

ASHRAE Rochester



VOLUME 9, ISSUE 5

JANUARY 2015

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You are cordially invited to the

58th Annual Valentine Dinner Dance

Hosted by ASHRAE Rochester

Friday, February 6, 2015

Colgate Rochester Crozer Divinity School
1100 South Goodman Street
Rochester, New York

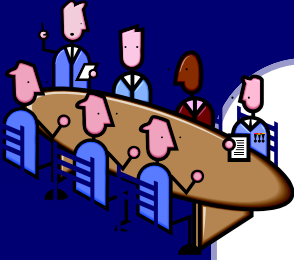
7:00pm Reception - Hors d'oeuvres & cocktails
8:00pm Dinner - As you select
9:15pm Dessert, Coffee and Dancing

Menu Selections

8 oz beef filet with burgundy reduction
Asian seared salmon
Chicken french
Roasted Vegetable Raviloi



(refer to pages 12-14 for more details)



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ASHRAE 2014-2015 Meeting Schedule				
Date	Event	pdh / Theme	Location	Schedule
01/09/15	Tour of 'Gene Polisseni Center' Ice Rink followed by an RIT Men's Hockey Game RIT Tigers vs American International <i>(tour for adults only, families are encouraged to come for the game)</i>	--- Family Night	RIT	Tour 3:00 pm Game 7:00 pm
02/06/15	Annual ASHRAE Valentines Dinner Dance	---	Colgate Rochester Crozer Divinity School	7:00 PM
02/09/15	Air Flow Measurement, IAQ and Building Pressure Control Mr. Jim Riendøau, Ebtron	Available	Mario's	12:00 PM
03/09/15	How to use Classroom Airhandlers with S12.60 to meet RC25 Classroom Design for Intelligently Quiet Schools Mr. Kevin McGachy Systemair Change'Air	Available Membership Promotion	Mario's	12:00 PM
04/06/15	Ethical Decision Making Barry Benator, PE, CEM - Benator, Inc. ASHRAE Distinguished Lecturer	Available	Mario's	12:00 PM
05/11/15	Annual ASHRAE Golf Outing and Picnic	---	Ravenwood Golf Club	9:30 AM Golf 4:30 - 8:00 Picnic

2014-2015 Presidential Award of Excellence Summary

Chapter #	Chapter Name	Chapter Members	Member Promotion	Student Activities	Research Promotion	Chapter Technology Transfer	History	Chapter Operations	Chapter PAOE Totals
11	Rochester	238	275	0	145	0	0	0	420

Mission Statement

ASHRAE will advance the arts and sciences of heating, ventilation, air conditioning, refrigeration and related human factors to serve the evolving needs of the public and ASHRAE members.



Shaping Tomorrow's
Built Environment Today

Vision Statement

- will be the global leader in the arts and sciences of heating, ventilation, air conditioning and refrigeration.
- will be the foremost, authoritative, timely and responsive source of technical and educational information, standards and guidelines.
- will be the primary provider of opportunity for professional growth, recognizing and adapting to changing demographics, and embracing diversity.

President's Message

Greetings,

The year is new, the hopes are new, the aspirations are new. I wish you and your families all the best and prosperity in the New Year! We are having a great start of the year! Our lunch meeting on Monday December 8th the program topic of Freeze Block Technology was presented by Mr. Bob Cooney. The technology of the installation of a temperature and pressure relief valve as a means of defense against costly coil freeze situations was very informative, as was the discussion of insurance companies' interest in this technology. I could not help but think of the original origins of the Hartford Loop! I hope all that attended found the program content as interesting and useful as I did.

Our upcoming January program meeting will be held at RIT on Friday January 9th at RIT. The program meeting will consist of a refrigeration tour of the new Gene Polissen Ice rink at RIT. The refrigeration tour event is combined with an ASHRAE Rochester Chapter Family event. Friday evening will be an ASHRAE Family night hockey game at RIT. RIT Tigers vs. American International. Look for details in our newsletter and on the Rochester ASHRAE chapter website.

As a chapter we are undertaking the initiative to be involved with a community project this year. We are exploring two excellent opportunities

1. Involvement with a community event sponsored by ASHRAE similar to an Explorers post. Either an event with multiple meetings of middle school to high school students getting together to solve a problem over an extended period of time. Or simply have ASHRAE host a one-day event where a group of kids solve a predetermined problem. This could include a Lego device or some type of competition. I see this as great synergy opportunity not only to get the ASHRAE name out to the community but also foremost help kids can learn what they might possibly like or things they definitely do not in regards to a education or career path.
2. Involvement of HVAC system design and installation for a Sensory Stimulation building currently being renovated at the Rochester Rotary Sunshine Campus. This building will be used by thousands of campers each summer who attend our program. It is designed to assist campers who are dealing with autism or other sensory issues the ability to enter a building that is designed to assist them in calming themselves and allowing them the ability to have a successful camp experience. As a chapter I am looking for design engineers, manufacturer's reps and contractors to provide turnkey HVAC design and installation to the camp Rotary Sunshine Campus at Zero cost.

We are really looking make one or both of these events happen! We are flexible and looking for personal or corporate involvement. If you would be involved please contact Mr. Matt Kramer's at Modular Comfort Systems or Mr Edward Burns at Mech Tech HVAC, Inc.

Other upcoming events include:

- The ASHRAE Conference takes place Jan. 24-28 Chicago, IL at the Palmer House Hilton. The ASHRAE co-sponsored AHR Expo, takes place Jan. 26-28 at McCormick Place.
- Rochester ASHRAE Buyers Guide. Opportunities to advertised in the years Buyers guide coming soon
- Annual Rochester ASHRAE Valentines Dance Friday February 6th at Colgate Rochester Divinity School.
- RES Engineering Symposium Rochester, NY to be held during the last week of April 2015.

Thank you to all the ASHRAE volunteers who help make our chapter the success that is! I look forward to seeing you all in the New Year!

Please check out our chapter website at www.rochester.ashraechapters.org or if facebook is your preferred method of communication take a moment to "like" us www.facebook.com/#!/ashraerochester

Edward J. Burns
Rochester ASHRAE President



Ed Burns, 2014-2015 President

Rochester Chapter Meetings

Highlights from December ASHRAE Meeting



Rick Kobylinski (left) of Cooney Coil & Energy, poses with a coil at Mario's on December 8th.

Bob Cooney (far right), owner of Cooney Coil and Energy, presented with live visual operational display of new freeze block technology. This new technology prevents coil damage due to freezing.



January Meeting



Join us on Friday, January 9, 2015

ASHRAE Tour of the Gene Polisseni Center

Ice Arena Pride at RIT

The \$38 million arena is home to the RIT men's and women's Division I hockey programs.

Construction Time-line

Construction began August 2013, and just 1 short year later the grand opening took place September 2014 .

Arena Capacity

The building holds 4000 seats, with 290 of that for club seating, and standing room only for a additional 300 people.



• ASHRAE Meeting/Tour:

Date: Friday, January 9, 2015

Time: 3:00 PM

Cost: FREE

Reservation required by Jan. 7th

• Presentation for ASHRAE members and people within the HVAC industry, followed by an HVAC and ice plant tour.

• We would like to thank LeChase Construction Services, Rochester Institute of Technology, Ice Builders, BBB Architects and Smith+Andersen for their time in showcasing such a fantastic project.

• RSVP at www.rochester.ashraechapters.org, tim.duprey@pres-services.com, or 585.330.6430

Join us for an ASHRAE family event - Let's all watch the game with family and friends...

