



Airways

Hamilton Chapter No. 037

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American Society of Heating, Refrigeration and Air Conditioning Engineers

Volume 51, No. 2

Our 51st Year

October 2009

Thursday, October 22, 2009

(Not the normal 2nd Tuesday)

Special 50th Anniversary Meeting

***Energy Efficiency in Existing Buildings
Our Greatest Opportunity for a Sustainable Future***

Featured Speaker

Gordon Holness, P.E.

Albert Kahn Associates / ASHRAE President



Gordon Holness, P.E., is Chairman Emeritus of Albert Kahn Associates, Inc. Architects and Engineers, in Detroit, MI. He retired from the firm in 2001 having served for over 32 years including roles as Chief Mechanical Engineer, Treasurer, Board Member, President and CEO. He currently serves in a consulting capacity and as an expert witness for design and construction issues. He is a Professional Engineer, registered in 42 States and 5 Provinces. He is a chartered engineer in the United Kingdom.

Gordon has over 50 years experience in design and construction, specifically in mechanical engineering and HVAC&R services for industrial, health care and institutional buildings in England, Canada and the United States.

(Continued on next page)

Royal Hamilton Yacht Club

North End of McNab, On Hamilton Harbour

11:30 am – Social Hour

12:30 pm – Lunch

2:00 pm – Feature Speaker

Dinner/Feature Speaker

Chapter Members - \$30.00 • Guests - \$40.00 • Students - \$15.00 • Meal Plan - \$150.00

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Gordon Holness Bio. (cont'd.)

Gordon joined ASHRAE in 1965 and is currently Society President, serving on the Board of Directors and the Executive Committee. He is Chair of Members council and the Advocacy Committee and chairs the Steering Committee on Building Information Modeling and Interoperability. He has won 12 Regional and National Awards for Technology and Energy Conservation.

Gordon has written numerous articles and is a frequent speaker in such areas as Improving Energy Efficiency in Existing Buildings, Building Information Modeling, and Integrated Building Design.

Social (Christmas) Event A Night at the Races

David Rasmussen has arranged for the Chapter to enjoy a "night at the races" at Flamboro Downs. A flyer with more details is attached to this Airways Bulletin.

Note that this event will not take place unless at least 70 people have committed to attend so please indicate your interest early to facilitate planning.

ASHRAE Research Recently Completed Projects

Attached to this Airways bulletin are a list of projects completed by ASHRAE during the 2008--2009 Society year.

*Submitted by Reaz Usmanali, LEED®AP
Research Chair 09/10*

ASHRAE News Releases

[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 Modelling Professional certification.

[ASHRAE Learning Institute is Sustaining Energy by Sustaining Professional Development](#)

ATLANTA – One third of the energy consumed by buildings in the United States has the potential to be conserved right now. In order to equip engineers with the knowledge to stop this energy loss, a new full-day Professional Development Seminar (PDS), *Energy Management in New and Existing Buildings: A Sustainable Activity*, will be offered as part of the ASHRAE Learning Institute at the 2010 Winter conference.

[Proposed High-Performance Building Standard 189.1 Draws Nearer to Publication Date](#)

ATLANTA – The total building sustainability package, addressing everything from design and commissioning to plans for high-performance operation, is covered in a proposed green building standard currently open for public review.

[Carbon Monoxide Alarms Proposed for ASHRAE Residential Ventilation Standard](#)

ATLANTA – In a change that would bring its residential ventilation and indoor air quality standard closer in line with that of the 2009 International Residential Code, ASHRAE is proposing that carbon monoxide alarms be required in homes.

[ASHRAE Proposes Mechanical Ventilation Requirements for Naturally Ventilated Buildings](#)

ATLANTA – Working to help ensure the quality of indoor air of naturally ventilated high-rise residential buildings, ASHRAE is proposing that mechanical systems be required for such building types.

**Click to go to the ASHRAE
Press Release web page**


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Hamilton Chapter Celebrates 50 Years

On **October 22, 2009**, the Hamilton Chapter will celebrate its 50th birthday!

This will be an **afternoon event** with a special guest speaker – **Gordon Holness, P.E.**, the Society's President, will give a presentation entitled "Energy Efficiency in Existing Buildings – Our Greatest Opportunity for a Sustainable Future."

