



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

LONDON CANADA CHAPTER #116

<http://LondonCanada.AshraeChapters.org>

JAN 29/2009

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TOPIC:

Timeless Engineering Design

James Moore

President of Lauren James

Using heat recovery technologies and methods that guarantee performance, minimize engineering and maintenance requirements and provide exceptional financial performance for years to come.

James Moore is a nationally recognized energy conservation expert and is the president of Lahren James Incorporated. His company is a unique turn-key provider of high ROI energy projects and products, providing analysis, installation, commissioning and financing for the industrial, commercial and institutional sectors.

Meeting - Monday Jan 29/2007

THE LAMPLIGHTER INN, 591 Wellington Rd., London

STUDENT NIGHT

London Chapter Members = \$25.00

Member's Meal Plan = \$125.00

Students = \$10.00

Others = \$35.00

CASH BAR

5:15-Social

ALL YOU CAN EAT BUFFET

6:00-Dinner

7:15-Program





President's Message

Welcome back to all of you, I hope you had a great holiday season and happy new year. I see we are finally going to experiencing "Old Man Winter", you didn't think those gas low bills were going to last now did you? Here we are at the end of another month, and I would like to extend the invitation to all of you to join us Jan. 29th for a talk on Energy Recovery systems.

Due to a last minute cancellation a change in speakers and topics was in order. Mr. James Moore was able to accommodate us and will be speaking on Timeless Engineering Design. Our original topic of "Improving Load Calculations for Fenestration with Shading Devices" may be something we can revisit at a future ASHRAE meeting.

The ASHRAE Society Winter Meeting is being held during the AHR Expo Show in Dallas, TX January 29 ~ 31st.. I'm sure that some of you will attending the show and maybe the Society Meeting. Daryl Somers, the Nominating Member for Region II, will be one of those attending the winter meeting. Unfortunately Daryl will not be available for our February meeting, however I will hold him to giving us a short summary of some of the activities at the Society level at our March meeting.

Hope to see you at the January 29 meeting,

Scott Turner – President
scott@somersep.com
London Canada Chapter President 2006-2007



ASHRAE is committed to advancing its programs and services for young members. With this in mind, ASHRAE has created a subcommittee called Young Engineers in ASHRAE (YEA), for members age 30 and younger!

Be sure to visit www.ASHRAE.org -> Members -> YEA

November Meeting Summary

Novembers meeting saw a fantastic turnout as Mr. Julian Rimmer of EH Price spoke to us on Displacement Ventilation Systems, and Overhead Air Distribution in green buildings and their relevance to the LEED program. Julian used great visual aids and scenarios in explaining how displacement ventilation differs itself from conventional systems. Thanks again to Julian for taking time from his busy schedule to come out and talk to us.



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Fundamentals of Standard 90.1 ANSI/ASHRAE/IESNA Standard 90.1

Learn How to Comply Online, with ASHRAE eLearning
Is compliance with Standard 90.1 a key part of your work?

You can now take an online course, at your PC, that will show you how to:

- * Apply the detailed requirements of ANSI/ASHRAE/IESNA Standard 90.1
- * Understand and make best use of the information in the Standard, the User's Manual and EnvStd software
- * Fill out the paperwork to gain compliance first time
- * Translate the principles of the Standard to local and state adaptations

Fundamentals of Standard 90.1 provide 35 PDH or 3.5 CEU credits. It is a US Green Building Council Approved Education Provider Program.

Visit the web site to take the first 2 modules of the course for Free.
There is a \$200 Discount for ASHRAE Members.

Direct web link:

http://www.cyweb.co.uk/clients/ashrae/fundamentals_901.htm

ASHRAE WEB SITE UPDATE

Member Login Changes

ASHRAE has launched the first phase of its new integrated membership database. As part of this change, you will need to login using your e-mail address and personal identification number (PIN).

Manage Your Membership

You can manage various aspects of your membership online, including paying dues and updating your bio.

ASHRAE SATELLITE BROADCAST & WEBCAST

April 18, 2007

Indoor Environmental Design: Practical Solutions to Everyday Problems

This free broadcast will present specific solutions to the everyday challenges of achieving indoor environmental quality within real-world budget constraints. Speakers will describe how you can provide ventilation air that helps protect the building from mold risk, how to avoid the three most common mistakes in ventilation system design and operation, how to achieve all three goals of IAQ, thermal comfort and noise control at lower cost through better air distribution decisions, and how to provide comprehensive filtration without breaking your budget. This program is sponsored by ASHRAE's Chapter Technology Transfer Committee

Online registration for site coordinators and webcast viewers begins March 1. Registration for satellite viewers begins March 15. Information about the speakers and program is available at: www.ashrae.org/iedbroadcast

A \$50 discount off a one-year membership will be extended to anyone who joins ASHRAE as a new member in conjunction with the broadcast. See website for details.



