



MINUTES

BOARD OF DIRECTORS MEETING

Wednesday, May 28, 2025

Note: These draft minutes have not been approved and are not the official record until approved by the Board of Directors.

TABLE OF CONTENTS
Board of Directors Meeting
Wednesday, May 28, 2025

CALL TO ORDER.....	2
VALUE STATEMENT.....	2
ROLL CALL/INTRODUCTIONS.....	2
REVIEW OF MEETING AGENDA.....	2
APPROVAL OF MINUTES.....	2
REVIEW OF ACTION ITEMS.....	2
POSTPONED MOTION.....	2-3
FINANCE COMMITTEE.....	4-5
FY24-25 MAJOR VARIATIONS.....	4
FY25-26 BUDGET PRESENTATION.....	4
FY25-26 DRAFT BUDGET.....	4
TECHNOLOGY COUNCIL REPORT.....	5-6
DEI ADVISORY SUBCOMMITTEE REPORT.....	6-7
NEW BUSINESS.....	7
WILDFIRES AND ACCESS TO WILDFIRE STANDARDS.....	7
2025-26 PRESIDENTIAL APPOINTMENTS.....	8
IEQ HUB STRATEGIC EVALUATION PRESIDENTIAL AD HOC.....	8
FUTURE OF ASHRAE CONFERENCES PRESIDENTIAL AD HOC.....	8
PEAC/TRAC STREAMLINING.....	8
UPCOMING MEETINGS.....	8
ADJOURNMENT.....	8

PRINCIPAL APPROVED MOTIONS

Board of Directors Meeting

Wednesday, May 28, 2025

No. - Pg.	Motion
1 - 2	Minutes from the February 9, 2025, February 12, 2025, and April 2, 2025 open session BOD meetings be approved.
2 - 2	Approve the proposed membership model restructuring plan as presented by the Membership Model Ad Hoc Committee to be implemented by the 2027-2028 Society Year.
3 - 5	<p>Technology Council recommends that the Board of Directors approve the following changes to Rule of the Board, 1.201.009, ASHRAE Policy on Standards and Guidelines that Address Smoking Space:</p> <p>1.201.008 ASHRAE Policy on Standards and Guidelines that Address Smoking Spaces where Smoking is Allowed.</p> <p><u>ASHRAE standards and guidelines that address ventilation or indoor air quality in their purpose shall not prescribe ventilation rates in smoking spaces or claim to provide acceptable indoor air quality be consistent with ASHRAE's Position Document on Environmental Tobacco Smoke, When Technology Council determines the need for substantial revision to the Position Document, it may grant a temporary waiver of this rule until the revision is completed.</u></p>
4 - 6	<p>Technology Council recommends to the Board of Directors that the Procedures for ASHRAE Standards Action (PASA), <i>Definitions</i>, be revised as shown below:</p> <p>User: A member who represents the interest of those that purchase or use materials, products, systems, or services other than for household use covered in the project scope.</p>
5 - 6	The Board DEI Subcommittee recommends to the ASHRAE Board of Directors that we approve the responses included in ATTACHMENT B, to be used as needed by all standing committees.
6 - 7	The Board DEI Advisory Subcommittee recommends to the ASHRAE Board of Directors that Jai Calloway of Calloway Consultants be approved as interim Professional Consultant. See ATTACHMENT C.



MINUTES
BOARD OF DIRECTORS MEETING

Wednesday, May 28, 2025

MEMBERS PRESENT:

Dennis Knight, President
Bill McQuade, President-Elect
Sarah Maston, Treasurer
Devin Abellon, Vice President
Wade Conlan, Vice President
Ken Fulk, Vice President
Chandra Sekhar, Vice President
Jeff Littleton, Secretary
Charles Bertuch, Region I DRC
Matt Archey, Region III RMCR
Bryan Holcomb, Region IV DRC
Jim Arnold, Region V DRC
Susanna Hanson, Region VI DRC
Scott Peach, Region VII DRC
Joe Sanders, Region VIII DRC

Jonathan Smith, Region IX DRC
Buzz Wright, Region X DRC
Rob Craddock, Region XI DRC
John Constantinide, Region XII DRC
Cheng Wee Leong, Region XIII DRC
Mahroo Eftekhari, Region XIV DRC
Richie Mittal, Region XV DRC
Bassel Anbari, RAL DRC
Carrie Brown, DAL
Doug Cochrane, DAL
Blake Ellis, DAL
Patrick Marks, DAL
Corey Metzger, DAL
Heather Schopplein, DAL
Wei Sun, DAL
David Yashar, DAL

GUESTS PRESENT:

Ashish Rakheja
Trent Hunt
Andres Sepulveda
Heather Platt-Gulledge
Julia Timberman
Michael Pouchak

Maggie Moninski
Jason Alphonso
Ching Loon Ong
Pankaj Dharkar
Steve Kujak
Daniel Nall

STAFF PRESENT:

Candace Denton, Sr. Manager - Board Services
Chandrias Jolly, Manager - Board Services
Vanita Gupta, Director – Marketing
Rhannon Masterson – Interim Director – Member Services
Mark Owen, Director - Publications & Education
Kirstin Pilot, Director - Development
Stephanie Reiniche, Director - Technology
Craig Wright, Director of Finance

Daniel Gurley, Sr. Manager - Membership
Tony Giometti, Group Mgr. – Conference Programs
Selina Parks, Manager – Conference Services

CALL TO ORDER

The meeting was called to order at 9:00 am.

