

March 2021
Volume 56, Issue 7

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QUAKER CITY CLIMATE

Tuesday, March 16, 2021
12:00 Noon to 1:30 PM

Virtual Meeting

"INDOOR AGRICULTURE SYSTEM DESIGN"

presented by

Eric Sturm
Trane

See [page 3](#) for more information.

There is no charge for this session,
However, you must register in advance to receive
the login information.

The link to the webinar will be sent to all registrants
prior to the event start time.

[Click here](#) to register.

**This is an Employer Recognition and
Research Promotion Donor Appreciation Event!**

This is a joint event with the New Jersey Chapter of ASHRAE.

2020-2021

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Attendance

Nathan Ware

Basic School Coordinator

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Chapter Technology

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Michael Calabrese, PE

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Robin Martin

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Hasanaat Prophete

Research Promotion Chair

Gary Debes

Special Events

Eric Feinschil

Student Activities Chair

Tyler Holland

Young Engineers in ASHRAE

Tyler Holland

PRESIDENT'S MESSAGE

Fellow Chapter Members –

Sometimes it is beneficial to “Start with Why” as popularized by Simon Sinek. So then – why ASHRAE? You obviously have your own personal reasons for why you are a member of ASHRAE but it never hurts to reacquaint yourself with ASHRAE's own stated answers to – Why?

Those answers come in the form of ASHRAE's Mission and Vision Statements:

Mission:

To serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields.

Vision:

A healthy and sustainable built environment for all.

So if anyone ever asks you, or you think to yourself – Why ASHRAE? Perhaps these statements will help ground your response.

As far as programs, February was another insightful presentation by Professors Aviv and Meggers, who gave some insight into their research on integrated Engineering and Architectural design and what the future might look like for our industry.

For March, we are excited to partner with the New Jersey Chapter again for a discussion about Indoor Agriculture System Design. As more ballot initiatives pass and state laws change, this continues to be a popular industry with interesting and challenging design considerations.

Looking forward to May, the golf outing is scheduled for May 10. Save the date and look for an email with registration and details soon!

Tim Reinking

Philadelphia Chapter President

c021@ashrae.net

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Abstract

Growing plants indoors has gained in popularity, but conditioning spaces for plants instead of humans introduces new challenges. This course will discuss plants, the dehumidification challenges they pose, and how precision cooling for indoor agriculture is different compared to comfort cooling. The program will also discuss common air- and waterside system configurations used to maintain space conditions to ensure a healthy crop.

Meet the Presenter

Eric joined Trane in 2006 after graduating from the University of Wisconsin – Platteville with a Bachelor of Science degree in mechanical engineering. Prior to joining the applications engineering team, he worked in the Customer Direct Services (C.D.S.) department as a marketing engineer and product manager for the TRACE™ 700 load design and energy simulation application. As a C.D.S. marketing engineer he supported and trained customers globally. In his current role as an applications engineer, Eric's areas of expertise include acoustics, airside systems, indoor agriculture, and indoor air quality. He is currently involved with ASHRAE as a representative on Members Council and member of the indoor agriculture and sound and vibration technical committees. Eric is the recipient of the ASHRAE Distinguished Service Award and Young Engineers in ASHRAE Award of Individual Excellence.



Philadelphia Future City Competition 2021

One outreach program of the National Engineers' Week is the Future City competition. Teams of middle school students simulate their vision of a city of a future, develop a slide presentation and video essay build a tabletop model and make a 7-minute presentation in a regional competition. Each team consists of an engineer/mentor, a teacher and three students.

The Philadelphia Region has been participating in Future City since 1995. More than 300 students representing 40 or more schools from Philadelphia and the surrounding region participate each year. The program has reached over 10,000 students in the past 20 years.

Visit the site to learn more: <http://www.futurecityphilly.org/>

The 2020—2021 Future City Theme is Living on the Moon.

At night, surrounded by stars or clouds, the Moon looks distant and lifeless. However, it holds a place of unique beauty and dominance in the sky and has been inspiring humanity for eons. Dreamers of all kinds—artists, science fiction writers, scientists, engineers—have imagined a thriving city on the Moon, one with healthy people and a resourceful, sustainable ecosystem. New ideas are constantly being dreamed up and tested.



The Competition Challenge:

Design a future lunar city and provide examples of how your city uses two Moon resources to keep your citizens safe and healthy.



There were 28 middle school entries in the 2021 Philadelphia regional competition, which was held virtually for the first time on January 30, 2021.

