ACES WEBINAR 2026
INNOVATIONS, CHALLENGES AND REGULATORY DEVELOPMENT
21 & 22 MAY 2026

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 and unique link to join this Zoom webinar.

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Registration Link & QR Code
https://us02web.zoom.us/webinar/register/WN_Re68OBqURLSrBCwAPlOYPQ

CPD: PDU - to be confirmed
4 CPD SIA-BOA; 4 STU (M&E) / 6 STU (Structural)

Note to participants: CPD points will be awarded based on your actual duration of attendance.

Day 1	Day 2	Nett Fee per Person
21 May 2026 (Thu) 9.00 am to 6.00 pm	22 May 2026 (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 webinar 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.

ACES WEBINAR 2026

INNOVATIONS, CHALLENGES AND REGULATORY DEVELOPMENT

21 & 22 MAY 2026

ASSOCIATION OF CONSULTING ENGINEERS SINGAPORE

PROGRAM OUTLINES FOR C&S SESSION

DAY 1: 21 May 2026 (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.	Next-Generation Concrete: Enabling Sustainable and Resilient Infrastructure	Prof. Pang Sze Dai NUS
9.55 to 10.45 am	50 mins	2.	S960 Ultra-High Strength Steel Footbridge at Lung Yeuk Tau Interchange (Hong Kong)	Ir. Leung Yew Wah YWL
10.45 to 11.00 am			Short break	
11.00 to 11.50 am	50 mins	3.	BCA/ACES Practical Guide for Post-Installed Reinforcement	Mr. Alex Tan HILTI
11.50 to 12.40 pm	50 mins	4.	Shaw Tower Design	Er. Lim Keong Liam Arup
12.40 to 1.00 pm	20 mins		Q&A	Moderator: Er. Yong Fen Leong (ACES)
1.00 pm			End of C&S Session 1	

DAY 2: 22 May 2026 (Fri)

C&S – 2			CONTENT	SPEAKERS
9.00 to 9.50 am	50 mins	5.	Progressive Geophysical Monitoring of Underground Anomalies during Tunnelling	Dr. Darren Chian NUS
9.50 to 10.40 am	50 mins	6.	Coastal Protection and Shoreline Defence for Climate-Resilient Infrastructure	Dr. Muthusamy Karthikeyan Surbana Jurong Consultants
10.40 to 11.00 am			Short break	
11.00 to 11.50 am	50 mins	7.	AI Workflows: Evolution, Applications in Planning and Design, and Accountability	Ir. Shah Izzni Talif Council Member, ACEM
11.50 to 12.40 pm	50 mins	8.	Regulatory updates, Innovation and Technology	Er. Chen Siew Siew / Mr. Lee Eik Chong BCA
12.40 to 1.00 pm	20 mins		Q&A	Moderator: Er. Gwee Siong Mong (ACES)
1.00 pm			End of C&S Session 2	

THE SPEAKERS

1.

Day 1: 21 May 2026 (Thu)	Time slot: 9.05 to 9.55 am
Topic: Next-Generation Concrete: Enabling Sustainable and Resilient Infrastructure	
Synopsis This presentation highlights forward-looking concrete technologies emerging from our research efforts, addressing key challenges such as carbon reduction, resource efficiency, and long-term durability. Attendees will gain insights into how these innovations can reshape construction practices and support the transition toward a more sustainable built environment.	
Speaker: Prof. Pang Sze Dai (NUS) Pang Sze Dai is Dean's Chair Associate Professor and Deputy Head (Undergraduate Curriculum and Student Matters) in the Department of Civil & Environmental Engineering at the National University of Singapore (NUS). He is the founding Director of the Centre for Resource Circularity and Resilience, established to advance the circular economy in the built environment by transforming waste into valuable resources, strengthening sustainability and resource resilience. At NUS, he has been instrumental in shaping transformative educational initiatives, helping to establish the Engineering Science Programme, the Innovation and Design Programme, and NUS Cities. Beyond academia, he contributes actively to the profession, serving as Vice-Chairman of the IES–IStructE Joint Committee, Council Member of the Singapore Structural Steel Society, and member of national committees such as iBuildSG and the Singapore Accreditation Council. He also serves on the Editorial Board of Nature's Materials Sustainability. His research spans eco-friendly construction materials, waste-to-resource upcycling, CO_2 mineralization, and material durability. He develops tools for physics-based life-cycle carbon assessment and works closely with industry partners to translate innovations into practice. He currently leads several national projects on material circularity, low-carbon building materials, decarbonisation strategies for the built environment, and the assessment and management of ageing buildings and infrastructure assets.	

