



**MINUTES**

**DRAFT**

**TECHNICAL COMMITTEE**

2023 Summer Meeting

**June 25, 2023**

Note: These draft minutes have not been approved and not the official, approved record until approved by the Technical Committee.



1791 Tullie Circle, N.E./Atlanta, GA 30329  
**404-636-8400**

**DRAFT**

TC/TG/MTG/TRG MINUTES COVER SHEET

**(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)**

TC/TG/MTG/TRG No. TC 2.8 DATE 6/25/2023

TC/TG/MTG/TRG TITLE Building Environmental Impacts and Sustainability

DATE OF MEETING 6/25/2023 LOCATION Tampa, FL/Virtual

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Joy Altwies	2021	Alara Apcin	2018	Carrie Anne Monplaisir (YEA, Int'l)
Kevin Brown	2021	Mike Pascual (YEA)	2018	Kim Cowman
Kevin Cross	2002	Janice Means	2005	Haleh Moghaddasi
Rafi Karim (YEA)	2017	Ashish Rakheja (non-quorum)	2023	Tom Lawrence
Svein Morner	2023	Tania Ullah	2023	Sumayyah Theron

**EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE (continued)**

Juliana Pellegrini	Paul Torcellini	Mitchell Swann
Natalie MacDonald (YEA)	James Sweeney	Frank Mills (Int'l)
Matthew Martinez (YEA)	Kinga Hydras	Tracy McKeon
Paul Stackhouse	John Lewis	Parichehr Salimifard
Eric Peterson	Lisa Ng	Michael Deru
Hyagi Kim	Doug Fick	Jaap Hogeling (Int'l)
Renee Clair	Costas Balaras (Int'l)	Katherine Hammack
Hailey Mick	John Willis	Katherine Allen-Willis
Brittany Carl Moser		

**DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:**

TAC Section Head: Jon Cohen	SH2@ashrae.net
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net

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Shaping Tomorrow's  
Built Environment Today

## TC 2.8 Building Environmental Impacts and Sustainability

Sunday June 25, 2023, 3:30 PM – 5:30 PM EDT

Online (Webex) and In-person, Tampa Marriott Waterside, Grand Salon GH (2)

[Online Meeting Link](#)

Chair: Meeting Called to Order at 3:31 PM EDT

### 1. Roll call and Introductions

Altwies / Ng

In-person and virtual attendees introduced.

Quorum not present (4 out of 10 voting members including Chair).

### 2. Review and Accept Agenda

Altwies / Brown

Agenda updated and accepted.

### 3. Review / Approval of February 2023 Meeting Minutes

Ng

Towards end of the meeting, 5 out of 10 voting members present. Brown moved to approve. Cross second. No discussion. With Tania's vote submitted via email, the Minutes were approved 5-0-0-1 (Y-N-A-CNV).

### 4. Standing Committee Liaisons TAC / RAC / Standards / Programs

Technical Activities Committee (TAC)

- Certification of Appreciation from TAC presented to Joy.
- Is Decarb Task Force being folded into TCs after this meeting? TAC will get feedback from Luke on Wed. Decarb TF Members could form a new TC 2.x or fold into existing TCs.

Standards

- In an effort to assist with speed to market of ASHRAE products, e.g., [ASHRAE Standard 241-2023, Control of Infectious Aerosols](#) process took only 4 months from concept to publication. Note, it is not an ANSI standard.
- Standards will conduct a post-evaluation on the process and how it can be used to expedite other ASHRAE products to market. They will start with ASHRAE Standards 90.1 and 189.1, as they have impact on carbon. ASHRAE wants to be at the forefront of emerging topics and issues that are important to the industry and its members.
- Changes to the [Titles, Purposes and Scopes \(TPS\)](#) of ANSI/ASHRAE/IES 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings and ANSI/ASHRAE/IES 100 Energy Efficiency in Existing Buildings were approved on Saturday June 25 to include carbon.

