



# 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.*



## ASHRAE Dinner Meeting November 15, 2007

### “Global Warming – Differing Perspectives”

ASHRAE Distinguished Lecturer

Victor Goldschmidt, PhD

Victoria Inn

1808 Wellington Avenue

5:00 pm - Social Hour

6:00 pm - Dinner

7:00 pm – Guest Speaker’s Presentation

**Overview:** A different approach to the usual formal presentation on these topics is the consequence of attempting to analyze the available data to demonstrate the reality of anthropogenic global warming. Unfortunately the analysis led to the conclusion that the only reality is in the uncertainties of these areas. A review of the data and predictions from climate change models will first provide evidence as to the culpability of CO<sub>2</sub>. Following that, through careful analysis of the data, consideration of astronomical large scale effects, and the nature of computer modeling, the second perspective will raise serious doubts on the culpability of CO<sub>2</sub> as a greenhouse gas threatening the welfare or even survival of future generations. The closing message will be a challenge to always “think as engineers”.

**Lecturer:** Victor Goldschmidt is an Emeritus Purdue Professor of Mechanical Engineering with more than 35 years of lecturing experience, Fellow and Past Director-at-Large of ASHRAE, and honorary member of the IIR (International Institute of Refrigeration), ACAIRE (Colombia Association of Air Conditioning and Refrigeration), AAF (Argentine Association of Cold), and ASURVAC (Uruguay Association of Refrigeration, Ventilation, Air Conditioning and Heating). He has also served as chair of the ASHRAE Task Group on Climate Change, and while serving in that role and carefully reviewing the published literature he slowly changed his perspective on the culpability of refrigerants in ozone depletion and global warming. His industrial experience includes having been an Application Engineer, and a Development Engineer with Honeywell, as well as serving as team leader with numerous research contracts with the HVAC&R industry. He also led research teams through grants with the DOD, NSF, and other governmental bodies. With more than 200 publications, he served as mentor to both graduate and undergraduate students. His earlier research and teaching included studies in atmospheric flows, and turbulent transport processes. Currently he is a facilitator to leadership, problem solving and strategic planning sessions, and Trustee in the Leelanau Township Board in the Lower Northwest Michigan.

## President's Message – David Stones, P. Eng.



Hello again.

I am sure that those of you that attended our first technical session on October 11 found our move to The Victoria Inn worthwhile. The service and food were excellent as was the presentation on Manitoba Hydro's Commercial Building Optimization Program (CBOP). As you can tell from the topic and speaker for our November 15 meeting, Johann Baetsen is continuing to do a fine job on the program and is receiving lots of support from others on the Board of Governors.

ASHRAE continues to be a leader in advocating sustainable development, which can be seen by visit the Society website and reading the Journal to find out more. You may not agree with those concerned with climate change, but it is clear that developed countries cannot continue to use natural resources at the rates that nations like Canada do. In light of this, the Institute for Research in Construction announced this summer that it will commence again to provide support for updating Canada's Model National Energy Code.

We will have another guest with us at the upcoming dinner and presentation. Norm Grusnick, our ASHRAE Regional Vice-chair for Research Promotion, will be visiting our chapter for the November meeting. I look forward to meeting and speaking with him and with you on November 15.

If you have questions or suggestions about the chapter or wish to participate on the Executive, please call me. Contact information for me and all Chapter Executive are listed near the end of this newsletter.

David Stones

## Coming Events

### **The Economics of Going Green, November 15**

8:00 a.m. – 1:30 p.m. Winnipeg Convention Centre.

