

**ASHRAE TC 9.2 – Industrial Air Conditioning and Ventilation Committee
Annual Meeting MINUTES – Virtual Meeting**

DRAFT

**Thursday 6/18/2020
1:00 – 3:30 P.M. EDT**

1:00 - 3:30 P.M. Kevin Marple chaired the meeting

1. Call to Order and Opening Remarks - Marple (1307 EDT)

“Commitment to the ASHRAE Code of Ethics – In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)”<https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>

2. Self-Introduction of Members and Guests – All

Please Sign-in: <https://forms.gle/1RjqiLo38XQPZDW1A>

3. Quorum Status Determination of Meeting Quorum – Marple/Phyfe

Quorum reached: 8 of 9 present at votes, final attendance of 6 members

Voting Members:

Kevin Marple (roll-off 6/30/20)	✓	Bill Lampkin (roll-off 6/30/21)	✓	Mike Connor (roll-off 6/30/20)	✓
Duncan Phyfe (roll-off 6/30/22)	✓	Mike Baucom (roll-off 6/30/21)	✓	Erich Binder (roll-off 6/30/21)	✓
Ravi Ganta (roll-off 6/30/22)	Absent	John McKernan (roll-off 6/30/21)	✓	Joel Foster (roll-off 6/30/22)	✓

4. Approval of Minutes from Atlanta Minutes – Marple/Phyfe

- (Phyfe) minor edits from review copy

Motion: Binder / to accept the minutes as agenda
Second: Connor

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Vote: Unanimous (8-0-0, chair voting) / Motion Passed

5. Chair Report Section Chair Meeting Update – Marple

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TC 9.2 Chair: Highlights from Chairs breakfast (full report attached)

- TC reorganization recap
- CEC request for review of submissions
 - Member has been stepping up to support
 - Good interaction with TAC
 - CEC does not have full expert range
 - CEC continues to look for TAC membership support (see attached)
- Winter 2021 currently schedule for January in Chicago

Section 9 section head: - Payne

- General thank you
 - Excellent attendance for Section 9 virtual meetings
- Check website, please keep updated
 - New template very simple
- ASHRAE
 - Website has great tools
 - Pushing for merging TCs
 - 9.4 merged with 9.6
 - (Marple)
 - 5.8 merger 2 years ago into 9.2 (Kumpf comment too)
 - 5.4 leadership in conversations about possible fit together
 - Membership @ 5.4 has recently increased participation & activities
 - Meetings for TC
 - Email tcmeetings@ashrae.net
 - Setup virtual meeting

6. Voting Member Status, Roster Update & New Members Announcements - Marple

- 2 members rolling off
 - Kevin Marple & Mike Connor
 - Orlando 8 new members
 - 5 are YAE
 - Connect with Marple if interested in upgrading to Voting Member

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7. Chapter Technology Transfer Committee (CTTC) Liaison - (Marple)

- Marple - unable to sit in on meeting for Virtual conference

8. Handbook - Goodman

- No report

9. Research - Mead

- No report

11. Program – Foster

- Orlando - follow up
 - Seminar: Cold climate design
 - Workshop: Guideline 21 Battery Thermal Storage
- Virtual meeting - will have to report back
- Chicago - will be following up with TC membership
 - Seminar submission deadline - 8/3/2020

2021 Winter Meeting – Chicago, IL

Potential and/or Future Topics for TC9.2

1. Nuclear Design Guide updates (Champion: Deep Ghosh)
2. Hazardous spaces guideline updates (Champion: Mike Baucom)
3. Industrial vent conference – separate conference, but still under ASHRAE – see main meeting notes for more detail
4. Oil and gas chapter for cold climate guide (Champion: Eric Binder)
5. Paint spray booth applications (Fundamentals track?, Champion: ?)
 - #1 - Ghosh: Nuclear Design Guide won't be ready for Chicago
 - #2 - Baucom: waiting to see when published
 - Possible “preliminary” presentation should the publishing folk allow
 - Marple: to follow with contact info @ ASHRAE to support
 - #3 - *to be covered later in meeting*
 - #4 - Binder - listed under new business
 - #5 - Foster: Looking for a paint spray booth champion
 - Baucom: would contribute “user side”
 - Lampkin: will look to see if he has some contacts that would be interested

11. Standards –Ghosh

- Workshop from Winter Meeting - question on Li-Ion battery
 - Form another committee to address Li-Ion
 - IEEE meeting 6/17/2020 (Binder & Ghosh)
 - Not a simple “edit” much more complexity
 - Starting process

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- Goal to complete in within year
 - Marple: Deep Ghosh appointed by TC as ASHRAE as representative with IEEE
- DOE design guide on back burner

12. Nuclear (Winter Meeting Only) - MacMurray

- No update

13. Hazardous Spaces

- Design Guide Development Report & Discussion - Baucom
 - Forward & Credits (see attachment)
 - Discussion of liability for listing company names in credits
 - Binder: publishing date?
 - Unknown date at this point
 - Appears that some of the MOPS procedures have been bypassed
 - Skipped possible technical review
 - Binder possible Guide vs. Standard
 - Binder: kick-off @ conference “coffee break”

14. STD 62.1 Liaison

- No report
- Position Open

15. STD 90.1 Liaison - Baucom

- No formal report, COVID has delays

16. TG 2 HVAC Liaison - Abramson

- TC 2.10
- No report

17. Webmaster - Baucom

- Fully updated
- Web Sites <http://tc0902.ashraetcs.org/index.php>

18. Journal/Insights Liaison - Maxwell

- No report

19. ASHRAE Learning Institute (ALI) - Maxwell

- no

**ASHRAE TC 9.2 – Industrial Air Conditioning and Ventilation Committee
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20. Old Business:

Ventilation 2021 Conference - Marple/Binder

- February:
 - Request for papers
 - Fundraising efforts started (sponsorships)
- Covid - created a pause in push forward
- Looking to start the push back up in July
- Live & Virtual components
- Eileen: website ready for submission
 - At present 1 submissions
 - Looking to promote VHOS

MTG - Air exchange rate

- Should be included with TC 9.2 liaison reports
 - Binder & Connor good sources between the two

21. New Business

Industrial HVAC Guide for Oil & Gas Facilities - Baucom/Binder

- Been on back burner coming forward as cold climate publication is completed
 - Binder: looking to setup a meeting to restart in July (invite TC)

COVID-19 - Ghosh: is there something we should be doing

- How does covid impact industrial facilities
 - Marple: manufactures are looking at it but very specific
 - Marple: can look to bring it to ADHOC ASHRAE committee
- Kumpf: is it too late?
- Where does TC 9.2 effectively work in solving infection control
 - McKernan: much of this information is available
 - Sent ASHRAE position paper for Marple to distribute
 - However, source for this control from the human vs. specific location
 - Ventilation control on point sources in industrial only environments
 - Risk: 30-50% show no sign of infection
 - Marple: companies are taking steps looking creating a guideline
 - Co-write with ACGIH?
 - TC looking positive at co-written approach
 - submit McKernan as liaison role between two organizations
 - Binder to bring it up within the ASHRAE organization

