



ASHRAE

ASHRAE SINGAPORE CHAPTER

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. SINGAPORE CHAPTER
Mailing Address : Bukit Merah Central, P.O. Box 0626, Singapore 911535

ASHRAE Society Region XIII Chapter Regional Conference
Technical Seminar on
"Green Buildings : Developments and Technologies"
27th August 2010, Friday, Holiday Inn Atrium, 317 Outram Road, S(169075)

ASHRAE Singapore Chapter is pleased to announce the hosting of ASHRAE Region XIII Chapters Regional Conference (CRC) 2010 at the Holiday Inn Atrium Hotel on 27 - 28 August 2010 . We are honoured to have the ASHRAE Society President 2010-2011, Ms Lynn Bellenger attending the event.

The CRC 2010 will commence with a half-day technical seminar with the theme "**Green Buildings: Developments and Technologies**" on 27 August 2010. The seminar aims to address issues arising from the climate change which has now become the most serious threat ever to mankind. The seminar will also provide a platform for the sharing and transfer of knowledge and information between the speakers and participants. The invited speakers are:

Dr Drury B. Crawley on Trends in Buildings and Energy Simulation
Prof Lee Siew Eang on The Design, Development and Performance of a Retrofitted Solar-powered Zero Energy Building, and
Mr Vinod Kesava on CARE . The first CDM Program in Singapore for Energy Efficiency in Chiller Plants employing ASHRAE 14 guidelines.

Participants at the technical seminar will be invited to the Presidential Luncheon where Society President will present her Presidential theme for ASHRAE Society Year 2010-2011.

We invite you to join in the celebration of this prestigious event. Details of the seminar and registration are attached below.

08:00 - 09:00	Registration
09:00 - 09:10	Welcome Address
09:10 - 09:55	Trends in Buildings and Energy Simulation by Dr Drury B. Crawley
09:55 - 10:25	Refreshments
10:25 - 11:10	The Design, Development and Performance of a Retrofitted Solar-powered Zero Energy Building by Prof. Lee Siew Eang
11:10 - 11:55	CARE – The first CDM Program in Singapore for Energy Efficiency in Chiller Plants employing ASHRAE 14 guidelines by Mr. Vinod Kesava
11:55 - 12:15	Q & A Session
12:15 - 14:00	Presidential Luncheon and Awards Presentation

Fee: S\$150.00 (Before 15th July, 2010)
Fee: S\$180.00 (On or after 15th July, 2010)
Fee includes course materials, lunch & refreshments

Application to the Professional Engineers Board for 3 PDU points.

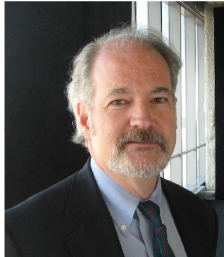


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Biographies Of Speakers and Abstract Of Technical Talk



DR. DRURY B. CRAWLEY, PH.D.
Director, Building Performance Products
Bentley Systems, Inc.

Trends in Buildings and Energy Simulation

The buildings industry faces many challenges and opportunities over the next few decades. The buildings touted today as 'most energy-efficient' or 'green' would not be possible without energy simulation—but no single simulation tool can model all aspects of our buildings today. Over the next ten years, changes in building technology—particularly wireless controls and solid-state lighting—will profoundly alter how our buildings are designed, built, and operated. This presentation provides an overview of trends and drivers affecting the building industry as well as the simulation tools of tomorrow.

Drury B. Crawley, Ph.D.

Dr. Crawley leads the development of software for building performance and sustainability at Bentley Systems. Prior to joining Bentley Systems in 2010, he led the U.S. Department of Energy's team working to achieve cost-effective net-zero energy commercial buildings by 2025 and was responsible for managing the DOE's building energy software tools development activities including EnergyPlus and Open Studio plugin for Google SketchUp.

He has more than 30 years of experience in buildings energy efficiency, renewable energy, and sustainability. He has written more than 100 papers and articles and made more than 300 presentations on energy efficiency, sustainability, and renewable energy topics throughout the world. He is active in ASHRAE and was made an ASHRAE Fellow in 2009, received an ASHRAE Distinguished Service award in 2003. A registered architect, he also has a PhD in Mechanical Engineering from the University of Strathclyde in Glasgow, Scotland.



