



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,
Next week's meeting will be student night. This is one of my favorite meetings because we get to see the ingenuity of the next group of engineers. The projects are Generating Energy with a Microbial Fuel Cell in Wastewater Treatment, Residential Energy Consumption Monitoring Network, and Ecological Greywater Recycling System.

Last month's meeting was a tour of Bushwakker's. It was a lot of fun and Jason did a great job of planning it. Jerry's topic on controllability of coils has sparked some good debate on how to get our controllability numbers up during design.

We are looking for new board members so if you are interested let me know.

Hope to see you at the meeting.

Meeting Notice

Tuesday, April 5th, 2011
Student Night

Hotel Saskatchewan - Radisson Plaza
2125 Victoria Ave. Regina, SK

5:15 pm - Cocktails

5:45 pm - **Student Presentations**

6:45 pm - Dinner

7:30 pm - Chapter Meeting

Upcoming Events

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

April 27-28, 2011 - Technical Seminar
Fundamentals of HVAC

May 4, 2011 - Next Chapter Meeting

May 26, 2011 - Golf Tournament at
Sherwood Forest

Program for March

This month's meeting will be Student Night.

Please refer to Janel's Student Activities column below for more details on the projects being presented.

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

May 26, 2011

ASHRAE Research Golf Tournament



**** Please note May's meeting date has changed! ****

COMMITTEE CHAIR REPORTS

President Elect & CTTC

by Jason Danyliw

This month's meeting is Student Night, where three University of Regina 4th year engineering student groups (or individuals) have been selected to present their ASHRAE-related 4th year projects. These presentations will be evaluated with prizes being awarded for the students' hard work. We have 3 great projects being presented, so please come out to the meeting to show your support for the students, and also take away some interesting information from the presentations.

Thank you to all those members who came out for last month's meeting at the Bushwakker Brew Pub. The guided brewery tour was very informative, and those in attendance had the great opportunity to sample some of their fine brewing products. We thank the staff at Bushwakker's for taking the time to provide us with the tour, and for a great meal! I also want to thank Jerry Boulanger, from J-Clan Services Ltd., for his always informative technical presentation, where he discussed “What LMTD and TE mean when selecting coils”. It was very informative with great information to pass onto all those in attendance.

ASHRAE Regina is presenting an ASHRAE Webcast on April 21, 2011 at 11 a.m. – 2:00 p.m.. The topic of the webcast is “Ground Source Heat Pump Systems: Putting the Earth to Work For You”. SaskTel will be hosting the webcast in the SaskTel Auditorium (2nd floor) at 2121 Saskatchewan Drive here in Regina, with MacPherson Engineering providing lunch.

We have arranged for a 2-day ASHRAE technical seminar planned for the end of April with the following details:

- *When:* April 27 & 28th, 2011 (tentative times will be 8:00 a.m. to 4:00 p.m., with lunch provided)
- *Why:* Because it is always good to learn more information!
- *Topic of the Presentation:* “Fundamentals of HVAC” (seminar course manual provided)
- *Where:* The University of Regina (Room ED 619)
- *Presenter:* Jerry Boulanger of J-Clan Services Ltd.

The seminar is open to any ASHRAE or industry members, so we encourage anyone interested in the topic to attend this valuable seminar. More details on how to register, cost, etc. will be provided in the next short while, so we look forward to a great turnout for that informative seminar.

We have the privilege of having Bob Hughes as a speaker for next month's May meeting at the Hotel Saskatchewan. The topic of Bob's presentation will be "The Big Dig", where he will discuss the Regina Wascana Lake deepening project in detail. This will be a special spouse evening where ASHRAE & industry members are encouraged to attend the meeting with their spouses for a great meal, and an entertaining presentation. The date of the meeting will be Wednesday, May 4th, 2011. Costs for the evening will be free for ASHRAE Regina members, and \$20 for each non-member or spouse. We look forward to seeing all members with their spouses out for that meeting!

