS) are designed to provide support and stability to structures built on sloping or uneven ground. The SBS for GSSW requires builders to demonstrate the necessary experience in designing, installing, and maintaining these structures, as well as complying with relevant safety and environmental regulations.

Overall, the SAC Specialist Builders Schemes Requirements provide a rigorous framework for ensuring that builders in Singapore have the necessary experience, skills, and knowledge to carry out specific construction works to a high standard. By meeting the requirements of these schemes, builders can demonstrate their commitment to quality and safety, and provide assurance to their clients that their projects will be completed to a high standard.

Speaker: Mr. Yap Chin Seng	
YAP Chin Seng BSc. IRCA LA is a highly experienced professional in the steel industry with 20 years of expertise. Having visited more than 40 steel manufacturing plants across Europe, Middle East, and Asia, Chin Seng brings a wealth of knowledge to his role as overseer of CARES operations in the Asia region, which includes Singapore, Hong Kong, China, and other countries. In his position, Chin Seng ensures that the system of assessments, audits, and independent assurance services are applied to ensure the highest standards of quality for reinforcing steel, relevant steel products and services used in construction across Asia. Chin Seng is a competent technical expert in relation to product conformity, sustainability and construction steel supply chain. As a member of the UK CARES, CARES Certification Pte. Ltd. Singapore and CARES Hong Kong Ltd management committee, Chin Seng has made significant contributions towards enhancing the quality of reinforcing steel across Asia.	

2. Variance of Slope Instability Problems in Malaysia and Lessons Learned

Synopsis

Slope problems can start from an inherent natural hazard without any tangible alteration of initial slope profile to a man-made alteration to induce severe distresses. No doubt gravitational force is the primary driven force to destabilise slope materials with converting potential energy to probably kinetic movement of various magnitude. However there are other factors like site morphology for instability of natural hilly terrain, the deterioration of effective slope material strength by hydrological or hydrological factors and material strength softening with stress relaxation upon unloading with lowering down the resistance below threshold for failure. Creep slope movement is also another type of annoying site problem affecting the infrastructure development despite its slow movement with usually much reduced risk of life threatening. This presentation will show a few case studies to demonstrate these variances of slope instability in Malaysia.

Slope problems in Malaysia can arise from various causes, ranging from natural hazards to human-made alterations that induce severe distress. While gravitational force is the primary driver of slope destabilization, other factors such as site morphology, surface hydrology due to climatic conditions or hydrogeological factors, and material strength softening can also contribute to instability. Additionally, creep slope movement is sometimes an annoying problem in hilly terrain, affecting infrastructure development, although it poses a reduced risk to human life due to its slow movement. This presentation will showcase case studies that demonstrate the variance of slope instability problems in Malaysia and the lessons learned from these challenges.

Speaker: Ir. Liew Shaw Shong

Ir. Liew Shaw Shong obtained his Bachelor of Science Degree in Civil Engineering with First Class Honours from National Taiwan University at Taipei in 1991 and worked as a geotechnical engineer in Sino Geotechnology Inc. at Taipei for a year. In 1992, he continued his post-graduate study in University of New South Wales in Sydney, Australia and obtained his Master of Engineering Science in 1993. He then returned to Malaysia to work as geotechnical engineer in a multi-discipline engineering consultant firm. During the six years of working, he has exposed himself to numbers of major infrastructure projects, likes Lebuhraya Damansara Puchong, Tanjung Pelepas Port, Kuala Lumpur International Airport, etc. In 1999, he jointly established a geotechnical specialist consulting firm with another two partners to continue the consultancy practice till now. He is the senior director/founder of G&P Geotechnics Sdn Bhd. In the past twenty-nine years of his professional career, he has involved in numbers of forensic investigations of landslide problems at mountainous roads and is one of the project team members in the National Slope Master Plan Study commissioned by JKR. He also conducted numbers of short courses and delivered lectures on subjects covering subsurface investigation, instrumentation, dam engineering, slope engineering, soft ground engineering, pile and retaining wall designs, geotechnical case histories and forensic engineering. On the peaty soil formation, he involved in platform treatment and foundation system for a palm oil mill project over the peat soils in flood plain alluvial deposits in Sumatra, Indonesia and a forensic investigation on peat soils flow failure with strengthening solution for an open coal mining at Mukah, Sarawak. He also involves in numbers of basement construction projects in Peninsular and Sabah.

