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ASHRAE REGION 2 NEWSLETTER

Greetings from your Region II Director and Regional Chair

Hope your chapter year is going well, and you are taking advantage of all your ASHRAE membership benefits.

The Las Vegas winter conference was a big success with nearly 2800 attendees. The AHR expo had over 500k square feet of exhibit space with over 69,000 industry personnel. The show in Chicago next year looks like it will be the biggest ever.

ASHRAE's 125th anniversary is 2019-2020 and planning is going on now to make it something to remember. To top it off, Toronto chapter has been awarded the 2022 ASHRAE annual meeting in June to help celebrate their 100th anniversary.

Many region ii members were recognized at the winter meeting. Darryl Boyce from Ottawa is the society treasurer nominee for 2017-18. Michel Bernier from Montreal was elevated to the highest membership grade of fellow. Claude Dumas of Montreal won the Milton Garland Refrigeration Award. More region ii members will be recognized in Long Beach for their efforts. We did well in the technology awards, Kurt Monteiro from Toronto captured 1st in new health care design with Humber Regional Hospital, and Julien Allard from Montreal captured 1st in new industrial facilities for STM. These awards give global recognition and I strongly encourage everyone to submit their projects. A lot of good work is going on in our region and they should get the recognition they deserve.

ASHRAE is looking at the winter and summer meetings to see how they can be made more efficient, looking at the regional structure to see if it is the right fit (looking at region at large and a new region in Europe for example), revamping the website and making things more mobile friendly, allowing more remote participation in meetings to name a few. This is a grassroots society so if you have ideas to improve society please pass them on or bring a motion forward at CRC.

We had a successful region planning meeting and president elect training in Montreal April to prepare for our Chapters regional conference (CRC). It is in Montreal Aug 25-27 and proves to be exciting. The committee has done a great job planning. Just a reminder to get your registrations and payment in by June 1, and your rooms booked before June 24 to help the chapter out and get the best deal.

President Wentz's theme of Adapt today to shape tomorrow is very timely. With the drive to low GWP refrigerants and stricter energy efficiency in codes, the way we do business today will change and we will need to adapt.

Thank you for all you do for ASHRAE. Remember your regional team is here to support you – if you have a question or concern, please ask. Enjoy the rest of the society year and hope to see you in Long Beach at the regional dinner Mon night June 23 (details to follow).

Sincerely,

Doug Cochrane, P.Eng. LEED AP, MAshrae
ASHRAE DRC Region II

Region II CRC Montreal Friday August 25 to Sun August 27, 2017

The Montreal Chapter will be hosting the Region II Chapters Regional Conference (CRC) at the Alt Hotel in Griffintown, Montreal, Quebec.



Registration Deadline Saturday, June 24th, 2017

Agenda:

Friday:

- Business Meetings: AM & PM
- YEA Program:
 - AM: HVAC Essential Training by Joel Primeau
 - PM: Technical Visit at Jetée Alexandra
- Presidential and Award Dinner at the Hotel
- Companion Activities in the PM: BotaBota Spa Afternoon in Old Montreal

Saturday:

- Business Meetings: AM
- Committee Workshop: PM
- Evening Social at Montreal Fine Arts Museum
- Companion Activities: AM & PM including Lunch: Walking Tour of Montreal

Sunday:

- Business Meeting: AM

Leadership U Program Update – Robert Hoadley

I was fortunate to have been chosen for the Leadership U program at the 2017 Winter Conference in Las Vegas. I shadowed Society Vice President Patricia Graef throughout the week, and sat in on her meetings with the Executive Committee (ExCom) and the Board of Directors.



These meetings were a glimpse into the decision making process within the society. I was able to witness the debates and votes on matters that will determine the direction of the society in coming years. The biggest take-away I have from these meetings is that the well-being of the grassroots of the society are the basis of all decisions made.

This was my first Society Conference, and I was also fortunate to have had the opportunity to attend several technical seminars and to have sat in on two subcommittee meetings of TC 9.6 – Healthcare Facilities (Water and Infectious Disease Subcommittees). I was also welcomed into several social receptions with the Board of Directors, and was able to make the acquaintance of many Executive Council and Board members. Regardless of what technical or social event I attended, I was always made to feel welcome in the room and a part of the discourse.

