DIUNEE

3-2014 February



Ottawa Valley Chapter

DATE: Tuesday February 18, 2014

(Social: 17:30, Dinner: 18:30, Program: 20:00)

Algonquin College Restaurant International LOCATION:

1385 Woodroffe Ave, Building H, Room H100

THEME:

PROGRAM: Commissioning Tips, Tricks and Techniques

SPEAKER: David Underwood, Underwood & Associates, Oakville, ON (ASHRAE DL) David Underwood has served ASHRAE for many years at the chapter, region and society level. He was the founder of Isotherm Engineering Ltd. and Evaporative Tower Services Inc in Ontario, Canada. He received his engineering degree from the University of Manitoba in 1964.

Mr. Underwood is a Fellow in ASHRAE. He has received the Distinguished and Outstanding service awards and the William J. Collins award. He has just concluded two years as an ASHRAE Vice President.

In his role on the Ontario Provincial Advisory Committee for the certified refrigeration trade, he developed the trade examination and courses for refrigeration apprentices and coauthored a safety manual for refrigeration mechanics. For many years Mr. Underwood was an active participant on the B-52 Mechanical Refrigerant Code committee for Canada. He also actively participated in developing the Refrigerant Management regulation for Ontario. Currently he serves on the Model National Building Code Committee.

Mr. Underwood has extensive experience in training operators and technicians through his role in Commissioning systems as a primary function of our design/build firm.

As a long time practitioner, the speaker will discuss some of the tips, tricks and techniques to successfully commission any project. In the tips portion, the discussion will focus on such items as starting early with the development of Owners Project Requirements (OPR) or alternatively how to handle projects that lack OPR (more typical). For example, adding value no matter what stage of the construction you enter the commissioning process. Tricks will look at how to engage all participants in the project and ideas about how to proceed cooperatively. Techniques will review methods for pricing, performance verification and operator training.

ASHRAE CAREER FAIR REGISTRATION LINK: https://ashraeottawa.simplesignup.ca/318

February Meeting Menu

Menu - To be Announced

Restaurant International is happy to accommodate ANY dietary needs with one week's notice. Please get in touch with Sandy Taylor. sandy@ashrae.ottawa.on.ca
If you are a vegetarian, ask the server for a list of options

> Chapter Members: \$40.00 Guests: \$60.00 Student Members: \$30.00 Life or Fellow: \$40.00 Space is limited so please register online at:

https://ashraeottawa.simplesignup.ca/en/294/index.php?m=eventSummary

Registration will close 1 week prior to the event, on Tuesday February 11th. Pre-registration is required as the venue requires confirmed numbers that the chapter must commit to pay for at this time.

http:/www.ashrae.ottawa.on.ca

President's Message

My dad was always a hoot to be around. I can remember being up a ladder in the early 90's at his property east of Ottawa; we were manoeuvring roof trusses into place on his house extension, and I suddenly asked him what he thought about certain frolicking activities that I cannot mention here. His answer, as always in these situations, was "Everything in Moderation". Come to think of it my long-passed grandmother used to say something similar: "Everything is fine as long as it doesn't scare the horses" or something along those lines. Our January meeting was a fine affair and I was tasked with the role of Moderator. In this case I don't think my father was quite right because everything was not in moderation, our wonderful quest panelists were the real stars. They performed admirably and I was impressed with their views, intelligently conveyed, to an enthusiastic audience.

That audience numbered about 75 and in the end we actually had to turn people away such was the popularity of the event. Our own **Sandy Taylor** and **Adam Graham** did a great job of making the non-standard arrangements and I commend both of them.

Just prior to January's meeting I attended the **ASHRAE** Winter Meeting in New York City, representing us on the Electronic Communications Committee. This was my first experience of one of these sessions and I was impressed with the enthusiasm shown by my counterparts, covering web-standards, social media, The **ASHRAE** Exchange, and related topics. I would encourage anyone interested in these fields to get involved - there are many committees to choose from and talent is wasted if it sits idly by.

