

# Pile of Bones

Published by the Regina Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers

## SEPTEMBER 2009

### President's Message

by Greg Fluter

Welcome all to a new ASHRAE year. I hope everyone had a great summer and you were able to find a few days of decent weather to enjoy between the rainy, windy, cloudy & cool days!

Our first Chapter meeting for the year is quickly approaching next week, Wednesday September 9<sup>th</sup>. The meeting will be held in conjunction with the SMACNA seminar being held that same day. Heric Holmes, the Programs Chair for this year, has lined up a speaker who will be giving two talks, one on chilled beams and another on displacement ventilation.

Please note that this month's meeting has been moved to a different location due to the SMACNA seminar. It will be held at the **Conexus Art Centre** (formerly known as the Centre of the Arts) in Wascana Park.

Rob Craddock has been working busy organizing the upcoming SMACNA seminar. If you are interested in attending this full day seminar and haven't already registered,

please contact Rob Craddock, Ted Cooke or myself to get on the list. The cost is only \$240.00 and includes 4 SMACNA Technical Standards. Please see the attached information sheet for more information about the seminar.

There have been a few changes with the Regina Chapter Board of Governors. Ted Cooke becomes Past President and takes over the Research Promotion Chair from Ray Sieber. Ray is no longer on our board but has moved onto become the Regional Research Promotion Chair. Heric Holmes has moved up to CCTC / Programs Chair. Jason Danyliw takes over the Vice President and Newsletter position and Dean Nagel moves to become the Student Activities Chair. We would like to welcome Carla Spriggs, from HDA Engineering, who will be taking over the Secretary position. Rob Craddock, Kris Pockett and Jerry Boulanger each remain on the board from last year. There will likely be a few positions to fill at the end of this ASHRAE year, so if you are interested in joining please contact one of the Board of Governors.

### Meeting Notice!

**Wednesday  
September 9, 2009  
Regina**

**Conexus Art Centre  
200 Lakeshore Drive**

**5:00 -Social/Cocktails**

**5:30 – Darron Rempel from  
E.H. Price will present on  
chilled beams and  
displacement ventilation**

**6:30 - Dinner**

**7:00 - Chapter Meeting**

I would also like to remind everyone that the Regina Chapter is hosting the 2010 Region XI Chapters Regional Conference (CRC) next May. Jerry Boulanger, the CRC chair, will need members to volunteer to make this event succeed. If you are interested, please let Jerry know ASAP. Jerry will have more information as the year moves forward.

**Please note:** Kris Pockett assured me that he will be sending out the Regina Chapter membership invoices right away. In order to keep our chapter strong and vibrant, please remit any unpaid or new dues promptly once received.

Also, note that the payment should be sent to the Post Office Box number noted on the invoice.

See you all at the meeting.

## **Technical Program for September**

### **Chilled Beams and Displacement Ventilation**

For our September meeting we are having Darron Rempel from E.H. Price speaking on Chilled Beams and Displacement Ventilation.

“The use of active and passive beams and displacement ventilation in heating and cooling can be advantageous to a design looking for LEED credit, operational economic benefit, thermal comfort and indoor air quality. Although some of the technology is new to North America, the design and application is not difficult with an appropriate understanding of the advantages and disadvantages of the different technologies.”

Darron graduated from the University of Manitoba in 1997 with a B.Sc in Mechanical Engineering. Darron has worked for EH Price since 2007 in the Applications Engineering department supporting chilled beam, radiant system and displacement ventilation products. Beyond providing advice and project assistance to customers, Darron is actively involved in application research and product design to expand the use and understanding of these systems.

## **2009/2010 Meetings and Events Schedule**

### **September 9, 2009: Darron Rempel - Chilled Beams and Displacement Ventilation**

October 14, 2009: Stanley Mumma, Distinguished Lecturer (DL) - DOAS Systems & Radiant Panels

November 18, 2009: Tentative Tour

December 10, 2009: Christmas Social – To be determined

January 12, 2010: Presidential Visit

February 10, 2010: To be Determined

March 10, 2010: Tentative DL

April 14, 2010: Student night

May 12, 2010: To be Determined

June, 2010: ASHRAE Research golf tournament

## **Committee Chair Reports**

### **President Elect and Chapter Technology Transfer Chair**

*by Heric Holmes*

This month we will be having Darron Rempel from E.H. Price give two presentations, one on chilled beams and the other will be on displacement ventilation.

There are currently four meetings that presentations are not yet confirmed (we do have a couple pending hopefully confirmed before the meeting). Also, there is interest from a few members to have local presentations. Right now I have one presentation from SRC, tentatively for February or May, on a local CHP project. I would like to add another local presentation to that day, so if you are interested let me know. If anyone has other suggestions for programs this year, please forward them to Heric at [h.holmes@mac-eng.ca](mailto:h.holmes@mac-eng.ca).

Heric Holmes

President Elect and Chapter Technology Transfer Chair

### **Membership Promotion Chair**

*by Rob Craddock*

It is hard to believe that it is the end of summer and time to start the new ASHRAE year.

I would like to thank all the members that have already renewed their membership for the 2009 / 2010 ASHRAE year. I will be contacting those of our members that are eligible to upgrade their membership to Member from Associate and Affiliate. We also have a couple that will be able to upgrade from student to Associate.

If you can think of anyone who you think should be a member of ASHRAE please let me know and I will contact them.

I have added the following links:  
Membership Application

[http://www.ashrae.org/docLib/20080710\\_MemberAssocAffilApp.pdf](http://www.ashrae.org/docLib/20080710_MemberAssocAffilApp.pdf)

Application to upgrade membership:

[http://www.ashrae.org/docLib/20080710\\_108.pdf](http://www.ashrae.org/docLib/20080710_108.pdf)

I would like to thank Norm Grusnick from ECCO Manufacturing in Langley B.C. and Mike Malden from E.H. Price for there assistance in organizing the Seminar. I would also like to thank the Mechanical Contractors Association of Saskatchewan for there assistance in sending the information to all there members and for sponsoring the seminar.

Rob Craddock  
Membership Promotion Chair

### **Past President & Research Promotion Chair**

*by Ted Cooke*

I would like to congratulate Ray Sieber and the RP committee (Jack Lyons, Murdoch MacPherson, Ted Cooke, Shawn Wedewer, Rob Craddock and Neil Paskewitz) from last year for a very successful year. Our chapter raised over \$12,000.00 exceeding last year's high-five of \$11,575 and this years target of \$10,500. This was not possible without the support of our great network of ASHRAE members and businesses, which includes the following 2008-09 contributors:

Axiom	MacPherson Eng.
Ecco Heating Products	Christie Mechanical
HVAC Sales Ltd.	Inland Metal
Uponor	SaskEnergy
Saskatchewan Insulation	Selkirk Canada
Trane	HR Enterprises Ltd.
Jason Paul	Kris Pockett
Marquardt Mechanical Ltd.	Trevor Harle
Harvard Developments	Heric Holmes
Ray Sieber	Ted Cooke
Dean Nagel	Rob Craddock
Greg Fluter	Walters Industrial
E.H. Price Sales Ltd.	Johnson Controls
KD Mechanical Ltd.	Darke Marketing
Moose Jaw Heating	Conbrio Consulting
Electronic Environments	J-Clan Services Ltd.
Engineered Air	All-Rite Plbg. & Htg.
Cypress Sales Partnership	Stantec Consulting

HDA Engineering  
Sask. Research Council  
Norm Grusnick (RVC)  
DMA Controls

LML Engineering  
ICBM Services  
City of Regina

On another note, the Saskatoon RP Chair and myself have briefly discussed the opportunity to hold a joint Research Promotion Golf Tournament at the end of this year i.e. end of May 2010. The event would likley include bussing people from each city to a Golf Course located between the two cities and 18 holes of golf followed by a dinner/social. I will ask the membership at September's meeting if this is something they would be interested in pursuing for this year. If you are unable to make the meeting, please email your opinion to myself at [tcooke@hdaeng.com](mailto:tcooke@hdaeng.com).

Ted Cooke  
Past President & Research Promotion Chair

### **Vice President – Newsletter**

*by Jason Danyliw*

**Regina Chapter Email Address:**  
<mailto:ashraeregina@accesscomm.ca>

**Regina Chapter Website Address:**  
<http://regina.ashraechapters.org/>

ASHRAE HVAC&R Industry eNewsletter  
If you wish to subscribe to the ASHRAE HVAC&R Industry eNewsletter, e-mail [subscribe-enews@ashrae.org](mailto:subscribe-enews@ashrae.org) with "Subscribe this address to The HVAC Industry eNewsletter" in the e-mail subject line.

