

## PROPOSED PROGRAM FOR ENGINEERS 2023

Time	Program
9.00am – 9.30am	Registration
9.30am – 9.45am	Opening Speech by MASHRAE President
9.45am – 10.45am	Net Zero by 2050 (Part 1)
10.45am – 11.00am	Tea Break
11.00am – 12.00pm	Net Zero by 2050 (Part 2)
12.00am – 12.30pm	Q&A
12.30pm – 2.30pm	Lunch Break & Exhibition
2.30pm – 3.30pm	ASHRAE Standard 241 to Reduce the Risk of Disease Transmission in Indoor Spaces
3.30pm – 3.45pm	Tea Break
3.45pm – 4.45pm	V in HVAC – Energy Efficient HVAC Systems Design
4.45pm – 5.00pm	Token Presentation
5.00pm	ENGINEER Cocktail Session (Speakers and MASHRAE office bearer)

### MORNING SESSION (BY CK TANG)

#### Topic 1: Net Zero by 2050

**Synopsis:** The world must achieve Net Zero by 2050 to stabilize our climate. Unfortunately, most of us are baffled by the numerous indicators of carbon accounting, rating tools, ESG disclosures requirements, energy efficiency, renewable energy, carbon offset, and more. We are also worried about the cost of doing this. Net Zero by 2050 will require us to turn this chaotic mess into a tangible roadmap that can be implemented by every one of us today, not in 2030 or 2050. And at a lower cost than business-as-usual.

**Biodata:** CK Tang has more than 28 years' experience and completed more than 35 energy efficiency, renewable energy, green buildings, and net zero projects around the world. He wrote 2 books on energy efficiency that were published by UNDP. He also has 13 years' experience working with various development agencies, DANIDA, ADEME, UNEP, UNDP, UN Environment, and World Bank. His green building projects won numerous awards, and recently co-wrote the Primer for Zero Carbon Buildings for World Bank.

## **AFTERNOON SESSION (BY MARWA ZAATARI, PHD)**

### **Topic 2: ASHRAE Standard 241 to Reduce the Risk of Disease Transmission in Indoor Spaces**

**Synopsis:** ASHRAE Standard 241, Control of Infectious Aerosols establishes minimum requirements to reduce the risk of disease transmission by exposure to infectious aerosols in new buildings, existing buildings, and major renovations. Infectious aerosols are tiny, exhaled particles that can carry disease-causing pathogens and are so small that they can remain in the air for long periods of time and be inhaled. Use of this standard would reduce exposure to SARS-COV-2 virus, which causes *COVID-19*, *influenza viruses and other pathogens that cause major personal and economic damage every year*. Standard 241 provides requirements for many aspects of air system design, installation, operation, and maintenance. Important aspects of the standard include infection risk management mode, requirements for equivalent clean airflow rate, requirements for use of filtration and air cleaning technology, planning and commissioning.

### **Topic 3: V in HVAC – Energy Efficient HVAC Systems Design**

**Synopsis:** This course provides instruction on how to design a more efficient ventilation system using the indoor air quality procedure. The course covers constant volume, VAV recirculating systems, DOAS with VRF and chilled beams for single zone and multiple spaces. For each ventilation system, the course provides energy modeling comparison of cooling and heating energy savings using the indoor air quality procedure.