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SPEAKER:

BIO:

Capital Communiqué



ASHRAE - AMERICAN SOCIETY OF

HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS http://www.ashrae.ottawa.on.ca OTTAWA VALLEY CHAPTER e-mail:contact@ashrae.ottawa.on.ca

EVENING PROGRAM DATE: Tuesday November 17, 2009. Social: 17:30 Dinner: 18:30 Program: 20:00 - Travelodge Ottawa Hotel & Conference Centre, 1376 Carling Avenue, Ottawa, Ont., 613-722-7600 THEME: Student Activities PROGRAM: The Renewable Energy Renaissance: Recent Developments and Forgotten Lessons in Solar

Thermal Technology for Heating and Cooling Applications

Dr. Stephen Harrison, P.Eng.

OVERVIEW: Recent concerns for the environment have resulted in a global renaissance in the use of renewable energy systems. In our rush to implement these technologies, it is valuable to take a moment to reflect on the experience gained over the last 30 years. For example, the use of solar energy for the heating of water has existed for decades; however, many of the benefits and design imperatives associated with these concepts have been overlooked.

Modern solar thermal systems can be used for space heating and cooling in residential and commercial applications and have higher efficiencies and cost performance than many competing renewable energy technologies. As well, recent efforts have focused on increasing system performance, reliability, durability and ease of installation. Coupled with higher volume manufacturing and quality control, new solar appliances are poised for widespread application in North America.

This talk will present an overview of modern solar thermal technology and highlight some of the most promising applications and potential pitfalls.

Dr. Harrison has over 30 years of experience in the development and evaluation of solar energy equipment. Author of numerous technical papers and patents, he is the Director of the Solar Calorimetry Laboratory at Queen's University in Kingston, ON. The laboratory supports the efforts of graduate students and post-doctoral researchers, and undertakes applied research for industry and government partners. His past experience includes 8 years as a research officer at the National Research Council of Canada, where he was involved in the development of both national and international standards for solar thermal products in North America, and in 2005, he became the Theme Leader for Solar Heating and Cooling within the Canadian Solar Buildings Research Network. The Network includes the participation of researchers at 11 universities across Canada. As a faculty member in the Department of Mechanical and Materials Engineering, and the School of Environmental Studies at Queen's University, he presents courses in renewable energy, heat transfer and thermodynamics.

Menu

Assorted Rolls and Butter - Cream of Asparagus Soup Grilled chicken breast with a mushroom sauce served with Roasted Potatoes and Seasonal Vegetables Black forest cake with Coffee & Tea Chapter Members: \$35.00 Guests: \$50.00

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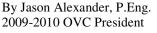
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President's Message



The theme for the November meeting is **Student Activities**. Students and our children are our future. I ask you to ponder for a moment what that future is? Tomorrow is built today. With higher than average attendance of students at the November meeting I ask all members to reach out and speak to some students. One of the main goals of the Board of Governors (BOG) this year is to increase attendance and to get new members active in the chapter. Please speak to the new students about getting active. There is great value in getting active at your local chapter and if anyone is interested in being involved with any committee please speak to me or any other BOG representative.

The November meeting's evening program will be on one of the mainstream sustainable energy sources, solar. Solar energy has become the front runner in our industry for many reasons. The sustainable theme is prevalent throughout ASHRAE society this year as can be seen in our program. Join us for some continuing education and engaging discussions.

Last meeting the membership was exposed to a new process here at the Ottawa Valley Chapter, the meeting survey. For the last few years the BOG and past presidents have been waging a war. We have been fighting to keep the chapter alive. Our membership numbers are down. Our members who are active on committees or the BOG are reduced. Organizing and running a chapter is a large commitment of time and resources. I thank all those that do it right along side me, but we need more. We are listening.

Recently, you received an email survey. This survey process, along with similar surveys after every meeting, is meant to give the BOG better feedback from the chapter. How can we improve your experience? How can we bring more value to being an ASHRAE OVC member? Please take some time to give us some honest feedback. Together we can build a bright future, today.

Sincerely, Jason Alexander, P.Eng. 2009-2010 OVC President



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What you missed at our October 2009 meeting

By Donald Weekes 2009-2010 OVC Secretary

The night's theme was TEGA / Research Promotion. October's table tops were: HTS and Walmar Ventilation Products .

Georges Maamari discussed TEGA (Technical, Energy and Government Affairs). Mr. Maamari talked about the ASHRAE Technology Awards. He also asked members to provide a critique on the technical program on forms left on each table.