Host, the Winnipeg Chamber of Commerce, is striving to make it easier for businesses to go green. Reducing electrical consumption and water usage, cutting back on paper waste, etc. can save thousands of dollars over the course of a year, but there's much more that can be done. Hear about programs and incentives available to help businesses be socially responsible and at the same time save money. For details go to <http://www.winnipeg-chamber.com/>

**Eco Efficiency in Commercial Buildings - A Vision of Canada's Future Investment Opportunities, November 28 2007**, Winnipeg. Sustainable Development Technology Canada

(SDTC) is launching its latest SD Business Case™, a report developed with comprehensive stakeholder input to provide strategic insights into Eco Efficiency in Commercial Buildings. A copy of the document will be provided and findings reviewed and discussed. To find out more about SDTC, go to [www.sdtc.ca](http://www.sdtc.ca), where you can also find previously published SD Business Cases™ in the Knowledge Centre section.

**Residential Geexchange System Design Course, November 28-30, 2007** Viscount Gort Hotel Winnipeg. For design of geexchange systems servicing buildings of less than 15,000 square feet or three storeys. *Note: the Installers' Courses (being offered on November 21-23, 2007) is a pre-requisite to both the residential and the commercial designers' courses.* **Cost:** CAN\$ 695.00 + applicable taxes. Register online at [www.mgea.ca](http://www.mgea.ca) or contact Inez Miller at (204) 470-6647 or [inez@mgea.ca](mailto:inez@mgea.ca)

### **2007 – 2008 ASHRAE Manitoba Supper Meeting Dates**

**December 13** – our annual cribbage tournament; January 17; February 7; March 13; April 10; and our year end social evening, sometime in May or June.

**ASHRAE Winter Meeting, New York City, January 19-23, 2008** – four days of terrific technical sessions and forums including “Lessons Learned in Sustainable Design Highlighted in ASHRAE Roundtable” in which two of New York’s best-known owner/developer firms, along with the engineering designers who bring their projects to reality, discuss the challenges, opportunities and successes in delivering new green high-rise towers that add to New York City’s skyline and grace the covers of engineering trade magazines. High-Performance Buildings: Lessons from the Leaders takes place 11 a.m.-12:30 p.m. Tuesday, Jan. 22. Learn about owner motivations, technical challenges, design choices and trade-offs, costs for these projects, and perspectives about whether the expectations set early in the design process have been met once the buildings are occupied.

Attend the Joint Region X and XI Dinner on Monday the 21<sup>st</sup> of January at 7pm. The Le Rivage restaurant is less than a mile from the hotel. It has a cozy French country atmosphere offering traditional French cuisine and offers a four-course dinner including an appetizer, salad, entree and dessert with coffee for \$35.00 per plate plus tip and gratuity.

And don’t miss the **ARI trade show**, the greatest HVAC equipment and services exhibition in the world.

**Commercial Geexchange System Design Course, March, 2008** - For details, go to [www.mgea.ca](http://www.mgea.ca) or contact Inez Miller at (204) 470-6647 or [inez@mgea.ca](mailto:inez@mgea.ca)

**2008 CRC** will be May 7-10, 2008 at the Fantasyland Hotel in the West Edmonton Mall. Golf on May 7<sup>th</sup>; Technical Seminars on the morning of May 8<sup>th</sup>, in conjunction with our chapter’s bi-annual Tradeshow followed by an orientation session, the first Caucus and Welcome Party; May 9<sup>th</sup> is meetings, workshops, the President’s Luncheon and Dinner Banquet; May 10<sup>th</sup> is more meetings and workshops, the Awards Luncheon and a Wrap-Up Party. Companion tours include a guided shopping tour of some of Edmonton’s most unique and obscure shops, and tours of the local attractions. Registration and accommodation details will be presented as they become available.

## **Geothermal Training and Industry Accreditation**

Almost 700 geothermal heat pump systems were installed in 2006, and approximately 3,500 since 2000. The recent changes in Manitoba Hydro's Earth Power Loan program and inception of the \$3,500 grant through the federal ecoENERGY Retrofit Program have helped increase demand. The Canadian GeoExchange Coalition estimates the number of Canadian installations grew by almost 30-40% in the past year alone. For this reason, the Canadian GeoExchange Coalition (CGC) developed its Global Quality GeoExchange™ Program®, an industry-led voluntary program aimed at creating a unified and strong Canadian geothermal industry. Training modules developed by the CGC include: System Installers course; Residential Design course; Commercial Design course; Drillers course.

