Organised by: The Institution of Engineers Singapore | SP Singapore Polytechnic | WFEO / FMOI

In celebration of: World Engineering Day for Sustainable Development

CHARLES RUDD DISTINGUISHED PUBLIC LECTURES 2023

TRANSITIONING TO A NET-ZERO WORLD

Green Plan | Circular Economy | ESG | Green Finance

Live Webinar

25TH MAY 2023, 10AM TO 1PM (SGT)

Lecture

Accredited: 2PDUs (PE & CEng) | 2 STUs (Structural) | GMAP

SP Learning Journeys

Accredited: 1 STU (Structural)

Guest-of-Honour

Mr. Desmond Lee
Minister for National Development
Minister-in-Charge of Social Services Integration

Moderator

Prof. Seeram Ramakrishna
Chairman, Circular Economy Taskforce NUS and
Chairman, Sustainable Manufacturing Technical Committee, IES

Distinguished Keynote Speaker

Mr. Lim Tuang Liang
Government Chief Sustainability Officer
Ministry of Sustainability and the Environment

Panel Discussion I – Empowering Net-Zero Transition through Green Plan and Circular Economy

PANELISTS

Mr. Manuel Ong
General Manager
Danfoss Singapore

Mr. Praveen Hassan Chandrashekar
Head, Sustainability & Resilience Office
Surbana Jurong

Ms. Rohaya Saharom
Vice President, Sustainable Solutions
Mandai Wildlife Group

Mr. Truls Lystang
Group Senior Vice President, Head of Sales
INDUSTRY Division
Grundfos

Panel Discussion II – ESG and Green Finance: Latest Strategies, Trends and Future Outlook

PANELISTS

Mr. Eric Lim
Chief Sustainability Officer
UOB

Ms. Isabella Huang-Loh
Chairman
Singapore Environment Council

Dr. Lee Hui Mien
Senior Director, Group Environmental Sustainability
Singtel

Mr. Vinamra Srivastava
Chief Sustainability Officer
CapitaLand Investment

Click the button below or scan the QR Code to join the Zoom Webinar

REGISTER HERE

PROGRAMME

10:00 AM **Welcome Address by Singapore Polytechnic (SP)**

10:05 AM **Opening Address by The Institution of Engineers, Singapore (IES)**

10:10 AM **Guest-of-Honour Address by Mr Desmond Lee**
Minister for National Development & Minister-in-charge of Social Services Integration

10:25 AM **Distinguished Keynote Address by Mr Lim Tuang Liang**
Government Chief Sustainability Officer, Ministry of Sustainability and the Environment

10:45 AM **Presentation of IES - Wong Yiu Cheong Research in Construction Project Management Scholarship**

10:50 AM **Signing of Memorandum of Understanding (MoU) Between UOB and SP**

10:55 AM **Panel Discussion I – Empowering Net-Zero Transition through Green Plan and Circular Economy**

The net-zero transition needs systemic and integrated approach, innovating technology, delivery systems, and business models, and creating a more circular resource economy. This embarkment of decarbonization needs to be explored and explained. What would waste management (water, packaging, plastic, e-waste, food etc) and recycling look like when we move from linear to circular economy to maximise resource efficiency? Is urban manufacturing in creating 'circular cities' a compelling concept and what is the trade-off in environmental impact? What else can be done to expedite renewable energy future and how will microgrids and long-distance transmission boast renewables deployment?

Featuring insights from experts and leading sustainability practitioners, this session aims to address and clarify some of these hot issues and how to prepare and groom engineers, designers, architects, scientists, and sustainability stakeholders for the future.

11:45 AM **Panel Discussion II – ESG and Green Finance: Latest Strategies, Trends and Future Outlook**

Sustainability is going mainstream and environmental, social and governance (ESG) factors are increasingly driving decisions at all levels of the economy. It has significantly evolved from being a risk and compliance approach to becoming an emerging factor for financial growth. Business operation is no longer about doing well but doing good. Momentum in low-carbon transition and ESG investing has also resulted in trillion of dollars directed to sustainable finance activities and innovative financial products.

Join this session to learn the latest ESG strategy including ESG metrics, compliance issues and solutions such as ESG software, digitalization to streamline data collection and facilitate assessment and evaluations. Hear from experts on challenges, opportunities and trend to watch for long-term investments in green financing in meeting sustainable development priorities.

