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Newsletter

November 2021 • Volume 1 (2021-2022)

ASHRAE THAILAND CHAPTER

President Message Newsletter #1 – 2021-2022

เรียน ท่านสมาชิก ASHRAE ประเทศไทย และเพื่อนๆ ทุกคน

วารสารฉบับนี้ เป็นฉบับที่ 1 สำหรับวารสารการทำงานของ ASHRAE 2021-2022 ครับ ซึ่งในช่วงเดือนพฤศจิกายนนี้ เราก็จะเปิดประเทศกันแล้ว โดยทางรัฐบาลก็ได้ออกมาตรการผ่อนปรตให้ 46 ประเทศได้รับการอนุมัติให้เดินทางเข้าไทยโดยไม่ต้องกักตัว โดยเริ่มตั้งแต่ วันที่ 1 พฤศจิกายน ตามแผนเปิดประเทศรับนักท่องเที่ยวตามเงื่อนไขสาธารณสุข หลังจากนั้น ก็ได้แต่หวังว่าประเทศไทยของเราจะสามารถควบคุม ปริมาณผู้ป่วยและผู้ติดเชื้อ และ รวมไปถึงสามารถฟื้นฟูเศรษฐกิจในประเทศไปได้ด้วยควบคู่กัน อย่างไรก็ตามเรื่องของการดูแลในเรื่องสุขอนามัยของตนเอง รวมไปถึงบุคคลในครอบครัวก็ยังเป็นเรื่องสำคัญเช่นเคย เราจะละเลยในเรื่องนี้ไม่ได้ เพราะเรายังคงต้องใช้ชีวิตอยู่กับเรื่องโควิดนี้อย่างยาวนานแน่นอน

สำหรับในช่วงเดือนที่ผ่านมา ทาง ASHRAE ประเทศไทย ก็ได้จัดกิจกรรมต่างๆ มากมาย สำหรับสมาชิก เช่น Virtual Webinar ในหัวข้อที่น่าสนใจและเป็นเทรนของโลกในขณะนี้ อาทิเช่น



- On 14th August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Orientation and Caucus Meeting during Virtual CRC 2021-22
- On 20th August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Business Session #1 Meeting during Virtual CRC 2021-22
- On 20th August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Technical Session during Virtual CRC 2021-22
- On 20th August 2021, 7 Students from Silpakorn University in corporation with ASHRAE Thailand chapter joined with students from other chapters in region XIII in attending Student Activities during Virtual CRC 2021-22
- On 21st August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Business Session #2 Meeting during Virtual CRC 2021-22
- On 21st August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Virtual CRC 2021-22 Hybrid Conference Closing
- On 26th August 2021, ASHRAE Thailand chapter joined with Air Conditioning Association of Thailand hold a zoom webinar on "Building Energy Code"
- On 28th August 2021, ASHRAE Thailand chapter's Officers and Chairs joined with other chapters in region XIII in attending Workshop Training No. 1 during Virtual CRC 2021-22

- On 4th September 2021, ASHRAE Thailand chapter's Officers and Chairs joined with other chapters in region XIII in attending Workshop Training No. 2 during Virtual CRC 2021-22
- On 31st August 2021, ASHRAE Thailand chapter hold a Night Talk on "Real Estate Developers Perspective on Post Covid-19"
- On 28th September 2021, ASHRAE Thailand chapter hold a zoom webinar on "Building Performance Analysis and Energy Modeling with Software"
- Regional Planning Meeting #1 (RPM #) went online on 16th October 2021 สำหรับวารสารฉบับนี้ ยังมีเรื่องราวที่น่าสนใจอีกหลายเรื่อง อาทิเช่น
- เรื่อง New! 2021-2022 Society Year ASHRAE Member Benefits
- เรื่อง ASHRAE Vision 2030 Mission Statement
- เรื่อง 2022 ASHRAE Winter Conference and AHR Expo, 2 February 2022, Las Vegas, Nevada
- เรื่อง ASHRAE announces ASHRAE Global Headquarters Grand Opening on Nov 18, 2021
- เรื่อง ASHRAE, AABC (the Associated Air Balance Council), ACG (the AABC Commissioning Group) and EMA (the Energy Management Association) Sign Memorandum of Understanding to formalize the organizations' relationship
- เรื่อง ASHRAE GUIDANCE FOR THE RE-OPENING OF SCHOOLS
- เรื่อง Basic Recommendations for HVCA Cybersecurity by Mike Galler, member ASHRAE

สุดท้ายนี้ ขอให้ทุกท่าน รักษาสุขภาพ ด้วยความปรารถนาดี จาก ASHRAE THAILAND CHAPTER