Jason Alexander introduced Patrick St-Onge to discuss ASHRAE Research. Mr. St-Onge discussed the fundraising for ASHRAE research in Canada and for the Chapter. Rob Lefebvre, last year's Chair, raised \$23,500.00. Mr. St-Onge introduced David Rasmussen, Regional Vice-Chair of Research. Mr. Rasmussen talked about the Canadian fundraising efforts. Mr. Rasmussen awarded special recognition to two (2) members – Glenn MacLean and Rob Lefebvre – for their past ASHRAE Research fundraising efforts.

Mr. St-Onge discussed the **Golden Circle** for Enbridge Gas Distribution for their contributions to ASHRAE research since 1996 - \$10,000.00 per year. Mr. Paul Green of Enbridge spoke about their commitment to ASHRAE Research.

Major Donor - Silver: Goodkey Weedmark & Associates - (\$1, 000.00 per year). Jason Alexander accepted their award.

Major Donor – Bronze: (\$500.00 per year). Breck-Mar Sales & Services; C&S Heating; Dilfo Mechanical; Direct Energy Business Services; Genivar Consulting Group; Longhill Energy Products Eastern; Methot Controls; T.A. Morrison & Company; Total HVAC Inc.; Walmar Mechanical.

Major Donors: (\$250.00 - \$500.00 per year). Engineered Air; HydroPlumb Mechanical; JP2G Consultants; Lar-Mex Inc.; Modern Niagara Ottawa; Parson Refrigeration; VCI Controls; Wesmech Technical Sales.

Honour Roll – (\$100.00 per year personal OR \$150.00 for company). A long list of individuals and companies were honoured.

Jason Alexander talked about the AHR Expo in January, 2010. Please contact Mr. Alexander regarding free passes to the Expo. The Expo is held in Orlando, Florida this year in conjunction with the ASHRAE Winter Meetings (January 24-27, 2010).

The evening's technical presenter was Mr. Joel Hirsch of Titus. Mr. Hirsch's topic was 'Chilled Beams'. Mr. Hirsch discussed the energy savings and the advantages of the use of chilled beams in HVAC systems. The presentation discussed the why and how of chilled beams, from active chilled beam applications to system design challenges.









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Student Activities and You

By Matthew Edmonds 2009-2010 Student Acitvities Chair

This month the OVC hosts its first of two student nights for the year. This year we are hoping to see a good turnout for both nights. So far we have had student participation at each meeting and we are hoping to grow our numbers substantially, and with new interest rising from two different schools in the city we should begin to see an influx of more fresh meat in the near future.

So now that you are excited, I know you are asking yourself, "How can I help?" - well there are numerous ways to help initiate and foster some Student-Member relations... First and foremost when you are at the next meeting and you see a pair of young, nervous, and impressionable eyes staring around the room, introduce yourself and make a comfortable environment for them, and keep two things in mind: they are the future of the business, and... they are much more afraid of you, than you are of them.

Next step, and a very important one, is helping to sponsor student meals. As a chapter we do our best to encourage students to attend our monthly meetings but as you remember money can be a scarce commodity when you are a student. Keep that in mind as you register for each meeting and think about sponsoring a student meal for the night; you'll help keep a hungry student off the streets, and who knows maybe that student will be your next employee... or boss. Sponsorships can be made at the personal or corporate level, at the meetings or directly through me, and as always there is chapter recognition for sponsorship.

Another way to help a student as well as the industry and our chapter, is to participate in any of the various student related activities around the city all year long. The best part is that this includes student of all ages, and is a great way to give back to the community. Activities can include anything from taking a student to work (shadow day), to many different school based activities where you can inject some excitement into a student's day and maybe even spark some interest in a career in engineering. For those of you who may be interested in something like this, but don't have the connections to students, schools, or teachers, let me be your resource for making some connections. As an example, you can help mentor some grade 5-7 students in the NRC Engineering Challenge and be a part of building and racing a rubber-band powered vehicle built completely out of recycled material and without the use of power tools. While not directly related to ASHRAE, it is a great way to get students interested in a career in engineering, and a great way to get your head into a different design mode than normal. If this venture seems like something that would interest you, take a look at the following link, and contact me for more information.

http://NRCengineeringChallengeEast.eventbrite.com http://NRCengineeringChallengeWest.eventbrite.com

I look forward to seeing you all at the upcoming meeting.

Matthew Edmonds Chair Student Activities

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History – Spotlight on Subash Vohra

by Rod Potter Webmaster & Chapter Historian

It was my great pleasure to interview Subash recently at building M-19 at the Montreal Road Campus of NRC. He is a fine example of what we should all strive to be in this life.

