June 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,

It is hard to believe that my term for ASHRAE president is almost over.

This year has been a great year for our Chapter. Our attendance and membership has increased, and we had a varied selection of meeting topics and speakers, so thanks Rob and Jason.

We had the opportunity to have both the President of ASHRAE, Lynn Bellenger and the Treasurer of ASHRAE, Tom Watson attend our meetings.

I would like to thank Rob Craddock for the uncountable hours that he has served with the board. Here's to the things in the future with Regional and Society duties.

The social activities were really outstanding as well. Both the Golf Tournament and Christmas Social were really well attended, and lots of fun. I am already looking forward to next year's golf tournament (maybe because I will be helping to plan it) with Trevor.

The increase in student activities will hopefully lead to more and varied HVAC related student projects.

Greg also has set a new bar for fundraising that I will have a very hard time meeting, so thanks to all who donated.

Our newsletter has been great, better than great actually. It has been a real improvement from years past. Alana has worked hard on this and it shows in every newsletter.

We also have three RVC's in our chapter. This is a huge achievement as we are one of the smallest chapters with the most amount of RVC's, so thanks Rob, Murdoch and Ray.

I would like to thank the board; Trevor, Kris, Greg, Rob, Carla, Alana, Janel, Jerry and Jason. It was a pleasure to work with them. They put a lot of work into this year and they should all be congratulated.

Have a great summer and see you next year.
Heric

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
Speaker: Bob Hughes on the Big Dig
ASHRAE Member & Spouse Evening

May 26, 2011
ASHRAE Research Golf Tournament
@ Sherwood Forest Country Club

2011/2012 MEETING & EVENT SCHEDULE

Mark your calendars for the 2011/2012 Meeting Dates

September 14, 2011
October 12, 2011
November 9, 2011
December - Social TBD
January 11, 2012
February 15, 2012
March 14, 2012
April 11, 2012
May 9, 2012

These meetings dates are subject to change based on availability of presenters.

COMMITTEE CHAIR REPORTS

President Elect & CTTC
by Jason Danyliw

Thank you to all those members who came out for the ASHRAE Research Golf Tournament last month. It could have been a little windier out…but at least we didn't have rain, and a good time was had by all.

That also concludes the meetings for the 2010-11 ASHRAE year. I hope that everyone enjoyed the programs this year as we tried to present interesting topics for all to benefit that attended. I want to thank all those people that helped me throughout the year to put together the programs, and to also thank all the speakers for a great year of presentations.

A special thanks to Alana Yip for all of her hard work in putting together the great promotional posters for the meetings and events, helping with coordination of meetings, along with the great job on the newsletter this year!

I will be taking over the role of ASHRAE Regina Chapter President next year, so I look forward to seeing all current (and hopefully additional) members at the meetings again for another great ASHRAE year! Have a great summer, and we'll see you in September.

Past President & Research Promotion Chair
by Greg Fluter

Another ASHRAE year is almost complete and I would like to thank all members, companies and guests who donated to this year's ASHRAE Research Promotion Campaign. We recently passed this year's goal of raising $10,500 and are well on our way to raising over $14,000. We still have a couple of weeks to go to the end of the campaign so if you are interested in making a donation, don't worry, there is still time. To make a donation, you can send a cheque made out to "ASHRAE Research Canada" either to myself at:

MacPherson Engineering Inc.
Attn: Greg Fluter
#220, 2365 Albert St.
Regina, SK S4P 4K1

or directly to:

ASHRAE Research Promotion
Att. Patricia Adelmann
1791 Tullie Circle NE
Atlanta, GA 30329
USA

Or if you would like to donate online using a credit card please go to the following website address: https://xp20.ashrae.org/secure/researchpromotion/rp.html. Please remember to click on "ASHRAE Research Canada" and that all donations will be in US Funds. Also, don't worry about entering a "State" in the form. It's not required.

If you require more information, please feel free to contact me at g.fluter@mac-eng.ca or 586-7972.

I'd also like to thank all those who attended this year's ASHRAE Regina Chapter Golf Tournament in support or ASHRAE Research Promotion. I was unable to attend myself, but I heard there were about 45 golfers in attendance and all had a great time. Thank you to Trevor Hobman for organizing the event.

Hope you all enjoy the summer (between rain showers) and we'll see you in the fall at the next Chapter meeting.

Incoming President Elect (Programs Chair)
by Carla Spriggs

I want to thank Jason Danyliw for a great year of programming. The last year was outstanding for speakers and technical information.