### **ASHRAE Learning Insitute**

The ASHRAE Learning Institute is offering on-line courses. [Online Courses Registration Form](#) Please see attached information.

### **Dates Confirmed for Next Satellite Broadcast/Webcast**

To be Determined.

### **ASHRAE YEA Leadership Weekend**

The Young Engineers in ASHRAE (YEA) Leadership weekend is scheduled for October 2-4, 2009 in Atlanta, GA. at the ASHRAE Headquarters and the Holiday Inn Decatur. This offers the best opportunity for young professional members to become leaders of Society. It is an opportunity to improve personal and professional development skills and enhance one's ability to serve as a leader in their professional life, in ASHRAE and in the industry.

Please contact Greg Fluter or Jason Danyliw if you have any questions, or if you are interested in attending.

### **ASHRAE Jobs Career Center**

On June 15th, ASHRAE launched its full services Career Center for ASHRAE members and HVAC hiring authorities (<http://www.ashraejobs.com/>). The reception has been magnificent as the number of job seekers, resumes, and employer job postings have risen each week. We are very pleased.

The Career Center is user friendly. The products and services match that of traditional big box boards such as Monster.com, yet the information and postings are specific to the ASHRAE Community. Job seekers have a shorter and more pleasurable search experience, and employers have immediate access to a pre-filtered pool of talent.

One unique feature is that Center highlights ASHRAE members. The online job application form requires an applicant to identify themselves by membership status. So does the resume posting form. And, employers can sort applications and resumes by their status. Why did we agree to keep this open to non ASHRAE members? Because career research is the fastest growing use of the web and we also see this service driving ASHRAE membership.

I would invite your Chapter to participate in this program by creating a link on your website to the ASHRAE Jobs Career Center. You will find attached an e-copy of the logo to use on your homepage. We would also appreciate an announcement through your eNewsletter, blogs, etc.

Please contact Greg Fluter or Jason Danyliw with any questions pertaining to this.

### **ASHRAE Provides Opportunity for Continuing Education**

ATLANTA—In keeping with ASHRAE's goal of continuing education, the Society will once again offer fall online seminars.

These online, instructor-led seminars will run from late September through early November and are available to those interested in expanding their knowledge of the HVAC industry and keeping up to date with the latest technology and their applications. Many popular courses will be offered, several of which will include updated material. The courses will cover a broad range of topics, including:

- *Understanding & Designing Dedicated Outdoor Air Systems (DOAS)*
  - *The Commissioning Process & Guideline 0*
  - *Complying with Standard 90.1-2007 HVAC/Mechanical*
  - *Introduction to Green Buildings and Sustainable Construction*
  - *Complying with Standard 90.1-2007 Envelope/Lighting*
  - *The Basics of Radiant Panel Heating & Cooling\**
  - *Using Standard 90.1-2007 to Meet LEED Requirements*
  - *Chilled Beam Technology for Excellent Indoor Climate in an Energy Efficient Manner*
  - *Complying with Requirements of ASHRAE Standard 62.1-2007*
  - *Energy Management in Existing Buildings\**
  - *Humidity Controls: Basic Principles Loads & Equipment*
  - *Humidity Controls: Application, Control Levels & Mold Avoidance*
  - *The Basics of a Proposed Standard on High Performance Green Buildings (Standard 189.1)*
- \*Indicates updated course material.*

The three-hour-long courses are taught in real-time, from 1 p.m. to 4 p.m. EDT, and feature interactive audio. Either three professional development hours or American Institute of Architects learning units or 0.3 continuing education units are available for each course.

Those who sign up for courses before Sept. 11 will receive a reduced registration fee. A 20

percent discount is also available to participants who register for courses with related topics.

A full list of courses and registration information can be found at [www.ashrae.org/onlinecourses](http://www.ashrae.org/onlinecourses).

ASHRAE, founded in 1894, is an international organization of some 50,000 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 Installs New Officers, Directors**

LOUISVILLE - The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) installed new officers and directors at its 2009 Annual Conference held here June 20-24.

The new president is Gordon V. R. Holness, P.E., Fellow ASHRAE, Life Member, consulting engineer, Grosse Pointe Shores, Mich. His presidential theme, *Sustaining Our Future by Rebuilding Our Past*, addresses energy efficiency in existing buildings.

“The vast majority of buildings that will exist in the year 2030 exist today,” Holness said. “If we are to have a material impact on overall energy use, it is through renovation of existing building stock. While existing buildings present great challenges, they offer us a greater opportunity to significantly impact our overall national energy demand, reduce our dependence upon imported oil and gas and minimize our carbon footprint. If ASHRAE is looking to build a sustainable future, we can see the foundations of that right now.”

Other officers installed for a one-year term are:

- President-Elect: Lynn Bellenger, P.E., Fellow ASHRAE, partner, Pathfinder Engineers, Rochester, N.Y.
- Treasurer: Ronald “Ron” Jarnagin, staff scientist, Pacific Northwest National Laboratory, Richland, Wash.
- Vice President: William “Bill” Bahnfleth, Ph.D., P.E., Fellow ASHRAE, professor, The Pennsylvania State University, University Park, Pa.

- Vice President: Jim Fields, vice president, Superior Mechanical Services, Greensboro, N.C.
- Vice President: Sheila J. Hayter, P.E., ASHRAE Fellow, senior engineer, National Renewable Energy Laboratory, Golden, Colo.
- Vice President: Thomas “Tom” Watson, P.E., ASHRAE Fellow, chief engineer, McQuay International, Staunton, Va.

ASHRAE installed the following directors to serve a three-year term from 2009-2012:

- Region I Director and Regional Chair: Spencer Morasch, advanced engineer, Customer Support Department, Jersey Central Power and Light, Red Bank, N.J.
- Region II Director and Regional Chair: Guy Perreault, P.E., president, Evap-Tech MTC, Quebec City, Quebec, Canada
- Region III Director and Regional Chair: Kevin Fallin, P.E., director of technical operations, E.K. Fox and Associates, Fairfax, Va.
- Region XI Director and Regional Chair: Erich Binder, president, Erich Binder Consulting, Calgary, Alberta, Canada.
- Director-at-Large: Michael J. Brandemuehl, Ph.D., P.E., professor of Civil, Environmental and Architectural Engineering at the University of Colorado, Boulder, Colo.
- Director-at-Large: Thomas “Tom” Werkema, vice president of government activities, Arkema, Philadelphia, Pa.
- Director-at-Large: Samir Traboulsi, P.E., general manager, Thermotrade SAL, Beirut, Lebanon.

ASHRAE, founded in 1894, is an international organization of 55,000 persons. Its sole objective is to advance through research, standards writing, publishing and continuing education the arts and sciences of heating, ventilation, air conditioning and refrigeration

(HVAC&R) to serve humanity and promote a sustainable world.

## **Coalition Looks to Producing High-Performance Federal Buildings**

WASHINGTON, D.C. - As Congress looks toward measures to reduce energy use in federal buildings, the leadership of the High Performance Building Congressional Caucus Coalition has issued recommendations that would allow the widespread development of high-performance federal buildings.

The report, *Producing High-Performance Federal Buildings*, was developed at the request of Rep. Russ Carnahan, D- Mo., co-chair of the High-Performance Building Congressional Caucus, by the leadership of the High Performance Building Congressional Caucus Coalition, which works to heighten awareness and inform policymakers about the major impact buildings have on health, safety and welfare.

The report is being issued to other High-Performance Building Congressional Caucus members as well as other relevant Congressional offices.

“These recommendations, if implemented through upcoming energy legislation, will provide an effective transition to reduced energy consumption, enhanced sustainability, improved building operation and maintenance, and more efficient use of national resources in the federal building stock,” said Doug Read, program director of government affairs for the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and chair of the Coalition.

The recommendations include:

- Require true life-cycle analysis and decision-making for the acquisition of federal buildings
- Require total building commissioning for the federal building stock
- Require integrated project delivery, including whole building design, procurement and construction for federal buildings
- Require building information modeling and support building data interoperability for federal buildings
- Require comprehensive education and training and higher levels of competence in the federal building design, property management, operations and maintenance, and procurement communities

· Require the collection, storage, dissemination and utilization for federal building performance data

More information on the Coalition and a copy of the report can be found at [www.hpbcc.org](http://www.hpbcc.org).