The Manitoba Geothermal Energy Alliance (MGEA) is the delivery agent for CGC training in Manitoba.

For more information or to register for Manitoba training sessions....  
MGEA's Training Contact: Inez Miller  
Website: [www.mgea.ca](http://www.mgea.ca)  
Phone: (204) 470-6447  
Email: [inez@mgea.ca](mailto:inez@mgea.ca)

Info on the Canadian GeoExchange Coalition (CGC)....  
Website: [www.geo-exchange.ca](http://www.geo-exchange.ca)  
Phone: (514) 807-7559 ext. 34  
Email: [info@geo-exchange.ca](mailto:info@geo-exchange.ca)

## **Manitoba Sustainable Building Community Calendar – a great idea!**

The Manitoba Building Network will provide a means of sharing information and resources among building-related organizations to further promote the building of healthy, energy-efficient, environmentally friendly buildings and sustainable communities in Manitoba through the Manitoba Sustainable Building Community Calendar, a web based calendar directed to members of all participating organizations with information about events presented by their respective organizations and all participating organizations.

Upon launch, the Manitoba Sustainable Building Community Calendar will provide each participating organization with a username and password for updating and maintaining their scheduled events. This service will be offered free-of-charge to fulfill part of their mission to build networks in Manitoba's sustainable building industry and foster collaboration amongst our many disciplines. Development of suitable format to display and manage the event information and a dedicated website is underway and a preliminary version is expected soon.

Until such time, you are invited to submit events you are planning for distribution to the Manitoba Building Network e-mail list of over 500 participants, thus increasing exposure of your events and growing the interest and knowledge of Sustainable Buildings in Manitoba. Contact Andrew Dixon, P.Eng., LEED® AP, Director, Sustainable Building Network, Manitoba Chapter, Canada Green Building Council  
[adixon@adwilliams.com](mailto:adixon@adwilliams.com)

## **The Accelerated Phase-Out Schedule of the Montreal Protocol**

From Edition 28 of McQuay's newsletter, Engineering System Solutions [www.mcquay.com](http://www.mcquay.com)

September 2007, the 191 Parties to the Montreal Protocol agreed on an amendment to accelerate the phase-out of ozone depleting substances (ODSs), including hydrochlorofluorocarbons (HCFCs) used in the HVAC industry. This amendment demonstrates the continued consensus and increased vigilance of the Parties in eliminating ODSs, without exception, to restore the ozone layer. Because ODSs are also potent greenhouse gases, the amendment offers a twin benefit that will result in savings of several billion tons of equivalent CO<sub>2</sub> greenhouse gas emissions.

The previous phase-out schedule had already begun to reduce production and consumption of HCFC refrigerants in developed countries, so few changes were made. However, the amendment adopted in September represents a significant acceleration in reductions for developing countries. It also foreshadows further reductions by requiring scheduled reviews in 2015 (developed countries) and 2025 (developing countries). These reviews will be used to determine if the production of service quantities will be required beyond the phase-out of HCFCs in new equipment. This raises the possibility that HCFC-123 production could cease in 2020 in developed countries, and that HCFC production could cease in 2030 for developing countries – ten years ahead of the current phase-out schedule.

**Revised phase-out schedule** - For developed countries, HCFC consumption and production was already frozen at 1996 levels and the first stepped reduction to 65% of this level occurred in 2004. The first change in the phase-out schedule occurs in 2010 when consumption will be limited to 25% of 1996 levels versus 35%. This coincides with the phase-out of HCFC-22 in new equipment in 2010.

The second change occurs in 2015 when the Parties have agreed to a scheduled review of the need for further production and/or export of all HCFC refrigerants after 2020 for servicing. Beginning in 2020, all HCFC refrigerants will be phased out for new equipment in developed countries.