Ir. Liew was the past chairman of Geotechnical Engineering Technical Division of the Institution of Engineers, Malaysia (IEM) for Session 2010 to 2013 and is also the retired advisor of Geotechnical Engineering Technical Division of the Institution of Engineers, Malaysia (IEM) for Session 2014 to 2016. He was the President of Malaysian Geotechnical Society (MGS) for Session 2019 to 2021 and Immediate Past President for Session 2021 to 2022. He is Nominated Member of TC221- Tailing and Mine Wastes of International Society for Soil Mechanic and Geotechnical Engineering (ISSMGE) for Session 2021 and Committee Member of Malaysian National Committee On Large Dam (MYCOLD). He is now also the member of Professional Fellow Member, Engineers Australia (EA). He has published more than 70 technical papers on geotechnical engineering in local and overseas conferences and seminars. In 2005 & 2022, he won twice the Ir. Tan Sri Hj. Yusoff Prize for the best IEM Technical Paper Award.

3. Connected BIM and Cloud-based Design: The Key to Digital Transformation in the Construction Industry

Synopsis

The construction industry is undergoing a massive digital transformation, driven by advancements in technology and increased demand for sustainability, efficiency, and cost-effectiveness. Building Information Modelling (BIM) and cloud-based design are two technologies that are gaining momentum in the construction industry, and for good reason. They are essential components of digital transformation, and businesses that don't adopt them risk falling behind their competitors.

This presentation will discuss the importance of connected BIM for Structural Engineers and cloud-based design in completing the digital transformation journey for businesses in the construction industry. It will explore the benefits of these technologies, including improved collaboration, streamlined workflows, increased efficiency, reduced costs, and better project outcomes.

The presentation will also cover some of the challenges associated with implementing connected BIM and cloud-based design, including data management, interoperability, and security. It will provide insights into how businesses can overcome these challenges and successfully adopt these technologies to achieve their digital transformation goals.

Speaker: Mr Stephan Gumpert Having worked in the structural / fabrication industry for the past twenty years, my passion these days is to help others become more BIM Centric while working collaboratively. Using BIM based processes and the Autodesk Cloud products, I try to help businesses see the power that they can harness for their own. Every business transition is different. Working Smarter not Harder is the key.	

4. Ground Improvement: An Alternative to Pile Foundation

Synopsis

Professional Engineers, Practitioners and Builders regularly face the challenge of fast-tracking the execution of projects, without compromising the quality of their work. This presentation focuses on innovative ground improvement solutions replacing traditional pile foundations, reducing construction time for both the temporary and permanent works. In an age where sustainability must be at the forefront of our decision-making process, these solutions also provide reduced concrete and steel and lower the overall embodied carbon for projects.

Speaker: Ms. Eleonora Di Mario **Eleonora Di Mario** is the Head of Engineering Department for Keller Foundations in Singapore. She is a Chartered Professional Engineer and certified Project Management Professional with a background in both consultancy and construction, specializing in the field of ground improvement. She has 15 years' experience in large-scale infrastructure projects across five continents, including the Zhuhai-Macau-Hong Kong Boundary Crossing Facilities and Three Runways System in Hong Kong, the Klang Valley MRT Line 2 in Malaysia and High Speed Two (HS2) in the UK.	

5. New Trends/Technologies in Data Centre Design and Operation

Synopsis

With a rapid changing landscape in data centre arising from government policies, increase in cloud base services and contactless payment as a result of the COVID-19 pandemic, advance in chip design with smaller and more powerful chips for AI and machine learning, new trends and technologies have been seen over the past few years in keeping pace with these movers.

