

POWUR NEWS

Saskatoon Chapter News

November 2006 – Vol.1, Issue #3

Engineering for the World We Live In

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Upcoming Meeting Notice

November 14th, 2006

To confirm meals and seating arrangements for the evening,

Please reply no later than **Thursday November 9th**

If you plan to attend the meeting or presentation.

Click the e-mail link to reply or phone:

Bruce Waldbillig
E.H. Price Ltd.
Ph: 931-3316

E-Mail: bwaldbillig@price-hvac.com

The itinerary for the evening at the Parktown is as follows:

5:30 – 6:00	Cash Bar
6:00 – 6:45	Supper
6:45 – 7:15	Chapter Meeting
7:30 – 8:30	Guest Speaker

Meal Plan A \$90.00/year
Meal Plan B \$20.00/Meeting
Membership Promotion Night \$10.00/Meeting
Students \$5.00/Meeting (Best deal in Town)

Guest Speaker

ASHRAE's Advanced Energy Design Guide Series
–Saving 30% The Easy Way
Ronald E. Jarnagin
Staff Scientist, Pacific Northwest
National Laboratory, Richland, WA



Who should attend?

Anyone who designs or builds small office or retail buildings that wants to save energy without a lot of extra effort.

What will you hear?

Attendees will learn about ASHRAE's new Advanced Energy Design Guide (AEDG) series of documents intended to address the needs of the design/construction process for small buildings. The presentation will provide an insight into the development of the guides, discuss application of the recommendations from the guides and will provide suggestions on how to utilize the guides as part of your everyday business. Come and learn about this exciting new series of documents from the person who chaired the committee and was involved in the development as well as the assessment of energy savings for the guides.

About the presenter:

Ron Jarnagin is a long time ASHRAE member who chaired the project committee that developed the first AEDG document for small offices. Ron is currently the vice chair of the project committee developing the AEDG for small retail. Ron previously chaired ASHRAE Standard 90.1 during the development of the 1999 standard. In addition, Ron has served on the ASHRAE Board as a Director at Large and as a Society Vice President.

Saskatoon Chapter
2006 – 2007
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Special Guest

We will also have in attendance for the November meeting Kevin Marple, Regional Vice Chair (RVC) of Membership Promotion for Region XI. Kevin is Vice President of Benz Air Engineering Co., Inc. in Portland, OR. Benz Co. is a manufacturer's rep firm that sells HVAC equipment and Industrial Air Pollution Control Equipment. Kevin has been with the company for 20 years. Kevin joined ASHRAE in 1983 when he worked for a mechanical contractor company. It wasn't until he came to work at Benz Co. that he became active in ASHRAE at a Chapter level and a Society level. Kevin is a past President of the Oregon Chapter and I currently serve as a member of TC 5.4 Industrial Process Air Cleaning (Technical Committee). Kevin will give us a short presentation on ASHRAE Membership and Society News.

Membership Promotion Night

The November 14th meeting will be the first of 2 membership promotion nights. This is being held in conjunction with our Membership Promotion RVC visit. This is a great opportunity to become more familiar with ASHRAE and ask questions on ASHRAE Membership and the benefits of becoming a society and local chapter member. Bring a friend, bring a colleague, bring a competitor, bring your uncle's, mother's, 2nd cousin, bring someone who is just wants to learn more about ASHRAE. Bring anyone to make your local membership promotion guy (*that's me*) look like he's doing his job. Any new prospective new members who attend the evening dinner, meeting and guest speaker can attend for the low, low rate of just \$10.00. Hope to see you there.

Jeff Frie
Membership Promotion Chair
ASHRAE Saskatoon

Don't forget to reply if you are attending

Location of Meeting

Revised Meeting Locations

Monthly meetings are being held this year at the Parktown Hotel. The room they are providing us with is large, and the meals are great.

Previous General Meeting Minutes

October 10th, 2006

The last general meeting of the Saskatoon Chapter of ASHRAE was held on October 10th 2006, for a draft copy of the meeting minutes please [Click here](#)

Chapter Technology Transfer Committee (CTTC)

ASHRAE Saskatoon Chapter is pleased to present:

Fundamentals of Air System Design

Fundamentals of Air System Design is a two-day course aimed at providing an understanding of the basics of air movement, the components of air distribution systems, considerations of human comfort, load and occupancy demand, and how codes and standards affect the design of air systems.

TOPICS INCLUDE:

- The functions of the components of an air distribution system, including major equipment types and auxiliary components
- The principles of air distribution as they relate to human comfort
- The principal codes and standards affecting air system design
- How to layout and size a simple duct system and calculate pressure losses in the system
- Common methods for reducing airborne sounds in systems
- How to start an air system and diagnose common problems associated with air system start-up

DATE: January 9th and 10th, 2007. Lunch will be provided.

REGISTER BY: December 20th, 2006

COST: \$350.00 for local ASHRAE Saskatoon members
\$400.00 for non-members.

Seating is limited. To reserve your spot or request additional information contact:
Chris Conley at chris.conley@dwel.com or (306) 477-0678.

