



## **MINUTES**

### **TECHNICAL ACTIVITIES COMMITTEE**

2023 Annual Meeting

**June 24 & June 28, 2023**

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**June 24 & June 28, 2023**

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**PRINCIPAL MOTIONS  
TECHNICAL ACTIVITIES COMMITTEE  
June 24 & 28, 2023**

No.	Motion	Status
1	<p>that TAC approve formation of a new MTG.BEQ, Building EQ, with the following scope:</p> <p><i>MTG.BEQ will be responsible for the technical development, business development, planning, training, and marketing of programs for the Building EQ enterprise. Responsibilities include suggestions for research, development, and presentation of technical programs of all types on Building EQ and special publications detailing aspects of the Building EQ program.</i></p>	PASSED

**ACTION ITEMS  
TECHNICAL ACTIVITIES COMMITTEE  
June 24 & 28, 2023**

No.	Responsible Party	Action	Status
1	Aute	Tell MTG.RES to send to their strategic plan to interested parties for comment	
2	TAC	Develop TC training on balance category selection/balance	
3	Staff	Send request to members to update their balance category listing	
4	Staff	Check with IT to allow section heads to review balance categories	
5	Staff	Determine if roster links can include TC name/number	
6	Section Heads	Send information on US TAG participation to TCs	
7	Marple	Distribute MOP changes to TAC for consideration	
8	Staff	Remove TC 8.9 from website	
9	Aute/Kazanci	Review MTG proposal form to include MOP required information for MTGs	
10	Section 1 & 2	Review TG2.IAQMD and TC 1.12 scopes for overlap	
11	Brueckner	Suggest TC 3.8 utilize TC 3.3 meeting slot or avoid TC 3.1 meeting overlaps	
12	Staff	Research tools for helping recruit TC members	
13	Aute	Discuss MTG.GAI proposal and revise for resubmission	

## LIST OF ATTACHMENTS

- ATTACHMENT A:** MTG.RES strategic plan  
**ATTACHMENT B:** MTG.BEQ proposal  
**ATTACHMENT C:** Roster Project Flowchart  
**ATTACHMENT D:** TAC Strategic Plan  
**ATTACHMENT E:** TAC data on YEA participation  
**ATTACHMENT F:** 2024 conference program tracks  
**ATTACHMENT G:** MBOs 2022-23  
**ATTACHMENT H:** Modified MTG.BEQ proposal  
**ATTACHMENT I:** MTG.GAI proposal  
**ATTACHMENT J:** PEAC Leadership Presentation

## LIST OF ACRONYMS

ASME	American Society of Mechanical Engineers	PDH	Professional Development Hours
ASHRAE	American Society of Heating, Refrigerating and Air-conditioning Engineers	RES	Resiliency
BOD	Board of Directors	ROB	Rules of the Board
CTTC	Chapter Technology Transfer Committee	RP	Research Project
CNV	Chair Not Voting	SH	Section Head
DEI	Diversity Equity and Inclusion	TAC	Technical Activities Committee
FG	Functional Group	TC	Technical Committee
GTIC	Global Technical Interaction Committee	TFBD	Task Force for Building Decarbonization
ISI	International Standards Interaction	TG	Task Group
MBO	Management by Objectives	TRG	Technical Resource Group
MOP	Manual of Procedures	US TAG	United States Technical Advisory Group
MTG	Multi-disciplinary Task Group	YEA	Young Engineers in ASHRAE

**MINUTES**  
**TECHNICAL ACTIVITIES COMMITTEE**  
**June 24 & 28, 2023**

**MEMBERS PRESENT:**

Craig Messmer, *Chair*  
 James Bennett, *Vice Chair*  
 Kevin Mercer, *Training Coordinator*  
 Corey Metzger, *Section 1 (7-12)*  
 Tina Brueckner, *Sections 3*  
 Patrick Marks, *Section 4*  
 Kevin Marple, *Section 5*  
 Doug Reindl, *Section 6*  
 Satheesh Kulankara, *Section 7*  
 Charles Henck, *Section 8*  
 Brad Cochran, *Section 9*  
 GD Mathur, *Section 10*  
 Vikrant Aute, *MTG*  
 Ongun Kazanci, *MTG*  
 Luke Leung, *BOD Ex-O*  
 Sarah Maston, *Coordinating Officer*

**GUESTS:**

Ian Cavanaugh  
 Kyle Gluesenkamp  
 Elizabeth Jedrlinic  
 Steve Kujak  
 Kashif Nawaz, *Incoming Member*  
 Lan Chi Nguyen-Weekes, *Incoming Member*  
 Kay Thrasher  
 Martin Weiland

**ASHRAE STAFF:**

Steve Hammerling, *MOTS*  
 Tara Thomas, *AA*

**MEMBERS NOT PRESENT:**

Jason Atkisson, *Section 1 (1-6)*  
 Jon Cohen, *Section 2*

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1. **Call to order**  
 Chair Craig Messmer called TAC meeting to order just after 8:00 AM EDT.
2. **Determine quorum**  
 Staff confirmed quorum at the start of the meeting with 11 of 16 members in attendance.
3. **Identify and welcome guests**  
 Messmer welcomed all in the room and on virtual meeting room. Members, incoming members, and guests introduced themselves.
4. **Code of Ethics:**  
 The chair reminded all “*we shall avoid all real or perceived conflicts of interests.*”. With the recent CHANGES to the TC MOP requiring BALANCE for the voting membership we remove the appearance of bias and conflict of interest.
5. **Reminder of 22-23 assignments**

TAC Member 2022-23	Role
Craig Messmer (23)	Chair
Jamie Bennett (24?)	V. Chair
Kevin Mercer (25?)	Training Coordinator
Jason Atkisson (25)	Section 1 (1-6) to take all of Section 1 later.
Corey Metzger (25)	Section 1 (7-12)

Jon Cohen (23)	Section 2
Tina Brueckner (26)	Section 3
Patrick Marks (26)	Section 4
Kevin Marple (24)	Section 5
Doug Reindl (25)	Section 6
Satheesh Kulankara (24)	Section 7
Charles Henck (23)	Section 8
Brad Cochran (24)	Section 9
Gursaran Mathur (27)	Section 10
Vikrant Aute (26)	Section MTG ( <i>HCDG, LowGWP, RAC, RES, VIC</i> )*
Ongun Kazanci (27)	Section MTG ( <i>ACR, BIM, CEA, CYB, EBO</i> )*
Luke Leung	Ex-O
Sarah Maston	CO

\*proposed assignments

6. **Changes/approval of the agenda**

No changes were requested.

7. **DRAFT minutes from TAC #1-10 Meetings**

Draft notes on TAC Basecamp (<https://3.basecamp.com/3106353/projects/389454>)

8. **Possible Motions**

1. (Aute) TAC Motion to approve MTG.RES Resiliency Strategic Implementation plan

MTG has requested TAC to approve plan (**Attachment A**). TAC agreed for them to share/get feedback from interested parties (TC 2.10, others represented on MTG, other FGs)

Aute would tell the MTG to send to interested parties for comment (**Action Item 1**). TAC section heads can help if requested. Implementation of this plan would be done through various efforts (RP, standards, design guides). Their roadmap could eventually be reviewed by Tech Council.

2. (Kazanci/Aute) Motion to approve MTG.BEQ

TAC discussed a proposal for an MTG.BEQ (**Attachment B**). This MTG would be a continuation of the Building Energy Quotient standing committee reporting to the ASHRAE Board of Directors that currently administers the ASHRAE BEQ program. The BOD aims to streamline and help BEQ function better under Tech Council and TAC as an MTG.

The BOD asked TAC to consider the request before July 1. TAC had a list of questions. Aute and Kazanci would meet with proposal representatives (Hunt, Deru) to address before TAC's Wednesday meeting and could consider the proposal at that time.

9. **(Messmer) TAC 22/23 Successes**

1. New TG9.SPACE approved
2. New TG2.IAQMD approved
3. New TC7.10 (formerly MTG.OBB) approved
4. New MTG.BEQ approved
5. Program Track Reviewers assigned. Program reviews for Atlanta and Tampa.

6. TC standards and handbook responsibilities posted to TAC basecamp and TAC/TC Leadership basecamp
7. Hightower Award winner approved
8. Published Journal article to generate interest in joining TCs (Smith and Constantinide)
9. TAC arranged with staff to give training on hybrid meetings (Jan 24)
10. Monthly TAC meetings.
11. Integrate Handbook Training into Chairs Breakfast (Tampa)
12. Handbook training took place as part of TAC breakfast during the 2nd hour of the breakfast.

10. **(Messmer) Old business / Action Items (Please be prepared to respond to below action items)**

- a. Kay Thrasher from Publications Committee addressed TAC. She noted Publications is always seeking input on what technical guidance and publications is needed. If TCs have ideas for publications that should be developed, what should be translated, etc. they are always seeking recommendations.
- b. CTTC initiative  
Metzger noted he attended CTTC and there's still a focus on getting grass roots members to attend FG meeting and engage or participate in FG efforts. Constantinide gave the presentation he and Smith developed at some ASHRAE chapter meetings.

TAC could ask for help plugging TC participation at TechHours

- c. (Mercer/Kulankara) PDH credits for auto tutorials
  - Kulankara was asked to be Training Coordinator for next Society Year
- d. Electronic Roster Implementation  
Staff continues to work with vendor on an online roster update tool. Test cases for specific TCs (9.9, others) have meet developed. A flowchart that formed the basis for the statement of work in included as **Attachment C**. The aim is for the tool to be ready at the start of the next roster rollover process in Chicago.

Marple asked that TAC members get training on new electronic roster implementation.

Reindl asked about interested categories (producer, user, general) and if they'd be included on rosters, noting they should be accessible if we're going to track balance. Thomas noted they were not included on latest rosters, only employer was listed. Currently, the definition and assignment of interest categories is left to discretion of TC chairs. We have a requirement, but no central way of defining/tracking. There should be training developed for TC chairs to assign a category (**Action Item 2**) and members should be requested to suggest their balance category for inclusion (**Action Item 3**).

Thomas was asked to check with ASHRAE IT to update TC rosters so section heads can review with interest categories listed (**Action Item 4**).

TAC asked a question on current rosters – if the TC name and number can be included in the link, or if a hyperlink can be made. Currently, the link is cryptic, and you cannot tell which TC the file is if downloading multiple files without opening. Thomas would look and see if this can be improved (**Action Item 5**).

- e. (Leung/Messmer/Bennett) Status of TFBFD liaison recommendations
  - Update

Leung would give an update at Part B meeting.