Student Activities

by Janel Walter

This month we will have the honor of listening to students from the University of Regina present their fourth year projects. We are pleased to be having Jing Wang, Zirui Lin and Chang Xu present "Energy Generation By Using Microbial Fuel Cell in Wastewater Treatment"; Cristy Jamieson present on "Ecological Greywater Recycling Greenhouse"; and Brad Arnold and Travis Samchinsky present "Record: Residential Energy Consumption Monitoring Network".

This year we have increased the awarded denominations voted on by our members to \$750 for first place, \$500 for second place and \$250 for the third place presenters. We look forward to listening to the student presentations and hope as many of you can make it out to support our local University students.

ASHRAE HVAC&R Industry eNewsletter

If you wish to subscribe to the ASHRAE HVAC&R Industry eNewsletter, e-mail subscribe-eneews@ashrae.org with "Subscribe this address to The HVAC Industry eNewsletter" in the e-mail subject line.

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ASHRAE Learning Institute

The ASHRAE Learning Institute is offering on-line courses. There are 2 ways to register:

1. **Internet :** <http://www.ashrae.org/onlinecourses>

2. **Phone:** Call toll-free at 1-800-527-4723

NOTE: You may register up to 24 hours prior to an online seminar. Courses are in Eastern Time Zone.



User's Manual Provides Guidance on Ventilation Standard, New 'Must Have' Spreadsheet

ATLANTA –The newest guidance for using Standard 62.1-2010 includes a revised, user-friendly spreadsheet and examples, as well as the latest updates pertaining to the new version of the standard.

The 62.1 User's Manual provides explanatory material, detailed information, figures and examples to guide users in designing, installing and operating buildings in accordance with ANSI/ASHRAE Standard 62.1-2010, Ventilation for Acceptable Indoor Air Quality, which sets minimum ventilation rates and other requirements for commercial and institutional buildings.

Also highlighted is the application of useful tools used for compliance with Standard 62.1-2010, including a newly revised spreadsheet that assists in Ventilation Rate Procedure calculations. The spreadsheet provides calculations for the multiple spaces procedure and has been significantly improved, made more user friendly and now includes two example spreadsheets focusing on cooling and heating.

“The spreadsheet and new examples have been revised in response to user feedback and have much improved usability,” Roger Hedrick, chair of the Standard 62.1 committee, said. “The spreadsheet should significantly reduce the effort needed to perform the calculations needed for multizone recirculating systems. The spreadsheets are a must have for designers.”

The Manual encourages users of the standard to apply the principles of good indoor air quality and effective ventilation when designing buildings and building systems, and provides useful reference material to assist designers in efficiently completing a successful and compliant design.

The cost of the 62.1 User's Manual is \$75 (\$64 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.

ASHRAE Funds Research to Improve Building Maintenance, Operation through Performance Data

ATLANTA – Guidance to specifying engineers and designers on how they can use building data to improve building operations, energy efficiency, comfort and

sustainability will be developed through newly funded research from ASHRAE.

Research Project 1633, “Data and Interfaces for Advanced Building Maintenance and Operation,” will result in development of a set of standard data-driven metrics, interfaces and dashboards for advanced building operation and management.

It was one of three projects totaling \$430,000 approved by ASHRAE at its 2011 Winter Conference. The 1633 project is sponsored by Technical Committee 1.4, Control Theory and Application, and co-sponsored by 7.6, Building Energy Performance, and TC 7.9, Building Commissioning, and was awarded to KGS Buildings, Cambridge, Mass.

“Analyzing and interpreting building performance data is critical to the success of high performance buildings,” Stephen Samouhos, Ph.D., principal investigator, said. “This research will help fill a void in standards literature by establishing data-driven metrics, interfaces and dashboards, organized by building type, that clearly quantify and communicate building performance to a diverse set of building stakeholders.”

The other two projects approved at the Winter Conference are:

- 1580-RP, “Study of Input Parameters for Risk Assessment of 2L Flammable Refrigerants in Residential Air Conditioning and Small Commercial Refrigeration Applications,” sponsored by TC 3.1, Refrigerants and Secondary Coolants; awarded to Navigant Consulting Inc.
- 1613-RP, “Update Climatic Design Data in Chapter 14 of the 2013 Handbook, Fundamentals,” sponsored by TC 4.2, Climatic Information, awarded to Numerical Logistics Inc.

