March 2011

# Pile of Bones

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

## President's Message

*by Heric Holmes*

Hi everyone,

This month we will be touring Bushwakker's. This will be a good meeting to do some networking and enjoy the fellowship of the ASHRAE community.

Thanks to everyone that attended last meeting with Tim McGinn. His presentation on the latest European Technologies was very informative. It looks like with the addition of some existing technology we will be able to reduce the amount of energy used in buildings. This will require the consent of occupants, as well as owners.

We are looking for new board members for the upcoming year, so if you are interested let me know.

Hope to see you at the meeting.


## Meeting Notice

**Wednesday, March 9, 2011**

Tour of Bushwakker's Brewery

Bushwakker's Brew Pub
2206 Dewdney Ave., Regina, SK

5:15 pm - Cocktails
5:45 pm - Tech Talk with Jerry Boulanger
6:30 pm - Dinner
7:15 pm - Chapter Meeting
7:45 pm - Brewery Tours

### Upcoming Events

April 1-3, 2011 - YEA Leadership Weekend

April 5, 2011 - Student Night / Next Chapter Meeting

April 21, 2011 - ASHRAE Webcast: Ground Source Heat Pump Systems - Putting the Earth to Work for You

## Program for March

***Tech. Talk:*** Jerry Boulanger of J-Clan Services Ltd. – "What LMTD and TE mean when selecting coils"

***Program:*** Tour of the Bushwakker Brew Pub facility

# 2010/2011 MEETING & EVENT SCHEDULE

September 15, 2010
*Tech. Talk:* Ed Niznik of Refrigerative Supply Ltd.
*Speakers:* Garry Wasyliw, Manager of Building Standards & Brian Woronoski, Manager of Mechanical Review from the City of Regina

October 14, 2010
*Distinguished Lecturer:* Tom Watson - ASHRAE Overview & Updates

November 10, 2010
Panel Discussion on "Commissioning for High Performance Buildings"

November 25, 2010
*Christmas Social Event:* Casino Regina Show Lounge (Featuring the Original Blues Brothers Revue & Learn to Gamble)

January 11, 2011
Presidential Visit - Lynn Bellenger

February 9, 2011
*Distinguished Lecturer*: Tim McGinn – European Technologies and their applications in North America

**March 9, 2011**
**Tour of Bushwakker Brew Pub**

April 5, 2011
*Student Night*

April 21, 2011 -
ASHRAE Society Satellite Webcast
Ground Source Heat Pump Systems – Putting the Earth to Work for You

May 4, 2011
*Tech Talk:* TBD
*Speaker:* TBD

**** Please note meeting dates for April and May have changed! ****

June 2011
*ASHRAE Research Golf Tournament*
*Date TBD*

# COMMITTEE CHAIR REPORTS

**President Elect & CTTC**
*by Jason Danyliw*

We were able to have an ASHRAE Distinguished Lecturer presentation last month when Tim McGinn presented on "European Technologies and their Applications in North America". It was a very informative and interesting presentation, and we thank Tim for taking the time to join us at our meeting.

This month, our meeting location has changed to the Bushwakker Brew Pub. For the technical portion of the meeting, we will have Jerry Boulanger (from J-Clan Services Ltd.) present on "What LMTD and TE mean when selecting coils", followed by a guided tour of the Bushwakker Brew Pub brewing facility. A few members of the brewing staff will take us on a guided tour of their brewing facility, and explain the process and equipment that is involved. This is sure to be an informative evening, and could likely involve sampling some of their fine brewing products for those that are interested!

Next month's meeting is Student Night, where Dr. Marie Iwaniw (from the University of Regina) will assist us in selecting three (3) University of Regina 4th year Engineering student groups (or individuals) to present their ASHRAE-related 4th year projects. These presentations will be evaluated with prizes being awarded for the students' hard work. I will have more details to follow in next month's newsletter once the student presentations have been selected.

Please feel free to contact me at jason@skhvac.com with any comments or suggestions for this years' program schedule.

