Shaping Tomorrow's Built Environment Today

MINUTES
GOVERNMENT AFFAIRS COMMITTEE
FRIDAY, JUNE 23, 2023
1:00 PM – 5:00 PM EDT
Annual Meeting - Tampa, Florida

Minutes approved 10-30-2023

ATTENDANCE

Members Present

Darryl Boyce, Chair
Rob Hoadley, Vice Chair
Mohammed Anbari
Cindy Callaway
Christopher Phelan
Timothy Wentz
Mike Wolf
Artorius Reyes
Michael Genin
RJ Hartman *
Louis Van Belle*
Beth Thomlinson*
Douglas Cage
Damon McClure*
Peter Knock-Wilwerding
Tracey Jumper
Daryl Collerman*
Timothy Theriault
(Albert) Yew T A Sin*
George Pantelidis
Ahmed Bolbol
Sonya Pouncy*
Ken Fulk
Malcom Dennis Knight

INCOMING MEMBERS

Shelia Hayter*
Jason Alphonso
William Fisher*
Geoffrey Jenks
Ioan Dobosi
Bryan Holcomb

Members Absent

Weston Hockaday
Nanette Lockwood
Meghan McNulty

Incoming Members

Andrew Persily
Eleazar Rivera

Guests

Doug Fick
David Underwood
Jim Arnold
Dennis Hassett
Fiona McCarthy
Colin Laisure-Pool
Doug Cochrane
Chad Smith
Corey Metzger
Tim Capbeh
Kelly Thomas, Oregon Building Codes
Mark Heizer, Oregon Building Codes and SSPC 90.1 Member
Douglas Ficher
Mark Heizer
Donielle Taylor
Michele Mihelic, AIA
Naila Mendonca, AIA
Jaideep Kamik*

Staff

Alice Yates
Emily Porcari
Jacob Karson
Matt Young
Andrew Barberi

* *Notes virtual attendance*

1. Call to Order, Welcome, and Roll Call – Darryl Boyce called the meeting to order at 1:00 p.m., welcomed the members and asked for a Roll Call to be conducted. Attendance is provided in the list above; a quorum was present.

2. Guest Introductions – Boyce asked the guests to introduce themselves.

3. ASHRAE Code of Ethics – Boyce read a summary of the ASHRAE Code of Ethics Commitment.

4. Hybrid Meeting Best Practices –Boyce reviewed the hybrid meeting best practices (see Attachment)

5. Review of Agenda – Boyce reviewed the agenda and stated that items #16 and #18 will be moved to the Executive Subcommittee Report, and that item #14c would be moved to right before item #11.

6. Approval of Minutes from April 12, 2023 Meeting – See Attachment

   MOTION: To approve the Minutes of the April 12, 2023 Meeting. Motion made by Daryl Collerman and Seconded by Artorius Reyes.

   MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

7. Update on Action Items (see Attachment) - Alice Yates reviewed the action items and noted those that were still open.

8. Report from ASHRAE Government Affairs Office - Yates, Emily Porcari, Matt Young, Jacob Karson, Andrew Barberi presented on the government outlook and opportunities for engagement (see Attachment)

9. Subcommittee Reports and MBO Status Reports: Each Subcommittee reported on the status of their MBOs (See Attachment), along with additional information items.

   a. Executive Subcommittee – Boyce explained that the subcommittee completed its MBO.

      MBO #2: Increase effectiveness of volunteer members through formalizing the GAC member mentorship program through small groups.

   b. Policy and Programs Subcommittee - Beth Tomlinson provided the report on behalf of Nanette Lockwood. Tomlinson reported that this subcommittee completed both its MBOs, hosting four meetings with the Advisory Board and establishing a liaison with the TFBD. Further, the subcommittee updated and approved all existing PPIBs (see Attachment), passed a new PPIB on Building Electrification at the Winter Meeting, and is drafting 2 new PPIBs: on Wildfire and Indoor Environmental Health; and Electricity Generation. Tomlinson is excited that she will be chairing the PPSC next year.

MBO #4: Decarbonization: establish clear lines of communication between the GAC and the TFBD.

MBO #6: Establish a GAC Advisory Board made up of senior staff from various government bodies; this group would advise ASHRAE on what technical resources they need.

c. Member Mobilization Subcommittee - Tim Theriault report on excellent progress with respect to Government Outreach Events (See Attachment) and on its MBOs.

MBO #1: Increase the participation of ASHRAE members in Government Outreach Events and other advocacy opportunities by hosting promotional GAC meetings, webinars, and other events to non-GAC ASHRAE members to increase awareness about the GAC.

MBO #8: Review and revise the RVC reporting requirements for the Winter and Annual meetings.

Revisions to the Resource Manual Regarding the RVC Reporting Form

MOTION: That the Government Affairs Committee approve the attached revisions to the Resource Manual regarding the RVC Reporting Form. Motion made by Tim Theriault and Seconded by Rob Hoadley.

MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

d. Global Affairs Subcommittee -- George Pantelidis reported that this subcommittee will be continuing work on its MBOs in the next Society Year. GASC wants to identify two annual events per region that ASHRAE can engage with, and also seeks to hold five GOEs per region. The GAC through the GASC will also continue to liaise with the GTIC. We also discussed changes and improvements to the RVC reporting form.

MBO #3: Build the foundation of a consistent global government engagement program by planning and identifying country- or region-specific events attended by government officials for the purpose of outreach and advocacy.

MBO #5: Work with International Standards Task Force to facilitate sharing of information to avoid duplication of efforts, including through the tracking and adoption of ASHRAE standards and guidelines around the world.

e. Rules Subcommittee - Rob Hoadley reported that this subcommittee worked with the Member Mobilization Subcommittee to make revisions to the Regional Reporting form in the Resource Manual.

f. Nominating Subcommittee – This subcommittee has completed its work.

10. Reports

    a. ExO Report - Ken Fulk provided an informative presentation (See Attachment).

    b. Communications Coordinator Report - Sonya Pouncy reported that recommendations for improving the website have been shared with staff, who are working to implement these.

       MBO #7: Improve the effectiveness of the Government Affairs Website (in cooperation with the PPSC and the MMSC)

    c. Technology Council Representative Report - Chris Phelan reported that Tech Council meets on Wednesday and he will provide updates after that time.

    d. Members Council Representative Report - Bassel Anbari reported that Members Council meets on Tuesday and the biggest change for the next Society Year is that standing committee chairs reporting to the Council will become voting members.

    e. Pub-Ed Council Representative Report (Cindy Callaway)

11. Reports from Regional Vice Chairs – RVCs provided reports (See Attachments)

    a. Region IX – Peter Koneck-Wilwerding
    b. Region V – Louis Van Belle
    c. Region XI – Daryl Collerman
    d. Region IV – Weston Hockaday
    e. Region III – RJ Hartman
    f. Region I – Artorius Reyes
    g. Region X – Tracey Jumper
    h. RAL – Ahmed Bolbol
    i. Region VI – Beth Tomlinson
    j. Region XIV – George Pantelidis
    k. Region II – Michael Genin
    l. Region XIII – Albert Sin
    m. Region VII – Douglas Cage
    n. Region XII – Tim Theriault
    o. Region VIII – Damon McClure

12. GAC PHOTO – photos of the GAC were taken, and they have been posted to Basecamp.

13. Presentation of Dave Palty Outstanding GAC Service Award – This award was presented by Boyce and Hoadley to **Daryl Collerman** in "recognition of his outstanding overall efforts on the Government Affairs Committee to advocate on behalf of ASHRAE with a conscientious work ethic, encouragement of the chapter chairs in his region, and dedication to a sustainable built environment." (See Attachment with award)

14. Reports from Committee Liaisons

    a. Building EQ Committee - Daryl Collerman provided a report (See Attachment**)**

    b. Environmental Health Committee - Meghan McNulty and Don Weekes reported that EHC was meeting next week and they would provide a report following that meeting.

c. International Standards Task Force - George Pantelidis reported that this task force will become a standing committee called the "Global Technical Interaction Committee," which will report to Tech Council.

d. Codes Interaction Subcommittee - Mike Wolf presented a report (See Attachment)

e. Refrigeration Technology Committee for Comfort, Process, and Cold-Chain (REF-CPCC) - Nanette Lockwood was present and did not provide a report.

f. Residential Building Committee - Boyce reported that he hasn't yet connected with the committee.

15. Guest Reports – There were no guest reports.

16. Proposed Public Policy Priorities (PPPs) for SY2023-2024 – Hoadley presented the PPPs for the next Society Year that were developed during a planning meeting (See Attachment)

MOTION: That the Government Affairs Committee approve the attached Proposed Public Policy Priorities for SY2023-2024. Motion made by Rob Hoadley and Seconded by Mike Genin.

MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

17. MBOs for SY2023-2024 – Hoadley reviewed the MBOs for the GAC for next Society Year (See Attachment)

18. Other Business

a. Boyce described a Proposed Pilot "DL-Style" Program for Government Outreach (See Attachment).

MOTION: That the Government Affairs Committee recommend that Members approve a pilot program for government outreach (per the outline in the Attachment), with a fiscal impact of $3,500. Motion made by Boyce and Seconded by Chris Phelan.

MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

19. Review of New Action Items added during this meeting – Yates reported that no new Action Items were added during this meeting, but two remain from earlier in the year.

20. Recognition of Outgoing GAC Members – Boyce recognized the outgoing members with certificates of appreciation.

21. Remarks from Outgoing Chair – Boyce reviewed the amazing work of the committee over this past year and thanked the committee for all of its efforts and impact.

22. Remarks from Incoming Chair – Hoadley remarked on his upcoming chair position and his enthusiasm about the year ahead; he also directed the committee members to review the SY24-24 Subcommittee Assignments (See Attachment) and encouraged them to attend their subcommittee meetings.

23. Next Committee Conference Call – Hoadley stated the next committee meeting will be in the fall, but the first GAC meeting will be a training session, to be held this summer.

GAC Training for New Members

24. Adjourn – Boyce adjourned the meeting at 5:01 p.m.

Minutes Respectfully Submitted by Alice Yates, Staff Liaison.

Hybrid Meeting Best Practices

1. In the meeting room, **project your voice** and speak clearly.
2. Prior to speaking, whether in person or remote, **state your name** so others know who is talking.
3. When making or seconding a motion **state your name**
4. In the room **avoid all side conversations**. If you must have a side conversation, please step out in the hallway.
5. If you are in-person, please DON'T join the GoToMeeting due to bandwidth issues. If for some reason you must join (e.g., screen-sharing), please MUTE yourself, or we will have horrible feedback issues.
6. Remote participants: **please send a chat** when you wish to speak. If for some reason, you are not being recognizing, please speak up without being recognized.
7. We can't guarantee that the remote function will work. We will do our best, but the conference was designed to be in-person.
8. **Thank you** for your patience and for working together through these challenges!

DRAFT MINUTES

GOVERNMENT AFFAIRS COMMITTEE

WEDNESDAY, APRIL 12, 2023
9:30 AM – 11:00 AM EDT

Virtual Meeting

ATTENDANCE

Members Present	Members Absent	Guests	Staff
Darryl Boyce, Chair	Chris Phelan	None	Alice Yates
Rob Hoadley	Nanette Lockwood		Emily Porcari
Bassel Anbari	RJ Hartman		Matt Young
Tim Wentz	Louis Van Belle		Jacob Karson
Cindy Callaway	Douglas Cage		Andrew Barberi
Mike Wolf	Albert Sin		
Meghan McNulty	Ahmed Bolbol		
Artorius Reyes	Ken Fulk		
Michael Genin	Dennis Knight		
Weston Hockaday			
Beth Tomlinson			
Damon McClure			
Peter Koneck-Wilwerding			
Tracey Jumper			
Daryl Collerman			
Timothy Theriault			
George Pantelidis			
Sonya Pouncy			

1. Call to Order, Welcome, and Roll Call - Darryl Boyce called the meeting to order at 9:32a.m., welcomed the members and asked for a Roll Call to be conducted. Alice Yates conducted the roll call and a quorum was present.

2. ASHRAE Code of Ethics – Boyce read a summary of the ASHRAE Code of Ethics Commitment.

3. Review of Agenda - Boyce reviewed the agenda; two items were added to "Other Items" section of the agenda:

    a. GAC SY23-24 Planning Session (Rob Hoadley)

    b. Subject Matter Experts for GOEs (Meghan McNulty)

4. Approval of Minutes from February 3, 2023 Meeting

    MOTION: To approve the attached Minutes of the February 3, 2023 Meeting. Motion made by George Pantelidis and Seconded by Sonya Pouncy.

    MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

5. Update on Action Items – Alice Yates reviewed the Action Items table and noted that 3 items were open. (see Attachment) Boyce asked for updates on those items; all are moving forward.

6. Subcommittee Reports and MBO Status Reports – The MBO Status table is provided in the Attachment.

    a. Executive Subcommittee – Boyce reported that this MBO is essentially complete, but the resource manual needs to be updated, and asked the Rules Subcommittee to take that assignment.

    MBO #2: Increase effectiveness of volunteer members through formalizing the GAC member mentorship program through small groups.

    Action Item: Rules Subcommittee to include Mentorship program in the Resource Manual. Due Date: By next Rules Subcommittee Meeting.

    b. Policy and Programs Subcommittee - Nanette Lockwood was not in attendance, so staff liaison Matt Young reported on the status of the MBOs assigned to the subcommittee.

        i. MBO Status

    MBO #4: Decarbonization: establish clear lines of communication between the GAC and the TFBD.

    MBO #6: Establish a GAC Advisory Board made up of senior staff from various government bodies; this group would advise ASHRAE on what technical resources they need.

        ii. PPIB Documents for GAC Review – Boyce asked that each PPIB be considered separately for approval.

PPIBs to Approve - (see Attachments)

i. Building Decarbonization - Approved By Voice Vote (CNV). No Objections.

ii. Building Energy Benchmarking - Approved By Voice Vote (CNV). No Objections.

iii. Climate Change and the Built Environment - Approved By Voice Vote (CNV). No Objections.

iv. Consensus Standards- Expert Solutions to Meet Global Needs - Approved By Voice Vote (CNV). No Objections.

v. Environmental Tobacco Smoke And Electronic Nicotine Delivery Systems - Approved By Voice Vote (CNV). No Objections.

vi. Indoor Air Quality - Approved By Voice Vote (CNV). No Objections, but editorial change suggested by Rob Hoadley will be addressed so that liters is included in addition to gallons.

vii. Refrigerants and Their Responsible Use - Approved By Voice Vote (CNV). No Objections.

viii. Resiliency in the Built Environment - Approved By Voice Vote (CNV). No Objections.

ix. STEM Education & Workforce - Approved By Voice Vote (CNV). No Objections.

x. Indoor Carbon Dioxide, Ventilation and IAQ - Approved By Voice Vote (CNV). No Objections.

c. Member Mobilization Subcommittee - Tim Theriault reported on the status of Government Outreach Events (See Attachment); staff noted that **only 39 forms have been submitted** and asked RVCs to encourage their Chapter Chairs and others organizing GOEs to please submit GOE reports. There was discussion concerning whether bonus PAOE could be offered to chapters that submit GOE reports in a timely fashion.

i. MBO Status Update – Theriault reported on the status of the MBOs assigned to his subcommittee.

MBO #1: Increase the participation of ASHRAE members in Government Outreach Events and other advocacy opportunities by hosting promotional GAC meetings, webinars, and other events to non-GAC ASHRAE members to increase awareness about the GAC.

MBO #8: Review and revise the RVC reporting requirements for the Winter and Annual meetings.

d. Global Affairs Subcommittee - George Pantelidis reported on the status of the MBOs assigned to his subcommittee.

MBO #3: Build the foundation of a consistent global government engagement program by planning and identifying country- or region-specific events attended by government officials for the purpose of outreach and advocacy.

MBO #5: Work with International Standards Task Force to facilitate sharing of information to avoid duplication of efforts, including through the tracking and adoption of ASHRAE standards and guidelines around the world.

e. Rules Subcommittee - Rob Hoadley reported the subcommittee met on April 6 and reviewed 4 items:

   i. PowerPoint Presentations created by Sheila Hayter and Meghan McNulty on the Nominating Subcommittee's responsibilities. The subcommittee considered including in the Resource Manual, but it was decided to include these presentations instead on Basecamp in the Nominating Subcommittee folder.

   ii. How to revise the GOE reporting of "global, federal, local/subnational" – is being further considered by MMSC and Global Affairs

   iii. Revisions to the RVC reporting form were considered, and will be discussed further.

   iv. Greater international representation on GAC – The Rules Subcommittee discussed changing the ROB so that there would be greater non-North American representation on the GAC.

   v. Onboarding and training of RVCs – This is being added to the Resource Manual.

f. Nominating Subcommittee - Meghan McNulty reported that the work of this subcommittee is complete.

14. Reports

a. ExO Report - Ken Fulk was not in attendance.

b. Communications Coordinator Report - Sonya Pouncy reported that several website changes are being discussed with staff and should be implemented by June.

   MBO #7: Improve the effectiveness of the Government Affairs Website (in cooperation with the PPSC and the MMSC)

c. Technology Council Representative Report - Chris Phelan was not in attendance.

d. Members Council Representative Report - Bassel Anbari reported that a motion was approved at the Winter Meeting whereby ExOs will be non-voting members, and the Standing Committee Chairs will be voting members; this change is intended to streamline the council. In addition, Anbari reported that the Handbook Online and a Certification Program Study Guide of the individual's choosing are two new choices as benefits of membership. IT staff are programming these changes, and the two

additional choices are now available at join and renewal. A full report is provided in the Attachment.

e. Pub-Ed Council Representative Report - Cindy Callaway reported that ALI will be offering 10 courses during Tampa, including some on Certifications, and an "Intro to Decarb" course. Several addenda are out for review, including addenda to Standards 34, 55, 90.1, 62.1/62.2.

15. Other Business – Boyce asked for reports on the items below.

a. Staff information on funding and other resources – Because Nanette Lockwood was not in attendance, Boyce asked for a report from Alice Yates. Yates noted that Lockwood was concerned that members may not be well informed about the billions of dollars being made available through the Infrastructure Act (IIJA) and the Inflation Reduction Act (IRA). Yates explained that reports on these programs are provided in the Government Affairs Update, as well as in a one-pager on Basecamp (Key Resources Folder). Yates asked if anyone needed more or different information about these programs to please let her know or to email GovAffairs@ashrae.org

b. GAC SY23-24 Planning Session - Rob Hoadley reported that a planning meeting will be scheduled in May, and Hoadley asked for input by all RVCs on the GOE goals for next year. Hoadley explained the following items will be discussed during the planning meeting:
- Proposed MBOs for New Society Year (23-24)
- Government Outreach Events: Goals for SY 2023-24
- Proposed Public Policy Priorities for New Society Year (23-24)
- Subcommittee Member Assignments for SY 2023-24

c. Subject Matter Experts for GOEs - Meghan McNulty reported that a "side project" is moving forward to provide a recommendation on a new program to establish a set list of SMEs for GOEs. A proposal will be developed for consideration at the Annual Meeting.

16. Review of New Action Items added at this meeting – Yates reviewed the new action items from this meeting (see Attachment).

17. Next Committee Meeting – Boyce stated that the next GAC meeting will be in Tampa:

GAC Meeting at the Annual Conference
Friday, June 23
1:00 p.m. – 5:00 p.m. EDT
Tampa, Florida – JW Marriott – Meeting Room 4(2)

18. Adjourn – Boyce adjourned the meeting at 10:36 a.m. EDT.

Minutes Respectfully Submitted by Alice Yates, Staff Liaison.

DRAFT MINUTES
GOVERNMENT AFFAIRS COMMITTEE
FRIDAY, FEBRUARY 3, 2023
1:00 PM – 5:00 PM
Winter Meeting – Atlanta, GA

ATTENDANCE

Members Present	Members Absent	Guests	Staff
Darryl Boyce-Chair	None	Sarah Dodge, AIA	Alice Yates
Robert Hoadley-Vice Chair*		Doug Tucker, Mitsubishi	Emily Porcari
Bassel Anbari		Ron Gagnon, DRC Region II	Matt Young
Cindy Callaway		Adrianne Mitani, OVC GAC Chair	Jacob Karson
Christopher Phelan		Darryl Deangers, Ebreon	Andrew Barberi *
Tim Wentz		Peter Luttik Emerson	
Mike Wolf*		Mariel Meegan, Gala Engineering	
Meghan McNulty		Lionel Davis	
Nanette Lockwood		Arturo Thur De Koos, Fujitsu	
Artorius Reyes		Donald Weekes, EHC	
Michael Genin*		Andy Persily, NIST	
RJ Hartman		Ron Jarnagin	
Weston Hockaday		Farooq Mehboob, ASHRAE President	
Louis Van Belle		Jonathan Smith	
Beth Tomlinson*		Doug Cochrane, GAC Liaison to Building EQ	
Jessica Gardner		Emily Toto, ASHRAE	
Damon McClure*		Madison Schultz, ASHRAE	
Peter Koneck-Wilwerding		Julia Timberman	
Tracey Jumper*		Larry Kouma, Johnson Controls	
Daryl Collerman		Samantha Slater, AHRI	
Tim Theriault		Don Davis, BOMA	
Albert Sin		Chad Smith	
George Pantelidis		Kishor Khankari	
Ahmed Bolbol		Steve Comstock, UNEP	
Sonya Pouncy			
Ken Fulk			
Dennis Knight			

**Indicates Remote Participation*

1. Call to Order, Welcome, and Roll Call - Darryl Boyce called the meeting to order at 1:01 p.m., welcomed the members and asked for a Roll Call to be conducted. Jacob Karson conducted the roll call and a quorum was present.

2. Guest Introductions – Boyce asked the guests to introduce themselves.

3. ASHRAE Code of Ethics – Boyce read a summary of the ASHRAE Code of Ethics Commitment.

4. ASHRAE Commitment to Care Statement – Boyce pointed out the Commitment to Care Statement provided as an attachment to the agenda.

5. ASHRAE Simplified Rules of Order – Boyce reminded members that the meeting would be conducted under ASHRAE's Simplified Rules of Order, which was provided as an attachment to the agenda.

6. Review of Agenda – Boyce reviewed the agenda. Nanette Lockwood asked if there could be a discussion of how staff can better liaise with all of GAC on resources available, especially with respect to funding availability. Boyce asked that subject be added to the Agenda under "Other Business."

7. Approval of Minutes from November 7, 2022 Meeting – Boyce reviewed the Minutes from the fall meeting and asked they be approved.

   MOTION: To approve the Minutes of the October 24, 2022 Meeting. Motion made by Sonya Pouncy and Seconded by Meghan McNulty.

   MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

8. Update on Action Items - Alice Yates reviewed the Action Items table and noted that only one item was open. (see Attachment)

9. Report from ASHRAE Government Affairs Office – Staff from the Washington Office (Alice Yates, Emily Porcari, Matt Young, and Jacob Karson) provided a presentation on the "Government Outlook and Opportunities for Engagement" (see Attachment)

10. Subcommittee Reports and MBO Status Reports – The MBO Status table is provided in the Attachment.

    a. Executive Subcommittee – Boyce reported that he has reached out to all of the members, and the program is "alive and well."

       MBO #2: Increase effectiveness of volunteer members through formalizing the GAC member mentorship program through small groups.

    b. Policy and Programs Subcommittee - Nanette Lockwood reported that Darryl Boyce has contacted Kent Peterson, Chair of the TFBD, to ask that a GAC liaison be

included at TFBD meetings. For MBO #6, an advisory board has been established and meetings have been held and are scheduled.

i. MBO Status

MBO #4: Decarbonization: establish clear lines of communication between the GAC and the TFBD.

MBO #6: Establish a GAC Advisory Board made up of senior staff from various government bodies; this group would advise ASHRAE on what technical resources they need.

ii. PPIB Documents for GAC Review (See Attachments)

i. PPIB Status Table – Lockwood reviewed the status of the 12 PPIBs this subcommittee has been managing; all have been reviewed and edits and recommendations are being made. PPIBs requests for approval should be made at the Spring 2023 GAC meeting.

ii. PPIB on Building Electrification – Lockwood stated this was a new PPIB and is important for addressing policies and legislation concerning building electrification.

MOTION: To approve the PPIB on Building Electrification. Motion made by Meghan McNulty and Seconded by Sonya Pouncy.

MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

iii. Proposed Change to the ROB on PPIB Format – Lockwood reviewed the proposed change to the ROB concerning the format of PPIBs; the vote will be taken up during the Rules Subcommittee report.

c. Member Mobilization Subcommittee - Tim Theriault reviewed the goals, targets and progress for Government Outreach Events (See Attachment); he also reported on the status of the MBOs assigned to his subcommittee (see status table).

MBO #1: Increase the participation of ASHRAE members in Government Outreach Events and other advocacy opportunities by hosting promotional GAC meetings, webinars, and other events to non-GAC ASHRAE members to increase awareness about the GAC.

MBO #8: Review and revise the RVC reporting requirements for the Winter and Annual meetings.

d. Global Affairs Subcommittee - George Pantelidis reported that the Global Affairs Subcommittee has met 3 times. They conducted again a survey developed last year to identify country- or region-specific events attended by government officials that could be targeted for the purpose of outreach and advocacy. For MBO #5, Pantelidis reported that a Working Group has been established with the goal of interacting with chapters. He also noted that the Task Force may be transformed into a Standing Committee, and this could happen during the Winter Meeting. Pantelidis also

reported that Global Affairs recommends extending the deadline for submitting a plan on financial assistance for International Outreach Events. The vote will be taken during the Rules Subcommittee report.

MBO #3: Build the foundation of a consistent global government engagement program by planning and identifying country- or region-specific events attended by government officials for the purpose of outreach and advocacy.

MBO #5: Work with International Standards Task Force to facilitate sharing of information to avoid duplication of efforts, including through the tracking and adoption of ASHRAE standards and guidelines around the world.

e. Rules Subcommittee - Rob Hoadley report that this subcommittee has considered two changes to GAC governing documents which the Rules Subcommittee has approved. Hoadley asks the GAC to approve.

i. ROB Change: PPIB Documents Note on Date

MOTION: That the ROB revision per the Attachment be recommended to Members Council for Approval. Motion seconded by Sonya Pouncy.

MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

ii. Resource Manual – Section T: Changing Deadline for Plan on Financial Assistance for International Outreach Events

MOTION: That the Resource Manual be changed per the Attachment. Motion seconded by Collerman.

MOTION PASSED: Approved By Voice Vote (CNV). No Objections.

f. Nominating Subcommittee - Meghan McNulty reported that the subcommittee met at the Winter Conference and has made recommendations for the Chair and Vice Chair of GAC for SY23-24; the subcommittee will meet again in April.

11. Motion Referred from RAL CRC – Boyce referred members to CRC Motion #54 from the Mumbai Chapter. There was considerable discussion, including that a Regional GAC Award can already be provided by Regions, and it was noted that this is already happening in Regions XI and II. Boyce pointed out that Motion 54 is about providing these Regional awards at the Society-level. Pouncy recommended that Regions and Chapters be educated further about the GAC Society award that already exists as well as the option that Regions may create their own Regional GAC awards.

Mumbai Chapter - Motion 54 (10/12/2022): That GAC Committee consider instituting an award at each Region for an individual member for Outstanding Work in Government Affairs in their respective Regions. The award to be instituted from Society Year 23-24, to be presented at the respective CRCs.

MOTION: That GAC recommend against approving Motion 54, and instead promote the GAC Society award and provide information to the Regions that Regional GAC awards may also be created. Motion made by Tim Theriault and Seconded by Bassel Anbari.

MOTION PASSED: Approved By Voice Vote (CNV); 1 oppose; 0 abstentions.

12. Government Affairs Award Nomination - Tim Theriault conducted this portion of the meeting in Executive Session.

13. Reports from Regional Vice Chairs – RVCs provided reports from their regions (See Attachments) – 5 minutes per report

1. RAL – Ahmed Bolbol
2. Region XIV – George Pantelidis
3. Region XIII – Albert Sin
4. Region XII – Tim Theriault
5. Region XI – Daryl Collerman
6. Region X – Tracey Jumper
7. Region IX – Peter Koneck-Wilwerding
8. Region VIII – Damon McClure
9. Region VII – Jess Gardner
10. Region VI – Beth Tomlinson
11. Region V – Louis Van Belle
12. Region IV – Weston Hockaday
13. Region III – RJ Hartman
14. Region II – Michael Genin
15. Region I – Artorius Reyes

14. GAC PHOTO – Photos of the committee was taken; the photos are available on Basecamp.

15. Reports

a. ExO Report - Ken Fulk provided the ExO report (see Attachment)

b. Communications Coordinator Report - Sonya Pouncy provided the Communications Coordinator report (see Attachment)

MBO #7: Improve the effectiveness of the Government Affairs Website (in cooperation with the PPSC and the MMSC)

c. Technology Council Representative Report - Chris Phelan provided the Tech Council Report, and referred to Emily Toto to provide an overview of the Codes Interaction Subcommittee (see Attachment)

d. Members Council Representative Report - Bassel Anbari provided a report from Members Council (see Attachment)

e. Pub-Ed Council Representative Report - Cindy Callaway provided a report from Pub-Ed (see Attachment)

16. Reports from Committee Liaisons

a. Building EQ Committee - Daryl Collerman provided a report (see Attachment)

b. Environmental Health Committee - Meghan McNulty and Don Weekes reported that the EHC has experts that can speak to chapters and possibly government officials. The EHC also has "emerging issue briefs," including a new one concerning dogs in the office. Every month in the *Journal*, they offer an article on environmental health that may be of interest to the GAC. The EHC will be meeting on Feb. 6, and McNulty will provide more information after that meeting.

c. International Standards Task Force – Pantelidis provided an update on the International Standards Task Force, which may become a Standing Committee.

d. Codes Interaction Subcommittee - Mike Wolf reported on code activity in Wisconsin.

e. Refrigeration Technology Committee for Comfort, Process, and Cold-Chain (REF-CPCC) – Lockwood reported that the REF-CPCC meeting is tomorrow, so there is nothing to report at this time.

f. Residential Building Committee – Boyce reported the meeting is on Sunday, so there is nothing new to report.

17. Guest Reports

a. AHRI - Samantha Slater, Senior Vice President of Government Affairs provided a report (see Attachment). AHRI is doing everything it can to get building codes to use A2Ls, and it's critical to do this by 2024**.** AHRI has a 27 state campaign and will be hiring resources in 27 states, either on a legislative or regulatory pathway.

b. AIA - Sarah Dodge, Senior Vice President of Advocacy & Relationships reported the AIA is focusing on climate and equity in the built environment. AIA also wants to coordinate more with ASHRAE about the 2023 COP in Dubai. At the AIA leadership summit in 2 weeks, they will be advocating for the Resilient America Act. AIA is pleased that ASHRAE also supported the change to the 179D tax credit in the Inflation Reduction Act.

c. BOMA - Don Davis, Vice President, Advocacy and Codes reported that BOMA supports the Airborne Act, and is concerned about building electrification because of the limits on the grid – BOMA is not opposed to electrification, but is looking to electrification where it makes sense. They also support the Small Business Energy Efficiency Act ($10.5 million in capital to make upgrades). Davis also announced that BOMA will be holding a "Decarbonization Symposium" in Washington, DC on March 15; ASHRAE will be represented on one of the panels.

d. UNEP - Steve Comstock, Senior Consultant, OzonAction Partnerships, United Nations Environment Programme provided a report (see Attachment). Other Business (Boyce)

e. DOE Schools Pilot Partnership - Sonya Pouncy provided a report (see Attachment).

f. Staff information on funding and other resources – because of time constraints, Nanette Lockwood asked that this matter addressed at the next GAC meeting. Review of New Action Items added at this meeting (Yates)

18. Next Committee Conference Call – Boyce stated that the next meeting will be scheduled for the Spring.

19. Adjournment – Boyce adjourned the meeting at 5:35 p.m.

Minutes Respectfully Submitted by Alice Yates, Staff Liaison.

ACTION ITEMS

GOVERNMENT AFFAIRS COMMITTEE

SY 2022-2023

Last Updated: April 11, 2023

#	Action	Assigned To	Due Date	Status	C/O
Added at 06-24-2022 meeting					
1	Review whether the presentation on roles and responsibilities for the nominating subcommittee should be added to the GAC Reference Manual.	Rules Subcommittee	Next Rules Subcommittee Meeting	Was discussed at Rules SC meeting on April 6; the presentation will be posted on Basecamp in the Nominating Subcommittee folder, rather than added to the Resource Manual.	C
Added at 11-07-2022 meeting					
2	Develop Fact Sheet on key programs from IRA and the BIL, along with websites that have more detailed information.	Staff	Winter 2023 Meeting	Matt Young prepared these factsheets and distributed to GAC members via email on December 16th, 2022. Documents are also posted to Basecamp in the Key Resources folder.	C
3	Work with the Marketing Team to collect statistics on use of the Gov Affairs website (and various pages within it). This information will help inform website changes.	Staff	Before December Meeting with Marketing.	Staff worked with Marketing to obtain statistics; these were used to inform the meeting on website redesign with the Communications Coordinator.	C
4	Set up dinner in Atlanta – to be held Friday night, February 3.	Staff	Mid-December	Venue identified, menu developed, payment system arranged.	C

#	Action	Assigned To	Due Date	Status	C/O
5	Inquire with the Building EQ Committee concerning its timeline for incorporating carbon into the tool.	Staff working with Daryl Collerman	Winter 2023 Meeting	Per a discussion with Building EQ staff, Daryl Collerman, and Gov Affairs staff, the Building EQ carbon metric is currently live for operational carbon emissions. BEQ will consider how to incorporate embodied carbon once more information on that is available from the TFBD. The BEQ Committee is working on an updated version of the BEQ "fact sheet" that will include the carbon information; this updated fact sheet will be used for GOEs once it's finalized and available.	C
Added at 02-03-2023 meeting					
6	Structure a Government Affairs award at the Regional Level, and potentially include language to Resource Manual; consider how to improve communication to Regions and Chapters about the Society GAC award.	Member Mobilization	GAC Spring Meeting	The Member Mobilization Subcommittee will consider criteria for an optional regional-level award based on regions that already have such an award and will share their recommendations at the June Annual meeting.	O
7	Send criteria on your Regional GA Awards to member mobilization SC so that they can structure a consistent approach	All RVCs with GA Regional Awards	Feb. 28	Member Mobilization will be reaching out to RVCs that already have a regional award before the June meeting.	O
8	Determine which parts of North Dakota (if any) are included in Region VI	Staff	ASAP	Yates sent email to RVCs for Regions VI and IX on 4/7.	C
9	Send GAC Award Recommendation to Honors & Awards	Staff	ASAP	Emily Porcari emailed recommendation to staff liaison of Honors and Awards on Feb. 5.	C
10	Investigate with web team why a nomination to the GAC couldn't be found on the website.	Ken	ASAP	This issue has been corrected.	C

#	Action	Assigned To	Due Date	Status	C/O
11	Continue the discussion on ways to better coordinate and collaborate between the CIS and GAC.	CIS & GAC	Spring / Summer		O
12					

Shaping Tomorrow's Built Environment Today

BUILDING ENERGY BENCHMARKING, ASSESSMENTS, AND PERFORMANCE TARGETS

THE ISSUE

Heating, ventilation, air conditioning, and refrigeration (HVAC&R) account for 61% of commercial building site energy use.[1] While new buildings have realized improved energy performance, existing buildings represent the greatest opportunity for energy and Greenhouse Gas (GHG) emissions reductions. Improving the energy performance of existing buildings requires a robust database of building energy data. Without understanding a building's true performance, identifying effective improvements in energy efficiency is challenging. As the saying goes, "you can't manage what you don't measure."