We encourage our members and guests to enjoy this Family Event. Tickets can be reserved by going to: www.rochester.ashraechapters.org, or contact Chris Walter at 585-486-2148 if you have any questions. Reserve your tickets before the Sunday, January 4th deadline.

ASHRAE family event reserved seating:

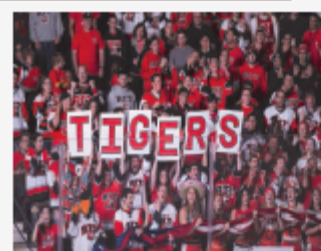
Adults	\$12
RIT Staff/Alumni	\$10
Youth (12 & Under)	\$ 6



RIT Tigers vs. American International

Date: Friday, January 9, 2015

Game Time: 7:05 PM





This section of the newsletter is reserved for those firms wishing to advertise their desires to hire from the Chapters Membership.

If you are interested in utilizing this FREE service provided by the Rochester Chapter, please contact our Chapter President, Ed Burns 585-739-7548 or by email ejb@mechtechvac.com.

This service is available to ASHRAE members for any local firm in our industry looking for knowledgeable persons in the HVAC&R industry.

Plumbing/Fire Protection Engineers

M/E Engineering, P.C., Upstate NY's leading Mechanical and Electrical consulting engineering firm is seeking a talented and enthusiastic Plumbing/Fire Protection Project Engineer and Senior Engineer in our Rochester Office.



**Mechanical/Electrical
Engineering Consultants**

Qualifications/Experience:

Project Engineer:
BS or BT Mechanical Engineering
4-8 years experience

Senior Engineer:
BS or BT Mechanical Engineering
10-20 years experience

*Salary commensurate with
experience and education.
M/E provides a competitive benefits package.*

Submit your Resume and Cover Letter online at
<http://www.meengineering.com/careers/>
Click on the Application Invitation to Self Identify
OR mail your resume to M/E Engineering, P.C.,
150 North Chestnut Street, Rochester, NY 14604
Attn: Candice J. Schneggenburger

*M/E Engineering, P.C. is committed to leveraging the talent of a diverse workforce to create great opportunities for our business and our people.
EOE/AA. Minority/Female/Disability/Vet
M/E Engineering is not able to sponsor H1B Candidates at this time.*

Value-driven solutions.

Outside Sales Engineer Wanted

H&V Equipment Sales, Inc. a manufactures representative for applied HVAC equipment is seeking a motivated salesperson to help expand its market presence in Western and Central NY. Responsibilities will be working with local mechanical contractors in the plan/spec and design/build markets, providing quotations for equipment, generating submittals and sales orders. Candidates should poses a thorough knowledge of Mechanical HVAC systems, have good communication, sales and computer skills, and be willing to travel within the sales territory.

Other skills considered favorable to the applicant are actual HVAC field installation, service, HVAC design experience and/or HVAC sales experience.

Please email resume to Thomas Snyder at tsnyder@hvgroup.us

H&V Equipment Sales, Inc. is a division of H&V Group.

Like us on Facebook!



Visit our new Facebook page by searching for "ASHRAE Rochester" on Facebook. Any ideas for additions or improvements email to Mark Kukla at mark@airsystemsbalancing.com. Keep up to date with current events and photos from recent meetings.

Membership

ASHRAE Rochester Chapter- Membership Promotion

Please remember to take a few minutes to make sure that your profile is up to date at www.ASHRAE.org. Maybe you've changed jobs? email address? or would like to advance your membership (i.e. Associate Member to Member). Keeping this information current ensures that you get the most value out of ASHRAE.

There is also a lot of emphasis this year to attempt to do as much of our Membership Renewals and New Member Applications online to decrease the amount of paperwork for the Society and make the process "Greener." If you have any questions or need assistance with any Membership Issues, please let me know.

Thank you, and as always, thank you for your support for ASHRAE.

Sincerely,
Jake Hall

Membership Promotion Chair

Young Engineers of ASHRAE (YEA)

Explorer's post with YEA

Our Rochester ASHRAE chapter and YEA are looking for volunteers to help with an Explorers Post. We are assembling a group of us to donate some time with local high school students. This program is an excellent opportunity for kids with interest in science and technology to spend time in different career fields. The intent is to allow these students to try out several potential career paths to investigate their interests. Our Explorer's program will expose the students to different disciplines within the HVAC industry to help gain exposure to our industry for future generations. Please contact Ed Burns or Matt Kremers mkremers@mcsmms.com if you are interested.

YEA Award of Individual Excellence

For more information on the award and how to submit, please contact Matt Kremers at mkremers@mcsmms.com.

Rochester Chapter Historian

ASHRAE History Article - Ice-Refrigerated Railroad Cars

By the late nineteenth Century, top speeds for railroad engines were approaching 60 mph. Despite this, transporting livestock to markets east of Chicago was still a very inefficient process. Given the limited rendering technology of the day, nearly half of any live animal was waste. For this reason Gustavus Swift perfected and built ice-refrigerated railroad cars, in large numbers, in the late 1880's. Combined with the increasing speed of rail transit, this made it possible to finally bring fresh meat, slaughtered in the mid-west, to east coast markets. By the turn of the twentieth Century, Swift & Co. had over 100,000 of these cars in operation.

Because these cars required replenishment of their ice bunkers, en-route to market, a new industry was born. Beyond this, once the new product reached its destination, it would still have to be kept cold, so other industries would soon follow. The availability of inexpensive refrigeration would make it possible for the produce and meat of the American plains to reach the population of the eastern states in useable condition.

By the mid 1920's, artificial ice production per person in the US was over 650 lbs. per year. For certain towns along the main railroad routes, ice production was over ten times that rate, because these were the key stops en-route to eastern markets. The average train would use about 500 tons of ice, sprinkled with 5 tons of salt. The process of icing a train could take as long as four hours. A typical railroad car icing station would need nearly 40,000 tons of ice a year, much more than any pond, canal or lake could provide. At the end of the rail route there was the requirement for ice for further cooling of meat and produce, so each eastern destination city would have extensive need for refrigeration facilities.

Next: The advent of the household refrigerator



Shaping Tomorrow's
Built Environment Today

Student Membership Application

What You'll Get With Your ASHRAE Student Membership!

What's "Cool" In ASHRAE

- ASHRAE maintains standards for indoor air quality
- ASHRAE promotes energy efficiency, savings and recovery
- ASHRAE reports on building controls, automation and integration
- ASHRAE focuses on green building issues and green technology
- ASHRAE promotes solar and other alternative energy sources
- ASHRAE offers certification programs, online learning opportunities and courses and seminars at ASHRAE Conferences

How Can ASHRAE Help You?

- Provide access to new technology
- Offer professional development opportunities
- Create opportunities for networking
- Offer online continuing education programs and eLearning programs

Student Member Benefits

- Access to members-only web pages
- Discounts on ASHRAE Handbooks
- Monthly ASHRAE Journal - print and digital
- HVAC&R Industry and Society Connections eNewsletters
- Discounted ASHRAE Annual and Winter Conference registration (AHR Expo, Student Program, Technical Sessions)
- Virtual online HVAC&R resume posting, job and internship searching program

ASHRAE Student Member Opportunities

- Society and chapter-level scholarships for both undergraduate and graduate engineering students
- Discounts for student members on select publications, go to www.ashrae.org/studentbookstore for more information
- Student Design Competition
- Networking with local ASHRAE Chapters
- Senior Undergraduate Project Grant Program
- At the student branch level, you'll enjoy meeting other students with similar interests - if your school hasn't yet started a student branch, take charge and contact a faculty member and ask for help on getting started!

You can continue your student membership after college with the SmartStart Program. The SmartStart program locks in the price of student dues for the first year of membership after graduation.

