

The

Pile of Bones

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

March 2009

President's Message

by Ted Cooke

We had a large turn out last month to hear Bob Baker's dissertations on the importance of maintenance to maintain the Green status of our environmentally designed HVAC systems. I would like to thank Bob for visiting our chapter and giving an excellent presentation.

I would like to remind everyone that next month will be our Student Presentation night. To accommodate the student's final examinations, we are holding the meeting one week earlier than usual on April 8.

This month we are privileged to have another distinguished lecturer, Will Stoecker, who will be talking about Industrial Refrigeration and some of the pitfalls involved with low-temperature multi-stage refrigeration systems.

I hope to see you all out at the meeting.

President
by Ted Cooke

On Wednesday, April 22, 2009, ASHRAE's Chapter Technology Transfer Committee (CTTC) will present a satellite broadcast and simultaneous webcast "**Clean, Lean and Green – IAQ for Sustainable Buildings.**"

Online registration for site coordinators and webcast viewers begins **March 2nd** at www.ashrae.org/iaqbroadcast. Registration for satellite viewers begins **March 16th**. Information about the program and speakers is available at www.ashrae.org/iaqbroadcast.

Three (3) PDH credits may be granted to those who view the program and then complete the Participant Reaction Form online by **April 30, 2009**.

An electronic flyer for download is available at http://www.ashrae.org/docLib/20090204_IAQFlyer.pdf to assist with promotion of the broadcast program. Please watch for updates via *ASHRAE Insights* and www.ashrae.org.

If you have questions, call (678) 539-1206 or email ashrae-SatelliteBroadcast@ashrae.org

Meeting Notice!

**Wednesday
March 11th, 2009**

**Hotel Saskatchewan
Radisson Plaza
2125 Victoria Avenue
Regina SK**

5:00 – Social / Cocktails

**5:30 - ASHRAE
Distinguished Lecturer –
William Stoecker - The
World of Industrial
Refrigeration**

6:30 – Dinner

7:30 Chapter Meeting



**ASHRAE REGION XI
SPRING 2009 CRC
Chapter Regional
Conference
Davenport Hotel
May 7-9, 2009
Spokane, Washington
Hosted by Inland Empire
Chapter
[http://www.ie-
ashrae.org/2009CRC](http://www.ie-ashrae.org/2009CRC)**

Technical Program for March

This month we are pleased to have another ASHRAE Distinguished Lecturer present to us. Will Stoecker is Professor Emeritus of the Mechanical Engineering Department of the University of Illinois in Urbana, IL. He will be here to give a talk on The World of Industrial Refrigeration. For more information, please see the attached invitation included with the Newsletter.

As we are limited to the number of seats in the room, please RSVP to either Ted Cook at tcooke@hdaeng.com or Rob Craddock Rob@inlandmetal.ca.

Hope you can all make it on Wednesday.

2008/2009 Meetings and Events Schedule

March 11, 2009: ASHRAE Distinguished Lecturer – Will Stoecker – The World of Industrial Refrigeration

April 8, 2009: Student night (**Note: 1 week earlier than usual**)

May 13, 2009: Condensing & Cast Iron Boiler Technologies & Applications - Louis Garas and Keith Farrell

June, 2009: ASHRAE Research golf tournament

President Elect and Chapter Technology Transfer Chair

by Greg Fluter

Committee Chair Reports

President Elect and Chapter Technology Transfer Chair

by Greg Fluter

I'd like to thank Bob Baker, an ASHRAE Distinguished Lecturer, for his excellent presentation last month on Green Maintenance Needed to Keep HVAC Systems Green.

Next month, remember that our meeting will be 1 week early than usual (April 8th) to accommodate the students' exam schedule. Jason Danyliw will be bringing in a few of the students to present their 4th year design projects. Please plan to attend.

Also, Odhner Ong, from Sasktel, has graciously offered their board room at Head Office to host the next Satellite Broadcast which is set to take place on April 22, 2009, 1:00p.m. – 4:00p.m. EDT (that's 11:00am – 2:00pm for us). The topic is "Clean, Lean, and Green: IAQ for Sustainable Buildings". If anyone is interested in attending please email me at g.fluter@mac-eng.ca and I'll get a list of attendees going. For more information please see the flyer attached to this newsletter. More information can also be found at: <http://www.ashrae.org/education/page/557>

Greg Fluter

President Elect and Chapter Technology Transfer Chair

Membership Promotion Chair

by Rob Craddock

I would like to welcome the following people who have sent applications to society for membership. I am waiting for their acceptance to our chapter. Mike Malden and Mike Thompson from E.H. Price, Doug Hird from Sask Power Gas Inspections and Trevor Hobman from Cypress Sales. Alana Churchman from Sasktel has been accepted as an Associate Member. Janel Walter and Jason Danyliw have applied for membership advancement and lastly Shawn Wedewer has upgraded his membership to Full member from Associate.