Brief history of data centre

1. Power density of server rack
2. Power and cooling infrastructure design
3. Physical footprint and size of data centre

Emerging trend and technology

1. Sustainability
   - Clean energy sources
   - WUE matrix

2. Efficiency in Design
   - Green Mark for data centre
   - Reduction in resiliency
   - Leaner electrical design
   - Tracking power and water usage
   - Improvement on air management

3. Technology
   - Hydrogen fuel cell
   - Digital twin technology
   - Speed of deployment and quality assurance
   - High density servers of up to 40kW per rack
   - Energy storage system

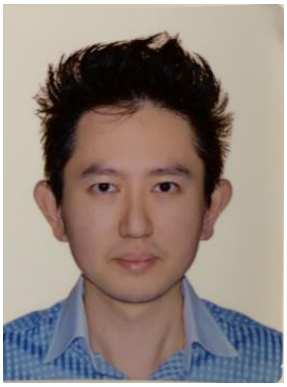
Speaker: Er. Lim Boon Keong Er. Lim Boon Keong is a Technical Director of DSCO Group and have been in the industry for 19 years. He is a certified Professional Engineer in Singapore, an ASEAN Chartered Engineer, a certified Accredited Tier Designer, a Green Mark Accredited Professional and a Singapore Certified Energy Manager. His knowledge in Data Centre Engineering design stems from his vast experience as a Project Lead for projects around the region.	

6. Regulatory Aspects to Ensure Supply of Good Water and Effective Collection of Used Water

Synopsis

In his presentation, Deputy Director Roland Chan will share on how Singapore's future water demand is projected to grow substantially and if left unchecked, this excess demand would need to be met by expending unsustainable energy requirements. Instead, PUB is taking a multi-pronged approach to manage this growth in water demand, adopting differential measures to tackle both the domestic and non-domestic demands to optimistically, support future industrial growth using the same water resources we have today. Whilst water efficient fittings are suitable for managing domestic water demand, the non-domestic sector requires specific technical support to be provided, as well as incentivisation to adopt new water reclamation technologies. Domestic water fittings also have the additional element of water safety, and Roland will share what PUB does to ensure that compliant water fittings continue to dispense wholesome water.

In the second part of the presentation, Senior Assistant Director Christian Budiman will share an overview of Singapore's used water network system and multi-pronged approach on how the industry can participate through their project design and implementation to ensure effective collection of used water.

Speaker 1 - Roland Chan (PUB) Roland Chan has been in the water sector for the last 20 years, having involved in various subject matters such as economic regulation of water sector, water pricing, water demand management, legislation and enforcement. He currently oversees the Water Demand Management and Inspectorate (WDMI) Division, which is part of the Water Supply Network (WSN) Department in PUB, Singapore's National Water Agency. He has two key portfolios. One part of his responsibilities revolves around working with industry partners and stakeholders to develop and implement policies to ensure the sustainable use of water resources in Singapore, while the other part of his responsibilities is to ensure that the industry complies with PUB's regulatory requirements to ensure the delivery of safe water to consumers.	
Speaker 2 - Christian Budiman (PUB) Christian Budiman holds the position of Senior Assistant Director in PUB, Water Reclamation (Network) Department, Planning and Design Division. He has been in the water sector for more than 10 years and is currently overseeing the development control and policy on sewerage and sanitary matters as well as protection submission of public sewerage system. His past portfolio includes development control and policy on drainage matters, earth control measures and drainage project development.	

7. To Thrive Through Innovations

Synopsis

To win and to lead in the market, one need to be able to differentiate his design from others. One of the key winning strategies is through innovation. Increasingly, innovation has become a necessity and no longer a choice, if one desire to win. How to innovate and make a difference in your design? Futureproof design, smart and Sustainable designs, higher energy efficiency, net zero carbon, high availability, cost effectiveness, Buildable design are approaches one can adopt to differentiate their design from others.

The presentation will share some of the implemented innovations and the approaches taken to make a difference in projects.

Speaker: Er. Steven Tay (WSP Consultancy Pte Ltd)

Er. Steven Tay is the Director, Property & Buildings, WSP Consultancy Pte Ltd and has over 30 years of professional engineering experience in the planning, design and management of industrial, commercial, institutional and infrastructure projects.

PE, FIES, MSc (Industrial Eng) NUS, BEng, Mechanical Engineering (1st Class Honours), NTU.

