



MAY 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,
Next week's meeting will be a presentation on the Big Dig from Bob Hughes. This will be a fun meeting and we are encouraging everyone to bring their spouses or significant others to the meeting.

Also this week there is a seminar on the Fundamentals of Water System Design being presented by Jerry Boulanger from J-Clan Services Ltd. This will be a great course, and it will be a great benefit to all that attend.

Last month's meeting was Student Night. The presentations were great, with the winning project being the Residential Energy Consumption Monitoring Network. It was a pretty remarkable series of devices and it was very worthy of their win.

Hope to see you at the meeting and mark your calendars for May 26 for the annual Research Golf Tournament!

Program for May

Bob Hughes to present on "The Big Dig", which will summarize the recent Regina Wascana Lake deepening project. This is an ASHRAE member and spouse evening.



Meeting Notice

Wednesday, May 4, 2011
"Spouse Night"

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

5:15 pm - Cocktails
5:45 pm - **The Big Dig by Bob Hughes**
6:45 pm - Dinner
7:30 pm - Chapter Meeting

Upcoming Events

April 27-28, 2011 - Technical Seminar
Fundamentals of Water System Design

May 26, 2011 - Golf Tournament at
Sherwood Forest

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

We have the privilege of having Bob Hughes presenting at this month's Chapter meeting, where he will present on "The Big Dig". Bob will summarize and provide insight into the recent Regina Wascana Lake deepening project. This is also a spouse evening where ASHRAE & industry members are encouraged to attend the meeting with their spouses for a great meal, and an entertaining presentation. 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 spouses for a great evening of entertainment.

Thank you to all those members who came out for last month's meeting to support the student night. We had some great informative presentations, and congratulations to all the students for a job well done.

A reminder that ASHRAE Regina is presenting an "ASHRAE Fundamentals of Water System Design" technical seminar on April 27 & 28th, 2011 at the University of Regina (ED 619), with Jerry Boulanger presenting the course. The course times are 8:00 a.m. to 4:30 p.m. both days, with continental breakfast and lunch provided both days. We had great industry interest in this course, and it is sure to be very informative and beneficial to those that are attending.

Next month is our annual ASHRAE Golf Tournament to be held on May 26th at the Sherwood Forest Golf & Country Club. Please mark that on your calendars and kick off the golf season with a great round of ASHRAE golf! Please contact Trevor Hobman for more information and to register.

Past President & Research Promotion Chair

by Greg Fluter

We are in the final stretch of the 2010/2011 ASHRAE Research Campaign. Once again the Regina Chapter members and companies have done a great job donating to the ASHRAE Research Canada. Thank you all for your donations! With this year's goal being at \$10,500 we still require a few more donations to reach this goal. If you haven't made a donation yet, please consider doing so within the next month. All of our donations must be received by ASHRAE Head Office by the end of June. If you require more information, please feel free to contact me at g.fluter@mac-eng.ca or 586-7972.

Student Activities

by Janel Walter

Thank you to the students that came out last month and presented their projects to us. We appreciate your time and enjoyed the presentations. We were pleased to be able to award Brad Arnold and Travis Samchinsky who presented "Record: Residential Energy Consumption Monitoring Network" first place with \$750, Jing Wang, Zirui Lin and Chang Xu who presented "Energy Generation By Using Microbial Fuel Cell in Wastewater Treatment" second place with \$500 and Cristy Jamieson who presented on "Ecological Greywater Recycling Greenhouse" third place with \$250. Also thank you to those members that came out to the meeting and supported the students!

Membership Promotion

by Rob Craddock

I just wanted to say thank you to all those members who attended meetings throughout the year and those who joined ASHRAE!