I have added the following links:

Membership Application

http://www.ashrae.org/docLib/20080710_MemberAssocAffilApp.pdf

Application to upgrade membership:

http://www.ashrae.org/docLib/20080710_108.pdf

Please log into the ASHRAE web site and make sure your Bio is up to date and accurate. If you want to join any of the many society TC's (Technical Committee's) or become involved at the Regional level or Society level you will need to keep this up to date.

YEA Member Resources

Check us out at www.ashrae.org/yea

1. [YEA Member Bios](#)
2. [YEA Member Guide](#)
3. [Getting Involved With ASHRAE Technical Committees](#)
4. [Past YEA Connection Newsletters](#)
5. [Tips For New Engineers](#)
6. [Supporting YEA Members At The Chapter Level](#)

Tips for new HVAC Engineers

1. Instead of focusing on tasks, make an effort to understand the entire HVAC system.
2. Make use of your [psychrometric chart](#) once a week.
3. Don't always take your lunch break at the same time.
4. Know the benefits and uses of Face-and-Bypass coils.
5. Never reheat with new energy.
6. Visit the sites on which you have done work for.
7. Use pencils.
8. Always trust Wikipedia.
9. Know how to wear a construction hat.
10. Take the [pocket guide](#) with you on jobsite visits.



Rob Craddock
Membership Promotion Chair

From The Regional side:

I would like to take a minute to congratulate the 2 incoming RVC's this year. The new CTTC RVC will be Eileen Jensen from the Oregon Chapter and the new Research Promotion RVC will be Ray Sieber from our chapter. The next DRC (Director and Regional Chair) will be Erich Binder from the Southern Alberta Chapter.

Rob Craddock
Region XI Treasurer

Student Activities

by Jason Danyliw

Next month's meeting is the ASHRAE Regina Chapter Student Night. Selected fourth year University of Regina engineering students will present their ASHRAE-related engineering projects during the meeting. They will be judged on predetermined criteria, and awards presented for their hard work. There will be a list of the presenters in next month's newsletter, and we hope to see all members out to the meeting to support the students.

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 <mailto:jason@skhvac.com> if you have any spare or old handbooks (hardcopy or CD's) that you would like to donate to the University, and I will make arrangements to get the handbooks to Marie Iwaniw at the University of Regina.

The Regina ASHRAE Chapter website redesign is complete, and the site is available for use. The website address is <http://regina.ashraechapters.org/>

Please browse the site for valuable ASHRAE information for both society and chapter (meetings, membership, research promotions, awards, CRC, newsletter and history), and feel free to make any suggestions to me on information to include or add to the website.

Jason Danyliw
Student Activities

Vice president – Newsletter

by Dean Nagel

Regina Chapter Email Address:

<mailto:ashraeregina@accesscomm.ca>

Regina Chapter Website Address:

Currently Under Construction

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is an international membership organization founded to advance the arts and sciences of heating, ventilation, air conditioning, refrigeration and related issues.

Need assistance? Please use the links below or contact us by [e-mail](#).

To change your e-mail address for all eNewsletters, [click here](#). This will not change your official e-mail address in ASHRAE's member database. This will only change the e-mail address to which your ASHRAE eNewsletters are sent.

If someone passed along this eNewsletter to you, and you want to have your own subscription, [click here](#).

To read ASHRAE's media kit to learn about advertising opportunities, [click here](#).

ASHRAE HVAC&R Industry eNewsletter
If you wish to subscribe to the ASHRAE HVAC&R Industry eNewsletter, e-mail subscribe-enews@ashrae.org with "Subscribe this address to The HVAC Industry eNewsletter" in the e-mail subject line. After Nov. 19, access to the article from this eNewsletter will no longer be available. It will remain available for free download by Members [here](#) and for purchase by nonmembers in the [ashrae.org bookstore](#).

ASHRAE Technology Awards Highlight Outstanding Building Projects

CHICAGO – Designers of systems for a community center, a school, an office building and a governmental building are recognized by ASHRAE

for incorporating elements of innovative building design.