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- McKernan to do the same on the ACGIH side

Toxic Shelter Guidance - Marple/Baucom

- Saw efforts of the VHOS
- Table discussion based on meeting attendance
 - Pick up in Chicago

22. Adjourn Announcement of Next Meeting

- Next meeting: Chicago 6/26/2021

Adjourn: Binder moved. 14:59 EDT

Respectfully submitted

Duncan Phyfe
Secretary
June 19, 2020

Attachments:

- TC 9.2 Agenda for Summer Virtual Meeting
- TC 9.2 Approved Meeting Minutes from 2020 Orlando (not including attachments)
- TC 9.2 Sign-In
- TC 9.2 Programs Important Dates as of July 8, 2020
- TC 9.2 VHOS: Forward, Credits & Dedication
- TC 9.2 Liaisons Report MTG OBB and Tc 2.10 Resilience and Security. (July 20, 2020)
- Virtual Meeting 2020, TAC Section Head Breakfast Handout

**ASHRAE TC 9.2 – Industrial Air Conditioning and Ventilation Committee
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Thursday 6/18/2020

1:00 – 3:30 P.M.

“Commitment to the ASHRAE Code of Ethics – In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)”

Item	Activity	Topics	Presenter	Duration (in Min.)	Approximate End Time
1	Call to Order and Opening Remarks	Approval of Agenda/Code of Ethics	Marple	0:02	1:02 PM
2	Self-Introduction of Members and Guests	Attendance Sheet	All	0:05	1:07 PM
3	Quorum Status	Determination of Meeting Quorum	Marple/Phyfe	0:05	1:12 PM
4	Approval of Minutes from Orlando, FL	Minutes and Activity Report	Marple/Phyfe	0:10	1:22 PM
5	Chair Report	Section Chair Meeting Update	Marple	0:10	1:32 PM
6	Membership Report	Voting Member Status, Roster Update & New Members Announcements	Marple	0:05	1:37 PM
7	Chapter Technology Transfer Committee (CTTC)	Status Report	Marple	0:02	1:39 PM
8	Handbook/Programs/Research Subcommittee Reports	Update on Subcommittee Meeting	Jensen/Foster/ Mead	0:18	1:57 PM
9	Handbook	Update	Goodman	0:02	1:59 PM
10	Research	Open	Mead	0:05	2:04 PM
11	Program Report	Review of Future Programs & Program Plan	Foster	0:10	2:14 PM
12	Standards	Open	Ghosh	0:05	2:19 PM
13	Nuclear (Winter Meeting Only)	Update	John MacMurray	0:05	2:24 PM
14	Hazardous Spaces	Design Guide Development Report & Discussion	Baucom	0:10	2:34 PM
15	Standard 62.1 Liaison	Meeting Report	Open	0:05	2:39 PM
16	Standard 90.1 Liaison	Meeting Report	Baucom	0:02	2:41 PM
17	TG2.HVAC Liaison	Meeting Report	Abramson	0:05	2:46 PM
18	Webmaster	Status Report	Baucom	0:05	2:51 PM
19	Journal/Insights Liaison	Update on Journal Activities	Maxwell	0:05	2:56 PM
20	ASHRAE Learning Institute (ALI)	Report on ALI	Maxwell	0:04	3:00 PM
21	Old Business	Ventilation 2021 Conference	Marple/Binder	0:15	3:15 PM
22	New Business	Industrial HVAC Guide for Oil & Gas Facilities; Toxic Shelter Guidance	Marple/Baucom/Binder	0:13	3:28 PM
23	Adjourn	Announcement of Next Meeting – //2020	Marple	0:01	3:29 PM



ASHRAE TC 9.2
Industrial Air Conditioning
Winter Meeting Agenda – Orlando, FL
Hilton Orlando, L, Lake Highland B
Tuesday 2/4/2020
1:00 – 3:30 P.M.

1:00 - 3:30 P.M. Kevin Marple chaired the meeting

1. Call to Order and Opening Remarks - Marple

- “Commitment to the ASHRAE Code of Ethics – In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)” <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>

2. Self-Introduction of Members and Guests – All

Total attendance: 37, 7-Remote, 30-On location

See sign in sheet for attendees.

Remote participants: (7 participating)

- Mohammad Farooq Saeed
- Bill Kumpf
- Ken Goodman
- April Ricketts
- Jeremy Snyder
- Harvey Schowe
- Danilo Catelan

Total Attendance:

- 30 – local / 7 - online / 37 - Total
- Non-Voting members: 20
- Guests: 11

3. Quorum Status Determination of Meeting Quorum – Marple/Phyfe

Quorum reached: 5 of 9 present at votes, final attendance of 6 members

Voting Members:

Kevin Marple ✓ (roll-off 6/30/20)	Bill Lampkin ✓	Mike Connor ✓ (roll-off 6/30/20)
Duncan Phyfe ✓	Mike Baucom	Erich Binder ✓ (post-voting)
Ravi Ganta	John McKernan ✓	Joel Foster

4. Approval of Minutes from Atlanta Minutes – Marple/Phyfe

- Minor correction to spelling of Bill Kumpf

Motion: Phyfe / *to accept the minutes with minor corrections*

Second: Conner

Vote: Unanimous (5-0-0, chair voting) / **Motion Passed**

5. Chair Report Section Chair Meeting Update – Marple

TC 9.2 Chair: Highlights from Chairs breakfast (full report attached)

- Program statics from TAC
- Upcoming meeting
 - Ventilation 2021, Toronto CA
 - August 15-18, 2021
 - Call for papers coming soon
 - Topics in minutes
 - ASHRAE conference
 - Austin programs due 2/10
 - Chicago call for papers out

Section 9 section head:

- Roster update link, please update
- TC 9.8 large building, Chair passed away (week before ASHRAE)
 - TC 9.4 voted to merge into TC 9.8
- Multiple Section 9 TC's looking to merge
 - TAC looking to continue the merger process in Section 9
- TC 9.2 is considered active & healthy

6. Membership Report Voting Member Status, Roster Update & New Members - Marple

- Call for members to join/upgrade
- 2 voting members rolling off (Kevin & Mike)