**Past President & Research Promotion Chair**
*by Greg Fluter*

Just a reminder that if anyone has an item that they would like to donate to the Chapter that can be raffled off at the next meeting (or future meetings), please contact me prior to the meeting. The donator will receive recognition to ASHRAE Research Promotion for the total value of the ticket sale for the raffle. This is in lieu of doing the usual 50/50 ticket sale. Thank you.

**Vice President & Newsletter**
*by Alana Yip*

The board has chosen to send both interested applicants to the YEA Leadership Weekend coming up April 1-3rd in Denver. Those applicants are Shawn Wedewer and Chris Klatt. These young men will be taking some leadership sessions, some YEA feedback/improvement/ growth sessions and a tour of the National Renewable Energy Laboratory. Enjoy your trip and we look forward to hearing from them when they get back!

As well, we are trying out a new method of receiving RSVP's for chapter meetings through sending them via email calendar invites. All attachments will be included in the meeting invite and should remain with your appointment in your calendar. If this is not working for you, please let me know. We would appreciate if you accept or decline to help get accurate numbers for dinner.

**Membership Promotion**
*by Rob Craddock*

We are at the time of the ASHRAE year that nominations for the Chapter and Regional Executive take place. If you are interested in becoming a member of the Chapter Board of Governors or the Regional Executive, please contact any of the members of the current Chapter Board.

There is a minimum requirement to sit on the Chapter Board of Governors of 1) Active Society membership either Associate of Full Member grade and 2) Paid chapter membership.

Here is a list of the chapter board of Governors:

- President:
- President Elect and Chapter Technology Transfer Chair
- Vice President and Newsletter
- Membership
- Research Promotion
- Treasurer
- Secretary
- Student Activities
- Historian
- Ways & Means

If you are interested in putting your name forward for a Regional position here is a list of the Regional positions and their term length:

- Director and Regional Chair (DRC) : 3 years as Chair and 2 years as Assistant Chair
  Regional Vice Chair (RVC) 3 years
- Research Promotion
- Student Activities
- Membership Promotion
- Chapter Technology Transfer
- Nominating Delegate and Alternate Term length is a Max of 7 years
- Regional Historian
- Regional Treasurer

If you are interested in any of the Regional positions you will need to have a copy of you updated bio. given to any of the Chapter Board of Governors members prior to CRC in May.

There is also an opportunity to be nominated for Society positions. More information can be found here. The last area within Society you can become active in is the technical side as a member of a SSPC, TC, TG, or TRG. If you are interested in this please login to the ASHRAE web site and apply for the specific Technical Committee you are interested in.

Please log into the ASHRAE web site and make sure your Biography 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 or Society level you will need to keep this up to date.

The other thing that will take place at CRC will be nominations for Honours and Awards. If there is anyone from the chapter that qualifies for Honours and Awards the chapter will be putting their name forward at this time. If you are interested in putting a project forward for one of the Regional Technology awards and then for the Society Awards you need to contact Heric about what paperwork needs to be filled out as he will be the Chapter Delegate at CRC in May.

ASHRAE

*Technology for a Better Environment*

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**Ronald E. Jarnagin**
*President-Elect*

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January 4, 2011

Dear ASHRAE Member,

**Are you interested in serving on an ASHRAE standing committee?**

**Do you know someone else who may be interested in serving?**

I would like your assistance in identifying qualified members to serve on our Society's standing committees for the 2011-2012 year. We will have a number of vacancies since one-third of the members of most committees rotate off each year; additionally, a new chair and vice chair must be appointed as well.

I encourage you to review those currently serving on Society committees as listed on the web site http://www.ashrae.org/aboutus/page/32 and submit any recommendations you may have.

Click on the following link to submit your recommendations online:

http://www.ashrae.org/members/page/1349

You are also welcome to send your recommendations directly to Claire Neme, cneme@ashrae.org with a copy to me at ron.jarnagin@pnl.gov.