VALUE STATEMENT

Mr. Knight read the value statement and advised that the full code of ethics, core values and diversity statements were available online.

ROLL CALL/INTRODUCTIONS

Roll call was conducted; members, guests, and staff were in attendance as noted above.

REVIEW OF MEETING AGENDA

Mr. Knight reviewed the meeting agenda. 'Wildfires and Access to Wildfire Standards' was added to *New Business*.

The group was advised that Matt Archey, Region III RMCR, was representing Region III in Ms. Abbott-Adkins' absence and would voice but no vote.

APPROVAL OF MINUTES

It was moved and seconded that

1. Minutes from the February 9, 2025, February 12, 2025, and April 2, 2025 open session BOD meetings be approved.

MOTION 1 PASSED (Unanimous Voice Vote, CNV).

REVIEW OF ACTION ITEMS

The one open action item was reported as complete.

POSTPONED MOTION

Mr. Knight reported that the motion that was recommended by the MMAH and postponed on February 9, 2025 had satisfied the mandatory cooling off period and was coming back before the BOD for further discussion and vote.

2. Approve the proposed membership model restructuring plan as presented by the Membership Model Ad Hoc Committee to be implemented by the 2027-2028 Society Year.

Mr. Fulk reported that all comments and questions submitted to the MMAH following the February 9th meeting were satisfied.

He reported that two subcommittees of the MMAH were created. The first focused on drafting proposed Bylaws amendments and worked with the Chair and Vice Chair of SRC. This group completed its work. The second subcommittee focused on developing the member value proposition and was chaired by Mr. Austin. The value proposition subcommittee was still working and the recommendations from that subcommittee would be presented to the BOD at the Phoenix BOD meeting.

The floor was opened for additional comments and questions.

It was asked if the dues amounts shown in the report were illustrative. Would Finance Committee still set dues each fall?

Mr. Fulk confirmed that was correct.

It was asked when the proposed changes would be implemented. Mr. Fulk reported that, if approved, the changes would be implemented in Society Year 2027-28.

Mr. Littleton advised that the motion on the floor would require a 2/3 majority vote of the BOD because it is a major organizational change and would have a fiscal impact.

MOTION 2 PASSED (28:0:0, CNV)

Mr. Knight thanked Mr. Fulk and the MMAH for their great work. He thanked RAL for bringing the issue to the attention of the BOD at the BOD meeting in Turkey. He also thanked the BOD for their input and engagement. He expressed that a thoughtful body of work would move forward for the membership's consideration next spring.

Mr. Fulk expressed appreciation for the BOD's vote and shared his excitement at seeing the recommendations move forward.

Mr. Littleton suggested that thought should go into how the approved motion is discussed and presented prior to vote by the full membership in the spring.

There was discussion of Mr. Littleton's suggestion. A summary of that discussion is below:

Need to be thoughtful moving forward because the recommendations are not final until approved by the membership. Suggest developing an overview ahead of announcing that there will be a vote by the membership in spring 2026.

Don't see a problem releasing this as part of updates at the CRCs and advise that the membership still needs to vote.

Members should at least be advised that the recommendation will be on the ballot.

Suggest including as part of election informational material. For example, "the BOD has approved this recommendation for vote by the membership and would like to educate the membership on what will be voted on."

Not saying something makes it seem like a secret. In the absence of fact, opinion will reign.

The BOD needs to be transparent so standing committees can prepare.

Suggest providing a message or script so BOD members can be in unison about why changes were made; specifically regarding changes to Life Members.

Mr. Knight reported that changes would not be retroactive and would not impact members who are already Life Members.

FINANCE COMMITTEE**FY24-25 MAJOR VARIATIONS**

Ms. Maston reported that the major variations were a forecast of where Society is anticipated to end the Society Year. The major variations were attached to the agenda and shown on screen.

FY25-26 BUDGET PRESENTATION

Ms. Maston reviewed the draft budget presentation. The presentation was attached to the agenda and was shown on screen.

She reported that Finance Committee will make final edits and clean up the budget before it is presented to the BOD for final approval in Phoenix.

She reported that increased dues appear on the budget as a carryover from dues increases in prior years; this increase will be less than if a dues increase had been approved for next Society Year. The impact of dues appear as a half year impact because renewals are continual. Dues impact is calculated assuming flat membership numbers.

FY25-26 DRAFT BUDGET

Ms. Maston reviewed the draft budget which was attached to the agenda and shown on screen.

Mr. Littleton reported that grant income was offset by payments to sub-contractors. Hypothetically, if Society loses the grant, the impact would be less than what is shown because of those offset costs. The bottom-line impact would be \$350,000.