ท่านสามารถติดตามข่าวสาร ASHRAE Thailand chapter
จะมีการจัดกิจกรรมต่างๆ ได้ที่



Facebook ASHRAE TH



Website ASHRAE TH



Website ASHRAE

ขอแสดงความนับถือ

ดร. รพีรัฐ ธัญวัฒน์พรกุล

Dr. rapeerat thanyawatpornkul

President 2021-2022 ASHRAE Thailand Chapter

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ข่าวกิจกรรมของสมาคมแอสเอร์ และ ASHRAE Thailand Chapter

Regional Planning Meeting #2 (RPM #2) went online on 5th June and 12th June 2021

ASHRAE Thailand chapter joined the RPM #2 to discuss 2021-22 plan for region 13 with other chapters in Region 13 on Saturday 5th and 12th June 2021. About 90 persons all around the region attended this meeting via zoom application.



ASHRAE Thailand Chapter Webinar

วันเสาร์ที่ 19 มิถุนายน 2021 เวลา 8:00-10:00 น.

“Myth or Reality Series on Astuteness in Technology Adoption, Building Automation System, Performance Contracting, Energy Efficiency Based Commissioning, Operation & Maintenance”

โดย Dr. Om Taneja

Om Taneja Distinguished Lecturer, Ph.D. P.E. FASHRAE

1st Topic:
Myth or Reality – “Facing the Realities & Challenges in Sustainability & Energy Efficiency” – Bridging the Gap in Performance from Concept Through Operations – Design, Construction, Operations & Maintenance Measures for Improving Performance of Buildings

2nd Topic:
Operations & Maintenance Measures for Improving Performance of HVAC Systems & chiller plants

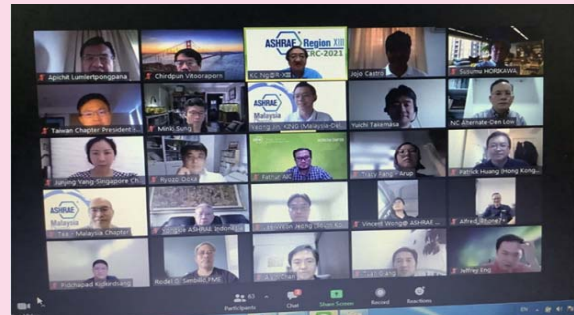
On 27th July 2021, ASHRAE Thailand chapter joint with ZIEHL-ABEGG hold a supplier’s webinar on “Efficient Fan System in AHU”



On 29th July 2021, ASHRAE Thailand chapter joint with Air Conditioning Association of Thailand hold a webinar on “Building Design Direction on the Day that Cities become Smart Cities”



On 14th August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Orientation and Caucus Meeting during Virtual CRC 2021-22



On 20th August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Business Session #1 Meeting during Virtual CRC 2021-22



On 20th August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Technical Session during Virtual CRC 2021-22



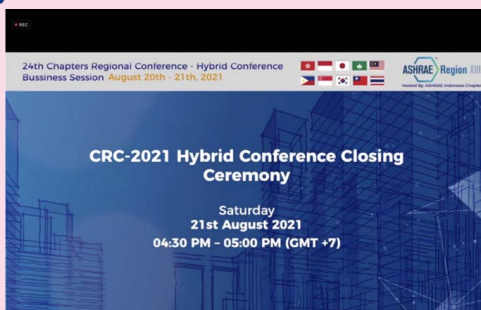
On 21st August 2021, ASHRAE Thailand chapter joined with other chapters in region XIII in attending Business Session #2 Meeting during Virtual CRC 2021-22



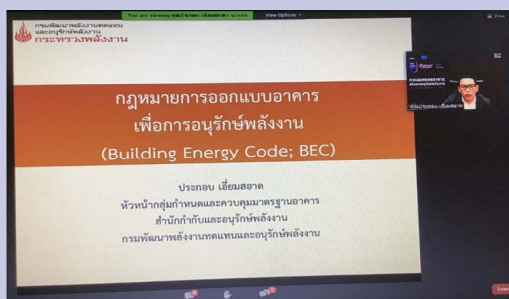
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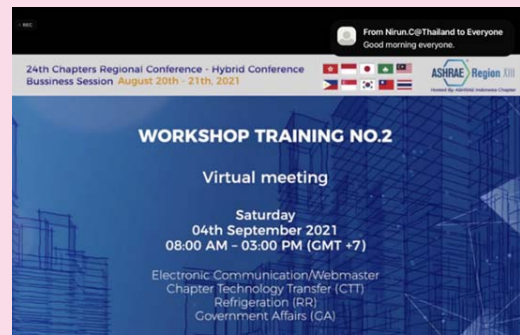
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การวิเคราะห์สมรรถนะอาคารและการจำลองพลังงานโปรแกรมคอมพิวเตอร์

