

Tuesday April 16, 2019 Social: 17:30, Dinner: 18:30, Program: 20:00

LOCATION: Centurion Conference & Event Centre 170 Colonnade Rd, Nepean, ON K2E 7J5

THEME: Research

### **PROGRAM:** Applications of Radiant Heating and Cooling Systems in Buildings

Alternatively to full air-conditioning **heating** and **cooling** may be done by water-based **radiant** heating and cooling systems, where pipes are embedded in the building structure (floors, ceilings, walls) or in the center of the concrete slabs in multi-story buildings. The present talk will discuss the possibilities and limitations of **radiant surface** heating and cooling systems. Differences in performance and application of surface systems compared to embedded systems are presented. Results from both dynamic computer **simulations** and field **measurements** are presented.

The paper shows that for well-designed buildings these types of system are capable of providing a **comfortable** indoor climate both in summer and in winter in different climatic zones. Various control concepts and corresponding **energy performance** are presented. To remove latent heat, these systems may be combined with an air system. This air system can, however, be scaled down with the benefit of improved comfort (noise, draught) compared to full air-conditioning. An added benefit can be reduced building height due to the elimination of suspended ceilings. Finally, surface heating and cooling systems use water at a temperature close to room temperature. This increases the possibility of using **renewable energy** sources and increasing the **efficiency** of boilers, heat pumps and refrigeration machines.

### SPEAKER : Bjarne W. Olesen, Ph.D. Professor - Technical University of Denmark

**Master's Degree** in Civil Engineering, 1972. Ph.D., Laboratory of heating and Air Conditioning, Technical University of Denmark, 1975. In the period 1972-1990 **Research scientist** at the Laboratory of Heating and Air Conditioning. Part time affiliated as **product manager** at Brüel & Kjaer 1978-1992. **Senior Research Scientist**, College of Architecture, Virginia Tech. in the period 1992-1993. Since 1993 until January 2004 **Head of Research & Development** at UPONOR-VELTA GmbH KG & Co., Norderstedt, Germany. Since January 2004 **full professor** in Indoor Environment & Energy at the Technical University of Denmark and **director** of the International Centre for Indoor Environment and Energy, Technical University of Denmark. Awarded the **Ralph Nevins Award** (1982), **Distinguish Service Award** (1997), **Fellow Award** (2001) and **Exceptional Service Award** (2006) from **ASHRAE**. Awarded the **Medal of Honour** from the German Engineering Society (VDI-TGA, 2005) and International Honorary

Space is limited so please register online at the link below

Chapter Members: \$48.00 Student Members: \$35.00 Past President: \$0.00 Guests: \$65.00 Life or Fellow: \$48.00 Past President Companion: \$0.00

https://ashraeottawa.simplesignup.ca/en/4020/index.php?m=eventSummary

Member of **SHASE**, The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan. **Vice president** of **ASHRAE** and Honorary member of AICARR (Italian Society for HVAC).

Is active in several ASHRAE-CEN-ISO-DIN standard committees regarding **indoor environment** and **energy performance** of buildings and HVAC systems. Has published more than 350 papers including more than 60 in **peer reviewed journals**.

## **President's Message**

As the 2018-19 **ASHRAE** year continues into Spring, I would like to thank everyone for joining us at the **Centurion Centre** on March 19<sup>th</sup>. The presentation by **Roland Charneux** was fantastic and it was a great opportunity to see his project that won an **ASHRAE Society Technology Ward**.

**ASHRAE** Society Past President (2017-18) Biarne Olesen will be presenting at our next meeting on Tuesday April 16<sup>th</sup> at the **Centurion** Centre. Mr. Olesen is a professor at Technical the **University** in his long **Denmark** and and distinguished career includes significant research and development in the HVAC&R industry. Mr. Olesen will present on the research into radiant heating and cooling systems.