Ms. Maston reported that the draft budget was running at a deficit of around \$60,000.

Mr. Wright reported that the CEBD budget would increase the deficit budget by \$50,000. Some of the CEBD budget would be pulled from reserves but some would come from the operating budget as well.

Mr. Littleton reported that all other factors being equal, the budget will be in net deficit of around \$110,000.

Ms. Maston reported that when the BOD voted to not increase dues for SY2025-26, there was consensus to pull the budget deficit from reserves. She expressed her opinion that drawing from reserves to achieve a balanced budget was not a long-term solution.

It was reported that the proposed dues increase would have generated an additional \$100,000 in revenue. Dues revenue is recorded in 1/12 increments every month and increased dues are experienced across multiple years. Similarly, the result of not increasing dues is experienced across multiple years.

Mr. McQuade expressed his opinion that a deficit budget and a draw from reserves to cover operating expenses was not what reserves are designed for; reserves should be used for one-time expenses. He suggested that a balanced budget, or a very close to balanced budget, be developed each year and that it was the BOD's fiscal responsibility to do so.

Mr. Littleton offered for staff to take a hard look at the budget and provide recommendations to get to a balanced budget. Ms. Mason responded that not increasing dues was a BOD decision and stated that

the BOD should be more proactive. She stated that all BOD members needed to look at the budget to identify areas where adjustments can be made.

She reported that the draft budget did not include council level requests related to the roll out or implementation of the new strategic plan.

It was asked if the budget typically included placeholders to fund new strategic plan initiatives. Mr. Littleton reported that in recent history, placeholders have not been used if specific line items were not requested by the councils.

Clarification on the DRC travel was requested. Mr. Littleton reported that the \$60,000 line item represented the cumulative impact of all DRC travel to CRCs. He reported that the amount shown was what has been budgeted historically.

It was stated that members ask BOD members frequently what the plan is for the Society's large reserves. It was suggested that reserves could dwindle because of market fluctuations and would be better spent on current needs of the Society.

Clarification on the Future Fund was requested. Ms. Maston reported that rollovers to the Future Fund were not automatic. After another full Society Year, funds in reserves in excess of the 2/3 requirement would be considered to be rolled into the Future Fund. Moving forward, draft budgets will include a line item with a recommended amount to be deposited into the Future Fund.

Mr. Knight thanked the BOD for the thoughtful discussion. He suggested that the Finance Committee should be allowed to take the BOD's comments into consideration and work to provide a balanced budget.

TECHNOLOGY COUNCIL REPORT

Mr. Conlan reported on behalf of the Council. The full report was attached to the agenda and shown on screen.

Mr. Conlan moved that

3. Technology Council recommends that the Board of Directors approve the following changes to Rule of the Board, 1.201.009, ASHRAE Policy on Standards and Guidelines that Address Smoking Space:

1.201.008 ASHRAE Policy on Standards and Guidelines that Address Smoking Spaces where Smoking is Allowed.

ASHRAE standards and guidelines that address ventilation or indoor air quality in their purpose shall not prescribe ventilation rates in smoking spaces or claim to provide acceptable indoor air quality be consistent with ASHRAE's Position Document on Environmental Tobacco Smoke. When Technology Council determines the need for substantial revision to the Position Document, it may grant a temporary waiver of this rule until the revision is completed.

Background on the motion was shown on screen and was attached to the agenda.

There was no discussion.

MOTION 3 PASSED (Unanimous Voice Vote, CNV).

Mr. Conlan moved that

4. Technology Council recommends to the Board of Directors that the Procedures for ASHRAE Standards Action (PASA), *Definitions*, be revised as shown below:

User: A member who represents the interest of those that purchase or use materials, products, systems, or services ~~other than for household use~~ covered in the project scope.

There was no discussion.

MOTION 4 PASSED (Unanimous Voice Vote, CNV).

Mr. Conlan reviewed information items from the report; they were shown on screen and attached to the agenda.

He reported that the annual EHC *Trends and Research Gaps* report was attached to the agenda and is included in ATTACHMENT A. He requested BOD members assist in providing council and committee chairs and vice chairs with a copy of the report.

DEI ADVISORY SUBCOMMITTEE REPORT

Ms. Hanson reported on behalf of the subcommittee. The full report was attached to the agenda and shown on screen.

Ms. Hanson moved that

5. The Board DEI Subcommittee recommends to the ASHRAE Board of Directors that we approve the responses included in ATTACHMENT B, to be used as needed by all standing committees.

Ms. Hanson reported that part of the development process for the talking points was circulating them to the BOD for review and comment. Talking points were revised to address comments received from BOD members.

She stated that the talking points were not meant to be a Society position document and were not meant to be posted verbatim online. The intent behind the talking points was to provide a unified message for BOD members to present, in various settings, when questions come up.

There was some discussion of the original intent of the talking points and the ideal mode of circulation and dissemination.

It was reported that the talking points were developed in response to questions relating to Society's stance on DEI and DEI initiatives. The intended strategy was for the talking points to be developed for use by BOD members to address common or anticipated questions from members.

