



**TECHNOLOGY  
COUNCIL  
Winter Conference Orlando  
February 12, 2025**

*NOTE: These are not official minutes until approved by Technology Council.*

**MOTIONS**  
Technology Council Winter Conference Orlando Motions  
February 12, 2025

Motion Number	Motion
1	<p>Moved as a consent motion:</p> <p>Technology Council recommend to the Board of Directors that the Rules of the Board 1.201.004 <i>Policy and Definitions of ASHRAE Standards and Related Documents</i>, be revised as shown below:</p> <p><b>1.201.004 Policy and Definitions of ASHRAE Standards and Related Documents</b></p> <p>1.201.004.2 Place emphasis on development of documents that establish ASHRAE as the leader in HVAC&amp;R technology, providing state-of-the-art best-practice guidance that advances the arts and sciences of our industry. <del>Such guidelines and state-of-the-art standards should normally be written in informative language.</del></p> <p>Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.003.3 <i>Operation</i>, be approved as shown below:</p> <p>2.425.003.3</p> <p>A. All ASHRAE standards <del>intended for ANSI designation</del> shall be submitted for ANSI approval as American National Standards.</p> <p>Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.003.6, <i>Operation</i>, be approved as shown below:</p> <p>2.425.003.6</p> <p>D. Formation of all new standard project committees and titles, purposes and scopes, shall be approved by the <del>Board of Directors</del> <u>Technology Council</u> or its designee before the project committees take action.</p> <p>Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.004.2, <i>Policy on Standards Committee Document Development</i>, be approved as shown below:</p> <p>2.425.004.2</p>

	<p>Consensus standards define minimum values or acceptable performance, whereas other documents, such as guidelines or design guides, <u>offer practical guidance, best practices, or</u> encourage enhanced performance.</p> <p>Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.008, Strategic Plan, be approved as shown below:</p> <p><b>2.425.008 Strategic Plan</b></p> <p>This committee shall <del>develop procedures for recommending updates to the strategic plan on a continuous basis. As a minimum the committee shall</del> submit a report to the council prior to the Annual Meeting <del>that</del>. The report includes the <del>current</del> status of each activity which supports the fulfillment of the committee's assignments under the strategic plan. The committee shall report to the council all recommendations for changes to the strategic plan as provided by the committee's constituents prior to the Annual Meeting.</p> <p><i>Note: Post Meeting – BOD approved 2/12/25</i></p>
<p><b>2</b></p>	<p>Technology Council approve the proposed draft response to the Fall 2024 CRC Motion, Region XV India Chapter – Motion 24-15-1 (September 22, 2024) as shown below.</p> <p><b>Proposed Draft Response:</b> ASHRAE has Standard 62.1, Ventilation for Acceptable Indoor Air Quality that provides procedures for monitoring IAQ. The current ASHRAE headquarters was designed to exceed ASHRAE Standard 62.1-2016. ASHRAE headquarters currently has an Indoor Air monitoring system. The system monitors the large conference areas. The data is on the ASHRAE Dashboard that should be available soon to ASHRAE members. A response to the conferences aspect of this is referred to CEC.</p> <p><b>Background: Fall 2024 CRC Motion, Region XV India Chapter – Motion 24-15-1 (September 22, 2024):</b> ASHRAE implement a standardized procedure for monitoring and reporting Indoor Air Quality (IAQ) across all ASHRAE-operated facilities and events. This procedure will ensure that IAQ is consistently monitored and reported to maintain a healthy and productive environment for all members and attendees.</p> <p>Effective AIQ monitoring ensures that indoor environments meet health and comfort standards, benefiting the well-being of all individuals present. It helps ensure consistent environmental quality across all ASHRAE facilities and events. Regular reporting of AIQ data enhances transparency and allows for timely interventions if issues are detected, ensuring a proactive approach to managing indoor air quality.</p>
<p><b>3</b></p>	<p>Technology Council recommend to Board Of Directors (BOD) ExCom that the <u>Infectious Aerosols Position Document (PD)</u> be revised.</p> <p><i>Note: Post Meeting – BOD ExCom approved via letter ballot 2/25</i></p>

<p>4</p>	<p>Technology Council recommend to BOD ExCom that the Title, Purpose and Scope (TPS) of the ASHRAE PD "<i>Infectious Aerosols</i>" be revised as shown:</p> <p><b>Title:</b> Infectious Aerosols</p> <p><b>Purpose:</b> Inform the ASHRAE membership and the public of the impact of HVAC systems on the distribution of infectious-aerosols. These aerosols can subsequently be inhaled directly in the upper respiratory tract, deep into the lung, or may <u>settle out deposit</u> on surfaces and <u>become indirectly transmitted</u> <u>cause exposure</u> by resuspension or fomite contact.</p> <p><b>Scope:</b> The document will address the impact of HVAC systems <u>that are described in the Systems Handbook</u> on <u>exposure to infectious aerosols</u>. <u>It will discuss available engineering controls and requirements for their use, in particular, as specified in ASHRAE Standard 241</u> that results in exposure.</p> <p>The document will address a variety of built and transportation environments.</p> <p>The document will <u>take positions and make recommendations that are supported by peer-reviewed research and for which references will be provided</u>.</p> <p>The document will be written with sufficient scientific rigor and references to be useful to specialists <u>such as a range of audiences</u>. Including policy makers, researchers, architects and engineers; and containing material that will be useful to the general public.</p> <p>The document will provide the content from which a brief can be prepared for advocacy purposes.</p>
<p>5</p>	<p><i>Note: Post Meeting – BOD ExCom approved via letter ballot 2/25</i></p> <p>Technology Council recommend to BOD ExCom that the TPS of the ASHRAE PD "<i>Unvented Combustion Devices and Indoor Air Quality</i>" be revised as shown:</p> <p><b>Title:</b> Unvented Combustion Devices and Indoor Air Quality</p> <p><b>Purpose:</b> The purpose of this position document is to inform the ASHRAE membership and the public of the <u>serious health effects and liability due to risks associated with</u></p>