12:35 PM **Presentation of Token of Appreciation & Photo-taking**

12:45 PM **End of Lecture**

02:00 PM **SP Learning Journeys (for on-site participants)**

Visit www.CharlesRudd.com for more information!

Singapore Polytechnic

LEARNING JOURNEYS

(for on-site participants)

Grundfos Demo Truck

Venue: Carpark D @ Block T12

The first ever Grundfos APAC Industry demo truck is ready to hit the road!

With ambitions to cross over multiple countries in Asia, this truck holds products and solutions across multiple applications relevant to you and your industry.

The APAC Demo truck features a range of world-class sustainable water technologies where visitors can explore various pumping solutions to help reduce their overall carbon footprint showcasing our full commitment towards net zero carbon emission by 2050.

A new addition to the robust Grundfos product offerings is the CR 255 pump. Its new hydraulic design is able to handle large flows up to 320m3/h, more than it has ever handled before. Another main feature is in building an intelligent system "Grundfos iSOLUTIONS". Key features such as precision dosing, constant boosting, multi-master and cascade functionality, level and temperature control handled in a smart and intelligent way for efficiency and effectiveness.

Explore the demo truck to find out more about the innovative solutions that Grundfos offers!

GRUNDFOS

Advanced Materials Technology Centre (AMTC)

Venue: Block W212 - W214

Experiencing Sustainable Solutions made possible by Advanced Materials Technology Centre (AMTC)

In this learning journey, participants would be introduced to various green and sustainable solutions developed in Advanced Materials Technology (AMTC), Singapore Polytechnic. Projects to be showcased include wastes conversion to useful resources, low carbon/green construction materials, solar PV module recycling, as well as natural functional ingredients for complementary health/cosmetics/functional foods.

Consumer Chemicals Technology Centre (CCTC) — Venue: Block T11A, Level 4

Beauty Meets Science: Embrace the Power of Personal Care Innovation @ Consumer Chemicals Technology Centre

Consumer Chemicals Technology Centre (CCTC) is established as a Centre of Innovation (COI) for the Beauty and Personal Care sector in Singapore since 2022. CCTC is committed to developing safe, sustainable and innovative beauty and personal care products for everyday consumer use. CCTC forms part of the Beauty Personal Care Joint Project Office led by Enterprise Singapore and comprises other members such as the Economic Development Board and A*STAR.

CCTC collaborates with industry partners, academic institutions, associations, research institutes and government agencies to drive innovation and create meaningful impact in the beauty and personal care sector. Our innovation projects focus on enhancing product performance, improving sustainability and promoting responsible use of cosmetic ingredients to protect human health and environment in the journey to create more 'Made in Singapore' products.

As a leading institution in the region, we are committed to sharing our expertise and knowledge with the wider community. We offer training programs, workshops, and seminars to industry professionals, researchers, and students, promoting knowledge exchange and fostering a culture of continuous learning.

For the learning journey at CCTC, you will experience three key segments:

- Products developed at CCTC
  Be captivated by the accomplishments of CCTC and learn how the centre creates products that are clean and sustainable for industry. Experience our products to have a 'feel' of how the centre has directly translated innovative ideas into tangible products.

- Consumer Business Ecosystem
  In addition, the co-location of companies on campus gives rise to an end-to-end Consumer Business Ecosystem. This nexus of collaboration brings diverse capabilities and services to bear, accelerating product development and shortening market-to-entry time.

- Training for PET and CET
  Learn how the STAR programme equips companies with knowledge on product development of cosmetics and fragrance development. Experience the Industry Now Curriculum where students work on real world problem statements provided by the companies and propose suitable formulation solutions.