- f. (Kulankara) Activity Form / Section Head Reports status.
- Reports
    - Summary report
    - Files for use at Tampa meeting are now posted to Basecamp (<https://3.basecamp.com/3106353/buckets/389454/vaults/6179478893>).
    - Kulankara asked that sections upload their summary forms by July 31. He would then compile reports for 2<sup>nd</sup> monthly TAC meeting. FGs are asked for their FG forms by Wednesday of meeting. Kulankara suggested most of form be completed before meeting, then add data from actual meeting.
- g. (Messmer) FG Evaluation forms for Winter Meeting
- Update/summary report  
FG Evaluation forms were not requested at Annual Meeting, but would be focus of Winter Meeting.
- h. (Mercer) What training topics do we need to cover?
- Training topic for 2023 Annual Meeting
    - Handbook training
    - Draft breakfast agenda is shown below
- i. Intl Standards Interaction (ISI) Task Group status. (Bennett)
- After the Tampa meeting, ISI will be an ASHRAE standing committee under Technology Council called the Global Technical Interaction Committee (GTIC). This group will face outward beyond North America. It is expected that the Vice-Chair of TAC will be a member of GTIC. Kazanci noted an interest in participating on GTIC.
  - Nominations to fill GTIC positions and subcommittee positions coming soon
  - Seminar 24: Future Proofing our Built Environment through Global Collaboration. Monday, June 26, 2023 at 8:00 AM to 9:30 AM
  - To all Sections: the GTIC is asking the TCs for responses to ISO TC 205, 163, 86, 142 actions. ASHRAE administrates these U.S. TAGs. Standards 205 and 163 have urgent need for ASHRAE member input
  - TAC discussed what can be done to motivate involvement? Activity form? YEA?  
TAC section heads were asked to make their FGs aware and spread word (**Action Item 6**). There is a US TAG page on ASHRAE website ([www.ashrae.org/technical-resources/standards-and-guidelines/international-secretariats-and-us-tags](http://www.ashrae.org/technical-resources/standards-and-guidelines/international-secretariats-and-us-tags)). Ryan Shanley ([rshanley@ashrae.org](mailto:rshanley@ashrae.org)) would be staff contact if anyone is interested.
- j. MOP changes
- Marple noted he would send language for MOP changes for consideration at future TAC meeting (**Action Item 7**).
- k. Section issues (Section Heads)
- Issues of note:
- Section 6 (Reindl)
    - TC 6.6 Service Water Heating Systems, handbook chapter A51 revision dispute  
TAC went into Executive Session to discuss TC 6.6 Handbook issue.
- Reindl would reach out to commenter for input and to assure involvement. In meantime, TC 6.6 would be asked to consider revising online version of handbook with volunteer involvement.



Legal issue raised related to ASME case was sent to Reiniche for consideration.

Reindl is keeping eye on TC 6.10 and employer support in response to decarbonization efforts.

- Section 8 (Henck)
  - Henck noted TC 8.9 was merged with another TC but is still listed on website. Staff was asked to remove (**Action Item 8**).
- Section 1 (Metzger)
  - TC 1.8 has had issue contacting Handbook liaison and will help put them in touch with appropriate volunteer and staff if necessary.
- Section MTG
  - Roster updates for MTGs still appears to be an issue.
  - There have been a number of requests for MTG websites
  - TAC should develop and activity form for MTGs as well and list in MTG MOP

#### 11. **(Leung) BOD Ex-O / (Maston) Coordinating Officer**

- a. BOD Ex-O report  
Leung would give Ex-O report Wednesday
- b. CO report  
Maston thanked TAC members for their continued great work.

#### 12. **(Messmer) New Business**

- a. TAC strategic plan
  - 1. A subcommittee developed a strategic plan for TAC, shown as (**Attachment D**).
- b. YEA/TC cooperation - Discussion with Elizabeth Jedrlnic

TAC wishes to explore how TAC can get YEA members more involved in TCs. YEA committee member Elizabeth Jedrlnic addressed TAC and shared some data:

- 9000 YEA members, 574 on TCs. (6%).
- 38% of YEA attendees at Winter Meeting were on TCs, so this is a driver in getting attendance.
- Aims to have YEA liaison on TCs.
- There is a motion being drafted to give voting YEA members on TCs a discount on meeting fee (low impact fiscally to ASHRAE but very helpful in getting YEA members to attend)

Messmer thanked for attending and noted TAC has the same goals. TAC tracks data on YEA participation at meetings and shared with Jedrlnic (**Attachment E**).

TAC members Marple and Kazanci agreed to liaise with YEA. TAC will consider what can be done to help train TCs on importance on YEA member participation (YEA mixer, YEA subcommittees)

- c. TAC review of 2024 ASHRAE Annual Conference Technical Program Tracks (**Attachment F**)  
Messmer asked for help in reviewing Technical Program Tracks. He

13. **(Mercer/Marple) Training**

- a. Draft Breakfast agenda:
  - 7:00-7:08: (Messmer) TFBD – Luke Leung
  - 7:08-7:16: (Mercer) Alice Yates – White House task force event
  - 7:16-7:24: (Mercer) Virtual Meeting tips
  - 7:24-7:35: (Messmer) TAC strategic plan & DEI (will add slide on DEI training ASHRAE has put together) (Metzger asked all to review vids before Tampa)
  - 7:35-8:00: section heads meet with sections
    - Items to emphasize
      - YEA engagement
      - Activity Form deadline
  - 8:00 -9:00: Joint meeting between Handbook Training and Chair breakfast  
Adrienne Thomle and Heather Kennedy will lead training with a goal of educating TC leadership on how to be more functional with handbooks.

14. **(Messmer) 2022-23 MBOs**

A final report on MBOs (**Attachment G**) would be reported to Tech Council's Operations Subcommittee.

**RECESS**

**RECONVENE**

Messmer reconvened TAC for Part B meeting at 7:00 AM on Wednesday June 28, 2023

15. **SECTION HEAD REPORTS (3 to 5 minutes per section)**

Presenting highlights only from their written reports submitted earlier

Kulankara noted a small error in Section Head Dashboard would be fixed shortly. Please use file with 23-A2 designation.

TAC considered MTG.BEQ request from Saturday.

(X) It was moved (Metzger) and seconded (Henck) that TAC approve formation of a new MTG.BEQ, Building EQ, with the following scope:

MTG.BEQ will be responsible for the technical development, business development, planning, training, and marketing of programs for the Building EQ enterprise. Responsibilities include suggestions for research, development, and presentation of technical programs of all types on Building EQ and special publications detailing aspects of the Building EQ program.

BACKGROUND: Modified proposal show in **Attachment H**.

**MOTION 1: 13-0-0 CNV PASSED**

Aute and Kazanci were asked to review MTG proposal to consider information requested in MTG MOP (balance, task, time, funding?, etc.) (**Action Item 9**).

### Section 1 – Metzger

- check 1.13 scope on website to make sure updates are reflected.
- Some TCs are seeking a connection with TFBD
- TC 1.2 noted new TG.IAQMD was within their scope. TAC to explore further (**Action Item 10**).

### Section 2 – Cohen

- Marks noted TC 2.4 ran a hybrid meeting really well with their own meeting gear (mics, audio, etc.). Other TCs had audio issues with ASHRAE equipment.
- Bennett noted that the TC know the TFBD is disbanding (in 1 year) with work rolling into TCs. Leung noted this will happen eventually, with majority of work will go to TCs, but TFBD extended thru 2023-24.

### Section 3- Brueckner

- TC 3.8, Refrigerant Contaminants, was recommended rolling into TC 3.2, Refrigerant Chemistry, but there are concerns about 3.8 getting lost in 3.2. It was suggested that the TC 3.8 meeting avoid conflicting with TC 3.1 as many would attend both if possible. TC 3.1 may also be better suited to include as a subcommittee if they can modify scope to include.
- Brueckner was asked to consider proceeding as TC 3.7 iwht a new chair and to avoid meeting overlaps w 3.1, 3.2, etc. The old TC 3.3 slot should be available now that its disbanded (**Action Item 11**).

### Section 4 – Marks

- TC 4.5 is seeking guidance on how to get involved with TFBD, don't currently have a liaison (sent name to Luke).
- TC 4.3 comments on RP, issues w/references, MTG.ACH (1833). Marks will connect them.

### Section 5 – Kevin

- TC 5.4 may need some help with their operation

### Section 6 – Reindl

- Noted he discussed TC 6.6 handbook issue with commenter, and they seemed OK and encouraged by incoming chair. Can consider issue addressed for now.
- TC 6.10, Fuels and Combustion. New chair attended and TC is regaining footing and more positive outlook. Aim to cosponsor a TC 6.3 RP on hybrid fuels.

### Section 7 – Satheesh

- Some experienced problems with hybrid meeting issues related to internet connection (need to use meetings dedicated wifi)
- Some issues with overlapping meetings (inter and intra section meetings), prefer older process
- TC 7.3 had some roster issues to work out with Thomas
- Staff was asked to see how we can help advertise need for members on TCs? (**Action Item #12**)

### Section 8 – Henck

- Echoed some issues from other sections

### Section 9 – Cochran

- Noted new members get a free conference registration, but process is a bit unclear. We should make clear to help recruit new member
- Working with Metzger to help lead and organize TC 9.7
- Can we auto add SH's to each FG basecamp? Basecamp should be more closely linked with roster. Data Coordinator to look at Basecamp cleanup. Basecamp training as part of TC training.

#### Section 10 - Mathur

- Echoed some issues from other sections

#### Section MTG – Kazanci /Aute

- check to see if MTG. VIC is still active
- many MTG rosters are outdated and need work.
- Proposal for MTG.GAI (**Attachment I**)
  - A number of issues with proposal were identified (no timeline, scope should be limited in time, not permanent). Aute would discuss issues with proposer to revise and submit in future (**Action Item 13**).

#### 16. **Unfinished Business**

- a) Leung gave PEAC presentation (**Attachment J**). Highlights include:
  - Thank you letter request for employers by August 12.
  - Nominations due Sept. 2023 (TAC) and Feb. 2024
  - TFBFD focus now on whole life carbon, including embodied carbon.

#### 17. **New Business**

- a) Thank outgoing members
  - Craig Messmer, Corey Metzger, Jon Cohen, Charlie Henck
- b) Welcome incoming members
  - Money Khanna, Lan Chi Nguyen-Weekes, Kashif Nawaz
- c) New assignments
  - TAC Data Coordinator (Kulankari)
  - TAC liaison to CTTC (Metzger)
  - TAC liaison to YEA (Marple, Kazanci)
  - Section head assignments to be determined

#### 18. **Next Meeting**

- a. Monthly TAC meeting in late July or August.
- b. ASHRAE Winter Conference – January 20 & 24, 2024 – Chicago, IL

#### 19. **Adjournment**

The TAC meeting adjourned at approximately 10 AM EDT.

# ASHRAE

## Roadmap to Resilience

Resilient buildings and communities is one of four major goals of the ASHRAE 2019-2024 Strategic Plan. While resilience has become a hot topic among both the public and the engineering community, specific guidance on how to achieve resilience is generally not available. There is great interest within ASHRAE to work to improve resilience in the built environment but given the breadth of the resilience concept there is a need to prioritize activities and direct the overall effort towards specific goals. This document provides a roadmap for implementing specific measures within ASHRAE to incorporate resilience concepts across its many activities.

**Overall Goal:  
Position ASHRAE as the worldwide leader in  
HVACR resilience.**

### Background

Resilience, as defined in the ASHRAE and CIBSE Position Document on Resiliency in the Built Environment is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events.

The ability to absorb adverse events involves identifying the hazards, setting appropriate design levels, and designing to achieve a specified performance when subjected to the hazards. In the past the design typically followed a prescriptive approach where both the hazard and the design requirements are required by standards, codes, etc. Performance based design, where the owner and designer have more flexibility in terms of the design requirements has been gaining in acceptance, but attempts to achieve enhanced resilience are often met with resistance since they go beyond simple code compliance.