The Chapter is extending a special invitation to all Past Presidents to attend this event as "guests" of the Chapter (i.e., no charge). A list of the Past Presidents follows – please assist in spreading the word:

1959 1960	W. Lloyd Algie *
1960 1961	Gary E. Elliott
1961 1962	William M. Carr
1962 1963	Donald S. Harper
1963 1964	Douglas A. McCoppen *
1964 1965	Michael V. Murray *
1965 1966	Clifford A. Hepburn
1966 1967	David B. Brown
1967 1968	Vincent Szabo *
1968 1969	Dan R. Tyrell
1969 1970	James Gordon
1970 1971	Frank J. Smith *
1971 1972	George E. Menzies
1972 1973	Edward J. Vance *
1973 1974	George Buckler *
1974 1975	Roland Clee
1975 1976	Tom Poolton
1976 1977	Frank Spina
1977 1978	Carl Ljungberg
1978 1979	Frank Spina
1979 1980	Jack Keon
1980 1981	Gerald W. Kowalyshyn
1981 1982	J. George Takata
1982 1983	Henry Ramsey *
1983 1984	John Tuck

1984 1985	Robert Morris
1985 1986	Ray Jacobs *
1986 1987	Joe Vassallo
1987 1988	Cliff Schemmer
1988 1989	Gary Romagnoli
1989 1990	Jim Buchanan
1990 1991	Ray Bates
1991 1992	David Rasmussen
1992 1993	Daryl Somers
1993 1994	Wilfred Laman
1994 1995	Anthony L. Rocco
1995 1996	Chris J. VanGerwen
1996 1997	Darryl W. Singleton
1997 1998	Frank J. Stempski
1998 1999	John B. Pollock *
1999 2000	Ed Cazzola
2000 2001	George Robb
2001 2002	George Robb
2002 2003	Ralph Kosir
2003 2004	Ralph Kosir
2004 2005	Bill McCartney
2005 2006	Bill McCartney
2006 2007	David Hills
2007 2008	David Hills
2008 2009	Terry Fowler
2009 2010	Terry Fowler

* – Deceased

Chapter members and guests – mark this date on your calendar (in your Blackberry). Further details will be included in the October Airways

*Submitted by Allan Antcliffe, P. Eng.
Home Page & Airways Editor 09/10*

(Thank you, Dave Rasmussen, for supplying the list)

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ASHRAE Hamilton Chapter meeting?***

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If interested, contact an executive member.



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2009 – 2010 Meeting Schedule

This year's meeting schedule is summarized below. Except for some special events, all meetings will be held at the Royal Hamilton Yacht Club, at the north end of McNab St., on the Hamilton Harbour (If you need a map, visit our web site). New products and/or services may be presented informally via a "technical session" or a "table top demonstration" prior to dinner. After dinner, the main topic of the evening is presented by the "feature speaker". If you are interested in presenting a technical session, booking table top space to promote your product and/or service or, if you have a suggestion for a feature subject and/or speaker, please contact Terry Fowler (Programs Chair). There is a charge of \$75.00 for "table top demonstration" space and this includes a business card ad for two months.

ASHRAE Hamilton Chapter Program Activity			
Date	Theme	Technical Session /Table Top Demonstration	Feature Speaker
October 22, 2009 AFTERNOON (Not 2nd Tuesday)	Chapter 50 th Anniversary Celebration	Gordon Holness, P.E. <u>Albert Kahn Associates, Inc. / ASHRAE President</u> Energy Efficiency in Existing Buildings – Our Greatest Opportunity for a Sustainable Future	
November 10, 2009	Research	to be determined	Jim Fields or Dennis Knight
December 6, 2009 (Not 2nd Tuesday)	Social/History	Christmas Party / Past Presidents Night Flamboro Downs	
January 12, 2010	Commissioning	LEED-EBOM	Morrison Herschfield
February 9, 2010	Membership	Your Industry in a Nutshell	Panel Discussion CCA, MCA, Green Building Council, ASHRAE
March 1, 2009 (Not 2nd Tuesday)	CMX Show	ASHRAE Distinguished Lecturer / topic to be determined Joint Meeting with ASHRAE Toronto Chapter	
April 13, 2010	Refrigeration	Refrigerants	to be determined
May 11, 2010	C.T.T.C.	to be determined	to be determined
June 9, 2010 (Not 2nd Tuesday)	Social/ Research	Peninsula Lakes (near Fonthill, ON) Annual Golf Tournament	

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ASHRAE HAMILTON CHAPTER **PAST PRESIDENTS AND LADIES NIGHT** **A NIGHT AT THE RACES**

*** * OPEN TO FAMILY AND FRIENDS * ***

DATE: SUNDAY, DECEMBER 6, 2009 (ARRIVAL TIME – 5:00 P.M.)

LOCATION: FLAMBORO DOWNS

COST: \$35.00 PER PERSON (must be 19 or older)

**INCLUDES: Buffet Supper at “Top of the Turn”
Free Parking
Race Program**

Each person will also receive a \$5.00 Voucher for the Casino located on the Main Floor



ASHRAE MUST GUARANTEE 70 PEOPLE OR THE EVENT WILL NOT TAKE PLACE.

PLEASE CONFIRM YOUR INTENT TO ATTEND ASAP BY E-MAILING:

David Rasmussen at tigerdave60@yahoo.ca

Please make sure you include the number in your party.

RECENTLY COMPLETED RESEARCH

The projects listed below were completed by ASHRAE in the 2008-2009 Society year. The final reports for these projects are available for purchase and download from the ASHRAE online Bookstore.

