# 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

**February 2008**




## EVENING PROGRAM

DATE: Tuesday **February 19, 2008**. Tech Session: 16:30 Social: 17:30 Dinner: 18:30 Program: 20:00
CLEO Banquet Center, 156 Cleopatra Dr., Nepean, Ont., (613) 224-8700

TECH SESSION: **Radiant Tube Infra Red Heating Applications**
**Presented by Ismet Lilich.**

THEME: **Membership**

PROGRAM: **Natatorium Design and Dehumidification**

SPEAKER: **Ralph Kittler**, P.E.

OVERVIEW: These facilities are notoriously complex to design and can be expensive to operate. The presentation covers the many critical system design aspects of a Natatorium which include the fundamentals of psychometrics, dew point, humidity/condensation control, moisture load calculation, air distribution, ventilation requirements, water chemistry and how to optimize your operating conditions to minimize operating costs.

SPEAKER BIO:

Mr. Kittler, an ASHRAE Distinguished Lecturer, is well regarded in the HVAC industry as an expert in dehumidification and Indoor Pool Design. He has been in the dehumidification and Natatorium design field for over 15 years. He is the revisor responsible for Chapter 4 (Large Building Air Conditioning Applications) of ASHRAE's 1999/2003/2007 Applications Design Handbook which covers Natatorium Design and speaks regularly at ASHRAE meetings across the country. He has also published several articles in trade journals and magazines. Mr. Kittler is a Co-Founder and Director of Sales & Marketing for Seresco Technologies Inc. He is a Professional Engineer with a degree in Mechanical Engineering from **Lakehead University, Ontario Canada** in 1989**.**

**Menu**
Salad to start
Chicken Cordon Bleu with baby potatoes and spring vegetables
Light desert with coffee and tea
Chapter Members: $30.00 Guests: $45.00

President & CRC Delegate

# President's Message

By Robert Lefebvre
P.Eng., LEED AP
2007-2008 OVC President

Hi Everyone,

I have been an ASHRAE member for a number of years now and since I joined, I have always been involved in the chapter activities in one way or another. However, I have never attended any of the ASHRAE society functions. This year with my being Chapter President and all, I thought I should make the effort and attend ASHRAE's annual winter meeting. Well, I should have done this sooner; it was a GREAT experience. First off, the meeting was in New York City which is one of the world's best cities. I arrived on the Saturday and attended two days of technical seminars. The information I received from the seminars was invaluable and can be immediately applied to my work. At the same time the seminars were going on, the business of ASHRAE was being attended to in a plethora (my big word for the day) of committee meetings. It was great to meet many of the people who keep ASHRAE going and contribute to ASHRAE on a regular basis. It was also good to see so many people from the Ottawa Valley Chapter at the meeting.

Of course, the AHR Expo was going on at the same time. Joel Primeau and I met up to walk through the hundreds of rows of product displays. We were very proud of ourselves for getting through the whole show in just over three hours. To our dismay, we were informed that there was a second floor of the show. We turned around and with a little less spring in our steps, we completed our walk through of the show. Needless to say, we were in need of a BEvERage after that. Oh ya, apparently New York City has some good bars and restaurants. Not that Frank Bann and Jason Alexander would know. They went to bed early on our last night in NYC (sorry boys, but it had to be said).

Back on the home front, in March we will be hosting an ASHRAE Learning Institute seminar on Commissioning. Commissioning is a key resource to ensure that the building systems work as intended from the initial concepts to final the post occupancy fine-tuning. Whether you are a contractor, consulting engineer, owner, tenant, property manager or building operator, commissioning adds value. To learn more about commissioning and the seminar, refer to the article here.

At this month's chapter meeting we have a technical session on Infra-Red heating and then our main program is on dehumidification of natatoriums (*a building constructed for the purpose of housing a swimming pool and related equipment – source Google*). Our speaker for the main program is Ralph Kittler. Mr. Kittler is an ASHRAE Distinguished Lecturer, so you can be certain that the presentation will be a good one.

