

Mid-Columbia Chapter of
the American Society of
Heating, Refrigerating and
Air Conditioning

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December 2007

The

Tumbleweed



<http://www.midcolumbia.ashraechapters.org>

Presentation on All Climate Heat Pumps by Greg Jourdan

Greg Jourdan gave a presentation on all-climate heat pumps. Currently, Greg has two of these "new" heat pumps installed at the We-natchee Valley College. One of the units heats and cools the HVAC lab at the college. The unit was donated to the college under the condition that the electrical demands be monitored. The unit was installed and instrumentation put in place to monitor and record all electricity usage for the heat pump.

The program was based on how this new technology all climate heat pumps (ACHP) can work well in our environment. Mr. Jourdan presented background information on traditional and all-climate heat pumps showing diagrams of how each system works. We looked at diagrams of how a standard heat pump works and compared it to this new technology seen in the ACHP's. The traditional system only has heat ratings until the outdoor temperature falls to 17 deg F, then it relies on auxiliary electric heat.

The ACHP has been proven to run when the outdoor temperatures are near 0 deg F with no backup heat required. The ACHP's use a 2 stage refrigeration system in winter. The ACHP is similar to a freezer system, running backwards in the winter time. The trick is this system must be installed correctly.

The test results for the ACHP indicate that this system works and requires little to no backup heat, compared to a traditional system that essentially requires backup heat at moderate outside temperatures. The unit serving the HVAC lab at the college maintained the space temperature at setpoint throughout last winter without using the electric backup heat. The units' average electrical usage was less than what would have been used by a single 1500W electrical resistance space heater (underdesk).



The major concern with the ACHP is that it must be installed properly. Many times, the contractor installs the system as a "normal" heat pump. This system is different and care must be exercised during installation for the system to work properly. The first cost of this equipment is considerably higher. However, with rising energy costs, the payback in lower energy bills can be relatively short.

ASHRAE Launches New Magazine Dedicated to High-Performing Buildings

ATLANTA – ASHRAE has launched a new magazine to help decision-makers in the building community learn about the latest developments in innovative technologies and energy-efficient design and operation.

Targeted at building owners, facility managers, architects and engineers, High Performing Buildings features working case studies of exemplary buildings developed by leading practitioners in the sustainability movement.

Also included is a "lessons learned" section in each article where building designers and operators explain what went right, what went wrong, how problems were resolved and what could have been done better.

"It is essential that ASHRAE share both the technologies and measured performance of high-performance buildings to change the status quo and help transform the building industry to a more sustainable built environment," said Kent Peterson, ASHRAE president.

ASHRAE's goal is to advance the concept of integrated building design with a focus on measured building performance, not just design of sustainable buildings. The cases studies featured will provide performance data, verifying actual sustainability performance.

Don't Miss This Month's Event

December 11, 2007

Controlling Contaminants with Pressure Differentials

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Message from the President

By Lois Payne

Happy Holidays! My message this month is **Express Yourself!** Whether it be caroling, skiing, sledding, or whatever – let's rejoice in the season.

We all enjoyed the Heat Pump technical presentation by our own ASHRAE member, Mr. Greg Jourdan – who is up to his elbows studying and testing heat pump performance and shared with us the results of his work which provided us with some very interesting information. A heat pump that still works in 7 degree weather - really. He actually gave me the idea for this month's message, along with Andy Williams singing Christmas carols on the radio and this snow!

I regretfully will not be at our annual Christmas dinner meeting this month – however, I am sending a little present from ASHRAE for anyone who is interested. But that's another story. As is our Chapter's tradition, if you attended the November meeting, you can bring your spouse or one guest to our holiday dinner meeting for free to have some fun and express yourself!

New Flash! Here's the story! The ASHRAE 2008 Winter Meeting is in New York City January 19-23. The October ASHRAE Insights has all the details or you can learn more about it on-line. So far, I know of 6 members who are attending. If you are going, you are

automatically registered for the AHR Expo, held January 22-24 at the Javits Convention Center, also in NYC. The AHR Expo is the world's largest HVAC&R Industry Show for professionals to buy, sell, network and learn. If you are not going to the Winter Meeting but want to go to the EXPO, or if you want to take your significant other to the EXPO with you, then come to the Christmas meeting and pick up a VIP invitation to the AHR EXPO (according to the ticket, this is a \$20 value).

Now for my wish list:

First, do you know someone whom you should be the ASHRAE nominee for Tri-City Engineer of the Year? If so, please contact any of our officers or Board of Governors and share your suggestion. I am wishing for the Mid-Columbia Chapter nominee to win the award again this year. We are on a roll – we have three in a row!

Second, would you be interested in sponsoring an Engineering college student to go with you to the Engineer's Banquet in February? If so, please send me an email or call me and let me know. I am wishing we involved young engineers in Chapter activities – how about you?

