

## **ASHRAE Hong Kong Chapter - Technical Working Group**

# **HVACR OPERATION & MAINTENANCE**

### **Background**

In 2004, the ASHRAE Hong Kong Chapter decided to set up a number of Technical Working Groups (TWGs) to arouse awareness of new advances and promote research and development in selected areas. One of the initiatives was to set up a TWG on “HVACR Operation and Maintenance” that focuses on the engineering, management, economic and environmental issues in relation to the operation and maintenance (O&M) of heating, ventilating, air-conditioning and refrigeration (HVACR) installations in buildings.

Proper O&M of HVACR installations is essential to providing indoor environments that are comfortable and healthy to building occupants and suitable to processes that take place in buildings. Adverse indoor environmental performance lowers productivity and increases absenteeism, which will ultimately trench upon the economic rent of the asset. In the extreme, it could render onerous medical claims and loss of life should there be an outbreak of contagious disease (e.g. Legionnaire’s disease <sup>[1]</sup> or SARS).

HVACR systems typically account for 30% to 50% of the total energy use in commercial buildings, <sup>[2,3]</sup> and statistics show a consistent rising trend of this energy end-use in Hong Kong over the past years. <sup>[4]</sup> Proper O&M of HVACR systems in buildings is crucial to ensuring energy efficient operation of the systems, which not only helps minimise building operating cost, it contributes to the achievement of sustainable development.

The areas to be covered by the TWG include, but not limited to, the following in relation to HVACR installations:

- a. Statutory requirements on O&M work
- b. Health and safety practices for O&M work
- c. Energy efficiency
- d. Advanced O&M technology and techniques for enhancing system performance
- e. O&M economics
- f. Best management practices for in-house and outsourced O&M works

### **Objectives of this TWG**

1. To provide a platform for stakeholders, including building owners, designers, installers, maintainers, academics and other relevant professionals, to exchange ideas and information about HVACR operation and maintenance.
2. To initiate and recommend relevant research topics and proposals to the ASHRAE headquarter for competitive bidding of funds.
3. To advise the Board of Governors (BoG) of the ASHRAE Hong Kong Chapter

on technical issues relevant to O&M of HVACR systems in buildings, such as formulating comments on issues of public concern and responses to government's consultations.

4. To conduct collaborative research studies relevant to HVACR O&M with relevant research institutes and groups locally and internationally.

### **Operation of this TWG**

Operation of this TWG is governed by the Terms of References for the Technical Working Groups in the ASHRAE Hong Kong Chapter.

On top of regular meetings, efficient and effective communications among the members will be made by means of correspondence, emails or telephones as deemed appropriate. Forums and ad-hoc meetings will be convened as and when required.

### **Memberships**

The membership of this TWG is open to all ASHRAE members and invited non-ASHRAE members in Hong Kong. A management committee formed by members (of ASHRAE and the TWG) will oversee the day-to-day operations of the TWG, including approval of membership applications. There is no membership fee.

For membership application, please send an email message to Dr. Joseph Lai via [bejlai@polyu.edu.hk](mailto:bejlai@polyu.edu.hk), with your ASHRAE membership number and contact details (address, telephone number, fax number and email address).

### **Founding Members of this TWG**

Dr. Joseph Lai  
Prof. Francis Yik  
Mr. Philip Pih  
Mr. Peter Li

Updated on August 9, 2006

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<sup>1</sup> EMSD (2000) Electrical and Mechanical Services Department, Prevention of Legionnaires' Disease: Code of Practice.

<sup>2</sup> EMSD (2005) Electrical and Mechanical Services Department, Energy Efficiency and Conservation for Buildings. Available at [http://www.emsd.gov.hk/emsd/e\\_download/pee/emsd100dpi.pdf](http://www.emsd.gov.hk/emsd/e_download/pee/emsd100dpi.pdf)

<sup>3</sup> Yik, F.W.H., Yee, K.F., Sat, P.S.K. and Chan, C.W.H. (1998), A Detailed Energy Audit for a Commercial Office Building in Hong Kong, Transactions, Volume 5, No. 3, pp. 84-88.

<sup>4</sup> EMSD (2004) Electrical and Mechanical Services Department, Hong Kong Energy End-Use Data.