Preparing and planning for hazards have been dictated, to a large extent, by using hazards and design levels specified in codes and standards. These hazard levels have traditionally been based on historical data, but efforts are underway to consider future effects such as climate change when determining design levels over the life of a project.

Considering recovery after an event is a relatively new concept for most designers. Since designing for no damage under any circumstances is not realistic, if we want a resilient building we must

determine acceptable levels of damage, including how a building should be used after an event, and the resulting requirements for functionality from the building systems. This is the main goal of designing for enhanced resilience – determining the requirements and designing to ensure the building delivers that performance with an acceptable time and cost of repairs.

## **Sustainability and Resilience**

Sustainability and resilience are often conflated in discussions, even though the concepts are separate and sometimes in conflict. Some components of sustainability, such as energy efficiency, may lead to improved resilience, while others might make a building less functional if there is a loss of power or water. Further, for some buildings, such as emergency response shelters or hospitals, resilience is of primary importance, although the goal is to design for maximum sustainability within the functionality restrictions imposed by the intended use.

## **Roadmap Overview**

The activities that ASHRAE will undertake to advance the overall goal of worldwide leadership in HVACR resilience can be divided into three broad conceptual categories: Coordinate, Develop, and Propagate. Each category consists of specific activities that ASHRAE will undertake, which are further characterized into the groups of Technical, Education, and Research.

***Coordinate:*** Achieving true resilience in the built environment requires that all the pieces work together. Coordinating ASHRAE resilience-related activities will not only ensure that the developed products lead to truly resilient designs, but also that ASHRAE resources are used in a manner that advances resilience, eliminates duplication, and provides cost-effective benefits to the membership and society at large. The requirement for cost-effectiveness of ASHRAE efforts involve not only monetary investments, but also the most valuable of resources – the time and energy of the members. Coordination also involves working with other technical societies and governmental and academic institutions.

***Develop:*** Standards, guidelines, user manuals, operation guides, educational guides and programs, etc. are the means by which ASHRAE technical expertise is documented and utilized. It is crucial that ASHRAE be the source of this information rather than letting others dictate how our members design HVACR systems. However, as ASHRAE moves towards development of resilience-related materials these efforts must be coordinated to ensure a holistic approach and disseminated to enhance their reach.

***Propagate:*** ASHRAE can develop forward thinking resilience materials, but unless these materials are disseminated they are of limited use. Dissemination includes making the material available to both the technical and policy communities, but also provision of education on their application.

***Technical:*** Technical activities will be the backbone of ASHRAE's efforts regarding resilience. Without a strong, scientifically based technical framework the drive to produce more resilient buildings will eventually dissipate.

**Education:** Educating ASHRAE members and others on resilience in HVACR systems is essential to successful implementation of increased resilience in design, and also for continued support of ASHRAE activities regarding resilience.

**Research:** There is clearly a need for research into improving resilience in HVACR systems. However, it is not currently apparent which topics will provide the most return on investment to ASHRAE and its members.

ASHRAE Activities to Promote Enhanced Resilience				
Category	Group	Activity	Priority	Time Frame
Coordinate	Technical	C1: Develop overarching resilience technical goals	High	Short
	Technical	C2: Provide guidance to TCs and other groups	High	Medium
	Education	C3: Convene resilience meeting coordination	Mid	Short
	Research	C4: Convene resilience research coordination	Mid	Short
Develop	Technical	D1: Standard development	Mid	Medium
	Technical	D2: Guideline development	Mid	Medium
	Technical	D3: Other technical development	Mid	Long
	Technical	D4: Resilience webinar series	Mid	Short
	Education	D5: How-to guides	Mid	Long
	Research	D6: Research proposal guidance	Mid	Medium
Propagate	Technical	P1: Incorporate ASHRAE products	High	Long/Continuing
	Education	P2: Resilience webinar series	Mid	Short
	Education	P3: Short courses	Low	Long
	Education	P4: Support ASHRAE outreach	Mid	Medium
	Research	P5: Collect research ideas	High	Short

## Activity Descriptions

### Coordinate

**C1: Develop overarching resilience technical goals:** Work closely within ASHRAE with all appropriate TCs and groups external to ASHRAE to develop overarching resilience goals and guidance. It is expected that the Resilience MTG will perform this role, in conjunction with Tech Council.

**C2: Provide guidance to TCs and other groups:** Provide guidance and oversight to TCs and other groups within ASHRAE to ensure that their products are consistent with the overall resilience roadmap. A new group may be required to perform this activity

**C3: Convene resilience meeting coordination:** A dedicated group will be established to evaluate resilience-related conference proposals to ensure that they actually address resilience, and in a way that is consistent with ASHRAE policies on resilience. Too many programs reference the hot term of the moment but have little actual relation to the topic.

**C4: Convene resilience research coordination:** Set up a group within RAC to specifically evaluate resilience related research proposals for both technical excellence and how they fit into the overall ASHRAE resilience roadmap. This group would also ensure that the project is suitable for ASHRAE funding, and not more appropriate for basic science funding agencies such as NSF or DOE.

## **Develop**

**D1: Standard development:** Develop standards that can be adopted into the building code to promote more resilient designs. These standards must be designed to work together to produce truly resilient buildings rather than a series of individual unrelated systems.

**D2: Guideline development:** Develop design guides, user manuals for commissioning, etc. to support the standards activities and promote wider use amongst the design community.

**D3: Other technical development:** Develop, as appropriate, handbook chapters, software, models, sequence of operations, and other advanced tools to assist designers looking to enhance resilience in their projects.

**D4: How-To Guides:** Development of “how-to” guides either stand alone or supporting other standards and guidelines. See, for example, the ASHRAE Datacenter short guide books.

**D5: Research proposal guidance:** Develop guidelines for TCs to use in determining what information is missing that will advance their efforts to develop technical information on resilience. This guideline could include a checklist of items to be considered when evaluating a resilience research topic/proposal. Of particular importance is supporting standard, guideline, and handbook chapter development since these items are of the most use to ASHRAE members.

## **Propagate**

**P1: Incorporate ASHRAE products:** Work to integrate ASHRAE’s technical documents into the building code, rating systems, and other building design projects globally.

**P2: Resilience webinar series:** A dedicated resilience webinar series to provide general information on resilience to ASHRAE members would include topics such as what is resilience, how it affects/will affect design practice, how building resilience impacts communities, and updates on activities within ASHRAE. Ideally these webinars would be free to members to encourage attendance and member involvement in ongoing activities.



**P3: Short courses:** ASHRAE short courses related to technical documents as they are developed. The short courses should be available online and/or in-person at every ASHRAE winter and summer meeting.

**P4: Support ASHRAE outreach:** Active support of presenting ASHRAE resilience initiatives to other audiences such as government officials, building owners/developers, architects, etc.

**P5: Collect research ideas:** Use ASHRAE publications and meetings to solicit input regarding resilience research priorities. Develop an ASHRAE “Think Tank” regarding resilience, and hold a workshop(s) to collect research priorities. Allow the general membership a voice in identifying those areas most in need of new information.

## Resource Commitments

Money - research, webinar development, coordination travel, workshops, etc.

Staff

Space - slot at meetings? meeting space, etc.

# MTG PROPOSAL FORM

Return Form to:  
Assistant Manager of Research & Technical Services  
ASHRAE  
180 Technology Parkway NW  
Peachtree Corners, Georgia 30092  
☎404-636-8400 • Fax 404-321-5478  
E-mail: amorts@ashrae.net

**Date:** June 5, 2023

\* Turn in no later than 3 weeks prior to the meeting for consideration by TAC

**MTG Name:** *BUILDING EQ (MTG-BEQ)*

**MTG Scope:** MTG.BEQ will be responsible for the technical development, business development, planning, training, and marketing of programs for the Building EQ enterprise. Responsibilities include suggestions for research, development, and presentation of technical programs of all types on Building EQ and special publications detailing aspects of the Building EQ program.

<sup>1</sup>Please see page 2 for an example of a MTG scope.

**Impact on TC/TG/TRGs and Other MTGs:** The Building EQ portal provides a credible and accessible approach to assess the as designed and operational performance of buildings, assists the user through an ASHRAE Level I energy audit, and provides recommendations for improvement. The Building EQ committee has worked with several ASHRAE functional groups in the development and promotion of the Building EQ platform. MTG.BEQ will continue these collaborations to leverage technical developments, sponsor research programs, and align with applicable ASHRAE standards to support ASHRAE building performance and decarbonization goals.

## **MTG Roster:**

Requirements below apply to MTG Rosters Only:

- \* Only one person from each TC/TG/TRG or non-TC group participating in MTG may serve as voting member.
- \* The Chairs or leaders of participating TC/TG/TRG s or non-TC groups will designate the MTG member to represent their group with a vote on the MTG.
- \* Alternate Members are nominated by the MTG Chair, and there are no restrictions on the number or affiliations of nominees
- \* Alternate Members are expected to participate in MTG activities and attend meetings when possible.
- \* An Alternate Member normally has no right to vote at the MTG level, but can vote at the MTG subcommittee level
- \* An Alternate Member may be given proxy authority, however, by a MTG voting member to vote in his or her absence so that groups participating in the MTG are always represented in a MTG vote.
- \* Chair & Vice Chair must be ASHRAE members

	<i>Position</i>	<i>Person's Name:</i>	<i>TC/TG/TRG or Non-TC Group Affiliation</i>	<i>ASHRAE Member #</i>
1	<b>Chair:</b>	Michael Deru		
2	<b>Vice-Chair:</b>	Doug Cochrane		
3	<b>Voting Member:</b>	Supriya Goel	TC7.6	
4		Bill Dean	TC7.9	
5		Daniel Redmond	TC9.7	
6		??	TC2.8	
7		Rupesh Iyengar	PLC	
8		John Constantinide	BOD	
9		Matthew Mullen	MTG.EBO	
10		Charles Eley	SSPC 189.1	
11		Chris Balbach	SSPC 211	
12		Megan McNulty	GAC	
13		Austin Wallace	ASHE	
14		Kate Callahan	GBI	
15		Jaideep Karnik	At Large	
16		Esteban Baccini	Region XII	
17	Alternate Member:	Trent Hunt	PLC	
18		Wade Conlan	TC7.9	
19		Kara Brooks	ASHE	
20		Emily Bowers	GBI	
21				

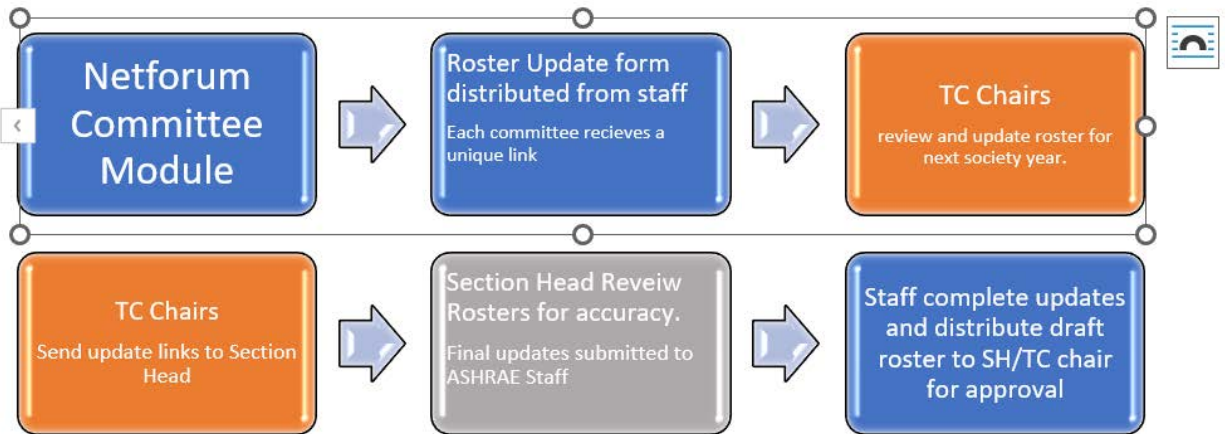
**T A C U S E O N L Y :**

Date Received: \_\_\_\_\_ Date Sent to TAC/FP: \_\_\_\_\_ Meeting Date: \_\_\_\_\_ Approved?    Yes    No

**Example Scopes**

***Multidisciplinary Task Group 0001, Building Energy Quotient***

*MTG 0001* will coordinate TC/TG/TRG technical activities to help support the technical basis and adoption of the Building Energy Quotient program. Responsibilities include suggestions for research, development and presentation of technical programs of all types on bEQ, and a special publication detailing aspects of the bEQ program.



