

Organised by:



BEAM Pro Mandatory CPD
綠建專才持續專業發展(強制性)

3 Mandatory CPD hours for BEAM Pro

Technical Seminar on Hospital Filtration Systems and Airborne Contaminant Control

Programme Highlight:

Session 1: Hospital Filtration Systems and Airborne Contaminant Control

On 12 July, 2014, a HKD\$1.6 billion request for funds to redevelop Queen Mary Hospital received support from lawmakers, passing in the final minute of the Legislative Council Finance Committee's final meeting before the summer break. Recently in construction industry, the number of Hospitals and healthcare related projects are uprising. Health care HVAC systems serve facilities in which the population is uniquely vulnerable and exposed to elevated risks of health, therefore Hospital Filtration Systems and Airborne Contaminant Control is one of the challenging topics to engineers.

Health Care facility air conditioning plays an important role in patient therapy by controlling airborne microorganisms, viruses, and hazardous chemicals that may be present in the indoor environment. The nature of the health care environment requires that special attention at the design stage be considered to limit air movement between departments, dilute or remove air borne contaminants, and recognize that temperature / humidity conditions may vary in areas within the same building.

Health Care HVAC designers must consider the control of airborne infectious disease, room pressure relationships, and Outdoor Air Requirements (ASHRAE Standard 62.1) to meet Health Care Facility IAQ concerns. Complicating the dilution strategy are ASHRAE Standard 90.1 guidelines calling for higher efficiency in LEED / High Performing Building Design. The presentation will focus on infection sources, control measures, air movement and proper filtration techniques that can be designed into the building's air handling system. An overview of anti-microbial construction techniques as they apply to dedicated outdoor air systems will also be discussed.



Session 2: Airborne Transmission Route of the Exhaled Bio-aerosol Contaminants from Patients in SARS Isolation Wards

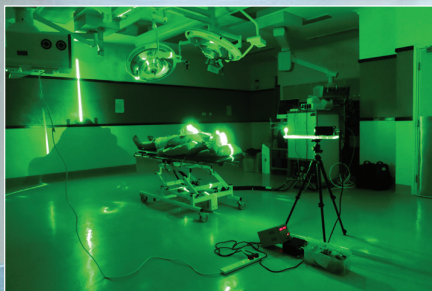


Photo from Dr Benny Chow

The design of airborne infection isolation (AII) room has become one of the major research domains following the emergence of the global concern of acute respiratory diseases in this century. These include severe acute respiratory syndrome (SARS) in 2003, H5N1 avian influenza, and pandemic influenza H1N1 in 2009. All of which have claimed thousands of lives.

A common engineering approach to isolation room design is to maintain the air ventilation rate at a minimum of 12 air changes per hour (ACH) for mixing and dilution, and a negative pressure in the room to direct airflow inwards, instead of leaking outwards.

The research implemented a high-fidelity human patient simulator (HPS) which could be programmed with different lung breathing conditions and oxygen flow rate settings.

The study quantitatively revealed the distinctive patient exhaled airflow patterns and the extent of bio-aerosol, generated directly from the patient source with the application of different oxygen delivery interventions for different patient lung conditions and oxygen flow rates. It was found that contamination was more critical during the administration of oxygen therapies, which is common in clinical circumstances. Source control is therefore the most efficient and effective approach to the reduction and even elimination of patient exhaled bio-aerosol contaminants.

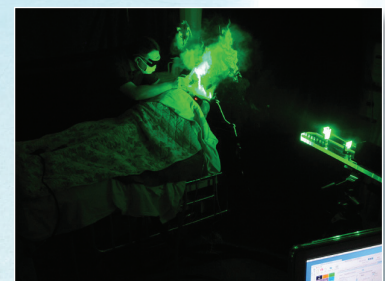


Photo from Dr Benny Chow

Speakers

Mr. Brian P. Monk, P.E.

Brian Monk is responsible for UTC Climate-Control-Security Custom Air Handling Solutions, specializing in design of air treatment systems, including airborne contaminant control and dedicated outdoor air systems with energy recovery.

Previously Mr. Monk was Director of Sales / Marketing for Carrier Corporation's custom air handling division. During this period Mr. Monk was also an instructor for Carrier University's Sustainability Symposiums under the International Association for Continuing Education and Training (IACET) program which provides CEU Credit for Professional Engineering Licensure in the USA.

His academic background comprises of a college degree in Applied Science (Building Systems Engineering Technology) from Vanier College of Montreal and a Bachelor of Building Engineering from Concordia University of Montreal. He is a Registered Professional Engineer with the Province of Quebec, Canada, and the Association of Professional Engineers and Geoscientists of British Columbia, Canada.

Mr. Monk is an ASHRAE Distinguished Lecturer, Member of Committee TC 2.3 Gaseous Air Contaminant Removal Equipment, and TG HVAC Security. He is also Part-Time Professor at Concordia University, Montreal, Canada, in the Faculty of Building, Civil and Environmental Engineering.



Dr. Benny Chow, Director of Sustainability, Aedas

Benny Chow is the Director of Sustainability (Aedas), an award winning sustainable design expert with worldwide project experience and a nominated LEED International Roundtable Representative, LEED AP BD+C (USGBC), appointed as the Member of the Board of Directors, Chairman of the Industry Standards Committee (ISC), and GB Faculty of the Hong Kong Green Building Council (HKGBC), an appointed committee member of BEAM Expert Panel and BEAM Plus Professional, and the Deputy Director of Board of GB Certification (China Green Building (HK) Council).

As the Director of Sustainability at Aedas Hong Kong, Prof. Benny brings with him 18 years of experience in Sustainable Design specializing in computer modeling and analysis, urban wind environment, solar heat gain calculations, global daylight illumination simulation, building energy modeling, and air ventilation assessment using Computational Fluid Dynamics (CFD), which invaluablely strengthened the architectural concept and designs of more than 320+ projects that he has worked on.

Benny is concurrently appointed as an Honorary Associate Professor in the Department of Mechanical Engineering at HKU, Adjunct Associate Professor in the Center for Housing Innovations at CUHK, and Honorary Research Fellow of the Faculty of Medicine at CUHK.



Supporting Organisations:



Date: 28 August 2014 (Thursday)
Time: 2:00pm - 5:00pm
Language: English

Venue: 25/F, Multi-function Hall 1, The Hong Kong Federation of Youth Groups Buiding, 21 Pak Fuk Road, North Point, HK

Fee: ASHRAE Members or BEAM Pro: HK\$ 600
Members of Supporting organizations: HK\$ 750
Other non-members: HK\$ 900

Registration & Enquiry

Number of participants is limited to 120 and prior registration is required. For registration, please download the Registration Form at BEAM Society Limited's website <www.beamsociety.org.hk>, complete and submit the form with your return cheque to BEAM Society Limited. Priority will be given to the members of the organisers and supporting organisations with payment. The deadline of application is on **22 August 2014**. Successful applicants will be notified by e-mail on or before **22 August 2014**, which has to be presented at the registry of the venue entrance for verification. If the applicants have not received the confirmation e-mail on or before 22 August 2014, their applications should be regarded as unsuccessful.

The event will be cancelled with full refund should a typhoon signal no. 8 or above, or black rainstorm warning being hoisted 3 hours before commencement of the event.