2013-2014 November





ASHRAE Ottawa Valley Chapter

DATE: **Tuesday November 26, 2013**

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

LOCATION: Algonquin College Restaurant International

1385 Woodrofee Ave, Building H, Room H100

THEME: Student

PROGRAM: HVAC Noise and Vibration Control: Compliance Strategies and Tactical

Resources

SPEAKER BIO: Bruce W. Majer, Vice President of BRD Noise and Vibration Control, Inc.

Bruce Majer has experience in vibratory noise control, with strong concentrations in acoustics and machine reliability since 1980. Prior to joining BRD in 2002, he worked at VSC, developing and maintaining machine reliability programs for industrial and military facilities throughout North America. He currently provides noise control solutions for industrial, architectural, and HVAC applications. Specialties include SCIF and recording studio expertise. He is participating in the development of the IEEE 45 standard rewrite and is also involved with development of criteria for the Navy's DDG 1000 program.

Mr. Majer designed training courses in sound and vibration analysis, while delivering them throughout this hemisphere and abroad. He has been published in journals Sound & Vibration, P/PM Technology, Vibrations, ASNE Fleet Maintenance Technical Proceedings, and ASNE Intelligent Ships.

OVERVIEW:

The two most common complaints about new HVAC installations are temperature and noise. A basic understanding of acoustics and relevant terminology, acceptance criteria, noise control engineering techniques, and best practices will be presented to help minimize the risk of noise complaints and the higher costs of remediation vs. design.

November 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/81/index.php?m=eventSummary

Registration will close 1 week prior to the event, on Tuesday November 19th. 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

At my time of writing, Remembrance Day November 11th is virtually upon us, and street corners and Loblaw's entrances are festooned with cadets and retired service personnel selling us poppies. By the time you are reading this, that day will have passed us by, and I am hoping that you will have taken just a small portion of your day to think about those who have fallen in an effort to make our future brighter. We often hear of soldiers fighting to "make our lives safe" and similar phrases and I usually question whether they were really doing that, or just out there risking everything because they were told to do so. I expect if I were thrown into a combat situation I would not be thinking "I am doing this to make my kids' future secure" - I would be thinking more about keeping my head down and trying to protect my buddies.

Most of us have not had to endure anything like a war with real bullets and I expect most of us never think about how lucky we are because of it. We live in a Fool's Paradise here in North America and are sheltered from most conflict because of the huge distance we are from the usual hot spots. People elsewhere grow up entirely aware of what it means to live in a war zone. We should endeavour to appreciate our good fortune, particularly around Remembrance Day, and realize that this life we lead is largely owing to those who have passed through before us and not just the fallen service personnel.

My favourite movie of all time is "Saving Private Ryan" - not because of all the graphic killing, but because I believe that level of realism has not been achieved in any other film. The direction and acting are first rate, and the movie pays great and accurate homage to the landings on Omaha Beach. Every time I watch it I grit my teeth and get rather annoyed at the idiocy of such carnage - and I have watched it more than a few times. There is a scene during the landings where an explosion temporarily renders



CRC Delegate
Roderic Potter
2013-2014 OVC President
Rodders CAS

President &

E-mail: rod@rodders.com

Tom Hanks' character deaf with a loud ringing in his ears. Luckily his hearing returns after a few minutes. Our topic for the November meeting will be "Noise and Vibration Control" so there is a slight coincidence there.

This will be only our second meeting at our new venue, Restaurant International at Algonquin College Woodroffe Campus. The October meeting was a great success and the food was spectacular to the point where I was in shock. We are lowly HVAC types and not used to food that both looks and tastes good! I look forward to seeing everyone at the November meeting - and assuming the bar staff are ready for us, we can all enjoy a drink together.

