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ASHRAE LONDON CANADA CHAPTER #116

TOPIC

Why Buildings Matter and the Role of ASHRAE 90.1

SPEAKER

Chris Mathis

ASHRAE Distinguished Lecturer
President - MC2 Mathis Consulting Company
Asheville, NC

MONDAY NOV 26/2018

5:15PM – SOCIAL

6:15PM – DINNER

7:15PM – PRESENTATION

MEETING LOCATION

MARIENBAD

122 Carling Street, London

PLEASE USE PALPAL – ADVANCED PAYMENT BEFORE MEETING

<http://londoncanada.ashraechapters.org/PayPalPage.html>

\$60 for Preregistered Members

\$75 for Members at the door

\$10 for Students

Consider Sponsoring a Student Meal

USE PAYPAL on the Chapter Web Site

Please register on the web site if you will be attending.



Chapter President's Message

Thank you to all who supported us last month at the Bostwick YMCA to make it one of the best attended ASHRAE London dinner meetings to date! Special thanks goes out to Stephen McDermid (Smith+Andersen), Gino Battel/Jason Hill (CIMCO), Michael Knowler (City of London) and Christina/Frank (Bostwick YMCA) for leading the tour of this impressive facility. Thanks also goes to EH Price, Airia, Somers Environmental, CIMCO and Chorley and Bisset as we had 29 student registrations paid for due to their sponsorships. We had quite a few students approach the board after the meeting to thank us for the interesting and informative tour which would not have been possible without the above mentioned individuals and organizations.

We are now well into November and rapidly approaching our next meeting November 26th at the Marienbad. We have the fortune of having distinguished lecturer Chris Mathis speak on "Why buildings matter and the role of ASHRAE 90.1." Considering the implementation of this standard in the Ontario Building Code it is very much at the heart of the day and day of all individuals here involved in HVAC&R so please make an effort to join us! Daniel Robert, RVC for CTTC in Region II will be another special visitor next week so please make our guests feel warm and welcome as we brace for winter in the Forest City.

As a final note, our December social will be December 7th at the s Palasad SocialBowl (North), 777 Adelaide St N, London so mark the calendar and prepare to have fun!

Thanks for your continued support and look forward to seeing you all on Monday.

John Freeman
ASHRAE London Canada Chapter
Chapter President 2018/2019

ASHRAE Membership

If you know a colleague that may benefit from an ASHRAE membership, please let me know.

Rajan Deenath
ASHRAE London Canada Chapter
Chapter Membership Promotion Chair 2018/2019

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TOPIC

Why Buildings Matter and the Role of ASHRAE 90.1

As our flagship standard for the minimum energy efficiency for buildings (except low-rise residential), ASHRAE 90.1 represents the Standard of Care for all certifying professionals serving the building industry. The latest version of that standard, 2016, contains dramatic changes that all certifying professionals should know. Attendees will gain a renewed perspective on the importance of buildings. Attendees will learn about the critical connections between building energy use and other social and environmental imperatives – such as available fuel supply, power trends, water use and availability, population growth, etc. Attendees will learn about critical energy, and environmental trends that will challenge the status quo building decision-making and help to prioritize delivered building performance. Attendees will learn about some of the most recent changes to 90.1, especially in those critical areas often overlooked by HVAC professionals – the building envelope provisions – as well as other changes. Attendees will be challenged to update their knowledge and understanding of the Standard and its role in delivering better buildings. The presenter has served over 15 years on the SSPC 90.1 development committee and remains an active participant in its development.

SPEAKER

R. Christopher Mathis

President

MC2 – Mathis Consulting Company

Asheville, NC

R. Christopher “Chris” Mathis has spent the past 30 years focusing on how buildings and building products perform – from energy efficiency to code compliance to sustainability and long-term performance durability.

Chris received his undergraduate degree in Physics from the University of North Carolina at Asheville. He received a Master of Science in Architecture Studies from MIT where his graduate work focused on energy use in buildings. He has served as a Scientist in the Insulation Technology Laboratory at the Owens-Corning Fiberglas Technical Center, was the Director of the Thermal Testing Laboratory for the National Association of Home Builders Research Center, and Director of Marketing for Architectural Testing, Inc., a private laboratory specializing in the performance of buildings and building products, particularly fenestration performance testing.

Chris is an active participant in Standards and Code development at ASHRAE, NFRC, ASTM and the ICC. He was a founding member and served for four years as the first Director of the National Fenestration Rating Council, the non-profit organization that developed the nation’s energy performance rating and labeling system for windows, doors and skylights.