2.

Day 1: 21 May 2026 (Thu)	Time slot: 9.55 to 10.45 am
Topic: S960 Ultra-High Strength Steel Footbridge at Lung Yeuk Tau Interchange (Hong Kong)	
Synopsis The project involves the construction of a pedestrian footbridge (notably Footbridge F6) at Lung Yeuk Tau Interchange, designed to enhance connectivity between new developments, existing road networks, and cycling infrastructure. The bridge adopts S960 ultra-high strength steel, a material with a minimum yield strength of about 960 MPa—significantly stronger than conventional structural steel. The project establishes a new benchmark for high-strength steel application in infrastructure, providing a technical foundation for future adoption of S960 steel in bridges and other structures. It also demonstrates how innovation in materials and construction methods can support sustainable, efficient urban development.	
Speaker: Ir. Leung Yew Wah **Managing Director (YWL)** Ir. Leung YW has extensive experience in bridge design, construction and maintenance in many countries in the last 40 years. He also deeply involves in developing construction methods, equipment and major temporary works design. He worked for the authorities (Hong Kong	

Government), various international contractors and is currently managing his own consultant firms, YWL Engineering group, with offices in Singapore, HK(SAR), Malaysia, Wuhan & Shenzhen. He has involved in many signature and award winning projects in Hong Kong and Singapore. He works as expert witness and conducts investigation in forensic engineering regularly. He is one of the technical experts, involved in the preparation of Singapore National Annex (NA) to SS EN 1991-2 – Eurocode 1: Actions on Structures – Part 2: Traffic Loads on Bridges; and Singapore National Annex to SS EN 1991-1-5 – Eurocode 1: Actions on structures – Part 1-5: General actions – Thermal actions.	

3.

Day 1: 21 May 2026 (Thu)	**Time slot:** 11.00 to 11.50 am
Topic: BCA/ACES Practical Guide for Post-Installed Reinforcement	
Synopsis This seminar offers a clear introduction to the Practical Guide for Post-Installed Reinforcement (PIR) by BCA / ACES, highlighting its key guidance on the qualification, design methodology, installation, and quality control of PIR systems.	
Speaker: Alex S Tan Han Lin Field Engineer (Structural) | Hilti Singapore B.Eng in Civil Engineering (Hons	

4.

Day 1: 21 May 2026 (Thu)	**Time slot: 11.50 to 12.40 pm**
Topic: Shaw Tower Design	
Synopsis Shaw Tower Redevelopment is located at 100 Beach Road in Bugis. The existing 35 storey building and connected 10-storey auditorium was demolished to make way for a 33-storey high office tower consisting of 6-storey commercial podium with no basement, with a total Gross Floor Area (GFA) of approximately 52,000sqm. The existing building consists of a basement and is founded on H-piles, while the new building is founded on bored piles, mainly to avoid the existing steel piles. Focus point during this talk 1. Merits of Demolishing / Building New vs Reuse 2. Challenges to found new building on a brownfield site. Cost-benefit analysis on reusing. 3. Choice of structural systems	
Speaker: Er. Lim Keong Liam (Arup) Er. Lim Keong Liam is an Associate Principal in Arup Singapore Pte Ltd and is the Co-Lead for the Building Structures Group. He has a vast experience in high-rise structures & in the healthcare building industry.	

5.