February's program topic is "Commissioning Tips Tricks & Techniques"



CRC Delegate
Roderic Potter
2013-2014 OVC President
Rodders CAS

President &

E-mail: rod@rodders.com

with presenter **David Underwood**. This guy is almost a legend in **ASHRAE** circles and universally respected as a guru in his field, and just a plain all-round good guy, not to mention that he is currently Society Treasurer. At Society Meetings and CRC's he tries hard to visit every Committee and he is always welcomed with a smile. I believe it will actually be his birthday on February 18th so be ready to make a fuss of him. I will be in California for that week and President-Elect Steve Moons will be a fine master of ceremonies. Try to make it to the meeting, it will be most entertaining I am sure.







Research Promotion

Hi Everyone!

Winter in Ottawa this year has been snowy and cold, but the Research Promotion Team has been working hard to keep moving steadily towards our goal for this year. To make that goal (\$26,000), we will need your help. We really can make that goal if you donate. Please consider a donation to Research Promotion as an investment in the future of our profession.

Please contact any member of the RP team (Steve Moons; Christine Kemp; Cathy Godin; Mike Swayne; and myself) to make a donation to this year's campaign. You can also make a donation through the

OVC or Society websites.

At the January Chapter meeting, our monthly raffle for Senators tickets was held. Thanks to RP team members who sold the tickets on that night, to the ticket donors, and to the many participants in the raffle who bought tickets. The January raffle raised \$280.00 for research promotion. We are seeking donations of tickets or other items for the upcoming Chapter meetings in April and May. Please contact myself or **Steve Moons** if you have an excellent item to donate.

As of mid-January, 2014, twenty one (21) Ottawa Valley Chapter



Past President
Donald Weekes
2013-2014 Chapter
Research Promotion Chair
InAIR Environmental Ltd.

E-mail: don.weekes@inairenvironmental.ca
members have donated over
\$4,200.00 for this year's RP campaign. Thanks to all of the donors!
We are looking for additional donors
to make our goal, so please be
generous!

If you have any ideas for fundraising this year for **ASHRAE** RP, please let any of the RP team members know about your idea. We will love to hear your ideas.

ASHRAE OVC link: https://ashraeottawa.simplesignup.ca/en/171/index.php?m=eventsList

ASHRAE Society link: https://xp20.ashrae.org/secure/researchpromotion/rp.html

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What You Missed January Meeting

The January meeting took place at Algonquin College Restaurant International. The meeting was called to order by President **Rod Potter** at 6:35pm and attendees were seated for dinner.

The business session commenced with President Rod Potter introducing the Board of Governors and Executive followed by Abbey Saunders introducing the evening's guests and Adam Moons introducing the new members.

Adrianne Mitani quickly introduced the upcoming Career Fair which is scheduled prior to social hour at the March program meeting. Adrianne requested that anyone interested in a booth please contact her at their earliest convenience.

Sylvain Boyer introduced the evening table top featuring Futech.

During social hour the research committee raffled off Sens tickets, donated by SK Sheet Metal. The raffle raised \$280 for **ASHRAE** Research, and **Brad McAninch** was the lucky ticket winner.

Following the business session, attendees enjoyed a multi-course à la carte menu which featured an assortment of delicious dishes that were well received by attendees.

Following dinner, the main program event took place. The panel discussion was mediated by President **Rod Potter** with a panel of speakers assembled of representatives from various local players in the industry to discuss different construction tendering processes.

Representatives were introduced as follows: **Brad McAninch** of Modern Niagara – Mechanical Contractor; **Mark Fazio** of Ellis Don – General Contactor; **Frank Jefferies** from

National Research Council Canada – Owner; **Ross McIntyre** of Goodkey Weedmark & Associated Ltd. – Consultant; and **David Bull** of Cuhaci & Associates – Architect.

Design-Bid-Build was the first tendering process discussed. Also known as design-tender, traditional method or hard bid, Design-Bid-Build is a project delivery method in which the agency or owner contracts with separate entities for both the design and construction of a project. Mr. McIntyre opened the discussion that from the consultant's point of view this is the most favorable construction tendering process. However, in order to provide owner's with desired outcomes definition of scope and trust of consultants is key. Panelists agreed in general this method allows owners to seek competitive bids for lump sum project costs. However, one major disadvantage to this method is that if a design is poor, modifications during construction period are costly and may lead to litigation or arbitration being required to resolve issues. In addition, often times budgetary constraints and inadequate time to properly identify functional requirements more often than not have a negative impact. Panelists agree a good design and well defined project requirements from the Owner are key in ensuring the desired project outcome.