Recipients of the ASHRAE Technology Awards were recognized at the Society's 2009 Winter Conference being held this week in Chicago. The recipients have applied ASHRAE standards for effective energy management and indoor air quality.

"ASHRAE Technology Awards are awarded for innovative HVAC&R designs that provide superior energy, economic, air quality and environmental performance through application of new technologies, new design concepts or by applying existing technologies in unusual ways," Bert Phillips, chair of the judging panel, said. "Innovation involves risk for owners and designers, requiring designers to work outside their comfort zone. Through the Technology Awards, ASHRAE recognizes innovation that works, honours the innovators and shares their design concepts with the broader HVAC&R community."

Following are summaries of the winning projects.

4200 St. Laurent Office Tower

Kenneth Sonmor, Ecovision Consulting, Montreal, Quebec, Canada, receives first place in the existing commercial buildings category for his retrofit of a 13-floor office tower, 4200 St. Laurent Office Tower, Montreal.

Sonmor made several energy-saving proposals related to energy measurement systems/direct digital controls, mechanical systems and electrical measures as part of a detailed energy audit. Among the most innovative measures was a heat recovery apparatus that preheats entering fresh air. The system is made up of two different heat recovery units – a patent-pending thermo siphon heat exchanger that uses an environmentally friendly refrigerant to transfer heat from the exhaust air into the fresh air supplied by the fresh air unit. The second unit transfers the heat of the warm water from the fan-coil condensers into the fresh air supplied by fresh air unit.

The natural gas savings are estimated at 62 percent, with electrical savings estimated at 16 percent of original electrical consumption and a reduction of 700 tons of CO₂. With estimated annual savings of around \$158,000, the project will pay itself back in a little over two years.

Centre Communautaire de Mistissini

Laurier Nichols, P.E., Dessau, Montreal, Quebec, Canada, receives first place in the new public assembly category for Centre Communautaire de Mistissini, Mistissini, Quebec, Canada.

The objective in building the community center was to design a building that would comply with sustainable development principles while providing high energy efficiency. The center houses an ice arena, which traditionally has high energy bills due to simultaneous heating and cooling load and high refrigeration needs. To reduce energy costs, Nichols selected an HVAC system comprised of heat pumps connected to a geothermal loop. Most arenas use chillers with standard condensers to produce and maintain the ice with extracted heat rejected through air condensers. In this project, rejected heat is reused as much as possible to meet the arena's heating load.

The building reports an energy reduction of 62 percent using geothermal energy, heat recovery and other energy efficient equipment and strategies. The cost savings are some \$154,000 a year. Through use of a life-cycle cost approach, greenhouse gas emissions were reduced by 350 tons a year compared to an equivalent community center built to minimum requirements.

HVAC Renovations – George Washington Carver Elementary School

Thomas H. Durkin, P.E., Durkin and Villalta Partners Engineering, Indianapolis, Indiana, receives first place in the existing institutional buildings category for HVAC renovations at George Washington Carver Elementary School, Indianapolis.

When the school was first built in 1935, an underground stream was inadvertently intercepted. The ground water was seen as a liability due to power outages that disabled sump pumps and flooded the boiler room. In 2005, the school system added cooling to the building and the ground water became an asset, used as a geothermal heating-source and cooling sink. The ground water serves as condenser cooling water for a central chiller when air conditioning operates. When heat is needed, water flow through the same central chiller is switched with the ground water going to the evaporator and the building loop on the condenser side. The system uses technologies proven to be

very effective – the heat recovery chiller and the geothermal heating and cooling.

The new system is cooling for less than half the cost of conventional equipment, with heating about one quarter of the cost of the cold system. Utility bills for 2007-08 with air conditioning were 16 percent less than utility bills for 2005-06 without air conditioning. When corrected for the cost of energy from 2005 to 2008, the savings are 33 percent.

Normand-Maurice Building

Jacques De Grace, Pageau Morel and Associates, Montreal, Quebec Canada, receives first place in the new institutional buildings category for the Normand-Maurice Building, Montreal.