To address this concern, building energy benchmarking has become a critical tool for quantifying and evaluating building operational energy use patterns. Benchmarking data can inform public policies that focus on the most effective ways to reduce energy use in a city or state's building stock. Benchmarking data can also be used to develop local energy and GHG emissions performance targets appropriate to local climate and building types.

Over 40 U.S. and Canadian cities have building energy benchmarking programs.[2] Some jurisdictions require actions beyond benchmarking, such as performing energy assessments (audits, tune-ups, or retrocommissioning) or meeting performance targets (maximum energy use or GHG emissions). Cities such as Boston, Denver, New York City, Vancouver, and Washington DC have set aggressive GHG emissions reduction goals for existing buildings that will require accurate benchmarking to determine emissions and energy savings.

ASHRAE's ROLE

ASHRAE develops standards, guidance and educational resources informed by robust data on the actual energy performance of buildings, and shares evidence-based best practices and technical information with professionals across the building sector. To achieve a carbon neutral world, ASHRAE is also leading the way in converting energy to carbon in selected standards. ASHRAE's tools and resources include:

- Benchmarking:
  - **ASHRAE Standard 105** *Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions* provides a method for determining and comparing building energy performance and greenhouse gas emissions.
  - **ASHRAE Standard 214** *Standard for Determining and Expressing Building Energy Performance in a Rating Program* provides uniformity in the building energy labeling and disclosure process.

[1] Includes water heating; 2012 Commercial Building Energy Consumption Survey: Energy Usage Summary. U.S. Energy Information Administration, 18 March 2016, https://www.eia.gov/consumption/commercial/reports/2012/energyusage/

[2] Comparison of U.S. Commercial Building Energy Benchmarking and Transparency Policies. Institute for Market Transformation, July 2022, https://www.imt.org/resources/comparison-of-commercial-building-benchmarking-policies/

    - **ASHRAE Standard 228P** *Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance* is an in-progress standard that provides consistent method definitions of "zero net energy" and "zero net carbon" for both the design of new buildings and the operation of existing buildings.
    - **ASHRAE Standard 240P** *Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation* will provide a whole life carbon approach to support emissions reductions in buildings.
- Energy Audits and Assessments:
    - **ASHRAE Standard 211** *Standard for Commercial Building Energy Audits* establishes consistent practices for conducting and reporting energy audits for commercial buildings. *Referenced by ordinances in Atlanta, GA; Boulder, CO; Los Angeles, CA; New York, NY; and San Francisco, CA.*
    - ***Commercial Buildings Energy Audits Reference Manual*** is a reference that defines best practices for energy survey and analysis for purchasers and providers of energy audit services and serves as a reference for Standard 211.
- Building performance targets:
    - **Building Performance Standards: A Technical Resource** provides technical basis and resources to policymakers, building owners, facility managers, design professionals and ASHRAE members when developing and implementing a Building Performance Standard (BPS).
    - **ASHRAE Standard 100** *Energy Efficiency in Existing Buildings* sets energy use intensity (EUI) benchmarks for existing buildings in the commercial and residential sector and establishes methods for determining opportunities for improvement in EUI leading to compliance with the standard benchmarks. *Referenced by Washington State's Clean Buildings Act of 2019.* Future revisions will incorporate setting GHG emissions targets.
    - **ASHRAE's Building EQ**[3] program calculates a building's energy performance in relation to other similar buildings, identifies the gap between "as designed" potential and actual performance in operation, and provides recommendations to reduce energy use. Building EQ can be used to publicly display building energy use and comply with disclosure requirements.

ASHRAE certification programs were developed to meet the industry needs of today and provide value to thousands of built-environment professionals, employers, and building owners. Certifications like Building Commissioning Professional (BCxP) and Building Energy Assessment Professional (BEAP) are recognized by the U.S. Department of Energy (DOE) as meeting the Better Buildings Workforce Guidelines (BBWG) and are used frequently by local jurisdictions to designate who is qualified to perform benchmarking and energy assessments.

ASHRAE's VIEW

Energy metrics that are widely accepted, robust, and validated are critical to achieving policy objectives. Standardized procedures for energy performance assessments ensure an appropriate level of rigor and scope of work. Within a building owner's portfolio or across a city's building stock, decision-makers need consistent language, metrics, and procedures to effectively communicate goals, evaluate potential investments, and measure success. ASHRAE remains dedicated to sharing technical resources with policymakers to support legislative and regulatory solutions that improve building energy efficiency and reduce GHG emissions.

[3] For more information, see https://www.ashrae.org/technical-resources/building-eq

Shaping Tomorrow's Built Environment Today

CLIMATE CHANGE AND THE BUILT ENVIRONMENT

THE ISSUE

Worldwide concern for changes in the global climate has escalated as scientific evidence has become more definitive, linking increased concentrations of atmospheric greenhouse gases (GHGs) with global warming. As a response, ASHRAE is increasing our attention and consideration on standards, regulations, legislation and policies that involve GHGs.

When developing policy to combat climate change, it is important to consider that buildings and their heating, ventilating, air conditioning and refrigeration (HVAC&R) systems directly and indirectly contribute to GHG emissions. Buildings are responsible for more than 35% of global final energy use and nearly 40% of energy-related CO2 emissions worldwide.[1] These emissions are associated with construction and the energy needed to operate buildings and building systems, and to a lesser extent indirectly through the release of refrigerants, if not properly managed. According to the United Nations Intergovernmental Panel on Climate Change (IPCC), "buildings offer immediately available, highly cost-effective opportunities to reduce energy demand, while contributing to meeting other key sustainable development goals including poverty alleviation, energy security and improved employment."[2] Improving the energy efficiency, and the ongoing efficient performance of building systems provide a significant opportunity for climate change mitigation.

ASHRAE's ROLE

ASHRAE is the leading source of information and research for HVAC&R systems and building performance making this issue a key area for our members. ASHRAE's members use their expertise to educate policymakers and promote the implementation of energy efficient design practices and sustainable technologies that can help reduce GHG emissions. This is done most notably through ASHRAE's wide-ranging standards development such *as Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings, Standard 100 Energy Efficiency in Existing Buildings, Standard 189.1 International Green Construction Code*, and *Standard 105 Standard Methods Of Determining, Expressing, And Comparing Building Energy Performance And Green House Gas Emissions*. ASHRAE also has an MOU with the International Codes Council to collaborate on the development of materials and resources related to quantifying GHG emissions.

ASHRAE and its partners have published several free-to-download Advanced Energy Design Guides (including Zero Energy Building Guides for K-12 Schools and Offices), which are available for free download and provide educational guidance to reduce energy consumption while achieving proper IEQ conditions.[3]

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[1] United Nations Environment Programme, International Energy Agency (IEA) , and Global Alliance for Buildings and Construction (GlobalABC),"*2018 Global Status Report Towards a Zero-Emission, Efficient and Resilient Buildings and Construction Sector*." .

[2] Lucon, Oswaldo, and Diana Ürge-Vorsatz. "AR5 Synthesis Report: Climate Change 2014."*Chapter 9: Buildings*, United Nations Intergovernmental Panel on Climate Change, 2014, https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter9.pdf.

[3] For more information, see www.ashrae.org/technical-resources/aedgs.

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ASHRAE is also in the process of developing BSR/ASHRAE Standard 228P which will set requirements for evaluating whether a building or group of buildings meets a definition of "zero energy."

With respect to refrigerants, ASHRAE also advances the HVAC&R field by performing research on low global warming potential (GWP) refrigerants and developing safety and classification standards on refrigerants[4], developing guides and a standard for designing systems that minimize energy consumption and reduce emissions of high GWP refrigerants. As part of this effort, ASHRAE supports the global phasedown of the production and consumption of refrigerants that are high-GWP HFCs, including through legislation, regulations, and policy.

ASHRAE's VIEW

ASHRAE is committed to a leadership role in reducing climate change contributed to by building systems and responding to climate change experienced in the built environment. ASHRAE recommends:

- States adopt the most recent version of ANSI/ASHRAE/IES Standard 100 for existing buildings and ANSI/ASHRAE/IES Standard 90.1, which has been a benchmark for new commercial building energy performance in the United States and a key basis for codes and standards around the world for more than 40 years. The 2019 version of Standard 90.1 is about 4.3% more energy efficient than the 2016 version.
- A full evaluation of new and existing buildings' climate impacts, carbon balance, and energy performance.
- Funding for research that improves energy efficiency/utilization in HVAC&R technology to minimize GHG emissions.
- Funding for building science research leading to advanced equipment and systems, grid-interactive designs and ability to load-shift, integration of the Internet of Things (IoT), net metering, and building based energy storage systems capable of providing dispatchable energy systems.
- Promotion of carbon and energy life-cycle analysis to building owners to encourage sustainable building construction, operation and renewal.

[4] For more information, see: https://www.ashrae.org/technical-resources/bookstore/standards-15-34

Shaping Tomorrow's Built Environment Today

CONSENSUS STANDARDS: EXPERT SOLUTIONS TO MEET GLOBAL NEEDS

THE ISSUE

Voluntary consensus technical standards developed by private organizations are essential for a productive global economy and to facilitate global commerce. Standards foster safe building technology innovation by providing a transparent baseline and needed metrics for assessing how that technology can impact building design, performance and the occupants. They are necessary for comparing technologies in the expanding global marketplace and facilitating cross-border collaboration. Governments and building codes recognize the value of voluntary consensus standards and adopt them for use in policies regulating buildings.[1]

Voluntary consensus technical standards are developed through the participation of qualified, interested and affected stakeholders including manufacturers, consumers, users, advocacy organizations and representatives of government and academia. Standards accreditors such as the American National Standards Institute (ANSI), the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) follow several principles such as consensus, balance, transparency, due process, and technical expertise.

Copyright protection of voluntary consensus technical standards is critical to the continued development and maintenance of standards. Governments at all levels benefit from application of standards by private organizations who rely on copyright protection in order to continue the maintenance of existing standards and development of future standards. Without copyright protection, standards development organizations will be challenged to provide the public with the benefit of rigorously research, tested and science-backed standards.

ASHRAE's ROLE

ASHRAE develops and publishes robust technical standards; many of which are adopted directly by governments or into building codes. ASHRAE standards establish recommended practice in the areas of heating and cooling, indoor air quality, energy conservation and management, building water systems, high-performance buildings, refrigerant use and classification, and others. ASHRAE's standard development process is rigorous, and it is one of only six standards-developing organizations in the U.S. that can self-certify that its standards have followed ANSI's procedures.

ASHRAE also serves on U.S. Technical Advisory Groups (TAGS) for ISO Committees and in the role of international secretariat for ISO Technical Committees to help ensure that ASHRAE views are represented. These standards are supported by technical committees that develop publications and educational materials to assist in the application of ASHRAE standards. ASHRAE standards are developed by experts from around the globe under strict ethical and non-commercialism guidelines.

[1] The National Technology Transfer and Advancement Act of 1995 (P.L. 104-113) (NTTAA) and OMB Circular A-119

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Updated June 30, 2023

ASHRAE's VIEW

Use of voluntary consensus standards at all levels of government are a benefit to society. For this reason:

- Government entities should continue to support voluntary consensus standard development, use, and adoption in laws and regulations, which will protect public health and safety, improve commerce and save taxpayers money.
- Agencies should work with standards developers and industry experts to identify situations where societal interests could be addressed through the use of voluntary consensus standards.
- Governments should continue to foster and support the unique character and strengths of the public-private partnership in standards development as they pursue trade and other international agreements, regulatory harmonization and legislative and regulatory approaches.
- Governments should support policies, both domestically and internationally, which ensure the continued ownership and control of the copyrights and trademarks of standards developers.
- Agencies should increase participation in the development of voluntary consensus standards by encouraging government experts to participate through work release time and reimbursement of expenses incurred.
- Governments should regularly update regulations and policies to reference the latest versions of standards since they reflect the latest technical advances.

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ENVIRONMENTAL TOBACCO SMOKE AND ELECTRONIC NICOTINE DELIVERY SYSTEMS

THE ISSUE

While indoor smoking has become less common in recent years in many countries the use of Electronic Nicotine Delivery Systems (ENDS) has significantly increased. Both smoking and the use of ENDS negatively affects indoor air quality and each has inherent health risks.

Exposure to Environmental Tobacco Smoke (ETS) continues to have considerable health and cost impacts. Researchers have investigated the health and irritant effects among non-smokers exposed to tobacco smoke in indoor environments. Such exposure is also known as passive smoking and as involuntary exposure to secondhand smoke. A number of national and global health research groups and agencies have concluded, based on the preponderance of evidence, that exposure of non-smokers to tobacco smoke causes specific diseases and other adverse effects to human health, most significantly cardiovascular disease and lung cancer. No cognizant authorities have identified an acceptable level of ETS exposure to non-smokers, nor is there any guarantee that further research will identify such a level.

Simultaneously with the decline of tobacco smoking, the use of Electronic Nicotine Delivery Systems (ENDS) including vape pens, electronic cigarettes, and other device that convert nicotine into an inhalable aerosol without combustion has rapidly increased. The vapor or aerosol emitted from these devices contains varying amounts of nicotine dissolved in propylene glycol, or glycerol along with volatile compounds (VOCs).[1,2] Unique to the use of ENDS is the concentration and type of compounds that may deposit and remain on indoor surfaces. These deposits represent a unique source of contamination in buildings that varies depending on indoor climate, air flow, and area that may require specialized cleaning, HVAC maintenance, and other operational practices.[3] In addition, limited studies have been performed to evaluate the chemical reactions and health interactions that may occur between ENDS emissions and other airborne contaminants commonly found indoors.

Despite the well-documented benefits of smoking bans, many locations worldwide still lack laws and policies that provide sufficient protection. Still fewer bans include the use of ENDs. In many locations, laws and policies are only partially protective, permitting smoking and ENDS usage in certain areas of buildings or specific building types including casino, entertainment and multifamily housing.

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[1] Offermann 2015. F.J. Offermann, "Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposures," *Building and Environment*, Vol. 93, Part 1, 101-105, November, 2015.
[2] Cooke 2015. Cooke, Andrew, MDa, et. al., "The Electronic Cigarette: The Good, the Bad, and the Ugly," *J Allergy Clin Immunol Practice*, 2015, Vol. 3, 498-505.
[3] Schripp 2013. Schripp, et. al., "Does e-cigarette consumption cause passive vaping?" *Indoor Air* 2013; 23: 25–31.

ASHRAE's ROLE

Providing healthy and comfortable indoor environments through the management of indoor air quality is a fundamental goal of building and HVAC design and operation. ASHRAE has long been active in providing engineering technology, standards and design guidance in support of this goal. For example, ANSI/ASHRAE Standards 62.1 and 62.2 are standards that specify minimum ventilation rates and other measures in order to minimize adverse health effects for occupants. Therefore, the health effects of indoor exposure to emissions from tobacco products, and ENDs devices are relevant to ASHRAE.

ASHRAE's VIEW

Exposure to ETS can be reduced through a variety of strategies, but they do not completely eliminate exposure to ETS. Only an indoor smoking ban, leading to near zero exposure, provides effective control, and bans on ETS exposure have only been recognized as effective by health authorities. Effects of secondary involuntary exposure to ENDS have not been thoroughly studied by the scientific community, in part because these devices are new, evolving, diverse and customizable. However, because ENDS have become so prevalent, indoor building components and occupants are being exposed to passive vapors. Many cognizant public health authorities argue that caution should prevail in all situations of human exposure when limited data is available about health impacts. Applying this principle to ENDS argues that involuntary exposure should be banned in order to keep exposure to airborne emissions as low as possible.

ASHRAE's mission to act for the benefit of the public encourages lawmakers, policymakers and others who exercise control over buildings, to maximize mitigation of secondary involuntary exposure from smoking and ENDS use inside and near buildings. ASHRAE also recommends:

- That building design practitioners work with their clients to define their intent, where smoking and ENDS use is still permitted, for addressing exposure in their facilities and educate and inform their clients of the limits of engineering controls in regard to both ETS and ENDS.
- That multifamily buildings have complete smoking bans and maximize mitigation of ENDS passive emissions inside and nearby in order to protect nonsmoking adults and children.
- That further research be conducted by cognizant health authorities on the health effects of involuntary exposure in the indoor environment from smoking cannabis, using hookahs, and using ENDS.

Shaping Tomorrow's Built Environment Today

INDOOR AIR QUALITY

THE ISSUE

The average adult breathes about 2,000 gallons of air each day and most Americans spend around 87% of their time inside buildings – amplifying the importance of indoor environmental quality. Specifically, the quality of the air inside our buildings has a significant impact on a person's health, performance and wellbeing. Indoor air is a significant exposure route for airborne contaminants and may contain particles and gases with impacts that range from eye and lung irritation to exposure to infectious pathogens, poisonous compounds, or carcinogens. These contaminants can impact health, comfort, well-being, learning, sleep, and work performance.

The direct connection between health and wellness encourages building designers and operators to prioritize indoor air quality (IAQ) in buildings. Cost-benefit analyses have estimated the health and economic benefits of improved IAQ to be far greater than the costs of implementing strategies that yield IAQ improvements. There are three widely accepted approaches to improving IAQ – source control, ventilation, and air cleaning. Many strategies exist within these approaches that can help achieve good IAQ efficiently and can be implemented to lower energy use and improve occupant satisfaction.

ASHRAE's ROLE

The critical connection between IAQ and building HVAC systems has made IAQ a fundamental issue for ASHRAE and its members for more than 50 years. ASHRAE provides technical resources, coordinates and funds research, organizes conferences, and educates practitioners about IAQ.

ASHRAE developed and continues to support standards, guidelines, and other resources related to efficiently improving IAQ, such as:

- ***ANSI/ASHRAE Standard 62.1, Ventilation and Acceptable Indoor Air Quality*** – This Standard establishes ventilation and other IAQ requirements for buildings other than residential and health care. Its outdoor air ventilation rate requirements have been adopted into the International Mechanical Code and Uniform Mechanical Code, the two most common model building codes in the US. The standard is also referenced by most green commercial building programs including LEED.
- ***ANSI/ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings*** – Residential (multifamily to single family homes) ventilation requirements from this standard have been adopted into codes, including California's Title 24, and into LEED for Homes and the U.S. Environmental Protection Agency's (EPA) Indoor airPlus program.
- ***ANSI/ASHRAE/ASHE Standard 170, Ventilation of Health Care Facilities*** – Standard 170 brought together several documents used throughout North America into a single standard. It is now widely used in building codes for ventilation requirements in hospitals and other health care facilities.
- ***ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings*** – This Standard was developed in conjunction with U.S. Green Building Council, the

International Code Council and Illuminating Engineering Society, this standard provides IAQ requirements beyond those in Standard 62.1.

- ***ASHRAE Indoor Air Quality Guide*: Best Practices for Design, Construction, and Commissioning and *ASHRAE Residential Indoor Air Quality Guide*: Best Practices for Acquisition, Design, Construction, Maintenance and Operation** – These guides present best practices that have proven successful in building projects to achieve good IAQ.
- ***2017 ASHRAE Handbook Fundamentals*** – This handbook covers basic principles and data used in the HVAC&R industry including indoor air quality. The ASHRAE Technical Committees that prepare these chapters provide new information, clarify and update existing content, and reorganize chapters to make the Handbook more understandable and easier to use.
- ***Damp Buildings, Human Health and HVAC Design*** – This report provides a summary of what is understood about dampness-related health risks in buildings as well as suggestions for HVAC system designers that can help avoid such risks.

ASHRAE'S VIEW

ASHRAE's view is that the provision of acceptable IAQ is an essential building service. Improved IAQ brings substantial health and economic benefits from a broad public health perspective, as well as to individual building owners and occupants.

Therefore, ASHRAE recommends that:

- Achieving and maintaining good IAQ should be included in all decisions (including policy decisions) that affect the design and operation of buildings and HVAC systems, including efforts to improve building energy efficiency, sustainability and resiliency.
- The importance of IAQ and the fundamentals of achieving good IAQ through building design and operation should be included in education programs for all stakeholders in built environment – from developers, owners, and operators to designers, technicians, and consultants.
- The latest versions of ASHRAE's IAQ standards should be adopted by building codes and regulations when they are updated every three years, specifically:
    - Standard 62.1-2022 for commercial buildings
    - Standard 62.2-2022 for residential buildings
    - Standard 170-2021 for healthcare buildings
- Research and standards development should be supported by the government, including consideration for a national model standard, improvement of indoor contaminant monitoring and measurement technologies, approaches to improving IAQ beyond ventilation and filtration (e.g., air cleaning), development of tools to assess the economic valuation of IAQ benefits, and improved understanding of new contaminants of concern and techniques for adding them.

Shaping Tomorrow's Built Environment Today

INDOOR CARBON DIOXIDE, VENTILATION AND INDOOR AIR QUALITY

THE ISSUE

Indoor CO_2 has been considered in the context of building ventilation and indoor air quality (IAQ) for centuries. Most of these discussions have focused on how CO_2 concentrations relate to occupant perceptions of IAQ, and the use of CO_2 to evaluate ventilation rates. While these topics have been studied for decades, misinterpretation of CO_2 concentration as an indicator of IAQ and ventilation is common in the HVAC industry, IAQ research community, and the public.

In addition, recent research has studied the impacts of CO_2 on human performance at commonly observed indoor concentrations. indoor CO_2 monitoring has also been promoted as a ventilation indicator in the context of managing the risks of airborne disease transmission. Also, concerns have long existed regarding the accuracy of indoor CO_2 concentration measurements, which are now more common due to the availability and more widespread application of less expensive sensors. Given all of these factors, as well as increasing calls to monitor CO_2 in buildings, ASHRAE is working to clarify the use of indoor CO_2 measurements as a tool to help improve IAQ and building ventilation.

ASHRAE's ROLE

ASHRAE has long been active in providing engineering technology, standards and design guidance to support the goal of providing healthy and comfortable indoor environments in an energy-efficient manner. For decades, these efforts have focused on providing effective ventilation in buildings, designing and operating ventilation systems and managing the wide range of air pollutants within buildings. For example, ANSI/ASHRAE Standards 62.1 and 62.2 are standards that specify minimum ventilation rates and other measures to support the health, comfort and productivity of building occupants; these standards do not include CO_2 limits.

ASHRAE's VIEW

Monitoring indoor CO_2 can be a useful tool for understanding building ventilation and IAQ, supporting efforts to provide high quality indoor environments and manage the energy needed to do so. Critically, indoor CO_2 measurements should be understood in the context of the built environment, to ensure that they are measured and interpreted in a meaningful way. Claims that ASHRAE Standard 62.1 requires indoor CO_2 concentrations below a certain threshold (typically 1000 ppm) for acceptable indoor air quality are *incorrect*[1]. ASHRAE's IAQ Standards do not use indoor CO_2 values to determine acceptable indoor air quality, as IAQ is impacted by multiple factors (such as temperature, humidity, particulate matter, gas pollutants, etc.).

Because of ASHRAE's mission to act for the benefit of the public, it encourages building designers, lawmakers, policymakers and others to craft informed recommendations for the measurement of indoor CO_2 concentrations. To that end, ASHRAE stresses that:

[1] Persily, A. 2022. *Development and application of an indoor carbon dioxide metric*. Indoor Air. Volume 32, Issue 7.

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Updated June 30, 2023

- Indoor CO_2 concentrations do not provide an overall indication of IAQ, but they can be a useful tool in IAQ assessments if users understand the limitations in these applications (e.g., number and activity level of occupants compared to the design capacity, length of time a space has been occupied, no combustion or other sources of CO_2 that could impact readings). While CO_2 readings below a threshold value do not assure overall acceptable IAQ, CO_2 readings far above expected ranges[2] may indicate the ventilation system is not functioning properly.
- Existing evidence for the impacts of CO2 on health, well-being, learning outcomes and work performance is inconsistent and does not currently justify changes to ventilation and IAQ standards, regulations, and guidelines.[3] However, CO_2 can be used to verify if ventilation system performance meets existing IAQ standards, regulations, and guidelines.
- The use of indoor CO2 measurements to evaluate the risk of airborne disease transmission must account for the type of space and its occupancy and the differences in CO2 and infectious aerosols. For example, CO_2 concentration is unaffected by filtration and most other air-cleaning methods that reduce infectious aerosol concentration, so it should not be used as a *direct* indicator of infection risk.
- Sensor accuracy, location and calibration are all critical for drawing meaningful inferences from measured indoor CO2 concentrations.
- Programs or requirements to monitor CO_2 in buildings, when conducted with an understanding of their technical basis, can be helpful, but monitoring CO_2 without such understanding can lead to confusion on the part of building occupants and the public.

[2] *Ibid*.

[3] In a 2010 study by J.M. Logue, T.E. McKone, M.H. Sherman, and B.C. Singer of the Berkeley National Laboratory titled, Hazard Assessment of Chemical Air Contaminants Measured in Residents, fifteen pollutants were identified as contaminants of concern for chronic health effects in a large fraction of homes. Nine pollutants were identified as priority hazards: acetaldehyde; acrolein; benzene; 1,3-butadiene; 1,4-dichlorobenzene; formaldehyde; naphthalene; nitrogen dioxide; and PM2.5. Activity-based emissions are shown to pose potential acute health hazards for PM2.5, formaldehyde, CO, chloroform, and NO2.

Shaping Tomorrow's Built Environment Today

BUILDING DECARBONIZATION

THE ISSUE

Buildings provide many benefits to society but have a significant worldwide environmental impact due to their greenhouse gas emissions (GHGs). The building industry accounts for roughly 40 percent of global GHGs and the global building stock is expected to double by 2060 due to urbanization, population growth, and related economic trends. The standard metric used to quantify GHGs is carbon dioxide equivalent (CO_2-eq). Using a common metric helps evaluate different sources of GHGs in terms of their potential to impact the atmosphere—also referred to as their global warming potential. As governmental bodies and jurisdictions across the planet confront climate change, the term "decarbonization" is used to describe practices or policies that reduce GHG emissions. Building decarbonization encompasses a building's entire life cycle, including building design, construction, operation, occupancy, and end of life.

Many governmental bodies and jurisdictions are requiring new buildings to be low carbon or net-zero energy in the near-term and other policies are requiring retrofits of existing building stock in the medium to long term to decarbonize. Some decarbonization policies also advance building electrification when coupled with a renewable electricity source or other low-carbon technologies. Decarbonization efforts will require large public sector and private sector investments while at the same time creating jobs and business opportunities in the HVAC&R, construction materials, and design sectors.

ASHRAE's ROLE

ASHRAE stands at the forefront in supplying standards, guidance and education for the design, manufacturing, installation, and operation of building systems. With respect to building decarbonization, ASHRAE's historical focus has been on energy efficiency, which has resulted in significant GHG emission reductions. ASHRAE is expanding its technical resources, education and training and other initiatives so that they address building decarbonization. ASHRAE's Task Force for Building Decarbonization is advancing numerous efforts and updates that can be found at www.ashrae.org/decarb

ASHRAE's consensus-based standards with potential reference to carbon include:[1]

- Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*
- Standard 90.2, *Energy-Efficient Design of Low-Rise Residential Buildings*
- Standard 100, *Energy Efficiency in Existing Buildings*
- *Standard 105-2021, Standard Methods for Determining, Expressing and Comparing Building Energy Performance and Greenhouse Gas Emissions*
- Standard 189.1, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*
- Standard 189.3, *Design, Construction, and Operation of Sustainable High-Performance Health Care Facilities*

[1] The most up-to-date list can be found at: https://www.ashrae.org/about/tfbd-technical-resources

- Proposed Standard 228P, *Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance*
- Proposed Standard 240P, *Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation*

ASHRAE's VIEW

ASHRAE's position is that eliminating GHG emissions from the built environment is essential to addressing climate change. To do this, it is ASHRAE's position that:

- Decarbonization of buildings and their systems must be based on a holistic analysis including healthy, safe, and comfortable environments; energy efficiency; environmental impacts; sustainability; operational security; and economics.
- By 2030, the global built environment must at least halve its 2015 GHG emissions, whereby:
  - all new buildings are net-zero GHG emissions in operation,
  - widespread energy efficiency retrofit of existing assets are well underway, and
  - embodied carbon of new construction is reduced by at least 40 percent.
- By 2050, at the latest, all new and existing assets must be net zero GHG emissions across the whole building life cycle.
- Building decarbonization provides benefits beyond reducing GHGs, including reduced indoor and outdoor air pollution, improved energy savings, improved community health and wellbeing, enhanced social responsibility, and increased property valuation.
- Operational energy-related GHG emissions can be reduced by implementing efficiency measures and building electrification; improving O&M; using low-GWP refrigerants and minimizing refrigerant volume while maintaining energy efficiency; improving refrigerant management; and increasing use of renewable energy sources both on site and off site, energy storage, and building-grid integration.
- Building design and operations should be able to respond to real-time carbon signals from the power grid to reduce GHG emissions.
- Increasing stringency and enforcement of energy codes are critical for decarbonization.
- Whole-building life-cycle assessment must be considered in future building codes to reduce embodied and operational GHG emissions related to buildings and their HVAC&R systems.
- Building performance standards (BPS) should be considered as a policy tool for existing building decarbonization.
- Decarbonization policies must consider and mitigate impacts on disadvantaged communities and less-developed nations.

Shaping Tomorrow's Built Environment Today

REFRIGERANTS AND THEIR RESPONSIBLE USE

THE ISSUE

Choosing a refrigerant for a given HVAC&R application has become increasingly complex due to direct and indirect environmental impacts, performance, cost-effectiveness and safety for employees and the public. Following the implementation of the Kigali Amendment to the Montreal Protocol in 2019, the use of lower global warming potential (GWP) refrigerants began to replace today's high GWP refrigerants. Many of the lower GWP refrigerants are mildly flammable, which required the updating of common codes and standards.

ASHRAE's ROLE

With its technical expertise, ASHRAE plays a key role in guiding the selection and analysis of new refrigerants, and the potential environmental and societal consequences of their use. ASHRAE contributed to successfully phasing out the use of ozone depleting refrigerants and is already contributing to reducing the use of high GWP refrigerants. ASHRAE develops voluntary technical standards and guidelines governing the classification, application, and use of refrigerants, which are referenced by various codes and regulations, globally.

As lower GWP refrigerants become prevalent, ASHRAE commits to ensure their safe classification and application in residential, commercial and industrial uses as prescribed by the *Standard 34 – 2022, Designation and Classification of Refrigerants, the ASHRAE Standard 15 – 2022, Safety Standard for Refrigeration Systems*, and the *ASHRAE Standard 15.2 – 2022, Safety Standard for Refrigeration Systems in Residential Applications*. Significant updates to these standards were based on a $5.2 million research program, with contributions from DOE ($3 million), ASHRAE ($1.2 million) and AHRI ($1 million), as part of ASHRAE's commitment to support climate change mitigation.

ASHRAE's VIEW

ASHRAE supports the classification and use of refrigerants based on safety, performance and environmental impact. As the transition to more climate-friendly alternatives continues, ASHRAE supports reducing emissions from high GWP refrigerants through research, education, and improvements to design, installation, operation, maintenance, and decommissioning of equipment in accordance with applicable standards and policies.

ASHRAE supports the global phasedown of the production and consumption of high GWP refrigerants and encourages the adoption of the latest standards in order to enable use of the new lower GWP refrigerants. ASHRAE continues to update related standards to reflect the newest low GWP refrigerants and solutions.

Furthermore, used refrigerants should be safely recovered for reuse, recycle, reclamation or destruction during service or at the end of the equipment life. Refrigerant inventory and management programs should be implemented to closely track refrigerant use.

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Updated June 30, 2023

Shaping Tomorrow's Built Environment Today

RESILIENCY IN THE BUILT ENVIRONMENT

THE ISSUE

Resiliency in the built environment is a complex subject that involves many disciplines. The National Institute of Building Sciences (NIBS) Coalition on Resiliency, which includes ASHRAE and 38 other organizations, has defined resiliency as "the ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events or threats." These events or threats may be financial, political, environmental, as well as disaster, conflict, cyber, climate, or health-related. Its recent prominence is in part due to increasing concerns over the adequacy of responses to natural or climate-related events around the world, as well as recognition that many such events are likely to increase in frequency and severity.[1] According to the National Oceanic and Atmospheric Administration (NOAA), the U.S. has sustained 341 weather and climate disasters since 1980 where overall damages/costs reached or exceeded $1 billion (including CPI adjustment to 2022). The total cost of these 341 events exceeds $2.475 trillion.[2]

Strengthening the built environment is vital to protecting the public when natural and human-induced events occur. Buildings often serve as the first line of defense and as a result, the built environment and engineered systems in buildings must become more resilient in how they are designed and operated in order to protect the public. A building's ability to recover and be available to occupants following such an event, can have widespread economic and health implications. Additionally, as the built environment becomes more interconnected and operations shift towards automation, building systems will see increased vulnerability to cyber threats.

ASHRAE's ROLE

It is ASHRAE's position that building design and operation must consider resiliency as part of an overall risk assessment and planning approach, and that major new efforts in research, education, standards and guidelines, and guidance documents are required to increase building resiliency. Building resiliency is of such importance that it has been identified as one of four key initiatives in the 2019-2024 ASHRAE Strategic Plan.

ASHRAE also has partnered with CIBSE to release a Joint Position Document on Resiliency in the Built Environment.[3] The two societies are committed to taking a leadership role with respect to building resiliency. ASHRAE will be developing and adopting designs, materials, components, systems, and processes that minimize the adverse impacts of extreme events and environmental changes over time.

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[1] IPCC. 2014. Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: Intergovernmental Panel on Climate Change. www.ipcc.ch/report/ar5/.

[2] "Billion-Dollar Weather and Climate Disasters: Overview." National Climatic Data Center, National Oceanic and Atmospheric Administration, https://www.ncei.noaa.gov/access/billions/.

[3] ASHRAE & CIBSE. Position Document on Resiliency in the Built Environment". https://www.ashrae.org/about/position-documents

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ASHRAE's VIEW

Investing in building resiliency is crucial to saving lives, protecting public property, and reducing the financial strain of post-disaster recovery. For these reasons, ASHRAE sees the need for policy setting entities world-wide to encourage sound, balanced, and innovative actions to address long-range resiliency issues and the specific technical concerns associated with them.