I also had the chance to attend my second AHR Expo whilst in Las Vegas. The trade show allows consultants like myself to meet directly with manufacturers to review new technology and products. I find this review of new products and applied technology to be very important professional development, and integral for young consultants and engineers.

The Board of Directors meeting agenda provides a time for members to bring forward concerns or comments regarding the Society. I took the opportunity to thank the board for the Leadership U program. I also took the opportunity to thank the board on behalf of my home chapter (NB/PEI) for the ongoing support of young engineers through the YEA program. The YEA program has reinvigorated our own chapter's membership and board of directors. We are now

fortunate to boast a young and vibrant chapter leadership, and ASHRAE's YEA program is the driving reason for our chapter's renewal.

The Leadership U program was a unique opportunity to be part of the society leadership. Society President Tim Wentz referred to the importance of “being in the room” during his address at the Presidential Luncheon. This week I was welcomed into the room, and I now intend to give back to the Society to the best of my abilities. The YEA Committee should be congratulated for the inception of the Leadership U program.

Robert Hoadley, P. Eng., HFDP
Fredericton, NB, Canada

ASHRAE LeaDRS Program Report – Alexis T.Gagnon
Winter Conference – Las Vegas
January 28-February 2, 2017

When I joined ASHRAE, I was not aware of all the workforce involved in it and all the decision-making process that was behind this big machine. As a student, I was mostly interested in the handbooks and all documents that could help grow my knowledge for my future career. The nearest chapter was a 2H30 drive. After graduating school I found a job in Quebec city where my employer rapidly encouraged me to join the rank of the local chapter. I was rapidly involved in the CTTC committee. After a couple of meetings and conversations, I decided to give my name for a chair position at the chapter and was quickly invited to the annual CRC. (Windsor 2009). At this meeting, I realized that the chapter was a small part of the puzzle and that there were Regional parts and Society parts for that puzzles. I still had a lot to learn but I was starting to have an idea of the organization. The followings years I chaired multiple committees which lead me to the presidency of the chapter. During those years I was hearing and seeing my boss involved at a higher level and we had some really interesting discussions on how things were working regionally and at society. The regional involvement curiosity was growing at that moment but I was just not able to place a date on when I was going to jump in it.

The LeaDRS program creation was something I found interesting from the start and the second time it was offered I tried my chance. I was not chosen at that time but it gave me the interest to work harder on my application document for the next annual meeting. Things worked out great since I was chosen for the program. The LeaDRS program was something I was seeing as a boot camp for my futures Leadership goals.

Doug and I discussed before the beginning of the conference and from the start, It was clear that this experience was to help me better understand the way ASHRAE works and that I would be guided in what I should attend depending on my interest in society. Our DRC was aware that not everyone is in the same work field in the business and that maybe we would fit best in certain activities. I arrived Saturday and I attended the YEA/Student mixer. This was a great event and I enjoyed the way networking was encouraged. The ASHRAE networking flyer was a really good initiative. At the welcome party, I had the chance to be introduced by Doug to numerous DRCs

and to know some of the others LeaDRS. It was a good moment to discuss with people of region II that I had not seen for a while.

On Sunday morning I attended technical sessions. I had the chance to be invited to the Leadership Luncheon and I was surprised to see how many organization around the world are in contact with ASHRAE. In this event, I was seated next to Marco Waldhauser the president of the Switzerland Engineer association, Farooq Mehboob a DAL, his LeaDRS Carine Saliba from Dubai, my DRC and other people from different organizations. In a survey they were asked to answer questions about the challenges these people were seeing for the next years in their respective organisations. During the evening, I went to the YEA hospitality event and I had the chance to meet with recent graduates from Montreal. The following event was Executive Hospitality. Again this event was a really great networking experience since I had the chance to meet most of the Leadership U participants. Robert Hoadley from NB/PEI who was participating in this program introduced me to them. I met Enrica Galasso from the Central New York chapter and Annie Smith from the St.Louis Chapter. I was impressed to see all those young individuals interested in the tomorrow ASHRAE Leadership.

On Monday I went to the AHR expo. This expo is always bigger and from what I heard in reports this year was a record in rented square foot. I really enjoyed being able to see the new products, the development and at the same time to be able to create new links with some manufacturers.