The High-Performance Buildings Congressional Caucus Coalition (HPBCCC) is a private-sector coalition providing guidance and support to the High-Performance Building Caucus of the U.S. Congress. The High-Performance Buildings Congressional Caucus Coalition will work with the Congressional Caucus to promote and showcase best practices in building design and focus on issues reflecting all aspects of high-performance buildings including: accessibility, aesthetics, cost-effectiveness, functionality, historic preservation, productivity, safety and security, and sustainability.

## **ASHRAE Appoints First DOE Building Energy Codes Fellow**

ATLANTA – The American Society of Heating, Refrigerating and Air-Conditioning Engineers has appointed its first Building Energy Codes ASHRAE Fellow in partnership with the Department of Energy. The new Fellow, Mike Erbesfeld, will assist the DOE in assessing the impact of updating state energy codes to meet the 2010 version of ANSI/ASHRAE/IESNA Standard 90.1.

“The fellowship is valuable in that I get to bring my industry perspective to the federal government, where I can illustrate the obstacles and pitfalls on the path to net-zero-energy buildings, says Erbesfeld. “At the same time, this collaboration will hopefully ease the communication among owners, designers and building code officials, creating a more efficient and streamlined process from design to certificate of occupancy.”

Erbesfeld will be placed in the DOE’s Office of Building Technologies, Building Energy Codes Program. He will analyze energy code updates based on EnergyPlus analysis of benchmark buildings and cost databases, as well as perform compliance testing of COMcheck using benchmark buildings and recommend program and front end changes to simplify COMcheck use. COMcheck is a software program from the DOE that simplifies energy code compliance by offering a flexible computer-based alternative to manual calculations.

Erbesfeld's most recent role was as an ASHRAE Congressional Fellow in the office of Sen. Diane Feinstein, where he worked on legislative efforts that included tax credits and deductions to assist homeowners and businesses make energy efficient improvements and with HUD to ensure that their energy efficiency mortgage (EEM) program was utilized to its full potential.

He graduated from the University of Miami, Miami, Fla., with a master's degree in mechanical engineering.

ASHRAE launched its Washington Fellow program in 2007 to allow participants to work in the federal government in a technical advisory role for limited terms. The Society is accepting applications for additional DOE ASHRAE Fellows. For more information on the program, contact Doug Read, ASHRAE Program Director of Government Affairs, at [dread@ashrae.org](mailto:dread@ashrae.org) or (202) 833-1830.

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### **New ASHRAE Standard Guides Designers in Moisture Control Measures**

ATLANTA – Moisture and mold don't make the headlines the way they once did, but they are still problems in some structures.

Guidance on how to best design buildings with adequate moisture control features is contained in a new standard from ASHRAE. ANSI/ASHRAE Standard 160, *Criteria for Moisture Design Analysis in Buildings*, formulates design assumptions for moisture design analysis and criteria for acceptable performance.

"If the designer elects to perform a design moisture analysis, the standard requires he or she to think about the interior conditions that will be maintained in the building and the effect that may have on building envelopes," Anton TenWolde, chair of the committee that wrote the standard, said. "The standard provides a methodology for the first time to make consistent design recommendations, such as the need, type and placement of vapor barriers in any climate."

The standard introduces criteria to handle rain, wind and other exterior moisture weather loads.

The cost of ANSI/ASHRAE Standard 160-2009, *Criteria for Moisture-Control Design Analysis in Buildings*, is \$39 (\$33, 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](http://www.ashrae.org/bookstore).

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### **ASHRAE Operations and Performance Management Certification Available Worldwide**

ATLANTA – ASHRAE's Operations and Performance Management (OPMP) Certification program has joined the Society's two other existing certification offerings available at testing centers around the world.

ASHRAE member Jim Newman took the exam when it was first offered at ASHRAE's 2009 Winter Conference.

"I teach classes to facility engineers on proper operating and maintenance techniques," said Newman, ASHRAE certified OPMP, Newman Consulting Group, Bloomfield Hills, Mich. "This exam covered all the aspects of operations and maintenance that an engineer would need to know to properly perform not only O&M in a building, but also know what to do to be more effective. Receiving the OPMP designation shows that a person is truly proficient in his/her craft."

The web-based exam is offered at testing centers in more than 200 locations in almost 20 countries. In addition to the United States and Canada, the exam is now offered in countries such as Australia, China, Egypt, Guam, India, Japan, Jordan, Kuwait, Lebanon, Philippines, Puerto Rico, Qatar, Saudi Arabia, Singapore, South Africa, South Korea, Taiwan, the United Arab Emirates, and the United Kingdom. Applicants first apply for the examination through ASHRAE, and if they meet

the certification qualifications, register for the examination at a testing center.

“ASHRAE's OPMP certification helps professionals attest that they are well prepared to manage and maintain buildings to fully achieve reliability and their potential energy savings,” said Richard Rooley, chair of the committee who developed the exam. “These ASHRAE certified professionals will keep your building’s design from fading from green to grey, ensuring the full potential of the energy conserving systems they manage. “

Other ASHRAE certifications currently available at testing centers are Healthcare Facility Design Professional and High-Performance Building Design Professional Certification.

ASHRAE’s Commissioning Process Management Professional launches in June at the Society’s 2009 Annual Conference in Louisville, Ky., and will be available at testing centers by the end of August.

For information on ASHRAE certification, visit [www.ashrae.org/certification](http://www.ashrae.org/certification).

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### **Virtual Congressional Visits Day Hosted by High-Performance Buildings Caucus Coalition**

WASHINGTON, D.C. – The building industry is encouraged to reach out to Congress to promote high-performance buildings during an upcoming High-Performance Buildings week.

The High-Performance Building Congressional Caucus Coalition (HPBCCC) is hosting the first annual Virtual Congressional Visits Days during the week of June 15-19. Members of the HPBCCC participating organizations are asked to contact their member of Congress by phone and e-mail and encourage them to join the High-Performance Building Congressional Caucus and to focus on high-performance building issues. The week has been dubbed “High-Performance Buildings Week.”

Co-Chairs of the High-Performance Building Congressional Caucus, Representative Russ Carnahan (D-MO) and Representative Judy Biggert (R-IL) introduced a Resolution (H.Res.492) supporting the goals and ideals of High-Performance Building Week.

“ASHRAE’s Washington Office is leading the program and would like to have ASHRAE members participate in full force,” said Bill Harrison, ASHRAE president. “ASHRAE set the foundation for energy efficiency with Standard 90.1, and we are working to build on that foundation by providing guidance related to high-performance buildings. To ensure the design, construction and operation of high-performance buildings, it is vital we have the support of the federal government.”

Information on the program including fact sheets, contact templates, and participating organizations is available at [www.hpbcc.org/cvd](http://www.hpbcc.org/cvd).

The High-Performance Buildings Congressional Caucus Coalition (HPBCCC) is a private-sector coalition providing guidance and support to the High-Performance Building Caucus of the U.S. Congress. The High-Performance Buildings Congressional Caucus Coalition will work with the Congressional Caucus to promote and showcase best practices in building design and focus on issues reflecting all aspects of high-performance buildings including: accessibility, aesthetics, cost-effectiveness, functionality, historic preservation, productivity, safety and security, and sustainability.

### **Guidance on Sustainability Latest Addition to ASHRAE Handbook**

ATLANTA – As economies transition from carbon-based to other forms of more sustainable energy, engineers are being challenged to meet an ever-increasing tide of regulation and demand.

To assist the building environment industry in meeting this challenge, guidance on designing for effective energy resource use is being emphasized in the newest edition of the ASHRAE Handbook.

The 2009 *ASHRAE Handbook – Fundamentals*, covers basic principles and provides essential data for HVAC&R design. In all, the *Fundamentals* volume includes more than 1,000 pages and 39 chapters on a variety of HVAC&R

topics, covering general engineering information, basic materials, load and energy calculations and duct and pipe design.

The new chapter on sustainability defines this concept for HVAC&R and describes the principles, design considerations, and detailed evaluations needed in designing sustainable HVAC&R systems.

“HVAC&R engineering design on projects concerned with performance and sustainability requires understanding of more than just HVAC&R,” said Dave Grumman, who oversaw writing of the chapter on behalf of ASHRAE’s technical committee on building environmental impacts and sustainability. “Engineers must consider projected energy and water demands, storm water runoff generation, waste generation and air quality impacts. The guidance in this new chapter will assist engineers as they strive for overall sustainability in buildings.”

The chapter covers characteristics of sustainability, factors impacting sustainability, primary HVAC&R considerations in sustainable design, factors driving sustainability into design practice and designing for effective energy resource use.

