

Organized by:



**3 Mandatory CPD hours
for BEAM Pro / BEAM Affiliate**

Technical Seminar on Building and District Energy

Date : 7 April 2017 (Friday)
Time : 2:15pm - 5:15pm (Registration will start at 2:00pm)
Venue : Conference Hall, 4/F, HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong

Background

In October 2016, countries representing more than 55% of global carbon emissions had ratified the Paris Agreement on climate change for the treaty to enter force. The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gases emissions mitigation, adaptation and finance starting in the year 2020. The language of the agreement was negotiated by representatives of 195 countries at the 21st Conference of the Parties of the UNFCCC in Paris and adopted by consensus on 12 December 2015. As of December 2016, 194 UNFCCC members have signed the treaty, 133 of which have ratified it. After several European Union states ratified the agreement in October 2016, there were enough countries that had ratified the agreement that produce enough of the world's greenhouse gases for the agreement to enter into force. The agreement went into effect on 4 November 2016.

The treaty aims to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change. With this intention, every countries is striving for reducing carbon emissions in a way looking at the energy use in building is not effective. We started look at how we lower the energy consumption through district scale integration and getting more interested in Net Zero Building and even Net Zero District.

In this technical seminar, the speaker will introduce how cities and towns in US can lower the energy consumption through district scale integration which correlates to the Site Aspects of BEAM Plus Scheme and also give us ideas of Net Zero Building vs. Net Zero District, cases will be introduced to show how energy use aspect is applied which to achieve Net Zero.

Speaker

Luke Leung, P.E.

Distinguished Lecturer of ASHRAE
Director of Skidmore, Owings & Merrill, United States

Luke is a LEED (Leadership in Energy and Environmental Design) Fellow; He is also a Centennial Fellow from The Pennsylvania State University Architectural Engineering Department; Board of Directors for USGBC (United State Green Building Council), Illinois; Chairman of the ASHRAE (American Society of Heating, Refrigeration and Air Conditioning) Committee on "Tall Buildings"; Chairman of the Building Pressure Committee, Chicago Committee on High Rise Buildings; Sustainable Committee with Council on Tall Buildings and Urban Habitat; Part Time Professor at IIT; Member of the Chicago Sister Cities Program with China; MBA from University of Chicago, MS and BAE from Architectural Engineering at Penn State University.



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Luke Leung is a Director of the Sustainability Engineering Studio for Skidmore, Owings and Merrill LLP. His work includes Burj Khalifa, the world's current tallest man-made structure; Multiple times "Excellence in Engineering" award from the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE); 2 awards from National Institute of Building Sciences, among others. Selected projects also include Pertamina Tower (Net Zero Supertall), General Motors Global Headquarters, Roche Diagnostic in Indianapolis, Beijing Finance Street, Embassy of Ottawa in Canada, Embassy in Beijing, Lakeside – 55 million sqft low energy development, a LEED Platinum building with the first large scale horizontal wind turbine in the city of Chicago; etc., and has served as a member of the editorial team for the CTBUH guide Natural Ventilation in High-Rise Office Buildings, ASHRAE "Design Guide for Tall, Supertall, Megatall Building Systems", among other publications.

Topics of the Technical Seminar

Session 1

Live Long, Healthy and Low Energy

Are people live in urban environment longer living and lower energy? Since 75% of the world's population will live in cities by 2050, we should ensure urban environment is where humans will thrive. From regression analysis done by the SOM team, urban dwellers tend to live longer than the rural residents. In fact, dense environment often coincides with longer life expectancy. Compare to rural communities, urban dwellers also consume less energy. However, are urban dweller healthier and how can we further lower our energy consumption?

Using Amish communities as a study case, this lecture will compare how our urban environment also brings about more allergy, autism, asthma, etc. cases, and how we can use nature and mechanical means to make us healthier.

Also using district scale system examples around the world, this lecture will study how cities and towns in US can lower the energy consumption through district scale integration.

Session 2

Net Zero Building vs. Net Zero District

Over the last decade, the architectural and engineering design community has made great strides in improving the energy efficiency of buildings. This has been inspired by standards and guidelines developed by ASHRAE, USGBC, various government agencies and a public awareness translating to market demand. Buildings currently represent 49% of the US energy consumption on an annual basis. The demand for energy efficiency goes beyond energy consumption and includes energy demand especially in economically expanding countries like China and India where there is a severe gap between electricity supply and projected demand over the next 10-20 years. The next phase in the energy efficient design will challenge the community to produce Net Zero Buildings (NZB). This challenge in the US by the AJA targets the year 2030 and in Europe, the target is year 2019. To achieve the target net zero for the next generation, the answer may partially rest in the larger infrastructure in the city from the central heating and cooling plant, co-generation, clean energy from the grid and looking at waste or renewable sources as a "resource" to generate power, similar to nature that has no waste and is integrated as a whole.