At the Tuesday morning member council, I really understood the reason to prepare precise and concise motion so they can be voted. The RMCRs around the table had to vote on motions that can have a fiscal impact on the society. A non-precise motion would have not had reach this point. I read some small part of the Member Council MOP after that to understand the responsibilities of everyone around the table. After this event Doug suggested that I should attend the President-Elect Advisory Committee (PEAC) which I did. It was interesting to see the team around the future president. There were discussions on the preparation of the presidential speech as well as guidance on which points this group thinks the president should focus on. After that event, I attended the TC 9.10 Laboratory Systems meeting. Since I'm a corresponding member of that committee it was important for me to show up at this meeting.

On Wednesday I went to the Technology Council. Again it was an exciting meeting to attend since this council votes on Research project, on what ASHRAE should affirm or reaffirm its position on and on funds to promotes ASHRAE programs. I had the chance to meet M. Charles H. Culp during this meeting and to discussed with him a little about his research and his work during the break. At the DRC meeting, the LeaDRS participants and the Leadership U participants were encouraged to share the experience they had and to bring some constructive criticism to help improve the programs for future meetings. The final meeting was a board meeting where all the DRC, DAL and Executive committee member sit. Various reports were presented and discussions on how ASHRAE can be stronger at the International Level were held.

I'm leaving the Winter Conference meeting with a bigger enthusiasm in participating in the development of ASHRAE. This opportunity added strength to my belief about ASHRAE and I really saw the core values of the society in action (Excellence/Commitment/Integrity/Collaboration/Volunteerism). It was a really good learning

experience and an enriching experience on how to lead effective meetings. I gained a lot of new contacts and I was able to solidify my existing ones.

I would like to thank our DRC Doug Cochrane, Audrey Dupuis our YRC, Region II and the Society to offer those wonderful professional development opportunities. I was already an ASHRAE believer and this will continue for sure.

Article for the 60th Anniversary of the Quebec Chapter

On December 5th, the Ville de Québec chapter of ASHRAE celebrated its sixtieth anniversary. The event took place at the prestigious Château Frontenac Hotel in old Québec.

For the occasion, the chapter was honored by the presence of the president of ASHRAE, Mr. Tim Wentz accompanied by his spouse. In addition, the past president of the Society, Mr. David Underwood, and the Director and Regional Chair (DRC), of Region II, Mr. Doug Cochrane, also accompanied by their spouses, participated in the evening.



During the visit, President Wentz and the other dignitaries took part in some activities planned by the organizing committee of the 60th, led by the chapter historian Mr. Andréa Daigle. To begin the day, the group made a guided tour of the Vidéotron Center. The project designers guided the visit and showed our guests the backstage scenes and mechanical rooms of this state-of-the-art

amphitheater. For dinner, the guests gathered at the Cercle de la Garnison with some members of the chapter's executive committee. Subsequently, President Wentz traveled to Université Laval to participate during an HVAC course and make a short presentation to members of the student branch.

The evening at the Château Frontenac began with a welcome cocktail where nearly 150 guests were able to observe a magnificent ice sculpture bearing the ASHRAE logo. The DRC Doug Cochrane introduced President Wentz who handed the 60-year Foundation Certificate to the current Chapter President, Mr. Xavier Dion-Ouellet. In addition, Mr. Renault-François Lortie, Senior Director, Sales and Market Development at Gaz Métro, a major sponsor of the event, told us about current and future energy status in Quebec. Obviously, the highlight of the evening was Mr. Wentz's presidential address where he presented his theme for this year: "Adapt Today to Shape Tomorrow".



It is important to note that in a spirit of sustainable development, all dignitaries' travels during the day were carried out in zero emission electric vehicles. In addition, the 60th anniversary



coincided with the traditional evening of former presidents. For the occasion, 21 former presidents of the Quebec chapter, some former chapter presidents of Montreal and Toronto chapters and the president-elect of the Moncton-PEI chapter attended the evening.

An activity of this kind with such a high level of participation demonstrates the dynamism of the Ville de Québec Chapter of ASHRAE as well as the entire Region II. In addition, the involvement of

volunteers and sponsors ensured the success of the activity. Finally, as the student branches affiliated with the chapter are very active, everything is in place for an enthusiastic succession, allowing the organization of other important events to come for the Ville de Québec chapter of ASHRAE.

