Mui Kwok Wai, Associate Professor at the Hong Kong Polytech University.
<horace.mui@polyu.edu.hk>

Brief

Dr. Mui K.W. is the Associate Professor in the Department of Building Services Engineering of The Hong Kong Polytechnic University. He obtained a BEng (Hons, First Class) degree and a PhD specializing in building environmental performance from the BSE Department at The Hong Kong Polytechnic University (HKPU). He joined the HKPU as a faculty member since 2000. Currently, he is an honourable international advisor for Hong Kong Indoor Air Quality Society, founding member and the co-chairman of the Technical Working Group (TWG) of ASHRAE HK Chapter.

Dr. Mui has been deeply and energetically involved in the research and development. He gained 2 patents and technology research funds from the RGC of the HKSAR Government, the University, and other resources. In 2008, a new class II IAQ bioaerosol laboratory has been funded under his initiative; it is an IAQ (bioaerosol) research milestone in BSE. In the past few years, major works of him, including about 100 referred journal papers (SCI & EI) on IAQ assessment, performance of the new demand control ventilation system, drainage systems of domestic high-rise buildings, water consumption, performance of deodorizer systems, adaptive comfort temperature model for air-conditioned buildings and certain advanced areas of building environmental performance, have been published. Besides, two of his papers has recently been recognized amongst the most cited articles published in Elsevier's Building and Environment between 2005 and 2008.

Ir. Dr. Mui's extensive research experiences have led him to a number of high-level consultancy projects. On behalf of the Department, he performed presentations and shared his research findings in journals, conferences, forums and invited workshops all over the world. He also offered community services to organizations serving the underprivileged. With his past experience, he is invited as a group member to work in the working group WG6 on perceived air quality.

Academic and Professional Qualifications

Academic Qualification

- 2001 Ph.D., Department of Building Services Engineering The Hong Kong Polytechnic University
- 1996 B.Eng (Hons) in Building Services Engineering (Year 2 - Year 3B) The Hong Kong Polytechnic University; with First Class Honours
- 1994 Higher Diploma in Building Services Engineering, (Year 1 - Year 3) City University of Hong Kong; with a Distinction Pass

Professional Qualification

- Honourable advisor for Hong Kong Indoor Air Quality Society (HKIAQS)
- Member, American Society of Heating, Refrigerating and Air-Conditioning Engineers (USA)
- Registered Professional Engineer (HK, BSE)
- Member, The Hong Kong Institution of Engineers (HK)
- Member, Chartered Institution of Building Services Engineering (UK)
- Chartered Engineer, Engineering Council (UK)
- Laboratory assessor, Hong Kong Accreditation Services, Innovation and Technology Commission

Research Interests

- Bioaerosols
- Indoor Environmental Performance
- Indoor Air Quality (IAQ)
- Plumbing and Drainage

Research and Academic Experiences

- 2010 – Now Associate Professor, Department of Building Services Engineering, HKPU.

- 2005 – 2010 Assistant Professor, Department of Building Services Engineering, HKPU.
- 2003 – 2005 Lecturer, Department of Building Services Engineering, HKPU.
- 2000 – 2003 Demonstrator, Department of Building Services Engineering, HKPU
- 1996 – 1997 Graduate Engineer, Hyder Consultant Ltd.
- 1994 – 1995 Assistant Engineer, Parsons Brinckerhoff (Asia) Ltd.

Selected Research and Development Grants

(Except PhD Projects)

- Indoor Air Quality Express Sampling Protocol in Hong Kong (CERG project, PolyU B-Q01G).
- Influence of Occupant Load on Potable Water Consumption in Residential High-rise Buildings (CERG project, PolyU B-Q01L)
- Development of Adaptive Comfort Temperature Model of Air-conditioned Building in Hong Kong (ICRG project, G-YE80).
- Investigating the confidence level of sampling schemes for assessing indoor air quality (ICRG project, APG-41).
- Visualization of principles and theories in building and environmental engineering (DTLC project).
- Purification and sterilization of indoor air for disease prevention and health against infection (CERG project, PolyU B-Q793).
- Energy policy for building environmental performance model in Hong Kong (Department general research fund).