7. Chapter Technology Transfer Committee (CTTC) Liaison - (Marple)

- No report

8. Handbook/Programs/Research Subcommittee Reports - (Jensen/Foster/Mead)

9. Handbook Subcommittee Report - Goodman

- Technical problems, no audio report
- Handbook chapters up for review/dates:
 - Discussion on 9.2 & old TC 5.8 chapters
- Eric: how to propose “update” or “new”
 - For existing chapters discuss w/Ken Goodman (chair)
 - Connor: walk through of his ongoing new chapter process

10. Research - Mead

- No Report

11. Program Report: Future Programs and Program Plan – Foster

- No Report

12. Update on all Standards – Deep Ghosh

- Guideline 21, Battery Ventilation
 - Published, revision of 2012 issue
 - Joint venture w/IEEE titled: IEEE 1635/ASHRAE Guideline 21
 - Workshop Monday

13. Nuclear

- Scott remotely led
- Good student attendance
- Design guide completed (15 sections)
 - Sub. Committee voted 4-0-1, requesting TC 9.2 send Design Guide for publishing
 - **Motion:** Sub. Committee requests that the Chair of TC 9.2 submit the Design Guide for publishing
 - 5-0-0, chair voting / Motion Passed
- Ghosh: update on Vogel plant building:
 - fuel load this year with second plant to follow in year

14. Hazardous Spaces

- Ghosh: explained general scope to Martin
- No vote this meeting, due to comment incorporation

- goal to have email ballot well before Austin

15. STD 62.1 Liaison

- no report, unable to make it to meetings
- position open

16. STD 90.1 Liaison

- Liaison-position is open - no report

17. TG 2 HVAC Liaison

- (Abramson) TG 2
 - Reviewing scope
 - Publish standard guideline 29 'Resilience & Security'
 - Chapter 59 published
 - Looking to have 2 future sessions in Austin
 - 8AM tomorrow session on resilience
- (Abramson) MTG-OB: occupant & behavior
 - Met Monday
 - Application/Chapter 25 published
 - Requesting TAC to move from MTG to TC

18. Webmaster

- Baucom: No Report
- Web Sites <http://tc0902.ashraetcs.org/index.php>

19. Journal/Insights Liaison

- Norm Maxwell is liaison - no report.

20.ASHRAE Learning Institute (ALI)

- Norm Maxwell is liaison no report.

21. Old Business:

- Industrial HVAC Conference – August 2021 Toronto (Frank Mortl/ACGIH)
 - Industrial ventilation manual by ACGIH – Partnership w/ASHRAE
 - Working to develop programs together to create
 - Practical knowledge
 - Leveraging experience conferences put on ACGIH
 - Annual in various states & countries

- Quarter 4 hour courses available
 - ASHRAE taking on conference as ASHRAE Topical Conference
 - ASHRAE plans to keep 3 year event cycle
 - Using Topical Conference ASHRAE format
 - Technical and practical focus
 - Expecting 250 – 300 people in attendance
 - International event not strictly US/Canada
 - (Marple) call for paper coming, TC 9.2 should be major contributor
- TC 5.8 discussion:
 - Is a subcommittee required on TC 9.2
 - At present no need to consider subcommittee identified
 - Focused on handbook chapters
 - Chapters identification – to ensure updates are continued through TC 9.2
- TC 5.4 Merger (TAC Initiative)
 - No discussion in TC meeting
 - TC 5.4: Industrial ventilation control
 - Previously struggling
 - Currently strong with activity & pipeline of research
- (Marple) Recognize Eric & Matt for seminar on Sunday
 - Cold climate design & application
 - Matt/Eric:
 - Felt it was a good seminar
 - Many questions after seminar
 - Background to code to application
- Bill K – feedback to TAC merger: “What happen with all the feedback?”
 - (marple) provided and response “thank you”
 - No specific response

22. New Business – Marple

- Industrial HVAC Guide for Oil & Gas Facilities (Binder)
 - Sunday – Cold climate seminar
 - Creating international guide for Oil & Gas beyond cold climate
 - Off-shore and specifically more international perspective
 - Much information existing needs to be captured
 - Looking for volunteers
- TC 9.2 sub-committee policy
 - Reduce space by off-site meeting (conference call)
 - Report in Main TC meeting
 - Cost of people/space driving ASHRAE’s initiative
- Toxic Shelter Guidance (Martin Timm)
 - “Informal remarks” - What could happen?
 - No specific information for industrial facilities on ventilation
 - Residential data is available

- Refinery does include limited information
- ASHRAE providing data for infiltration of toxics
- Shelter vs. evacuate “by wind”
 - When does the shelter become untenable
 - Instructions for leave vs. stay
- Preparing literature search
 - Looking to see interest within TC 9.2
 - Is there energy for a Gap analysis
 - Erick/Matt discussed some experience
 - Risk (company) vs. protection of people (ventilation)
 - Eric’s handbook comments all in similar focus guide
 - Siting: for fire/explosion not much on toxic
 - (Ghosh) nuclear does this for nuclear or toxic release
 - (Schowe) design guide w/formula looking at density/contaminate distribution
 - (Kay Clark) echo Schowe’s discussion
 - (Abramson) bomb shelter [section 2] for physiological data
- UNEP providing training on refrigerants
 - Volunteers for creating a guideline/checklist

23. Adjourn Announcement of Next Meeting

- Next meeting 6/30/2020 @ Annual Conference, Austin

Adjourn: Binder moved. 2:55 pm

Action Items:

Action for	Action Item
Marple	Handbook chapters published to web (confirm: capture "TC 5.8" chapters)
Phyfe/Marple	Toxic shelter contact lists

Respectfully submitted

Duncan Phyfe
Secretary
February 6, 2020

Attachments:

- TC 9.2 Agenda for Orlando
- TC 9.2 Approved Meeting Minutes from 2019 Summer /KC (not including attachments)
- TC 9.2 Sign-In
- Orlando 2020, TAC Section Head Breakfast Handout

**ASHRAE TC 9.2 – Industrial Air Conditioning and Ventilation Committee
Annual Meeting - Virtual Meeting**

Attendance Sign-In

Username	Full Name	Company	TC 9.2 Membership?	ASHRAE Member?	ASHRAE YEA?
dphyfe@aldenlab.com	Duncan Phyfe	Alden	TC Voting Member	Yes	No
ronald.jensen@frontier.com	Eileen Jensen	Bonneville Power Administration	Corresponding Member	Yes	No
bill.lampkin@greenheck.com	Bill Lampkin	greenheck fan corp	TC Voting Member	Yes	No
michael.connor@wsp.com	Mike Connor	WSP USA Buildings Inc.	TC Voting Member	Yes	No
vance_payne@yahoo.com	W. Vance Payne	NIST	Guest	Yes	No
mckernan.john@epa.gov	John McKernan	US EPA	TC Voting Member	Yes	No
mikeb@exphvac.com	Mike Baucom	Bebco Environmental	TC Voting Member	Yes	No
sam_zhao68@hotmail.com	Samuel Zhao	Worley	Guest	Yes	No
bkumpf@camposengineering.com	William A. Kumpf	Campos Engineering, Inc.	Corresponding Member	Yes	No
Erich.Binder@worley.com	Erich Binder	EBCL	TC Voting Member	Yes	No
dghosh@southernco.com	Deep Ghosh	Southern Nuclear	Corresponding Member	Yes	No
bkumpf@camposengineering.com	William A Kumpf (Bill)	Campos Engineering, Inc.	Corresponding Member	Yes	No
kmarple@benzco.com	Kevin Marple	Benz Air Engineering	TC Voting Member	Yes	No