Construction Management (CM) was discussed next. In a CM arrangement, the client selects a head contractor who manages the entire project on their behalf. The CM contractor coordinates all design, procurement and construction works to ensure the entire project is completed as required, and on time. The CM contractor may or may not undertake actual site work. Mark



Secretary
Abbey Saunders
2013-2014 OVC Secretary
NRC-CNRC

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Fazio commenced discussions identifying at a high level the main advantage of the CM method is it allows a project team to capitalize on constructor's (builder's) and designer's knowledge through an advanced collaborative approach and if executed properly this method typically allows for identification and remedial action to rectify any design flaws in the most cost effective manner. The main disadvantage to CM method is that is leaves the owner with significant financial risk. Other challenges sometimes associated with the CM method include sometimes Owners are presented with too many cost effective options and have difficulty making timely decisions and sometimes general contractors try to act as construction managers when in fact they do not have either the appropriate skill set or ability to foster strong relationships between trades. For this construction tendering method to be highly successful everyone needs to be on the same team, and working together. In order to maximize the benefits associated with this type of tendering process, all team members must be brought onboard early in the process so everyone has the ability to provide added value. Panelist were in general consensus that if Owners are not comfortable with the financial risks associated with this type of construction tendering method they should not consider it, as the effectiveness of this process can fall apart quickly if the Owner isn't comfortable.

Design-Build, the construction tendering process which relies on a single point of responsibility to minimize risk for the Owner and re-





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Account Executive

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duce the delivery schedule by overlapping the design and construction phase of a project was discussed next. Brad McAninch outlined the main advantage of the Design-Bid method is the sole source of responsibility. This method provides owners with budget certainty, however for this method to be successful in meeting and/or exceeding owner requirements no barriers can exist between the design and construction team. As such, the major challenge to this type of construction tendering process is breakdown between consultant and construction team cooperation. If the construction team does not have a good working rapport with the consultant team often times this can create issues. Panelists were in agreement that selection of a contractor and consultant team with a proven record of success in working together, as opposed to selecting team members individually, is critical for maximizing the benefits associated with this construction tendering method.

Next, the Public-Private Partnership was discussed. A Public-Private Partnership is a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies. These schemes are often referred to as PPP, P3 or P3s. P3s involve a contract between a public sector authority and a private party, in which

the private party provides a public service or project and assumes substantial financial, technical and operational risk in said project. David Bull opened up the discussion reviewing at a high level a P3 project is similar to the Design-Bid-Build with the addition of a performance based approach. In additional to capital costs of project construction the life cycle costs, maintenance and operational costs are considered. Typical projects that lend themselves to successful implementation of the P3 method are large complex projects with clear functional requirement definitions such as hospital, transportation infrastructure, etc. A disadvantage of the P3 method is that due to the complexity and costs associated with this type of projects competition is often limited. Panelist agreed, that each of the construction tendering methods discussed are slightly more complicated than the previous method, however P3 is significantly more difficult. In addition, the pressures associated with delivery of a P3 project far exceed those of the other tendering methods so selection of the correct project team is critical for success.

Lastly Mr. Jefferies indicated that from an Owner's perspective several factors should be considered when evaluating which construction tender method is the preferred approach for each individual project. Some of

these factors include: functional project requirement definition, timing, financial or budgetary constraints, level of risk comfort, internal knowledge and capabilities. Since each construction tender method has merit for various situations, there is no one single preferred tender method for owners. Evaluation on a project specific basis is the best way to ensure owners are satisfied with outcomes, and panelist agreed.

To summarize the evening panelist all agreed that regardless of the construction tendering method selected for project implementation, assembling the right project team is critical for successful project completion. In addition, to ensure satisfaction with project outcomes clear identification of project functional requirements and responsibilities to ensure risks are allocated to the correct proponent is important. Basically, if parties involved are not comfortable with their associated risks and responsibilities for the proposed construction tender method it isn't the correct option for the proj-

Following the presentation, President **Rod Potter** thanked the panel members for their participation, and the meeting was adjourned at approximately *9:30pm*.