Visit www.ashrae.org/students
to join online!



You are cordially invited to the

58th Annual Valentine Dinner Dance

Hosted by ASHRAE Rochester

Friday, February 6, 2015

Colgate Rochester Crozer Divinity School
1100 South Goodman Street
Rochester, New York

7:00pm Reception - Hors d'oeuvres & cocktails
8:00pm Dinner - As you select
9:15pm Dessert, Coffee and Dancing

Menu Selections

8 oz beef filet with burgundy reduction
Asian seared salmon
Chicken french
Roasted Vegetable Raviloi



For reservations, please mail or fax this registration form by January 24, 2015.

Make checks payable to Rochester Chapter ASHRAE and mail to:

Jody McGarry
ABR Wholesalers, Inc.
510 North Goodman Street
Rochester, New York 14609
Phone (585) 482-3601 | Fax (585) 482-6698

Name: _____ Beef · Chicken · Fish · Vegetarian

Name: _____ Beef · Chicken · Fish · Vegetarian

Number of people ___ x \$65* per person = \$_____ (enclosed)

*Special price of \$50 per person for members of the Y.E.A.



January 6, 2015

Dear ASHRAE Members,

On Friday, February 6, 2015, ASHRAE will be hosting its 58th Annual Valentine Dinner Dance at the Colgate Rochester Crozer Divinity School. ASHRAE is asking for your corporate support to donate \$325.00, billed to you as an advertising expense, to help defray the cost of this event. Your sponsorship will enable us to provide you with lively entertainment, a delicious meal, special desserts, and an evening with friends and colleagues you won't soon forget.

Your \$325 sponsorship comes with two complimentary dinners to the event, but this year, we're giving our sponsors a chance to save on more tickets! If you would like to sponsor the event and reserve a table for 10, consider becoming a gold-level sponsor. For \$800, you'll receive a reserved table, 10 dinners, and special "gold-level" sponsor designation.

As always, your sponsorship will be listed in the dinner program and dance flyers, as well as being listed in a full-page advertisement in the R.E.S monthly publication. You will certainly be recognized by your peers as an ASHRAE supporter.

An invoice is attached for your convenience. We thank you for your support and look forward to sharing this fantastic evening with you!

Very truly yours,

Jody McGarry
Valentine Dance Committee



Invoice

Advertising for February 2015 Promotion

(Check One)

Sponsor: \$325

Gold-Level Sponsor: \$800

Please make check payable to: ROCHESTER CHAPTER ASHRAE and mail to:

Rochester Chapter ASHRAE
c/o ABR Wholesalers, Inc.
ATTN: Jody McGarry
510 North Goodman Street
Rochester, NY 14609

Commitment

We would like to support the Rochester ASHRAE 2015 Promotion and agree to fulfill our commitment by March 1, 2015.

Company Name_____

Signed by_____

Date signed_____

Please return your check or commitment no later than January 24, 2015 to ABR Wholesalers, Inc. Thank you for your support.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

A N I N T E R N A T I O N A L O R G A N I Z A T I O N

Board of Governors Meeting Minutes



Rochester Chapter - ASHRAE

Board of Governors Meeting

December 8, 2014 10:00 AM

Location: Mario's - 2740 Monroe Ave, Rochester, NY
14618

AGENDA

- | | |
|---|--------------------|
| 1. Call to Order | Ed Burns |
| 2. Roll Call | Chris Walter |
| 3. President Elect / Program | Chris Walter |
| 4. Approval of previous meeting's minutes | All |
| 5. Treasurer's Report | Bill Clark |
| • Tax Return extension Filed | |
| 6. Committee Reports | |
| • Technology Transfer Committee
Program/Tech Sessions
Technology Transfer | Jeff Wiedrick |
| • Membership | Jacob Hall |
| • Student Activities | Chris Lukasiewicz |
| • Education | Bill Murray |
| • YEA | Matt Kremers |
| • Awards & Recognition(update website) | Al Rodgers |
| • Research Promotion | Paul Kenna |
| • Refrigeration | Mike Nohle |
| • Chapter Tech Energy & Govt Activities | Tom Burke |
| • Newsletter | Scott Edwards |
| • Buyers Guide | Stephanie Dempsey |
| • Attendance | Tim Duprey |
| • Historian | Lee Loomis |
| • Publicity | Mark Kukla |
| • Website | |
| • Nominating | Michelle Sommerman |
| • CRC 2016 General Chair>>Budget, Location | Jim Browe |
| 7. Old Business | |
| • Tax Return | |
| • RES Engineering Symposium - Rochester Chapter representation?- Michelle Sommerman to handle | |
| • Scholarship updates Bill M approval of criteria to RIT & money allocation. | |
| • Drop Box, FTP or laptop location of chapter legal and significant documents. | |
| 8. New Business | |
| • Make sure everyone is logging PAOE points | |
| • Grass Roots community project possibilities - Seneca Waterway's Explorer's Post programs - Rob Hudson YEA. Sensory Stimulation building at the Rochester Rotary Sunshine Campus | |
| • NYSERDA Training Session possibility - Bill Bishop | |
| • Webcast promotion -New Tomorrows for Today's Buildings April 23,2015 1-4 pm | |
| 9. Next BOG meeting Friday January 9, 2014. Carrier Corp Humboldt St. | |
| 10. Adjourn 11:30 AM | |



Tips for ASHRAE Scholarship Applicants

Make sure ...

- You meet all applicable criteria
- You read the application carefully and answer all questions completely and honestly.
- The application and all required documents are submitted or postmarked on or before the applicable deadline.
- Your application is NEAT, legible (typed or handwritten clearly), and proper English (correct grammar and spelling) is used when responding to essay questions.
- To take time to submit a brief, non-required introductory cover letter
- You are clear and thorough when stating goals and financial need.
- You contact the nearest ASHRAE chapter for an interview with the Student Activities Chair or other officer to learn more about the Society.
- You find out if your school hosts an ASHRAE student branch.
- You contact ASHRAE headquarters if you have any questions and to ensure your application has been completed and submitted properly.

More information on the scholarship and details on how to apply can be found at www.ashrae.org/scholarships.

 Like us on Facebook |
  Follow us on Twitter |
  Join the conversation on ASHRAExCHANGE



News

1791 Tullie Cir. NE | Atlanta, Ga. 30329-2305 | 404-636-8400 | www.ashrae.org

For Release:

Dec. 18, 2014

Contact: Jodi Scott

Public Relations

878-539-1140

jscott@ashrae.org

ASHRAE Expands Scope, Renames Research Journal

ATLANTA – In recognition of the changing role of HVAC&R since it was first published 20 years ago, ASHRAE's *HVAC&R Research* has a new title, an expanded scope and an updated look.

Beginning in January 2015, the journal will be known as *Science and Technology for the Built Environment*. All manuscripts in process now will be published in the journal under its new name. Learn more at www.ashrae.org/stbe.

"This new name reflects its expanded scope, which includes papers in many areas of science and technology for the built environment," Reinhard Radermacher, Journal editor, said. "In addition to traditional areas of research in HVAC&R, the Journal's papers now often cover topics that have come to be associated with the industry since the Journal was first published in 1995. These include smart buildings, thermal comfort, aircraft ventilation and automotive climate technology. *Science and Technology for the Built Environment* will offer comprehensive reporting of original research in science and technology related to the stationary and mobile built environment."