Selected Major Publications

- KNK Fong, KW Mui, WY Chan, LT Wong*. Air quality influence on chronic obstructive pulmonary disease (COPD) patients' quality of life. Indoor Air 2010 (In Press).
- Wong LT, (Chan WY), Mui KW*, Lai CK. An experimental and numerical study on deposition of bioaerosols in a scaled chamber. Aerosol Science & Technology 2010, 44(2): 117 – 128.
- Cheng CL, Mui KW, Wong LT*, Yen CJ, He KC. Characteristics of air pressure fluctuations in high-rise drainage stacks. Building and Environment 2010, 45(3): 684 – 690.
- Mui KW, Wong LT, Lai CK*. Numerical modeling of exhaled droplet nuclei dispersion and mixing in indoor environments. Journal of Hazardous Materials 2009; 167(1-3): 736 – 744.
- Wong LT, Mui KW*. An energy performance assessment for indoor environmental quality (IEQ) acceptance in air-conditioned offices. Energy Conversion and Management 2009; 50(5): 1362 – 1367.
- Mui KW, Wong LT*, Fong NK. Optimization of indoor air temperature set-point for centralized air-conditioned spaces in subtropical climates. Automation in Construction 2010; (In press)
- Wong LT, Mui KW*, Guan Y. Shower water heat recovery in high-rise residential buildings of Hong Kong. Applied Energy 2010; 87(2): 703 – 709.
- Mui KW, Wong LT*, Chung LY. Mathematical models for accurate prediction of atmospheric visibility with particular reference to the seasonal and environmental patterns in Hong Kong. Environmental Monitoring Assessment 2009; 158(1-4): 333 – 341.
- Wong LT, Mui KW*. Efficiency assessment of indoor environmental policy for air-conditioned offices in Hong Kong. Applied Energy 2009, 86(10): 1933-1938.
- Wong LT, Fong NKK, Mui KW*, Wong WWY, Lee LW. A field survey of the expected desirable thermal environment for the older people. Indoor Built and Environment 2009; 18(4): 336 – 345.

Recent Consultancy Projects

- Indoor Air Quality certification scheme in Sun Hung Kai Building (Client: Sun Hung Kai) – Project Leader (PolyU).
- Energy analysis and benchmarking system (EABS) in Hong Kong (Client: CLP Power Hong Kong Limited) – Project Leader.

- Determination of performance of the deodorizer system in chamber test (Client: Simatelex Manufacturing Factory Ltd) – Project Leader.
- Investigation of the performance for the isolation ward in hospitals (Client: Hospital Authority) – Consultant.
- Investigation of the performance test for the AHU (Client: Emerson Network Power) – Project Leader.
- Electrical installations in high-rise buildings (Client: NWS Engineering Ltd) – Consultant.
- Drainage optimization for healthy drainage design of public housing redevelopment at upper Ngau Tau Kok estate phases 2 & 3 (Client: Housing Authority) – Project Leader.
- Determination of performance of the deodorizer system in chamber test (Client: Johnson Controls) – Project Leader.
- Testing for the deodorizer system in RCP (Client: Housing Authority) – Project Leader.
- Investigation of the performance for the underfloor terminal unit system (Client: Air Master Limited) – Consultant.
- Investigation of the performance for the underfloor terminal unit system (Client: Trox limited) – Consultant.

Patents

- ICU Extraction unit (Patent No. HK1057444).
- Indoor Environmental Quality Logger (Patent No. HK1060490).

Awards

2005	Outstanding professional services and innovation awards, The Hong Kong Polytechnic University.
2003	Certificate of appreciation from the PolyU for the department's contribution to the Hong Kong community during the SARS outbreak.
2009	One of the papers has recently been recognized amongst the most cited articles published in Elsevier's Building and Environment between 2005 and 2008. The paper entitled: i) Modeling water consumption and flow rates for flushing water systems in high-rise residential buildings in Hong Kong and ii) Evaluation on sampling point densities for assessing indoor air quality.