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COSTS

Fees are based on online reservations and prepayment.

Philadelphia Chapter Members:
\$30

ASHRAE Society Members -
Non-Chapter Members:
\$40

Non- ASHRAE Member:
\$50

YEA Member (35 & under):
\$25

Students:
\$10



QUAKER CITY CLIMATE

Thursday, November 8, 2018

“Green Buildings Can Waste Energy Efficiently”

presented by

Lawrence G. Spielvogel, PE, CEng, FASHRAE, FCIBSE, FSLL

(See [page 8](#) for more information.)

[Click here](#) to Register

Registration 11:45 am *

Lunch 12:15 pm

Presentation 12:55 pm - 2:00 pm

**Please arrive prior to 12:15 to allow for signature meat tableside service.*

LOCATION

Fogo de Chão Brazilian Steakhouse
1337 Chestnut St,
Philadelphia, PA 19107

[Click here](#) for directions.

It's our Research Promotion and
Donor Recognition Event!

See [page 4](#) for information on becoming a
corporate sponsor and donating to Research Promotion.

YEA Bowling Night

Thursday, November 15, 2018

See [page 5](#) for more info.

PRESIDENT'S MESSAGE**President**

Mike Radio, PE, CEM, BEMP, LEED AP

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Sean Hughes

Young Engineers in ASHRAE

Dan Brown

Publicity

Mike Radio

Grassroot Government Activities

Anthony Scaccia

Special Events

Tim Reinking

Honors and Awards Committee

Jeff Crozier

I would like to thank the Sheet Metal Contractors Association (SMCA) for hosting Engineers Night earlier this month at the Warwick Hotel. It is always great to see multi-disciplinary professionals gather and learn from each other's experiences. Today's marketplace is challenging us to adapt to improve project delivery methods and a more efficient design and construction process to create high-performance buildings. Integrated Project Delivery (IPD) is a process that collaboratively utilizes the talents and insights of all participants to optimize project results. ASHRAE will continue to encourage this type of collaboration by hosting a variety of joint meetings with other professional organizations such as American Institute of Architects (AIA), Association of Energy Engineers (AEE) and Institute of Electrical and Electronics Engineers (IEEE).

Our Government Affairs Committee Chair, Anthony Scaccia, has been very active. This month Anthony participated in the Delaware Residential Energy Codes Coalition, a meeting of residential building professionals in the State of Delaware. The discussion included potential changes to the ASHRAE 2016 Residential Energy Code. Anthony has been working with Jim Scarborough, ASHRAE's Senior Manager of State and Local Government Affairs to coordinate Government Outreach Day in the State of New Jersey. They will be meeting with Senator Linda R. Greenstein and Senator Christopher Bateman. The purpose of the meetings is to raise awareness of ASHRAE and its core mission, but not to support or oppose any particular piece of legislation. In June, the Philadelphia Chapter and the Central PA Chapter conducted a Pennsylvania Day on the Hill. The team had approximately eight separate meetings with representatives at the Capitol. Following the meetings, the ASHRAE members handed out flyers to approximately 40 other representatives in an effort to introduce ASHRAE to state legislators. It was a successful first step in advocacy for the Philadelphia Chapter. If you are interested in helping out, the chapter plans on setting up another day on the hill in PA in the spring.

I am very excited for our upcoming chapter meeting on November 8th at Fogo De Chao. The meeting is a lunch meeting and will start promptly at 12:15. ASHRAE Fellow and former winner of ASHRAE Distinguished Service Award, Larry Spielvogel, will be presenting "Green Buildings Can Waste Energy Efficiently". The topic is sure to lead to a lively discussion, and participation in the Q+A period is encouraged. I am looking forward to seeing you all at the next Chapter meeting! Follow us on LinkedIn for further Chapter updates.

Mike Radio, PE
Philadelphia Chapter President
c021@ashrae.net

The New 2018-2019 Directory is Available!

The latest edition of the Directory of Associations, Consulting Firms, and Manufacturers' Representatives in the Philadelphia Area is now available. It sells for \$23 each.

Send your check to:

ASHRAE, 994 Old Eagle School Road, Suite 1019, Wayne, PA 19087.

If you prefer to pay by credit card, please call Hope at 610-971-2169 or email her at hope@mmco1.com.