Ho! Ho! Ho!

Lois Payne

ASHRAE Launches New Magazine Dedicated to High-Performing Buildings Continued from page 1

The cover story of the first issue focuses on Heifer International. By providing gifts of livestock and plants to financially disadvantaged families around the world, Heifer International teaches sustainability by showing recipients how to use those gifts wisely.

The importance of passing on the gift of sustainability is also highlighted in the organization's Arkansas headquarters, which features earth-friendly designs such as a constructed wetlands, a gray-water tower and energy-saving techniques.

"One thing that Heifer understands is that if we are going to have a lasting impact on world hunger, everything we do must be sustainable – that is, the means for production of food and income must renew the environment and not deplete it," Jo Luck, Heifer's CEO and president, said.

"In conceiving and constructing our new office building, we are striving to live up to the aspirations of Heifer's own mission of ending hunger and saving the earth."

To learn more or to subscribe, visit www.HPBmagazine.org. The quarterly magazine will be distributed via print and digitally.

ASHRAE, founded in 1894, is an international organization of some 50,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.



This Month's Event

Tuesday, December 11, 2007

Controlling Contaminants with Pressure Differentials

Speaker: Bert Phillips, P.E., MBA
RVC CTTC Region XI

Description:

ASHRAE members routinely use ventilation for contaminant control in buildings. As a rule, more ventilation means better air quality. However, there are circumstances where the brute force of a lot more ventilation does not do enough but a bit air and a bit of finesse does. Bert Phillips will present a few examples where finesse and pressure differentials provided simple ways of controlling contaminant movement between spaces. Examples include: reducing the risk of TB passing from the flop house area into social services offices in a homeless shelter; a building with offices, automotive repair bays and a beauty salon in which tenants did not smelling their neighbors, and; crawlspace ventilation. He will also present a simple and effective method to determine the airflow differential needed to achieve target pressure differentials in hospital rooms that are to be pressurized or depressurized to keep germs in or out. The concepts presented are simple and effective although not well understood.

About Bert Phillips:

Bert Phillips, P.E., MBA, UNIES Ltd. is a consulting engineer whose practice is split between conventional HVAC system design and less conventional pursuits such as contract research related to: movement of air, moisture and energy through buildings; building envelope problems; the interaction between mechanical system operation and building envelopes; and evaluation of the performance of new and emerging heating and ventilation technologies primarily targeted at the housing market. He has been active at Society level of ASHRAE since 1987 and has served on several technical and standards committees. He has served a number of functions in the Manitoba Chapter since 1990, including President in 1994/95 and as newsletter editor for about 15 years. He is currently serving the second of a three year term as ASHRAE Region XI Vice-Chair for Chapter Technology Transfer.

Location: O'Callahans—Riverfront Shilo Inn

50 Comstock

Richland, WA, 99332

When: 6:00 pm—Social

6:30 pm—Dinner: Program following dinner

Cost: \$30.00 Dinner and Program

RSVP: Jay Ashbaugh at (509) 735-1589 jpashbaugh@meierinc.com

Please RSVP by December 7, 2007 if you plan to attend.

Program Calendar (2007–2008)

September 11, 2007: *Low NOx Burners 101, Don Williams*

October 16, 2007: *Data Center Design, David Toralez*

November 13, 2007: *All-Climate Air-to-Air Heat Pumps, Greg Jordan*

December 11, 2007: *Controlling Contaminants with Pressure Differentials, Bert Phillips, ASHRAE DL*

January 15, 2008: *TBD, Terry Herron*

February 22, 2008: *Engineers Week Banquet*

March 9, 2008: *TBD, Kent Peterson, ASHRAE President*

April 16, 2008: *Characteristics and Competencies of Outstanding Leaders, Barry Benator, ASHRAE DL*

May 13, 2008: *TBD*

June ??, 2008: *Mid-Columbia ASHRAE Golf Tournament to benefit ASHRAE Research.*

Mid-Columbia ASHRAE Chapter

2007-2008 Officers/ BOG

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The Mid-Columbia Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers was chartered in 1981 in Richland, Washington. We are part of ASHRAE Region XI and represent ASHRAE members in Eastern Washington State.

Help Sponsor our Website with a Business Card Ad

How would you like to place your business card in front of more than seventy eastern Washington ASHRAE members? For a low \$10 an issue, we can place your business card with company logo in a prominent location in our newsletter.

Interested??? Contact
Mark Simon at (509) 377-8713
msimon@energy-northwest.com

Important Notice About Future Meeting Dates

The dates for the Winter and Annual Meetings in 2008 and 2009 are:

- 2008, Jan. 19–23 in New York, and June 21-25 in Salt Lake City, Utah.
- 2009, Jan. 24-28 in Chicago, and June 20-24 in Louisville, KY.

