



MINUTES

BOARD OF DIRECTORS MEETING

Wednesday, November 6, 2024

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, November 6, 2024

CALL TO ORDER..... 2

VALUE STATEMENT..... 2

ROLL CALL/INTRODUCTIONS..... 2

REVIEW OF MEETING AGENDA..... 2

REVIEW OF ACTION ITEMS..... 2

APPROVAL OF MINUTES..... 2

2025-28 STRATEGIC PLAN REVIEW AND APPROVAL..... 2-3

EXCOM REPORT TO THE BOD..... 3-4

COUNCIL REPORTS TO THE BOD..... 4-7

MEMBERS COUNCIL REPORT..... 4

PUBLISHING AND EDUCATION COUNCIL..... 4

TECHNOLOGY COUNCIL..... 4-7

FINANCE COMMITTEE REPORT..... 7

DEI SUBCOMMITTEE REPORT..... 7-8

MEMBERSHIP MODEL AD HOC REPORT..... 8-9

ASHRAE BRANDING..... 9

EXECUTIVE SESSION..... 9

UPCOMING MEETINGS..... 9

ADJOURNMENT..... 9

PRINCIPAL APPROVED MOTIONS

Board of Directors Meeting
Wednesday, November 6, 2024

No. - Pg.	Motion
1 - 2	The minutes from the June 23, 2024 and June 26, 2024 Board of Directors meetings be approved.
4 – 4	Members Council recommends to the Board of Directors the regional boarders be adjusted so that the countries of Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, and Uzbekistan be changed from within Region XIV and Region XV to Region-at-Large, effective immediately.
5 – 4	<p>Technology Council recommends to the Board of Directors that the Rules of the Board 1.300, Position Documents and Public Policy Issue Briefs be revised as follows:</p> <p>1.300 POSITION DOCUMENTS AND PUBLIC POLICY ISSUE BRIEFS</p> <p>1.300.001 Definitions</p> <p>1.300.001.1 An ASHRAE Position Document is a BOD-approved document expressing the views of the Society on a current issue of importance to ASHRAE and its members. It includes a concise summary statement as well as supporting documentation, analysis and/or rationale, and recommendations.</p> <p>1.300.001.2 An ASHRAE Public Policy Issue Brief (PIIB) is a one-page brief on current relevant legislative/regulatory issues that are of interest to ASHRAE. (07-01-31-23B)</p> <p>1.300.002 Initiation: Any ASHRAE officer, member, committee or council, or any responsible outside entity may suggest issues for which an ASHRAE Position Document or Public Policy Issue Brief should be developed or may suggest whether existing ASHRAE documents should be revised, withdrawn, or rescinded.</p> <p>a. <u>Requests for new</u> Position Document requests should be sent to the Technology Council chair for consideration. <u>Technology Council recommends initiation of new position to the Board of Directors Executive Committee for approval.</u> Position Documents are produced using the procedures and forms located in the Technology Council MOP. (22-02-02-15)</p> <p>b. Public Policy Issue Brief requests are sent to Government Affairs Committee for consideration. Government Affairs Committee shall make recommendations to create a new PPIB; re-affirm, amend, or expire and remove existing PPIBs. PPIB’s are developed by the Government Affairs Committee.. (22-02-02-15)</p> <p>1.3000.003 Approval</p> <p><u>1.300.003.1 Revision of Existing Position Documents.</u></p> <p><u>A. Technology Council approves requests for initiation of revision of existing position documents when there is no proposed changes to the title, purpose and scope (TPS).</u></p> <p><u>B. Technology recommends revisions to position document title, purpose and scope changes to the Board of Directors Executive Committee for approval.</u></p> <p>1.300.003.1 Technology Council recommends publication of Position Documents including changes, to the Board of Directors for approval. Position Documents will be</p>

	<p>distributed to document review subcommittee (DRSC), Technology Council and the Board of Directors for a review at least 30 days prior <u>to being considered for approval. PDs should be reviewed for technical content, to assure procedures have been followed, and to assure the document stays within the approved TPS.</u></p> <p>1.300.003.2 Technology Council approves re-affirmation or withdrawal of Position Documents and reports to the Board of Directors for information.</p> <p>1.300.003 The Board of Directors acts on Technology Council recommendations for publication of Position Documents) (14-07-02- 29)</p> <p>1.300.003.4 GAC shall send newly developed, revised or reaffirmed PPIBs for review by Technology Council or its designee. After review by Technology Council or its designee, comments shall be sent to the GAC, and the GAC shall communicate to Technology Council how it has addressed comments received. GAC shall submit each revision reaffirmation or withdrawal of existing PPIBs as an information item to ExCom. The GAC shall submit any new PPIBs to ExCom for approval along with background information describing how it addressed comments received from Technology Council or its designee. (22-02-02-15)</p> <p>1.300.004 Archiving (12-06-27-19/12-10-26-11/22-02-02-15)</p> <p>1.300.04.1 Position Documents</p> <ul style="list-style-type: none"> A. The Technology Department shall maintain information concerning the history of development and approval of Position Documents. B. Position Documents are reviewed every 30 months and are automatically withdrawn if not reaffirmed or revised within 36 months of issue. Each version of a Position Document will contain the expiration date on the cover. (22-02-02-15) C. Current Position Documents will be posted on the ASHRAE website for free download. D. Technology Council shall maintain the current list of Position Documents on the ASHRAE website. <p>1.300.004.2 Public Policy Issue Briefs (17-06-28-11/22-02-02-15)</p> <ul style="list-style-type: none"> A. Government Affairs Committee shall manage the current list of Public Policy Issue Briefs by evaluating each at least on an annual basis and formally decide to re-affirm, amend, or let expire and remove, each brief, subject to the approval of the Executive Committee of the ASHRAE Board of Directors. B. The Government Affairs Committee shall be responsible for archiving, publication and distribution of Public Policy Issue Briefs. GAC shall maintain and annually review each PPIB and determine whether to update or rescind it. PPIBs will include the date of creation or update. (23-02-08-02/22-02-02-15)
6 – 6	Technology Council recommends that the Board of Directors approve a revision to the <i>Energy Efficiency in Buildings</i> position document (PD) as shown in ATTACHMENT D.

ACTION ITEMS

Board of Directors Meeting
Wednesday, November 6, 2024

No. - Pg.	Responsibility	Summary of Action	Status	Goal Date
1 – 2	Scoggins	Work with AASA to review and provide recommendations on external actionable items from the Global HVAC Summit. (Assigned February 5, 2023)	Ongoing	



MINUTES

BOARD OF DIRECTORS MEETING

Wednesday, November 6, 2024

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
Genevieve Lussier, Region II DRC
Sherry Abbott-Adkins, Region III DRC
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
Luke Leung, DAL
Patrick Marks, DAL
Corey Metzger, DAL
Wei Sun, DAL
David Yashar, DAL

GUESTS PRESENT:

Andres Sepulveda
Ashish Rakheja
Trent Hunt

Dunstan Macauley
Julia Riordan
Megan Cruz
Leigh Lain Walker

STAFF PRESENT:

Candace Denton, Sr. Manager - Board Services
Chandrias Jolly, Manager - Board Services
Vanita Gupta, Director – Marketing
Lizzy Seymour – Director – Member Services
Mark Owen, Director - Publications & Education
Kirstin Pilot, Director - Development
Stephanie Reiniche, Director - Technology
Alice Yates, Director - Government Affairs
Craig Wright, Director of Finance

Tammy Catchings, Mgr. – Region Activities
Steve Hammerling, Sr. Mgr. – Research & Technical Services
Rhiannon Masterson, Mgr. – Chapter Programs
Ragan McHan, Mgr. – Conference Services
Tanisha Meyers-Lisle, AMOS - Administration
Ryan Shanley, Sr. Mgr. - Standards
Tony Giometti, Group Mgr. – Conf. Programs

CALL TO ORDER

The meeting was called to order at 8:02 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 introduced themselves. Guests were welcomed and thanked for their attendance. Members, guests, and staff were in attendance as noted above.

REVIEW OF MEETING AGENDA

Mr. Knight reviewed the meeting agenda. There were no changes or additions.