Vice President & Newsletter

by Alana Yip

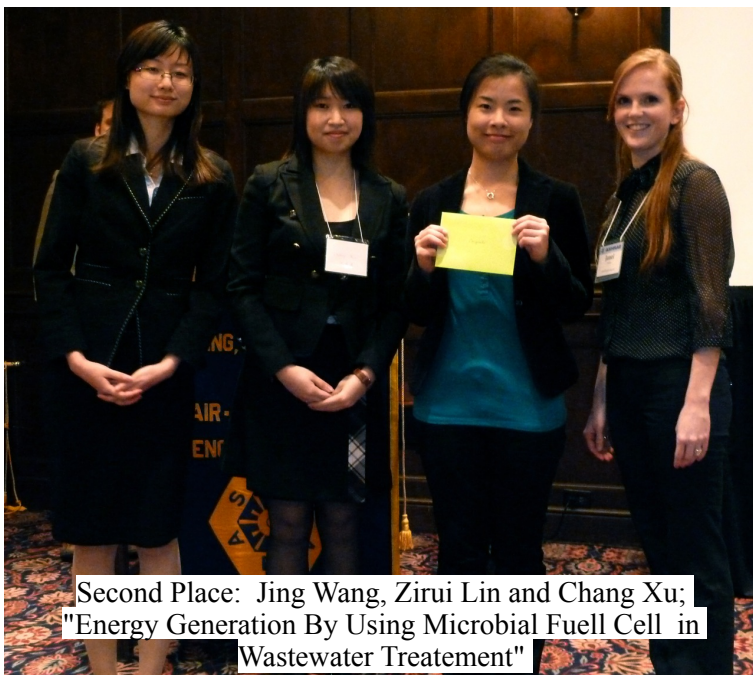
At the last meeting, we had Chris Klatt speak about his trip to the YEA (Young Engineers in ASHRAE) Leadership Weekend, but for those who were not there - here is a small recap from Shawn Wedewer.

Chris and I recently attended the YEA Leadership Weekend in Denver, Colorado at the beginning of April. I have been involved in many ASHRAE conferences such as Chapter Regional Conferences (CRC's) and the ASHRAE Winter Meetings in the past. However, the YEA leadership weekend was somewhat different than other ASHRAE events. While there was still a focus on the technical during our tour of the net zero commercial office building at the National Renewable Energy Laboratory facility, there was some (I use this term loosely) socializing and going out for drinks. The highlight of the weekend for me was spending the time and taking a hard look at myself. The YEA brought in a facilitator from Kison to help everyone understand how they fit there current career and how to best align your career with your individual strengths. Generally I don't get a great deal out of training like this but I have to say this generally reinvigorated me going forward. I would highly recommend this weekend to anyone who is interested. - Shawn

STUDENT NIGHT



First Place: Brad Arnold and Travis Samchinsky; "Record: Residential Energy Consumption Monitoring Network"



Second Place: Jing Wang, Zirui Lin and Chang Xu; "Energy Generation By Using Microbial Fuel Cell in Wastewater Treatment"



Third Place: Cristy Jamieson; "Ecological Greywater Recycling Greenhouse"

2011 Spring YEA Leadership Weekend





ASHRAE

Technology for a Better Environment

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Dear ASHRAE Member:

As summer approaches in the Northern Hemisphere, many college students will be seeking a summer job. I'd like to ask you to consider hiring a summer intern if your work load permits. For those of you in the Southern Hemisphere, please consider hiring an intern during holiday breaks or for co-op positions.

In addition to using local resources for finding applicants, intern positions can be posted at no cost through ASHRAE's online jobs website, www.ashraejobs.com. Under the "visit the employer area" in the top right-hand section of the site, you can find more information about posting internships for free. Students can search for internships under the "resources" tab.

As I've visited chapters this Society year, I've met with the Society's Young Engineers in ASHRAE members (those members under age 35) in many cities. I've asked each of them how they entered the HVAC&R field, and the answer almost universally is "I learned about it through an intern position."