News Update

REFRIGERATION COMMISSION-ING GUIDE SEEKS TO ENSURE SYSTEMS WORK RIGHT; FREE **DOWNLOAD AVAILABLE**

ATLANTA – Sixty percent of energy use in supermarkets is attributed to refrigeration, and studies have shown commissioning could result in 7 to 25 percent energy savings. A new guide from **ASHRAE** outlines a commissioning process that would result in substantial savings. "Refrigeration Commissioning Guide for Commercial and Industrial Systems" provides user-friendly, how-to guidance for commissioning of custom-engineered refrigeration systems in commercial and industrial facilities. The book was funded in part by the U.S. Department of Energy through the National Renewable Energy Laboratory The book is available for free download at

www.ashrae.org/freeRefCxGuidance.

"Custom refrigeration systems are complex and individually designed for each facility," Richard Royal, who served as chair of the committee that wrote the guide, said. "Deficiencies in the system design found at start-up are not easily resolved and, as a result, maintenance managers or operators deal with unnecessary shortcomings and expenses over the life of a facility. The value of commissioning is to establish a consistent stepwise process that helps 'get it right the first time,' resulting in refrigeration systems that 'work right' and minimize maintenance and energy costs."

The U.S. Environmental Protection Agency (EPA) estimates that supermarkets typically use approximately 3,000,000 kWh of electricity per year, with 60 percent of that energy use attributed to refrigeration (EPA 2007). Portland Energy Conservation, Inc. (PECI) predicts that com-

missioning in existing grocery stores would result in 7 percent to 25 percent energy savings per year (PECI 2010). Based on these estimates, this commissioning guide, if widely adopted, would lead to substantial energy sav-

"Thousands of refrigeration systems are installed every year in facilities ranging from convenience stores to large, sophisticated frozen food distribution centers," Royal said. "Properly commissioned systems reduce energy cost, are easier to maintain, help minimize liabilities from refrigeration leaks and reduce loss of product to system failures or unreliable performance."

Royal noted that commissioning of refrigeration systems is uncommon in the industry. One reason is a belief that commissioning results in added cost and time without sufficient or measureable value. "Certainly, commissioning is an investment, but it provides significant financial value in several ways," he said. "First, systems operate more reliably with lower maintenance cost and lower energy cost when commissioning is applied as described in this Guide. Second, incorporating commissioning can reduce first cost through improved understanding of system performance and lead to better equipment design and installation methods." The guide will help achieve cost-effective and cost-efficient refrigeration systems for new projects, expansions, remodels and existing systems that simply need a tuneup. For commercial facility owners and managers, this means improved profitability through lower operating and service costs as well as reduced product loss. For industrial plants, this means improved "up time" and improved labor productivity in addition to reduced operating cost, according to Royal.



Daniel Redmond 2013-2014 Chapter Technology Transfer Chair **MMM Group** E-mail:

RedmondDan@mmm.ca

Governor

Also included in the Guide is information on commissioning during planning and design; construction and installation; and system startup and first-year operation. A matrix helps delineate roles and responsibilities. Examples of commissioning checklists and acceptance plans can be used for reference or template.

A printed version of the Guide is slated to be available in early **Janu**ary 2014. The cost of the printed version is \$99 (\$84, ASHRAE members). To order, contact ASHRAE Customer Contact Center at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 678-539-2129, or visit www.ashrae.org/bookstore.

ASHRAE GREENGUIDE: FOUR EDITIONS, 10 YEARS, 158 GREENTIPS: E-BOOK MADE AVAILABLE

ATLANTA – When the first edition of the "ASHRAE GreenGuide" was first published 10 years ago, guidance on how practice green building design was not so readily available. "Since 2004, the industry has witnessed the continued evolution of green building programs from strictly voluntary to being both more in the industry mainstream as well as being mandatory in jurisdictions that adopted these for their building codes," Tom Lawrence, a member of ASHRAE's technical committee (TC 2.8) on building environmental impacts and sustainability, said.



The Energy Conservation People



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Capital Communiqué February 2014 The newly published fourth edition of the "ASHRAE GreenGuide" contains updated guidance that reflects how green building practices as well as the industry have changed, according to Lawrence.