In the fall it is my responsibility to arrange for speakers for the monthly ASHRAE dinner meetings. I would appreciate it if the Regina chapter members would let me know of any particular subjects that interest them or they would like to have more knowledge about. ASHRAE has a Distinguished Lecturer Program that we are able to request speakers from. If you go to http://cms.ashrae.biz/lecturers/ you can search the list by lecturer, region or topic. Please take a moment to have a look. This program is very well used and the sooner we request a speaker the better our chances are of being able to arrange for them to visit.

The list is extensive and will give you many good ideas. Any topic ideas are welcome as most of the meetings will be filled with people not on the Distinguished Lecturer list. Please send your suggestions to me by July 20th. I can be reached at cspriggs@hdaeng.com or at 525-9815.

I am looking forward to another fantastic year of ASHRAE. I hope everyone has a great summer and we will see you in the fall.

Membership Promotion
by Rob Craddock

I would like to thank the Board of Governors for their time and effort over the past ASHRAE year. I would also like to thank all the past Board members that I was lucky enough to work with during my time on the Board.

The Regina chapter was well represented at CRC in Portland in mid May. Our chapter excelled again this year bringing home awards in Research Promotion for all the work Ted and his committee from last year as well in Membership as our chapter has grown 11% which is the highest in our Region. Murdoch MacPherson won one of the Regional design competition awards. So I think we did exceeding well as a chapter at CRC.

Over the last year SSPC 90.2 or Standard 90.2 as most of you would know it has gone through a complete rewrite and is now out for a 30 day Advisory Public review if any of you would like to review this standard and submit your comments I know that the committee will be reviewing them in Montreal and as a member of this SSPC we are hoping to have the final version to Standards Council shortly after Montreal's annual meeting. If you, or any interested party, is interested in receiving the formal announcement of the initiation of the 90.2 Advisory Public Review Draft, please direct them to this link:

http://www.ashrae.org/publications/detail/14931

If you wish to review the Standard here is a link to the Online Standards Actions & Public Review Drafts:

https://osr.ashrae.org/default.aspx

Once again next year our chapter will be well represented on the Regional Executive here is the new regional executive for the 2011 / 2012 ASHRAE Year:

- Director and Regional Chair
  Erich Binder Southern Alberta Chapter
- Assistant Regional Chair
  Kevin Marple Oregon Chapter
- Nominating Delegate
  Norm Grusnick B.C. Chapter
- Nominating Alternate
  Vacant
- Membership RVC
  Murdoch Macpherson Regina Chapter
- Research Promotion RVC
  Ray Sieber Regina Chapter
- Chapter Technology RVC
  Eileen Jensen Oregon Chapter
- Student Activities RVC
  Stephan Lidington Oregon Chapter
- Regional Historian
  Bill Dean Saskatoon Chapter
- Regional Treasurer
  Rob Craddock Regina Chapter
- Regional YEA Member
  Tariq Amla B.C. Chapter

THANKS ROB!!

For those who didn't know, this was Rob Craddock's last year on the Regina ASHRAE Chapter Executive.

He has been a part of the Regina Executive since 1998, when he started as Secretary. He later held the positions of Programs, President Elect, President, Research Chair, and most recently Membership Chair.

He also has been on the Region VI Executive since 2005 as the Regional Treasurer.

He has received 9 awards at CRC and 3 Society awards. Congratulations!

He currently is on Committee Std. SSPC 90.2 and a committee member for the Society Advocacy Committee.

We thank Rob for his endless hours he put into our chapter and wish him the best of luck in all his future ASHRAE duties.

ASHRAE 2010 BACnet® Published

ATLANTA – A large collection of new technologies for emerging applications is contained in ASHRAE's newly published BACnet standard.

ANSI/ASHRAE Standard 135-2010, BACnet – A Data Communication Protocol for Building Automation and Control Networks, allows building equipment and systems manufactured by different companies to work together. It is the only open, consensus-developed standard in the building controls industry. The new standard contains 19 addenda approved since the 2008 standard was published.

"The 2010 version of the standard represents a large amount of work in a short amount of time by the BACnet committee," Dave Robin, committee chair, said. "In just two years, the committee has added a wide variety of new technologies and contributed more than 400 pages to the standard."

The standard contains several new ways to communicate: wireless communications is provided for applications where wired networks are impractical or expensive; a new XML vocabulary is provided for complex standard and proprietary data and metadata; a new character encoding method is provided for greater flexibility and compatibility with international text; and new state-of-the-art network security is defined to allow the creation of highly secure communications channels for sensitive data.