For developing countries the changes are significantly greater. Under the previous phase-out schedule, consumption and production of HCFC refrigerants would be frozen in 2016, and no stepped reductions would occur until their complete phase-out in 2040. The new phase-out schedule calls for consumption and production to be frozen at 2013 levels, with stepped reductions in 2015 (10%), 2020 (35%), 2025 (67.5%) and 2030 (97.5% – leaving 2.5% for servicing between 2030 and 2040).

Here, too, the Parties have agreed to a scheduled review in 2025 of the need for further production and/or export of all HCFC refrigerants for servicing. Beginning in 2030, all HCFC refrigerants will be phased out for new equipment in developing countries.

**Potential outcomes of scheduled reviews** The scheduled reviews called for in the amended phase-out schedule will be used to determine if production of service quantities will be required beyond the phase-out of HCFCs in new equipment in 2020 (developed countries) and 2030 (developing countries). There are two potential outcomes of these reviews: 1) No change is made and current phase-out schedules will stand. 2) Production of the service tail is eliminated. In this

case, all HCFCs will be phased out completely in 2020 in developed countries and 2030 in developing countries – ten years ahead of the current phase-out schedule. Thereafter, all HCFC refrigerant required for service will have to be obtained from reclaimed stock.

**Why the accelerated phase-out?** Several factors contributed to the unanimous decision to accelerate the phase-out of HCFC refrigerants. On February 22, 2007, the United Nations Environmental Program (UNEP) released a Synthesis Report of the 2006 assessments of the Montreal Protocol by the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel. According to the report, updated estimates from the 2006 assessment of the Montreal Protocol showed that, with continued compliance to the pre-amendment phase-out schedule, Antarctic ozone would return to pre-1980 levels (a commonly used benchmark for ozone recovery) in 2060-2075. This represents a 10-25 year delay versus the estimate from the 2002 assessment.

The growth in the use of HCFC refrigerants – particularly in developing countries which account for 146 of the 191 Parties to the Montreal Protocol – threatened further delays in ozone recovery. Experts estimate the use of HCFC refrigerants may have doubled by 2015 under the previous phase-out schedule.

Finally, mounting evidence has demonstrated that because ODSs are also potent greenhouse gases, their phase-out benefits both ozone recovery and global warming/climate change. On March 20, 2007, the

National Academy of Sciences (NAS) released a report titled *The Importance of the Montreal Protocol in Protecting Climate.2*. Authored by representatives from the Netherlands Environmental Assessment Agency, the U.S. Environmental Protection Agency (EPA), the U.S. National Oceanic and

Atmospheric Administration and Dupont Fluoroproducts, the report quantifies the impact of the phase-out of ODSs on global warming/climate change. According to the report, “The climate protection already achieved by the Montreal Protocol alone is far larger than the reduction target of the first commitment period of the Kyoto Protocol.”

Accelerating the phase-out of HCFCs was among the options recommended in the UNEP Synthesis Report as having the largest potential to bring about a return to pre-1980 ozone levels sooner. The report further notes that technically and economically feasible substitutes are available for almost all ODS applications, including those using HCFCs.

**HCFCs phased out - no exceptions for HVAC applications** - Faced with the potential for further delays in ozone recovery and the possibility of achieving further climate change benefits, six proposals were put forth at the September 2007 Meeting of the Parties in Montreal. Included among these proposals were requests for critical use exemptions and exceptions for HCFC-123 used in the HVAC industry. The final amendment is a combination of these various proposals and represents a commitment to reduce the use of HCFC refrigerants and accelerate their phase out. No critical use exemptions or exceptions for HCFC-123 are included in the final amendment.

**Conclusion** - The unanimous decision by the 191 Parties to the Montreal Protocol to accelerate the phase-out of HCFC refrigerants sends a strong message that ozone recovery and climate change are recognized globally as environmental concerns that require immediate action. It also recognizes that technically equivalent and economically feasible alternatives are available for all HVAC equipment using HCFC refrigerants.