Awards
BCA Built Environment Leadership (BEL) Awards 2019 – GoldPlus
Ministry of National Development Medallion in Recognition for service in the Green Mark Advisory Committee in 2013
Public Administration Medal (Bronze) in 2004
Asean Energy Efficiency Award and BCA Energy Efficiency Award in 2002 for the innovative District Cooling System using seawater cooling and ice thermal Storage at the Changi Naval Base, Singapore
Singapore Defence Science and Technology Award, 1999 for the Underground Ammunition Facility Development, Singapore

Professional Membership
Member, Professional Practical Examination (Mechanical) Sub-Committee, Professional Engineers Board, Singapore
Member, Preservation of Sites and Monuments Advisory Board (PSMAB), National Heritage Board
Member, Preservation of Sites and Monuments Technical Sub- Committee
Member, Study Group on ‘Standards for Liquid Cooling in Tropical Data Centres’, Green IT Technical Committee of the IT Standards Committee (ITSC)

8. The Industrialized Revolution-Shifting from prefabrication to Productization

Synopsis

- Why modularity
- Examples of, modularity
- Benefits of modular concepts
- Environmental impact

Case Studies and Projects

- Hospital ZMC (Zaandam)
- Zaans medisch centrum
- Ministry of VROM (Den Haag)
- Supreme Court (Den haag)
- Head office Roompot (Goes)

Speaker: Mr. Danny van Rij-Roks
Director Integrated Construction Solutions
J. van Walraven Holding B.V., Amsterdam, Netherlands

Experience leader with a technical background who is passionate about modularity and Configure lifecycle management in the MEP market.
Working for Royal Bam as a developer of modular concepts for non-residential buildings resulting in several used cases. Together with the supply chain making steps towards sustainable development end social innovation using lean methodology.
Current position at Walraven to develop, innovate by creating multiple modular concepts in a digital, sustainable and responsible way with our supply chain partners all over the world.

9. Working with the Industry to Expedite the Handover of Road Assets

Synopsis

Industry professionals may be required to construct new streets or carry out improvement works to existing road infrastructure and handover the constructed road facilities to LTA for management and maintenance. In 2022, LTA carried out a series of improvements to fast track and facilitate the handover process. In this presentation, LTA will recap the key process improvements, and with reference to recent case studies, share how the industry can proactively work with LTA to ensure a timely handover of road facilities. LTA will also share resources which are available for Industry Professionals to better appreciate LTA's statutory, regulatory & technical requirements, such as the Geometric Design of Roads Course, and LTA's Quick Guides for Development Proposals.

Speaker: Mr. Jesse Lim
Senior Manager, Engagement and Industrial Development Unit (DBC),
Policy & Planning Group, LTA

Jesse Lim is a senior manager from the Land Transport Authority, Development & Building Control Subgroup. He has been with LTA since 2013, with extensive experience in reviewing and advising development proposal applications submitted by industry professionals. He currently leads the Engagement and Industrial Development Unit of DBC and spearheads various industry engagement and upskilling initiatives.

10. Towards Digital Sharing of Verified Global Warming Potential Data In Constructional Steel Products

Synopsis

The expectations of stakeholders across the steel and construction industry value chain have increased significantly because of new legislation, a growing body of scientific evidence and a greater understanding of sustainability impacts. There is now a demand for companies to manage a wide range of issues in a systematic way, to improve performance and to be able to demonstrate this.

This presentation describes a systematic approach to assess foundations of technical specifications, traceability and product quality as well as the sustainability and circular economy principles of the constructional steel producer. Specification of certified steels helps to reduce detrimental and increase positive sustainability impacts across the industry value chain.

The presentation outlines how Life-Cycle emissions data is accurately calculated for specific steel producers, steel products and fabrication, how 3rd party verification provides confidence in it and how an innovative collaboration is developing a solution that aims to digitalise the constructional steel supply chain so this information can be used by design engineers and other construction stakeholders to help drive down emissions.

The presentation explains digital connection of numerous discrete construction project IT systems to systems used in the material supply chain, enabling the assurance and compliance evidence for a safety critical product such as constructional steel to be utilised throughout the process.