I look forward to seeing you at February's meeting.

Yours very truly,

Robert Lefebvre, P.Eng., LEED AP
ASHRAE Ottawa Valley Chapter
2007-2008 President

Secretary

# What You Missed

by Patrick St-Onge
P.Eng., LEED AP
2007-2008 Chapter Secretary

Once again this season, the first meeting of the New Year was an all day event with the career fair. Students Activities Chair Stephen Lynch was the organizer of this very successful event. This year's career fair started at 2pm with presentation from industry professionals talking about careers in manufacturing, consulting, sales and facility management. With booths representing all sides of the industry, it was a privileged opportunity for the exhibitors looking for young talent to meet the graduating youth from all the local post-secondary institutions. The students had this chance to see the depth and variety of our industry and chat with potential employers.

Officially visiting our region, Students Activities RVC Joël Primeau, wearing a suit for this special occasion (he promised that he'll be dressed like Gary Hartman for the next meetings) talked about the committee and what ASHRAE offers to students, like grants and scholarships and the design competition. He also made a special mention to Steven's dedication as chair of the committee.

Don Fugler engineer in Policy and Research at CMHC, was our speaker for the night. The topic was the CMHC's Equilibrium project which deals with 12 houses across Canada (new construction or major renovation) and has the objective to show how houses can be built to have a zero net energy consumption after completion. The houses must also provide a healthy environment for the occupants and be affordable, as much as possible. Mr. Fugler presented an overview of the 12 projects, some of them already built, some in construction and others still at the concept stage of the project, with an objective and critical eye on the strategies implemented to build what in the end should lead to better energy efficient houses in Canada. Mr Fugler is certainly one of the great speakers our chapter has had the opportunity to receive and by the number of questions and comments the presentation generated, it certainly was a topic that was of great interest to the attendees. The conversation could have lasted longer, but all good things must come to an end.

Some interesting pictures!

Student Fair Display

Student Fair Display 2

Learning about ASHRAE

Glenn MacLean speaking about HVAC sales

Christine Doyle speaking about facility management

Joel Primeau speaking about engineering consultants

Paul Baker speaking about sales engineering


The students are amazed!

Committee Chair

# Membership

by Christine Kemp
2007-2008 OVC Membership Promotion Chair

February is Membership month. If you have joined ASHRAE recently and have not yet attended a meeting, it would be great to see you at this one. Once you have been to a meeting, you will then see the **many** benefits of becoming a member.

ASHRAE Ottawa Valley Chapter is happy to welcome our new members this month:
Johnathan Brazeau, Daniel Laurin, Eugenio Burnier & Narinder Paul Sra.

We are also pleased to see one new student member:
Sean Fleming.

Hope to see you on February 19th.

Christine Kemp
ASHRAE Ottawa Valley Chapter
Membership Chair

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Committee Chair

# 2008 ASHRAE Curling Bonspiel

by Chris Healey
2007-2008 OVC Committee Chair


**2008 ASHRAE Curling Bonspiel**

**When:** Friday March 14/08

**Where:** The Nepean Sportsplex

**Who:** Anyone who wants to have a good time.

**What:** 4 Games of 4 ends each, plus dinner and prizes.

**The Nut & Bolts:**
Please book in teams of 4, the cost will be $ 360.00 per team (This includes prizes)
Curling will last from 1:00 pm to approx. 6:30. Dinner will follow upstairs in the Richmond Room at approx. 6:45. Spectators Bar & Grille will be open at 11:30 am for lunch and will remain open all day.

To Book a team: Contact Chris Healey - chris@walmar.net or
613-225-9774 or fax 613-225-2972

See you there !!!!
Chris Healey

Governor

# Tower Colliery finally Closes

by Rod Potter
Governor, Chapter Historian, Gopher and Webmaster

My formative teen years were spent in the midlands of England, in the Birmingham area. Much of the surrounding countryside was marred by the presence of "slag" heaps from the numerous coal mines that were still operated by men who spent most of their lives in darkness. The area surrounding Birmingham was in fact referred to as the "Black Country" for obvious reasons. If you were lucky, the slag heap nearest your residential area was covered in grass so in fact it was not such an eyesore. Slag is the waste matter that is left after the precious anthracite is separated out, and I am told it is quite fertile (for growing grass anyway).