PHILADELPHIA CHAPTER PROGRAMS CALENDAR 2018-2019

<u>Date</u>	Time	Venue	Session Topic	Theme
Thursday, November 08, 2018	12pm - 2pm "Lunch Event"	Fogo de Chao	"Green Buildings Can Waste Energy Efficiently"	Research Promotion and Donor Recognition
Thursday, December 13, 2018	7am - 8:30am "Breakfast Meeting"	The Union League	"Microgrids"	Research Promotion
Wednesday, January 16, 2019	5pm - 10pm	Wells Fargo Center	Social Event - Hockey Flyer vs Bruins	Membership Promotion and YEA
Thursday, February 21, 2019	5pm - 8pm	Mummers Museum	"Codes / Standards"	
Thursday, March 14, 2019				ASHRAE History Night
Thursday, April 11, 2019				
Thursday, May 09, 2019				Employer Recognition Past Presidents Research Promotion
Monday, May 13, 2019	11am - 7pm	DuPont CC	Annual Golf Outing	Fun and Relaxation

Program calendar is tentative and subject to change. Please refer to [ASHRAE Philadelphia Website](#) for up to date information.
Advance registration and pre-payment are required before the meetings.

We need your attendance!

If we are below our guaranteed level for attendees at our meetings, our treasury could be negatively effected. Our programs are designed around the membership's input and we all need to support these meetings to maintain a strong/informed association. We hope to see you at our next meeting. Please come out and support our Chapter!



[Click here](#) for info!

**2019 ASHRAE
Winter Conference
& AHR Expo
Atlanta, GA
January 12-16, 2019**

ASHRAE Philadelphia Corporate Sponsorships Are Still Available

The Philadelphia Chapter invites your company to join as a Corporate Sponsor for the 2018-2019 year.

Your firm's participation in this program would enable us to make a wonderful donation to ASHRAE Research Promotion which includes over \$ 1.5 million in local research funding.

Corporate Sponsors are listed on our web site, in our newsletter, and in our annual directory. They receive free copies of our directory and recognition at all of our events. With the ease of one payment, you may get all this, as well as free dinner tickets good for our monthly meetings, and make a valuable contribution to ASHRAE Research at the same time.

Since not all companies have the same financial capabilities or quantity of employees, we offer a few different levels of corporate sponsorship. Each level will receive the same types of benefits, with some differences in quantities and discounting.

Those who have signed up for 2018-2019 are listed below and it's not too late to join!

If you are interested, please email us at philachapter@mail.ashrae.org. The Board of Governors thanks you for your continued support of ASHRAE. We hope that this year is successful for your firm.

2018-2019 Corporate Sponsors

Bush Sales Associates, Inc.
Clapp Associates, Inc.
CM3 Building Solutions, Inc.
Coward Environmental Systems, Inc.
Elite Air Systems, Inc.
Ernest D. Menold, Inc.
Finnegan Associates
Jacobs Buildings & Infrastructure
McHugh Engineering, Inc.
Metropolitan Acoustics
Peirce-Phelps, Inc.
Penn Pumps & Equipment Co. Inc.
Phillips McDade
RD Bitzer Company, Inc.
Schiller & Hersh Associates
SETTY
The Tri-M Group
Universal Motor Distributors

The November meeting is our Research Promotion and Donor Recognition Event.

Note from the CTT Committee:

One of the most compelling features of VRF technology is its ability to trade heat between different zones using Heat Recovery systems. It allows simultaneous heating and cooling from a single outdoor heat pump and affords greater efficiency than standard VRF heat pump systems.

However, because these efficiencies are only realized when part of the building is utilizing heat while another utilizes cooling during periods of moderate temperatures, it can be difficult to quantify the actual energy benefits of these systems. Typically, their use is dictated by a need for simultaneous heating and cooling, so the efficiency premium is often left to an afterthought.

The following papers independently arrive at similar efficiency gain conclusions under tightly controlled experimental settings. Whereas the second paper is primarily aimed at vetting the reliability of energy modeling algorithms related to these systems, the data presented is nonetheless compelling.

For those engineers who rely on less time intensive energy models than those found in packages like EnergyPlus: do you have your own rules of thumb or calculation methods for modeling energy use in heat recovery systems on an hourly or monthly basis? Have you found actual energy use in applied systems consistent with the findings in these papers?

Brian N. Stehman
CTTC Refrigeration Subcommittee Chairman
bstehman@tristatehvac.com

Henry Hoffman, PE
CTTC Chairman
c021cttc@ashrae.net

[See next page for articles . . .](#)

YEA Bowling Night

Thursday, November 15, 2018
6:30 PM to 8:30 PM

South Bowl Lounge N' Lanes
19 East Oregon Avenue
Philadelphia, PA 19148

[Click here](#) to register.



Philadelphia's ASHRAE Chapter invites all members 35 and under (including Students!) to the Young Engineers in ASHRAE (YEA) Fall Social - a night of bowling in South Philadelphia! Please try to get to South Bowl between 6:00 pm and 6:30 pm to get your shoes and lanes. We have reservations for the lanes starting at 6:30 pm, so as people arrive, we can start bowling. There will be appetizers and a full spread of delicious food.

The cost is \$15 for YEA members and \$15 for Student members and \$15 for guests.

Please contact Dan Brown at c021yea@ashrae.net if you have any questions.