Another change is addition of climate data for 5,564 stations on the CD accompanying the book, an increase of 1,142 stations compared to the 2005 Handbook on the CD accompanying the book. A subset of data for selected stations is included in the printed chapter, Climatic Design Information.

Other new information can be found in chapters titled *Psychrometrics, Mass Transfer, Fundamentals of Control, Thermal Comfort, Indoor Environmental Health, Fenestration, Ventilation and Infiltration, Nonresidential Cooling and Heating Load Calculations, Space Air Diffusion, Duct Design, Insulation for Mechanical Systems, Airflow Around Buildings, Refrigerants, Thermophysical Properties of Refrigerants, and Measurement and Instruments.*

The 2009 ASHRAE Handbook is published in two editions. One contains inch-pound (I-P) units of measurement, and the other contains the International System of Units (SI).

The cost of the 2009 *ASHRAE Handbook – Fundamentals*, which includes the CD is \$195, in I-P or SI. The 2009 ASHRAE Handbook CD, which contains both the I-P and SI editions, costs \$155.

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 at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

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### **CDC and HUD Recognize Benefits of ASHRAE Ventilation Guidance**

*Call to promote healthy homes mentions ASHRAE Standard 62.2-2007 as resource*

ASHRAE has long said that proper ventilation levels can lead to healthier, more productive environments. Now the Centers for Disease Control and the U.S. Department of Housing and Urban Development recognize ASHRAE guidance as a means for creating healthy homes.

On June 9, Acting Surgeon General Steven K. Galson released *The Surgeon General’s Call to Action to Promote Healthy Homes*, calling for Americans to prevent disease and promote healthy environments in homes. ANSI/ASHRAE Standard 62.2-2007, *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*, was recommended as an effective way to reduce indoor air pollution through ventilation in the CDC’s and HUD’s supporting guidance for builders and homeowners.

“The citation of Standard 62.2 by the Surgeon General highlights the relevance of this standard to the national need for safe and healthy housing,” says Andy Persily, chair of ASHRAE’s Technology Council. “ASHRAE members should be proud to be able to contribute to such an important goal.”

ANSI/ASHRAE Standard 62.2 helps ensure air inside homes is clean and safe by limiting sources of pollutants and requiring enough mechanical ventilation to provide dilution for unavoidable contaminants. The standard ensures that heating, ventilating, air-conditioning and refrigeration systems work together to effectively

ventilate homes and minimize sources of indoor pollution.

The standard applies to spaces intended for human occupancy within single-family houses and multi-family structures of three stories or fewer, including manufactured and modular houses. It does not apply to transient housing such as hotels, motels, nursing homes, dormitories or jails. The standard applies to both new and existing buildings and renovations.

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### **New Publication Provides Energy Efficiency Guidance for Hotels**

ATLANTA – When visiting your next hotel this summer, check to see if energy efficiency is on the amenities list. If it's not, it should be.

Recommendations on achieving 30 percent energy savings over minimum code requirements are contained in the newly published *Advanced Energy Design Guide for Highway Lodging*. The energy savings guidance for design of new hotels provides a first step toward achieving a net-zero-energy building.

“The recommendations allow the building industry to create more energy-efficient hotels while maintaining the quality and functionality of the space to provide a pleasant guest experience,” said Ron Jarnagin, chair of the committee that wrote the book.

The book, published by ASHRAE, gives guidance to architects, engineers, contractors and other building team members on how to easily achieve advanced levels of energy savings without having to resort to detailed calculations or analyses. A few tips on how to achieve energy savings now are included below.

Written in partnership with The American Institute of Architects, the Illuminating Engineering Society of North America, the U.S. Green Building Council, and the U.S. Department of Energy, the book is available for free in electronic form at [www.ashrae.org/freeaedg](http://www.ashrae.org/freeaedg). Hard copies are available

for purchase in the ASHRAE Bookstore through the same Web page.

The Guide focuses on typical hotels found along highways that have up to 80 rooms, generally four stories or less, that use unitary heating and air-conditioning equipment. Buildings of these types with these HVAC&R configurations represent a significant amount of commercial hotel space in the United States.

Examples of advanced highway lodging energy designs are provided in case studies to illustrate the recommendations and the flexibility offering in achieving the energy savings in the Guide.

Although the guidance targets new hotels, some of the design tips included in the guide that allow hotels to save energy immediately are appropriate for existing hotels as well:

#### **Lighting:**

- In interior corridors, lighting often runs 24 hours a day. This is an area for possible daylight savings from top lighting (skylights) or occupancy sensors that reduce lighting when the space is unoccupied.
- Use compact fluorescent lighting in downlights, wall sconces, and table lamps. Use incandescent lighting sparingly, such as in accent lighting of artwork or highlighting of special architectural features in the lobby. Use translucent wall sconces and table lamps to better light the space and patrons' faces.
- Use compact fluorescent fixtures with electronic ballasts in all plug-in table and floor lamps in guest rooms, lobbies and common areas

#### **Hot Water:**

- The least expensive means of reducing service water heating energy consumption is by reducing service hot water consumption. Lower-flow shower heads can reduce hot water demand during showers from approximately 1.8 gpm to less than 1.5 gpm. Low-flow lavatory faucets can produce similar

hot water usage reductions for each lavatory.

### **Laundry Service:**

- Laundering of bed linens and towels consumes significant amounts of energy in highway lodging facilities. Water-conserving commercial washers consume roughly 25 percent less water per pound of laundry than conventional commercial washers and extract significantly more water from the load thus reducing the energy use required by the dryer.

The cost of the print version of *Advanced Energy Design Guide for Highway Lodging*, is \$62 (\$53 members). To download the free electronic version, please visit [www.ashrae.org/freeaedg](http://www.ashrae.org/freeaedg).

To order a print copy of the book, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

### **ASHRAE Conference Catch-UP**

Thanks for joining us at ASHRAE's 2009 Annual Conference. Here's a look at what's happened so far and some suggestions on events and programs you don't want to miss.

#### **Shout Out to Honors and Awards Recipients**

A big congratulations to the 56 members and one chapter who were recognized during Saturday's honors and awards session. This includes 18 Distinguished Service Award recipients, five Exceptional Service and six Distinguished 50-Year Member recipients. A thank you as well to keynote Sue Roaf for educating us on adapting buildings. If you missed her, Roaf speaks again Sunday at the technical plenary.

#### **Off to the Races**

ASHRAE's technical program kicks off Sunday with a plenary session on adapting buildings and cities for climate change. Other sessions of interest address energy use and efficiency in healthcare facilities; ASHRAE's new commissioning guideline; and case studies of moisture management

in litigation. Most importantly, in today's economy, you don't want to miss the seminar, *ASHRAE Members' Survival Guide: Keeping Your Business Alive and Well during Difficult Economic Times*.

### **Start Learning and Earning the PDHs and CEUs you need for 2009 in Louisville!**

The year is half over – where do you stand on earning your annual PDH/CEU requirements? The ASHRAE Learning Institute is offering four half-day courses here, including a new session on *Engineering for Sustainability: Understanding Air-to-Air Energy Recovery Technologies and Applications*. Sign up today at Registration.

### **Tech Tours Take You Behind-the-Scenes in Louisville**

ASHRAE technical tours offer you an inside view of how technology developed by members is practically applied in building environments. Tours include the central steam and chilled water plant at Louisville Medical Center, an HVAC system for a Class 100/1000 cleanroom at the University of Louisville, Scribner Place YMCA and Aquatic Center and the CMTA Corporate Headquarters Building. Check your final program for details and sign up at Registration. Ask for Jan – she can help you.

### **Net-Zero-Energy Building Conference Posters on Display**

In March, ASHRAE held a sold-out conference in San Francisco, *Countdown to a Sustainable Energy Future...Net-Zero and Beyond*. Attendees and speakers came together to help drive the building industry toward market-viable net-zero-energy buildings. Now you can see the posters from the conference here in Louisville. Check them out near Registration.

### **ASHRAE Introduces Prototype of Building Energy Label at Annual Conference Program that aims to change the "face" of building energy use moves closer to official launch**

ATLANTA – Most of us know the fuel efficiency of our cars, but what about our buildings? ASHRAE is working to change that, moving one step closer today to introducing its building energy labeling program with release of a prototype label at its 2009 Annual Conference in Louisville, Ky.

A prototype label for the ASHRAE Headquarters in Atlanta was unveiled. The Building Energy Quotient program, which will be known as Building EQ, will include both asset and operational ratings for all building types, except residential. ASHRAE is working with major real estate developers to implement the label prototype this fall with a widespread launch of the full program in 2010. For more information, visit <http://buildingEQ.com/>

“As the United States looks to reduce its energy use, information is the critical first step in making the necessary choices and changes,” Bill Harrison, ASHRAE president, said. “With labeling mandatory in Europe and disclosure of a building’s energy performance becoming required by several states, now is the time to introduce a label that can serve as a model for mandatory programs. ASHRAE’s introduction of its prototype labeling program couldn’t be better-timed.”