Future article topics include:

- Indoor environmental quality, occupant health, comfort and productivity
- HVAC&R and related technologies
- Thermodynamic and energy system dynamics, controls, optimization, fault detection and diagnosis, smart systems and building demand-side management
- Experiments and analysis related to material properties, underlying thermodynamics, refrigerants, fluid dynamics, airflow, and heat and mass transfer
- Renewable and traditional energy systems and related processes and concepts
- Integrated built environmental system design approaches and tools
- Novel simulation approaches and algorithms and validated simulations
- Building enclosure materials, assemblies, and systems for minimizing and/or regulating space heating and cooling modes
- Review articles that critically assess existing literature and point out future research directions

Just as before with *HVAC&R Research*, *Science and Technology for the Built Environment* will accept for publication only works reporting on research that is original and of lasting value. This journal will continue to be published by Taylor & Francis Group on behalf of ASHRAE and be included in the Web of Science and Current Contents Connect databases.

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 50,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today. More information can be found at www.ashrae.org/news.

 Like us on Facebook |  Follow us on Twitter |  Join the conversation on ASHRAExCHANGE



News

1791 Tullie Cir. NE | Atlanta, Ga. 30329-2305 | 404-636-8400 | www.ashrae.org

For Release:

Dec. 3, 2014

Contact: Jodi Scott

Public Relations

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ASHRAE Drives Home Residential Guidance in 2015 Winter Conference Technical Program

ATLANTA – Guidance to help ensure that homes are energy efficient and have good indoor environmental quality will be featured in several Technical Program sessions at the 2015 ASHRAE Winter Conference, Jan. 24-28, Chicago.

"More time and energy is spent in residential environments than any other environment," Max Sherman, who chaired a Presidential Ad Hoc Committee on the Residential Construction Market that developed a report on "ASHRAE and the Residential Construction Market," said. "The ASHRAE Board of Directors recently acknowledged that by creating a Residential Committee and by making residential an initiative in the Society's newly adopted Strategic Plan. Similarly ASHRAE's mission of providing technical information cannot be achieved without consideration of residential information and guidance. Starting in Chicago, we will see an increase in the number of residential programs available for the professional. This residential guidance is not just for the consulting engineer but is intended for broader residential stakeholders as well."

Sherman noted that in the past, ASHRAE used to be heavily focused on residential. In 1895, President Edward Bates, first president of the American Society of Heating and Ventilating Engineers, an ASHRAE predecessor society, spent much of his Presidential address talking about the living conditions of the poor and the Society's duty to improve it. For the last several generations ASHRAE's emphasis has shifted more to commercial and institutional occupancies and away from where people spend most of their time.

In the last year, given the amount of energy used in residential buildings and issues related to the indoor environmental quality, ASHRAE took a look at how it can contribute most effectively to the improvement of the performance of residential buildings. The Society released a report, "ASHRAE and the Residential Construction Market," which contains a series of recommendations to the Board of Directors.

The ASHRAE 2015 Winter Conference takes place at the Palmer House Hilton, while the ASHRAE co-sponsored AHR Expo is held Jan. 26-28, McCormick Place. Complete Conference information and registration can be found at www.ashrae.org/chicago, and Expo information at www.ahrexpo.com.

The Technical Program begins Sunday, Jan. 25, and offers over 200 Professional Development Hours, as well as Continuing Education Units, which can be applied toward a Professional Engineering license. The Conference features papers and programs for eight tracks, which address trends in the industry and also are relevant to the design community in the area.

Continued on next page

Sessions related to residential include:

- Modeling and Simulation of Occupant Behavior in Buildings, Sunday, Jan. 25
- Variable System Field Results and Why Load Based Testing Is Needed for Residential Equipment Applications, Sunday, Jan. 25
- Alternative Refrigerants for Residential Refrigerator-Freezers, Sunday, Jan. 25
- ASHRAE and the Residential Construction Market: Status and Strategic Opportunities, Monday, Jan. 26
- Analysis of Variable Capacity Heat Pumps, Ground Source Heat Pumps Hydronics and Rainwater, Gray Water and AC Condensate Collection, Monday, Jan. 26
- New 2015 Regional Standards and the Effects on Different Areas of the HVAC Industry, Monday, Jan. 27
- A Paradigm Shift for HVAC Design, Tuesday, Jan. 27
- Building Energy Prediction and Measurement: Avoiding Fantasy and Heading toward Fact, Tuesday, Jan. 27
- Using Solar to Improve Efficiency, Tuesday, Jan. 27
- Who Needs a Residential IAQ Guide?, Tuesday, Jan. 27
- International Codes and Standards Issues Impacting Use of A2L Refrigerants in Unitary Heat Pump and Air-Conditioning Equipment, Tuesday, Jan. 27
- Advances in Cooling Heat Exchangers and Refrigerants, Wednesday, Jan. 28
- Modeling Radiant Heating and Cooling Systems: Tools and Analysis , Wednesday, Jan. 28
- The Future is Now: Small, Simple, Efficient and Comfortable Residential HVAC Systems, Wednesday, Jan. 28
- Data Center Cooling for Increased Performance, Wednesday, Jan. 28
- Efficiency of Residential Domestic Water Heating, Wednesday, Jan. 28
- Lies, Damn Lies, and...EUIs?, Wednesday, Jan. 28

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 50,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today. More information can be found at www.ashrae.org/news

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News

1791 Tullie Cir. NE | Atlanta, Ga. 30329-2305 | 404-636-8400 | www.ashrae.org

For Release:

Dec. 12, 2014

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Recipients of Technology Awards Announced by ASHRAE

ATLANTA – Buildings designed for a range of occupant types and uses – including penguins, patients, skaters, students, government employees and water testers – are being recognized for innovative design with ASHRAE Technology Awards. The awards recognize outstanding achievements by ASHRAE members and building owners who have successfully applied innovative building design. Their designs incorporate ASHRAE standards for effective energy management and indoor air quality and serve to communicate innovative systems design. Winning projects are selected from entries earning regional awards.

First place awards are presented at the ASHRAE 2015 Winter Conference, Jan. 24-28, Chicago, Ill.

Following are summaries of the nine projects receiving first place.

Antarctica: Empire of the Penguin

William C. Weinaug Jr., P.E., vice president, exp U.S. Services Inc., Maitland, Fla., receives first place in the existing industry facilities or processes category for the Antarctica Empire of the Penguin animal exhibit and ride attraction, Orlando, Fla. The facility is owned by Sea World Parks and Entertainment Inc.

The building includes a 6,000 square foot immersive dark ride and penguin exhibit in a 30,000 square foot space, including spaces for bird holding, brooding and life support systems. The project included a major expansion and renovation to an existing penguin encounter, with a portion of the original space, animal pools and life support spaces reused to save costs. When creating a 32°F space in hot and humid Orlando, the efficiency of the systems and envelope is crucial. The facility is designed to minimize energy use while providing a habitat for penguins to thrive.

Another important factor in design is indoor air quality for both penguins and guests. In regard to thermal comfort, the criteria were driven by birds' comfort instead of humans. Human comfort was measured by how well odors were controlled, particularly guest perception of the natural odor of penguin guano. Designers also had to protect the birds from mold and fungi not common to their native environment.

The facility contains many innovative systems, such as use of condenser water for heating and defrosting of iced coils. To ensure proper envelope was maintained while allowing thousands of people to flow through the building, sally ports and quick acting doors were added to keep cold in and moisture out. For the queue, ride and exhibit spaces; control and concern focused on dew point. Self-contained liquid desiccant air conditioning units were used to control the space dew point by creating cold and dry air as efficiently as possible.

Continued on next page

Centre Civique de Dollard-des-Ormeaux

Kateri Héon, Ing., project manager; and Pietro Guerra, Ing., mechanical-electrical director; exp, Montreal, Quebec, receive first place in the existing other institutional buildings category for Centre Civique de Dollard-des-Ormeaux, Quebec. The building is owned by the Ville de Dollard-des-Ormeaux.

