AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS INC.

LONDON CANADA CHAPTER #116

http://LondonCanada.AshraeChapters.org Mon Mar 29/2010

Topic:

HYBRID GEOTHERMAL/THERMAL ENERGY STORAGE

Mr Eric Stewart
President
Innovative Cooling Technologies of Canada Limited

Meeting - Mon Mar 29/2010

6:15pm-Dinner
7:15pm - Program

Windermere Manor
Western Research Park
200 Collip Circle, London

$35.00 for London Chapter dues paid members
or $175.00 for meal plan

$10.00 for Students with valid student card

$45.00 for others

President's Message:

March has arrived, and has almost passed us by already. The weather for the March Break week was much better than the weatherman predicted… Before we know it, the hot, humid summer will be upon us.

Last month our meeting turned out to be a quiet one due to the bad weather that we had drop in suddenly, and created a much less desirable driving condition for our group. Dale Hanscomb of Rehau Inc. spoke to the group on Hybrid Radiant System Design.

This month, we have Eric Stewart – President of Innovative Cooling Technologies from Ottawa, Ontario coming to speak to the attendees about Hybrid Geothermal/Thermal Energy Storage systems that are suitable for medium sized multi-unit residential and light commercial buildings.

With the advent of Electrical Time of Use Rates coming to our market, the need for new ways of improving daytime energy use will bring pressure to bear on our designing community, as well as building owners/operators to look for ways to cut energy usage during peak load hours. We need to find ways of shifting the way we use electricity as well as other forms of energy to more appropriate times, and in more cost effective ways.

Our April meeting will be a technical tour to a new TD – Canada Trust Branch that has been recently finished here in London, with a focus on improving energy efficiency as a major part of the design and construction goals. Jamie Kruspel – our Chapter Secretary will be the tour guide, and our dinner after the tour will be at the Seven Dwarfs Restaurant location at 1659 Wharncliffe Rd. S., London, (Lambeth area)

At this month's meeting we are going to discuss some proposed changes to the format of our annual golf tournament in June, and will be looking for input and feedback from the membership. We hope to open the tournament registration process for everyone in the near future.

We are also going to be starting the annual chapter nomination process – opening the opportunity for anyone that would be interested in getting involved at the local chapter level of ASHRAE – we welcome all suggestions.

We look forward to seeing you all out to the meeting on the 29th

Eric Shaw
President - ASHRAE London Canada Chapter

The Commissioning Process in New and Existing Buildings

ASHRAE, in conjunction with CMX/CIPHEX 2010, is offering a special opportunity for you to gain valuable information and guidance for real world commissioning challenges.

SEMINAR SUMMARY: Learn the fundamentals of the commissioning process through each step of a new construction project and retrofitting an existing project from pre-design to occupancy and operations. The seminar highlights the benefits of commissioning with an appreciation for how the process can improve the built environment, reduce environmental impacts through responsible resource utilization, improve the quality of design and construction, and raise the professional reputation of the entire commissioning team. The documentation that is created during the process, including specifying commissioning for new construction will be discussed. Case studies that demonstrate the value of investing in the commissioning process as well as other compelling information are reviewed.

When: **Friday, March 26,2010**
Time: **9:00 am – 4:00 pm**
Where: **Metro Toronto Convention Center**, 255 Front St., W. Toronto, Ont
Cost: $419 ($349 ASHRAE member) Lunch and course materials are included
More information: **http://www.ashrae.org/education/page/2551**

March 29/2010

Speaker

Eric Stewart

President

Innovative Cooling Technologies of Canada Limited

Eric Stewart is member of the Ottawa Chapter of ASHRAE. He has been in the HVAC contracting and service industry for over 30 years in the Ottawa Region and has extensive experience in HVAC design-build in the ICI sectors.

Eric is currently the President of Innovative Cooling Technologies of Canada Limited; a company that specializes in Thermal Energy Storage, Heat Recovery in large commercial and institutional building, Geothermal heating and cooling, and arena and curling rink ice-making systems.

He will be presenting an overview of Hybrid Geothermal/Thermal Energy Storage systems that are suitable for medium sized multi-unit residential and light commercial buildings. These systems are one solution to the soon to be increasing costs of cooling as the Province of Ontario begins to roll out time-of-use electricity rates in 2010.

