



# ASHRAE Ottawa Valley Chapter

**DATE:** **Tuesday January 17, 2017**

Technical session: 4:30 (see page 2), Social: 17:30, Dinner: 18:30, Program: 19:30

**LOCATION:** **Centurion Conference & Event Center**  
170 Colonnade Rd S, Nepean, ON

**THEME:** **Young Engineers of ASHRAE**

**PROGRAM:** **IAQ Guidelines for Occupied Buildings Under Construction**

The SMACNA IAQ guidelines for Occupied Buildings Under Construction is the authoritative source for providing project management guidance in maintaining satisfactory indoor air quality of occupied buildings undergoing renovation or construction. The guidelines cover how to manage the source of air pollutants, control measures, quality control and documentation and communication with occupants. Many sections of these standards have been adopted by the code authorities, specifiers and the green building community. With considerable ongoing or upcoming renovations to buildings within the Ottawa area, we are pleased to join with the MCA Ottawa for a 45 presentation by Eli Howard III, Executive Director Technical Services of SMACNA on this timely topic.

**SPEAKER:** **Eli P. Howard, III**

As SMACNA's Executive Director Technical Services, Eli Howard has the overall responsibilities of the more than 30+ SMACNA Technical and ANSI Standards related to the HVAC and Sheet Metal Industry. Prior to joining SMACNA he was Manager of Technical Program Development for NEMI providing technical assistance to contractors in energy engineering and IAQ technologies. His experience also includes work with Marriott International as Mechanical Engineer for design/construction of hotels in the United States, Hong Kong and Poland. Mr. Howard holds a degree in Mechanical Engineering from Allegheny College.

He is a member of ASHRAE Technical Committees:

- 90.1 Energy Standard for Buildings Except Low-Rise Residential
- SSPC 62.1 Ventilation for Acceptable IAQ
- 7.2 HVAC&R Construction and Design Build Technologies
- SPC 171P Method of Test of Seismic Restraints for HVAC&R Equipment

He has additional responsibilities as SMACNA Liaison to:

- NFPA 90A & 90B
- International Code Council (ICC)
- Canadian Commission on Building and Fire Codes (CCBFC) Standing Committee on HVAC and Plumbing
- Construction Specifications Institute (CSI)
- International Association of Plumbing and Mechanical Officials (IAPMO)

**Space is limited so please register online at the link below**

Chapter Members: \$45.00 Guests: \$65.00  
Student Members: \$30.00 Life or Fellow: \$45.00

<https://ashraeottawa.simplesignup.ca/en/610/index.php?m=eventSummary>

# President's Message

Another year has passed. I hope everyone had an enjoyable holiday season with family and friends, and I would like to welcome you to a new year with the **Ottawa Valley ASHRAE Chapter**. To paraphrase Steve Moons from a few years ago, January always presents the possibility for new beginnings and opportunities, and I hope that everyone is able to take advantage of these opportunities in both your personal and professional lives.

November marked not only a very successful first seminar on **CAN/CSA B139** hosted in the Master Group classroom, it also reintroduced us to the tech sessions. We plan to make tech sessions a more frequent occurrence for the remainder of the year. January's tech session will be presented by **Eli Howard, III**. Refer to the tech session article for additional details.

Our January meeting will be something new and exciting for the chapter. We are hosting our first joint event with the MCA. The speaker, **Mr. Eli Howard**, will be presenting on **IAQ Guidelines for Occupied Buildings Under Construction**. As a reminder, the January meeting will

be held at the **Centurion Conference & Events Centre**. Due to the fact this meeting is a joint event, and we anticipate attendance to be higher than normal, I strongly encourage everyone to use the online system and register early for the meeting. To register for the January meeting please visit our website at [www.ashrae.ottawa.on.ca](http://www.ashrae.ottawa.on.ca)

The **theme** for January is **YEA** and I am hoping to see many of our young members in attendance. Student participation and mentorship of YEA members in ASHRAE is important to facilitate new, bright minds to join and remain in our industry. I encourage you to sponsor a student meal and take the opportunity to chat with your future colleagues.

The **ASHRAE Winter Conference & Expo** is quickly approaching in Las Vegas from **January 28 through February 1, 2017**. While it is short notice to attend this year's event, think ahead to next year and consider attending. Not only does the ASHRAE Winter Conference & Expo coincide with the largest trade show in our industry, ASHRAE also offers a number of courses and learning opportunities throughout the event.



**President  
Abbey Saunders**  
2016-2017  
OVC President  
**National Research  
Council Canada**

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**Adam Graham** and his **Research Promotion Committee** deserve thanks for their early efforts to get the 2016-2017 RP Campaign rolling. Research Promotion is one of the most important yearly goals set down from Society, and I encourage all individuals and organizations to continue with your generous donations to help us achieve our goal. Please speak with Adam directly if you have any questions.

Welcome to 2017, and I wish everyone a successful and enjoyable year!

Sincerely,  
**Abbey Saunders**  
2016-2017 OVC President

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## Technical Session - Duct Leakage, System Effects and SMACNA APPs

**DATE:** Tuesday, January 17, 2016 at 4:30

**LOCATION:** Centurion Conference & Event Center  
170 Colonnade Rd S, Nepean, ON

**TOPIC:** Duct Leakage, System Effects and SMACNA APPs

**PRESENTER:** Eli Howard

**SUMMARY:** The tighter the forced-air ventilation system, the less air is needed from the fan to create a change in the ductwork pressure. Tighter systems = less fan energy Duct leakage testing is a diagnostic tool designed to measure the airtightness of high pressure duct systems. In this session, we will review duct leakage and effect on energy, equipment selections, duct leakage as a quantifiable part of a system, upcoming SMACNA standard for system leakage and how to apply the SMACNA duct leakage testing standard and the free APP.