Free ASHRAE Webcast Highlights Ground Source Heat Pumps: Registration Opens March 21

ATLANTA – While temperatures above ground vary with the seasons one constant is the temperature underground, which stays relatively the same all year. Designers in the built environment using ground source heat pump systems are harnessing the energy underground to help with heating and air conditioning in the buildings they design.

ASHRAE's upcoming webcast, "Ground Source Heat Pump Systems – Putting the Earth to Work for You," focuses on this method of using underground temperature to create a system using natural resources to save energy and money at the same time. The webcast takes place April 21, 2011, from 1– 4 p.m. EDT.

"The overwhelming choice from our several webcast surveys has been ground source heat pump systems," Dave Shugars, chair of ASHRAE's Chapter Technology Transfer Committee Webcast Ad Hoc Committee, said. "This webcast will highlight several critical factors in the evaluation and design process that are essential to deliver system efficiency. From understanding ground characteristics, to avoiding pitfalls of design and installation, the webcast is a must see for discerning owners and designers alike."

The webcast presenters are Jeffrey D. Spitler, Ph.D., P.E., professor in the School of Mechanical and Aerospace Engineering, Oklahoma State University, Stillwater, Okla.; Kirk T. Mescher, P.E., principal, CM Engineering, Inc., Columbia, Mo.; and Mick Schwedler, P.E., manager, Applications Engineering, Trane, LaCrosse, Wis.

Three Professional Development Hours (PDHs) or three AIA Learning Units (LUs) may be awarded to viewers who complete the participant reaction from online by May 5, 2011.

The live program will be archived online until May 5, 2011, for viewers who are unable to participate on April 21. Registration is required to view the archived program.

Online registration for the webcast begins March 21, 2011. For more information on the webcast program, continuing education credits and ASHRAE ground source heat pump resources, visit www.ashrae.org/ghpwebcast. If you have questions about the webcast, call 678-539-1200 or email ashrae-webcast@ashrae.org.

New ASHRAE Guideline Published
ASHRAE Guideline Addresses Interactions Affecting Indoor Environmental Quality

ATLANTA – ASHRAE has published a new guideline that provides guidance on achieving good indoor environments by considering the interactions of air quality and thermal conditions, as well as lighting and

acoustics. Guideline 10 is especially important in the design of low-energy buildings in order to ensure full consideration of indoor environmental quality and its effects on occupants.

ASHRAE Guideline 10-2011, *Interactions Affecting the Achievement of Acceptable Indoor Environments*, calls attention to many interactions that designers might not have previously recognized or understood. The guideline contains an assembly of available knowledge on the complexity of the indoor environment and its impact on building occupants.

"The guideline summarizes what research and experience have taught us about the complex interplay of the wide range of factors that determine occupants' reactions to the buildings they inhabit," Hal Levin, chair of the committee writing the guideline, said.

Levin explains that the guideline is intended to help users understand and use existing documents that deal with indoor environments, including the ASHRAE standards related to energy, ventilation, indoor air quality and thermal conditions with a more complete understanding of their combined effects on occupants.

"It can provide assistance to building design professionals and building operators by making them aware of the major interactions that have the potential to impact the indoor environment," he said. "We believe the guideline will help draw attention to the narrowly-defined scopes of the widely-used standards and the significance of combined or interactive effects in determining the acceptability of an indoor environment."

The cost of Guideline 10-2011, *Interactions Affecting the Achievement of Acceptable Indoor Environments*, is \$54 (\$46, 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.

Luncheon Briefing to Focus on Secure and Sustainable U.S. Embassies

ATLANTA—As iconic symbols of diplomacy, U.S. Embassies are subject to a range of security and terrorist threats. The ongoing threats to those who live and work in overseas diplomatic facilities drive the security, design, construction and operations of U.S. Embassies.