REVIEW OF ACTION ITEMS

Action item 1 was reported as ongoing. All other action items were reported as complete.

AI - 1

Mr. Leung and Mr. Rakheja reported on action item 2. It was reported that GAC may be starting a program in Africa. Additionally, GTIC is working to create 'global champions' who would be regional conduits for information exchange.

ATTACHMENT A was shown on screen and identifies organizations (in bold) that are recommended for Society to enter into an MOU with.

Mr. Leung and Mr. Rakheja were thanked for their work. They were asked to provide additional feedback on how the proposed relationships might work. The recommendations will be presented at an upcoming ExCom meeting.

APPROVAL OF MINUTES

Mr. Peach moved and Mr. Craddock seconded that

1. The minutes from the June 23, 2024 and June 26, 2024 Board of Directors meetings be approved.

Mr. Wright (Buzz) asked for an editorial change on page 19, his comments regarding motion 11:

Mr. Wright (Buzz) reported that 80-90% of the current system relies on the honor system already; and that Regional Leadership workload likely results in over crediting or no points being entered.

MOTION 1 PASSED (Unanimous Vote, CNV).

2025-28 STRATEGIC PLAN REVIEW AND APPROVAL

Mr. Abellon stated that the Planning Committee and Strategic Plan Development Subcommittee were excited to present the draft 2025-28 S for the BOD's approval.

Julia Riordan and Megan Cruz from McKinley Advisors reviewed the work and development of the draft plan. They reviewed the objectives, stakeholders, and engagement plans.

BOD members provided feedback and comments. Comments submitted via the chat are included in ATTACHMENT B.

Mr. Abellon moved and Mr. Smith seconded that

2. The Planning Committee recommends that the Board of Directors approve the goals, objectives, and initiatives, as proposed for the 2025-28 ASHRAE Strategic Plan as presented in ATTACHMENT C, with the addition of IEQ and removal of the word *cause* as part of Goal #1 and editorial changes/review regarding the professional journey in Goal #2, AI as a key enabler, the importance of IEQ and the use of the terms *decarbonization* and *climate change*.

Mr. Abellon reported that the full background was included in the presentation, attached to the agenda.

After some discussion it was suggested that the motion be postponed and that a “clean” document be presented to the BOD in December.

Mr. Craddock moved and Mr. Cochrane seconded that

3. MOTION 2 be postponed until the December 4, 2024, BOD meeting.

It was suggested that it might be more productive to defeat the original motion with the understanding that a revised recommendation will be made to the BOD in December.

MOTION 3 WITHDRAWN (without objection).

MOTION 2 WITHDRAWN (without objection).

Mr. Abellon asked that BOD members provide any additional comments or feedback on the draft plan as soon as possible.

Mr. McQuade stated that the BOD should be giving guidance on the direction of the plan. Final wording of all the plan documents won't happen until the spring but initiatives, goals, and objectives need to be approved so the PLC can continue their work. He suggested that the motion presented in December should be stated in such a way that Marketing has the ability to make editorial changes. He stated that the BOD should not get into the minutia of the plan.

The BOD was encouraged to review the plan before the December meeting for the best use of the BOD's time.

Mr. Knight reminded the BOD that this is an important decision for the Society.

Representatives from McKinley Advisors left the meeting.

EXCOM REPORT TO THE BOD

Mr. Knight reported that there were no recommendations for the BOD's consideration. He reviewed information items presented in the report. The full report was attached to the agenda.

He advised that the EHC trends report was attached for the BOD's information and review.

Mr. Knight was asked to provide clarification on the information item regarding the possible development of technician training. He stated that the training would be for any non-engineer working in the HVAC&R industry.

COUNCIL REPORTS TO THE BOD

MEMBERS COUNCIL

Mr. McQuade reported on behalf of the council. The full report was attached to the agenda. He expressed his gratitude for the great members serving on the council. He reported that the council was on track to complete all MBOs.

Mr. McQuade moved that

4. Members Council recommends to the Board of Directors the regional borders be adjusted so that the countries of Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, and Uzbekistan be changed from within Region XIV and Region XV to Region-at-Large, effective immediately.

Mr. McQuade provided background on the motion. On September 9, 2024, the DRCs from Region XIV, Region XV and the Region-at-Large submitted a joint letter requesting the adjustment of regional boundaries to move nine countries from Region XIV and one country from Region XV to the Region-at-Large. The letter states that these countries will be better served by the Region-at-Large due to their geographic proximity and their shared demographics. The letter also states that RAL is well-positioned to drive membership in these countries. All three DRCs signed the letter.

MOTION 4 PASSED (Unanimous Vote, CNV).

Mr. McQuade reviewed information items from the report.

He reported that a motion to convert ribbons, banners, and certificates into digital format was defeated. The elimination of these hard copy recognition items was assumed when the council budget was finalized. The council should be able to absorb this expense but he wanted to bring it to the BOD's attention.

Mr. Knight thanked Mr. McQuade and the council for their report and great work.

PUBLISHING AND EDUCATION COUNCIL

Mr. Sekhar reported on behalf of the council. The full report was attached to the agenda.

He reported that there were no recommendations for the BOD's consideration. He reviewed information items from the report.

TECHNOLOGY COUNCIL

Mr. Conlan reported on behalf of the council. The full report was attached to the agenda.

Mr. Conlan moved that

5. Technology Council recommends to the Board of Directors that the Rules of the Board 1.300, Position Documents and Public Policy Issue Briefs be revised as follows:

1.300 POSITION DOCUMENTS AND PUBLIC POLICY ISSUE BRIEFS

1.300.001 Definitions

1.300.001.1 An ASHRAE Position Document is a BOD-approved document expressing the views of the Society on a current issue of importance to ASHRAE and its members. It includes a concise summary statement as well as supporting documentation, analysis and/or rationale, and recommendations.

1.300.001.2 An ASHRAE Public Policy Issue Brief (PPIB) is a one-page brief on current relevant legislative/regulatory issues that are of interest to ASHRAE. (07-01-31-23B)

1.300.002 Initiation: Any ASHRAE officer, member, committee or council, or any responsible outside entity may suggest issues for which an ASHRAE Position Document or Public Policy Issue Brief should be developed or may suggest whether existing ASHRAE documents should be revised, withdrawn, or rescinded.

a. Requests for new Position Document ~~requests~~ should be sent to the Technology Council chair for consideration. Technology Council recommends initiation of new position to the Board of Directors Executive Committee for approval. Position Documents are produced using the procedures and forms located in the Technology Council MOP. (22-02-02-15)

b .Public Policy Issue Brief requests are sent to Government Affairs Committee for consideration. Government Affairs Committee shall make recommendations to create a new PPIB; re-affirm, amend, or expire and remove existing PPIBs. PPIB's are developed by the Government Affairs Committee.. (22-02-02-15)

1.3000.003 Approval

1.300.003.1 Revision of Existing Position Documents.

A. Technology Council approves requests for initiation of revision of existing position documents when there is no proposed changes to the title, purpose and scope (TPS).

B. Technology recommends revisions to position document title, purpose and scope changes to the Board of Directors Executive Committee for approval.

1.300.003.1Technology Council recommends publication of Position Documents including changes, to the Board of Directors for approval. Position Documents will be distributed to document review subcommittee (DRSC), Technology Council and the Board of Directors for a review at least 30 days prior to being considered for approval. PDs should be reviewed for technical content, to assure procedures have been followed, and to assure the document stays within the approved TPS.

1.300.003.2 Technology Council approves re-affirmation or withdrawal of Position Documents and reports to the Board of Directors for information.