ASHRAE Webinar 3
28th September 2021 (Tuesday)
08:30 - 16:30

Topics

- ช่วงที่ 1 ภาพรวมของงานจำลองประสิทธิภาพอาคาร ในขั้นตอนการออกแบบสถาปัตยกรรม และมาตรฐาน ASHRAE 209-2018
- ช่วงที่ 2 การจำลองประสิทธิภาพอาคารในขั้นตอนร่างขึ้นต้น และขั้นตอนพัฒนาและเฝ้าติดตาม
- ช่วงที่ 3 การจำลองประสิทธิภาพพลังงานของอาคารเขียวตามมาตรฐาน LEED
- ช่วงที่ 4 การจำลองการไหลของอากาศในอาคารและผลกระทบต่อสิ่งแวดล้อม (Environmental Impact Assessment, EIA) ด้วยโปรแกรม CFD (Computational Fluid Dynamic)

PANEL LIST

ASHRAE Thailand Chapter/ACAT member: 1,000 Baht Public: 1,400 Baht

Transfer after 22 Sep 2021
ASHRAE Thailand Chapter/ACAT member: 1,400 Baht Public: 1,700 Baht

Scan for Registration
Step 1: Register with QR code
Step 2: Receive confirmation and log in link

Connect Us: <https://www.ashraethailand.org/>
Email: memberashrae@gmail.com

ASHRAE TH Program brought to you by:

CPD APPLIED

Regional Planning Meeting #1 (RPM #) went online on 16th October 2021

ASHRAE Thailand chapter joined the RPM #1 to discuss activities in the region 13 with other chapters in Region 13 on Saturday 16th October 2021. About 87 persons all around the region attended this meeting via zoom application.



ASHRAE Society News

New! 2021-2022 Society Year ASHRAE Member Benefits

An exciting new selection of benefits is available to qualifying members joining the Society (starting June 1) and renewing into the new 2021-2022 Society Year. The new expanded benefit options are a direct result of member feedback and volunteer effort, to provide the best possible service to ASHRAE members, and the industry.

As volunteer leaders of ASHRAE it is important that you are familiar with and communicate the benefits of ASHRAE membership. Please take a moment to familiarize yourself with the benefits and resources available to current and potential members.

Information is currently available at ashrae.org/renew. And on Tuesday, June 1 all membership pages of ashrae.org will be updated to reflect the changes in membership benefits. We encourage you to check the Membership section of ashrae.org and use the information provided to update your chapter and region websites and other communications if necessary.

ASHRAE Membership
ashrae.org/benefits

Your (NEW!) Membership Benefits
A NEW selection of complimentary ASHRAE products is now available to new and renewing, full dues paying Member and Associate grade members.

Full Members and Associates can now select 1 of the following:

- 150+ to select from eLearning Course
- 100+ to choose from ASHRAE Standard
- PDF version of the most recent Handbook ASHRAE Handbook

Additional Member Benefits by the Numbers

- 12 month subscription to ASHRAE Journal
- 25% discount on 400 publications in the Bookstore
- 2000+ free resources for members in the ASHRAE Technology Portal

Get Discounted Pricing on:

- 350+ ASHRAE Learning Institute (OLI) Courses held annually
- 7 ASHRAE Certifications
- 6+ Conferences held annually

50,000+ Members **190+ Chapters** **15 Regions** across the world

ASHRAE MEMBERSHIP APPLICATION. Prices valid from 6/01/2021- 5/31/2022.

1. Contact Information. Mr. Miss Ms. Mrs. Dr. *Birthday is required (mm) (dd) (yy).

Name (First) (Middle) (Last) (Designation)
Primary Address: This is a Home Business School Alternate Address: This is a Home Business School
Company Name Company Name
Address Address
City State/Province City State/Province
Zip/Postal Country Zip/Postal Country
E-mail Alternate E-Mail
Phone Local ASHRAE Chapter: use my Primary Address Alternate Address Other

2. Member Grade. Select your grade, and complete below section if applicable. See reverse for benefits and prices.

Full Member, Regular (complete 2a, 2b, 2c, 3) Associate, Regular (complete 2c) Affiliate, Regular
Full Member, Developing Economy Associate, Developing Economy Affiliate, Developing Economy
Student, Regular (complete 2a, 3) Associate, SmartStart (complete 2c) ASHRAE Member Number
Student, Developing Economy (complete 2a, 3) Associate, SmartStart, Developing Economy Associate Member Number

2a. Education Information. Only complete this section if required by your selected member grade (above).
School Location Dates of Attendance (current students: enter expected graduation date) Degree/Course of Study

2b. Professional Information. Only complete this section if required by your selected member grade (above).
Employer Location Dates of Employment Position/Title

License Number Field of Registration Date Issued Location of Registration

2c. Select One Annual Member Benefit. Only complete this section if required by your selected member grade (above).
One ASHRAE Standard PDF: Review the list of available ASHRAE Standards at: <http://stdnewwebbenefit.ashrae.org/> and indicate your selection here: ASHRAE Standard: Unit of Measure: Product Number:
One eLearning Course Subscription: Find complete list of available eLearning Courses at myelearning.ashrae.org. ASHRAE Handbook PDF: Receive the next ASHRAE Handbook (PDF) released annually in June.