"ASHRAE GreenGuide: Design, Construction, and Operation of Sustainable Buildings, 4th Edition," uses an integrated, building systems perspective to provide need-to-know information on what to do, where to turn, what to suggest, and how to interact with other members of the design team in a productive way. The release of the Guide was announced today during ASHRAE's 2014 Winter Conference taking place in New York.

For more information, visit www.ashrae.org/greenguide.

Lawrence said the guide contains several changes that will impact green building design. First is a complete revision of the indoor environmental quality (IEQ) chapter with much of the content based on the Indoor Air Quality Guide: Best Practices for Design, Construction and Commissioning.

"While it is challenging as well as important to provide good indoor environmental quality in an energy efficient manner, in some cases the most effective means to improve IEQ can also save energy," he said. "IEQ should not be sacrificed strictly to obtain energy use reductions. After all, the purpose of such buildings is to support the activities for which the building exists and to do so in a manner that does the least

harm to the environment while enhancing the health and well-being of the human occupants."

Another change is a new chapter on sustainable sites. While site issues may be outside the normal purview of most typical **ASHRAE** members, Lawrence notes that site sustainability is an important part of the design process of the future sustainable built environment. The chapter provides a summary of the key issues in the following topical

- Where to locate the building project
- Landscaping
- Urban heat island effect
- Exterior lighting/light as a pollution source
- Storm water management

As in previous editions, the book contains GreenTips, or which are sidebars containing information on techniques, processes, measures or systems. There are 44 GreenTips in this edition, including new ones on topics such as condensing boilers, rain gardens, green roofs and data centers. The book now also contains figures printed in color, making them easier to read.

The cost of the print book and the e-book is \$103 (\$87, **ASHRAE** members). To order, contact **ASHRAE** Customer Contact Center at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 678-539-2129, or visit www.ashrae.org/bookstore.

BACNET WEB SERVICES UP-DATES AND CALL FOR PARTICI-**PATION IN A VIRTUAL PLUGFEST**

NEW YORK - The BACnet committee has approved an update to BACnet/web services (WS) to better support more sophisticated needs such as smart grid and energy management.

ANSI/ASHRAE Standard 135-2012, BACnet – A Data Communication Protocol for Building Automation and Control Networks, allows building equipment and systems manufactured by different companies to work together. It is the only open, consensus-developed standard in the building controls industry.

The BACnet committee announced this week at **ASHRAE**'s 2014 Winter Conference that addendum 135 is slated for public review in the first quarter of 2014. In order to drive a deeper review, the committee is conducting a "virtual plugfest" for prototype implementations. An open source BACnet/WS server reference implementation has been developed to seed the plugfest; it can be used as a test subject for client development and a basis for server prototypes, according to **Carl Neilson**, chair of the Standard 135 committee. The committee is asking for implementations of both client and server prototypes. The virtual plugfest will be conducted online and is expected to begin mid-March and run through early April.



PERFORMANCE... ... mechanical, electrical, building automation, environmental, ... anced sustainable Patrick St-Onge, P. Eng. LEED AP | 613-596-6454 | bpa.ca



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Yorkland Controls represents leading control systems and component manufacturers. Integrated solutions for Lighting, Card Access, CCTV and Building Automation.



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CTTC Awards

Hi Ottawa Valley Chapter Member!

I would like to remind you that the deadline to submit your application for the **ASHRAE** Technology Award is April 15, 2014. Please participate by submitting your application as soon as possible! Keep in mind that there are many categories and don't hold back on submitting your projects thinking that it may be too small.

The **ASHRAE** Technology Awards program recognizes, on an international scale, successful applications of innovative design, which incorporate ASHRAE standards for effective energy management, indoor air quality, and good mechanical de-

The purpose of the **ASHRAE** Technology Awards program is threefold

1. To recognize **ASHRAE** members who design and/or conceive innovative technological concepts that are

proven through actual operating data.

- 2. To communicate innovative systems design to other **ASHRAE** members
- 3. To highlight technological achievements of **ASHRAE** to others, including associated professionals and societies worldwide, as well as building and facility owners

Chapter level submissions must be submitted electronically directly to me at bmoore@master.ca.