The regional competition winner advances to the national competition in Washington, DC during Engineers' Week with the exact date to be determined. The ASHRAE Philadelphia Chapter is a bronze-level sponsor of the program and awards the Best Indoor Environment Award to the team which incorporates an innovative solution to controlling the indoor environment.

The intent of the program is to steer young students toward engineering by associating the profession with an enjoyable competition. The students also learn presentation, writing and team-building skills.

St. Cecilia Middle School from Philadelphia, PA won the ASHRAE sponsored award for Best Indoor Environment Award for the city called Orbis Noctem. Congratulations!

CTTC Article

During the February meeting, Professor Meggers shared this article.

Globe Thermometer Free Convection Error Potentials

For thermal comfort research, globe thermometers have become the de facto tool for mean radiant temperature, t_r , measurement. They provide a quick means to survey the radiant environment in a space with nearly a century of trials to reassure researchers. However, as more complexity is introduced to built environments, we must reassess the accuracy of globe measurements. In particular, corrections for globe readings taking wind into account rely on a forced convection heat transfer coefficient. In this study, we investigate potential errors introduced by buoyancy driven flow, or free convection, induced by radiant forcing of a black globe's surface to a temperature different from the air.

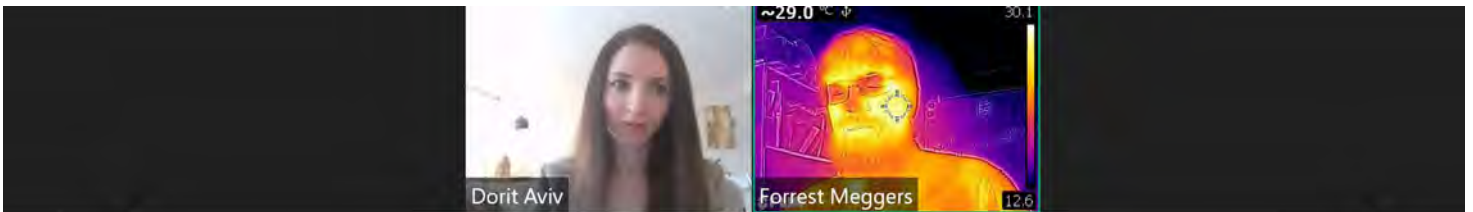
Read the entire article [here](#).

FEBRUARY MEETING SCREENSHOT

"CHAOS (Cooling and Heating for Architecturally Optimized Systems)"

presented by

Professors Forrest Meggers and Dorit Aviv



Enemies created by silos

Engineering



BSE Mech Eng
MS Env Eng

Architecture



Iowa
U of Iowa Eng.

New York
NASA GISS

Zurich
ETH D-arch ITA

Singapore
Future Cities Lab

Princeton
Arch+Energy/Env

PHILADELPHIA CHAPTER PROGRAMS CALENDAR 2020-2021



Our 2020-2021 Chapter Digital Directory is now available.

This digital version is replacing the paper versions from years past. This provides flexibility during these challenging times, having access anywhere. It's easy to use, highly interactive, and always up to date. We hope you enjoy this refreshed publication.

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!

Invest in ASHRAE and Help Shape our Future - Give to ASHRAE RP Today!

ASHRAE's Research Promotion Campaign generates funds to support ASHRAE research, YEA, Education (ALI), Endowed Research through ASHRAE Foundation, YEA Programs, Scholarships, and the General Fund. Research, the backbone of ASHRAE, remains the primary fund of the program with over \$2 million raised for this program annually.

All contributions received by ASHRAE significantly assist in ensuring that the Society continues to have the resources needed to sustain and expand its work. ASHRAE is very thankful for the support of all our donors and will strive to utilize all resources to better serve our members, the HVAC&R industry and society!

[Click here](#) if you would like to support ASHRAE's mission, programs, and member services with a gift through the RP Campaign.

If you have any questions, please contact the Philadelphia Chapter's Research Promotion Chair, Gary Debes, at c021rp@ashrae.net.

Thank you for your support!



Save the Date !!
Philadelphia Chapter ASHRAE Golf Outing

Monday, May 10, 2021
DuPont Country Club, Wilmington, DE

Shotgun start will be at 12:30 pm.
Online registration and full outing details to follow.