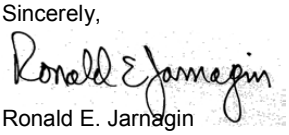
If you would like to be considered for appointment to a committee or if you are rotating off a committee and would like another assignment, please feel free to nominate yourself. Except in special circumstances, it is preferable for a member to serve on only one Society standing committee at a time.

When submitting your recommendations, please include why you recommend an individual for service on a particular committee. Recommendations without that backup don't provide sufficient information to match a candidate with an appropriate committee. It would also be most helpful if you could include the membership number for each of your recommendations so that we can ensure we can identify the correct candidate.

**Deadline for recommendations: February 14, 2011**

For your reference, following is a list of committees to which I will be appointing members. All information you submit will remain confidential. Thank you.

Sincerely,



Ronald E. Jarnagin

**List of Committees for 2011-2012 Appointments**
*President-Elect Ron Jarnagin will make appointments to the following committees for the 2011-2012 Society year:*

Advocacy
Certification
Conferences and Expositions
Electronic Communications
Environmental Health
Finance
Historical
Honors and Awards
Planning
Professional Development
Publications
Refrigeration
Society Rules
Young Engineers in ASHRAE

***Please send your recommendations to:***
*Claire Neme (cneme@ashrae.org)*
*Copy to President-Elect Ron Jarnagin (ron.jarnagin@pnl.gov)*

***Deadline: February 14, 2011***

**For Your Information**

If you wish to recommend individuals to serve on the following committees, please submit your recommendations online or through your region:

Chapter Technology Transfer
Membership Promotion
Research Promotion
Student Activities

Recommendations for the following councils and committees were solicited earlier this Society year. Members will be elected by the Board of Directors and announced at the 2011 Winter Meeting for terms beginning in July 2011. Please feel free to submit recommendations for future years online for any of the following positions:

Technology Council Standards Committee
Publishing and Education Council Research Administration Committee
Technical Activities Committee
Handbook Committee
Nominating Committee

**PLEASE NOTE**: You can **submit recommendations** for appointment or election to Society councils and standing committees **at any time** during the Society year by going to the following link on the ASHRAE web site: **http://www.ashrae.org/members/page/1349**

**ASHRAE Releases Policy Recommendations for New Congress**

ATLANTA – As the 112th Congress gets underway, ASHRAE has provided a potential roadmap for the federal government to use in addressing issues related to energy efficiency and environmental concerns.

"Protecting America's Economy and Conserving Our Environment: The Buildings Answer" provides policy recommendations for the new Congress from the Society. ASHRAE notes that "fueled in part by population growth and the rise in building floorspace, the nation's demand and consumption of energy is expected to grow by 14 percent through 2035. Residential and commercial building energy expenditures accounted for $445.8 billion in 2008, and lead the way in primary energy use, accounting for approximately 40 percent, ahead of industry (32 percent) and transportation (28 percent)."

"As part of the call for fiscal and environmental conservation, all individuals and stakeholders must work to discover ways to use our financial resources wisely and protect the environment," Lynn G. Bellenger, ASHRAE president, said. "Through innovative design and retrofits, buildings are one of the most cost-effective means of solving the nation's fiscal and energy challenges."

ASHRAE's report provides detailed recommendations on shaping energy policy. The following is a sampling of topical areas and summary recommendations:

**Energy Policy & Climate Change**

- Require posting and annual updates of buildings' energy use
- Include energy efficiency as a renewable fuel source within renewable standards portfolio
- Encourage decoupling of utility rates from energy sales
- Encourage states to implement utility demand-side management programs
- Provide adequate funding and direction for data collection and analysis of energy use in buildings
- Support implementation of Smart Grid and micro-grid systems
- Remove barriers to grid-connection for on-site power generation
- Require states to adopt commercial building energy codes with ANSI/ASHRAE/IESNA Standard 90.1-2004 as a minimum

