

# WORLD ENGINEERING DAY 2024 — FEATURING — THE CHARLES RUDD DISTINGUISHED GLOBAL LECTURES

SUSTAINABLE DEVELOPMENT GOALS:  
ENGINEERING AS AN ENABLER

| SUSTAINABLE LIVING | GREEN ECONOMY |  
| ENERGY RESET | RESILIENT FUTURE

MONDAY, 4 MARCH 2024 | 9AM - 1PM (SGT)

SINGAPORE POLYTECHNIC CONVENTION CENTRE & ZOOM  
(FOR INTERNATIONAL PARTICIPANTS)

Accredited: 3 PDUs (PE & CEng & SCEM) | 3 STUs (Structural)



## GUEST-OF-HONOUR



**Mr Edwin Tong**  
Minister for Culture,  
Community and Youth,  
and Second Minister for Law

## MODERATOR



**Prof Seeram Ramakrishna**  
Chairman, Circular Economy Taskforce, NUS &  
Chairman, Sustainable Manufacturing Technical  
Committee, IES

## KEYNOTE SPEAKER



**H.E. Kara Owen CMG CVO**  
British High Commissioner to  
Singapore

## KEYNOTE SPEAKER



**Mr Pang Xingjian**  
Zone President, East Asia  
Schneider Electric

## PANEL DISCUSSION I

**Opportunities and Challenges:  
Energy Reset and Green Economy**



**Ms Abigail Ng**  
Executive Director and Head of Department  
Markets Policy & Consumer Department  
Monetary Authority of Singapore



**Mr Lim Yong Wei**  
General Manager  
Keppel Energy-as-a-Service



**Ms Therese Noorlander**  
Sustainability Director  
Grundfos Industry

## PANEL DISCUSSION II

**The Approach to Foster a Resilient  
Future and Sustainable Living**



**Dr. Ir. Danis Hidayat Sumadilaga**  
President of The Institution of Engineers  
Indonesia (PII) & Chairperson of the  
National Capital (IKN) Infrastructure  
Development Taskforce



**Dr Deven Chhaya**  
Partner  
Infrastructure Advisory  
KPMG in Singapore



**Ms Georgina Phua**  
Deputy Principal (Development)  
Singapore Polytechnic

Organised by:



**SP** Singapore  
Polytechnic



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In celebration of:



**WORLD  
ENGINEERING  
DAY**  
FOR SUSTAINABLE  
DEVELOPMENT



## EVENT PROGRAMME

<b>9:00AM</b>	Registration
<b>10:00AM</b>	Welcome Address by Mr Soh Wai Wah, Principal & CEO, Singapore Polytechnic
<b>10:05AM</b>	Opening Address by Mr Dalsen Chung, President, The Institution of Engineers, Singapore
<b>10:10AM</b>	Address by Guest-of-Honour, Mr Edwin Tong, Minister for Culture, Community and Youth, and Second Minister for Law
<b>10:25AM</b>	MoU Signing with IHLs
<b>10:35AM</b>	WED 2024: Celebrations of Achievements
<b>10:45AM</b>	Distinguished Keynote Address I by H.E. Kara Owen CMG CVO, British High Commissioner to Singapore
<b>11:05AM</b>	<b>Panel Discussion I</b> <i>Opportunities and Challenges: Energy Reset and Green Economy</i> <i>Moderator: Prof Seeram Ramakrishna</i>
<b>11:50AM</b>	Distinguished Keynote Address II by Mr Pang Xingjian, Zone President, East Asia, Schneider Electric
<b>12:10PM</b>	<b>Panel Discussion II</b> <i>The Approach to Foster a Resilient Future and Sustainable Living</i> <i>Moderator: Prof Seeram Ramakrishna</i>
<b>12:55PM</b>	Presentation of Token of Appreciation
<b>1:00PM</b>	End of Lecture
<b>2:00PM</b>	Learning Journeys





# Learning Journeys

## Advanced Manufacturing Learning Journey

**Time: 2PM – 3:30PM**

The Advanced Manufacturing Learning Journey (AMLJ) helps SMEs in Manufacturing embrace Industry 4.0. Co-developed with TÜV SÜD, the programme guides participants through three zones - Digitalisation, Integrated, and Smart - representing different stages of i4.0 transformation. SMEs learn how to digitalise processes, connect machines for valuable information, and integrate systems across the value chain. Over 450 enterprises have undergone the AMLJ, sparking their transformation journeys and upskilling their workforce.