While the majority of the changes were designed to significantly accelerate reductions of HCFC use in developing countries, the new phase-out schedule foreshadows further reductions by requiring scheduled reviews of the need for service quantities in 2015 (developed countries) and 2025 (developing countries). If production of service quantities ceases as a result of these scheduled reviews, all HCFC refrigerant required for service will have to be obtained from reclaimed stock.

## **Manitoba's Green Future Conference: A Dialogue on Climate Change Action and Greening Our Economy** - Dieter Bartel, Chapter Governor

The following notes are a summary of some of the presentations and discussions at this one day conference/workshop held in Winnipeg on October 23, 2007.

### “Western Leaders’ Panel on Climate Change”

- Gary Doer, Premier of Manitoba, spoke about progress since 2001, when the “Western Leaders’ Panel on Climate Change” was struck in the province and lead by Lloyd Axworthy. And the need to continue efforts such as the Green Building Policy.
- Gordon Campbell, Premier of British Columbia, spoke about the changing attitudes of engineers and developers. In Vancouver, downtown residential developments provide people opportunities to live closer to their work. He mentioned damage by the Western Pine Beetle and the risk of them moving eastward across the prairies... *the brain-drain goes west, the pine beetle moves east.*
- Dr. Steve Howard, CEO of the Climate Group highlighted examples of “shifting” thinking in the retail/transportation world in order to reduce waste etc. In particular he spoke of Walmart and General Mills getting together and flattening out the noodles in Hamburger Helper, which reduced the size of their packaging by 30%, which allowed them to increase the product in shipping containers by 30%, allowed Walmart to stock 30% more product on the same shelf space, decreased the amount of packaged waste by 30%, and so on, and so on.... *Walmart- changing the world one noodle at a time*

Five concurrent workshop streams discussed Climate Action and Greening the Manitoba Economy,

Future Challenges and Opportunities and Steps to Manitoba's Green Economic Future with respect to Agriculture, Business, Northern and First Nations Communities, Municipalities and Transportation. Being involved in the commercial building sector, I chose to participate in the “Business” workshop and recorded the following notes:

- Walmart (and many other major world wide companies) has signed on with the Carbon Disclosure Project. This is where vendors are held accountable for their carbon “foot print”, so to speak.

- Future carbon trading opportunities for both local and global trading were a topic of discussion
- Much of the discussion about the critical issue of getting business to move toward a green economy focused on building energy efficiency and other soft benefits
- Benchmarks for industry and measuring site energy were seen as important
- Many business customers do not know where to go or who to talk to in order to start looking at their GHG emissions or energy consumption
- Utility incentives and energy efficiency legislation were both thought to be important elements in the effort to reduce GHG's in Manitoba. Other important elements were communication and education for corporate leaders to get buy-in from the top down. Success stories should be promoted
- Building labeling, such as DOE's Energy Star in the U.S. would provide an indicator of energy efficiency on a building type/sector basis
- Energy codes, service providers and regulatory authorities can play a significant and positive role in new construction
- The LEED approach which allows businesses to select the EE measures that best fit their new or existing buildings, in order to get credits or incentives from government was favourably reviewed.
- There appeared to be a consensus among the approximately 70 business representatives (bankers, environmental engineers, builders, construction material vendors, provincial employees) that energy rates in Manitoba, especially electric rates were too low and that charging fair market electricity rates to customers would encourage businesses to proactively seek ways of reducing their energy consumption/demand and consequently their carbon footprint.

### Looking Back – Robert McDowall, P.Eng., Chapter Historian



This photo from ASHRAE Manitoba's Chapter History treasure trove shows Ivan Hall of the Northern Alberta Chapter of ASHRAE receiving a Gold Ribbon Award for History from Regional Historian Neil Childs, about ten years ago. Last month, Ivan visited ASHRAE Manitoba in his role as Regional Historian.

Neil, a long time ASHRAE supporter, served the ASHRAE in many positions including Manitoba Chapter President in 1986 – 87.