**Incentives for Implementing Energy Efficiency**

- Set realistic depreciation schedules for HVAC&R equipment to encourage high-efficiency replacements
- Ensure adequate planning time in extension or implementation of tax credits/deductions
- Incentivize widespread use of building commissioning, re-commissioning and retro-commissioning
- Support implementation of technologies utilizing energy previously deemed as waste heat
- Encourage ongoing education and training for operations and maintenance personnel and building designers and constructors

**Research and Development to Achieve Energy Goals**

- Make the Business R&D Tax Credit permanent
- Continue increased funding under the American Competitiveness Initiative
- Fund research on
  - on-site and off-site renewable energy technologies
  - building technologies for improved indoor environmental quality and energy efficiency
  - building technologies and designs to achieve net-zero energy buildings
  - human factors of building operation, occupancy and energy use
  - characteristics and control of indoor contaminants
  - improving teaching and learning of science, technology, engineering and mathematics (STEM) concepts

**Indoor Air Quality (IAQ)**

- Establish ASHRAE Standards 62.1, 62.2 and 55 as the major national minimum guidelines on indoor air quality (IAQ) and thermal comfort management
- Support research to significantly advance understanding of the impact of IEQ on work performance, health symptoms and perceived environmental quality in offices
- Fund research to understand the influences of HVAC&R on airborne pathogen transmission in public spaces and develop effective control strategies
- Continue government support for IAQ-related education and implementation programs
- Support research on the intersections between building energy efficiency and IAQ

**Federal Agencies as National Leaders**
**Education as a Critical Tool**
**Government-wide Activities to Further Science and Technology**

The policy document can be found at www.ashrae.org/advocacy.

**ASHRAE Hosts Building Energy Modeling Conference, BEMP Certification in April**

ATLANTA– An integrated design approach to building energy modeling – and learning how to use modeling tools more effectively – improves the accuracy and reliability of simulation results and increases the return on time and resources invested to generate the models. *ASHRAE's Energy Modeling Conference: Tools for Designing High Performance Buildings,* April 4-6, 2011, ASHRAE Headquarters, Atlanta, Ga., will provide hands-on modelers and principals with the information to better harness the power of energy modeling tools. The conference covers modeling fundamentals, building component contributions, software demonstrations and case studies. A collaborative perspective is provided that demonstrates how energy models and computer simulations can assist all project team members in creating energy-efficient buildings.

For complete information or to register, visit www.ashrae.org/energymodeling. Registration is $500 ($450, ASHRAE, AIA and USGBC members).
"There are industry powerful modeling tools that enable engineers and architects to create and refine our vision of a building – its appearance, systems, operation and performance," Lynn G. Bellenger, P.E., ASHRAE president and conference keynote speaker, said. "Understanding how to use those tools to model new and innovative system types and learning more about building physics will enable modelers to expand their abilities to design the high-performance buildings our clients demand and expect."

In the conference's spirit of integrated design, William J. Worthen, AIA,also joins Bellenger as a keynote speaker. Worthen is the American Institute of Architecture's national director and resource architect for sustainability, serving as an expert on sustainability.
Sessions cover ASHRAE standards, the cost of energy modeling, modeling for a variety of building types, such as hospitals, data centers and labs, building information modeling and integrating building performance.

Energy modeling software companies are providing 30-minute demonstrations. One-on-one comprehensive demonstrations also are available.

In addition, on April 6, the U.S. Department of Energy is launching its development roadmap for EnergyPlus, OpenStudio, EPGUI and other tools. Attendees can provide feedback on the roadmap and on DOE's general activities in the simulation tools area.

Also on April 6, ASHRAE will administer its Building Energy Modeling Professional (BEMP) certification examination. The BEMP certifies an individuals' ability to evaluate, choose, use, calibrate and interpret the results of energy modeling software when applied to building and systems energy performance and economics and to certify individuals' competence to model new and existing buildings and systems with their full range of physics. Certification applications (submitted online) must be received by ASHRAE 30 days prior to the exam. The application fee is $415 ($295 ASHRAE member).