I noted the recent closure of **Tower Colliery** in Hirwaun, Wales, with interest. This was the last remaining operational deep mine in Wales. Britain in the 80's was a turbulent time for the labour unions, and a year long miners' strike in 1984-5 against pit-closures nearly became the swan-song for Tower colliery. Maggie Thatcher (prime minister at the time) insisted with the backing of then trade-minister Michael Heseltine that the pit had become financially unviable, and pulled the plug; the mine eventually closed in 1994. However, the 239 staff at the pit called her bluff, pooled each of their £8,000 redundancy cheques, and purchased the pit. After this they continued to produce coal in an economical manner from 1995 until today, the coal now having effectively run out.

One of the miners spent a final couple of hours 450m underground "just tidying a few things up" before being hauled back to the surface. Apparently it IS possible to leave a mess down inside the pit prior to the final filling-in and closure comes to pass. I can remember hearing things like "my grandfather worked in this pit, my father worked in this pit, I work in this pit and [dammit] my children are going to work in this pit". This fixation on working a coal mine ran in the genes of these hard-working men and women (well, mostly men actually) and I imagine the reason was there was not much else to choose from. God knows any one of them worked much harder than I am ever likely to in this life.

Some would say that the closure of the last deep mine in Wales is a good thing because coal is the horrible fossil fuel creator of carbon dioxide, methane, and many other things that give environmentalists reason to sound off. Tell this to the Chinese, where the economy is growing at an alarming rate, this being an economy that relies on coal for 80% of its electricity. The country can boast very little oil or natural gas reserves, but it has plenty to shout about in the coal-mining department. And of course because of all of this, the Chinese are the bad-boys when it comes to climate change. We in the west have done everything to spur on the rampant development of that economy through our insatiable appetites for Happy Meal Toys, cheap technology, and chop suey [ok maybe not chop suey].

Many men were killed in Tower Colliery over the years, and China's record is not very healthy on that score: the death rate in Chinese coal mines is currently running at about 20 each and every day. The official plan calls for another 544 coal-fired power stations across China, so the death rate is likely to increase, and not just down the mines. As the economy continues to boom, the standard of living of the average Chinese worker will increase to the point where there will be so many cars on the roads that Kanata westbound at 5 pm will look like a cake walk. There are already traffic jams in Beijing, significant because these were unheard of just a few years ago. More cars on the roads can only lead to more accidents on the same roads.

At least the authorities in China are aware of the global-warming problems we face, and some of the newer mines are taking steps to cut down on such pollution. For instance the Sihe mine is considered a role model because it captures much of the methane gases being released by its mining works, and diverts them to a nearby gas-fired power station. Typically these gases are simply allowed to rise to the heavens. Now at least they are put to some good use [before they rise to the heavens in an even dirtier form].

[I guess all of this really has no bearing on ASHRAE OVC History, but you know me, I like to waffle on occasionally, so there you have it.]

Cheers from the desk of Rodders CAS.

Governor

# Table Top Display

By Frank Bann, P.Eng.
Governor

This month's Table Top is presented by Paul Pilot from Siemens.

SIEMENS

Siemens will be displaying their new modular building controller the PXC-modular.

This is Siemens latest Building Automation field panel. It is completely backward compatible with all of our other field panels. The PXC modular has modular hardware components which are mounted on DIN rails simplifying installation, service and future expansions. The controller contains proven program sequences, sophisticated adaptive control, built-in energy management, historical data trending, operator control and monitoring functions.

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Seresco is quickly becoming one of the leading manufactures of packaged dehumidification equipment in North America. Installations of their product range from small indoor residential pools and Physiotherapy baths all the way up to large indoor water parks.

