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## Technical Seminar on Design Analysis of Smoke Management and Egress System in Malls, Atria and Large Spaces

Date : January 6<sup>th</sup>, 2014 (Monday)

Time : 19:00 – 20:30

Venue : HJ203 (Podium Floor), The Hong Kong Polytechnic University

### Abstract:

This presentation reviews recent developments in smoke management system design concept in malls, atria, and large spaces using actual design projects for demonstrative examples. This performance-based design concept, using computer simulation and full-scale experiment as a tool, can achieve a higher performance, safer, more cost-effective fire engineering designs.

Design examples will be analyzed by demonstrating the 3D CFD analysis performed using the FDS program followed by full-scale hot smoke tests, while the egress analysis will be using the SIMULEX program, followed by a 328-people full-scale test. This presentation will demonstrate how this procedure can be adapted in designing smoke management and egress systems in airport terminals, railway stations, shopping malls, sports arena, and even clean rooms for IC manufacturing fabs providing the interested attendants a hands-on feeling of it.

### Honorable Speaker:



**Prof. Kuan Hsiung Yang** is a professor of Sun Yat-Sen University and a technical consultant of China Engineering Consultants, Incorporated, and Chunghwa Telecom, on Building Energy Conservation and HVAC System Designs. He received his degree in Mechanical Engineering from Lamar University in 1985. He is a member of Technical Committee of Building Science, HVAC systems and Fire-protection Engineering for the Ministry of the Interior, Taiwan.

In the field of HVAC and fire protection, he served as a professor in Mechanical Engineering, both on undergraduate and graduate levels at the National Sun Yat-Sen University in Taiwan for 25 years, and a visiting professor at the Sun Yat-Sen University at Guangzhou, China, serving as Master and Doctoral students thesis

advisor concentrating on HVAC and fire protection system designs, simulation and full-scale experimental investigation.

Prof. Yang is a Fellow in the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). He is a recipient of Outstanding Contribution on Building Energy Research Awards, Ministry of the Interior, Taiwan, in 1991, Best Research Award on Building Thermal Energy Storage HVAC Systems, Taiwan Power Company in 1992, Top 10 Engineering Professors Award in Taiwan in 1993, Best Research Award on Centrifugal Chillers under Cycling Operation Modes, National Electrical Power Association in 1994. Ozone Protection and Chiller CFC Refrigerant Conversion Technology Award in 1995, Tunnel Ventilation Award, China Road Congress in 1996, IBC Award on HVAC Engineering Research in 1997, Inclusion in Mcquis Who's Who in the World 2000, Teaching Excellence Awards in NSYSU, College of Engineering, in 2006 and 2008.

Outstanding Contribution Award in HVAC Engineering in Taiwan, 2010. He is also the leader in the National program on HVAC System Retrofits (2003-2007 Green HVAC) and the Building Energy Efficiency Upgrade (2007-2011 BeeUp), completing 200 buildings energy systems retrofitting and commissioning with a total budget of 30 million USD and realizing energy savings of 22.5% each year.

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He is also the author of two (2) books, and published over 200 technical papers in the U.S. and other parts of the world addressing topics on HVAC systems, tunnel ventilation, smoke management and egress analysis, using 3D CFD as a tool followed by full-scale experiments.

Language: English

Fee: Free of charge for all and members of Organizers  
Free of charge for full time students or staff of The Hong Kong Polytechnic University

Remark: 1.5-hour CPD certificate will be provided.

Application:

This is a joint activity organised by ASHRAE-HKC, CIBSE HK Branch and HKIE-BSD. Registration is opened to all members of the organising institutions. Please complete and return the application form by e-mail on or before 3<sup>rd</sup> January 2014. Number of participants is limited to 65. Places will be allocated on a first-come-first-served basis and will be distributed evenly among the three institutions and HKPU as far as possible. Successful applicants will be informed individually by e-mail on or before 5<sup>th</sup> January 2014.

**Application Form:**

**Technical Seminar on Design Analysis of Smoke Management and Egress System in Malls, Atria and Large Spaces**

Name (Dr./Ir/Mr./Mrs./Ms.)\* : (Surname) \_\_\_\_\_ (Given Name) \_\_\_\_\_

Membership\* : Organization: \_\_\_\_\_ Membership No.: \_\_\_\_\_

Company\* : \_\_\_\_\_

Email Address\* : \_\_\_\_\_

Contact Numbers : (Mobile)\*: \_\_\_\_\_ (Office): \_\_\_\_\_

\* Information must be filled.

Enquires: For enquiry, please contact Mr. Peter Lam at 92196323 (ASHRAE – HKC), Ir. KT Cheuk at 92092155 (HKIE-BSD) or Ir. Stanley CHOW at 91339259 (CIBSE HK Branch). Email enquiries can be sent to <[seminar\\_06\\_jan@yahoo.com.hk](mailto:seminar_06_jan@yahoo.com.hk)>.

Registration: Please send the filled application form before 3<sup>rd</sup> January 2014. The applicant may email the above information to <[seminar\\_06\\_jan@yahoo.com.hk](mailto:seminar_06_jan@yahoo.com.hk)> for place reservation.  
Successful applicants will be notified by mail on or before 5<sup>th</sup> January 2014.