It also adds:
• higher speeds for MS/TP networks and wiring guidance for optically isolated segments
• new requirements for workstations and the definition of new kinds of workstations
• new engineering units to support smart grid and other emerging applications
• a new Global Group object for gathering, monitoring and distributing sets of data
• six new objects to support physical access control
• 12 new objects to support the full complement of all data types, including strings

The cost of ANSI/ASHRAE Standard 135-2010, BACnet – A Data Communication Protocol for Building Automation and Control Networks, is $170 ($140 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.

Expanded Data Center Classes, Guidance Provide More Data Center Energy Efficiency Options

ATLANTA – Since the publication of ASHRAE's Thermal Guidelines for Data Processing Environments in 2004, there has been a continued focus on providing guidance to datacenter operators regarding how to best maintain high reliability while operating their facilities in the most energy efficient manner.

In a new whitepaper, "2011 Thermal Guidelines for Data Processing Environments – Expanded Data Center Classes and Usage Guidance," published by ASHRAE Technical Committee (TC) 9.9, Mission Critical Facilities, Technology Spaces and Electronic Equipment, a roadmap has been outlined to facilitate a significant increase in the operational hours during which economizer systems are able to be used, and to increase the opportunity for datacenters to become "chillerless," eliminating mechanical cooling systems entirely, in order to realize improved Power Usage Effectiveness (PUE). The Green Grid created the popular PUE metric that is widely used to compare the total power to the IT power.

The major change that is introduced in the whitepaper is the addition of two new datacenter classes. The classes have been added primarily for facilities that are willing to explore the tradeoffs associated with the additional energy saving of the cooling system through increased economizer usage and what that means in terms of the impact to IT Equipment attributes such as reliability, internal energy, cost, performance, contamination, etc.

"This whitepaper is truly ground-breaking in that it achieves alignment between representatives of the major IT equipment manufacturers on wider environmental tolerances for IT equipment while providing guidance and a methodology for owners and operators to optimize the operating environment of their datacenter based on the criteria most important to their business needs," Don Beaty, chair of the Publications Subcommittee for TC 9.9, said. "In order to most quickly meet the current demands of the industry, we are using a two-step approach to introduce this important information sooner rather than later. The information in this whitepaper will be incorporated into the third edition of the Thermal Guidelines publication."
The whitepaper can be obtained from www.tc99.ashraetcs.org.

ASHRAE Urges Congress to Continue Funding for Important Building Data Survey

ATLANTA—The recent announcements regarding the U.S. Energy Information Administration's (EIA) decision to not release the results of the 2007 Commercial Buildings Energy Consumption Survey (CBECS), and to halt work on the 2011 edition of the Survey, have prompted ASHRAE to request action.

EIA has opted not to release the 2007 CBECS results—a national sample survey that collects information on the stock of U.S. commercial buildings, their energy-related characteristics, energy consumption and expenditures—and has suspended work on a 2011 Survey due to statistical issues and funding cuts, respectively.

ASHRAE has issued a letter strongly urging Congress to include funding for CBECS in the Fiscal Year 2012 appropriations bills to allow work on the 2011 edition of the Survey to continue. This is particularly important in light of the 2007 CBECS data discrepancies.

"Information from CBECS plays a critical role in building energy efficiency through the many federal and private sector programs that use the Survey's data in their efforts to establish benchmark levels and promote energy efficient practices, including ASHRAE's Building Energy Quotient (Building eQ) program," Lynn G. Bellenger, P.E., ASHRAE president, said. "Additionally, many of ASHRAE's committees depend upon CBECS to help develop some of the standards in use by the federal government, states and local jurisdictions."

Currently, the latest version of CBECS data is from 2003. If funding is not provided, work on the 2011 CBECS data will not continue, and the government and industry will be forced to rely on data that is nearly a decade old and in need of revisions and enhancements, resulting in potential missed opportunities to increase building efficiency and reduce energy use.

ASHRAE Seeks to Reduce Heat Island Effect through Proposed Changes to Green Building Standard

ATLANTA – Requirements to reduce heat and subsequent energy use on building sites are proposed for the green building standard developed by ASHRAE, IES and USGBC.

Five proposed addenda to Standard 189.1-2009, *Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings,* currently are open for public comment. To learn more or to comment, visit www.ashrae.org/publicreviews.

Developed by ASHRAE in conjunction with the Illuminating Engineering Society of North America (IES) and the U.S. Green Building Council (USGBC), the standard provides a long-needed green building foundation for those who strive to design, build and operate green buildings.

- Addendum *k* updates portions of section 5 (Site Sustainability) to improve requirements related to tree-growth rate and adds a mandatory requirement restricting invasive plants. The change extends the tree growth period to 10 years from five years.