Seresco will have an example of a small packaged dehumidifier on display.

Seresco

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Roberts Gordon represented by Walmar Ventilation will be displaying High Intensity radiant heating and control products.

RG ROBERTS GORDON

WALMAR

President-Elect & CRC Alternate

# Commissioning Seminar

by François Bélair
2007-2008 President Elect

## Save the date - March 18th, 2008

## The Commissioning Process for New and Existing Buildings

Details have been finalized for a full day commissioning seminar this March 18th. Invitations will be distributed shortly. For details, refer to the **Chapter website here**, or contact Francois Belair (fbelair@master.ca) P: 613-829-2816

**Learn the Latest Building Commissioning Process Through Your Chapter**

**The Commissioning Process for New and Existing Buildings**

This course will explain the fundamentals of applying the building commissioning process to new construction and existing facilities. Learn the commissioning process through each step of a project from pre-design to occupancy and operations. The course explains the benefits of commissioning and how the process can improve the quality of design and construction, and raise the professional reputation of the entire commissioning team. The course discusses the documentation that is created during the process, including specifying commissioning for new construction.

**The presenter:**

**Richard Casault, P.E., CDT (Casault Engineering)**

Committee Chair

## ASHRAE Chapter/Regional Technology Awards

by Thomas Chiykowski
2007-2008 OVC Committee Chair

The TEGA Committee is now looking for submissions for the ASHRAE Chapter/Regional Technology Awards. This is an excellent opportunity to showcase some of the innovative designs that are found in the Ottawa Chapter. We are looking for submissions for buildings that have been completed and been in operation for at least a few months. The form and instructions, which can be found on the Ottawa Chapter website here, consist of two simple pages. The submissions should be in by the end of March. We would like to see several submissions in each of the seven categories:

I. Commercial Buildings
II. Institutional Buildings
III. Health Care Facilities
IV. Industrial Facilities or Processes
V. Public Assembly
VI. Residential
VII. Alternative and/or Renewable Energy Use

The Ottawa Chapter has many talented firms and individuals associated with it and I am sure there are many designs that are worthy of recognition. This is a chance to share them with colleagues and perhaps with other chapters. If you have suggestions or questions regarding the TEGA Technology Award please contact myself, Frank Vaculik or Bob Kilpatrick.

Tom Chiykowski

Treasurer

## Student Sponsors

by Jason Alexander
2007-2008 OVC Treasurer

The Ottawa Valley Chapter would like to thank the following individuals for sponsoring a student meal at the January meeting:

Chris Harrison of Longhill Energy Products Ltd (two meals sponsored)
Lan Chi Nguyen Weeks of InAir Environmental
Eric Van Benschoten of Van Fort

As with all other monthly meetings, we encourage individuals or companies to support a student through sponsoring their meals.

Jason Alexander



Governor

NCR NIRAJ CHANDRA REPORT
OUR GUY ON SITE

# Turn off your lights!

**IMPORTANT NOTE**
My articles represent my own personal views, opinions, and knowledge. They should not be construed in any way as representing the viewpoint of the organization I work for, or ASHRAE Society, or the Ottawa Valley Chapter.
Niraj Chandra, P.Eng
E-mail: niraj_Chandra@hotmail.com

Lighting is the most visible form of energy wastage in commercial buildings. When I drive past downtown at night, the lights are on in most of the office buildings even during the weekend. In some offices, the lights for the entire zone turn on as soon as anyone enters, and stay on even if only one person is at work. This is simply because of the way lighting system has been designed. Does this serve any purpose?

Obviously not. But most of us have been trained to design the buildings in a certain way. We talk about energy analysis, green buildings, sustainability, and LEED ratings, but most of the time, we simply let all this hi-tech talk overpower our common sense. It is common sense to provide lighting that turns off during unoccupied hours, and to have lighting controlled by individual switches or individual occupancy sensors rather than zone lighting. But it is hard to find buildings that actually do this.