Next Meetings

Web Apr 21/2010

Webcast: Commissioning for High Performing Buildings
1:00-4:00pm EDT
http://www.ashrae.org/education/page/557

Mon Apr 26/2010

Topic: Technical Tour
Canada Trust - 3029 Wonderland Rd S., London
Ice storage to offset cooling demand
and photovoltaic roof panels for electrical

Mon June 7/2010

ASHRAE London Golf Tournament
Forest City National
16540 Robin Hill Road
London, Ont

Previous Meeting Summary

Mr Dale Hanscomb from REHAU presented some issues that need to be taken into consideration when using radiant floor heating and cooling tubing systems.

Research Night

March 29th will be our second Research Promotion night and I would like to start by thanking all of you who have in the past and continue to contribute towards ASHRAE Research Canada. Last year the London Chapter received $11,476 in contributions and has set a budget for the 2009/2010 campaign of $10,000.

The ASHRAE Society Goal for the 2009/2010 campaign is $2,080,375 and is currently sitting YTD at $673,919. Currently our chapter is sitting at $1571 so we will soon be calling on those of you who have contributed in the past, to continue your support, and would like to ask for those who have not contributed to consider doings so.

ASHRAE Research plays a key role in sponsoring research projects that help set the standards and design criteria we all see and use today. When you contributed to ASHRAE Research Canada your contributions are used for research projects within Canada and the donations collected are always less than the number of research projects on going, so in fact your donation is usually matched by at least 2-1 by ASHRAE Society.

ASHRAE Research's mission is

"Improve the quality of life and to answer tomorrow's questions through research today."

Last year, Region II raised just over $142,000 and the total research projects is at $556,707 so your contribution was matched at almost 4-1.

1235-RP	4.4	$167,000	The Nature, Significance and Control of Solar Driven Vapor Diffusion in Wall Systems	CONCORDIA UNIVERSITY	
1311-RP	4.1	$145,283	Improving Load Calculations for Fenestrations with Shading Devices	U. OF WATERLOO	
1328-RP	5.6	$80,000	Algorithm for Smoke Modeling in Large, Multi-Compartmented Buildings	NAT. RESEARCH COUNCIL CANADA	
1453-RP	4.2	$136,924	Updating the ASHRAE Climatic Data for Design and Standards	NUMERICAL LOGISTICS - Waterloo Canada	
GIA 07-08		$7,500	Geothermal Energy	U. OF LAVAL - Jasmin Raymond	Graduate Student Grant-in-Aid
GIA 09-10		$10,000	Development of Models and Tools to Perform Ongoing	CONCORDIA UNIV.-Danielle Monfet	Graduate Student Grant-in-Aid
GIA 09-10		$10,000	Development of a Solar Building Design Methodology and its Implementation into a Solar House Design Tool for Temperature Climates	CONCORDIA UNIV-Willaim O'Brien	Graduate Student Grant-in-Aid
REGION II		**$556,707**			

Karl Gilroy
Research Promotion Chair - ASHRAE London

Scott Edmunds
Research Promotion Co-Chair - ASHRAE London

ASHRAE Handbook Becomes More Accessible in Online Format

ATLANTA—What was once the turn of a page will now be the click of a mouse. The ASHRAE Handbook is now available online to allow for quick and easy access to a vast amount of HVAC&R information.

"The advantages of the ASHRAE Handbook Online are numerous," Dennis O'Neal, 2009-10 chair of the ASHRAE Handbook Committee, said. "For one, the text is fully searchable and includes live links to figures, tables, footnotes, equations and other Web references. Going online also allows for fast navigation among all four current Handbook volumes, with live cross-reference links."

Unlike the ASHRAE HandbookCD+ 2006-2009, an ASHRAE Handbook Online subscription provides immediate access to Handbook content, in contrast to the two weeks required for the shipping of the CD; requires no software installation; eliminates dependency on one computer by allowing for quick and easy access from any computer with an Internet connection; and costs considerably less than the price of purchasing each volume separately, offering a $331 savings for non-members.

The benefits of the ASHRAE Handbook Online don't stop there. Taking the Handbook online will provide an opportunity for the Society to fulfill its mission of advancing the HVAC&R industry through publishing by making the Handbook more accessible.

"This helps ASHRAE position its publishing program for customer expectations in the digital age," O'Neal said. "Additionally, having the Handbook online opens it to members globally and makes ASHRAE information more readily available."