In 2002, Public Works and Government Services Canada ordered construction of a federal multi-occupant building offering offices, classrooms, warehouses, and an indoor firing range for the Royal Canadian Mounted Police, the Canadian Navy and two federal departments. The intent was to create a green building prototype that would be at least 40 percent more efficient than building meeting the country's minimum energy code. To achieve these goals, the building features several innovative measures, including underfloor displacement ventilation for improved ventilation effectiveness, a cascade ventilation principle supplying outside air to occupied spaces before transferring to secondary spaces, radiant slabs for improved thermal comfort and energy efficiency, a geothermal heat exchanger to reduce energy consumption, and an innovative solid thermal energy storage system to reduce first costs of the geothermal heat exchanger.

The results show 40 percent more outside air supplied to occupied spaces as compared to ASHRAE Standard 62.1-2004; 51 percent regulated energy cost reduction compared to the 1997 national building code; 600 metric tons in avoided CO2 emissions each year, and 31 percent reduction in potable water use.

Eric Kirkland, P.E., Smithgroup, Phoenix, Ariz., receives second place in the new institutional buildings category for the **National Renewable Energy Laboratory Science and Technology Facility**, Golden, Colorado.

BACnet Gets Down to Business at ASHRAE Conference

ATLANTA – From a new standard to activities taking place internationally, BACnet continues to seek improvement in tying together building equipment and systems manufactured by different companies.

ASHRAE recently published the newest version of Standard 135-2008, *BACnet® -- A Data Communication Protocol for Building Automation and Control Networks*. This new publication includes seven addenda that add BACnet/Web services and new objects for Event Log, Trend Log Multiple, Load Control, and Access Door.

Moving forward, the committee has 11 addenda in process for the 2008 version. In addition, addendum *q* for ASHRAE 135-2008 has been approved for publication and is available in the standards section of ASHRAE.org. Made in cooperation with members of the ZigBee Alliance, the new datalink specification allows mains-powered BACnet devices to communicate over the ZigBee wireless mesh network, opening up new installation options and furthering BACnet's reach into all areas of facility monitoring and control, according to Dave Robin, BACnet chair.

At ASHRAE's recent 2009 Winter Conference, the BACnet committee heard an update on BACnet activities from Russia. The BACnet Interest Group, Russia (BIG-RU) was recently asked by the Moscow State Construction University to prepare a BACnet training course at the university, which will become a required part of the curriculum.

"We estimate that at least 100 students will go through the course every year, and we expect that at least 50 of those will go into the industry experienced with BACnet", said Andrey Golovin, leader of the BIG-RU.

The committee also heard about activities in Japan. "A proposed green project of the graduate school/faculty of the University of Tokyo will establish an intelligent facility management system with advanced ICT technologies, and is planning an integrated BACS to research how to reduce energy consumption to 30 percent by 2012 and 50 percent by 2030 at the University of Tokyo," reported Takeji Toyoda, the liaison to the BACnet

committee from the Institute of Electrical Installation Engineers, Japan (IEIEJ).

Robin said the committee is expecting a busy spring public review period, with 11 addenda proposed for standard 135 and four for standard 135.1.

After an extended period to allow for some actual implementations to be prototyped, the BACnet Network Security architecture will go out for its fourth public review as addendum *g*, bringing state-of-the-art digital signatures and encryption to BACnet, enabling security-critical applications to use a standard protocol.

Developed in collaboration with the IEIEJ, the Global Group Object will go out for its second public review in addendum *p*. This extends the concept of the Group Object to monitor and report on changes in data collected from multiple external devices.

An enhanced Lighting Output Object will begin its third public review in addendum *i*, and a few additions made to the XML Data Formats will cause it to go out for its second public review in addendum *t*.

A new set of "Value Objects", proposed in addendum *w*, complete the data representation capabilities of BACnet. New objects like String Value Object and Unsigned Value Object enable more opportunities to present data in a standard, rather than proprietary, manner, according to Robin. In addition, the new Time Value Object enables the definition of an extension to BACnet scheduling for non-absolute times, allowing schedules to reference calculated times like sunrise/sunset.

ASHRAE/AIRAH Issue Joint Resolution on Climate Change

ATLANTA – Use of renewable energy, education of the building industry and responsible refrigerant use are encouraged in a new joint statement on climate change issue by ASHRAE and the Australian Institute of Refrigeration Air Conditioning and Heating (AIRAH).

"The use of HVAC&R technologies is an essential element of contemporary life," Bill Harrison, ASHRAE president, said. "Yet, HVAC&R systems contribute to greenhouse gas releases through energy-related effects and through the effects of refrigerant losses. ASHRAE and

AIRAH are emphasizing a variety of measures to decrease emissions associated with energy use and its effect on global climate.”