When it comes to strengthening the built environment, building codes and standards, such as those developed by ASHRAE, make our communities more sustainable, more efficient and more resilient. According to a 2018 study released by NIBS, by adopting the most recent building codes, there is an impressive cost-benefit ratio ranging from $4—12 for every $1 invested towards hazard mitigation. Unfortunately, most jurisdictions have not yet adopted the most recent standards and codes that are based on the latest research and technological innovation. Legislators and other government officials should examine the best ways to assist these jurisdictions with the adoption, implementation and enforcement of the most recent building energy efficiency codes and standards. This will help prevent future destruction and improve the resilience of the built environment. ASHRAE is committed to being a resource for government with respect to building codes and standards, and will continue to publish and maintain consensus-based building standards, guidelines, and Design Guides.

ASHRAE also holds the following positions with respect to resiliency in the built environment:

- Resiliency is an important societal, economical and technical issue that has a major impact on the built environment as well as how engineered building systems are designed and operated.
- Technical solutions to these challenges are needed. These solutions will include research, standard and guideline development, and the production of educational material.
- Policy setting entities need to encourage sound, balanced, and innovative actions to address the broad issues of resiliency and the specific technical concerns associated with them.
- Built environments need to be developed which are both resilient and sustainable.

Additionally, ASHRAE recommends that additional and continuing research be conducted with the intent to guide resilient infrastructure, building systems and community designs. ASHRAE aims to continue collaborating on building resiliency research opportunities with external organizations, national and international government agencies, and foundations. This is in addition to the over $10 million in ongoing research projects currently funded by ASHRAE.

Shaping Tomorrow's Built Environment Today

STEM EDUCATION AND HVAC&R WORKFORCE

THE ISSUE

Commitment to a solid education in science, technology, engineering and mathematics (STEM) to develop the future supply of technicians, engineers and scientists is critical to our future well-being and standard of living. Even students pursuing non-STEM specialties need basic knowledge of scientific and technological applications for effective participation in the workforce, success in their personal lives and responsible citizenship.

Moreover, there has been increased growth in jobs related to STEM that need to be filled. The U.S. Bureau of Labor Statistics projects that employment in architecture and engineering occupations is expected to grow 4% from 2021 to 2031, with a median annual wage of $79,840 compared to $45,760, the median wage across all occupations.[1] Additionally, about 168,500 openings for construction employment are projected each year on average over the next decade.[2]

The HVAC&R workforce in North America remains a male-dominated employment sector; the share of female workers in engineering and architecture is 14 percent[3] and 5.9 percent of HVAC&R Technicians.[4] Additionally, people of color remain under-represented in the engineering of buildings and HVAC&R sectors; 70.1 percent of the HVAC&R workforce is white.[5]

ASHRAE's ROLE

As professionals focused on design, construction, operation and maintenance of buildings and infrastructure, and as educators of future generations of engineers and the HVAC&R workforce, our members also recognize the importance of mentoring and helping students learn about STEM careers, which is why our members are active in their local communities and in national programs, bringing exciting science and engineering programs to students. ASHRAE is actively engaged in the Solar Decathlon, National Engineers Week and other STEM education efforts worldwide, including through its 440 active student branches.

ASHRAE is also a member of the National STEM Education Coalition, which supports new and innovative initiatives that help improve the content, knowledge, skills and professional development of the K-12 STEM teacher workforce, and informal educators. ASHRAE is dedicated to ensuring quality STEM programs for teachers and students all around the world by encouraging its members to get involved with their local school systems.[6]

ASHRAE's Board of Directors has committed to promoting diversity and inclusion in all levels of the society. This includes efforts to promote STEM education and training to children, schools, and educators, in a way that will attract, train, and retain more women, disabled, LGBTQ, and people of all socioeconomic and ethnic backgrounds to engineering education and employment.

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[1] U.S. Bureau of Labor Statistics. 2022. Occupational Outlook Handbook: Architecture and Engineering Occupations.
[2] U.S. Bureau of Labor Statistics. 2022. Occupational Outlook Handbook: Construction Laborers and Helpers.
[3] U.S. Bureau of Labor Statistics. 2017. Women in architecture and engineering occupation in 2016.
[4] Zippia, 2022. Hearing and Cooling Technician Demographics and Statistics in the US. https://www.zippia.com/heating-and-cooling-technician-jobs/demographics/.
[5] *Ibid.*
[6] For more information, see https://www.ashrae.org/communities/student-zone/k-12-activities.

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Updated June 30, 2023

ASHRAE also supports strengthening the broader HVAC&R workforce, including technicians who install and maintain HVAC&R equipment as well as distributors, contractors, and facility operators and managers. The HVAC&R and buildings industry has been facing a serious shortage of skilled trade employees for several years and has more recently been exacerbated by the overall shortage of U.S. workers. Unfortunately, there is a broadening skills gap as well due to several factors, including: the retirement of the baby boomers, advancements in technology that require new skills, increased job competition in the global marketplace, failure to cultivate a and retain skilled talent, a societal focus only on four-year degree programs to the exclusion of technical and technological education, and a lack of emphasis on the necessary skill sets for advanced manufacturing. Of these, the last two are most critical to ensuring innovative, high efficiency products are able to be manufactured and installed properly. Community colleges, training programs, internships, apprenticeships and certification programs can strengthen the pipeline for the HVAC&R workforce.

ASHRAE's VIEW

Future generations need to possess the skills and critical competencies necessary to be successful in a highly competitive, global and technologically sophisticated economy. We must work cooperatively to ensure that students receive the STEM training essential for future success.

ASHRAE encourages policymakers to implement the following recommendations:

- Increase government funded research to improve teaching and learning of STEM concepts and critical thinking skills.
- Recruit, train and retain qualified STEM teachers through the development of programs recognizing educators who excel in STEM education and incentives, that encourage the best and brightest scientists, engineers, technologists, and technicians to act as role models and teachers, to pave the way for future generations.
- Foster partnerships among educational institutions, industry and non-profit organizations and their members to introduce students of all backgrounds to STEM career opportunities, including those careers that do not necessarily require a university degree.
- Support and encourage students who choose to enroll in community college, or other career and technical education programs, that prepare and qualify individuals for careers as HVACR technologists, technicians, facility operators, and buildings managers by providing these students with affordable tuition options.
- Create opportunities and incentives for women and those of diverse backgrounds to pursue STEM coursework and careers.
- Encourage diversity in STEM education and the HVAC&R workforce.

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TRACKING GOVERNMENT OUTREACH EVENTS SY 2022-2023

PROGRESS CHART

	Target	Held	Scheduled	Planned	Delta
City/Local	57	3	0	2	-52
State	28	22	0	9	4
Federal	13	26	0	8	21
Global	28	16	0	4	-8
In-Person		38			
Virtual		29			
Total	**125**	**67**	**0**	**23**	**-35**

Note: Totals may not add up due to rounding

*Note: Delta assumes that **ALL** planned and scheduled events are held (negative indicates that we are behind the goal).*

SY22-23 SUMMARY TOTALS (to date):	Number of Attendees (ASHRAE Members)	Number of Meetings
Local	3	3
State	80	65
Federal	52	24
Global	180	18
TOTAL:	**315**	**110**

In Comparison

SY21-22 SUMMARY TOTALS:	Number of Attendees (ASHRAE Members)	Number of Meetings	Total Number of Events
Local	72	44	21
State	103	98	39
Federal	16	15	9
Global	343	60	44
TOTAL:	**534**	**217**	**113**

Members Council Report to GAC meeting April 12, 2023

Most of the Council's work since the Winter Conference is a follow-up to the Conference. For example, during the Winter Conference, the Board approved two motions that affect the work of the Council and its reporting Committees:

A- The Handbook Online and a Certification Program Study Guide of the individual's choosing are two new choices for the benefit of membership. IT programming these changes has been undertaken, and the two additional choices are now available at join and renewal.

B- Beginning SY 2023-24, the Chairs of the Committees that report to the Members Council will be voting members of the Council, and the assigned Executive Officers (ExOs) will be nonvoting members. This change is intended to streamline operations while maintaining direct links among the Council, its reporting Committees, and the Board of Directors.

Below are the activities in the Region at Large since the winter meeting. I am sure RAL RVC (Ahmed Bellbol) will cover these events

C- Excom meeting in Egypt organized by three Egyptian chapters. Meeting with the Egypt Minister of Environment and the team

D- Acrex HVAC & R Feb 15-17 RAL arranged a side meeting during Acrex

E- Developing Economy Conference Mumbai India May 10-11, 2023. The conference theme is "Decarbonizing and Sustaining Growth of Healthcare and Residential Infrastructure in Emerging and Future Markets

ACTION ITEMS

GOVERNMENT AFFAIRS COMMITTEE

SY 2022-2023

Last Updated: April 17, 2023

#	Action	Assigned To	Due Date	Status	C/O
Added at 06-24-2022 meeting					
1	Review whether the presentation on roles and responsibilities for the nominating subcommittee should be added to the GAC Reference Manual.	Rules Subcommittee	Next Rules Subcommittee Meeting	Was discussed at Rules SC meeting on April 6; the presentation will be posted on Basecamp in the Nominating Subcommittee folder, rather than added to the Resource Manual.	C
Added at 11-07-2022 meeting					
2	Develop Fact Sheet on key programs from IRA and the BIL, along with websites that have more detailed information.	Staff	Winter 2023 Meeting	Matt Young prepared these factsheets and distributed to GAC members via email on December 16th, 2022. Documents are also posted to Basecamp in the Key Resources folder.	C
3	Work with the Marketing Team to collect statistics on use of the Gov Affairs website (and various pages within it). This information will help inform website changes.	Staff	Before December Meeting with Marketing.	Staff worked with Marketing to obtain statistics; these were used to inform the meeting on website redesign with the Communications Coordinator.	C
4	Set up dinner in Atlanta – to be held Friday night, February 3.	Staff	Mid-December	Venue identified, menu developed, payment system arranged.	C

#	Action	Assigned To	Due Date	Status	C/O
5	Inquire with the Building EQ Committee concerning its timeline for incorporating carbon into the tool.	Staff working with Daryl Collerman	Winter 2023 Meeting	Per a discussion with Building EQ staff, Daryl Collerman, and Gov Affairs staff, the Building EQ carbon metric is currently live for operational carbon emissions. BEQ will consider how to incorporate embodied carbon once more information on that is available from the TFBD. The BEQ Committee is working on an updated version of the BEQ "fact sheet" that will include the carbon information; this updated fact sheet will be used for GOEs once it's finalized and available.	C
Added at 02-03-2023 meeting					
6	Structure a Government Affairs award at the Regional Level, and potentially include language to Resource Manual; consider how to improve communication to Regions and Chapters about the Society GAC award.	Member Mobilization	GAC Spring Meeting	The Member Mobilization Subcommittee will consider criteria for an optional regional-level award based on regions that already have such an award and will share their recommendations at the June Annual meeting.	O
7	Send criteria on your Regional GA Awards to member mobilization SC so that they can structure a consistent approach	All RVCs with GA Regional Awards	Feb. 28	Member Mobilization will be reaching out to RVCs that already have a regional award before the June meeting.	O
8	Determine which parts of North Dakota (if any) are included in Region VI	Staff	ASAP	Yates sent email to RVCs for Regions VI and IX on 4/7.	C
9	Send GAC Award Recommendation to Honors & Awards	Staff	ASAP	Emily Porcari emailed recommendation to staff liaison of Honors and Awards on Feb. 5.	C

#	Action	Assigned To	Due Date	Status	C/O
10	Investigate with web team why a nomination to the GAC couldn't be found on the website.	Ken	ASAP	This issue has been corrected.	C
11	Continue the discussion on ways to better coordinate and collaborate between the CIS and GAC.	CIS & GAC Executive Subcommittee	Spring / Summer	Ongoing	O
Added at 04-12-2023 meeting					
12	Draft new section for the Resource Manual on the GAC Mentorship Program.	Rules Subcommittee	Annual Meeting		
13	Consider recommending PAOE bonus points for getting in the GOE forms in a timely fashion.	Incoming GAC Chair	Summer		
14	Send email to RVCs requesting examples of chapter activity to include on the Advocacy Toolkit page of the website.	Communications Coordinator	Mid-May	Email sent on April 13.	C
15	Ask if Decarb training courses can be added to the decarb webpage (www.ashrae.org/decarb)	Cindy Calloway			
16	Provide list of individuals to staff for the SY23-24 planning meeting.	Rob Hoadley	ASAP	Discussed on April 17; Hoadley wants to invite the Executive Subcommittee members	C
17	Provide input on the GOE goals for SY23-24.	All RVCs			
18	Organize GAC dinner for Tampa meeting for Friday, June 23	Tim Theriault			
19					

ACTION ITEMS

GOVERNMENT AFFAIRS COMMITTEE

SY 2022-2023

Last Updated: June 9, 2023

#	Action	Assigned To	Due Date	Status	C/O
Added at 06-24-2022 meeting					
1	Review whether the presentation on roles and responsibilities for the nominating subcommittee should be added to the GAC Reference Manual.	Rules Subcommittee	Next Rules Subcommittee Meeting	Was discussed at Rules SC meeting on April 6; the presentation will be posted on Basecamp in the Nominating Subcommittee folder, rather than added to the Resource Manual.	C
Added at 11-07-2022 meeting					
2	Develop Fact Sheet on key programs from IRA and the BIL, along with websites that have more detailed information.	Staff	Winter 2023 Meeting	Matt Young prepared these factsheets and distributed to GAC members via email on December 16th, 2022. Documents are also posted to Basecamp in the Key Resources folder.	C
3	Work with the Marketing Team to collect statistics on use of the Gov Affairs website (and various pages within it). This information will help inform website changes.	Staff	Before December Meeting with Marketing.	Staff worked with Marketing to obtain statistics; these were used to inform the meeting on website redesign with the Communications Coordinator.	C
4	Set up dinner in Atlanta – to be held Friday night, February 3.	Staff	Mid-December	Venue identified, menu developed, payment system arranged.	C

#	Action	Assigned To	Due Date	Status	C/O
5	Inquire with the Building EQ Committee concerning its timeline for incorporating carbon into the tool.	Staff working with Daryl Collerman	Winter 2023 Meeting	Per a discussion with Building EQ staff, Daryl Collerman, and Gov Affairs staff, the Building EQ carbon metric is currently live for operational carbon emissions. BEQ will consider how to incorporate embodied carbon once more information on that is available from the TFBD. The BEQ Committee is working on an updated version of the BEQ "fact sheet" that will include the carbon information; this updated fact sheet will be used for GOEs once it's finalized and available.	C
Added at 02-03-2023 meeting					
6	Structure a Government Affairs award at the Regional Level, and potentially include language in Resource Manual; consider how to improve communication to Regions and Chapters about the Society GAC award.	Member Mobilization	GAC Spring Meeting	MMSC requested regional award criteria from RVCs; this item is on the agenda of the MMSC in Tampa.	
7	Send criteria on your Regional GA Awards to member mobilization SC so that they can structure a consistent approach	All RVCs with GA Regional Awards	Feb. 28	MMSC requested regional award criteria from RVCs; this item is on the agenda of the MMSC in Tampa.	
8	Determine which parts of North Dakota (if any) are included in Region VI	Staff	ASAP	Yates sent email to RVCs for Regions VI and IX on 4/7.	C
9	Send GAC Award Recommendation to Honors & Awards	Staff	ASAP	Emily Porcari emailed recommendation to staff liaison of Honors and Awards on Feb. 5.	C
10	Investigate with web team why a nomination to the GAC couldn't be found on the website.	Ken	ASAP	This issue has been corrected.	C

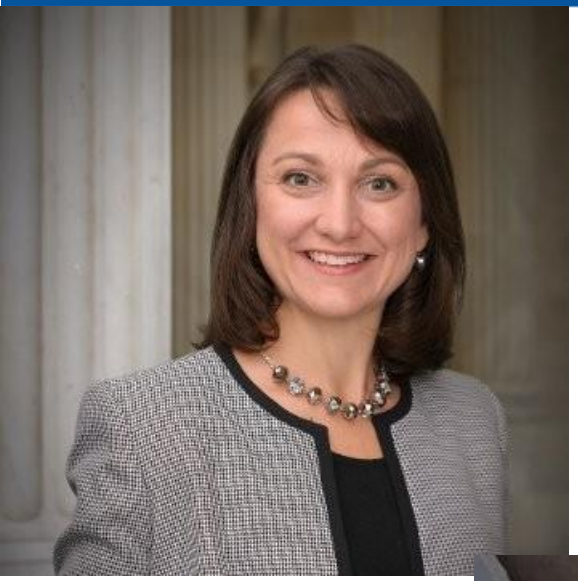
#	Action	Assigned To	Due Date	Status	C/O
11	Continue the discussion on ways to better coordinate and collaborate between the CIS and GAC.	CIS & GAC Executive Subcommittee	Spring / Summer	CIS Staff Liaison (Emily Toto) will send summaries of proposals to the GAC; the GAC may then summarize them for communication with local code officials.	C
Added at 04-12-2023 meeting					
12	Draft new section for the Resource Manual on the GAC Mentorship Program.	Rules Subcommittee	Annual Meeting	On the Rules SC agenda in Tampa	
13	Consider recommending PAOE bonus points for getting in the GOE forms in a timely fashion.	Incoming GAC Chair	Summer		O
14	Send email to RVCs requesting examples of chapter activity to include on the Advocacy Toolkit page of the website.	Communications Coordinator	Mid-May	Email sent on April 13.	C
15	Ask if Decarb training courses can be added to the decarb webpage (www.ashrae.org/decarb)	Cindy Calloway		The TFBD has added this item to their agenda in Tampa; Cindy proposed a training sub-page with course list, brief description of each course and link to course schedule(s).	C
16	Provide list of individuals to staff for the SY23-24 planning meeting.	Rob Hoadley	ASAP	Discussed on April 17; Hoadley wants to invite the Executive Subcommittee members	C
17	Provide input on the GOE goals for SY23-24.	All RVCs		Received some input at the June 6 planning meeting. Is a 101 GOE goal reasonable for SY23-24?	
18	Organize GAC dinner for Tampa meeting for Friday, June 23	Tim Theriault		**Completed!** Tim has arranged for an AMAZING dinner at an historic restaurant called **Malio's Prime Steakhouse!**	C
19					

Staff Report: Government Outlook and Opportunities for Engagement

Annual Meeting – June 2023

Alice Yates, Director of Government Affairs
Emily Porcari, Manager of State and Local Government Affairs
Matt Young, Manager of Federal Government Affairs
Jacob Karson, Assoc. Manager of Government Advocacy and Outreach
Andrew Barberi, Office Manager

Government Affairs Staff: Who Are We?



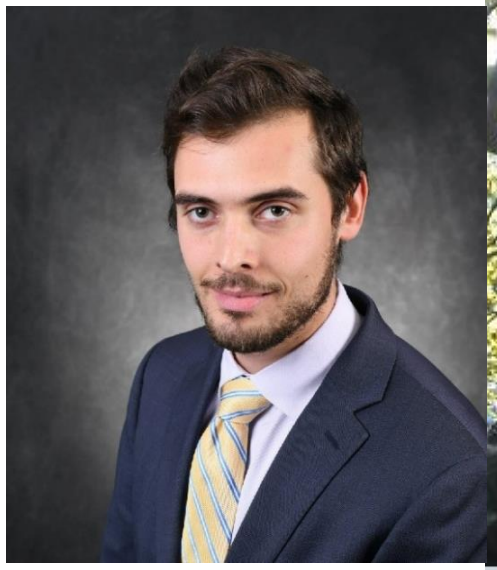
We have a team that is ready to support you!

Contact any of us at GovAffairs@ashrae.org

Matt Young **Jacob Karson** **Emily Porcari**
Federal **Advocacy/Outreach** **State/Local**

Andrew Barberi
Office Manager

Alice Yates
Director



Where is the ASHRAE Government Affairs Office?

1255 23rd Street NW, Suite 825, Washington, DC

You are welcome to visit!

OUTLOOK and OPPORTUNITIES

Buildings continue to be on the policy and legislative agenda:

- To meet climate and carbon goals
- To provide healthy and safe places to live, work and learn
- To bring resilience to communities

ASHRAE resources and technical expertise are in demand!


ROAD
WORK
AHEAD

U.S. Federal: What's going on with the IRA and IIJA?

IIJA

- $180 billion out the door since November 15, 2021
- ASHRAE Applied for Resilient and Efficient Codes Implementation
- Renew America's Nonprofits - $50 million for Energy Improvements
  - Deadline: October 3, 2034

IRA

- 179D tax deduction – Standard 90.1-2007 will remain the reference standard until 2027 when it will be updated to Standard 90.1-2019
- ASHRAE Provided Comments on $1 billion in IRA Codes funding

U.S. Federal Efforts / the Biden Administration

- **Building Performance Standards:** Partnership between 33 state and local governments dedicated to better buildings (Jan. 21, 2022)
- **Federal Buildings:** Reduce energy use in 30% of building space by 2030 (Dec. 7, 2022)
- **HFCs:** EPA rule to reach 40% reduction below historic levels (Oct. 22, 2022)
- **Indoor Air Quality**:
  - White House (WH) National COVID-19 Preparedness Plan (Spring 2022)
  - EPA Clean Air in Buildings Challenge (Mar. 2022)
  - WH Summit on Indoor Air Quality (Oct. 11, 2022)
  - WH Commitment to Long-term Improvement of IAQ (Dec. 8, 2022)

U.S. Federal Efforts / the Biden Administration

- Debt Ceiling Bill
  - Approved Mountain Valley Pipeline
  - Reforms the National Environmental Policy Act
  - Safeguarded IRA and IIJA investments in clean economy
- Agency Updates
  - **U.S. Department of Energy** - $5.6 billion in FOAs, $3.2 billion in awards announced
  - **Environmental Protection Agency** – ASHRAE submitted response on lowering embodied carbon in construction material
  - **General Services Administration** – $30 M from IRA to increase the sustainability of federal buildings by testing novel technologies
  - **HUD & USDA** – Currently receiving comments on the adoption of ASHRAE Standard 90.1-2019 for new constructions

U.S. Congressional Outlook

- **Appropriations**
- **Pro Codes Act**
  - Protect a code or standard's incorporation by ensuring the copyright doesn't extinguish
- **E-Access Act**
  - Establish customer's right to access real-time date from utility providers
- **Big WIRES Act**
  - Requires regions of the country to be able to transfer at least currently 30% of their peak electrical loads with other regions
- **Small Business Energy Loan Enhancement Act**
  - Increasing the cap on energy efficiency improvements for small businesses to $10 million, up from $5.5 million
- **Gas Stove Protection and Freedom Act and Save Our Gas Stoves Act**
  - Prohibit the CPSC and DOE from using federal funds to regulate gas stoves as banned hazardous products, among other similar provisions

State and Local Outlook

- Most state legislative sessions have concluded for the year. Legislative sessions only continue after June in 9 states, plus D.C. - More opportunities in Spring 2024
- Trends in state and local legislation:
  - Gas bans/preemption
  - Building code updates and revisions
  - Building decarbonization, especially embodied carbon
  - IAQ
  - New initiatives and programs using federal funding
- Ongoing opportunities to support ASHRAE's Public Policy Priorities through government outreach
- State and local updates can be found in the biweekly Government Affairs Update newsletter. Sign up on the ASHRAE website: https://www.ashrae.org/about/government-affairs/government-affairs-updates

State and Local Outlook and Opportunities

- The Government Affairs team:
  - Tracked 213 pieces of legislation that directly name ASHRAE or reflect the Society's public policy priorities
  - Over fifty actionable legislative items
    - Issues tracked include: Gas bans/preemption, building decarbonization, ASHRAE standards/building codes, new initiatives and programs using federal funding
  - Helped conduct 16 Day on the Hill events advocating for dozens of pieces of legislation
  - Sent 35 policy letters to elected officials
- Building electrification continues to polarize
  - Ballot measure to rescind building electrification in Eugene, OR. Court case to rescind building electrification in Berkley, CA. Building code effective date delay in WA state.
  - Over 20 states have passed preemption laws
- Ongoing opportunities to support the adoption of ASHRAE standards and advocate for ASHRAE policy priorities! Look for information on these goals in the biweekly Government Affairs Update, and contact us at govaffairs@ashrae.org

Government Outreach and Advocacy

Get Involved + Get Resources at ashrae.org/govaffairs

Government Affairs staff can help with Federal, State, and Local Outreach and Advocacy:

- Identifying opportunities for engagement
- Legislative research, analysis, and talking points
- Outreach to policymakers
- Planning for Government Outreach Events
- Attend meetings for in-person support/advocacy
- Collateral packets and leave-behinds
- Coalition building


GovAffairs@ashrae.org

GAC MBOs: Status Table
SY2022- 2023

Last Updated: June 9, 2023

MBO	Assignment	Metric(s)	Status
1. Increase the participation of ASHRAE members in Government Outreach Events and other advocacy opportunities by hosting promotional GAC meetings, webinars, and other events to non-GAC ASHRAE members to increase awareness about the GAC.	Member Mobilization	✓ Host 4 "Office Hour" events (including a specific one for international participants). ✓ Create an internal Office Hour Best Practices document to summarize the lessons we've learned, for the benefit of future iterations of GAC. ✓ Create a DL presentation on the benefits of Government outreach for ASHRAE members.	**COMPLETED.** All metrics have been met. The DL Presentation will be shared at the Annual Meeting. The Office Hours "Best Practices" document has been finalized by the Subcommittee members. (It's posted in Basecamp – in the MMSC folder.)
2. Increase effectiveness of volunteer members through formalizing the GAC member mentorship program through small groups.	Executive Subcommittee	Mentorship program is included in Resource Manual. ✓ Mentor assignments made by July 30. ✓ Each mentor reaches out to their mentees 4 times per year.	**COMPLETED.** This program is well established, and it is working well. The Rules Subcommittee is working to include the Mentorship Program in the GAC Resource Manual.
3. Build the foundation of a consistent global government engagement program by planning and identifying country- or region-specific events attended by government officials for the purpose of outreach and advocacy.	Global Affairs	Each global RVC identifies at least two events per region that are held annually. Each RVC works with the global chapter chairs to facilitate 5 GOEs per Region. Each global RVC works with the global chapter chairs to identify the schedule for revision of Energy Codes/Building Codes of the country/state and key officials involved.	**ONGOING.** • Six global events have been identified. • Several global GOEs were conducted. • Energy codes and adoption schemes vary widely country to country; outreach is ongoing.
4. Decarbonization: establish clear lines of communication between the GAC and the TFBD.	Policy & Programs	✓ GAC member is identified as liaison to the TFBD.	**COMPLETED.** Darryl Boyce is serving as the liaison to TFBD; receiving regular updates from the taskforce.

MBO	Assignment	Metric(s)	Status
5. Work with International Standards Task Force to facilitate sharing of information to avoid duplication of efforts, including through the tracking and adoption of ASHRAE standards and guidelines around the world.	Global Affairs	Long-term coordination structure defined. RVC works with the global chapter chairs to facilitate 4 outreach events per region, which are related to adoption of ASHRAE Standards.	**ONGOING.** • The ISTF will be a Standing Committee beginning July 1, and this MBO will be ongoing under that new structure. • Multiple bodies are tracking global adoption of ASHRAE standards, and the GAC will work to coordinate and streamline these efforts in the coming SY.
6. Establish a GAC Advisory Board made up of senior staff from various government bodies; this group would advise ASHRAE on what technical resources they need.	Policy & Programs	✓ Advisory Board meets 4 times in the Society Year.	**COMPLETED.** Advisory Board members identified (11 members). Held meetings with the Advisory Board in December 2022, March 2023, April 2023, and June 2023.
7. Improve the effectiveness of the Government Affairs Website	Communications Coordinator, in cooperation with PPSC and MMSC	Implement recommendations made from the GAC website survey in SY21-22.	**ONGOING.** Communications Coordinator discussed recommendations with Marketing and Government Affairs staff. Some updates are being made to the Advocacy Toolkit page regarding information on U.S. state legislatures as well as international legislative bodies. Examples of outreach by chapters may also be included; the Coordinator will be requesting ideas/input on this from the RVCs.
8. Review and revise the RVC reporting requirements for the Winter and Annual meetings.	Member Mobilization	Streamlined RVC reporting form is developed	Streamlined reporting form will be considered at the Annual Meeting – by MMC, Rules, GASC, and the GAC.

Public Policy Issue Briefs (PPIBs) for Society Year SY23-24
Government Affairs Committee
Annual Meeting – June 2023

GAC PPIB Information Item:

During SY22-23, the GAC reviewed 10 PPIBs, and recommended updating 9 of them for SY23-24.[1]
The GAC also created a new PPIB on Building Electrification, which was reviewed by the TFBD, and subsequently approved by ExCom at the 2023 Winter Conference.

Per the GAC MOP, the Policy and Programs Subcommittee conducted the first review of existing PPIBs, made updates to the PPIBs, and then submitted them to the full committee for review. The PPIBs were approved by the GAC on April 12, 2023.

The PPIBs were then submitted to Tech Council on April 14 for its review. Tech Council designated DRSC to conduct the review, and after a one-month review period, the GAC received comments on 4 PPIBs. The GAC provided a response to the DRSC comments on June 1, 2023, accepting all suggestions, and responding to questions.

The updated PPIBs for SY22-23 are listed below and provided in the Attachment. The "Building Electrification" PPIB will continue to be available in SY22-23, but will be reviewed for possible updates during the first half of the SY. The GAC is also working on a new PPIB on Wildfire and Indoor Environmental Quality, which will likely be completed by the Winter Conference.

1. Building Decarbonization
2. Building Energy Benchmarking, Assessments, and Performance Targets
3. Climate Change and the Built Environment
4. Consensus Standards: Expert Solutions to Meet Global Needs
5. Environmental Tobacco Smoke and Electronic Nicotine Delivery Systems
6. Indoor Air Quality
7. Indoor Carbon Dioxide, Ventilation and Indoor Air Quality
8. Refrigerants and their Responsible Use
9. Resiliency in the Built Environment
10. STEM Education & HVAC&R

[1] The PPIB for "Environmental Tobacco Smoke and Electronic Nicotine Delivery Systems" was not updated because it already contained up-to-date information.

Shaping Tomorrow's Built Environment Today

BUILDING ENERGY BENCHMARKING, ASSESSMENTS, AND PERFORMANCE TARGETS

THE ISSUE

Heating, ventilation, air conditioning, and refrigeration (HVAC&R) account for 61% of commercial building site energy use.[1] While new buildings have realized improved energy performance, existing buildings represent the greatest opportunity for energy and Greenhouse Gas (GHG) emissions reductions. Improving the energy performance of existing buildings requires a robust database of building energy data. Without understanding a building's true performance, identifying effective improvements in energy efficiency is challenging. As the saying goes, "you can't manage what you don't measure."

To address this concern, building energy benchmarking has become a critical tool for quantifying and evaluating building operational energy use patterns. Benchmarking data can inform public policies that focus on the most effective ways to reduce energy use in a city or state's building stock. Benchmarking data can also be used to develop local energy and GHG emissions performance targets appropriate to local climate and building types.

Over 40 U.S. and Canadian cities have building energy benchmarking programs.[2] Some jurisdictions require actions beyond benchmarking, such as performing energy assessments (audits, tune-ups, or retrocommissioning) or meeting performance targets (maximum energy use or GHG emissions). Cities such as Boston, Denver, New York City, Vancouver, and Washington DC have set aggressive GHG emissions reduction goals for existing buildings that will require accurate benchmarking to determine emissions and energy savings.

ASHRAE's ROLE

ASHRAE develops standards, guidance and educational resources informed by robust data on the actual energy performance of buildings, and shares evidence-based best practices and technical information with professionals across the building sector. To achieve a carbon neutral world, ASHRAE is also leading the way in converting energy to carbon in selected standards. ASHRAE's tools and resources include:

- Benchmarking:
  - **ASHRAE Standard 105** *Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions* provides a method for determining and comparing building energy performance and greenhouse gas emissions.
  - **ASHRAE Standard 214** *Standard for Determining and Expressing Building Energy Performance in a Rating Program* provides uniformity in the building energy labeling and disclosure process.

[1] Includes water heating; 2012 Commercial Building Energy Consumption Survey: Energy Usage Summary. U.S. Energy Information Administration, 18 March 2016, https://www.eia.gov/consumption/commercial/reports/2012/energyusage/

[2] Comparison of U.S. Commercial Building Energy Benchmarking and Transparency Policies. Institute for Market Transformation, July 2022, https://www.imt.org/resources/comparison-of-commercial-building-benchmarking-policies/

    - **ASHRAE Standard 228** *Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance* is an in-progress standard that provides consistent method definitions of "zero net energy" and "zero net carbon" for both the design of new buildings and the operation of existing buildings.
    - **ASHRAE Standard 240P** *Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation* will provide a whole life carbon approach to support emissions reductions in buildings.
- Energy Audits and Assessments:
    - **ASHRAE Standard 211** *Standard for Commercial Building Energy Audits* establishes consistent practices for conducting and reporting energy audits for commercial buildings. *Referenced by ordinances in Atlanta, GA; Boulder, CO; Los Angeles, CA; New York, NY; and San Francisco, CA.*
    - ***Commercial Buildings Energy Audits Reference Manual*** is a reference that defines best practices for energy survey and analysis for purchasers and providers of energy audit services and serves as a reference for Standard 211.
- Building performance targets:
    - **Building Performance Standards: A Technical Resource** provides technical basis and resources to policymakers, building owners, facility managers, design professionals and ASHRAE members when developing and implementing a Building Performance Standard (BPS).
    - **ASHRAE Standard 100** *Energy Efficiency in Existing Buildings* sets energy use intensity (EUI) benchmarks for existing buildings in the commercial and residential sector and establishes methods for determining opportunities for improvement in EUI leading to compliance with the standard benchmarks. *Referenced by Washington State's Clean Buildings Act of 2019.* Future revisions will incorporate setting GHG emissions targets.
    - **ASHRAE's Building EQ**[3] program calculates a building's energy performance in relation to other similar buildings, identifies the gap between "as designed" potential and actual performance in operation, and provides recommendations to reduce energy use. Building EQ can be used to publicly display building energy use and comply with disclosure requirements.

ASHRAE certification programs were developed to meet the industry needs of today and provide value to thousands of built-environment professionals, employers, and building owners. Certifications like Building Commissioning Professional (BCxP) and Building Energy Assessment Professional (BEAP) are recognized by the U.S. Department of Energy (DOE) as meeting the Better Buildings Workforce Guidelines (BBWG) and are used frequently by local jurisdictions to designate who is qualified to perform benchmarking and energy assessments.

ASHRAE's VIEW

Energy metrics that are widely accepted, robust, and validated are critical to achieving policy objectives. Standardized procedures for energy performance assessments ensure an appropriate level of rigor and scope of work. Within a building owner's portfolio or across a city's building stock, decision-makers need consistent language, metrics, and procedures to effectively communicate goals, evaluate potential investments, and measure success. ASHRAE remains dedicated to sharing technical resources with policymakers to support legislative and regulatory solutions that improve building energy efficiency and reduce GHG emissions.

[3] For more information, see https://www.ashrae.org/technical-resources/building-eq

Shaping Tomorrow's Built Environment Today

CLIMATE CHANGE AND THE BUILT ENVIRONMENT

THE ISSUE

Worldwide concern for changes in the global climate has escalated as scientific evidence has become more definitive, linking increased concentrations of atmospheric greenhouse gases (GHGs) with global warming. As a response, ASHRAE is increasing our attention and consideration on standards, regulations, legislation and policies that involve GHGs.