	<p>emissions of pollutants from unvented combustion devices into indoor spaces, <u>and to make recommendations for mitigation of these risks.</u></p> <p><b>Scope:</b></p> <ol style="list-style-type: none"> <li>1. Define what is meant by unvented combustion devices <u>Include cooking and heating devices</u></li> <li>2. Reference health effects associated with exposure to pollutants from combustion devices <u>Consider the impacts of these devices on indoor air</u></li> <li>3. <u>Include suitable mechanisms for managing emissions</u></li> <li>4. Describe the types of indoor environments where unvented combustion appliances might be used including commercial buildings, homes and schools</li> <li>5. Include devices used in both developed and developing countries, such as gas stoves, fireplaces, and biomass cooking devices</li> <li>6. Exclude emissions from solid fuels, which are addressed by ASHRAE's Position Document on "Combustion of Solid Fuels and Indoor Air Quality in Primarily Developing Countries" candles and incense</li> <li>7. <u>Exclude emissions from the food that is cooked through the cooking process</u></li> </ol> <p><i>Note: Post Meeting – BOD ExCom approved via letter ballot 2/25</i></p>
<u>6</u>	<p>Technology Council recommend that the BOD approve a revision to the <i>Indoor Carbon Dioxide</i> position document (PD).</p> <p><i>Note: Post Meeting – BOD approved 2/12/25</i></p>
<u>7</u>	<p>Technology Council approve the revising of the <u>Combustion of Solid Fuels and Indoor Air Quality in Primarily Developing Countries</u> Position Document (PD) with Paul Francisco as chair of the Position Document Committee (PDC).</p>
<u>8</u>	<p>Technology Council reaffirm the <i>Resiliency in the Built Environment</i> PD.</p>
<u>9</u>	<p>Technology Council reaffirm the <u>Combustion of Solid Fuels and Indoor Air Quality in Primarily Developing Countries</u> PD.</p>
<u>10</u>	<p>Tech Council approve that the following members be appointed to the committee to revise the <i>Infectious Aerosols</i> PD:</p> <ul style="list-style-type: none"> <li>○ Meghan McNulty (PNNL, chair)</li> <li>○ Dennis Knight (Whole Building Systems)</li> <li>○ Chandra Sekhar (National University of Singapore)</li> <li>○ William Bahnfleth (Penn State)</li> <li>○ Katherine Ratliff (EPA)</li> <li>○ Lewis Radonovich (CDC)</li> <li>○ David Fisman (University of Toronto)</li> </ul>

<u>11</u>	Technology Council approve the addition of \$69,650 to the SY 25-26 Budget for Security Updates to and cloud migration of the OSR. <a href="#">See Attachment B</a> .
<u>12</u>	Technology Council approves the addition of \$86,400 to the SY 25-26 Budget to Implement Improvements to the OSR and the Project Committee Membership Application System. <a href="#">See Attachment B</a> .
<u>13</u>	Technology Council recommends to the Board of Directors that all ASHRAE Regions with Chapters outside United States and Canada to appoint a liaison (Regional position) who will work closely with the GTIC to help in interaction with the ASHRAE Chapters in their Region and help promote exchange of ASHRAE technical resources to meet its objectives.  <i>Note: Post Meeting – BOD approved 2/12/25</i>

**ACTION ITEMS**  
**Technology Council Winter Conference Orlando**  
**February 12, 2025**

AI#	Responsibility	Status	Description
1	Staff	New	To determine the best person on PubEd to reach out to REF about online special publications.

**ACTION ITEMS**  
**Technology Council Fall Virtual Meeting**  
**October 29, 2024**

*Secretary's Note: There were no new action items from this meeting.*

**ACTION ITEMS**  
**Technology Council Annual Meeting Indianapolis**  
**June 26, 2024**

AI#	Responsibility	Status	Description
1	Staff	Complete	To send EHC's 2024 Trends and Research Gaps report to RAC and TAC.
2	REF-CPCC	Ongoing	To look at the "H" in ASHRAE and the emerging trend of electrification of heating for comfort and process cooling. TAC to make recommendations for support of "H".
3	Staff	Ongoing	To send RBC, TAC, and RAC's Strategic Plan to Society Planning Committee.
4	Staff & Tech Council Leadership	Ongoing	To work with RAC to make sure RAP process is in the correct location in the rules.

**ACTION ITEMS**  
**Technology Council Spring Web Call**  
**March 11, 2024**

AI#	Responsibility	Status	Description
1	Staff	Complete	To send the ASHRAE Global HVAC&R Summit Final Report with Tech Council assignments to Tim Wentz.

<u>2</u>	Staff	Complete	To send the ASHRAE Global HVAC&R Summit Final Report with Tech Council assignments to the Standing Committee Chairs.
<u>3</u>	Wade Conlan	Complete	To arrange a working session between the Energy Efficiency in Buildings PD Committee and those who have opinions about the revised position document.
<u>4</u>	James Bennett	Complete	To share TAC inputs to the Strategic plan with the Society Planning Committee.
<u>5</u>	Standing Committees	Complete	To keep Susanna Hanson informed on Strategic Plan input.
<u>6</u>	Stephanie Reiniche	Complete	To record sentiments from this meeting regarding DEI for Ashish to bring to the Board.
<u>7</u>	Tech Council	Ongoing	To update the Tech Council Reference Manual to reflect the process for handling projects from the CEBD.

**Minutes**  
Technology Council

<b><u>Voting Members Present:</u></b> Wade Conlan, Chair Devin Abellon, Vice Chair Carl Huber Corey Metzger Costas Balaras Dru Crawley Heather Schopplein Joseph Sanders Larry Smith Mark Fly Michael Pouchak Richie Mittal Susanna Hanson Ashish Rakheja – GTIC Chair Natascha Milesi-Ferretti – RAC Chair Rachel Romero – RBC Chair Doug Scott – REF Chair Doug Fick – StdC Chair Kevin Mercer – TAC Chair	<b><u>Staff</u></b> Stephanie Reiniche, DOT Steve Hammerling, SMORT Ryan Shanley, SMOS Tanisha Meyers-Lisle, AMOS-Administration Derrick Nesfield, MOSP Leigh Lain Walker, MOBD Alice Yates, DOGA Kirstin Pilot, DOD Amber Thomas, Administrative Assistant
<b><u>Non-voting Present:</u></b> Max Sherman -EHC Vice Chair Steve Bushby – GTIC Vice Chair Carol Marriott – RBC Vice Chair Donald Brandt – REF Vice Chair Adrienne Thomle - StdC Vice Chair	<b><u>Guests</u></b> Jonathan Smith Trent Hunt Juliana Velez Peter Ernzen Buzz Wright Nisha Nair Christine Miner Paolo Tronville Lisa Ng Joel Deddens Charles Bertuch Doug Cochrane
	<b><u>TechC Voting Absent:</u></b> Marwa Zaatari – EHC Chair

**TechC Non-Voting Absent:**

Jin Wen – RAC Vice Chair  
Satheesh Kulankara – TAC Vice Chair

**1. CALL TO ORDER/OPENING COMMENTS**

Chair Conlan called the meeting to order at 9:00 A.M. EST. The Value Statement, the commitment to the Code of Ethics, the ASHRAE Core Values, and the Diversity Statement were shared during the meeting.