Building energy efficiencies have been greatly enhanced over the last three decades by utilization by utilization of high efficiency glazing and envelopes, effective use of day lighting, high efficiency lighting, energy star computers and appliances etc. The energy required has been further reduced by the application

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of renewable energy strategies such as active solar systems, photovoltaic systems and building integrated wind turbines. Studies by National Renewable Energy Laboratory (NREL) have shown that zero energy becomes more difficult to achieve as the building height increases. However, the study also concludes that 62% of buildings could achieve net zero. Climate, of course, plays a major role in achieving the net zero with different strategies for efficiency and renewable strategies depending on climate. Tall buildings represent some challenges, but also opportunities in energy efficient design due to the changes in environmental conditions with altitude. As we strive to design NZB, there may be a point of diminishing returns economically. This extends the idea of NZB to Net Zero District (NZD).

There are many advantages that can be offered by a NZD such as more land is generally available for the alternative energy plants due to the limited site area of individual buildings. A district plant, electric, cooling, and/or heating will also see significant load diversity due to serving multi use buildings. The plant can also use larger more efficient generating equipment and would likely have unblocked access to the resources of wind and sun. Strategic locations of the generating plant can take advantage of increased efficiency measures such as lake or sea water cooling. Another main advantage of the NZD is that the responsibility is shared by the building owners, the utility companies and the local and federal government. We propose a design process to achieve NZB/NZD that begins with optimizing the architectural systems to reduce the energy requirements of buildings and then apply practical alternative energy strategies at the building level. At the district level, apply large scale alternative energy strategies such as thermal solar, photovoltaic and wind turbines for power generation. Next, apply non fossil fuel co-generation technologies for remaining peak and annual energy requirements.

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

Language : English

Deadline for Application : 3 April 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). For registration, please complete the application form via the following "[On-Line Registration Link](#)". The deadline of application is on 3 April 2017. Successful members will be notified by e-mail on or before 5 April 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 5 April 2017, their applications will be regarded as not successful.

Members of Supporting Organizations – kindly note that we only accept registration by original application form and cheque payment. Sorry for any inconvenience caused.

Enquiry

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

Supporting Organizations:



Deadline for Application : 3 April 2017, Monday

**Mandatory CPD Training –
Technical Seminar on Building and District Energy
REGISTRATION FORM**

Event Code : M-2017-0407

Name: Dr / Ir / Prof / Mr / Mrs / Ms
(Name shown on your HKID /Passport)

BEAM Pro / Affiliate No.:
BP -
BA -

Chinese Name (中文名) :

Organisation :

Job Title :

Correspondence Address :

Nature of Organisation
(Please tick one only):

- | | |
|---|--|
| <p>A Government Department</p> <p><input type="checkbox"/> Architectural Services Department</p> <p><input type="checkbox"/> Buildings Department</p> <p><input type="checkbox"/> Drainage Services Department</p> <p>B Private Sector</p> <p><input type="checkbox"/> Consultant (other than Interior Design)</p> <p><input type="checkbox"/> Contractor</p> <p><input type="checkbox"/> Developer</p> <p><input type="checkbox"/> Facility & Property Management</p> <p><input type="checkbox"/> Others: please specify _____</p> <p>C Non-government Organisation</p> <p><input type="checkbox"/> Educational / Research / Training Institute / University</p> <p><input type="checkbox"/> Others: please specify _____</p> | <p><input type="checkbox"/> Electrical and Mechanical Services Department</p> <p><input type="checkbox"/> Housing Department</p> <p><input type="checkbox"/> Others: please specify _____</p> <p><input type="checkbox"/> Interior Design</p> <p><input type="checkbox"/> Manufacturer / Supplier / Distributor</p> <p><input type="checkbox"/> Property Agency</p> <p><input type="checkbox"/> NGO / NPO</p> <p><input type="checkbox"/> Professional Society</p> |
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Area of Practice
(Please tick one only):

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| <p>A Architecture & Landscape</p> <p><input type="checkbox"/> Landscape Architecture</p> <p><input type="checkbox"/> Architecture</p> <p>B Engineering & Building</p> <p><input type="checkbox"/> Building</p> <p><input type="checkbox"/> Civil</p> <p><input type="checkbox"/> Environmental</p> <p><input type="checkbox"/> E&M / BSE</p> <p><input type="checkbox"/> Geotechnical</p> <p><input type="checkbox"/> Structural</p> <p><input type="checkbox"/> Others: please specify _____</p> | <p>C <input type="checkbox"/> Environmental Science</p> <p>D <input type="checkbox"/> Facility & Property Management</p> <p>E <input type="checkbox"/> Interior Design</p> <p>F <input type="checkbox"/> Planning</p> <p>G <input type="checkbox"/> Product Materials Supply & Manufacturing</p> <p>H Surveying</p> <p><input type="checkbox"/> Building Surveying</p> <p><input type="checkbox"/> Land Surveying</p> <p><input type="checkbox"/> Quantity Surveying</p> <p>I Others: please specify _____</p> |
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Contact : Phone

Fax Number

Email

DETAILS

Topic	Date	Venue	CPD Hours Recognition	Fee for BEAM Pro / BEAM Affiliate/ BSL Member	Standard Fee
Technical Seminar on Building and District Energy	2:15pm - 5:15pm 7 April 2017 (Friday)	Conference Hall, 4/F, HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong	3 Mandatory CPD Hours	ASHRAE-HKC members, BEAM Pro / BEAM Affiliate / BSL Members - \$600 Members of Supporting Organisations - \$720	\$900

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.

Signature of Applicant

Date