It was suggested that the talking points could be shared at the grassroots level as there were chapter leaders being asked the same types of questions.

It was suggested that, in the spirit of openness and transparency, the talking points could be distributed at the BOD's discretion.

MOTION 5 PASSED (28:0:1, CNV).

Mr. Yashar abstained.

Ms. Hanson moved that

6. The Board DEI Advisory Subcommittee recommends to the ASHRAE Board of Directors that Jai Calloway of Calloway Consultants be approved as interim Professional Consultant. See ATTACHMENT C.

Ms. Hanson reported that the subcommittee would like to hire a consultant to operationalize DEI Chairs in a way that is ASHRAE centric. The cost to hire and retain a consultant was included in the subcommittee's budget.

It was asked if there had been communication between MP and the subcommittee to ensure consistency. Ms. Hanson reported that the subcommittee had a liaison from the MP Committee. One of the goals of hiring the consultant was to facilitate calls with regional DEI chairs. Having the consultant facilitate the calls, which did not happen consistently this Society Year, would take the burden off volunteers.

She reported that the consultant will provide guidance on what group the DEI Chairs should report to.

There was discussion of the consultant reviewing staff hiring practices as well. Mr. Littleton suggested that volunteer and staff initiatives be kept separate. He stated that he was very confident that Society's hiring practices were in compliance with US Federal guidelines.

MOTION 6 PASSED (28:0:1, CNV).

Mr. Yashar abstained.

Ms. Hanson reported that information items were included in the report for the BOD's review.

Mr. Knight thanked Ms. Hanson and the subcommittee for keeping this important work moving forward.

NEW BUSINESS**WILDFIRES AND ACCESS TO WILDFIRE STANDARDS**

Mr. Craddock reported that 302 wildfires were burning in four Canadian provinces, with many starting mandatory evacuations. When California was impacted by wildfires, free versions of Standard 44 were available online for free download. He requested that the same be done in response to the Canadian wildfires.

Mr. Littleton stated that there was no reason that applicable Standards could not be made available online for free download.

Ms. Gupta reported that there was a dedicated wildfire resources page where access to the free downloads would also be posted.

There was no objection.

2025-26 PRESIDENTIAL APPOINTMENTS**IEQ HUB STRATEGIC EVALUATION PRESIDENTIAL AD HOC**

Mr. McQuade reported that the IEQ Hub Strategic Evaluation Ad Hoc was organized to investigate a comprehensive approach while meeting proper IEQ requirements. He reported that the fiscal impact would be a one-day planning meeting at the Annual Conference.

FUTURE OF ASHRAE CONFERENCES PRESIDENTIAL AD HOC

Mr. McQuade reported that a staff presentation on the future of ASHRAE Conferences was previously made to the BOD. That presentation was also attached to the agenda. This ad hoc would continue the work started by staff.

PEAC/TRAC STREAMLINING

Mr. McQuade reported that Ms. Keen offered to streamline PEAC/TRAC processes. He reported that she will be compiling a list of members who participated in past PEACs and TRACs to assist with the effort. There was no cost associated with this effort.

UPCOMING MEETINGS

Mr. Knight reviewed the meeting dates and times for the BOD meetings at the Annual Conference in Phoenix.

ADJOURNMENT

The meeting adjourned at 11:13 am without objection.

Jeff Littleton

Jeff H. Littleton, Secretary

ATTACHMENTS:

- A. Trends and Research Gaps Report
- B. DEI Talking Points and Script
- C. Calloway Consultants Proposal

Emerging Trends and Research Gaps in Environmental Health

Spring 2025

An Environmental Health Committee Report to ASHRAE Technology Council

This report is prepared as a part of the MBO's assigned to Environmental Health Committee. Based on the feedback from the members of the EHC a list of recent trends and research gaps in the environmental health field and their impact on HVAC&R industry was prepared.

Microplastics as a source of particulate matter

Microplastics are an emerging environmental contaminant found in air, water, soil, and biota. Despite rising concern over their potential health and ecological impacts, the absence of standardised methods for sampling and analysis remains a major barrier to understanding their distribution, abundance, and effects. Current techniques vary widely depending on the sample matrix, particle size, and study objectives, with methods including enzymatic digestion, spectroscopic analysis, forensic fiber techniques, and thermal decomposition.

No single analytical approach is suitable for all environmental conditions, and even similar sample types may require different processing depending on characteristics such as particle density or organic content. Given this complexity, harmonization—rather than full standardization emerges as a more achievable short-term objective. Harmonization focuses on using consistent reporting units, quality control protocols, and transparent documentation of analytical procedures.

This allows data comparability across studies and supports monitoring of spatial and temporal trends in microplastic pollution. It supports future regulatory standards, particularly in sectors such as water treatment and public health. Collaborative method development and shared best practices will be essential to advance the field.