Ron Jarnagin, who chairs the committee developing the label, noted that the market, with its move toward placing a premium on energy-efficient properties, would benefit from a labeling program.

“When potential building tenants and owners have information on the properties they are interested in, they can understand the full cost of their investment and place a value on the energy efficiency of a building,” he said. “ASHRAE’s label will help building owners differentiate their product in a technically sound manner while providing tenants with the tools they need to select energy-efficient spaces.”

The ASHRAE labeling program differs from existing labeling programs in that it focuses solely on energy use. Under the ASHRAE program, new buildings will be eligible to receive an asset rating. An operation rating will be available once the building has at least one year of data on the actual energy use of buildings. Existing buildings would be eligible to receive both an asset and operational rating.

The asset rating provides an assessment of the building based on the components specified in the design and would be based on the results of a building energy model. The operational rating provides information on the actual energy use and is based on a combination of the structure of the building and how it is operated.

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### **Existing Buildings Highlighted at ASHRAE Meeting**

ATLANTA – The need to improve the energy efficiency of existing buildings was highlighted at the ASHRAE 2009 Annual Conference held in Louisville.

At the meeting, ASHRAE launched the prototype of its Building Energy Quotient building energy labeling program, introduced a year-long focus on existing buildings and kicked off the Society’s most highly anticipated certification program to-date, Commissioning Process Management Professional

Some 1,530 attendees came together to support the Society’s mission of advancing HVAC&R to serve humanity and promote a sustainable world.

“In these economic times, dollars for new construction have dwindled,” said Gordon Holness, ASHRAE president. “Given that more people are renovating than building new, now is the perfect time for ASHRAE to focus on reducing energy consumption in existing buildings to save money and reduce carbon emissions.”

Gordon Holness, P.E., Fellow ASHRAE, Life Member, was inducted as the Society’s president for 2009-10. Through his presidential theme, *Sustaining Our Future by Rebuilding Our Past*, Holness addresses energy efficiency in existing buildings.

“The vast majority of buildings that will exist in the year 2030 exist today,” Holness said. “If we are to have a material impact on overall energy use, it is through renovation of existing building

stock. While existing buildings present greater challenges, they offer us a greater opportunity to significantly impact our overall national energy demand, reduce our dependence upon imported oil and gas and minimize our carbon footprint. If ASHRAE is looking to build a sustainable future, we can set the foundations of that right now.”

To read his presidential address, visit [www.ashrae.org/holness](http://www.ashrae.org/holness).

The Society launched its Building Energy Quotient program, known as Building EQ, which will include both asset and operational ratings for all building types, except residential. ASHRAE is working with major real estate developers to implement the label prototype this fall with a widespread launch of the full program in 2010. For more information, visit [www.buildingeq.com](http://www.buildingeq.com).

ASHRAE Learning Institute courses related to sustainability and high-performance building design were top drawers, including *Basics of a Proposed Standard on High-Performance Green Buildings (Standard 189.1)*, *Engineering for Sustainability: Understanding Air-to-Air Energy Recovery Technology and Applications*, and *The Commissioning Process and Guideline 0*.

Top-attended technical program sessions included the poster session; *Adapting Buildings and Cities for 3°C of Climate Change*; *To LEED or not to LEED: What are the IAQ and Energy Implications?*; *Proper OA Design Criteria for Sustainable Design and Efficiency*; *Real World BIM for the HVAC Engineer*; *Cities Are Not Sustainable: A Debate*; *Defining the Contribution of Fans in Achieving the Goals of ASHRAE Standard 90.1*; *Design of Hybrid Ground Source Heat Pump Systems*; *Optimizing of DX-DOAS Systems*; *How to Make Your Sustainable Building Work*; *Use of Liquid Desiccants for Improved Air Quality and Ventilation Air Energy Savings*; *Energy Efficiency and Application of Water to Water Heat Pumps in Residential Installations*; *Back to Basics - Motors and VFDs*; *Cooling of Telecom Centers*; *Free Cooling Opportunities for Data Centers*; *Avoiding Moisture and Humidity Problems During Part-Load Hours*; *Design Tools for Modeling Hybrid Geothermal Heat Pump (GHP) Systems*; *Energy Modeling for Large Building Systems*; *Successes and Challenges of Sustainable Building Metrics Implementation*; and *Is 30% More Outdoor Air Really Better?*

Top-selling publications at the meeting were Guideline 0-2005, *The Commissioning Process*, Guideline 1.1-2007, *HVAC&R Technical Requirements for the Commissioning Process*, the ASHRAE Pocket Guide; ANSI/ASHRAE/IESNA Standard 90.1-2007, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, and its *User’s Manual*; *the Load Calculations Applications Manual*; and *Best Practices for Datacom Facility Energy Efficiency, second edition*. For more information on these books and more, please visit [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

ASHRAE also launched its fourth certification program, Commissioning Process Management Professional, with some 80 people taking part. The examination will be available on computer at testing centers around the world by the end of August. For more information, visit [www.ashrae.org/CPMP](http://www.ashrae.org/CPMP).

At the meeting, the Host Committee displayed its sustainability footprint project - designed to leave behind a lasting sustainable footprint in the cities where the Society’s meetings are held. Thanks to funds and equipment donated by members and others, 2 kilowatt of photovoltaic panels with an inverter to supply electricity was installed at Jeff Street Baptist Community at Liberty in Louisville. The church is part of the Louisville Kilowatt Crackdown program, which is a competition that promotes energy conservation within the business district of Louisville.

ASHRAE will hold its 2010 Winter Conference, Jan. 23-27 in Orlando, accompanied by the AHR Expo, Jan. 25-27.

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### **BACnet Technologies Well Positioned for Smart Grid Initiatives**

ATLANTA – At ASHRAE’s Annual Conference in Louisville last week, the BACnet committee and its working groups considered how BACnet technologies can be used to aid development of standards to help Smart Grid efforts- as required by

the Energy Independence and Security Act (EISA) of 2007- led by National Institute of Standards and Technology (NIST).

The BACnet committee's long-standing Utilities Integration Working Group has been engaging utility companies and working with national labs on grid related technologies like real-time pricing and automated demand response for many years. This group, which is being re-chartered as the Smart Grid Working Group (SG-WG), is well positioned to lead BACnet's efforts as the nation moves toward creating an interoperable Smart Grid.

The leader of the Smart Grid Working Group is also the leader of NIST's Building to Grid (B2G) Domain Expert Working Group. "We look forward to continuing collaboration among ASHRAE and NIST, Lawrence Berkeley National Laboratory, and other public and private industry organizations as the working group expands its focus to include all aspects of building integration into the Smart Grid, which includes not only communications with utilities and other grid service providers, but also efficient energy system management in buildings and homes," says David Holmberg, the working group's leader.

Aiding this effort is an update to the network security specifications for the BACnet protocol. The committee moved forward for publication an addendum that adds state-of-the-art digital signatures and encryption (SHA-256/HMAC and AES) to enable the creation of FIPS-compliant secure communications. This technology will be available on all BACnet media types and joins the capabilities of the certificate-based SSL/TLS that can be employed when using BACnet Web Services (BACnet/WS). Together, these technologies will serve the high security needs of the Smart Grid initiatives.

BACnet has been communicating on standard IP networks for more than 10 years now. To ensure that BACnet continues to integrate well into corporate infrastructures and to expand it into the emerging market areas enabled by ubiquitous IP networking, the committee has formed a new working group to investigate the opportunities for adopting more key capabilities and best practices from the Information Technology industry. This group will be working to facilitate the continued

convergence of the IT and Building Automation infrastructures.

During the conference, the committee advanced ten addenda to final publication stage, created four new addenda for first public review, and revised six addenda for additional public review.

"With these activities, BACnet is showing its key strengths," says Dave Robin, chair of the committee. "It is both a mature technology and an ever-changing one. Driven by an open consensus-driven industry effort, BACnet always adapts to changing needs without losing the stable core that has ensured interoperability since 1995."

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### **Datacom Contamination: Stopping it Before it Starts**

ATLANTA – While particle and gaseous contamination resulting from dust and dirt can lead to unexpected shutdowns of critical IT equipment, the connection between contamination and hardware failures is often overlooked.