No update from Research Administration Committee (RAC) or Programs

### 5. Subcommittee Reports

#### 5.1 Green Guide

Lawrence

- Just completed 6<sup>th</sup> edition so subcommittee has not met and will resume when next cycle begins.
- Will need a lead (to replace Lawrence) for 7<sup>th</sup> edition. Lawrence will discuss with ASHRAE to see if they interested in a 7<sup>th</sup> edition. Abdel Darwich had expressed interest in the past to lead a 7<sup>th</sup> edition (not confirmed).
- Lawrence can give update at next meeting (Chicago) to see if work on a 7<sup>th</sup> edition will start.

#### 5.2 International

Mills / Rakheja

- Didn't meet prior to this summer meeting.

- [Sustainable Development Report](#) released in January for 193 UN Member States.
- [ASHRAE HVAC Cold Climate Conference 2023](#) was held in March 2023 in Alaska with [SCANVAC](#). The topics included net zero energy and carbon, with a particular focus on preserving indigenous communities. There were 300 participants from 11 countries.
- Mills attended a net zero carbon meeting in Hong Kong, organized by local ASHRAE chapter. Met with government officials regarding targets for carbon. Engagements like this could lead to creating local applications guides, which also helps to spread the reach of the work done by the Decarb Task Force.
- Reviewed net zero energy standard for UK hospitals. Funding road show to showcase new standard to hospitals.
- Still working on updates to [ASHRAE Guide for Buildings in Hot and Humid Climates](#), especially contents related to cooling exterior areas.
- In the spirit of decarb, committee discussed if ASHRAE could make an effort to invite international members to speak but do so via video conferencing to reduce carbon footprint due to travel. Time differences would need to be considered.

### 5.3 Water-Energy Nexus

Karim

- Met virtually on June 20.
- Discussed WEN guide. Re-vamping up efforts. New volunteers to fill in gaps in guide.
- Will plan focused group meetings between now and Chicago.
- Has WEN subcommittee considered making the publication a funded effort through ASHRAE publications? This means that ASHRAE might fund an external entity to write it if the expertise is not sufficient among members or if members do not have time to author something in a timely manner. Altwies and Karim will discuss offline.

### 5.4 Research (minutes included below)

Cross

- Met virtually on June 16.
- Work Statement (WS-1929) *Evaluation of building life cycle analysis tools incorporating embodied carbon* expected to go out to bid in Fall (Sweeny and Cross).
- Research Topic Acceptance Request (1933-RTAR) *Water-Energy Nexus: Utility Source Water and Source Energy Dataset* accepted for development into WS.
- 2 co-sponsored items WS approved by TC2.8. Waiting to hear back from RAC
  - 1885-WS *Guideline/Book for Design Installation and Operation of PV* with TC 6.7: Solar Energy and Other Renewables
  - 1947-WS *Climate change driven extreme temperature effects map for efficiency and resilience map of heat pump technology* with TC 2.5: Global Climate Change
- Always looking for researching ideas.
  - New one today: Modular equipment to recycle/reuse for mechanical equipment.

### 5.5 Programs (minutes included below)

Apcin / Altwies

- Met virtually on June 20.
- Apcin will be back as subcommittee chair.
- [Subcommittee minutes are posted to basecamp](#). See minutes for new program ideas.
- Seminars/etc. at Tampa are listed below.
- Ask any committee member for access to [basecamp](#).
- Contact Altwies/Brown to help walk you through submission of new programs. August 2 is the deadline for Chicago. Papers are due next week (end of June).
- New ideas today:
  - Hogeling brought the topics of zero emission building, life cycle, green financing, energy first principle and more. They have 3 speakers identified. Hogeling would be the chair of the session.
  - Hydras will also contact Altwies/Brown with another idea.
- In the spirit of decarb, Peterson proposing finding speakers in location where conference being held.

### 5.6 Handbook – Chapters 34 & 35

Morner / Theron

- Met virtually on June 21.
- Theron gave the report in Morner's absence.
- Looking for volunteers to help edit and proof-read chapters.
- Fundamentals chapters are 34: Energy Resources and 25: Sustainability.