The 225,000 square foot building features three National Hockey League regulation-size skating rinks, swimming pools, the town's city hall and library and a cultural center.

An energy efficiency program was developed to increase the performance of the refrigeration system for the three indoor rinks and then to recover the energy rejected from the center compressors to heat the building. The design team chose a system that featured a direct carbon dioxide heating and regeneration of a dehumidifier desiccant wheel, which is the first time this system has been used in a rink in North America. The system also is the first to use carbon dioxide in a multi-rink complex and the first to use carbon dioxide to cool the brine, thereby avoiding having to re-do the slabs in the rinks.

Other efficiency measures included:

- Four-pass brine distribution reduces by more than 50 percent the brine pump power compared to the old two-pass distribution.
- Low-e ceiling above the skating rinks to limit the radiative heat exchange between the hot ice rinks ceiling and the cold ice sheets.
- Expanded water storage by the use of an existing 600-L tank to accumulate preheated domestic hot water.
- New dehumidifiers for the pool using heat pipes to preheat entering air and energy recovery system.
- Sensitive energy recuperators on the exhaust vents for the arena and pool changing rooms to preheat fresh air.

The annual electricity savings for the project totaled \$247,000 or a 31 percent cost reduction from the previous baseline.

Achieving a return on investment will take approximately 8.3 years. The implementation of recovery and energy saving measures decreases overall consumption by 4.7 million kWh.

Federal Center South – Building 12021

Benjamin Frank Gozart, engineer; Tom Marseille, P.E., managing director; WSP; Charles Chaloeicheep, P.E., WSP Built Ecology; Seattle, Wash.; Tom Boysen Jr., P.E., senior project manager, Sellen Construction, Seattle, Wash.; receive first place in the new commercial buildings category for Federal Center South, Building 12021, Seattle, Wash. The building is owned by the U.S. General Services Administration.

Federal Center South is a three-story, 209,000 square foot facility with the U.S. Army Corps of Engineers Seattle District as the exclusive tenant.

The project used an integrated design approach that focused on energy conservation measures vs. expensive on-site energy generation strategies. Floor depth, façade design and daylighting are optimized to reduce heating and cooling requirements and the amount of artificial lighting. Several innovative technologies are included: passive chilled sails; thermal storage using phase change material; a 100 percent outside air ventilation system with heat recovery of exhaust serving a raised floor ventilation air distribution system; and heat recovery chillers tied to a high efficiency low temperature heating/high temperature cooling hydronic system.

The project includes use of ground loop heat exchange piping in almost 50 percent of the building's grout-filled steel pipe piles that provide needed structural support for the building. These 100 tons of "energy piles" efficiently reject waste heat and extract heat from the ground. In the summer, waste heat is rejected into the ground as a priority over an evaporative fluid cooler to save both energy and water. In the winter, heat is extracted from the ground and elevated to useful temperatures for heating the building through the use of the heat recovery chillers. The ground loop heat exchanger improves the building's energy use intensity substantially, reduces the building's carbon footprint and saves water.

The total building energy cost usage was shown to be 40.5 percent less than the ASHRAE baseline. The yearly total building energy cost was modeled at \$80,740 compared to baseline of \$135,791.

Janesville Ice Arena Addition and Renovation

Jason Troy LaRosh, P.E., mechanical engineer, Angus-Young Associates, Janesville, Wis., receives first place in the existing public assembly category for the Janesville Ice Arena addition and renovation. The building is owned by the City of Janesville. The project included renovation of the existing 26,000 square foot arena with the addition of 2,000 square feet that included new locker rooms, an ice resurfacing melt pit and resurfacing equipment storage area.

The original ice refrigeration system, installed in 1964, was a direct refrigeration system that used R-22 refrigerant circulated in piping embedded in the floor. The new system incorporates a pond loop geothermal system to handle the high refrigeration needs of the arena. The system uses a city owned pond as thermal storage to pull and reject heat to the ice refrigeration system which is made up of three water source heat pumps. The use of a pond loop geothermal system as it relates to an ice sheet refrigeration system is unique as the system takes advantage of the pond's ability to maintain relatively constant temperatures.

The water source heat pumps use R-410A refrigerant, which does not contain bromine or chlorine and is considered a non-ozone depleting refrigerant. The geothermal system transfers energy to and from the pond without burning fossil fuels. The updates to the building energy systems resulted in an annual natural gas energy savings of 33.5 percent from 2010 to 2013. The overall facility energy usage intensity was reduced by 24.1 percent: from 234.6 kbtu/square foot per year in 2010 to 178 kbtu/square foot per year in 2013.

Peace Island Medical Center

Mark Stavig, P.E., principal, CDi+Mazzetti, Lynnwood, Wash., receives first place in the new health care facilities category for Peace Island Medical Center, San Juan Island, Wash. The building is owned by PeaceHealth.

The building, a 40,000 square foot high performance, critical access hospital and clinic, contains 10 inpatient beds, emergency and imaging areas, surgery departments and an ambulatory outpatient clinic with a cancer care center.

Island resources are limited, which made sustainable choices vital and simple design necessary. The mechanical system was designed to use only electricity, the only available energy source on the island. The project employs numerous energy efficiency measures and achieves an average EUI of 87.7 kBtu/square foot per year.

Passive design strategies provide for load reductions and facilitate natural ventilation. A conscious effort was made to reduce cooling demand resulting from building envelope and plug loads. The orientation allows for controlled penetration of sun for passive solar heat in exam and waiting areas. Unwanted heat gain is minimized on the east and west exposures. Heat gain from solar is further controlled with the use of appropriate overhangs. Roofs are sloped to the south allowing for future installations of solar collectors. A major contributor to energy reduction was the use of decentralized systems sized to specific loads. This approach allows for systems to be tailored to the individual needs of each program area.

Other measures include operable windows, a ground source heat pump, a variable air volume system and heat recovery ventilators.

Tacoma Center for Urban Waters

Matthew William Longsine, P.E., associate, and Henry Di Gregorio, senior vice president, WSP, Seattle, Wash., receive first place in the new other institutional buildings category for the Tacoma Center for Urban Waters, Tacoma, Wash. The building is owned by the National Development Council, HEDC Public-Private Partnerships on behalf of the City of Tacoma.

The 51,000 square foot lab facility functions as a shared research facility for the City of Tacoma, the University of Washington and Puget Sound Partnership. It focuses on receiving and analyzing water samples from the waterways of Tacoma and surrounding areas.

Design features include heat recovery, energy efficient lighting, daylighting, natural ventilation, radiant floors, low-e glass and exterior operable shading, variable air volume low flow fume hoods, low flow plumbing fixtures, rainwater harvesting, green roof and energy efficiency HVAC&R components.

One of most innovative features is a geexchange system. At depths below 12 feet, the earth is typically at a relatively constant temperature compared with the surrounding air (approximately 55°F in the Puget Sound Region). When feasible, this makes it an ideal medium to either reject heat from the building in the cooling cycle, or draw energy from the earth for heating the building. The geexchange ground loop will last the life of the building without requiring replacement.

Another innovative component is rainwater harvesting. Two 36,000 gallon water storage tanks sit outside the building and collect both rainwater and rejected purified lab water which are used for toilet flushing and irrigation. Combined with low flow plumbing fixtures, this project provides a 46 percent reduction in water use.

Valley Middle School

Brian Haugk, P.E., mechanical principal, and Brian Cannon, mechanical senior associate, Hargis Engineers Inc., Seattle, Wash., receive first place in the new educational facilities category for Valley View Middle School, Snohomish, Wash. The school is owned by Snohomish School District No. 201.