The building in questions should be in operation for a period of about 9 months. There are six categories to which applications may be submit-

- I. Commercial Buildings (New and Existing) II. Institutional Buildings (New and Existing) o Educational Facilities
 - o Other Institutional

Benjamin Moore 2013-2014 Chapter **Technology Transfer** Awards Program Chair The Master Group L.P. E-mail:

bmoore@master.ca

III. Health Care Facilities (New and Existing) IV. Industrial Facilities or Processes (New and Existing) V. Public Assembly Facilities

(New and Existing) VI. Residential (New and Existing)

The CTTC committee is looking for judges to help review applications

at the chapter level; if you are interested in volunteering for this worthy endeavor please contact me!

For questions during the application process here are my coordinates: Benjamin Moore, P.T.

Ph: 613-829-2816 Cel: 613-324-3087

Email: bmoore@master.ca

The technology awards section of the **ASHRAE** website is located at: http://www.ashrae.org/membership--conferences/honors--awards/technology-awards-program

The short form description is located here:

https://www.ashrae.org/File%20Library/docLib/Committees/CTTC/Chapter-Regional-Application-Short-Form.pdf

Membership Promotion

Greetings Everyone!

Most employers are happy to support your desire for involvement in a professional society like **ASHRAE**. Many organizational leaders are members of quite a few professional societies themselves. They understand how important membership in a professional society is to their own career, and typically urge others to take advantage of what memberships have to offer.

I will be continuing the MP lunch and learns over the coming months. If you think that your office might benefit from an explanation of the opportunities that **ASHRAE** can bring, please feel free to contact me. If you aren't sure where your employer stands, why not ask?

I would also like to introduce and welcome the following new members:

- **Mr. Andrew Pinet**
- Mr. Yusuke Irokawa
- **Dr. Cynthia Cruickshank**
- Mr. Stephen Pope
- Mr. Eric Ballachev
- Mr. Alex Tiessen
- **Mr. Justin Demers**
- Mr. Andrew Brown
- Mr. Ross MacLaren
- Mr. Peter Whitred

Looking forward to seeing you at the next **ASHRAE** event!



Committee Chair Adam Moons 2013-2014 Membership Committee Chair Walmar Ventilation **Products** E-mail: adam@walmar.net

February 2014 Capital Communiqué

Table Tops

January Table Top Futech: ABB (variable speed drives for the HVAC industry)

In Canada, ABB employs close to 3,000 people from coast to coast. ABB is the market leader in power transmission and distribution and hold leading market positions in most key product areas. The intro-duction of a dedicated ABB drive for HVAC marks a significant milestone in the development of AC drives. Macros for the most common applications are built into the drive as standard. The drive is programmed with several HVAC applications, including supply and return fans, cooling tower fans, booster pumps and condensers.

The intelligence within the HVAC control panel means that the user is given direct and understandable instructions in clear text at all times. Harmonics and RFI emissions are major concerns within many HVAC installations. The ABB drive for HVAC fulfils demanding requirements for electromagnetic compatibility. A swinging choke cuts harmonics emissions by up to 25 percent.

February Table Top Futech: Plad (engineered pump systems)

Plad, a Canadian founded company, is a leader in the pump industry with the broadest range of pump selection, types and models, serving multiple markets including **E-mail**: Stevem@totalhvac.com those of: chemicals, paint, food processing, electronics, construction, industrial maintenance, pulp and paper, utilities, process industries wastewater, sludge processing, mining and golf course irrigation pumping systems. PLAD Products are manufactured in a wide variety of materials and configurations with energy-efficient design features.



President-Elect Steve Moons 2013-2014 President-Elect & PAOE Committee Chair Total HVAC

February Table Top Master: Dadanco

DADANCO heating and air conditioning solutions utilize our unique patented induction nozzle technology. This technology offers significant performance advantages in a wide range of HVAC products including our ACB™ Active Chilled Beams, Inffuser™ Induction Diffusers and Induction unit consoles.

These advantages offer the opportunity for HVAC system designs that are sustainable, energy efficient, quiet and comfortable. Whether it is a new installation or a complete refurbishment, DADANCO induction technology can provide cost effective and environmentally green solutions.