Air Conditioning Still Cool After 100 Years:

by Bern Nagengast and Rob Faulkner-The Hamilton Spectator
(original article published in 2002)



The snowball rolled in 1956.

'Sold out' signs hung in Hamilton Ontario storefronts. Farmers read of a chill that made cows give more milk. Tenants rented new, windowless apartments. And once-sweaty Canadians – at work, home and play – wondered where the future of air conditioning could lead.

A threshold year, some called it, as the home air conditioning market boomed. Market watchers saw imports rise 140 per cent over 1955. Bosses saw a new way to keep workers working, shopkeepers, a way to attract customers, and a new hum was spreading to Canadian homes.

This is the story of the birth of cool.

It's an interesting story where you go from people saying, 'You're out of your mind' to the point where it's, 'I've got to have it. I can't live without it,' said Bernard Nagengast, co-author of *Heat and Cold: Mastering the Great Indoors*.

"There aren't many technologies that have undergone such a profound change in our perception of the technology, and what it has done to change things," said Nagengast, an Ohio engineer who has studied the history of air conditioning for more than 45 years.

By 1956, a late start by American standards, a hot Canadian summer had local and national newspapers raving about the mainstream adoption of air conditioning. It seemed an idea whose time had finally come – and this week (2002) marks the 100th birthday of that idea.

It was exactly a century ago this Wednesday that Willis Carrier of Buffalo laid plans for what's been hailed as the world's first air-conditioning system. On July 17, 1902, the young engineer found a way to control the climate in a Brooklyn, N.Y., printing plant, reducing the waste created when humidity changed the size of paper rolls and made colours inconsistent.

While some dispute Carrier's claim of 'invention' – and laud earlier pioneering like Dr. John Gorrie's 19th century attempts to fight malaria in Florida with ice-cooled air – the man behind today's Carrier Corp. kick-started the scientific thinking and marketing of a product that has changed our lives.

Early on, air conditioning – which, unlike the 19th century's fans and ice, also controlled humidity – was a financial blessing for industrial plants that depended upon stable climate conditions. The lithographers at the Sackett-Wilhelm plant in Brooklyn soon had company.

Before air conditioning, cotton threads snapped, cigarette machines jammed, film attracted dust and chocolate went grey with fluctuating heat and humidity. Cool and dry air, the captains of industry learned, could also make factory workers more comfortable, more productive and less prone to call in sick.

"For the first 20 years, it was almost entirely industrial use," said Jon Shaw, Carrier's communications manager in Syracuse, N.Y. It was only a matter of time, however, before the gargantuan systems shrank in size and grew in popularity.

The North American public, in the thousands, first felt the new chill at the St. Louis World's Fair in 1904, which cooled the 1,000-seat auditorium of the Missouri State Building. Most, however, had to wait until movie theatres installed air conditioners in the years after the First World War.

The summer blockbuster, now a multimillion-dollar staple in Hollywood, was only possible when air conditioning let theatre owners stay open year-round. Rather than close shop in the summer heat, theatre owners could market their cool air and cool flicks as the perfect summer outing.



In the deadly Ontario heat wave of 1936, which turned Hamilton General Hospital into a 37C heat trap, locals found shelter in the new Westdale Theatre. Opened in 1935, it was an air-conditioned refuge where they could cool off and catch the latest Bette Davis film for 20 cents.

The theatre's first program boasted of 'the latest air-conditioning,' cutting-edge Dunlopillo seats, a non-reflecting screen and fittingly 'British' content that opened and closed with God Save the King.

Other movie house banners bragged 'it's 20 degrees (Fahrenheit) cooler inside,' thereby turning cool air into the hottest ticket in town. Once the target of moralists worried about unwashed masses in dark, unventilated spaces, theatres soon rivalled amusement parks and ball diamonds as spots for summer leisure. This indoor bliss would also bring us the mall.

Starting with the New York Stock Exchange in 1901, mechanical cooling let architects break the rules of urban design. Time was, office buildings were built according to L, T or H-shaped floor plans, which maximized the number of windows to catch any available cross-breeze.

'Air conditioning let you use more space for the actual building,' Nagengast said. Builders filled whole city blocks with bricks and mortar, building up instead of out. They got rid of the window awnings (no need for shade), added more offices (no need for windows) and erected glass towers immune to the outside world – as long as the air conditioner

kept the inside world a pleasant 22C.