When developing policy to combat climate change, it is important to consider that buildings and their heating, ventilating, air conditioning and refrigeration (HVAC&R) systems directly and indirectly contribute to GHG emissions. Buildings are responsible for more than 35% of global final energy consumption and nearly 40% of energy-related CO2 emissions worldwide.[1] These emissions are associated with construction and the energy needed to operate buildings and building systems, and to a lesser extent indirectly through the release of refrigerants, if not properly managed. According to the United Nations Intergovernmental Panel on Climate Change (IPCC), "buildings offer immediately available, highly cost-effective opportunities to reduce energy demand, while contributing to meeting other key sustainable development goals including poverty alleviation, energy security and improved employment."[2] Improving the energy efficiency, and the ongoing efficient performance of building systems provide a significant opportunity for climate change mitigation.

ASHRAE's ROLE

ASHRAE is the leading source of information and research for HVAC&R systems and building performance making this issue a key area for our members. ASHRAE's members use their expertise to educate policymakers and promote the implementation of energy efficient design practices and sustainable technologies that can help reduce GHG emissions. This is done most notably through ASHRAE's wide-ranging standards development such *as Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings, Standard 100 Energy Efficiency in Existing Buildings, Standard 189.1 International Green Construction Code*, and *Standard 105 Standard Methods Of Determining, Expressing, And Comparing Building Energy Performance And Green House Gas Emissions*. ASHRAE also has an MOU with the International Codes Council to collaborate on the development of materials and resources related to quantifying GHG emissions.

ASHRAE and its partners have published several free-to-download Advanced Energy Design Guides (including Zero Energy Building Guides for K-12 Schools and Offices), which are available for free download and provide educational guidance to reduce energy consumption while achieving proper IEQ conditions.[3]

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[1] United Nations Environment Programme, International Energy Agency (IEA) , and Global Alliance for Buildings and Construction (GlobalABC),"*2018 Global Status Report Towards a Zero-Emission, Efficient and Resilient Buildings and Construction Sector*." .

[2] Lucon, Oswaldo, and Diana Ürge-Vorsatz. "AR5 Synthesis Report: Climate Change 2014."*Chapter 9: Buildings*, United Nations Intergovernmental Panel on Climate Change, 2014, https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter9.pdf.

[3] For more information, see www.ashrae.org/technical-resources/aedgs.

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Updated June 30, 2023

ASHRAE also developed ANSI/ASHRAE Standard 228 which sets requirements for evaluating whether a building or group of buildings meets a definition of "zero energy."

With respect to refrigerants, ASHRAE also advances the HVAC&R field by performing research on low global warming potential (GWP) refrigerants and developing safety and classification standards on refrigerants[4], developing guides and a standard for designing systems that minimize energy consumption and reduce emissions of high GWP refrigerants. As part of this effort, ASHRAE supports the global phasedown of the production and consumption of refrigerants that are high-GWP HFCs, including through legislation, regulations, and policy.

ASHRAE's VIEW

ASHRAE is committed to a leadership role in reducing climate change contributed to by building systems and responding to climate change experienced in the built environment. ASHRAE recommends:

- States adopt the most recent version of ANSI/ASHRAE/IES Standard 100 for existing buildings and ANSI/ASHRAE/IES Standard 90.1, which has been a benchmark for new commercial building energy performance in the United States and a key basis for codes and standards around the world for more than 40 years. The 2019 version of Standard 90.1 is 4.3% more energy efficient than the 2016 version.
- A full evaluation of new and existing buildings' climate impacts, carbon balance, and energy performance.
- Funding for research that improves energy efficiency/utilization in HVAC&R technology to minimize GHG emissions.
- Funding for building science research leading to advanced equipment and systems, grid-interactive designs and ability to load-shift, integration of the Internet of Things (IoT), net metering, and building based energy storage systems capable of providing dispatchable energy systems.
- Promotion of carbon and energy life-cycle analysis to building owners to encourage sustainable building construction, operation and renewal.

[4] For more information, see: https://www.ashrae.org/technical-resources/bookstore/standards-15-34

Shaping Tomorrow's Built Environment Today

CONSENSUS STANDARDS: EXPERT SOLUTIONS TO MEET GLOBAL NEEDS

THE ISSUE

Voluntary consensus technical standards developed by private organizations are essential for a productive global economy and to facilitate global commerce. Standards foster safe building technology innovation by providing a transparent baseline and needed metrics for assessing how that technology can impact building design, performance and the occupants. They are necessary for comparing technologies in the expanding global marketplace and facilitating cross-border collaboration. Governments and building codes recognize the value of voluntary consensus standards and adopt them for use in policies regulating buildings.[1]

Voluntary consensus technical standards are developed through the participation of qualified, interested and affected stakeholders including manufacturers, consumers, users, advocacy organizations and representatives of government and academia. Standards accreditors such as the American National Standards Institute (ANSI), the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) follow several principles such as consensus, balance, transparency, due process, and technical expertise.

Copyright protection of voluntary consensus technical standards is critical to the continued development and maintenance of standards. Governments at all levels benefit from application of standards by private organizations who rely on copyright protection in order to continue the maintenance of existing standards and development of future standards. Without copyright protection, standards development organizations will be challenged to provide the public with the benefit of rigorously research, tested and science-backed standards.

ASHRAE's ROLE

ASHRAE develops and publishes robust technical standards; many of which are adopted directly by governments or into building codes. ASHRAE standards establish recommended practice in the areas of heating and cooling, indoor air quality, energy conservation and management, building water systems, high-performance buildings, refrigerant use and classification, and others. ASHRAE's standard development process is rigorous, and it is one of only six standards-developing organizations in the U.S. that can self-certify that its standards have followed ANSI's procedures.

ASHRAE also serves on U.S. Technical Advisory Groups (TAGS) for ISO Committees and in the role of international secretariat for ISO Technical Committees to help ensure that ASHRAE views are represented. These standards are supported by technical committees that develop publications and educational materials to assist in the application of ASHRAE standards. ASHRAE standards are developed by experts from around the globe under strict ethical and non-commercialism guidelines.

[1] The National Technology Transfer and Advancement Act of 1995 (P.L. 104-113) (NTTAA) and OMB Circular A-119

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Updated June 30, 2023

ASHRAE's VIEW

Use of voluntary consensus standards at all levels of government are a benefit to society. For this reason:

- Government entities should continue to support voluntary consensus standard development, use, and adoption in laws and regulations, which will protect public health and safety, improve commerce and save taxpayers money.
- Agencies should work with standards developers and industry experts to identify situations where societal interests could be addressed through the use of voluntary consensus standards.
- Governments should continue to foster and support the unique character and strengths of the public-private partnership in standards development as they pursue trade and other international agreements, regulatory harmonization and legislative and regulatory approaches.
- Governments should support policies, both domestically and internationally, which ensure the continued ownership and control of the copyrights and trademarks of standards developers.
- Agencies should increase participation in the development of voluntary consensus standards by encouraging government experts to participate through work release time and reimbursement of expenses incurred.
- Governments should regularly update regulations and policies to reference the latest versions of standards since they reflect the latest technical advances.

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Updated June 30, 2023

Shaping Tomorrow's Built Environment Today

ENVIRONMENTAL TOBACCO SMOKE AND ELECTRONIC NICOTINE DELIVERY SYSTEMS

THE ISSUE

While indoor smoking has become less common in recent years in many countries the use of Electronic Nicotine Delivery Systems (ENDS) has significantly increased. Both smoking and the use of ENDS negatively affects indoor air quality and each has inherent health risks.

Exposure to Environmental Tobacco Smoke (ETS) continues to have considerable health and cost impacts. Researchers have investigated the health and irritant effects among non-smokers exposed to tobacco smoke in indoor environments. Such exposure is also known as passive smoking and as involuntary exposure to secondhand smoke. A number of national and global health research groups and agencies have concluded, based on the preponderance of evidence, that exposure of non-smokers to tobacco smoke causes specific diseases and other adverse effects to human health, most significantly cardiovascular disease and lung cancer. No cognizant authorities have identified an acceptable level of ETS exposure to non-smokers, nor is there any guarantee that further research will identify such a level.

Simultaneously with the decline of tobacco smoking, the use of Electronic Nicotine Delivery Systems (ENDS) including vape pens, electronic cigarettes, and other device that convert nicotine into an inhalable aerosol without combustion has rapidly increased. The vapor or aerosol emitted from these devices contains varying amounts of nicotine dissolved in propylene glycol, or glycerol along with volatile compounds (VOCs).[1,2] Unique to the use of ENDS is the concentration and type of compounds that may deposit and remain on indoor surfaces. These deposits represent a unique source of contamination in buildings that varies depending on indoor climate, air flow, and area that may require specialized cleaning, HVAC maintenance, and other operational practices.[3] In addition, limited studies have been performed to evaluate the chemical reactions and health interactions that may occur between ENDS emissions and other airborne contaminants commonly found indoors.

Despite the well-documented benefits of smoking bans, many locations worldwide still lack laws and policies that provide sufficient protection. Still fewer bans include the use of ENDs. In many locations, laws and policies are only partially protective, permitting smoking and ENDS usage in certain areas of buildings or specific building types including casino, entertainment and multifamily housing.

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[1] Offermann 2015. F.J. Offermann, "Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposures," *Building and Environment*, Vol. 93, Part 1, 101-105, November, 2015.
[2] Cooke 2015. Cooke, Andrew, MDa, et. al., "The Electronic Cigarette: The Good, the Bad, and the Ugly," *J Allergy Clin Immunol Practice*, 2015, Vol. 3, 498-505.
[3] Schripp 2013. Schripp, et. al., "Does e-cigarette consumption cause passive vaping?" *Indoor Air* 2013; 23: 25–31.

ASHRAE's ROLE

Providing healthy and comfortable indoor environments through the management of indoor air quality is a fundamental goal of building and HVAC design and operation. ASHRAE has long been active in providing engineering technology, standards and design guidance in support of this goal. For example, ANSI/ASHRAE Standards 62.1 and 62.2 are standards that specify minimum ventilation rates and other measures in order to minimize adverse health effects for occupants. Therefore, the health effects of indoor exposure to emissions from tobacco products, and ENDs devices are relevant to ASHRAE.

ASHRAE's VIEW

Exposure to ETS can be reduced through a variety of strategies, but they do not completely eliminate exposure to ETS. Only an indoor smoking ban, leading to near zero exposure, provides effective control, and bans on ETS exposure have only been recognized as effective by health authorities. Effects of secondary involuntary exposure to ENDS have not been thoroughly studied by the scientific community, in part because these devices are new, evolving, diverse and customizable. However, because ENDS have become so prevalent, indoor building components and occupants are being exposed to passive vapors. Many cognizant public health authorities argue that caution should prevail in all situations of human exposure when limited data is available about health impacts. Applying this principle to ENDS argues that involuntary exposure should be banned in order to keep exposure to airborne emissions as low as possible.

ASHRAE's mission to act for the benefit of the public encourages lawmakers, policymakers and others who exercise control over buildings, to maximize mitigation of secondary involuntary exposure from smoking and ENDS use inside and near buildings. ASHRAE also recommends:

- That building design practitioners work with their clients to define their intent, where smoking and ENDS use is still permitted, for addressing exposure in their facilities and educate and inform their clients of the limits of engineering controls in regard to both ETS and ENDS.
- That multifamily buildings have complete smoking bans and maximize mitigation of ENDS passive emissions inside and nearby in order to protect nonsmoking adults and children.
- That further research be conducted by cognizant health authorities on the health effects of involuntary exposure in the indoor environment from smoking cannabis, using hookahs, and using ENDS.

Shaping Tomorrow's Built Environment Today

INDOOR AIR QUALITY

THE ISSUE

The average adult breathes about 2,000 gallons (7570 liters) of air each day and most Americans spend around 87% of their time inside buildings – amplifying the importance of indoor environmental quality. Specifically, the quality of the air inside our buildings has a significant impact on a person's health, performance and wellbeing. Indoor air is a significant exposure route for airborne contaminants and may contain particles and gases with impacts that range from eye and lung irritation to exposure to infectious pathogens, poisonous compounds, or carcinogens. These contaminants can impact health, comfort, well-being, learning, sleep, and work performance.

The direct connection between health and wellness encourages building designers and operators to prioritize indoor air quality (IAQ) in buildings. Cost-benefit analyses have estimated the health and economic benefits of improved IAQ to be far greater than the costs of implementing strategies that yield IAQ improvements. There are three widely accepted approaches to improving IAQ – source control, ventilation, and air cleaning. Many strategies exist within these approaches that can help achieve good IAQ efficiently and can be implemented to lower energy use and improve occupant satisfaction.

ASHRAE's ROLE

The critical connection between IAQ and building HVAC systems has made IAQ a fundamental issue for ASHRAE and its members for more than 50 years. ASHRAE provides technical resources, coordinates and funds research, organizes conferences, and educates practitioners about IAQ.

ASHRAE developed and continues to support standards, guidelines, and other resources related to efficiently improving IAQ, such as:

- ***ANSI/ASHRAE Standard 62.1, Ventilation and Acceptable Indoor Air Quality*** – This Standard establishes ventilation and other IAQ requirements for buildings other than residential and health care. Its outdoor air ventilation rate requirements have been adopted into the International Mechanical Code and Uniform Mechanical Code, the two most common model building codes in the US. The standard is also referenced by most green commercial building programs including LEED.
- ***ANSI/ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings*** – Residential (multifamily to single family homes) ventilation requirements from this standard have been adopted into codes, including California's Title 24, and into LEED for Homes and the U.S. Environmental Protection Agency's (EPA) Indoor airPlus program.
- ***ANSI/ASHRAE/ASHE Standard 170, Ventilation of Health Care Facilities*** – Standard 170 brought together several documents used throughout North America into a single standard. It is now widely used in building codes for ventilation requirements in hospitals and other health care facilities.
- ***ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings*** – This Standard was developed in conjunction with U.S. Green Building Council, the

International Code Council and Illuminating Engineering Society, this standard provides IAQ requirements beyond those in Standard 62.1.

- ***ANSI/ASHRAE/ASHE Standard 189.3, Design, Construction, and Operation of Sustainable High-Performance Health Care Facilities –*** This Standard was developed in conjunction to prescribe the procedures, methods, and documentation requirements for the design, construction, and operation of high-performance, sustainable health care facilities.
- ***ASHRAE Indoor Air Quality Guide*: Best Practices for Design, Construction, and Commissioning and *ASHRAE Residential Indoor Air Quality Guide*: Best Practices for Acquisition, Design, Construction, Maintenance and Operation** – These guides present best practices that have proven successful in building projects to achieve good IAQ.
- ***2017 ASHRAE Handbook Fundamentals*** – This handbook covers basic principles and data used in the HVAC&R industry including indoor air quality. The ASHRAE Technical Committees that prepare these chapters provide new information, clarify and update existing content, and reorganize chapters to make the Handbook more understandable and easier to use.
- ***Damp Buildings, Human Health and HVAC Design*** – This report provides a summary of what is understood about dampness-related health risks in buildings as well as suggestions for HVAC system designers that can help avoid such risks.

ASHRAE'S VIEW

ASHRAE's view is that the provision of acceptable IAQ is an essential building service. Improved IAQ brings substantial health and economic benefits from a broad public health perspective, as well as to individual building owners and occupants.

Therefore, ASHRAE recommends that:

- Achieving and maintaining good IAQ should be included in all decisions (including policy decisions) that affect the design and operation of buildings and HVAC systems, including efforts to improve building energy efficiency, sustainability and resiliency.
- The importance of IAQ and the fundamentals of achieving good IAQ through building design and operation should be included in education programs for all stakeholders in built environment – from developers, owners, and operators to designers, technicians, and consultants.
- The latest versions of ASHRAE's IAQ standards should be adopted by building codes and regulations when they are updated every three years, specifically:
    - Standard 62.1-2022 for commercial buildings
    - Standard 62.2-2022 for residential buildings
    - Standard 170-2021 for healthcare buildings
- Research and standards development should be supported by the government, including consideration for a national model standard, improvement of indoor contaminant monitoring and measurement technologies, approaches to improving IAQ beyond ventilation and filtration (e.g., air cleaning), development of tools to assess the economic valuation of IAQ benefits, and improved understanding of new contaminants of concern and techniques for adding them.

Shaping Tomorrow's Built Environment Today

INDOOR CARBON DIOXIDE, VENTILATION AND INDOOR AIR QUALITY

THE ISSUE

Indoor CO_2 has been considered in the context of building ventilation and indoor air quality (IAQ) for centuries. Most of these discussions have focused on how CO_2 concentrations relate to occupant perceptions of IAQ, and the use of CO_2 to evaluate ventilation rates. While these topics have been studied for decades, misinterpretation of CO_2 concentration as an indicator of IAQ and ventilation is common in the HVAC industry, IAQ research community, and the public.

In addition, recent research has studied the impacts of CO_2 on human performance at commonly observed indoor concentrations. indoor CO_2 monitoring has also been promoted as a ventilation indicator in the context of managing the risks of airborne disease transmission. Also, concerns have long existed regarding the accuracy of indoor CO_2 concentration measurements, which are now more common due to the availability and more widespread application of less expensive sensors. Given all of these factors, as well as increasing calls to monitor CO_2 in buildings, ASHRAE is working to clarify the use of indoor CO_2 measurements as a tool to help improve IAQ and building ventilation.

ASHRAE's ROLE

ASHRAE has long been active in providing engineering technology, standards and design guidance to support the goal of providing healthy and comfortable indoor environments in an energy-efficient manner. For decades, these efforts have focused on providing effective ventilation in buildings, designing and operating ventilation systems and managing the wide range of air pollutants within buildings. For example, ANSI/ASHRAE Standards 62.1 and 62.2 are standards that specify minimum ventilation rates and other measures to support the health, comfort and productivity of building occupants; these standards do not include CO_2 limits.

ASHRAE's VIEW

Monitoring indoor CO_2 can be a useful tool for understanding building ventilation and IAQ, supporting efforts to provide high quality indoor environments and manage the energy needed to do so. Critically, indoor CO_2 measurements should be understood in the context of the built environment, to ensure that they are measured and interpreted in a meaningful way. Claims that ASHRAE Standard 62.1 requires indoor CO_2 concentrations below a certain threshold (typically 1000 ppm) for acceptable indoor air quality are *incorrect*[1]. ASHRAE's IAQ Standards do not use indoor CO_2 values to determine acceptable indoor air quality, as IAQ is impacted by multiple factors (such as temperature, humidity, particulate matter, gas pollutants, etc.).

Because of ASHRAE's mission to act for the benefit of the public, it encourages building designers, lawmakers, policymakers and others to craft informed recommendations for the measurement of indoor CO_2 concentrations. To that end, ASHRAE stresses that:

[1] Persily, A. 2022. *Development and application of an indoor carbon dioxide metric*. Indoor Air. Volume 32, Issue 7.

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- Indoor CO_2 concentrations do not provide an overall indication of IAQ, but they can be a useful tool in IAQ assessments if users understand the limitations in these applications (e.g., number and activity level of occupants compared to the design capacity, length of time a space has been occupied, no combustion or other sources of CO_2 that could impact readings). While CO_2 readings below a threshold value do not assure overall acceptable IAQ, CO_2 readings far above expected ranges[2] may indicate the ventilation system is not functioning properly.
- Existing evidence for the impacts of CO2 on health, well-being, learning outcomes and work performance is inconsistent and does not currently justify changes to ventilation and IAQ standards, regulations, and guidelines.[3] However, CO_2 can be used to verify if ventilation system performance meets existing IAQ standards, regulations, and guidelines.
- The use of indoor CO2 measurements to evaluate the risk of airborne disease transmission must account for the type of space and its occupancy and the differences in CO2 and infectious aerosols. For example, CO_2 concentration is unaffected by filtration and most other air-cleaning methods that reduce infectious aerosol concentration, so it should not be used as a *direct* indicator of infection risk.
- Sensor accuracy, location and calibration are all critical for drawing meaningful inferences from measured indoor CO2 concentrations.
- Programs or requirements to monitor CO_2 in buildings, when conducted with an understanding of their technical basis, can be helpful, but monitoring CO_2 without such understanding can lead to confusion on the part of building occupants and the public.

[2] *Ibid*.

[3] In a 2010 study by J.M. Logue, T.E. McKone, M.H. Sherman, and B.C. Singer of the Berkeley National Laboratory titled, Hazard Assessment of Chemical Air Contaminants Measured in Residents, fifteen pollutants were identified as contaminants of concern for chronic health effects in a large fraction of homes. Nine pollutants were identified as priority hazards: acetaldehyde; acrolein; benzene; 1,3-butadiene; 1,4-dichlorobenzene; formaldehyde; naphthalene; nitrogen dioxide; and PM2.5. Activity-based emissions are shown to pose potential acute health hazards for PM2.5, formaldehyde, CO, chloroform, and NO2.

Shaping Tomorrow's Built Environment Today

BUILDING DECARBONIZATION

THE ISSUE

Buildings provide many benefits to society but have a significant worldwide environmental impact due to their greenhouse gas emissions (GHGs). The building industry accounts for roughly 40 percent of global GHGs and the global building stock is expected to double by 2060 due to urbanization, population growth, and related economic trends. The standard metric used to quantify GHGs is carbon dioxide equivalent (CO_2-eq). Using a common metric helps evaluate different sources of GHGs in terms of their potential to impact the atmosphere—also referred to as their global warming potential. As governmental bodies and jurisdictions across the planet confront climate change, the term "decarbonization" is used to describe practices or policies that reduce GHG emissions. Building decarbonization encompasses a building's entire life cycle, including building design, construction, operation, occupancy, and end of life.

Many governmental bodies and jurisdictions are requiring new buildings to be low carbon or net-zero energy in the near-term and other policies are requiring retrofits of existing building stock in the medium to long term to decarbonize. Some decarbonization policies also advance building electrification when coupled with a renewable electricity source or other low-carbon technologies. Decarbonization efforts will require large public sector and private sector investments while at the same time creating jobs and business opportunities in the HVAC&R, construction materials, and design sectors.

ASHRAE's ROLE

ASHRAE stands at the forefront in supplying standards, guidance and education for the design, manufacturing, installation, and operation of building systems. With respect to building decarbonization, ASHRAE's historical focus has been on energy efficiency, which has resulted in significant GHG emission reductions. ASHRAE is expanding its technical resources, education and training and other initiatives so that they address building decarbonization. ASHRAE's Task Force for Building Decarbonization is advancing numerous efforts and updates that can be found at www.ashrae.org/decarb

ASHRAE's consensus-based standards with potential reference to carbon include:[1]

- Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*
- Standard 90.2, *Energy-Efficient Design of Low-Rise Residential Buildings*
- Standard 100, *Energy Efficiency in Existing Buildings*
- *Standard 105-2021, Standard Methods for Determining, Expressing and Comparing Building Energy Performance and Greenhouse Gas Emissions*
- Standard 189.1, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*
- Standard 189.3, *Design, Construction, and Operation of Sustainable High-Performance Health Care Facilities*

[1] The most up-to-date list can be found at: https://www.ashrae.org/about/tfbd-technical-resources

- Standard 228, *Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance*
- Proposed Standard 240P, *Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation*

ASHRAE's VIEW

ASHRAE's position is that eliminating GHG emissions from the built environment is essential to addressing climate change. To do this, it is ASHRAE's position that:

- Decarbonization of buildings and their systems must be based on a holistic analysis including healthy, safe, and comfortable environments; energy efficiency; environmental impacts; sustainability; operational security; and economics.
- By 2030, the global built environment must at least halve its 2015 GHG emissions, whereby:
  - all new buildings are net-zero GHG emissions in operation,
  - widespread energy efficiency retrofit of existing assets are well underway, and
  - embodied carbon of new construction is reduced by at least 40 percent.
- By 2050, at the latest, all new and existing assets must be net zero GHG emissions across the whole building life cycle.
- Building decarbonization provides benefits beyond reducing GHGs, including reduced indoor and outdoor air pollution, improved energy savings, improved community health and wellbeing, enhanced social responsibility, and increased property valuation.
- Operational energy-related GHG emissions can be reduced by implementing efficiency measures and building electrification; improving O&M; using low-GWP refrigerants and minimizing refrigerant volume while maintaining energy efficiency; improving refrigerant management; and increasing use of renewable energy sources both on site and off site, energy storage, and building-grid integration.
- Building design and operations should be able to respond to real-time carbon signals from the power grid to reduce GHG emissions.
- Increasing stringency and enforcement of energy codes are critical for decarbonization.
- Whole-building life-cycle assessment must be considered in future building codes to reduce embodied and operational GHG emissions related to buildings and their HVAC&R systems.
- Building performance standards (BPS) should be considered as a policy tool for existing building decarbonization.
- Decarbonization policies must consider and mitigate impacts on disadvantaged communities and less-developed nations.

Shaping Tomorrow's Built Environment Today

REFRIGERANTS AND THEIR RESPONSIBLE USE

THE ISSUE

Choosing a refrigerant for a given HVAC&R application has become increasingly complex due to direct and indirect environmental impacts, performance, cost-effectiveness and safety for employees and the public. Following the implementation of the Kigali Amendment to the Montreal Protocol in 2019, the use of lower global warming potential (GWP) refrigerants began to replace today's high GWP refrigerants. Many of the lower GWP refrigerants are mildly flammable, which required the updating of common codes and standards.

ASHRAE's ROLE

With its technical expertise, ASHRAE plays a key role in guiding the selection and analysis of new refrigerants, and the potential environmental and societal consequences of their use. ASHRAE contributed to successfully phasing out the use of ozone depleting refrigerants and is already contributing to reducing the use of high GWP refrigerants. ASHRAE develops voluntary technical standards and guidelines governing the classification, application, and use of refrigerants, which are referenced by various codes and regulations, globally.

As lower GWP refrigerants become prevalent, ASHRAE commits to ensure their safe classification and application in residential, commercial and industrial uses as prescribed by the *Standard 34 – 2022, Designation and Classification of Refrigerants, the ASHRAE Standard 15 – 2022, Safety Standard for Refrigeration Systems*, and the *ASHRAE Standard 15.2 – 2022, Safety Standard for Refrigeration Systems in Residential Applications*. Significant updates to these standards were based on a $5.2 million research program, with contributions from DOE ($3 million), ASHRAE ($1.2 million) and AHRI ($1 million), as part of ASHRAE's commitment to support climate change mitigation.

ASHRAE's VIEW

ASHRAE supports the classification and use of refrigerants based on safety, performance and environmental impact. As the transition to more climate-friendly alternatives continues, ASHRAE supports reducing emissions from high GWP refrigerants through research, education, and improvements to design, installation, operation, maintenance, and decommissioning of equipment in accordance with applicable standards and policies.

ASHRAE supports the global phasedown of the production and consumption of high GWP refrigerants and encourages the adoption of the latest standards in order to enable use of the new lower GWP refrigerants. ASHRAE continues to update related standards to reflect the newest low GWP refrigerants and solutions.

Furthermore, used refrigerants should be safely recovered for reuse, recycle, reclamation or destruction during service or at the end of the equipment life. Refrigerant inventory and management programs should be implemented to closely track refrigerant use.

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RESILIENCY IN THE BUILT ENVIRONMENT

THE ISSUE

Resiliency in the built environment is a complex subject that involves many disciplines. The National Institute of Building Sciences (NIBS) Coalition on Resiliency, which includes ASHRAE and 38 other organizations, has defined resiliency as "the ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events or threats." These events or threats may be financial, political, environmental, as well as disaster, conflict, cyber, climate, or health-related. Its recent prominence is in part due to increasing concerns over the adequacy of responses to natural or climate-related events around the world, as well as recognition that many such events are likely to increase in frequency and severity.[1] According to the National Oceanic and Atmospheric Administration (NOAA), the U.S. has sustained 341 weather and climate disasters since 1980 where overall damages/costs reached or exceeded $1 billion (including CPI adjustment to 2022). The total cost of these 341 events exceeds $2.475 trillion.[2]

Strengthening the built environment is vital to protecting the public when natural and human-induced events occur. Buildings often serve as the first line of defense and as a result, the built environment and engineered systems in buildings must become more resilient in how they are designed and operated in order to protect the public. A building's ability to recover and be available to occupants following such an event, can have widespread economic and health implications. Additionally, as the built environment becomes more interconnected and operations shift towards automation, building systems will see increased vulnerability to cyber threats.

ASHRAE's ROLE

It is ASHRAE's position that building design and operation must consider resiliency as part of an overall risk assessment and planning approach, and that major new efforts in research, education, standards and guidelines, and guidance documents are required to increase building resiliency. Building resiliency is of such importance that it has been identified as one of four key initiatives in the 2019-2024 ASHRAE Strategic Plan.

ASHRAE also has partnered with CIBSE to release a Joint Position Document on Resiliency in the Built Environment.[3] The two societies are committed to taking a leadership role with respect to building resiliency. ASHRAE will be developing and adopting designs, materials, components, systems, and processes that minimize the adverse impacts of extreme events and environmental changes over time.

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[1] IPCC. 2014. Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: Intergovernmental Panel on Climate Change. www.ipcc.ch/report/ar5/.

[2] "Billion-Dollar Weather and Climate Disasters: Overview." National Climatic Data Center, National Oceanic and Atmospheric Administration, https://www.ncei.noaa.gov/access/billions/.

[3] ASHRAE & CIBSE. Position Document on Resiliency in the Built Environment". https://www.ashrae.org/about/position-documents

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ASHRAE's VIEW

Investing in building resiliency is crucial to saving lives, protecting public property, and reducing the financial strain of post-disaster recovery. For these reasons, ASHRAE sees the need for policy setting entities world-wide to encourage sound, balanced, and innovative actions to address long-range resiliency issues and the specific technical concerns associated with them.

When it comes to strengthening the built environment, building codes and standards, such as those developed by ASHRAE, make our communities more sustainable, more efficient and more resilient. According to a 2018 study released by NIBS, by adopting the most recent building codes, there is an impressive cost-benefit ratio ranging from $4—12 for every $1 invested towards hazard mitigation. Unfortunately, most jurisdictions have not yet adopted the most recent standards and codes that are based on the latest research and technological innovation. Legislators and other government officials should examine the best ways to assist these jurisdictions with the adoption, implementation and enforcement of the most recent building energy efficiency codes and standards. This will help prevent future destruction and improve the resilience of the built environment. ASHRAE is committed to being a resource for government with respect to building codes and standards, and will continue to publish and maintain consensus-based building standards, guidelines, and Design Guides.

ASHRAE also holds the following positions with respect to resiliency in the built environment:

- Resiliency is an important societal, economical and technical issue that has a major impact on the built environment as well as how engineered building systems are designed and operated.
- Technical solutions to these challenges are needed. These solutions will include research, standard and guideline development, and the production of educational material.
- Policy setting entities need to encourage sound, balanced, and innovative actions to address the broad issues of resiliency and the specific technical concerns associated with them.
- Built environments need to be developed which are both resilient and sustainable.

Additionally, ASHRAE recommends that additional and continuing research be conducted with the intent to guide resilient infrastructure, building systems and community designs. ASHRAE aims to continue collaborating on building resiliency research opportunities with external organizations, national and international government agencies, and foundations. This is in addition to the over $10 million in ongoing research projects currently funded by ASHRAE.

Shaping Tomorrow's Built Environment Today

STEM EDUCATION AND HVAC&R WORKFORCE

THE ISSUE

Commitment to a solid education in science, technology, engineering and mathematics (STEM) to develop the future supply of technicians, engineers and scientists is critical to our future well-being and standard of living. Even students pursuing non-STEM specialties need basic knowledge of scientific and technological applications for effective participation in the workforce, success in their personal lives and responsible citizenship.

Moreover, there has been increased growth in jobs related to STEM that need to be filled. The U.S. Bureau of Labor Statistics projects that employment in architecture and engineering occupations is expected to grow 4% from 2021 to 2031, with a median annual wage of $79,840 compared to $45,760, the median wage across all occupations.[1] Additionally, about 168,500 openings for construction employment are projected each year on average over the next decade.[2]

The HVAC&R workforce in North America remains a male-dominated employment sector; the share of female workers in engineering and architecture is 14 percent[3] and 5.9 percent of HVAC&R Technicians.[4] Additionally, people of color remain under-represented in the engineering of buildings and HVAC&R sectors; 70.1 percent of the HVAC&R workforce is white.[5]

ASHRAE's ROLE

As professionals focused on design, construction, operation and maintenance of buildings and infrastructure, and as educators of future generations of engineers and the HVAC&R workforce, our members also recognize the importance of mentoring and helping students learn about STEM careers, which is why our members are active in their local communities and in national programs, bringing exciting science and engineering programs to students. ASHRAE is actively engaged in the Solar Decathlon, National Engineers Week and other STEM education efforts worldwide, including through its 440 active student branches.

ASHRAE is also a member of the National STEM Education Coalition, which supports new and innovative initiatives that help improve the content, knowledge, skills and professional development of the K-12 STEM teacher workforce, and informal educators. ASHRAE is dedicated to ensuring quality STEM programs for teachers and students all around the world by encouraging its members to get involved with their local school systems.[6]

ASHRAE's Board of Directors has committed to promoting diversity and inclusion in all levels of the society. This includes efforts to promote STEM education and training to children, schools, and educators, in a way that will attract, train, and retain more women, disabled, LGBTQ, and people of all socioeconomic and ethnic backgrounds to engineering education and employment.

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[1] U.S. Bureau of Labor Statistics. 2022. Occupational Outlook Handbook: Architecture and Engineering Occupations.
[2] U.S. Bureau of Labor Statistics. 2022. Occupational Outlook Handbook: Construction Laborers and Helpers.
[3] U.S. Bureau of Labor Statistics. 2017. Women in architecture and engineering occupation in 2016.
[4] Zippia, 2022. Hearing and Cooling Technician Demographics and Statistics in the US. https://www.zippia.com/heating-and-cooling-technician-jobs/demographics/.
[5] *Ibid.*
[6] For more information, see https://www.ashrae.org/communities/student-zone/k-12-activities.

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ASHRAE also supports strengthening the broader HVAC&R workforce, including technicians who install and maintain HVAC&R equipment as well as distributors, contractors, and facility operators and managers. The HVAC&R and buildings industry has been facing a serious shortage of skilled trade employees for several years and has more recently been exacerbated by the overall shortage of U.S. workers. Unfortunately, there is a broadening skills gap as well due to several factors, including: the retirement of the baby boomers, advancements in technology that require new skills, increased job competition in the global marketplace, failure to cultivate a and retain skilled talent, a societal focus only on four-year degree programs to the exclusion of technical and technological education, and a lack of emphasis on the necessary skill sets for advanced manufacturing. Of these, the last two are most critical to ensuring innovative, high efficiency products are able to be manufactured and installed properly. Community colleges, training programs, internships, apprenticeships and certification programs can strengthen the pipeline for the HVAC&R workforce.

ASHRAE's VIEW

Future generations need to possess the skills and critical competencies necessary to be successful in a highly competitive, global and technologically sophisticated economy. We must work cooperatively to ensure that students receive the STEM training essential for future success.

