Organized by:

ASHRAE Hong Kong Chapter

BEAM 建築環保評估協會

3 Mandatory CPD hours for BEAM Pro / BEAM Affiliate

Technical Seminar on New Development of Refrigerant & Refrigeration Safety Management

Date : 5 December 2017 (Tuesday)
Time : 2:30pm - 5:30pm (Registration will start at 2:15pm)
Venue : BEC Auditorium, G/F Jockey Club Environmental Building, 77 Tat Chee Avenue, Kowloon Tong, Hong Kong

Background

The Montreal Protocol has scheduled the phasing out of controlled substances, including chemicals containing chlorine and bromine used as refrigerants, solvents, foam blowing agents, aerosol propellants, fire suppressants, and for other purposes. Ozone Layer Protection Ordinance (Cap. 403) 1989 gives effect to Hong Kong's international obligations to control the manufacture, import and export of ozone depleting substances. Ozone Layer Protection (Controlled Refrigerants) Regulation 1994 requires the conservation of controlled refrigerants used in large scale installations and motor vehicles. Scheduled substances under the Ozone Layer Protection Ordinance are listed by the Environmental Protection Department. In addition to having suitable thermodynamic properties, the ideal refrigerant would be nontoxic, non-inflammable, completely stable, environmentally benign, readily available, self-lubricating, compatible with materials used in equipment, easy to handle and detect.

The U.S. Environmental Protection Agency provides information on suitable substitutes for ozone depleting substances, including refrigerants for various types of air-conditioning and refrigeration equipment, fire suppression, blowing agents, solvents, etc. U.S.EPA has developed and implemented regulations for management of ozone depletion substances (ODSs) in the United States. The regulations include programs that ended the production of ODSs and require the manufacturers to label products either containing or made with chemicals that have significant ODSs. Banning the usage of CFCs in refrigerants slows the ozone depletion and global climate change.

In BEAM Plus Manual, the credits of MA P2 (Use of Non-CFC Based Refrigerants) and MA8 (Ozone Depleting Substances) cover the concerns on usage of refrigerants. The air-conditioning and refrigeration equipments shall fulfill the following equation which determines a maximum threshold for the combined contributions to ozone depletion and global warming potentials: $LCGWP + LCODP \times 10^5 \leq 775$. The Client shall submit a report by a suitably qualified person giving details of the air-conditioning and refrigeration equipment installed; and demonstrating that the global warming potential and ozone depletion potential of the refrigerants used in equipment meets the specified requirement. Reference shall be made to refrigerant supplies and/or equipment manufacturer's data together with guidance provided by recognised authorities such as ASHRAE, etc. In this seminar, the experts of refrigerants from ASHRAE will present the update on the relevant ASHRAE Standards as well as local development trends on new refrigerants.

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Session 1

ASHRAE Standard 15 & 34 – A Review and Update

ASHRAE's key standards guiding refrigerant identification and usage have been revised to meet US governmental regulation and achieve improved performance. Standards 15 and 34 (2016 Edition) provide essential guidance to manufacturers, design engineers and operators who need to stay current with new air conditioning and refrigerating requirements.

Standard 34 (Designation and Safety Classification of Refrigerants) describes a shorthand way of naming refrigerants and assigns safety classifications based on toxicity and flammability data, while Standard 15 (Safety Standard for Refrigeration Systems) establishes procedures for operating equipment and systems when using those refrigerants. Standard 15 is one of ASHRAE's oldest standards dating back to 1919. The purpose of Standard 15 is to specify safe design, construction, installation, and operation of refrigeration systems. All engineers that work with building mechanical systems should have a basic understanding of this Standard and for those engineers that work closely with refrigeration or chilling systems must have a deeper understanding of this standard and its requirements. This presentation will provide a review of Standard 15 and highlight recent changes to the standard. Common misapplications of the standard will be presented and discussed. In this session, the speaker also highlights the review and update of ASHRAE Standard 34.

Speaker

Douglas T. Reindl,

Ph.D., P.E., ASHRAE Fellow Member & Distinguished Lecturer
Professor, University of Wisconsin-Madison

Douglas Reindl is a professor in the Departments of Engineering Professional Development and Mechanical Engineering at the University of Wisconsin-Madison. In addition, he is the founding director of the Industrial Refrigeration Consortium (IRC) at the UW. He received his B.S. in Mechanical Engineering Technology from the Milwaukee School of Engineering and his M.S. and Ph.D. degrees from the University of Wisconsin-Madison. He is a registered professional engineer in the State of Wisconsin and presently serves on the Board of Directors of the International Institute of Ammonia Refrigeration.