**ASHRAE Works to Expand Datacom Environmental Classes**

ATLANTA – ASHRAE continues to widen the temperature and humidity ranges for servers through a soon-to-be-published third edition of the datacom book, "Thermal Guidelines for Data Processing Environments."

The first edition was published in 2004 and was groundbreaking in that it created the first global, vendor neutral environmental specification for data centers, according to Don Beaty, chair of the Publications Subcommittee of ASHRAE's Technical Committee (TC) 9.9, Mission Critical Facilities, Technology Spaces and Electronic Equipment. Prior to its publication, data center temperature requirements were set individually by each equipment manufacturer. This typically resulted in using the most stringent temperature plus a safety factor being used across the entirety of the data center.

The approach used by TC 9.9 for the first edition through to the present was to assemble a team of thermal engineers from the major commercial IT manufacturers to develop requirements. The first edition created a recommended temperature upper limit of 77 F (25 C), promoting the use of higher temperatures and endorsed by all of the IT manufacturers.

The second edition (2008) took considerable deliberation amongst the manufacturers and raised the recommended upper limit to 81 F (27 C). Both the first and second editions were groundbreaking (the first edition in unifying the industry and the

second edition in enabling the potential to use economizers in many locations and applications), according to Beaty.

The third edition will be equally groundbreaking in that it will enable compressorless cooling (all cooling through economizers) in many applications. Accomplishing this has been a challenge since major tradeoffs (equipment size, equipment cost and operating cost) surface above a certain temperature threshold. This challenge is complicated because the threshold is not the same for all the manufacturers.

"Different locations, applications and business philosophies make it ineffective to force all equipment to be capable of the same high temperature tolerance (in some cases higher thresholds would negatively impact the return on investment)," Beaty said. "To address this, the third edition creates multiple server classes and therefore provides freedom of choice. This is particularly important since the thermal guidelines are used throughout the world."

*Editors Note: The following information provides additional background information on TC 9.9 and the proposed environmental classes.*

ASHRAE TC 9.9 was started in 2002 to be recognized by all areas of the datacom industry as the unbiased engineering leader in HVAC and an effective provider of technical datacom information, according to Beaty. Its scope covers all datacom (data processing and communication) facilities including rooms or closets used for communication, computers or electronic equipment.

The first initiative of TC 9.9 was to publish the book, "Thermal Guideline for Data Processing Environments." Prior to TC 9.9, commercial IT manufacturers published their own, independent temperature specifications. Typical data center temperatures were 20 or 21 C and a common notion of cold is better. However, most data centers are multi-vendor, resulting in the temperature defaulting to the most stringent requirement plus a safety factor.

TC 9.9 obtained informal consensus from the major commercial IT manufacturers for both "recommended" and "allowable" temperature/humidity ranges and for four environmental classes.

Another critical accomplishment was to establish IT equipment air inlets as the common measurement point for temperature and humidity compliance; requirements in any other location within the data center were optional.

The global interest in expanding the temperature and humidity ranges continues to increase. In 2008, TC 9.9 revised the requirements for Class 1 and 2 to be less stringent. The following are the current allowable and recommended maximum dry bulb temperatures:

- Class 1 – 32 C Allowable; 27 C Recommended
- Class 2 – 35 C Allowable; 27 C Recommended
- Class 3 – 35 C Allowable; N/A Recommended (no environmental control)
- Class 4 – 40 C Allowable; N/A Recommended (no environmental control)
-

Increasing the temperature and humidity ranges increases the opportunity to use compressorless cooling solutions. Typically the equipment selected for data centers are either Class 1 or 2. Class 3 is for applications such as personal computers and Class 4 is for applications such as "point of sale" IT equipment used indoors or outdoors.

These environmental specifications/classes are really the domain and expertise of IT OEMs. TC 9.9's IT Subcommittee is exclusively compromised of engineers from commercial IT manufacturers; the subcommittee is strictly technical.