Subash Vohra was born in the Indian province of **Punjab** on October 5th, 1939. He obtained his first degree from Punjab University in 1958, with a Bachelor of Science. Choosing to continue his education, he wondered about a career in medicine or engineering, both of which were highly respected professions at the time. His grandfather was already an established engineer and he was encouraged to follow in his footsteps. There was great prestige involved with entering a high level engineering course and there was limited space – the 1958 year only allowed for 30 mechanical, 30 electrical, and 60 civil engineering positions. Subsequently after a further four years of study at the Thaper Institute of Technology, in Patiala, Subash completed his studies with a second Bachelor of Science in engineering in 1962.

At this time Subash's brother was working in Frankfurt, Germany at **ATE** (Alfred Teves Est., now part of Continental AG), a company that manufactured brake systems for cars, and air conditioning systems for commercial buildings. Through this contact, Subash landed a job and worked there for one year from July 1962 to July 1963. Soon after this his brother emigrated to Canada. Subash then moved on to another job at **MAN AG** (Maschinenfabrik Augsburg-Nürnberg), a German engineering and manufacturing company (trucks to printing presses). This company specialized in diesel engines and had three divisions based on size of engine. Subash worked for the *Klein Motor* division which manufactured small engines suitable for cars. He stayed with this firm for one year from July 1963 until July 1964.

Both **Canadian National** and **Canadian Pacific** were customers of MAN AG and while he was working there, Subash wrote letters to these companies enclosing his CV. He traveled to Montreal in July 1964 and was interviewed by both companies. Canadian National offered him a job in Moncton New Brunswick, while Canadian Pacific offered him a job in Montreal working on the design of a/c systems. His brother was living in Montreal and he was more interested in this position. While this was going on, his brother noticed an advert in the newspaper from a headhunter – describing a design position with **G. Granek & Associates** of Toronto, a design consultancy. They were the designers of a shopping center in Montreal, which was under construction. The main mechanical contractor was headed by **Jack Lewin**. Subash responded to the advert and Gerry Granek asked Jack to interview him at his Montreal office.

The normal salary for a young qualified engineer at that time was in the order of \$800/month. However Subash did not feel comfortable asking for this high a salary because he knew he was green in the Canadian market, had never worked in Imperial units, and wanted a chance to prove himself. When Jack Lewin asked him what salary he was looking for, Subash responded \$500/month, so Jack said fine, please come back to the office for 1pm to meet Gerry Granek who was traveling up to Montreal that day. During his time in Germany Subash attained a good knowledge of the German language, and Jack Lewin had German background so this was an advantage. Subash met Gerry and things went splendidly. This was July 21st 1964 and Gerry asked when he could start work, to which Subash suggested August 1st. Gerry was obviously keen because he questioned what Subash would do with that week or so, and it was soon arranged that Subash was whisked away to Toronto by air and put up in a hotel all courtesy of Gerry Granek. At their downtown offices, he met with Gerry's senior partner, who proceeded to ask Subash "what is the typical airflow required per square foot for an average office space?" - to which Subash answered in **metric units**... The partner was suitably impressed (or confused) and all went well.

The first project he worked on was the design of the main mechanical room for a racetrack near Lakeshore Blvd. in Toronto, under the tutelage of a senior engineer. Soon thereafter the firm won the design competition for the new **National Arts Center** in Ottawa, and Subash was sent to work on this project under the supervision of a senior engineer at the office of the architectural firm **Affleck**, **Desbarats** in Montreal. This project was plagued with many redesigns, and after six months Subash was looking for a change. It was nearly Christmas in 1964 and he moved to a supervisory position with

(cont...)

Monarque, Morelli, Gaudette, Laporte, another Montreal firm providing mechanical, electrical and structural design services. Even though he had only just started he still received the \$25 Christmas bonus. There were many new immigrants working in our field at that time and Subash's language skills made him the "official translator" for the office.

This was a very busy era for construction in Montreal and Subash soon learned that the design-build contractor **S. Engle &** Associates were looking for help. They were building the *Place Bonaventure* project and were doing real-time design on site. Subash was soon in the situation where he was working all day for Monarque Morelli and then moonlighting in the evenings on Place Bonaventure. This was a Canadian National Railways project and they were paying the contractor to produce accurate drawings of everything being installed. They wanted everything to be complete in time for the **Expo '67** world fair, and Subash worked evenings and weekends for a flat rate of \$5/hour (sounds like a decent wage for 1965).

