



BUFFALO TALES

Newsletter of the Manitoba Chapter

The Manitoba Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers was chartered in September 1935. It is the second oldest ASHRAE Chapter in Canada. ASHRAE Manitoba is part of ASHRAE Region XI and covers ASHRAE members in Manitoba and Northwest Ontario.



November 13, 2008
Past Presidents Night
and
Research Promotion
Victoria Inn
1808 Wellington Avenue

Earl Rudolph
Calmac Manufacturing
Thermal Energy Storage
And LEED Gold

5:00 pm – Social Hour

6:00 pm – Dinner

7:00 pm – Presentation – Earl Rudolph on Thermal Energy Storage (TES) and LEED Gold

Mr. Rudolf will give an overview of ice storage, how it works, why it is green, and discuss the advantages of safety factor and redundancy. There will be specific references and examples of LEED certified projects using these systems.

Earl Rudolph is the Midwest Regional Sales Manager of CALMAC Manufacturing Corporation and has been in the HVAC business for over 28 years. He joined CALMAC in February 2002. Prior to that, he was the International General Sales Manager of Tecumseh Products Company from 1987 to 2001. From 1980-1986 he worked at Honeywell .



President's Message – Sergio Almeida, P. Eng.

Now that everyone is well rested from an extra hour of sleep from the annual “fall back” daylight savings hour, we move into November with more programs to serve our membership and the industry as a whole.

On November 5, thanks to Mr. Lance Marohn of PCL Constructors Canada, our members are getting a sneak peak at the much talked about Manitoba Hydro downtown office building. This new addition to Winnipeg's skyline boasts world class efficiency, and although the price tag might be more than many owners are willing to pay, the building serves as a great visual reminder that there are many ways, big and small, for all of us to build better buildings. Regardless of our role in the industry, there are ideas and concepts we can all learn from this unique statement building as we try to be a little better “greener” every day.



Continuing on a similar thread, our dinner presentation this month highlights another “green” technology that is gaining a lot of momentum in our industry. Mr. Earl Rudolph of Calmac Manufacturing will discuss Thermal Energy Storage – also known as Ice Storage – which has been used for many years throughout North America and the world. These types of systems have typically been seen as only applicable to large buildings or in markets with very high electrical costs, but in addition to the obvious LEED incentives, there is also a real payback potential for many projects, even in our “cheap Hydro” part of the world. Just one more option for all of us to consider and take with us.

Finally, November's dinner meeting is also Past President's night. We'll have on hand several of the fine men who have served our chapter for many years, so please take a moment to say hello, thank them for the work they've done for our chapter in the past, and if you're lucky you'll get to hear a great story that begins with “back in my day...”

Cheers,
Sergio

Coming Events

ASHRAE Manitoba Meeting Schedule

November 13, 2008 - Earl Rudolph, Calmac Manufacturing on Thermal Energy Storage

December 11, 2008 – ASHRAE Manitoba Annual Cribbage Tournament

January 15, 2009 - Ryan Geister – Trane Global Product Manager

February 12, 2009 – Refrigeration Night

March 12, 2009 – ASHRAE Distinguished Lecturer Will Stoecker

April 16, 2009 – ASHRAE Distinguished Lecturer Stan Mumma

More Coming Events

January 24 to 28 ASHRAE Winter Meeting and ARI Trade Show – Chicago. ASHRAE's Winter meetings and the ARI Trade Shows are always worth and HVAC professional's time to attend, and Chicago is a city with much to do. But if you are a true HVAC professional, what else would you want to do? Maybe take a course or two! Eleven three-hour courses and four six-hour courses are available for attendees at the 2009 Winter Conference and AHR Expo. For complete course and meeting registration, visit www.ashrae.org/chicago. Topics include Complying with Standard 62.1-2007; Exceeding Standard 90.1-2007; Testing, Adjusting, & Balancing and The Commissioning Process in New & Existing Buildings; two Humidity Control courses, i) Basic Principles and ii) Applications and Mold Avoidance; The Basics of a Proposed Standard on High Performance Green Buildings (Standard 189.1P); Introduction to Green Buildings & Sustainable Construction; Energy Management in New & Existing Buildings; Chilled Beam Technology; Low-Temperature Radiant Heating & High Temperature Radiant Cooling Systems; Residential Ventilation Systems (Standard 62.2); Healthcare Facilities: Best Practice HVAC Design Considerations & Criteria; Healthcare Facilities: Best Practice Applications of HVAC Systems; and Introduction to Thermal Energy Storage Systems for A/C.