- Planning for final draft to be ready in Chicago.
- Submission deadline July 2024.
- [TC 4.4 Building Materials and Building Envelope Performance](#) expressed concern that no embodied carbon was included in Chapter 35. They could serve on our Handbook subcommittee to help with chapter revisions/additions since we are the cognizant TC of Chapters 34 and 35.

## 6. Related Activities Reports

### 6.1 Standards

- **SSPC 189.1 High-Performance Green Buildings** Lawrence / Hammack
  - TC 2.8 is the cognizant TC of [ANSI/ASHRAE/ICC/USGBC/IES 189.1 Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings](#)
  - Tomorrow every Working Group is presenting and focusing on what are the new changes, what's in process, and then host Q&A.
    - There are 3 in morning ([Part 1](#)): WG 5 - Site Sustainability; WG 6 - Water Use Efficiency; WG 10 - Construction Plans for Operations
    - 5 in afternoon ([Part 2](#)): WG 7 - Energy Efficiency; Energy Perf and Modeling; WG 8 - Indoor Environmental Quality; WG 9 - Materials and Resources; TPS; Resilience
  - [Main committee meeting on Tuesday June 27](#)
- **SSPC 189.3 High-Performance Green Healthcare Facilities** Moser
  - [Meeting Monday morning June 26](#)
  - Will be at the [ASHE 2023 Annual Conference](#)
  - Addenda A - 5 % views to outside (whereas 189.1 has 8 % views) due to size of spaces in healthcare
  - TPS update to align with 189.1 language passed
  - Working on
    - Heating hot water temperature
    - Nitrous oxide leakage rates
    - Cleaning of surfaces for infectious controls
    - Medical waste disposal
- **SPC 191P Efficient Use of Water in Buildings** Betz
  - Update sent via email to Altwies
  - Approved 4<sup>th</sup> public review (Independent Substantive Change (ISC) Public Review)
  - Standards will be voting at this meeting
  - Committee will disband after Winter and become an Standing Standards Project Committee (SSPC)
- **SPC 228P Standard Method of Evaluating Zero Energy Building Performance** Torcellini
  - [ANSI/ASHRAE 228 Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance](#) published.
  - Changing to SSPC with Torcellini as Chair.
  - [Meeting Monday June 26 as SSPC](#)
- **SPC 227P ~~Passive Building Design Standard~~High-Performance Envelope** Torcellini
  - Add *SPC 240P Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation* to the list of updates? See below for update at this meeting.
  - [Meeting Tuesday June 27](#)
  - After Advisory Public Review – copyright language being fixed

### 6.2 ASHRAE Advanced Energy Design Guides Update

Torcellini

- Multifamily guide is the latest edition out.
- AEDGs were a joint effort with ASHRAE, American Institute of Architects (AIA), U.S. Green Building Council (USGBC) and U.S. Department of Energy (DOE), but Memorandum of Understanding (MOU) won't be renewed.
- Being picked up by Decarb Task Force, but no more AEDGs will be developed. Moving toward design guides.
- Adding heat pump design guide. If interested in helping or being interviewed, reach out. They are interested in case studies to support more installation of heat pumps.

- 6.3 Task Force for Building Decarbonization Lawrence
- Should their guides be turned into guidelines and owned by TCs?
  - Would TC2.8 like to own any of the guides (turning into guidelines)?
  - Training and education to be associated with guides.
  - Board of Directors (BOD) committed funding to create guides and courses (Decarb 101, intro to decarb; systems/equipment; operation/case studies).
  - [ANSI/ASHRAE/ACCA Standard 211-2018 Standard for Commercial Building Energy Audits](#) project committee (not SSPC) disbanded and formed SSPC and may now include carbon.
  - Decarb too new to create a certification. Could create certificate for completing courses.
  - Feedback needed from designers on what they need to get decarb out there and useful.