Cheers



Rod Lancefield, P.Eng., LEED*AP
Engineering Sales
rodi@heseng.com
C 612.651.1992

HTS Ottawa
163.6 Woodward Dr.
Ottawa. Ontario K2C 8R8T 613.726.7400 Ext.221
F 613.726.8032
Toll Free 868.280.8544
ontario.htseng.com

Lan Chi Nguyen Thi, P.Eng.
Partner

1390 Prince of Wales Dr., Suite 503
Ottawa, Ontario K2C 3N6
Phone 613.224.3963
Fax 613.224.2561
lanchi.nguyen@inairervironmental.ca

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What You Missed October Meeting

The October meeting took place at Algonquin College Restaurant International. The meeting was called to order by **President Rod Potter** at 6:15pm 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. Next **Georges Maamari** introduced new members who recently joined the chapter:

- Cary McGee
- Andrew Paterson
- Bill Wong
- Enrique Chavarria
- Benjamin Moore

Steve Moons then recapped the ASHRAE Stroke Play Golf Tournament which was previously postponed due to poor weather conditions. Participants had a great day, and the winner was Marc Parent of Longhill Energy. Steve then reminded everyone of the upcoming Bowling Social in November and that online registration for the event is now open.

During social hour the research committee raffled off Sens tickets, donated by Walmar raising a whopping \$360 for ASHRAE Research.

Andrew Douma of Total HVAC was the lucky winner of the Sens tickets.

Following the business session, attendees enjoyed a 4-course à la carte menu which featured Asian spring rolls, herbed tomato soup, a main entrée of roasted chicken potatoes and vegetables followed by crème brulee for dessert. Dinner was well received by attendees.

After dinner, the main program event took place, speaker **Jason Koo's** presentation topic was optimized design for data centre cooling applications. The presentation started with Mr. Koo outlining how the following relevant **ASHRAE** documents should be utilized to enhance the reliability and efficiency of data centre cooling equipment:

- ASHRAE TC9.9 which details the benefits of increased return air temperatures.
- ASHRAE 90.1 which outlines the benefits of air and water side economizers as well as the latest warm water cooling technologies.

In addition to the **ASHRAE** documentation, key elements of the POD cooling system design considerations which are paramount to efficiency and reliability include: water/air side economizers, containment strategies, controls and humidification.

In general, cooling systems are designed to have an average lifespan of approximately 10–15 years. However, IT equipment generally only has a useful lifespan of 2-5 years. Therefore, allowances or tolerable variations in temperature and humidity for data centre cooling equipment are beneficial. Issues that help define acceptable tolerances also help optimize the design. For example, the following table outlines risks associated with various

Condition	Risk
High Moisture	Corrosion
Low Moisture	ESD
	Thermal Shutdown
I ow Inlot	Wasted Energy



Secretary
Abbey Saunders
2013-2014 OVC Secretary
NRC-CNRC

E-mail: abbey.saunders@nrc-cnrc.gc.ca

temperature and humidity issues. The recommended allowances for humidity and temperature conditions in data centre cooling applications have evolved over time, and are outlined in **ASHRAE TC9.9**.

Row and perimeter cooling equipment are some of the most commonly used equipment types for POD cooling applications. The row cooling design concept allows for both hot and cold aisle capture, with both strategies currently utilized. Hot aisle containment allows for peak efficiency in operation of the cooling system, whereas cold aisle containment allows for optimized energy efficiency in conjunction with proper air balancing.

Containment design applications follow two main principles: plenum or chimney. A raised floor application can accomplish proper air flow (cooling) without containment, however plenums are often used to ensure adequate containment design. The chimney design does not require power assistance to get hot return air back to the equipment

Next Mr. Koo presented an example where he worked through how various modifications to a POD cooling system such as varying temperature, humidity, water temperature, air temperature, and fan speed to demonstrate how these variables can affect the reliability, efficiency and energy consumption, namely overall performance of the cooling system for a particular application.





SIEMENS

Siemens Canada Limited
Building Technologies Division

2435 Holly Lane
Ottawa, Ontario
K1V 7P2 Canada

Tel: (613) 733-9781
Pax: (613) 737-4985
Cell: (613) 614-7165
Account Executive
atma.anantram@siemens.com

Following the example, we reviewed free cooling as something that can and should be used in POD cooling applications to help improve the system efficiencies significantly. That being said there are special considerations that must be evaluated prior to implementation of a free cooling systems which may make an air side or water side economized preferred. For example, row cooling applications are generally more suited for water side economizer systems, and air quality and specialized filtration requirements to remove odours and residual particulate matter should be thoroughly investigated when contemplating use of air side economizers.