3. Optional: Add Primed Handbook for a discounted rate. Only for eligible member grades as indicated in section 2. Printed and shipped each June to primary address. Select IP or SI units.
Add to Total Amount below: \$65 (U.S.) \$84 (International) \$54 (Students only)

4. Payment. Checks will be accepted in US and Canadian funds. Credit card payments accepted in US funds only. Include Chapter Dues? Dues Amount: Paying chapter dues is encouraged but not mandatory, and can be paid separately to the chapter at any time. Contact chapter officers for amount. Add to Society dues in Total Amount below.
Total Amount: Payment type: Visa Mastercard American Express Check/money order
Card # Expiration Date: (MM) (YY)

5. Application Signature & Date Required:
Privacy Policy: Your application implies agreement to receive ASHRAE emails. You may opt out at any time. ashrae.org/privacy-policy
Code of ethics: By submitting this application you agree to abide by the ASHRAE Code of Ethics. ashrae.org/codeofethics

ASHRAE Membership Application

Join online at ashrae.org/join.
Prices shown are valid from June 1, 2021 through May 30, 2022

Who Are ASHRAE Members?
Members are represented by consulting engineers, mechanical contractors, building owners, employees of manufacturing companies, educational institutions, research organizations, government, architects, students or anyone concerned with HVAC/R for the built environment.

Which Member Grade is Right for You?
ASHRAE has four grades of membership awarded to applicants based on their experience and participation in the industry.

Full Member
Regular \$230 | Developing Economy \$135
Available to anyone with 12 years or more ASHRAE approved experience in the HVAC/R industry.

Associate Member
Regular \$230 | Developing Economy \$135
Available to anyone with less than 12 years of ASHRAE approved experience in the HVAC/R industry.

SmartStart: Student Transfer Program
Regular \$25 first year, \$85 second, \$115 third | Developing Economy \$15 first year, \$50 second, \$70 third
Program for current ASHRAE student members transferring to Associate member grade.

Affiliate Member
Regular \$60 first year, \$85 second, \$115 third | Developing Economy \$35 first year, \$50 second, \$70 third
Affiliate grade is for individuals who are new to ASHRAE (no previous membership in ASHRAE) and are age 90 or younger.

Student Member
Regular \$25 | Developing Economy \$15
Designed for all students, at any level of study, who are considering a career in HVAC/R.

*Developing Economy Program: Applicants who reside in a country categorized as "Low Income" and "Lower Middle Income" by the World Bank List of Economies statistics may select to participate in this program. Ensure your country qualifies by visiting data.worldbank.org.

Benefits	Full Member and Associate		Student and Affiliate	
	Regular	Developing Economy	Regular	Developing Economy
ASHRAE Journal (Monthly)	Yes	Digital Only	Yes	Digital Only
Select One Annual Benefit: ASHRAE Standard, eLearning Course, or Handbook PDF	Yes	Handbook PDF Only	No	No
Option to select additional Handbook Packages at discounted rate	Yes	No	Student: No	No
Complimentary 12 month access to Handbook Online (new members)	Yes	No	No	No
Member Bookstore Discount	Yes	Yes	Yes	Yes
Member Access to Technology Portal	Yes	Yes	Yes	Yes
Conference Registration and Education Discounts	Yes	Yes	Yes	Yes
Networking at local, region and Society level	Yes	Yes	Yes	Yes
Hold Office and Vote at Chapter, Regional, and Society Level	Yes	Yes	No	No
Participate on Committees	Yes	Yes	Yes	Yes
HVACAR Industry Newsletter	Yes	Yes	Yes	Yes
Free Online Access to Science & Technology for the Built Environment	Yes	Yes	Yes	Yes

Completed applications or questions can be sent to ASHRAE via email: membership@ashrae.org | fax: 678-539-2120 | phone: 1-800-527-4723 or 404-636-8400
mail: 180 Technology Parkway, Peachtree Corners Ga, 30092

ASHRAE Vision 2030 Mission Statement

"As a global society, ASHRAE guides and shapes the built environment for the advancement of human wellbeing through education, research, and standards advancements for our modern world.