 <p>Stéphan Riffault, P.Eng. Sales Representative 1250 Old Innes Road, Unit 518 Ottawa, Ontario K1B 5L3 613-565-2129, ext. 2128 <a href="mailto:sriffault@regulvar.com">sriffault@regulvar.com</a> <a href="http://www.regulvar.com">www.regulvar.com</a></p>	<p><b>InAIR Environmental Ltd.</b></p> <p>Lan Chi Nguyen Thi, P.Eng. Partner 1390 Prince of Wales Dr., Suite 503 Ottawa, Ontario K2C 3N6 Phone 613.224.3863 Fax 613.224.2561 <a href="mailto:lanchi.nguyen@inairenvironmental.ca">lanchi.nguyen@inairenvironmental.ca</a> <a href="http://www.inairenvironmental.ca">www.inairenvironmental.ca</a></p> <p>Mould &amp; Flood Remediation Drinking Water Testing Training Courses IAQ Surveys</p> 	 <p><b>WALMAR</b> <a href="http://www.walmar.net">www.walmar.net</a></p> <p>24 Gurdwara Road Nepean, Ontario K2E 8B5 Tel: (613) 225-9774 Fax: (613) 225-2972 e-mail: <a href="mailto:randy@walmar.net">randy@walmar.net</a></p> <p><b>RANDY CAVILL, C.E.T.</b> President</p> <p>VENTILATION &amp; FILTRATION PRODUCTS</p>
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# What You Missed

The third meeting of the **2016/2017 ASHRAE** season was held at the **Centurion Conference and Event Center** on Colonnade Road. Attendance at the meeting was **fifty six**, forty eight of which were members, eight guests and five students. The theme for the evening was research promotion. The program meeting was preceded by a technical session presented by **Professor Liam O'Brien** of **Carleton University**. The technical session was presented by Professor O'Brien on modeling occupants in buildings to predict energy use.

The meeting was called to order by **President Abbey Saunders** at **18:20**. President Abbey Saunders introduced the Board of Governors and the Executive. **Secretary Chris Fudge** introduced the guests for the evening. President Abbey Saunders introduced the new members to the Ottawa chapter. Governor and Student Activities Co-Chair **Adrienne Mitani** presented a brief overview of the technical session. **Georges Maamari** gave an overview of the upcoming TSSA seminar taking place November 24th.

**President Elect Adam Graham** gave a presentation on ASHRAE research. Mr. Graham talked about the importance of ASHRAE research. He discussed how the results of ASHRAE research turn into reality through design guides, standards etc.... He discussed the frame work of how ASHRAE research works and projects get off the ground. Last year OVC exceeded goal on research promotion. Following the presentation President Elect Adam Graham recognized all donors to the 2015/2016 ASHRAE OVC research promotion campaign.

President Elect Adam Graham is running this year's ASHRAE OVC

research promotion campaign and he has goal of **29,000.00**. **100%** of the money you donate to ASHRAE research is invested in research projects in Canada. For every dollar you donate to the OVC research promotion campaign, ASHRAE Society will at minimum match it, resulting in two or more dollars invested in Canadian research projects.

A buffet dinner was presented at **19:00**.

The evening's program got started at **19:30**.

To get things started President Elect Adam Graham drew the winning raffle ticket. The winner was Governor Adam Moons ... Mr. Moons won tickets for an upcoming Ottawa Senators game. The tickets were generously donated by **Trane** with the proceeds of the draw going towards the ASHRAE OVC Research Promotion campaign.

President Abbey Saunders introduced the evening's speaker Dr. Liam O'Brien of Carleton University. The program topic was **Carleton University as a living lab: where research, teaching and operations meet**. The research project used the campus a living lab. To achieve the data collection the entire campus has been digitized. The project involved collaboration between architecture and engineer faculties. Building performance visualization, advanced controls, occupant monitoring and modeling, BIM, fault detection and diagnostics and sensor position optimizations were all utilized to complete this study. The focus of the presentation is the Canal building.

The campus has been loaded into a 3D mapping tool where the buildings can be analyzed according to various



**Secretary**  
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factors such as occupant density. During the presentation Sankey diagrams showed how every joule of energy enters the campus and leaves. In these diagrams energy inputs were broken down into Nuclear, Hydro, Solar etc..., while energy outputs are also shown to provide a visual of energy flows.

By way of all of this data collection energy bills were broken down to a by student/employee level. Different methods were used to normalize energy use, such as cost per student. Costs per student for energy came in around **500\$ /employee and student**. Energy usage in buildings varied widely from Athletics to research to dormitories.

Architects made extremely detailed BIM models of the Canal building. These models were immediately simplified into CAD based models by the research promotion teams. Building performance visualization was used to help operators better operate their buildings to improve energy performance. These graphical tools allowed easy comparison of different times of day, week or heating vs cooling season.

Detailed analysis done at the office level in terms of energy use at the Canal building. Data points collected at the office level were; CO2, temp, humidity, air flow rates, occupancy, Light levels, motorised shading.