ASHRAE encourages policymakers to implement the following recommendations:

- Increase government funded research to improve teaching and learning of STEM concepts and critical thinking skills.
- Recruit, train and retain qualified STEM teachers through the development of programs recognizing educators who excel in STEM education and incentives, that encourage the best and brightest scientists, engineers, technologists, and technicians to act as role models and teachers, to pave the way for future generations.
- Foster partnerships among educational institutions, industry and non-profit organizations and their members to introduce students of all backgrounds to STEM career opportunities, including those careers that do not necessarily require a university degree.
- Support and encourage students who choose to enroll in community college, or other career and technical education programs, that prepare and qualify individuals for careers as HVACR technologists, technicians, facility operators, and buildings managers by providing these students with affordable tuition options.
- Create opportunities and incentives for women and those of diverse backgrounds to pursue STEM coursework and careers.
- Encourage diversity in STEM education and the HVAC&R workforce.

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TRACKING GOVERNMENT OUTREACH EVENTS SY 2022-2023

PROGRESS CHART

*Note: Delta assumes that **ALL** planned and scheduled events are held (negative indicates that we are behind the goal).*

	Target	Held	Scheduled	Planned	Delta	Reporting Forms	Recurring Meetings	# of Government Attendees
City/Local	57	7	0	0	-50	6	5	8
State	28	53	0	0	26	53	0	180
Federal	13	33	0	6	26	33	0	32
Global	28	38	0	2	12	35	0	61
In-Person		79						
Virtual		52						
Total	**125**	**131**	**0**	**8**	**14**	**127**	**5**	**281**

Note: Totals may not add up due to rounding

SY22-23 SUMMARY TOTALS (to date):	Number of Attendees (ASHRAE Members)	Number of Meetings	Number of in-person Meetings	Number of virtual meetings
Local	**7**	**7**	6	1
State	**187**	**170**	152	18
Federal	**73**	**39**	10	29
Global	**238**	**44**	39	5
TOTAL:	**505**	**260**	**207**	**53**

In Comparison

SY21-22 SUMMARY TOTALS:	Number of Attendees (ASHRAE Members)	Number of Meetings	Total Number of Events
Local	**72**	**44**	**21**
State	**103**	**98**	**39**
Federal	**16**	**15**	**9**
Global	**343**	**60**	**44**
TOTAL:	**534**	**217**	**113**

Regional Comparisons

Region (arabic numeral)	Region	# of GOEs Held In this Region	
1	I	3	
2	II	4	
3	III	13	
4	IV	20	
5	V	1	
6	VI	16	
7	VII	13	
8	VIII	8	
9	IX	9	
10	X	2	
11	XI	19	
12	XII	19	
13	XIII	2	
14	XIV	0	
15	XV	2	note: 15 = RAL

Motion (Revisions to the GAC Resource Manual): That the Government Affairs Committee approves the attached revisions to the Resource Manual regarding the RVC Reporting Form.

BACKGROUND: The GAC Member Mobilization Subcommittee has proposed updates to the GAC Resource Manual that would clarify the requirements for RVC reports, which are given to the full GAC at the Annual and Winter Meetings. The Standardized RVC Reporting Format is in Section E, pages 14-15 of the Resource Manual. The proposed changes would add fields for the RVC to include the total number of chapters in the U.S. and outside the U.S. (if applicable) that are in their region, as well as the number of chapters present at CRC and GA trainings, and subcategories for Government Outreach Events (GOEs), in order to be consistent with the categories on the online GOE Reporting Form.

FISCAL IMPACT: NONE.

STAFF IMPACT: NONE.

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

ACTIVITY	
CRC (review with DRC)	
Region #	
Total number of chapters in region	
Total number of chapters in the US in this region	
Total number of international chapters in region	
Number of chapters present at CRC Training	
Number of GA chapter chairs present at GA training	
Percentage of participation	
Percentage of GA chapter chair participation	
No. of planning sessions held	
PAOE	
No. of Chapters Reporting PAOE Points:	
No. of Chapters Making Society Minimum:	
No. of Chapters Making Society PAR:	
Highest PAOE Points by a Chapter:	
Percentage of chapters reporting	
Percentage of chapters making Society Minimum	
Percentage of chapters making Society PAR	
PAOE Trending by Chapter (up or down):	
CHAPTER VISITS	
No. of visits made:	
No. of visits scheduled:	
Percentage of chapters visited:	
GAC AWARDS	

No. of Government Affairs Award submissions	
Government Outreach ~~Days~~ Events	
No. of Local Events	
No. of State Events	
No. of Federal Events	
No. of Global Events	

No. of Chapters Participating	
No. of government officials visited	
No. of ASHRAE members participating	
No. of Chapters reporting	
No. of days duration	

Leadership Presentation
2023 ASHRAE Annual Conference

ASHRAE Policies

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

View ASHRAE Governing Documents at 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.

Nominations

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

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

2023-24 Board of Directors

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Corners, Georgia

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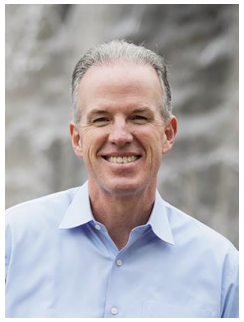


Billy Austin, P.E.
Fellow ASHRAE,
BCxP, BEAP, BEMP,
HBDP, HFDP, OPMP
Charlotte, North
Carolina

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

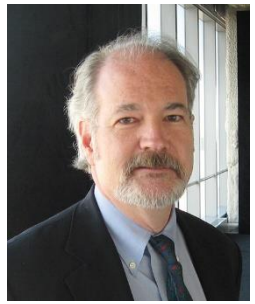
Richie Mittal
New Delhi, India

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)

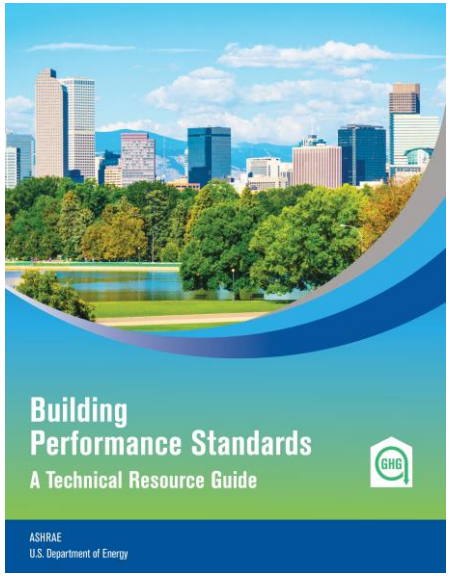
Purpose

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

Task Force for Building Decarbonization



Download the guide
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

Government Affairs

Get Involved + Get Resources at 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

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

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

2 SOCIETY | **6** TOPICAL | **15** CRCs

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

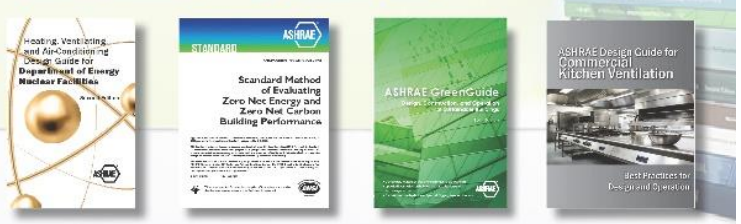
9,680 COURSE ATTENDEES

ASHRAE Learning Institute **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 YEA

$29,000 RAISED FOR EDUCATION

$2.9M TOTAL RAISED

$8,900 RAISED FOR DECARBONIZATION EFFORTS

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

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

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

$653,581 SUPPORTING ASHRAE PROGRAMS

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

ASHRAE APPLICATION OF FUNDS
12 Months ended June 30, 2023

$28,147M REVENUE

$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:

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*

$1M Raised for Endowments

$235,500 Awarded via 65 Scholarships

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

Within the RP Campaign
$1.9M Raised for Research

$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

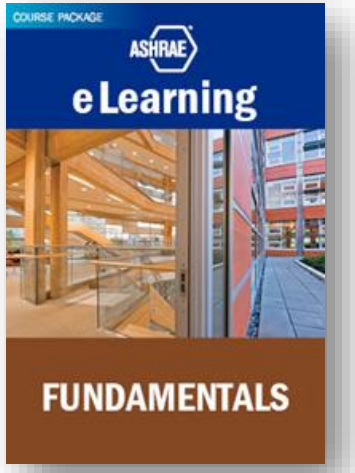
Professional Development

Learn More at ashrae.org/professionaldevelopment

eLearning

Course Package
Fundamentals: HVAC Systems (IP), 21.5 PDHs

- 10 individual courses
- Most are AIA approved



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

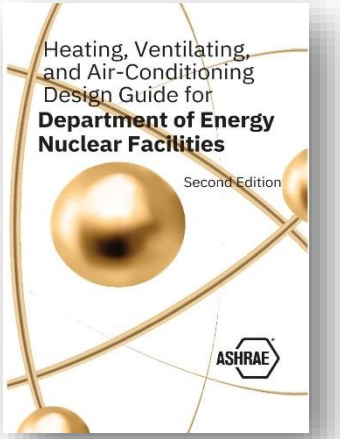
ASHRAE Certifications

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

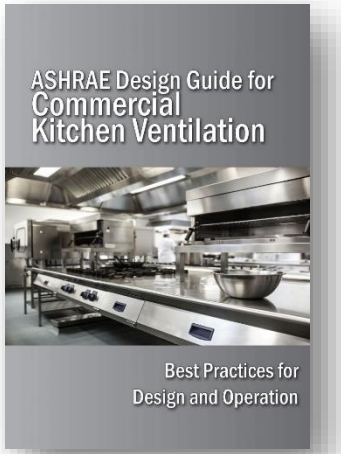
ashrae.org/certification

Publications

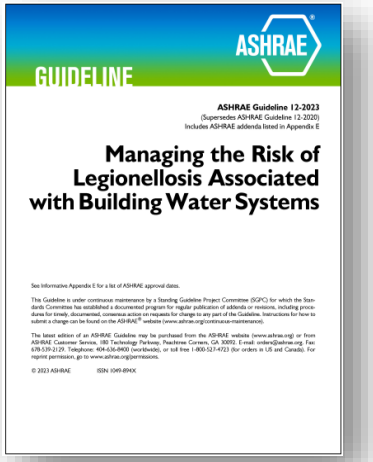
Recently published items available at ashrae.org/bookstore



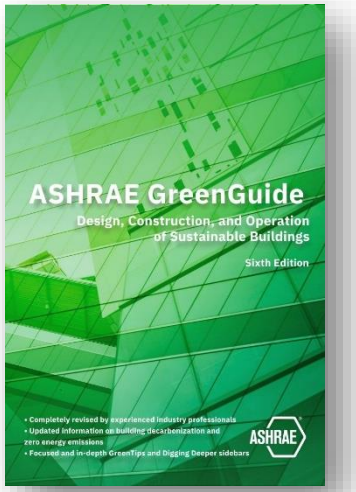
Heating, Ventilating, and Air-Conditioning Design Guide for Department of Energy Nuclear Facilities, Second Edition



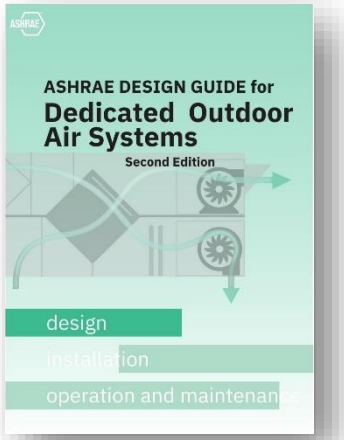
ASHRAE Design Guide for Commercial Kitchen Ventilation: Best Practices for Design and Operation



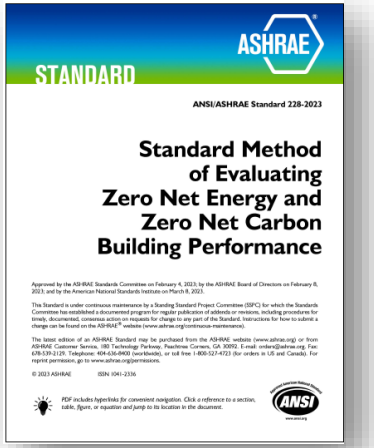
ASHRAE Guideline 12-2023, ***Managing the Risk of Legionellosis Associated with Building Water Systems***



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



ASHRAE Design Guide for Dedicated Outdoor Air Systems, Second Edition



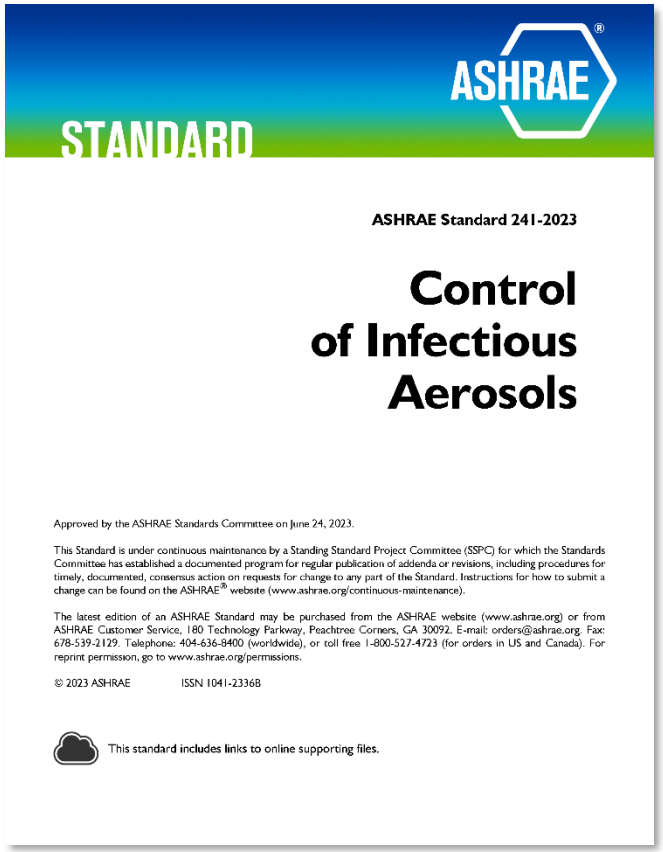
Standard 228-2023, ***Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance***

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!


STANDARD

ASHRAE Standard 241-2023

Control of Infectious Aerosols

Approved by the ASHRAE Standards Committee on June 24, 2023.

This Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the Standard. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

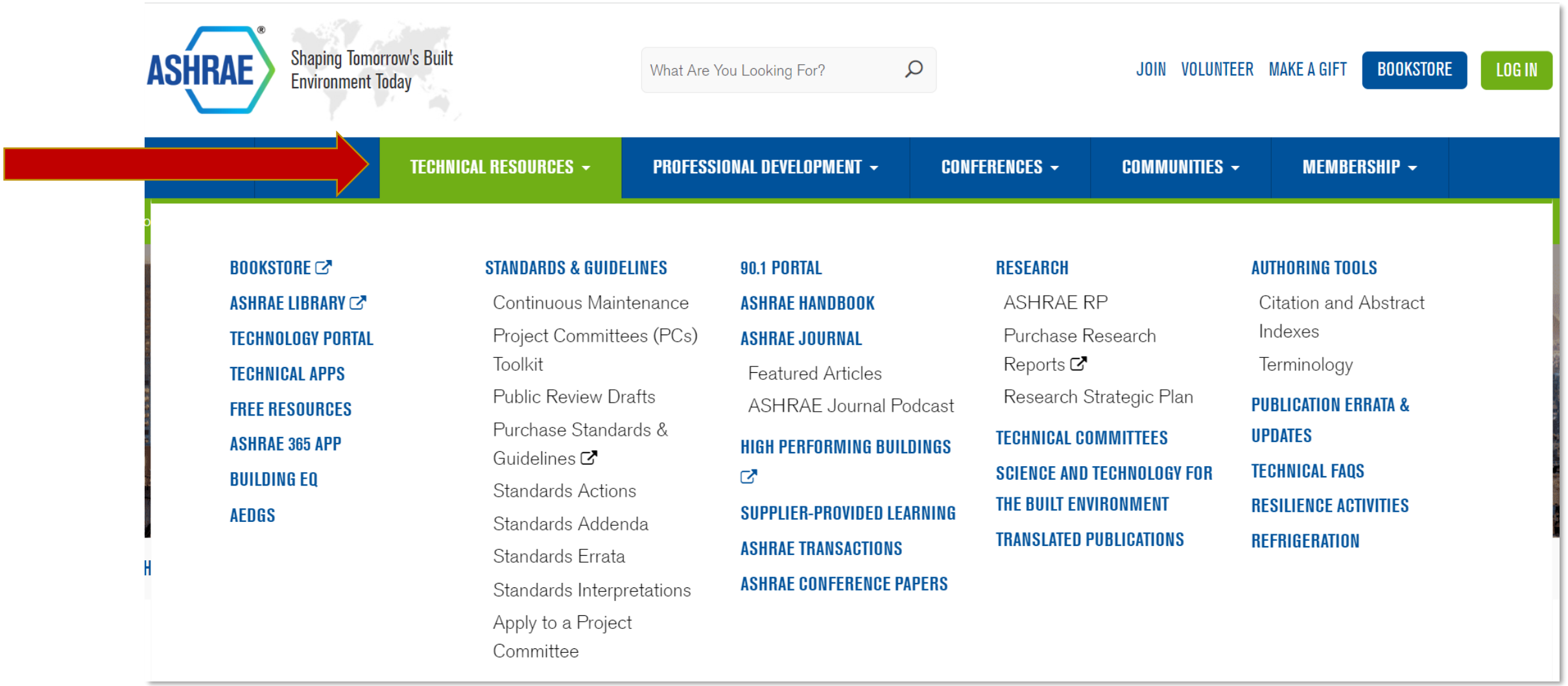
The latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30092. E-mail: orders@ashrae.org. Fax: 678-539-2129. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

 ISSN 1041-2336B

This standard includes links to online supporting files.

Resources

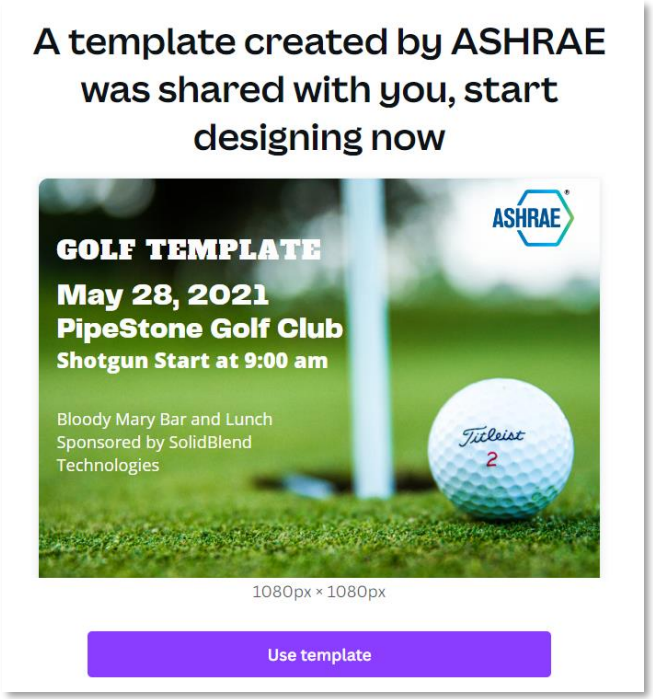
Find Technical Resources at ashrae.org



Marketing Central

Promotion Resources for the busy volunteer ashrae.org/marketingcentral

Templates for all your Communication Needs



Download PowerPoint Presentations

Find logos, Brand Guide, Acronym Guide and more!

Flyers & Brochures | Videos | Toolkits | Tradeshows | Graphics

World Refrigeration Day

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

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

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

ASHRAE CHICAGO 2024 WINTER CONFERENCE AND AHR EXPO

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.**

ashrae.org/conferences

Thank you!
Questions or Comments?

RVC Reports

Annual Meeting

2023 - Tampa

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region I (SY 2022-2023)

ACTIVITY	
CRC	
Total number of chapters in region	15
Number of chapters present	12
Number of GA chapter chairs present	8
Percentage of participation	80%
Percentage of GA chapter chair participation	53%
No. of planning sessions held	0
PAOE	
No. of Chapters Reporting PAOE Points:	12
No. of Chapters Making Society Minimum :	10
No. of Chapters Making Society PAR :	9
Highest PAOE Points by a Chapter:	3800
Percentage of chapters reporting	80%
Percentage of chapters making Society Minimum	66%
Percentage of chapters making Society PAR	60%
CHAPTER VISITS	
No. of visits made:	1
No. of visits scheduled:	2
Percentage of chapters visited:	6%
GAC AWARDS	
Government. Affairs Award	0
Government Outreach Days	4
No. of Chapters Participating	8
No. of government officials visited	22
No. of ASHRAE members participating	15
No. of Chapters reporting	8
No. of days duration	1

GAC RVC Report - Summer Conference Region I

SY 2022-2023

Artorius M Reyes

Regional Goals

Primary Goals

- Continue to bring awareness of ASHRAE to City/State officials across the region through outreach events and networking.
- Maintain and grow relationships with City/State entities and officials across the region.
- Give awareness to ASHRAE members of important legislation, code and standards changes
- Grow the ASHAE brand among City/state entities and members as much as possible across the region

Member States of Region I

New York
New Jersey
Connecticut
Massachusetts
New Hampshire
Rhode Island
Vermont
Maine

ASHRAE Region 1

RVC Goals

Primary Goals

- Continue to support and maintain Chapter Engagement Quarterly meetings w/ NYSERDA & NY State
- Establish New Engagement Plan w/ 2nd State in Region I
  - (In the works w/ Massachusetts)
- Establish more Streamlined RVC Management Structure
- Begin succession planning for next Region 1 RVC
- Spend more time as GAC Mentor to support new GAC RVC's

ASHRAE Region 1

Regional Legislative Updates

New York State

- **Climate Action Scoping Plan Finalized**
  - Outlines recommended policies and actions to meet goals set forth by Climate ace (CLCPA)
  - Finalized December 2022

New York City

- **Climate Mobilization Act (Local Law-97) Rules Finalized**
  - Rules Finalized – December 2022
  - Property/Occupancy Classifications: Property types and classifications aligned around EPA's portfolio manager. Some categories are new and were not in the original law.
  - Accounting for grid decarbonizing: Coefficient for electricity for 2030-2024 adjusted
  - Clear Time Blocks:
    - [2024-2029] [2030-2035] [2035-2039] [2040-2049] [2050-Beyond]
  - Time of use included: Building owners will have the option to calculate their utility electricity emissions around time of use.
  - Building Occupancy Type Clarification: Building with multiple occupancy types to be evaluated as a sum total of the emissions for all types together.

New Jersey

- **Adopted IECC 2021 – September 2022**

Regional Legislative Updates

New Jersey

- Adopted IECC 2021 – September 2022

Connecticut

- Adopted IECC 2021 – September 2022

Massachusetts

- Updated Stretch Code to include IECC 2021
- Base Energy Code to be updated in 2023

City of Boston

- **Building Emissions Reduction & Disclosure Ordinance (BERDO 2.0)**
  - Policies & Procedures Formally Adopted December 2022

New Hampshire

- Updated Base Energy Code to IECC 2018

Regional Progress Highlights

NY State Quarterly Chapter Engagement Growing

- Visibility and impact of our Quarterly Chapter Engagement meetings.
  - Increased amount of NY State entities participating – Utilities, State Agencies, US Senate (Senator Gillibrand's office)
  - Other engineering societies looking to participate (American Society of Healthcare Engineering (ASHE), American Council of Engineering Companies (ACEC), Real Estate Board of New York (REBNY), etc.

New York Healthcare Protocol

- Region I Sponsored Project
- Aligning all of Healthcare in NYS and providing playbook & roadmap to decarbonizing their **existing facilities** (not in conflict w/TFBD Healthcare Design Guide in development)
  - 150+ Participants Across Healthcare Vertical
  - Spawned significant activity across the NYS Chapters including various workshops, workforce development training, and increased monthly dinner meeting presence from NY State.

Systems & Equipment Definition Establishment for Decarbonization

- ASHRAE working with various DEC & NYSERDA to help establish high-level mechanical systems and equipment definitions formally across the state. This will inform language on future climate policy so that implementation of said policies are smoother (i.e., what is the difference between air cooled and water-cooled heat pumps and where they are applied or "What is a heat pump?").

Regional Challenges

- Travel challenges (Presenters/Members)
- Fast Changing Political Landscape
  - Decarbonization
  - IAQ focus for schools
- Active But Disconnected Members
  - Chapters in NY moving at different paces
  - Varying government relationships across the region
- Definition of Government Outreach Changing
  - What do we do when relationships exist and work to be done?
  - How to stay aligned as to not duplicate efforts?

RVC Lessons Learned

- Need better focus on pace and sustainability of relationships/programs.
- Lean more on ASHRAE Staff for support & guidance
  - Policy/Legislation Commenting
  - Bill Tracking & Testimonies

Region Summary

State	Chapter Name	Active Chair	PAOE Points (to date)	Chapter Visits	CRC Attendance
New York	Bi-State	Yes	1600	1	No
	Central New York	Yes	1750	0	Yes
	Long Island	Yes	3000	0	Yes
	New York City	Yes	3800	N/A – Home Chapter	Yes
	Niagara Frontier	No	0	0	No
	Northeast	No	0	0	No
	Rochester	Yes	2350	0	No
	Twin Tiers	Yes	3000	0	Yes
New Jersey	New Jersey	Yes	200	0	No
Connecticut	Connecticut	Yes	1850	0	Yes
Massachusetts	Boston	Yes	1000	1 – Cancelled	Yes
New Hampshire	Granite State	Yes	1950	0	Yes
Rhode Island	Rhode Island	No	0	0	No
Vermont	Champlain Valley	Yes	400	0	Yes
Maine	Maine	Yes	600	0	No

2023 -2024 Outlook "Things In The Works"

- NY Healthcare Protocol Publication & Implementation
- Uniform Mechanical Systems & Equipment Definitions in NY State
- Continued work on Connecticut Code Council
- Looking to Establish Similar Relationship w/ Massachusetts

Region IX
Summer Report 2023

Big Sky

Chapter# 131

Black Hills

Chapter# 127

El Paso

Chapter# 072

New Mexico

Chapter# 077

Ozarks

Chapter# 150

Pikes Peak

Chapter# 148

Idaho

Chapter# 135

Kansas City

Chapter# 053

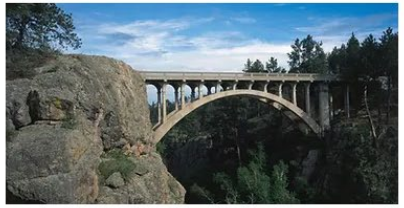
Nebraska

Chapter# 075

Rocky Mountain

Chapter# 073

South Dakota



Chapter# 093

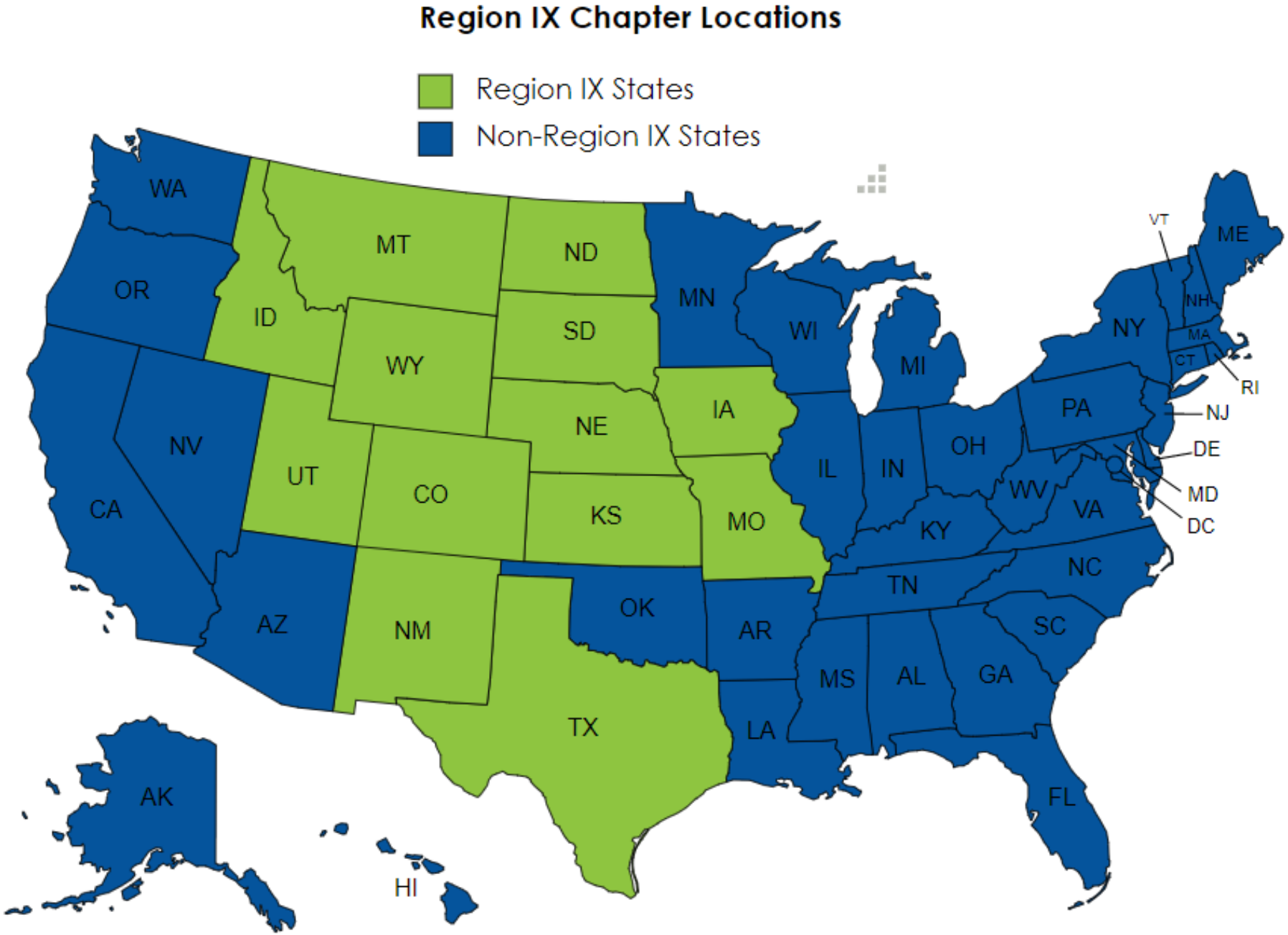
Utah

Chapter# 074

Wichita

Chapter# 076

Region IX


Region IX Chapter Locations
Region IX States
Non-Region IX States
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MI
IN
OH
KY
TN
MS
AL
GA
FL
SC
NC
VA
WV
PA
NY
VT
NH
ME
MA
CT
RI
NJ
DE
MD
DC
AK
HI

Region IX RVC Bio.

- Peter Koneck-Wilwerding
- Associate Mechanical Engineer at HDR
- Omaha, Nebraska, USA
- Nebraska Chapter #75
- GA Chapter Chair 2018/19, 2019/20, 2020/2021
- On BOG for NE (Second Chair)
- First Year RVC (of 3-year term)

Region IX Chapter PAOE Status

Chapter code	Chapter Name	Chapter AAM	Government Affairs: Minimum 500; PAR 1000	ChapterPAOEpointTotals	% Total
75	NEBRASKA	369	2250	12745	18%
53	KANSAS CITY	620	2150	14375	15%
135	IDAHO	161	1450	10055	14%
93	SOUTH DAKOTA	126	950	3952	24%
74	UTAH	330	650	13475	5%
73	ROCKY MOUNTAIN	970	600	17054	4%
148	PIKES PEAK	108	600	7760	8%
77	NEW MEXICO	137	50	2770	2%
72	EL PASO	53	0	1506	0%
76	WICHITA	143	0	3773	0%
127	BLACK HILLS	45	0	1095	0%
131	BIG SKY	127	0	1615	0%
150	OZARKS	60	0	920	0%

Region IX Lessons Learned

- Kansas City
- Nebraska
- South Dakota
- Idaho
- Utah
- Pikes Peak

Region IX Successes

- Kansas City
- Nebraska
- South Dakota
- Idaho
- Utah
- Pikes Peak

Region IX Legislative Trends

- Attempt to weaken energy code requirements for new builds
  - Push to lower the cost of housing, passing cost on to residents.
  - Looking to push ASHRAE design guides to support.
- Reluctance to discuss climate change
  - Terminology minefields
- Smoking bans

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region #XI

ACTIVITY
CRC
Total number of chapters in region 11
Number of chapters present 11
Number of GA chapter chairs present 1
Percentage of participation 9.9%
Percentage of GA chapter chair participation 9.9%
No. of planning sessions held 1
PAOE
No. of Chapters Reporting PAOE Points: 9
No. of Chapters Making Society Minimum : 2
No. of Chapters Making Society PAR : 5
Highest PAOE Points by a Chapter: 2400 Regina Chapter
Percentage of chapters reporting 80%
Percentage of chapters making Society Minimum 18%
Percentage of chapters making Society PAR 45%
CHAPTER VISITS
No. of visits made: 3
No. of visits scheduled: 3
Percentage of chapters visited: 28%
GAC AWARDS
Government. Affairs Award 1 presented to Kyle Harasyn GAC Saskatoon Chapter
Government Outreach Days
No. of Chapters Participating 2
No. of government officials visited 4
No. of ASHRAE members participating 2
No. of Chapters reporting 2
No. of days duration 2

ASHRAE Region XI

GOVERNMENT AFFAIRS SUMMER REPORT - 2022/2023 SY

Chapter PAOE Synopsis 2022/2023:

Chapter	Points to date	Chair	Chair Activity	Chapter Visit
Manitoba	250	Yes	None	No
Regina	2400	Yes & Committee	Strong	Virtual
Saskatoon	1950	Yes	Strong	No
Southern Alberta	800	Yes	Moderate	No
Northern Alberta	450	Yes	Minimal	No
British Columbia	1350	Yes	Moderate	Yes
Vancouver Island	1100	Yes	Moderate	Yes
Oregon	0	No	None	No
Puget Sound	1300	Yes & Committee	Moderate	No
Inland Empire	0	No	None	No
Alaska	0	Yes	Has not reported	No

2022 GOE Accomplishments

- ✓ Regina Chapter Hosts a Building Decarbonization Panel Presentation with Local & Provincial Government Officials, and Stakeholders.
- ✓BC Chapter unveils their Resiliency and Sustainability Guide while hosting a Building Decarbonization Panel Presentation with the City of Vancouver, and key engineering firm representatives.
- ✓Vancouver Island Chapter Hosts Smoke Control Presentation with the Chief Building Inspector from the City of Victoria.
- ✓Southern Alberta Chapter Hosts a Building Decarbonization Presentation with Senior Facility Officials from the University of Calgary.