The ASHRAE Handbook is the most widely cited reference source for HVAC&R technology in the world. The hardback version of the Handbook is published in a series of four volumes, one of which is revised each year, ensuring that no volume is older than four years. The ASHRAE Handbook Online, however, allows access to all of the four most recent volumes at once. To subscribe to the ASHRAE Handbook Online, visit https://handbook.ashrae.org for immediate access to vast and valuable HVAC&R technology and resources. Additional information may be found at www.ashrae.org/handbookonline.

High-Performance Building Standard Provides the Foundation for Green Building Codes

ATLANTA – A proposed high-performance building standard and a stronger version of Standard 90.1, both being released next year, together will provide a total green resource for local and state governments looking to set building code requirements to reduce energy use.

Proposed Standard 189.1, Standard for the Design of High Performance, Green Buildings Except Low-Rise Residential Buildings, is being developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) in conjunction with the Illuminating Engineering Society (IES) and the U.S. Green Building Council (USGBC). The standard is slated to be the first code-intended commercial green building standard in the United States when published early in 2010.

It covers key topic areas typi-cally included in green building rating systems: site sustainability, water use efficiency, energy efficiency, indoor environmental quality, and the building's impact on the atmosphere, materials and resources.

ASHRAE and IES also are working to strengthen the requirements in ANSI/ASHRAE/IESNA Standard 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings, which provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings. It is estimated that the 2010 standard will result in 25 to 30 percent energy savings over the 2004 version. The 2010 standard is expected to be released in mid-2010.

"Both standards are written in mandatory language to allow for adoption with building codes," Gordon Holness, ASHRAE president, said. "They are being developed using the widely respected American National Standards Institute consensus procedures. As such, their strength comes from the volunteer committee of experts from all facets of the building industry. In addition, the requirements in the draft standard were strengthened through the public review process with input from a variety of building industry professional."

Proposed Standard 189.1P has been written by experts representing all areas of the building industry, including engineers, lighting designers, sustainability experts, building owners, designers, architects, code and compliance officials, utilities, materials experts and equipment manufacturers. These volunteer experts have contributed tens of thousands of man hours valued at millions of dollars.

The technical requirements in the standard also are supported by input from the building industry during the public review process. The standard recently completed a fourth public review, in which 109 comments were received. The comments are being reviewed by working groups of the committee developing the standard. The full committee meets this week in conjunction with the GreenBuild Expo to act on the suggested comments.

The standard has undergone four public reviews, meaning anyone could comment on its proposed requirements. Some 2,500 comments were received during the review periods.

Advanced Energy Design Guidance Offered for Small Hospitals and Healthcare Facilities

ATLANTA—The newest Advanced Energy Design Guide (AEDG), written by a group of leading building industry organizations, is just what the doctor ordered. The AEDG for Small Hospitals and Healthcare Facilities is the sixth in the 30 percent AEDG series, designed to provide recommendations for achieving 30 percent energy savings over the minimum code requirements of ANSI/ASHRAE/IESNA Standard 90.1-1999. "The recommendations in the Small Hospitals and Healthcare Facilities Guide provide good design practices for integrating energy efficiency in a healthcare environment, while maintaining indoor air quality and required airflow and pressurization relationships," Shanti Pless, chair of committee that wrote the guide, said.

The Guide focuses on small healthcare facilities up to 90,000 square feet in size, including acute care facilities, outpatient surgery centers, critical access hospitals and inpatient community hospitals. These buildings have intensive heating and cooling systems, which the guide covers extensively; additionally, other important energy saving measures such as daylighting are included. "The energy efficiency recommendations in the Guide were developed based on design experiences from members of a project committee made up of healthcare facilities design professionals, combined with the insight gained from modeling the energy performance of these specific recommendations," Pless said.

Some tips that the Guide offers include:

· Providing an unoccupied air flow and temperature setback for spaces that are not used 24 hours a day, such as surgery suites;

· Installing high efficiency condensing boilers with an outdoor air temperature reset schedule for all climate zones to address the high amounts of reheat energy used by such facilities to control humidity;

· Carefully laying out lighting design to meet recommended lighting power density by space type;

· Maximizing the use of daylighting and daylighting-responsive controls through both sidelighting and toplighting strategies in all space types that do not have air change requirements;

· Installing an insulated thermal envelope, with additional recommendations to address air barriers and continuous insulation strategies.

