Training Course on Energy Audit and Energy Conservation

3, 8, 10 & 12 July 2008

ORGANISERS:
- Energy Institute (Hong Kong Branch)
- Department of Mechanical Engineering, The University of Hong Kong

CO-ORGANISERS:
- The Hong Kong Association of Energy Engineers
- The Gas & Energy Division, Hong Kong Institution of Engineers
- Hong Kong Productivity Council
- The Institution of Mechanical Engineers (Hong Kong Branch)

Course Objectives

The main purpose of this course is to provide the participants with the fundamental principles, skills and guidelines needed to carry out effective energy audits for the commercial and industrial sectors. After taking the course, the participants should be qualified to identify energy saving measures and perform quantitative analysis to predict the energy savings, environmental and economic benefits. Moreover, the participants should be able to measure and verify the performance of implemented energy saving measures.

Key Speakers

- **Ir Dr HF Chan**, Managing Director, Cinotech Consultants Limited
- **Ir Joe Chan**, Senior Engineer/General Engineering Services, Electrical and Mechanical Services Department, HKSAR Government
- **Ir Raymond Fong**, Principal Consultant, Environment Management Division, Hong Kong Productivity Council
- **Ir Dr Michael KH Leung**, Assistant Professor, Department of Mechanical Engineering, The University of Hong Kong
- **Ir Anthony CW Lo**, New Product Development Manager, Marketing & Customer Services, CLP Power Hong Kong Limited
- **Ir Dr Edward Lo,** Associate Professor, Department of Electrical Engineering, The Hong Kong Polytechnic University

General Information

Date & Time:	Lectures: 3 July (Thursday), 8 July (Tuesday) & 10 July 2008 (Thursday); 6:30 PM - 9:30 PM	Compulsory
	Site visit: 12 July 2008 (Saturday); 9:30 AM – 1:00 PM	Optional
Venue:	Lecture Theatre, 1/F, HKPC Building, 78 Tat Chee Avenue, Kowloon Tong	
Medium of Instruction:	English	
Target:	Interested persons include practicing engineers, energy managers, energy auditors, environmental officers, building services managers, plant managers, etc.	
Course Fee:	HK$1,800 per person (for Lectures only) (includes training material and tea breaks)	
Registration:	A maximum of 110 participants and 40 participants for the Lectures and the Site Visit respectively on a first-come-first-served basis. Completed registration form together with the registration fee [cheque made payable to "Energy Institute (Hong Kong Branch)"] should be sent to Ms Li, Asian Cities Research Centre Limited, Unit No. 48, 1/F, South Seas Centre, 75 Mody Road, Tsim Sha Tsui, Kowloon. Reservation can be made by fax (2858 5467) but enrolment will only be confirmed upon receipt of course fee.	
Registration Deadline:	23 June 2008	

CPD:	CPD certificate will be issued.
Enquiry:	Ms Li [Tel: 6843 8167; email:tceaec2008@yahoo.com.hk]

Course Contents

Lecture 1 (3 July 2008)

Introduction to Energy Audit and Energy Conservation

- Management procedures for energy audit: walk-through inspection, detailed energy audit and identification of energy management opportunities (EMOs).
- Advanced energy management techniques commonly considered to improve the energy performance.

Utility Energy Bill Analysis

- Proper analysis of historical energy consumption data including electricity, town gas, diesel and others.
- Understanding of energy consumption profiles.
- Comparisons with energy end-use data and benchmarks.

Lighting Systems

- Photometry and light measurements.
- Incandescent lamps, fluorescent lamps, electromagnetic ballasts, high-frequency electronic ballasts, light-emitting diode (LED).

Electrical Systems and Power Quality Improvement

- Discussion of easy to implement energy efficiency measures for lighting, motors, and electrical distribution systems including transformers and wires.
- Presentation of procedures of measuring and improving power quality for buildings due to low power factor and/or high harmonics (typically caused by electronic equipment).
- Discussion of experimental tests suitable for evaluating energy use of electrical systems and for identifying any power quality problems.
- Calculation of energy and cost savings due to improvements in electrical systems performance and power quality.

Lecture 2 (8 July 2008)

Heating Ventilating and Air-Conditioning (HVAC)

- Measurements and evaluation of energy efficiency of chillers, water-side systems and air-side systems; coefficient of performance (COP) analysis.
- Provision of thermal comfort and good indoor air quality in an energy-efficient manner.
- Qualitative analyses of effective energy management opportunities for HVAC systems, including temperature settings for chilled water supply and indoor air, building envelops meeting the overall thermal transfer value (OTTV) requirements, evaporative cooled condensers, variable-speed pumps, automatic cleaning devices for seawater cooled condensers, Fresh air intake control and more.

Lecture 3 (10 July 2008)

Water Heating Systems

- Evaluation of fuel-fired water heater and energy efficiency of condensing water heater.
- Heat pump water heater and integrated heat pump for cogeneration (water heating and air-conditioning).

Commercial Cooking

- Evaluation of gas cookers, electric cookers, induction cookers.
- Energy saving by innovative heat-pump steamers.

Industrial and Manufacturing Equipment

- EMOs for compressed air systems.
- EMOs for injection molding.

Energy Saving Measurement and Verification (M&V) Methods

- International Performance Measurement & Verification Protocol; instrumentation and measurement techniques; baseline adjustment; error and uncertainty analysis; third-party verification.

Economic Analysis and Environmental Impact Assessment

- Discussion of common economic analysis methods used to determine the cost effectiveness of energy efficiency measures.
- Life-Cycle carbon emission analysis for energy efficiency measures.

Site visit (12 July 2008)

The University of Hong Kong (TBC)

**** Contents are subject to change without further notice***

Ms Li (Fax number: 2858 5467)
Asian Cities Research Centre Limited
Unit No. 48, 1/F, South Seas Centre, 75 Mody Road, Tsim Sha Tsui, Kowloon

Registration Form

TRAINING COURSE ON ENERGY AUDIT AND ENERGY CONSERVATION

3, 8, 10 & 12 July 2008

☐ Lectures only (HK$1,800 per person)

☐ Lectures and Site Visit (HK$1,900 per person)

(Please tick the appropriate box)
(A maximum of 110 participants and 40 participants for the Lectures and the Site Visit respectively on a first-come-first-served basis.)

Name (Mr/Ms) _____
(name as shown on your HKID)

Position _____

Organisation _____

Mailing Address _____

_____

E-mail _____ Fax _____ Tel _____

***TYPHOON**: Classes in the morning or evening will be cancelled if a typhoon signal No. 8 or above, or a black rainstorm warning, is still hoisted after 6:00 am or 2:00 pm respectively.*

Important

1. All cheques should be crossed and made payable to Energy Institute (Hong Kong Branch) and are subject to bank clearance.
2. Enrolment fee is not refundable unless the Organiser is notified in writing of your withdrawal at least 7 working days before the course commences. A handling charge of HK$200 will also be levied.
3. An applicant may, subject to approval from the Organiser, nominate a substitute to attend the course on his/her behalf.
4. The Organiser has adopted a Personal Data (Privacy) Policy. Information about the policy can be collected from the Organiser. You may also contact our Personal Data Controlling Officer for further details..

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If you do NOT wish to receive any of our promotional materials in future, please complete the following details and fax this page to 2858 5467. 如閣下不想再收到我們的宣傳刊物，請填妥下列資料後，傳真至2858 5467.

Name 姓名 _____ Email Address電郵地址 _____ ___

Tel # 電話號碼 _____ Fax # 傳真號碼 _____

Organisation 機構名稱_____