"Ten years accounts for a wider diversity of trees across geographic regions to achieve a canopy that provides effective shading," Dennis Stanke, committee chair, said. "The current requirement of five years favors fast-growing trees, which may be more likely to lack stability in storms and to die at a relatively young age."

In addition to addendum *k*, addendum *n* is open for public comment until June 20, 2011.

- Addendum *n* improves the heat island reduction provisions in sections 5 (Site Sustainability) to include aged values for solar reflective index and to include a reference to the Cool Roof Rating Council ANSI Standard. It also modifies the solar reflectance and emittance values in Normative Appendix D (Performance Option for Energy Efficiency).

Three addenda are open for public comment until June 5, 2011.

- Addendum *l*updates portions of section 5 (Site Sustainability), treating porous pavers and open graded aggregate, all of which mitigate the heat island effect, separate from other paving materials. Studies have shown that porous and permeable pavement systems store less energy and therefore less heat when exposed to sun over an extended period of time. The heat is not absorbed and therefore not emitted back into the environment, which results in lower daytime and nighttime temperatures.
- Addendum *m* clarifies condensate collection requirements in Section 6 (Water Use Efficiency), exempting dry climates where little if any condensate would be expected from air-conditioning units.
- Addendum *o* addsa mandatory requirement to

to section 5.3 (Site Sustainability) to provide pedestrian friendly environments through the use of designated walkways. Vehicles negatively impact the environment through the generation of air pollution, traffic congestion and issues associated with oil extraction and petroleum refining. The use of alternative modes of transportation helps reduce the energy demand for transportation and associated greenhouse gas emissions.

"Requirements for pedestrian friendly environments help encourage transit use and support bicycle mobility, both of which increase physical exercise opportunities and associated health benefits," Stanke said.

Standard 189.1 also serves as jurisdictional compliance option to the International Green Construction Code authored by the International Code Council, ASTM International and the American Institute of Architects.

Call for Presenters
ASHRAE Announces High Performance Buildings Conference

ATLANTA – Building upon its 2009 Net-Zero Energy Conference, ASHRAE seeks to advance the industry's efforts to change the energy-use aspects of the built environment through its High Performance Buildings Conference: A Focus on Deep Energy Savings, March 12-13, 2012 in Mission Valley, Calif.

This conference will guide building design professionals, building owner/managers, building operating staff and government officials about what works and what doesn't when tackling major improvements in energy efficiency, renewable applications and operating practices. With an attendance limited to 300, the conference will allow an exchange of ideas and dialogue to facilitate understanding of current energy saving efforts, share best practices and to establish an action plan to substantially improve energy efficiency in buildings.

The conference will offer two tracks: 1) a technical applications track focusing on strategies, technologies, tools, measured performance and optimal operations, and 2) a policy track with a focus on current and future legislation and related programs in the areas of standards, performance rating and labeling, disclosure laws, etc. The conference's target facilities include both existing and new construction non-residential buildings. Case studies, especially from the region, are requested.

Call for Presenters

Presentation abstracts (300-500 words) are requested on the following topics:

- Applications results
- Energy audits
- Commissioning
- Benchmarking of utility consumption
- Economics, design and construction, and
- Energy efficiency strategies
- Building envelopes
- Lighting and daylighting
- Passive
- HVAC
- Plug loads

Presentation proposals are due July 15, 2011. Decisions on presentation proposals will be sent in August 2011.

For more information or to submit a presentation proposal, visit www.ashrae.org/HPBconference.

Guide for Achieving Advanced Energy Savings Published by Industry Leaders

ATLANTA – Guidance to get you at least halfway to achieving net-zero-energy design is now available from leading industry organizations in a new publication.

Advanced Energy Design Guide for Small to Medium Office Buildings: Achieving 50% Energy Savings Toward a Net-Zero-Energy Building is the first book in a series of Advanced Energy Design Guide (AEDG) publications that provides recommendations to achieve 50 percent energy savings when compared with the minimum code requirements of ANSI/ASHRAE/IESNA Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings. The book was developed by a committee representing a diverse group of energy professionals drawn from ASHRAE, the American Institute of Architects (AIA), the Illuminating Engineering Society of North America (IES), the Department of Energy (DOE) and the United States Green Building Council (USGBC).

The series follows the earlier six-book series that provided guidance to achieve 30 percent savings. The ultimate goal is to provide guidance to achieve net-zero-energy buildings, that is buildings that produce more energy than they consume.

"This guide will help in the design of new office buildings and major renovations that consume substantially less energy compared to the minimum code-compliant design, resulting in lower operation costs," Bing Liu, chair of the 50% AEDG project committee, said. "Of equal importance is that energy-efficient buildings offer a great possibility to enhance the working environment, including indoor air quality, thermal comfort and natural lighting."