## Research Promotion – Stirling Walkes, Chapter RP Chair

In 2006-2007 Peter Gryc led a Research Promotion effort that raised \$12,883, 63% more than the Manitoba goal, thanks to the following contributors:

### Major Contributors

<b>Manitoba Hydro</b>	<b>\$2000</b>
<b>Tom Beggs Agencies</b>	<b>\$1000</b>
<b>BEMM</b>	<b>\$1000</b>
<b>Midwest Engineering Ltd.</b>	<b>\$1000</b>
<b>Price – Winnipeg Sales Office</b>	<b>\$1000</b>
<b>Trane Service Agency</b>	<b>\$1000</b>
<b>BPL Sales Limited</b>	<b>\$1000</b>
<b>E.H. Price Limited</b>	<b>\$1000</b>
<b>Hydron-Aire</b>	<b>\$500</b>
<b>Nova 3 Engineering</b>	<b>\$500</b>
<b>Airdronics</b>	<b>\$250</b>

### Honour Roll and Other Contributors

(Honor Roll \*- at least \$100 personal or \$150 corporate)

M2 Engineering*	Dieter Bartel*	Bert Phillips*
Robert Bisson*	Peter Gryc*	David Stones*
Sergio Almeida*	George Marchildon*	Stirling Walkes*
Russell Lavitt*	Corey Nation*	Bornhorst Mechanical*
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Please help us meet our 2007 – 2008 target of \$10,000. **Two easy ways you can earn Honor Roll Recognition.....**

- Set aside 30¢ a day for ASHRAE Research  
or
- Donate \$10/month from September through June, the primary months of the RP Campaign

Honor Roll donors have their names published in the ASHRAE Journal and during the Chapter's Recognition Night. Better than that, they know they are supporting the research that supports them.

An authorization form for this monthly or bi-monthly charge may be found through your Chapter RP Chair (Stirling Walkes, [swalkes@smseng.com](mailto:swalkes@smseng.com)) or by contacting ASHRAE RP staff at Headquarters in Atlanta. Please ask for Candace DeV Vaughn or Patricia Adelman, 404/636-8400.

**Did you know** ASHRAE Research not only supports ASHRAE standards, but other important standards for the built environment that are written by other organizations. Earlier this year, submissions were made to the NFPA Smoke Management Committee to make changes to NFPA 92B, Standard for Smoke Management Systems in Malls, Atria and Large Spaces based on the results obtained in RP-1247. NFPA 92B is the standard used throughout North America for the design of atria smoke management systems.

## ASHRAE Manitoba Chapter Officers

President	David Stones	Wardrop Engineering	272-1331	<a href="mailto:dstones@shaw.ca">dstones@shaw.ca</a>
President-Elect	Sergio Almeida	The Trane Company	632-1543	<a href="mailto:salmeida@trane.com">salmeida@trane.com</a>
Vice-President				
Secretary	Daryl Friesen	Midwest Engineering	989-3636	<a href="mailto:daryl@midwesteng.com">daryl@midwesteng.com</a>
Governor	Dieter Bartel	Manitoba Hydro	477-7717	<a href="mailto:dbartel@hydro.mb.ca">dbartel@hydro.mb.ca</a>
Governor	Derek Bishop	Siemens Building Technologies	774.3411	<a href="mailto:derek.bishop@sbt.siemens.com">derek.bishop@sbt.siemens.com</a>
Governor	Robert Bisson	Public School Finance Board	945-8452	<a href="mailto:rbisson@gov.mb.ca">rbisson@gov.mb.ca</a>
Governor	Corey Nation	E.H. Price Ltd.	982-2222	<a href="mailto:CNation@price-hvac.com">CNation@price-hvac.com</a>