Technology will improve every aspect of the built environment with an integrated community of buildings and the energy systems that support our daily lives. Our built environment will be adaptable and resilient to best serve the occupants with efficient, healthy, safe, and secure, indoor environments. The data-driven buildings industry, through innovation and ingenuity, will drive our buildings to increasingly higher performance. Integrating intelligent design, construction, and operation will transform tomorrow's built environment".

ASHRAE announced the launch its Vision 2030 webpage. The webpage can be found at <https://www.ashrae.org/about/ashrae-vision-2030>

As technology continues to improve every aspect of the built environment, ASHRAE's Vision 2030 is committed to leading, serving, and providing all professionals in the buildings industry with the resources and knowledge to continually drive the innovative and strategic improvements needed during the revolution of the built environment.

"The Vision 2030 webpage provides guidance to support intelligent design, construction, and operation for a more adaptable and resilient built environment," said 2018-19 ASHRAE Presidential Member and Vision 2030 Chair Sheila J. Hayter, P.E. "We believe that the contributions of the Vision 2030 team will serve as a powerful resource to industry professionals and the general public alike."

The webpage features the following five sections:

- ⇒ Connected Communities
- ⇒ Built Environment
- ⇒ Data and Integration
- ⇒ Team Processes
- ⇒ Member Services
- ⇒ Resources

Members of the Vision 2030 team are as follows:

1. Sheila J. Hayter, P.E., Presidential Fellow ASHRAE, chair, ASHRAE Vision 2030
2. Thomas H. Phoenix, P.E., BEMP, Presidential Fellow ASHRAE, vice chair, ASHRAE Vision 2030
3. Chip Branscum, PE, LEED AP, ASHRAE VISION 2030 Ad Hoc Committee
4. Robin Bryant, ASHRAE Director & Regional Chair Region XII
5. Jayson Bursill, Ph.D.
6. Michael Cooper, P.E., ASHRAE Headquarters Building Ad-hoc Committee
7. Drury B. Crawley, Ph.D., Fellow ASHRAE, BEMP, FIBPSA, chair, ASHRAE Standards Committee, AIA
8. Christopher M. Gray, Ph.D., P.E.
9. William R. MacGowan
10. Tim J. McGinn, P.Eng., HBDP, ASHRAE Vice President
11. Francis A. Mills
12. Daniel H. Nall, P.E., FAIA, Fellow ASHRAE, LEED® Fellow, BEMP, HBDP, CPHC
13. Lan Chi Nguyen Weekes, ing., P.Eng., chair, ASHRAE Multidisciplinary Task Group Health and Wellness in the Built Environment
14. Joe Noworatzky Ed.D., ASHRAE Foundation Trustee
15. W. Andrew Perrin, BASC
16. Chandra Sekhar, Ph.D., Fellow ASHRAE, ASHRAE Director-at-Large, Distinguished Lecturer
17. Manish K. Sharma
18. Jiri Skopek

2022 ASHRAE Winter Conference and AHR Expo In Person + Virtual, January 29 – February 2, 2022, Las Vegas, Nevada

Registration is now open for the 2022 ASHRAE Winter Conference, January 29 – February 2. Registration for the conference provides entry to the co-sponsored AHR Expo, held January 31 – February 2 at the Las Vegas Convention Center.

"The ASHRAE Winter Conference and AHR Expo bring together the world's foremost built environment experts, professionals, building owners and exhibitors one place," said 2021-22 ASHRAE President Mick Schwedler, P.E., Fellow ASHRAE, LEED AP. "This conference in Las Vegas will mark the Society's first large in-person event since the COVID-19 pandemic. The impact and reach of ASHRAE conferences are truly one-of-a-kind. We look forward to providing attendees, both in person and virtual, the resources and business networking to deliver solutions and navigate our rapidly changing building industry landscape."

For the first time ever, the ASHRAE Winter Conference will be presented in a hybrid format, offering both in-person and virtual options for participation for attendees, provides convenience and affords global participation with a group of the world's leading presenters delivering timely and useful industry content.

The conference will feature over 80 technical sessions with updates from Society leaders, tours, social events and livestreamed sessions for virtual attendees. Technical sessions will address building performance, energy system integration, international environmental health and IEQ and challenges and opportunities for industrial and commercial purposes. Conference registration is now open at ashrae.org/2022winter.

ASHRAE is committed to the health and safety of our members and conference attendees. The Society is closely monitoring guidance from the Centers for Disease Control & Prevention for both fully vaccinated and unvaccinated individuals, the World Health Organization, and local health agencies regarding travel and events. ASHRAE's Commitment to Care can be found on ashrae.org/2022winter and explains what in-person attendees can expect before, during and after the conference.