A significant addition to the new 50 percent guide is the inclusion of a performance path; specifically, offering guidance for early stage energy modeling.

"Whole-building energy modeling programs can provide more flexibility to evaluate the energy-efficient measures on an individual project," Liu said. "Simulation programs have learning curves of varying difficulty, but energy modeling for office design is highly encouraged and is considered necessary for achieving energy savings of 50 percent."

The groups note that meeting the 50 percent energy savings goal is challenging and requires more than doing business as usual. The Guide offers eight essentials to achieve advanced energy savings:

-Obtain building owner buy-in
-Assemble an experienced, innovative design team
-Adopt an integrated design process
-Consider a daylighting consultant
-Consider energy modeling
-Use building commissioning
-Train building users and operations staff
-Monitor the building

ASHRAE, AIA, IES, DOE and USGBC are currently developing the second guide in the 50 percent series, which will focus on K12 schools. Publication is targeted for fall of 2011, followed by a guide for medium/big box retail in the winter of 2012 and large hospitals in the spring of that year.

Advanced Energy Design Guide for Small to Medium Office Buildings: Achieving 50% Energy Savings Toward a Net-Zero-Energy Buildings is available as a free download at www.ashrae.org/freeaedg. A print version is available for $82 ($69, 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. Bulk discounts are available to individuals, companies and organizations who are interested in purchasing multiple copies.

ASHRAE, IES Seek Public Input on Residential Energy Standard

ATLANTA – Ensuring the welcome mat is always out for energy efficient homes is the goal of a standard being revitalized by ASHRAE and IES.

ANSI/ASHRAE/IES (Illuminating Engineering Society of North America) Standard 90.2, Energy Efficient Design of Low-Rise Residential Buildings, provides minimum requirements for the energy-efficient design of residential buildings. ASHRAE and IES joined forces last year to increase the efficiency of the standard's requirements.

Now the two organizations are seeking input into a draft of the standard. The standard is open for an advisory public review May 13 until June 12, 2011. Visit www.ashrae.org/publicreviews for more information.

Making homes more energy efficient is important given that the residential market contains 115 million housing units that consume 22.5 percent of the primary energy in the U.S. In addition, lighting consumes approximately 650 billion kWh per year, or approximately 10 percent of residential electricity consumption.

The goal of ASHRAE and IES is to publish a standard that is 30 percent more energy efficient than the 2004 version of 90.1 – including both a prescriptive and a performance path – and as the International Energy Conservation Code (IECC) 2006, as well as at least equivalent in energy efficiency to the 2009 IECC. As part of that effort, the two organizations are committed to developing a standard that is easy to use, has criteria that are economically justified and requirements that are not too strenuous to meet.

The proposed standard contains four prescriptive paths (R-values) and performance paths (U-factors) for each of the eight climate zones. The multiple paths provide options to:
• improve envelopes.
• upgrade HVAC equipment efficiencies beyond National Appliance Energy Conservation Act minimums
• increase envelope air infiltration tightness and duct leakage tightness
• a combination of the above features

"Without question, the most significant feature is

the four prescriptive paths and that each path provides a 30 percent energy savings," Merle McBride, 90.2 committee chair, said. "This is the first time the standard has contained multiple prescriptive options, and the features in each path represent upgrades from previous versions. The combinations of the features in each path provide prescriptive options that users can select based on the type of construction and features that best meets their needs. One of the key attributes is the integration of multiple measures including envelope features, improved HVAC equipment efficiencies, lighting and reduced air leakage in the envelope and air distribution systems."

"In addition, the annual energy cost tradeoff option is retained, which allows users to conduct whole house simulations that can be used to trade off energy efficiency measures for any feature of the residence, including envelope, lighting, HVAC and service water heating," he said.

The title, purpose and scope of the draft standard were expanded to include new features such as criteria for lighting, pools and spas. In addition, the format, structure and organization of the standard were changed to make it easier to understand and simpler to use.

The 90.2 committee is specifically seeking suggestions for input into Appendix B, which eventually will include checklists for practitioners on installation and proper application of requirements, as well as what type of application checklists should be included.

ASHRAE Grants: Reusing Air to Save Energy in Low-Income Housing

ATLANTA – Reducing energy costs through reuse of air to help make homes for low-income households in hot and humid climates is the goal of a student research project being funded by ASHRAE.
Statistics show that some 38.6 million households in the United States are in need of low-income home energy assistance. In hot and humid climates, reducing residential energy consumption is a challenge due to high humidity in warm months.