A new book from ASHRAE provides basic information that is essential to the control and prevention of particulate and gaseous contamination in datacom facilities. *Particulate and Gaseous Contamination in Datacom Environments* identifies datacom equipment susceptibility and operational impact, strategies for prevention and control as well as contamination testing and analysis.

"Any installation planning checklist for datacom environments typically includes power, cooling and structural criteria," said Joe Prisco, a member of ASHRAE's technical committee on mission control facilities, technology spaces and electronic equipment, which wrote the book.

"Contamination criteria can now be added. The guidance in this book is crucial for maintaining a high level of IT equipment dependability and availability."

Prisco noted that as IT equipment shrinks in size, resulting in smaller components and less

physical space between them, the risk of contamination grows.

The book is part of the *ASHRAE Datacom Series*, developed to provide a more comprehensive treatment of datacom cooling and related subjects. Other books in the series are *High Density Data Centers – Case Studies and Best Practices*, *Design Considerations for Datacom Equipment Centers*, *Best Practices for Datacom Facility Energy Efficiency*, *Thermal Guidelines for Data Processing Environments*, *Liquid Cooling Guidelines for Datacom Equipment Centers*, *Datacom Equipment Power Trends and Cooling Applications*, and *Structural and Vibration Guidelines for Datacom Equipment Centers*.

The cost of *Particulate and Gaseous Contamination in Datacom Environments* is \$54 (ASHRAE members, \$46). 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 at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore).

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### **Change to ASHRAE Residential IAQ Standard Facilitates IAQ Improvements**

ATLANTA – In a time when the U.S. economic stimulus plan is emphasizing retrofitting commercial and residential buildings, ASHRAE has approved a change to its residential ventilation standard to encourage home retrofits to improve indoor air quality.

“With the U.S. economic stimulus having a great deal of focus on weatherization and other residential retrofits, we developed this change to help improve indoor air quality for public health and safety,” Steven Emmerich, committee chair, said.

Addendum e to ANSI/ASHRAE Standard 62.2-2007, *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*, allows alternative methods for meeting the standard’s requirements regarding kitchen and bathroom

exhaust fans. The standard currently requires fans in those rooms.

“For new construction or renovation, it’s simple to meet those requirements,” Max Sherman, former committee chair who now serves as consultant to the committee, said. “But the committee recognizes that installation of fans can be a barrier when added to existing homes in terms of expense and practicability. For example, an interior bathroom with ceiling joists running the wrong way may require ripping out a lot of ceiling and cutting studs to install ducting.”

An example of an alternative compliance path that is allowed under the addendum would be increasing the overall whole-house ventilation rate to compensate for insufficient or non-existent bathroom exhaust.

While the alternative path could result in modest increased energy use due to the extra whole-house ventilation required, Emmerich notes that the proposal is being made because experience has shown that people doing retrofits will often ignore the standard if the fan requirements are too onerous.

“This can lead to poor indoor air quality,” he noted. “So while the preferred method is to have the right size exhaust fan, we are proposing this alternative.”

Addendum e can be found at <http://www.ashrae.org/62.2e>.

Standard 62.2 is the only nationally recognized indoor air quality standard developed solely for residences. It defines the roles of and minimum requirements for mechanical and natural ventilation systems and the building envelope intended to provide acceptable indoor air quality in low-rise residential buildings.

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### **Changes Proposed to Standard 90.1 Airside Control Requirements**

ATLANTA – Proposed changes designed to improve the energy efficiency of buildings covered

by ASHRAE/IESNA Standard 90.1 are open for public comment.

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, 18 proposed addenda to the standard are open for public review.

“As we move toward publication of the 2010 standard, the 90.1 committee is considering many changes to reduce building energy use and cost,” Chair Mick Schwedler said. “The proposed addenda that are out for review move toward our goal of 30 percent energy cost savings.”

Among the proposed addendum out for public review is addendum *bh*, which would require supply air temperature reset in multiple-zone HVAC systems. Balancing the reset with an increase in fan energy can substantially reduce system energy use, Schwedler said.

“A preliminary energy analysis indicates that the whole building energy savings for buildings affected by this requirement is between 2.5 and 3 percent,” he said.

Proposed addendum *bf* provides new requirements for continuous air barriers. Schwedler noted that while performance requirements have existed for fenestration and door products, evidence suggests that the opaque envelope is the source of the majority of air leakage in buildings.

“A working group comprised of many interested parties developed an energy saving proposal that we hope will lead to acceptance and adoption,” Schwedler says.

Other addenda include *f*, which would allow a number of paths to reduce building roof load; *bq*, which reduces additional lighting power allowances by reducing both lighting energy and the energy needed to cool the space; and *bn*, which requires orientation of fenestration to be considered to reduce thermal loads.

The proposed addenda to ASHRAE/IESNA Standard 90.1 are available during their public review period. To read the addenda or to comment, visit [www.ashrae.org/publicreviews](http://www.ashrae.org/publicreviews).

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## **ASHRAE Announces a Call for Papers for 2010 Annual Conference**

*Conference to be held in Albuquerque, New Mexico, focuses on Raising Efficiency to New Levels*

ATLANTA – With its background setting of desert mountains and its recent focus on sustainability practices, Albuquerque is the perfect setting for ASHRAE’s 2010 Annual Conference focusing on “Raising Efficiency to New Levels.” ASHRAE has announced a call for papers for the conference to be held there June 26-30 next year.

The technical program will feature a wide range of programs and papers addressing energy-efficient system design for high elevations and dry climates as well as a variety of other topics. Setting this conference apart from previous ones is that it will feature more market-based papers and programs compared to previous technology-driven ASHRAE conferences. In addition, a new shorter “conference paper” format with an eight-page limit is being introduced in addition to the traditional 30-page technical papers.

Technical papers and conference paper abstracts are requested for the following tracks:

- What Is Sustainable Anyway?
- Energy Facts vs. Simulations
- Ventilation Systems
- Refrigeration for the Future
- Central Plant Systems
- BIM/CAD/Paper and Pencils
- Energy Conservation vs. New Generation
- Living with HVAC&R Systems
- High Efficiency HVAC&R Systems
- Professional Skills
- Data Centers and High Density Cooling

Technical papers and conference paper abstracts are due September 25, 2009. For instructions on submitting a technical paper or conference paper abstract, go to [www.ashrae.org/newmexico](http://www.ashrae.org/newmexico).

Conference paper authors will be notified of abstract acceptance by October 9, 2009. After acceptance, draft conference papers will be due

January 9, 2010. Final technical and conference papers will be due March 12, 2010.

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### **ASHRAE Research Hits \$2 Million Mark**

ATLANTA – For the second year in a row, ASHRAE Research Promotion has raised over \$2 million.

Contributions from individuals, ASHRAE chapters and 20 company donors reached \$2,038,528 for the 2008-09 Society year. Last year, ASHRAE raised \$2,081,42, marking the first time contributions to research had gone over the \$2 million mark. The Society matches these donated funds dollar-for-dollar, creating a \$4 million pool to support research.

“It is especially heartening that given today’s economy, ASHRAE chapters and members as well as industry companies continue to see the value of supporting our research program,” said Gordon Holness, ASHRAE president. “This year marks the 90<sup>th</sup> anniversary of the ASHRAE research program, and these contributions signify the strength of our program in researching today to improve the industry of tomorrow.”

With more than 6,400 total donations for the year, nearly half came from individual ASHRAE member donations, with corporate donations comprising the remainder. The money raised will fund research projects beginning in the 2009-10 fiscal year, such as *Measuring, Modeling, Analysis and Reporting Protocols for Short-Term M&V of Whole Building Energy Performance, Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing, and Establishing Benchmark Levels and Patterns of Commercial Building Hot Water Use*. ASHRAE conducts about \$8 million in research in any given year, with projects often spanning several years. Currently, the Research Promotion program is supporting 82 research projects and student grants-in-aid, valued at more than \$11.2 million.

Individual chapters raise funds in a variety of ways, including golf tournaments, auctions and educational seminars. ASHRAE’s Region VIII led the regions in total funds raised with some \$350,000.

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### **Congressional Briefing: Improving Performance of Buildings through “Smarter” Operation**

ATLANTA – The energy efficiency of high-performance buildings has the potential to go even higher through a proposed national “smart” electric power grid being developed by the U.S. government and leading industry groups.

“Through implementation of the Smart Grid, we will have better information about our energy use and the ability to make informed decisions on how and when energy can be used most efficiently,” said Doug Read, ASHRAE program director of government affairs. “Given that 70 percent of the U.S. electricity use is in buildings, there is a critical need to examine how buildings and their equipment will interact and communicate with the Smart Grid.”