On Wednesday April 17<sup>th</sup>, **Mr. Olesen** will also present a seminar

for the **ASHRAE OVC community**. The seminar is focused on the **European** approach to decreasing energy consumption in buildings. Europe has been particularly successful in the implementation of cutting edge **technology** to reduce energy consumption and this seminar is a great opportunity to discuss with an expert in the field that understands European and North American applications.

Please go to our website at www.ashrae.ottawa.on.ca and click on the registration link to sign up for the program meeting and the seminar.

The theme for April is **Research**. **Aaron Dobson** and the **Research Promotion Committee** are working hard to raise funds for this year's campaign. It is through Research Promotion that **ASHRAE** generates the funds to invest in the research



President Daniel Redmond 2018-2019 OVC President Carleton University

E-mail: daniel.redmond@carleton.ca

that is crucial to development of the **standards** and **guidelines** that we use in the **HVAC&R** industry everyday. It is important also to note that every dollar raised in **Canada** stays in **Canada** which furthers our local research endeavors.

Thank you and I look forward to seeing you soon!

please go to our website at www.ashrae.ottawa.on.ca for more information and to sign up.

Thank you and I look forward to seeing you soon!

## **ASHRAE Table Top Displays**

What better way to display a new **product**, **existing line**, or share great **ideas** than to have a table-top display at our local **OVC ASHRAE** meetings? The **OVC** meetings provide a captive audience in the industry and exposure to 60+ people.

There are only two meetings left with limited space available for the remainder of this **ASHRAE** season so get your table before they are all gone! Please contact **David Michelin** (david.michelin@hts.com) to secure yours today!

Cost for a table-top is \$225!

Payment is to be made through the online system prior to the date reserved.

Follow the link below:



Table TopsDavid Michelin2018-2019OVC Table TopsHTS Engineering

E-mail: david.michelin@hts.com

https://ashraeottawa.simplesignup.ca/en/3654/index.php?m=eventSummary



### Capital Communiqué

## 2018-2019 Research Promotion

Thank you very much for your continued support of **ASHRAE Research Canada!** 

ASHRAE Research plays an important role to improve the quality of life and to answer tomorrow's questions through research today. For every dollar raised towards Research Promotion in Canada, four dollars are invested towards research projects in Canada by ASHRAE Society.

The 2018-2019 **RP Campaign** Team includes: **Rob Lefebvre**, **Frank Bann**, **Michael Swayne**, **Georges Maamari**, **Abbey Saunders**, **Adam Graham** and **Dan Redmond**.

To date, the **RP campaign** has raised 61% of our \$34,300 goal for 2018-2019. Thank you to everyone

who made this possible.

Thank you to **Walmar** for donating **Ottawa Senators** hockey tickets which helped raise \$611 towards the **RP campaign**.

The following list of current 2018-2019 **RP campaign** donors will be provided in each monthly **newsletter** and updated on the **website**, so donate quickly to see your name appear!

Two of the easiest ways to make your donation to the 2018-2019 **RP Campaign** are by clicking either of the links below.

Should you wish to donate by cheque, please make payable to **ASHRAE Ottawa Valley Chapter.** My contact details are below, and I



President-Elect Aaron Dobson 2018-2019 OVC President-Elect Ainsworth

E-mail: aaron.dobson@ainsworth.com

will gladly make arrangements to pick-up any cheques if needed.

Aaron Dobson Ainsworth Inc. 100-2935 Conroy Road Ottawa, ON K1G 6C6 aaron.dobson@ainsworth.com p: 613.203.1951