ASHRAE will also conduct business, committee and technical meetings in the weeks leading up to, and during the conference.

The technical program is comprised of seven tracks, featuring subject matter such as environmental health, energy system integration and examining building performance and resilience.

ASHRAE President Mick Schwedler will provide an update on the 2021-22 Society theme, "Personal Growth. Global Impact. Feed the Roots." Members will be recognized for the industry and Society accomplishments. Major contributors to ASHRAE will also be recognized.

Professional development hours can be earned for all sessions and most online sessions upon successfully completing a short quiz.



The cost to attend the conference in-person is \$690 for ASHRAE members (\$960 for non-members, which includes an ASHRAE membership for one year). Early bird discounts are available.

The cost to attend the conference virtually is \$275 for ASHRAE members (\$505 for non-members, which includes an ASHRAE membership for one year). Company packages are available. Please check the conference the conference webpage for additional pricing.

In-person registration includes:

- Access to technical program from Sunday, January 30 – Wednesday, February 2 (seminars, workshops, paper sessions, debates and panels)
- Conference proceedings.
- Access to the virtual conference platform during the conference and for the 12 month post-conference period
- Entry into the plenary session on Saturday, January 29 at 3:15 p.m. (Pacific Time)
- Networking coffee break on Sunday, January 30 from 9 – 9:30 a.m. (Pacific Time)

Virtual registration includes:

- Access to up to ten (10) technical sessions live-streamed Sunday, January 30 – Wednesday, February 2 with the ability to post questions and comments for the speakers to answer live
- Access to live-streamed Meeting of the Members Plenary session on Saturday, January 29 featuring recognition of award recipients of ASHRAE's most prestigious Society awards
- Access to live-streamed President's Luncheon on Monday, January 31 featuring President Mick Schwedler's State of the Society address
- Exclusive access to live virtual sessions presented by speakers unable to attend the in-person conference
- Conference proceedings. Download the technical papers and conference papers
- Access to the on-demand conference content which includes recordings of the live sessions the day after they are presented. These sessions allow for attendees to take a quiz and earn a PDH certificate.
- Access to the virtual conference environment for 12 months post-conference.

All registered attendees, both in-person and virtual, will have access to the conference platform during the conference and 12 months post-conference.

To learn more about the 2022 ASHRAE Winter Conference and to register, visit ashrae.org/2022winter.

ASHRAE announces ASHRAE Global Headquarters Grand Opening



The grand opening ceremony will take place on Thursday, November 18, 2021, 10:00 am (US)

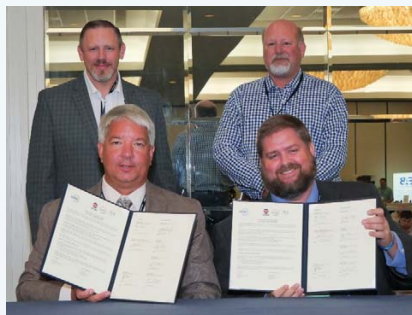
ASHRAE Invites all members to watch the ASHRAE Global Headquarters Grand Opening ribbon cutting, and remarks from special guests, broadcast via Facebook Live on Thursday, November 18 at 10:00 am.

For more information about ASHRAE New Headquarter and virtual technical tour please visit:

<https://www.ashrae.org/about/ashrae-s-global-headquarters>

Technology News

ASHRAE, AABC, ACG and EMA Sign Memorandum of Understanding



(Front Left to Right: Mike Kelly, TBE, CxA, President, Associated Air Balance Council; Wade Conlan, P.E., CxA, ASHRAE Director-at-Large

Back Left to Right: Chris Smith, P.E. CxA, EMP, President, Energy Management Association; Troy Byers, P.E., TBE, CxA, President, AABC Commissioning Group)

ATLANTA (October 1, 2021) – ASHRAE, the Associated Air Balance Council (AABC), the AABC Commissioning Group (ACG) and the Energy Management Association (EMA) have signed a new Memorandum of Understanding (MOU) formalizing the organizations' relationship.

The MOU was signed by Mike Kelly, TBE, CxA, AABC President, Troy Byers, P.E., TBE, CxA, ACG President, Chris Smith, CxA, EMP, EMA President and Wade Conlan, ASHRAE Director-At-Large, at a signing ceremony during the AABC Annual Meeting in Destin, Florida. The agreement specifies the path forward and defines parameters by which the organizations will work cooperatively to promote the advancement of emerging research and technologies to support a more sustainable built environment.