April 15 and 16, 2009 BEMM Conference -

April 22, 2009 - ASHRAE Satellite Broadcast “Clean, Lean, and Green - IAQ for Sustainable Buildings”. More details to follow

May 6-9, 2009 – CRC (ASHRAE Chapters Regional Conference) in Spokane, Washington. Events schedule, registration and accommodation details will be presented as they become available.

Notes from the 2008 ASHRAE Winter Meeting in New York City - Bert Phillips

Transactions 9 – Ability of Ratings to Identify Better Performance : Do We Know What to Expect

Iain Walker talked about residential furnace rating systems. Electric energy use is not included in typical fuel fired furnace ratings, so has not been seriously addressed by furnace manufacturers. Furnace manufacturers do not offer efficient air handling alternatives (typically 15%). He estimates a move to good furnace fans could save \$2 billion per year in the US (ten days US oil consumption). Poor furnace fan performance is the result of poor packaging, big blowers in small boxes to fit through attic hatches, big tolerances to survive the drop from the truck.....

Jason Glazer spoke about building energy performance rating systems. He observed that rating systems work best if there is one commonly accepted system. Where there are multiple, competing rating systems, there is confusion and ratings get ignored. He found 88 rating protocols for buildings, 47 with a commercial focus, 31 with a residential focus.

He liked Energy Star which rates building energy performance from 0 to 100, because this allows owners to incrementally improve a building over time, you get recognition for each step taken. He found rating systems like BREEM and LEED have big steps which require big investments to move up a category,

He rated 29 buildings under different rating systems. Only 4 did not end up in the top half of at least one rating system, and only 4 ended up in the top half of all rating systems. As you might expect from this, there was lots of scatter between rating system protocol. “Certification earns legitimacy”

Seminar 56 – Backcasting- Impact of HVAC&R on IEQ and Civilization Growth

Indoor air quality problems are not new. The Bible (Leviticus 14.47) provides instruction on what to do about mould in the indoor environment.

Barney Burroughs reviewed more recent history of our attempts at contaminant control in indoor environments, beginning with the canary in the mines research done by Treadgold in 1896. Chemical warfare in WW I lead to developments and applications in air filtration for chemical removal. Particulate filtration was driven by IC engine development and the need to eliminate dirt to reduce wear in engines.

Forced air furnace filters were developed to prevent the burning of hair and lint on furnace heat exchangers because burning hair and lint stank and discoloured wall surfaces. Early filters were made from waste materials like wood shavings, cotton from the bedding industry. The first foam filters were made from the waste from the padded bra industry, directly linking the two key interests of young HVAC engineers.

WW II and the Manhattan project lead to development of HEPA filters and gas absorbers to deal with radioactive iodine. Health care demands drove the demand for better filters and UV sterilization systems. Moon travel and the fear of moon rocks drove development of clean room technology and demands related to the manufacture of computer chips lead to development of technologies for cleaner clean rooms, higher efficiency HEPAs and better chemical removal. Air leakage around a not so great filter seal can account for 30% of total flow in the duct system.

New Ventilation Design Requirements for Health Care Facilities

Just like the right dose of medicine can improve health, proper ventilation is an integral part of patients’ well-being in health care facilities. Requirements to ensure high-quality ventilation can be found in a new standard written by ASHRAE and the American Society for Healthcare Engineering (ASHE). ANSI/ASHRAE/ASHE Standard 170-2008, Ventilation of Health Care Facilities, defines ventilation system design requirements that provide environmental control for comfort, as well as infection and odor control.