CTTC Articles *(continued from previous page)*

Variable Refrigerant Flow-Heat Recovery Performance Characterization

Walt Hunt, Harshal Upadhye, and Ron Domitrovic, Electric Power Research Institute

Paul Delany and Bach Tsan, Southern California Edison

Mira Vowles, Bonneville Power Administration

From the 2012 ACEEE Summer Study on Energy Efficiency in Buildings

Anecdotal suggestion and manufacturer provided data provides evidence that variable refrigerant flow systems with heat recovery (VRF-HR) provide a significant opportunity for building energy savings under certain conditions. Actual operational data showing the performance of heat recovery systems under varying conditions is scarce. This paper details the testing of a VRF-HR system under laboratory controlled conditions, revealing operational characteristics. A four-zone VRF-HR system was tested at specified conditions with varying degrees of connected combinations of cooling and heating demand. Results show system power draw, delivered capacity, and EER are dynamic with changes in total connected load, ratio of cooling to heating, and system net operating mode (net cooling / net heating). The results of this work inform VRF designers, model developers and energy efficiency practitioners interested in pursuing VRF as an HVAC resource.

[\(click here to read the entire article\)](#)

The New Variable Refrigerant Flow System Models in EnergyPlus: Development, Implementation and Validation

By Tianzhen Hong, Kaiyu Sun, Lawrence Berkeley National Laboratory

Variable Refrigerant Flow (VRF) systems provide more flexible controls and better thermal comfort while saving energy. There are two types of VRF systems: the Heat Pump (HP) and the Heat Recovery (HR). The VRF-HP system can provide either cooling or heating, but not simultaneous cooling and heating; while the VRF-HR system can deliver simultaneous heating and cooling to different zones by recovering heat from cooling zones to heating zones. For VRF models in a number of building simulation tools, a large number of system-level curves are used to describe the operational performance of the overall system. These models can generate satisfactory results for VRF-HP systems with simple controls (e.g., constant evaporative temperature), but for VRF-HP or VRF-HR systems with more complex controls under a wider range of operational conditions, there exist significant discrepancies between the simulated and measured energy use. This paper presents algorithms development and implementation of a new VRF-HP model and a new VRF-HR model in EnergyPlus. The two VRF models were successfully validated with measured performance data from real buildings and laboratory experiments.

[\(click here to read the entire article\)](#)

It's that time of year again. I can't believe it's October already! The school year is off to a great start for the Future City Competition. To date, 49 schools have signed up and have started designing their cities of the future.



The Philadelphia Regional Future City Competition is in urgent need of mentors and needs your help! If you have any time available to share your experience with students who are learning about what engineers and planners do, please consider volunteering!

The Future City Competition is a project-based learning program for 6th through 8th grade students around country that introduces them to the principles of engineering while allowing them to use teamwork and creativity to solve problems that face the world. The program helps advance STEM learning in Middle Schools in our region and encourages students to consider careers in engineering in the future. In recent years the regional competition has grown to include over 500 participating students and teachers in the Philadelphia area, but we are short on volunteer mentors. This is a great way to give back to the community and share your experience with the next generation of engineers!

Please consider volunteering as a mentor! Here is some helpful information:

1. **What is a Mentor?** – A Future City Mentor is a volunteer who is an engineer, planner or student who shares their experience, advice, guidance, and technical assistance to a group of students who are working towards completing the competition deliverables (SimCity virtual city, essay, model construction, and presentation). For more information about your role as a mentor go to: <https://futurecity.org/participants/mentors>.
2. **Where are Mentors Needed?** - Mentors are needed at Middle Schools throughout the Greater Philadelphia region. Currently, the following schools are in need of mentors:

- Agora Cyber Charter School - Phoenixville, PA	- Mill Creek Elementary - Warrington, PA
- Centennial School District - Southampton, PA	- Mother Teresa Regional Catholic - King of Prussia, PA
- Charles Boehm Middle School - Yardley, PA	- Mount Aviat Academy - Childs, MD
- Elizabethtown Area School - Elizabethtown, PA	- New Hope Solebury Middle School - New Hope, PA
- ET Richardson Middle School - Springfield, PA	- St. Albert the Great School - Huntington Valley, PA
- Fleetwood Area Middle School - Fleetwood, PA	- St. Elizabeth Parish School - Uwchlan, PA
- Gwynedd Mercy Academy Elementary School - Spring House, PA	
- Little Town Christian Robotics Academy - Chester, PA	- St. Mary Interparochial School - Philadelphia, PA
- Maria Kaupas Academy - Scranton, PA	- St. Peter's School - Philadelphia, PA
3. **Time Commitment** - The schools in need of mentors could use any help you can offer! There are plenty of ways to help, including meeting with the class in person, using technology such as Skype or GoToMeeting for virtual meetings, or corresponding via email. Normally, the teachers could use help every other week for the first month or two, then more frequently as the deadlines approach.
4. **Schedule** – Mentors are need as soon as possible, as these schools are already working towards their first deliverables in mid-December. The competition is held in on January 19, 2019 at Archbishop Carroll High School in Radnor, PA. Mentors are assigned on a first-come, first-served basis. Please let us know if you have a preference.
5. **Spread the Word** – These schools are in desperate need of help from engineers and planners! Please share this email with friends/coworkers who may interested. And please feel free to partner up with a colleague, coworker, or friend to work as a team in serving as co-mentors.