Day 2: 22 May 2026 (Fri)	Time slot: 9.00 to 9.50 am
Topic: Progressive Geophysical Monitoring of Underground Anomalies during Tunnelling	

Synopsis

Tunnelling in dense urban environments is often associated with significant uncertainty, including unforeseen obstacles, voids, and geological interfaces that may compromise safety and operational efficiency. In such conditions, progressive geophysical monitoring offers a transformative approach to identifying underground anomalies, particularly where conventional investigation methods are limited. This study presents the development and application of a seismic-based tunnel look-ahead system that utilises the propagation and reflection of seismic waves to progressively detect subsurface anomalies ahead of Tunnel Boring Machines (TBMs). The proposed method enables continuous, non-intrusive monitoring without the need for cutterhead access or drilling through tunnel linings, allowing real-time assessment of ground conditions ahead of the excavation face.

Speaker: Dr. Darren Chian Siau Chen

Dr. Darren Chian is Vice Dean of the College of Design and Engineering and an Associate Professor in the Department of Civil and Environmental Engineering at the National University of Singapore (NUS). He also serves as Director of the Centre for Resilient Underground Infrastructure and Engineering. He obtained his Ph.D. from the University of Cambridge and his B.Eng. (Gold Medal) from Nanyang Technological University. Dr. Chian is currently President of the South East Asian Geotechnical Society (SEAGS) and the immediate past President of the Geotechnical Society of Singapore (GeoSS), where he has served on the Committee since 2013.

Dr Chian is also the Chair of the ESG-IES Technical Committee on Civil and Geotechnical Works. Recognised as one of MIT Technology Review's Top 10 Innovators Under 35 Asia, he has received several prestigious awards, including the GeoSS Promising Young Geotechnical Engineer Award, Prominent Geotechnical Engineer Award, Enterprise Singapore–Singapore Accreditation Council Distinguished Award, Ministry of Transport Distinguished Innovation Award, and the IAAM Scientist Medal. His work spans geotechnical engineering, materials science, and sustainability innovation.

6.

Day 2: 22 May 2026 (Fri)	Time slot: 9.50 to 10.40 am
Topic: Coastal Protection and Shoreline Defence for Climate-Resilient Infrastructure	

Synopsis

Coastal areas are increasingly at risk from erosion and flooding due to sea-level rise, extreme weather, and human activities. This presentation outlines the key processes influencing shoreline change and introduces practical approaches for assessing coastal risks, including wave action, sediment movement, and climate uncertainties. It compares traditional hard engineering solutions such as seawalls, revetments, and dikes with nature-based approaches like mangrove restoration. While hard structures provide strong and immediate protection, they can affect natural coastal processes. Nature-based solutions, on the other hand, are more sustainable and environmentally friendly, especially when combined with engineered measures. Case studies from coastal and estuarine projects, including polder developments and mangrove restoration, are used to demonstrate how integrated approaches can reduce erosion and flooding risks. The presentation highlights the importance of using site-specific and hybrid solutions to achieve effective and climate-resilient shoreline protection.

Speaker: Dr. Muthusamy Karthikeyan

Dr. Muthusamy Karthikeyan is the Director of Coastal Engineering at Surbana Jurong Consultants Pte Ltd, Singapore, with extensive experience in geotechnical and coastal engineering. He holds a PhD and Master’s degree in Geotechnical Engineering from NUS and is a Chartered Engineer in Infrastructure. He has contributed to climate change–related slope stability studies and played a key role in the Pulau Tekong Pilot Polder Project, among other major coastal developments. His expertise includes offshore investigations, seabed characterisation, ground improvement, empoldering, and coastal engineering. Dr. Karthikeyan has received several awards, including the ASTM C.A. Hogentogler Award (2007), the Japanese Geotechnical Society Best Paper Award (2009), and the GeoSS Outstanding Geotechnical Engineer Award (2024). He represents Singapore in ISSMGE Technical Committees (TC211, TC217, TC303) and has been an active GeoSS member since 2008, serving as President from 2022 to 2023.

7.