Each committee shall have a Chair and Vice Chair

Each committee has mandatory positions. In some cases, the same person is assigned to multiple positions. If this is the case, the positions are outlined in the print on roster field.

**Mandatory Positions**

- Chair
- Vice Chair
- Secretary
- Standards Subc Chair
- Research Subc Chair
- Handbook Subc Chair
- Program Subc Chair
- Webmaster

Each committee consist of approximately 12 Voting Members, with a minimum of six (6) and a maximum of eighteen (18)

*Would like to have the number of voting members tallied before the roster update form can be submitted. If the minimum number is not met, there should be a message to prompt them to add more members.*

TC Chairs voting terms consist of 2 years

Voting Member terms consist of 4 years

*When a position changes, the begin date of a voting member changes but the end date remains the same.*

Corresponding members – non voting members these members are not assigned an end date.

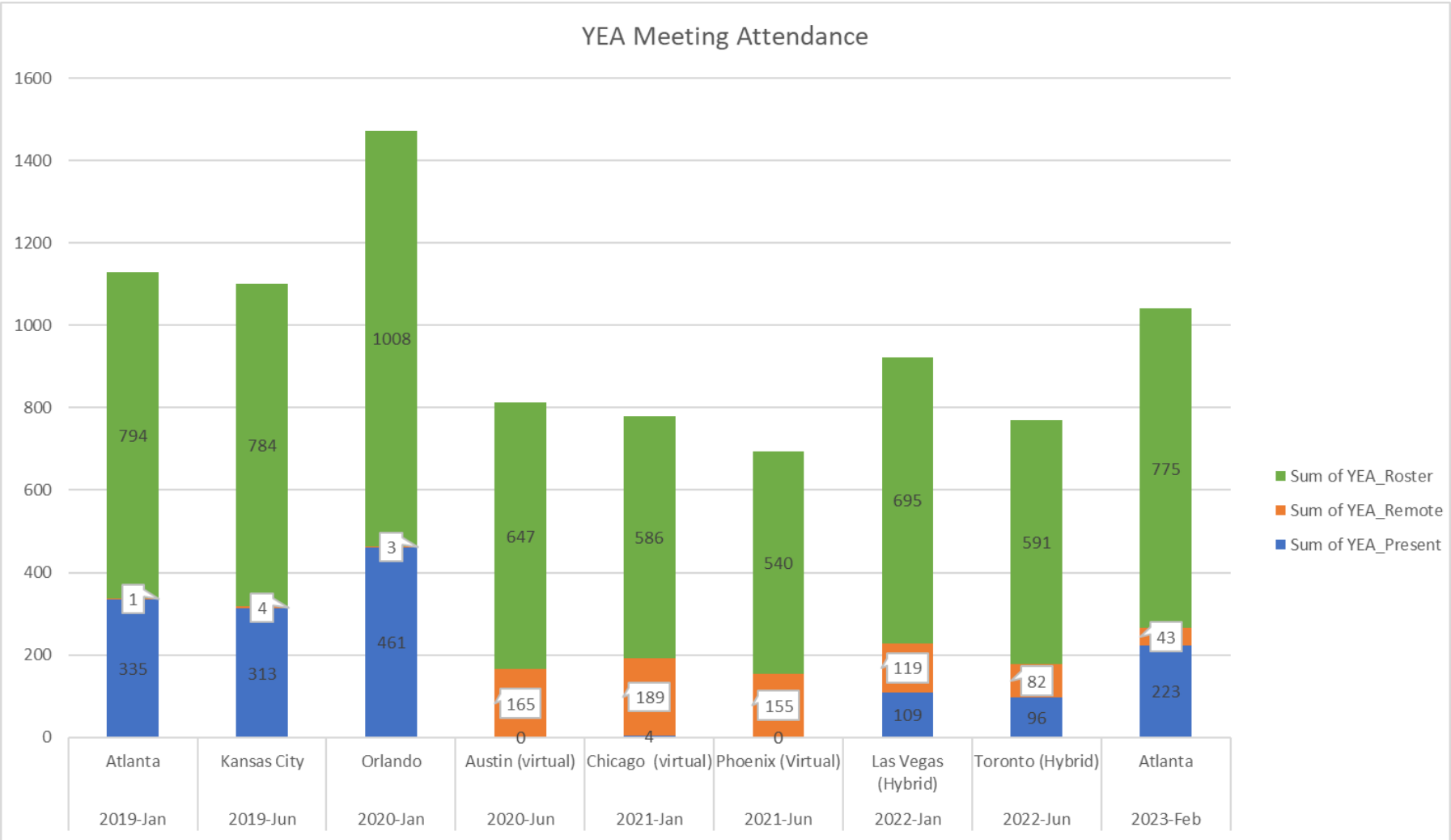
## Proposed TAC Strategic Plan (2023-03-16)

Title: Technical Activities Committee Strategic Plan for Enhancing Committee Efficiency and Cohesion within ASHRAE

Vision: Align committee initiatives with ASHRAE's strategic goals to promote long-term growth and sustainability.

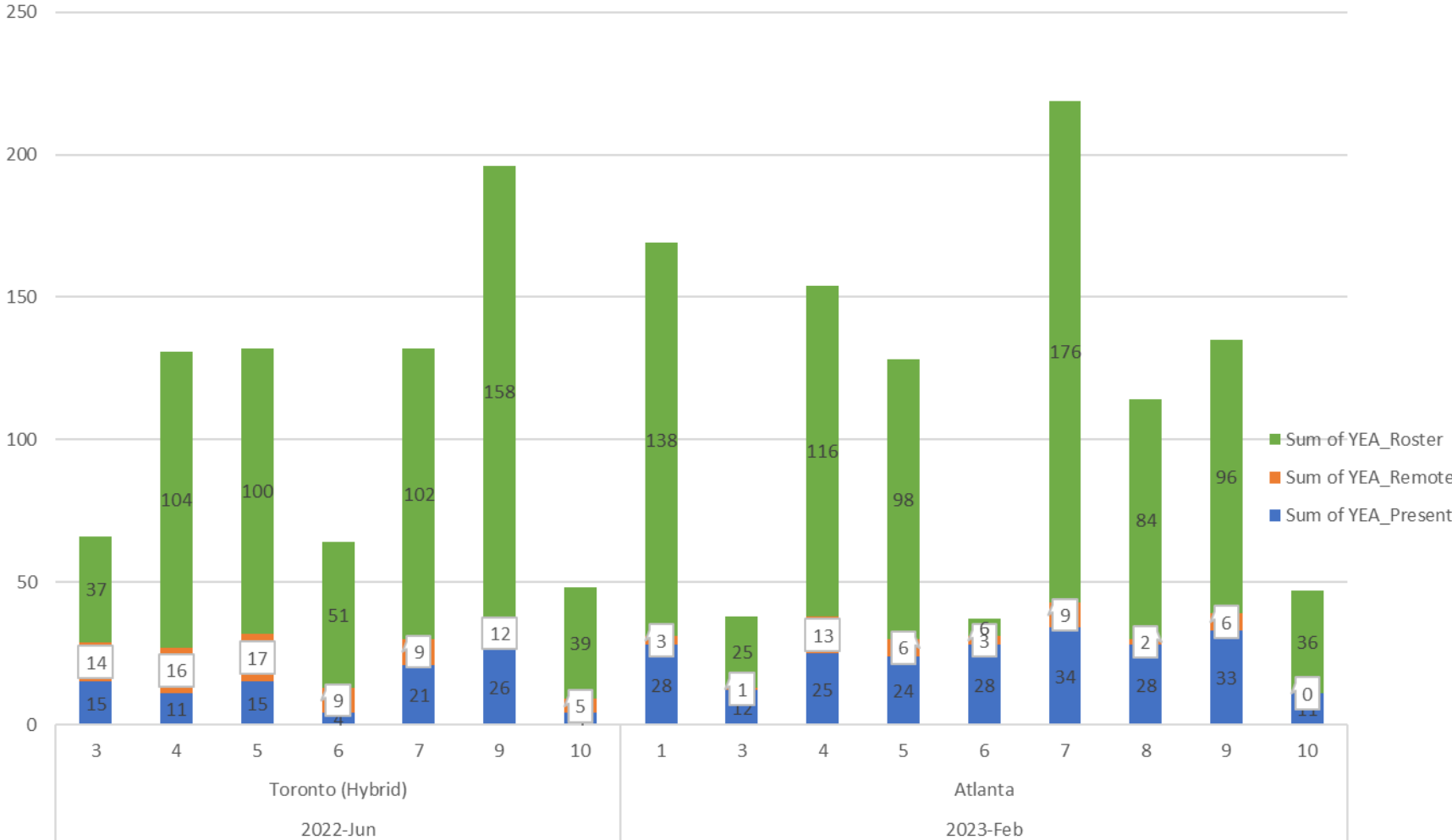
Mission: By implementing this strategic plan, we aim to align committee initiatives with ASHRAE's strategic goals, fostering an environment that encourages communication, collaboration, and engagement among all members. This will ultimately contribute to the long-term growth and sustainability of ASHRAE. (Too many task forces because not enough foresight from standing committees.)