Chlorine flushing as a source of chloroform

Chloroform, a volatile disinfection byproduct formed during the chlorination of water, is now recognised as an indoor air pollutant of concern. Recent studies have shown that routine use of chlorinated water in homes—particularly during activities like showering, washing, or cooking—can release chloroform into the indoor environment through volatilisation. This process can be intensified during chlorine flushing of water distribution systems, a standard maintenance practice aimed at ensuring water safety. Studies show

indoor chloroform concentrations may exceed outdoor levels by up to tenfold, posing potential inhalation risks.

Evidence suggests that chloroform emissions during residential water use are not only common but also underreported. In some cases, indoor exposure may surpass that from drinking water ingestion. Elevated concentrations have also been documented in facilities using chlorinated water, such as swimming pools and laundries. As concern grows over indoor air quality, chloroform emissions from municipal water treatments and household activities represent an emerging trend in environmental health research, highlighting the need for better ventilation strategies and exposure risk assessments.

Wildfires

Recent research highlights the varying health impacts of particulate matter (PM) produced by wildfires, depending on the materials burned. While vegetation fires generate organic carbon particles, wildfires that consume buildings, vehicles, and other urban infrastructure release more complex and potentially more hazardous pollutants. These may include heavy metals, volatile organic compounds, and synthetic chemicals not typically present in natural biomass.

This variability in composition suggests that not all wildfire smoke poses equal health risks. In urban-interface fires, the inhalation of toxic combustion products may have more severe respiratory and systemic health effects compared to exposure to smoke from forested areas. As climate change increases both the frequency and scale of wildfires, understanding the source-specific toxicity of emitted particulate matter is becoming a critical area of public health research and regulatory concern.

Using Disability Adjusted Life Years for justifying and setting standards

Over the past few decades, the field of public health has developed a unified metric of harm called the Disability Adjusted Life Year, or DALY, that includes both quality of life lost to illness or disease and life lost to premature death. DALYs are now the standard metric for evaluating public health programs, international aid, and government regulations. IEQ researchers and ASHRAE standards committees are now starting to use DALYs in their work. DALYs solve two problems for us:

First, DALYs can help justify IEQ standards. We can show that improving IAQ prevents harm, i.e. 'purchases' life and health, for a good price compared to other health regulations. This is true even in situations where improved standards are not profitable for business owners.

Second, DALYs can be used to make better standards. At minimum, we can use them to set thresholds based on the harm that a contaminant would cause. The cutting edge of standards, as demonstrated in the revised 62.2 Standard, is to define good IEQ as

minimizing the total harm caused, and create a 'harm budget' that the environment cannot exceed.

Sensors

In 2025, the deployment of real-time air quality monitoring devices within buildings is becoming standard practice for new, and existing, buildings (during renovations). The combination of real-time monitoring, smart ventilation, and predictive modeling is a game-changer for indoor and outdoor air quality management. With open data platforms aggregating sensor data, it also enhances transparency and public awareness. These devices, when integrated with smart ventilation systems, can provide tenants with assurance of a healthy indoor environment. These advancements will directly impact building regulations, sustainability initiatives, or tenant well-being.

The integration of real-time data collection and advanced modelling techniques is revolutionizing the scope of air quality monitoring. With the proliferation of open data platforms and networks of sensors deployed across urban and rural areas, it is now possible to compile live measurements from numerous devices. These datasets feed into sophisticated models that provide a comprehensive understanding of air quality over a large area. Such developments empower governments, researchers, and the public with the ability to track pollution levels dynamically, to predict air quality trends, and to develop effective mitigation strategies. New research using the data obtained from sensors will enhance understanding and use of controls, and will enable building owners to control the indoor environmental quality in their buildings. Sensor accreditation, currently underway at the American Industrial Hygiene Association Laboratory Accreditation Program (AIHA LAP), will become important since there is currently no formal, recognized process to validate the performance of direct-reading sensor devices. This validation will potentially undermine the health and safety of the individuals they intend to protect.

Sensor networks are increasingly being integrated with artificial intelligence (AI) platforms. These systems combine real-time data with predictive modelling, occupancy patterns, and weather forecasts to optimize building operations. However, concerns remain over algorithm transparency, data privacy, and the real-world validation of AI tools. Formal testing protocols and performance standards are needed to ensure health and safety are not compromised.

As these technologies develop, collaboration between environmental health researchers, building engineers, and AI specialists will be essential to ensure that both sensor data and AI systems support healthier indoor environments.

Heat Stress

Rising global temperatures are increasing the frequency and severity of heatwaves, with significant implications for vulnerable populations indoors. While thermal comfort and

temperature thresholds are well established in building design, there is growing interest in early biomarkers of physiological heat stress, particularly in settings such as schools, care homes, and hospitals.

Heat shock proteins (HSP70, HSP90) are consistently upregulated in response to elevated core body temperature and cellular stress. They are detectable in blood, saliva, and potentially urine, and rise before clinical symptoms appear. Their use as early warning indicators is well supported by studies in occupational and athletic settings. Other markers—such as cortisol, inflammatory cytokines (IL-6, TNF- α), and oxidative stress indicators—may complement this molecular profile, offering a fuller picture of subclinical stress during heat events.