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Learn to Meet, Beat 90.1 Requirements with new eLearning Course

ATLANTA – Guidance to help users design buildings that are in compliance with ASHRAE's energy efficient standard is available through a new online learning course.

The Fundamentals of Standard 90.1 is the newest offering in ASHRAE's eLearning system, which provides on-demand, interactive online courses that include hardbound and online course reference books, online self-assessment and continuing education credits.

ANSI/ASHRAE/IESNA 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings, has become the basis for building codes, and the standard for building design and construction throughout the United States.

"The new eLearning course is designed to help you go through the standard and learn about each of the requirements," said Carol Marriott, P.Eng., a former member of the Standard 90.1 committee who helped develop the new module. "In school, you had assignments to enforce retention of the concepts you learned. The eLearning course is designed exactly the same way, in that it reinforces learning by providing questions to practice the concepts learned, and applying the 90.1 requirements to sample questions. Most users will hardly even realize they are learning as it is designed for users to have fun while doing the work."

The course explains:

- The detailed requirements of the standard so that they can be applied in designing buildings that are in compliance with 90.1;
- How to use available resource material, such as the standard and the User's Manual, to design and construct building in compliance with the standard;
- How to complete compliance documentation in a satisfactory manner the first time; and
- How to translate the key principles of the standard to local and state adaptations.

Marriott said the course is one of three key elements in learning about the requirements, along with the actual standard and the Standard 90.1 User's Manual.

The course is the second in ASHRAE's eLearning system. The first, Fundamentals of HVAC Systems, provides a thorough and comprehensive introduction to how HVAC systems function in controlling temperature, air quality, and air circulation in a conditioned space.

For more information about ASHRAE eLearning Systems, visit www.ashrae-elearning.org.

Become Part of the Green Team: New Guidance from ASHRAE

ATLANTA – Looking to become a more effective player on the green team?

ASHRAE GreenGuide: The Design, Construction and Operation of Sustainable Buildings will help teach designers how to participate effectively on design teams charged with producing green buildings.

"This is a design guide for mechanical engineers who are interested in advancing integrated, high performance/green concepts and applications on building design projects," said Malcolm Lewis, Ph.D., a member of ASHRAE's technical committee on building environmental impacts and sustainability, which wrote the book. "The guidance will help building professionals analyze system design options and point them in the right direction for deeper analysis."

The book, an update to the 2003 version of ASHRAE GreenGuide, contains a new chapter outlining guidance on the Leadership in Energy and Environmental Design (LEED™) Rating System developed by the U.S. Green Building Council. The chapter discusses ways in which LEED credits affect engineers and how they can best respond to the opportunities presented by the use of LEED on projects.

"The GreenGuide will assist the design and development team in striving for a level of accountability as to the effectiveness of their efforts to produce a building that is truly green," Lewis said.

The book also contains a new chapter on how HVAC&R systems interact with the local environment and methods for mitigating or reducing that impact.

"There are some areas that are either not intuitively obvious as being potential impacts of HVAC systems or are items that some may not consider to be truly sustainable issues," Lewis notes.

The ASHRAE GreenGuide also contains more than 40 GreenTips, which are sidebars containing information on techniques, processes, measures or systems. The tips contain a list of other sources for reference. To read the GreenTips, visit www.engineeringforsustainability.org.

This is the first in a new series of books, known as The ASHRAE Professional Series, published in cooperation with Butterworth-Heinemann/Elsevier. The series is intended to provide high-quality professional information for a global audience of HVAC&R engineers as well as professionals in related fields.

The cost of the ASHRAE GreenGuide is \$79.95 (\$62.95, 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, by mail at 1791 Tullie Circle NE, Atlanta, GA 30329, or visit the ASHRAE.org Bookstore at www.ashrae.org.

ASHRAE, founded in 1894, is an international organization of 55,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.



ASHRAE Publishes User's Manual for Standard 62.2

ATLANTA – A new book from ASHRAE will aid users in designing and constructing homes and apartments that comply with its residential ventilation and indoor air quality standard.

The User's Manual is the first for ASHRAE Standard 62.2-2004, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, which provides the minimum requirements necessary to achieve acceptable indoor air quality for dwellings.

The manual was co-developed by the Indoor Air Quality Association.

"The 62.2 User's Manual will provide HVAC engineers and IAQ consultants with practical information to ensure that ventilation positively affects the indoor environment," Robert G. Baker, IAQA president and ASHRAE Member, said. "IAQA was pleased to be a co-sponsor of this dynamic publication."