The directive from the school district was to build on experience gained from two previous highly sustainable school projects and to make the building as energy efficient and maintenance-friendly as possible.

A ground source system sized for 100 percent of the central plant heating and cooling capacity was selected. A water-to-water heat pump (WWHP) allowed the design team to utilize displacement ventilation, which requires very tight discharge air temperature control to maintain occupant comfort, only achievable with a WWHP system. This project was one of the first to use this technology in the region and fully integrate the factory controls with the building energy management system (EMS). An EMS based energy dashboard system with touch screen monitors at multiple locations allows staff and students to learn about the sustainable features of the building. To further spark the interest of the student population, the EMS metering design of the lighting, plug and HVAC systems allowed for competition zones to be created in two classroom pods. This allows students to interact with the building systems to see what kind of impact they have on the overall energy usage.

The project saw a reduction in greenhouse gas emissions of 530 metric ton carbon dioxide equivalent reduction based on northwest region utility average emissions and 1,079 metric ton carbon dioxide equivalent reduction based on national utility average emissions.

Wayne N. Aspinall Federal Building and U.S Courthouse

Roger (Jui-Chen) Chang, P.E., BEMP, principal and director of engineering and sustainability, Westlake Reed Leskosky, Washington, D.C., receives first place in the existing commercial buildings category for the Wayne N. Aspinall Federal Building and U.S. Courthouse, Grand Junction, Colo. The building is owned by the U.S. General Services Administration, Rocky Mountain Region and was completed by WRL with The Beck Group.

The project converted a 1918 landmark into one of the most energy efficient, sustainable historic buildings in the country. To meet aggressive performance goals, including energy independence and energy efficiency, design included:

- a roof canopy-mounted 123 kW photovoltaic array (generating electricity on-site to power 15 average homes)
- addition of spray foam and rigid insulation to building shell
- storm windows with solar control film to reduce demand on HVAC
- variable-refrigerant flow heating and cooling systems tied to a 32-well geothermal loop;
- a dedicated outdoor air system with evaporative cooling and heat recover, wireless controls, and fluorescent and LED lighting upgrades

The project not only preserved a piece of cultural heritage and an anchor in the Grand Junction community, but also converted this 96-year-old property into one of the most sustainable and energy efficient buildings in the General Service Administration's portfolio, showcasing how innovative technology and building preservation work hand-in-hand to create sustainable design.

Westhills Recreation Center

Art Sutherland, president, Accent Refrigeration Systems, Victoria, British Columbia, receives first place in the new public assembly category for the Westhills Recreation Center, Langford, British Columbia. The building is owned by the City of Langford.

The 75,000 square foot recreation facility includes a National Hockey League size indoor ice rink, an outdoor ice rink, a skating trail joining the two together, a bowling alley, offices and a restaurant.

The mechanical system for the three ice surfaces are integrated into the building HVAC system to the extent that no fossil fuels are used for the facility other than in the kitchen. The outdoor rink offers an interesting energy balance opportunity in winter by providing additional rejected energy during the heating season. Even with the extensive use of energy, only 40 percent of the waste energy is required within the complex. The remaining 60 percent is pumped 400 yards to the growing Westhills housing development as an energy source for their household heat pumps.

The project turned a typical arena sub-floor heating system into an enhanced geothermal field. It is the first in North America to use new ultra high efficient reciprocating compressors and the first total integration between an ice facility and an entire community. The center also is the first in North America to utilize ammonia heat pumps to heat a housing community and is one of only a few ammonia based air conditioning systems.

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News

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For Release:
Dec. 16, 2014

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ASHRAE/IES Proposes Expansion of Climate Zones for Energy Standard

ATLANTA – New proposed climate data could make the ASHRAE/IES energy standard more applicable for global use. Addendum w is one of 10 proposed addenda to ANSI/ASHRAE/IES Standard 90.1-2013, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, open for public comment starting Dec. 5, 2014. The proposed addendum closes for review Jan. 19, 2015. To comment or learn more, visit www.ashrae.org/publicreviews.

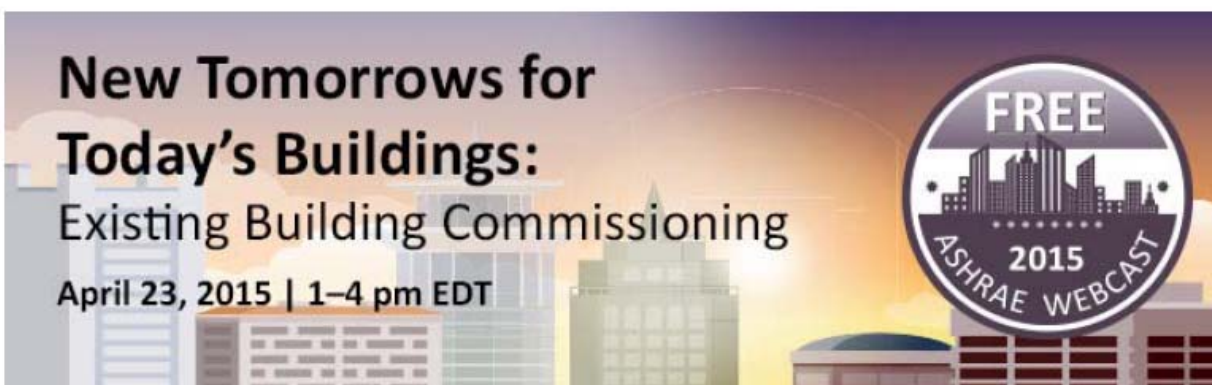
The addendum was developed in response to an update of ASHRAE Standard 169-2013, *Climatic Data for Building Design Standards*, which now contains updated climate data and additional Climate Zone 0 with humid (0A) and dry (0B) zones. Addendum w adds this climate zone to 90.1. This has global implications for the standard as Climate Zone 0 does not exist in the United States and is primarily used in the equatorial regions of South America, Africa, Middle East, southern Asia and the south Pacific.

"It gives the standard more of an international view with maps and data never before available to users," Dru Crawley, chair of the Standard 169 committee, said. "Previously there was the single U.S. map. Now there are high-level (1 deg latitude/longitude) maps of the world, covering each continent and major countries."

Other addenda open for public review from Dec. 5, 2014, until Jan. 4, 2015 are:

- v revises fenestration orientation requirements
- y adds a new approach to simplified building lighting
- z clarifies and modifies the modeling of a baseline HVAC system with air source heat pumps and electric auxiliary heat
- aa clarifies an exception in a table in the design model section
- ad revises the preheat coil requirement for the baseline building model in Appendix G
- ae updates a section related to definitions used with motors
- af restores the specification of the rating conditioners for measuring efficiency of heat pump pool heaters
- ag limits mechanical cooling for vestibules
- ah clarifies lighting requirements

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Planning your Chapter's Event Calendar?

Well, We've got April Covered!

Register your Chapter to view the 2015 ASHRAE Webcast at www.ashrae.org/webcast. Registration begins on March 23, 2015. Add lunch, a speaker, or even a product show and make it a full-day event.

- **Attend a live, interactive, educational program.**
This **FREE** webcast will feature industry experts who will define the benefits of existing building commissioning for the environment, occupants, operations staff, and overall ownership costs
- Chapter members and other attendees at your event may earn **3 Professional Development Hours (PDHs)** by completing the online Participant Reaction Form by May 8, 2015
- The webcast has been approved for **3 GBCI Continuing Education (CE) Hours** and **3 AIA Learning Units (LU)**
- Chapters who register to view the webcast will earn **100 PAOE points**



Promote the Webcast

Use the flyer and article in the online [Media Kit](#) to promote the webcast viewing at your Chapter event in your newsletter and on your webpage. We will also be sending the Chapter Presidents and Chapter CTTC Chairs hard copies of the Webcast Guide to promote the program at work, with other organizations, and of course, at your Chapter meetings. Please email ashrae-webcast@ashrae.org to request additional copies.