Through ASHRAE's grants-in-aids program Simge Andolsun, a student at Texas A&M University, plans to model a new HVAC&R energy saving strategy with partial conditioning or reuse of air. Partial conditioning is based on using the remaining energy of the air returning from the occupied zones in unoccupied zones before it returns to the system or is exhausted from the system, according to Andolsun.

"The strategy is expected to provide substantial – over 50 percent – reduction in the overall HVAC&R energy consumption of residential buildings before any onsite energy reduction, according to the project, Partial Conditioning (Reuse of Air) as an Energy Saving Strategy for Sustainable Affordable Housing in Hot and Humid Climates.

Andolsun is one of 21 students who will receive a grant through ASHRAE Graduate Student Grant-In-Aid Award Program, which is designed to encourage students to continue their education in preparation for service in the HVAC&R industry. The grants, totaling $210,000, are awarded to full-time graduate students of ASHRAE-related technologies.

Andolsun's project will be modeling on Colonias, or residential neighborhoods at the Mexican border in Texas, which has the second highest number of housing units eligible for low-income home energy assistance. The state's hot and humid climate also results in 45 percent higher average energy consumption for air conditioning when compared to that for heating.

The study will be conducted in four steps: data collection, baseline design and modeling, partial conditioning design and modeling, and analysis and recommendations.

Other recipients of ASHRAE grants-in-aid are:
• Bikash Acharya, University of Maryland, College Park, Electrostatic Enhanced Separation of Fine Liquid Droplets from Gas Streams
• Aleksandar Andelkovic, Faculty of Technical Sciences Novi Sad, Serbia, Development of an Integrated Building Design Method by Coupling Building Energy Simulation and Computational Fluid Dynamics; also receives the Grant-In-Aid Life Member Club grant given to the highest top-rated applicants and supported by a financial contribution from the club.
• Simge Andolsun, Texas A&M University, Partial Conditioning (Reuse of Air) as an Energy Saving Strategy for Sustainable Affordable Housing in Hot and Humid Climates
• Stephen F. Bourne, University of Texas, Austin, Emissivity Changes due to Dust Fouling for Horizontal and Rafter Installed Radiant Barrier Systems
• Howard Cheung, Purdue University, Modeling and Testing of Heat Pump Systems
• Jordan D. Clark, University of Texas at Austin,

Development of Library of Mass Transfer Correlations for Indoor Surfaces for Use in Passive Pollutant Removal Applications
• Brian Matthew Fronk, Georgia Institute of Technology, Condensation Heat Transfer and Pressure Drop of Binary Fluid Mixtures in Microchannels
• Caroline Hachem, Concordia University, Investigation of Design Methodology for Net-Zero-Energy Solar Neighborhoods
• Vibhash Chandra Jha, university of Maryland, Development of High Performance Compact Absorption Refrigeration Systems Utilizing Innovative Force-Fed Micro Channels – Application of Low-Grade Waste Heat
• Kyle Konis, University of California, Berkeley, Developing a Field-Based Monitoring Procedure for Indoor Environmental Quality to Assess Façade Performance
• Abhinav Krishna, Purdue University, Organic Rankine Cycle with Solution Circuit for Waste Heat Recovery
• Ki Sup Lee, Purdue University, Establishment of Design Procedures to Predict Room Airflow Requirements in Partially Mixed Room Air Distribution Systems
• Shichao Liu, University of Texas, Exposure Study in Hospital Waiting Rooms: Analysis of Airflow Distributions for Exposure Reduction
• Wei Liu, Tianjin University, Validation of CFD Models for Predicting Air Distribution and Contaminant Transport in a Commercial Aircraft Cabin
• Raphael Kahat Mandel, University of Maryland, Thin Film Evaporation on MIcrogrooved Surfaces
• Peter May-Ostendorp, University of Colorado at Boulder, Near-Optimal Control of Mixed-Mode Buildings and Generalized Rule Extraction
• Ananda Krishna Nagavarapu, Georgia Institute of Technology, Investigation of Binary Fluid Heat and Mass Transfer Phenomena at Microscales in Internal and External Ammonia Water Absorption; also receives the Grant-In-Aid Life Member Club grant given to the highest top-rated applicants and supported by a financial contribution from the club.
• Kashif Nawaz, University of Illinois at Urbana Champaign, Aerogel Coated Metal Foams for Desiccant Applications
• Amanda Pertzborn, University of Wisconsin-Madison, Optimization of Advanced Ground-Source Heat Pump Systems
• Sugirdhalakshmi Ramaraj, Purdue University
• Feini Zhang, University of Illinois at Urbana-Champaign, Hybrid Water-/Air-Cooled Condensers for Organic Rankine Cycles

Proposed Operation and Maintenance Guideline from ASHRAE Open for Public Comment

ATLANTA – Many buildings with great designs fade from green to grey when operation and maintenance isn't carried out as intended, especially in regard to energy conserving systems.