Data Science & Analytics Centre (DSAC) — Venue: AiCoLab, Block T1A310

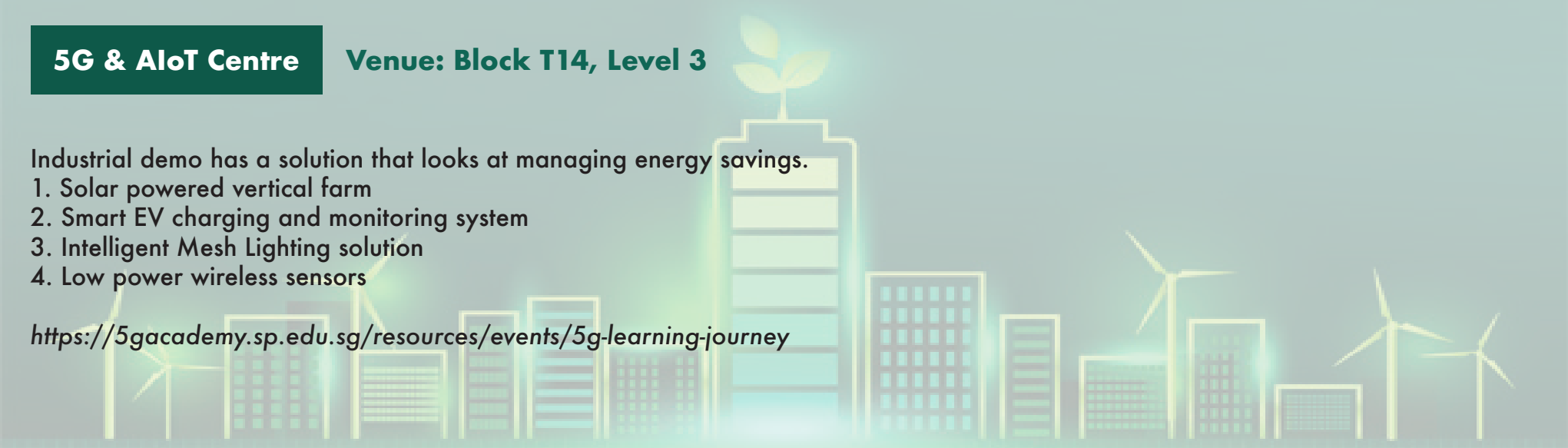
Supporting Companies in their Data-Driven Digital Transformation

As the digital era evolves, it is up to us – how we dream and imagine, and put these dreams and imagination into action - to support Singapore's transformation into a Smart Nation. The Digital Economy provides exciting opportunities for the industry to transform to support this national initiative. It has become apparent that key accelerants to digital transformation are data and analytics. In this talk, we will share how Singapore Polytechnic works with the industry to support the industry in their data-driven digital transformation.

5G & AIoT Centre — Venue: Block T14, Level 3

Industrial demo has a solution that looks at managing energy savings.
1. Solar powered vertical farm
2. Smart EV charging and monitoring system
3. Intelligent Mesh Lighting solution
4. Low power wireless sensors

https://5gacademy.sp.edu.sg/resources/events/5g-learning-journey



School of Architecture & The Built Environment (ABE) Venue: LT18A

Harnessing Innovative Technologies in the Built Environment

By harnessing the rapid technological development and digitalization, the built environment can be made safer, more efficient and collaborative through better delivery, operations and continuous improvements. Hear from our multi-disciplinary leading professionals as they share their experiences on the use and application of innovative technologies leading to desired performance and outcomes in large-scale projects.

Speakers:

MS. OH CHU XIAN

Founder of Magorium

Ms Oh founded a promising start-up that could revolutionise a traditionally unsustainable and resource-intensive industry, i.e. to convert plastic waste into a bitumen substitute to pave roads. Her achievement is well recognised with her name reflected in Forbes Asia's 30 under 30, in addition to Magorium's accomplishments of winning competitions (e.g. HSBC Gamechanger, etc.) and being supported by DBS Foundation, Temasek Foundation and Enterprise Singapore.

NEWBitumen, a novel material to pave green roads - Journey to convert contaminated plastic wastes to NEWBitumen

At Magorium, the key process targets the most problematic plastic waste stream. Contaminated and unsorted plastic wastes are recycled and molecularly engineered to create NEWBitumen, a novel material to pave green roads. Coming from 3 generations of road construction familybusiness, Ms. Oh Chu Xian has witnessed the vast quantities of natural resources mined from earth to pave roads - aggregates from the quarries and bitumen refined from crude oil. Magorium is her way of continuing the family's construction legacy but in a more innovative and sustainable way.

MR. TAN KEE AAN

Founder of TSM C&S Consultants Pte Ltd

Mr Tan has over 14 years of experience in various authorities and major stakeholders' inspections such as HDB, LTA, SMRT, PUB, PSA, CAG, STB. Inspection coverage from underwater, drainage, tunnels, MRT tracks, bearings, flyovers, roads and related facilities and buildings.