2023 GOE Accomplishments

- ✔ Darryl Boyce - Society Government Affairs Chair, Ali Zahedi, and Norm Grusnick – BC Chapter Reps, and Daryl Collerman Region XI Government Affairs RVC met with the Building Sustainability Department from the City of Vancouver, on Monday morning April 17th
- ✔ Darryl Boyce - Society Government Affairs Chair, Ali Zahedi, and Norm Grusnick – BC Chapter Reps, and Daryl Collerman Region XI Government Affairs RVC met with the Building Policy Engineer and Chief Mechanical & HVAC Inspector from the City of Vancouver, on Monday afternoon April 17th
- ✔ Darryl Boyce - Society Government Affairs Chair, Eric Loeper – V.I. Government Affairs Chapter Chair, and Daryl Collerman Region XI Government Affairs RVC met with the Codes and Standards Branch for the Province of BC, on the Thursday afternoon of April 20th

2023 GOE Accomplishments

The Regina and Saskatoon ASHRAE Chapters and Saskatchewan BOMA hosted two Panel Discussions with the Province of Saskatchewan, City of Regina, City of Saskatoon, University of Saskatchewan and other Stakeholders on the afternoon of April 20th and April 21st Organized by Aura Lee MacPherson and Kyle Harasyn

Region XI and Region II organized a Day on the Hill event in Ottawa from April 24th –April 26th The event was a total success with GA Chairs from Saskatoon, Toronto, and Ottawa, and GA RVC's from both Regions, and the Chair of Society Government Affairs Darryl Boyce. We met with respective MP's and with National Research Council of Canada, Energy Efficiency Canada, Health Canada, and Natural Resources of Canada!

Goals and Objectives for 2023/2024 SY

- ✓In commemoration of International Women in Engineering Day June 23rd and the recognition of World Refrigeration Day, June 26th I'm encouraging all Chapters to host a year end social and celebration as close as possible to June 23rd To recognize women in engineering, and women in the refrigeration industry, as women play a significant role in the refrigeration Industry. Invite Government Officials on all levels, that are responsible for the Workforce Sectors. This can also be combined with the DEI Chair Committee of each Chapter.

Lessons Learned from 2022/2023, SY

- ✓ The importance of in-person CRC's and the benefits of GA Chapter Chairs attending the CRC!!!
- ✓ The importance of stressing and impressing upon each Chapter BoG, the need for the Chapter to conduct government outreach activities and to have at least one active GA Chair and if possible, a GA Committee on the BoG. To conduct actual Government Outreach activities both virtual, and or in-person meetings.
- ✓GA Chapter Chairs, and Committees, are the Frontline representatives for getting the ASHRAE message out to policy and decision makers.

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region 4

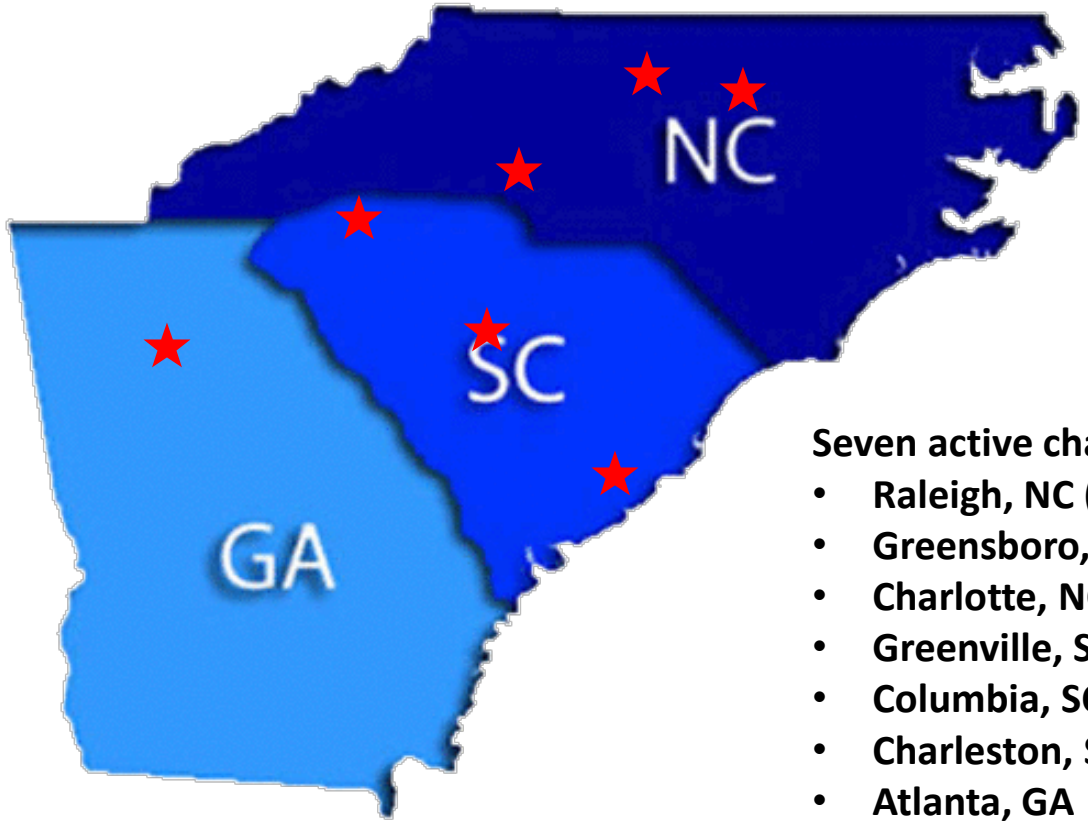
ACTIVITY	Region IV – Mid Year GAC Report 2023
CRC	
Total number of chapters in region	7
Number of chapters present	5
Number of GA chapter chairs present	5
Percentage of participation	71
Percentage of GA chapter chair participation	71
No. of planning sessions held	7
PAOE	
No. of Chapters Reporting PAOE Points:	7
No. of Chapters Making Society Minimum :	6
No. of Chapters Making Society PAR :	6
Highest PAOE Points by a Chapter:	2250
Percentage of chapters reporting	86
Percentage of chapters making Society Minimum	86
Percentage of chapters making Society PAR	86
CHAPTER VISITS	
No. of visits made:	2
No. of visits scheduled:	2
Percentage of chapters visited:	29
GAC AWARDS	
Government. Affairs Award	0
Government Outreach Days	
No. of Chapters Participating	6
No. of government officials visited	47
No. of ASHRAE members participating	9
No. of Chapters reporting	6
No. of days duration	3

ASHRAE
2023 Annual Conference
Tampa Bay, Florida
June 23, 2023

GAC:
Region IV Report

Weston Hockaday, GAC RVC

Region IV Overview



Seven active chapters:

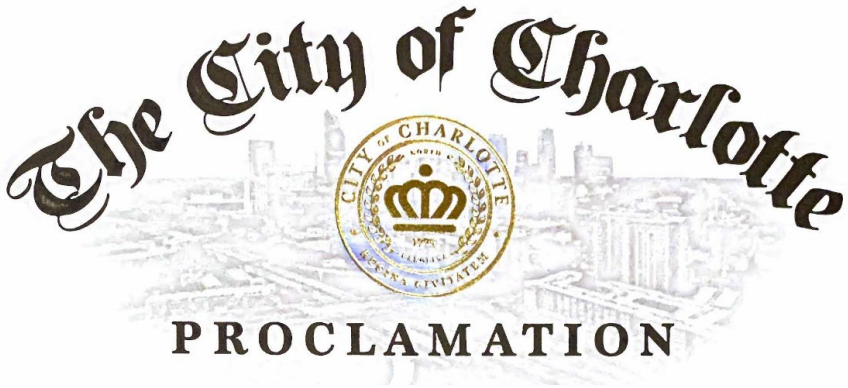
- **Raleigh, NC (Triangle)**
- **Greensboro, NC (North Piedmont)**
- **Charlotte, NC (Southern Piedmont)**
- **Greenville, SC**
- **Columbia, SC**
- **Charleston, SC**
- **Atlanta, GA**

ASHRAE Region IV

ASHRAE

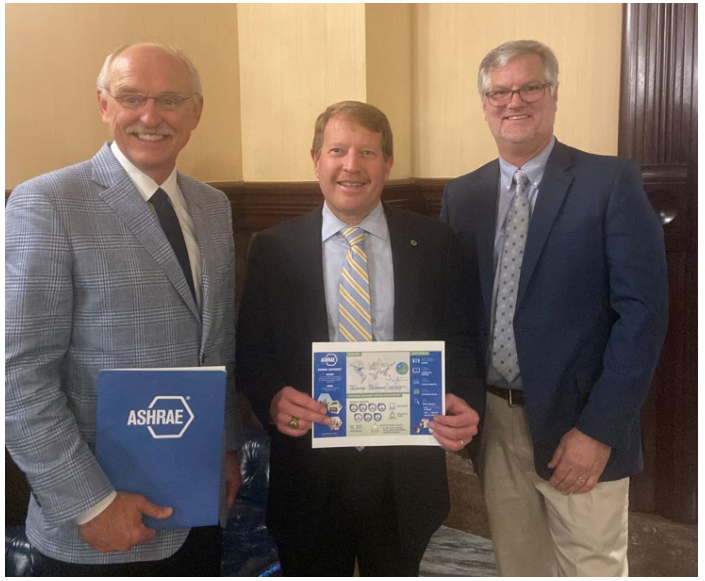
Special Mention Activities

- Energy Efficiency Day (Oct 5, 2022) & National Engineers Week Proclamation (Feb 19-25): Charlotte Mayor Vi Alexander Lyles
- Constituent Meetings with multiple Representatives facilitated by the Associate Manager of Government Advocacy and Outreach



Special Mention Activities

- Georgia Day on the Hill – 2/22/23 - 22
- South Carolina Day on the Hill – 4/18/23 - 10
- North Carolina Day on the Hill – 5/23/23 – 15



ASHRAE Region IV

ASHRAE

Special Mention Activities

- Southern Piedmont Chapter Visit – April 13th

TOPIC: Introduction to Building Decarbonization

By: Drury B. Crawley, PH.D.

Positive Activities

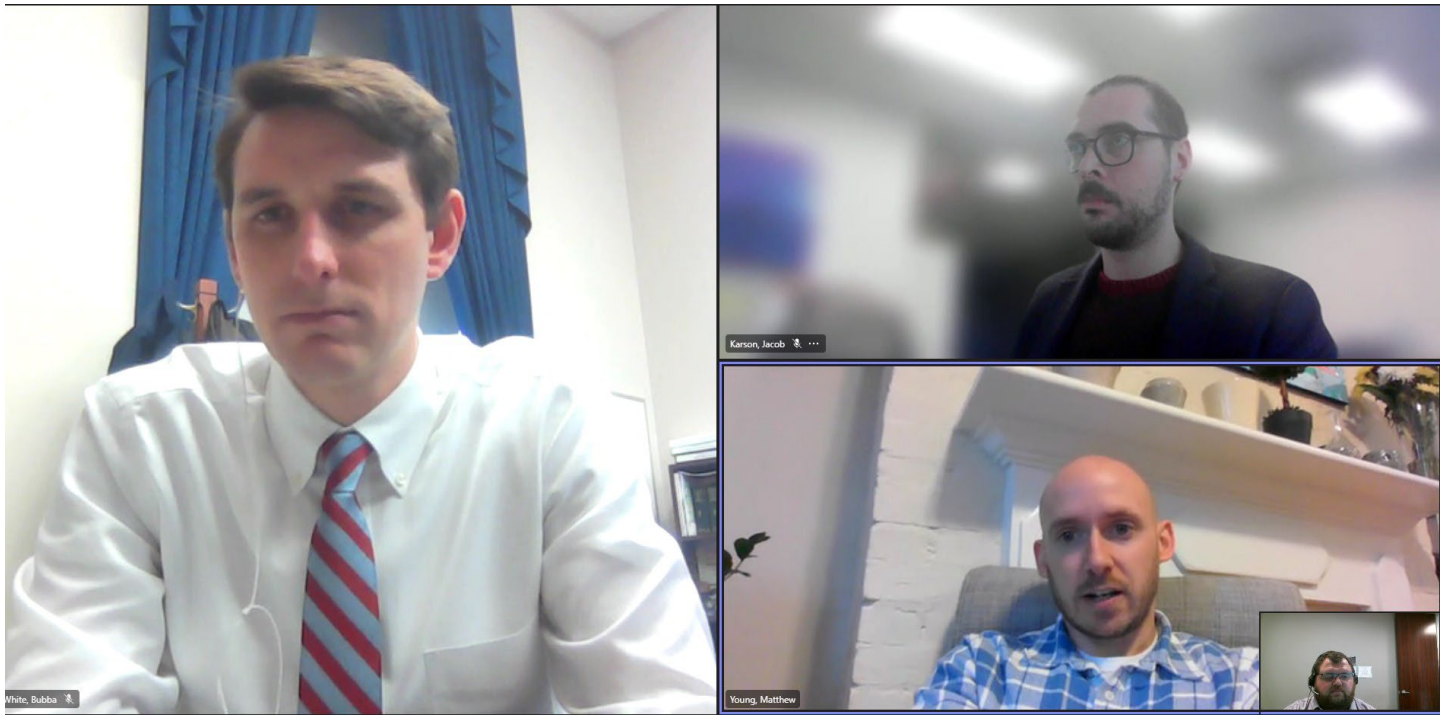
Highlights

- 6 of 7 Chapters reported PAOE points.
- 6 of 7 Chapters PAOE points are above PAR.
- 71 % Chapter & Chair attendance at CRC GAC Traini
- Variety of events at federal, state, and local level of
  and Counties: Atlanta, Charlotte, Raleigh.
- Government Outreach Event – Constituent Meetings
- DoTH events garnered 47 meetings!
- Government Outreach Events Reported – 15 as of 6/12/23
  (due 6/30/23)
- Newsletter Articles Posted and Local Issue Submissions

ASHRAE Region IV

ASHRAE

Virtual Constituent Meeting



ASHRAE Region IV

ASHRAE

2023 Outlook

Opportunities

- **Improving Meaningful Government Outreach Events.**
- Continue to Develop **Local Level Contacts**: State, City, County, and Schools.
- Encourage participation in State Boards & Councils.
- Increase Chapter Level Engagement with Joint & GAC Theme Meetings
- **Take Pictures & Submit activities sooner.**

End of Report

Any Questions?

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region 3 – Summer Meeting 2023

ACTIVITY
CRC
Total number of chapters in region: 11
Number of chapters present: 4
Number of GA chapter chairs present: 4
Percentage of participation: 45%
Percentage of GA chapter chair participation: 36%
No. of planning sessions held: 6
PAOE
No. of Chapters Reporting PAOE Points: 6
No. of Chapters Making Society Minimum : 2 (up from 1 last year)
No. of Chapters Making Society PAR : 3 (no change from last year)
Highest PAOE Points by a Chapter: 2550 (Central PA)
Percentage of chapters reporting: 55%
Percentage of chapters making Society Minimum: 45%
Percentage of chapters making Society PAR: 28%
CHAPTER VISITS
No. of visits made: 0
No. of visits scheduled: 0
Percentage of chapters visited: 0
GAC AWARDS
Government. Affairs Award – Will be presenting my award at CRC to Central PA.
Government Outreach Days – 1
No. of Chapters Participating: 1 (Central PA)
No. of government officials visited: 12
No. of ASHRAE members participating: 8
No. of Chapters reporting: 1
No. of days duration: 1

ASHRAE Region 3

Summer Meeting Government Affairs Report

RJ Hartman

GA - Chapter Breakdown

Chapter	PAOE	Min or Par?	Highlight
PHILADELPHIA	0	-	
CENTRAL PENNSYLVANIA	2550	PAR	Hugely successful DOTH event
JOHNSTOWN	0	-	
PITTSBURGH	50	-	
BALTIMORE	1500	PAR	Multiple GOEs
NATIONAL CAPITAL	1300	PAR	multiple GOE's, newsletters, presentations
HAMPTON ROADS	0	-	
LEHIGH VALLEY	0	-	
ROANOKE	0	-	
ANTHRACITE	650	MIN	
RICHMOND	500	MIN	Multiple GOEs

Note: PAOE is as of 5/31/2023

Strong finish to the year by the few very active chapters in my region.

Once again, Central PA crushing it with a successful Day on the Hill event.

Regional Accomplishments

- Central PA had a massively successful Day on the Hill event and met with 12 state representatives. 8 Volunteers from Central PA spent the day advocating for ASHRAE. Great leadership from John in setting this event up. This was also a repeat, as Central PA held a very successful DOTH event last year.

- 8 other GOE's held by the few other active GAC's in the region

Photo: L to R: Bill McQuade, John Hayden (GAC), Ann Swartzbaugh (past GAC), Robert Weidner, Daniel Wyrick, Dean Scheurich, Ryan Kerstetter.

Regional Struggles

- Similar struggles with hearing back from chapter chairs.
  - Numerous smaller chapters struggle with fielding a GA Chair as it is, which is common in this region.

Goals and Objectives

Goals/Objectives Review from 2022-2023

- Continue with being frequent with my communication to my GACs. Gentle reminders are always nice to have.
  - Felt like my communication at the first half of the year was strong, with he second half being a bit weaker (though more targeted). Let some of the GACs loose so didn't need to talk as much.
- Hold another Day On The Hill event in my region, potentially 2 if the Central PA folks do theirs again. (No excuse for us Virginians to get schooled by PA!)
  - Didn't get this one accomplished, a few too many personal and work matters flared up and couldn't get any of my Virginia GACs to take point. Hopefully next year my National Capital GAC will be able to take the lead on this.
- Personally, I would like to get back in front of some of the VA state government and my local county/school board.
  - Was able to do 2 Federal GOE's, with the help of Jacob Karson. Having him (and all the ASHRAE staff) help schedule makes these significantly easier to do, and I look forward to many more next year.
  - Wasn't able to get in front of the local school board, or city council, but that's still on the docket for next fall.

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

ACTIVITY	Region X – GAC Report June 2023
CRC	Updated June 12,2023
Total number of chapters in region	14
Number of chapters present	9
Number of GA chapter chairs present	8
Percentage of participation	64%
Percentage of GA chapter chair participation	57%
No. of planning sessions held	5
PAOE	
No. of Chapters Reporting PAOE Points:	12
No. of Chapters Making Society Minimum :	3
No. of Chapters Making Society PAR :	1
Highest PAOE Points by a Chapter:	1400
Percentage of chapters reporting	86%
Percentage of chapters making Society Minimum	21%
Percentage of chapters making Society PAR	8%
CHAPTER VISITS	
No. of visits made:	5
No. of visits scheduled:	3
Percentage of chapters visited:	36%
GAC AWARDS	
Government. Affairs Award	0
Government Outreach Days	
No. of Chapters Participating	1
No. of government officials visited	18
No. of ASHRAE members participating	6
No. of Chapters reporting	1
No. of days duration	1

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region

ACTIVITY	
CRC	
Total number of chapters in region	32
Number of chapters present	28
Number of GA chapter chairs present	15
Percentage of participation	88%
Percentage of GA chapter chair participation	55%
No. of planning sessions held	3
PAOE	
No. of Chapters Reporting PAOE Point	22
No. of Chapters Making Society Minimum :	17
No. of Chapters Making Society PAR :	7
Highest PAOE Points by a Chapter:	Pyramids
Percentage of chapters reporting	68%
Percentage of chapters making Society Minimum	53%
Percentage of chapters making Society PAR	21%
CHAPTER VISITS	
No. of visits made:	2
No. of visits scheduled:	5
Percentage of chapters visited:	40%
GAC AWARDS	
Government. Affairs Award	0
Government Outreach Days	
No. of Chapters Participating	12
No. of government officials visited	48
No. of ASHRAE members participating	82
No. of Chapters reporting	4
No. of days duration	8

ASHRAE Region at Large

GAC (Summer Meeting) 2022/2023

RVC Bio:

Ahmed M. Bolbol

Consulting Engineer

Cairo, Egypt

Chapter 211 Pyramids

GA Chapter Chair *2014/2017*

Chapter President *2023/2024*

First Year of 3 Years GA RAL RVC Term *2022/2025*

SUB REGION 01

- Alexandria
- Bahrain
- Cairo
- Central Pakistan
- Faisalabad
- Jordan
- Kuwait
- Lebanon
- Libya
- Nigeria
- Northern Pakistan
- Oman
- Pakistan
- Pyramids
- Qatar
- Saudi Arabia
- South Africa
- Sudan
- Turkey
- UAE (Falcon)

ASHRAE

Region-at-Large

"Where Things Happen"

SUB REGION 02

- Bangalore
- Bangladesh
- Chandigarh
- Chennai
- Deccan
- East India
- India
- Mumbai
- Pune
- Rajasthan
- Sri Lanka
- Western India

ASHRAE

Regional Accomplishments:

- ✓Central Pakistan Chapter had several events during the year with the government authors.
- ✓Mumbai Chapter hint several events with government authorities supporting HVAC and refrigeration with government officials
- ✓Pyramids Chapter had many numbers of government outreach and Chinese authorities and HVAC parts to support the global worming & increase woman in ASHRAE

(Central Pakistan Activities)

Workshop on Developing F-Gases Component in GHG Inventory Platform of Pakistan organized by GIZ &Ministry of Climate Change.

workshop on Rectification of Kigali Amendments at Lahore by Ministry of Climate Change GOP

Workshop for Pakistan Cooling Action Plan organized by the Ministry of Climate Change (MOCC), CLAPS, NEECA, WWF-Pakistan and SamaVerte..

(Mumbai Chapter Activities)

Picture above showing the delegates of training program with the organizing team and ASHRAE Mumbai team members

Meeting with Mr Samant -ECBC nodal officer Govt of Goa

Mumbai Chapter GA team with Chief Minister , Govt of Goa –ASHRAE Std 90.1 copy handed over

(Pyramids Chapter Activities)

Ex Com ASHRAE with minister of environment

27 Chinese Entities in HVAC industries

Day on the HILL with more than 300 person

Things to do

1) Trying to have better reports from the GAC (Chapters)
2) Two on-time meetings for each sub-region (In each next quarter)
3) More Chapter visits specially in Sub-region II
4) To have a GA chair in each chapter with at lest two CO Chair
5) In encourage the chapter GA Chairs to attend the CRC workshop
6) Concentrate on world decarbonization

Lessons Learned

1) More support for struggle chapter (Libya, Sudan, Lebanon, South Africa … etc.)
2) Be sure that each chapter has a complete GA committee
3) Increase the (Go-To-meeting) specially for under-standing the reporting.
4) Interacting between the GA activities with other committee and increase the outreach attendance.

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region VI

ACTIVITY	Region VI – GAC Report June 2022
CRC	
Total number of chapters in region	11
Number of chapters present	11
Number of GA chapter chairs present	11/12
Percentage of participation	100%
Percentage of GA chapter chair participation	100%
No. of planning sessions held	9
PAOE	
No. of Chapters Reporting PAOE Points:	3
No. of Chapters Making Society Minimum :	2 (so far)
No. of Chapters Making Society PAR :	0 (so far)
Highest PAOE Points by a Chapter:	750
Percentage of chapters reporting	27%
Percentage of chapters making Society Minimum	10% (so far)
Percentage of chapters making Society PAR	0 (so far)
CHAPTER VISITS	
No. of visits made:	14-virtual meetings with chairs
No. of visits scheduled:	0 (in person)
Percentage of chapters visited:	90% (virtually)
GAC AWARDS	
Government. Affairs Award	0
Government Outreach Days	
No. of Chapters Participating	5
No. of government officials visited	30+
No. of ASHRAE members participating	6
No. of Chapters reporting	4
No. of days duration	Virtual

Government Affairs
Region VI

2022-2023 ASHRAE
Annual Conference

Region VI

Region VI 2022-23 To-Date

- Region VI RVC – Beth Tomlinson, Stantec

Chapter Membership/Info	NAME	FIRM
CEDAR VALLEY	**Ryan Collins**	Deisgn Engineering
CENTRAL ILLINOIS	**Jamie Moehling**	
ILLINOIS	**Cory Abramowicz**	Arup
IOWA	**Matt Jesson**	HVAC TAB
LA CROSSE AREA	**Chris Hsieh**	Trane
MADISON	**Jason Boatman**	Vyron
MINNESOTA	**Brian Freeman**	LEO A Daly
MISSISSIPPI VALLEY	**Allen Poppe**	Stanley Group
NORTHEAST WISCONSIN	**Mike Wolf**	Greenheck
ST LOUIS	**Dan Mareschal**	
WISCONSIN - Milwaukee	**Victor Nino**	EcoBalance

Region VI 2021-22 To-Date

Region VI Chapter	Joint Training / Planning Meeting	Mid-Year Check-In	CRC	End of Year Check-In	Meetings					*Anticipated PAOE*
					Local	State	Federal	Global	Total	
CEDAR VALLEY	Y		N	N	0	0	0	0	0	0
CENTRAL ILLINOIS	Y		Y	N	0	0	0	0	0	0
ILLINOIS	Y		N	Y	11	0	0	0	11	600
IOWA	Y	Y	Y	Y	2	1	0	0	3	1250
LA CROSSE AREA	Y	Y	Y	Y	TBD	TBD	TBD	TBD	TBD	1850
MADISON	Y		N	Y	0	3	0	0	3	850
MINNESOTA	Y		Y	Y	0	6	1	0	7	1250
MISSISSIPPI VALLEY	Y		N	Y	0	0	0	0	0	50
NORTHEAST WISCONSIN	Y		N	Y	TBD	TBD	TBD	TBD	TBD	500
ST LOUIS			N	N	0	0	0	0	0	0
WISCONSIN - Milwaukee	Y		N	Y	TBD	TBD	TBD	TBD	TBD	1000
					13	10	1	0	24	Actual
					15	7	1	0	23	Estimated Goal

Region VI 2022-23 To-Date

- 1 International meeting with Clean Energy Ministerial
- 3 Letters of support to state and code officials.
- 4 Chapters in Wisconsin collaborating and coordinating activities!
- 5 Chapters assisting with local climate action committees, code reviews, decarbonization or energy efficiency.

Region VI 2022-23 Legislation

WISCONSIN

- Milwaukee is considering Building Performance Standards.

Region VI 2022-23 Legislation

ILLIONIS

- Chicago is considering Building Performance Standards.

Region VI 2022-23 Legislation

IOWA

- IA: SF479, did not pass. Proposed to remove energy conservation code / freeze 90.1-2012 with legislative oversight for changes.

- IA HF605, passed & Gov. signed. Prohibited cities from enacting Building Performance Standards.

Region VI 2022-23 Legislation

MINNESOTA

- SF 4, passed and signed. **100% Clean Energy by 2040**
- MN HF2310 Omnibus bill, passed & Gov. Signed.
  - Net Zero Emissions was removed,
  - $11M Solar Rewards, approved
  - $1M Air Ventilation Pilot for schools, approved
  - $1.8M Energy Benchmarking, approved
  - $3.5M residential electric panel upgrades, approved
  - $4000 residential heat pumps rebates, approved (if energy audit has been completed within the past 18 months)
- Minneapolis working toward emissions-based Building Performance Standards.
- SF47, HF197, passed: Federal ERA Resolution
  - "Equality of rights under the law shall not be denied or abridged by the United States or by any state on account of sex."
    - After 100 years (1923), 38 states have ratified the Equal Rights Amendment (ERA), meeting the constitutional requirements by Article V and creating the 28th Amendment to the U.S. Constitution. House and Senate introduced a joint resolution to remove the time limit from its preamble.

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region XIV

ACTIVITY	
CRC	
Total number of chapters in region	9
Number of chapters present	9
Number of GA chapter chairs present	6
Percentage of participation	100%
Percentage of GA chapter chair participation	67%
No. of planning sessions held	-
PAOE	
No. of Chapters Reporting PAOE Points:	2
No. of Chapters Making Society Minimum :	0
No. of Chapters Making Society PAR :	1
Highest PAOE Points by a Chapter:	1050
Percentage of chapters reporting	25%
Percentage of chapters making Society Minimum	0%
Percentage of chapters making Society PAR	12,5%
CHAPTER VISITS	
No. of visits made:	-
No. of visits scheduled:	-
Percentage of chapters visited:	-
GAC AWARDS	
Government. Affairs Award	-
Government Outreach Days	
No. of Chapters Participating	-
No. of government officials visited	-
No. of ASHRAE members participating	-
No. of Chapters reporting	-
No. of days duration	-

ASHRAE Region XIV

2023 ASHRAE Annual Conference

Region XIV - GAC Report

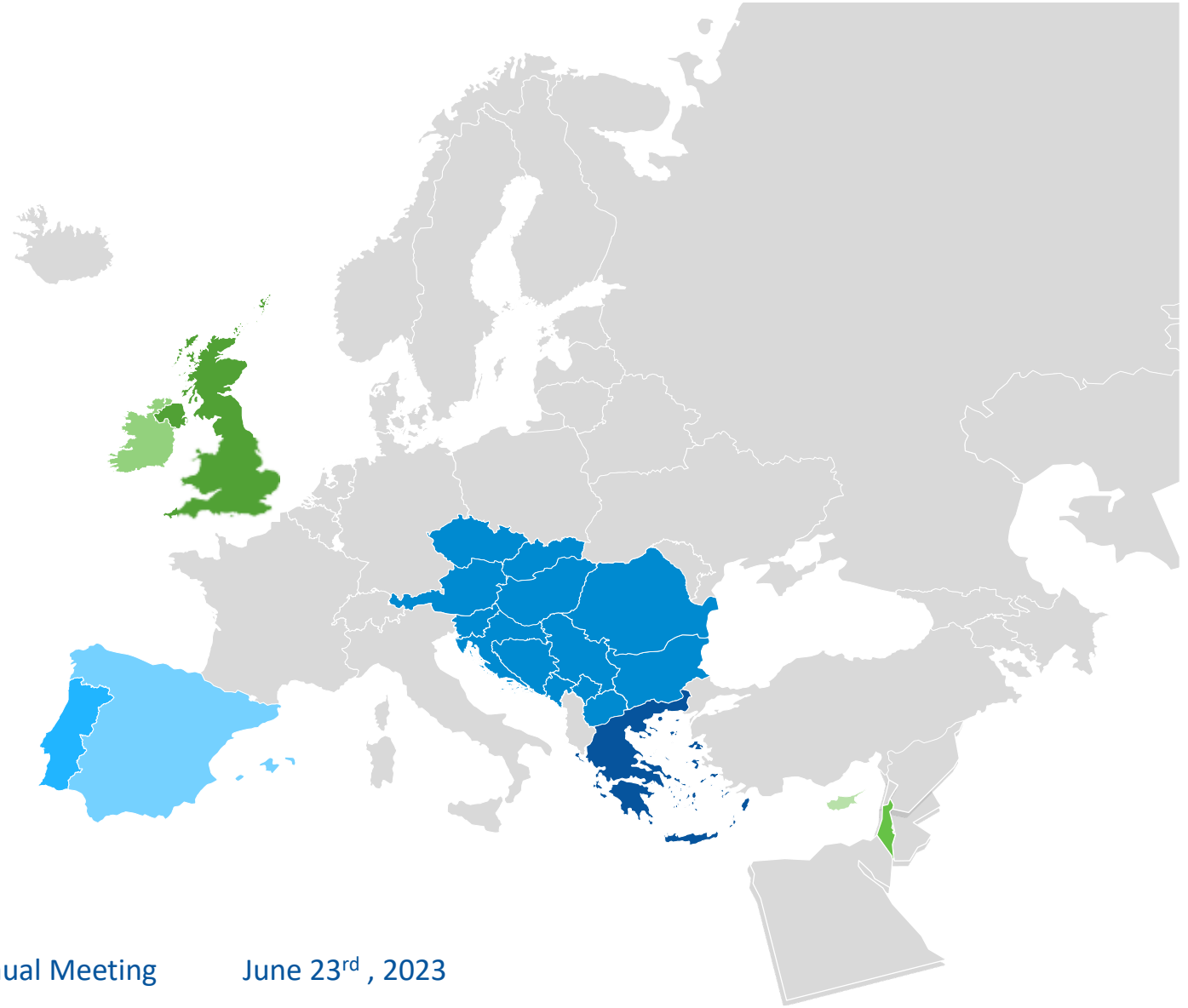
George Pantelidis

RVC-GA Region XIV

Hellenic Chapter

The Region

#	Chapter	GA Chair
168	Hellenic	✓
176	Danube	✓
177	Portugal	✓
182	Spain	-
203	Cyprus	✓
204	Ireland	✓
214	Israel	✓
223	ASHRAE UK	✓



Current situation

#	Chapter	GA Chair
168	Hellenic	Nikos Giannitsanos
176	Danube	Liviu Drughean
177	Portugal	Luis Neto
182	Spain	TBC
203	Cyprus	TBC
204	Ireland	Ken Goodman – Edith Blennerhassett
214	Israel	TBC
223	ASHRAE UK	Gary Middlehurst

Accomplishments

GA Workshop – Virtual (25.7.2022 – around 22 Participants)

Discussion on how the Region can participate in ASHRAE's effort to be more global

Hellenic & Cyprus chapter

Energy in Buildings Cyprus Joined conference held in Cyprus (April 8th, 2023)

Israeli chapter

Electricity and Energy annual conference (8-11/11/2022). Organized by the chapter. Minister of energy and 3 representatives for the Ministry of Economy and Industry.

ASHRAE UK chapter

UK London & UK Midlands chapters merged to a single chapter. Launch event June 16th 2023

Goals for 2023-2024

- ✓ **Smooth transition to the new GA RVC**

Thank you all for being part of that magnificent group for 3 wonderful years!!!

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region II

ACTIVITY	
CRC	
Total number of chapters in region	9
Number of chapters present	9
Number of GA chapter chairs present	7
Percentage of participation	100%
Percentage of GA chapter chair participation	78%
No. of planning sessions held	4
PAOE	
No. of Chapters Reporting PAOE Points:	9
No. of Chapters Making Society Minimum :	8
No. of Chapters Making Society PAR :	3
Highest PAOE Points by a Chapter:	
Percentage of chapters reporting	100%
Percentage of chapters making Society Minimum	89%
Percentage of chapters making Society PAR	33%
CHAPTER VISITS	
No. of visits made:	5
No. of visits scheduled:	0
Percentage of chapters visited:	55%
GAC AWARDS	
Government. Affairs Award	None
Government Outreach Days	Day on the Hill Event, April 2023
No. of Chapters Participating	2 - Toronto, Ottawa.
No. of government officials visited	8 Bureaucrats and over 10 MP's (MP's were joint meetings with HRAI.
No. of ASHRAE members participating	9 - Darryl Boyce, Mike Genin, Marli Moise, Adrianne Mitani, Kurt Montiero, Rana Pushpinder, Vivek Desai, Doug Cochrane, Ghina Annan.
No. of Chapters reporting	2 - Toronto, Ottawa.
No. of days duration	2 – April 25 and 26, 2023.