Chris is a 30-year member of the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE). In ASHRAE he has worked on window thermal test standards, national model codes for commercial buildings (ASHRAE 90.1), model codes for residential buildings (ASHRAE 90.2) and is the energy consultant to Standard 189.1 – ASHRAE’s model code for sustainable commercial buildings. He is also the energy consultant to the Chapter Technology Transfer Committee. Chris has been recognized as an ASHRAE Distinguished Lecturer, conducting seminars on a variety of building science, energy efficiency and sustainability topics across the US and worldwide

Chris is also an on-going student of about 90 million years of sustainability and building science through his activities as a beekeeper. He lives and works near the farm he grew up on in the beautiful mountains of Western North Carolina.

Chapter Upcoming Meetings

Mon Nov 26/2018 – ASHRAE 90.1

Chris Mathis, ASHRAE Distinguished Lecturer

Dec 7, 2018 – Social Event

Palasod SocialBowl (North), 777 Adelaide St N, London

Mon Jan 28/2019 - Health as a Building Performance Metric

Stephanie Taylor, ASHRAE Distinguished Lecturer

Mon Feb 25/2019 - ASHRAE Legacy Night

Mon Mar 25/2019 - Transforming an Existing Building
into a High Performing Facility

Jim Newman, ASHRAE Distinguished Lecturer

April 2019 – webcast: THE FUTURE OF REFRIGERANTS
UNITARY AND VRF SYSTEMS

Mon June 3/2019 – Annual Golf Tournament

*** be sure to check web site for latest information ***

<http://LondonCanada.AshraeChapters.org>

ASHRAE RESEARCH <http://www.ashrae.org/contribute>

Local London ASHRAE Members have already contributed more than \$5,000 to ASHRAE Research for the 2018-2019 year. Please consider a contribution. All funds stay in Canada to improve the HVAC&R environment thru research.

Since 1960, ASHRAE has sponsored research studies at universities and research firms. The results of these studies have been used to prepare chapters in the ASHRAE Handbook series; as foundational material in special publications; in the formulation of standards; to train university students as they prepare for service in the HVAC&R industry; and to spread the knowledge gained through presentation at Society Conferences and publication in ASHRAE Transactions or conference proceedings.

ASHRAE currently has 59 active research projects.

The total value of these projects is \$10.6 million.

Average cost: \$159,696

Since 1959, ASHRAE has sponsored 907 projects with a combined value of \$76 million.

Phil Cook

ASHRAE London Canada

Research Promotion Chair 2018/2019

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Chapter Meeting Table Top Displays

Are you a sales rep? Does your company have information that you wish to display and present at a ASHRAE London chapter meeting? The chapter can arrange for a table top display at a chapter meeting. Just \$200 per meeting and includes one dinner.

Contact Matt Moore

226-808-4678

matthewjmoore36@gmail.com

Professional Development

Need hours for your professional development requirements?

Professional Engineers Ontario requires members to have yearly professional development training recorded through the Practice Evaluation and Knowledge (PEAK) program. Other groups also require continuing education.

Attend a chapter meeting to claim 1 hour towards your training.

ASHRAE HVAC COURSES

<https://www.ashrae.org/professional-development>

Learning Portal, ASHRAE Certification, Job Board, Educator Resources

NEARBY TRAINING

HVAC Design: Level I - ESSENTIALS

MAY 20-22, 2019 – TORONTO, ONT

Essentials provides intensive, practical training ideal for recent technical or engineering school graduates, engineers new to the HVAC field, those who need a refresher in new technologies, and facility managers, sales representatives and others who want to gain a better understanding of HVAC fundamentals, equipment and systems.

HVAC Design: Level II- APPLICATIONS

MAY 23-24, 2019 – TORONTO, ONT

Applications provides instruction in HVAC system design for experienced HVAC engineers and those who have completed the HVAC Design: Level I – Essentials. The training covers the technical aspects of design and allows participants an opportunity to expand their exposure to HVAC systems applications to increase energy savings and improve indoor environmental quality.

Also see: www.ashrae.org/onlinecourses



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2019 ASHRAE Winter Conference Jan 12-16, 2019 and AHR EXPO Jan 14-19, 2019

Atlanta, GA

See: <https://www.ashrae.org/conferences/winter-conference>
and <https://ahrexpo.com/>



2019 ASHRAE WINTER CONFERENCE
JANUARY 12-16 // AHR EXPO JANUARY 14-16

2018 International Green Construction Code® Powered by Standard 189.1-2017 A Comprehensive Solution for High-Performance Buildings

The 2018 International Green Construction Code® (IgCC®) is a joint initiative of ASHRAE, International Code Council (ICC), U.S. Green Building Council (USGBC), and the Illuminating Engineering Society (IES). The first-ever fully integrated edition of the 2018 IgCC establishes minimum regulations for building systems and site considerations using prescriptive and performance-related provisions.