Goal \$34,300	<b>ASHRAE Partner</b> \$5,000 - \$9,999	<b>ASHRAE Associate</b> \$2,500 - \$ 4,999	<b>Major Donor Silver</b> \$1,000 - \$2,499	
\$20,912 Raised		Ainsworth Enbridge Gas Distribution Longhill Energy	Total HVAC Goodkey, Weedmark & Associates	
	Major Donor Bronze \$500 - \$999	Major Donor Antique \$250 - \$499	Honor Roll Individuals \$100 - \$249	
	Modern Niagara Engineered Air Walmar Ventilation	Aaron Dobson Daniel Redmond Mastron Mechanical Clément Marchand Climate Works Trane Optimum Mechanical T.A. Morrison	Frank Bann Chris Frauley Adrianne Mitani Michael Swayne Steve Moons Celine Baribeau Jacob Hough Adam Moons Joe Della Valle Peter Shaw-Wood Ryan Dickinson Abbey Saunders Stephen Harrison Stephen Pope	
-	Special Thank-You to the following Donors for their contribution Darryl Boyce, Belimo Aircontrols (CAN), David Michelin, Chris Brown, Ross MacLaren, ProEng Consulting, Aerodynamics & Associates, T.P. Crawford			

ASHRAE Society link:https://xp20.ashrae.org/secure/researchpromotion/rp.html ASHRAE OVC link:<u>https://ashraeottawa.simplesignup.ca/en/2594/index.php?m=eventSummary</u>

## What You Missed

The March program meeting of the 2018/2019 ASHRAE season was held at the Centurion Conference & Event Center on Colonnade road, and the theme for the evening Student Activities. The was meeting was attended by forty-nine guests, which consisted of thirty-one members, eleven guests, and seven students. The program for the evening was 1st Place Technology Winner 2018 MEC Award Headquarters in Vancouver presented by Roland Charneux of Pageau Morel.

President Daniel Redmond called the meeting to order, and introduced Executive and the Board of Governors as well as Society Vice President Darryl Boyce who was in attendance. Secretary Adrianne Mitani introduced the guests for the evening and Membership Chair Andrew Brown introduced the new chapter members.

President Daniel Redmond spoke about the current Research **Promotion** campaign which is currently at 58% of our goal. Adam Moons announced the raffle was for four tickets to see Senators vs Buffalo March 26<sup>th</sup> with two parking passes donated by Walmar. Abbey Saunders introduced herself and Steve Moons as the chairs for **Honors, Awards and Nominations committee** this year. She introduced the executive lineup for next year and the currently open positions for Secretary and the Board of Governors. It was motioned to open nominations for the 2019-2020 season it was passed.

Governor Peter Shaw-Wood spoke about student activities including the outreach to the local universities at **Carleton** and **Algonquin**. Secretary Adrianne Mitani briefly spoke about the ASHRAE Career Fair in early March, the event was well attended with fourteen booths and over 150 students attended from a mix of

### Algonquin, Carleton and Ottawa University.

The curling bonspiel was held March 8th and \$1,400 was raised to a local charity and \$150 to ASHRAE research. The winning team was TotalHVAC team 1 with Mark Gall. Adrianne Mitani spoke about the March seminar held March 13th presented by Ralph Kison on Business Development, as well as an upcoming seminar to be held April 17<sup>th</sup> to be presented by **Bjarne** Olesen of Denmark who was **ASHRAE** Society president last year. The seminar will be on The European Approach to Decrease Energy Consumption in Buildings.

The **table top** for the evening Belimo, presented by Jenna Lyons, who will be taking over the Ottawa area representation from Clark Campbell.

Dinner was an assorted buffet. The tickets were raffled off with \$611 raised for ASHRAE Research and they were won by student member Daniel Lowcay. Also a bag donated by Belimo was also raffled off and won by Darryl Boyce.

Daniel Redmond President announced the speaker Roland **Charneaux** and the award winning MEC headquarters building in Vancouver. Roland is from the Montreal office of Pageau Morel, and worked on the project from the original concept as part of an integrated design team.

The approach for the project was to use an integrated design project and to use many elements of sustainable design. With the integrated process brought all the consultants onboard at the beginning to give input into the orientation, shape and life cycle costs of the building by not having a sequential approach. This was to the projects favor to design a high efficiency



Secretary Adrianne Mitani 2018-2019 OVC Secretary Smith+Andersen

adrianne.mitani@smithandandersen.com building.