As most of you know, the number of colleges and universities that offer HVAC&R courses is declining and many capable young men and women are unaware of our industry and the exciting opportunities it offers. So, please join me in reaching out to them by offering one or more intern positions this summer. It's a win-win situation! Thank you.

Personal regards,

Lynn G. Bellenger, PE, Fellow ASHRAE

ASHRAE President

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

A N I N T E R N A T I O N A L O R G A N I Z A T I O N

ASHRAE Funds Undergraduate Project on Net Zero Energy Design Toolkit

ATLANTA – A toolkit to help better understand the impacts of building construction related to net zero energy targets is being developed by undergraduate students in their senior year through an ASHRAE Undergraduate Senior Project Grant.

The grants, totaling some \$65,000, are awarded by ASHRAE to colleges and universities worldwide to promote the study and teaching of HVAC&R, encouraging undergraduate students to pursue related careers. The grants are used to design and construct projects.

This year, 14 schools from around the world were awarded grants, including the University of Oregon for its proposal to develop a net zero energy design toolkit. As the top grant award winner, two students from the university are invited to present their project as part of the Student Program at the 2012 ASHRAE Winter Conference in Chicago.

As the building industry looks toward more energy efficient design, with the eventual goal of net zero energy use, additional tools are needed. The toolkit being developed by students will help facilitate understanding of the impact of design decisions on the rising cost of energy and enhance dialogue between engineers, architects, contractors and building owners.

“The toolkit offers a three-tiered approach to investigate, evaluate and experience the impacts of building construction in achieving net zero energy targets related to design, construction and occupancy,” Allison Kwok, faculty advisor and branch advisor for the University of Oregon Student Branch, said. “The approach is provided through pre-occupancy onsite investigations, post-occupancy audits of the existing building stock and through a professional workshop between local members and students.”

The toolkit will include a building air tightness testing system as well as an infrared camera to detect moisture, missing or defective insulation, structural shortcomings, HVAC problem areas, sources of heating and cooling loss, plumbing blocks, roof leaks and electric issues.

The kit will be used for pre- and post-occupant audits followed by a workshop, where students will discuss their real experiences with building performance analyses dealing with topics such as occupant comfort, system effectiveness and energy use.

Other ASHRAE grant recipients are:

- University of Nebraska – Lincoln – CO₂-Based Demand Control Ventilation (DCV) of Multiple-Zones in a LEED™ Building
- UNC Charlotte – Advanced Cooling Technologies: Nanofluids Flow and Heat Transfer Lab
- Ryerson University – Design and Construction of a Compact Integrated Variable-Capacity Multi-Zone Air Handling Unit with HRV/ERV/Economizer for Super Energy Efficient/Net Zero Energy Houses
- Purdue University – Living Laboratory for Smart Home
- UET Lahore – Design and Fabrication of 1KW Solar Stirling Engine
- Bradley University – Design of a System for Regulating AC Capacity by Compressor Rapid Cycling
- National Taipei University University of Technology – A Performance Study on Electric Powered Vehicle Air-Conditioning System
- American University of Beirut – The Use of Shading and Condensate Drain to Improve the Efficiency of a Residential-Sized DX Split Air Conditioning System in Beirut City
- Southern Illinois University - Carbondale – PCM Solar Energy Storage Demonstrator for Air and Water Heating
- Mapua University (team 2) – Development of a Laboratory Set-Up for a Ducted Underfloor Air Distribution System
- National Chin-Yi University of Technology – Development of a Demonstrator of Thermoelectric Cooler/Heater System for Bio-medical Cold-Chain System: Design, Fabrication and Performance Testing
- University of Algarve – Development of a Hot-Wire Anemometry Multi-Channel System and an Air Velocity Sensors Calibration System
- Manipal University – Solar Liquid Desiccant Air Conditioning System

For more information on the grant program, visit www.ashrae.org/students. ASHRAE will begin accepting applications for the 2012-13 program in August 2011, with a December 2011 final deadline.