*SPC 240P Evaluating GHG and Carbon Emissions in Buildings* Fick

- Joint standard between ASHRAE and ICC on calculating carbon
- Public reviewed closed May 2023 with 400+ comments
  - Received feedback on TPS
  - Should there be a requirement to include uncertainty?
- Will meet virtually during summer
- Will meet in person in October
- Target for publication is 2025

## 7. Old Business

- 7.1 [TC 2.8 Basecamp](#) site
- If you need access, reach out to any TC member.
  - Subcommittee minutes can go to Secretary.
  - Full minutes → go onto Basecamp and Website.
- 7.2 Future [volunteers](#) for WS-1929 PES (Proposal Evaluation Subcommittee)
- Title: Evaluation of building life cycle analysis tools incorporating embodied carbon
  - Bid later this year depending on RAC
  - PES volunteers identified at a past meeting.
- 7.3 Review Membership roster changes / New voting members starting July 1
- ASHRAE list received this morning is wrong and needs to be fixed
- 7.4 Approved minutes

## 8. New business

- 8.1 Acknowledgement and thank you to Don Brundage
- ~~8.2 Programs subcommittee chair volunteer?~~
- Apcin is returning
- 8.3 No other new business

## 9. Adjourn

Moved by Cross. Second by Brown. Adjourned.

**NEXT MEETING: January 21, 2024, Chicago IL**

## **ASHRAE Code Of Ethics**

*In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and we shall avoid all real or perceived conflicts of interests.*

### **TC 2.8 Web Site**

<http://tc0208.ashraetcs.org>

[TC 2.8 Basecamp Site](https://3.basecamp.com/3106353/projects/10832944)

<https://3.basecamp.com/3106353/projects/10832944>

### **Upcoming Conferences:**

Jan. 20-24, 2024 – Chicago, IL  
June 22-26, 2024 – Indianapolis, IN  
Feb. 8-12, 2025 – Orlando, FL  
June 21-25, 2025 – Phoenix, AZ  
Jan 31-Feb. 4, 2026 – Las Vegas, NV  
Jun 27-Jul 1, 2026 – Austin, TX  
Jun 12-16, 2027 – New Orleans, LA

### **TC 2.8 Sponsored Programs in Tampa...**

#### **Seminar 23: Future Proofing our Built Environment through Global Collaboration**

Monday, June 26 8:00 AM – 9:30 AM EDT  
JW Marriott Tampa Water Street, Tampa Bay 7

#### **Debate 2: College of Fellows Debate: Engineers Have An Obligation To Decarbonize**

Tuesday, June 27 8:00 AM – 9:30 AM EDT  
JW Marriott Tampa Water Street, Tampa Bay 2

#### **Seminar 47: Decarbonization of Buildings with Carbon Capture Tech: Post Combustion, Pre-Combustion and Direct Air Capture in the HVAC**

Tuesday, June 27 11:00 AM – 12:30 PM EDT  
JW Marriott Tampa Water Street, Tampa Bay 6

#### **Seminar 72: Results from ASHRAE 1814-TRP, Actual Energy Performance of Secondary Schools Designed to Comply with ASHRAE Standard 90.1-2010**

Wednesday, June 28 11:00 AM – 12:30 PM EDT  
JW Marriott Tampa Water Street, Tampa Bay 8

## **TC2.8 Research Subcommittee Minutes**

Friday, June 16<sup>th</sup>, 2023  
4:00 p.m. to 5:00 p.m. EDT

Attendees: Joy Altwies, Kevin Cross, Jim Sweeney, Doug Fick, Alejandra Nieto, Janice Means, Jo Norris, Julianna Pellegrini, Michael Deru, Nuria Casquero, Stu Asay, Summayah Theron, Svein Morner, Xiaohui “Joe” Zhou

1. Comments by Section 2 RAC Liaison Bill Hutzel (not present)
  - a. Bill is rolling off the RAC at the end of the month. Our new RAC liaison will be Chris Gray.
  - b. RAC Breakfast at Monday, 6/26 at 7:00 a.m. Kevin, Summaya, and Julianna will attend.
2. Announcement(s)
  - a. Plan to attend “Seminar 72: Results from ASHRAE 1814-TRP, Actual Energy Performance of Secondary Schools Designed to Comply with ASHRAE Standard 90.1-2010” at the Annual Conference on Wednesday, 6/28 at 11:00 a.m. Presenters will be Joe Zhou and Zhihong Pang.
3. Review current research topic ideas (see following table)