There is an opportunity to integrate physiological screening with environmental monitoring. A pilot study could track HSP70 levels in children or elderly individuals during a heatwave, alongside hydration, symptoms, and indoor environmental data. This could support the development of heat stress risk tools for caregivers, enabling targeted interventions before occupants become clinically unwell.

These developments underline the need for better integration between building performance metrics and occupant health monitoring, especially as climate change intensifies thermal exposure risks indoors.

Novel Airborne Diseases

Health agencies are increasingly focused on several emerging airborne disease threats. A key concern is the recent mutation of avian influenza A (H5N1), with cases in North America showing changes that could increase transmissibility to humans. Risk remains low, but pandemic potential requires ongoing monitoring.

Human metapneumovirus (HMPV), a respiratory virus similar to RSV, is also drawing attention due to rising cases in China and the U.S. Although seasonal, spikes in infections and severity—particularly among children and older adults—suggest the need for enhanced surveillance.

In Central Africa, an unidentified illness dubbed ‘Disease X’ has raised alarm. This illness affects primarily young children, and the symptoms include fever, cough, and severe anemia. Its cause and transmission route remain unknown, but potential airborne spread is under investigation.

Finally, the World Health Organization has revised its definitions of airborne transmission to better guide responses to both familiar and novel pathogens. Together, these developments reflect growing concern about the adaptability of respiratory viruses, underscoring the importance of early detection, global coordination, and preparedness for future outbreaks.

Fungal Pathogens and Indoor Risk

Candida auris is an emerging fungal pathogen of global concern. Since its first identification in 2009, *C. auris* has caused difficult-to-control outbreaks in hospitals across five continents, including in several EU countries. Spain and the UK have reported hundreds of cases, many linked to nosocomial transmission in intensive care settings. *C. auris* is often resistant to multiple antifungal drug classes and can persist on surfaces and equipment, making it highly suited to healthcare environments.

Recent research supports the hypothesis that *C. auris* emerged from environmental origins, potentially accelerated by global warming. Wild-type isolates from the Andaman Islands differ genetically and phenotypically from clinical strains—showing slower growth at mammalian temperatures and lower antifungal resistance. This supports the idea that thermal adaptation, in response to rising global temperatures, allowed *C. auris* to cross the endothermy barrier (the high body temperature of mammals and birds restricts many fungal species, making them less likely to cause infections) and become pathogenic to humans.

In the EU, outbreaks have demonstrated the organism's potential for rapid intra- and inter-facility spread. Laboratory misidentification, limited decolonization strategies, and persistent environmental contamination all contribute to outbreak difficulty. The ECDC recommends targeted infection control measures, including screening, isolation, and rigorous disinfection with fungicidal agents. Many member states have yet to fully implement surveillance systems or reference laboratory capacity.

The emergence of *C. auris* highlights a broader concern: fungal pathogens with environmental reservoirs and high thermal tolerance may become increasingly common in buildings. Indoor environments that serve vulnerable populations—especially hospitals and care homes—should monitor emerging fungal risks as climate trends, antifungal use, and healthcare practices continue to evolve.

Second Hand Emissions from Non-Tobacco Sources

Second-hand exposure to smoke from non-tobacco sources, such as marijuana and hookah, is now an emerging health concern. While tobacco smoke is known for indoor air pollution and health risks, recent studies show that marijuana smoke may produce even higher levels of fine particulate matter (PM_{2.5}). Some studies indicate that second-hand marijuana smoke can emit over three times more PM_{2.5} than tobacco cigarettes, raising concerns about respiratory and cardiovascular risks for bystanders, particularly in poorly ventilated spaces.

Similarly, hookah use generates substantial second-hand smoke exposure. A single smoking session can emit significant quantities of pollutants including carbon monoxide, volatile organic compounds, and particulates. Despite the water filtration process, emissions from hookah smoke still contain harmful substances that can linger in indoor environments, affecting non-users nearby.

These findings challenge the perception that non-tobacco smoking is less harmful and point to a need for updated health policies. As social and legal norms around marijuana and hookah evolve, understanding and addressing second-hand exposure risks is becoming more important for indoor air quality management and health protection.

Tradeoffs between De-carbonization, Energy Efficiency, and Indoor Environmental Quality

Balancing sustainability goals with indoor environmental quality (IEQ) is an emerging challenge in building design and environmental health. De-carbonization and energy efficiency measures are accelerating, but they do not always align with efforts to protect occupant health. This tension is increasingly recognized and reflected in phrases such as '*Sustainability Without Compromise*', '*Healthy Energy Efficiency*', and '*Energy-Efficient IAQ*'.

Despite this attention, frameworks to evaluate and manage trade-offs between energy use, carbon reduction, and indoor environment quality remain limited. Progress will be difficult without clear principles that prioritize human health within sustainability targets. Collaboration between environmental health researchers, building scientists, and policymakers is needed to develop standards that safeguard both planetary and human health.