1. Reinstate regular section meetings with a strategic focus
  - 1.1. Encourage all sections to meet virtually, as needed, between conferences.
  - 1.2. Align section meetings with the organization's goal of becoming an essential knowledge resource and maximizing member value and engagement.
  - 1.3. TAC leadership to provide a scripted agenda for long-range strategic and vision planning.
2. Empower TAC as a strategic organization to increase new members, maximize member value and engagement. (Relevant, sustaining)
  - 2.1. Focus on providing vision, motivation, training, leadership, and assistance to FGs within a volunteer organization.
  - 2.2. Explore strategies for engaging and integrating YEA members into FGs and communities.
  - 2.3. Align TAC initiatives with the goal of maximizing member value and engagement.
3. Reevaluate and restructure Functional Groups (FGs) to optimize organizational structure
  - 3.1. Encourage mergers between FGs when it makes sense.
  - 3.2. Identify additional FGs that may benefit from mergers or restructuring.
  - 3.3. Develop an action plan to address underperforming FGs, including providing support, merging, or dissolving groups as needed.
  - 3.4. Align restructuring efforts with the goal of optimizing organizational structure for maximum effectiveness.
4. Arrange FGs and MTGs into sections that act as communities to improve local chapter engagement.
  - 4.1. Reorganize FGs into sections that can serve as communities for better collaboration and shared issue resolution.
  - 4.2. Consider downstream committees such as Standards, Guidelines, Research where possible.
  - 4.3. Actively seek FG input in restructuring to promote enthusiasm and participation.
  - 4.4. Establish regular meetings and communication channels within these communities to promote cooperation and mutual support.
  - 4.5. Engage with CTTC and/or YEA for input and suggestions on community development and member engagement.
  - 4.6. Align community initiatives with the goal of improving local chapter engagement, capacity, and support.
  - 4.7. Integrate board appointed committees into the TAC community structure to provide longer term viability.
5. Embrace bold and decisive actions for a sustainable, high-performance built environment.
  - 5.1. Recognize the need for change to ensure the organization's sustainability in the 21st century.
  - 5.2. Prioritize actions that challenge the status quo and drive organizational growth.
  - 5.3. Align strategic actions with the goal of positioning the organization as an essential knowledge resource for a sustainable, high-performance built environment.

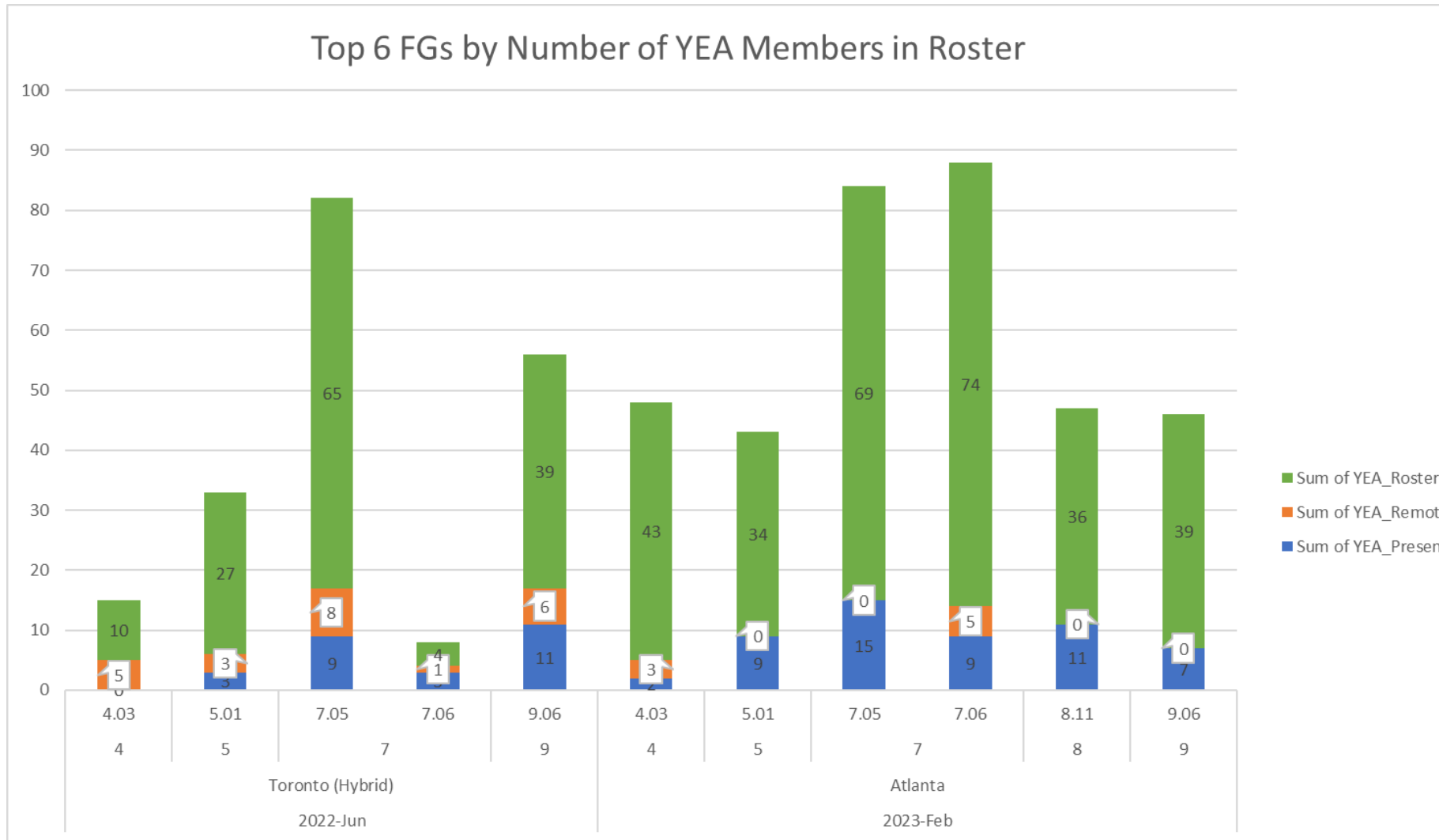


- 1) YEA attendance at FG meetings appears to be recovering along with general attendance
- 2) There seems to be a preference for in-person attendance even when remote option is offered

YEA Meeting Attendance by Section



- 1) There is some variance in YEA attendance between different sections
- 2) What can be done to improve YEA participation in all sections?



- FGs with the largest number of YEA members on roster at 2023 Atlanta meeting
  - What can other TCs learn from these TCs?



Dear Members of TAC,

I'm writing on behalf of Brian Fronk, the technical program chair for the 2024 ASHRAE Annual Conference in Indianapolis. The conference takes place June 22 – 26, 2024.

He has requested that I forward to you the proposed tracks for the conference for your review and comment.

Please see the track titles and abstracts below.

Would you please take a moment to review them and if you would like to make comments on the titles and abstracts or have other suggestions please let Brian know by **Monday, July 3**.

Thanks for your time and consideration of this request.

Best regards,

Tony Giometti

### **2024 ASHRAE Annual Conference Technical Program Tracks**

1. ***Fundamentals and Applications***

Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid flow, and heat and mass transfer. 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.

2. ***HVAC&R Systems and Equipment***

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, novel applications of existing systems and equipment, improvements to existing systems and equipment and the proper application and operation of systems and equipment.

3. ***Research Summit***

Active research, and the exchange of those research findings, are critical to the development of our HVAC&R industry and built environment. The 11th annual research summit invites researchers to share those results, including ASHRAE-sponsored research and research of interest to the ASHRAE community. Researchers are invited to present papers, extended abstracts, seminars, forums or participate in panel discussions. The Research Summit includes a partnership with ASHRAE's archival journal, Science and Technology for the Built Environment.

4. ***Professional Development***

As members of a professional organization, we participate not only for the great value of technical exchange, but also the interpersonal exchange. We recognize that the single greatest strength of our organization is its membership. This track is designed to allow those professionals an opportunity to develop in the areas of presentation skills, leadership, team building, understanding various business operations, interpersonal skills, etc. The Professional Development Track will cover all aspects of business outside of engineering/technical applications and lends itself to interactive session types such as workshops and forums.

5. ***Electrification: Possibilities and Pitfalls***

Global legislative efforts are pushing for full electrification of the building sector. This track features programs that explore the required technology to meet legislative targets and the seen and unforeseen challenges and consequences of rapidly electrifying the built environment in parallel with other sectors. Submissions are encouraged in the areas of relationships between electrification and decarbonization, electrification of space and water heating, building/grid interactions in a highly electrified environment, onsite energy generation and storage, district energy systems, and all other areas related to the electrification of building systems.

6. ***Artificial Intelligence and the Built Environment***

Artificial Intelligence and Machine Learning have the potential to transform how we design, optimize, and operate buildings and equipment. From the automated design of heat exchangers to adaptive controls to the development of new working fluids, the possibilities are vast. This track highlights papers, case studies, and programs that separate the hype from reality and explore the possibilities of AI and ML tools for advancing technology for the built environment.

7. ***Building Life Cycle Assessment***

The explosion of computational capacity and data collection capability is rapidly expanding the scope, complexity, and practical applications of modeling and performance characterization both during design, construction, end-of-life, but even more so for fault detection, diagnostics, and operational optimization. These data can provide better insights on the whole life cycle impact of building construction and operation on efficiency and decarbonization goals. This track welcomes programs related to all aspects of building life cycle assessment, with a particular interest in successful applications that have extended modeling into operational phases of the building life cycle.

8. ***Legislation, Standards, Codes, and Guidelines***

Legislation such as the US Inflation Reduction Act (IRA) of 2022 and global F-Gas regulations can dramatically impact the building sector by incentivizing different technologies and approaches to managing building energy systems. In addition, ASHRAE is well known for its standards and design guidelines and their continuous evolution to improve the built environment and its systems in terms of IEQ, resource efficiency, and energy consumption. ASHRAE Members must be able to keep up with the rapidly evolving legislative environment and prepare to inform future legislation, standards, and codes. The programs in this track highlight recent changes and opportunities to inform new legislation, standards and guidelines and their impact on the buildings sector.



# MTG PROPOSAL FORM

Return Form to:  
Assistant Manager of Research & Technical Services  
ASHRAE  
180 Technology Parkway NW  
Peachtree Corners, Georgia 30092  
☎404-636-8400 • Fax 404-321-5478  
E-mail: amorts@ashrae.net

**Date:** June 25, 2023

**MTG Name:** *BUILDING EQ (MTG-BEQ)*

**MTG Scope:** MTG.BEQ will be responsible for the technical development, business development, planning, training, and marketing of programs for the Building EQ enterprise. Responsibilities include suggestions for research, development, and presentation of technical programs of all types on Building EQ and special publications detailing aspects of the Building EQ program.

**Background of scope or problem statement:** MTG-BEQ's focus is to increase the usage of the Portal through product and services enhancement, market outreach and collaboration, grassroots coordination, tool usability, and increased scalability of the Building EQ Portal and program. Furthermore, the Portal continually aligns with ASHRAE Standards and publications, making Building EQ a tool to apply these industry norms.

**Clear problem statement with desired deliverable(s):** Understanding building energy and carbon performance and how to improve performance is at the core of ASHRAE's mission and values. MTG-BEQ will provide building owners with an impactful web-based tool to understand and improve their buildings' performance, sustainability, and resiliency and to move the built environment

towards zero net energy and zero net carbon. MTG-BEQ will complete the following deliverables in support of this goal:

- Modify the Building EQ methodology and portal to align with Standard 211 decarbonization audit annex and other ASHRAE decarbonization efforts as appropriate to support building owner decarbonization and energy efficiency activities.
- Develop a use case of the Building EQ API with a third party organization.
- Update Building EQ training and material to align with decarbonization and other portal revisions.