Additional Information including instructor bio available at:
<http://www.saskatoon.ashraechapters.org/main page.htm>

Additional Information

Meal Plan Invoice, Roster Sponsorship, Information Consent

This year we have been able to hold the Plan A Meal at the same rate as last year. The link below will open a PDF document explaining the various meal plan options, roster sponsorship, and personal information consent form. Just a reminder that the deadline for prepayment of Plan A meals was October. If you have outstanding debts for meals, you should have received an invoice, and I will be collecting all money due at the upcoming meeting. If you have not received an invoice, but would still like to pay me, I would be happy to comply.

Ryan MacGillivray
Treasurer
ASHRAE Saskatoon
Meal Plan Invoice. [Click here](#)

Building Saskatchewan Green

Annual Saskatchewan Sustainable Building Conference and Tradeshow. November 16 and 17, 2006. Saskatoon, College of Commerce. For more information please [Click here](#)

Regina Chapter Conference

The Regina local ASHRAE Chapter is hosting a conference titled **HVAC Emerging Technologies – Ready or Not!** November 15 and 16, 2006. Regina, Hotel Saskatchewan Radisson Plaza. For more information please [Click here](#)

MCA of Saskatchewan Course

The Mechanical Contractor's Association of Saskatchewan is offering a course on "Managing Field and Labour Productivity". For more information please [Click here](#)

Saskatoon Chapter Curling Funspiel

It may be a little early but the Saskatoon Chapter Funspiel is booked for February 17, 2007 at the Granite Curling Club and is open to all chapter members, family, friends, associates, and anyone else who might like to curl. More information to follow.

Jack Scott
Historian and Social Activities
ASHRAE Saskatoon

Important Dates

Mark your calendar for the upcoming monthly meetings

Dates and locations for this years meeting are shown below. Speakers, tours and activities are tentative and subject to change.

Date	Location	Speaker
September 12 th , 2006	Parktown Hotel	Rob Dumont -Factor 9 Demonstration House
October 10 th , 2006	Parktown Hotel	Traci Hanegan, P.E. Region XI DRC -Specification Enforcement
November 14 th , 2006	Parktown Hotel	Kevin Marple, Region XI RVC Membership Promotion. Ron Jarnagin, The Advance Energy Guide 1 st Membership Promotion Night, Student Night
December 12 th , 2006	TBA	Past President's Night - Social Function
January 9 th , 2007	Parktown Hotel	Robert McDowall - Engineering Change Inc. - Topic TBA
February 13 th , 2007	Parktown Hotel	Bruce Dobbs, Region XI RVC Student Affairs Garry Johnston - Great Western Brewing Company 2 nd Membership Promotion Night, Student Night
March 13 th , 2007	Parktown Hotel	Godfrey Nash, Weil McClain - Designing for High Efficiency Boilers
April 10 th , 2007	Parktown Hotel	TBA
May 2007	Willows Golf and Country Club	Annual ASHRAE Golf Tournament

[Did you reply, Bruce wants to know](#)

Student Activities

Our November meeting is the first of two Student Meetings this year. These meetings provide an ideal opportunity for you to meet potential employees in a relaxed and informal setting and promote your business as well as our industry in general.

I hope you will all make an extra effort to come out to this meeting and introduce yourself to one or all of the students in attendance.

I am pleased to announce that Society has selected a student from the University of Saskatchewan to receive the annual \$3,000 ASHRAE Memorial Scholarship. We will be presenting this award to the recipient during the meeting.

Jonathan French
Student Activities Chair
ASHRAE Saskatoon

2007 Region XI CRC – Alaska Cruise

You may get more up to date information by visiting our website at:

<http://alaska.ashraechapters.org/crc2007.html>

Energy Answers from Rob Dumont

The following is a question and answer from an article on furnace fan timer called the **Air Cyclor** that allows one to set the number of minutes per hour that the furnace fan is on.

I read your article with great interest and wondered if I could get some specific feed back.

In April 2006 I completed a new 3500 sq. ft 1+1/2 storey home with a developed basement. The home has a bonus room design over the garage which is dropped 4 risers from the second floor level. I have previously owned an R-2000 home and was very dissatisfied with the noise and performance from the HRV (air-to-air heat exchanger). We have R-20 walls, R-50 ceilings, R-8 windows, + R-20 bsmt walls. There is R-5 under the bsmt slab. I installed a 92% efficient Trane furnace and a 91% AFUE NTI boiler with boilermate system. Our site is well treed with 50 ft trees and we are comfortable without central air conditioning. The hydronic system heats the bsmt floor, ensuite floor, foyer floor, kitchen nook floor, the 600 sq ft Bonus room over the garage, the rear second floor space and the garage floor. We have a high output "Bis Panorama"

wood burning fireplace (will heat 2,500 sq ft) with a high return air grille in the great room. The furnace circulates to all rooms and all floors. We set the in-floor heating to a comfortable temperature in each of the hydronically heated rooms and the D.C. furnace fan on "run". The thermostat on the furnace is set around 15 degrees. We find we have the most wonderful fresh air in the house and it is draft free and comfortable. I tend to heat the garage slab only enough to keep everything from freezing. We tend to open windows whenever the weather allows.