The standard is the first ANSI standard to specifically address ventilation in health care facilities and is available for adoption by various authorities for health care facility construction such as city, state and federal governments and by private national organizations such as the Facilities Guidelines Institute and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO).

Without high-quality ventilation in health care facilities, patients, health care workers and

visitors can become infected by simply breathing. “Air-transmitted pathogens can be found everywhere in poorly ventilated health care facilities,” Richard Hermans, P.E., ASHRAE certified healthcare facility design professional (HFDP), chair of the committee that wrote the standard, said. “Because these organisms are found in higher concentrations in hospitals and because patients are susceptible to them, additional care should be taken in the design of ventilation systems.”

The standard addresses systems and equipment; space ventilation for a variety of areas in health care facilities, including airborne infection isolation rooms, critical care units, burn units, surgery rooms, and Class B and C operating rooms; and planning, construction and system startup. The cost of ASHRAE/ASHE Standard 170, Ventilation of Health Care Facilities, is \$54 (\$43, ASHRAE members).

To order, contact ASHRAE Customer Service at 1-800-527-4723, fax 404-321-5478, or visit at www.ashrae.org/bookstore.

The Call To Action

How many of the thousands of business communications sent compel responses? Too often, the reader arrives at the end of a document or e-mail with a sense of relief, rather than purpose. If your goal is to achieve a reaction from your reader, you must end your communications with a call to action. To motivate a response,

- State your ultimate goal at the end. If the reader has to reread to understand your request, the response will be, at best, delayed and probably less than satisfying.
- Keep control. If you are interested in talking or meeting, end by stating that you will call to set a date. Otherwise, you are at a disadvantage when you try to make the next contact.
- Reiterate your time frame. If possible, create a sense of urgency to increase the reader's motivation to act.

Ultimately, if you don't end with a call to action, you have not finished writing.

ASHRAE Manitoba Research Report – David Stones, Chapter RP Chair

A portion of the November 13 dinner meeting is allocated for Research Promotion. It will emphasize the importance of ASHRAE research activities and acknowledge the individuals and organizations that have made contributions. Our Regional Vice-Chair for Resource Promotion, Norm Grusnick, will attend and speak at the dinner on this subject.

ASHRAE initiated 30 new research projects and completed 14 projects during fiscal year 2007-2008. The average cost of the new projects is \$120,000. Ten technical papers reporting on ASHRAE Research were presented at Society meetings during the past year. A complete report can be seen in the on-line and printed versions of the ASHRAE Journal, starting on page 69.

Contributions submitted for ASHRAE Research Canada fund research in Canada. This

work is ongoing and we will be approaching Chapter members and organizations to continue supporting this work.

Each year Society awards Presidential Award of Excellence (PAOE) points to chapters that have full participation in contributions by the Board of Governors. Manitoba Chapter has achieved this for a number of years running.

In the 2007-2008 year, under Stirling Walkes, as Research and Promotion Chair, Manitoba Chapter raised \$16, 545, that is 165% of the amount raised in the previous year. Congratulations to Stirling and on behalf of the Board of Governors and Chapter members, I thank the following for their contributions in the last year:

Major Contributors

Trane Service Agency-Winnipeg	\$2500
Manitoba Hydro	\$2000
BEMM Inc	\$1000
BPL Sales Limited	\$1000
Tom Beggs Agencies Ltd	\$1000
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(Honor Roll *- at least \$100 personal or \$150 corporate)

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Robert Bisson	George Marchildon	David Stones
Russell Lavitt	Stirling Walkes	Daryl Friesen
Peter Gryc	Robert McDowall	Sergio Almeida
	Corey Nation	

Please contact me at dstones@shaw.ca or dstones@waa.ca to find out you can contribute.