In addition to water and air side economizers, warm water cooling was briefly discussed as an alternative to provide free cooling for POD cooling applications. Often warm water cooling allows for increased run time of free cooling systems, depending on the climate, which extends the window for which non-mechanical assisted cooling can be achieved.

System integration and advanced controls are critical for POD cooling applications, and have a significant impact on the efficiency of the systems. Proper use of controls help to maximize reliability, optimize free cooling utilization and reduce overall energy consumption of a cooling system and allows for active redundancy in certain POD cooling applications. In addition, the monitoring capabilities provided by an advanced control system enable trending and analysis of data which allows constant modification and tweaking of system operation to ensure optimal and efficient operation.

The **ASHRAE** documents outline several options for POD cooling humidification. However, they recommend the use of ultrasonic humidification systems for POD cooling as an additional energy saving measure due to the fact there is no phase change in ultrasonic humidification. This reduction in energy consumption from ultrasonic humidification over other traditional humidification methods further decreases the energy consumption of a POD cooling system, ultimately improving overall system efficiency.

In summary, to enhance the reliability and efficiency of a POD cooling application adherence to **ASHRAE TC9.9 and 90.1** recommendations and mandatory requirements, along with advanced integrated control systems are paramount.

Following the presentation, **President Rod Potter** thanked **Mr. Jason Koo** for his presentation, and the meeting was adjourned at approximately 9:10pm.



ASHRAE Scotch Tasting

7pm start on **Tuesday November 19th** at the **Brew Table Restau- rant, 360 Moodie Drive** at Robertson Road in Bells Corners.

Tasting will consist of 2 Irish & 3 Scotch whiskeys, and an American Bourbon with food appetizers to compliment the beverages.

Cost will be \$60 per person (includes gratuity).

Registration will be up on the website today.

You better be going...

Cheers!



Committee Chair Adam Moons 2013-2014 Membership Committee Chair Walmar Ventilation Products

E-mail: adam@walmar.net







News Update

ASHRAE PUBLISHES 2013 VER-SION OF IAQ STANDARD

ATLANTA – The 2013 version of **ASHRAE**'s indoor air quality standard contains several revisions to help users better meet its requirements.

Newly published, **ANSI/ASHRAE Standard 62.1-2013**, Ventilation for Acceptable Indoor Air Quality, sets minimum ventilation rates and other requirements for commercial and institutional buildings.

The 2013 standard combines the 2010 standard and 10 published addenda to that edition, providing an easy-to-use consolidated standard. Specific information on the contents of each addendum and approval dates for each addendum are included in Informative Appendix J at the end of the standard.

"The 2013 version of Standard 62.1 continues the trend of increasing clarity while adding flexibility,"

Roger Hedrick, Standard 62.1 committee chair, said. "These changes will allow designers and building operators to meet the requirements of the standard and provide adequate ventilation airflow to occupants while reducing excess ventilation and the associated energy consumption."

The 2013 edition of the standard revises and improves the standard in several ways. A number of changes

remove inconsistencies within the standard and improve clarity. Significant changes include:

- Table 6-2, Zone Air Distribution Effectiveness is modified to increase the ventilation effectiveness of under floor air distribution systems that meet certain conditions.
- Requirements for the quality of water used in humidification systems are modified and clarified.
- Building level pressurization requirements were clarified, including adding a definition of "exfiltration."
- A performance alternative to the prescriptive exhaust rates is added. This approach differs from the Indoor Air Quality Procedure; the existing perform-

ance-based method for setting supply ventilation rates, in that monitoring of the concentrations of contaminants of concern is required and provides the basis for control of exhaust flow rates.