"With a focus on maintaining safe, healthy and efficient built environments, ASHRAE is pleased to have the opportunity to partner with AABC, ACG and EMA to enhance innovative technologies and resources to meet the challenges of the communities we serve," said 2021-22 ASHRAE President Mick Schwedler P.E., Fellow ASHRAE, LEED AP. "The global pandemic along with environmental threats have raised the profile of building industry organizations such as ours to set the foundation for impactful solutions to improve the built environment for us all."

"Properly performed testing and balancing by a certified, independent firm has positive ripple effects on the performance of equipment, systems, and entire buildings that help give owners what they paid for," said AABC President Mike Kelly, TBE, CxA. "Through ASHRAE's leadership position among HVAC engineers, manufacturers and others, we believe a better understanding of TAB's central role in improving performance can lift standards and expectations across the industry, to the benefit of everyone."

"One of ACG's primary missions is advocating for early involvement of the commissioning provider on all projects, and that an independent provider working directly for the building owner should be the norm," said ACG President Troy Byers, P.E., TBE, CxA. "We look forward to working with ASHRAE and their extensive reach within the building industry to communicate those messages."

"We look forward to exploring ways we can combine our education and advocacy efforts to promote EMA's commissioning-based energy management process, with the goal of maximizing energy savings for building owners everywhere," said EMA President Chris Smith, CxA, EMP.

Areas of alliance include:

- Ongoing advancement of collaborative projects.
- Consistent leadership communication of major initiatives between organizations.
- Discussion of new collaborative opportunities.

About the Energy Management Association (EMA)

The Energy Management Association is dedicated to providing education, training and certification to energy management professionals on behalf of building owners. Its Energy Management Professional Certification (EMP) features a commissioning-based curriculum that maximizes energy efficiency and optimization of building systems. For more information and to stay up-to-date on EMA, visit energymgmt.org and connect on LinkedIn, Twitter and YouTube.

ASHRAE GUIDANCE FOR THE RE-OPENING OF SCHOOLS

ASHRAE is a global professional society of over 55,000 members committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields. ASHRAE has established a Task Force to help deploy technical resources to address the challenges of the COVID-19 pandemic and possible future epidemics as it relates to the effects of heating, ventilation, and air-conditioning systems on disease transmission. Guidance and building readiness information for different operational conditions has been developed for several building types, including commercial; residential; schools and universities; and healthcare facilities.

Protecting the health, safety and welfare of the world's students, faculty, and administrators from the spread of SARS-CoV-2 (the virus that causes the COVID-19 disease) is essential to protecting the entire population.

ASHRAE's guidance for schools provides practical information and checklists to help minimize the chance of spreading SARS-CoV-2. A summary of key general recommendations related to HVAC and water supply systems appears below. Many different HVAC system types are used in educational facilities, so adaptation of these guidelines to specific cases is necessary. Please consult the full guidance for important details and consider reaching out to qualified design professionals for detailed analysis as needed.

- **Inspection and Maintenance:** Consider assessing the condition of systems and making necessary repairs. All building owners and service professionals should follow ASHRAE Standard 180-2018 "Standard Practice for the Inspection and Maintenance of Commercial HVAC Systems."
- **Ventilation:** A good supply of outside air, in accordance with ASHRAE Standard 62.1-2019, to dilute indoor contaminants is a first line of defense against aerosol transmission of SARS-CoV-2. Pre- and post-occupancy purge cycles are recommended to flush the building with clean air.
- **Filtration:** Use of at least MERV-13 rated filters is recommended if it does not adversely impact system operation. If MERV-13 filters cannot be used, including when there is no mechanical ventilation of a space, portable HEPA air cleaners in occupied spaces may be considered.
- **Air Cleaning:** Air cleaners such as germicidal ultraviolet air disinfection devices may also be considered to supplement ventilation and filtration. Technologies and specific equipment should be evaluated to ensure they will effectively clean space air without generating additional contaminants or negatively impacting space air distribution.

- **Energy Use Considerations:** In selecting mitigation strategies, consideration should be given to energy use as there may be multiple ways to achieve performance goals that have greatly different energy use impact.

Control changes and use of energy recovery to limit or offset the effect of changes in outdoor air ventilation rate and filter efficiency may reduce or offset energy and operating cost penalties.

- **Water System Precautions:** Buildings that have been unoccupied could have stagnant water, and water systems should be flushed to remove potential contaminants. Utilizing ASHRAE Standard 188 and Guideline 12 can help minimize the risk of water-borne pathogens such as legionella. HVAC&R systems play an important role in minimizing the spread of harmful pathogens, and ASHRAE is ready to provide technical resources and answer questions.