Professor hours tracked through occupancy. Arrival and departure times analysed through data collection and tools to predict were

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used in. Intermediate vacancy periods analyses to predict return time or if occupant will return. Temperature learning; most occupants like temperatures that are less energy intensive than traditional setpoints. Personalised optimal temperatures can be developed based on preference, resulting in energy savings. Heating setpoints often in the 19°C range and cooling setpoints 24°C range.

Default algorithms compared to adaptive algorithm. Adaptive algorithm adjusts the space set points towards the occupant preferences automatically. Impressive energy savings resulted from adaptive algorithm. Zero complaints from the adaptive algorithm.

Lighting control was analysed to determine user preference. Again resultant preferences were much lower than what traditional levels are for lighting intensity. Occupant model developed for lighting and used to design appropriate window sizes, for example. During analysis it was found that occupants had

tampered with occupancy sensors indicating people do not necessarily want the lights coming on based purely occupancy.

Hoteling potential analysed based on occupancy detection. Do we need so many offices or could we have less offices that are shared.

Fault detection and diagnosis (FDD) developed. How can various data sets be used to determine faults in the building envelope, window leakage etc...

Sensor placement and optimization. Using BIM to analyse appropriate location based on building orientation.

Zone level virtual sensing was created. It is expensive to measure everything by equipping spaces with loads of sensors. However, multiple sensors, inferences and mathematical modeling can be used to generate data.

Auto-Commissioning was done prior to occupancy. Estimating light power, thermal resistance of building

envelope. Air balancing by estimating OA supply rate using CO2 mass balance models.

Integrate BIM into operations. Real time visualization of building performance via BIM. Build up enough data infrastructure to provide interactive visualization for operators and other stakeholders. Immersed graduate students in operations.

Health Sciences Building / SIF Grant was reviewed. This building will be equipped with additional data collection. Complete building including mechanical systems modeled in BIM.

Professor Liam O'Brien recognized those people involved in the research project. President Abbey Saunders thanked Professor Liam O'Brien and presented him with a gift.

Next meeting **January 17th 2017** at the **Centurion Convention and Event Center**.

Meeting adjourned **21:25**

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President  
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# Membership Update

I would like to introduce and welcome the following new member:

- Ciro Anez**
- Steven Mogrige**
- Marc Riel**
- Benoit Touchette**
- Sylvain Lapointe**
- Fethi Fethi**
- Sudhakar Molleti**
- Leah Morrell**

At any time, if you have any questions or comments regarding your **ASHRAE** membership, please do not hesitate to contact me at: [cbaribeau@bpa.ca](mailto:cbaribeau@bpa.ca)

Thank you all for the continued support and participation in your local ASHRAE chapter. Looking forward to seeing everyone at the next **ASHRAE** meeting.



**Committee Chair**  
**Celine Baribeau**  
2016-2017  
Membership Committee Chair  
**BPA**

E-mail: [cbaribeau@bpa.ca](mailto:cbaribeau@bpa.ca)

# Research Promotion

Thanks for your continued support for **ASHRAE Research Canada!**

ASHRAE Research plays a huge role in all aspects of our built environment. Our homes, offices, schools, hospitals, retail spaces and even the food we eat are all affected and hopefully protected by their HVAC&R system, or lack thereof. Although Abbey and her committee have left me big shoes to fill, I am pleased to be part of such an important part of society in serving as the Research Promotion Chair for our **Ottawa Valley Chapter**.

Our objective for the 2016-2017 RP Campaign is **\$29,000**. Although this seems like a lot, our chapter history, in particular last year's stellar fundraising efforts have shown us this objective is attainable. No donation is too small, and all money raised goes to **ASHRAE Research Canada**.

**Georges Maamari, Abbey Sauders, Michael Swayne, Robert Lefebvre, and Frank Bann** have all agreed to help support this cause as a part of the ASHRAE RP Committee.. Please contact any of us with your RP questions. We have started our annual calling campaign so expect to hear from one of us shortly if you have not yet.

The raffle draws for event tickets will

continue at each program meeting in support of our 2016-2017 RP Campaign. The **December 3, Sens v. Panthers** tickets graciously donated by **Trane Ottawa** raised a total of **\$630!** A special thanks to all that have donated tickets, and congratulations to **Adam Moons of Walmar** for winning the tickets. We are always looking for donors that may have something to contribute for our monthly raffles. Please contact me if interested.

As of **Dec 22**, we have raised **\$9,670** towards our campaign goal, approximately 33% of our objective.

Thanks to all our donors who continue to support the RP Campaign.

A list of current 2017-2017 RP Campaign donors will be updated for each monthly newsletter, so donate quickly to see you name appear!

Two of the easiest ways to make your donation to the 2017-2017 RP Campaign are by clicking either of the links below.

However, should you wish to make you donation using cheques, please make all cheques payable to **ASHRAE Research Canada**. My contact details are shown below, but I will gladly make arrangements to pick-up any cheques if need be.



**President-Elect  
Adam Graham**  
2016-2017  
OVC President-Elect  
**HTS**

**E-mail:** [adam.graham@hta.com](mailto:adam.graham@hta.com)

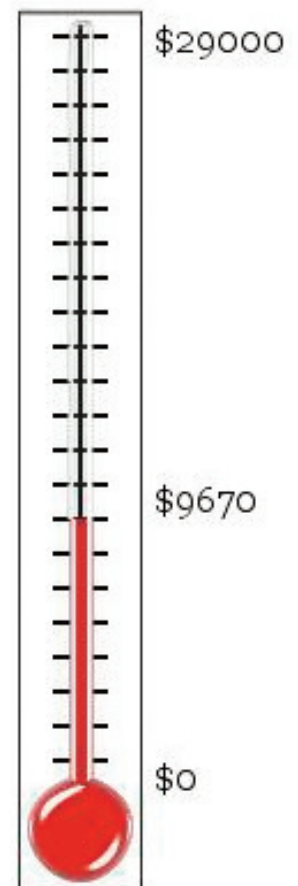
Again, I can't say this enough thanks for your continued support for ASHRAE Research Canada!