ASHRAE TC 9.2 – Industrial Air Conditioning and Ventilation Committee
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Attendance Sign-In



ASHRAE
Programs
Important Dates as of July 8, 2020
Joel G. Foster, P.E., C.E.M. TC9.2 Programs

2020 Winter Meeting – Orlando, FL

Website can be used for submission in Confex with Programs Chair Support.

REVISED IMPORTANT SUBMISSION DATES CHANGES in "RED"

- Monday, July 8, 2020: Final Conference Papers Due - Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment); Request for Conference Paper Sessions Due
NOTIFICATIONS Going out this week

- **August 3, 2020:** Program Submission Deadline
Moved back 1 day.
- **Monday, August 17, 2020:** Final Conference Papers Due Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment); Request for Conference Paper Sessions Due
Moved back from August 9.
- **Monday, August 31, 2020:** Conference Paper Accept/Revise/Reject Notifications
Moved back 5 days.
- Monday, September 14, 2020: Revised Conference Papers/Final Technical Papers Due - **Preliminary**
- Monday, September 21, 2020: Conference and Technical Paper **Final Accept/Reject Notifications**
- **Monday, October 5, 2020:** Seminar, Workshop, Forum, Debate, and Panel Accept/Reject Notifications
Moved back 1 day.

PREVIOUSLY POSTED DATE

- Monday, March 18, 2020: Conference Paper Abstracts, Technical Papers and Paper Session Requests Due
- Monday, April 22, 2020: Conference Paper Abstract Accept/Reject Notifications
- Monday, June 17, 2020: Website Opens for Seminar, Workshop, Forum, Debate, and Panel Proposals
- Friday, July 26, 2020: Conference Paper Accept/Revise/Reject Notifications
- ~~Friday, August 2, 2020: Seminar, Workshop, Forum, Debate, and Panel Proposals Due~~
- ~~Friday, August 9, 2020: Revised Conference Papers/Final Technical Papers Due~~
- ~~Friday, August 26, 2020: Conference and Technical Paper Final Accept/Reject Notifications~~
- ~~Friday, October 4, 2020: Seminar, Workshop, Forum, Debate, and Panel Accept/Reject Notifications~~

Technical Committee for Industrial Air Conditioning & Ventilation

ASHRAE Guide for the Design, Installation, Maintenance and Operation of Heating, Ventilation and Air Conditioning Systems for Hazardous Spaces

Forward:

This guide is dedicated to the individuals who work at Oil Refineries and Chemical Manufacturing Facilities and put their lives on the line every day to provide us all with the products and services we depend upon daily, in the hope that it can provide meaningful information and make their facility a safer place to work.

Credits:

Contributors include many fellow volunteer participants at ASHRAE, including the original Subcommittee Members, Eric Binder, a private consultant, Abdel Darwiche with Guttman & Blaevoet Consulting, Bill Lampkin with Greenheck Fan, Vernon Peppers, retired, George Menzies with FibreCast and Tom Axley with the Rimkus Consulting Group.

Recent contributors to the process of editing and proof reading include Erik Ostberg with British Petroleum, Mak Kampen with ConocoPhillips, John McKernan with the Environmental Protection Agency, and Duncan Phyfe with Alden Research Laboratory.

Many special thanks to Deep Ghosh with Southern Company, Eileen Jensen with Bonneville Power Administration and Kevin Marple with Benz Air Engineering, along with Mark Owen, Michael Vaughn and Cindy Michaels who serve us all as Members of the ASHRAE Publishing Committee.

Dedication:

This guide is dedicated to the fond memory of Mr. Wayne Lawton, a fellow ASHRAE Committee Member, friend, and trusted mentor. May he rest in peace, assured that his adamant insights regarding the purpose and intention of this guide have been faithfully instilled.

Subject: TC 9.2 Liaison Report

Submitted By: Douglass Abramson

As the Liaison for TC 9.2 to MTG OBB and Tc 2.10 Resilience and Security. (July 20, 2020)

1. TC 2.10 conducted a Zoom meeting on 07/08/2020. The following items of interest were discussed:
 - ASCE/AEI/ASHRAE Envelope Resilience Standard, Cold Climate Resiliency Guide.
 - ASHRAE Guide 29- Risk Management, the committee proposed the withdrawal of the guide.
 - Committee Proposing items for the seminars and forums for the Chicago Meeting in January 2021 and June of 2021.
 - Introduced a new business item to review and update the title purpose and scope of the newly established TC.

2. MTG OBB, Occupant Behavior in Buildings
 - Presentation of IEA/EBC Annex 79, "Occupant Centric Building Design and Operation"

 - OBB plans for publications ASHRAE Fundamentals 2021, Chapter 19
 - ASHRAE HVAC Applications 2023, Chapter 65

TC 9.2 should review Chapter 65 to evaluate how it might interact with our Chapters in the Applications handbook.



TAC

TC Chair - Vice Chair Breakfast

**In all your interactions at these meetings,
please remember...**

Code of Ethics

*“As members of ASHRAE or participants in ASHRAE activities,
we pledge to act with honesty, fairness, courtesy,
competence, integrity and respect for others in our conduct.
We will avoid conflicts of interest and behavior that is
discriminatory and/or harassing.”*



Welcome and Introductions

- I am skipping introductions.
- Note that in the presentation, the abbreviation of TC is also applied to TG, TRG, and MTG. In TAC, we often refer to these groups collectively as Functional Groups (FG's).
- GoToWebinar –
 - Participants are on mute
 - Use chat feature to submit questions. Dustin Meredith will monitor.
- We will make this presentation available as a pdf and post on the Basecamp site
- All times in this presentation are US Eastern Time Zone



What is different for this “breakfast” meeting

- Breakout meeting with your Section Head is being held separately
- Steve Hammerling has forwarded to the TC Chairs the normal handout. Some of that information will be covered by the liaisons later. Other topics can be covered during your Section Head meeting.