As faculty member at the University of Wisconsin since 1996, Professor Reindl has taught at all levels: undergraduate, graduate, and continuing professional development. Professor Reindl has developed an internationally-recognized series of professional development courses focused on industrial refrigeration systems with an emphasis on the safe use of ammonia as a refrigerant. Through the IRC, Professor Reindl works with some of the world's leading food companies to improve the safety, efficiency, reliability and productivity of industrial refrigeration systems and technologies.

In addition to being an ASHRAE Fellow, Professor Reindl is also a member of the American Society of Mechanical Engineers, International Institute of Refrigeration, and the International Institute of Ammonia Refrigeration. He is a past recipient of ASHRAE's Distinguished Service Award and the first recipient of ASHRAE's George C. Briley Award for the best refrigeration article in the *ASHRAE Journal*. He is a past chair and member of ASHRAE's Standard 15 committee – Safety Standard for Refrigeration Systems.

Professor Reindl has published 6 books and nearly 100 technical papers on topics including: industrial refrigeration, building mechanical systems, energy systems, indoor air quality, and solar energy.

Session 2

Next-gen Technology Development for Low-GWP Refrigerants

The recent amendment to Montreal Protocol incorporating the control of hydrofluorocarbons (HFCs) has given a clear message to the industry in transitioning to next gen refrigerants of low global warming potential (GWP). ASHRAE is committed to a leadership role in responding to and reducing building Climate

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Change footprints. In support of this commitment, ASHRAE continuously advances the HVAC&R field by performing R&D guides and standards for designing systems that minimize energy use and reduce emissions of high GWP refrigerants.
Many common refrigerants with high GWP such as R404A, R410A and R134a started to see their successors, of which some options are still non-flammable but many become flammable. The HVAC&R industry has been actively developing next-gen technology around these new refrigerant options. This presentation will review the refrigerant applications in consideration of environmental, safety and energy performance.

Speaker

Dr. Philip Yu,

Ph.D., RPE, CEng, LEED-AP
Past President of ASHRAE Hong Kong Chapter,
Director of Trane

Dr. Philip Yu is environmental & applications engineering director of TRANE, President of ASHRAE Hong Kong Chapter 1996-97, ASHRAE Region XIII Vice-Chair of Chapter Programs 1998-2001 and General Chair for Chapters Regional Conference 2005. Philip led a special task group of 25 members and successfully published in 2011 the Chapter's first book "COOL Hong Kong" documenting the HVAC&R development in Hong Kong. This effort has been well recognized by the Society in light of 2012 ASHRAE Lou Flagg Award. Dr. Philip is also serving on ASHRAE "Climate Change Position Document Committee" which just stated this year.

Fee : HK$600 (ASHRAE-HKC members, BEAM Pro, BEAM Affiliate & BSL Ordinary / Associate Members)
HK$720 (Members of Supporting Organizations)
HK$900 (Standard)

Language : English

Deadline for Application : 29 November 2017

Registration

Number of participants is limited and prior registration is required. Registration will be on a first-come-first-served basis (priority will be given to members of Organizers and Supporting Organizations). The deadline of application is on 29 November 2017. Successful members will be notified by e-mail on or before 1 December 2017, which has to be presented at the registry of the venue entrance for verification. If the applicants have not received the confirmation e-mail on or before 1 December 2017, their applications will be regarded as not successful.

Members of ASHRAE-HKC and Supporting Organisations – kindly note that we ONLY accept registration by sending original application form and cheque payment in mail.

BEAM Pro / BEAM Affiliate / BSL Associate or Ordinary Members / Non-members – kindly note that we ONLY accept registration by online training portal. For existing users, please login to your

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Online Training Portal account. **For new Online users, please register a new online training portal account to apply for the course. Sorry for any inconvenience caused.**

The Organisers reserve the right to cancel, postpone or reschedule an event due to unforeseen circumstances, including low enrolment. Should a refund be appropriate, fee paid will be refunded within 30 days.

Enquiry

For enquiry, please call 3610 5700 or email to beampro.training@beamsociety.org.hk.

