BSE Alumni Activity - CPD Lecture and Dinner Gathering: Operation and Control of Low Energy Buildings

The above CPD lecture was held as a BSE alumni activity on 6 May 2008 at The Hong Kong Polytechnic University. There were 109 attendants including BSE students, alumni and mentors.

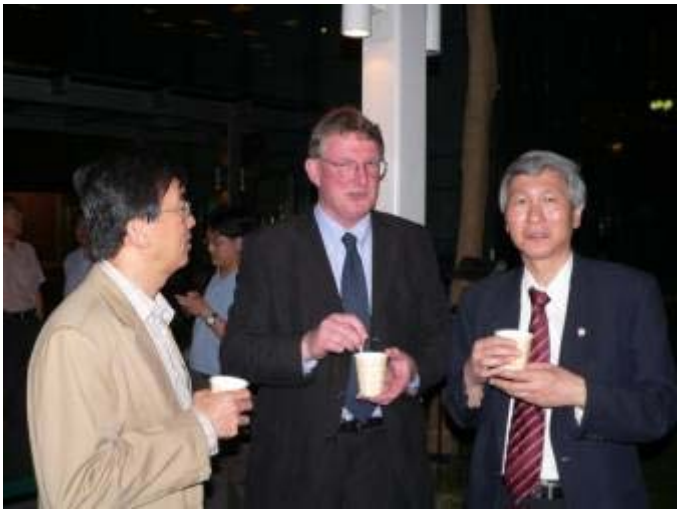
A warm welcome to alumni activities was first given by Professor W.K. Chow. BSE alumni and mentor activities were then introduced by Dr. K.T. Chan and Dr. Joseph Lai. After that, Professor Arthur Dexter from University of Oxford, UK gave a talk on the design of low-energy buildings, and challenges in operation and control of this type of buildings. A tea reception was also held afterward.

Professor Dexter is a Professor of Engineering Science, at the University of Oxford, UK. He is also a Tutorial Fellow in Engineering Science, Worcester College, University of Oxford, UK; and has been the Departmental Academic Advisor of Department of Building Services Engineering, The Hong Kong Polytechnic University since 2004.

There has been much recent interest in the design of low-energy buildings, which make use of local sources of renewable energy, natural ventilation and day-lighting. Buildings of this type offer new challenges in terms of their operation and control. The reasons why low-energy buildings are more difficult to control than conventional buildings and why current methods of controlling them are sometimes unsatisfactory were explained in the talk. The main issues requiring in-depth studies were identified.

Three current projects were introduced:

- Black-box model-based simulation of low energy HVAC systems;
- Hierarchical fuzzy rule-based supervisory control of low energy buildings; and
- Occupant driven intelligent control of mixed-mode buildings.



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