Agenda

Topic	Presenter	Time
Information for TC Leadership	TAC Chair	30 mins
Liaison Reports <ul style="list-style-type: none">• Tech Council (Dennis Knight) if available• CEC (Michael Collarin)• REF-CPCC (Rajan Rajendran)• EHC including ETF update (Wade Conlan)• RAP (Reinhard Radermacher)• RAC (David Yashar)• RBC (Paul Francisco)	Liaison Reports	30 mins
TC Chairs Training - There is Change in the Air	Victor Goldschmidt	60 mins



CELEBRATING
125
YEARS

Committee Meeting Schedule is Available

The screenshot shows a web browser window with the URL ashrae.org/conferences/ashrae-2020-virtual-conference. The page features a navigation menu with items like 'REGISTRATION INFORMATION', 'TECHNICAL PROGRAM', 'VIRTUAL CONFERENCE SCHEDULE SUMMARY', and 'COMMITTEE MEETINGS'. The 'COMMITTEE MEETINGS' section is expanded, displaying a green arrow button labeled 'COMMITTEE MEETINGS'. Below this, the text states: 'ASHRAE will conduct the business and technical meetings typically held during the ASHRAE Annual Conference in an online format. Beginning in late May and running through the end of July, online meetings will be scheduled for standing committees, councils, the Board of Directors, technical committees, standards project committees and others. Just like at ASHRAE's face-to-face Annual Conference, attendance at committee meetings are open to all society members, to all registered guests at scheduled Society Conferences, and to those invited by the chairman at the request of a member. **You are encouraged to attend any of these meetings in which you have a technical interest.** If you are interested in attending any of the meetings taking place this summer please email meetings@ashrae.org with the name, date and time of the meeting of interest and information will be sent to you about how to join the online meeting. Committee Meeting Schedules now available!

FROM YOU!
Click here for more information



Virtual Meeting

- **TC/TRG/MTG Meetings from June 1 to July 21**
 - TC members should receive the invite/log in information from the TC chairs. TC chairs are receiving this information this week.
 - If you are interested in attending any of the meetings taking place this summer please email meetings@ashrae.org with the name, date and time of the meeting of interest no later than close of business the day before the meeting and information will be sent to you about how to join the online meeting.
- TAC - June 25, 9 AM to noon and 1 to 3 PM
- TAC – July 22, 9 AM to noon
- TC and TAC Roster rollover date is August 1

All times are US Eastern Time Zone



ASHRAE 2020 Virtual Conference Event Planning

Following are events of importance to TC Leadership

TC Chairs / V-Chairs Breakfast + Training Wed, May 27 8:00 – 10:00 AM
or Thurs, May 28 3:00 – 5:00 PM

For Subcommittee Chairs:

- Handbook Training Workshop Friday, June 5 10:00 – 11:00 AM
- TC Program SubC Training Tuesday, July 7 1:00 – 2:00 PM

All times are US Eastern Time Zone



ASHRAE 2020 Virtual Conference Event Planning

Research Subcommittee Chairs

Recording PPT for Breakfasts	7/8/2020	9:00am	11:30am
Research Subcommittee Chairs Sec #1	7/13/2020	8:00am	10:00am
Research Subcommittee Chairs Sec #2	7/13/2020	10:00am	12:00pm
Research Subcommittee Chairs Sec #3	7/14/2020	8:00am	10:00am
Research Subcommittee Chairs Sec #4	7/14/2020	10:00am	12:00pm
Research Subcommittee Chairs Sec #5	7/15/2020	8:00am	10:00am
Research Subcommittee Chairs Sec #6	7/15/2020	10:00am	12:00pm
Research Subcommittee Chairs Sec #7	7/16/2020	8:00am	10:00am
Research Subcommittee Chairs Sec #8	7/16/2020	10:00am	12:00pm
Research Subcommittee Chairs Sec #9	7/17/2020	8:00am	10:00am
Research Subcommittee Chairs Sec #10	7/17/2020	10:00am	12:00pm



ASHRAE Virtual Conference TC Chairs Deliverables

By the end of the day, Tuesday July 21, you should have entered or submitted to your Section Head:

- TC Activity Form

Other 2020 Virtual Conference Topics

- Certificates of Appreciation to outgoing TC Chairs
 - Your choice for receipt:
 1. Virtually, during your TC meeting,
 2. In person during the Chicago meeting, or
 3. From your Chapter president, during an upcoming, in-person Chapter meeting

Coordinate with your Section Head

TC Reorg

- The TC ReOrg committee was organized as an ad hoc committee, led by Sarah Maston.
- An update was distributed to TC Chairs in late December
- Since then, the TC ReOrg committee held their final meeting in January. They are preparing a report and recommendations to deliver to TAC.
- Going forward, the TC ReOrg will be handled by a new team within TAC, led by Larry Smith.

TC Reorg

For those TC's that have decided to merge, you need to:

- Vote on the revised Title & Scope. Any combining TC's need to be voting on the same Title & Scope.
- Proposed leadership and voting roster need to be completed.
- Please work closely with your Section Head.
- So far, TAC has approved 4 TC mergers – 3.2 & 3.3, 8.10 & 8.12, 9.4 & 9.8, 7.3 & 7.8.

For those TC's still in the discussion phase, please keep your Section Head aware of your discussion status.

TC Reorg

Section 1.5 of the TC MOP calls for an annual review of each TC:

1.5.1 Once a year, preferably at, or prior to, each Annual meeting, the Committee Chair and Committee Membership shall evaluate their progress in accomplishing the purpose for which they were constituted and recommend one of the following actions...

For TC's, those actions are to continue, merge, or dissolve.

George B Hightower Technical Achievement Award

- **ASHRAE GEORGE B. HIGHTOWER TECHNICAL ACHIEVEMENT AWARD NOMINATION FORM**
- In recognition of exceptional service in the area of technical leadership and technical contribution **in the past four years.**
- Eligibility Points: While this award is given on the basis of service **in the past four years** as described in the nominator's statement, nominees must have earned a minimum of 10 points for career service on the nominating TC/TG. Eligibility points are defined in the form.
- Due date – September 1



George B Hightower Technical Achievement Award History

- 2003-2004 Richard L. Hall – TC 8.1
- 2004-2005 *No nomination*
- 2005-2006 George Briley – TC 10.1
- 2006-2007 *No nomination*
- 2007-2008 Howard J McKew – TC 9.1
- 2008-2009 Paul Miclea – TC 5.9
- 2009-2010 Dharam Punwani - TC 1.10
- 2010-2011 Gary Phetteplace – TC 6.2 & TC 6.8
- 2011-2012 Don Beaty – TC 9.9
- 2012-2013 Lucas Hyman – TC 1.10
- 2013-2014 Gursaran Mathur – TC 5.7
- 2014-2015 John Carter – TC 4.3
- 2015-2016 Steve Duda – TC 4.3 & TC 9.1
- 2016-2017 Paul Lindahl – TC 3.6 & TC 8.6
- 2017-2018 Art Halstrom – TC 1.6
- 2018-2019 David Moss – TC 9.9
- 2019-2020 Devin Abellon – TC 6.5

TC Manual of Procedures (MOP)

- Latest update available on ASHRAE website
- Outlines membership Categories & Requirements
- Summarizes the responsibilities of the executive committee
- Defines TC purpose & scope
- Lists the ASHRAE acronyms
- Guide to parliamentary motions in Appendix H

Reminders

- TC meetings are open, with the exception of Executive Session
- Accommodate time for your Section Head during your meeting
- You may have quite a few attendees at your virtual meeting. Develop a plan for providing them the floor. Remember, as Chair, you control the meeting.