*Secretary's Note: Quorum was met with 18 voting members, including the Chair, at the start of the meeting.*

*All reports referenced in the minutes are on Basecamp in the folder "2025-02-12*

*Winter Conference Orlando.”*

## **2. REVIEW OF AGENDA**

### **A. Agenda Review**

The agenda was approved as presented.

## **3. MINUTES/ACTION ITEMS**

### **A. TechC Fall Meeting Minutes – 03A**

It was moved by Rachel Romero and seconded by Mark Fly that the Technology Council Fall Meeting minutes be approved.

**Tech C Vote: 17-0-1<sup>1</sup>**

**MOTION PASSED by Acclamation.**

### **B. Letter Ballot Updates – Ms. Thomas provided an update indicating all letter ballots issued since the Fall meeting were approved.**

### **C. Action Items**

The action items were updated as shown above in the action item table.

## **4. SUBCOMMITTEE REPORTS**

### **A. Operations (OPS)**

Susanna Hanson, OPS Chair, presented the report. The report is posted on Basecamp as *04A\_OPS Report to Tech Council.docx*.

Ms. Hanson moved Ops Motions 1-5 as a consent agenda motion as shown that:

**M1**

Technology Council recommend to the Board of Directors that the Rules of the Board 1.201.004 *Policy and Definitions of ASHRAE Standards and Related Documents*, be revised as shown below:

### **1.201.004 Policy and Definitions of ASHRAE Standards and Related Documents**

1.201.004.2 Place emphasis on development of documents that establish ASHRAE as the leader in HVAC&R technology, providing state-of-the-art best-practice guidance that advances the arts and sciences of our industry. ~~Such guidelines and state-of-the-art standards should normally be written in informative language.~~

**OPS Vote: 9-0-1**

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<sup>1</sup> Wade Conlan, Chair, abstained

Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.003.3 *Operation*, be approved as shown below:

2.425.003.3

- A. All ASHRAE standards intended for ANSI designation shall be submitted for ANSI approval as American National Standards.

**OPS Vote: 9-0-1**

Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.003.6, *Operation*, be approved as shown below:

2.425.003.6

- D. Formation of all new standard project committees and titles, purposes and scopes, shall be approved by the Board of Directors Technology Council or its designee before the project committees take action.

**OPS Vote: 9-0-1**

Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.004.2, *Policy on Standards Committee Document Development*, be approved as shown below:

2.425.004.2

Consensus standards define minimum values or acceptable performance, whereas other documents, such as guidelines or design guides, offer practical guidance, best practices, or encourage enhanced performance.

**OPS Vote: 9-0-1**

Technology Council recommend to the Board of Directors that the Rules of the Board 2.425.008, Strategic Plan, be approved as shown below:

**2.425.008 Strategic Plan**

This committee shall develop procedures for recommending updates to the strategic plan on a continuous basis. As a minimum the committee shall submit a report to the council prior to the Annual Meeting that. The report includes the current status of each activity which supports the fulfillment of the committee's assignments under the strategic plan. The committee shall report to the council all recommendations for changes to the strategic plan as provided by the committee's constituents prior to the Annual Meeting.

**OPS Vote: 9-0-1**

**Tech C Vote: 17-0-1<sup>2</sup>**

It was moved by Ms. Hanson that:

**M2**

Technology Council approve the proposed draft response to the Fall 2024 CRC Motion, Region XV India Chapter – Motion 24-15-1 (September 22, 2024) as shown below.

**Proposed Draft Response:** ASHRAE has Standard 62.1, Ventilation for Acceptable Indoor Air Quality that provides procedures for monitoring IAQ. The current ASHRAE headquarters was designed to exceed ASHRAE Standard 62.1-2016. ASHRAE headquarters currently has an Indoor Air monitoring system. The system monitors the large conference areas. The data is on the ASHRAE Dashboard that should be available soon to ASHRAE members. A response to the conferences aspect of this is referred to CEC.

**Background: Fall 2024 CRC Motion, Region XV India Chapter – Motion 24-15-1 (September 22, 2024)**: ASHRAE implement a standardized procedure for monitoring and reporting Indoor Air Quality (IAQ) across all ASHRAE-operated facilities and events. This procedure will ensure that IAQ is consistently monitored and reported to maintain a healthy and productive environment for all members and attendees.

Effective AIQ monitoring ensures that indoor environments meet health and comfort standards, benefiting the well-being of all individuals present. It helps ensure consistent environmental quality across all ASHRAE facilities and events. Regular reporting of AIQ data enhances transparency and allows for timely interventions if issues are detected, ensuring a proactive approach to managing indoor air quality.

**Fiscal Impact:** Not mentioned.

**Staff Impact:** Not Mentioned.

**CRC Vote:** 6-5-0 CNV

**Tech C Vote: 17-0-1<sup>3</sup>**

Ms. Hanson highlighted the following information items:

1. Operations Subcommittee approved changes to the Standards Committee MOP.
2. Standards Committee revised the Standards Committee Reference Manual to bring the procedures in alignment with current practices and removed duplication. Standards Committee also approved a new section in the PC Guide to PASA that defines procedures for an ASHRAE (Only) standards and the path to become ANSI/ASHRAE Standards.

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<sup>2</sup> Wade Conlan (Chair) abstained

<sup>3</sup> Wade Conlan, Chair, abstained

3. In 2022, the Board of Directors approved the development of Standard 241, directing that all resulting pathogen mitigation strategies be incorporated into existing ASHRAE IAQ standards and guidelines. However, this directive did not reach the Project Committees. On December 18, 2024, a letter from President Knight was received, followed by a conference call with all IAQ Project Committee Chairs (62.1/Gdl 42, 62.2, 170, Gdl 43, 189.1, 161, Gdl 28, Gdl 48), who were unaware of the Board's decision due to the lack of communication. A few action items from the meeting include the following:
  - A conversation is recommended between SSPC 62.1 and SSPC 241 to discuss equivalent clean airflow and Addendum f.
  - Standards Committee will work on better communicating and tracking directives regarding standards.
  - The IAQ standards project committee leaders are encouraged to discuss the operational impact of their documents and inclusion of Standard 241 or its principles (where applicable).
4. Residential Buildings Committee Leadership gave approval for the new RBC webpages to go live. The two new webpages were created by ASHRAE Marketing using the website templates created by the Communications Subcommittee.
5. The Global Technical Interaction Committee is preparing a video to promote ASHRAE global technical activities. The goal is to complete the final video by the 2025 ASHRAE Annual Conference.
6. EHC approved minor changes to their Reference Manual. The revised document will be posted to EHC webpage of ASHRAE website.
7. EHC is reviewing ROB 1.201.008, Standards and Guidelines that Address Smoking Spaces, and will consider recommending changes if deemed appropriate:

## B. Special Projects

Costas Balaras, Special Projects Chair, presented the report. The report is posted on Basecamp as *04B\_SpcProj\_Report\_to\_TechC\_2025\_02\_12\_Final.docx*.