Ever watchful of the newspaper adverts, he noticed one by the **National Research Council** for a position at their Montreal Road site, and sent in his résumé. **Ab Maclaren** was the NRC director of Plant Engineering Services (PES) at that time and he interviewed Subash at the Queen Elizabeth hotel in Montreal. Subash was asked general questions about his experience and was offered a job two weeks later with a \$550/month salary. He talked over his options with some colleagues at Monarque Morelli and eventually accepted the position, starting in September 1966.

These were days when the slide rule was still the tool of choice, and his first project was a heating system for a small building at the NRC Uplands Campus, U-62. Things were different in those days – PES was a major employer with approximately 260 employees, comprising all M&E trades. When a design was done it was installed by PES staff and the designer was responsible for everything right down to bills of materials. (*in fact I can state that I have learned what little I know about pneumatic control systems by studying some of Subash's original drawings – ed*). Subash continued in a design role and in 1974 was promoted to Supervisor of Mechanical Engineering Group.

In 1983 the director of PES retired and this heralded an era of major change in the organization – many people retired early with golden handshake packages. Subash was promoted to **General Manager of Engineering Services** in 1986 and the first thing he was asked to do was to make cuts and find cost savings. The NRC buildings in the Ottawa area had previously been split up into as many as seven "zones" and Subash found cost savings in reducing this to three. Zones 1 and 3 are both at the Montreal Road campus, and Zone 2 comprises the 100 Sussex Drive building (S-77) and the Uplands Campus.

The name PES was eventually changed to ASPM (Administrative Services and Property Management), and Subash became **Director of Engineering & Maintenance** in 1987. In 1997 the head of ASPM was seconded to the SIGMA project (NRC's adoption of the SAP system) and Subash then became **Acting Director General** of ASPM for two years. After the SIGMA work was complete, his predecessor decided to retire, so the DG position became vacant. Subash had to compete and won the competition – and he eventually retired from NRC in 2007 after another eight years as **Director General**.

During his time with NRC, Subash contributed greatly to the organization and these are just a few of his achievements:

- In 1989 he started the first Government of Canada backed Energy Performance Contracts for four NRC buildings, and saved \$400K/year in running costs.
- NRC buildings at the Uplands campus had originally been heated via steam provided down tunnels by DND. He felt that the cost for this was too high and he worked with Honeywell to convert the buildings over to individual gas-fired steam boiler plants this project was successful with a 2.5 year payback period.
- In 1993 the 4.0 megawatt NRC Co-gen system was brought on-line, saving millions of dollars per year. The payback period was 5.5 years with a 1 million dollar incentive from Hydro Ontario. Natural gas was inexpensive in the early 90's which made this project particularly attractive. Now the plant runs during peak periods when it is still cost-effective.
- Replacement of fume hoods in building M-12 with efficient low-flow units has reduced the outdoor air make-up requirement considerably, saving NRC \$330K/annum.

Subash is currently very active in records management for ASPM – his forty year knowledge of projects for NRC Ottawa has proved invaluable in deciding what documents (such as drawings) are still valid for scanning (see the article "I.M. Knocks at Our Door, Drawing Ever Closer" in the April 2008 Communiqué). He has set his sights on the Sussex Drive building in the near future – it has hundreds of fume hoods gobbling energy – and he intends to put this right much like he did with building M-12.

(cont...)



Jim Siciliano, P.Eng. Partner/Mechanical Section Head m.Siciliano@mckeeottawa.ca

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He is currently vice-president of Co-Gen Canada, a non-profit organization offering courses, seminars and workshops. In 2007 he received a Lifetime Achievement award from the *Real Property Institute of Canada* (RPIC), has received awards from the Treasury Board, and in the past has received TEGA awards through ASHRAE. When asked what he thinks of his forty years with NRC, he is quick to state what a wonderful employer they are, where you can learn a great deal, and give the same back.



Subash Vohra, October 2009



Membership

By Philippe Lemieux 2009-2010 OVC Membership Promotion Chair

The ASHRAE Ottawa Valley chapter would like welcome its new members for August and September. They are:

- Mr. David Chabot
- Mr. Prasanna R Sivapiragasam _
- Jeremy D'Brox.

The membership committee is still looking for some volunteers if anyone is interested please contact me.

Thank you Phil Lemieux



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Table TopBy Frank Bann

2009-2010 OVC Governor

Governor



Longhill is pleased to feature Nortec MH – Advanced Evaporative Media Humidifier at their table top.