Day 2: 22 May 2026 (Fri)	**Time slot: 11.00 to 11.50 am**

Topic: AI Workflows: Evolution, Applications in Planning and Design, and Accountability

Synopsis

A quick look at the major developments in AI over the past couple of years, including the rise of AI-generated content, the evolution of AI workflows from direct interaction with large language models to agentic ReAct-style workflows, and the growing availability and accessibility of AI tools. The webinar will also explore potential applications of AI in planning and design workflows, how an engineering consultancy practice can prepare to adopt AI-enabled workflows, and a brief discussion of accountability for AI-generated content.

Speaker: Ir. Shah Izzni Talif b Mohd Adnan
Council Member, ACEM

Ir. Shah Izzni Talif graduated with a Bachelor’s Degree in Civil Engineering with Honours from The University of Queensland, Australia in 2007. He began his professional career working as an Engineering Consultant in Australia, developing experience in the planning and execution of soil investigation works for tunnel and mining works, slope stability, rock and soil stabilization, piling, geological mapping, liquefaction, land reclamation works as well as the design of compacted earth filled dam embankments.

In 2012, he returned to Malaysia where he continued his professional Consultancy career in detailed design and studies project such as large-scale agricultural irrigation and drainage projects, flood mitigation, water distribution replacement and upgrade works, water resources development, integrated river basin management studies, as well as design impact and effectiveness studies.

He is currently serving as the Chief Executive Officer at RPM Engineers Sdn Bhd, and is growing his passion in the development of sustainable and carbon conscious paddy cultivation techniques linking together new technologies with traditional wisdoms.
Ir. Shah is a trained humanitarian response technical specialist through RedR Malaysia and RedR Australia, a certified BEM PAE examiner, an active member of ACEM as well as FIDIC, and keenly promotes the engineering profession through talks, lectures and sharing session at national and international professional platforms.

8.

Day 2: 22 May 2026 (Fri)	Time slot: 11.50 to 12.40 pm

Topic: Regulatory updates, Innovation and Technology

Synopsis

Driven by innovation and technology, the Built Environment requires a dynamic regulatory approach. This presentation highlights BCA's latest regulatory updates and explores how technological advancements are shaping the future of the Built Environment. Through the presentation, the speakers will share recently implemented policies which are designed to foster a safer, more innovative construction landscape.

Speaker:

Er. Chen Siew Siew

Er. Chen Siew Siew is presently a Senior Engineer in the Building and Construction Authority. She has 16 years of experience in the built environment sector. Her meticulous approach to design checking and site coordination ensures project quality and compliance. At BCA, she focuses on formulating regulatory policies for structural safety in building works and is a key member of the team overseeing the Design & Engineering Safety Award.

Lee Eik Chong

Lee Eik Chong is an Executive Engineer in the Building and Construction Authority. He oversees policy work relating to RE/RTO requirements, firm-based supervision, Accredited Checkers, and developers' duties under the building regulatory framework. His work supports efforts to strengthen regulatory oversight, improve industry practices, and uphold safety and accountability in building projects.

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PROGRAM OUTLINES FOR <u>M&E SESSION</u>

<u>DAY 1: 21 May 2026 (Thu)</u>

MEP - 1			**CONTENT**	**SPEAKERS**
2.00 pm			Welcome Address by ACES Vice President	Er. Choong Choon Guan (ACES)
2.05 to 2.55 pm	50 mins	1.	Numerical Investigation of Indoor Ventilation and Air Distribution Using CFD	Mr. Amit Despende CFD Specialist HY M&E Consultancy Services Pte.Ltd.
2.55 to 3.45 pm	50 mins	2.	Reducing Risk of Decarbonisation Investments for Buildings and Campuses Using Digital Twins	Mr. Rohan Rawte Business Head – APAC, Managing Director IESVE Singapore Pte Ltd, Singapore
3.45 to 4.00 pm			Short break	
4.00 to 4.50 pm	50 mins	3.	Sustainable by Design: An Optimised and Open-Engineered Grease Separation System for Real-World Constraints	Mr. Thomas Chan Managing Director Birkhall Pte Ltd Founder, Greasera™
4.50 to 5.40 pm	50 mins	4.	Beyond ESG: Engineering Innovation and Profitability Through Science-Based Sustainability Principles	Ms. Lin Zhang Natural Step International, Sweden
5.40 to 6.00 pm	20 mins		Q&A	Moderator: Er. Ng Han Siong (ACES)
6.00 pm			End of MEP Session 1	