Equipping Yourself to Serve as TC Chair

- Take advantage of all training opportunities
- Recruit strong sub-committee chairs
- Read ASHRAE's TC MOP
- Study Robert's Rules of Order
- Establish and Maintain a Vision
- Recognize Extra Efforts

Interim Meetings – New Announcement Procedure

- We will initiate a listing of the interim meetings on the Technical Committees webpage (<https://www.ashrae.org/technical-resources/technical-committees>), similar to the listing done for Standards.
- TC interim meetings should be **posted** (by emailing the alias TCmeetings@ashrae.net) **two weeks before an online meeting** and **four weeks before a face-to-face meeting**. The person emailing should also include the meeting call-in info/ link for posting.

Interim Meetings – New Announcement Procedure (Cont)

- To keep our members apprised of the meetings, we will add a notice in the ASHRAE Journal Newsletter (bimonthly) to remind our members to check the listing and to provide a link to the list.

2019–2024 ASHRAE Strategic Plan

- Mission - To serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields.
- Vision - A healthy and sustainable built environment for all.
- Values – Excellence, Commitment, Integrity, Collaboration, Volunteerism, Diversity



2019–2024 ASHRAE Strategic Plan

Goals:

1. Position ASHRAE as an Essential Knowledge Resource for a Sustainable, High-Performance Built Environment
2. Maximize Member Value and Engagement
3. Optimize ASHRAE's Organizational Structure to Maximize Performance



2019–2024 ASHRAE Strategic Plan

Strategic Plan Areas and Initiatives:

Initiative Area: Built Environment of the Future

1. Resilient Buildings and Communities
2. Indoor Environmental Quality

Initiative Area: Future of ASHRAE

3. Organizational Streamlining
4. Improve Chapter Engagement, Capacity and Support



Thank You

Thank you for all you do for ASHRAE! Your contributions to society are important and appreciated.





TAC

TC Chair - Vice Chair Breakfast

2020 Virtual Annual Meeting

Conferences & Expositions Committee (CEC)

2020 Virtual Conference

What to Expect

**80 on-demand sessions + 12 live sessions = 92 technical sessions
at your fingertips for 18 months.**

On-demand Technical Program: Available Monday, June 22

- **80 sessions accessible on your terms for 18 months**
- Conference proceedings. Download the technical papers, conference papers and extended abstracts.

Live Four Day Event: Monday, June 29 - July 2

- **12 featured technical sessions presented live and available for download**
- Sessions addressing the latest information relating to the COVID-19 pandemic
- Live forum for Q&A with speakers
- Access to scheduled live chat sessions with speakers for on-demand sessions
- Virtual networking happy hours with specific topics and social focus
- Leadership Moments providing updates from Society leaders

- **TC Program Subcommittee Training - Tuesday, 7/7/2020 1:00-2:00 PM EDT**



2021 Winter Conference - Chicago

Track #	Track	Track Chair
1	HVAC&R Fundamentals and Applications	Robert Cox bob.cox@jacobs.com
2	Systems and Equipment	Dr. Marianna Vallejo marianna.vallejo@jacobs.com
3	Refrigeration and Refrigerants	Gary Debes gary.debes@comcast.net
4	Environmental Health Through IEQ	Stephen Idem sidem@tntech.edu
5	Building Performance and Commissioning for Operation and Management	Lee Ribbeck lee.riback@gmail.com
6	Energy Conservation	Nivedita Jadhav nivi2307@gmail.com
7	International Design	Farhan Mehboob farhan.mehboob@smehboob.com
8	Standards, Guidelines and Codes	Kyle Inge kinge@burns-group.com



2021 Winter Conference - Chicago

Deadlines:

Monday, June 15, 2020: Website Opens for Seminar, Workshop, Forum, Debate, and Panel Proposals

Wednesday, July 8, 2020: Final Conference Papers Due - Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment); Request for Conference Paper Sessions Due

Monday, July 27, 2020: Conference Paper Accept/Revise/Reject Notifications

Monday, August 3, 2020: Website Closes for Seminar, Workshop, Forum, Debate, and Panel Proposals

Monday, August 10, 2020: Revised Conference Papers/Final Technical Papers Due

Monday, August 24, 2020: Conference and Technical Paper Final Accept/Reject Notifications

Monday, October 5, 2020: Seminar, Workshop, Forum, Debate, and Panel Accept/Reject Notifications



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Upcoming Topical Conferences

Date	Conference	Location
August 12 – 14, 2020	2020 Building Performance Analysis Conference & SimBuild Co-organized by ASHRAE and IBPSA-USA	Chicago, IL
September 14 – 16, 2020	IAQ 2020: Indoor Environmental Quality Performance Approaches	Athens, Greece
October 1 – 2, 2020	The Fourth International Conference on Efficient Building Design	Beirut, Lebanon
August 15 – 18, 2021	Ventilation 2021: 13th International Industrial Ventilation Conference for Contaminant Control	Toronto, Canada

<https://www.ashrae.org/conferences/topical-conferences>





TAC

TC Chair - Vice Chair Breakfast

2020 Virtual Annual Meeting

Refrigeration Technology Committee

Comfort – Process – Cold-Chain

New REF-CPCC Subcommittee Structure

- New REF-CPCC Subcommittees:

- In order to better collaborate with TCs & others 7 new subcommittees were created as follows:

- Awards Subcommittee - Chair: Ayman Eltalouny
- Cold-Chain Subcommittee – Chair: Dustin Lilya
- HVAC Subcommittee – Chair: Walid Chakroun
- Program Subcommittee – Chair: Steven Gill
- Research Subcommittee – Chair: Yunho Hwang
- R in ASHRAE Subcommittee – Chair: Didier Coulomb
- Ref. Tech Report Subcommittee – Chair: Martin Dieryckx

- All subcommittee meetings will be held via web meetings and held between Society meetings in order to allow for easier participation.



Refrigeration Technology Committee for Comfort – Process – Cold-Chain – REF CPCC

It is our hope that these new subcommittees will bring a greater focus on the R in ASHRAE issues and opportunities and provide a new communication and collaboration vehicle between Society level TC members, Regions, and Chapters.