A briefing for Congressional staff on high-performance buildings and the Smart Grid will take place from 11:30 a.m.-1 p.m. July 23 at B-340 Rayburn House Office Buildings. Speakers will address how buildings can connect to the Smart Grid, the technologies and equipment necessary for success and the expectations for what the Smart Grid would look like.

The briefing is sponsored by the High-Performance Building Congressional Caucus Coalition, which works to heighten awareness and inform policymakers about the major impact buildings have on health, safety and welfare.

ASHRAE serves as the Coalition’s secretariat and is a leading sponsor of the briefing with NEMA, a trade association for the electrical manufacturing industry.

ASHRAE’s BACnet standard is already providing a critical framework for how buildings

and their systems will communicate with the Smart Grid. The National Institute of Standards and Technology (NIST), the lead federal agency in development of the Smart Grid, has recognized the valuable role of the BACnet standard.

Co-chairs of the High-Performance Building Caucus, Rep. Judy Biggert, R-Ill., and Rep. Russ Carnahan, D-Mo., will provide welcome remarks.

Speakers are:

- Steve Bushby, Fellow ASHRAE, National Institute of Standards and Technology, speaking on connecting buildings and the Smart Grid.
- Mary Bell, General Electric and the NEMA Smart Grid Advisory Panel, speaking on the state of technology and equipment for Smart Grid Implementation.
- Barbara Tyran, Electric Power Research Institute, speaking on communications within the Grid.  
*Free Workshops in Albany and New York Lead Effort*

### **New York State, ASHRAE Team to Slash Data Center Energy Use**

ATLANTA – Two free workshops focused on thermal guidelines for data processing, datacom facility energy efficiency, high density data centers and contamination in datacom environments are available to those who work with data centers in New York.

The workshops follow five sessions held last year by ASHRAE in collaboration with the New York State Energy Research and Development Authority. More than 700 attendees took part.

It was estimated that implementation of the guidance and best practices information presented could result in a savings of at least \$25 million for New York data centers over the next five years, with a 75 percent reduction in data energy use experienced in some data centers.

“Because of the important of reducing New York State’s energy use and the opportunities for savings that can be achieved through improved datacom center design and operation, NYSEEDA and ASHRAE are funding these seminars,” said Roger Schmidt, an instructor at an earlier workshop. “The workshops expand from the 2008 series with 25 percent new material added.”

A workshop is planned for Sept. 29, College of Nanoscale Science and Engineering, University

at Albany – SUNY, and will be repeated Nov. 6, Con Edison Auditorium, New York, N.Y. To register, visit [www.ashrae.org/datacenter](http://www.ashrae.org/datacenter).

The workshops are led by instructors who are data center authorities and who are active in ASHRAE Technical Committee 9.9, *Mission Critical Facilities, Technology Spaces and Electronic Equipment*.

Attendees will receive four ASHRAE design manuals for free: *Thermal Guidelines for Data Processing Environments, second edition, Best Practices for Datacom Facility Energy Efficiency, second edition, High-Density Data Centers – Case Studies and Best Practices*, and *Particulate and Gaseous Contamination in Datacom Environments*.

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### **ASHRAE Research Targets Tying Together BIM, Energy Efficiency**

ATLANTA – Ensuring that a common language of “energy efficiency” is spoken by both building information modeling software used by architects and energy analysis and simulation software used by engineers is the goal of new research funded by ASHRAE.

The project will develop open-source reference models by which developers may test their solutions to interoperability between BIM and energy simulation software. The project will focus on the most common thermal features in buildings assumed to have the greatest impact on energy use, and provide guidelines for describing thermal models extracted from BIM and the rules for extracting those models used in whole building energy analysis applications.

“This research will promote the inclusion of energy efficiency measures in the early design of building model development,” said Mark Clayton, Ph.D., principal investigator for the project. “It is expected to greatly increase the efficiency and accuracy of energy analysis and allow building designs to achieve higher levels of energy efficiency.”

The project is one of 13 approved for funding by ASHRAE at its 2009 Annual Conference, totaling some \$1.6 million.

ASHRAE Research Project 1468, *Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing*, was awarded to Texas A&M University. The \$175,311 project is expected to take 15 months to complete. It is sponsored by ASHRAE's technical committee (TC) 1.5, Computer Applications.

Studies have shown that problems related to exchanging information among various building design software systems causes more than \$16 billion per year of unnecessary expense. Given that new computer technologies for representing buildings are expected to transform the processes for architectural engineering design services, it is imperative that standards for data exchange among disparate software systems be established, according to Clayton, the associate director of the Center for Housing and Urban Development at Texas A&M.

"Consequently, the research will enable ASHRAE to foster standard for interoperability between various BIM software systems and energy simulation systems and address some of the costs attributable to poor interoperability," said Clayton. "More significantly, improved interoperability is expected to improve the quality of design and the energy efficiency of buildings.

Other projects approved for funding are:

- *Development of Design Tools for Surface Water Heat Pump Systems*, RP-1385, Oklahoma State University, two years, \$193,132, sponsored by TC 6.8, Geothermal Energy Utilization
- *Measuring, Modeling, Analysis and Reporting Protocols for Short-Term M&V of Whole Building Energy Performance*, RP-1404, Milwaukee School of Engineering, two years, \$199,512, sponsored by TC 4.7, Energy Calculations
- *Stability of Candidate Lubricants for CO2 Refrigeration*, RP-1409, Spauschus Associates, one year, \$46,200, sponsored by TC 3.2, Refrigerant System Chemistry
- *Ventilation Requirements for Refrigerating Machinery Rooms*, RP-1448, CPP Inc., 18 months, \$93,368, sponsored by TC 4.3, Ventilation Requirements and Infiltration

- *Balancing Latent Heat Load Between Display Cases and Store Comfort Cooling*, RP-1467, University of Colorado-Boulder, two years, \$167,425, sponsored by TC 10.7, Commercial Food and Beverage Cooling Display and Storage. The Air-Conditioning, Heating and Refrigeration Institute (AHRI) is contributing \$100,000 toward the project.
  - *Thermal Comfort in Commercial Kitchens*, RP-1469, KEMA Inc., two years, \$350,000, sponsored by TC 5.10, Kitchen Ventilation
  - *Measuring Air-Tightness of Mid- and High-Rise Non-Residential Buildings*, RP-1478, Wiss, Janney, Elstner Associates Inc., two years, \$150,000, sponsored by TC 4.3, Ventilation Requirements and Infiltration
  - *Binary Refrigerant Flame Boundary Concentrations*, RP-1507, Safety Consulting Engineers Inc., one year, \$87,500, sponsored by TC 3.1, Refrigerants and Secondary Coolants
  - *Establishment of Design Procedures to Predict Room Airflow Requirements in Partially Mixed Room Air Distribution Systems*, RP-1522, Building Energy and Environmental Engineering, two years, \$104,500, sponsored by TC 5.3, Room Air Distribution
  - *Establishing Benchmark Levels and Patterns of Commercial Building Hot Water use*, RP-1544, Research Quality and Design Engineering, 18 months, \$190,000, sponsored by TC 6.6, Service Water Heating
  - *Effects of Fin Design on Frost and Defrost Thermal Performance of Micro-Channel Heat Exchangers*, RP-1589, Oklahoma State University, 18 months, \$137,065, sponsored by TC 8.4, Air-to-Refrigerant Heat Transfer Equipment
  - *Implementation of Total Cost of Ownership Principles into Higher Education as an Integrated Decision Making Tool*, RP-1590, APPA (Association of Physical Plant Administrators of Universities and Colleges), one year, \$125,000, sponsored by TC 7.8, Owning and Operating Costs
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## ASHRAE Announces Newest Distinguished Lecturers for 2009

ATLANTA – ASHRAE has named 13 new Distinguished Lecturers who provide Society chapters with noted authorities who speak on relevant topics that impact the HVAC&R industry.