The owner decided to build a new building but it was for **employee comfort** in mind. The project goals were to include lots of daylighting with views to the exterior, high priority of indoor air quality, thermal comfort, acoustical comfort, and energy efficiency.

It was decided to passively reduce the energy consumption by using daylighting. The impact of this created an elongated building and limit the width of the building to get daylight to penetrate the interior of the building. Due to the amount of sunlight the next step was to reduce the **solar gain**. This was through exterior overhangs, roller blinds and triple pane windows. The walls and roof were chosen to have very high R values which helped keep the mechanical systems smaller.

Natural **hybrid ventilation** is used with three ventilation shafts with dampers that orient to the direction of the wind and send air down the shafts to the mechanical room. There it is filtered, then directed back to the raised floors which then pushes the floor air back up the shaft to be exhausted. There are back up fans that provide ventilation when there is no wind available.

Radiant panels with heating and cooling take care of envelope loads, while internal loads are handled by the air. Thermal tanks are used with a hot side and a cold side to extract heat at night and then use the cold water to cool during the



day, with thermal regeneration for the tanks.

Overall the energy consumption of the proposed building was much less than the **baseline**. Due to the design the building load even out to be fairly constant and not have peaks of energy usage. With building envelopes getting bigger and new high insulated walls and windows there is no reason to have buildings with high heating and cooling loads. Buildings should be built for the future not for today, buildings to todays standards are obsolete as soon as the project is finished, therefore we must make our buildings with the future in mind.

President **Daniel Redmond** thanked **Roland Charneaux**, and presented him a gift of a commemorative coin on behalf of the chapter. He reminded attendees of the **survey** which will be emailed. The next meeting is April 16<sup>th</sup> at the **Centurion Conference and Event Center**.

President **Daniel Redmond** also mentioned that the **CTTC 2019 Technology Awards** are now open for submissions and the deadline is May  $2^{nd}$  for the chapter awards.

## **Membership Update**

Greetings Everyone,

This past January I had mentioned that our RVC for membership promotion **Geneviève Lussier** would be paying **Ottawa** a visit. As you know this did not happen, but I'm please to announce that Geneviève will be attending our April meeting. Please help me give Genevieve a warm welcome.

I would like to introduce and welcome the following new

members:

Michal Bartko Mathieu Levesque Alex R Lapointe Karim Saadi Eng Sarah Abraham Zarna G Kakadiya Muhammad Waqas Jean Cardinal Mfonobong Etukudo



Membership Promotion

Andrew Brown 2018-2019 OVC Membership Committee Master Group

E-mail: aabrown@master.ca

## **YEA Archery Tag**

### Hi OVC!

I am excited to announce the date for our next **YEA** event! I have booked **BATL Axe Throwing** on April 19<sup>th</sup>.

An email will be sent to all members with a registration link and event details. The event is open to everyone so please share with anyone who may be interested. If you have any questions about Axe throwing let me know. Thank you for your support!"



YEA Jordan Hansen 2018-2019 OVC - YEA Goodkey Weedmark & Associates

E-mail: jhansen@gwal.com



Capital Communiqué

## **News Update**

### **Registration Is Open for the 2019 Annual Conference in Kansas City**

ATLANTA (Mar. 5, 2019) – ASHRAE is pleased to announce that registration is open for the 2019 Annual Conference in Kansas City, Mo., June 22-26, at the Kansas City Marriott and Kansas City Convention Center. To register, visit ashrae.org/kansascity.

The five-day conference includes sessions addressing current trends and technologies in the **HVAC&R** industry, as well as tours, social events and a keynote message from **Mike Massimino**, former **NASA** astronaut, advisor and author.

Additionally, the incoming 2019-2020 **ASHRAE President Darryl K. Boyce, P.Eng.**, Fellow **ASHRAE**, Life Member, present the Society theme for the coming year during the President's Luncheon on Monday, June 24.