Upfront 'embodied' carbon emissions – measured as its Global Warming Potential (in CO2e per tonne of steel product) - and other environmental data, held within a fully verified Environmental Product Declaration (EPD) will flow through this system enabling the easier identification and selection of lower emission constructional steel products and the accurate calculation of asset level embodied emissions. This in turn can improve the scores available within 'Green' building and infrastructure rating systems and can support sound decision making in the race to Net-Zero.

Speaker: Mr. Ladin Camci

Ladin Camci BSc MSc CSAP Cert NEBOSH ISG is 'Chief Technology & Sustainability Officer (CTSO)' and 'Executive Board Member' of CARES, an international product certification body that focuses on the production, processing, supply and installation of steel products used in the construction industry. Ladin has studied engineering and proceeded to work as a research assistant on steelmaking, thermodynamics and kinetics. Passionate about the steel, the move to private sector was natural fit. With encouragement from colleagues, Ladin has worked for steelmakers and joined CARES in 2009. Ladin has contributed for the development of sustainability and responsible sourcing schemes and digital transformation of CARES internal and external processes to compliment his considerable experience. Ladin is the convener of the fib (International Federation for Structural Concrete) TG 5.2 'Reinforcing Steel and Systems', deputy convener of fib TG 7.5 'EPDs and Equivalent Performance of Concrete' and a member of fib Special Task Group on Sustainability.

11. AFRO ASIA
Designing a sculpted structure in CBD terraced office environment

Synopsis

The site of Afro Asia is located at an intersection of major traffic roads and crossing of 2 underground MRT tunnels i.e.. East-West and Thomson-East Coast lines. The building is an end block to a row of terraced offices along Robinson Rd and the architectural design presented with a unique challenge with a criss cross diagonal column feature rising 40m high from ground as one of the main structural systems. The poor ground conditions warranted seismic design considerations and the building had to be separated by an appropriate distance to comply with regulations, guided by independency of building movements. The desire to have a Grade A office building with long floor spans and exposed sculpted structure presented a myriad of structural challenges both in design and construction. This resulted in multiple systems of RC, PT, Steel and Composite being used in the same building.

Speaker: Er. Lim Kok Kim Managing Director at KKLim & Associates Er. Lim is the Managing Director and founder of KK Lim & Associates PL. He has been a structural designer for 40 years and has overseen tall buildings and infrastructure projects both local and international, in countries such as Australia, Indonesia, Malaysia, Sri Lanka, UAE and Mongolia. He designed the Wisma 46 in Jakarta (tallest office when completed in 1995, in seismic zone). In Singapore, Er. Lim attributes his proudest personal achievements to the conversion of original Keppel Harbour at Telok Blangah Rd to waterfront condominiums (designing the Caribbean and Curved Towers of Reflections) and in providing value engineering designs for Fusionopolis and Changi Airport T3.	

12. Revolutionizing Building Inspections: The Power of AI Façade Inspection Drones

Synopsis

The presentation will provide consultant engineers, PE's/CP's, Civil, Structural Engineers significant and valuable knowledge and know-how about Artificial Intelligence [AI] technology and drones. How they work together to execute successful Periodic Façade Inspection [PFI]. The audience will understand the advantages and disadvantages, limitations of drone use, and how to overcome them.
We will provide 7 simple steps to accomplish successful PFI as a useful assistant platform to enhance the façade inspection process. The audience will learn about a simple tool enabling the firm to execute Façade inspection in the most efficient, easy, and economical way and not less importantly direct access to ask questions about real-life cases of PFI in Singapore.

Speaker: Mr. Ronen Sharashov Experienced high-tech entrepreneur, utilize his over 25 years of experience in local and global high-tech industries to deliver significant value and competitive advantage. B.Sc. In Mechanical Engineering from the University of Ben Gurion in the Negev, and Executive MBA from the Haifa University. His unique combination of technology, engineering and marketing experience comes to realty in the foundation of Dynamic Edge	

