



AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS INC.

LONDON CANADA CHAPTER #116

<http://LondonCanada.AshraeChapters.org>

MAY & JUNE/2010

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ASHRAE LONDON & AREA 2010 GOLF TOURNAMENT

Date: MONDAY JUNE 7/2010
Location: FOREST CITY NATIONAL
16540 Robin Hill Road, London, Ont.
Tee Off: Shotgun Start at 11:30am
Scramble Format/Best Ball
Cost: \$150.00 Golf and Dinner per person
\$ 45.00 Dinner Only



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THANK YOU TO ALL



President's Message:

June 1st has arrived. It is hard to believe that 2 years have passed – the time that I have served as ASHRAE London Chapter President nears a close.

We as a chapter have accomplished several milestones - the most notable being the formation and chartering of the UWO Student ASHRAE Chapter.

I would like to thank everyone who participated in making all of these successes a reality. All of the hard work and effort made by your Board of Governors to put together the program and events for the chapter needs to be recognized by all.

These people have given of their own time as volunteers to make our meetings and events a success. Thanks again for all of your efforts.

The month of April was our technical tour of the TD – Canada Trust Branch at 3029 Wonderland Rd. South – A very interesting project that the bank has undertaken to utilize many of the leading energy saving processes and technologies to reduce the carbon footprint, and increase the use of renewable energy sources to operate a building and it's systems.

The dinner afterward was held at the Seven Dwarfs restaurant – a decent meal was had by all in attendance.

Our final event of the 2009/2010 year will be the golf tournament being held at the Forest City National Golf Course... it appears that this year's event will be a great success as the foursomes are almost fully booked, and the holes have all received sponsors.

Now we need the co-operation of Mother Nature to make the day the success that we all wish for.

We are going to be swearing in the new London Chapter Executive for the 2010 – 2011 year at the golf tournament. The positions are elected, and are to be held as follows:

- President Jason Vandenberghe
- VP Jack Maynard
- Treasurer Jamie Kruspel
- Secretary Karl Gilroy
- Research Eric Shaw
- Membership Scott Edmunds
- History Tom Pollard / Scott Turner
- Students Ibrahim Semhat, Jordan Foster
- Newsletter Tom Pollard

We would welcome anyone who would like to assist with the chapter's operations – just speak to anyone on the list above if you wish to help out.

This year has been a good year for the London ASHRAE Chapter, and we look forward to the trend continuing in the future. The recipe for success is based on participation by the membership in making it work for all involved.

I would like to thank everyone for their participation in making our local chapter a success.

Looking forward to seeing you all at the golf tournament...

Sincerely,
Eric Shaw
President – ASHRAE London Chapter

ASHRAE LONDON & AREA 2010 GOLF TOURNAMENT

This years golf tournament will have a few changes. The prize table is being revised to have each golfer receive a golf shirt. There will be the closest to the pin and longest drive as well as a new fun "hole challenge" on the Baymar sponsored hole - a "closest to the damper" competition with the prize being an engraved Taylormade Driver



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ASHRAE London - Committee Chairs

HELP !!!

Chapter executive needs help with the normal chapter operations.
 We need assistance in arranging meetings, speakers and topics.
 We need assistance with getting members out to meetings
 We need assistance with the Student Chapter at UWO

This only requires one or two hours per month.

If you can help, or know of a chapter member that may be able to assist in chapter operations, please contact

Eric Shaw ph: 519-964-0022
 eshaw@baymarsupply.com

or

Jason Vanderberghe ph: 519-670-8066
 jasonv@aquatech.ws

Previous Meeting Summary

A technical tour was done that the Canada Trust Branch - Wonderland and Southdale. The building has 2 Ice-Bear unit set to create ice at night when electrical rates are low and then provide cooling for the building during the day. The Ice-Bar units are connected to "normal" packaged rooftop units that just have an extra coil for the chilled water system.

The branch also has several photo-voltaic panels to create up to 14.28kw of electrical power into the building. The allows a reduced electrical consumption during the day.

Thanks to Jamie Kruspel for making the arrangements.

Meeting Topics

Meeting topics are needed for next years chapter meetings.

If you know of a topic or can suggest an idea that you would like to see for a chapter meeting next year, please contact:

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ASHRAE publishes new book on dampers and airflow control

ASHRAE has released a comprehensive guide on dampers, providing resources for gaining good judgment of the engineering principles needed to size, select, install and adjust control dampers.

Dampers and Airflow Control is geared toward mechanical designers; mechanical and control contractors; and testing, adjusting and balancing (TAB) contractors. Additionally, the content material helps to bridge the gaps that exist between disciplines.