1.300.003 The Board of Directors acts on Technology Council recommendations for publication of Position Documents) (14-07-02- 29)

1.300.003.4 GAC shall send newly developed, revised or reaffirmed PPIBs for review by Technology Council or its designee. After review by Technology Council or its designee, comments shall be sent to the GAC, and the GAC shall communicate to Technology Council how it has addressed comments received. GAC shall submit each revision reaffirmation or withdrawal of existing PPIBs as an information item to ExCom. The GAC shall submit any new PPIBs to ExCom for approval along with background information describing how it addressed comments received from Technology Council or its designee. (22-02-02-15)

1.300.004 Archiving (12-06-27-19/12-10-26-11/22-02-02-15)

1.300.04.1

Position Documents

- A. The Technology Department shall maintain information concerning the history of development and approval of Position Documents.
- B. Position Documents are reviewed every 30 months and are automatically withdrawn if not reaffirmed or revised within 36 months of issue. Each version of a Position Document will contain the expiration date on the cover. (22-02-02-15)
- C. Current Position Documents will be posted on the ASHRAE website for free download.
- D. Technology Council shall maintain the current list of Position Documents on the ASHRAE website.

1.300.004.2 Public Policy Issue Briefs (17-06-28-11/22-02-02-15)

- A. Government Affairs Committee shall manage the current list of Public Policy Issue Briefs by evaluating each at least on an annual basis and formally decide to re-affirm, amend, or let expire and remove, each brief, subject to the approval of the Executive Committee of the ASHRAE Board of Directors.
- B. The Government Affairs Committee shall be responsible for archiving, publication and distribution of Public Policy Issue Briefs. GAC shall maintain and annually review each PPIB and determine whether to update or rescind it. PPIBs will include the date of creation or update. (23-02-08-02/22-02-02-15)

Mr. Conlan reviewed the proposed changes, shown in red. He reported that the proposed edits would allow Tech Council to approve a TPS if it isn't changing; if there are changes, the recommendation would come before the BOD.

MOTION 5 PASSED (Unanimous Vote, CNV).

Mr. Conlan moved that

- 6. Technology Council recommends that the Board of Directors approve a revision to the *Energy Efficiency in Buildings* position document (PD) as shown in ATTACHMENT D.

MOTION 6 PASSED (30:0:1 CNV). Mr. Constantinide abstained.

Mr. Conlan reviewed information items from the report.

FINANCE COMMITTEE REPORT

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

She reported that Finance is looking for outside of the box ways to collect dues as the current model of annual dues increases does not seem to support global growth. The Finance Committee plans to have further discussions and will bring a recommendation regarding dues to the BOD at the December meeting.

It was reported that Chapter Treasurers had expressed concern over current available training. The Finance Committee will develop baseline financial training for chapter volunteers.

Mr. McQuade reported that Chapter Treasurer training is a co-MBO with Members Council; and Members Council is willing and able to help with Finance's efforts.

It was asked if Chapter Treasurer training could be developed in time for 2025 spring CRCs. Ms. Maston advised that the request would be taken back to Finance.

Ms. Hanson reported that there was an existing Treasurer training PPT currently being used. She suggested that Finance Committee may want to review it as they work to develop new training.

DEI SUBCOMMITTEE REPORT

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

She reported that the subcommittee restructured into four different ad hocs. The biggest objective of the subcommittee this year is to develop a cohesive method and call to action with regional chairs and within ASHRAE as a whole.

The DEI Subcommittee will be organizing one cultural event this Society Year. The event will be at the Annual Conference and will represent Hispanic heritage.

She reported that the DEI Subcommittee already created resources, but they weren't necessarily conducive to discussions. The subcommittee wants to work with existing resources to repurpose them as well as identify gaps.

Ms. Hanson moved that

7. The Board DEI Advisory Subcommittee recommends to the ASHRAE Board of Directors that the Board DEI Advisory Subcommittee rebrand with the new title, the Board of Directors IMPACT (Inclusivity for Maximizing Positive Action and Change, Together) Subcommittee.

Ms. Hanson reported that the proposed change identifies where Society has already defined a mission while also recognizing that other issues like accessibility have not been addressed. She reported that the subcommittee believes the change will boost the group's mission statement. The proposed change also hopes to eliminate some headwind for this group while inspiring and energizing those signing up to do this work at the chapter level.

She reported that chapter level volunteers would be called IMPACT Chairs.

There was extensive discussion of the motion. A summary of that discussion is below:

Spoke against the motion. Believe that DEI is well known by many, and IMPACT is not. The proposed change makes the purpose of the subcommittee less clear. If approved, it may be perceived that Society eliminated the DEI Subcommittee.

Don't like the idea of changing the subcommittee's name because of political pressure. Would rather have a clear role for a position that may not be filled as opposed to an unclear definition for a filled role.

The charge can be adjusted as needed but the current name is more clear.

Voted in favor of the motion at the subcommittee but speaking against the proposed motion. Have been involved in ASHRAE DEI initiatives for about 10 years. The term DEI has been politicized in the US and am concerned with the optics of approving this change.

Ms. Hanson advised that the subcommittee wanted to submit the proposed change to ExCom prior to the election so the recommendation would not be seen as a response to the election.

She suggested that IMPACT could be presented as a new program, a reboot. The DEI Subcommittee deliberated on this matter for quite some time.

Spoke against the motion. Given the timing, the optics could be disastrous.

Like the action and acronym and understand the subcommittee's desire. Suggest that it could be presented as the 'DEI Subcommittee presents IMPACT.'

MOTION 7 FAILED (0:27:2, CNV). Ms. Hanson and Mr. Smith abstained.

MEMBERSHIP MODEL AD HOC REPORT

Mr. Fulk reported on behalf of the ad hoc. The full report was shown on screen and attached to the agenda.

Mr. Fulk thanked members of the ad hoc for their good work and engagement. He also thanked staff for their great support, specifically Ms. Seymour and Mr. Gurley who had done the heavy lifting to this point.

He encouraged BOD members to review the information presented and provide comments so they can be addressed prior to Orlando. The goal is to have a final recommendation to the BOD in Orlando.

He reported that the ad hoc met with the Life Members Club leadership and they were in favor of the proposal as it relates to Life Members.

Mr. Fulk reviewed the current membership model and presented the proposed *simplified membership model*.

BOD members were asked to send comments to Mr. Fulk via email. Comments submitted in the chat would be shared with Mr. Fulk and the ad hoc.

Mr. Knight thanked Mr. Fulk and the ad hoc for the report and good work.

ASHRAE BRANDING

Ms. Gupta provided background on Society's change to its DBA in 2012.

She reported that there was consensus from staff not to rebrand to *ASHRAE International*. She reviewed the proposed recommendations and staff's responses. The full report was attached to the agenda.

She reported that there was consensus that ASHRAE is already known as a global and international society.

Mr. Owen added that spelling out the ASHRAE acronym isn't done anymore, so it wouldn't serve any great purpose to change what the acronym stands for.

The floor was opened for discussion. A summary of that discussion is below:

In favor of staff's recommendation. Like the addition of 'global' to the tag line and feel that it accomplishes all the desired changes.

Agree with staff's assessment.

Need to confirm if a motion is needed. If not, Marketing should be empowered to move forward.

Staff confirmed that the tag line is not in the ROB.

Mr. Knight stated that there was consensus from the BOD on the proposed change to the tagline. He advised that the Marketing Department was empowered to make the necessary updates.

Ms. Gupta reported that the Marketing team would have the tag line updated everywhere forward facing by January 1, 2025.

Mr. Knight thanked Ms. Gupta and Mr. Owen for their good work.

EXECUTIVE SESSION

Executive session was called at 10:45 am.

Open session reconvened at 11:00 am.

UPCOMING MEETINGS

Mr. Knight reviewed the BOD's upcoming meetings.

ADJOURNMENT

The meeting adjourned without objection at 11:00 am.

Jeff Littleton

Jeff H. Littleton, Secretary

ATTACHMENTS:

- A. Recommendations for Collaboration in the Global South
- B. WebEx Chat Log
- C. Draft 2025-28 Strategic Plan Presentation
- D. Proposed PD Edits

Investigate Organizations in the Global South that ASHRAE should Proactively Enter into MOUs with

What is GLocal South?