The commercial IT manufacturers' proprietary design, field and failure data is shared (to some extent) within this IT Subcommittee enabling greater levels of disclosure and ultimate expansion of the environmental specifications.

"Prior to TC 9.9, there were no organizations or forums to remove the barrier of sharing proprietary information amongst competitors," Beaty said. "This is critical since having some manufacturers conform while others do not, returns to the trap of a multi-vendor data center where the most stringent requirement plus safety factor or most likely preside. The IT manufacturers negotiated amongst themselves in private resulting in achieving some critical sharing of proprietary information."

From an end user perspective, it is also important that they be provided with options for their multi-vendor facilities such as:

- Option 1 – use IT equipment optimized for a combination of attributes including energy efficiency but the dominant attribute being capital cost.

- Option 2 - use IT equipment optimized for a combination of attributes including some level of reliability but the dominant attribute being energy and compressorless cooling

The industry needs both types of equipment but also needs to avoid Option 2 increasing the cost of Option 1 by increasing manufacturing costs through mandatory requirements not desired or used by all end users. Expanding the temperature and humidity ranges can increase the physical size of the IT equipment (e.g. more heat transfer area required), increase IT equipment air flow, etc. This can impact embedded energy cost and IT equipment cost.

Local editor's note: If you are reading this still, email me prior to this month's meeting and you will receive a small token of appreciate for reading the newsletter.

**ASHRAE Lead Society for National Engineers Week**

ATLANTA –Engineers don't just shape our buildings and infrastructure; they help transform our world.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is the lead society in the National Engineers Week program **(Feb. 20-26)**, that celebrates the contributions that engineers make to our society and encourages engineering as a career path among young students by promoting pre-college literacy in math and science. For specific information about the program, please visit www.EWeek.org.

"National Engineers Week showcases how our profession engineers the world in which we live," ASHRAE President Lynn G. Bellenger said. "From buildings to manufacturing and transportation, engineers have been behind many modern-day marvels. ASHRAE is proud to be lead sponsor in this program and celebration."

ASHRAE has twice served as lead organization in National Engineers Week. The last time, in 2003, ASHRAE launched the New Faces of Engineering program as part of the weekly celebration.

The New Faces program promotes the accomplishments of young engineers across various disciplines by highlighting their engineering contributions and the resulting impact on public welfare. The program targets those age 30 and younger. Engineering associations, societies and government groups nominate candidates each year, which are selected for recognition in USA Today.

ASHRAE's New Face of Engineering is Tracey Jumper, general manger/commissioning project manager, Cornerstone Group Commissioning, Ltd., Wilkes-Barre, Pa. Jumper is leading the way in demonstrating that her engineering specialization of building commissioning can be a best strategy for reducing energy use and costs while increasing comfort and healing in healthcare buildings. She engineered a process that translates industry commissioning guidelines into effective quality control tools for end-users. The process is suited to how people and systems operate in environments where system efficiency and environment quality are patient-critical over the life of the building.
ASHRAE is also pleased to announce New Faces of Engineering, College Edition. This new program will promote the accomplishments of fourth and fifth year engineering students by highlighting their academic success and student contributions to the industryand sponsoring society. The New Face from each society will be announced no later than May 15, 2011.

Several events will take place in conjunction with National Engineers Week, including Introduce a Girl to Engineering Day (Feb. 24) and the Future City Competition—at which ASHRAE Treasurer Tom Watson will serve as a judge and award the Best Indoor Environment and Most Sustainable Building award.

ASHRAE's New Face of Engineering - Tracey Jumper

**ASHRAE Winter Conference Sees Best Attendance in 15 Years**

ATLANTA – The 2011 ASHRAE Winter Conference saw its highest attendance numbers in years, as well as the announcement of updated energy savings figures for ASHRAE's energy standard.

Some 3,400 people attended the Conference, held Jan. 29-Feb. 2, in Las Vegas, Nev.; of that number, 400 were first-time attendees.