## AI Learning Journey

**Time: 2PM – 3:30PM**

In today's business landscape, leveraging the power of AI is essential for companies looking to stay competitive. The AI Learning Journey by SP is designed to showcase practical AI solutions, illustrating how suitable technologies can improve business processes while providing employees with opportunities to build skills to support the companies' data-driven digital transformation aspirations.

## DT|UX Learning Journey

**Time: 2PM – 3:30PM**

The DT|UX Learning Journey is an interactive showcase of SP's Innovation Framework, which is driven by Humanity-Centred Innovation. Through this multimedia experience, witness how SP has transformed organisations in Singapore and Southeast Asia, and be inspired to embark on your own innovation journey. Centred around the impact of design thinking on people, planet, processes, products, and profitability, this exploration unveils how the framework can propel innovation and drive growth for your organisation.





# Learning Journeys

## HR Learning Journey

**Time: 2PM – 3:30PM**

To address the current disruptions in the global market, SP and the Institute for Human Resource Professionals have developed the Human Resource Learning Journey (HRLJ). This specialised programme targets critical HR areas—Onboarding, Performance Management, and Learning and Development—to empower HR as a strategic driver of business and workforce transformation. The HRLJ positions organisations to prioritise employee development, fostering adaptability in the face of market challenges.

## Technical Visit to Rolls-Royce Singapore @Seletar Aerospace Park

**Time: 2PM – 6:15PM**

Explore the heart of aerospace innovation in Singapore with a visit to the Rolls-Royce Singapore Seletar Campus. You'll learn about fan blade production, explore the engine training facility, and delve into technology labs. Gain insights into engineering technologies, industry skills amid the energy transition, and seize the chance to inquire about engineers' career paths and experiences during this immersive visit.

Organised by:



**Time: 2PM - 4PM | LT18A**

## Embracing Sustainable Engineering Solutions in the Built Environment

A more sustainable and climate resilient future in the built environment is achievable with sustainable strategies to address the issues of climate change, rising sea level and carbon emissions. Join our multidisciplinary professionals as they share their experiences and innovative engineering solutions to solve challenging problems in design or construction for large-scale projects with sustainability goals in mind.

### PROGRAMME HIGHLIGHTS

**Dr Du Hongjian**

Senior Lecturer  
Department of Civil and Environmental Engineering  
National University of Singapore

### Promoting Urban Sustainability through Resource Circularity

Based on the ground-breaking research conducted at the Centre of Resource Circularity and Resilience, National University of Singapore, this presentation spotlights the innovative upcycling of soft clay, waste glass, and construction and demolition waste, into green cement for the production of low-carbon concrete.

**Mr Benjamin Lee Sze Chong**

Project Director  
Teambuild Engineering & Construction Pte Ltd

### Transforming Singapore's Construction Industry: Adoption of Robotic Solutions at Construction Site

This talk looks at the transformative impact of robotics and automation on wall finishing processes. It will explore the innovative use of robotics, and how robotics and automation are reshaping the construction landscape, providing a glimpse of the future where smart technologies elevate the building process to new heights.

**Dr Serene Tay Hui Xin**

Research Fellow, Tropical Marine Science Institute  
National University of Singapore

### Dominant Coastal Processes in Singapore: Computer modelling for Coastal Engineering and Design

As a densely populated island nation, Singapore faces significant risks from climate change and rising sea levels. This presentation looks at how the dominant coastal phenomena affect the design of coastal protection infrastructures, underscoring the importance of addressing these challenges for the resilience of Singapore's coastal areas.

**Ms Tan Su Chern**

Director, Technical Services Division  
JTC

### Using Engineering as An Enabler to Enhance Flood Resilience Against Climate Change & Solarise Our Industrial Estates

This presentation explores JTC's engineering-led sustainability efforts, spotlighting two key projects. Firstly, a 8.9-hectare bio-retention pond on Jurong Island combats flood risks and enhances biodiversity. Additionally, JTC's SolarRoof and SolarLand programs repurpose rooftops and vacant land for solar panels, advancing Singapore's renewable energy goals. Engineering drives transformative solutions for sustainability.





## PANEL DISCUSSION I

# Opportunities and Challenges: Energy Reset and Green Economy

In the pursuit of a comprehensive transformation towards a sustainable future, decarbonisation, climate finance, and Artificial Intelligence (AI) take centre stage. This journey involves transitioning to cleaner energy sources across all sectors, significantly reducing the carbon footprint. Simultaneously, through the strategic allocation of climate finance, fostering green economic growth facilitates the shift towards sustainable practices. Embracing cleaner energy solutions, which benefit from AI-driven innovation, not only mitigates climate change but also ignites the creation of new job opportunities and breathes new life into industries. Sustainability becomes not only a moral imperative but also a competitive advantage, propelling us to thrive in a rapidly changing world. Steadfast commitment to minimising environmental impact secures a prosperous and sustainable future for the community and economy.