"With the global movement towards sustainable energy, the **HVAC&R** industry is ever-changing," said **Carrie Anne Monplaisir**, chair of the 2019 Annual Conference. "We continue to face new challenges as we adapt our designs, codes, and technology to fit this constantly changing criteria. The 2019 ASHRAE Annual Conference aims to address these challenges, and offer best practices, lessons learned, and innovative design strategies to be applied in a wide range of topics."

This conference's technical program will include sessions addressing engineering practices, research and professional development as follows: • **Research Summit** – nearly one-quarter of the technical program is devoted to the presentation of current research in the HVAC&R industry. Fifteen of the 23 scheduled sessions present peer-reviewed papers on ongoing research with a total of 26 conference papers and 31 extended abstracts accepted for presentation. The **Research Summit** includes a partnership with **ASHRAE**'s archival journal, **Science and Technology for the Built Environment**.

 Another quarter of the technical program is comprised of the Fundamentals and Applications track and the Systems and Equipment in the Built Environment track.

• Nearly a third of the program advances knowledge and practices in three focused tracks: **Optimization** in HVAC&R, Commissioning New and Existing Buildings and Modeling Throughout the Building Life Cycle.

• The **Occupant Health** and **Safety track** covers a range of topics from ventilation to health.

• The **Professional Development** tracks presents sessions to sharpen individual, personal skills, including career growth, ethics, business development and liability.

**ASHRAE Learning Institute** (ALI) will offer full-day seminars and half-day courses and ASHRAE certification will be exams administered during the week. complete information For and registration for the 2019 ASHRAE **Conference**, Annual visit ashrae.org/kansascity.

**ASHRAE** Announces Certified **HVAC** Designer Launch (Mar. 13, **ATLANTA** 2019) that **ASHRAE** announces applications for the new Certified HVAC Designer (CHD) certification World-wide now open. are computer-based testing opens Jun. 3.

"For a long time, the certification committee had suspected an **HVAC Designer** certification would serve the needs of members, but the 'Industry Needs' survey data emphasized just how much need and

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Governor Jacob Hough 2018-2019 OVC Program Committee Total HVAC

E-mail: jacobh@totalhvac.com

demand there are," said Mark Fly, P.E., chair of the exam "Launching a new subcommittee. certification program is а commitment, but we're confident this investment from which is an ASHRAE members and their employees will benefit."

The **CHD** exam blueprint and eligibility requirements, which have been approved by the **ASHRAE Certification Committee**, can be found in the CHD Candidate Guidebook.

The Certified HVAC Designer (CHD) certification validates competency of the **HVAC Designer**, working under the responsible charge of an engineer, to design **HVAC** systems to meet building/project requirements, including:

Load calculations

• Equipment selection and sizing

• Mechanical equipment room design

Duct and piping design

• Layout for the development of **HVAC** plans for permit and construction

The exam follows a 2018 industry-wide job analysis study with data that was gathered from more than 1,200 respondents from over 60 countries. The CHD application is currently open with a practice exam launching May 1.

For more information, visit ashrae.org/chd.



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Sylvain Chenier, P. Eng., ing., LEED@AP Vice President - Mechanical Sylvain.Chenier@mckeeottawa.ca 1785 Woodward D rive Ottawa, ON K2C 0P9 CANADA Tel.: (613) **723-9585 x128** Fax.: (613) 723-9584 www.mckeeottawa.ca

# 2019 Career Fair

The 2019 ASHRAE Ottawa Valley Chapter Career Fair at Carleton University on March 15<sup>th</sup> was a great success! We had over a dozen employers and more than 150 students in attendance.

Thank you to everyone who was present and those who sponsored the event. We hope to see you again next year!