Nortec MH - Advanced Evaporative Media Humidifier

The MH Series provides energy efficient air humidification and air cooling based on the simple adiabatic principle. Its innovative design is specifically engineered for air handling units (AHU) or ventilation duct applications and is a perfect compliment towards Green/LEED building design.







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News Update



By Jason Alexander, P.Eng. 2009-2010 OVC President

<u>Technical News:</u> Building Energy Use Highlighted in Newest ASHRAE Certification Program

ATLANTA—As building owners and developers become increasingly concerned about rising energy costs and potential obligations under climate change programs, building energy modeling helps provide a preview into a building's likely energy use and allows decisions affecting energy use to be made before a shovel even hits the ground.

To ensure that professionals modeling a building's energy use have the skills necessary to produce an accurate model, ASHRAE is launching a Building Energy Modeling Professional certification.

The first exam for the new certification program will be administered on Jan. 27, 2010, at the Winter Conference in Orlando, Fla. To register for the exam, visit <u>www.ashrae.org/BEMP</u>.

"Energy modeling is one of the most effective ways to achieve energy efficiency when designing sustainable buildings," Gordon Holness, ASHRAE president, said. "Since buildings consume 40 percent of all U.S. primary energy supplies, and energy modeling is only as good as the consultant who uses it, ASHRAE's newest certification program strives to ensure that engineers and architects achieve the highest possible standards when it comes to sustainable design."

Criteria to improve the accuracy of building energy models will help address some of the growing concerns within the building community that building designs do not necessarily translate to actual energy use once a building is constructed. Additionally, energy modeling will play a vital role in ASHRAE's soon-to-be launched Building Energy Quotient (bEQ) program, which will feature both an "As Designed" and "In Operation" component. While the "In Operation" rating is based on actual energy use, the "As Designed" rating is based on the results of a building energy model.

Careful and consistent energy modeling will allow modeling results to be compared with the results of models from other buildings. According to Holness, the certification will be an essential element for guaranteeing the quality of the bEQ program by assuring that there is a competent pool of building energy modelers.

Professionals who pass the certification exam will have demonstrated their ability to evaluate, choose, use, calibrate and interpret the results of energy modeling software, as well as confirm their competence to model new and existing buildings and systems with their full range of physics.

The certification will also highlight a consultant's ability to act as a leader for projects that focus on energy efficiency, especially projects that deal with green buildings and building labeling programs, such as bEQ. The Building Energy Modeling Professional program will help the individuals who earn it to distinguish themselves by providing confirmation of their skills and specialties by an internationally recognized engineering society. Professionals with such certifications have better chances of being hired, promoted and/or tapped for working on certain types of design projects.

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ASHRAE's newest certification will become available at testing centers located around the world in March 2010and was developed in collaboration with the U.S. affiliate of the International Building Performance Simulation Association and the Illuminating Engineering Society of North America.

Sustainability News:

ASHRAE, UNEP Further Work in Protecting the Ozone

For Release Oct. 28, 2009

ATLANTA—ASHRAE and the United Nations Environment Program have launched a joint program of work in order to reduce emissions and encourage energy-efficient refrigeration and air conditioning systems and building designs.

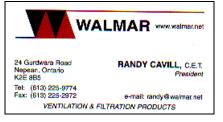
The First Annual Cooperation Work Plan between ASHRAE and UNEP, an organization that promotes the wise use and sustainable development of the global environment, was presented on October 5, 2009 at the Region-at-Large Chapter Regional Conference in Kuwait. The program of work sets goals and timelines for phasing out ozone-depleting refrigerants and the management of ozone-depleting substance refrigerant banks, to name just a few.

One of the ways ASHRAE will support the established goals is by providing Distinguished Lecturers to present the latest achievements in non-Ozone depleting refrigeration technology to both ASHRAE chapters and technical activities organized by UNEP. ASHRAE will also support an ozone literacy course developed by UNEP.

"By partnering with UNEP, ASHRAE can more efficiently respond to the growing demand for new technologies that do not contribute to ozone depletion and are energy efficient," Gordon Holness, ASHRAE president, said. "Through collaboration, continuing education and provision of experts on the topic, ASHRAE, UNEP and the global community can look forward a healthier environment." The program of work is the result of a memorandum of understanding signed between ASHRAE and UNEP in June of 2007.

UNEP was formed in 1972 and acts as "the voice for the environment within the United Nations system." The Program works with a wide range of partners to asses global, national and regional environmental conditions and trends; strengthen institutions for the wise management of the environment; and facilitate the transfer of knowledge and technology for sustainable development.

ASHRAE, founded in 1894, is an international organization of some 50,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.





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Business Card Ads

by Rod Lancefield

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