“I see this joint statement as an acknowledgement of the role we affiliated organizations must play to address the complex challenges we collectively face,” John Bosci, AIRAH president, said. “AIRAH is committed to creating awareness and acceptance through further education and to the promotion of sustainable building practices and the responsible development of alternative technologies within the Australian market.”

By signing the statement, ASHRAE and AIRAH resolve to:

- Support research and development activities designed to reduce buildings’ energy use and greenhouse gas emissions
- Educate building owners, operators, users, designers, and constructors on the importance of building energy efficiency, corresponding climate change impact, and proper operations and maintenance measures
- Encourage the supply of renewable energy into buildings and building engineering systems when economically feasible
- Develop and implement sustainable building designs, materials, components, systems, and processes that minimize environmental impacts, including climate change, while maintaining indoor environmental quality
- Provide advice, information, and assistance to governments and other influential bodies on energy efficiency and climate change emissions in both new and existing buildings
- Encourage responsible refrigerant use, including emissions reduction strategies and technologies and encourage development of energy efficient refrigerants with low or zero global warming potential
- Support the development and implementation of standards, building codes, incentive programs, and voluntary initiatives aimed at reducing building environmental impacts
- Implement holistic and coordinated approaches to identifying and resolving environmental issues at all stages of a building’s life cycle—from conception, design, and construction through operation, maintenance, refurbishment, and deconstruction

ASHRAE, GBI Pledge to Collaborate to Promote Building Sustainability

ATLANTA – Through a new memorandum of understanding, ASHRAE and the Green Building Initiative (GBI) will work together to accelerate the adoption of sustainability principles in the built environment.

The agreement was approved by ASHRAE and by the GBI Board of Directors during their winter meetings.

“ASHRAE supports a wide variety of programs that encourage the sustainable design and operation of buildings,” Bill Harrison, ASHRAE president, said. “Tools such as GBI’s Green Globes rating system help to provide metrics through which building owners and operators can gauge a building’s sustainability performance. Pushing forward the built environment to improve sustainability will require a collaborative effort among a myriad of organizations. ASHRAE looks forward to collaborating with GBI and other organizations.”

“The GBI is delighted to finalize this agreement and begin working with ASHRAE on our shared goal of increasing sustainable building principles,” said Ward Hubbell, President of the GBI. “Improving the built environment is an enormous task and we can’t afford to just focus on new construction. An important aspect of this agreement is that both organizations will work to promote the importance using actual performance data to ensure that our buildings are performing in an efficient and environmentally-friendly manner.”

Specifically, the agreement calls for the two groups to

- Promote the design, construction and operation of buildings that are energy-efficient, healthier and environmentally responsible by, among other things, providing education and training;
- Provide access to the Green Globes tool;
- Promote the link between sustainable design and actual performance outcomes;
- Encourage and/or undertake research that identifies specific economic and environmental benefits of green building practices;

- Support and promote green building standards, certification programs and rating systems.

Economic Stimulus Bill Reinforces Importance of Energy-Saving Standard 90.1

ATLANTA—In the economic stimulus package just signed into law by President Obama, ANSI/ASHRAE/IESNA Standard 90.1-2007 and its energy-saving features are recognized through special funding measures.

For states to receive additional funding from the \$16.8 billion allotted to the Department of Energy, Office of Energy Efficiency and Renewable Energy, governors would be required to work toward implementation of a building energy code at least as stringent as Standard 90.1-2007 and to develop a plan for achieving 90 percent compliance with the code, including provisions for training and enforcement programs.

“For more than 30 years, Standard 90.1 has been one of the building industry’s most important benchmarks for energy efficiency,” says ASHRAE President Bill Harrison. “Its inclusion in the economic stimulus package demonstrates not only its importance in the building industry, but the importance and economic potential of saving energy and promoting energy-efficient technologies.”

Standard 90.1 provides minimum requirements for the energy-efficient design of buildings in the United States, except low-rise residential buildings. Written during the 1970s energy crisis, ASHRAE Standard 90.1 first was published in 1975 as an effort to cut energy use in buildings. The 2004 version of the standard is referenced in the U.S. Energy Policy Act, which requires states to adopt commercial building codes that meet or exceed the standard’s requirements.

ASHRAE has set a goal of making the standard 30 percent more stringent over the 2004 version by the 2010 publication.