Mr. Balaras highlighted the following information items:

1. The Special Projects Subcommittee has been meeting bi-weekly following the summer meeting in Indianapolis, Indiana. Subcommittee members and liaisons have been assigned as SP Champions to projects (**see CEBD Projects List shown below**) and have been collaborating with CEBD Champions and other parties (stakeholders, TCs, Standing Committees, etc.) to best coordinate work on the projects they are assigned to.
2. The nine CEBD projects listed below have completed their TPS (two-page summaries) and budget estimations for the CEBD to request funding at the

the BOD meeting on February 12, 2025. *Secretary's Note: The funding for all projects was approved.*

CEBD Projects to be presented to ExCom and recommended to the BOD for funding

- **Global ASHRAE Member Needs for Building Decarb Education (CEBD)**
- **Streamlined, Flexible International Building Code Framework (CEBD)**
- **Refrigerant Emissions Management, Tracking and Compliance**
- **Update Equipment Lifespan Tables**
- **Whole Life Carbon Gap Analysis**
- **Whole Building MEP Benchmarking Data Research**
- **Decarbonization Framework for Data Centers**
- **Residential Retrofits – A Summary of Existing Resources**
- **Design Guide Supermarket Decarb**
- **Whole Life Carbon Calculation Guide for Building Systems**

3. Ongoing Work – Next Steps

- a. The Special Projects Subcommittee will need to support the initiation and implementation of these projects in collaboration with CEBD and ASHRAE Staff.
- b. Identify possible overseers for the projects. Possible overseers for projects could be Special Projects with the support of the identified stakeholders, TCs, Standing Committees and other ASHRAE entities, or industry experts who could form oversight committees to monitor progress, review deliverables, or prepare calls for proposals etc.
- c. Complete work on the remaining CEBD Projects and consider new ideas. CEBD is organizing a meeting in the Spring to further discuss these projects and other ideas.

**C. Document Review Subcommittee (DRSC)**

Devin Abellon, DRSC Chair, presented the report. The report is posted on Basecamp as *04C-DRSC Rprt to TechC.W25.docx*.

It was moved by Mr. Abellon that:

**M3**

Technology Council recommend to Board Of Directors (BOD) ExCom that the *Infectious Aerosols Position Document (PD)* be revised.

**BACKGROUND:** This PD expires October 2025. It is of continuing value but needs to be updated because of the rapidly expanding literature on airborne disease transmission and because ASHRAE Standard 241 was published after the previous revision and is, therefore, not reflected in it. A motion to revise the TPS is listed below.

**Tech C Vote: 17-0-1<sup>4</sup>**

It was moved by Mr. Abellon that:

**M4**

Technology Council recommend to BOD ExCom that the Title, Purpose and Scope (TPS) of the ASHRAE PD "*Infectious Aerosols*" be revised as shown:

**Title:**

Infectious Aerosols

**Purpose:**

Inform the ASHRAE membership and the public of the impact of HVAC systems on the distribution of infectious-aerosols. These aerosols can subsequently be inhaled directly in the upper respiratory tract, deep into the lung, or may ~~settle out deposit~~ on surfaces and ~~become indirectly transmitted cause exposure~~ by resuspension or fomite contact.

**Scope:**

The document will address the impact of HVAC systems ~~that are described in the Systems Handbook on exposure to infectious aerosols. It will discuss available engineering controls and requirements for their use, in particular, as specified in ASHRAE Standard 241 that results in exposure.~~

~~The document will address a variety of built and transportation environments.~~

The document will take positions and make recommendations that are supported by peer-reviewed research and for which references will be provided.

~~The document will be written with sufficient scientific rigor and references to be useful to specialists such as a range of audiences. Including policy makers, researchers, architects and engineers; and containing material that will be useful to the general public.~~

~~The document will provide the content from which a brief can be prepared for advocacy purposes.~~

**BACKGROUND:** The revised TPS updates terminology, more specifically defines what aspects of HVAC systems are to be addressed, adds a reference to ASHRAE Standard 241 and is more reflective of current practice for position documents.

**Tech C Vote: 17-0-1<sup>5</sup>**

It was moved by Mr. Abellon that:

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<sup>4</sup> Wade Conlan (Chair) abstained

<sup>5</sup> Wade Conlan (Chair) abstained

**M5**

Technology Council recommend to BOD ExCom that the TPS of the ASHRAE PD " *Unvented Combustion Devices and Indoor Air Quality*" be revised as shown:

**Title:**

Unvented Combustion Devices and Indoor Air Quality

**Purpose:**

The purpose of this position document is to inform the ASHRAE membership and the public of the ~~serious health effects and liability due to risks associated with emissions of pollutants from unvented combustion devices into indoor spaces, and to make recommendations for mitigation of these risks.~~

**Scope:**

8. ~~Define what is meant by unvented combustion devices~~ Include cooking and heating devices
9. ~~Reference health effects associated with exposure to pollutants from combustion devices~~ Consider the impacts of these devices on indoor air
10. Include suitable mechanisms for managing emissions
11. ~~Describe the types of indoor environments where unvented combustion appliances might be used including commercial buildings, homes and schools~~
12. ~~Include devices used in both developed and developing countries, such as gas stoves, fireplaces, and biomass cooking devices~~
13. ~~Exclude emissions from solid fuels, which are addressed by ASHRAE's Position Document on "Combustion of Solid Fuels and Indoor Air Quality in Primarily Developing Countries"~~  
~~candles and incense~~
14. Exclude emissions from the food that is cooked through the cooking process

**BACKGROUND:** A revision of this PD is underway. These changes were recommended by the PD chair and committee and reviewed by EHC.

**Tech C Vote: 17-0-1<sup>6</sup>**

It was moved by Mr. Abellon that:

**M6**

Technology Council recommend that the BOD approve a revision to the *Indoor Carbon Dioxide* position document (PD).