[Global South](#) broadly comprises Africa, [Latin America and the Caribbean](#), Asia (excluding [Israel](#), [Japan](#), and [South Korea](#)), and [Oceania](#) (excluding [Australia](#) and [New Zealand](#)). The Global South is home to over 6 billion people. (See Figure 1)

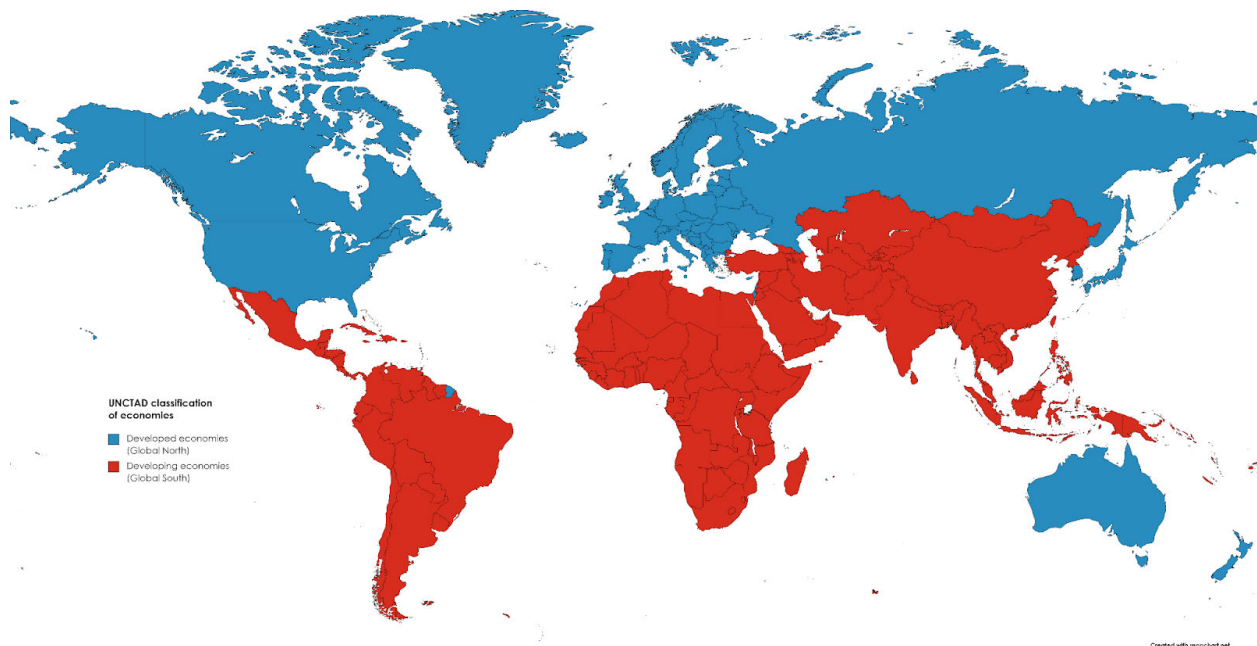


Figure 1. Global South Countries

In terms of global future building floor area additions to 2060 (see Figure 2), while the global north is still seeing steady growth, it will be relatively slower by 2030 compared to global south. The global south is anticipated to see accelerated growth to 2040, and some countries, especially the ones in Africa and India, are anticipated to see significant growth from 2040 to 2060.

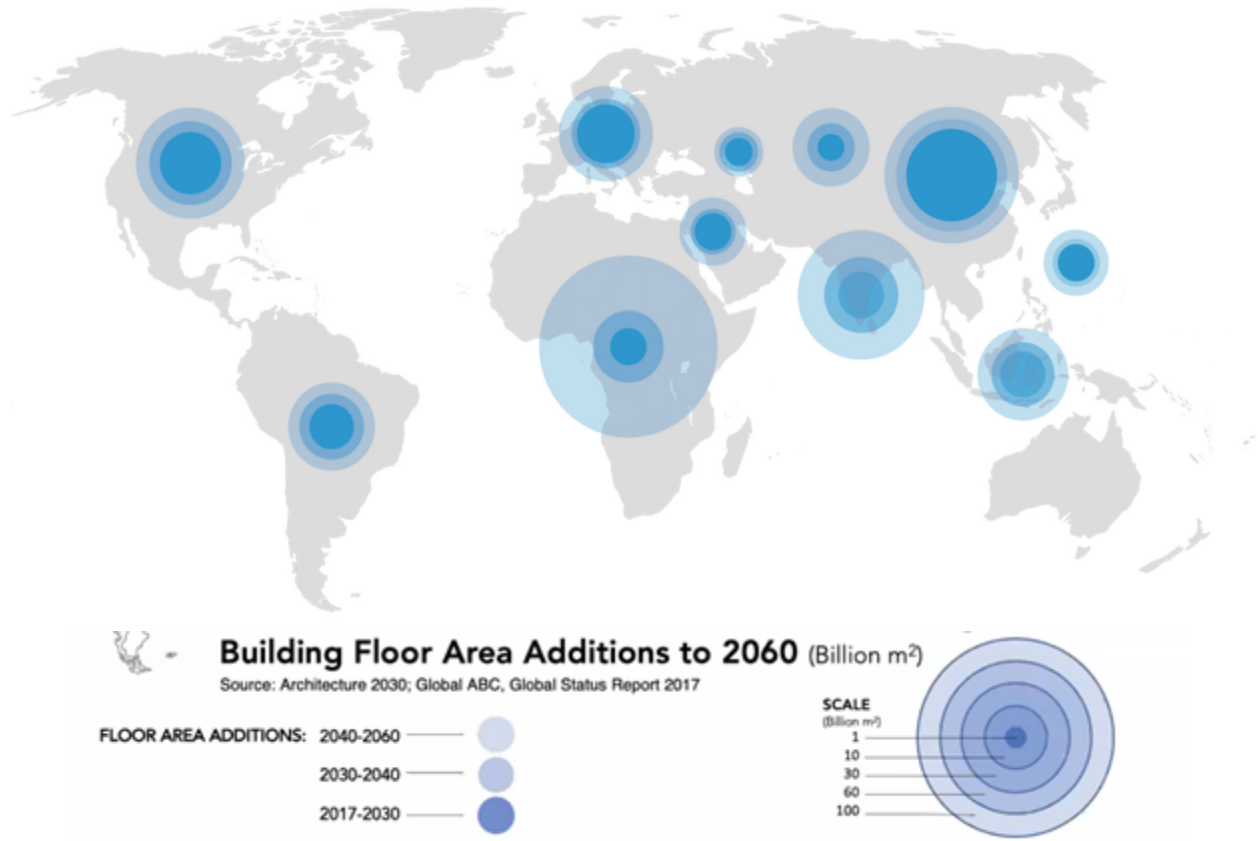


Figure 2. Global South Growth
 Credit: [Architecture 2030](#)

In terms of air conditioning, especially units stock, there will be significant global growth by 2050, almost 2.5 times compared to 2024 because of the building floor area additions, climate change, and also shifting of the focus from heating, in the global north. to cooling in the global south. China and India are the obvious growth targets, Indonesia, Mexico, Brazil, Middle East, and Africa will be also seeing significant growth (see Figure 3).

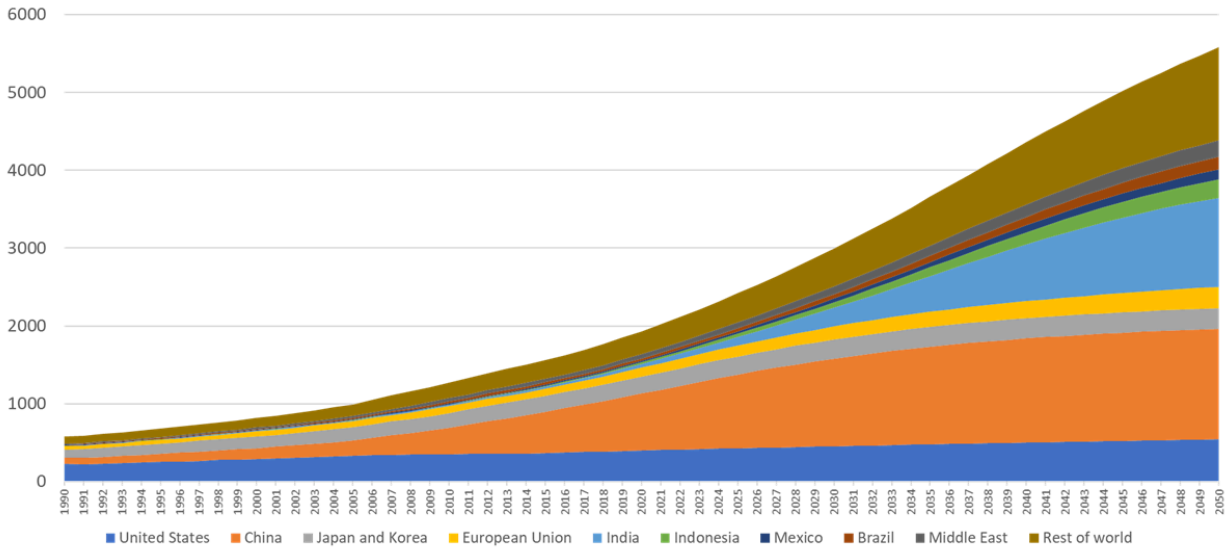


Figure 3. Global Growth in Air Conditioning Stock

Credit: IEA

Based on the above information regarding HVAC growth stock and population (see Fig, the following countries are identified as good opportunities to develop MOUs within 2024-2025:

- India
- China
- Taiwan
- Indonesia
- Pakistan
- Nigeria
- Brazil
- Mexico

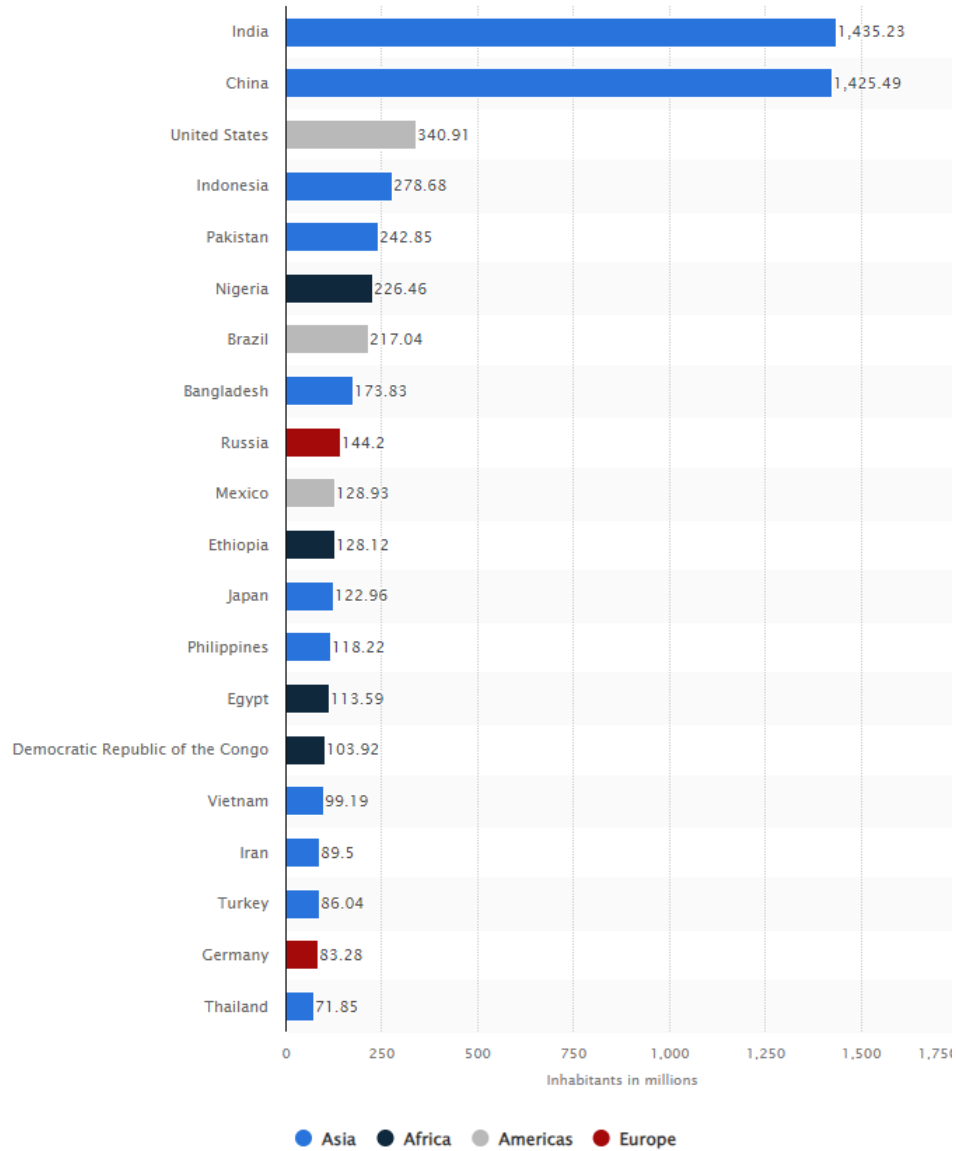


Figure 4. Top 20 Countries with the Most Population in 2024

Credit: Statista

***Organizations with Bolded text are preferred organizations for consideration in the next round.**

List of Potential Technical/Govt Organization in Developing Economies for MoU with ASHRAE					
NO.	*ORGANIZATION NAME	EMAIL ADDRESS	LOCATION	CONTACT	CLASSIFICATION

A AFRICA					
1	Environmental Protection Agency	cmo@epa.gov.gh	Ministries, Accra	0501301535/ 0501301518	Regulatory / certification
2	Ghana Institution of Engineers	cmo@epa.gov.gh	Ministries, Accra	0501301535/ 0501301518	Regulatory / certification
3	Public Utilities Regulatory Commission	info@purc.com.gh	Liberation Road, Accra	0302240046	Regulatory/Energy
4	Energy Commission	info@energycom.gov.gh	Ghana Airways Ave., Accra	0302813756	Regulatory/Energy
5	Ghana Standards Board Authority	gsanep@gsa.gov.gh	Gulf.St., Accra	0302500066	Regulatory/certification
6	Ghana Institute of Architects	secretariat@ghie.org.gh	Roman Ridge, Accra	0302760867	Professional Body
7	EDGE Ghana	admin@gia.com.gh	Accra	0303966841	Professional Body
8	Green Building Council	kofosu@worldbank.org.com	Accra	0302214142	EDGE certification (IFC)
9	KNUST	info@ghgbc.org	Spintex Road	0302817092	Best practices
10	Accra Technical University	fkemausuor.soec@knust.edu.gh	Kumasi	0500099299	Educational Institution
11	Ashesi University	vc@atu.edu.gh	Barnes Rd., Accra	0332095371	Educational Institution
12	World Green Building Council – Africa Regional Network	https://worldgbc.org/africa/	Kenya		
13	Kenya Green Building Society	https://www.kgbs.co.ke/	Kenya		
B. ASIA					
1	Bureau of Energy Efficiency	sdiddi@beeindia.gov.in	New Delhi, India		Regulatory/Energy
2	Center for Tall Buildings & Urban Habitat		Mumbai, India		Professional Body
3	Alliance for Energy Efficient Economies (AEEE)	satish@aeee.in	New Delhi, India		Energy
4	International Finance Corporation (IFC)	asayyed@ifc.org	Mumbai, India		International / Finance
5	Council of Architects		New Delhi, India		Professional Body