### Committee Chairs

Treasurer	George Marchildon	PSFB	945-0207	<a href="mailto:gmarchildo@gov.mb.ca">gmarchildo@gov.mb.ca</a>
Programs	Johann Baetsen	E.H. Price Ltd.	661-7829	<a href="mailto:johannb@price-hvac.com">johannb@price-hvac.com</a>
Membership	Jesse Sandhu	SMS Engineering	775-0291	<a href="mailto:jsandhu@smseng.com">jsandhu@smseng.com</a>
Student Activities	Peter Gryc	SMS Engineering	775-0291	<a href="mailto:pgryc@smseng.com">pgryc@smseng.com</a>
Chapter History	Robert McDowall	Engineering Change	284-6678	<a href="mailto:mcdowall@engineeringchange.com">mcdowall@engineeringchange.com</a>
CTT	Russell Lavitt	SMS Engineering	775-0291	<a href="mailto:rlavitt@smseng.com">rlavitt@smseng.com</a>
Research & Promo	Stirling Walkes	SMS Engineering	775-0291	<a href="mailto:swalkes@smseng.com">swalkes@smseng.com</a>
Honours & Awards	Dieter Bartel	Manitoba Hydro	477-7717	<a href="mailto:dbartel@hydro.mb.ca">dbartel@hydro.mb.ca</a>
Refrigeration	Asitha Gajaweera	Smith Carter	477-1260	<a href="mailto:asithagajaweera@hotmail.com">asithagajaweera@hotmail.com</a>

### Other

Roster	Craig Perrett	Manitoba Hydro	474-4516	<a href="mailto:cperrett@hydro.mb.ca">cperrett@hydro.mb.ca</a>
Homepage Editor	Trent Lalonde	SMS Engineering	775-0291	<a href="mailto:tlalonde@smseng.com">tlalonde@smseng.com</a>
Accommodations	David McNeil	Emco Ltd.	925-9630	<a href="mailto:DMcNeil@emcoltd.com">DMcNeil@emcoltd.com</a>
Special Events	Tom Beggs	Tom Beggs Agencies		
Newsletter Editor	Bert Phillips	UNIES Ltd.	633-6363	<a href="mailto:phillips@unies.mb.ca">phillips@unies.mb.ca</a>

## ASHRAE REGION XI OFFICERS

Director & Regional Chair	Traci Hanegan	Coffman Engineers, Spokane	<a href="mailto:hanegan@coffman.com">hanegan@coffman.com</a>
Assistant Regional Chair	Bill Dean	NRC, Saskatoon	<a href="mailto:Bill.Dean@nrc.ca">Bill.Dean@nrc.ca</a>
Technology Transfer	Bert Phillips	UNIES Ltd.	<a href="mailto:phillips@unies.mb.ca">phillips@unies.mb.ca</a>
Membership Promotion	Russell Lavitt	SMS Engineering	<a href="mailto:rlavitt@smseng.com">rlavitt@smseng.com</a>
Student Activities	Bruce Dobbs	NW Natural Gas, Portland	<a href="mailto:bruce.dobbs@nwnatural.com">bruce.dobbs@nwnatural.com</a>
Resource Promotion	Norm Grusnick	ECCO	<a href="mailto:normang@shaw.ca">normang@shaw.ca</a>
Nominating Committee	Dale Carter	Dec Design, New Westminster	<a href="mailto:Dale@decdesign.ca">Dale@decdesign.ca</a>
Nominating Committee	Doug Dunford	Portland	<a href="mailto:Dwdunford@aol.com">Dwdunford@aol.com</a>
Regional Historian	Ivan Hall	ESC Automation, Edmonton	<a href="mailto:ihall@escautomation.com">ihall@escautomation.com</a>
Treasurer	Rob Craddock	Inland Metal Manufacturing, Regina	<a href="mailto:rob@inlandmetal.ca">rob@inlandmetal.ca</a>
Web Page Editor	Joseph Korus	Coffman Engineers	<a href="mailto:korus@coffman.com">korus@coffman.com</a>
CRC Chair, 2008	Shanon Warner	Cohos-Evamy, Edmonton	<a href="mailto:WarnerS@cohos-evamy.com">WarnerS@cohos-evamy.com</a>

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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