**Anticipated timeline and suggested sunset date:** MTG-BEQ will complete these deliverables within three society years with completion by June 2026.

**Impact on TC/TG/TRGs and Other MTGs:** The Building EQ portal provides a credible and accessible approach to assess the as-designed and in-operation performance of buildings, assists the user through an ASHRAE Level I energy audit, and provides recommendations for improvement. The Building EQ committee has worked with several ASHRAE functional groups in the development and promotion of the Building EQ platform. MTG.BEQ will continue these collaborations to leverage technical developments, sponsor research programs, and align with applicable ASHRAE standards to support ASHRAE building performance and decarbonization goals.

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	<i>Position</i>	<i>Person's Name:</i>	<i>TC/TG/TRG or Non-TC Group Affiliation</i>	<i>user, general, producer</i>	<i>ASHRAE Member #</i>
1	<b>Chair:</b>	Michael Deru		General	
2	<b>Vice-Chair:</b>	Doug Cochrane		General	
3	<b>Voting Member:</b>	Supriya Goel	TC7.6	General	
4		Bill Dean	TC7.9	General	
5		Daniel Redmond	TC9.7	General	
6		??	TC2.8	TBD	
7		Trent Hunt	PLC	General	
8		John Constantinide	BOD	User	
9		Matthew Mullen	MTG.EBO	User	
10		Charles Eley	SSPC 189.1	User	
11		Chris Balbach	SSPC 211	Producer	
12		Megan McNulty	GAC	General	
13		Austin Wallace	ASHE	User	
14		Kate Callahan	GBI	User	
15		Jaideep Karnik	At Large	General	
16		Esteban Baccini	Region XII	General	
17		Darryl Boyce	APPA	User	
18	Alternate Member:	Rupesh Iyengar	PLC	General	
19		Wade Conlan	TC7.9	User	
20		Kara Brooks	ASHE	User	
21		Emily Bowers	GBI	User	

**T A C U S E O N L Y :**

Date Received: \_\_\_\_\_ Date Sent to TAC/FP: \_\_\_\_\_ Meeting Date: \_\_\_\_\_ Approved?    Yes    No

**Additional information requested by TAC:**

- Re. “3. Committee intends to handoff responsibility of website to a third party, either as a sale or partner” in “Proposed MTG.BEQ Background” document: What are the implications of this? How will this be financed?
  - This was a previous goal of the Building EQ committee, and it may still be a long-term goal. However, the technical demands and the market for a tool like Building EQ have evolved. We feel there is more technical development required to support decarbonization, and there is not a viable organization that could take on Building EQ at this time.
- Is there still the same demand or need as it was in 2007 or 2011?

- Yes, there is a growing demand for Building EQ, and we feel that we can improve the demand as we align closely with ASHRAE decarbonization efforts.
- Is the target market still mainly USA or North America or is it foreseen that it would be more global to create a broader market for it?
  - The tool is used globally with users from at least 20 countries. We recently added carbon emission factors covering 14 countries to support global demand.
- What happened to the program since 2016 (see the background document) - is it lack of data or is it stagnant?
  - The timeline shared in the background information is incomplete. Major achievements since 2016 include a rebranding effort that included a name change to Building EQ, development of the web portal, development of an API for connection to third-party applications, updating the reports, adding carbon emission factors and carbon performance metrics, updating the portal to align with an Standard 211 level 1 energy audit, completion of two Energy Genius award cycles, completion of a Student Activities Council competition, and completion of several outreach and marketing efforts.
- Is there an identified chair and voting members? Is membership balanced?
  - See the member list above. The member list is proposed at this time and will evolve as we coordinate associated ASHRAE groups. We will continue to strive for a balanced membership.
- Why an MTG and not a TC/TRG/TG?
  - At this point in the development of Building EQ, we need input and connections with multiple ASHRAE groups for further development to align with evolving efficiency and decarbonization efforts and to improve alignment with building operations.
- Does this MTG conflict with any work that a TC is currently doing (is this an overlap)? What is the scope/goals/focus of the MTG? Is it sufficient to be it's own committee?
  - See the scope above. Building EQ does not conflict or overlap in a significant way with any ASHRAE TC/TRG/TG. Building EQ combines technical development efforts from multiple TCs and standards into a tool that supports building energy performance and use of ASHRAE products.
- Their past programs have been to educate members about the portal (what it is, how to use it, etc.) Should the scope be expanded? For example, building rating systems handbook (compare LEED, HERS, BEQ, Green Globe, etc.)
  - Building EQ has continued education programs and development of educational material. The Building EQ committee worked with GBI to establish Building EQ as a pathway for Green Globes certification for the new buildings and existing buildings pathways.
- We need to see that lifecycle of this MTG is addressed in the proposal.
  - See the additions to the proposal above.
- What is the product?
  - Building EQ portal that benchmarks building performance and provides in-operation and as-designed performance ratings. Building EQ also assists users with a level 1 energy audit and provides performance audit reports. See the proposal above for current deliverables.
- When will it be completed?
  - We will complete the deliverables within three years.
- Is there any overlap with mtg.ebo?
  - The Building EQ committee is collaborating with MTG.EBO to ensure that we have synergistic efforts. MTG.EBO will be represented on MTG.BEQ and vice versa.
- Are there non ashrae members?
  - Yes, we have members from ASHE and GBI who are not ASHRAE members.

# MTG PROPOSAL FORM

Return Form to:  
Assistant Manager of Research & Technical Services  
ASHRAE  
180 Technology Parkway NW  
Peachtree Corners, Georgia 30092  
☎404-636-8400 • Fax 404-321-5478  
E-mail: amorts@ashrae.net

**Date:**

June 27, 2023

\* Turn in no later than 3 weeks prior to the meeting for consideration by TAC

**MTG Name:**

Generative AI for HVAC Industry

**MTG Scope:**

*MTG.GenerativeAI will coordinate the application of generative AI (Artificial Intelligence) across the various technical committees and society activities. This will include best practices, work flows and emerging applications of new artificial intelligence technologies in Large Language Models (LLM), Machine Learning (ML), data science, conversational AI (chatbots) and related developments. This MTG will develop tools and guidelines for ASHRAE members to benefit from Generative AI applications. Examples of tools include transforming ASHRAE Standards, handbooks and research reports as training data for an ASHRAE Chatbot that can help members navigate and quickly access the relevant information improving quality and productivity. There are also several machine learning models and data science approaches that could be standardized for predictive analysis for energy use predictions and fault detection. The Generative AI MTG will develop new research projects, best practices guidelines and possibly a new standard for Generative AI technology adoption by ASHRAE members and the society.*

<sup>1</sup>Please see page 2 for an example of a MTG scope.

**Impact on TC/TG/TRGs and Other MTGs:**

*Generative AI applications have potential impact on all aspects of engineering consulting, design, operation, maintenance and general productivity improvements. TC 1.5, TC 1.6, TC 4.7, TC 4.10 and TC 7.5 have several ideas and initiatives on application of generative AI for design, energy modeling, energy use predictions and fault detection and diagnostics. There are other industry initiatives in monitoring building automation system data to dynamically identify operational adjustments and maintenance requirements. There is a new career path as “Prompt Engineering” by which intelligence can be extracted from data sets and internet knowledge that is publicly available. ASHRAE sponsored a Kaggle competition in the past that has*



resulted in the development of several Python scripts that can be used by practicing engineers. ASHRAE Society activities and publications can benefit from developing new products and services incorporating generative AI to improve internal processes and develop new tools to add value in disseminating the information without compromising the intellectual property. This MTG is expected to develop working prototype tools and workflow that can be developed further by the society and industry.

**MTG Roster:**

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	<i>Position</i>	<i>Person's Name:</i>	<i>TC/TG/TRG or Non-TC Group Affiliation</i>	<i>ASHRAE Member #</i>
1	<b>Chair:</b>	<b>Krishnan Gowri</b>	<b>TC 1.5</b>	
2	<b>Vice-Chair:</b>			
3	<b>Voting Member:</b>	<b>Dennis Knight</b>		
4		<b>Tim Dwyer</b>	<b>CIBSE, International</b>	
5		<b>Jennifer Lather</b>	<b>MTG.BIM</b>	
		<b>Mike Pouchak</b>	<b>TC 1.4</b>	
		<b>Bruce Billedaux</b>	<b>TC 1.6</b>	
		<b>TBD</b>	<b>TC 4.7</b>	
		<b>Mohammed Hajiniard</b>	<b>TC 4.10</b>	
		<b>Carol Monaco</b>	<b>TC 7.5</b>	
6	<b>Alternate Member:</b>	<b>Stephen Roth</b>	<b>TC 1.5</b>	
7		<b>Edward Tsui</b>	<b>Independent</b>	<b>Edward.tsui@intelligent-net.com</b>
8		<b>Kevin Lawson</b>	<b>Independent</b>	<b>Ripple Inc.</b>
9		<b>Apporv Khanaja</b>	<b>Independent</b>	<b>U. Cincinnati</b>
10				

<b>T A C U S E O N L Y :</b>				
Date Received: _____	Date Sent to TAC/FP: _____	Meeting Date: _____	Approved? Yes	No





**Leadership Presentation**  
**2023 ASHRAE Annual Conference**

## Code of Ethics

*“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 interest.”*

## Harassment and Discrimination Policy

ASHRAE strictly prohibits and does not tolerate discrimination against members or applicants for membership because of such individual’s race, color, religion, age, sex, sexual orientation, national origin, physical or mental disability, pregnancy, genetic information, veteran status, uniformed service member status, or any other category protected under applicable law.

## Commercialism

**ASHRAE’s Commercialism Policy** allows for Society activities that fulfill the mission of technological advancement with adherence to business plans that generate income to offset operational expenses such as AHR Exposition, ASHRAE periodicals, website, and Society conference events such as the Welcome Party, luncheons, registration kits, and receptions.  
[ashrae.org/commercialism](https://www.ashrae.org/commercialism)

View ASHRAE Governing Documents at [ashrae.org/about/governance](https://www.ashrae.org/about/governance)



# ASHRAE Appreciates You & Your Employer!

2022-23 ASHRAE President Farooq Mehboob would like to thank your employer for supporting your volunteer contributions over the last year.

Please carefully fill out the form to have a message of gratitude immediately sent to your employer, from the ASHRAE President.

Login is required. **Submit by August 12.**



Questions? Contact [boardservices@ashrae.org](mailto:boardservices@ashrae.org).



## Council and Committee Nominations

JUN  
2023

Speak with your committee ExO/CO if your current appointment/elected position ends in **June** to be nominated for another position.

SEP  
2023

Nominations for elected positions are due **September 2023**. (Publications & Education Council, Tech Council, RAC, TAC, Standards, Handbook, Nominating)

FEB  
2024

Nominations for appointed committees are due **February 2024**.

Submit nominations for others and/or yourself  
[ashrae.org/committee-nominations](https://www.ashrae.org/committee-nominations)

## Honors & Awards Nominations

ASHRAE's awards fall into one of six categories:

1. Personal Honors
2. Personal Awards for General & Specific
3. Society Activities
4. Paper Awards
5. Society Awards to Groups or Chapters
6. Chapter and Regional Awards

Depending on the award, deadlines are either  
**May 1** or **December 1** each year.