6	Sustainable Energy Authority		Colombo, Sri Lanka		Regulatory/Energy
7	Institute of Post Harvest Technology		Colombo, Sri Lanka		Regulatory/Refrigeration
8	Institute of Architects		Colombo, Sri Lanka		Professional Body
9	Green Building Council		Colombo, Sri Lanka		Certification
10	CCHVAC (China Committee of HVAC)		China		Professional Body
11	Green Building Council Indonesia		Indonesia		
C	Middle East				
1	Jordan Green Building Council		Jordan		Certification
2	Jordan Standards and Metrology Organization (JSMO)	info@ashesi.edu.gh	1 University Ave., Berekuso, E/R	0302610330	Educational Institution
3	Jordan Engineers Association (JEA)		Jordan		Regulatory/Engineering
4	Engineers training Center		Jordan		Regulatory/Engineering
5	Ministry of housing and public works		Jordan		Regulatory
6	Ministry of Energy and Mineral Resources		Jordan		Regulatory
7	Royal scientific society		Jordan		Regulatory
D	South America				
1	ABNT's Brazilian Committee #55		Brazil		
2	ABRAVA		Brazil		Professional Body
3	FAIAR, Federation of Latin American HVACR associations	https://faiar.net/			
4	Brazilian association of Refrigeration	https://abrava.com.br/	Brazil		
5	CONFEA (Brazilian federal		Brazil		

	engineers licensing organization, MOU passed by BOD, work plan and MOU being considered by CONFEA still for passage)				
6	Chilean chamber of Refrigeration	https://www.cchryc.cl/	Chile		
7	National Standards Institute (INN, the Chilean counterpart to ANSI)		Chile		
8	Chamber of Refrigeration of Argentina	https://www.camaraargentinaderefrigeracion.com/	Argentina		
9	Colombian association of Air conditioning	https://acaire.org/	Columbia		
10	CROSQ (Caribbean Community (CARICOM) standards organization for all Caribbean nations)				
11	Mexican Association of Refrigeration and Airconditioning distributors	https://www.andira.org.mx/	Mexico		
12	BOMA mexico	https://imei.org.mx/	Mexico		
13	Federación de Colegios de Ingenieros Mecánicos, Electricistas y Electrónicos de México (FECIME) - Federation of Colleges of Mechanical, Electrical, and Electronics Engineers of Mexico		Mexico		
14	Instituto Mexicano del Edificio Inteligente y Sustentable (IMEI) - Mexican Institute of Intelligent and Sustainable Buildings		Mexico		
15	AEE Latam - Association of Energy Engineers Latin		Mexico		

	America				
16	Asociación Nacional de Fabricantes para la Industria de la Refrigeración en México (ANFIR) - National Association of Manufacturers for the Refrigeration Industry in Mexico		Mexico		
17	Unión Nacional de Constructores Electromecánicos (UNCE)- National Union of Electromechanical Contractors		Mexico		
18	AMERIC - Asociación Mexicana de Empresas del Ramo de Instalaciones para la Construcción - Mexican Association of Companies in the Construction Facilities Industry		MEXICO		

11/6/2024

Cheng Wee Leong 11/6/2024 7:54 AM • Good evening everyone

Richie Mittal 11/6/2024 8:00 AM • Good morning. good afternoon and good evening everyone

John Constantinide 11/6/2024 8:01 AM • Good morning/afternoon/evening, everyone. I'll need to stay on mute due to a briefing, but I'll participate in chat.

Yes

For roll call, I am here, Candace.

Yates, Alice 11/6/2024 8:11 AM • Sorry - I kept getting booted off the meeting. Hope 3rd time is a charm.

c bertuch 11/6/2024 8:13 AM • C Bertuch now on

Buzz Wright 11/6/2024 8:15 AM • Mr. Wright (Buzz) reported that 80-90% of the current system relies on the honor system already, and that Regional Leadership workload likely results in over crediting, or no points being entered.

John Constantinide 11/6/2024 8:29 AM • Can the professional journey objective be more explicit to be more cross generational?

Wei Sun 11/6/2024 8:30 AM • My connection is on/off, I will log out and log in again.

Megan Cruz, McKinley Advisors 11/6/2024 8:30 AM • I am back, my apologies!

John Constantinide 11/6/2024 8:32 AM • For AI, please consider including volunteer use to streamline grassroots operations. Internal operations infers, to me, ASHRAE HQ and Staff operations.

John Constantinide 11/6/2024 8:34 AM • Please note this comment, as well.

John Constantinide 11/6/2024 8:33 AM • Correct, Dennis.

Corey Metzger 11/6/2024 8:34 AM • Can we consider a slight modification to Strategic Goal 1 to read something like: ASHRAE leads globally in advancing solutions that address the cause and impact of climate change and create healthy indoor environments

Wade Conlan 11/6/2024 8:40 AM • Can we move IEQ in front of climate change? Isn't that critical to have to then optimize for energy or carbon?

Luke Leung 11/6/2024 8:47 AM • Should we consider : "... leads globally in addressing climate change..."

John Constantinide 11/6/2024 8:37 AM • Will do. I also have a change for the AI enabler.

Carrie Brown 11/6/2024 8:39 AM • I think Corey's edit is aligned with the objectives and initiatives.

c bertuch 11/6/2024 8:42 AM • Possibly: Modifu Strategic Goal 1 to read: ASHRAE leads globally in advancing solutions that address climate change and create healthy indoor environments

Carrie Brown 11/6/2024 8:46 AM • If an edit is required, I would prefer this to just removing "cause." While I understand the sensitivity, if we only leave "impact" I don't think this sufficiently includes decarbonization. (I think this would be adaptation, not mitigation.)

Luke Leung 11/6/2024 8:44 AM • "Empowered Workforce" - align to above, should we consider use "climate change" rather than "decarbonization"?

Susanna Hanson 11/6/2024 8:46 AM • who's speaking? It's not dennis

Pat Marks 11/6/2024 8:46 AM • Scott Peach

Susanna Hanson 11/6/2024 8:46 AM • Is someone in Dennis' office?

Devin Abellon 11/6/2024 8:46 AM • Scott is in the room with Dennis

You deleted your message. 11/6/2024, 8:46 AM

Scott Peach, PE, FPE 11/6/2024 8:47 AM • Yes Susanna - it works better if there is only one mic in here.

Susanna Hanson 11/6/2024 8:51 AM • Just wanted you to know I'm awake. Dumber, but awake.

John Constantinide 11/6/2024 8:57 AM • Perhaps climate change solutions should be in the outcomes, whereas decarbonization is in the objectives.

Decarb is the action.

Littleton, Jeff 11/6/2024 8:59 AM • Proposed Changes Summary:

Littleton, Jeff 11/6/2024 8:59 AM •

- Goal 1: Remove "cause" of climate change. Bill.
- Goal 1: Add IAQ to the first goal. Corey.
- Key Enabler on AI: AI should be applied to grass roots not just HQ business operations. John.
- Objective 2C: Professional journey -- be more explicit about career stages. John.
- Strategic Initiatives: Replace decarbonization with Climate Change (consistency). Healthy Communities: Prioritize IEQ.

Carrie Brown 11/6/2024 9:00 AM • Slight edit: • Goal 1: Remove cause and impact, leave address. Bill.

- Goal 1: Add IEQ to the first goal. Corey.

Devin Abellon 11/6/2024 9:01 AM •

The Planning Committee recommends, and I so move, that the Board of Directors approve the goals, objectives, and initiatives, as proposed for the 2025-28 ASHRAE Strategic Plan as presented in **ATTACHMENT A**, with the addition of IEQ and removal of the word cause, as part of Goal #1 and

editorial changes/review regarding the professional journey in Goal #2, AI as a key enabler, the importance of IEQ and the use of the terms decarbonization and climate change.

John Constantinide 11/6/2024 9:02 AM • Edits: Add “early, mid-career, and senior” before “professionals” on Objective 2c.

Add “volunteer and” before “internal” in AI enabler statement.

Wade Conlan 11/6/2024 9:06 AM • Suggested phrasing for item 1: ASHRAE leads globally in advancing solutions to provide indoor environmental environments and address the impact of climate change

Bassel Anbari 11/6/2024 9:08 AM • I second that

John Constantinide 11/6/2024 9:12 AM • They could withdraw.

John Constantinide 11/6/2024 9:27 AM • Out of meeting and can talk now.

John Constantinide 11/6/2024 10:10 AM • Concur with Sarah

Against

Mahroo Eftekhari Region XIV 11/6/2024 10:25 AM • What about smartstart scheme. Is it still available.

Chandra Sekhar 11/6/2024 10:31 AM • With HBO being the new norm for all members with this model, what would happen to the print version of handbooks? Would we still need to publish the print version of handbook each year?

John Constantinide 11/6/2024 10:33 AM • I would recommend maintaining a PDF as a standard of care.

Owen, Mark 11/6/2024 10:33 AM • We would still publish and sell print Handbook to members and nonmembers.