Also taking place in conjunction with the meeting was the Air-Conditioning, Heating, Refrigerating Exposition, which attracted over 54,000 registered visitors and exhibitor personnel. The Show was by far the largest and best attended AHR Expo in the Western states, with more than 1,900 exhibiting companies and their 20,000 exhibiting personnel—the second largest number of exhibiting companies in the Show's history. Overall, the 2011 AHR Expo was the second largest held outside of Chicago.

The ASHRAE Conference offered a technical program with nearly 300 sessions, 20 educational courses and numerous 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.

The biggest buzz at the Conference centered on the latest energy saving figures of ANSI/ASHRAE/IES Standard 90.1-2010, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, which provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings. Without plug loads, site energy savings are 32.6 percent and energy cost savings 30.1 percent. Including plug loads, the site energy savings are estimated at 25.5 percent and energy cost savings 24 percent. The standard is written in mandatory code language and offers code bodies the opportunity to make a significant improvement in the energy efficiency of new buildings, additions and major renovations.

Other Conference highlights included the Technical Plenary, with its focus on Standard 189.1, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings. The Plenary drew over 700 attendees, with standing room only.

Additional sessions from the Technical Program are part of ASHRAE's Virtual Conference, which provides access to more than 250 presentations and PDFs of posters. Register or access presentations at www.ashrae.org/lasvegasvirtual.

Also offered were six Professional Development Seminars and 14 short courses from the ASHRAE Learning Institute. The most popular courses were *Using Standard 90.1 to Meet LEED Requirements*; *Determining Energy Savings from Performance Contracting and LEED® Projects: Measurement and Verification*; *Successful Solar Applications for Commercial & Industrial Facilities*; *The Commissioning Process & Guideline 0*; and *Energy Modeling Best Practices and Applications: HVAC/ Thermal*.

The Conference served as the launch of ASHRAE's newest certification program, the Building Energy Assessment Professional certification, with more than 60 candidates taking the exam. The new certification recognizes individuals' ability to audit and analyze residential, commercial and industrial buildings. It complements ASHRAE's Building Energy Quotient program as well as the Building Energy Modeling Professional certification. Together, the programs provide a valuable toolkit when it comes to the evaluation and reduction of building energy use.

Top selling publications included Standard 189.1-2009; Standard 62.1-2010; the "ASHRAE Pocket Guide" and new publications including Standard 90.1-2010*,* "ASHRAE GreenGuide, The Design, Construction, and Operation of Sustainable Buildings," third edition; "Green Tips for Data Centers;" and the Standard 90.1-2010 User's Manual.

**ASHRAE Online Courses Feature High-Performing Guidance**

ATLANTA— For a more sustainable world, high performance is demanded of buildings. The same applies to continuing education.

Two courses related to high-performance building design are being offered as part of ASHRAE Learning Institute's (ALI) spring online series. Twelve online instructor-led short courses run from late March through early May 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 are offered, several of which include updated material.

*Basics of High Performance Building Design*, taking place April 27, focuses on the basic application of ANSI/ASHRAE/IES Standard 90.1-2010, *Energy Standard for Buildings Except Low-Rise Residential Buildings,* and ANSI/ ASHRAE/USGBC/IES Standard 189.1-2009, *Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential*

*Buildings,* to achieve high-performance building design. The course focuses on the differences in purpose and requirements between Standards 189.1 and 90.1.

"The Basics of High Performance Building Design course will help you earn the 'three greens'," instructor Tom Lawrence, Ph.D., P.E., University of Georgia, said. "First, you will be helping the planet stay green by reducing the energy, water and materials required to build and operate a facility. Second, you will be left with a facility that will save you 'green' due to lower operating costs and more efficient operations. Finally, you will have a building that will leave its neighboring buildings 'green with envy' when they know that they have a lower market value compared to their high performance neighbor."

*Advanced High Performance Building Design*, May 4, focuses on advanced concepts involved in applying Standards 90.1 and 189.1 to achieve high-performance building design. More emphasis is placed on case studies to move beyond the minimum requirements of these standards.