Activities Elizabeth Primeau 2018-2019 **OVC Student Activities Total HVAC** 

E-mail: elizabethp@totalhvac.com







Capital Communiqué



## Ottawa Valley ASHRAE Technology Awards

## **Call for Submissions**

	<ul> <li>Recognize local ASHRAE members for innovative designs proven through operation</li> <li>Communicate these designs to other ASHRAE members</li> </ul>	
WHY?		
	Highlight achievements of ASHRAE to other professionals and societies including building and facility owners	
	Short form <u>(click here)</u> for chapter level awards	
	Single page application form	
	11x17" system schematic diagram	
HOW?	Two page narrative	
	Long form <u>(click here)</u> for region and society level awards	
	Three page application form	
	Ten page report including schematics & diagrams	

## Submissions due May 2nd, 2019

Contact: Jacobh@totalhvac.com

### Smith + Andersen

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Michael St. Louis B.Eng., P.Eng. Associate Principal d 613 691 0265 m 613 316 7297 Michael.St. Louis@smithandandersen.com

1600 Carling Avenue Suite 503 Ottawa, Ontario K1Z 1G3



David Yin, P.Eng., LEED AP Senior Associate, Buildings Engineering

Stantec 400 - 1331 Clyde Avenue, Ottawa ON K2C 3G4 phone: (613) 725-5573 cell: (613) 323-4964 fax: (613) 722-2799 david.yln@stantec.com



### Frank Picchione Regional Sales Manager

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## April Seminar

DATE:

Wednesday, April 17, 2019

**LOCATION: Master Group** 25 Northside Rd, Nepean, ON K2H 8S1



Governor Jacob Hough 2018-2019 **OVC** Program Committee **Total HVAC** 

#### **TOPIC:** The European Approach to Decrease Energy **Consumption in Buildings**

E-mail: jacobh@totalhvac.com

### **SUMMARY:**

According to the European Energy Performance of Buildings Directive (EPBD) all buildings (residential, commercial, industrial etc.) must have an energy declaration based on the calculated energy performance of the building, including heating, ventilating, cooling and lighting systems. This energy declaration must refer to the primary energy or CO2 emissions. The directive also states that the energy performance calculation must consider the indoor climate. This and other directives (increased use of renewable energy and energy labeling of energy consuming products) set the direction for energy performance of buildings and systems in Europe and they have been revised several times. Most recently a Smart-Ready-Index (SRI) is being developed to evaluate a building's readiness to be integrated in a smart grid.

To support the implementation of the directives in national building codes the **European Organization for Standardization (CEN)** has prepared a series of standards to cover the requirements for the indoor environment, energy performance calculations for buildings and systems, ways of expressing energy performance, inspection of heating-cooling-ventilation systems and conversion to primary energy. This talk presents the EPBD (Energy Performance of Buildings Directive) and other directives together with the related standards. The presentation will also show examples of activities in the US to increase energy efficiency and reduce energy use in buildings with focus on ASHRAE products and projects.

#### **SPEAKER: Bjarne Olesen, Technical University of Denmark**

### **SPEAKER BIO:**

Master's Degree in Civil Engineering, 1972. Ph.D., Laboratory of heating and Air Conditioning, Technical University of Denmark, 1975. In the period 1972-1990 **Research scientist** at the Laboratory of Heating and Air Conditioning. Part time affiliated as product manager at Brüel & Kjaer 1978-1992. Senior Research Scientist, College of Architecture, Virginia Tech. in the period 1992-1993. Since 1993 until January 2004 Head of Research & Development at UPONOR-VELTA GmbH KG & Co., Norderstedt, Germany. Since January 2004 full professor in Indoor Environment & Energy at the Technical University of Denmark and **director** of the International Centre for Indoor Environment and Energy, Technical University of Denmark. Awarded the **Ralph Nevins Award** (1982), Distinguish Service Award (1997), Fellow Award (2001) and Exceptional Service Award (2006) from ASHRAE. Awarded the Medal of Honour from the German Engineering Society (VDI-TGA, 2005) and International Honorary Member of SHASE, The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan. Vice president of ASHRAE and Honorary member of AICARR (Italian Society for HVAC).