<b>Research Topic Idea</b>	<b>Generated by</b>	<b>Update/Status</b>	<b>Next Steps</b>
<b>ACTIVE:</b> 1929-WS: Evaluation of building life cycle analysis tools incorporating embodied carbon	Jim Sweeney, Kevin Cross	Version submitted to RAC on 12/14 returned with comments. Next version developed, approved by TC 2.8, and submitted to RAC on 3/14. That version was conditionally accepted for bid this fall. Jim responded to outstanding concerns and resubmitted on 5/15/23.	<i>Kevin will follow up with Donna Daniel in late summer if he doesn't hear from them first.</i>
<b>ACTIVE:</b> 1933-RTAR: Water-Energy Nexus: Utility Source Water and Source Energy Dataset	Fred Betz, Jim Sweeney, Rafi Kareem	Submitted August 2021. Approved with comments. Comments forwarded to authors in Oct 2021. Authors still interested in moving forward as of January 2023.	<i>Jim followed up with Fred and Rafi on 6/25 to for their feedback and is waiting to hear back.</i>
<b>ACTIVE (Co-Sponsor):</b> 1885-WS Guideline/Book for Design Installation and Operation of PV (Solar and Other Renewable)	TC 6.7: Solar Energy and Other Renewables	Janice was putting the finishing touches on the WS in January 2023, and hoped to be able to submit it to the RAC by 3/15/23.	<i>Janice waiting to hear from the author, Jim Slidell. She hopes to hear from him during the meeting in Tampa. We anticipate holding an e-mail vote on this one in July,</i>
<b>ACTIVE (Co-Sponsor):</b> 1947-WS Climate change driven extreme temperature effects map for efficiency and resilience map of heat pump technology	TC 2.5: Global Climate Change	Submitted to RAC by TC 2.5 on 5/15/23.	<i>We are waiting to hear back from Elizabeth Jedrlic, TC 2.5 Research Subcommittee Chair on next steps.</i>
<b>PENDING:</b> Conservation vs. Water Quality from the Design Engineer's Perspective	Water-Energy Nexus Subcommittee (Rafi, Tania)	In February 2023, Rafi stated this this should be dropped from the list if no interest is expressed in moving forward with this in June 2023.	<i>Stu Asay (<a href="mailto:stu.asay@iapmo.org">stu.asay@iapmo.org</a>) is interested in pursuing this. Jim Sweeney may be interested in this as well.</i>
<b>PENDING:</b> Net Zero Energy Hospitals	Frank Mills	In February 2023, Frank said that he planned to write a RTAR on this by June 2023.	<i>Kevin followed up with Frank on 6/25 and is waiting to hear back.</i>
<b>PENDING:</b> Meta Materials for diverting solar radiation to where it will be most useful	Harvey Schowe	In February 2023, Harvey said he would check with TC 4.4 (Building Materials and Building Envelope	<i>Alejandra Nieto said she would reach out to her TC 4.4 Research Subcommittee Chair. Jim Sweeney said he would</i>

		Performance) and get back to us.	<i>reach out directly to Harvey. They are waiting to hear back.</i>
<b>PENDING:</b> Carbon capture and sequestration in buildings	Janice Means	Janice will provide more details on this at our June 2023 meeting.	<i>Jan organized a seminar on this topic at the meeting in Tampa. She wishes to keep this topic on the list.</i>
<b>PENDING:</b> What is the potential for reducing embodied carbon in distribution systems and building renovations?	Paul Raftery	Is this addressed adequately in our proposed WS 1929? Other initiatives? Is there an additional need for research in this area? Kevin sent WS 1929 to Paul in February 2023; Paul to respond to our questions at the June 2023 meeting.	<i>Paul says that he may develop an RTAR on this after he finishes some research already underway on reducing the embodied carbon in piping and ductwork.</i>
<b>ON HOLD:→ Pending</b> Ground source heat pump technologies in hot climates – international	Ashish Rakheja	In February 2023, Eric Peterson said that he would look into using water – including “ambient networks” – as the warm reservoir and provide an update at in June 2023.	<i>Eric Peterson suggests a seminar of debate on the geographical limits to where ground source systems can provide sustainable cooling heatsinks. He does not have the bandwidth to take this on development of an RTAR.</i>
<b>ON HOLD:</b> Effect of Water Quality on HVAC Systems	Fred Betz	Fred asked to keep this on the list at the January 2023 meeting.	<i>Jim Sweeney will follow up with Fred. He is waiting to hear back.</i>
<b>ON HOLD:</b> Do buildings built to Standard 189.1 perform as expected?	Kevin Cross, Joy Altwies, Tom Lawrence	Kevin and Tom communicated with Katherine Hammack, the Chair of SSCP 189.1, in February 2023. We learned that a number of municipalities in the U.S. have adopted this, mostly as an optional code. We weren’t able to obtain a list of buildings built to this standard, though.	<i>Kevin Cross will follow up with Tom before this subcommittee meets next winter.</i>