Smart Inspection for Buildings and Infrastructures

As the engineering industry is moving toward digital twins, Artificial Intelligence and automation. TSM C&S Consultants is focusing on findingmore innovative solutions for the inspection industry and is committed to be the leading and growing tech-savvy inspection engineering firm.

ER. DR. ONG CHEE WEE

Managing Director of ONE SMART Engineering Pte Ltd

Er. Dr. Ong is the Immediate Past President of Singapore Institute of Building (SIBL) and the Managing Director of ONE SMART Engineering Pte Ltd. He is a Specialist Professional Engineer (Geotechnical), Specialist Professional Engineer (Tunnelling) as well as a Professional Engineer (Civil) registered with Professional Engineers Board (PEB).

He is also a registered Qualified Erosion Control Professional (QECP), ABC Water Professional, DfS (Design for Safety) Professional, Chartered Professional Engineer (Australia), ASEAN Chartered Professional Engineer, Chartered Engineer (Infrastructure Engineering), Competent Person for Facade Inspection, APEC Engineer and International Professional Engineer. He obtained his PhD in Geotechnical Engineering from the National University of Singapore (NUS). He was elected Fellow of the Institution of Engineers Singapore (FIES), FSIB, Fellow of Singapore Institute of Building (FSIB), Fellow of Institute Engineers Australia (FIEAust) and Fellow of the Institution of Engineers Malaysia (FIEM).

Green Solution for ABC Waters Project - Design and Implementation in Construction Sites with Case Studies

The changing climate and damaging effects of CO2 on the environment, including climate change, have led to an awareness, throughout the construction industry, of the need to deliver more sustainable solutions. The Active, Beautiful, Clean Waters (ABC Waters) Projects providing greener and more sustainable method for slope construction and is therefore a good alternative to the construction of a reinforced concrete wall as canal lining.

This presentation describes one of the ABC Water projects of PUB, Singapore's National Water Agency at Sungei Tampines. The ABC Waters project includes the creation of a slope using soil bio-engineering and geogrids. Soil bio-engineering is the use of living plant materials to provide some engineering functions such as erosion control and it is an effective tool for treatment of a variety of unstable slopes or sites. Under this system, storm water runoff is expected to be managed in a more sustainable manner via the utilisation of natural systems consisting of plants and soil that are able to detain and treat rainwater runoff before discharging the cleansed runoff into the downstream drainage system. Soil bio-engineering slope also provides a good opportunity for greening the river bank, without having to worry about soil erosion.

School of Business + UOB **Venue: T18B204**

Sustainable Financing

Sustainable financing comprises environmental, social, governance and economic aspects. Sustainable financing refers to the process of raising capital or investment funds for environmentally sustainable projects or initiatives. The goal of green financing is to support projects that have a positive impact on the environment, such as renewable energy projects, energy-efficient buildings, sustainable agriculture, and clean transportation. Sustainable financing can be done through various channels, such as green bonds, green loans, green venture capital, and other sustainable investment options. It is an important tool for promoting sustainable development and combating climate change.

Speakers:

DON WEE

Senior Vice President, UOB Corporate Sustainability Office

Don is a Senior Vice President with UOB's Corporate Sustainability Office currently.
Prior to UOB, Don had worked with HSBC, OCBC and Citibank. Don is a Member of Parliament and serves with the Government Parliamentary Committee for Sustainability and Environment.
He has been serving as an elected council member of the Institute of the Singapore Chartered Accountants.
Don graduated with an MBA from NTU and Master in Public Administration from NUS.
He is a Fellow Chartered Accountant (Singapore) as well as Fellow Certified Practising Accountant (Australia).

KIANG KHIANG TAN

Course Chair, School of Business

KK is a course chairman and senior lecturer for the diploma in banking and finance in School of Business, Singapore Polytechnic. He leads and manages the Diploma in Banking & Finance course, including updating course relevance through industry engagements and infusing FinTech and sustainability elements in the curriculum.
Prior to joining the education sector, KK had spent a decade of his professional life working in the banking industry possessing a wide experience across consumer banking, commercial banking as well as wholesale banking, primarily in the risk management area. KK graduated with a Master in Financial Engineering (MFE) from NUS and a graduate diploma in Finance Technology from SUSS. He is also a practising life coach with an Associate Certified Coach (ACC) credential with the International Coaching Federation (ICF).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Singapore Green Building Council

STAS — Specialists Trade Alliance of Singapore

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