"In many instances, building design objectives tend to regard minimum code requirements as a ceiling of quality rather than a minimum requirement," instructor Jeff Ross-Bain, P.E., ASHRAE-Certified Building Energy Modeling Professional, Ross-Bain Green Buildings, LLC, said. "However, the development of high-performance green building methods, strategies and technologies has given designers the tools to reach for energy efficiency levels in buildings that exceed these minimum requirements and, in fact, are beginning to approach net-zero-energy building status. In order to advance the performance of buildings, it is essential that the engineering community rethink 'business as usual' and begin to maximize the performance of buildings – *beyond the codes*. We have tools, resources and real-world examples available to help us achieve those goals. The advanced energy design course will give the attendees an insight into ways in which these principals can be integrated into practice."

Courses and dates are:

- *Using Standard 90.1 to Meet LEED® Requirements*, March 28
- *Fundamental Requirements of ASHRAE Standard 62.1-2010, Ventilation for Acceptable Indoor Air Quality*, March 30
- *Application of ASHRAE Standard 62.1-2010: Multiple Spaces Equations*, April 6
- *The Commissioning Process and Guideline 0, The Commissioning Process (co-sponsored with the Building Commissioning Authority, Illuminating Engineering Society of North America and the National Environmental Balancing Bureau), April 11*
- *Avoiding IAQ Problems Using ASHRAE's New IAQ Guide*, April 13
- *Understanding Standard 189.1 for High Performance Green Buildings*, April 18
- *District Cooling & Heating Systems: Central Plants*, April 20
- *Understanding Air-to-Air Energy Recovery Technologies and Applications*, April 25
- *Basics of High Performance Building Design*, April 27
- *Complying with Standard 90.1-2010 HVAC/ Mechanical,* May 2
- *Advanced High Performance Building Design*, May 4
- *Complying with Standard 90.1-2010 Envelope/Lighting*, May 11

The three-hour courses are taught in real-time, from 1 p.m. to 4 p.m. EDT. 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 March 18 receive a reduced registration fee. A 20 percent discount is also available to participants who register for courses with related topics.

**User's Manual Provides Guidance on 2010 Energy Standard**

ATLANTA – Detailed guidance on how to apply the latest ASHRAE/IES standard for the design of energy-efficient buildings is provided in a newly published user's manual.

The User's Manual to ANSI/ASHRAE/IES Standard 90.1-2010, *Energy Standard for Buildings Except Low-Rise Residential Buildings,* was published this week. The standard, which provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings, contains 109 addenda approved since the 2007 standard was published.

"The new User's Manual is a very useful resource because it helps guide practitioners in by explaining the intent of provisions in the standard and how they apply to buildings through not only written word but also illustrations and example problems," Steve Skalko, chair of the Standard 90.1 committee, said. "The latest edition of the manual is especially valuable because it specifically identifies what changes have taken place since the

2007 edition and through use of calculations and examples tells how the new provisions apply."

Specific examples of how the User's Manual assists users in regard to the 2010 standard include:

- Application of new requirements in the standard regarding data centers.
- Application of new requirements for building envelopes including vestibules, continuous air barriers, skylights, daylighting controls and the use of dynamic glazing.
- Explanation of new lighting power density requirements and application of revised lighting controls. In the standard, maximum allowed interior lighting power densities were lowered for most space types, additional occupant sensing controls and mandatory daylighting requirements are added for specific spaces and a new five-zone exterior lighting power density table has been added.
- Explanation of how to apply new HVAC requirements, including higher equipment efficiencies, energy recovery provisions in more applications, economizers required in more climates and smaller system sizes and more energy-conserving controls.
- Changes to modeling requirements (e.g. for U.S. Green Building Council LEED® certification) that were clarified and expanded.

Since being developed in response to the energy crisis in the 1970s, Standard 90.1 has become the basis for building codes, and the standard for building design and construction throughout the United States.

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