ASHRAE Manitoba Chapter Officers

President	Sergio Almeida	The Trane Company	632-1543	salmeida@trane.com
President-Elect	Daryl Friesen	Midwest Engineering	989-3636	daryl@midwesteng.com
Vice-President	Jesse Sandhu	SMS Engineering	775-0291	jsandhu@smseng.com
Secretary	Stirling Walkes	SMS Engineering	775-0291	swalkes@smseng.com
Treasurer	Corey Nation	E.H. Price Ltd.	982-2222	coreyn@price-hvac.com
Governor	Dieter Bartel	Manitoba Hydro	477-7717	dbartel@hydro.mb.ca
Governor	Robert Bisson	Public School Finance Board	945-8452	rbisson@gov.mb.ca
Governor	George Marchildon	PSFB	945-0207	gmarchildo@gov.mb.ca
Committee Chairs				
Chapter History	Robert McDowall		284-6678	robertmcdowall@mts.net
CTT	Russell Lavitt	SMS Engineering	775-0291	rlavitt@smseng.com
Honours & Awards	Dieter Bartel	Manitoba Hydro	477-7717	dbartel@hydro.mb.ca
Membership	Jesse Sandhu	SMS Engineering	775-0291	jsandhu@smseng.com
Programs	Johann Baetsen	E.H. Price Ltd.	661-7829	johannb@price-hvac.com
Refrigeration				
Research & Promo	David Stones	Wardrop Engineering	272-1331	dstones@shaw.ca
Student Activities	Peter Gryc	SMS Engineering	775-0291	pgryc@smseng.com
Other				
Accommodations	Jesse Sandhu	SMS Engineering	775-0291	jsandhu@smseng.com
Homepage Editor	Devin Evenson	Manitoba Hydro	474-3971	devenson@hydro.mb.ca
Newsletter Editor	Bert Phillips	UNIES Ltd.	633-6363	phillips@unies.mb.ca
Roster	David Stones	Wardrop Engineering	272-1331	dstones@shaw.ca
Special Events	Tom Beggs	Tom Beggs Agencies	953-1900	tombeggs@mts.net

ASHRAE Region XI Officers

Director & Regional Chair	Traci Hanegan	Coffman Engineers, Spokane		hanegan@coffman.com
Assistant Regional Chair	Erich Binder	Colt Engineering, Calgary		Binder.Erich@colteng.com
Technology Transfer	Bert Phillips	UNIES Ltd.		phillips@unies.mb.ca
Membership Promotion	Russell Lavitt	SMS Engineering		rlavitt@smseng.com
Student Activities	Doug LeCren	Colt Engineering, Anchorage		dlecren@nana-colt.com
Resource Promotion	Norm Grusnick	ECCO, Vancouver		normang@shaw.ca
Nominating Committee	Dale Carter	Dec Design, New Westminster		Dale@decdesign.ca
Nominating Committee	Doug Dunford	Portland		Dwdunford@aol.com
Regional Historian	Ivan Hall	ESC Automation, Edmonton		ihall@escautomation.com
Treasurer	Rob Craddock	Inland Metal Manufacturing, Regina		rob@inlandmetal.ca
Web Page Editor	Joseph Korus	Coffman Engineers		korus@coffman.com
CRC Chair, 2009	David Reames			daver@lseng.com

ASHRAE, founded in 1894, is an international organization of 55,000 persons. Its sole objective is to advance through research, standards writing, publishing and continuing education the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve the evolving needs of the public.

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Visit ASHRAE at www.ashrae.org.



"Fundamentals of Refrigeration - IP" online course is now available through ASHRAE eLearning.

[Fundamentals of Refrigeration-IP](#) is a comprehensive introduction online course available as one full course or 6 short courses covering:

- Heat Transfer
 - Thermodynamic States
 - Psychrometrics
 - Multi-stage and cascade refrigeration cycles
 - Refrigeration systems
 - Refrigerants
- [Fundamentals of Refrigeration - IP](#) includes an online course reader, Online assessment and a Completion certificate for 9 PDHs or 0.9 CEUs. This course is ideal for:
- Recent engineering graduates working in the HVAC&R Industry
 - Experienced engineers who need an introduction to refrigeration
 - Architects, technicians, construction, or building management professionals who need to improve their knowledge of refrigeration systems

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