For more information on mentoring, please contact: Mike McAtee at mjmcattee@urbanengineers.com. There are also volunteer opportunities on the day of the competition (January 19, 2019), including special awards evaluator, preliminary judge, and general volunteer. We also have a need for volunteers in advance of the competition, including virtual city judge and city essay judge. If you are interested in getting involved, please visit <http://www.futurecityphilly.org/fcvolops.html> to sign up.

Any questions please contact me via e-mail or phone. Please feel free to forward this e-mail to your friends, co-workers, and technical society members.

Karen R. McManuels, PE
Philadelphia Regional Volunteer Coordinator
kmcmanuels@aeceng.net / 610-688-3980 x132

November Meeting
Thursday, November 8, 2018

“Green Buildings Can Waste Energy Efficiently”

presented by

Lawrence G. Spielvogel, PE, CEng, FASHRAE, FCIBSE, FSLL

Presentation

Too many talk about the glamor and glory of green buildings as well as the higher income for designers, contractors, and product manufacturers. However, too few talk about the risks and performance problems. This presentation will examine some of the reasons why green buildings do not always perform as expected, some misconceptions about “high performance” green and sustainable buildings, and some of the risks for designers, contractors, and manufacturers, as well as owners and operators. Even meeting the mandatory prerequisites of USGBC LEED®, BREEAM, ASHRAE 90.1, and other certification programs is easily challenged. Most industry publications feature green buildings, but do not publish the metered energy use or occupant satisfaction for comparison with the readers’ own experience. Too much reliance is placed on energy models lacking in occupant, operator, and maintainer behavioral impacts.

Actual experience with metered energy data from green and sustainable buildings shows that most do have performance gaps as do comparable traditional new buildings. A key reason is the complexity that is designed and installed to achieve more points and higher expectations, but rarely performs as modeled or advertised. Too much enclosure insulation is another reason. Most building operators are not qualified to understand these complex systems and their intended functionality. Even many contractors have little or no training or experience with installing and maintaining these systems. This presentation will provide case study examples of widely publicized green and sustainable buildings with metered data that shows they are not energy efficient

Presenter Bio

Larry Spielvogel is a Consulting Engineer in Bala Cynwyd, Pennsylvania, a suburb of Philadelphia. He holds a B.S. in Mechanical Engineering from Drexel University and is a Registered Professional Engineer in 49 States. He is also a Chartered Engineer in England, a European Engineer in all 27 Common Market Countries, an International Professional Engineer in 11 other countries, a Certified Plant Engineer, and has lectured and written extensively. He is a Fellow of ASHRAE, was an ASHRAE Distinguished Lecturer, and is a winner of its Distinguished Service Award. From 2002 to 2005, he served on the ASHRAE Board of Directors and on many standing committees. He spent 19 years as a member and chaired the ANSI/ASHRAE/IESNA Standard 90.1 Project Committee from 1999 to 2002. He served on the IESNA Board of Directors from 1976 to 1979. His practice is limited to consulting on energy management, procurement, and problem solving in buildings, and he has been a consultant on many major buildings around the country and the world.

[Click here](#) to Register



The Philadelphia Chapter
of the
American Society of Heating,
Refrigerating and Air
Conditioning Engineers, Inc.

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Suite 1019
Wayne, PA 19087-1866
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F 610-971-4859

Visit
our web site at:

www.ashraephilly.org

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Any member with material to
submit for inclusion in the
Climate can send the information
to:

Hope Silverman
P 610-971-2169
hope@mmco1.com

Material can include letters to the
editor, member news, upcoming
events, comments on chapter
programs or issues, etc.

New Philadelphia Chapter Members

New Members:

Robert J. Batten
William G. Stump
Dr. Joseph D. Trentacosta

New Affiliates:

Joshua David Lamb
Marc H. Sano

New Associates:

David E. Engelhardt
Tom Walker

Membership Advancement

If you are currently an ASHRAE Associate Member, becoming a full Member is easier than you think! The following count toward the required **12 points** to advance to full membership status. You must update your ASHRAE online biography and send an email to membership@ashrae.org to advance.

Non-accredited degree = 4 points
Accredited degree = 6 points
PE = 4 points
Industry experience = 1 point/year