The manual explains how to comply with all the requirements of the standard, provides examples illustrating specific methods of complying with sections of the standard, and includes background material explaining why many of the requirements of the standard exist, according to Roger Hedrick, who co-authored the book.

The manual is targeted toward builders and subcontractors, but will also be useful for code officials, researchers, and interested homeowners.

"The manual has been developed as a document that will accompany Standard 62.2 and provide guidance for applying its requirements to the design and construction of residential buildings," David Grimsrud, chair of the Standard 62.2 committee, said. "It serves as a guide to clarifying issues for users."

The cost of the 62.2 User's Manual is \$45 (\$36, 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, by mail at 1791 Tullie Circle NE, Atlanta, GA 30329, or visit the ASHRAE.org Bookstore at www.ashrae.org.

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IAQA, founded in 1998, is an international organization of 5,200 members. IAQA is a non-profit, multi-disciplinary organization, dedicated to promoting the exchange of indoor environmental information, through education and research, for the safety and well being of the general public. For more information, visit www.iaqa.org.

IAQ 2007 Conference to Discuss Sustainable Buildings

ATLANTA – Healthy and sustainable buildings are the talk of the building industry, but what exactly defines what a healthy building is?

ASHRAE will discuss this and other topics at its IAQ 2007: Healthy and Sustainable Buildings conference in Baltimore Oct. 15-17.

IAQ 2007 addresses what tools and metrics can be used to quantify buildings' health and sustainability and how indoor air quality can be certified as sustainable. Plenary session speakers will compare the functionality of rating systems, how they can be improved and what information other than the ratings can developers, designers and public entities use to distinguish high-performing buildings.

Kevin Hydes, P.Eng., P.E., chair of the Board of Directors of the U.S. Green Building Council, will address the Council's Leadership in Energy and Environmental Design building rating system and case studies. Nils Larsson, executive director of the International Initiative for a Sustainable Built Environment, will cover the same questions for other rating systems, labels and green building/IAQ metric tools.

"Buildings' health and efficiency impact everyone," said Larry Schoen, chair of the committee organizing the conference. "It's important to discuss how our designs as building professionals will affect the occupants' lives and the global community for many years to come. This conference helps attendees learn how we can work together to maximize sustainability."

The conference is open to anyone with a stake in the built environment or with an interest in indoor air quality, including researchers, policy makers, owners, designers, builders, building operators and remediation experts.

To submit an abstract to be a speaker at the conference, visit www.iaq2007.org. The submission deadline has been extended to Jan. 15, 2007.

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**07' ASHRAE****Measures to Attain Major Energy Savings Shared at ASHRAE Seminar**

ATLANTA – Guidance for building design engineers and owners that will result in buildings cutting their energy usage in half by 2010 currently is being developed by leading organizations in the building environment industry.

Achieving that goal will require more than simply substituting or adopting new technologies and systems. It will acquire changes in design practice in which the design team converts energy strategies into building plans, sections, details and construction.

An update on some of the measures that have been demonstrated to yield significant energy reductions will be presented at ASHRAE's 2007 Winter Meeting in a seminar, *Achieving 50% and Beyond Approach to Net Zero Energy Use in Buildings Part 1*. It takes place from 7:45-9:15 a.m. Monday, Jan. 29, and is followed by Part 2 from 10:45 a.m.-12:15 p.m.

The guidance is being developed by ASHRAE in cooperation with the American Institute of Architects, the Illuminating Engineering Society of North America and the U.S. Green Building Council, through a series of Advanced Energy Design Guides for the commercial building sector.

John Mitchell, P.E., is chairing a scoping committee studying ways to achieve building designs as close as is feasible to net zero energy use, defined as "a building which, on an annual basis, uses no more energy than is provided by the building's on-site renewable energy sources." This study will provide the basis for the development of Advanced Energy Design Guides to go 50 percent and beyond minimum standards for energy use.

"The goal of a 50 percent approach to net zero energy use, on either a site or source basis, is feasible," he said. "There are no apparent technological barriers to achieve the desired energy reductions but aggressive energy conservation strategies and energy generation are needed."

The scoping study recently was completed and identified measures that achieve significant energy savings. Some of the measures identified are:

- Improved daylighting and electrical illumination systems
- Reduction of parasitic power requirements in air and water distribution systems
- Separate treatment of ventilation and internal thermal loads
- Improved delivery of conditioning to where it is needed
- Improved part load performance of HVAC components
- Water loop heat pump systems.

Information related to the Advanced Energy Design Guide series can be found at www.ashrae.org/aedg.