<u>DAY 2: 22 May 2026 (Fri)</u>

MEP - 2			**CONTENT**	**SPEAKERS**
2.00 to 2.50 pm	50 mins	5.	ACES-CYPE M&E Engineering Digital Design Automation Platform	Er. Teo Yann ACES
2.50 to 3.40 pm	50 mins	6.	Unlock the future of AI-ready data centers	Ms. Lim Xin Lan Schneider Electric
3.40 to 4.00 pm			Short break	
4.00 to 4.50 pm	50 mins	7.	Bridging Green Mark Compliance to Net Zero Performance: Diagnostics, Digital Tools and Regulatory Readiness	Mr. Tan Shi Hao Building Systems and Diagnostics
4.50 to 5.40 pm	50 mins	8.	New Inventions and Breakthrough in Fire Safety Engineering	Er. Victor Ho HiLT
5.40 to 6.00 pm	20 mins		Q&A	Moderator: Er. Ho See Fong (ACES)
6.00 pm			Closing Remarks End of MEP Session 2	Er. Choong Choon Guan (ACES Vice President)

THE SPEAKERS

1.

<table>
<tr><td>Day 1: 21 May 2026 (Thu)</td><td>Time slot: 2.05 to 2.55 pm</td></tr>
<tr><td colspan="2">Topic: Numerical Investigation of Indoor Ventilation and Air Distribution Using CFD</td></tr>
<tr><td colspan="2">Synopsis

Indoor ventilation and air distribution play a vital role in maintaining indoor air quality, occupant comfort, and energy efficiency. Poor ventilation design can result in stagnant airflow regions, uneven temperature distribution, and accumulation of harmful contaminants. This study utilizes Computational Fluid Dynamics (CFD) to evaluate the performance of a ventilation configuration featuring top-mounted supply and return air ducts. A key objective is to define and assess a characteristic time constant (Tc), which quantifies the system's ability to remove indoor pollutants such as carbon monoxide (CO), carbon dioxide (CO_2) or any other gas. By analyzing contaminant dispersion and decay within the space, the study provides a quantitative basis for comparing ventilation performance. The findings support data-driven design decisions aimed at improving indoor environmental quality and ventilation effectiveness.</td></tr>
<tr><td>Speaker: Mr. Amit Despende
CFD Specialist
HY M&E Consultancy Services Pte.Ltd

Amit is a CFD/CAE Specialist at HY M&E Consultancy Services Pte. Ltd., Singapore, with over 24 years of international experience in advanced engineering simulation and product development. He holds a postgraduate degree in Mechanical Engineering from the prestigious Indian Institute of Technology Madras (IIT Madras), India. Over the course of his career, he has held key technical positions in leading US and European multinational organizations, delivering high-impact engineering solutions across multiple industries.
At HY M&E Singapore, he champions the strategic use of Computational Fluid Dynamics (CFD) and Computer-Aided Engineering (CAE) to enable performance-driven design in the Built Environment and related sectors. His work focuses on applying physics-based simulation to address complex challenges in ventilation, thermal management, and energy optimization. By integrating advanced simulation with engineering insight, he supports the development of resilient, sustainable, and future-ready infrastructure.</td><td></td></tr>
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2.

<table>
<tr><td>Day 1: 21 May 2026 (Thu)</td><td>Time slot: 2.55 to 3.45 pm</td></tr>
<tr><td colspan="2">Topic: Reducing Risk of Decarbonisation Investments for Buildings and Campuses Using Digital Twins</td></tr>
<tr><td colspan="2">Synopsis

Buildings have a crucial role to play in achieving zero-carbon energy. Reports indicate buildings account for 37% of energy and process-related CO2 emissions, and over 34% of energy demand globally.
To mitigate climate change, industry leaders say that by 2030, 100% of new buildings must be net-zero carbon in operation, embodied carbon must be reduced by at least 40%, and by 2050, all new and existing assets must be net-zero across the whole-lifecycle. Whilst many countries/ organisations have pledged to decarbonise, few understand how their buildings truly perform or have concrete plans to improve them at the scale required.
Technology advancements, i.e. digital twins, are helping to address this.</td></tr>
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These highly accurate virtual replicas leverage physics-based simulations, data, machine learning and AI, to behave like their real-world counterpart and uncover detailed insights into current and future energy/carbon performance. Helping to identify energy efficiency upgrades, as well as simulate impacts of future changes and zero-carbon interventions, prior to implementation, to de-risk decarbonisation decisions.