The most up-to-date information for schools and universities can be found at: <https://www.ashrae.org/technical-resources/reopening-of-schools-and-universities>

The most up to date information for Building Readiness for re-opening can be found at: <https://www.ashrae.org/technical-resources/building-readiness#intent>

The information above is provided as a service to the public. While every effort is made to provide accurate and reliable information, this is advisory, and is provided for informational purposes only. They are not intended and should not be relied upon as official statements of ASHRAE

Technical Paper

Basic Recommendations for HVAC Cybersecurity

BY MIKE GALLER, MEMBER ASHRAE

This article was published in ASHRAE Journal, September 2021.

Cybersecurity has been a topic of increasing importance for several years. While fully securing a large, complex system can be complicated, some basic precautions can easily be applied to any system. This column provides introductory information on recommended cybersecurity precautions for HVAC networks that would be helpful to facility staff with limited expertise in cybersecurity.

There have been many headlines about major cybersecurity breaches at large companies, but administrators of small networks also need to be concerned. Malware does not care about the size of the company owning the computer or the network it is attacking. Failing to address the needs of cybersecurity is like failing to prepare for a hurricane because you think you're too small for the hurricane to care about. Recent statistics show that small businesses are frequently the target of cyberattacks.¹⁻⁷

A good cybersecurity plan addresses the physical components of the facility and the personnel, policies, legal, liability and education requirements. No "one-size-fitsall" exists when it comes to protecting a facility from attacks. Knowing your levels of risk⁸ and cybersecurity awareness, likely threat vectors, technical abilities and your budget will help create a workable plan.

Many recommendations for securing industrial control systems outlined in NIST SP 800-829 are relevant to building automation systems. These include access control, identification and authentication, configuration management, awareness and training and planning. Multiple controls are suggested for each of these areas providing a range of recommendations and guidance. Cybersecurity relies on defense-in-depth; implementing more precautions will make your network safer. This column will briefly explore two of these areas: awareness and training and planning. Future columns will address the remaining areas: current issues in cybersecurity and advances in technology relating to cybersecurity.

Awareness and Training

- Every person who will use a computer on any network operated by their business must be aware of basic cybersecurity concepts. Your HVAC equipment on the operational technology (OT) network may be protected by a virtual private network (VPN), but it will still not be secure if your information technology (IT) network is compromised. Many types of malware are spread through fraudulent e-mail designed to look legitimate. Malware may also be disguised as a different program offered for download. Training employees to recognize malware is an important part of the strategy to defend your network. Free and low-cost online cybersecurity training is available.¹⁰ Be sure to select training that is matched to the employee's roles. A budget should be allocated for employees who have roles that require specialized training

- Define your cybersecurity policies for your human resources department, operations and maintenance department and contractors. Make sure a compliance verification process exists for these policies. Policies must be followed accurately to be effective.

- Cybersecurity attacks evolve over time. Your training and policies must also evolve to meet new threats.

Planning

- Cybersecurity planning must encompass the entire life cycle of the building and the systems and networks that support it. Guidance on developing a security plan can be found in NIST SP 800-53.11

- The network configuration must be designed around the concepts of cybersecurity. Trying to retrofit cybersecurity onto the network later may require more effort with less effect.

- Develop a comprehensive design and implementation plan regarding your building control system. Engage your consulting engineer, IT and IT security team, IT security auditor and OT team in proper sizing and scope of cybersecurity measures. Do this before it becomes an issue, not after the breach has occurred.

- Engage with your legal advisers on creating and enforcing cybersecurity insurance, contracts, indemnification and related policies. They can also develop legal documents relevant to contractors working on building systems.

- If a breach does occur, have a notification, triage and escalation plan in place to reduce any negative outcomes.

- As with other building components, cybersecurity will require a level of ongoing maintenance to ensure adequate security controls continue to be implemented as intended. It is important to plan for this when allocating resources.

- All computers and network components should be in environmentally controlled locations. A computer is less likely to fail if it is kept clean and up-to-date. Dirt, dust or other debris can clog fans or heat exchangers in the computer and cause components to overheat. Operating system updates should be installed after they are approved by the HVAC systems vendor.

- If your computer has a conventional hard disk drive (HDD), industry recommendations are for it to be replaced after three to five years due to the probabilistic nature of HDD failures. It is recommended to replace it with a solid-state drive (SSD) due to their generally higher durability and reliability.

Conclusion

This list is intended to be a basic introduction to cybersecurity. A deeper understanding of relevant topics is necessary to ensure your network is secure. For more information about cybersecurity, see the 2019 ASHRAE Handbook—HVAC Applications, Chapter 41, Computer Applications, Section 5. In addition, ASHRAE Guideline 13-2015, Specifying Building Automation Systems, has a new chapter specifically addressing cybersecurity requirements. Multiple sources of information are also available on the internet, including more detailed recommendations and references to applicable standards.

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