Our energy costs seem moderate for the size of house when it was under construction, but we haven't lived in it for a winter yet.

Can we get enough fresh air if we only run the furnace fan 10 minutes per hour with an Air Cyclor? Can we lower heating costs by not heating the basement slab, (or a low temp say 15 degrees), if we are not using the basement? Anything else you can recommend to lower heating costs?

Alberta Home Contractor

Answer

Every house needs ventilation. Most older houses get their ventilation from air leakage, but most modern houses on the Canadian prairie are now tight enough that a mechanical ventilation system is needed.

Why do houses need ventilation? Let's go back to fundamentals.

There are about five main reasons. First, people need about 8 Litres per second (15 cubic feet per minute) of reasonably clean air for health and comfort. We ingest air at about 380 parts per million outdoors and our lungs reject carbon dioxide into the air that we exhale. Our exhaled breath is quite loaded with carbon dioxide, with about 40,000 parts per million or 4% CO₂. If you recycled that exhaled breath directly back into your lungs, you would soon be overcome with carbon dioxide poisoning. This is essentially what happened in the Black Hole of Calcutta, when a large number of people died in a confined space. My dad, who was an anesthetist, told me that controlling carbon dioxide in operating room patients is a key concern, because anesthetic gases are expensive and are recycled back into the patient. The carbon dioxide laden air is put through a scrubber to remove this gas. On submarines and space craft, scrubbers are also used to minimize the amount of expensive fresh air. Inside houses and most buildings, carbon dioxide levels should generally be below about 1000 parts per million. If the level is higher, it is usually a sign of inadequate ventilation (or a blocked chimney.)

A second reason that humans must have ventilation is to get rid of moisture that the body emits. Sedentary adults release about 0.1 kilogram (0.1 litres) of moisture per hour, partly through breathing and partly through skin evaporation. Cooking, bathing, floor washing, etc. all contribute additional moisture to the air. One of the common signs of inadequate ventilation in a home is high humidity, with condensation on the windows.

A third reason for ventilation is to dilute body odour, perfumes, deodorants, cologne, etc.

A fourth reason to ventilate is to remove the offgassing from building materials. Our paints, floor coverings, furniture, cabinets and so on all will all emit some volatile organic compounds, and these should be diluted by adequate ventilation. It is also important to choose building materials carefully to avoid organic compound emissions and formaldehyde.

A fifth reason to ventilate is to ensure that there is adequate combustion air for furnaces, boilers, water heaters, fireplaces, etc. When any fuel burns, sufficient air must be supplied or deadly carbon monoxide can readily occur.

In older houses, leaky walls and ceilings will generally provide enough ventilation air through most of the year. However, when there is no wind and the temperature inside the house is the same as outdoors, there is no driving force for ventilation, and very little air change will result. I can remember my grandparents' home in Vancouver and the times during the warmer months when there was a distinct 'old house' smell to it.

For all the above reasons, I am a strong advocate of continuous mechanical ventilation—24/7/365.

Getting back to your letter, Wayne, I infer that in your house you have a fresh air duct that goes into the return air plenum for your furnace, and that this provides ventilation air because you run the furnace fan continuously. There is no heat recovery with that system, and you do pay an energy penalty for heating the air passing through your house. If you only ran the furnace fan 10 minutes an hour, you likely would get a reduced amount of ventilation and possible air quality problems.

Short of measuring the amount of air coming into your house, I can't quantify how expensive the annual heating bill for the ventilation air is. If the flow is 75 cubic feet per minute (35 Litres/second), I would estimate the annual cost of heating the ventilation air at about \$200 a year if you are heating with natural gas.

As to your second question about turning off or reducing the basement radiant floor heat to save money, I would recommend that you try it. With an insulated floor, the heat losses through the floor are very modest. I estimate that a basement floor with R5 (RSI 0.88) insulation will lose only about 2 BTU/hour per square foot of floor area, or about 3500 BTU/hour for a 1750 square foot basement. Heat losses from the furnace ductwork are often sufficient to offset the basement floor losses. As you are already circulating air from the furnace to all rooms, the floor heat will likely be superfluous.

Another low cost way to save energy in most houses is to use a clock thermostat. For every one degree C that you lower your average house temperature in Edmonton's climate, you can save about 3% on your heating bill.

Newsletter Format

Revised Newsletter Format

As you can tell our newsletter format has been revised from an attached PDF file to a HTML web based file format. This was done in part to eliminate the possibilities of attachments being stripped out of e-mails by some servers. There may still be some issues with this format and various web browsers and mail servers but it is a start. Please send me your [feedback](#).

For a PDF version of the newsletter for printing visit the local Saskatoon ASHRAE Web site <http://saskatoon.ashraechapters.org> or [Click here](#)

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