- Some changes to the ventilation rates and space types in
 Table 6-1 are made. These add refrigerated warehouses and change the ventilation rate for sports related spaces to include a per occupant component which then allows the use of demand controlled ventilation in these spaces.
- The filtration requirement on air entering wetted cooling coils has been modified to change the MERV rating from 6 to 8. This change will reduce potential for particulate deposition on the coils that could lead to biological or other contamination on the
- Toilet exhaust air that is cleaned to Class 1 may be recirculated.

The cost of **ANSI/ASHRAE Standard 62.1-2013**, Ventilation for Acceptable Indoor Air Quality, is \$79 (\$67 **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/IES PUBLISH 2013 EN-ERGY STANDARD: CHANGES FOR ENVELOPE, LIGHTING, MECHAN-ICAL SECTIONS

ATLANTA – Major changes to requirements regarding building envelope, lighting, mechanical and the energy cost budget are contained in the newly published energy standard from **ASHRAE** and IES.

ANSI/ASHRAE/IES Standard 90.1-2013, Energy Standard for Buildings Except Low-Rise Residential Buildings, incorporates 110 addenda, reflecting changes made through the public review process. Appendix F gives brief descriptions and publication dates of the addenda to 90.1-2010 reflected in this new edition.



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

RedmondDan@mmm.ca

"While many things have changed since the first version of Standard 90 was published in 1975, the need to reduce building energy use and cost has not," **Steve Skalko**, chair of the committee that wrote the 2013 standard, said. "This standard represents many advances over the 2010 standard, as we worked toward our goal of making the standard 40 to 50 percent more stringent than the 2004 standard."

"Achieving the stringency goals established for the 2013 standard presented a challenge in reducing the requirements for lighting," Rita Harrold, director of technology for the Illuminating Engineering Society of North America, said. "While interior lighting power densities (LPD) were re-evaluated and most lowered, there continues to be an ongoing concern about maintaining quality of lighting installations for occupant satisfaction and comfort while achieving energy savings. The focus in the 2013 standard, therefore, was not just on lowering LPDs but on finding ways to achieve savings by adding more controls and day lighting requirements as well as including lighting limits for exterior applications based on jurisdictional zoning."

The most significant changes are:

- Building Envelope. Opaque elements and fenestration requirements have been revised to increase stringency while maintaining a reasonable level of cost-effectiveness. Opaque and fenestration assemblies in Tables 5.5-1 through 5.5-8 are revised in most climates. These changes include:
 - Criteria requiring double glazed fenestration in many climates
 - Minimum visible transmittance/solar heat gain coefficient (VT/SHGC) ratio to enable good day lighting with minimum solar gain, while not restricting tripleand quadruple-glazing.

Capital Communiqué

- Simplification of the sky lighting criteria.
- Lighting: These changes include improvements to day lighting and day lighting controls, spaceby-space lighting power density limits, thresholds for top lighting and revised controls requirements and format.
- Mechanical: Equipment efficiencies are increased for heat pumps, packaged terminal air conditioners, single package vertical heat pumps and air conditioners evaporative condensers. Also, fan efficiency requirements are introduced for the first time. Additional provisions address commercial refrigeration equipment, improved controls on heat rejection and boiler equipment, requirements for expanded use of energy recovery, small motor efficiencies and fan power control and credits. Control revision requirements have been added to the standard such as direct digital controls in many applications.
- Finally, the 2013 edition completes the work that was begun on equipment efficiencies for chillers in the 2010 edition.
- Energy Cost Budget (ECB) &
 Modeling: Improvements were
 made to the ECB and Appendix
 G provisions to clarify the use of
 the prescriptive provisions when
 performing building energy use
 modeling. In addition, these
 sections were revised to enhance capturing day lighting
 when doing the modeling calculations.