And millionaire Charles Gates, whose Minneapolis mansion became the first air-conditioned home in 1914, wasn't the only person who wondered: 'If I can be cool at the office, why not at home?'

By 1929, refrigerator maker Frigidaire created a small, expensive 'room cooler' that could be installed in homes or small stores. This led to the window box unit, air conditioners in cars and, later, the rise of new house designs. Widespread adoption of so-called 'comfort cooling,' however, slowed until after the Great Depression and Second World War.

'We can now create our own climates indoor and forget about the naturalistic approaches to home design, at a cost,' said Leslie Oliver, a retired heating and refrigeration expert now working on a Web-based museum of air conditioning.

For example, the Aurora-based historian lives in an Italianate-style home built in 1860 with ceilings that soar 10 feet high, a design feature used to trap hot air above the heads of residents. Old-time windows once opened from the top so hot air wasn't mixed around, Oliver says, while awnings and verandas made some much-needed shade.

But homes changed with the arrival of air conditioning. Check out post-war suburbs like those in Levittown, N.Y., or older parts of Canadian cities: single-storey homes have low roofs, large windows sealed to the outside, ceilings of about 8 feet (2.4 metres) and porches just for show or entirely absent.

'Verandas used to be your sun shield so you didn't get direct sunlight in your living room,' Oliver said. It no longer mattered which way your house faced. 'And coloured awnings on homes were once a very stylistic mark of an expensive home.'

As North America's middle class grew in the '50s, the father of the modern suburb, William Levitt, signed a lucrative deal with Carrier to put cooling units into his mass-produced, cookie-cutter homes. 'It doesn't make sense to heat a home in the winter and not cool it in the summer,' Levitt said.

But, as Oliver notes, there were also costs to this new thinking. Without awnings, buildings paid huge sums to cool their exposed interiors. Electrical demand soared, upending our old notion of winter as the season of heaviest use. Later, we learned some coolants were environmental hazards and that coal-fired generators feeding this new demand for power also spewed pollutants into the air that turned to smog at ground level and boosted global warming.

Yet, in the '50s, decorating magazines like House Beautiful and House & Home advertised the cool, new convenience. Window boxes sprouted on the outside of homes and offices. Homes, freed from the need to catch a breeze, could face any direction. And air conditioning made the rules of geography more elastic.

In the United States, it helped reverse a century-long pattern of migration out of southern cities, Nagengast says. Air conditioning was an important reason why eight of the 10 fastest-growing states after 1940 were in the south, among them dynamos like Atlanta, Dallas, Houston and Miami.

Even in Canada, with its cooler weather, the slower spread of chilled air brought change. Air conditioning seemed to reduce allergies to dust and pollen. It boosted summer church attendance. In the age of 'new is best,' it seemed like the fix for everything from crowded classrooms (year-round teaching), traffic woes (pack more buses) and labour strife (cool off workers).

Oliver, the engineering historian, recalls how the early '60s brought cool air to Canadian grocery stores like Dominion and Loblaws. New refrigeration tactics allowed the sanitary quick-freeze of meat products. Our use of electricity was reshaped as Canadians cranked up air conditioners all summer.

Gone were the days when a notable like Alexander Graham Bell had to drain his swimming pool and turn it into an ice-cooled living room to stay cool. The inventor -- of the telephone, it should be noted, not the air conditioner -- built ventilators to move air over ice and into the bottom of the pool, which he furnished with a carpet, desk, sofa and armchair.

After Carrier, life got cooler and quieter. By 2000, one in three Canadians had an air conditioner at home. They gathered inside on hot days, maybe to watch TV in a climate of their own design. They shut their doors against the summer heat. They traded the old sounds of the neighbourhood -- barking dogs, crying babies, passing traffic -- for a cool hum.

You can contact Rob Faulkner at rfaulkner@hamiltonspectator.com or at 905-526-2468.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers
www.ashrae.org

Additional comments from article's writer Bernard Nagengast, a current member of the Society's Historical Committee, Feb 14, 2017

The photo shown in the article is of the first Carrier centrifugal chiller from the early 1920s. The man in the photo is Willis Carrier. There is no direct connection to the Westdale Theatre, however if the theater had a Carrier AC system, no doubt it would have been a Carrier centrifugal although it would have looked very different from the 1920's photo since Carrier made many improvements in the system by 1935.