## PANELLISTS



### Ms Abigail Ng

Executive Director and Head of Department  
Markets Policy & Consumer Department  
Monetary Authority of Singapore

Abigail helms the shaping of policies on capital markets, aiming to foster fairness, orderliness, and transparency. Her role extends to ensuring the safety and efficiency of financial market infrastructures while championing policies on market conduct to secure equitable outcomes for investors and influence corporate governance standards. In addition to her pivotal role in policy formulation, Abigail oversees MoneySense, the nation's premier financial education program, contributing to the broader goal of promoting financial literacy and empowerment.



### Ms Therese Noorlander

Sustainability Director  
Grundfos Industry

With her expertise in marketing, change management, and reputation, Therese has shaped global strategies for Heineken, Coca-Cola, and LEGO. Leading Grundfos's sustainability initiatives, she is steering the company towards achieving Science Based Targets initiative (SBTi) by 2030 and the Net Zero commitment by 2050. Focused on energy and water efficiency, she ensures Grundfos remains a pioneer in sustainable solutions. As a vital member of the Industry Division Leadership team, Therese contributes to overall strategy and vision.



### Mr Lim Yong Wei

General Manager  
Keppel Energy-as-a-Service

Yong Wei has been with Keppel since 2013, and is the driving force behind the success of Energy-as-a-Service (EaaS), the company's flagship decarbonisation service that provides end-to-end solutions encompassing cooling, solarisation, EV charging, and low-carbon electricity. His strategic leadership has expanded Keppel District Heating and Cooling Systems in Thailand. In Singapore, Yong Wei has significantly increased the number of Retail Cooling projects. Through his emphasis on 'zero capex' and 'operational expertise', EaaS has enjoyed substantial growth, making it a key player in the region.





## PANEL DISCUSSION II

# The Approach to Foster a Resilient Future and Sustainable Living

To proactively address climate change challenges while promoting sustainability, resilience, and innovation will involve reducing carbon emissions, adopting responsible consumption practices, and enhancing recycling efforts, driven by digital technologies and engineering innovations. Simultaneously, the nation is building resilience to withstand climate impacts into the next century. The goal is to create a Zero Waste Nation powered by a circular economy, where 'Reduce, Reuse, and Recycle' become shared norms for citizens and businesses. This integrated approach, bolstered by digital technologies and engineering innovations, ensures a sustainable, resilient, and eco-conscious future for our nation.

## PANELLISTS



### **Dr. Ir. Danis Hidayat Sumadilaga**

President of The Institution of Engineers Indonesia (PII) & Chairperson of the National Capital (IKN) Infrastructure Development Taskforce

With over 30 years in engineering, Dr Danis is a prominent figure in the industry. This alumnus of Institut Teknologi Bandung also holds a Master's from the University of New South Wales, and a Doctorate in Strategic Management from the University of Indonesia. Serving as Chief of the IKN Development Task Force, Ministry of Public Works and Housing, he leads Indonesia's new capital development. Coupled with his role as the Commissioner of Wika Gedung, Dr Danis' expertise resonates in both public and corporate sectors.



### **Dr Deven Chhaya**

Partner  
Infrastructure Advisory  
KPMG in Singapore

Dr Deven leads KPMG's Infratech advisory practice in Singapore and co-leads the Cities practice in the Asia Pacific region. Boasting over 25 years of experience, he has spearheaded transformative initiatives in energy transition, technology, and citizen services. Dr Deven is actively laying the groundwork for Energy Transition in the power sector across Asia Pacific. He holds a Doctorate in business model innovation with a focus on net zero targets, and special interests in Asset Reliability, Smart Grids, Renewable Integration, and new energy market dynamics.



### **Ms Georgina Phua**

Deputy Principal (Development)  
Singapore Polytechnic

Georgina leads SP's mission to be a Polytechnic for all ages through collaborations with industry partners and agencies. Her portfolio includes managing the Department of Industry & Partnership, Technology, Innovation & Enterprise, and the Professional and Adult Continuing Education (PACE) Academy. Georgina ensures end-to-end solutions for enterprises, facilitating their company, workforce, and sustainability transformation. She also manages Singapore Polytechnic International, a wholly-owned subsidiary. She was awarded the Public Administration Medal (Silver) in 2017.



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