Adam Graham

ASHRAE OVC President Elect,  
Research Promotion Chair

Attn: **Adam Graham**  
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ASHRAE OVC link: <https://ashraeottawa.simplesignup.ca/en/1773/index.php?m=eventSummary>

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

# Seminar Wrap-Up

November 23rd, 2016 **ASHRAE OVC** hosted a full day seminar on **CSA B139-Series 15 Installation of Oil-burning Equipment** at the **Master Group** classroom. The seminar was a huge success with the maximum 30 participants registered.

Participants included a good mix of consulting engineers, suppliers, contractors, and property management representatives. The course covered fuel oil regulations, approvals, distributor inspections, unacceptable conditions, certification

of installers & updates made to the 2015 standard. The course also covered **B139.1.0-15**: aboveground tank installations, piping systems & high pressure piping systems, tank connections & components, day tank installations & venting systems. The course finished off with B139.1.1-15; aboveground tank installations, engine service rooms, exhaust systems, air dampers & anti-siphon requirements.

The interactive seminar was well received by participants and ASHRAE



**Governor**  
**Richard Cameron**  
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OVC would like to extend a special thanks to **Raphael Sumabat** for sharing his expertise and experience.

# YEA

**Hi OVC Members,**

I am very excited to announce our next YEA event will be taking place **Friday, January 20th!**

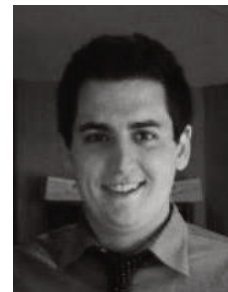
I have made a reservation for us to play **Archery Tag**. The cost will be **\$20** per person, I will be sending out an invitation to all members through the chapter website with more event

information.

If you would like to attend be quick to sign up as there will only be **24** spots available.

Have a great holiday and see you in the new year!

**Joe Della Valle**



**Committee Chair**  
**Joe Della Valle**  
2016-2017  
OVC YEA Chair  
*Walmar Ventilation*

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## Student Activities

Hi All,

Following up from the October communique, we're ecstatic to report our design competition team from Carleton University & CEGEP. From Carleton University, we have Shahryar Shahryari Fard, Ryan Gaudreault, Godwin Scott Nannan, Armand Guy and Bornha Shaeri with Adrienne Mitani stepping up as their mentor. Our CEGEP team will consist of Benoit Touchette, Fethi Sehili, Maxime Charbonnea, Marc Riel, Tom Fournier and their Student Chapter President Louis Laurier with the mentorship of the very capable Georges Maamari.

We all hope to see many of these

ambitious students at the OVC meetings coming up; let's help them out in the form of student meal sponsorships and reaching out and saying hi. We are an accepting but intimidating crowd at times and a simple introduction goes a long way for the students.

The plant tour has been put on hold for now since feedback from the students was that mid-terms and finals would take priority. In early January we'll get working with the student chapter presidents to make sure this important exposure takes place.

Our March 2nd Career fair planning is well underway, the sign-up sheet



**Committee Chair**

**Peter Shaw-Wood**

2016-2017

OVC Student Activities

Co-chair

**Applied Energy**

**E-mail:** [peter@applied-energy.ca](mailto:peter@applied-energy.ca)

for interested companies can be found on the front page of the OVC website at the link below.

Enjoy your friends, family and well deserved holidays!

All the best,

**Peter Shaw-Wood**  
**OVC Student Activities Co-Chair**

## Table Top Display

If you're looking to communicate the value of your product, there is no better way than to invest in a table-top at an upcoming **ASHRAE OVC** meeting. Highly attended and highly regarded, our monthly meetings can afford you the opportunity to display your new technologies to an eager group of HVAC/R engineers and contractors. If you wish to review the themes of each meeting to find an appropriate topic, please feel free to contact me.

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.

We are currently starting to reserve table-top openings for this ASHRAE year.

Please contract **Adam Moons** ([adam@walmar.net](mailto:adam@walmar.net)) to secure yours



**Governor**

**Adam Moons**

2016-2017

Table Top Chair

**Walmart Ventilation Products**

**E-mail:** [adam@wal-](mailto:adam@walmar.net)

today! Cost for table tops is **225\$** and spaces are filling up quickly, so book your table-top today!

*Payment is to be made through the online system prior to the date reserved. Follow the link below:*  
<https://ashraeottawa.simplesignup.ca/en/1775/index.php?m=eventSummary>

# News Update

## Changes to Commissioning Requires Proposed for Green Building Standard

**ATLANTA** – Changes to the commissioning requirements in **Standard 189.1** that would increase its ability to support achieving high performance green buildings are open for public input.

Published by ASHRAE, the **Illuminating Engineering Society (IES)**, the **U.S. Green Building Council (USGBC)** and the **International Code Council (ICC)**, **ASHRAE/IES/USGBC/ICC Standard 189.1, Standard for the Design of High Performance Green Buildings**, contains minimum requirements for the siting, design and construction of high performance green buildings in support of reducing building energy use, resource consumption and other environmental impacts, and maintaining acceptable indoor environments.