Awards information and nomination forms  
[ashrae.org/honorsandawards](https://www.ashrae.org/honorsandawards)

# 2023-24 Board of Directors

## Executive Committee



### President



Ginger Scoggins, P.E.  
Fellow ASHRAE,  
Raleigh,  
North Carolina

### President-Elect



Dennis Knight, P.E.  
Fellow ASHRAE  
Mt. Pleasant  
South Carolina

### Treasurer



Bill McQuade, P.E.  
Fellow ASHRAE  
Jessup,  
Maryland

### Secretary



Jeff Littleton  
Peachtree  
Corners, Georgia

### Vice Presidents



Billy Austin, P.E.  
Fellow ASHRAE,  
BCxP, BEAP, BEMP,  
HBDP, HFDP, OPMP  
Charlotte, North  
Carolina



Ashish Rakheja,  
Noida, Uttar Pradesh,  
India



Wade Conlan, P.E.  
BCxP, CxA  
Maitland, Florida



Chandra Sekhar, Ph.D.,  
CPEng.  
Fellow ASHRAE  
Singapore

# 2023-24 Board of Directors

## Director and Regional Chairs



### Region I



Steven C. Sill  
Sterling, New York

### Region II



Ronald Gagnon  
Quebec, Canada

### Region III



Mark Tome, P.E., HFDP  
Harrisburg, Pennsylvania

### Region IV



Bryan Holcomb  
Oak Ridge, North Carolina

### Region V



James Arnold, P.E.  
Dublin, Ohio

### Region VI



Susanna Hanson  
La Crosse, Wisconsin

### Region VII



Scott Peach, P.E.  
Mobile, Alabama

### Region VIII



Joseph Sanders  
Oklahoma City, Oklahoma

### Region IX



Jonathan Smith, P.E.  
Lenexa, Kansas

### Region X



Buzz Wright, P.E.  
Tucson, Arizona

### Region XI



Eileen Jensen, P.E.  
Vancouver, Washington

### Region XII



John Constantinide, P.E.,  
Merritt Island, Florida

### Region XIII



Cheng Wee Leong, P.E.,  
Singapore

### Region XIV



Mahroo Eftekhari, C.Eng., CDPhil  
Loughborough, England

### Region-at-Large



Richie Mittal  
New Delhi, India



# 2023-24 Board of Directors

## Directors-at-large



Doug Cochrane, P.Eng.  
Mississauga, Ontario, Canada



Blake Ellis, P.E.  
Overland Park, Kansas



Dru Crawley, Ph.D., BEMP  
Washington, D.C.



Corey Metzger, P.E.  
Ames, Iowa



Art Giesler  
Colleyville, Texas



Wei Sun, P.E.  
Ann Arbor, Michigan



Kishor Khankari, Ph.D.  
Ann Arbor, Michigan



Luke Leung, P.E.  
Clarendon Hills, Illinois



Heather Schopplein-Anderson, P.E.  
Santee, California

# Diversity, Equity, & Inclusion (DEI) in ASHRAE



## Members



Kishor Khankari  
(Chair)



Susanna Hanson  
(Vice Chair)



Devin Abellon



Mahroo Eftekhari



Bill Cheng Wee Leong



Dunstan Macauley



Heather Schopplein-Anderson



Jonathan Smith



Tanisha Meyers-Lisle  
(Staff Liaison)

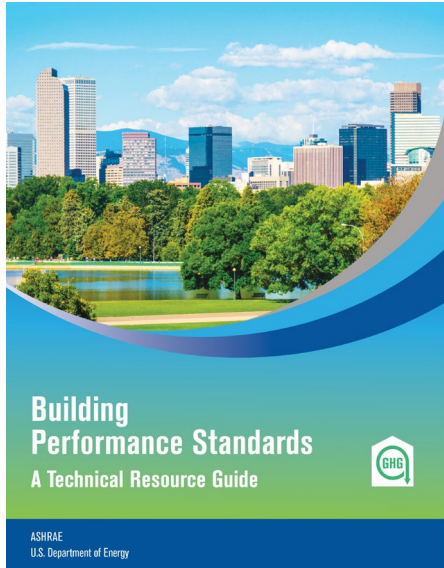
## Purpose

**Provides recommendations and advice to the Board of Directors on the following:**

- Matters relating to improving organizational awareness and performance relating to DEI amongst both staff and the Society membership.
- Develop a DEI strategic plan and annual budgets for the program.
- Recommend policies to increase and improve inclusion within ASHRAE and the HVAC&R Industry and help the Society meets its commitments to fairness and equal opportunities.

Resources Available at [ashrae.org/dei](https://www.ashrae.org/dei)

# Task Force for Building Decarbonization



Download the guide  
[ashrae.org/decarb](https://www.ashrae.org/decarb)

Through its Working Groups with over 100 volunteers from around the world the **Task Force For Building Decarbonization** (TFBD) is working to implement strategy, direction, and successful products and services for the industry relating to building decarbonization.

## Products and Services Include:

- Seven Guides
- Creating content for a Knowledge Hub
- Establishing relevant training & education



[ashrae.org/decarb](https://www.ashrae.org/decarb)

# Government Affairs

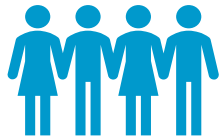
Get Involved + Get Resources at [ashrae.org/govaffairs](https://www.ashrae.org/govaffairs)



## GOVERNMENT OUTREACH EVENTS



**100+** Events



**450+**  
Members  
in Attendance

## GOVERNMENT AFFAIRS UPDATES



**493** Articles



**2,371** Readers

Sign up online or email  
[GovAffairs@ashrae.org](mailto:GovAffairs@ashrae.org)

## LETTERS, BRIEFINGS, TESTIMONY, COMMENTS



**35**  
messages  
in support of  
ASHRAE's  
Public Policy  
Priorities and  
Positions



# Society Snapshot

Download the Snapshot at [ashrae.org/society-snapshot](https://ashrae.org/society-snapshot)



## TECHNOLOGY

**21** STANDARDS & GUIDELINES PUBLISHED

**39** ACTIVE PROJECTS  
**4** COMPLETED PROJECTS

**3,800+** TOTAL TECHNICAL INQUIRIES



Printed on 100% recycled paper

## MEMBER SERVICES

### ASHRAE CONFERENCES



**53,000** TOTAL SOCIETY MEMBERS  
**+1,200** from previous membership year

**198** TOTAL CHAPTERS

**282** (Virtual and In-Person) DISTINGUISHED LECTURER VISITS

**450** STUDENT BRANCHES

## PUBLISHING AND EDUCATION

**23** NEW PUBLICATIONS

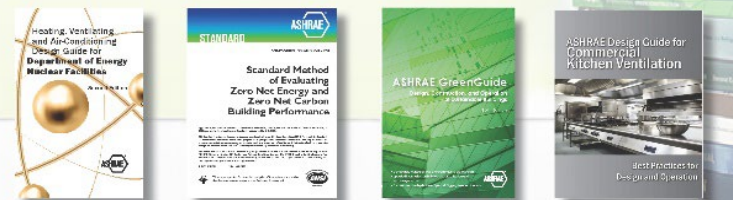
**9,680** COURSE ATTENDEES

**243** COURSE INVENTORY

**145** TOTAL EDUCATION COURSES PRESENTED

**280** HOURS OF TRAINING IN eLEARNING PORTAL

**2,000** CERTIFICATIONS HELD



## DEVELOPMENT

### Forecasted SY 22-23 Results RP CAMPAIGN TOTAL

**\$2.6M**

WITHIN THE RP CAMPAIGN

**\$2M** RAISED FOR RESEARCH

**\$15,000** RAISED FOR YEAs

**\$29,000** RAISED FOR EDUCATION

**\$2.9M** TOTAL RAISED

**\$8,900** RAISED FOR DECARBONIZATION EFFORTS

**\$735,000** ASHRAE FOUNDATION TOTAL ADDED including gifts raised through RP

**\$653,581** SUPPORTING ASHRAE PROGRAMS

**\$45,000** LIFE MEMBERS CLUB TOTAL RAISED

**\$6,000** COLLEGE OF FELLOWS TOTAL RAISED

**73** SCHOLARSHIPS AWARDED

These totals represent more than 5,000 contributions from Members, Organizations and other Associations.

## MARKETING



**2,554,709** VISITS TO ASHRAE.ORG

**71,512** LIKES

**145,738** FOLLOWERS

**22,598** FOLLOWERS

**7,346** SUBSCRIBERS

**3,530** FOLLOWERS

## FINANCIAL

### ASHRAE SOURCE OF FUNDS 12 Months ended June 30, 2023



**\$28,147M** REVENUE

### ASHRAE APPLICATION OF FUNDS 12 Months ended June 30, 2023



**\$28,186M** EXPENSE

## GOVERNMENT AFFAIRS



**GOVERNMENT OUTREACH EVENTS**



**87** EVENTS



**408** MEMBER PARTICIPANTS

**GOVERNMENT UPDATE NEWSLETTERS**

**493** ARTICLES & **2,382** READERS

**LETTERS & TESTIMONY**



**35** MESSAGES IN SUPPORT OF ASHRAE'S PUBLIC POLICY PRIORITIES & POSITIONS

**1,200 New ASHRAE Members in 2022-23!**

# Membership & Communities



## NEW! FIVE Benefit Options for New & Renewing Full Dues Paying Members

New benefit options include ASHRAE Handbook Online and Certification Study Guides (PDF). Benefits are selected during the join & renewal process.

New, Full Dues Paying Members Automatically Get:

<b>eLearning Course</b>  <b>150+</b> to choose from	<b>ASHRAE Standard</b>  <b>100+</b> to choose from	<b>ASHRAE Handbook</b>  PDF version of the most recent	<b>Handbook Online</b>  <b>4</b> most recent	<b>ASHRAE Certification Exam Study Guide</b>  <b>3</b> to choose from
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<b>1 Free Registration</b>  to Winter or Annual Conference	<b>&amp;</b>	<b>12 Months FREE</b>  Handbook Online
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[ashrae.org/membership](https://ashrae.org/membership)

# Supporting ASHRAE's Mission



Thank You to all the donors and volunteers for your support

## Final SY 21-22 RP Campaign Results



**\$3.1M Total Cash Raised\***

**Research Promotion Campaign Total \$2.5M**  
*(Research, YEA, ALI, Scholarships, General)*



**\$1M** Raised for Endowments



Within the RP Campaign  
**\$1.9M** Raised for Research



**\$235,500** Awarded via 65  
Scholarships



**\$1.1M** Given by ASHRAE  
Regions, Chapters and Sections

\*More than 4,000 contributions from Members, Organizations and other Associations

Donate, Volunteer and Learn More at [ashrae.org/support](https://www.ashrae.org/support)



# Professional Development

Learn More at [ashrae.org/professionaldevelopment](https://www.ashrae.org/professionaldevelopment)



## eLearning

### Course Package

Fundamentals: HVAC Systems (IP), 21.5 PDHs

- 10 individual courses
- Most are AIA approved



[elearningcatalog.ashrae.org](https://elearningcatalog.ashrae.org)

## ASHRAE Learning Institute (ALI)

### Cities and Dates Just Added

Check the schedule of HVAC Design Courses for 2023-24.

