Training Course on Energy Audit for Building Energy Efficiency
16, 18, 25 & 30 October 2012

ORGANISER[1]**:**

energy INSTITUTE HONG KONG

3rd Intake

SUPPORTING ORGANIZATIONS:

ASHRAE Hong Kong Chapter

BSOMES

CIBSE

香港 CIE

HKAEE 香港能源工程師學會 Hong Kong Association of Energy Engineers

Air Conditioning and Refrigeration Association Hong Kong

HKGBC 香港綠色建築議會

(TBC)

Institution of MECHANICAL ENGINEERS

soe engineering success soe hong kong region 營運工程師學會 香港分會

General CPD Events with 6-hours in total

BEAM Pro 綠建專才 (TBC)

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 in accordance with the Building Energy Efficiency Ordinance. After taking the course, the participants would appreciate the approach 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 (TBC)

- Representative from Electrical and Mechanical Services Department, HKSAR Government
- **Ir Raymond Fong**, Principal Consultant, Hong Kong Productivity Council
- **Ir Dr Edward Lo**, Associate Professor, Department of Electrical Engineering, The Hong Kong Polytechnic University
- **Ir Dr Michael KH Leung**, Associate Professor, School of Energy and Environment, City University of Hong Kong
- **Ir Dr Albert So**, Director, Asian Institute of Built Environment
- **Ir Dr TM Chung**, Associate Professor, Department of Building Services Engineering, The Hong Kong Polytechnic University

[1] The Energy Institute Hong Kong (Branch) is Incorporated in Hong Kong with limited liabilities

General Information

Date & Time:	16 Oct (Tue), 18 Oct (Thu), 25 Oct (Thu), 30 Oct (Tue), 2012; 6:30 pm – 9:30 pm	
Venue:	HKPC Building, 78 Tat Chee Avenue, Kowloon Tong	
Medium of Instruction:	English	
Target:	Practicing engineers, energy managers, energy auditors, environmental officers, building services managers, plant managers, etc.	
Course Fee:	HK$2,800 per person (member of EI) HK$3,000 per person (member of Supporting Organizations) HK$3,500 per person (non-member)	(includes training material and tea breaks)
Registration:	Please fax the registration form to (852) 8143 0048 for reservation and mail a copy of the registration form with a cheque (payable to "**Energy Institute (Hong Kong Branch)**") to the Event Manager, Ms April Li, c/o Asian Gateway Consultants Limited, P.O. Box No 44347, Shau Kei Wan Post Office, Hong Kong. Enrolment will only be confirmed upon receipt of course fee.	
Registration Deadline:	8 October 2012	
Accreditation:	This course is accredited by Energy Institute, UK	
CPD:	CPD certificate will be issued to all participants by the Organizer. **TBC:** HKGBC endorsed this course as "General CPD Events with 6-hours in total" for BEAM Pro. BEAM Pro Candidates who have attended this course will be required to provide HKGBC the CPD certificate issued by the Organizer as an evidence for claiming their respective CPD.	
Enquiry:	Ms Li [Tel: (852) 2967 8855; email:aprilagc@gmail.com]	

Course Contents

Lecture 1 (16 October 2012, Tuesday)

Introduction to the Buildings Energy Efficiency Ordinance (BEEO)

- Legislative Framework
- Requirements of Energy Audit
- Qualification and Duties of Registered Energy Assessors (REAs)

Energy Audit (Ir Raymond Fong)

- 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.

Energy Saving Measurement and Verification (M&V) Methods (Ir Raymond Fong)

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

Economic Analysis and Environmental Impact Assessment (Ir Raymond Fong)

- 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.

Lecture 2 (18 October 2012, Thursday)

Electrical Systems and Power Quality Improvement (Ir Dr Edward Lo)

- Energy efficiency for electrical distribution systems, including transformers and wires.
- Procedures of measuring and improving power quality for buildings due to low power factor and/or high harmonics (typically caused by electronic equipment).
- 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 improvement in electrical systems performance and power quality.

Lecture 3 (25 October 2012, Thursday)

Heating Ventilating and Air-Conditioning (HVAC) (Ir Dr Michael KH Leung)

- 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.

Water Heating Systems (Ir Dr Michael KH Leung)

- 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 (Ir Dr Michael KH Leung)

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

Lecture 4 (30 October 2012, Tuesday)

Lift and Escalator (Ir Dr Albert So)

- Maximum allowable electrical power requirements.
- Energy consumption measurements of lift and escalator Systems.
- Total harmonic distortion and power factor of motor drive systems.
- Energy efficient designs.

Lighting Systems (Ir Dr TM Chung)

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

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

Event Manager, Ms April Li
[Email soft version to aprilagc@gmail.com or fax to 8143 0048]

Registration Form

TRAINING COURSE ON ENERGY AUDIT AND ENERGY CONSERVATION

16, 18, 25 & 30 October 2012

☐ EI member at HK$2,800 / person

Membership #:_____

☐ Member of Supporting Orgs at HK$3,000 / person

☐ ASHRAE ☐ BSOM`ES ☐ HKACRA
☐ CIBSE ☐ CIE(HK) ☐ HKAEE
☐ HKGBC ☐ IMechE ☐ SOE

Membership #:_____

☐ Non-member at HK$3,500 per person

(Please tick the appropriate box)

Name (Mr/Ms) _____
(name for issuing CPD Certificate)

Position _____

Organization _____

Mailing Address _____

_____

E-mail (MUST PROVIDE) _____ Tel _____

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

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 8143 0048. 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8143 0048.

Name 姓名 _____ Email Address電郵地址 _____ ___

Tel # 電話號碼 _____ Fax # 傳真號碼 _____

Organisation 機構名稱_____