Talking Points and Script**Executive Summary**

ASHRAE is a merit- and science-based organization. The technology and consensus we develop are better when we include many perspectives and encourage meaningful participation.

ASHRAE maintains its core values. Diversity, equity and inclusivity are part of our values and support our mission and vision.

ASHRAE's mission is to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields.

ASHRAE is global. The non-U.S. portion of our membership is growing; currently it's over 30%.

ASHRAE's vision is a healthy, sustainable built environment for all.

Enhancing our Mission as a Global Society

As a global organization, ASHRAE's strength grows when we collaborate across borders, backgrounds and perspectives. Embracing DEI is critical to addressing challenges in the HVAC&R industry, including workforce development and overcoming staffing shortages. Together we build consensus and provide solutions for global issues.

Advancing DEI ensures we attract and retain top talent from all walks of life. This is essential for sustaining ASHRAE's position as a leading engineering society. It allows us to advance in the field of technology and helps to build a sustainable world. It reinforces our commitment to supporting a diverse and skilled membership that reflects the world we serve.

Embracing Diversity is a Commitment to Excellence

Having diverse teams, committees and membership has been shown to be advantageous and outperform homogenous ones through broader perspectives, better problem-solving and increased creativity. This commitment supports ASHRAE's long-standing reputation for rigorous consensus building and technical excellence.

ASHRAE is a leader in setting standards across the Built Environment and HVAC&R industry. ASHRAE develops merit and performance within ASHRAE and the broader industry by educating, credentialing and developing technical products, so that all related industries can benefit from an equitable, level playing field and well-trained employees.

When selecting members for volunteer positions, the mantra we follow is “the office seeks the person”. This means that there is no campaigning for positions. Only qualified individuals are considered; ASHRAE has a vast pipeline to develop the necessary skills to succeed as a volunteer leader.

Equity Reflects ASHRAE's Core Values

Respect is one of ASHRAE's core values, and our support of equity reflects that. By fostering respectful, inclusive environments, we create a culture where all members, regardless of age, gender, ethnicity, physical appearance, thought styles, religion, nationality, socioeconomic status, belief systems, sexual orientation or education can thrive and contribute to ASHRAE's mission.

ASHRAE sponsors meaningful and thoughtful use of our volunteers' expertise through programs such as community sustainability projects in conjunction with the annual and winter conferences. Most of the projects target underserved communities and spotlight the value that our volunteers bring while inspiring more people to improve the built environment. Our volunteers work with Engineers Without Borders to bring simple, sustainable energy and water upgrades to remote communities without the resources for maintaining complicated systems.

Inclusion Makes ASHRAE a Better Organization

ASHRAE strives to promote a sense of belonging. One of ASHRAE's most successful initiatives resulted in Member Resource Groups (MRGs). Two established MRGs are Young Engineers in ASHRAE and Women in ASHRAE. Two new MRGs were started in 2024-2025: New Members and Professionals with Young Families. These groups build community, enhance professional development and discover unmet needs. This leads to a stronger sense of belonging and identity within our organization.

Short Messages Inspired by the Member Survey

1. Why is ASHRAE committed to Diversity, Equity, and Inclusion?

ASHRAE's commitment aligns with our core values of integrity, respect, and collaboration. We believe that fostering a diverse and inclusive environment enhances our ability to develop innovative solutions for the built environment. By embracing diverse perspectives, we strengthen our Society and better serve our global community.

2. How does DEI contribute to ASHRAE's mission?

As an apolitical, global organization, ASHRAE focuses on technical excellence and innovation. DEI contributes to this mission by bringing together varied experiences and viewpoints, which are essential for addressing engineering challenges worldwide. Our inclusive approach ensures that we remain a leader in developing sustainable solutions for diverse communities.

3. Is this a political initiative within ASHRAE?

No, ASHRAE maintains our commitment to our core values and the recognition that inclusivity enhances our professional environment. By promoting diversity and equity, we aim to create a welcoming space for all members, which in turn fosters collaboration and innovation.

4. What action has ASHRAE taken within the organization?

ASHRAE established a Board DEI Advisory Subcommittee to identify and address barriers to inclusion. This group focuses on developing programs and policies that support underrepresented groups, ensuring equitable opportunities across all levels of the Society. Additionally, ASHRAE encourages chapters to engage in initiatives appropriate for the diverse communities they serve. ASHRAE's Member Resource Groups (MRGs) such as the Young Engineers in ASHRAE (YEA), Women in ASHRAE, New Members and Professionals with Young Families, build community, enhance professional development and uncover diverse perspectives.

5. How does ASHRAE integrate DEI into its operations?

ASHRAE is committed to continuously evaluating and adapting our policies and practices. ASHRAE provides resources and training to support inclusive practices and encourages feedback from members to identify areas for improvement. By embedding DEI into our organizational framework, we strive to maintain an environment where all members can thrive.