This marks the 13<sup>th</sup> year of the Distinguished Lecturer Program. The new lecturers and their areas of expertise are:

- David Arnold, Ph.D., Troup Bywaters and Anders, Reading, England – *Chilled Beams for Low Energy Cooling in Sustainable Buildings, Estimating the Future Reliable Service Life of Existing Plant, The Evolution of Modern Office Buildings and Air Conditioning and Air Conditioning and the Impact on the Growth and Development of the USA in the 20<sup>th</sup> Century.*
- William P. Bahnfleth, Ph.D., P.E., Pennsylvania State University, University Park, Pennsylvania – *Fundamentals of Ultraviolet Germicidal Irradiation for Air and Surface Disinfection, Variable Primary Flow Chilled Water Systems and Cool Thermal Energy Storage in the Era of Sustainability.*
- Hoy Bohanon, P.E., WorkingBuildings, LLC., Winston-Salem, North Carolina – *Update on ASHRAE Standard 62.1, How to Apply the ASHRAE Standard 62.1 Multiple Spaces Equation, How to Implement Demand Control Ventilation and Comply with ASHRAE Standards and Using the Retro-commissioning Process for Energy Savings and Recovery Equipment.*
- William A. Harrison, Trane Arkansas, Little Rock, Arkansas – *Maintain to Sustain-Delivering ASHRAE's Sustainability Promise.*
- Sam C. H. Hui, Ph.D., The University of Hong Kong, Hong Kong – *Building Energy Codes and Building Energy Performance Evaluation, Building Energy Labels and Energy Benchmarking, Green Building Design and Assessment and Green Roof Systems and Technology*
- Sanjeev Jain, Ph.D., Indian Institute of Technology Delhi, New Delhi, India – *Renewable and Low Energy Driven Cooling Technologies for a Greener Tomorrow, Desiccant Technologies for Dehumidification and Cooling, Natural Refrigerants: Meeting the Challenges to Sustainability and Advanced Evaporative Cooling Systems for Sustainable Development*
- Ronald E. Jarnagin, Pacific Northwest National Lab, Richland, Washington – *Standard 90.1-Past, Present and Future, Advanced Energy Design Guides-Going Beyond Minimum Standards, Moving from Blue to Green-ASHRAE's Path to Sustainability, Today's ASHRAE-It's Not What You Think Anymore, ASHRAE's Headquarters Renovation-What Happens When Leaders Try to Do It Right, ASHRAE's Living Laboratory-Learning and Involvement by All Members and ASHRAE's Building Energy Labeling Program-A First Look*
- M. Dennis Knight, P.E., DHIMEX, Mexico City, Mexico – *Developing and Integrated Personal Management System to Help Get Things Done, Integrated Building Design, Building Performance Analysis for Building Performance Rating Systems and Building Information Modeling for the Mechanical Disciplines.*
- R. Christopher Mathis, MC2 Mathis Consulting Company, Asheville, North Carolina – *Energy Efficiency in Residential Buildings, Energy Efficient Window and Fenestration Technologies, Energy Efficiency in Commercial Buildings, Compliance with ASHRAE 90.1 and Building Science Lessons from the Honey Bees*
- Jianlei Nui, Ph.D., The Hong Kong Polytechnic University, Hong Kong – *Room Air Distribution: Stratified Air Distribution Systems and Reduced Cooling Load Calculation Methods, Personalized Ventilation: Energy Saving Potential and Application Modes, High-Rise Residential Building Ventilation Design: Public Health and Local Community Air Quality and Low-Energy Building Cooling and Heating Technologies: From Sky to Underground to Address Sustainability.*
- Todd L. Rindlisbaker, P.E., QCxP, HBDP, LEED® AP, CDP, Total Building Commissioning, Inc., Salt Lake City, Utah – *Design Engineers Working with a Commissioning Agent, Who Sabotaged My High-Performance Building, The LEED and ASHRAE Affair and The Integrated Project Delivery Process.*
- Wei Sun, P.E., Engsysco, Inc., Ann Arbor, Michigan, *Cleanrooms and HVAC Systems Design Fundamentals, Laboratories and HVAC Systems Design Fundamentals, HVAC Systems Design for Airborne Infection Control Spaces in Healthcare Facilities, Design Practices for Pressurization Systems-Technologies in Suite Pressure Control and Performance Modeling, Fan Energy Conservation in Cleanrooms-Airflow Modeling and*

*Demand Flow Control and Primary, Secondary and Tertiary Air Handling Systems Design Strategies for Controlled Environments*

Dennis A. Stanke, Trane Commercial Systems, Ingersoll-Rand, La Crosse, Wisconsin – *Standard 62.1 Update, Standard 62.1: The Ventilation Rate Procedure, Standard 62.1: Dynamite Reset and LEED Indoor Environmental Quality (EQ) Credits.*

The new lecturers will serve a two-year term. There are 72 Distinguished Lecturers representing 20 countries for 2009-2010. These lecturers are available to present on 319 topics.

For a complete listing of Distinguished Lecturers and detailed procedures on how to arrange a lecturer presentation, visit <http://www.ashrae.org/distinguishedlecturers>.

For additional information, contact Rosy Douglas, manager of chapter programs, at [rdouglas@ashrae.org](mailto:rdouglas@ashrae.org) or 678-539-1128.

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### **ASHRAE Design Competition Gives Students Hands-On Experience in Practical Design**

ATLANTA—The 2009 ASHRAE Student Design Competition, which encourages students to become more involved with their chosen major through practical design, saw the largest number of entries to date.

This year's Student Design Competition featured a 15,650-square-foot office building with first floor parking, second floor retail and office space and third floor offices. Among the 32 schools that submitted entries, three in particular stood out as first place winners in the three categories that the Competition offers.

First place in HVAC System Design is awarded to Craig Allen, Brian Sybesma, Chan Kim, William Raschefskey and Elyse Widin, of California Polytechnic State University, San Luis Obispo, Ca. Their faculty advisor is Jesse Maddren, Ph.D.

The students chose a ground-source heat pump with an energy recovery ventilation system for the building, citing the benefits of a GSHP's minimal energy use and long life-span.

"The primary driving factors for the GSHP system were its low life cycle cost and minimal energy consumption," the students wrote. "Combining GSHPs with an energy recovery ventilator reduces the size of the equipment needed, thus lowering the strain on natural resources and keeping energy costs low," they added.

First place in HVAC System Selection is awarded to Kelly Griffith, James Newman, Phillip Podlasek and Darren Rottinghaus, of Kansas State University, Manhattan, Kan. Their faculty advisors are Fred Hasler, P.E. and Julia Keen, P.E.

The students also selected a ground-source heat pump, with each heat pump piped in a direct return loop, rather than reverse return, in order to save on the amount of piping used. The GSHP also utilizes variable frequency drives to control the hydronic pump, which would decrease the energy consumption of said pumps.

"The option is the most efficient and has the lowest environmental impact throughout the life of the building," the students wrote. "The [building] owner will be very pleased because of the system's highly green design and the number of LEED points that can be achieved through its design."

Perhaps this year's large number of entries was due in part to the new Integrated Sustainable Building Design (ISBD) category, which encouraged collaboration between engineering and architectural students. Students who chose to participate in the ISBD category were asked to redesign the office building to their own local climate, with the ultimate goal being a zero-energy building.

First place in ISBD is awarded to Troy White, Edward Wood, Jaime Gonsalves and Ivan Fernandes of Seneca College of Applied Arts and Technology, Toronto, Ontario, Canada. Their advisor is Filimon Tsionas

The students designed an office building that would be made up of 5 percent recycled materials collected from abandoned buildings on the construction site. A solar wall, curtain windows and chilled beams would be utilized for heating and cooling. The building would also feature an open concept atrium, acting as a solar chimney to reduce

the number of ducts necessary, and in turn the number of fans and energy needed to power them. Grey water collected in a green roof would be used in sinks, toilets and irrigation of landscaping.

“The design group feels that the product of this design problem has been greatly influenced by the solution methodology and the end product exceeds that of a more conventional approach,” the students wrote of their collaborative experience.

A representative from each winning team will be presented with their awards at ASHRAE’s 2010 Winter Conference, to be held in Orlando, Fla.

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Jason Danyliw  
Vice President – Newsletter

### **Student Activites**

*by Dean Nagel*

The University of Regina Engineering faculty is in need of any ASHRAE Fundamental handbooks for use with class studies. Please feel free to contact me at [dean.nagel@stantec.com](mailto:dean.nagel@stantec.com) if you have any spare or old handbooks that you would like to donate to the University, and I will make arrangements to get the books to Marie Iwaniw at the University of Regina.

The April ASHRAE Regina Chapter meeting is the Student Night. This is where selected fourth year University of Regina engineering students will present their ASHRAE-related fourth year engineering projects during the meeting, they will be judged on predetermined criteria, and awards presented for their hard work. There will be more detailed information on this meeting in the months to come.

Dean Nagel  
Student Activites

### **Board of Govenors for the Regina Chapter**

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**Research Promotion:** Ted Cooke

**President:** Greg Fluter

**President Elect and Chapter Technology**

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**Historian:** Jerry Boulanger

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