ASHRAE Philadelphia Chapter

December 2024
Volume 60, Issue 2

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MEETING COSTS

Fees are based on online reservations and prepayment.

Register before Thursday, December 5, to avoid $10 late fee.

$65 Chapter Member
$75 with late fee

$55 YEA Member
$65 with late fee

$35 Student Member
$45 with late fee

$0 Life Member

$70 Society Member
$80 with late fee

$75 Non-Member
$85 with late fee

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QUAKER CITY CLIMATE

Breakfast Meeting

Thursday, December 12, 2024

7:30 AM to 9:30 AM

"Modular Heat Recovery Systems –
A Compact Approach to Colossal Savings"

presented by

Robby Brown
Chillmaster

7:30 AM - 8:30 AM Breakfast
8:30 AM - 9:30 AM Presentation

Click here to register.

LOCATION

The Union League of Philadelphia
140 South Broad Street
Philadelphia , PA 19102
http://www.unionleague.org

For directions and parking, click here.

See page 3 for more information and the Union League Dress Code.

Virtual Meeting:
Recruiting and Retention of the next Generation—Gen Z
Wednesday, December 11, 2024
See page 4!

YEA Event
Thursday, December 5, 2024
See page 5!

2024-2025

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Young Engineers in ASHRAE
Sam Hall

President's Message

Chapter Members,

We had a well-attended lunch meeting in October, where Derek Badgley and Rob McMichael presented on *Decarbonizing Steam Systems*, at Fogo de Chão in King of Prussia. They did a great job discussing the different technologies available, capacity ranges, and their comparative costs. We had about 35 attendees and maxed out the meeting space that we booked, so thank you to all that attended. It was especially nice to meet both seasoned and young chapter members. I look forward to meeting more of you as the year goes on.

We are nearing the end of the biennial audit for the 2023-24 chapter year and the draft report indicates that the financial statements are good. They did recommend one adjustment to our revenue reporting for Membership Dues; previously reported on a cash basis rather than prorated on a monthly basis, which is being corrected in our current budget statement. We should have the final report from the auditors this month.

We are working on the list of topics to circulate to our chapter members for their preferences on presentation topics in 2025. We expect to have that issued this month. We have two upcoming events this month of December, YEA happy hour and Union League breakfast meeting.

On December 5th, the YEA happy hour event is scheduled at the Five Iron Golf facility in Fishtown, from 5:30 – 7:30 pm. Please share the details of the event with any young engineers. See page 5 for more information.

On December 12th, we will be holding our annual breakfast meeting at the Union League. Our guest speaker, Robby Brown, will be speaking about *Modular Heat Recovery Systems*. See page 3 for more information.

I look forward to seeing our members throughout the year and receiving feedback on the topics that matter to you the most.

Sincerely,
Jason Trefz
Philadelphia Chapter President
c021@ashrae.net

Have you taken the

2024 ASHRAE Member Satisfaction Survey?

The survey should take 5 minutes or less.

Click here **to take the survey!**

December Breakfast Meeting

Thursday, December 12, 2024
7:30 AM - 9:30 AM

"Modular Heat Recovery Systems –
A Compact Approach to Colossal Savings"

Click here to register.

Presentation Summary:

Electrification and energy efficiency are key aspects of modern HVAC design but are often a detriment to mechanical floor space and grid resilience. A common solution for these issues is utilizing a modular heat recovery chiller or heat pump system that provides simultaneous hot and cold water with a significantly reduced footprint. This presentation will focus on the design and application of modular air and water-source heat recovery systems.

Presenter:



Robby Brown is the Head of Engineering for Chillmaster, a modular chiller and heat pump manufacturer based in Murfreesboro, TN. He has overseen the design, application, and implementation of several modular heating and cooling equipment product lines with an emphasis on software development. He has a Bachelor of Science in Mechanical Engineering from Tennessee Technological University.

We hope you can join us!

Register today!

The Union League House Dress Code

The Union League reserves the right to refuse admittance to anyone not adhering to the dress code.

The Union League's Dress Code requires Business Casual Attire for ladies and gentlemen. Gentlemen are required to wear a collared shirt and slacks; turtleneck and mock-turtleneck shirts may be worn when accompanied by a suit jacket or sport coat. At no time are jeans, sneakers, athletic clothing, or shorts permitted on the first or second floor of The League House.

More information available here: https://www.unionleague.org/be-our-guest#club-policies-and-dress-code

Our Chapter Digital Directory is now available!

This digital version has replaced the paper versions from years past. This provides flexibility and allows for access anywhere. It's easy to use, highly interactive, and always up to date.

The link to the directory is on our home page on the website, or you may click here to advertise or purchase access to the directory!