See: <https://www.ashrae.org/technical-resources/bookstore/standard-189-1>
and other publications in the ASHRAE Bookstore



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JOB POSTINGS

See web site for more information: <http://londoncanada.ashraechapters.org>



ASHRAE NEWS

YEA HVAC Design Essentials Scholarship Applications due December 17, 2018

YEA members (Affiliates, Associates, or Members age 35 and under) interested in attending ASHRAE's HVAC Design Essentials Training, make sure to apply for the YEA scholarship! The current round of scholarship applications is open through December 17, 2018. Five scholarships will be awarded and the recipients can attend any Level I training scheduled for January - June 2019.

Apply and learn more at ashrae.org/HVACscholarship.

Undergraduate Program Equipment Grants Applications due December 15, 2018

The ASHRAE Undergraduate Program Equipment Grants provide funding to engineering, technical and architectural schools worldwide with the goal of increasing student knowledge, learning and awareness of the HVAC&R industry through the design and construction of equipment. Grants are to be used to fund equipment and supplies for senior projects and 2-year technical school projects that focus on ASHRAE-related topics. Grants may cover projects lasting from one academic term up to one year.

Apply Now for the 2019 WISE Program! Applications due December 31, 2018

The Washington Internship for Students of Engineering Program (WISE) is a 10 week summer program in Washington D.C. with the goal of grooming future leaders of the engineering profession. During the paid-internship, you will learn how government officials make decisions on complex technological issues and how engineers can contribute to legislative and regulatory public policy decisions. Founded in 1980 through the collaborative efforts of several professional engineering societies, WISE has become one of the premier Washington internship programs.

Inquiries from interested students should be sent to GovAffairs@ashrae.org

Upcoming Topical Conferences

The 2019 Buildings XIV International Conference

December 9-12, 2019 | Sheraton Sand Key in Clearwater, FL

Inaugurated in 1979, the "Buildings Conference" takes place every three years allowing time to develop new research and technology applications and to document the findings. Attendance is international and draws heavily on the advanced technical knowledge of all our global experts. The "Buildings Conference" presents a great opportunity for product manufacturers, research groups, technical advisors, builders, designers and other consultants to discuss their work achievements, interest and awareness of buildings issues, and provides solutions to some of our major building problems.

The 2019 ASHRAE Building Performance Analysis Conference

Sept. 25-27, 2019 | Denver, CO.

The goal of this conference is to promote networking and present new techniques and workflows that practitioners make better decisions during the simulation and modeling process of an entire building life cycle.

7th International Conference on Energy Research and Development

November 19-21, 2019 | State of Kuwait

This conference is organized by ASHRAE and Kuwait University. The theme of the conference is "Advances in Energy Research & Development." Special emphasis will be on emerging energy conversion technologies, conservation and management strategies

New refrigerants: the next transition has begun

Whether it is turning off lights when leaving an empty room or driving electric cars, we are becoming more and more aware of the impact we have on the environment. For years, the HVAC industry has increased the pressure to reduce the use of refrigerants with high global warming potential. Now is the time to act. The following article aims to explain how to achieve this.

The Montreal Protocol is an agreement to protect the ozone layer that has been ratified by most countries around the world since 1987. It proposed the replacement of CFCs by HCFCs and HFCs in order to address the ozone depletion potential (ODP) of these refrigerants. Over the years, this has reduced the damage we have done to the ozone layer. However, this agreement did not focus at all on global warming potential (GWP). It is now time to slow global warming by using refrigerants with a GWP that is minimized while still satisfying a low ODP.

The 2017 Kigali Agreement is an amendment to the 1987 Montreal Protocol. The latter proposes to reduce the use of HFCs in the coming years. To achieve this, the solution would be to switch to refrigerants with a lower global warming potential than HCFCs and HFCs. Figure 1 below shows the refrigerants that are considered to be "new generation" to replace the transition refrigerants that are currently in use.