The recommendations allow contractors, consulting engineers, architects and designers to easily achieve advanced levels of energy savings without having to resort to detailed calculations or analyses. Also, case studies provide excellent examples of advanced hospital and healthcare facility designs that demonstrate the flexibility offered in achieving advanced energy savings such as the 30 percent goal of the Guide. The Advanced Energy Design Guide series has been developed in collaboration with these partnering organizations: ASHRAE, the American Institute of Architects (AIA), the Illuminating Engineering Society of North America (IES), the U.S. Green Building Council (USGBC) and the U.S. Department of Energy (DOE).

Since the Guides first began to be offered as free downloads at the beginning of 2008, more than 200,000 AEDGs have been downloaded. Other books in the series deal with small office and retail buildings, K-12 school buildings, highway lodging and small warehouse and self storage buildings.

For more information on the entire Advanced Energy Design Guide series, or to download a free copy, please visit www.ashrae.org/freeaedg. A softback copy of the Guide may be purchased for $62 ($53, ASHRAE members). To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit www.ashrae.org/bookstore.

ASHRAE, IES Seek to Lighten Energy Use through Changes to Standard 90.1

ATLANTA – Requirements to "lighten up" energy use and costs through fenestration, parking lot lighting and other proposed measures are being recommended for Standard 90.1. ANSI/ASHRAE/IESNA Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential Buildings, provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings. Currently, 15 proposed addenda to the standard are open for public review.

"As the industry continues to call for buildings and systems that use less energy, the Standard 90.1 committee is striving to find ways to reduce energy uses and costs," Mick Schwedler, chair of the Standard 90.1 committee, said. "The proposed changes not only reduce energy use but move the standard closer to the workplan goal of a 2010 standard with 30 percent energy cost savings compared to the 2004 standards."

Among the proposed addenda out for public comment is addendum cd, which would require active exterior control rather than just require the control capability; add bi-level control for general all-night applications, such as parking lots to reduce lighting when not needed; and add control for façade and landscaping lighting not needed after midnight. A second public review of proposed addendum bn would reduce solar loads by orienting the fenestration in more appropriate directions. Changed in response to comments during the first public review, this approach gives flexibility to building design teams to work with siting and fenestration and orientation as well as fenestration area to comply with the requirement. Proposed addendum bb updates building envelope requirements for opaque elements, such as walls and rooms, and fenestration (windows and skylights). A number of changes were made in response to public comments during the first public review.

The proposed addenda to ASHRAE/IESNA Standard 90.1 are available for comment only during their public review period. To read the addenda or to comment, visit www.ashrae.org/publicreviews.

Making a Case for Energy Efficiency in Existing Buildings: New Industry Publication

ATLANTA – Improving energy use all comes down to green – the green of energy efficiency and resource sustainability as well as the green of money.

So, show them the money. Building owners and managers of existing buildings need to understand the economic benefits of improving systems and operations. A new publication from leading industry organizations provides guidance for the business case to achieve energy savings as much as 30 percent.

Energy Efficiency Guide for Existing Commercial Buildings: The Business Case for Building Owners and Managers provides the rationale for making economic decisions related to improving and sustaining energy efficiency in existing buildings. Approximately 86 percent of U.S. annual building construction expenditures relate to renovation of existing buildings vs. new construction.

"Our goal is to enable business owners to break down the 'mystery' of energy conservation opportunities into business-based scenarios that are both practical and cost-justifiable," said George Jackins, who chaired the committee overseeing the book. "To achieve true sustainability in the building industry, we must help owners learn that investing in energy efficiency translates into a high rate of return with a low associated risk. Owners and managers typically view buildings in terms of short-term economics. We must make the transition from best value vs. lowest first cost of buildings."

Specifically, the guide provides straight-forward applications that could produce energy savings from 10 to 15 percent to a more aggressive approach that could save 30 percent or more.

The book is a collaboration between ASHRAE, the American Institute of Architects, the Building Owners and Managers Association, the Illuminating Engineering Society of North America, the U.S. General Services Administration and the U.S. Green Building Council.

Here are the five important tips that owners and managers need to know to make their buildings energy efficient:

- Know your current energy utilization index (EUI) (kBTU/SF-year).
- Establish a target EUI and an initial budget estimate for achieving this goal.
- Conduct an internal energy study/audit (using ASHRAE's Procedures for Commercial Building Energy Audits as a basis) or have the facility retro-commissioned by a certified retro-commissioning firm. This activity may result in a modification to the original estimated budget amount.
- Identify energy efficiency measures with attractive rates of return on energy retrofit or renovation investments.
- Implement the recommended energy conservation measures that will get the facility to the desired goal with the stipulated budget.
- Commission the energy conservation measures by a certified commissioning firm. This process should include training of facility personnel on properly operating and maintaining equipment and systems.