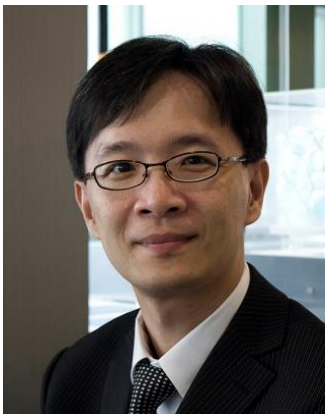
13. MEP Design Automation Trend

Synopsis

According to Forbes, digital twins, artificial intelligence, sustainability, resilient systems and big data are some of the trends driving the architecture, engineering and construction (AEC) industry.
According to McKinsey Technology Trends Outlook 2022, it identifies 14 most significant technology trends unfolding today, Applied AI, Advanced Connectivity, Future of bioengineering, Future of clean energy, future of mobility, future of sustainable consumption, Web 3, Industrializing machine learning, Immersive-reality technologies, Cloud and edge computing, Trust architectures and digital identity, Future of space technologies, Quantum technologies, Next-generation software development.

In this session, I will share with you the followings: -
[1] Quick recap of what is current design automation we have, from a design engineer point of view.
[2] What is our MEP design automation trend (Global & Local)
[3] Is it sufficient to catch the overall trends as mentioned by above mentioned report?
[4] Update on ACES initiatives and efforts on Design Automation for Singapore and Members.

Speaker: Er. Ricky Chan
Director, ANR Design Engineer Pte Ltd
Co-Founder, AECC Basestation Pte Ltd
A Professional Electrical Engineer, Council Member of ACES, Co-Chair of ACES Digital Delivery Committee.
Council Member, Chairman of IES M&E Technical Committee from 2019~2021, with over 27 years of engineering experience.



Prior to the establish his own firm ANR in 2017, he had been serving the consulting engineering firms leading the regional engineering design team and project delivery. The projects include Singapore MRT Downtown Line and East Coast Line Stations, Cruise Terminal, Jakarta Metro Stations and Depot, Modernization of Brunei Airport Terminal.

In 2017, Ricky established ANR Design Engineer Pte Ltd with founding principles of providing modern professional engineering design services by leveraging on technology and new way of collaboration with our AEC (Architectural, Engineering, Construction) talents for achieving a more fulfilling career.

At technology front, Ricky and his team developed an innovative digital design solution (Prototype) called “Co-Design Engineer” powered by Python coding, AI algorithm and BIM application, to have a faster and informed design for Electrical power Supply and distribution of build environment project. The innovation solution development is supported by Enterprise Singapore via Enterprise Development Grant.

At new way of working and service delivery, Ricky and his team from AECC Basestation developed a new and evolving Eco system called AECport.com, it offers a venue, support, opportunity, freedom for people come together to collaborate, offer people own services and solutions, find service solution, to achieve a valuable and rewardable working experience.

14. Strategic portfolio decarbonisation with building services improvement

Synopsis

Climate change is here to stay and the most obvious way to reduce its impact is a holistic decarbonisation of all sectors, including the built environment. Regulations and financial requirements all leads into the need to decarbonise and minimise future risks. In this opportunity, we explore what is possible in the built environment sector to decarbonise through improving building services systems within a portfolio and how this should be challenging the business as usual. From nature-based solution, passive design intervention to engineering solutions, there are decarbonisation strategies we can implement on our existing assets to help mitigate climate change. We will explore engineering solutions to strategically defined which asset enhancement initiatives will have the most impact for carbon reduction. Although these looks to be capital-intensive but they provide the best financial risk mitigations from business as usual.

Speaker: Mr. Dion Anandityo

Dion leads Mott MacDonald's Sustainability services in East Asia, working collaboratively with private and public clients in multiple countries in Asia. As a designer focusing in sustainable design, Dion advocates low carbon solutions in city planning, new build and existing asset portfolio conserving resources while enhancing the overall spatial and environmental quality.

In his professional career, Dion has led the successful growth of the Sustainability teams in Surbana and Arup for more than a decade before joining Mott MacDonald. His project experiences spans from low energy high rise mixed development achieving LEED Platinum, creating sustainability framework for the new Indonesian capital city, to establishing a decarbonisation roadmap for a multi-national developer for their global portfolio.