The compressor Carrier is standing next to was custom made by Jaeger in Germany in the 1920s. The centrifugal production moved to the USA in the early 1930's (for obvious political reasons) and were made by Carrier Corp. in Newark, NJ.

The early Carrier cooling systems in 1920 used Dichloroethylene (Dilene) refrigerant, then in the late 1920s, they switched to Methylene Chloride (trade named Carrene).

By the time of the Westdale Theatre opened in 1935, I believe they would have been using R11 refrigerant

Best regards, Bern Nagengast

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- Standard 55
- Standard 62.1
- Building Systems: Education Facility
- System Applications: Chiller/Boiler, Air Handlers, VAV Terminals
- Life Cycle Cost
- Building Systems: Multi-story Office Building
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- Water-to-Water GSHP Option 2 UFAD

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Your Instructors



Joel Primeau, P.Eng.,
Member ASHRAE, HBDP,
LEED® AP

[view bio >>](#)



Dennis Wessel, P.E.,
Fellow/Life Member
ASHRAE, LEED® AP

[view bio >>](#)

Improving Existing Building Operation



When: May 18 - 19, 2017 | Chicago, IL **Cost:** \$599 (ASHRAE Member: \$499)

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In two days, gain knowledge and understanding of the proper operation and maintenance of existing HVAC systems to increase building performance. The training equips attendees with the techniques to measure existing building performance to make their facilities operate more efficiently and economically.

- Importance of Building Operation
- Managing the Process
- Potential for Improvement
- Performance Baseline & Benchmark
- Operation & Maintenance
- Investing in Facility Improvements
- Commissioning
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- Financing EEMs
- Hiring a Consultant

CONFERENCE - WINDSOR
ENERGY AND NATURAL RESOURCES 2017

<https://www.environmentalenergyinstitute.com/eanr2017>

June 22-23/2017 UWINDSOR

The sustainable production and use of energy is critically linked to our invaluable natural resources. Both renewable and fossil energy sources are reliant on the availability of elements essential to our living environment. Energy and Natural Resources (EANR) 2017 will set a vital focus on the interconnectivity between energy and the environment. The outcomes driven event is bent on connecting ALL relevant stakeholders - such that the most pressing issues are moved forward with quantifiable and sustainable momentum.

TOPIC FOCUS

EANR2017 will explore the following topics. It is important to emphasize that each of technology, policy, and financial aspects of these topics will be examined.

Renewable and Fossil Energy Generation

- **Energy Storage**
- **Energy Systems Design and Integration**
Innovative Energy Finance and Market Dynamics
- **Carbon Mitigation Strategies**
- **Carbon Capture**
Carbon Sequestration
- **Mini/Microgrids**
- **Greenhouse Energy Systems**
Water's Role in Energy Extraction and Generation
- **Geo-Energy Interaction**
- **Northern Energy Systems**
Energy's Role in Water Treatment and Transportation
- **Island/Isolated Energy Systems**

UPCOMING REGION II EVENTS

- Day on the Hill , Ottawa (trying for **Wed –Thurs June 7, 8**)
- 2017 ASHRAE Annual Conference Regional Dinner (combined with Region XI), Long Beach, California, **Mon June 26** –details to follow
- Chapters Regional Conference (CRC) ,Montreal **Aug 25-27** (Alt Hotel Griffintown)
- RP Centralized Training Chicago **Sep 15-16**
- 2022 ASHRAE Annual Meeting, Toronto (**June 2022**) in celebration of chapter's 100th anniversary

ASHRAE Conferences

- Second International Conference on Energy and Indoor Environment for Hot Climates, Doha, Qatar, **Feb. 26-27**
- Delivering Resilient High-Performance Buildings, Loughborough, UK, **April 5-6** (in collaboration with CIBSE)
- Sustainable Management of Refrigeration Technologies in Marine and Off-Shore Fisheries Sectors, Bangkok, Thailand, **April 6-8**
- ASHRAE Webcast, Take Control: Using Analytics to Drive Building Performance, **April 20**
- 2017 ASHRAE Annual Conference, Long Beach, Calif., **June 24-28**
- ASHRAE 2017 Building Performance Analysis Conference, Atlanta, Ga., **Sept. 27-29**
- Second Developing Economies Conference, Delhi, India, **Nov. 10-11**

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