4. Discuss new research topic ideas (see following table)

<b>New Research Topic Ideas</b>	<b>Generated by</b>	<b>Update/Key Questions</b>	<b>Next Step</b>
What are the reasons that municipalities adopt required or optional stretch energy codes? What could ASHRAE do to get these standards adopted?	Joy Altwies	Would ASHRAE fund research like this? Is there a role for TC 2.8 here? Could we partner with the Government Affairs office?	<i>Doug said that he would ask the Standards Executive Committee if they have any suggestions on how we might proceed with this.</i>
Building Performance Standards – how are they developed, whether effective	Joe Zhou	Joe needs to think about this further	<i>Joe to let Kevin know as he gathers his thoughts.</i>
Integration of Thermal Energy Storage with Stirling or ORC Engine for Building Decarbonization	John Willis	Determine feasibility of a thermal energy storage system with a Stirling or Organic Rankine Cycle Engine for home power generation.	<i>Following the Main TC 2.8 meeting, John submitted a draft RTAR for this idea to Kevin on 6/27. He is also asking for feedback from TC 1.10 (Combined Heat and Power Systems)</i>

5. Other business

a. None.

6. Adjourned at 5:05 p.m. EDT.

**Reference Items**

For more information, visit ASHRAE’s research web site here: [ashrae.org/research](https://www.ashrae.org/research)

Anyone interested in pursuing research topics (including those who generated ideas above) are asked to take a look at the RTAR form to start fleshing out their ideas. The most recent RTAR and Work Statement forms can be downloaded from the link provide above.

The ASHRAE Strategic Research Plan was updated in 2021. The formal roll out took place at the 2022 Las Vegas meeting.

The published information indicates that future research topics should address one of these topics/goals. Details and specifics on each topic area can be found at this link:

<https://www.ashrae.org/file%20library/technical%20resources/research/research%20strategic%20plan/research-strategic-plan.pdf>

1. Resilience
2. IEQ – Environmental Quality in Occupied Spaces and Impacts on Work and Learning Health and Well Being, and Transmission of Airborne Infectious Viruses
3. Sustainability, Decarbonization, Energy and Resources
4. HVAC&R Equipment, Components, and Materials

5. Tools and Applications
6. Education and Outreach

# TC 2.8 Programs Subcommittee Meeting Minutes

2023 ASHRAE Annual Conference

June 20, 2023 12:00 - 1:00 PM EDT (Virtual Meeting)

Attendees: Joy Altwies, Costas Balaras, Eric Peterson, Harvey Schowe, Svein Morner, Danielle Taylor, Rubens, Michael Rhodes, Rafi Karim, Janice Means, Alara Apcin

## 1) Roll call and introductions

## 2) Agenda

## 3) Announcements

### **Seminar 23: Future Proofing our Built Environment through Global Collaboration**

Monday, June 26 8:00 AM – 9:30 AM EDT

JW Marriott Tampa Water Street, Tampa Bay 7

### **Debate 2: College of Fellows Debate: Engineers Have An Obligation To Decarbonize**

Tuesday, June 27 8:00 AM – 9:30 AM EDT

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### **Seminar 47: Decarbonization of Buildings with Carbon Capture Tech: Post Combustion, Pre-Combustion and Direct Air Capture in the HVAC**