A briefing of the High-Performance Building Congressional Caucus Coalition (HPBCCC)—established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)—in late March will highlight how sustainable design practices and operations in U.S. Embassies can effectively reduce the consumption of resources at diplomatic facilities, while enhancing security.

Top industry leaders will discuss sustainable building initiatives at U.S. Embassies around the world and how sustainability and security result in design excellence.

“During these turbulent times, we must take into consideration the safety of U.S. citizens as well as the sustainability of the buildings they live and work in,” Doug Read, ASHRAE’s program director for government affairs, said. “We can see that the balance between the two can be struck, leading to security and sound building design.”

The briefing will be held 11:30 a.m.-1 p.m. Tuesday, March. 29 at 2325 Rayburn House Office Building.

Representatives Judy Biggert (R-Ill.) and Russ Carnahan (D-Mo.), who serve as co-chairs of the High-Performance Building Caucus, have been invited to deliver opening remarks, followed by presentations by Lydia Muniz, deputy director, Overseas Buildings Operations (OBO), U.S. Department of State; Paul Phillips, American Institute of Architects, principal, Karn Charuhas Chapman & Twohey; and Faye Harwell, Fellow of the American Society of Landscape Architects, Rhodeside & Harwell.

Congressional staff and press are invited to attend the briefing by RSVPing to Patricia Ryan at pryan@ashrae.org or by fax (202-833-0118) by close of business Friday, Mar. 25.

The High-Performance Buildings Caucus of the U.S. Congress heightens awareness and informs policymakers about the major impact buildings have on

our health, safety and welfare and the opportunities to design, construct and operate high-performance buildings that reflect our concern for these impacts.

Do Clothes Make the Man Hotter or Cooler? Role of Fashion in Thermal Comfort Studied by ASHRAE

ATLANTA – The role of international fashions in determining how cool or hot we are is being studied by ASHRAE. It’s not the impact of Gucci or Channel on our style but rather how non-western wear, such as burqas or saris, affects our thermal comfort.

Comprehensive data exists on western clothing insulation values but little research exists on non-western. Having information on attire like saris could influence the design of ventilation and air-conditioning systems to provide the best thermal comfort for occupants.

“Given the growing energy needs of large nations such as India, China and Pakistan, all of which often have different clothing styles from western nations, knowing more about the impact of clothing on comfort is essential to improving ventilation and air-conditioning systems for these countries,” John Stoops, head of the project monitoring subcommittee for Technical Committee 2.1, Physiology & Human Environment, which is overseeing the project, said. “The project also will look at how different fabrics and body postures and movements impact the insulation value of cloth. We expect to find that the results of non-western wear on thermal comfort will be different than that of western wear due to looser fit, long gowns and lighter materials that promote movement of air.”

1504-TRP, “Extension of the Clothing Insulation Database for Standard 55 and ISO 7730 to Provide Data for Non-Western Clothing Ensembles, Including Data on the Effect of Posture and Air Movement on that Insulation,” is one of 17 projects currently out for bid by ASHRAE. The deadline to submit proposals for all projects is May 16.

Results of 1504 would be of fundamental importance to both ASHRAE and the International Organization of Standardization (ISO) standards, building and building system designers and vehicle designers around the world. Specifically, it could expand the scope and reach of ASHRAE Standard 55, *Thermal Environmental Conditions for Human*

Occupancy, to a worldwide audience.

Other projects open for bid are:

- 1399-TRP, “Survey of Particle Production Rates from Process Activities in Pharmaceutical and Biological Cleanrooms,” responsible committee: TC 9.11, Clean Spaces
- 1410-TRP, “Effect of System Chemicals toward the Breakdown of Lubricants and Refrigerants,” TC 3.2, Refrigerant System Chemistry
- 1413-TRP, “Developing Standard Procedures for Filling Climatic Data-Gaps for Use in Building Performance Monitoring and Analysis,” TC 4.2, Climatic Information
- 1458-TRP, “Modeling Person-to-Person Contaminant Transport in a Mechanical Ventilation Space,” TC 4.10, Indoor Environmental Modeling
- 1495-TRP, “Effect of Lubricant on the Distribution of Water Between the Vapor and Liquid Phases of Refrigerants,” TC 3.3, Refrigerant Contaminant Control
- 1499-TRP, “The Effect of Humidity on the Reliability of ICT Equipment in Data Centers,” TC 9.9, Mission Critical Facilities, Technology Spaces and Electronic Equipment
- 1550-TRP, “Thermal Performance of Insulating Coating,” TC 1.8, Mechanical System Insulation
- 1557-TRP, “Lab Comparison of Relative Performance of Gas Phase Filtration Media at High and Low Challenge Concentrations,” TC 2.3, Gaseous Air Contaminants and Gas Contaminant Removal Equipment
- 1564-TRP, “Measurement of Oil Retention in the Microchannel Heat Exchanger,” TC 8.4, Air to Refrigerant Heat Transfer Equipment
- 1565-TRP, “Development of the ASHRAE Design Guide for Dedicated Outdoor-Air Systems,” TC 8.10, Mechanical Dehumidification Equipment and Heat Pipes
- 1581-TRP, “Develop Alternate Set-up Guidelines for Unitary Air Conditioner Test Configurations Which Cannot Adhere to ASHRAE Standards 37 and 116 Specified Duct Dimensions and External Pressure Tap Locations,” TC 8.11, Unitary and Room Air Conditioners and Heat Pumps
- 1584-TRP, “Assessment of Alternative Approaches to Predicting the Burning Velocity of a Refrigerant,” TC 3.1, Refrigerants and Secondary Coolants
- 1592-TRP, “CHP Design Guide – Update to the Cogeneration Design Guide (1996),” TC 1.10, Cogeneration Systems
- 1603-TRP, “Role of HVAC Systems in the Transmission of Infectious Agents in Buildings and

Intermodal Transportation,” TC 9.3, Transportation Air Conditioning

- 1604-TRP, “Demand Controlled Filtration for Clean Rooms,” TC 9.11, Clean Spaces
- 1606-TRP, “Laboratory Testing of Flat Oval Transitions to Determine Loss Coefficients,” TC 5.2, Duct Design

Intensive ASHRAE Workshop Highlights Essentials of HVAC Design for High Performing Buildings

ATLANTA—As the demand for high performing systems and buildings has risen, what is considered to be status quo in HVAC&R has changed. Whether you’re an experienced engineer or new to the field, it’s crucial to have a firm understanding of these new HVAC& essentials for the green building industry.

ASHRAE Learning Institute presents an intensive, three-day workshop focusing on both the fundamental and technical aspects of HVAC design in commercial buildings, providing practical strategies for HVAC designers and others involved in delivery of HVAC services. HVAC Design Essentials: Tools for High Performance Building Designers takes place at ASHRAE Headquarters in Atlanta, Ga.

The workshop addresses the skill set that will be required by designers of the future; techniques to interact effectively with all design partners in an integrated design team; the economics of sustainable buildings; and the skills needed to design high-performance buildings, to name just a few.

“HVAC Design Essentials is ideal for engineers looking to learn about the latest tools and technology in the high-performance building industry, but is also beneficial for those new to the field who want to give themselves an edge,” Filza Walters, professional development committee chair said. “Facilities managers involved in new construction or technicians who would like to gain design knowledge are also encouraged to attend.”

The course is led by ASHRAE members Julia Keen and Joel Primeau, both are licensed engineers and ASHRAE Certified High Performance Building Design Professionals. Keen is associate professor of architectural engineering and construction science at Kansas State University, Manhattan. Primeau is

director of sustainable design at Genivar, in Ontario, Canada.

In addition to updates on the most cutting-edge green HVAC&R tools and technology, attendees receive a copy of Standard 189.1, Standard for the Design of High Performance Green Buildings Except Low Rise Residential, and the 189.1 User's Manual. Professional Development Hours and Continuing Education Units are also available.

Register early to save: Advance conference registration is \$1,189 (\$939 member price) and \$1,239 after April 15 (\$989 member price). A company discount is available for \$889 per person when three or more from the same employer enroll at the same time. More information can be found at www.ashrae.org/hvacdesign.

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