ASHRAE Philadelphia Chapter



QUAKER CITY CLIMATE

February 2021
Volume 56, Issue 6

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Thursday, February 18, 2021
12:00 Noon to 1:30 PM
Virtual Meeting

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

presented by

Professors Forrest Meggers and Dorit Aviv

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 a Research Promotion, Membership Promotion, and Young Engineers in ASHRAE (YEA) Event.

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





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Tyler Holland

PRESIDENT'S MESSAGE

Fellow Chapter Members –

This time last year, many were escaping the Philadelphia area winter and traveling to the bright warm sunshine of Orlando, Florida for the annual ASHRAE Winter Conference. Although the cancellation of this year's in person conference is a stark reminder of the current world we live in, ASHRAE, at both Society and Chapter levels, continues to provide guidance on the topics that matter most to our industry. The only silver lining to the cancellation of the Winter Conference is that we get to skip the frigid Chicago temperatures and look forward to another warm weather venue in Las Vegas in 2022.

On the topic of continued guidance, the cover article in the latest ASHRAE Journal features another piece by William Bahnfleth. Professor Bahnfleth appropriately remains at the forefront of the current discussions and has contributed articles and quotes in publications in addition to many speaking engagements this past year. He continues to do his part to help educate us all on how the built environment can be evaluated and addressed regarding infection control.

As a chapter, we have tried to keep membership current with the ongoing discussions as demonstrated by having Professor Bahnfleth join us for our September meeting and continuing last month when Dr. Stephanie Taylor discussed how humidity control plays a part in the infection control discussion.

This month, we take a break from the pandemic discussions and turn our attention to what the future might hold for our industry. Professors Forrest Meggers (Princeton University) and Dorit Aviv (University of Pennsylvania) will discuss their CHAOS (COOLING AND HEATING FOR ARCHITECTURALLY OPTIMIZED SYSTEMS) research. With architectural and mechanical engineering backgrounds, they have done interesting work relative to how architecture and engineering must continue to evolve together to solve complex problems. Their work has helped reframe the way ASHRAE measures radiant heating and cooling.

In order to continue providing meaningful content, please continue to support the Chapter and Society by attending monthly meetings and, if possible, by making Research and Promotion donations via https://xp20.ashrae.org/secure/researchpromotion/rp.html

Tim Reinking
Philadelphia Chapter President
c021@ashrae.net

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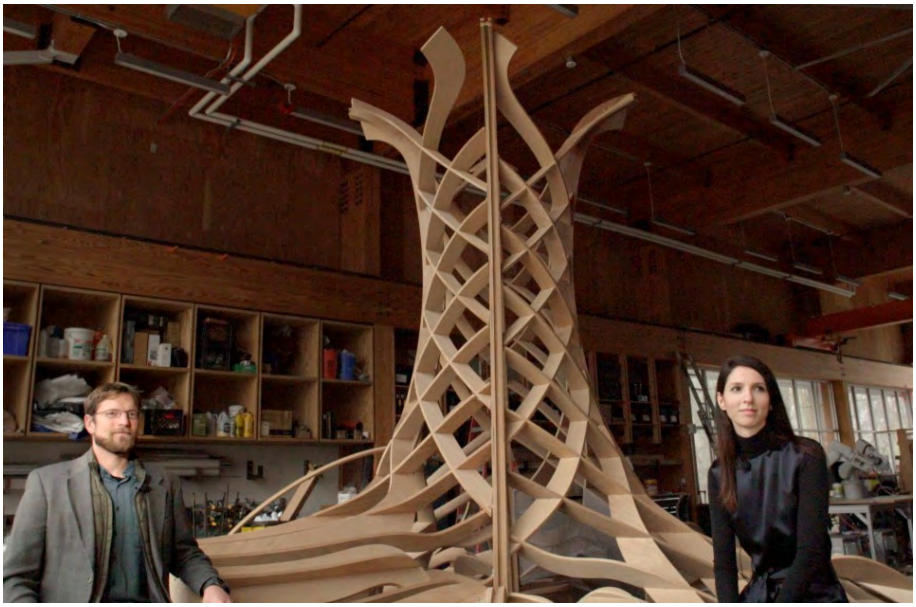
Abstract

We are no longer building buildings... we are now building complex interactive environments for working and living. This requires both architecture and engineering at a systems level. Our work spans the development of novel sensors, as well as the deployment of prototype systems, and also the demonstrations of new thermal spaces spaces. These all push the boundaries of how we define indoors and outdoors. Forrest will present a variety of research from the CHAOS lab including the high profile recent results that have recently helped reframe the way ASHRAE measures radiant heating and cooling. Dorit will present recent projects that leverage new ways to think about radiant in the design of architectural spaces through pavilions and intallations. We will both show how how distributed sensing in both research and deployment can open doors to new paradigms for building heating and cooling that address environmental challenges, both indoors and out.