In the past, articles on indoor air quality, for example, dictated which actions to take but offered few suggestions for how they should be taken. This book addresses how to apply dampers within systems to achieve clearly defined goals.

Dampers and Airflow Control may be purchased for \$89 for non-members, \$75 for members. 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 www.ashrae.org/bookstore.

ASHRAE Receives NIST Grant to Study IAQ in Retail Stores

ASHRAE has been awarded \$1.5 million dollars in grant money from the National Institute of Standards and Technology (NIST) to conduct a three-year research project on ventilation and indoor air quality in retail stores.

ASHRAE's project, Ventilation and Indoor Air quality in Retail Stores, is one of 27 projects funded by NIST for measurement science and engineering research. The NIST Measurement Science and Engineering Research Grants Program, made possible through the American Recovery and Reinvestment Act provides \$34.12 million in grants at higher-education, commercial and nonprofit organizations in 18 states. The project will be conducted through ASHRAE's research program.

"ASHRAE thanks NIST for recognizing the great need for more information on ventilation and IAQ in retail stores," Society president Gordon Holness said. "The data gathered through this project will benefit not only the industry but the general public who work and shop in retail stores around the world."

Currently, there is little published information about air quality and ventilation rates in retail spaces in the United States—ventilation requirements for retail and other space types have been set largely by data for commercial office buildings.

Given that there are some 14.6 billion ft² of retail space in the United States where people shop up to 24/7, it is vital that ventilation systems operate as efficiently as possible while maintaining good indoor air quality.

Through this study, ASHRAE is seeking to improve the energy efficiency of ventilation systems in retail stores while maintaining air quality by establishing a method to determine the relationship between ventilation rates and IAQ, using measured ventilation and pollutant concentration data. Specifically, the project will provide a quantitative basis for improving energy efficiency, while maintaining air quality, by increasing maintenance frequency and reducing ventilation rate requirements.

Existing pollutant and ventilation rate data, on which ventilation requirements for retail spaces are based, largely come from measurements in office buildings, which may not be appropriate. The project will conduct measurements in up to five retail building types: general merchandise, department, supermarket, restaurant, and home improvement/hardware.

Holness noted that the results will provide a more rigorous basis for the ventilation rate requirements in retail spaces and provide incentives for improved maintenance if it can be shown that clean and dry spaces will lead to lower pollutant concentrations and improve the perception of good air quality.

Ultimately, the project will establish a methodology for collecting real world ventilation and air quality data.

Founded in 1901, NIST is a non-regulatory federal agency within the U.S. Department of Commerce. NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve our quality of life.

Papers Focused on Net-Zero-Energy Sought for ASHRAE 2011 Winter Conference

Papers addressing the industry's efforts to achieve zero-energy design are being sought for ASHRAE's 2011 Winter Conference in Las Vegas, Nev.

The deadline for paper submissions is April 16. For complete information on the submittal requirements, visit www.ashrae.org/lasvegas.

The 2011 Winter Conference takes place Jan. 29-Feb. 2, along with the ASHRAE co-sponsored AHR Expo, held Jan. 31-Feb. 2. The technical program focuses on efficient use of energy, different design approaches and other topics related to refrigeration, standards and codes, and HVAC systems, equipment, applications and fundamentals.

Topics covered include codes and standards in the HVAC&R industry, integrated design, low-energy design, refrigeration update, industrial HVAC&R, net-zero energy, HVAC systems and equipment and HVAC fundamentals and applications. Full-length technical papers or conference paper abstracts (400 words or less) should be submitted by April 16.

For more information about the two types of papers and to submit a full-length technical paper or conference paper abstract, go to the ASHRAE Las Vegas Conference Web site: www.ashrae.org/lasvegas.

The conference is expected to attract some 2500 attendees from 60 countries. The technical program takes place Sunday, Jan. 30–Wednesday, Feb. 2, and includes paper presentations as well as non-paper presentations. Approved papers are published in ASHRAE Transactions.

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.



ASHRAE Publishes Update to Principles of HVAC

A new textbook designed to double as a reference manual that allows engineers to build on their knowledge of HVAC design procedures and methods has been published by ASHRAE.

Principles of Heating, Ventilating and Air-Conditioning builds on much of the basic information in the 2009 ASHRAE Handbook Fundamentals and contains the most current ASHRAE procedures and definitive, yet easy to understand, treatment of building HVAC systems, from basic principles through design and operation.

The book may be used for/by:

- undergraduate engineering courses in the general field of HVAC
- similar courses at technical institutes
- continuing education and refresher short courses for engineers
- adult education courses for non-engineers.