Eleven addenda to Standard 189.1 currently are out for public review. For more information or to submit a comment, visit: [www.ashrae.org/publicreviews](http://www.ashrae.org/publicreviews)

Proposed addendum aq updates the standard's requirements for building systems commissioning. Committee chair **Andrew Persily** said the requirements are being changed for several reasons.

*"We want to update the standard to reflect experience gained in applying the existing requirements as well to keep current with trends and terminology in the evolving commissioning industry,"* he said.

In addition to addendum aq, addenda ap and as are open for review until **Dec. 19**.

Addendum ap updates the normative references in Section 11 and the informative references in Appendix G, primarily to reflect the latest publication dates in referenced standards.

Addendum as updates the acoustical requirements based on new technical requirements as well as review of the International Green Construction Code, Acoustical Society of America documents, Facilities Guideline Institute healthcare guide and the U.S. Green Building Council's LEED. The changes include a requirement that room background noise levels be controlled by calculation instead of by prescribing several interrelated features, allowance of either a prescriptive or testing approach for building envelope and interior assemblies, requirements for mechanical equipment and noise to adjacent properties by equipment and addition of a new section on acoustical testing.

In addition, seven addenda are open for public comment until **Dec. 4, 2016**. They are:

- Addendum ae addresses plans for the treatment of waste materials originating from the development of a building project site.
- Addendum ag creates a new definition for plants that are suitable for inclusion in this standard.
- Addendum ah revises the lighting power density (LPD) requirements for exterior parking areas.
- Addendum ai adds requirements for testing, installation and commissioning of air curtains when they are installed in building entrances.
- Addendum aj revises the bi-level motion control requirements to better align with addendum as to

## Committee Chair

**Jeff Watson**

2016-2017

OVC CTTC Chair

**Chorley + Bissett**

**E-mail:** [Jeff.Watson@chorley.com](mailto:Jeff.Watson@chorley.com)

ASHRAE/IES 90.1-2013, Energy Standard for Buildings Except Low-Rise Residential Buildings.

- Addendum al modifies the provisions for electric vehicle charging infrastructure.
- Addendum ak updates the standard's life cycle assessment of buildings.
- Addendum am modifies the roof heat island mitigation section that was changed via addendum i.

## Revised Residential Energy Standard Open for Industry Input

**ATLANTA** – Recognizing the amount of energy used by the residential building sector, **ASHRAE** and **IES** are revising their residential energy standard with a goal of making it 50 percent more efficient than the **2006 International Energy Conservation Code**, which serves as the industry benchmark.

The residential sector consumes a fifth of all the primary energy used by the United States (21 percent) and more than half (54 percent) of all energy used by buildings. Similar trends are also observed in other parts of the world. For example, in Europe, residential buildings accounted for 75 percent of the total building stock and were responsible for 26.2 percent of the total European Union final energy consumption in 2012.

**ASHRAE/IES Standard 90.2-2007R, Energy Efficient Design of Low-Rise Residential Buildings**, is open for public comment from **Nov. 4**

 <p><b>DANNY DILLON, GSC</b> PRESIDENT</p> <p>1481 Cyrville Road Ottawa, ON K1B 3L7 Ph. 613.741.7731 Cell. 613.880.8504 Fax. 613.741.9962 <a href="mailto:danny@dilfo.com">danny@dilfo.com</a></p> <p><a href="http://DILFO.COM">DILFO.COM</a></p> 	 <p><b>Goodkey, Weedmark &amp; Associates Limited</b> Consulting Engineers</p> <p><b>Ross McIntyre, P.Eng.</b> Principal, Designated Consultant, Mechanical Engineer</p> <p>1688 Woodward Dr., Ottawa, ON, Canada, K2C 3R8 Telephone: 613-727-5111 ext. 239 Fax: 613-727-5115 <a href="mailto:rossmc@gwal.com">rossmc@gwal.com</a></p> 	 <p>Building System Surveys / Design &amp; Retrofit AutoCad System Design &amp; Customization</p> <p><b>Roderic S. Potter</b> Principal</p> <p>3 Rochester Street Carleton Place ON K7C 2P9</p> <p><a href="http://www.rodgers.com">www.rodgers.com</a> <a href="mailto:info@rodgers.com">info@rodgers.com</a> cell 613.266.2134</p> 
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until Dec. 19, 2016. For more information or to submit comments, visit [www.ashrae.org/publicreviews](http://www.ashrae.org/publicreviews). **Theresa Weston**, chair of the **Standard 90.2** committee, said the revision of the standard, last published in 2007, represents a new approach in residential building energy performance.

*"This new 90.2 seeks to deliver residential building energy performance that is at least 50 percent more efficient than the energy efficiency defined by the 2006 International Energy Conservation Code," she said. "Key to accomplishing this objective is delivery of an accurate, flexible performance-based tool to enable user creativity in meeting the performance objectives. The new standard contains detailed rules governing the energy modeling and analyses needed to determine compliance with the performance objectives."*

The standard provides a mechanism by which any residential building design can be easily evaluated against these performance objectives. By establishing a clearly-defined rules set for energy performance modeling, users can easily assess various designs, material options, orientations and other variables to evaluate predicted energy performance, according to Weston. This analytical flexibility also provides users with a tool for helping to establish program targets and ensure program compliance.

The ruleset is based on **ANSI/ICC/RESNET 301** with specific exceptions and adjustments for building size. ANSI/ICC/RESNET 301 is available online at the link below.