More information on each new REF-CPCC subcommittee, their scope, objectives, and upcoming meetings dates and times can be obtained from REF-CPCC staff liaison – Mike Vaughn via e-mail at MORTS@ashrae.net





TAC

TC Chair - Vice Chair Breakfast

2020 Virtual Annual Meeting

ENVIRONMENTAL HEALTH COMMITTEE (EHC)

EHC - Update

- Re-Organizing EHC to the following sub-committees
 - <https://www.ashrae.org/communities/committees/standing-committees/environmental-health-committee-ehc>
- Policy
 - Identify major environmental health trends impacting HVAC&R
 - Create Recommend policies for Emerging Issues Briefs, Position Documents and RP
- Education
 - IEQ column in the ASHRAE Journal
 - Handbook chapter
- Coordination and Outreach
 - Interaction – internal to ASHRAE committees
 - Interaction - external societies
- ExCom

EHC - Update

- Issued the following documents this past year;
 - EIB: Pandemic COVID-19 and Airborne Transmission (April 17, 2020)
 - <https://www.ashrae.org/file%20library/technical%20resources/covid-19/eiband-airbornetransmission.pdf>
 - PD: Infectious Aerosols (April 14, 2020)
 - https://www.ashrae.org/file%20library/about/position%20documents/pd_infectiousaerosols_2020.pdf
 - Handbook: 2021 Fundamentals Chapter 10
- Documents being worked on currently
 - PD: Indoor Air Quality
 - PD: Environmental Tobacco Smoke
 - PD: Indoor Carbon Dioxide
- To be considered
 - EIB: 3D Printers
 - EIB: Indoor Environmental Impact of Climate Change

Epidemic Task Force (ETF) - Update

- EHC Cognizant to Epidemic Task Force (ETF) per of ASHRAE ExCom
 - ETF was established to help deploy ASHRAE's technical resources to address the challenges of the current pandemic and future epidemics as it relates to the effects of heating, ventilation, and air-conditioning systems on disease transmission in healthcare facilities, the workplace, home, public and recreational environments.
- Primary role is for the ETF to communicate with those involved in the built environment:
 - Review all technical questions/requests for technical guidance submitted
 - Coordinating activities of ASHRAE's internal resources
 - Partnering with and monitoring the activities of external organizations, including the more than 60 members of the [ASHRAE Associate Society Alliance \(AASA\)](#) of organizations related to the HVAC&R industry around the world
 - Reviewing, organizing, consolidating and publishing clear and concise summaries with citations of the most relevant information available to the built environment

Epidemic Task Force (ETF) - Update

- Supported expedited update of [Position Document on Infectious Aerosols](#). Board Approved April 14, 2020. (First published in 2009)
- ASHRAE statements on SARS-CoV-2
- Expedited the EIB “Pandemic COVID-19 and Airborne Transmission”
- COVID-19 resources/guidance page [ashrae.org/covid19](https://www.ashrae.org/covid19)
- Answers to over 350 questions to web site (COVID-19@ashrae.org)
- Meetings with AIA, NYSERDA, DOE, IEA
- Partnership with government on HVAC for alternate care facilities (USACE, USAF, USN, NIOSH)
- Reviewed/commented on state guidance (Florida, Michigan)
- Working on...
 - Immediate guidance for current COVID-19 Pandemic
 - Near term guidance for 2nd wave
 - Long term guidance to future proof

Epidemic Task Force (ETF) - Update

Focus Areas as of May 18, 2020

- Healthcare (including long-term care)
- Residential
- Commercial / retail
- Schools
- Transportation
- Building Readiness
- Resource inventory
- Science / literature review
- Filtration and disinfection
- Communications
- Grassroots
- Advocacy / developing economies
- External partnerships

Epidemic Task Force (ETF) - Update

Task Force

- Review Public & Industry Needs
- Creates a content development plan
- Assigns Teams work based on Subject Matter Expertise
- Communicates with ASHRAE Leadership and Board of Directors

Subject Matter Teams

- Determines current state of technology and practice and gaps to be filled
- Creates New or Updates Existing Content
- Performs internal PEER Review
- Respond to questions from Industry and public

Task Force

- Team Leaders Perform PEER Review of other team's work
- Coordinates and harmonizes common between teams
- Gives green light to ASHRAE staff to publish content to website
- Coordinates with outside organizations (AIA, BOMA, CIBSE, ETC.)

Communication Team

- Designed website for ease of access and navigation
- Processes content and post to the web
- Develops press releases and public communication strategies

ASHRAE Support Staff

- Tracks Task Force Activities and Deadlines
- Receives questions and sends to SMEs for response
- Develops lists of FAQs for refinement of responses and posting on web

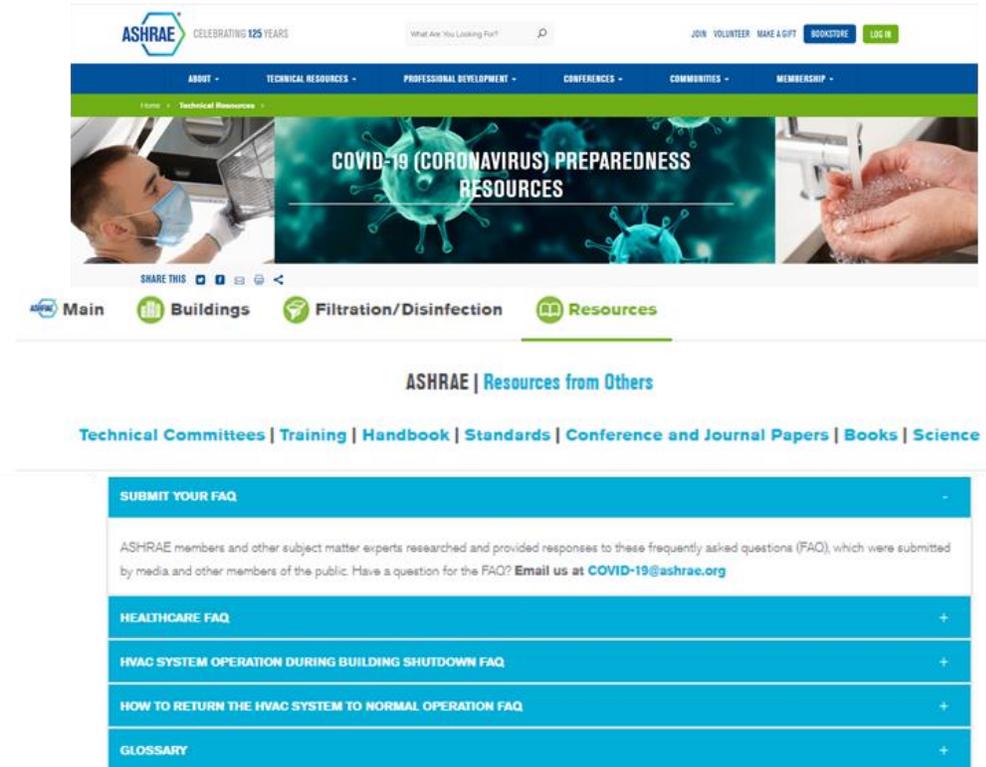
ASHRAE Government Affairs

- Monitors activities of Federal, State, Local and International Governments, Agencies and Policy Makers
- and coordinates with Task Force, SMEs and ASHRAE leadership
- Organizes timely responses to requests for assistance