**BACKGROUND:** The revised position document was approved by the position document committee (PDC) and is included as **04C-Attachment A**. The current

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<sup>6</sup> Wade Conlan (Chair) abstained

version of this PD expires Feb. 2, 2025. The approved title, purpose, and scope (TPS) is included as **04C-Attachment B**.

**Tech C Vote: 17-0-1<sup>7</sup>**

It was moved by Mr. Abellon that:

**M7**

Technology Council approve the revising of the *Combustion of Solid Fuels and Indoor Air Quality in Primarily Developing Countries* Position Document (PD) with Paul Francisco as chair of the Position Document Committee (PDC).

**BACKGROUND:** This PD is of continuing value, expires June 2025, and needs a significant update. The proposed chair (Francisco) led the development of the current position document and is willing to lead this revision as well. The chair and EHC will propose a PD committee. The approved title, purpose and scope (TPS) is unchanged and included as **04C-Attachment C**. A motion to reaffirm a reformatted version of this PD is listed below.

**Tech C Vote: 17-0-1<sup>8</sup>**

It was moved by Mr. Abellon that:

**M8**

Technology Council reaffirm the *Resiliency in the Built Environment* PD.

**BACKGROUND:** The reaffirmed PD is included as **04C-Attachment D**. TC 2.10 approved a reaffirmation of the PD with editorial changes at a previous meeting. This reaffirmation gets the PD into the current PD format. The current PD expires in June 2025.

**Tech C Vote: 17-0-1<sup>9</sup>**

It was moved by Mr. Abellon that:

**M9**

Technology Council reaffirm the *Combustion of Solid Fuels and Indoor Air Quality in Primarily Developing Countries* PD.

**BACKGROUND:** The document submitted for reaffirmation (**04C-Attachment E**) is the previously reaffirmed (2022) version reformatted to conform to current guidelines. It does not make substantive changes to anything in the previous version. The position document is in need of revision but will expire (June 2025) before a revision can be completed. The proposed chair, Paul Francisco, is currently chairing a committee revising the *Unvented Combustion Devices and Indoor Air Quality* PD and does not feel he can manage two revisions at the same time. It is

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<sup>7</sup> Wade Conlan (Chair) abstained

<sup>8</sup> Wade Conlan (Chair) abstained

<sup>9</sup> Wade Conlan (Chair) abstained

expected that work on the revision can begin following the 2025 Annual Conference.

**Tech C Vote: 17-0-1<sup>10</sup>**

It was moved by Mr. Abellon that:

**M10**

Tech Council approve that the following members be appointed to the committee to revise the *Infectious Aerosols* PD:

- Meghan McNulty (PNNL, chair)
- Dennis Knight (Whole Building Systems)
- Chandra Sekhar (National University of Singapore)
- William Bahnfleth (Penn State)
- Katherine Ratliff (EPA)
- Lewis Radonovich (CDC)
- David Fisman (University of Toronto)

**BACKGROUND:** The proposed chair and committee members are all willing to serve and all have extensive and current expertise in various aspects of this subject. The committee meets the balance requirements for PD committees. Primary employer for each person is listed, but some have multiple roles across more than one balance category.

**Tech C Vote: 17-0-1<sup>11</sup>**

Mr. Abellon highlighted the following information items:

1. EHC is considering a PD on *Ozone & Indoor Air Chemistry* and will develop a proposal with a TPS and proposed chair.

**5. STANDING COMMITTEE REPORTS**

**A. Standards Committee (StdC)**

Doug Fick, StdC Chair, presented the report. The report is posted on Basecamp as *05A\_StdC Report to Technology Council\_Winter Mtg Feb 2025.docx*.

It was moved by Mr. Fick that:

**M11**

Technology Council approve the addition of \$69,650 to the SY 25-26 Budget for Security Updates to and cloud migration of the OSR. [See Attachment B.](#)

**Background:** It has been over five years since there has been a major update to the OSR. These security improvements are needed to maintain usability and improve user security. These updates also include migration of the current on-

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<sup>10</sup> Wade Conlan (Chair) abstained

<sup>11</sup> Wade Conlan (Chair) abstained

site server infrastructure to a cloud-based AWS framework.  
**Fiscal Impact:** \$69,650  
**Staff Impact:** Estimated at 20 hours

**StdC Vote:** 24-0-1

Rank	Name	Description	LOE (hrs)	Estimated Cost
1	System Infrastructure	Perform comprehensive OSR software update and implement necessary system and security updates	286	\$50,050
2	OSR Cloud Migration	Migrate OSR database to cloud to improve backup and disaster recovery capabilities; review and update email sending technology	112	\$19,600
	<b>Motion 1</b>	<b>Total</b>		<b>\$69,650</b>

**Tech C Vote: 17-0-1**<sup>12</sup>

It was moved by Mr. Fick that:

**M12**

Technology Council approves the addition of \$86,400 to the SY 25-26 Budget to Implement Improvements to the OSR and the Project Committee Membership Application System. [See Attachment B](#).

**Background:** Staff has been maintaining a list of improvement items that require more than several hours for the database vendor to implement. This includes updates to the PC membership application system to align with the updates to the TC roster management system.

**Fiscal Impact:** \$86,400

**Staff Impact:** Estimated at 70 to 80 hours for oversight, testing and implementation.

**StdC Vote:** 24-0-1

Rank	Name	Description	LOE (hrs)	Estimated Cost
3	Ballot Roster Management	Create Interface for ASHRAE Staff to manage ballot rosters, including ability to add, edit, and delete roster members. Modify ballot roster generation logic to use ballot start date instead of meeting date when determining appropriate membership	38	\$6,650
4	PC Membership Application Update	Update PC membership application system to match TC roster online functionality		\$50,000
5	Committee Information Synchronization	Fix synchronization issues between netFORUM and OSR databases where committee references and keys don't match correctly. Requires after-hours deployment.	44	\$7,700
6	Duplicate Detection and Management	Clean up duplicate user accounts in OSR database - involves moving comments, ballots etc from old accounts to new ones and deleting old records. Estimated several hours of validation and testing required.	78	\$13,650
7	Email Resend Functionality	Add feature to automatically resend failed email notifications rather than requiring manual resending.	48	\$8,400
	<b>Motion 2</b>	<b>Total</b>		<b>\$86,400</b>

**Tech C Vote: 17-0-1**<sup>13</sup>

Mr. Fick highlighted the following information items:

1. Standards Committee approved the allocation of \$12,800 from the Standards Expediting Fund to Implement Staff Recommendations for Improvements to OSR not covered in other budget requests.