Another key difference in the structure of this standard is that it allows users to develop multiple

prescriptions – recipes of construction, systems and equipment – that will deliver the targeted performance. As such, users such as states, utility programs and product manufacturers may seek to build prescriptive "solutions" to assist builders with locally focused, performance-based compliant options.

Weston noted that an array of new building envelope, HVAC, lighting and equipment technologies exist to enable achieving even greater levels of residential energy efficiency. Since this standard is performance-based and focuses on whole building energy performance, all of these new technologies can be evaluated to meet the performance target.

Additional key features in this draft standard include:

- **Title, Purpose and Scope** – The standard now covers manufactured housing, which was not included in the 2007 version. It also addresses renewable and non-renewable forms of energy.

- **Building envelope** - The standard recognizes that long-lived building envelope decisions play a critical role in achieving the targeted building performance. Certified performance of insulation, fenestration and envelope air sealing are prioritized. Testing and verifying the envelope air leakage is mandatory. The standard attempts to address several problems in existing residential performance techniques. One major difference is adjustments in building modeling techniques to address the energy use implications of building size.

- **Mechanical systems** – The standard recognizes the importance of HVAC and water heating system performance as essential to achieving the overall building performance targets. Proper sizing

and verification of duct system performance, as well as having all ductwork within conditioned space are fundamental to these objectives. Similarly, plumbing system design, insulation levels and controls are prioritized and are fundamentally new. Requirements for HVAC system design, installation, commissioning and verification are integral to 90.2.

- **Lighting systems** – The standard builds on the many recent cost-effective and long-lived advances in lighting technology – from lamps to control systems – to help deliver even greater levels of lighting energy savings than current minimum code. Key improvements include revised modeling rules for quantifying residential lighting energy, credits for the use of vacancy sensors, dimmers and other control devices and revised lighting allowances for interior, exterior, garage and other residential lighting.

- **Onsite power systems** – The standard recognizes the important role of renewable energy and onsite power systems to help achieve the building performance targets. It emphasizes load minimization and HVAC performance strategies first so that any onsite power systems used can have maximum impact toward the overall building performance goals.

### Smart Grid Standard Adopted by International Organization for Standardization

**ATLANTA** – A smart grid standard published earlier this year by ASHRAE and the **National Electrical Manufacturers Association** (NEMA) has been approved as an **International Organization for Standardization** (ISO) standard.

### ANSI/ASHRAE/NEMA Standard 201-2016, Facility Smart Grid Information Model (FSGIM),

Link: <http://www.resnet.us/blog/ansiresneticc-standard-301-2014-january-15-2016/>



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provides a common basis for electrical energy consumers to describe, manage and communicate about electrical energy consumptions and forecasts.

On **Nov. 17**, ISO/TC 205 Building Environment Design unanimously approved the FSGIM standard in a draft international standard ballot. Because there were no negative votes and no comments to resolve, the standard can move directly to the publication process without an additional international vote, according to Standard 201 committee chair Steve Bushby. The standard will soon be published as ISO 17800.

*"This approval is important given that the standard provides one piece of a larger ecosystem of standards that support the global transformation of the current electric grid into a new smart grid,"* Bushby said. *"This grid will support the two-way flow of both information and electricity as well as widespread use of distributed,*

*renewable generation sources."*

The FSGIM standard builds upon the work of the Smart Grid Interoperability Panel (SGIP) Priority Action Plan 17 and several other smart grid standards, including the standards that support Green Button. The FSGIM standard defines key information that must be shared between electricity providers and electricity consumers along with internal operational and control information needed to control loads and generation sources in facilities (from homes to manufacturing plants) in cooperation with a smart grid.

The FSGIM is a seed standard intended to guide the evolution of control technology specific standards, such as **ANSI/ASHRAE Standard 135**, BACnet – A Data Communication Protocol for Building Automation and Control Networks, for use in various locations.

**Standard 201** joins three other ASHRAE standards that have been adopted by ISO. Two of these standards, both direct adoptions, ISO 16484-5, a direct adoption of Standard 135, and ISO 16484-6, ANSI/ASHRAE Standard 135.1, Method of Test for Conformance to BACnet, are already being modified to include new features that would support the functionality defined in FSGIM.

Standard 201 is part of ASHRAE's efforts to support SGIP in accelerating the development of interoperability for a nationwide smart electric power grid.

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## Bowling Wrap-up

### Ladies and Gentlemen,

The annual Bowling Social was held on **Wednesday, Nov. 16th** at the **Merivale Bowling Center**. Turnout was excellent this year, with **12 teams** vying for the trophy. In the end, **Walmar** pulled out the victory, led by **Joe Della Valle's** final game score of 90, to retake the title from **Airtron**. **Aaron Dobson**, of the

mildly disheartened Airtron team, was quoted as saying, *"A good time was had by all."*

Thank you all for the participation and support! It is truly a testament to the efforts that our chapter is willing to make to maintain our exemplary status. See you next year!



### Governor

**Adam Moons**

2016-2017

Table Top Chair

**Walmar Ventilation Products**

E-mail: [adam@walmar.net](mailto:adam@walmar.net)

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## Chapter Technology Award

Greetings from the CTTC Chair,

Just a friendly reminder regarding that the deadline for applications for the Ottawa Valley Chapter ASHRAE Technology Awards will be **March 15, 2017**. The Awards Presentation will occur at the **April Chapter Meeting**.