Speaker: Mr. Rohan Rawte
Business Head, APAC
Managing Director, IESVE Singapore Pte Ltd
Director, IES India Pvt Ltd

A mechanical engineer by profession, Rohan has been involved in the Computer Aided Engineering (CAE) industry for almost 25 years. Initially specialising in the use of digital twins for avoiding failure, extending life/warranty, and optimizing cost in the mechanical/automotive industries, Rohan transitioned to the built environment when he joined IES in 2010. Rohan now manages multiple divisions for IES across APAC. Based in Singapore, he is currently focused on growing the company’s presence and revenue in APAC drawing on his experience in facing new markets, supporting the development and sale of new products, developing global and local partnerships and fostering multi-disciplinary global teams to drive results.

3.

Day 1: 21 May 2026 (Thu)	**Time slot: 4.00 to 4.50 pm**

Topic: Sustainable by Design: An Optimised and Open-Engineered Grease Separation System for Real-World Constraints

Synopsis

The 2025 PUB Code of Practice introduces significant updates to grease management in Singapore, including an enlarged minimum inlet diameter and mandatory sizing in accordance with EN 1825-2 with uprated sizing factors. These changes coincide with real-world challenges faced by consultants — tight plantrooms, complex pipe orientations, and rising expectations for long-term durability and maintainability — making optimisation essential.
This session presents Greasera as an **optimised, open-engineered grease separation system** designed to EN 1825-1 and fully aligned with the latest PUB Code. Its **non-proprietary configuration** uses readily available components, ensuring flexibility in maintenance and replacement without supply-chain lock-in.
To support correct design, the Greasera Designer App — developed under the IMDA Open Innovation Programme and supported by BCA — enables EN 1825-2 sizing, grease and sludge disposal pumping, and AR-based spatial visualisation. The session shows how engineering fundamentals, digital precision, and open-architecture design deliver robust and sustainable grease management solutions.

Speaker: Mr. Thomas Chan
Managing Director
Birkhall Pte Ltd
Founder, Greasera™

Thomas Chan is the Managing Director of Birkhall Pte Ltd and founder of the Greasera™ grease separation system. A long-time practitioner of The Natural Step Framework for Strategic Sustainable Development, he integrates systems thinking and forensic engineering to reshape how the built environment approaches kitchen wastewater management.
Since pioneering the introduction of automatic grease separators in Singapore in the early 1990s, Thomas has focused on engineering modern, sustainable grease management solutions aligned with

EN 1825 and the latest PUB Code of Practice. He led the development of the Greasera Designer App under the IMDA Open Innovation Programme, supported by BCA for sector-wide implementation. Thomas champions an open-engineered, non-proprietary approach to system design. His work centres on improving upstream engineering decisions, strengthening professional boundaries, and advancing resilient, sustainable kitchen waste systems across the built environment. He also delivers guest lectures at BCA Academy on grease separation technology for facility management and plumbing professionals.	

4.