<sup>12</sup> Wade Conlan (Chair) abstained

<sup>13</sup> Wade Conlan (Chair) abstained

2. In the Fall of 2022, ASHRAE received multiple appeals relating to 62.2 proposed addendum j. An appeals panel was formed and the panel reviewed all submitted appeals and a rebuttal of the appeals from the project committee chair. Based on the evidence presented the appeals panel determined there were no procedural violations, hence the appeals were dismissed. The appellants then filed a claim with the ANSI ExSC. Based on the evidence and ASHRAE's rebuttal, the ANSI ExSC also dismissed the appeal. The appellants have filed a claim with ANSI Appeals Board. The ANSI Appeals Board reversed the ANSI ExSC ruling and a hearing has been scheduled for September 18, 2024 at ANSI DC Headquarters. A hearing was held and the decision was upheld and addendum j will not be published.

*Secretary's Note: Natascha Milesi-Ferretti arrived, bringing the total number of voting members to 19.*

## B. Research Administration Committee (RAC)

Natascha Milesi-Ferretti, Chair of RAC, presented the report. The report is posted on Basecamp as *05B-RAC-Info Items.W25.docx*.

Ms. Milesi-Ferretti highlighted the following information items:

1. RAC released for bid in Fall 2024 the following eight projects for bid:
  - a) **0003-WSP**, *Design Guide for Radiant Heating and Cooling Systems*, Responsible Committee TC 6.5 Radiant Heating and Cooling
  - b) **1566-TRP-R**, *Equations to estimate evaporation rates from heated water pools in indoor recreational aquatic facilities*; Responsible Committee: TC 8.10 (Mechanical and Desiccant Dehumidification Equipment, Heat Pipes and Components); Co-Sponsors: TC 9.8, (Large Building and Air Conditioning Application)
  - c) **1909-TRP**, *In-Tube Condensing Flue Gas Heat Transfer and Pressure Drop with Enhancements for Residential Furnaces*; Responsible Committee: TC 1.03 (Heat Transfer and Fluid Flow); Co-Sponsors: TC 6.03 (Residential and Light Commercial Forced Air Heating and Cooling Systems)
  - d) **1910-TRP**, *Evaluation of Standard 103 Transient Components and Thermostat Cycle Times on the Resulting AFUE (rebid)*; Responsible Committee: TC 6.03, (Residential and Light Commercial Forced Air Heating and Cooling Systems)
  - e) **1913-TRP**, *Study of the Corrosion Impact on Information Technology Equipment in Data Centers Located in Coastal Regions with High Sea Salt Concentration*; Responsible Committee: TC 9.9 (Mission Critical Facilities, Data Centers, Technology Spaces and Electronic Equipment); Co-Sponsors: TC 2.03 (Gaseous Air Contaminants and

Gas Contaminant Removal Equipment), TC 2.04 (Particulate Air Contaminates and Particulate Contaminant Removal Equipment

- f) **1915-TRP**, *Refrigerated Facilities Doorway Infiltration Air Energy Reduction*; Responsible Committee: TC 10.02 (Refrigeration Applications); Co-Sponsors: None
- g) **1947-TRP**, *Climate change driven extreme temperature effects for efficiency and resilience map of heat pump technology*; Responsible Committee: TC 2.05 (Global Climate Change); Co-Sponsors: TC 4.2 Climatic Information; TC 2.8 Building Environmental Impacts and Sustainability
- h) **1964-TRP**, *Optimizing Heating System Performance in Warmup and Setback Modes*; Responsible Committee: TC 1.04 (Control Theory and Application); Co-Sponsors: TC 7.05 (Smart Building Systems)

Contractors for these projects will be selected at the 2025 Winter meeting.

2. Fifteen nominations were received for the 2024-2025 New Investigator Award and Dr. Yungyang Ye of the University of Alabama was selected as the recipient.
3. A call for pre-proposals was issued this fall for the ASHRAE Innovative Research Grant Program and 4 pre-proposals were submitted. RAC reviewed the pre-proposals in Orlando and 2 pre-proposals were selected for further consideration and will be invited to submit a full proposal prior to the 2025 Annual meeting.
4. RAC reviewed one nomination for the 2024-2025 Homer Addams Award, which recognizes a student that worked on an ASHRAE research project and published one or more papers with ASHRAE on the project results. The recipient this year is Dr. Cary Faulkner of the University of Colorado - Boulder for the work that they did as a student on ASHRAE 1661-RP, *Development of Near-Optimal Control Sequence for Chiller Plants with Water Side Economizer Using Dynamic Models*.

### **C. Technical Activities Committee (TAC)**

Kevin Mercer, the Chair of TAC, presented the report. The report is posted on Basecamp as *05C-TAC Rprt to TechC.W25.docx*.

Mr. Mercer highlighted the following information items:

1. The Online Rostering tool is again being utilized for the 2025-2026 roster update. TAC is collecting feedback for improvements. TCs have been asked to return their rosters by March 3<sup>rd</sup>.
2. TAC has three liaisons to the Center of Excellence for Building Decarbonization (CEBD) and continues to support by connecting TC experts to specific projects identified by the CEBD.

3. TAC continues to consider balance on Functional Groups (FG) and has proposed interest categories as a starting point. TAC recognizes that certain FGs could need more or different interest categories depending on the scope of their work. TAC continues to review this process.
4. TAC is working with YEA on their mentoring program and will help mentor YEA members by connecting them to TAC and TC members. A presentation was made at the TC Breakfast in Orlando.
5. TC Scope Change:

TC 9.7 is concerned with the application of ventilating, air-conditioning, refrigeration, life safety, and energy conservation systems to educational (secondary school, college) facilities. for educational facilities, including early childhood education through higher education facilities.

6. Philip Naughton was approved as winner of the 2025 George Hightower Award by Honors & Awards Committee and will be invited to receive the award in Phoenix.

#### **D. Environmental Health Committee (EHC)**

Marwa Zaatari, the Chair of EHC, was absent so Max Sherman, the Vice Chair of EHC, presented the report. The report is posted on Basecamp as *05D-EHC Rprt to TechC.25W.docx*.

Lisa Ng presented an overview of the EHC Trends Report, which is posted on Basecamp as *05D – EHC Environmental Trends report (June 24, 2024).pdf*.