The stimulus package, the American Recovery and Reinvestment Act, focuses on economic stimulus through both tax credits and public-sector spending, with a heavy focus on infrastructure and energy. Several provisions are of interest to and could bring new opportunities to the building sector, including:

- Tax credits for the production of renewable energy are extended until at least 2012
- Research expenses associated with renewables, conservation, and carbon capture and sequestration could result in higher credits in 2009 and 2010
- The Department of Energy is authorized to provide grants up to 30% of the cost of installation of items such as fuel cells, solar, small wind, geothermal heatpumps, and combined heat and power systems
- Department of Energy, Energy Efficiency and Renewable Energy receiving \$21.4 billion for research, weatherization assistance, grants and other programs
- Department of Labor receiving \$750 million for job training, with significant focus on emerging industry sectors including energy efficiency and renewable energy
- Federal agencies are receiving considerable funds for retrofitting and upgrading existing facilities to meet federal energy and water use requirements and alleviate any maintenance backlogs

For more information on ASHRAE government affairs, please visit www.ashrae.org/advocacy.

ABOUT THE GREEN BUILDING

INITIATIVE: The mission of the Green Building Initiative is to accelerate the adoption of building practices that result in energy-efficient, healthier and environmentally sustainable buildings by promoting credible and practical green building approaches. A not-for-profit education initiative, the GBI is supported by a broad cross section of organizations and individuals with an interest in residential and commercial construction. For more information on the Green Building Initiative, please visit www.thegbi.org.

ASHRAE Publishes Updated Guidance for Buildings in Hot and Humid Climates

ATLANTA – Expanded and revised guidance on keeping heat and humidity out of buildings in hot

and humid climates is contained in a new book from ASHRAE.

The second edition of *The ASHRAE Guide for Buildings in Hot and Humid Climates*, is expanded from 124 to 316 pages and based on years of questions, comments and suggestions from practicing architects, engineers and building managers who work in hot and humid climates, according to author Lew Harriman.

The book includes four new chapters to guide architectural design toward reduced energy consumption, reduced mold risk and lower-cost mechanical systems. The HVAC&R design section has also been expanded. Six new chapters help system designers quantify and reduce cooling and dehumidification loads, design more economical ventilation systems and save more than 25 percent of annual HVAC&R energy through low-cost sealing of air distribution components. Suggestions for contractors are also provided to reduce mold risk and prevent scheduling problems through simple improvements to jobsite practices as well as through modern drying technology.

Chapter summaries allow building professionals to quickly understand the big picture issues and to understand the logic behind suggested best practices for hot and humid climates. The book also provides specific, actionable suggestions for implementing ASHRAE standards for comfort, ventilation and energy efficiency in parts of the world where high heat and humidity can occur at any time of the year.

The cost of *The ASHRAE Guide for Buildings in Hot and Humid Climates*, expanded second edition, is \$116, non-members (\$99, 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 at www.ashrae.org/bookstore.

ASHRAE Publishes Load Calculations Manual

ATLANTA – Guidance to help designers improve the performance and efficiency of design as it relates to load calculations is contained in a new book from ASHRAE.

Load Calculation Applications Manual focuses on two methods for calculating cooling

loads in non-residential buildings – the heat balance method and the radiant time series method (RTSM).

Author Jeffrey Spitler noted that understanding these methods is crucial when answering three primary design questions – what is the required equipment size; how do the heating/cooling requirements vary spatially within the building; and what are the relative sizes of the various contributors to the heating/cooling load?

“Cooling load calculations are performed primarily to answer the first and second questions, providing a basis for specifying the required airflow to individual spaces within the building,” Spitler said. “Answers to the third question help designers make choices to improve the performance or efficiency of the design.”

The new manual features in-depth examples, as well as bringing together the latest data for building materials, windows, weather and internal heat gains, according to Spitler. The accompanying CD contains spreadsheets that compute the factors needed by the RSTM and compute cooling loads with the RSTM.

The manual is the fourth in a series of load calculation manuals published by ASHRAE, including the first and second editions of *Cooling and Heating Load Calculation Manual* as well as *Cooling and Heating Load Calculation Principles*.

The cost of the *Load Calculations Applications Manual* is \$119 (\$97, 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 at www.ashrae.org/bookstore.

ASHRAE '09: Engineering Tomorrow....Today

ATLANTA – ASHRAE is moving right along in engineering tomorrow today through a proposed building energy labeling program and a proposed high-performance building standard, according to leaders at the Society's 2009 Winter Conference.