Region II GA Update

Mike Genin – Region II RVC (SY ’21-’24)

Global Affairs & Member Mobilization Sub-Committees

Chapter Status

Chapter	CRC	Planning	RVC Visit	PAOE (Par = 1000)	Meetings Held
Windsor				900	
London	Y			150	
Hamilton	Y	Y	Y	1100	3
Toronto	Y	Y	Y	500	2
Ottawa	Y		Y	1150	2
Montreal	Y	Y		600	
Quebec	Y	Y		2050	2
Halifax		Y	Y	550	1
NB / PEI	Y	Y	Y	900	2

- CRC featured top GA Staff, Decarb Task Force update.

Chapter Accomplishments

- Many chapters encouraged to cross promote EE day, national eng. week, refrigeration day.
- Windsor – Hosted GAC themed dinner meeting
- Ottawa- work with the City of Otttawa on new high performance building standard
- Hamilton – 3x meetings to Provincial gov MPP's
- NB/ PEI – 50th anniversary, 2x meetings including Minister of Energy / Resource Development
- Toronto – meeting with City of Oakville, heat pumps for new homes
- Quebec – GAC themed dinner meeting, featured local electric company and decarbonization task force***, meeting with Manager Climate Action Fed gov.***

General Accomplishments

- Day on the Hill event – April 25 & 26th
  - 25th – joint meetings with MP's and HRAI, **over 10 MP's contacted**
  - 26th – meetings with other gov. officials, **over 8 gov officials contacted**
  - **Participation by Toronto and Ottawa Chapters (Region II) and others from Region XI**
- Implementation of Regional Government Affairs Award
- Second letter to Minister of the Environment, signed by all Chairs

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Report XIII (YR 2022 – 2023)

ACTIVITY	
CRC (review with DRC)	
Region # XIII	
Total number of chapters in region	10
Total number of chapters in the US in this region	0
Total number of international chapters in region	10
Number of chapters present at CRC Training	9
Number of GA chapter chairs present at GA training	9
Percentage of participation	90%
Percentage of GA chapter chair participation	90%
No. of planning sessions held	1
PAOE	
No. of Chapters Reporting PAOE Points:	9
No. of Chapters Making Society Minimum:	1
No. of Chapters Making Society PAR:	5
Highest PAOE Points by a Chapter:	2500
Percentage of chapters reporting	90%
Percentage of chapters making Society Minimum	10%
Percentage of chapters making Society PAR	50%
PAOE Trending by Chapter (up or down):	
CHAPTER VISITS	
No. of visits made:	2
No. of visits scheduled:	2
Percentage of chapters visited:	100%

GAC AWARDS	
No. of Government Affairs Award submissions	0
Government Outreach Events	
No. of Local GA Events	
No. of State Events	
No. of Federal GA Events	
No. of Global GA Events	

No. of Chapters Participating	
No. of government officials visited	
No. of ASHRAE members participating	
No. of Chapters reporting	
No. of days duration	

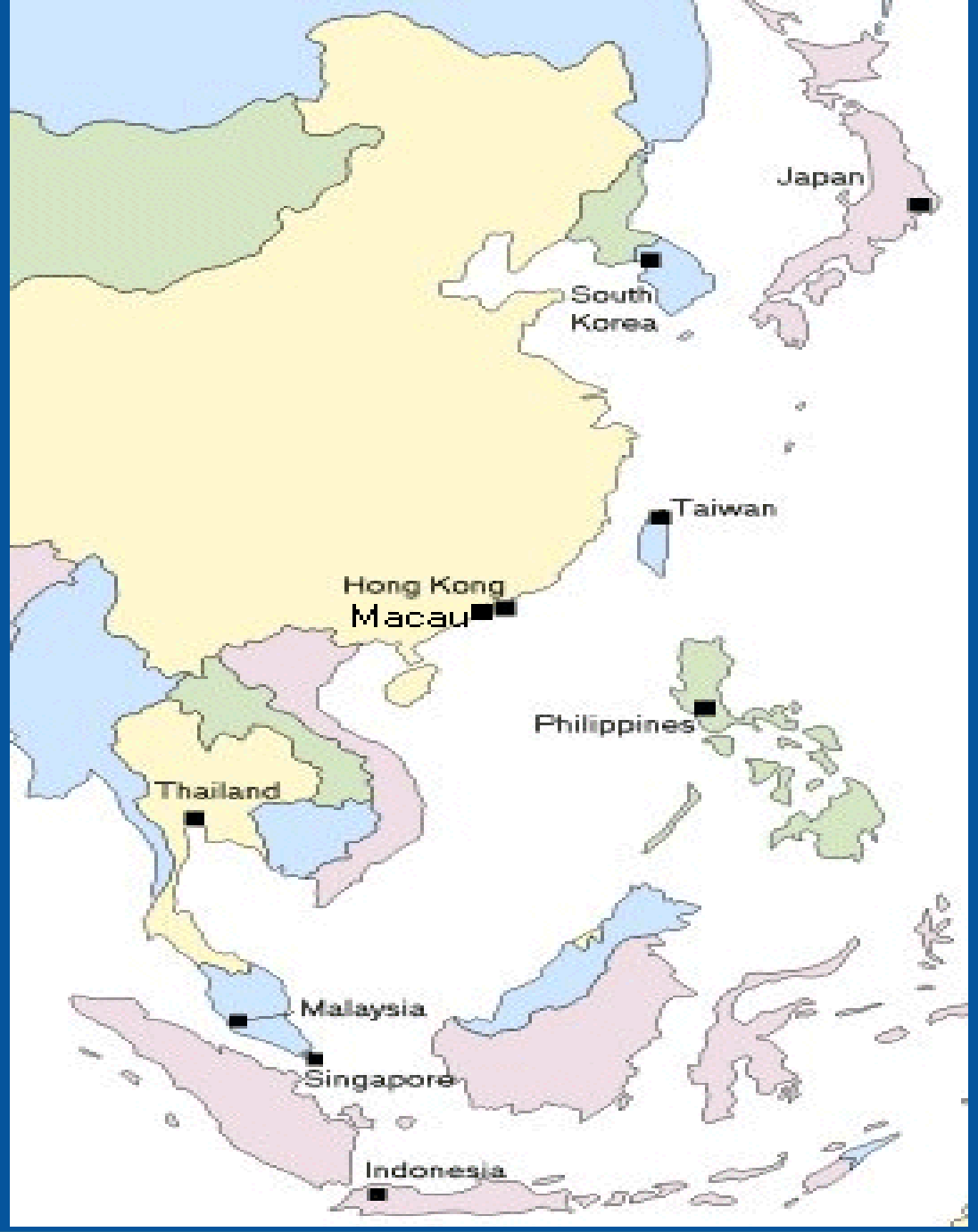
Government Affairs Committee
Region XIII Report

June 2023: ASHRAE Annual Meeting

Er. Albert Sin Yew Tek
Regional Vice Chair –
GAC (2021 – 2024)
sinyewtek@gmail.com

Region XIII

- Singapore (142)
- Hong Kong (143)
- Malaysia (149)
- Taiwan (157)
- Philippines (167)
- Thailand (170)
- Indonesia (183)
- Japan (194)
- South Korea (195)
- Macao (198)



S/N	GAC Appointment (2022-2023)	Name
1	RVC	Er. Albert Sin
2	ISI Task Force	Mr. Henry Yeo
3	Singapore - Chair	Mr. Syed Mubarak
4	Singapore - Co-Chair	Mr.Jeffrey Eng Ee Seong
5	Hong Kong - Chair	Mr. Jacky NG
6	Hong Kong - Co-Chair	Mr Chan Yu Ho, Mike
7	Malaysia - Chair	Mr. Chea Suei Keong
8	Malaysia - Co-Chair	Mr. Leong Siew Meng
9	Taiwan - Chair	Mr. Sun, Ting-Jui
10	Taiwan - Co-Chair	Dr. Huang, Chia-Ming
11	Philippines - Chair	Francis Guevara
12	Philippines - Co-Chair	Ms. Jaime Jajay E. Cruz
13	Thailand - Chair	Mr. Pachern Sangbutsarakum
14	Thailand - Co-Chair	Tavatchai Alex
15	Indonesia - Chair	Dr. Ardiyansyah Yatim
16	Indonesia - Co-Chair	Ms. Cahyarini Dwiatmo
17	Japan - Chair	Mr. Nobuhiro.hirasuga
18	Japan - Co-Chair	Mr. Takashi Akimoto
19	South Korea - Chair	Jongrim Jeong
20	Macao - Chair	Mr. Cheong Chan Wa
21	Macao - Co-Chair	Ms Georgina Lam

Region XIII GAC PAOE

Note:
For 2022-2023;
Par 1000, Min. 500

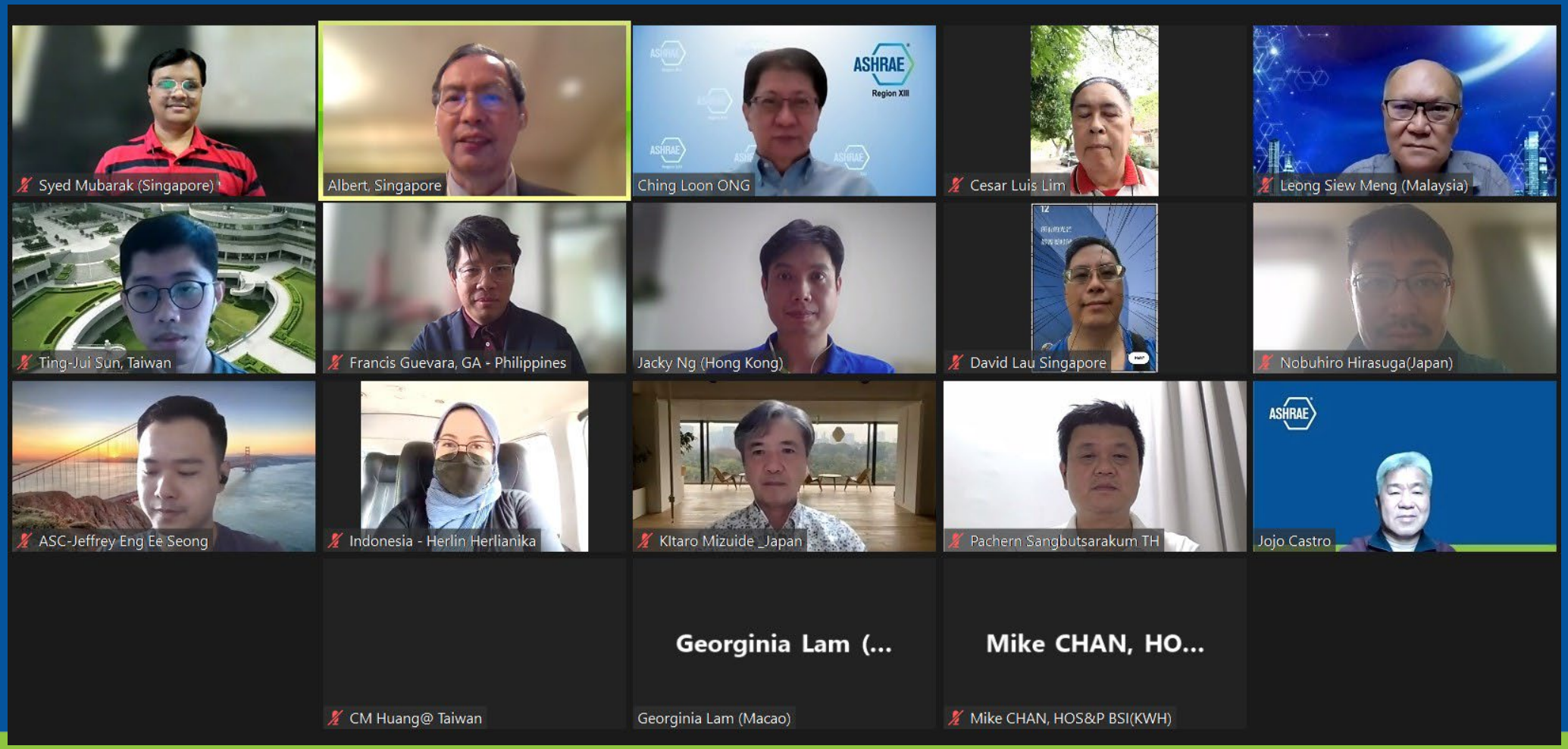
Chapter Name	2022 - 2023 (As on 07Jun23)	2021 - 2022	2020 - 2021	2019 - 2020	2018 - 2019
Singapore	2050	1350	1050	2300	200
Hong Kong	3250	2100	2300	5600	2250
Malaysia	2700	4650	2100	1800	3450
Taiwan	1800	1750	1700	1050	1100
Philippines	1900	2400	3600	3800	8250
Thailand	1700	1620	1050	700	1000
Indonesia	3150	1350	1650	700	2750
Japan	500	400	250	200	100
South Korea	600	250	250	200	350
Macao	550	1200	9950	1100	200

Past GAC meetings: 2021 – 2022, 2022 – 2023

Virtual Meetings	(2022 – 2023)		(2021 – 2022)	
	Dates	Attendances	Dates	Attendances
GAC Workshop	20 Aug. 2022	28	4 Sep. 2021	55
GAC Meeting no. 1	29 Oct. 2022	11	2 Oct. 2021	19
GAC Meeting no. 2	25 March 2023	13	12 Mar. 2022	20
GAC Meeting no. 3 RXIII RPM2	28 May 2023	>30 RXIII officers	4 Jun. 2022	18

ASHRAE Region XIII Virtual CRC
GAC Training Workshop, 20 August 2022

28 participants



ASHRAE Region XIII
GA Virtual Meeting No. 1,
29 October 2022

11 participants

ASHRAE Region XIII
GA Virtual Meeting No. 2,
25 March 2023

13
participants

Bilateral meeting between ASHRAE Singapore and Malaysia Chapter on 5 November 2022

Government Affairs Update

March 16, 2023

Indonesia Set to Offer Incentives for 235,000 Electric Motorbikes in 2023

In an attempt to reach their 2024 goal of converting 10 percent of its motorbikes population to electric motorbikes, Indonesia is providing subsidies of $457 on the purchase of new electric motorcycles. While the incentive is geared specifically toward electric motorcycles, Indonesia plans to unleash further incentives for 35,000 electric cars and 138 electric busses. In addition, carmakers and manufactures will receive incentives for using at least 40 percent local components in their production.

25 May 2023

ASHRAE Malaysia Chapter Member Appointed to the Local Government Development Ministry

Ir. Chen Thiam Leong, a former ASHRAE Society appointed Distinguished Lecturer, current member of the Board of ASHRAE's Malaysia Chapter (MASHRAE), and a highly respected HVACR engineer was appointed as the Expert Advisor to the Panel of Experts that was recently convened by the Malaysian Minister of Local Government Development. Mr. Leong will advise the Minister and the panel on HVACR matters related to Housing, Local Government and Sustainable Development. The promotion of a distinguished ASHRAE member to a high-profile panel positions ASHRAE as a thought leader and resource for policy makers everywhere. You can read more about the newly convened panel of experts here.

Ir. Chen Thiam Leong – consulting engineer

Government Affair

Government Affair

OZONE2CLIMATE TECHNOLOGIES IN REFRIGERATION AND AIR-CONDITIONING SECTOR

Venue: Hilton Hotel, Kota Kinabalu, Sabah

Date: 16 Mar 2023

Time: 8:30am - 4:30pm

Task Force for Building Decarbonization Board Update

2/5/2023

The End

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region VII

ACTIVITY	Region VII – June 2023
CRC	
Total number of chapters in region	14
Number of chapters present	14
Number of GA chapter chairs present	4
Percentage of participation	100%
Percentage of GA chapter chair participation	28%
No. of planning sessions held	7
PAOE (GA)	
No. of Chapters Reporting PAOE Points:	11
No. of Chapters Making Society Minimum :	6
No. of Chapters Making Society PAR :	3
Highest PAOE Points by a Chapter:	2300
Percentage of chapters reporting	79%
Percentage of chapters making Society Minimum	43%
Percentage of chapters making Society PAR	21%
CHAPTER VISITS	
No. of visits made:	0
No. of visits scheduled:	0
Percentage of chapters visited:	0%
GAC AWARDS	
Government. Affairs Award	0
Government Outreach Days	
No. of Chapters Participating	2
No. of government officials visited	13
No. of ASHRAE members participating	4+
No. of Chapters reporting	2
No. of days duration	7

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

RVC Report for Region 12

ACTIVITY	
CRC	
Total number of chapters in region	16
Number of chapters present	10
Number of GA chapter chairs present	9
Percentage of participation	62.5%
Percentage of GA chapter chair participation	56.25%
No. of planning sessions held	8
PAOE	
No. of Chapters Reporting PAOE Points:	14
No. of Chapters Making Society Minimum :	10
No. of Chapters Making Society PAR :	7
Highest PAOE Points by a Chapter:	2100
Percentage of chapters reporting	87.5%
Percentage of chapters making Society Minimum	62.5%
Percentage of chapters making Society PAR	43.75%
CHAPTER VISITS	
No. of visits made by RVC:	4
No. of visits scheduled:	2
Percentage of chapters visited:	25%
GAC AWARDS	
Government. Affairs Award	None submitted
Government Outreach Days	
No. of Chapters Participating	8
No. of government officials visited	54
No. of ASHRAE members participating	30
No. of Chapters reporting	5
No. of days duration	~30

Region XII Government Affairs

2022/2023

Timothy N Theriault

June 23, 2023

Tampa Winter Meeting

GAC Regional Vice Chair Bio

Timothy N Theriault

Consulting Engineer and Project Manager since 1998

Employed by TLC Engineering Solutions In Tampa, Florida since 2013

Home chapter is ASHRAE Florida West Coast Chapter and ASHRAE Sarasota-Bradenton Section

FWC GGAC Chair 2017-2018 – Best Chair Award Reg XII

FWC GAC Co-chair 2018-2019 and 2019-2020

Co-Organized FL Day on the Hill in Spring 2019 and Spring 2023

FWC Chapter President 2020-2021 – Best Chapter Award Reg XII

GAC Regional Vice Chair Term is 2021-2024

GAC Member Mobilization Sub-Committee Chair 2022-2023

GA Chapter Synopsis 2022-2023 to date

Winter Mid Year Tally

REGION XII

2022-2023 Presidential Award of Excellence

***Minimum and PAR points indicated are for 2022-2023**

Chapter Name	Chapter AAM	Government Affairs: Minimum 500; PAR 1000
JACKSONVILLE	249	0
FLORIDA WEST COAST	400	350
MIAMI	209	50
CENTRAL FLORIDA	323	200
GOLD COAST	199	0
PUERTO RICO	80	50
SOUTHWEST FLORIDA	113	50
BRASIL	162	950
ARGENTINA	107	200
COLOMBIA	54	250
CHILE	52	1850
ECUADOR	46	150
PARAGUAY	49	50
ASHRAE CARICOM	71	850
SOUTH BRAZIL	61	150
PERU	75	0

Summer End of ASHRAE Year Tally

REGION XII

2022-2023 Presidential Award of Excellence

***Minimum and PAR points indicated are for 2022-2023**

Chapter Name	Chapter AAM	Government Affairs: Minimum 500; PAR 1000
JACKSONVILLE	249	50
FLORIDA WEST COAST	400	1550
MIAMI	209	50
CENTRAL FLORIDA	323	2100
GOLD COAST	199	0
PUERTO RICO	80	50
SOUTHWEST FLORIDA	113	50
BRASIL	162	1450
ARGENTINA	107	1150
COLOMBIA	54	750
CHILE	52	2050
ECUADOR	46	650
PARAGUAY	49	500
ASHRAE CARICOM	71	1550
SOUTH BRAZIL	61	1150
PERU	75	0

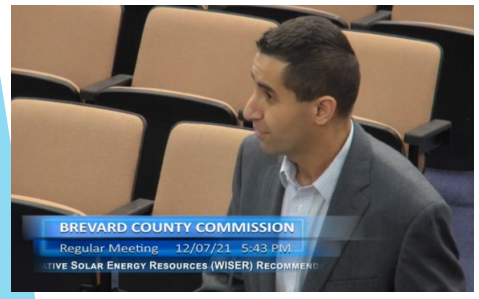
Regional Acomplishments

- Florida West Coast and Central Florida Chapter March 14,2023 Florida Day on the Hill event. Representatives from Florida chapters visited the Florida State Capitol in Tallahassee to meet individually with 12 lawmakers 1 on 1. With assistance from ASHRAE GAC staff we discussed all things ASHRAE over the course of a full day. Most policy makers were very receptive towards
- Florida Gold Coast Chapter/Space Coast Section had multiple visits last year and was involved with Workgroup on Innovative Solar Energy Resources (WISER) and the Beautification and Energy Efficiency Board (BEEB) in Melbourne, FL. The chair has continued involvement with the BEEB so far this ASHRAE year.
- Paraguay Chapter meetings with the Ministry of the Environment and Sustainable Development (MADES) to collaborate and sign a MOU to implement ASHRAE standards.
- Ecuador Chapter meetings with United Nations International Development Organization (UNIDO) and their ministry to translate and adopt ASHRAE standards into Ecuadorian codes. Region 12 DRC visited at beginning of the ASHRAE year to strengthen relations between Ecuador and ASHRAE. The Assistant GA RVC is from Ecuador. Standards to be translated are 15, 34, 147 and Guideline RP1807 to start. Request to Pub Ed for complimentary copy of standards has been sent.
- Overcoming the language barrier and reaching previously silent chapters in Columbia and Puerto Rico.
- A new Central America section was formed and will be under the guidance of the Florida West Coast chapter. This section will serve all of the countries in Central America, including Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Dominican Republic, Belize and Honduras.
- Roadways have been made to pursue new groups in Venezuela, Cuba and Uruguay.

ASHRAE Gold Coast Chapter

ASHRAE Peru Chapter

ASHRAE Argentina Chapter



ASHRAE Chile Chapter

ASHRAE Brasil Chapter

ASHRAE South Brazil Chapter

ASHRAE Caricom Chapter

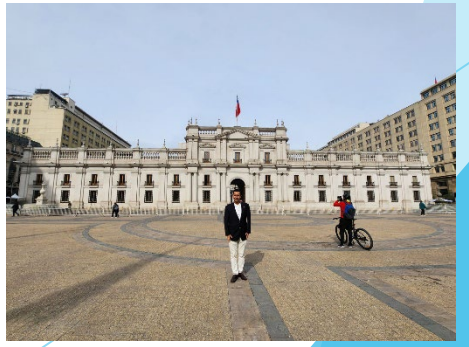
ASHRAE Paraguay Chapter

ASHRAE

Regional Accomplishments - Chili

- Chile Chapter participation with Institute of Standards (INN) coordinating administrative issues to start approval meetings for Standard 170. Also working with the INN on Standard 62.1 Approval for Chile as well as other energy efficiency standards. Some additional activities with the Ministry of Health of Chile (MINSAL).
  - 5/30/2023 – Region XII DRC having meetings with discussions on the adoption of ASHRAE standards with the Ambient Minister, Contraloria de la Republica and INN (National Institute of Norms)

ASHRAE Chile Chapter



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Regional Accomplishments – Brasil & S. Brazil

ASHRAE Brasil Chapter

- Brasil and South Brazil Chapters have signed an MOU between themselves to work together and support each other. They are working chartering a National Council of air Conditioning to bring together multiple associations such as SMACNA, BCC, Abrave and ASHRAE Brasil chapters. Future MOU to be written after charter.

  Translation of ASHRAE standards from English to Portuguese include:
  i. Standard 90.1-2019 - Energy Standard for Buildings Except Low-Rise Residential Buildings
  ii. Standard 55-2020 - Thermal Environmental Conditions for Human Occupancy
  iii. Standard 62.1-2022 - Ventilation and Acceptable Indoor Air Quality

- Viviane Nunes - Past chapter best GAC chair, Reg XII 2022 for the Brasil chapter. She is becoming Region XII Assistant GAC Chair. She speaks many languages and can assist with overcoming the language barrier and overall coordination in reaching all of South America.

- 5/25/2023 Meeting with Secretary of Climate Change for the city of Sao Paulo. They closed a partnership with the secretary of government.

ASHRAE South Brazil Chapter

ASHRAE

In-The-Works / On-The-Go

FLORIDA WEST COAST ASHRAE

- GAC Training Workshop for incoming Region XII GA Chairs during the Summer CRC for the ASHRAE year in August, in Trinidad and Tobago which is in our Caricom Chapter.
- GAC presentation at Pres Elect training in May to layout and discuss regional committee expectations to each chapter. This 2023 year was in Argentina. 2024 to be held in Columbia.
- Florida chapters Day on the Hill occurred March 14, 2023 and was championed by Florida Chapter chairs to bring together Florida chapters. Inquiries to Staff for planning and preparedness were vital to our meeting's successes. Plans to repeat next year have started.
- Plans to charter a new Chapter in Central South America to combine Costa Rica and Panama sections completed. Big focus next year to bolster relations in these countries.
- Assist chapters to connect with their local governments. Does not have to be during a Day on the Hill event.
- Brazil and south Brazil chapter forming a council and creating an alliance with other societies.
- MOUs in conjunction with CTTC and Pub-Ed for translation of ASHRAE standards and publications, possibly with Paraguay, Ecuador, Chile, Brasil/South Brazil, Costa Rica.
- Regional GAC Office Hours – Mentorship Program.
- Focus on helping chairs fill out reporting forms for events. Some challenges with the online forms when done from international chapter areas like Brasil.

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Lessons Learned & Outcomes of 2022-2023

- Important to make a connection with the chapter GA Chairs. Patience with translations from their languages to English has been very much appreciated. Google Translate.
- A lot of energy in the beginning of each year is spent getting chapter chairs up to speed and making those connections.
- Language barrier between chapters in the region prevents proper reporting of events and some PAOE categories. Our region appointed a new Portuguese/Spanish speaking assistant RVC to the current English speaking RVCs to help bridge that gap. Puts the ARVC in a position to be qualified to run for the next GAC term.
- COVID restrictions seem to be lifted everywhere. Day on the Hill and more Government events should be expected.
- The process to form a MOU to translate a standard from English to Spanish as coordinated by GAC, Pub Ed and CTTC chairs. Then get that translated standard to be adopted by countries and shared between countries.
- Seems like less reporting forms have been coming in. Need to increase the focus on educating chairs on how to fill out the forms. However, South American Countries do slow down and take the winter months off, much like we take off the summer months. They are busy April-October full speed.

Goals for future 2022-2023

- Conduct more in-person chapter visits (if possible) in Florida and International.
- Encourage government outreach events in Florida and International. Connect with all chapters better.
- Continue and support and lead the Regional XII GAC committee to include a new Portuguese/Spanish speaking Assistant Chair (ARVC) and a Subject Matter Expert (SME) to aide in standards adoption coordination between Central/South American Countries and the Caribbean. This is a combined effort with the CTTC chairs who will coordinate standards translation needs to Spanish and to Portuguese.
- Region has recently combined all Central America countries to one full section. Focus to assist them as much as possible.
- Focus on helping chapters fill out their reporting forms.
- Hold regional GAC office hours and training.

E: STANDARDIZED RVC/ REPORTING FORMAT

The following information is compiled into a summary spreadsheet showing activity for each region. The spreadsheet is reviewed by GAC at each Society meeting.

ACTIVITY	Region VIII – GAC Report June 2023
CRC	
Total number of chapters in region	15
Number of chapters present	15
Number of GA chapter chairs present	12
Percentage of participation	100%
Percentage of GA chapter chair participation	80%
No. of planning sessions held	10
PAOE	
No. of Chapters Reporting PAOE Points:	12
No. of Chapters Making Society Minimum :	8
No. of Chapters Making Society PAR :	7
Highest PAOE Points by a Chapter:	3900 (Monterrey)
Percentage of chapters reporting	80%
Percentage of chapters making Society Minimum	53%
Percentage of chapters making Society PAR	47%
CHAPTER VISITS	
No. of visits made:	2
No. of visits scheduled:	0
Percentage of chapters visited:	40%
GAC AWARDS	
Government. Affairs Award	1 submission
Government Outreach Days	
No. of Chapters Participating	(Planned: 10); Actual: 11
No. of government officials visited	(Goal: 60+); Actual: +/-40
No. of ASHRAE members participating	(Goal: 20+); Actual: +/-20
No. of Chapters reporting	10
No. of days duration	5

ASHRAE™

Region VIII

2023 Annual Conference

Government Affairs Committee Report

June 23, 2023

Region VIII Status

- **Region VIII GAC had very successful year**
- **Multiple types of Outreach Events by chapters in the region ranging from virtual to physical state capitol events**
- **Conducted events at city, state, and federal levels**
- **Several chapters involved in legislative and public forums in our region.**
- **About 2/3rd chapters have active GAC program and to continue growing our region. Best year in my tenure.**

GAC at Society Level

- **Reviewed & updated Public Policy Information Brief (PPIBs).**
- **Continued involvement with Decarb Task Force and working with ETF to respond to inquiries from all over the world.**
- **Continued involvement with Task Force for Building Decarbonization to identify ASHRAE resources and develop advocacy materials to help state, federal, & global entities reach 2030/2050 goals.**
- **Continued effort to build foundation for consistent global government engagement, advocacy, and adoption of ASHRAE standards around the world.**

Overall Region Accomplishments

- **Monterrey & Mexico City continued to work with local and state government officials.**
- **Monterrey presented to governing bodies highlighting ASHRAE**
- **Monterrey hosted Economy Secretariat on Energy Efficiency**
- **Monterrey signed three (3) collaboration agreements**
- **Monterrey hosted World Refrigeration Day event.**
- **Central OK & NE OK continued work with Oklahoma Uniform Board of Code Commission (OUBCC) in adoption of IECC**
- **Central OK & NE OK held virtual Federal Government Outreach Events**
- **Central OK & NE OK continued annual joint state capitol visit.**
- **Austin, Dallas, Houston, & West Texas chapters held joint state capitol visit**
- **Arkansas, Fort Worth, NE OK, & Central OK were presented Proclamation of E-Week for local or state government**

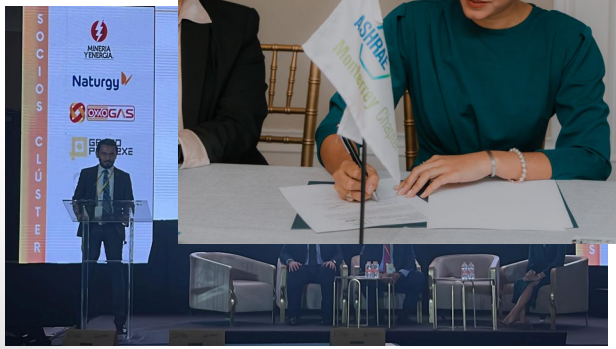
GAC

Chapter Region Accomplishments

- **Eleazar Rivera, GAC Chair, recipient of the 2023 Society Government Affairs Award. (not for public disclosure until 2023 Annual Meeting)**
- **Fifteen (15) meetings with various City/State officials for how ASHRAE can support local government programs**
- **Nine (9) presentations to governing bodies highlighting ASHRAE Standards to promote ASHRAE and its members as industry resources for legislative issues.**
- **Monterrey's Economy Secretariat, representing our city's mayor, inaugurated our 4th Annual Congress on Energy Efficiency**
- **Signed three (3) collaboration agreements between ASHRAE Monterrey and the Association of Energy Engineers (AEE), State's Home Appliances Cluster (CLELAC), and the Energy Cluster of the State of Nuevo Leon.**
- **ASHRAE Monterrey invited to participate in a roundtable for the Water Management Taskforce of the government of Monterrey during the city's historic water drought**
- **The first international participation of a Mexican chapter in a Latin American project: "Net Zero Emissions Project" for the Universidad del Valle in Colombia, funded by the Swiss Fund.**
- **Participation as part of the Technical Advisory Council of the "Efficient Building Challenge" program in Monterrey. This program is implemented directly by the Mayor of the City of Monterrey.**
- **World Refrigeration Day event hosted by ASHRAE Monterrey in conjunction with the Ministry of Economy, the Household Appliances Cluster, as well as the Institute of Innovation and Technology Transfer of the State of Nuevo León**

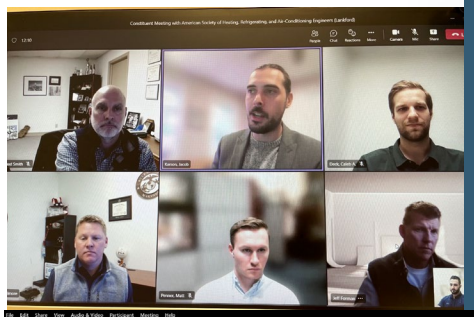
GAC

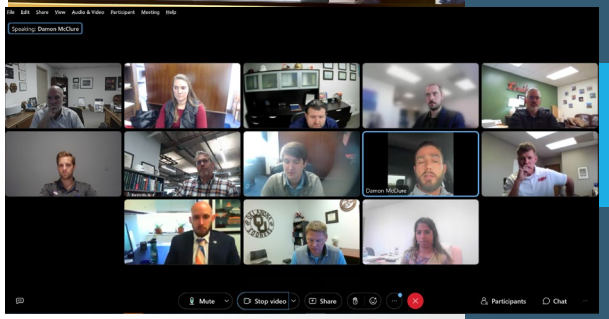
Chapter Region Accomplishments



Chapter Region Accomplishments

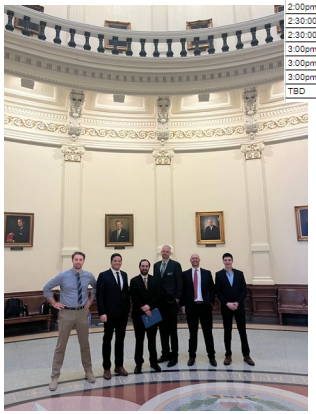
- **Central Oklahoma & Northeastern Oklahoma Chapters – 9th consecutive Outreach Day. Longest running in Society. Provided input on SB168, SB1030, HB2425, & HB2556**
- **Central OK & NE OK held virtual Federal Government Outreach Events with Representative Kevin Hern & Senator James Lankford**
- **Central Oklahoma & Northeastern Oklahoma obtained National Engineer successfully worked with our legislature and leaders for our second statewide proclamation for Engineer's Week from Oklahoma Governor Kevin Stitt**





Chapter Region Accomplishments

- **Austin, Dallas, Houston, & West Texas chapters held joint state capitol visit**
- **Multiple chapter GAC chairs & members held multiple meetings with throughout one (1) eventful day.**
- **Topics ranged from introduction to ASHRAE, standards, PPIBs, energy efficiency, and Decarbonization.**