Mr. Sherman highlighted the following information items:

1. EHC reported their 2024 Trends and Research Gaps report to Tech Council at the Annual Meeting and is working on 2025 report for June.
2. Jennifer Isenbeck & Iain Walker co-chair the ASHRAE's [IEQ2025 Conference, "Rising to New Challenges: Connecting IEQ with Sustainable Buildings"](#) taking place in Montreal, Quebec, Canada September 24-26<sup>th</sup>, 2025. Conference organizers are now seeking co-sponsorship. This conference series is the continuation of the IAQ conference series initiated in 1986 and now reflects an expansion of the scope to holistically address all aspects of indoor environmental quality, including air quality, thermal environment, sound, and light. AIVC is co-organizing. This conference theme aligns well with President-Elect Bill McQuade's Presidential Theme for 2025-2026 and will be collocated with a related workshop.
3. A winner was selected for the 2025 Donald Bahnfleth Environmental Heath Award by Honors & Awards Committee and will be invited to receive the award in Phoenix.
4. EHC made changes to Reference Manual and reported to OPS.

5. Updates on the following Position Documents were reported to Document Review Subcommittee:
  - Unvented Combustion Devices and Indoor Air Quality
  - Infectious Aerosols
  - Combustion of Solid Fuels and Indoor Air Quality in Primarily Developing Countries
  - Human Health and Wellness in the Built Environment
  - Indoor Carbon Dioxide

#### **E. Refrigeration/CPCC (REF-CPCC)**

Doug Scott, the Chair of REF-CPCC, presented the report. The report is posted on Basecamp as *05E-REF-CPCC Rprt to TechC.W25.docx*.

Mr. Scott highlighted the following information items:

1. REF-CPCC sponsored a forum in Orlando on “Use of New A2L Refrigerants in Cold Storage Applications”.
2. The second draft of the *Refrigerants and their Responsible Use* Position Document revision was reviewed by Dustin Lilya. The PD Committee will review and begin weekly meetings in early March. The expectation is to have a final draft to DRSC in advance of the Phoenix Annual Meeting. The PD expires June 28, 2025.
3. REF-CPCC is supporting the Special Projects committee with two CEBD projects:
  - a. “Refrigerant Emissions Management, Tracking and Compliance”
  - b. “Decarbonization Strategies for Supermarket Industry Archetypes”
4. REF-CPCC agreed to be the cognizant committee for changes to the “ASHRAE Guide for Sustainable Refrigerated Facilities and Refrigeration Systems” and work with Special Publications

**A1**

An action item was assigned to staff to determine the best person on PubEd to reach out to REF about online special publications.

#### **F. Residential Building Committee (RBC)**

Rachel Romero, the Chair of RBC, presented the report. The report is posted on Basecamp as *05F\_RBC Rprt to TechC\_2025-02-12\_Final.docx*.

Ms. Romero highlighted the following information items:

1. Tech Council approved RBC’s proposal to host a stakeholders workshop at the 2025 Building Conference. While RBC is awaiting final approval from the Financial Committee and BOD, the committee started planning with the appointment of a chair to a working group for the

workshop. RBC presented their motion to host a stakeholders workshop at the 2025 Building XVI Conference at the Tech Council meeting on October 29, 2024.

2. The committee approved a recipient for the 2024-2025 Residential Buildings Service Award. The award recognizes excellence in volunteer service within ASHRAE focused on residential building issues over the previous two society years. The recommendation for the award recipient has been sent to the Honors & Awards Committee and the recipient will be announced and presented after their approval has been received.

#### **G. Global Technical Interaction Committee (GTIC)**

Ashish Rakheja, the Chair of GTIC, presented the report. The report is posted on Basecamp as *05G\_GTIC Report to TechC Winter Meeting Feb 2025.docx*.

Mr. Rakheja presented the results of the GTIC RCIS Survey, which is posted on Basecamp as *05G\_2024\_11\_17\_GTIC RCIS Survey Analysis\_AR.pptx*.

*Secretary's Note: Rachel Romero left, bringing the total number of voting members to 18.*

It was moved by Mr. Rakheja that:

**M13**

Technology Council recommends to the Board of Directors that all ASHRAE Regions with Chapters outside United States and Canada to appoint a liaison (Regional position) who will work closely with the GTIC to help in interaction with the ASHRAE Chapters in their Region and help promote exchange of ASHRAE technical resources to meet its objectives.

**Background Information:** Global Technical Interaction Committee (GTIC) has been recently established by the ASHRAE Board of Directors to harness the technical resources of ASHRAE and maximize the global impacts of ASHRAE standards, guidelines, and other technical work products on the practice of HVAC&R and the built environment. This includes developing, implementing, and managing processes that enable information flow and coordination between chapters, technical committees, standard project committees, and international technical advisory groups.

ASHRAE has over 60 International Chapters spread over Region VIII, Region XII, Region XIII, Region XIV, Region At Large and Region XV. GTIC recently conducted a global survey to identify the areas of focus for the committee and is working on creating communication channels with the international chapters. However, continuous communication with international chapters is proving to be difficult due to the limited resources of the Committee and hence appointment of a liaison by these Regions shall help GTIC in formally communicating with each Chapter in their Region and gather data as well as interact with grassroot leaders to promote ASHRAE Technical resources & help serve them better.

GTIC plans to develop a written description of the liaison position to assist DRCs

in identifying the best people.

**Fiscal Impact:** None. Volunteers to be designated as liaisons in their respective regions.

**Staff Time Cost:** None.

**Tech C Vote: 17-0-1<sup>14</sup>**

Mr. Rakheja highlighted the following information items:

1. The committee shall continue to discuss procedures for global adaptation, adoption or joint development of ASHRAE standards with help from Standards.
2. The committee was briefed on the revision to the Construction Products Regulation on 27<sup>th</sup> November 2024 by the European Union. This updates the 2011 version and reinforces the requirements for all construction products covered by harmonised European Standards to comply with the standards and to be CE marked in accordance with the relevant Annex to the standard in order to be placed on the EU market. This note sets out the headline issues as they may relate to the work of the ASHRAE GTIC.
3. The ASHRAE-UNEP liaison committee was formed to develop and implement mutually beneficial programs and initiatives focusing on Montreal Protocol compliance in Article 5 countries. ASHRAE-UNEP Connect is a pilot initiative launched in Grenada that builds a relationship between the National Ozone Unit and ASHRAE. GTIC's has played a role to act as a clearing house and the efforts have been appreciated.
4. The committee has been assigned by ExCom to review and prioritize connections from the MOUs from Global South Countries.

## **6. 2025-2028 ASHRAE STRATEGIC PLAN**

### A. Society Planning Liaison Report – Abellon

Devin Abellon presented the PowerPoint on the new Society Strategic Plan, which can be found at *06A-2025-28 ASHRAE Strategic Plan.pptx*. Incoming Chairs were asked to review this as they prepare their MBOs for SY 25-26.