J. CALLOWAY CONSULTANTS

DIVERSITY, EQUITY & INCLUSION

Strategic Implementation Proposal

May 9

20
24



Overview

Introduction

We are pleased to submit this proposal to support the implementation and operationalization of DEI-informed, mission-driven programs that advance **IDEAS**—Innovation, Diversity, Equity, Access, and Sustainability. With extensive experience in DEI consulting and a proven track record of driving equity through people-centered policies, leadership engagement, and strategic execution, our team is well-equipped to partner with ASHRAE in embedding DEI into the core of its mission: to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

Our approach is designed to translate DEI principles into actionable strategic implementation and programs that strengthen ASHRAE's organizational culture, enhance representation across the engineering and HVAC industry, and ensure long-term, inclusive impact for the Society and the communities it serves.

We encourage you to review this proposal and offer amendments or revisions that you feel are appropriate to help us better support you.

About Us

J. Calloway Consultants (JCC) is a boutique firm dedicated to assisting corporations, academic institutions, agencies, NGO's and non-profits redefine the way people work together by harnessing the power of difference. We offer innovative, customized solutions to meet the distinct needs of our clients across all sectors. Our specialized expertise in tailored DEI strategy development and implementation, organizational culture enhancement, and training and development is designed to address unique challenges while prioritizing the human element at the core of our services.

We believe in enhancing your organizational culture, uniquely tailored to reflect your mission-driven values. We prioritize creating bespoke, people-centered strategies that drive meaningful, lasting change. Our methodology centers on these four core pillars:

People-Centered Solutions:

We're dedicated to fostering an environment that deeply appreciates and fully integrates every individual. By championing equitable practices and inclusive policies, we lay the groundwork for a culture that genuinely embraces diversity.

Learning and Development:

Commitment to continuous education, skill enhancement, and leadership alignment is paramount. By investing in education and development programs, we equip individuals and teams with the necessary skills, resources, and tools to effectively serve and contribute to the broader communities you serve.

Strategic Alignment and Sustainability:

Recognizing that cultural development is a continuous journey, we prioritize the ongoing assessment and enhancement of our strategies to ensure they remain responsive to your organization's evolving needs. This approach enables us to consistently align our efforts with your strategic priorities, embedding your core values into the design and delivery of programs and initiatives that drive lasting impact.

Our Proposed Approach

Based on insights gathered during our initial discovery call, we propose the following approach to effectively assess your organization's capacity to advance and operationalize DEI strategic programming across all areas. Upon completion of this engagement, subsequent phases—focused on strategic integration, implementation, and the development of DEI-aligned programs and policies—may be further refined to support long-term impact and sustainability.

Phase 1: Discovery & Alignment

Objective: Understand ASHRAE's current DEI Advisory Subcommittee recommendations, internal readiness, and strategic mission alignment.

Key Activities:

- Conduct a DEI Baseline Assessment (policy review, demographic analysis, programmatic assessments of all regional chapters.
- Interview key stakeholders (ASHRAE staff, Society members, Board of Directors)
- Assess alignment between DEI and the organization's mission, values, and technical goals.
- Deliver a DEI Strategic Implementation Readiness Report that includes a SWOT analysis and roadmap implementation plan.

Deliverables:

- DEI Strategic Implementation Readiness Report

Timeline:

- 6-8 weeks

Projected Costs

Engagement Details	Cost
Phase 1	\$5,000
Administrative Fees	\$2,500
Training and Facilitation *optional	\$3,500
Total	\$7,500

**Projected costs do not include consultant travel.*

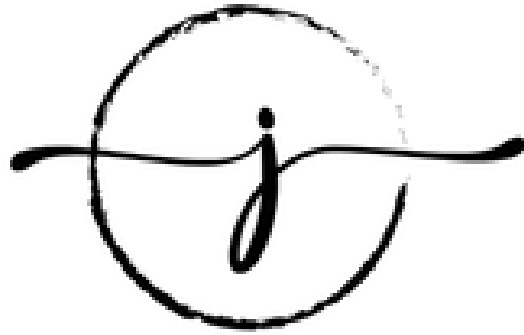
| Consultant Bio



Jai Calloway, JD

Jai McBride Calloway is the Founder and Principal Consultant of J. Calloway Consultants. has over 15 years of experience as a change maker and people strategist empowering organizations toward culture transformation and equitable workplace environments through strategy development and programmatic implementation. Jai is known for her unique approach to reimagining business models by centering on people-centric strategic frameworks. She blends her experience in alternative dispute resolution methodology, diversity and inclusion, and organizational development to provide equitable solutions to highly complex organizational issues. In addition to founding J. Calloway Consultants, LLC, a boutique firm dedicated to helping organizations create equitable, inclusive, and high-performing workforce cultures, Jai proudly serves on multiple civic boards, and works as a trusted executive advisor.

Jai earned a Bachelor of Science in Sociology from the University of New Mexico, a Master of Science in Public Affairs from Texas Southern University, a Juris Doctor from South Texas College of Law, and a Master of Law in Dispute Resolution with a focus on cross-cultural conflict and advanced mediation from Pepperdine Caruso School of Law.



J. CALLOWAY CONSULTANTS

Thank you for your consideration.

www.jaicalloway.com
info@jaicalloway.com