Meet the Presenters

Forrest Meggers is faculty at Princeton jointly appointed in Architecture and the Andlinger Center for Energy and the Environment and is the director of CHAOS lab. He has a background in mechanical engineering, environmental engineering, and architecture. He got his PhD at the ETH in Switzerland, and worked in Singapore on advanced cooling systems before arriving at Princeton where he researches advanced radiant heating and cooling systems and sensors, novel liquid desiccant humidity management systems, and geothermal heat exchanger designs for storage and grid flexibility. This is all enabled by work on novel distributed sensing and data analysis tools.

Dorit Aviv is a faculty member of the University of Pennsylvania Weitzman School of Design and the director of the Thermal Architecture Lab, an interdisciplinary laboratory at the intersection of thermodynamics, architectural design and material science. She is a licensed architect and holds a Ph.D in architectural technology with emphasis on building science from Princeton University. Her current projects include a distributed energy monitoring and environmental sensing network using blockchain and IoT infrastructure funded by the Ripple Research Grant, a prototype for passive cooling in desert climate, and system design for net-zero off-grid floating waterfront structures.

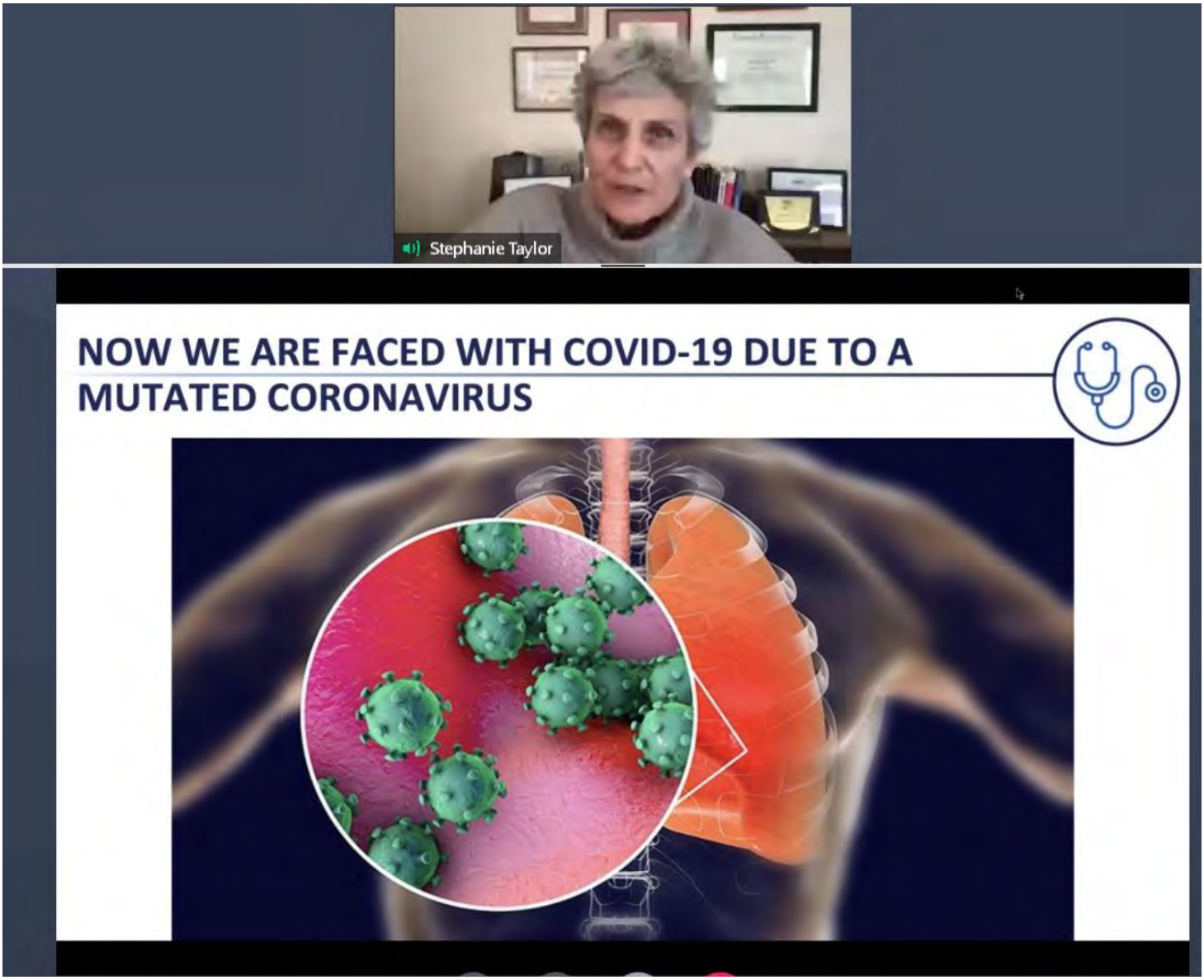


JANUARY MEETING SCREENSHOT

"Buildings Are Our Best Medicine"

Presented By:

Dr. Stephanie H. Taylor MD, M Architecture, CIC, FRSPH(UK)



PHILADELPHIA CHAPTER PROGRAMS CALENDAR 2020-2021



ASHRAE Philadelphia Chapter Digital Directory

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!