Or consider another example – the way ventilation systems are designed in buildings. During spring and autumn – the "free' cooling season –the outside air enters the system from intakes, runs the through extensive ductwork, gets filtered, mixes with return air, and is then distributed throughout the building using fan power. Why not just let the fresh air in directly into the rooms, using operable windows?

Many engineers don't like operable windows because they feel they will lose control; occupants might actually open or close the windows. If this is a concern, just let the building control system operate the windows, based on indoor and outdoor temperature conditions. Surely, we don't need rocket science to accomplish this; it can readily be done using available technology. Innumerable studies have shown that most occupants prefer operable windows. Fresh air is the highest quality air we have available in a building; anything we do to it inside the building will only reduce indoor air quality.

At home, most people don't operate the air conditioning system continuously during the summer but this is the norm in office buildings. At our house, we open the windows in the morning and at night to cool the house, and then turn on the air conditioner for only a few hours in the afternoon. This works well even in the hottest summer months; we get plenty of fresh air and save on energy bills. We need to replicate the same type of commonsense approach towards designing commercial building systems, using building automation to perform the tasks that we do manually at home.

At home, most people also adjust their dress code according to the season. People dress warmly in winter and turn down the thermostat a few degrees; conversely they dress lightly in summer and use the air conditioning sparingly But this is rarely practiced in offices, except, perhaps, in Japan where energy conservation is a much more serious business.

We rely too much on standards and guidelines in designing buildings. These are very useful tools – especially if they come from ASHRAE- but we also need a very strong dose of common sense injected into all stages of the design process.

Niraj Chandra

President & CRC Delegate

# News Update

By Robert Lefebvre
P.Eng., LEED AP
2007-2008 OVC President

**Technical News:**

## ASHRAE Publishes Updated Version of Energy Efficiency Standard

January 22, 2008

ATLANTA – Energy reduction through new requirements related to lighting, façades, and mechanical systems is achievable in the latest energy efficiency standard from ASHRAE and the Illuminating Engineering Society of North America (IESNA).

Just published, the 2007 version of ANSI/ASHRAE/IESNA Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings,* provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings. The standard contains changes made through 47 addenda to the 2004 standard.

"One of the best ways to reduce building energy consumption is to reduce, or eliminate, the cooling or heating loads," Mick Schwedler, chair of the Standard 90.1 committee, stated. "By doing so, the systems installed in buildings become smaller and use less energy. For example, on a hot, sunny day, having more insulation in the roof and better glass on the southern and western façades of a building reduce the air conditioning necessary as well as its resultant energy use. Two of the addenda do this by enhancing the insulation and fenestration (or window) requirements for the building exterior."

The standard also addresses reduction of electrical and cooling loads and thus electricity by allowing less power for lighting. An addendum revised lighting allowances for retail displays, as it allows more flexibility for designers and better reflects actual retail lighting function.

Schwedler cited forewords from three approved mechanical addenda to quantify a portion of the energy savings:
· Addendum an: "*…would save about 18 trillion Btu of gas and oil annually once the existing boiler stock turns over."*
· Addendum g: "*will save an estimated 1.05 Quads of cumulative primary energy by 2035."*
· Addendum f: *"will save an estimated 2.3 Quads of cumulative primary energy by 2035."*
"These substantial savings are credited to the work of past Standard 90.1 Chair Jerry White, the Standard 90.1 committee, and those that aided in the rigorous public review process," Schwedler said. "We know that many projects are achieving considerable energy savings at reasonable costs and ask the entire design, operation, and owner communities to share these project ideas and contribute toward future energy and energy cost savings."

The cost of the I-P version of ANSI/ASHRAE/IESNA Standard 90.1-2007, *Energy Standard for Buildings Except Low-Rise Residential Buildings, is $119 ($95, ASHRAE members). The SI version will be available later this spring. The standard is co-sponsored by the Illuminating Engineering Society of North America (IESNA).*

To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit at www.ashrae.org/bookstore.