Sustainability Knows No Borders: ASHRAE Annual Conference to Take Place in Montreal

ATLANTA–Montréal, known for bringing a bit of European charm to North America, blends cultures, languages and people from all over the world, culminating in a unique and vibrant *joie de vivre*. In the same way, the 2011 ASHRAE Annual Conference brings together members from all over the world to share their knowledge of HVAC&R.

The theme of the Conference, Sustainability Knows No Borders, serves as a reminder of ASHRAE's international reach. The Society's members bring different perspectives, design styles and experiences to the HVAC&R industry, but all work toward the same goal: Advancing HVAC&R.

New to the Conference Technical Program is the Engineering Tools track that seeks to keep up with the fast pace of development in energy modeling and building information modeling programs. Programs include BIM calculations as applied to the ASHRAE HQ building; numerical models for predicting dispersion of exhaust stacks, environmental impacts of buildings, building material properties for reducing energy consumption, code compliance, incorporating acoustics into BIM and large public spaces; operation-oriented flexible building system modeling; an integrated project delivery medical center case study; HVAC design checklists that work; computational fluid dynamics; DOE's new buildings energy efficiency HUB; VAV system controls; inverse modeling tools; and energy audits.

The Tech Program also addresses alternative technologies and net zero buildings and balance those programs with HVAC&R applications. Additional tracks include Refrigeration; HVAC Systems; Professional Skills; and Commissioning.

The technical program begins Sunday, June 26, and ends Wednesday, June 29, with all sessions at the Hilton Montreal Bonaventure. Complete program details are available at www.ashrae.org/montreal.

The ASHRAE Learning Institute offers nine instructor-led training opportunities, including full-day seminars on ASHRAE Standard 90.1-2010 and Data Center Energy Efficiency. Half-day sessions cover Energy Management, High Performance Building Design, Using Standard 90.1 to Meet LEED® Requirements, ASHRAE Standard 62.1 and Project Management for Improved IAQ.

The Conference keynote speaker is Rob "Waldo" Waldman, a former combat pilot, businessman and authority on leadership and sales. While relaying his personal experiences as a combat fighter pilot and businessman, he makes a parallel that is memorable and exciting, bringing fighter-pilot energy to each illustration. The Plenary session takes place Saturday, June 25 at Fairmont Queen Elizabeth.

ASHRAE technical tours offer an inside view of how technology developed by members is practically applied in building environments. Tours at the Annual Conference include the Bell Center, home of the Montréal Canadiens; the Montreal Biodôme; and the Beauharnois Generating Station.

The ASHRAE Annual Conference takes place June 25-29. Register before May 31 to save; purchases of a full registration also receive the Montreal Virtual Conference. Visit www.ashrae.org/montreal for more information. The Fairmont Queen Elizabeth will serve as the headquarters hotel.

ASHRAE Seeks Public Comment on Standard for Existing Buildings

ATLANTA – To ensure a sustainable future, the greatest opportunity lies in modifying existing buildings. Only 2 percent of construction projects are for new buildings, while 86 percent of construction dollars go into renovation of our existing building stock.

ASHRAE and the Illuminating Engineering Society (IES) are revising ANSI/ASHRAE/IESNA Standard 100-2006, Energy Conservation in Existing Buildings, to provide greater guidance and a more comprehensive approach to the retrofit of existing buildings for increased energy efficiency. The standard was first published in 1981, and the need for its requirements has grown as more attention is paid to improving energy in our current building stock.

The standard is open for an advisory public review until May 25, 2011. Visit www.ashrae.org/publicreviews for more information.

ASHRAE's advisory public review process is designed to seek suggestions for new, unusual or potentially controversial elements of a proposed standard that the committee feels would benefit from increased public scrutiny. Unlike ASHRAE's formal call for public comments process, comments

received under advisory public reviews are supportive and do not need to be resolved.