For those wishing to learn more about the Awards Program, an overview can be found on ASHRAE's website.

I hope you all had a wonderful Holiday Season!

Best Regards,  
**Jeff Watson**

### Committee Chair

**Jeff Watson**

2016-2017

OVC CTTC Chair

**Chorley + Bissett**

E-mail: [Jeff.Watson@chorley.com](mailto:Jeff.Watson@chorley.com)

Link: <https://www.ashrae.org/membership--conferences/honors--awards/technology-awards-program-overview>

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**JOB POSTING 2016-002**

**Senior Mechanical Engineer - OTTAWA**

Job ID	2016-002	# of Positions	1
Location	Ottawa, Ontario	Experience (years)	10 minimum in Consulting
Posted Date	August 24, 2016	Status	Permanent full-time
Job Title	Senior Mechanical Engineer	Category	Mechanical

**Overview**

Jp2g Consultants Inc. is a multi-discipline Consulting Engineering firm providing services in municipal infrastructure and building services. Our firm currently requires a qualified Senior Mechanical Engineer in our Ottawa Office. Jp2g provides opportunities for work on a wide variety of projects, with emphasis on educational, federal, commercial, and institutional clients. Focus of mechanical work includes; building HVAC, plumbing, fire protection, energy management, investigations and reports.

**Responsibilities**

- Undertake feasibilities studies.
- Assist Section Manager to develop engineering concepts, concept reports and construction budgets.
- Attend client meetings as directed by Section Manager.
- Attend co-ordination meetings with design team.
- Review codes and obtain preliminary approvals where appropriate.
- Assign tasks to Designer and CAD operator; supervise delegated tasks for content and completion in assigned hours.
- Complete heating, cooling and piping calculations and design of mechanical systems for building projects.
- Complete layout of plumbing, piping and ductwork through complex facilities integrating multiple mechanical spaces and systems.
- Co-ordinate mechanical systems installation requirements with other design disciplines.
- Prepare documents to supplement drawings in project bid packages
- Review contract documents prior to tender for completeness.
- Ensure proper coordination of documents with the other design disciplines.
- Perform contract administration.
- Prepares project fee proposals
- Prepare schedule of tasks required to complete project, man hours to perform tasks and critical data required for performance.
- Mentor junior staff
- Maintains existing business and develops new business opportunities
- Any other tasks assigned by Section Manager required to assist in the continued success of the firm.

**Qualifications**

- Bachelor’s Degree in Mechanical Engineering.
- Minimum 10 years of experience in a Consulting Engineering office in the field of mechanical building services – fire protection, plumbing, HVAC and controls.
- Professional Engineer, Licenced in the Province of Ontario.
- Strong ability to work independently and in a complex environment, dealing with multiple projects and clients.
- Sound communications skills (oral and written) as demonstrated through client and staff relations.
- Demonstrate experience working with other consultants and contractors, and coordination of major projects.
- Knowledge of OBC, NBC, ASHRAE, CSA and NFPA standards.
- Familiar with HVAC software (such as Carrier HAP and Trane Trace) and NMS specifications.
- Strong sense of urgency and ability to prioritize tasks.
- Excellent problem solving and decision-making skills.
- Basic CADD experience.



- LEED certification / Experience implementing sustainable design (LEED projects) is considered an asset.
- Experience in project management is considered an asset.

### **Compensation and Benefits**

- Competitive compensation package commensurate with experience and based on industry standards
- Friday afternoon's off year-round (36 hour/week)
- Group RSP planning opportunities
- Group benefits plan
- Professional development and advancement opportunities
- Shareholder opportunities
- An Equal Opportunity Employer

Please submit hard copy resumes in confidence to:

David Nguyen, P.Eng, ing,  
Ottawa Office Manager  
Jp2g Consultants Inc.  
1150 Morrison Drive, Suite 410  
Ottawa, Ontario, K2H 8S9

Or Email to [Ottawa@jp2g.com](mailto:Ottawa@jp2g.com)

*We thank all applicants for their interest, however only candidates selected for an interview will be contacted.*



## **JOB POSTING 2016-015**

### **Intermediate Mechanical Engineer - OTTAWA**

Job ID	2016-O15	# of Positions	1
Location	Ottawa, Ontario	Experience (years)	7-10 minimum
Posted Date	August 24, 2016	Status	Permanent full-time
Job Title	Intermediate Mechanical Engineer	Category	Mechanical

#### **Overview**

Jp2g Consultants Inc. is a multi-discipline Consulting Engineering firm providing services in municipal infrastructure and building services. Our firm currently requires a qualified Intermediate Mechanical Engineer in our Ottawa Office. Jp2g provides opportunities for work on a wide variety of projects, with emphasis on educational, federal, commercial, and institutional clients. Focus of mechanical work includes; building HVAC, plumbing, fire protection, energy management, investigations and reports.

#### **Responsibilities**

- Undertake feasibility studies.
- Assist Section Manager to develop engineering concepts, concept reports and construction budgets.
- Attend client meetings as directed by Section Manager.
- Attend co-ordination meetings with design team.
- Review codes and obtain preliminary approvals where appropriate.
- Assign tasks to Designer and CAD operator; supervise delegated tasks for content and completion in assigned hours.
- Complete heating, cooling and piping calculations and design of mechanical systems for building projects.
- Complete layout of plumbing, piping and ductwork through complex facilities integrating multiple mechanical spaces and systems.
- Co-ordinate mechanical systems installation requirements with other design disciplines.
- Prepare documents to supplement drawings in project bid packages
- Review contract documents prior to tender for completeness.
- Ensure proper coordination of documents with the other design disciplines.
- Perform contract administration.
- Prepare schedule of tasks required to complete project, man hours to perform tasks and critical data required for performance.
- Mentor junior staff
- Any other tasks assigned by Section Manager required to assist in the continued success of the firm.