Epidemic Task Force (ETF) - Update

Representation on the ETF Teams:

- Section 1: 1.4, 1.5, 1.8, 1.9, 1.12
- Section 2: 2.1, 2.2, 2.3, 2.4, 2.5, 2.8, 2.9, 2.10
- Section 3: 3.3, 3.6
- Section 4: 4.1, 4.2, 4.3, 4.4, 4.7, 4.10
- Section 5: 5.3, 5.5, 5.6, 5.10
- Section 6: 6.1, 6.2, 6.5, 6.7, 6.9
- Section 7: 7.1, 7.3, 7.5, 7.6, 7.7, 7.8, 7.9
- Section 8: 8.3, 8.6, 8.10, 8.12
- Section 9: 9.1, 9.2, 9.3, 9.6, 9.7, 9.8, 9.9, 9.10, 9.11, 9.12
- Section 10: 10.2, 10.6



Epidemic Task Force (ETF) - Update

Voting

- Bill Bahnfleth – Chair, (External Contacts)
- Wade Conlan (Bldg. Readiness, Resources)
- Jason DeGraw (Transportation)
- Traci Hanegan (Healthcare)
- Rick Hermans (Schools, Grassroots)
- Luke Leung (Commercial, Retail)
- Steve Martin (Filtration)
- Jim Ridenhour
- Max Sherman (Residential)
- Stephanie Taylor (Science)

For technical guidance, visit

[ashrae.org/covid19](https://www.ashrae.org/covid19)

Non-Voting

- Walid Chakroun (Advocacy, GAC)
- Dennis Knight (Communications, ExO)
- Jay Kohler (TAC)
- Wayne Stopplemoor (Stds)

Society Staff

- Vanita Gupta (Director of Marketing)
- Steve Hammerling (Manager of Technical Resources)
- Stephanie Reiniche (Director of Technology)
- Alice Yates (Director of Government Affairs)



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TAC

TC Chair - Vice Chair Breakfast

2020 Virtual Annual Meeting

Research Advisory Panel

ASHRAE Research Strategic Plan Development

- Research Advisory Panel kick-off November 2019
- Update to coordinate with ASHRAE Strategic Plan
- 4 Meetings held
- Survey conducted and evaluated
- Survey had 700+ responses, ran mid January through mid February

RAP Membership	
Reinhard Radermacher (Chair)	Chris Wilkins (RAC VC)
Larry Markel (past RAP)	Pawel Wargocki (Intl)
Eckhard Groll	Kishor Khankari
Allen Chad Kirkwood	Dawen Lu
Chun-cheng Piao	Agami Reddy



Current Status

- Derived 7 Initiatives (Working Titles)
 - Understanding IEQ and Impact on Productivity, HVAC airborne pathogen transmission and control
 - Education and Outreach
 - Sustainably – Energy and Resources
 - Resilience for buildings and communities
 - Tools and Standards
 - HVAC Components including new refrigerants
 - Leveraging ASHRAE Research
- Drafting in Progress



TAC

TC Chair - Vice Chair Breakfast

2020 Virtual Annual Meeting

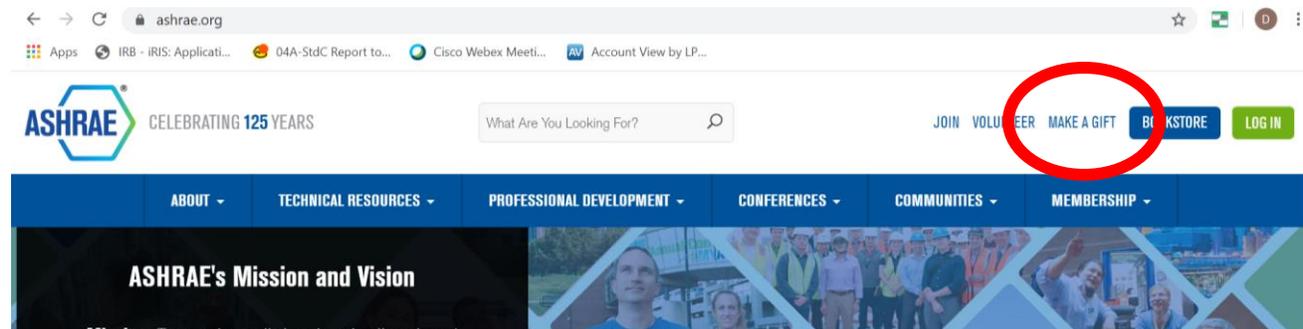
Research Administration Committee

Research Budget

- Typically \$2.6M - \$2.7M per year
 - Donations
 - Research Promotion sponsored events
 - AHR Expo contribution
- Funds collected in a given SY becomes RAC budget in next SY
- Funds:
 - Research Projects – 12-15 new projects per year
 - Grants and Awards
 - Innovative Research Grants (\$125k over 3 years)
 - New Investigator Award (\$125k over 3 years)
 - Grant In Aid – Typically 20-25 per year @ \$11,500

Fiscal Impact from Covid-19

- Reduced revenue from closures, cancellations, austerity
- Top Priority: Ensure continuity of core function
 - TC developed research addresses members most direct needs
- Unsolicited Research Projects (URPs) will not be considered for now
- Grants and awards will be delayed until budget is approved, may be suspended
- Encourage your members to donate to ASHRAE research!





TAC

TC Chair - Vice Chair Breakfast

Residential Buildings Committee

Residential Buildings Committee

- Currently in its 5th year as a standing committee under Tech Council
- Mission is to help ASHRAE have a greater impact in the residential space
 - Internally – help coordinate and facilitate residential activities that help stakeholders
 - Externally – communicate with stakeholders to identify needs and disseminate ASHRAE products

Residential Buildings Committee

- In the process of analyzing input from external stakeholders regarding priority needs of the residential sector
 - Identify those suited to ASHRAE
 - Prioritize
- In the process of identifying priority TCs for residential activities but which do not have current RBC member – will seek formal liaison