Bassel Anbari 11/6/2024 10:40 AM • I agree with the recommendations and the comments

John Constantinide 11/6/2024 10:42 AM • So move, if needed

Pat Marks 11/6/2024 10:42 AM • Second, if needed.

New messages

Leigh Lain Walker 11/6/2024 10:45 AM • Thank you!

Ken 11/6/2024 10:52 AM • Sorry, my computer tried to do an update. Sorry if it disrupted the meeting.

ASHRAE Strategic Planning: Strategic Plan & Initiatives

November 6, 2024

Agenda

- Overview of Project Progress
- Strategic Plan & Initiatives Review
- Group Discussion
- Project Next Steps

Work and Development To Date

How did we get here?

- Member and stakeholder research
 - Qualitative interviews with ASHRAE members and Industry Partners
 - Quantitative survey of ASHRAE members and non-members
- Board and Planning Committee formative, generative, and strategic discussions
- Iteration with ASHRAE's council leadership and strategic plan subcommittee
- Collaboration with PEAC, TRAC, PubEd and Tech Councils to understand alignment between the strategic plan and existing work streams
- Implementation discussions with ASHRAE staff directors.

Key Inputs

What elements helped shape the strategic plan?

- Member and stakeholder research findings
- Takeaways from ASHRAE's Strategic Plan feedback form responses
- Synthesis of the analysis, development, discussion and debate of emerging concepts by ASHRAE volunteer leaders
- Alignment of strategic plan goals and objectives to ASHRAE's Vision 2030

Draft Strategic Plan



MISSION STATEMENT | To serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields.

VISION | A healthy and sustainable built environment for all.

ORGANIZATIONAL VALUES | Collaboration, Commitment, Diversity, Excellence, Integrity, Volunteerism

2025 – 2028 Strategic Goals

Objectives

1. ASHRAE leads globally in advancing solutions to address the cause and impact of climate change

- a. Lead the development of widely adopted standards to support decarbonization, resilience and indoor environmental quality.
- b. Develop alliances and diverse working groups that position ASHRAE to lead and collaborate globally in identifying challenges, defining solutions, and developing approaches to address them.
- c. Develop resources based on member needs and industry trends.

2. Pursue **impact-focused engagement** - targeting stakeholders to support a strong workforce and maximize utilization, adherence, and trust of ASHRAE's global expert resources

- a. Tailor and target engagement and resources to ASHRAE members and defined key stakeholders
- b. Provide guidance to targeted stakeholders on impactful ways to maximize the positive downstream effect of their engagement on the built environment
- c. Empower professionals in their journey to maximize industry impact in support of ASHRAE's mission and vision
- d. Pursue partnerships to amplify the impact of ASHRAE's mission and support the HVAC and built environment workforce.

3. Increase the **accessibility** of ASHRAE content and resources

- a. Identify and address structural, content, and financial barriers to access
- b. Align communication and delivery methods and formats to enhance accessibility of content, resources, and volunteer opportunities
- c. Strengthen communication channels with and through chapters and regions to empower contribution to the Society as thought partners in adapting resources to local context and needs

Outcomes

ASHRAE's member and volunteer base maximizes the organization's reach, foresight, leadership position, and organizational knowledge.

A broad group of stakeholders leverage ASHRAE's resources to make decisions and meet objectives that positively affect the environment.

A viable, thriving industry makes a positive global impact.

Key Enablers

Research: The value of ASHRAE's resources is grounded in unbiased data, developed through rigorous research methods.

AI: The use of AI enables ASHRAE to improve data collection, automate internal operations, and promote agility.

Global Network: ASHRAE's global network convenes the industry to generate unparalleled knowledge.

Draft Strategic Initiatives

Strategic Initiatives

Healthy, Sustainable and Resilient Communities

Empowered Workforce

Organizational Agility

Emerging Technologies



Healthy, Sustainable and Resilient Communities

Minimizing greenhouse gas emissions from the built environment is essential to address climate change. It is equally important to enhance IEQ while advancing decarbonization strategies that support healthy and resilient buildings and communities. Key stakeholders leverage ASHRAE's standards and technical resources globally. This presents an opportunity for ASHRAE to solidify global leadership in healthy, sustainable and resilient communities. ASHRAE prioritizes timely identification of industry trends, expedient content development, and forges key partnerships to advocate and collaborate with industry.



Empowered Workforce

The development of a skilled, competent, and solutions-oriented workforce is critical to addressing the challenges facing the built environment and the HVAC&R industry, today and in the future. ASHRAE continues to provide educational and professional development resources. Our members and industry partners need these tools to implement key initiatives such as decarbonization, resiliency, and indoor environmental quality goals and policies required to advance a healthy and sustainable built environment for all. ASHRAE, with the support of our chapters and regions, partners with key industry stakeholders in tackling the unique workforce challenges facing the industry globally.



Organizational Agility

ASHRAE's ability to serve communities, the industry, the current and future workforce, and provide value to its volunteer members, is dependent on forward-looking products, services, and solutions. ASHRAE will use emerging technologies to support the development of resources and knowledge flow between ASHRAE's chapters, regions, and technical bodies, the industry, and to deliver organizational and operational efficiencies.



Emerging Technologies

In today's rapidly evolving landscape, emerging technologies are revolutionizing the built environment and HVAC&R industry, expanding numerous career opportunities.

By combining technological advancements such as AI with human creativity, both seasoned professionals and new talent can collaborate to drive industry-wide progress. Advanced automation and AI-enabled systems propel energy efficiency and smart buildings, enhance comfort and IEQ, improve operations and maintenance, and deliver holistic and sustainable solutions for industry professionals. ASHRAE engages in a thoughtful process to evaluate and prioritize opportunities to leverage new technologies.



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




2025 – 2028 Strategic Goals

Objectives







1. ASHRAE leads globally in advancing solutions to address the cause and impact of climate change

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AI: The use of AI enables ASHRAE to improve data collection, automate internal operations, and promote agility.

Global Network: ASHRAE's global network convenes the industry to generate unparalleled knowledge.

Group Discussion

Strategic Initiatives and Plan Discussion

What other thoughts or reactions do you have to the strategic plan or initiatives?

What needs to be addressed, in the plan or initiatives, before approval?

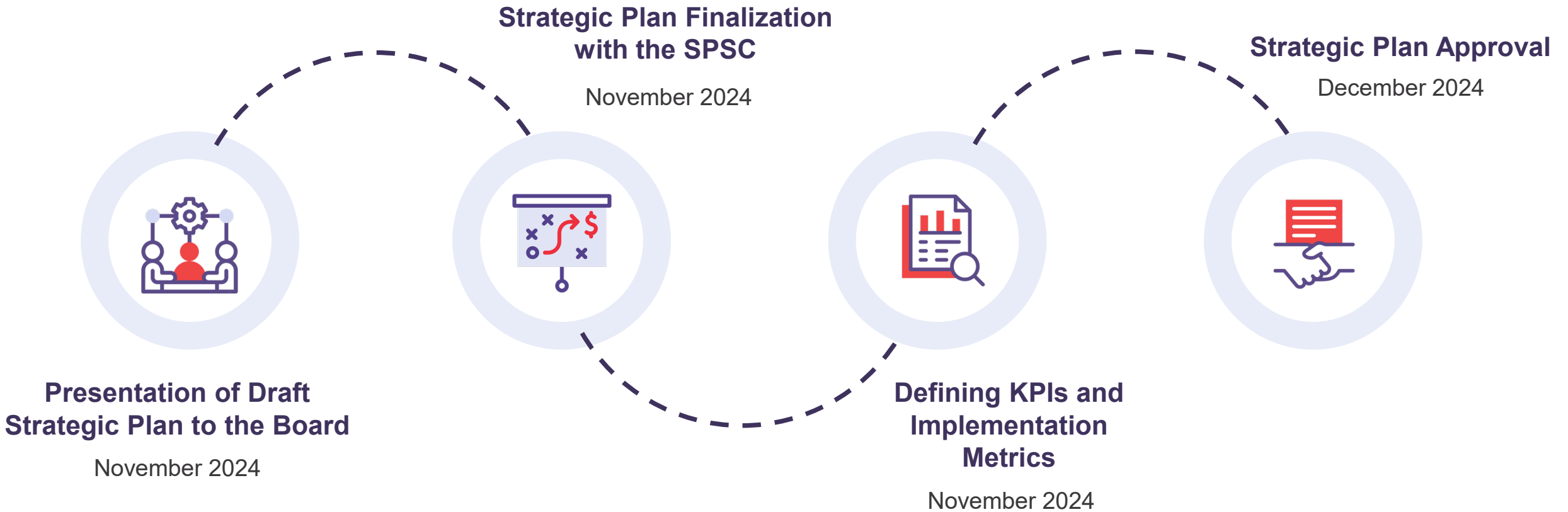
What additional information do you need to see (e.g. KPIs) before approval?