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PROFESSOR LEE SIEW EANG

**Director, Centre for Total Building Performance
Department of Building, National University of Singapore**

The Design, Development and Performance of a Retrofitted Solar-powered Zero Energy Building

The Zero Energy Building at the Building and Construction Authority's Academy (ZEB@BCAA) was conceived and built within 24 months. It is the first and only Zero Energy Building in the region that is able to achieve its energy target of net zero consumption by reducing the energy consumption by 60% and providing its own electricity through solar power. The paper presents the processes involved in the design and development of the building and the barriers faced in the design, implementation and management of the project. The performance status of the building to date will be reported. The project has served as a useful benchmark for the development of energy efficient building in Singapore.

Prof. Lee Siew Eang

Dr. Lee, trained as a building engineer, is the Director of the Centre for Total Building Performance, a joint research centre between the Building and Construction Authority of Singapore and the National University of Singapore. Dr. Lee also heads the Energy Sustainability Unit (ESU). The Unit is a fully industry sponsored energy research unit. Major sponsors include the Economic Development Board of Singapore, National Environment Agency, the Energy Market Authority and companies from Singapore and Europe. Current major research programmes of Dr. Lee include energy performance benchmarking of buildings, development of energy labeling systems, baseline models development, and the development of Zero Energy Building in the tropics.

Besides research, Prof. Lee also serves as a board member of the Singapore Green Building Council, and chairs its Technical Coordination Committee.



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MR. VINOD KESAVA

Managing Director
Climate Resources Exchange Pte Ltd

CARE – The first CDM Program in Singapore for Energy Efficiency in Chiller Plants employing ASHRAE 14 guidelines

The presentation explores the first CDM Program of Activities (POA) implemented in Singapore for Energy Efficiency in Chiller Plants of commercial and industrial buildings, known as CARE – Climate Action Response Enterprise. The POA is based on aggregating projects that replace chiller plants to achieve a minimum energy efficiency coefficient of 0.65kW/TR and that must be measured and verified in accordance with ASHRAE guideline 14 annually, over a period of 10 years in order to generate and benefit from Certified Emission Reductions (CERs) or carbon credits.

Vinod Kesava

Vinod has been involved in the carbon and renewable energy markets in Europe and Asia since 2002. Between 2003 and 2007 he co-founded, designed and implemented the world's first carbon exchange trading in CDM derived emission reductions, through a unique auction process.

Vinod has also originated and developed over 40 projects under the CDM and other sustainable energy initiatives. In 2009, he designed and developed Singapore's first program for energy efficiency in chiller plants for commercial and industrial buildings. The program is known as the Climate Action Response Enterprise (CARE) for Energy Efficiency and its measurement and verification standards are based on ASHRAE 14 guidelines. This initiative is now being replicated in other parts of Asia.



Location Map of Holiday Inn, Atrium



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Time : 9 am to 2 pm

Fee: S\$150.00 (Before 15th July, 2010)
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Fee includes course materials, lunch & refreshments

Register by email or fax before 15th August 2010 and post your cheque payable to ASHRAE Singapore Chapter.

To : **ASHRAE Singapore Chapter**
P.O. Box 0626, Singapore 911535
Email: asc@ashrae.org.sg
Fax: 68631151 (David)

Please contact the following personnel for clarifications:

On programme and registration matters: **David Lau** [Email: asc@ashrae.org.sg]

1) Registration details:

Name for Registration : _____
ASHRAE Membership No. : _____
ASC Membership No. : _____
PE Reg No. (for PDU) : _____

- Please complete the following in full

Organisation : _____
Designation : _____
Address : _____
Postal Code : _____
Telephone/Mobile No. : _____ Fax No. : _____
Email : _____
Signature : _____ Date : _____

If you are an invited guest, please state the name of ASC member who invited you:

Invited Guest of: Member's Name: _____