More than 2,800 people attended the conference, held Jan. 24-28, Chicago. Also taking place in conjunction with the meeting was the Air-Conditioning, Heating, Refrigerating Exposition, which attracted 54,000 registered visitors and exhibitor personnel. The Show ranks as the second largest AHR Expo, just behind the 2006 Show in

Chicago, in terms of number of exhibiting companies (1,911).

Centered on the theme *Sustainable Urban Design: Engineering Tomorrow...Today*, the ASHRAE conference offered a technical program with more than 100 sessions, 15 educational courses and social events. The meeting also featured more than 600 meetings of technical, standards and standing committees, developing guidance for the future of the industry and ASHRAE.

“Through activities such as building energy labeling, the *Advanced Energy Design Guide* series and our net-zero-energy conference, ASHRAE members really are engineering tomorrow...today,” ASHRAE President Bill Harrison said. “Chicago and its sustainable skyline offered a great opportunity to witness application of the technology shared at ASHRAE’s technical program, educational sessions and committee meetings.”

A major announcement was ASHRAE’s proposed building energy labeling program, which the Society expects to launch at the 2009 Annual Conference in Louisville, Ky. Uniform metrics are vital to making buildings more energy efficient, according to Ron Jarnagin, chair of the committee overseeing the program, who updated attendees.

The ASHRAE program will include a method for rating the energy performance of buildings covered by Standard 90.1; qualification criteria for raters and assessors; provision of both Asset and Operational ratings to cover both design and operations; and a process for approving alternative methods.

For more information on the proposal, visit www.ashrae.org/energylabeling.

In addition, the newly expanded committee responsible for Standard 189.1P, *Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*, held its first meeting in Chicago. The committee approved an aggressive work plan with a goal to release a public review draft this spring.

The committee has been expanded to 39 members after a recent call for members to broaden the variety of industries, designers and code officials participating.

It also was announced that more than 154,000 copies of the four *Advanced Energy Design Guides* are in circulation in 180 countries. These

guides show how to reduce the energy consumption of buildings 30 percent beyond Standard 90.1.

Also at the conference, President Harrison presented his State-of-the-Society address, updating attendees on his theme, *Maintain to Sustain*. The speech can be read at www.ashrae.org/harrison.

“There is an elephant in the room but it seems that hardly anyone knows it’s there,” he said. “Those in the building industry see and recognize it for the monstrosity it is, but most people don’t know that they’re essentially avoiding a huge energy issue. Everywhere you look, there’s talk of increased fuel efficiency for vehicles, alternative fuels and compact fluorescent light bulbs. These are admirable efforts, and I would never want to detract from those. But the elephant in the corner – our world’s existing building stock – constitutes roughly 30 to 40 percent of our primary energy use, easily larger than either transportation or industry. It’s time we all started focusing on it.”

Meeting highlights include the technical program, with its theme of *Sustainable Urban Design*, featuring more than 105 sessions. The most well-attended sessions dealt with Standard 189.1P, CO2 sensors and demand-controlled ventilation, building energy labeling, innovations in mechanical systems for high-rise buildings, commercial building re-tuning, lessons learned from solar technologies in recent times, air filtration for sustainable buildings, variable speed pump applications for energy savings, and building information modeling and performance analysis.

Also offered were the ASHRAE Learning Institute’s four Professional Development Seminars and 11 short courses. The most popular courses dealt with exceeding Standard 90.1, chilled beams and proposed Standard 189.1P on high performance buildings.

Top selling publications included *Procedures for Commercial Building Energy Audits*, *ASHRAE GreenGuide: The Design, Construction and Operation of Sustainable Buildings*, the *Load Calculation Applications Manual* and Standard 170-2008, *Ventilation of Healthcare Facilities*.

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.

Consortium to Advise DOE on High-Performance Green Building Issues

ASHRAE leads formation

ATLANTA –The American Society of Heating, Refrigerating and Air-Conditioning Engineers, along with nine other leading organizations, is forming a consortium in response to the U.S. Department of Energy request for consortia to advise the department on high-performance building issues. The High-Performance Commercial Green Building Partnership (HPCGBP) brings together leading organizations from all aspects of the building community to provide guidance and technical leadership on key sustainability issues to the Department of Energy’s Building Technologies Program.

“This partnership will ensure that the voices of the building industry are being heard,” says Bill Harrison, ASHRAE president. “At a time when reducing energy consumption in buildings is paramount, the consortium gives leaders in the built environment and in those industries affecting construction a clear path to offer advice to the DOE on our goals, concerns and new technologies.”