Need more information?

If you have questions about the webcast, call 678-539-1200 or email ashrae-webcast@ashrae.org.

For more information about the program, continuing education credits, speakers, registration, and Existing Building Commissioning resources visit us online at www.ashrae.org/webcast.

NOT ABLE TO WATCH THE LIVE WEBCAST ON APRIL 23?

Not a problem! Register your Chapter and view the Webcast online between April 23rd and May 8th. PAOE points and continuing education credits are also available for the Webcast On Demand. Visit www.ashrae.org/webcast for details.

REGISTRATION FORM

ASHRAE 2015 WINTER CONFERENCE

Chicago, IL January 24-28

Last Name _____ First _____ Initial _____

Nickname (for badge) _____ Phone Number _____ FAX Number _____

Company Name (or name of school if student) _____

Mailing Address _____

City _____ State/Province/Country _____ Zip/Postal Code _____

E-mail _____

MEMBER # _____
Member # must be supplied to receive member pricing.

NON-MEMBER (Registrants paying the non-member registration fee receive first year of membership free. Completed membership application form must be submitted by March 27, 2015).

If you have a disability which requires special assistance, please attach a description of your requirements with your registration form to enable us to make appropriate arrangements. Contact the hotel for wheelchair availability at the Palmer House.

In which type of business or firm do you currently work? (check only one)

- | | | |
|---|--|---|
| <input type="checkbox"/> 1 HVAC&R Contractor/Contracting Firm | <input type="checkbox"/> 9 Manufacturer's Agent/Representative | <input type="checkbox"/> 16 Other Allied to Field (specify) _____ |
| <input type="checkbox"/> 2 Plumbing Contractor/Contracting Firm | <input type="checkbox"/> 10 Importer/Exporter | <input type="checkbox"/> 17 Guest/Spouse Other |
| <input type="checkbox"/> 3 Mechanical Contractor/Contracting Firm | <input type="checkbox"/> 11 Manufacturer of HVAC&R & other Allied Equipment and Components (OEM) | |
| <input type="checkbox"/> 4 Other Primary Contractor/Contracting Firm | <input type="checkbox"/> 12 Building/Facility/Plant Management or Operations | Business Focus |
| <input type="checkbox"/> 5 Consulting Engineering Firm or Individual Consultant | <input type="checkbox"/> 13 Public Utility or Government Agency | <input type="checkbox"/> 1 Residential |
| <input type="checkbox"/> 6 Architectural & Architectural/Engineering Firm | <input type="checkbox"/> 14 Publishing | <input type="checkbox"/> 2 Commercial |
| <input type="checkbox"/> 7 Design/Build Firms | <input type="checkbox"/> 15 Education | <input type="checkbox"/> 3 Industrial |
| <input type="checkbox"/> 8 Wholesaling/Distribution | | <input type="checkbox"/> 4 Institutional |
| | | <input type="checkbox"/> 5 Guest/spouse/other |

Which of the following best describes your job function? (check only one)

- | | |
|--|---|
| <input type="checkbox"/> 1 Owner, President, Partner | <input type="checkbox"/> 8 Sales/Marketing |
| <input type="checkbox"/> 2 Other Senior Management (VP, General Mgr, etc.) | <input type="checkbox"/> 9 Research/Product Design & Development |
| <input type="checkbox"/> 3 Engineer | <input type="checkbox"/> 10 Consultant |
| <input type="checkbox"/> 4 Architect | <input type="checkbox"/> 11 Faculty/Student |
| <input type="checkbox"/> 5 Technician | <input type="checkbox"/> 12 Editor/Publisher |
| <input type="checkbox"/> 6 Operations/Maintenance | <input type="checkbox"/> 13 Other Allied to Field (specify) _____ |
| <input type="checkbox"/> 7 Purchasing | <input type="checkbox"/> 14 Guest/Spouse Other |

CONFERENCE REGISTRATION includes technical program and AHR Expo. **Includes virtual.

Early Bird Advance Full Registration
Sept. 1-Nov.3 Nov. 4-Dec.31 Jan. 1-28
<input type="checkbox"/> \$425 <input type="checkbox"/> \$450 <input type="checkbox"/> \$580 ASHRAE MEMBER**
<input type="checkbox"/> \$400 <input type="checkbox"/> \$425 <input type="checkbox"/> \$555 ASHRAE MEMBER-1ST TIME ATTENDEE**
<input type="checkbox"/> \$635 <input type="checkbox"/> \$660 <input type="checkbox"/> \$780 NON-MEMBER**
<input type="checkbox"/> \$610 <input type="checkbox"/> \$635 <input type="checkbox"/> \$755 NON-MEMBER-1ST TIME ATTENDEE**
<input type="checkbox"/> \$115 <input type="checkbox"/> \$115 <input type="checkbox"/> \$115 SPEAKER** (includes session chairs forum moderators)
<input type="checkbox"/> \$115 <input type="checkbox"/> \$125 <input type="checkbox"/> \$135 LIFE MEMBER**
<input type="checkbox"/> \$25 <input type="checkbox"/> \$25 <input type="checkbox"/> \$25 ASHRAE STUDENT MEMBER
<input type="checkbox"/> \$25 <input type="checkbox"/> \$25 <input type="checkbox"/> \$25 ASHRAE STUDENT BRANCH ADVISOR
<input type="checkbox"/> \$55 <input type="checkbox"/> \$55 <input type="checkbox"/> \$55 FULL TIME STUDENT NON-MEMBER
<input type="checkbox"/> \$0 <input type="checkbox"/> \$0 <input type="checkbox"/> \$0 CHICAGO HOST COMMITTEE
<input type="checkbox"/> \$0 <input type="checkbox"/> \$0 <input type="checkbox"/> \$0 CHICAGO-MONITORS
<input type="checkbox"/> \$0 <input type="checkbox"/> \$0 <input type="checkbox"/> \$0 PRESS**
<input type="checkbox"/> \$55 <input type="checkbox"/> \$55 <input type="checkbox"/> \$55 SPOUSE
<input type="checkbox"/> \$249 <input type="checkbox"/> \$249 <input type="checkbox"/> \$249 ASHRAE MEMBER-VIRTUAL
<input type="checkbox"/> \$445 <input type="checkbox"/> \$445 <input type="checkbox"/> \$445 NON MEMBER-VIRTUAL

SOCIAL EVENTS All social events and tours will increase by approximately \$5 each Jan. 2.