CTTC Article

Single-Pipe Water Source Heat Pump Systems for Commercial Application

Cost-competitive and energy-efficient, single-pipe systems can finally be extended to commercial buildings.

Imagine an optimal hydronic HVAC system for a commercial building. What benefits would it deliver? First, it would provide comfort to all building zones. Second, it would be easy to install, operate, and maintain. Third, it would be competitive on a first– and operating-cost basis. Lastly, it would conserve the use of raw materials and be energy-efficient, a must in the "green" environment. Since the 1950s, a system providing all of these benefits has been available—the single-pipe hydronic system.

Read the entire article here.

2021 ASHRAE Technology Awards

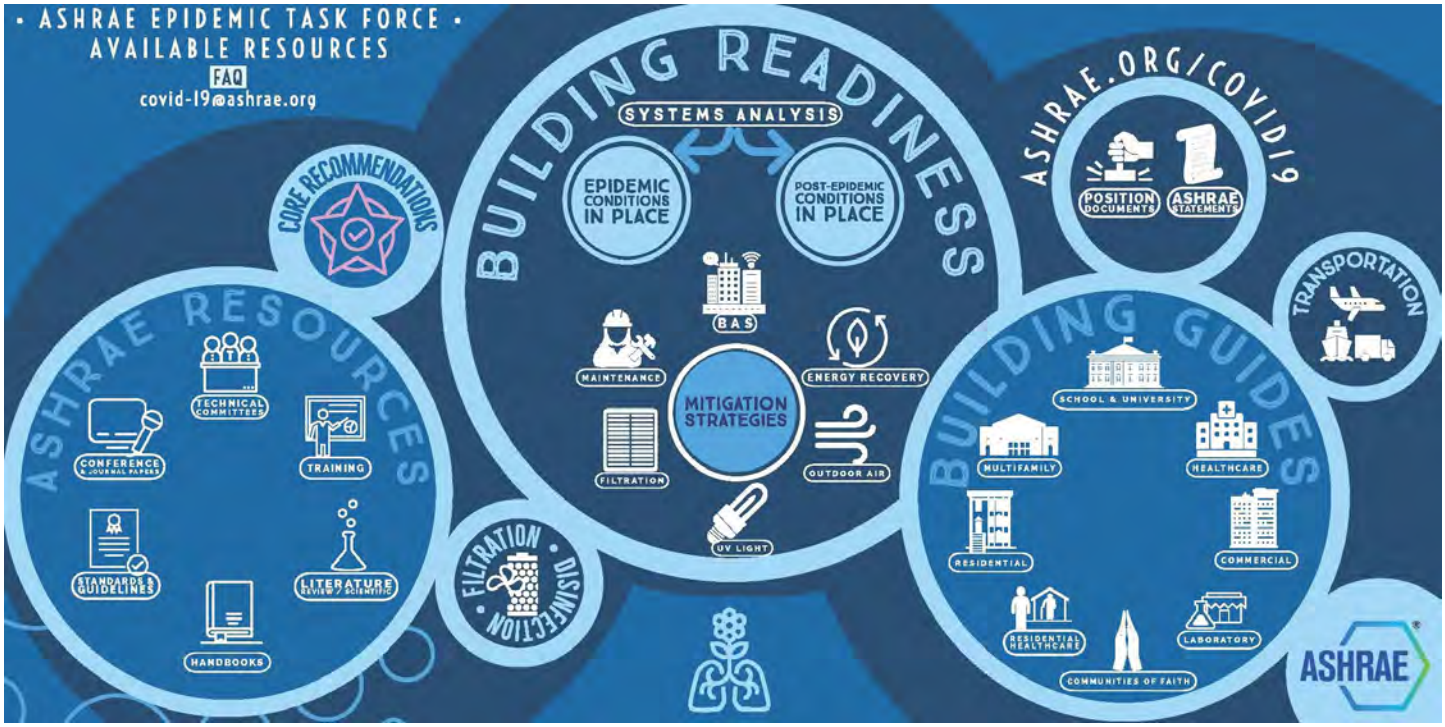
Applications are due by March 15, 2021

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

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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 ASHRAE Members
Fred Agyeman
Rajish Cheruparambil
Hualiang Albert Zhou

New Chapter Members
Jordan Black
Katherine Dougherty
Raymond Jho
Brian Wismer

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 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