Another important change for the 2013 standard is the first alternate compliance path in Chapter 6. Section 6.6 was added to the 2010 edition to provide a location for alternate methods of compliance with the standard. The first such alternate path has been developed for computer room systems and was formulated with the assistance of **ASHRAE** technical committee 9.9, Mission Critical Facilities, Data Centers, Technology Spaces and Elec-

tronic Equipment. This path uses the Power Usage Effectiveness (PUE) metric established by the datacom industry. This alternate efficiency path format provides a framework that could be considered for other energy using facets of buildings not easily covered in the prescriptive provisions of the standard.

quirements for operating escalators and moving walkways at minimum speed per ASME A17.1 when not conveying passengers. The cost of **ANSI/ASHRAE/IES** Standard 90.1-2013, Energy Standard for Buildings Except Low-Rise Residential Buildings, is \$135 (\$115, **ASHRAE** members). To

Also new to the standard are re-

(\$115, **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.



Adam Beales Principal

Total HVAC Inc. 14A-190 Colonnade Rd., S. Ottawa, Ontario Canada, K2E 7/5 Tel: (613) 723-4611 Fax: (613) 723-4677 Res: (613) 825-7319 Cell: (613) 223-2112

Res: (613) 825-7319
Cell: (613) 223-2112
Email: adamb@totalhvac.com
Web: www.totalhvac.com

Andrew Klassen Account Manager

www.trane.com



1024 Morrison Drive Ottawa, ON K2H 8K7 Cell 613 808 4054 Direct 613 356 1966 Tel 613 820 8111 Toll Free 888 872 6326 andrew, klassep@trane.com

(IR) Ingersoll Rand



Jim Siciliano, Prog. LEED#AP Vice-President - Mechanical Iim.Siciliano@mckecottawa.ca 1785 Woodward Drive Ottawa, ON K2C 0P9 CANADA Tel.: (613) **723-9585 x109** Fax: (613) **723-9586** www.mckeeottawa.ca

Research Promotion

Hi, Everyone!

The RP team is off to a flying start! At the October OVC Chapter meeting, the first monthly raffle for Senators tickets was held. Thanks to RP team members who sold the tickets on that night, and to the many participants in the raffle who bought tickets, the raffle raised \$360 for research promotion. I want to particularly thank **Christine Kemp** for donating the tickets for the raffle. Please remember that we are seeking donations of Senators tickets for the upcoming Chapter meetings, including November's meeting.

Please contact myself or **Steve Moons** if you have hockey tickets to donate.

On November 26th, 2013 at the OVC Chapter meeting, the donors to the 2012-3 Research Promotion campaign will be recognized. This is always a great night when we thank those individuals and companies that have made a donation last year to the campaign. I am looking forward to seeing all of the donors there and telling them personally 'Thanks'. I hope to see all of the donors at the meeting.



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

E-mail: don.weekes@inairenvironmental.ca

If you have any ideas for fundraising this year for **ASHRAE** RP, please let any of the RP team members know about your idea. The RP team members are: **Myself**, **Steve Moons**, **Cathy Godin**, **Christine Kemp**, **Bob Kilpatrick** and **Mike Swayne**. We will love to hear your ideas.

6

CTTC Update

I am pleased to announce that **Benjamin Moore** will be overseeing the CTTC Awards program for the 2013-2014 year. Ben is enthusiastic and excited for the year ahead. If you have any questions or concerns regarding CTTC Awards, please don't hesitate to let Ben or I know.



It is now time to start thinking about the projects you would like to submit to the **ASHRAE** Technology Awards. In light of this, I would like to remind you the deadline for submitting technology awards is **April 15**, **2014**.

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 design.

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

- To recognize ASHRAE members who design and/or conceive innovative technological concepts that are proven through actual operating data.
- 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 submitted:

- Commercial Buildings (New and Existing)
- Institutional Buildings (New and Existing)
 - Educational Facilities
 - Other Institutional
- Health Care Facilities (New and Existing)
- Industrial Facilities or Processes (New and Existing)
- Public Assembly Facilities (New and Existing)
- Residential (New and Existing)



Governor
Daniel Redmond
2013-2014 Chapter
Technology Transfer Chair
MMM Group
E-mail:
RedmondDan@mmm.ca



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

bmoore@master.ca

The **ASHRAE** website has plenty of helpful information to guide you during the application process.