Speakers in the seminars are:

- Net Zero Energy Building Ideas – The Path Toward Net Zero Energy Use, John W. Mitchell, Ph.D., P.E., University of Wisconsin, Madison
- Architectural Perspective as a Bridge to Engineering, Jeff Levine, American Institute of Architects, New York, N.Y.
- What Has Been Done? Case Study Review, David Hewitt, New Buildings Institute, White Salmon, Wash.
- Integrated Design Process – Making it Possible, Jeff Levine, American Institute of Architects, New York, N.Y.
- Daylighting – Advanced Lighting, Daylighting and Controls, Stephen Selkowitz, Lawrence Berkeley National Laboratory, Berkeley, Calif.
- Distribution Systems – Air, Wayne Reedy, Carrier Corp., Indianapolis, Ind.
- Distribution Systems – Water, Stephen Kavanaugh, Ph.D., University of Alabama, Tuscaloosa, and Harvey Sachs, Ph.D., American Council for an Energy-Efficient Economy, Washington, D.C.
- HVAC/Ventilation, Michael Brandemuehl, Ph.D., University of Colorado, Boulder, Colo.

For more information about the ASHRAE meeting, visit www.ashrae.org/dallas.

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ASHRAE Receives Recognition for Sustainability Efforts

ATLANTA – ASHRAE has been recognized by the Sustainable Buildings Industry Council for the Society's educational efforts related to sustainability.

Last week, ASHRAE received a Best Sustainable Practice Award in the Educational Initiatives category, which recognizes the best products, processes, educational tools and outreach initiatives.

The award centered on the presidential challenge made by Terry Townsend of ASHRAE's promise for a sustainable future. To fulfill that challenge, ASHRAE is using its expertise and tools to provide cost-effective solutions in designing, operating and maintaining energy efficiency and sustainable buildings.

"The sustainability initiative is stimulating conversation inside ASHRAE about what it means to be sustainable and the importance of protecting today's natural resources for future generations," Townsend said. "We are pleased to be recognized by the Sustainable Buildings Industry Council (SBIC) for our efforts."

The Awards program was established in 2001.

"The Best Sustainable Practice category recognizes the excellent innovations and unique contributions SBIC members are making toward building a sustainable future in America," Douglas K. Schroeder, associate director of SBIC, said. "This year's competition was exceptionally competitive, but for the second consecutive year, the SBIC jury recognized the valuable contributions ASHRAE is making to the buildings industry."

Realizing that sustainability cannot be accomplished without measurable goals, ASHRAE has put in place some 35 specific challenges, ranging from a proposed water conservation standard, development of building performance metrics, research and design guidance resulting in net zero energy use buildings and greening of ASHRAE meetings.

To generate excitement and increase member awareness, ASHRAE created a three-part DVD, featuring a video of Townsend fishing with his grandchildren illustrating the importance of sustainability, Townsend's recorded presidential speech, and a short video highlighting why ASHRAE is taking on this challenge.

The DVD is part of a total communications package from ASHRAE to inspire members and the industry about the challenges and opportunities related to sustainability.

Other aspects include a promotional slide chart explaining the benefits of sustainable design measures, a Website, www.engineeringforsustainability.org, featuring sustainability guidance from ASHRAE; creation of a page on ASHRAE.org, www.ashrae.org/building, focusing on ASHRAE's planned renovation of its Headquarters building as sustainable; and use of ASHRAE publications and other outreach vehicles to spread the word about the Society's work.

The award is the second for ASHRAE from SBIC. Last year, the Advanced Energy Design Guide for Small Office Buildings published by ASHRAE and the ASHRAE Journal supplement, "Building for the Future," were recognized with honorable mention in the educational initiatives category.

Liquid Cooling Guidelines Available
IT Heat Load Solution Discussed in New ASHRAE Publication

ATLANTA – Heat loads generated by IT equipment can present significant problems for data centers by introducing effects such as decreased equipment availability, wasted floor space and inefficient cooling system operation. One solution, liquid cooling, is described in detail in ASHRAE's new publication, Liquid Cooling Guidelines for Datacom Equipment Centers.

Liquid Cooling Guidelines for Datacom Equipment Centers covers a broad range of liquid cooling topics such as facility cooling systems, facility piping design, liquid cooling implementation for datacom equipment, liquid cooling infrastructure requirements for chilled water systems, and liquid cooling infrastructure requirements for technology cooling systems.

The book is the fourth in a series written by ASHRAE Technical Committee 9.9, Mission Control Facilities, Technology Spaces and Electronic Equipment.