A proposed guideline from ASHRAE, currently open for public comment, will help improve the performance of all buildings by providing guidance on optimizing operation and maintenance of buildings to achieve the lowest economic and environmental life cycle cost without sacrificing safety or functionality.

ASHRAE Guideline 32P, Sustainable, High Performance Operation and Maintenance, is open for public comment until July 4, 2011. For more information, visit www.ashrae.org/publicreviews.

"This guideline outlines steps that can be applied to any building to move its operation and maintenance function toward high performance," Michael Bobker, chair of the guideline 32P committee, said. "Buildings can be designed to be high performance, but if they are not operated well that performance will not be delivered. This guideline is part of ASHRAE's effort to strengthen its guidance for existing buildings."

The guideline will apply to the ongoing operational practices for buildings and systems with respect to energy efficiency, occupant comfort, indoor air quality, health and safety. These systems include the building envelope, HVAC&R, plumbing, complementary energy systems, and utilities and electrical systems.

"Modern air conditioning systems protect the health, comfort and productivity of building occupants," ASHRAE Presidential Member Bill Harrison, whose presidential theme focused on the need for operation and maintenance, said. "Unfortunately, even very well designed systems waste a great deal of energy when they are not operated and maintained properly. ASHRAE's Guideline 32 attacks wasted energy by helping people from the executive suite to the powerhouse understand how to efficiently manage the sophisticated systems that produce healthy comfort in today's buildings. This is a giant step forward as we strive to use only the energy that produces value in our buildings."

Studies and documented experience have shown that improved operational strategies alone could save 10 to 40 percent in energy. These savings came about through application of expert knowledge to operation and maintenance practices, not large capital investment, Bobker noted. "We must first upgrade and then maintain the capabilities of the operations staff, which is where Guideline 32 will help play a role," he said.

The guideline contains recommendations for three levels of building oversight: senior managers, facility managers and technicians. Checklists for tracking that appropriate steps are being taken to move toward high-performance operation and maintenance are included for each.

Among the items on the checklist for facility managers are:
• Develop and implement protocols for good facility/ system documentation.
• Investigate, identify and implement appropriate levels of building intelligence.
• Identify and implement appropriate performance metrics.
• Benchmark against other similar facilities.
• Establish performance baselines and targets. Institute a system for regular reporting and evaluation.

Bobker said the guideline will provide the next steps beyond compliance with ANSI/ASHRAE/ACCA Standard 180, Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems, and provide concepts, methods and details that meet the intent of the "minimum standards of care" under ANSI/ ASHRAE/USGBC/IES Standard 189.1, Standard for the Design of High Performance Green Buildings.

ASHRAE Makes Guidance on Green Buildings Easily Accessible in eBook Format

ATLANTA –ASHRAE has published its first ever eBook for use on the Apple iPad.

The third and latest edition of "ASHRAE GreenGuide: The Design, Construction and Operation of Sustainable Buildings" is now available in an eBook format to allow iPad users convenient access to the book's guidance, which covers each stage of the building process, from planning to operation and maintenance of a facility, with emphasis on teamwork and close coordination among interested parties. The eBook follows ASHRAE's latest mobile apps on duct fitting databases and Standard 62.1, Ventilation for Acceptable Indoor Air Quality.

The GreenGuide eBook includes embedded links to other sections of the book and to graphics and relevant web pages.

"We want people to have access to ASHRAE guidance wherever they are, without having to carry around a hardback book," Sheila Hayter, chair of the organization's Publishing and Education Council, said. "With the release of GreenGuide eBook, detailed information on the design of high performance buildings is as close as one keeps their iPad."

The GreenGuide eBook is available as a download in Apple's iBooks store for $39.99 and requires the iBooks app.

User's Manual Assists in Meeting Requirements of ASHRAE Residential IAQ Standard

ATLANTA – Guidance that explains the "why" and "how" behind requirements in ASHRAE's residential indoor air quality standard is contained in a newly published user's manual.

The 62.2-2010 User's Manual is a complete guide to meeting the requirements of ANSI/ASHRAE Standard 62.2-2010, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. The manual provides explanations and examples showing how to meet all parts of the standard and includes background material explaining why many of the requirements are included. The User's Manual covers nine sections of the standard and three appendices.