**Sustainability News:**

# Kite to pull ship across Atlantic

January 22, 2008

**The world's first commercial cargo ship partially powered by a giant kite is setting sail from Germany to Venezuela.**
The designers of the MS Beluga Skysails say the computer-controlled kite, measuring 160sq m (1,722sq ft), could cut fuel consumption by as much as 20%.

They also hope the state-of-the-art kite will help reduce carbon dioxide emissions, as it tugs the ship.
Fuel burnt by ships accounts for 4% of global CO2 emissions - twice as much as the aviation industry produces.
The MS Beluga SkySails' maiden transatlantic voyage is from the northern port of Bremerhaven to Guanta in Venezuela.
The ship is expected to leave the German port at 1700 local time (1600 GMT).

The BBC's Steve Rosenberg, on board the vessel, says the computer will enable the kite to harness the full power of the wind.

"The maiden voyage marks the beginning of the practical testing during regular shipping operations of the SkySails System," says Stephan Wrage, managing director of SkySails GmbH.

"During the next few months we will finally be able to prove that our technology works in practice and significantly reduces fuel consumption and emissions," he said on the company's website.

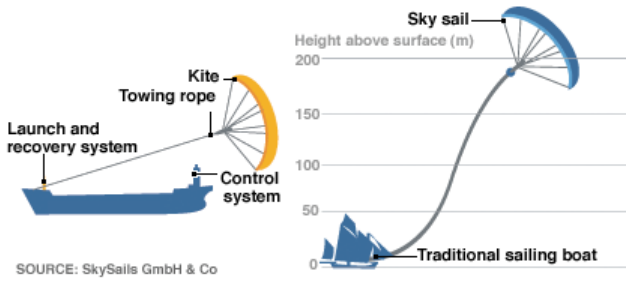
**Free energy**
"We're absolutely excited," said Verena Frank, project manager at Beluga Shipping GmbH, SkySails GmbH's partner.
She told the BBC's World Today programme that the project's core concept was "using wind energy as auxiliary propulsion power and using wind as a free of charge energy".

"Nevertheless, it differs very much from traditional sailing, as we do not have any bothersome mast on deck which might be a hindrance to cargo-loading operations."

Ms Frank said the efficiency of the kite depended on wind and weather conditions.
But the advantage of the SkySails system "is that you do not need only backward winds - there can also be side winds and you can still set sail," she said.

She said the kite could be used on medium-size cargo ships, cruise liners and trawlers.

How the Kite Ship Works



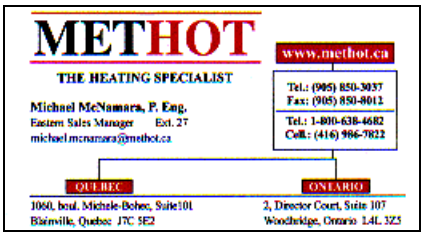

The kite sail will help reduce annual fuel costs by 10-35%. Reduced fuel also means fewer harmful carbon emissions
The large towing kite resembles a paraglider and is shaped like an aircraft wing, to enable it to take advantage of different wind directions

It operates at 100-300m above surface level - much higher than a normal sailing craft - where winds are stronger and more stable

The kite can be used in winds of between 12-74km/h (7-40 knots) and not just when the wind is blowing directly from behind the ship

*This article is based on a news release from the BBC.*





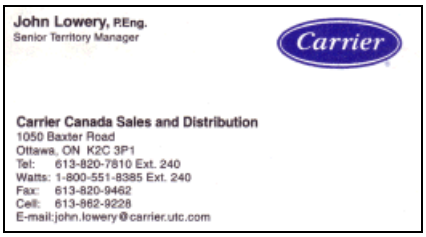

Swell Guy

# Business Card Ads

by Rod Lancefield

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.

Cost is $225.00 for the year; contact Rod Lancefield, rodl@htseng.com , (613) 728-7400.






Your card here!

ASHRAE OVC Capital Communiqué February 2008 Page 13 of 13