There are several significant changes in the new edition, including new values for climatic design information; new values of heating, wind and cooling and dehumidifying design conditions; improved values of thermal conductivity and resistance for common building and insulating materials; and an extensively revised chapter on residential heating and cooling load calculations.

Additionally, the chapters on system design and equipment have been significantly revised to reflect recent changes and concepts in current heating and air-conditioning system practices

Also available is Principles of HVAC Solutions Manual, which contains revised solutions to most of the problems in the Principles book. Co-authors are Ronald Howell, Ph.D., P.E., William Coad and the late Harry Sauer Jr., Ph.D., P.E.

The cost of Principles of HVAC is \$89 (\$76, ASHRAE members; \$58, ASHRAE student members), while the cost of the solutions manual is \$59 (\$50, ASHRAE members).

To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, by mail at 1791 Tullie Circle NE, Atlanta, GA 30329, or visit the ASHRAE.org Bookstore.

Standard 189.1 to Provide a Strong Foundation for High-Performance Green Buildings

A new standard for the design of high-performance green buildings is set to revolutionize the building industry. Published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), in conjunction with the Illuminating Engineering Society of North America (IES) and the U.S. Green Building Council (USGBC), Standard 189.1, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings, is the first code-intended commercial green building standard in the United States.

The standard, published Friday, provides a long-needed green building foundation for those who strive to design, build and operate green buildings. From site location to energy use to recycling, this standard will set the foundation for green buildings through its adoption into local codes. It covers key topic areas similar to green building rating systems: site sustainability, water use efficiency, energy efficiency, indoor environmental quality and the building's impact on the atmosphere, materials and resources. For complete information on the standard, including a readable copy, visit www.ashrae.org/greenstandard.

The energy efficiency goal of Standard 189.1 is to provide significant energy reduction over that in ANSI/ASHRAE/IESNA Standard 90.1-2007. It offers a broader scope than Standard 90.1 and is intended to provide minimum requirements for the siting, design and construction of high performance, green buildings.

"The far-reaching influence of the built environment necessitates action to reduce its impact," Gordon Holness, ASHRAE president, said. "Provisions in the standard can reduce negative environmental impacts through high-performance building design, construction and operations practices. Ultimately, the aim is not just energy efficiency but a balance of environmental responsibility, resource efficiency, occupant comfort and well being and community sensitivity, all while supporting the goal of sustainable development."

"IES is pleased to be a cosponsor of this standard that will have a significant impact on requirements for high-performance green buildings and the building industry as a whole," Rita Harold, director of technology for IES, said. "We congratulate the Project Committee for the tremendous effort and dedication of its members in the fast track development of a consensus standard. We look forward to continuing the partnership with ASHRAE and USGBC as the standard continues to evolve through future continuous maintenance proposals."

"Greening the building code is fundamental to the U.S. Green Building Council's goal of market transformation and is also a critical factor in how the building industry is working to mitigate climate change," said Brendan Owens, VP, Technical Development, U.S. Green Building Council. "We're extremely excited to see our collective efforts over the past three years come to fruition in the form of this important standard."

Standard 189.1 has been written by experts representing all areas of the building industry, including engineers, lighting designers, sustainability experts, building owners, designers, architects, code and compliance officials, utilities, materials experts and equipment manufacturers. The technical requirements in the standard were also supported by input from the building industry during the public review process.

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 www.ashrae.org/bookstore. The cost of Standard 189.1 is \$119 (\$99, ASHRAE members)



ASHRAE Technology Awards Highlight Outstanding Building Projects

Designers of systems for two office buildings, a warehouse and college library are recognized by ASHRAE for incorporating elements of innovative building design. First place recipients of the ASHRAE Technology Awards were recognized at the Society's 2010 Winter Conference, held this week in Orlando, Fla. The recipients have applied ASHRAE standards for effective energy management.

The following are summaries of the winning projects.

The Terry Thomas

Michael Hedrick, Thomas Marseille, P.E. and Long Lam; Stantec Consulting; Seattle, Wash. receive first place in the new commercial buildings category for a four-story office building, the Terry Thomas, Seattle, Wash.