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### **Seminar 72: Results from ASHRAE 1814-TRP, Actual Energy Performance of Secondary Schools Designed to Comply with ASHRAE Standard 90.1-2010**

Wednesday, June 28 11:00 AM – 12:30 PM EDT

JW Marriott Tampa Water Street, Tampa Bay 8

## 4) Old Business

- Sumayyah indicated she was planning a program for Chicago on IAQ for middle school students as part of the Host Committee activities. She will request TC 2.8 co-sponsorship if appropriate when more is known. **Status:** Alara will follow up with Sumayyah.
- Chicago or Indianapolis potential topic: Grid Resilience and Thermal Storage/Thermal Balance/Geothermal/Ground Source HP. A seminar proposal with three speakers. Alara has a potential speaker with a condenser water thermal storage project. Eric: Efforts in the UK to create micro-district systems facing legal hurdles. Ron spoke about heat recovery from waste-water treatment plants using a heat exchanger/heat pump. Ron will

check with another committee to find a person. **Status:** Maybe for Indianapolis, perhaps a Debate? Eric is interested in pursuing. Svein is also interested for Chicago. Svein says ComED has an electrification program happening.

- OLDER: Pathways to Zero Energy Emissions and Decarbonization. Decarbonization of hospitals. Chris Miller has a Kaiser Permanente project to present. Travis English and one more potential speaker pending confirmation. Fred is working on a decarbonization design guide/ ASHRAE code overlay. **Status:** Not discussed in June 2023.
- OLDER: Operations and Maintenance: Opportunity to collaborate with TC 7.9 Building Commissioning. Alara to be the liaison. Fred brought up a facility managers survey regarding issues with highly complex buildings conducted by ASHRAE from 5 years ago that might be useful. Alara will talk to Kent Peterson to learn more. **Status:** Not discussed in June 2023.
- OLDER: Building Simulation and Virtual Design in Construction: It would be helpful to have IBPSA people to have a bigger reach. **Status:** Not discussed in June 2023.
- OLDER: Hydropower to provide energy: Janice, Rafi. **Status:** Not discussed in June 2023.
- OLDER: Rainwater Harvesting: Fred spoke about water efficiency helping to reduce carbon emissions and rainwater harvesting. Alara to add it to the agenda to keep on our radar for future conferences. **Status:** Not discussed in June 2023.

## 5) New Business

- Alara has joined the meeting and should be able to resume Program Subcommittee duties.
- New Program ideas:...
  1. Possible track 9 (Chicago) – A delivery process for net zero or decarbonized buildings. Other methods that might work better? How to bid decarb buildings/projects. It's new for many owners. Svein will pursue? Passivhaus standards in Europe (City of York in UK)? Rafi recommended following up with Paul T or someone authoring Net Zero Design Guides as possible speaker.
  2. Rafi mentioned that AEI has project in CA, Net Zero energy building for track 4, has large PV system, would be interesting to have a program on case studies for this track. Perhaps have a contractor or architect from the projects as speakers. Svein also has a project case study from WI we could add. Program topic is case studies on net zero/decarb.
  3. Alara will reach out to Summayah about Chicago program on IAQ in schools. – Perhaps the ComED schools program might also be a good fit.

4. Janice – perhaps co-sponsor with TC 2.5 Climate Change looking at vernacular architecture as a possible solution. The program is not full formulated yet but 2.5 is working on it. (Chicago)
  5. Svein – TC 6.7 Solar and Other Renewable Energies is working on Strategies for Net Zero buildings, looking for TC 2.8 to co-sponsor. Looking also at local ordinances that may prevent net zero strategies. (Chicago)
  6. Alara will reach out to TC 7.9 Commissioning to talk about the tracks and how we can work together.
- Chicago Winter Meeting: The 2024 ASHRAE Winter Conference will take place January 20-24, 2024 at the Marriott Marquis Chicago, which is connected to the McCormick Place convention center.

The tracks and track chairs for the conference are listed below.