Day 1: 21 May 2026 (Thu)	**Time slot: 4.50 to 5.40 pm**
Topic: Beyond ESG: Engineering Innovation and Profitability Through Science-Based Sustainability Principles	
Synopsis Sustainability is often treated as ESG reporting, carbon disclosure, regulatory compliance or CSR initiatives. While important, these activities address only the surface. When viewed through a systems lens, sustainability becomes a powerful strategic tool that can guide organisational and engineering decisions, accelerate innovation, strengthen operational excellence and increase profitability and competitive advantages. Founded in Sweden more than 30 years ago, The Natural Step is one of the world's earliest strategic sustainability advisory organisations. It developed science-based Sustainability Principles that define the boundary conditions for a sustainable society. These principles translate directly into engineering criteria: reducing the systematic accumulation of harmful substances, eliminating structural waste, increasing resource productivity, and designing for resilience and circularity. This keynote explores how these Sustainability Principles can be applied as first-order design rules and a strategic framework for businesses to drive innovation, profitability and unlock new value opportunities. A real-world case study from the materials industry in Asia will illustrate how embedding sustainability principles across the entire value chain enabled engineering innovation and product reformulation. The transformation achieved higher material efficiency, increased revenue and profit, significant market share growth, and strengthened industry leadership. The session will also demonstrate how sustainability and digitalisation reinforce each other when data is aligned with clear design principles. For consulting engineers, this approach shifts practice from reactive compliance to proactive innovation — enhancing productivity, strengthening regulatory resilience and enabling long-term value creation.	
Speaker: Ms. Lin Zhang Lin Zhang is a business transformation leader and systemic innovation coach whose work bridges science-based sustainability principles with organisational and engineering practice. She serves on the Board of The Natural Step International and is Executive Director of its China office. Holding dual Master's degrees in Sustainable Business Leadership and Electronic Engineering from Lund University in Sweden, Lin combines technical depth with a strong systems-thinking foundation. She began her career in Sweden's semiconductor and telecom sectors, where she led cross-site R&D transformation initiatives across Europe and Asia. She later transitioned into enterprise-level sustainability transformation, specialising in embedding The Natural Step's science-based principles into core engineering workflows and strategic decision-making. Her work enables organisations to use sustainability not as compliance, but as a design and innovation tool to create and capture both short and long-term value, deliver measurable business benefits while reduce environmental impact. Lin speaks internationally on systemic transformation, engineering innovation, and sustainable competitiveness, and mentors master's students at universities in Europe and Asia.	

5.

Day 2: 22 May 2026 (Fri)	Time slot: 2.00 to 2.50 pm
Topic: ACES-CYPE M&E Engineering Digital Design Automation Platform	

Synopsis

The ACES-CYPE M&E Engineering Digital Design Automation Platform, DDAP is a Revit Plug In developed by ACES with assist from CYPE under a Singapore Enterprise Local Enterprise and Association Development Grant. The effort started in Aug 2024. To date, the Platform has completed 10 out of 17 Modules. The Platform utilises Singapore IFC SG Platform to align Space and Object naming conventional to download M&E Requirement from any Arch Revit to a M&E Detail Design Template to generate M&E provisions for the space. These are then upload on to the Arch Base to reflex the M&E provisions. This innovation harness the speed of the Digital Process to expedite M&E Detail Design.

In this presentation, ACES will share the completed the Fire Protection, Plumbing and Sanitation, Lighting, Electrical Power, Earthing and Lightning Protection Modules. By end Dec 2026, we should complete the remaining ACMV and Extra Low Voltages Modules. We will soon be rolling out the subscription packages for the completed Module.

Speaker: Er. Teo Yann

Er Teo Yann has more than 40 years' experience designing M&E Systems for numerous various projects. Some of thess has won awards for M&E Design and Sustainability. He is currently the Group Managing Director of Squire Mech Pte, a leading Singapore M&E Consultancy with operation in China, Middle East and around Asean. He is also the Immediate Past President of ACES and is tasked to lead ACES effort in delivering the M&E Engineering DDAP.

6.

Day 2: 22 May 2026 (Fri)	Time slot: 2.50 to 3.40 pm
Topic: Unlock the future of AI-ready data centers	

Synopsis

In this session we explore how skyrocketing GPU power densities are transforming data center design. We'll dive into the challenges and architectural shifts driven by NVIDIA's high-density rack roadmap and discuss what operators must prepare for as power demands accelerate.
You'll also gain insights into Schneider Electric's validated AI Reference Designs—created to help simplify planning, reduce risk, and accelerate deployment of next-generation AI infrastructure.
Join us to understand the evolution, the challenges, and the possible solutions that will power the AI era.