The book is the first of three planned guides on energy efficiency. The second will be aimed at providing technical guidance in undertaking existing building renovation programs. The third will provide operation and maintenance guidance to help sustain the energy efficiency.

The cost of Energy Efficiency Guide for Existing Commercial Buildings: The Business Case for Building Owners and Managers is $69 ($59, ASHRAE members). To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit www.ashrae.org/energyguide.

First Changes Proposed to New Green Standard: Daylighting Addressed

ATLANTA—Members are being sought and changes proposed for the new standard for the design of high-performance green buildings published in January. ANSI/ASHRAE/USGBC/IES Standard 189.1, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings, is the first code-intended commercial green building standard in the United States. The standard provides a long-needed green building foundation for those who strive to design, build and operate green buildings. It covers key topic areas of site sustainability, water use efficiency, energy ef-ficiency, indoor environmental quality and the building's impact on the atmosphere, materials and resources. Under ASHRAE's continuous maintenance procedure, which allows requests for change to any part of the standard to be made at any time, changes have already been proposed.

"Given the high amount of interest in this standard, using continuous maintenance allows us to incorporate current technical information on a timely basis," Kent Peterson, chair of the committee said. "These changes are then put out for public review and comment, which results in an industry consensus standard."

Open for public comment are addenda a and b. Addendum a makes the daylighting definitions and criteria consistent with changes recently proposed to Standard 90.1, which sets requirements for energy efficient buildings. Addendum b reduces the space limitation for daylighting requirements. Rather than requiring daylighting in space larger than 1,000 square feet, the proposal would require it in spaces larger than 250 square feet. Members also are being sought for the committee developing the standard with slots opening July 1. The deadline to apply is March 31.

For more information on membership, contact standardssection@ashrae.org For more information on the proposed addenda, visit www.ashrae.org/publicreviews. For complete information on the standard, visit www.ashrae.org/greenstandard.

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Spring 2010 Online Course Series

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Note: You may register up to 24 hours prior to an online seminar. Courses are in US Eastern Standard Time.

Introduction to Thermal Energy Storage Systems for A/C
Wednesday, April 7, 2010 – 1:00 p.m. to 4:00 p.m. EDT

Complying with Standard 90.1-2007: HVAC/Mechanical
Monday, April 12, 2010 – 1:00 p.m. to 4:00 p.m. EDT

Energy Management in New & Existing Buildings: A Sustainable Activity
Wednesday, April 14, 2010 – 1:00 p.m. to 4:00 p.m. EDT

Complying with Standard 90.1-2007: Envelope/Lighting
Monday, April 19, 2010 – 1:00 p.m. to 4:00 p.m. EDT

Using Standard 90.1 to Meet LEED Requirements
Monday, April 26, 2010 – 1:00 p.m. to 4:00 p.m. EDT

Introduction to Cleanroom Design
Wednesday, April 28, 2010 – 1:00 p.m. to 4:00 p.m. EDT

District Cooling & Heating Systems: Central Plants
Monday, May 3, 2010 – 1:00 p.m. to 4:00 p.m. EDT

Complying with Requirements of ASHRAE Standard 62.1-2007
Wednesday, May 5, 2010 – 1:00 p.m. to 4:00 p.m. EDT

ASHRAE LEARNING INSTITUTE

Understanding & Designing Dedicated Outside Air Systems (DOAS)
Monday, May 10, 2010 – 1:00 p.m. to 4:00 p.m. EDT

Hot Products from ASHRAE

A leader in HVAC&R technology, ASHRAE publications cover topics that impact every facet of the environment, both indoors and out.

Latest Publications from ASHRAE!

- ❑ *Standard 189.1-2009, Standard for the Design of High-Performance Green Buildings* (A Jurisdictional Compliance Option of the IGCC)
- ❑ *ASHRAE Handbook Online* – Web-Based access to all 4 volumes
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- ❑ *Building Information Modeling Guide*
- ❑ *Advanced Energy Design Guide for Small Hospitals and Healthcare Facilities*
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