2014 ASHRAE Curling Bonspiel

When: Friday Feb 28, 2014 at the Nepean Sportsplex

Curling (3 games of 4 ends) starting at 1:00 followed by dinner at 6:00 pm. Please book in teams of 4: *\$360.00* per team. Registration is from 12:00 to 12:45 at Spectators Bar & Grille at the Curling Rink.

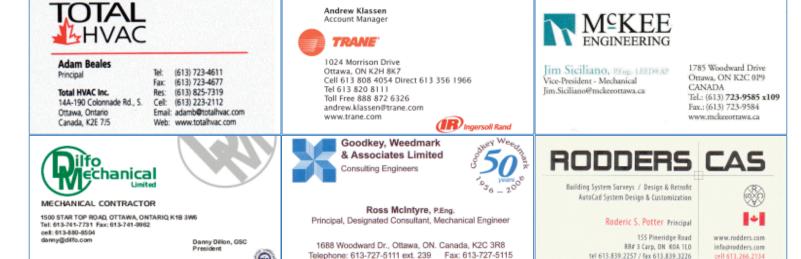
Team booking and Payment will be made online only by Credit Card at the link below:

For more info, please contact my-

Chris Healey by phone *613-225-9774*

or by email: chris@walmar.net

Registration Link https://ashraeottawa.simplesignup.ca/en/314/index.php?m=eventSummary



rossmc@gwal.com

President-Elect Steve Moons 2013-2014 President-Elect & PAOE Committee Chair Total HVAC



Advertising career opportunities on the ASHRAE Ottawa Valley website makes good business sense. We offer a unique way to reach technical professionals and make your ad dollars work hard for you.

Advertising

E-mail: Stevem@totalhvac.com

To discuss your needs, contact one of our chapter officers, via our "This Year" page. Increase the impact of your advertising through the ASHRAE Ottawa Valley website today.

Rates for career opportunities ads are as follows:

Chapter Member: \$50/month Non-member: \$250/month

Placement of an Ad

We suggest that you complete and submit our advertisement form to speed up the processing of your request. If you have provided your e-mail address, a confirmation receipt e-mail will be sent to you for reference.

Please note that ads require prepayment made to the treasurer. For payment and other information contact Steve Moons at stevem@totalhvac.com.

The ads will appear on the website until the end date for publication provided in the submitted form. To extend the ad, please resubmit the form with the new publication dates and the required prepayment amounts.

ASHRAE Table Top Opportunity

We currently have table-top availability for several of the 2013-2014 **ASHRAE OVC** meetings.

Cost for a table-top is \$200 and spaces are starting to fill up.

Please let **Adam Graham** (adam.graham@hts.com) or **Steve Moons** (stevem@totalhvac.com) if you are interested and we will ensure that you are booked in accordingly.

Rod Lancefield
2013-2014 Publicity
Committee Co-Chair
HTS Engineering Ltd.
E-mail: rodl@htseng.com



Business Card Ads

You can support your chapter and promote your business by placing your business card in the Capital Communiqué. It will also appear on the chapter website.

The cost is \$225.00 for the year. Please contact **Rod Lancefield** at rodl@htseng.com for more details.

2013-2014 Roderic Potter President-Elect Steve Moons Treasurer Georges Maamari Secretary Abbey Saunders Governors Patrick Albert Chris Fudge Adam Graham Daniel Redmond **Past President Donald Weekes Committees Attendance**

Committees
Attendance
Sandy Taylor
Audit
Stephen Lynch
Capital Communiqué
Richard Cameron
CRC
Roderic Potter
CTTC
Daniel Redmond

Grassroots Government
Affairs
Kashyap Desai
Financial
Sandy Taylor
Greeter
Miker Swayne
History

Aaron Dobson
Membership
Promotion
Adam Moons
Nominations &

Awards
Robert Kilpatrick
PAOE

Steve Moons
Publicity
Richard Cameron
Research

Promotion
Donald Weekes
Roster

Georges Maamari
Special Events
Chris Healey
Andrew Douma

Student ActivitiesRichard Cameron
Adrianne Mitani

Table TopDerek Atkins **Website**Roderic Potter

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