Of the 94.6 quadrillion btu of energy consumed in the United States in 2009, 42 percent was used by commercial and residential buildings. Over the next 24 years, national electric consumption is expected to grow by over 22 percent and natural gas consumption by 16 percent. In the same period, the amount of commercial and residential floor space in the marketplace is expected to increase by 37 percent and 17 percent respectively.

“In order to offset the growing amount of floor space and subsequent increased energy demands, existing buildings must improve their efficiency, even if every new square foot were built and operated at net zero energy,” Rick Hermans, chair of the Standard 100 committee, said. “ASHRAE and IES are working to make Standard 100 the best source of practical, accurate and cost effective design guidance for existing buildings.”

“Achieving improvements in energy efficiency in existing buildings provides significant rewards in operating savings, conservation of resources and improvements in the environment,” Rita Harrold, IES director of technology, said. “The standard addresses the necessary guidance for a variety of users to develop action plans for their specific needs. Making the standard available for an advisory public review is an important opportunity for contributory comments that will add value to the final document.”

The revised standard provides comprehensive and detailed descriptions of the processes and procedures for the energy efficiency improvements of existing residential and commercial buildings in order to achieve greater energy efficiency.

“Cities like New York, which are constrained in their development due to infrastructure limitations, can use this tool to renovate their existing building stock, freeing up energy for new developments,” ASHRAE Presidential Member Gordon Holness, whose presidential theme focused on energy in existing buildings, said. “Since the standard sets specific energy targets based on building type and climate zone, it can also be used by state and federal agencies and by utility companies as a means of validating building efficiency improvements as a result of tax rebate and incentive programs. Given that 75 to 80 percent of all buildings that will exist in the year 2030, exist today, this

rewritten standard gives us a vital resource to fulfill our sustainability goals. President Obama recently announced a series of tax and regulatory changes with a collective goal for a 20 percent reduction in energy use in commercial buildings by the year 2020. That can only be achieved by addressing our existing building stock.”

The standard addresses major and minor modifications for both residential and commercial buildings, single and multiple activity buildings with variable occupancy periods and identifies an energy target for 53 building types in 16 climate zones/sub-zones.

The revised standard also identifies energy efficiency requirements for buildings without energy targets – mostly industrial, agricultural, data centers and special laboratories – and provides multiple levels of compliance.

Recognizing that the type of occupancy, operation and the use of a building plays a key role in its performance, the standard establishes the requirement for developing an energy management plan and an operation and maintenance plan, according to Hermans.

Included within the revised standards is criteria for energy use surveys, auditing, implementation and verification. Appendices are included for life cycle cost analysis procedures as well as identification of potential energy efficiency measures.

“Through this advisory public review, we are seeking broad and general comments on the text of the standard, the concepts of requirements and opinions about the value of the standard,” Hermans said. “Throughout the text there are questions seeking your advice as reviewers of this draft document. Please look at these questions and add your thoughts, answers and comments in the ASHRAE comments database as described in the instructions.”



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Joke of the Day:

An engineer died and ended up in Hell. He was not pleased with the level of comfort in Hell, and began to redesign and build improvements. After a while, they had toilets that flush, air conditioning, and escalators. Everyone grew very fond of him.

One day God called to Satan to mock him, "So, how's it going down there in Hell?"

Satan replied, "Hey, things are great. We've got air conditioning and flush toilets and escalators, and there's no telling what this engineer is going to come up with next."

God was surprised, "What? You've got an engineer? That's a mistake. He should never have gotten down there in the first place. Send him back up here."

"No way," replied Satan. "I like having an engineer, and I'm keeping him."

God threatened, "Send him back up here now or I'll sue!"

Satan laughed and answered, "Yeah, right. And just where are YOU going to get a lawyer?"

If this newsletter was passed on to you and you would like to be added to the mailing list, please email me at alana.yip@sasktel.sk.ca. Also, if there are any comments regarding this newsletter, please drop me an email.