The Terry Thomas is the first modern Class A office building to be built without mechanical cooling in the Puget Sound region in decades. Shading, daylighting, building form and structure and other load reduction strategies were critical to the successful implementation of a passive cooling strategy. The use of natural ventilation, along with a hydronic heating system, has drastically reduced the energy consumption of the building to 45.9 kBtu/sf-year, 53 percent better than the average office. Additionally, the building includes: automated external blinds controlled by meteorological conditions; motorized louvers controlled by CO2 sensors during the heating season and thermostats in the cooling season; integrated building design for passive cooling, daylight and occupancy; and waterless urinals and dual-flush water closets

Sobey's Warehouse

Martin Roy, P.Eng.; Martin Roy et Associés, Inc.; Deux-Montagnes, Québec, Canada, receives first place in the industrial facilities or processes category for Sobey's Warehouse, Trois-Rivières, Québec, Canada.

A refrigerated warehouse in Trois-Rivières can be a very chilly place when winter comes around; that's why Roy worked to balance keeping the warehouse cold and its employees warm and comfortable, all while saving energy. An ammonia central chiller and glycol secondary distribution fluid system keeps the warehouse at 39 degrees Fahrenheit (4 degrees Celsius), and can operate in free cooling mode by using the thermosiphon principle. Ammonia is one of the best refrigerants to get high efficiency and has non-ozone depleting potential and zero global warming potential. Heat rejection from the warehouse chiller occurs simultaneously with space heating the office and common spaces. These spaces are also heated by a hydronic radiant floor and cooled by fan-coils. Additionally, the warehouse includes daylighting and occupancy detectors to control high efficiency lighting fixtures and treats all of its water on-site using constructed wetlands

IDeAs Design Facility

Peter Rumsey, P.E., Fellow ASHRAE; Rumsey Engineers; Oakland, Calif. receives first place in the existing commercial buildings category for his remodel of a one story office building, IDeAs Design Facility, San Jose, Calif.

Rumsey's work on a California electrical engineering consulting firm's offices resulted in one of the world's first net-zero-energy and zero-carbon-emission buildings. The 7,200 sq. ft. commercial office building was designed to meet 100 percent of its net energy requirements using renewable energy from photovoltaics. A topping slab was designed containing cross linked polyethylene radiant tubing for both heating and cooling; using water to convey heating and cooling through a radiant system uses less energy to provide the same amount of conditioned air than a forced air system. Daylighting and natural ventilation is provided by a 45 ft. long south-facing operable glass door façade between the building and the courtyard, as well as multiple skylights. The building showed a 43 percent reduction in energy use from California's Title 24 and a 60 percent reduction from ASHRAE Standard 90.1-1999. In the spring of 2009, the building generated more energy than it consumed.

The Richard J. Klarcheck Information Commons Building

Donald McLauchlan, P.E., Steven Maze and David Lavan; Elara Energy Services, Inc.; Hillside, Ill. receive first place in the new institutional buildings category for the Richard J. Klarcheck Information Commons Building at Loyola University, Chicago, Ill.

The Loyola's Information Commons Building, located on the shores of Lake Michigan, combines state-of-the-art mechanical systems and striking architectural features; glass exposures on the east and west sides allow views through the building to the lake. Effective natural ventilation is provided throughout the open areas due to automatically controlled operable windows on the east façade and inner windows on the west double façade. Dual path custom designed air handlers were installed to incorporate multiple functions depending on the building mode of operation. The contoured ceiling consists of coffered pre-cast concrete panels with cross linked polyethylene tubing set just below the surface; the system was designed to meet 60 percent of the design sensible cooling load. The exceptionally innovative design is a result of a fully collaborative approach by the Architect, Structural Engineer, MEPFPIT Engineer and Klimaengineer.

ASHRAE Rescinds News Release on Non-Chemical Water Device Project

ASHRAE has received numerous comments and questions concerning its April 7, 2010, press release relating to research project no. RP 1361, Biological Control in Cooling Towers Using Non-Chemical Water Treatment Devices. After careful consideration, ASHRAE has decided to rescind that press release pending further review. The cognizant ASHRAE Technical Committee, TC 3.6 Water Treatment, which sponsored and is responsible for the project, has not yet reviewed the final report. TC 3.6 expects to complete its review, including voting on whether to recommend approval of the final report, within the next 30-60 days. In addition, the prior press release referenced Legionella though the project Statement of Work did not include protocols for testing for Legionella.

RP 1361, as is typical of experimental research projects, did not involve actual full-scale cooling towers operating in a working cooling system. Rather, researchers constructed a very small Plexiglas model of a cooling tower, fully complying with the proposal submitted by the researcher and approved by TC. 3.6. There are significant variances between the preliminary results of the study and actual field results recorded by non-chemical device manufacturers. This is one aspect of the study that will be reviewed by TC 3.6 and may indicate the need for further research.

Regardless of the type of water treatment used, ASHRAE recommends that owners of cooling and refrigeration systems conduct routine testing to evaluate whether the water treatment is working effectively