#### **Qualifications**

- Bachelor's Degree in Mechanical Engineering.
- 7 - 10 years of experience in the field of mechanical building services – fire protection, plumbing, HVAC and controls.
- Professional Engineer, Licenced in the Province of Ontario.
- Strong ability to work independently and in a complex environment, dealing with multiple projects and clients.
- Sound communications skills (oral and written) as demonstrated through client and staff relations.
- Demonstrate experience working with other consultants and contractors, and coordination of major projects.
- Knowledge of OBC, NBC, ASHRAE, CSA and NFPA standards.
- Familiar with HVAC software (such as Carrier HAP and Trane Trace) and NMS specifications.
- Strong sense of urgency and ability to prioritize tasks.
- Excellent problem solving and decision-making skills.
- Basic CADD experience.
- LEED certification / Experience implementing sustainable design (LEED projects) is considered an asset.
- Experience in project management is considered an asset.



### **Compensation and Benefits**

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- Friday afternoon's off year-round (36 hour/week)
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- Professional development and advancement opportunities
- Shareholder opportunities
- An Equal Opportunity Employer

Please submit hard copy resumes in confidence to:

David Nguyen, P.Eng, ing,  
Ottawa Office Manager  
Jp2g Consultants Inc.  
1150 Morrison Drive, Suite 410  
Ottawa, Ontario, K2H 8S9

Or Email to [Ottawa@jp2g.com](mailto:Ottawa@jp2g.com)

*We thank all applicants for their interest, however only candidates selected for an interview will be contacted.*



## **Outside Sales Representative (Ottawa, ON)**

The successful candidate will promote and sell different HVACR products essentially to contractors, engineering firms and building owners. He will be responsible for prospecting and developing new business as well as continuing to build on existing relationships between The Master Group and its existing customer base.

### **Principal tasks:**

#### **Promotion of Master products to clients (contractors, engineering firms, dealers and owners)**

- Evaluation of client's needs & resources and recommendation of appropriate products
- Writing of product technical specs
- Presentation of technical drawings/documents
- Preparation of buying & pre-purchase documents
- Maintain sales forecasting reports
- Presentation of product applications for use in HVACR systems (formal presentation with catalogs or audio/video material)
- Acquire required technical knowledge in order to promote products (academic or manufacturer training)

#### **Management of client accounts**

- Development of existing and potential clients & solicitation
- Preparation of annual sales budgets for territory & proposals for client accounts
- Responsible for the use of the CRM in client account management
- Document account activities, generate reports and keep records of business transactions with customers and suppliers
- Responsible for developing and identifying design build accounts and markets.

#### **After sales service**

- Contacting customers after the sale to resolve problems and ensure follow up
- Ability to resolve technical problems related to products

#### **Marketing & promotion**

- Selling price: coordination with purchasing & sales departments
- Marketing tools, catalogs, sales manuals: coordination with purchasing & sales departments
- After sales service: coordination with service manager & support to manufacturers
- Technical training (products, installation, maintenance)
- Keep informed on industry news and trends, products, services, competitors, relevant information about existing and emerging technologies and the latest product-line developments

### **Ensure effective regional commercial relations with suppliers.**

Promotion of products within the Master sales team.

Identify competitive positioning of our products versus the competition.

Coordination with Product Managers & Technical Support Department

Keep informed on industry news and trends, products, services, competitors, relevant information about existing and emerging technologies and the latest product-line developments.

### **Requirements:**

A Mechanical Engineering degree or equivalent experience

Possess a minimum of 5 to 7 years experience in the sales environment

In depth knowledge of products technical applications (HVACR Master's products & competition)

Working knowledge of Microsoft Office products

Bilingualism considered a major asset

Must have a valid driver's license and be willing to travel

### **Work conditions:**

Permanent position

Competitive salary

Training

Group insurance

Additional holidays

Health program (contribution to your gym membership)

Leader in the air conditioning, refrigeration, ventilation and heating sectors for almost 60 years now and 2010 winner as one of Canada's 50 Best Managed Companies, The Master Group is the largest independent distributor in Eastern Canada from the Greater Toronto Area eastward to the Maritimes.

### **Please submit resume to:**

Christopher Fudge, P.Eng. LEED® AP

Regional Sales Director, Commercial, Applied, Heating and Ventilation

#### **The Master Group**

P: 613-829-2816

C: 613-761-2173

F: 613-829-3731

@ [cfudge@master.ca](mailto:cfudge@master.ca)

25H, Northside Road, Ottawa (Ontario) K2H 8S1

[master.ca](http://master.ca)

We thank all applicants for their interest, however only candidates selected for an interview will be contacted.



# 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 the **ASHRAE** Ottawa Valley website today.

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# 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@htseng.com](mailto:rod@htseng.com) for more details.

Payment will be made through the online system. Follow the link below for payment.  
<https://ashraeottawa.simplesignup.ca/en/1776/index.php?m=eventSummary>

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

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**E-mail:** [rod@htseng.com](mailto:rod@htseng.com)

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Committee Co-Chair  
**HTS Engineering  
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Andrew Klassen  
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