Speaker: Ms. Lim Xin Lan
Schneider Electric

Lim Xin Lan is a Senior Power System Technical Expert at Schneider Electric, specializing in high-voltage and data center electrical architecture across Asia. With over 14 years of experience in HV/MV systems, GIS design, and energy projects, she supports regional customers with system studies, training, and advanced power solutions.

7.

Day 2: 22 May 2026 (Fri)	Time slot: 4.00 to 4.50 pm

Topic: Bridging Green Mark Compliance to Net Zero Performance: Diagnostics, Digital Tools and Regulatory Readiness

Synopsis

This presentation looks at how project teams can transition from paper-based Green Mark compliance to robust, measurable performance in real-world buildings. It will look at practical and regulatory considerations in testing, commissioning, and operations, highlighting common causes of performance gaps and how diagnostics and enhanced commissioning strategies can address them. The session will also cover digital workflows, dashboards, IoT/BMS data, automated fault detection, and emerging AI tools that aid in both compliance and ongoing system optimisation, including the use of in-house measurement and verification toolkits where appropriate. Furthermore, it will discuss how consultants and project teams can prepare for changing sustainability regulations, which will place greater emphasis on performance verification, documentation, and operational accountability. Finally, the presentation will decode Whole Life Carbon and explain how it supports the transition to Net Zero Emissions, as well as how Green Building Certifications are moving toward net zero outcomes.

Speaker: Mr. Tan Shi Hao

TAN SHI HAO is an Associate Director at Building Systems and Diagnostics Pte Ltd. He supervises and manages all existing building projects and is well-versed in local building codes and regulations, as well as other regulatory frameworks that govern the built environment.

Shi Hao has advised on Environmental Sustainability Design (ESD) for buildings and developments in both the private and public sector. His involvement has helped clients reduce energy consumption by optimising building ACMV design, undertaking ACMV retrofit projects, and obtaining environmental assessment certificates (e.g., Green Mark) while minimizing environmental impacts. He has extensive experience designing new and existing data centres to achieve low PUE and Green Data Centre awards, as well as meeting the SS 564 certification requirements for data centre projects.

8.

Day 2: 22 May 2026 (Fri)	Time slot: 4.50 to 5.40 pm

Topic: New Inventions and Breakthroughs in Fire Safety Engineering

Synopsis

The rapid adoption of lithium-ion batteries in the built environment, driven by technological advancements, has introduced significant fire and explosion risks. Regulatory frameworks such as NFPA 855 and the Singapore Fire Code 2023 imposes stringent mitigation measures once Li-Ion battery capacities exceed the threshold of 20 kWh (Table 10.3.1) (Compartmentalization, higher sprinkler density, flammable and smoke detectors, deflagration vents, smoke purging, etc). These mitigation measures also severely restrict where these batteries can be deployed and what basic fire provision infrastructures need to be in place.
This presentation introduces a product developed to meet the challenges of complying with these requirements at the product level while enabling practical deployment without much addition to the existing battery room's infrastructure. It introduces a flexible approach that balances safety with operational needs, offering alternative strategies for integrating lithium-ion battery systems without compromising fire safety objectives.

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Speaker: Er. Victor Ho

Er. Victor Ho is Director of HiLT Pte Ltd and a veteran fire safety engineer with over 30 years of consultancy experience. A Professional Engineer and Registered Inspector in Singapore, he is also a Registered Fire Safety Engineer with dual Master's degrees in Mechanical Engineering and Fire Safety Engineering.

He serves on the Singapore Master Fire Code Review Committee and was part of the working group that helped shape section 10.3(Energy Storage Systems). He is actively involved in the adoption of UL 9540A into Singapore's regulatory framework.

Internationally, he contributes to Underwriters Laboratories as a technical committee member for UL 2849 and UL 3202, and as a stakeholder in UL 9540. He is also a co-inventor of a patent for lithium-ion battery energy storage containment.

In academia, he lectures at the Singapore Institute of Technology and Ngee Ann Polytechnic, shaping the next generation of fire safety engineers.

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