Future City Philadelphia 2025

The Future City Competition, Philadelphia Region, will be held on January 18, 2025, at Archbishop Carroll. They currently have 48 schools registered, which represents introducing over 600 middle school students to the engineering profession. The Philadelphia Region is now celebrating its 30th year of competition.

The theme of this year's competition is Above the Current. The students' challenge is to design a floating city and provide two innovative examples of how their floating city works and keeps its citizens healthy and safe.

They are in need of many volunteers to mentor the schools (engineers preferred), judge and to keep things moving smoothly on Competition Day. Please sign up to volunteer at www.futurecityphilly.org/fcvolops.html.

Virtual Meeting:

Recruiting and Retention of the next Generation—Gen Z

Wednesday, December 11, 2024
12:00 PM to 1:00 PM

Click here to register.
$10 per Member or Guest

Presentation Synopsis:
All employers are in the position that they need to replace long-term employees who change jobs or retire. One of the obvious choices to fill these voids in personnel is to promote existing employees and hire individuals that just completed their degrees to the newly vacated positions. The success of these hires does not typically depend on their technical capacity or capability but instead is related to issues of expectation, communication, motivation, and fit. Success of recruiting and retaining generation Z hires is important for the success of companies. This presentation identifies the unique attributes of this newer generations entering the workforce and provides recommendations to increase the odds of retaining these employees.

Speaker Profile:



Julia Keen is a Professor of Architectural Engineering and Construction Science at Kansas State University holding the Bob and Betty Tointon Engineering endowed chair. She also owns her own consulting company, Keen Designs, PA. Her specific areas of interest include HVAC design, energy codes, high performance design, HVAC education, and the advancement of women in the building design and construction industry. Her service to ASHRAE was recognized in 2010 when she was given the Distinguished Service Award. Julia continues to promote her passion of HVAC education through the HVAC Essentials Course she co-developed and delivers for ASHRAE around the world. She was promoted to the grade of ASHRAE Fellow in 2016 and was presented with the 2018 ASHRAE E. K. Campbell Teaching Award.

Any questions, please reach out to Tyler Holland @ c021pe@ashrae.net



Registration is open!
Click here for more info.

YEA Event

Thursday, December 5, 2024
5:30 PM to 7:30 PM

Five Iron Golf—Fishtown
27 East Allen Street
Philadelphia PA 19123

FIVE IRON GOLF

Click here for directions.

Click here to register.

Come join Philly YEA for happy hour at Five Iron Golf (Philadelphia Fishtown location) on Thursday December 5th.

This event is hosted by Victaulic!
Thanks to Victaulic there will be no fee to join this event.

We will have two golf simulator bays, side-by-side for two hours. The golf simulators will be covered, but space is limited (12 total golfers). Register today to reserve your spot.

Full bar and food available for purchase at the event, including $5 happy hour until 6pm.

Please contact Sam Hall with any questions - Shall@accuspecinc.com (201-463-6316)

The Philadelphia Chapter
of the
American Society of Heating,
Refrigerating and Air
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our web site at:

www.ashraephilly.org

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Republication of material contained herein is expressly forbidden without official Chapter authorization. The Chapter does not speak or act for the Society. 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 Chapter Members:
Thomas Krieger
John Snook
Chase Ross
Ian Hanna
David Morrison
Matthew Lipsit

New Society Member:
Parth Patel

What are the benefits of paying Philadelphia Chapter dues* ?

Discounts:

$200 Discount for Basic Class
$150 Discount for 90.1 Seminar
Free access to the Digital Directory
And much more!

* Note that Philadelphia Chapter Membership Dues are $35/year.

To receive discounts, please remit you Chapter dues when renewing online or applying for a new membership. Feel free to upgrade online by clicking here or contact c021@ashrae.net for assistance.

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

Why Transition to Low Global Warming Potential Refrigerants: What does it mean for you?

Since the inclusion of hydrofluorocarbons (HFCs) in the international Kyoto Protocol climate treaty in 1997, various governments around the world have been considering regulations to reduce the use of high global warming potential (GWP) refrigerants. California's journey began in 2014 with Senate Bill 1383 directing the California Air Resources Board (CARB) to reduce emissions of these short-lived climate pollutants (SLCPs) by 40% compared to 2013 levels by 2030. This is one of the most ambitious emission reduction goals in the world and it will impact HFC refrigerants and other products used today. CARB is developing regulations with a proposed deadline to transition air conditioning by 2023.

Some of the new low-GWP refrigerant blends contain components characterized by ASHRAE as having a comparatively low burning velocity and are classified as A2L.

- It is more difficult to ignite these fluids than it is to ignite highly flammable fluids like hydrocarbons.
- It is less likely that these fluids will sustain a flame than highly flammable refrigerants.