"While the standard is written to be as simple as possible, it can still be challenging to apply in some situations to ensure that all the requirements are met," Steve Emmerich, chair of the Standard 62.2 committee, said. "The example calculations and system drawings are particularly helpful. In addition, since the standard is written in code language, it does not address the 'why' behind any requirements. So the User's Manual provides the 'how' and 'why' while the standard gives the 'what'."
The standard has undergone significant changes since it was last published, so the updated User's Manual allows users to stay up to date with those changes.
"One of the most important changes is the addition of alternate means for existing buildings to comply with the standard," Roger Hedrick, lead author of

the User's Manual, said. "Many new examples are provided to illustrate these new compliance paths."

The Manual is written for residential HVAC&R contractors and installers as well as residential builders, developers and architects. The new sections related to existing buildings are meant to make the standard more useable as part of weatherization programs or retrofit projects. It also may be useful to code officials and to those homeowners who are technically knowledgeable.

The cost of the Standard 62.2-2010 User's Manual is $55 ($47, ASHRAE members). To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide) or visit www.ashrae.org/bookstore.

New ASHRAE Handbook Volume Tackles Tall Buildings

ATLANTA – Tall buildings can be a tall order for HVAC designers. The newly published 2011 ASHRAE Handbook—HVAC Applications has a new chapter that focuses on the unique design issues that tall buildings present.

2011 HVAC Applications also contains 60 other chapters on a broad range of applications, written to help HVAC&R design engineers and others use the fundamentals, equipment and systems described in other ASHRAE Handbook volumes.

"HVAC Applications has up-to-date, real-world guidance from many of the world's leading authorities in their areas of expertise," Rex Noble, chair of the subcommittee that supervised the 2011 revision of the volume, said. "This volume covers an incredibly wide variety of topics, from residential, commercial, educational and health care facilities to agriculture, aircraft, fire and smoke management, solar energy, seismic- and wind-resistant design—even nuclear facilities. In addition to the new chapter on tall buildings, we have a second new chapter on ultraviolet germicidal irradiation."

The cost of the 2011 ASHRAE Handbook—HVAC Applications is $195 for the print version, which includes a searchable CD, or $165 for the CD only. ASHRAE members receive the print/CD version as a member benefit. The 2011 HVAC Applications volume also is being added to ASHRAE Handbook Online, (available at http://handbook.ashrae.org).

Proposed ASHRAE Standard on Prevention of Legionellosis Open for Public Comment

ATLANTA—A proposed standard practice that specifies requirements to prevent legionellosis associated with building water systems is currently open for public review from ASHRAE.

The bacterium Legionella can lead to a very serious form of pneumonia, referred to as Legionnaires' disease, or Pontiac fever, which is a less severe form of the disease. There are many thousands of cases every year in the U.S. Essentially all cases of legionellosis are the result of exposure to Legionella associated with building water systems.

ASHRAE Standard 188P, Prevention of Legionellosis Associated with Building Water Systems, is intended to address the "what" of controlling the spread of legionellosis. The standard helps facility managers/owners understand how to apply the available information on Legionella effectively in order to prevent cases of legionellosis associated with building water systems.

"We know how to analyze and control this hazard," Bill McCoy, chair of the Standard 188P committee, said. "We need a standardized practice to specify for facility managers/owners exactly what to do in their facilities to control the hazard in a systematic and scientifically defensible way."

The proposed standard underwent an earlier public review in November 2010 and is currently open for a second public review until July 25. For more information, visit www.ashrae.org/publicreviews.

Since the standard's first public review, Section 8.1 on potable water has been rewritten. Originally, the section included several system design specifications; however, those design-oriented specifications were eliminated because Standard 188P is intended to be a practices standard, rather than a design standard. The newly revised Section 8 clarifies this aspect.

Compliance with the standard requires facility managers/owners to formally take responsibility for controlling Legionella in their building water systems, while at the same time acts as a defense against accusations of negligence in those cases which are caused by the hazard from unknown sources.

Standard 188P also covers the potable water system in buildings, which are not treated as often as cooling towers, and will hold facility managers/owners accountable for properly managing the entire building water system both potable and utility water.

Of course, the ultimate goal of Standard 188P is to reduce the spread of fatal disease.

The standard differs from ASHRAE Guideline 12, Minimizing the Risk of Legionellosis Associated with Building Water Systems, in that while the guideline gives recommendations about how to treat various building water systems, the standard specifies the practice of exactly what must be done with all those recommendations.

“The standard and the guideline are, therefore, complementary,” McCoy said.

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to the Executive for all your hard work this year!