The American Society of Heating, Refrigerating and Air-Conditioning Engineers initiated formation of the Partnership and will serve as the Partnership’s Secretariat. Other members of the HPCGBP’s steering committee currently includes the Air-Conditioning, Heating and Refrigeration Institute (AHRI), American Institute of Architects (AIA), Alliance to Save Energy (ASE), Building Owners and Managers Association (BOMA), International Code Council (ICC), Illuminating Engineering Society of North America (IESNA), National Association of State Energy Officials (NASEO), National Electrical Manufacturers Association (NEMA) and the U.S. Green Building Council (USGBC).

The partnership intends to be recognized as a “Partnership Consortium” by the Department of Energy as requested in response to the Energy Independence and Security Act of 2007 Section 421. Section 421 is part of the formation of the Net-Zero Commercial Building Initiative which is intended to develop a research, development, and

deployment strategy toward achieving net zero energy commercial buildings.

Partnership participants reflect all disciplines necessary to design and build high-performance commercial buildings, including:

- architects and engineers
- the development, construction, financial, and real estate industries
- building owners and operators
- academic and research organizations
- building code agencies and organizations
- independent high-performance green building associations or councils
- experts in indoor air quality and environmental factors
- experts in intelligent buildings and integrated building information systems;
- utility energy efficiency programs;
- manufacturers and providers of equipment
- public transportation industry experts
- nongovernmental energy efficiency organizations

For more information, please visit www.hpcgbp.org or contact Doug Read in ASHRAE’s Washington Office at dread@ashrae.org or 202-833-1830. For **media inquiries**, please contact Wendy Angel at wangel@ashrae.org.

ASHRAE College of Fellows Celebrates 10th Anniversary

ATLANTA – Founded to enhance the Society’s technical image internally and in the community at large, the ASHRAE College of Fellows is celebrating its 10th anniversary.

“The College serves as an ambassador supporting ASHRAE through many different pathways,” said Presidential Member Richard Rooley, FREng, ASHRAE Fellow, who currently serves as president of the College of Fellows. “Our Fellows are leaders in their fields who support ASHRAE at the highest levels through activities such as transferring ASHRAE technology and knowledge; mentoring students, engineers and educators; and communicating ASHRAE-recommended practices to resolve industry issues.”

Membership in the College of Fellows, founded in 1998, is open to anyone holding ASHRAE Fellow member grade. Fellow ASHRAE honors distinction in the arts and sciences of HVAC&R and is earned through achievement as a researcher, designer, educator or engineering executive. Approximately 500 of ASHRAE's 50,000 members are Fellows.

Among the projects undertaken by the College is review of the annual ASHRAE Handbook volume. Members of the College also served as resources in the U.S. Department of Energy's 2007 Solar Decathlon, of which ASHRAE served as a title sponsor. The group asked technical questions submitted by the student teams who participated.

ASHRAE Hosts Conference on Net-Zero Buildings

ATLANTA – To help drive the building industry toward market-viable net-zero-energy buildings, ASHRAE is hosting a specialty conference on the topic in March in San Francisco.

"We have reached a time when the building industry is being called to shift to a new level of performance that will reduce our energy and carbon footprint," Bill Harrison, ASHRAE president, said. "It is time to advance net-zero-energy building knowledge."

ASHRAE's *Countdown to a Sustainable Energy Future...Net-Zero and Beyond* conference takes place March 29-31 at Hyatt at Fisherman's Wharf in San Francisco. The conference will provide a forum to discuss the role of policy and regulatory involvement in addition to providing application knowledge for the various aspects of net-zero-energy buildings for both residential and non-residential buildings. It will include building science, energy efficiency in HVAC, lighting and appliances, and renewable energy sources applied to buildings.

To register or for more information, visit www.ashrae.org/netzeroconference.

ASHRAE defines net-zero-energy buildings as those which, on an annual basis, use no more energy from the utility grid than is provided by on-site renewable energy sources. These buildings use 50 to 70 percent less energy than comparable traditional buildings and the remaining energy use

comes from renewable sources, like solar panels or wind turbines incorporated into the facility itself, according to Harrison.

He noted that the state of California recently announced its goal of new residential developments being net-zero-energy by 2020 and new commercial developments being net-zero by 2030.

"As the industry seeks solutions to these challenges, ASHRAE must be there to help disseminate the knowledge," he said.

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.

Dean Nagel
Vice President – Newsletter

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