A2Ls Around the World

A2L refrigerants (A2Ls) are used around the world today as various countries have already started the transition to low-GWP alternatives. In 2012, there was a quick transition in Australia due to a very high carbon tax on refrigerants. Greater than 50% of air conditioners sold there today contain A2L refrigerants. The industry quickly partnered with other stakeholders to analyze all aspects of the supply chain related to the transition and there have been no incidents reported to date related to A2Ls.

Unfortunately, there have been some very serious incidents related to the use of hydrocarbons as refrigerants where there was no stakeholder analysis. Hydrocarbons are listed by ASHRAE as higher flammability refrigerants, or A3s. They are controlled tightly in the U.S., with only very small quantities allowed in sealed (self-contained) systems or appliances.

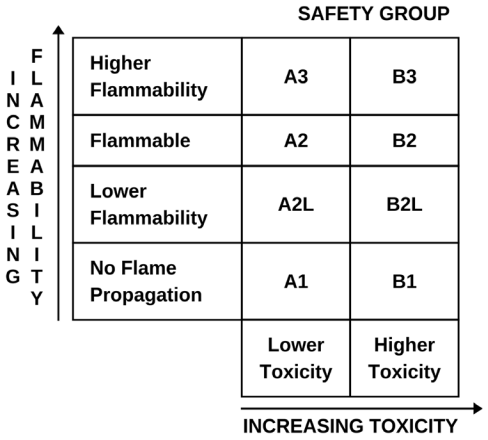
Japan has also done significant work related to the adoption of A2Ls. They have carefully examined potential issues and worked to eliminate them using a risk analysis model. Thailand and other countries in the developing world have followed their guidance in the fast adoption of A2L refrigerants.

Why Regulate Refrigerants?

It is estimated that a global phasedown of HFCs will reduce global temperature rise by up to one half degree centigrade by 2100.

Regulation of HFCs in air conditioning and refrigeration is one of the ways to reduce greenhouse gas emissions, especially since air conditioning and refrigeration are the fastest growing sectors using high-GWP HFCs.

ASHRAE Safety Classification of Refrigerants



Toxicity is classified based on Occupational Exposure Limit (OEL). OEL ≥ 400 ppm by volume is classified as class A.

Flammability is classified based on a flame propagation test, lower flammability limit (LFL), heat of combustion (HOC), and maximum laminar burning velocity (BV). LFL ≤ 0.10 kg/m^3 or HOC ≥ 19 kJ/g is classified as flammability class 3.

A2Ls in the U.S.

In the U.S. approximately 60% of the new automobiles sold today contain A2L refrigerants. In Europe, nearly all new vehicles contain them. The auto industry worked together with refrigerant producers through the Society of Automotive Engineers (SAE) to complete a similar safety analysis. The same refrigerant producers are assisting with the development of safety standards for air conditioning and refrigeration. One important fact they shared from earlier research is that A2L refrigerants create the exact same combustion products as the nonflammable refrigerants that have been in use worldwide for decades. In fact, these same companies and others already offer these low-GWP refrigerants in Europe where regulations related to this transition are approximately six years ahead of much of the rest of the world.

Did You Know?

Ammonia and hydrocarbons were some of the first refrigerants used over one hundred years ago.

Ammonia is classifed as a B2L flammable refrigerant.

Safety standards now control their usage in the United States.

U.S. industry is taking this transition very seriously and is following, and in many cases tightening, best practices from around the world.

- The Air Conditioning Heating and Refrigeration Institute (AHRI) is leading a supply chain analysis through its Safe Refrigerant Transition Task Force. This group will have a special focus on the most common types of equipment used in the U.S.

- The U.S.-Canadian safety standard, UL/CSA 60335-2-40, has reduced the allowed refrigerant charge size by one half compared to the amount allowed by the companion international standards. It also requires additional measures to reduce risk.

- Over the past 10 years, the industry has examined hundreds of reports and commissioned several tests. More recently, a more than $6 million collaborative research program jointly funded by the Department of Energy, ASHRAE, AHRI, and CARB explored how flammable refrigerants might ignite and how they burn if released.

- ASHRAE, North American Technician Excellence (NATE), and others are developing new training and testing programs for contractors and technicians installing and maintaining equipment containing A2L refrigerants. ASHRAE is also developing a separate safety standard for residential applications that is focused on clearly communicating safety requirements to contractors and technicians.

Contact AHRI if you would like more information about the Safe Refrigerant Transition Task Force:

Helen Walter-Terrinoni
HWalter-Terrinoni@ahrinet.org
(703) 600-0340

There are those around the world that have accused U.S. industry of being too cautious and slow in this transition, but we take the safe use of these products very seriously and will continue this careful approach.

Please contact us if you are interested in more information or visit ahrinet.org/policy/saferefrigerant.

AHRI SAFE REFRIGERANT TRANSITION TASK FORCE

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