15. Connecting to District Cooling Systems
District Cooling: Decoupling cooling from the energy and climate crisis

Synopsis

In Southeast Asia, cooling is not a luxury but a necessity of life. According to the Southeast Asia Green Economy 2022 report and the International Energy Agency, the demand for cooling is expected to double by 2030 and could require up to 30% of the region's peak electricity demand by 2040. These forecasts highlight a significant challenge to decarbonising the built environment in the region. A challenge which can be addressed by district cooling.

District cooling provides reliable, sustainable, and cost-effective air conditioning to clusters of buildings within a district. By sharing the load of cooling and optimising energy consumption, building clusters can lower their energy usage, reduce carbon emissions, and save costs, while mitigating the heat island effect.

In this session, we will present the advantages of district cooling and provide guidance on designing buildings' air-conditioning infrastructure to maximise the benefits of district cooling.

Speaker: Ms. Anne MICLO

Anne MICLO is currently Head of Engineering at ENGIE South East Asia, a part of ENGIE Group, a global reference in low-carbon energy and services. Anne oversees a skilled regional team of technical engineers based in Singapore, Malaysia and the Philippines. She specialises in planning, structuring, and managing complex energy efficiency projects. With over 15 years of experience, she develops greenfield and brownfield energy projects to help commercial and industrial players accelerate their transition toward carbon neutrality.

Anne joined ENGIE in 2014. From her base in their Singapore offices, she has played a critical role in expanding the engineering team and standardising its practices across Southeast Asia. Her efforts have enabled the business to broaden its project scope in the region, from small commercial buildings and retrofitting of commercial plants to designing and delivering energy efficiency

and utility projects for large-scale mixed-use developments, hotels, manufacturers, and industrial clients with operations across Southeast Asia. Prior to ENGIE, Anne gained regional and international experience working in the energy sector for renowned companies in France, the UK, and Qatar. In these roles, she developed her expertise in district heating and cooling, delivering solutions for clients across Europe, the Middle East, and Southeast Asia. Anne holds Master's degrees from prominent French Universities Les Mines de Paris and the Institut National des Sciences Appliquées de Lyon (INSA Lyon) in Engineering and Energy Efficiency and in Engineering, Energy and Environment.	

16. Digital Twin Smart Building

Synopsis

Singapore's ambition and whole-of-nation movement towards the national agenda of sustainable city development by 2030 under the Singapore Green Plan is progressing rapidly. From fighting climate change, conceiving decarbonisation technologies and establishing Singapore as an international hub for future green tech and policies.

The Singapore industry of Engineers and Consultants will all play a part in designing, instituting and implementing the green solutions that touches on the five key pillars under the Green Plan; "City in Nature", "Energy Reset", "Greener Infrastructure and Buildings", "Sustainable Living" and "Green Economy". With the policy reinforcement through the Building & Construction Authority (BCA) by raising the sustainability standards of our buildings through the Singapore Green Building Masterplan, which aims to deliver the three targets of 80-80-80 in 2030, will pave the way for a low-carbon built environment.

This drive leads to a need for industry players and building owners to strongly consider and adopt even smarter innovative energy-efficient technologies and controls that will positively transform the built environment sector with better building energy performance and standards.

Speaker: Mr. Suzuki Ippei Mr. Suzuki Ippei is a Professional Engineer from Japan for Environmental Engineering and he is the regional design & technical manager of Azbil Corporation/Singapore, one of the world leaders in building and industrial automation systems. His knowledge and experience in smart building systems allows him to precisely engineer the design and architecture of the open control platforms that are safely installed into projects and developments in Singapore. In tandem with the smart nation and sustainability objectives of Singapore, he implements AI energy-saving technologies into building controls to enable the improvement of building energy use intensity and drive environmental efforts for building owners towards going green. He has contributed towards the design of more than a hundred control systems in Singapore and Japan and has been involved in the completion large-scale Singapore university campus infrastructural projects to enable the integration and control optimisation of multiple different brands of building management systems on open protocols as well as on open digital platforms. His proficiency and expertise has helped influence the design of smart control systems to improve building energy use intensity and reduce consumption-related carbon emissions in critical environment control such as district cooling systems, data centres, laboratories, clean rooms, institutions as well as commercial buildings.