

## Organizers



## Co-organizers



The Association of  
Energy Engineers  
Hong Kong Chapter



# Technical Talk on IAQ and Energy Saving

29 July 2017 (Saturday)

The Energy Institute Hong Kong and the Ability R&D Energy Research Centre of City University of Hong Kong jointly organize a half-day **Technical Talk on Indoor Air Quality and Energy Saving** with support from the Association of Energy Engineers (Hong Kong Chapter), the Hong Kong Association of Energy Engineers and ASHRAE-HK Chapter on 29 July 2017 (Saturday) for their members. Others interested professionals in this event are also welcome.

## **About the Event**

Following the issuance of Energy Saving Plan and Climate Action Plan 2030+ by the Environment Bureau, the HKSAR Government is targeting to reduce the energy intensity by 40% by 2025 using 2005 as the base year. Traditionally, good indoor air quality means more energy consumption but with the technology advancement, energy can be saved as well as providing good IAQ. Our speakers will discuss the technology to achieve good IAQ and energy saving simultaneously. From research to design and application with the ultimate aim to reduce the energy consumption without sacrifice the level of comfort and indoor environment.

## **Topic 1 – How UVC can cut Energy and Operational Costs & Application in HVAC System**

Competent property owners and professionals have been faced with challenges of keeping complex HVAC systems running efficiently and at optimal performance to reduce energy and operational costs; besides building up new premises, Retro-Commissioning becomes so eminent to maintain and improve their systems with indoor IAQ upgrade and energy savings. The speaker will explore and demonstrate how UVC offers to inactivates and destroy microbial organisms such as bacteria and viruses that existed in air-side equipment, also improving AHU coil heat transfer and optimizing chiller performance. There are other facilities like passenger elevators, polluted areas in the premises that require UVC incorporated device to protect human lives.

### **Topic 2 – Update on Variable Air Volume & Constant Air Volume Technology**

Comfort air to all occupants in the building does not limit to temperature and humidity condition offered by its HVAC plant system, but the amount of airflow serving at the right location, and at the right time. Variable (VAV) and Constant (CAV) airflow control requirements in the HVAC system become headache to most professional engineers, with great concern to investment and energy consumption. The speaker will offer an update of the VAV and CAV devices and equipment applying in the airside system, including VAV boxes and diffusers, CAV non-electric mechanical regulators; all to comply contemporary requirements of indoor IAQ and energy saving demand, as well as the minimum costs in system calibration and maintenance.

### **Topic 3 – Development of Functional Nano-coating for Glass**

Glass is widely used in buildings and vehicles for better appearance and daylighting. However, solar heat gain through the glass is high, which results in high interior temperature and high energy use. A transparent nano-coating developed by Hong Kong Polytechnic to block the near infrared solar irradiance, which can reduce the solar heat gain through the glass by 40% and hence the air-conditioning system energy consumption. The research won the Global Innovation Awards at the TechConnect World Conference and Expo 2017 held in Washington, D.C. in May 2017 and it is the first time for a Hong Kong higher education institution to receive the award.

### **Topic 4 – Essence of Holistic Energy Management and a Sustainable Building Case Study**

Energy management has its great importance for striving sustainable building operations, it also plays a vital role in managing the carbon emission, hence combating the climate change impact to us. To address continuous business growth and growing expectations on building energy performance, a holistic and effective energy management is definitely required. The speaker will share what are the essential elements of an energy management, that has being adopted in The Hong Kong Jockey Club by integrating process, people and advanced technology for managing utility costs over hundred millions dollars in a year. A case study of HKJC Shatin Communications and Technology Centre will also be presented to demonstrate those salient design features and the importance of Facilities Management (FM) integrated design. This building is a truly sustainable and user-friendly building which has received local and international recognition and awards.

### **Topic 5 – Energy Saving Measures and Practices – From Technology to Behaviour**

Energy consumption in buildings is the major contributor to greenhouse gas emissions in Hong Kong. Incorporation of a variety of energy saving technologies in building's design and construction can optimise venue utility and improve energy efficiency of the building for an achievement of direct energy saving. However, the hardware enhancement for building services and systems could be only taken as an energy saving tool, awareness and daily practice among the building users are of utmost importance as our consumption behaviour directly affects our environmental performance. Individuals' personal habits are determinant to influence long-term levels of energy consumption, including diverse uses of air-conditioning, lighting and electrical equipment in the building. In this topic, the speaker will demonstrate and share Hong Kong Baptist University's holistic energy conservation strategies through hardware and software approach for the University's commitment to the sustainable development.

### **Moderator**

- **Ir K F Yee**, Vice-Chairman, Energy Institute Hong Kong

### **Speakers**

- **Mr Peter Beale**, Director of International Marketing, Sterilaire, USA
- **Mr Tomas Podgurski**, Director of Engineering, Royal Services, USA
- **Dr Vivien Lu**, Associate Professor, Department of Building Services, The Hong Kong Polytechnic University
- **Ir Eric Lau**, Executive Manager, Property Facilities Management, The Hong Kong Jockey Club
- **Ir Jimmy Lam**, Assistant Director (Building Services and Systems), Estates Office, Hong Kong Baptist University

<b><u>Time &amp; Date</u></b>	0910 - 1300; 29 July 2017 (Sat)	<b><u>Venue</u></b>	Tin Ka Ping Lecture Theatre ( <b>Lecture Theater 1</b> , LT-1), 4/F, Academic 1, City University of Hong Kong, Tat Chee Avenue, Kowloon Tong
<b><u>Fee</u></b>	Free of charge	<b><u>CPD</u></b>	CPD attendance certificates will be issued to attendees (4 hours)
<b><u>Language</u></b>	English		

### **Registration**



Please register on-line through <https://goo.gl/4GE9Ry> (copy this link and paste on the browser should it cannot be linked directly) on or before **24 July 2017**

### **Tentative Rundown**

0910 - 0930	Registration
0930 - 0935	<b>Welcoming Notes</b> - <b>Ir Paul Lee</b> , Chairman, Energy Institute Hong Kong
0935 - 0940	<b>Souvenir Presentation</b>
Moderator: <b>Ir K F Yee</b> , Vice-Chairman, Energy Institute Hong Kong	
0940 - 1030	<b>How UVC can cut Energy and Operational Costs &amp; Application in HVAC System</b> - <b>Mr Peter Beale</b> , Director of International Marketing, Sterilaire, USA
1030 - 1100	<b>Update on Variable Air Volume &amp; Constant Air Volume Technology</b> - <b>Mr Tomas Podgurski</b> , Director of Engineering, Royal Services, USA
1100 - 1120	<i>Tea Break</i>
1120 - 1150	<b>Development of Functional Nano-coating for Glass</b> - <b>Dr Vivien Lu</b> , Associate Professor, Department of Building Services, The Hong Kong Polytechnic University
1150 - 1220	<b>Essence of Holistic Energy Management and a Sustainable Building Case Study</b> - <b>Ir Eric Lau</b> , Executive Manager, Property Facilities Management (Technical Services & Planning), The Hong Kong Jockey Club
1220 - 1240	<b>Energy Saving Measures and Practices – From Technology to Behaviour</b> - <b>Ir Jimmy Lam</b> , Assistant Director (Building Services and Systems), Estates Office, Hong Kong Baptist University
1240 - 1300	<i>Q&amp;A</i>
1300	<i>End of Event</i>