# **CURLING WRAP UP**

The annual **ASHRAE Curling Bonspiel** took place on Friday, March 8th at the **Nepean Sportsplex**. There were a total of 16 teams registered. All the participants had a great time and enjoyed the day. The winning team entered by **Total HVAC 1** consisted of: **Mark Gall**, **Langdon Liebregts**, **Tom LeRoy** and **Josh Bates**. These gentlemen took home the trophy, as well as a nice bottle of wine for their skilled efforts.

As in the past years we have donated money to local charities which were deemed as worthwhile causes. Places like **The Salvation Army, Rogers House** and **The Ottawa Food Bank** are who we have given to in the past. This year we are once again lucky enough to donate \$1,400 which brings the total to \$15,470.00 since 2010. In addition to the charity donation, we were also able to donate \$1050.00 to **ASHRAE Research** from the proceeds and the 50/50 draw that we ran. Thank-you to **Mastron Mechanical** and **Trane** for the prize donations.

We would also like to thank **Cedar Hill Golf and Country Club** for the banquet venue and fabulous meal they put on. Thank-you once again to **Stan Millross** for being our Emcee for the event.

We look forward to seeing everyone again next year.



Special Events Colleen Fox 2018-2019 OVC Special Events TRANE

E-mail: cfox@trane.com



# Advertising

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.

To discuss your needs, contact one of our chapter officers, via our "This Year" page. Increase the impact of your advertising through E-mail: amoons@master.ca the ASHRAE Ottawa Valley Website today.

Rates for **career opportunities** ads are as follows:

**Chapter Member:** \$50/month \$80/2 months \$100/3 months

Non-member: \$250/month

Note: Purchase of additional months will only have a discounted rate if purchased up front. Otherwise the standard rate will apply for additional months.

### 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. Please register and pay through the online system and contact Adam Moons (amoons@master.ca) with any questions. Follow the link below for payment.

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.

Link: https://ashraeottawa.simplesignup.ca/en/2590/index.php?m=eventSummary Link: https://ashraeottawa.simplesignup.ca/en/2593/index.php?m=eventSummary

## **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 \$250.00 for the year. Please contact Rod Lancefield at rod.lancefield@hts.com for more details.

Payment will be made through the online system. Follow the link below for payment. https://ashraeottawa.simplesignup.ca/en/2591/index.php?m=eventSummary

Ads will now require prepayment. All of last year's ads will appear in the Communique for the first month of this year to allow time for payment for the upcoming year. Ads will be refreshed accordingly in the second Communique.

**Publicity** 2018-2019 Publicity Committee Co-Chair HTS Engineering Ltd. E-mail: rod.lancefield@hts.com



2018-2019 Publicity Committee Co-Chair HTS Engineering Ltd.

E-mail: rod.lancefield@hts.com

2018-2019 President Treasurer **Daniel Redmond** Adam Moons **President-Elect** Aaron Dobson **OVC** Treasurer Treasurer Master Group

Adam Moons Secretary Adrianne Mitani Governors Chris Frauley Joe Della Valle Jacob Hough Celine Baribeau Peter Shaw-Wood Past President Adam Graham Committees Attendance Sandy Taylor Audit Abbey Saunders Capital Communiqué **Evans Mutua** CRC **Daniel Redmond CTTC** Jacob Hough Grassroots **Government Affairs** Adam Moons Financial Sandy Taylor Greeter **Chris Frauley** History Ryan Dickinson Membership Promotion Andrew Brown Nominations & Awards Abbey Saunders Steve Moons PAOE Aaron Dobson **Program** James Pady Research Promotion Aaron Dobson Roster Georges Maamari Special Events Colleen Fox Joe Della Valle Rod Lancefield Adam Moons Student Activities Elizabeth Primeau Table Top David Michelin ΥΕΑ Jordan Hansen Website

Ryan Dickinson

Capital Communiqué



2018-2019