AGENDA FOR TX DAY ON THE HILL EVENT

Date: April 13th

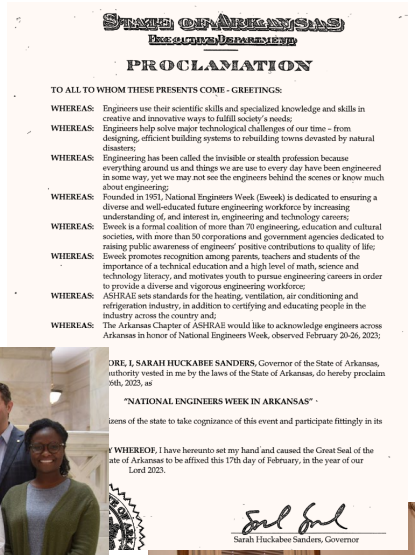
Time: 10:15am to 4:00pm

Timeslot	Title/Name	Office Location	Party	notes	ASHRAE Constituents	Associated Chapter	ASHRAE meeting attendees:
930am to 945am	Rep. Schwertner	3S.5		sponsor of Texas Energy Efficiency Council bill			Tom Paxon, Nick Jones
930am to 945am	Rep. Ron Reynolds	4N.7	Dem.	member level meeting, early meeting.	Lorenzo.	San Antonio	Lorenzo, Damon
10:15am to 10:30am	Rep. Kyle Kacal	GS.6	Rep.	waiting on final confirmation		Ft. Worth	Jacob, Lorenzo, Ken, Carlos
10:30am meeting							Tom, Nick, Careron, Sergio
10:30am to 10:45am	Rep. Ann Johnson	E2.412	Dem.				Cooper, Elham, Damon, Dacoda
10:45am to 11:00am	Rep. Bobby Guerra	GN.7	Dem.			South Texas	Cooper, Elham, Damon, Dacoda
11:00am to 11:30am	SENATE COMMITTEE: Natural Resources and Economic Development	SHB 325	Rep.	recomend sending experienced presenters to this meeting, and having practiced remarks. Call 512.463.0390 to access the office building. **Meeting is with Committee Staff.**		n/a	Jacob, Lorenzo, Ken, Carlos
11:00am to 11:15am	Sen. Bob Hall	4E.2	Rep.	meeting will be with staff. Scarlet Smith, senior policy advisor		Dallas	Tom, Nick, Careron, Sergio
11:00am to 11:15am	Rep. Erin Gamez	E2.420	Dem.	staff meeting. NOTE: double booked. will need to break into two teams for this block.		Houston	Cooper, Elham, Damon, Dacoda
11:30am to 11:45am	Rep. Erin Zwiener	E2.908	Dem.	meeting is with staff. Rep. Zwiener sponored **HB 3061** which directs TX depot of Energy Conservation to leverage federal funds for loans for energy audits, upgrades, or retrofits for existing buildings , includes langauge on IECC use/adoption/implementation		Austin	Tom, Nick, Careron, Sergio
12:00pm to 1215pm	Rep. Liz Campos	E1.306	Dem.	meeting is with staff. LUNCH AFTER THIS MEETING		San Antonio	Jacob, Lorenzo, Ken, Carlos
1:00pm to 1:15pm	Sen. Morgan LaMantia	E1.712	Dem.	staff meeting. NOTE: double booked. will need to break into two teams for this block.		South Texas	Cooper, Elham, Damon, Dacoda
1:00pm to 1:15pm	Sen. Lois Kolkhorst	GE.4	Rep.	also on Sen. Business and Commerce committee		Austin	Nick, Careron, Sergio
1:30:00 PM to 1:45pm	Rep. Ed Thompson	4S.3	Rep.	meeting will be with staff, follow up closer to the 13th for Rep's availability		Houston	Jacob, Lorenzo, Ken, Carlos
2:00:00 PM to 2:15:00	Rep. Craddick	1W.9	Rep.	meeting will be with staff. On energy resources re: HB 3061		West Texas	Cooper, Elham, Damon, Dacoda
2:00pm to 2:15pm				waiting on final confirmaiton. NOTE: double booked. will need to break up into two teams for this block. follow up with Adison for Rep's		uth Texas	Nick, Careron, Sergio
2:30:00 PM to 2:45:00						llas	Cooper, Elham, Dacoda
2:30:00 PM to 2:45:00							Jacob, Lorenzo, Ken, Carlos
3:00pm to 3:15pm						uth Texas	Cooper, Elham, Dacoda
3:00pm to 3:15pm						Worth	Nick, Careron, Sergio
3:00pm to 3:15pm							Jacob, Lorenzo, Ken, Carlos
TBD						Worth	Jacob, Lorenzo, Ken, Carlos

Name	Title	Party	Email	ASHRAE Member Constituent	Committees
Ana-Maria Ramos	Representative	Democratic	District102.ramos@house.texas.gov		Natural Resources Committee
Ann Johnson	Representative	Democratic	ann.johnson@house.texas.gov		Public Health Committee
Brooks Landgraf	Representative	Republican	brooks.landgraf@house.texas.gov		Environmental Reg Committee (Chair)
Charles Anderson	Representative	Republican	charles.anderson@house.state.tx.us		Energy Resource Committee
Craig Goldman	Representative	Republican	craig.goldman@house.texas.gov		Energy Resource Committee (Chair)
Drew Darby	Representative	Republican	drew.darby@house.state.tx.us		Energy Resource Committee
Ed Thompson	Representative	Republican	ed.thompson@house.texas.gov		Natural Resources Committee (Vice chair)
Eddie Morales	Representative	Democratic	eddie.morales@house.texas.gov		Energy Resource Committee
Elizabeth Campos	Representative	Democratic	elizabeth.campos@house.texas.gov		Public Health Committee (Vice Chair)
Erin Elizabeth Gamez	Representative	Democratic	erin.gamez@house.texas.gov		Natural Resources Committee
Erin Zwiener	Representative	Democratic	erin.zwiener@house.texas.gov		Natural Resources Committee
Ernest Bailes	Representative	Republican	ernest.bailes@house.texas.gov		Energy Resource Committee
Glenn Rogers	Representative	Republican	glenn.rogers@house.texas.gov		Natural Resources Committee
Jacey Jetton	Representative	Republican	jacey.jetton@house.texas.gov		Public Health Committee
Janie Lopez	Representative	Republican	janie.lopez@house.texas.gov		Environmental Reg Committee
Jay Dean	Representative	Republican	jay.dean@house.texas.gov		Environmental Reg Committee
John Kuempel	Representative	Republican	john.kuempel@house.texas.gov		Environmental Reg Committee
Jolanda Jones	Representative	Democratic	jolanda.jones@house.texas.gov		Public Health Committee
Keith Bell	Representative	Republican	keith.bell@house.texas.gov		Environmental Reg Committee
Kyle Kacal	Representative	Republican	kyle.kacal@house.texas.gov		Natural Resources Committee
Nicole Collier	Representative	Democratic	nicole.collier@house.texas.gov		Public Health Committee
Penny Morales Shaw	Representative	Democratic	penny.moralesshaw@house.texas.gov		Environmental Reg Committee
Rafael Anchia	Representative	Democratic	rafael.anchia@house.state.tx.us		Energy Resource Committee
Reggie Smith	Representative	Republican	reggie.smith@house.texas.gov		Public Health Committee
Robert Guerra	Representative	Democratic	bobby.guerra@house.texas.gov		Environmental Reg Committee (Vice Chair), AND Energy Resource Committee
Ron Reynolds	Representative	Democratic	ron.reynolds@house.texas.gov		Environmental Reg Committee
Shawn Thierry	Representative	Democratic	shawn.thierry@house.texas.gov		Energy Resource Committee
Stan Kitzman	Representative	Republican	stan.kitzman@house.texas.gov		Natural Resources Committee
Stanley A. Gerdes	Representative	Republican	stanley.gerdes@house.texas.gov		Energy Resource Committee
Stephanie Klick	Representative	Republican	stephanie.klick@house.texas.gov		Public Health Committee (Chair)
Suleman Lalani	Representative	Democratic	suleman.lalani@house.texas.gov		Natural Resources Committee
Terry Meza	Representative	Democratic	terry.meza@house.texas.gov		Environmental Reg Committee

Chapter Region Successes

- **Arkansas Chapter held outreach event to obtain Engineer's Week Proclamation at state capitol.**
- **Fort Worth Chapter obtain two (2) Engineer's Week Proclamation. One from Mayor of Arlington & one (1) Mayor of Fort Worth**



STATE OF ARKANSAS
EXECUTIVE DEPARTMENT

PROCLAMATION

TO ALL TO WHOM THESE PRESENTS COME - GREETINGS:

WHEREAS: Engineers use their scientific skills and specialized knowledge and skills in creative and innovative ways to fulfill society's needs;

WHEREAS: Engineers help solve major technological challenges of our time – from designing efficient building systems to rebuilding towns devasted by natural disasters;

WHEREAS: Engineering has been called the invisible or stealth profession because everything around us and things we are use to every day have been engineered in some way, yet we may not see the engineers behind the scenes or know much about engineering;

WHEREAS: Founded in 1951, National Engineers Week (Eweek) is dedicated to ensuring a diverse and well-educated future engineering workforce by increasing understanding of, and interest in, engineering and technology careers;

WHEREAS: Eweek is a formal coalition of more than 70 engineering, education and cultural societies, with more than 50 corporations and government agencies dedicated to raising public awareness of engineers' positive contributions to quality of life;

WHEREAS: Eweek promotes recognition among parents, teachers and students of the importance of a technical education and a high level of math, science and technology literacy, and motivates youth to pursue engineering careers in order to provide a diverse and vigorous engineering workforce;

WHEREAS: ASHRAE sets standards for the heating, ventilation, air conditioning and refrigeration industry, in addition to certifying and educating people in the industry across the country and;

WHEREAS: The Arkansas Chapter of ASHRAE would like to acknowledge engineers across Arkansas in honor of National Engineers Week, observed February 20-26, 2023;

ORE, I, SARAH HUCKABEE SANDERS, Governor of the State of Arkansas, uthority vested in me by the laws of the State of Arkansas, do hereby proclaim 6th, 2023, as

"NATIONAL ENGINEERS WEEK IN ARKANSAS"

izens of the state to take cognizance of this event and participate fittingly in its

WHEREOF, I have hereunto set my hand and caused the Great Seal of the ate of Arkansas to be affixed this 17th day of February, in the year of our Lord 2023.

Sarah Huckabee Sanders, Governor

FORT WORTH

CERTIFICATE of RECOGNITION

Office of the Mayor

Engineers are an important part of any community, especially in Fort Worth with the economic and professional impact those in the career path make on the city every day.

From the chemical to the mechanical, electrical to the civil, all types of engineering tackle complex technologies that the city depends on to provide the best experience for all who live in Fort Worth.

For this Engineers Week, we thank everyone in the demanding profession for their skills and knowledge in the craft that contributes so much to the community

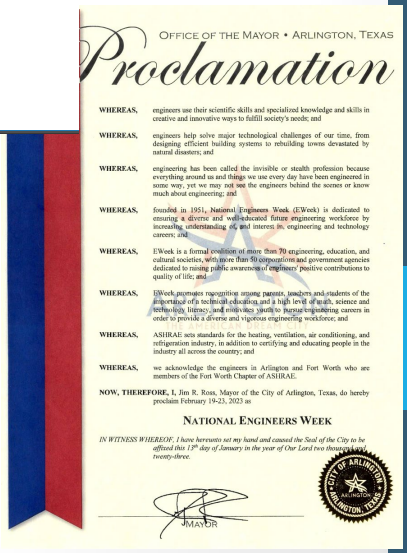
This certificate is presented to

ASHRAE Fort Worth

in recognition of Engineers Week (February 19th – February 25th, 2023)

on this 20th day of November 2022.

Mattie Parker
Mayor



OFFICE OF THE MAYOR • ARLINGTON, TEXAS

Proclamation

WHEREAS, engineers use their scientific skills and specialized knowledge and skills in creative and innovative ways to fulfill society's needs; and

WHEREAS, engineers help solve major technological challenges of our time, from designing efficient building systems to rebuilding towns devastated by natural disasters; and

WHEREAS, engineering has been called the invisible or stealth profession because everything around us and things we use every day have been engineered in some way, yet we may not see the engineers behind the scenes or know much about engineering; and

WHEREAS, founded in 1951, National Engineers Week (EWeek) is dedicated to ensuring a diverse and well-educated future engineering workforce by increasing understanding of, and interest in, engineering and technology careers; and

WHEREAS, EWeek is a formal coalition of more than 70 engineering, education, and cultural societies, with more than 50 corporations and government agencies dedicated to raising public awareness of engineers' positive contributions to quality of life; and

WHEREAS, EWeek promotes recognition among parents, teachers and students of the importance of a technical education and a high level of math, science and technology literacy, and motivates youth to pursue engineering careers in order to provide a diverse and vigorous engineering workforce; and

WHEREAS, ASHRAE sets standards for the heating, ventilation, air conditioning, and refrigeration industry, in addition to certifying and educating people in the industry all across the country; and

WHEREAS, we acknowledge the engineers in Arlington and Fort Worth who are members of the Fort Worth Chapter of ASHRAE.

NOW, THEREFORE, I, Jim R. Ross, Mayor of the City of Arlington, Texas, do hereby proclaim February 19-23, 2023 as

NATIONAL ENGINEERS WEEK

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the City to be affixed this 13th day of January in the year of Our Lord two thousand twenty-three.

JMAYOR

Areas for improvement in 2023-2024

- **Implement mentorship program between strong GAC chapters with small GAC chapters.**
- **Each chapter should have 1 outreach activity at each level: city, state, or federal level.**
- **Be creative in your outreach opportunities. Does not have to be meetings at capitol only.**
- **Need more connection with other public entities; school boards, county commissions, maintenance staffs & code officials**
- **Training sessions are always welcome by public officials**
- **Need better reporting & tracking for all outreach events.**
- **Several outreach events that were not formally submitted to Society**

GAC

Formal Report

ACTIVITY	Region VIII – GAC Report June 2023
CRC	
Total number of chapters in region	15
Number of chapters present	15
Number of GA chapter chairs present	12
Percentage of participation	100%
Percentage of GA chapter chair participation	80%
No. of planning sessions held	10
PAOE	
No. of Chapters Reporting PAOE Points:	12
No. of Chapters Making Society Minimum :	8
No. of Chapters Making Society PAR :	7
Highest PAOE Points by a Chapter:	3900 (Monterrey)
Percentage of chapters reporting	80%
Percentage of chapters making Society Minimum	53%
Percentage of chapters making Society PAR	47%
CHAPTER VISITS	
No. of visits made:	2
No. of visits scheduled:	0
Percentage of chapters visited:	40%
GAC AWARDS	
Government. Affairs Award	1 submission
Government Outreach Days	
No. of Chapters Participating	(Planned: 10); Actual: 11
No. of government officials visited	(Goal: 60+); Actual: +/-40
No. of ASHRAE members participating	(Goal: 20+); Actual: +/-20
No. of Chapters reporting	10
No. of days duration	5

Thank you

Questions?

ASHRAE

The Dave Palty Outstanding GAC Service Award

2022-2023

Presented to

Daryl Glen Collerman

In recognition of his outstanding overall efforts on the Government Affairs Committee to advocate on behalf of ASHRAE with a conscientious work ethic, encouragement of the chapter chairs in his region, and dedication to a sustainable built environment.

Darryl K. Boyce, P.Eng.
GAC Chair 2022-2023

Robert P. Hoadley, P.Eng
GAC Vice-Chair, 2022-2023

ASHRAE Building EQ Spring/Summer update: 2022/2023 SY

By Daryl Collerman, Liaison from the GAC to the Building EQ Business Development Committee

Building EQ Government Outreach

I'd also like to take this opportunity to impress upon everyone how important it is to promote Building EQ to your GA Chapter Chairs. Building EQ is part of the agenda for Government Outreach and there is a Fact Sheet in our Advocacy Tool-Box.

FYI; the Building EQ Business Development targets are, Government Buildings Municipalities, Hospitals and Clinics, Educational Facilities, Universities. Building Owners, Utilities, and Non-Profits

Going forward please don't hesitate to reach out to the GAC Liaison to BEQ if you have any questions, or need any assistance, kick starting a BEQ campaign in your region, with your GA Chapter Chairs.

GAC outreach Advocacy Tool-Box Fact Sheet

Building EQ

Be an Energy Genius

ASHRAE's Building Energy Quotient program takes your building to the next step beyond benchmarking. The program provides a quick energy analysis, assists in preparation of an ASHRAE Level 1 Energy Audit, and provides actionable recommendations for improving a building's energy performance including low-cost, no-cost energy efficiency measures and an Indoor Environmental Quality survey with recorded measurements.

Two different evaluations can be used independently to compare a candidate building to other similar buildings in the same climate zone or together for an assessment of a building's design potential compared to actual operation:

In Operation compares actual building energy use
- Based on actual metered energy use of a building
- Assists in preparation of on-site ASHRAE Level 1 Energy Audit
- Measurements confirm that indoor environmental quality is not compromised for energy savings

As Designed compares energy use based on the building's physical characteristics and systems
- Simulated standardized energy use model
- Independent of operational and occupancy variables

Benefits:
- ✓ Includes metered energy data exchange from ENERGY STAR® Portfolio Manager
- ✓ Median EUI calculation aligned with ENERGY STAR Portfolio Manager
- ✓ Details actionable recommendations to improve a building's performance
- ✓ Streamlines and improves the audit process
- ✓ Utilizes standard and consistent process for tracking improvement over time
- ✓ Creates an opportunity to reassess building performance following implementation of energy efficiency improvements to assess effectiveness (improved performance/rating)
- ✓ Provides a Building EQ performance score (efficiency) to benchmark building
- ✓ Offers a building label to recognize high performance buildings

For additional information, please visit **ashrae.org/BuildingEQ**

Spring BEQ Update to the GAC

- Carbon has been incorporated into the tool.
- Building EQ Committee developed a **Value Proposition** for the tool by market segment (e.g., Commercial, Health Care, Higher Education, State and Local Govts, Nonprofits, Utilities)
- Building EQ Committee is requesting GAC review the Value Proposition document and share any comments; this can be done in SY23-24.

Additional Building EQ Updates

1. Planning is ongoing for a joint webinar with Green Building Initiative (GBI); the President-Elect has approved this webinar and John Constantinide is the lead.
2. BEQ is also conducting outreach to ASHE.
3. Since Building EQ is approved to become an MTG, they will reach out to the organizations on the committee liaison list to ask if they want to be involved with the MTG going forward.
4. John Constantinide will be working on an article about ASHRAE's new HQ for a case study.
5. BEQ will be having a **joint seminar with the Effective Building Operations (EBO) MTG on <u>Tuesday, June 27.</u>**

Shaping Tomorrow's Built Environment Today

1255 23rd Street, NW • Washington, DC 20037 • Tel: 202.821.1730 • Fax: 202.833.0118 • www.ashrae.org

June 23rd, 2023

To: Darryl Boyce, Chair of the Government Affairs Committee
From: Codes Interaction Subcommittee
Subject: Report from Codes Interaction Subcommittee

The following items are updates for the Government Affairs Committee from the Codes Interaction Subcommittee:

- After the Tampa meeting, we have a new CIS roster and chair – Karl Peterman
- A new code cycle is starting up. SSPC chairs have been contacted about deadlines for submitting proposals to CIS for the Group A ICC Codes (e.g., the IMC, IPC) and the IAPMO codes for their 2027 code editions. The first deadline for each code body will be in January 2024.
- ASHRAE staff is currently discussing the idea of creating voting guides for our members, which is an advocacy tool that other organizations have. We will have more information for GAC as the code cycle progresses.

ASHRAE's Public Policy Priorities: SY 2023-2024 *--Draft*

- Support Sustainable Building Practices including Building Decarbonization to Mitigate Climate Change
  Buildings and their heating, ventilation, air conditioning and refrigeration (HVAC&R) systems directly and indirectly contribute to GHG emissions. Buildings are responsible for more than 35% of global final energy use and nearly 40% of energy-related greenhouse gas emissions worldwide. Eliminating greenhouse gas emissions from the built environment is essential to address climate change. ASHRAE is advancing additional tools to support decarbonization across a building's entire life cycle, including building design, construction, operation, occupancy, and end of life. ASHRAE is targeting emissions from the operation of buildings as well as those embodied in building materials and the construction process.

  In addition to government adoption of robust building energy standards such as ASHRAE Standard 90.1 (commercial), 90.2 (residential), 90.4 (data centers), 189.1/IgCC (green buildings) and 189.3 (high-performance health care facilities) for new construction, ASHRAE supports policies and programs to improve the energy and carbon performance of existing buildings such as through the adoption of Standard 100 and policies such as building performance standards, building benchmarking and labeling requirements. To assess carbon emissions across the entire building life cycle, ASHARE recommends use of ASHRAE/ICC Standard 240, *Evaluating Greenhouse Gas and Carbon Emissions in Building Design, Construction and Operation,* which provides consistent procedures and data to be referenced by policies, codes, and regulations.
- Promote Healthy Buildings and Reduce Indoor Environmental Risks
  Supporting the health and well-being of building occupants is the most important feature of the indoor environment. Providing acceptable indoor air quality is an essential building service that should be achieved while also improving building energy efficiency, sustainability, and resiliency. The latest versions of ASHRAE Standards for Ventilation and Indoor Air Quality (62.1 for commercial buildings, 62.2 for residential, and 170 for health care facilities) should be adopted in building codes and regulations. Jurisdictions should also adopt Standard 241, *Control of Infectious Aerosols*, to reduce the risk of disease transmission including COVID-19. With respect to water systems, Jurisdictions should adopt ASHRAE Standard 188-2021 and Guideline 12-2020, which present a framework and guidance for *Legionella* risk mitigation. ASHRAE recommends that policymakers cite ASHRAE standards and guidance in legislation and policies to reduce the risk of pathogen transmission in buildings, including in schools and congregate housing. At a national level, model building codes should be developed that address IAQ.

- Ensure the Orderly and Safe Phasedown of High-GWP HFC Refrigerants
  ASHRAE supports the global phasedown of the production and consumption of Hydrofluorocarbon (HFCs) refrigerants that have high-Global Warming Potential (GWP), including through legislation, regulations, and policy. Governments are mandating the near-term use of lower GWP refrigerants, which can have some flammability. ASHRAE Standard 15-2022, *Safety Standard for Refrigeration Systems,* and Standard 34-2022, *Designation and Classification of Refrigerants* should be adopted quickly to help ensure the safe use of these refrigerants. Additional ASHRAE resources include the *Update on New Refrigerants Designations and Safety Classifications* factsheet, which was developed through a cooperative agreement with UNEP. ASHRAE is also working with UNEP to assist developing countries with the adoption of state-of-art technologies and deployment of lower-GWP refrigerants to protect supply of food and medicine (including vaccines), as well as provide increased comfort and productivity while meeting sustainability goals.

- Advance Design and Construction of Resilient Buildings and Communities

  Resiliency is an important societal, economic, and technical issue that will have a major impact on how buildings are designed, renovated and operated. For example, the increasing threat of wildfires has led ASHRAE to produce technical materials such as the Planning Framework for Protecting Commercial Building Occupants from Smoke During Wildfire Events.

  As investments are made to improve infrastructure, buildings should be included, as they are vital for protecting the public when natural and human-induced events occur. A building's ability to recover and be available to occupants following such an event can have widespread economic and health implications. In particular, up-to-date building energy and indoor air quality (e.g., ventilation, filtration) standards are essential elements of providing resilient buildings. Unfortunately, most states have not adopted the most recent standards and codes that are based on the latest research and technological innovation, which could make building occupants more vulnerable to disasters. In addition, policies and regulations that require qualified HVACR engineering and technical professionals to be an integral part of building design, construction, and operation are encouraged as these can result in a more resilient and safer built environment.

- Support Adoption of the Latest Edition of ASHRAE's Energy Standards into Building Codes

  Energy efficiency can be improved significantly through the adoption and effective implementation of the most recent version of Standard 90.1 *Energy Standard for Buildings Except Low-Rise Residential Buildings*, which has provided the minimum requirements for the energy-efficient design in the United States for over 40 years. Although its adoption in the U.S. by States is required by the Energy Conservation and Production Act (ECPA), most States are using dated versions of the standard, resulting in buildings with higher energy needs and costs. Residential buildings and data centers can also achieve improved performance, save energy costs, and reduce climate impacts when jurisdictions adopt ASHRAE Standard 90.2 (residential) and Standard 90.4 (data centers).

- Strengthen and Increase Diversity in the HVACR Workforce

  Strong education in science, technology, engineering and mathematics (STEM) to develop the pipeline of technicians, engineers and scientists is critical to our future well-being and standard of living. ASHRAE supports policies that strengthen STEM at all educational levels, including through use of ASHRAE's extensive educational offerings. Policymakers should consider requiring ASHRAE certification programs to ensure professionals have the knowledge to improve building performance.

  ASHRAE's Board of Directors is committed to proactively pursuing and celebrating diverse and inclusive communities, as it fuels better, more creative and more thoughtful ideas, solutions and strategies for the Society and for the communities we serve. We respect and welcome all people regardless of age, gender, ethnicity, physical appearance, thought style, religion, nationality, socio-economic status, belief system, sexual orientation or education.

Draft GAC MBOs
SY2023- 2024

MBO	Subcommittee Assigned	Metric(s)	Initiative #	Goal #
1. Increase the participation of ASHRAE members in Government Outreach Events and other advocacy opportunities by hosting promotional GAC meetings, webinars, and other events to non-GAC ASHRAE members to increase awareness about the GAC.	Member Mobilization	• Office Hours? • Panel at ASHRAE conference? • Marketing material (one-pager) for chapter meetings and/or CRCs?	4	2a, 2c
2. Streamline approach for gathering data and reporting on GOEs; include number of government officials and staff who attended the GOEs. Determine best way to differentiate between types of GOEs	Member Mobilization	• Provide recommendation to GAC on whether and how GOE reporting should be changed.	3	3b
3. Review volunteer commitments of committee members as well as membership in general; identify ways to use volunteer time effectively and increase participation in GAC governance and activities.	Executive Subcommittee	• Estimate average volunteer time commitment from committee membership and chairs. • Identify # of committee members with other ASHRAE commitments. • Share information with Members Council and request whether volunteer commitments are similar for other standing committees.	3, 4	2a, 3b
4. Review effectiveness of GAC mentorship program and obtain feedback on how best to make use of program.	Executive Subcommittee	• Poll a selection of recent mentees and mentors on their experiences with the program. • Recommend whether the program should be maintained, altered, replaced, or stopped entirely.	3, 4	2a, 3b

MBO	Subcommittee Assigned	Metric(s)	Initiative #	Goal #
5. Build the foundation of a consistent global government engagement program by planning and identifying country- or region-specific events attended by government officials for the purpose of outreach and advocacy.	Global Affairs	• Identify national and international conferences/events outside North America where ASHRAE can participate to further government engagement. • Provide recommendations to MMSC on how best to increase the number of GOEs outside North America and increase number of ASHRAE members participating	1, 2	1a, 1b, 3b
6. Determine best approach for communicating effective strategies about building decarbonization and other key issues to government officials.	Policy & Programs	• Establish a program to connect ASHRAE SMEs to government officials. • Coordinate 3 SME-Government meetings. • Assess effectiveness of program and provide recommendations to GAC on full implementation of program.	1, 3	1a; 1b; 2b;
7. Work with Global Technical Interaction Committee (GTIC) to facilitate sharing of information to avoid duplication of efforts, including through improved understanding of market needs and the tracking and adoption of ASHRAE standards and guidelines around the world.	Global Affairs	• Nominate a liaison from GASC to GTIC and send recommendation to GAC Chair at earliest possible opportunity. • Each member of GASC to provide a list of ASHRAE standards that have been adopted by various jurisdictions in their regions. • Identify opportunities for ASHRAE Standards adoption, including through scheduling meetings, sharing information about standards, and/or writing advocacy letters for standards adoption.	3	3b

MBO	Subcommittee Assigned	Metric(s)	Initiative #	Goal #
8. Continue work with GAC Advisory Board. Review recommendations of board and provide recommendations on how best to enact them.	Policy & Programs	• Determine whether Advisory Board work should be continued, and if so, whether new members should be invited. • Review recommendations from GAC Advisory Board; determine what recommendations should be referred to the GAC and suggest how those recommendations should be enacted.	3	1b; 2b; 3a;
9. Work with other relevant bodies within ASHRAE to share needs from Government Officials, and how ASHRAE could better communicate via the web and social media.	Executive Subcommittee, through the Communications Coordinator	• Assess effectiveness of outward and inward facing ASHRAE web and social media presence focused on GAC efforts. • Provide recommendations on how ASHRAE web and social media presence can better serve GAC committee members as well as government officials.	3, 4	1a, 2a, 2c, 3b
10. Provide recommendations to the full committee on how best to increase the global scope of Government Affairs Committee work and increase participation of members outside North America in committee activities.	Global Affairs	• Review current and historical GAC rosters to determine the usual number of committee members outside North America. • Review and compare GOE participation to determine how chapters outside North America compere to chapters in U.S./Canada. • Provide list of challenges that may impede volunteers outside North America from participation on GAC, and recommendations on how to solve these possible challenges	4	1b, 2a

Draft: 06-07-2023

Proposed Subject Matter Expert Program to Support Government Affairs

Recommendation for GAC Approval:

MOTION: Recommends that the GAC establish a pilot program that would identify and recruit Subject Matter Experts within ASHRAE to communicate technical information effectively to government officials and policy makers. The framework for the program is provided in Attachment A. Details for the pilot program would be developed during July-December 2023, and the pilot would be implemented in January 2024-June 2024, with SME transportation to three (3) meetings funded under this program.

BACKGROUND:

The GAC's Government Outreach Events program is an effective and well-established program for grassroots members to introduce government officials to ASHRAE, as well as the issues that are critical to advancing the arts and sciences of heating, ventilation, air conditioning and refrigeration. The program uses pre-approved collateral materials including ASHRAE's Public Policy Priorities, Public Policy Issue Briefs, and presentations with information contained in PPPs, PPIBs, as well as Position Documents. When government officials need to dive deeper into these subjects, including for when they are developing legislation or regulations, an individual with more knowledge and expertise on the subjects is needed. This individual could be compared to a "Distinguished Lecturer" but would need to be able to communicate technical information to non-technical government officials and policy makers and would need to know ASHRAE's positions on the topics at hand. Currently, identifying these individuals is done on an ad-hoc basis, or through the Government Affairs staff, who may need to reach out to staff from the Technology Department to best identify an SME. Because government officials often need information quickly, having a program in place where there is a ready reserve of ASHRAE technical experts with good communication skills would be useful.

FISCAL IMPACT: $3,500.

The fiscal impact uses the DL budget of $1,072 per visit (transportation); at 3 visits, the total is $3,216, which we rounded up slightly.

STAFF IMPACT: 210 hours

Staff time would average about 4 hours per week. Staff time includes scheduling meetings, holding meetings, and taking notes, fleshing out proposals, helping to identify SMEs and create a database, working with the accounting department on transportation reimbursement, working with chapters and Members Council to share information about this program, helping to evaluate the program and write a report at the end of the year.

Shaping Tomorrow's Built Environment Today

ATTACHMENT A
Framework for Proposed Subject Matter Expert Program to Support Government Affairs

This program would identify and recruit Subject Matter Experts (SME) within ASHRAE who can communicate technical information effectively to government officials and policy makers. The program would establish a pool of SMEs with specific expertise who would be able to provide technical support and information for government briefings, legislative testimony, and responses to government requests for information. SMEs will be sources of technical support for local to global level government affairs work.

The objective of this program would be to have a vetted list of SMEs for government interaction so that responses to government officials could be provided in a more timely manner, which can be especially important when legislation or regulations are moving quickly. This program would help ASHRAE support its mission of advancing the sciences of HVAC&R to serve humanity and promote a sustainable world.

1. **Define the criteria for selecting SMEs:** The program would define the qualifications that SMEs should meet, such as their professional expertise, experience, and communication skills. They should be able to explain technical subjects in plain language, write and deliver testimony for local pending legislation, and respond to letters and comments. The program will seek broad geographic representation, both globally and locally.
    - The SME must have a deep understanding of the technical subjects related to HVAC&R.
    - The SME must have experience communicating technical information to government officials, agencies, and the public.
    - The SME must have a track record of providing technical support for legislative testimony and public requests for information.
2. **Develop an application process:** The program would design an application process that collects information on the SMEs' qualifications and experience. The application form would be available on the ASHRAE website and require applicants to provide their

professional background, experience, expertise, and references. A subset of the GAC[1] would review the applications, conduct interviews, contact references, and make selections. Staff from the Washington Office would also provide input. Individuals selected would hold 3-year terms, with reviews conducted after each government engagement.

3. **Establish a database of SMEs:** The program would maintain a database of SMEs who have been selected for the program. The database would include their contact information, areas of expertise, and availability (if known).
4. **Train SMEs:** The program should provide training to SMEs on how to communicate effectively with government officials, including through briefings and testimony. Washington Office Staff will continue to provide training and support relative to specific engagements.
5. **Engage SMEs:** The program should actively engage SMEs by informing them of opportunities to participate in meetings, provide testimony, or provide input on letters and comments. SMEs would engage with GAC Chapter Chairs and local members. The program would track the SMEs' participation and assess their impact.
6. **Funding for transportation:** The program would offer funding for transportation when the government official specifically requests in-person attendance. The transportation would be approved by the Staff Director of Government Affairs.
7. **Evaluate the program:** The program would be evaluated on an annual basis. Each SME engagement would also be assessed, likely in a qualitative manner as each engagement will be different.

[1] Proposed as the GAC Chair and Vice Chair, Chairs of the PPSC, MMSC and GASC, and any GAC members with professional government experience.

SY2023-2024 GAC Subcommittee Assignments					
Executive	**Policy & Programs**	**Member Mobilization**	**Global Affairs**	**Rules**	**Nominating**
Rob Hoadley (Chair)	Beth Tomlinson (Chair)	Artorius Reyes (Chair)	Timothy Theriault (Chair)	Shelia Hayter (Chair)	Sheila Hayter (Chair)
Sheila Hayter (Vice Chair)	Douglas Cage	Mike Wolf	Mike Genin - II	Sonya Pouncy	?? (Vice Chair)
Beth Thomlinson (Policy and Programs Chair)	Eleazar Rivera	Ioan Dobosi	Eleazar Rivera - VIII	Bassel Anbari	Rob Hoadley
Artorius Reyes (Member Mobilization Chair)	William Fisher	Chris Phelan	Geoffrey Jenks - XI	Bryan Holcomb	Sonya Pouncy
Timothy Theriault (Global Affairs Chair)	Weston Hockaday	Geoffrey Jenks	Albert Sin - XIII	Rob Hoadley	Bryan Holcomb
Sonya Pouncy (Communications Coordinator)	Andrew Persily	Mike Genin	Ioan Dobosi - XIV	Tim Wentz	Artorius Reyes
Bassel Anbari (Members Council Representative)	Peter Koneck-Wilwerding	Ahmed Bolbol	Ahmed Bolbol - RAL		
Jason Alphonso (PubEd Council Representative)	Louis Van Belle	Tracey Jumper	Bassel Anbari		
Chris Phelan (Tech Council Representative)	RJ Hartman	Albert Sin			
William McQuade (Coordinating Officer/Treasurer)					
Bryan Holcomb (BOD ExO)					
Alice Yates (Staff Liaison)	Matt Young (Staff Liaison)	Emily Porcari (Staff Liaison)	Jacob Karson (Staff Liaison)	Emily Porcari (Staff Liaison)	Alice Yates (Staff Liaison)

Note: Staff Liaisons listed above will serve as the primary point of contact for each of the subcommittees above.
However, please know that you can contact any of the Government Affairs Staff, including by emailing GovAffairs@ashrae.org