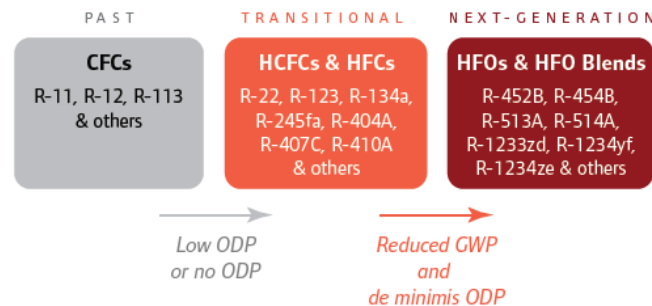


Figure 1: Evolution of refrigerants¹

Twenty countries have now ratified the Kigali amendment, which will allow it to formally enter into force. Canada² has signed this amendment which will come into effect on January 1, 2019. Canada's position according to an October 2017 article³ in the Canada Gazette is as follows: "The Department has maintained the ban's effective date of January 1, 2025, with a GWP (Global Warming Potential) limit of 750 (relative to the emissions of 1 ton of carbon dioxide CO₂) for all chillers to permit the use of a range of alternatives in various types of chillers. "

Figure 1 above illustrates that R-134a chillers will require a new generation refrigerant such as R-513A and R-123 chillers will require a new generation refrigerant such as R-514A.

Things are more complicated when it comes to replacing the R-410A. For this refrigerant, the next generation refrigerant options are (as of right now) "slightly flammable" (ASHRAE Class 2L). The industry is currently trying to find solutions to a certain degree of flammability, even if it is slight. For Class 2L refrigerants to be installed indoors, a major update of ASHRAE 15 is required. As the standards are updated over a three-year cycle, this update will be completed in 2019. The challenge is to promote a refrigerant by maximizing its efficiency, minimizing its flammability and eliminating toxic refrigerants.

Therefore, there are not yet any recommended options to replace the R-410A. It will be necessary to wait until 2019 to know the recommended alternative refrigerants for packaged units on the roof, VRF, heat pumps, and other equipment using R-410A.

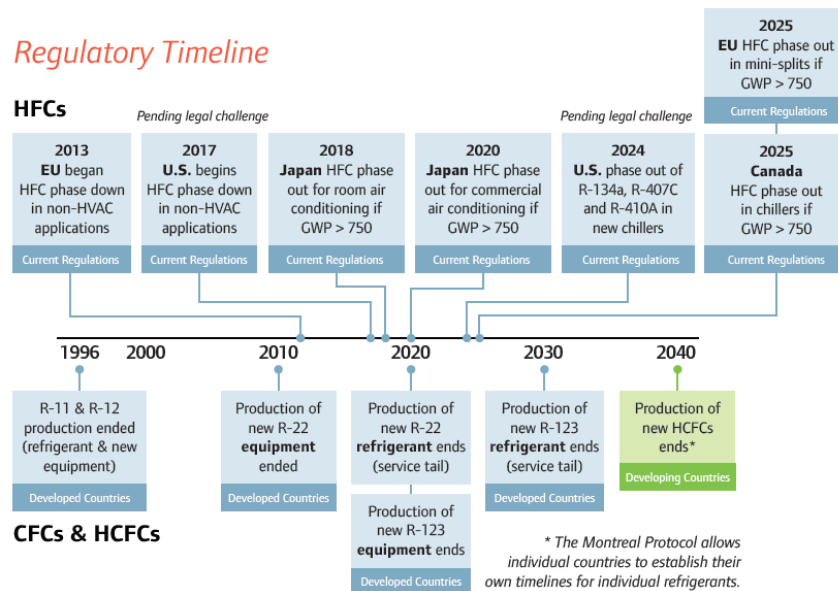


Figure 2: Regulations on refrigerants¹

Figure 2 above highlights that it will soon be prohibited to sell chillers operating with a refrigerant with a global warming potential greater than 750, such as R-134a or R-410a. In Canada, that's only seven years away. Fortunately, several chiller manufacturers are already able to manufacture equipment incorporating new-generation refrigerants. Refrigerant will still be available to purchase after the equipment phase out dates so it is an important conversation to have with the end-user while considering the original purchase price, life time maintenance costs, and the value placed on the environment.

In short, we must be ready for these changes in the industry by 2025. However, we are able to make a difference for the environment today. Encouraging a customer to opt for a new generation refrigerant has much more impact than taking out the recycling bin and can potentially take less time. We can all do our part; why not promote a greater impact?

*Philippe Dolbec, B.ing
Account Manager at Trane Montreal*

*Jeff Armstrong, BESC
Account Manager at Trane London*

Sources:

¹<http://www.trane.com/content/dam/Trane/Commercial/global/newsroom/blogs/Documents%202018/HVAC%20Industry%20Update.pdf>

²<http://ozone.unep.org/profile/CAN>

³<http://www.gazette.gc.ca/rp-pr/p2/2017/2017-10-18/html/sor-dors216-eng.html>