In-person and virtual:  
Level I – Essentials  
Level II – Applications

+ **NEW** courses added to the Instructor-led Online Series

+ **Ask about Chapter and Company Training**

[ashrae.org/onlinecourses](https://ashrae.org/onlinecourses)

## ASHRAE Certifications

Full dues paying member benefit options now include the ASHRAE Certification Exam Study Guide (PDF)  
BCxP | BEMP | CHD

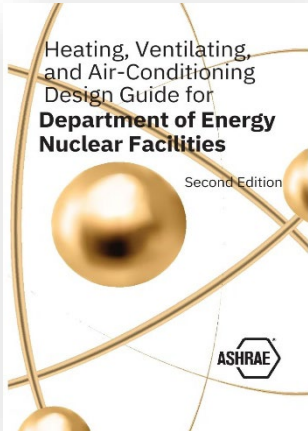


[ashrae.org/certification](https://ashrae.org/certification)

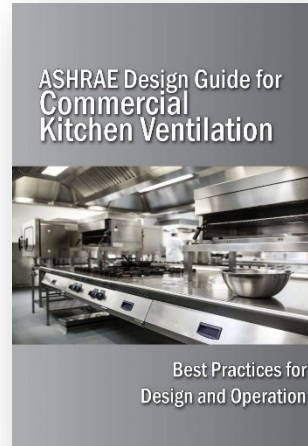


# Publications

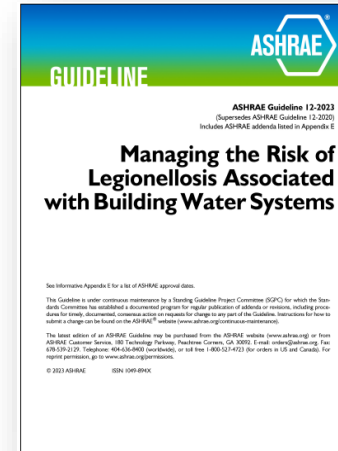
Recently published items available at [ashrae.org/bookstore](https://www.ashrae.org/bookstore)



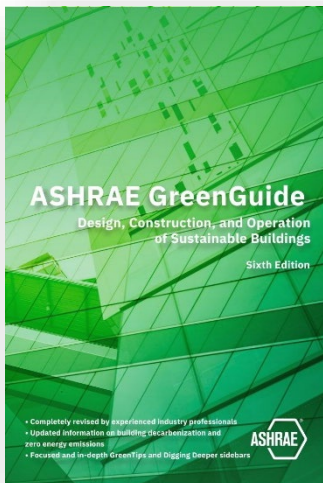
**Heating, Ventilating, and Air-Conditioning Design Guide for Department of Energy Nuclear Facilities, Second Edition**



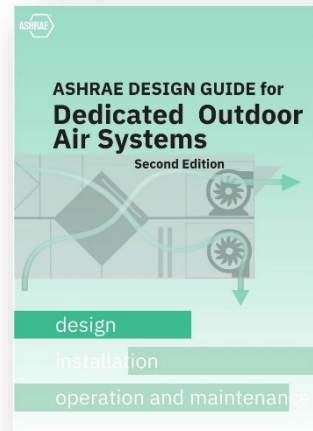
**ASHRAE Design Guide for Commercial Kitchen Ventilation: Best Practices for Design and Operation**



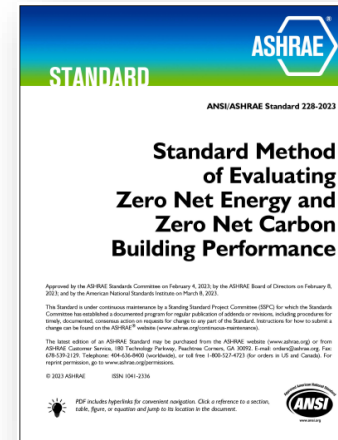
**ASHRAE Guideline 12-2023, Managing the Risk of Legionellosis Associated with Building Water Systems**



**ASHRAE GreenGuide: Design, Construction, and Operation of Sustainable Buildings, Sixth Edition**



**ASHRAE Design Guide for Dedicated Outdoor Air Systems, Second Edition**



**Standard 228-2023, Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance**

# Standard 241: *Control of Infectious Aerosols*

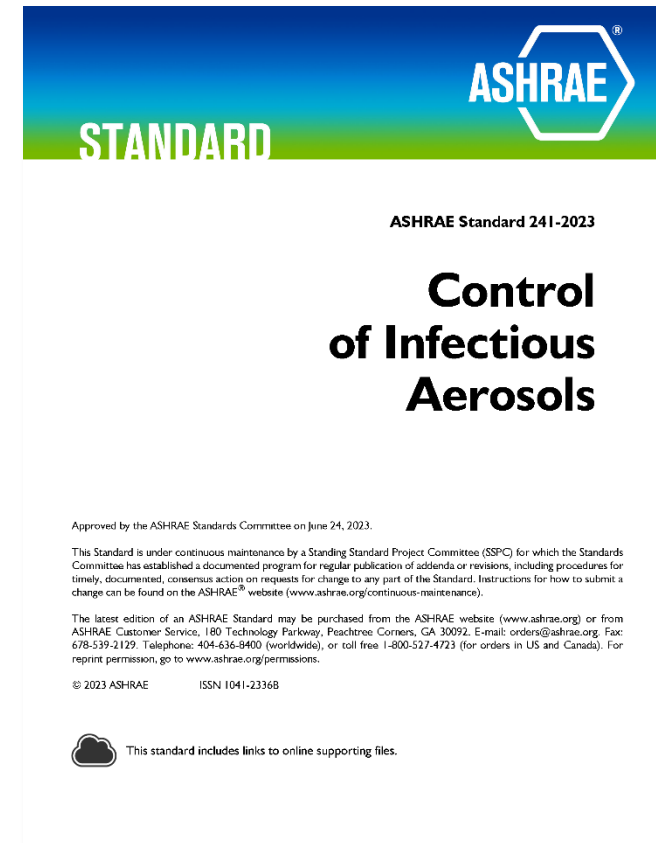


## ASHRAE Creates First Ever Pathogen Mitigation Standard

ASHRAE Standard 241, *Control of Infectious Aerosols* provides minimum requirements for HVAC-related measures to reduce the risk of transmission of COVID-19, influenza, and other airborne viruses in homes, offices, schools, hospitals during periods of high risk.



**Anticipated Approval: Saturday, June 24!**



# Resources

Find Technical Resources at [ashrae.org](http://ashrae.org)



Shaping Tomorrow's Built Environment Today

What Are You Looking For?



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[BOOKSTORE](#)

[LOG IN](#)

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**PROFESSIONAL DEVELOPMENT** ▾

**CONFERENCES** ▾

**COMMUNITIES** ▾

**MEMBERSHIP** ▾

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[ASHRAE LIBRARY](#) ↗

[TECHNOLOGY PORTAL](#)

[TECHNICAL APPS](#)

[FREE RESOURCES](#)

[ASHRAE 365 APP](#)

[BUILDING EQ](#)

[AEDGS](#)

**STANDARDS & GUIDELINES**

Continuous Maintenance

Project Committees (PCs)

Toolkit

Public Review Drafts

Purchase Standards &

Guidelines ↗

Standards Actions

Standards Addenda

Standards Errata

Standards Interpretations

Apply to a Project

Committee

**90.1 PORTAL**

[ASHRAE HANDBOOK](#)

[ASHRAE JOURNAL](#)

Featured Articles

ASHRAE Journal Podcast

[HIGH PERFORMING BUILDINGS](#)



[SUPPLIER-PROVIDED LEARNING](#)

[ASHRAE TRANSACTIONS](#)

[ASHRAE CONFERENCE PAPERS](#)

**RESEARCH**

ASHRAE RP

Purchase Research

Reports ↗

Research Strategic Plan

[TECHNICAL COMMITTEES](#)

[SCIENCE AND TECHNOLOGY FOR](#)

[THE BUILT ENVIRONMENT](#)

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[UPDATES](#)

[TECHNICAL FAQs](#)

[RESILIENCE ACTIVITIES](#)

[REFRIGERATION](#)

# Marketing Central

Promotion Resources for the busy volunteer [ashrae.org/marketingcentral](https://ashrae.org/marketingcentral)



## Templates for all your Communication Needs

A template created by ASHRAE was shared with you, start designing now



1080px x 1080px

Use template

## Download PowerPoint Presentations



## Find logos, Brand Guide, Acronym Guide and more!



Flyers & Brochures | Videos | Toolkits | Tradeshow | Graphics

**#NEXTGENCOOLING**  
IN OUR HANDS



**WORLD REFRIGERATION DAY**

26<sup>th</sup> JUNE 2023 #WREFD23

## The Future of Cooling is in Our Hands June 26, 2023

World Refrigeration Day raises awareness of refrigeration, air conditioning, and heat pumps and their role in modern society to a wider audience

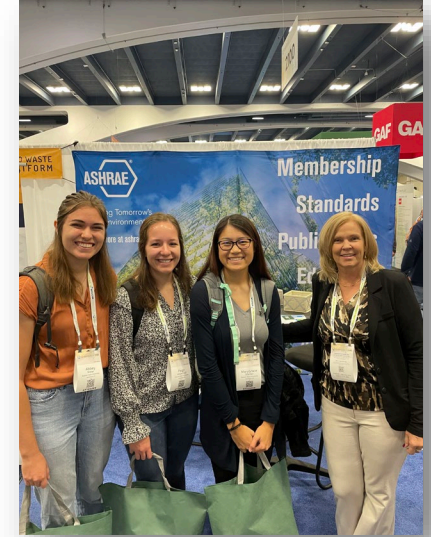
Learn More at [worldrefrigerationday.org](https://worldrefrigerationday.org)



# Upcoming Tradeshows & Events



WHAT?	WHEN?	WHERE?
AHR Expo Mexico	Sept. 19-21, 2023	Mexico City, Mexico
Greenbuild	Sept. 26,29, 2023	Washington, DC
COP28	Nov. 30 – Dec. 12, 2023	Dubai
AHR Expo Chicago	Jan. 22-24, 2024	Chicago, IL
ACREX	Feb. 15-17, 2024	Delhi NCR, India



- Educational Resources
- Discounts on Publications
- Free ASHRAE Giveaways



Learn More and Find Resources for Tradeshows [ashrae.org/marketingcentral](https://www.ashrae.org/marketingcentral)

# ASHRAE Conferences



SEPT  
2023

**2023 Building Performance Analysis Conference**  
September 11-13, 2023 | Austin, TX

OCT  
2023

**2023 Decarbonization Conference for the Built Environment**  
October 25-27, 2023 | Washington, DC

NOV  
2023

**8th International Conference on Energy Research and Development**  
November 28-30, 2023 | Kuwait

APR  
2024

**2024 ASHRAE International Conference on Building Decarbonization**  
April 17-19, 2024 | Madrid, Spain



## **NEW Conference Hotel**

### **Marriott Marquis Chicago**

Marriott is connected via sky bridge with McCormick Place for easy access to the AHR Expo!

Registration opens fall 2023 at [ashrae.org/2024winter](https://ashrae.org/2024winter).

[ashrae.org/conferences](https://ashrae.org/conferences)

Thank you!  
Questions or Comments?