1128-RP

TRADE-OFF FUNCTION FOR THE COMBINED EFFECTS OF NOISE AND TEMPERATURE ON HUMAN COMFORT AND PERFORMANCE

Completed February 2009
University of Nebraska - Lincoln
Principal Investigator, Dale Tiller
TC 2.1, Physiology and Human Environment

For the design engineer it is of major importance to know the relative effect of different factors of the indoor environment on people. Based on this knowledge, an appropriate allocation of financial resources for the establishment and control of the total indoor environment can be made in order to obtain optimal comfort for the occupants in buildings. Not only human comfort will be improved by optimization of the indoor environment; most likely the occupants' performance will also improve. An overall optimization of the environment is of major importance for the expenses incurred in the construction and operation of a building and for the use of energy to run it.

The objective of this research project is to determine the relative effect of thermal load, indoor air pollution and noise on human comfort and to develop a model that predicts discomfort for human beings when they are exposed to more than one form of indoor climate simultaneously.

1311

IMPROVING LOAD CALCULATIONS FOR FENESTRATIONS WITH SHADING DEVICES

Completed August 2008
University of Waterloo
Principal Investigator, John L. Wright
TC 4.1, Load Calculation Data and Procedures

The users of fenestration data, represented by TC 4.1 and TC 4.7, need comprehensive and reasonably accurate procedures to calculate realistic loads, including the effects of shading. This makes it of first importance to integrate the new information about glazing products with some level of information about the behavior of shading devices. Further, this integrated information must offer a suitable interface for inclusion in loads calculation procedures. Characterizing fenestrations solely by their U-factor and SHGC is not adequate.

1314-RP

REFLECTION OF AIRBORNE NOISE AT DUCT TERMINATIONS

Completed August 2008
The Georgia Institute of Technology
Principal Investigator, Kenneth A. Cunefare
TC 2.6, Sound and Vibration Control

Much of the low-frequency HVAC noise in rooms is airborne noise that propagates inside ducts and is then transmitted through the duct termination into the room. Simple & accurate methods for estimating the losses of airborne noise inside ducts by the End Reflection Effect will provide the HVAC system designer with an essential, but now largely missing, element required in estimating noise emitted from duct terminations, particularly at low frequencies. Since it is at low frequencies where noise is often the subject of complaints and because low-frequency noise control treatments are costly, remedial fixes in response to complaints

and/or installation of unnecessary noise control treatments may be avoided if accurate estimates of low frequency ERL values at duct terminations are used during system design.

1373-RP

AIR DISTRIBUTION EFFECTIVENESS WITH STRATIFIED AIR DISTRIBUTION SYSTEMS

Completed August 2009
Building Energy and Environmental Engineering
Principal Investigator, Zheng Jiang
TC 5.3, Room Air Distribution
Research Strategic Plan Goals Supported: A6, B2, C6, D1, E1

The objective is to create a database of ventilation effectiveness and air-change effectiveness for thermal displacement ventilation and under-floor air distribution systems for classrooms, auditoriums, office spaces, restaurants, workshops, and retail spaces for determining the minimum amount of outside air for these spaces. The research scope includes literature review, mockup test, CFD validation, CFD parametric study, and development a design guide how to use the database and CFD for evaluating the thermal displacement ventilation and under-floor air distribution systems.

1384-RP

DEVELOPMENT OF DESIGN GUIDELINES FOR HYBRID GROUND SOURCE HEAT PUMP SYSTEMS

Completed September 2008
University of Wisconsin-Madison
Principal Investigator, Greg Nellis
TC 6.8, Geothermal Energy Utilization

The results of this project will be design guidelines that will extend the applicability of ground source heat pumps to heavily heating and cooling-dominated buildings. This design method will be immediately useful to ASHRAE members involved in the design and selection of HVAC equipment for buildings.

1438-RP

SIMPLIFIED THERMAL MODEL WITH EXPERIMENTS TO DESIGN OPTIMIZED CHILLED CEILING AND POSITIVE DISPLACEMENT VENTILATION SYSTEM

Completed July 2009
American University of Beirut
Principal Investigator, Nesreen Ghaddar
TC 5.3, Room Air Distribution
Research Strategic Plan Goals Supported: A1, A6, B2, C1, C3, E1, E2

The first of this work is to develop and validate a simplified plume-multi-layer model to simulate air flow, and associated heat and moisture transport within a radiant cooled enclosure with positive displacement ventilation (PDV) in presence of transient loads.

The second objective is to use the plume-multi layer model to set guidelines for sizing and recommending optimal operational parameters for a combined chilled-ceiling and PDV air conditioning system adapted to local weather conditions of Beirut and Kuwait.

The third objective of the work is to conduct real-time experiments in Lebanon and Kuwait to test optimal control strategies derived from the proposed optimal operational parameters for minimum energy consumption.