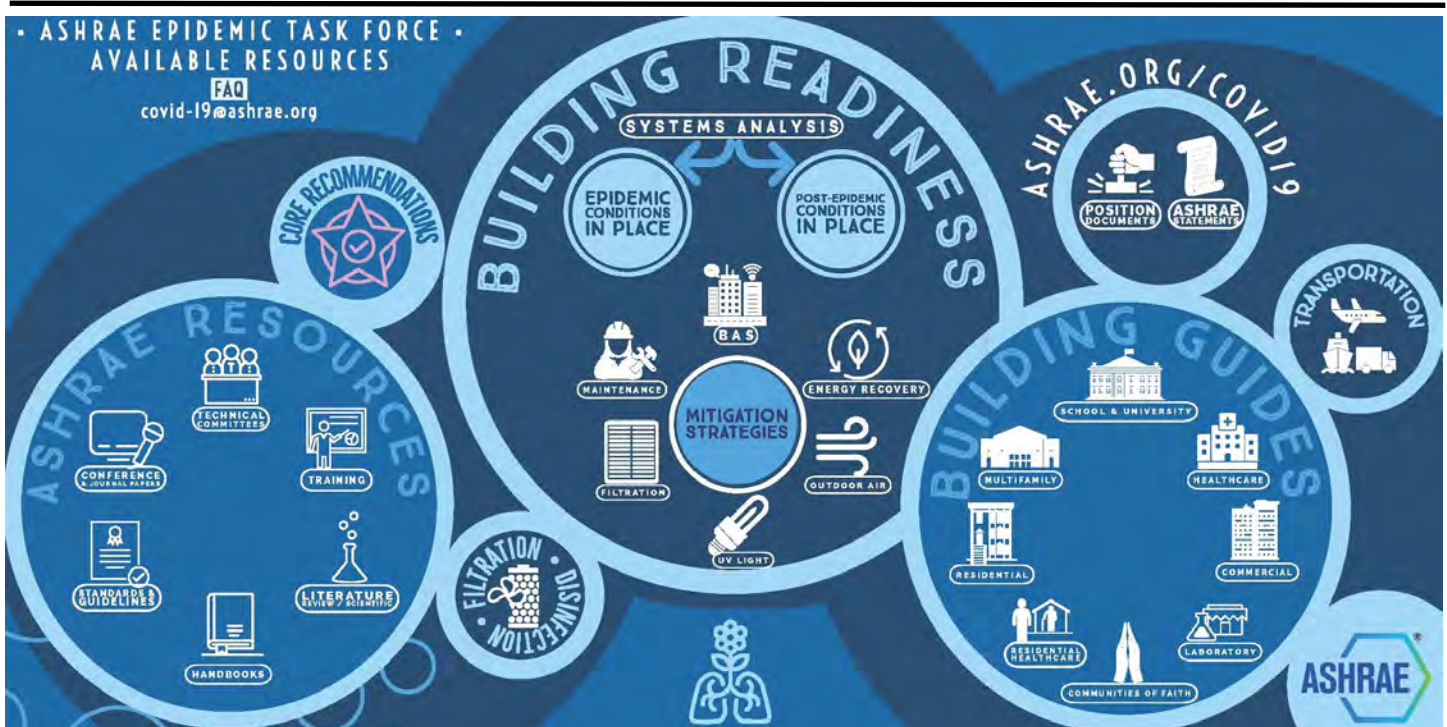
2021 ASHRAE Technology Awards

Applications are due by March 15, 2021

Applications are currently open for the 2021 ASHRAE Technology Awards. Society may present awards in six categories: **Commercial Buildings** (New, Existing, Existing Building Commissioning); **Institutional Buildings** (New, Existing, Existing Building Commissioning); **Health Care Facilities** (New, Existing, Existing Building Commissioning); **Industrial Facilities or Processes** (New, Existing, Existing Building Commissioning); **Public Assembly** (New, Existing, Existing Building Commissioning); **Residential**

The short form application (see link below) can be used if you would like to submit for a Chapter award. Applications are due by March 15, 2021 and shall be sent via email to c021@ashrae.net

<https://www.ashrae.org/File%20Library/Membership/Honors%20and%20Awards/Tech-Award-Application-Short-Form-January-2016.pdf>





The Philadelphia Chapter
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Visit
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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 Student Members:

Yun Zhang
Michael Feng
Jacqueline Loeliger
Varun Nair
Colin Shalk

New Chapter Members:

James Applegate
Mohammad Mustafa
Alan Givens
Shea Harris
Jeffrey Scanes
Christopher Pennello

New Society Members:

David Snyder

If you are currently experiencing hardship, especially with the current COVID-19 pandemic, please contact our Member Services Department at members@ashrae.org

One of our Member Services Representatives will assist you in determining your hardship case and provide guidance with respect to an adequate adjustment to your dues and other member benefits for the 2020 – 2021 Society Year.

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 your 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