### B. MBO Discussion

Mr. Conlan briefly spoke about creating MBOs for next year.

### C. MBO Support – Austin

Billy Austin presented the PowerPoint showing how Society Planning Committee can help with development of MBOs which can be found at

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<sup>14</sup> Wade Conlan abstained as Chair.

*06C\_PLC II to Committees\_01022025.pptx.* He reiterated the point that if something occurs and happens every year, it does not need to be included in MBOs.

*Secretary's Note: Dru Crawley and Mile Pouchak left, bringing the total number of voting members to 16.*

## **7. SPECIAL COMMITTEE/LIAISON REPORTS**

### **A. Government Affairs Committee (GAC) Liaison Report**

Heather Schopplein, GAC Liaison, presented the report, which can be found at 07 GAC TECH COUNCIL Report-Winter 2025.docx. Ms. Schopplein highlighted the following:

1. Thank you for your work in developing important technical resources to make buildings healthy and sustainable. ASHRAE resources are in demand by government entities, and we appreciate all you do in your developing technical resources. If Tech Council has new resources that it wants GAC to advocate for, please let the GAC know (through your staff liaison would work best, or send email to [GovAffairs@ashrae.org](mailto:GovAffairs@ashrae.org).) Thank you!
2. New restrictions (possibly temporary) of federal government employees: We understand that some ASHRAE technical resources have become more difficult to develop due to new restrictions (which may potentially be temporary) on U.S. federal government employees from participating in PCs and other bodies. We will continue to communicate with decision-makers about the importance of voluntary consensus-based standards, federal government involvement, and how they can be used by governments to save taxpayer dollars. If you have any ideas or suggestions for supporting our federal government ASHRAE members, please feel free to email [GovAffairs@ashrae.org](mailto:GovAffairs@ashrae.org).
3. Public Policy Issue Briefs: The GAC approved unanimously 12 updated Public Policy Issue Briefs (PPIBs) listed below. These documents (with the exception of Building Electrification, which has already been reviewed) still need to be reviewed by Tech Council or its designee. A new PPIB on Infectious Disease has been proposed and two possible new PPIBs are being developed: electricity generation and environmental justice. A **big thanks to the Tech Side of ASHRAE** for your help with updating these briefs!
  - o Building Electrification
  - o Building Decarbonization
  - o Building Energy Benchmarking
  - o Climate Change and the Built Environment
  - o Consensus Standards- Expert Solutions to Meet Global Needs
  - o Environmental Tobacco Smoke and Electronic Nicotine Delivery Systems
  - o Indoor Air Quality
  - o Refrigerants and Their Responsible Use
  - o Resiliency in the Built Environment
  - o STEM Education & Workforce

- Indoor Carbon Dioxide
- Wildfires and Indoor Environmental Health

4. Subject Matter Expert Program to Support Government Outreach: This new pilot program is up and running: The first set of SMEs have been selected and notified and the second set of applications is being reviewed. Staff have begun sharing a flyer to help recruit SMEs for the program, and this information is also included in the Leadership Presentation for the Winter Conference. Sign up here: <https://www.ashrae.org/about/government-affairs/grassroots-advocacy/accomplishments#SME>

Kevin Mercer expressed that over the last few years, more TAC members have become intrigued at what's happening at the federal level, so TAC will be asking for more involvement with GAC.

## **B. Finance Liaison Report**

Mr. Conlan, Finance Liaison, reported that there is a Standards motion currently with the Finance Committee. The committee will be working on developing the budget for next year, and any requests need to be sent in by March 15<sup>th</sup>.

## **C. Society Rules Committee**

Heather Schopplein, Society Rules Committee Liaison, reported that Society Rules Committee (SRC) met yesterday, where they provided feedback for motions for Members Council and made suggestions for possible revisions.

## **D. DEI Subcommittee**

DEI Subcommittee is currently meeting monthly, with four subgroups. One of those subgroups is working on messaging and a possible rebrand while another group is continuing work for the cultural appreciation event happening during the Annual Conference. Another subgroup put out a survey, but they have not finished unpacking the results. The subcommittee is working on how to navigate the new political landscape.

## **8. AD HOC REPORTS**

## **9. DOT REPORT**

Stephanie Reiniche reported on new staff and current open ASHRAE positions:

- Leigh Lane Walker is the Manager of Building Decarbonization working with the CEBD.
- Maralyn Graham is the Program Administrator for International Standards
- Working to backfill the Technical Services Engineer position

## **10. NEW BUSINESS**

### **A. Roundtable Report**

Devin Abellon presented the Roundtable Report which can be reviewed with the files *10B\_2024 Industry Roundtable Critical Issues and Ideas for Councils.pptx* and *10B\_ASHRAE Roundtable Review and Findings – January 2025.pdf*. Members were asked to review this and consider if any findings may be applicable to address by their committees in the next year.

## **11. EXECUTIVE SESSION**

The following motion was approved in Executive Session:

RAC recommends Tech Council appoint the following members to the Research Advisory Panel (RAP):

- Jin Wen, Drexel University, RAC Vice Chair
- Past RAP Members
  - Chun-cheng Piao, Daikin
  - Jim Braun, Purdue
- International Members
  - Stefan Elbel, TU Berlin
- New Members
  - Roland Charneux, Pageau Morel
  - Jon Douglas, Johnson Controls
  - Lisa Ng, NIST
  - Marianne Touchie, Univ of Toronto
  - Hyojin Kim, New Jersey Institute of Technology
  - Chris Gray, EcoSmart Solution
- Alternative Past RAP Members:
  - Christopher Wilkins, RFS Engineering
  - Eckhard Groll, Purdue
  - Mike Pouchak, Honeywell
- Alternative New Members:
  - Vikrant C. Aute, Univ of Maryland
  - Riley Barta, Purdue
  - Srinivas Katipamula, PNNL
- Alternative New Members:
  - Hywel Davies, CIBSE

**BACKGROUND:** RAC identified members to participate on the Research Advisory Panel (RAP) to develop the ASHRAE Research Strategic Plan. RAC considered the categories listed above and tried to achieve balance on industry, academics and governments, areas of expertise, research experience, etc. RAC will reach out to candidates and alternates as appropriate to confirm their participation. A chair can be identified when committee members are confirmed.

**Motion passed.**

**12. NEXT MEETING**

The Tech Council Spring Meeting will be determined and sent out after this meeting.

Tech Council will meet on Wednesday, June 25<sup>th</sup>, at 9am PST during the Annual Conference in Phoenix, Arizona.

**13. ADJOURN**

The meeting was adjourned at 11:37am EST.