Supporting Organisations:

1/F, Jockey Club Environmental Building,
77 Tat Chee Avenue, Kowloon Tong, Hong Kong
Tel: 3610 5700
Fax: 3996 9108
Website: www.beamsociety.org.hk
Email: enquiry@beamsociety.org.hk

Deadline for Application: **29 November 2017, Wednesday** Event Code : M-2017-1205

Mandatory CPD Training –
Technical Seminar on New Development of Refrigerant & Refrigeration Safety Management

REGISTRATION FORM
(For Members of ASHRAE-HKC & Supporting Organisations ONLY)

BEAM Pro, BEAM Affiliate and BSL Ordinary / Associate Members / Non-Members –
Registration by Online Training Portal ONLY
Existing Users – please login to your Online Training Portal account to apply for the course
New Online Users – please register a new Online Training Portal Account to apply for the course

Name: Dr / Ir / Prof / Mr / Mrs / Ms (Name shown on your HKID /Passport)	**Name of (Supporting) Organisation:** Membership No:
Chinese Name〔中文名〕:	
Company Name :	
Job Title :	
Correspondence Address :	

Nature of Organisation (Please tick one only):

A Government Department
- ☐ Architectural Services Department
- ☐ Buildings Department
- ☐ Drainage Services Department
- ☐ Electrical and Mechanical Services Department
- ☐ Housing Department
- ☐ Others: please specify _____

B Private Sector
- ☐ Consultant (other than Interior Design)
- ☐ Contractor
- ☐ Developer
- ☐ Facility & Property Management
- ☐ Others: please specify _____
- ☐ Interior Design
- ☐ Manufacturer / Supplier / Distributor
- ☐ Property Agency

C Non-government Organisation
- ☐ Educational / Research / Training Institute / University
- ☐ Others: please specify _____
- ☐ NGO / NPO
- ☐ Professional Society

Area of Practice (Please tick one only):

A Architecture & Landscape
- ☐ Landscape Architecture
- ☐ Architecture

B Engineering & Building
- ☐ Building
- ☐ Civil
- ☐ Environmental
- ☐ E&M / BSE
- ☐ Geotechnical
- ☐ Structural
- ☐ Others: please specify _____

C ☐ **Environmental Science**
D ☐ **Facility & Property Management**
E ☐ **Interior Design**
F ☐ **Planning**
G ☐ **Product Materials Supply & Manufacturing**

H Surveying
- ☐ Building Surveying
- ☐ Land Surveying
- ☐ Quantity Surveying

I Others: please specify_____

Contact :	Phone	Fax Number
	Email	

1/F, Jockey Club Environmental Building,
77 Tat Chee Avenue, Kowloon Tong, Hong Kong
Tel: 3610 5700
Fax: 3996 9108
Website: www.beamsociety.org.hk
Email: enquiry@beamsociety.org.hk

DETAILS

Topic	Date	Venue	CPD Hours Recognition	Fee
Technical Seminar on New Development of Refrigerant & Refrigeration Safety Management	**2:30pm - 5:30pm 5 December 2017 (Tuesday)**	**BEC Auditorium, G/F Jockey Club Environmental Building, 77 Tat Chee Avenue, Kowloon Tong, Hong Kong**	**3 Mandatory CPD Hours**	☐**ASHRAE-HKC members, - $600** ☐**Members of Supporting Organisations - $720**

PAYMENT *Please send a crossed cheque made payable to "**BEAM Society Limited**" together with this Registration Form to:*

BEAM Society Limited, 1/F, Jockey Club Environmental Building, 77 Tat Chee Avenue, Kowloon Tong, Hong Kong.

Cheque Number and Issued Bank : _____

Total Amount: _____

COLLECTION OF PERSONAL DATA

1. Your personal data will be collected and used by BEAM Society Limited (BSL) for purposes in connection with BEAM Professionals Program, training and examination, and the selection designation and regulation of assessors by us in respect of the BEAM (Building Environmental Assessment Method).
2. The data may be disclosed to relevant stakeholders in respect of BEAM including their employees and agents concerned.
3. You have the right to request for the access and correction of your personal data. Such request should be made in writing and addressed to the BEAM Society Limited by mail (1/F, Jockey Club Environmental Building, 77 Tat Chee Avenue, Kowloon Tong) or email enquiry@beamsociety.org.hk. For details of the BSL Privacy Policy, please visit www.beamsociety.org.hk.

TERMS & CONDITIONS

1. Registration (paper form) must be attached with a cheque as full payment.
2. Payment is non-refundable unless the event is cancelled by the organiser.
3. Booking will only be confirmed with payment on a first-come-first-served basis.
4. An official receipt will be issued upon cheque clearance.
5. The event will be cancelled with full refund should a typhoon signal no. 8 or above, or black rainstorm warning being hoisted 3 hours before commencement of the event.
6. BSL reserves the right to cancel, postpone or reschedule an event due to unforeseen circumstances, including low enrolment. Should a refund be appropriate, fee paid will be refunded within 30 days.

_____ _____

Signature of Applicant *Date*