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.**

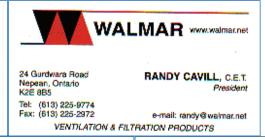
Ph: 613-829-2816 Email: bmoore@master.ca

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









CHRISTOPHER FUDGE P.Eng. LEED® AP

Commercial & Industrial Sales Engineer ofudge@master.ca

TEL 613-829-2816 CELL 613-761-2173 FAX 613-829-3731

The Master Group L.P. 25H, Northside Road Ottawa (Ontario) K2H 8S1 MASTER CA



Membership Promotion

Greetings Everyone!

The goal of Membership Promotion is the growth of our chapter. Our chapter cannot grow if we don't retain the members that we currently have. It is important that we continue to promote within our organization and stay current with our dues. Access to renewing your dues is available online and takes only a few minutes.

Of the many benefits to **ASHRAE** involvement, social events are certainly high on the list. November and December bring three amazing events, starting with the Bowling Social. There will be a Scotch tasting on the 19th (see details in the

communique or online), which is sure to be a delight. Also, the much anticipated Christmas Party is just around the corner. Be sure to sign up and take advantage of these excellent opportunities to mingle and network with your fellow **ASHRAE** members!

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

- Dominique Dore
- Mr. Phillipe Brunet
- Mr. Michael Gamble
- Mrs. Audrey Tellier
- Mr. Jarrett Carriere

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



Committee Chair
Adam Moons
2013-2014 Membership
Committee Chair
Walmar Ventilation
Products

Walmar Ventilation
Products
E-mail: adam@walmar.net







KNIC





Larry Gravelle Tel: (613) 721-3301 Fax: (613) 721-4906 I - 877 - 733-3833 www.yorkland.net

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ASHRAE Christmas Party

Please join the Ottawa Valley Chapter of ASHRAE in celebrating this year's Holidays! We will be hosting a Christmas Party at the St-Elias Center at 6:00 pm on Friday December 6th for an evening of drinks, food, fun, and of course, dancing! Leave your colours on the rack as the evening's theme will be Black and White.

Last year, the Ottawa Valley Chapter hosted the Region II CRC which ended up being a very profitable event. As part of giving back to our members and volunteers, the cost of this Christmas will mostly be covered by the Ottawa Valley Chapter. Spouses are invited and encouraged to attend. Please register online as spaces are limited. Remember that we will not have a December dinner meeting. So get your monthly ASHRAE fix and attend the Christmas party!

Details:

Cocktail hour (6:00pm to 7:00pm)

- Domestic and imported cheese display
- Fresh garden vegetables and crudités presentation
- Hot and cold hors d'oeuvres
- Cash-bar

Dinner (7:00pm)

- Rolls and butter
- Soup
- Salad
- Chicken Breast of Chicken Stuffed with Mozzarella cheese, Spinach, Garlic & Italian Herbs & Spices Champagne Sauce with hot vegetable and potato or rice
- Dessert with coffee or tea
- Wine at table



Treasurer Georges Maamari2013-2014 Treasurer & Roster Commitee Chair **BPA inc**

E-mail: GMaamari@bpa.ca

Evening

- The evening's entertainment will be provided by the Will Cook Trio, a live band with our one and only Adam Moons.
- Cash-bar

Late night Buffet

- Pizza and bruschetta buffet
- Assorted mini pastries
- Fruit Display
- Chocolate Fondue
- Coffee Station

Registration Link: https://ashraeottawa.simplesignup.ca/105

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.

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.

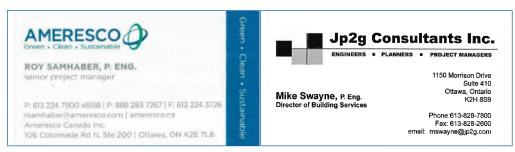
Rod Lancefield 2013-2014 Publicity Committee Co-Chair HTS Engineering Ltd. E-mail: rodl@htseng.com



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 Sandy Taylor Audit

Stephen Lynch

Capital Communiqué Richard Cameron

CRC

Roderic Potter CTTC

Daniel Redmond

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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 Activities Richard Cameron Adrianne Mitani

> Table Top **Derek Atkins** Website Roderic Potter