## Review Timeline for Future Meetings

### 2024 ASHRAE Winter Conference Chicago IL

January 20-24, 2024: <https://ashraem.confex.com/ashraem/w24/cfp.cgi>

#### Major Deadline:

- **Wednesday, August 2, 2023 | Debate, Panel, Seminar, Forum, Workshop, and Debate Proposals Due**

#### 2024 Winter Conference Tracks and Track Chairs:

<https://www.ashrae.org/conferences/2024-winter-conference-chicago/2024-winter-conference-technical-program>



1. Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow. This track provides opportunities for papers and presentations of varying levels across a large topic base. Concepts, design elements and shared experiences for theoretical and applied concepts of HVAC&R design are included.

Track Chair: **Craig Bradshaw** | [craig.bradshaw@okstate.edu](mailto:craig.bradshaw@okstate.edu)



2. HVAC&R systems and equipment are constantly evolving to address the changing requirements of the built environment. Papers and programs in this track focus on the development of new systems and equipment, improvements to existing systems and equipment and the proper application and operation of systems and equipment.

Track Chair: **Ng Yong Kong** | [nyk@nyk.com.my](mailto:nyk@nyk.com.my)



3. Refrigeration systems generate and use cold for a range of processes, from food preparation and conservation to vaccine preservation, to long-term protection of fragile ancient inks of historic documents and others. Differences in technologies and equipment, performances, refrigerants, etc., may hide synergies from which both industrial and commercial systems might benefit, also,

but not only, from the points of view of reducing direct and indirect GHG emissions.

Track Chair: **Atilla Biyikoglu** | [abiyik@gazi.edu.tr](mailto:abiyik@gazi.edu.tr)



4. Jurisdictions globally are confronting climate change and recognizing that building decarbonization is an important component in their efforts. The worldwide building sector accounts for about 40% of energy-related carbon emissions and buildings remain a major sector that lacks sufficient mitigation policies. As the standards authority for energy usage in buildings, ASHRAE recognizes that our long-standing initiatives in energy efficiency should be expanded to building decarbonization. This track seeks papers and programs that demonstrate the industry's decarbonization efforts.

Track Chair: **Som Shrestha** | [shresthass@ornl.gov](mailto:shresthass@ornl.gov)



5. Many different hydronic systems are used in the built environment. This track looks at heating hot water, domestic water, chilled water, condenser water, etc.

Track Chair: **Joe Chow** | [joe.ashrae@gmail.com](mailto:joe.ashrae@gmail.com)



6. Many different parameters come into play when designing and constructing a finished space. This track looks at how these parameters work with and against each other.

Track Chair: **Ahmed H Abdel Salam** | [ahmed.abdel-salam@usask.ca](mailto:ahmed.abdel-salam@usask.ca)



7. ASHRAE Standards 55, 62 and 90 require many things – some of which seem to be in conflict with each other. This track looks at these standards as well as Guideline 10 and their effect on the final project as well as on each other.

Track Chair: **Kristen Cetin** | [cetinkri@msu.edu](mailto:cetinkri@msu.edu)



8. Determining the best system for a project only goes as far as the control system design that makes all of the elements function together and properly. This track looks at various control strategies and their application within the built environment.

Track Chair: **Alekhya Kaianathbhatta** | [alekhya\\_k@rogers.com](mailto:alekhya_k@rogers.com)



9. There are numerous methods for delivering the final project (design-bid-build, design-build, construction manager at risk, indefinite-delivery/indefinite-quantity, etc.). This track looks at the different methods and how they produce the best results for the project delivery.

Track Chair: **Ehab Mamdouh Abu Taleb** | [ehab.mamdouh@ipeceg.net](mailto:ehab.mamdouh@ipeceg.net)

**6) Adjourn.**

### **Future Annual and Winter Conferences**

Winter 2024 - Chicago, IL - Jan. 20-24, 2024  
Annual 2024 - Indianapolis, IN - June 22-26, 2024  
Winter 2025 - Orlando, FL - Feb. 8-12, 2025  
Annual 2025 - Phoenix, AZ - June 21-25, 2025  
Winter 2026 – Las Vegas, NV - Jan. 31-Feb 4, 2026