QTY.	TOTAL	
20 _____	@ \$55 _____	Saturday, January 24
		Welcome Party, 6:30pm
21 _____	@ \$45 _____	Monday, January 26
		President's Luncheon, 12:15pm
38 _____	@ \$0 _____	38 Women in ASHRAE Breakfast, 7-8:30am
		Tuesday, January 27
22 _____	@ \$55 _____	22 Members Night Out, 6:15pm
23 _____	@ \$35 _____	23 Life Members Lunch, 12noon

TOURS (limited space per tour)

QTY.	TOTAL	
24 _____	@ \$55 _____	Sunday, January 25
		City of Chicago 8am-Noon
25 _____	@ \$55 _____	25 Devil in the White City 1pm-5pm
		Monday, January 26
26 _____	@ \$50 _____	26 Immigrant to Elite, 2:30-5:30pm
27 _____	@ \$50 _____	27 Lifestyles of the Rich & Famous, 2:30-5:30pm
		Tuesday, January 27
28 _____	@ \$100 _____	28 Chicago Film Tour, 11:30am-2:30pm

TECHNICAL TOURS (limited space per tour)

29 _____	@ \$30 _____	Monday, January 26
		Walgreens Net Zero Store, 2:30-4:30pm
30 _____	@ \$30 _____	30 Refrigeration for Craft Brewing, 2:30-5:00pm
		Tuesday, January 27
31 _____	@ \$15 _____	31 McCormick Place Campus Tour, 2:30-3:30pm
32 _____	@ \$30 _____	32 Motorola Mobility Corp. Hdqtrs, 2:00-4:00pm

RESEARCH _____ 95 Research Promotion Contribution

ASHRAE CONFERENCE PUBLICATIONS

Code # _____	Quantity _____	@Price _____	Total _____
Code # _____	Quantity _____	@Price _____	Total _____

GRAND TOTAL \$ _____ (Registration fees, social events, tours, publications)
Payment must accompany registration form. ASHRAE reserves the right to charge the correct amount if different from the total listed above.

ASHRAE LEARNING INSTITUTE

Full Day \$395 ASHRAE Member \$485 Non-member

- | | |
|---|--|
| Saturday, January 24, 8am-3pm | Tuesday, January 27, 9am-4pm |
| <input type="checkbox"/> 60 Designing HVAC Systems to Control Noise & Vibration | <input type="checkbox"/> 74 Introduction to Building Enclosure Commissioning |
| <input type="checkbox"/> 61 The Commissioning Process in New & Existing Bldgs | <input type="checkbox"/> 75 Energy Modeling Best Practices and Applications |
| <input type="checkbox"/> 62 Commercial Building Energy Audits | |

Half-Day Courses \$119 ASHRAE Member \$159 Non-member

- | | |
|--|--|
| Sunday, January 25, 8:30am-6:30pm | Monday, January 26, 2:45pm-5:45pm |
| <input type="checkbox"/> 63 Air-Air Energy Recovery Applications: Best Practices | <input type="checkbox"/> 71 Complying with Std 90.1-2013: HVAC/Mechanical |
| <input type="checkbox"/> 64 Fundamentals of Risk Management NEW | <input type="checkbox"/> 72 Commissioning for High-Performance Buildings |
| <input type="checkbox"/> 65 Laboratory Design: The Basics and Beyond | <input type="checkbox"/> 73 Building Demand Response & the Coming Smart Grid |
| <input type="checkbox"/> 66 Energy Management Best Practices | |
| Monday, January 26, 8:30am-11:30am | Tuesday, January 27, 9am-12pm |
| <input type="checkbox"/> 67 Designing High-Performance Healthcare HVAC Systems | <input type="checkbox"/> 76 Combined Heat & Power: Creating Efficiency through Design & Operations |
| <input type="checkbox"/> 68 App. of Standard 55.1-2013: Multiple Spaces Equations and Spreadsheets | <input type="checkbox"/> 77 Commissioning Process & Standard 202 NEW |
| <input type="checkbox"/> 69 Energy Efficiency in Data Centers | Tuesday, January 27, 1pm-4pm |
| <input type="checkbox"/> 70 Design of Commercial Ground Source Heat Pumps | <input type="checkbox"/> 78 Fundamentals and Applications of Std. 55 |
| | <input type="checkbox"/> 79 Advanced High-Performance Building Design |

METHOD OF PAYMENT: CHECK ENCLOSED-(Payable to ASHRAE/CHICAGO15) U.S. FUNDS ONLY. CHARGE: MasterCard AMEX Diners Club VISA

CARD NO. _____ EXP. DATE _____ SIGNATURE _____

Send registration form and payment to: Meetings Section, ASHRAE, 1791 Tullie Circle, NE, Atlanta, GA 30329. Phone (404) 636-8400. FAX (678) 539-2219. Deadline: Dec. 31.

Under proper safeguard ASHRAE will provide names of conference registrants to both sponsors of the ASHRAE conference and AHR exhibitors. If you do not wish to have your name and mailing address provided, please check the appropriate box. No information from sponsors No information from AHR exhibitors



ASHRAE 2015 Winter Conference
January 24–28 | Chicago, Illinois

AHR Expo
January 26–28 | McCormick Place



ASHRAE is excited to return to Chicago for the 2015 Winter Conference, its historically best-attended event. Attendees can discuss the latest topics in the building industry; participate in technical tours; attend ASHRAE Learning Institute courses; earn professional credits; and obtain ASHRAE certifications. Chicago also serves as the site of the AHR Expo, co-sponsored by ASHRAE and held in conjunction with the Winter Conference.

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Gain personal and career excellence through peer contact, exchange of technical information and continuing education. Share ideas with members from around the world.



Visit the world's largest HVAC&R marketplace. The AHR Expo brings the entire industry together under one roof to see the latest products and technology, **learn about innovations and trends that are shaping the future**, and build new relationships. www.ahrexpo.com.

With the Conference being held in the big city of Chicago, the Technical Program itself is going big with a focus on **big projects, the big picture and big impacts**. Eight tracks are featured. The complete Technical Program is available at www.ashrae.org/chicago.

We have 20 high-quality, authoritative, Professional Development Seminars and Short Courses presented by the ASHRAE Learning Institute. There is a new course on Standard 202, *Commissioning Process for Buildings and Systems*, in addition to updates to Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, and 62.1, *Ventilation for Acceptable Indoor Air Quality*. Training topics include commissioning, energy management, Standard 55, *Thermal Environmental Conditions for Human Occupancy*, energy efficient data centers, healthcare facilities, building energy audits, the coming smart grid and ground source heat pumps.



Register at www.ashrae.org/chicagocourses.

Culture abounds through social events and general tours of historic Chicago venues. Kick off the Conference by catching up with friends and meeting new acquaintances at the **Welcome Party** held at the Chicago Cultural Center.

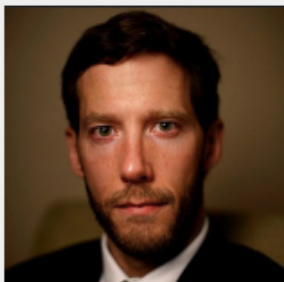
See the technology you help create first-hand via a **Technical Tour**. Tours include a brewery, Walgreens net zero store and McCormick Place. Complete information can be found online.

New tracks are: Mission Critical Facilities, Industrial Facilities, Life Safety, Energy and Water Efficient Systems and Hospital Design.

Gain valued credentials held by top engineers via ASHRAE's six Certification programs. An exam session for all six ASHRAE certifications takes place Wednesday, Jan. 28. ASHRAE's six certification programs are as follows:

- Building Energy Assessment Professional (BEAP)
- Building Energy Modeling Professional (BEMP)
- Commissioning Process Management Professional (CPMP)
- High-Performance Building Design Professional (HBDP)
- Healthcare Facility Design Professional (HFDP)
- Operations & Performance Management Professional (OPMP)

And, for the Technical Program sessions that you can't attend because of your other committee commitments, you'll be able to catch up on them afterward through the Chicago Virtual Conference. The Virtual Conference is an on-demand recording of presentations in a synced audio and PowerPoint format, a podcast and the slides in note format.



Hear Keynote Speaker Aron Ralston share the dramatic story of being forced to cut off his hand after being trapped while hiking. Author, adventurer and subject of the film *127 Hours*, which was nominated for six Oscars.

Make some time in your schedule now. Register before Jan. 1 to save!
www.ashrae.org/chicago.

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We look forward to seeing you in Chicago.
If you have any questions, please contact us at meetings@ashrae.org.

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