"The book incorporates the experience of liquid cooling from the mainframe days," says Roger Schmidt of IBM and chair of TC 9.9. "Liquid cooling is a proven technology, and the book provides a good central source of liquid cooling information from the datacom equipment to the facility level."

The cost of Liquid Cooling Guidelines for Datacom Equipment Centers is \$49 (ASHRAE members, \$39) and is available in print and download versions. To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide); fax 404-321-5478; by mail at 1791 Tullie Circle NE, Atlanta, GA 30329; or visit the Bookstore at www.ashrae.org.

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**Major Study of Aircraft Cabin Air Quality Launched by ASHRAE**

ATLANTA – Good afternoon and thank you for flying with us. We want to make sure you are as comfortable as possible during the flight, so please let us know – how's the air quality? Is the temperature ok? Do we need to adjust the lighting? Thanks again for flying Indoor Comfort Airlines.

This is the message millions of U.S. and international airline passengers could be hearing in the near future thanks to a study funded by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and conducted by Battelle, a Columbus, Ohio-based global services and technology enterprise.

The research project will examine the link between aircraft cabin air and health symptoms and discomfort experienced by passengers and crew members.

"The aircraft cabin is a challenging microenvironment for maintaining the health, comfort and well-being of passengers and crew," said Jeff Myers, principal investigator for Battelle. "Space is limited, conditions can feel cramped, the outside environment is extreme, and travelers may experience anxiety over loss of control over their situation and environment. Through this study, we will determine the causes of passenger and crew discomfort and use that information to make flights more comfortable."

More than 600 million passengers fly U.S. carriers each year, with thousands of crew members spending much of their working time in densely packed airliner cabins.

During flights, passengers and crew can experience noise, reduced atmospheric pressure, poor lighting, vibration, low relative humidity, variable temperature and potential air quality degradation.

The study, set to begin early this year, will be carried out on several international and domestic commercial airlines. It also has the support of the Federal Aviation Administration's Air Transportation Center of Excellence for Airliner Cabin Environment Research.

Results from the research could be used by manufacturers to modify aircraft to improve air quality or by airline companies to make more low-impact changes, such as adjustment of lighting.

As part of the research, passengers on 160 flights will be surveyed about their perceptions of air quality on the flight. The flights will vary in distance, lengths and time zones.

Following the surveys, the top causes for statistical variation (such as the most complaints by time zone) will be ranked. Scientists then will travel on those flights, using on-board monitoring instruments to measure carbon monoxide and dioxide, respirable particles and volatile organic compounds among others.

The research is the second phase of a \$1.8 million research project. In the first phase in 2004, passengers and crew surveyed on four flights out of Cincinnati, Salt Lake City, Chicago and Seattle indicated that the overall cabin air quality was adequate.

Indoor Environmental Design Focus of ASHRAE Satellite Broadcast

ATLANTA - Specific solutions to the everyday challenges of achieving indoor environmental quality within real-world budget constraints will be presented by ASHRAE in an upcoming satellite broadcast/Webcast.

Indoor Environmental Design: Practical Solutions to Everyday Problems, sponsored by ASHRAE's Chapter Technology Transfer Committee, will take place from 1-4 p.m. EDT, April 18.

"This program will benefit designers, building owners, architects, contractors and facility managers who are faced with the daily engineering challenge of specifying systems that maximize IAQ, thermal comfort and noise control," said Bill Williams, chair of the broadcast committee. "Viewers will be given guidance on how to provide ventilation air that helps protect buildings instead of increasing mold risk, how to avoid the three most common mistakes in ventilation system design and operation, and how to provide comprehensive filtration without breaking their budget."

Bill Coad, P.E., president of Coad Engineering Enterprises, St. Louis, Mo., and past ASHRAE president, will present an overview perspective on indoor environmental quality and introduce the following panel of experts:

- Hoy Bohanon Jr., P.E., owner and consultant, Bohanon Engineering Winston-Salem, N.C., "Ventilation System Design: Avoiding Three Common Mistakes."
- Lew Harriman, director of research, Mason-Grant, Portsmouth, N.H., "Ventilation Air: First, Do No Harm."
- Dan Int-Hout, chief engineer, Krueger-HVAC, Richardson, Texas, "Noise, IAQ and Thermal Comfort – Can You Have It All?"
- Chris Muller, technical director, Purafil, Doraville, Ga., "Behind the Access Door – Advances in Affordable Filtration for IAQ."

Online registration opens March 1 for satellite broadcast site coordinators and Webcast participants at www.ashrae.org/IEDbroadcast. Registration for satellite downlink viewers begins March 15. There is no fee for registration.

For more information, email ashrae-satellitebroadcast@ashrae.org or call 678-539-1139.