Next Steps

- Determine the right metrics to help assess strategic plan performance in collaboration with ASHRAE Staff Directors (e.g. KPIs)
- Review the strategic plan and initiatives with ASHRAE communications teams to develop plans to socialize with ASHRAE members
- Discuss operationalization and metrics with the Validation and Documentation Subcommittee.
- Following approval:
 - Work with communications staff to socialize plan with membership
 - Share potential programmatic ideas with relevant Councils and Committees to jump-start integration of strategic plan into future work plans and MBOs

Next Steps



Thank you!

Megan Cruz, CAE

macruz@mckinley-advisors.com

Julia Riordan, M.A.

jriordan@mckinley-advisors.com

Kristi Langham

klangham@mckinley-advisors.com

Attachment A



FINAL DRAFT

ASHRAE Position Document on

Energy Efficiency in Buildings

Approved by the ASHRAE Board of Directors [DATE] Expires [DATE]

ASHRAE is a global professional society of over 55,000 members, committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields (HVAC&R). ASHRAE position documents are approved by the Board of Directors and express the views of the Society on specific issues. These documents provide objective, authoritative background information to persons interested in issues within ASHRAE's expertise, particularly in areas where such information will be helpful in drafting sound public policy. The documents also clarify ASHRAE's position for its members and building professionals.

Energy Efficiency is a Public Interest Issue

It has never been more necessary or urgent to improve the energy efficiency of buildings. ASHRAE has long advocated for energy efficiency as the central means for reducing the environmental impact of buildings through lowering their energy use. Energy efficiency, when implemented strategically, uniquely reduces greenhouse gas (GHG) emissions associated with the built environment while simultaneously reducing life-cycle costs and maintaining or improving occupant health, comfort, and safety.

Why ASHRAE Takes Positions on Energy Efficiency in Buildings

ASHRAE consensus standards and design guides provide the technical foundation for international building practices and energy codes. Energy efficient design, construction, operation, and considerations for end of life can dramatically reduce and sometimes eliminate building net energy use and associated GHG emissions.

ASHRAE resources span the entire life cycle of buildings. Since buildings account for 34%¹ of global energy use, our work in this sector is crucial. ASHRAE's Position Document on Building Decarbonization² states that decarbonization of buildings and their systems must be based on a

¹ UN Environment Programme's Global Alliance for Buildings and Construction; 2021 Global Status Report for Buildings and Construction. <https://globalabc.org/our-work/tracking-progress-global-status-report>

² See ASHRAE Position Document on Building Decarbonization, June 26, 2022
https://www.ashrae.org/file%20library/about/ashrae_building_decarbonization_pd_2022rev.pdf

Commented [WB1]: This isn't correct. Current membership is closer to 53,000. "More than 50,000" is safe.

Commented [B2R1]: ASHRAE-provided figure, outside of our purview.

Commented [WB3]: It continues to bother me that we say this but have stripped the references out of PDs so that the authority of statements in the PD is less clear than it was.

Commented [B4R3]: ASHRAE-provided language from standard PD template, outside of our purview.

Commented [WB5]: Efficiency does not inherently lead to energy use reduction. E.g., data centers inherently use huge amounts of energy regardless of how efficient HVAC systems are. Increases in residential efficiency are largely offset by increases in the size of a typical single-family home.

Commented [B6R5]: Good point, but does not contradict the statement in the PD. I don't think ASHRAE wants to advocate for fewer data centers or smaller homes. ☹️

Commented [WB7]: Does this mean "when applied to the largest consumers"?

Commented [B8R7]: It was intended to have broader meaning in reference to the rest of the sentence. If not implemented strategically, energy efficiency might not hit those other objectives.

Commented [WB9]: Would prefer something like "ASHRAE's role in building energy efficiency"

Commented [B10R9]: ASHRAE-provided language from standard PD template, outside of our purview.

Commented [B11]: Not sure what "energy efficient...end of life" is. Would need to say something like "energy efficient... considerations for end of life."

holistic analysis including healthy, safe, and comfortable environments. Energy efficiency is the first priority in reducing building GHG emissions.

ASHRAE Takes These Positions

1. Improving Building Energy Efficiency is Paramount

Energy efficiency of existing buildings is essential because the average lifespan of a building is over 70 years. While new buildings reach net zero, most of the building population will consist of older buildings. Energy efficiency reduces building GHG emissions in these buildings, an immediate and crucial policy goal to reducing the impacts of climate change. Furthermore, energy efficiency is necessary to permit older buildings to compete economically by reducing operating costs while maintaining occupant health and safety.

2. Energy Efficiency is the Leading Cost-effective Solution for Decarbonization and Climate Change Mitigation

Efficiency is the lowest cost energy resource we have³; it results in the reduction of building operational GHG emissions while saving life-cycle costs and increasing property values. Reducing loads through efficiency is the most cost-effective approach to whole building decarbonization and is a critical first step before considering renewable energy systems. ASHRAE's guidance and resources for improving the energy efficiency of buildings, developed and honed over the past decades, provide a strong foundation for strategic decarbonization efforts. The impact of carbon emissions is an essential consideration when evaluating energy efficiency measures.

3. Energy Efficiency Contributes to Resilience and Assurance⁴

Efficiency lowers or eliminates the energy demands of buildings. Doing so improves resilience by minimizing or eliminating the loads that must be met by the supply grids or emergency systems. This approach minimizes the need for backup, storage, and redundant systems and reduces the necessary capacity and costs of those systems. Electrification without building efficiency will delay the transition to green electricity significantly.

4. Energy Efficiency Provides Good, Local Jobs and is an Economic Catalyst

Energy efficiency contributes to local economies, including the creation of jobs that cannot be

³ Per the International Energy Agency's report on the 7th Annual Global Conference on Energy Efficiency (June 2022): "The cleanest, cheapest, most reliable source of energy is what countries can avoid using, while still providing full energy services for citizens. That is why the IEA refers to energy efficiency as the "first fuel"."
<https://www.iea.org/reports/the-value-of-urgent-action-on-energy-efficiency>

⁴ Energy assurance refers to the reliability of energy transmission from one site to another. Energy efficiency and resilience should not only look at facility-level use, but also transmission and other grid factors that can benefit from energy efficiency measures.

Commented [WB12]: Emissions includes particulate matter, SOx, NOx, and other things that affect health. This should not ALL be about climate change. Health is addressed farther down. This item should either add discussion of health or be changed to "Reducing building GHG emissions is..."

Commented [B13R12]: Makes sense to clarify the title sentence to "GHG Emissions" and address the other emissions/health impacts in the subsequent section on health.

exported. According to the United Nations Development Program, transitions in energy infrastructure are predicted to increase job demand by 1% annually.⁵ Investments in new building technologies must be accompanied by similar investments in a technically trained workforce.

5. Operational Efficiency is a Continuous Improvement Process
Building operating systems deviate significantly from optimal performance leading to significant and frequent loss in energy efficiency. Ongoing commissioning is essential to keep the building operating efficiently.

6. ASHRAE Standards Should Provide Guidance for Energy Efficiency while Maintaining Healthy Buildings

Energy efficiency strategies must consider impacts on indoor environmental quality, including thermal comfort, indoor air quality, lighting, and acoustics. ASHRAE Standards and Guidelines can continue to protect public health by maintaining healthy indoor environmental quality while reducing energy consumption.

7. Energy Efficiency Must be Maintained Throughout the Building Life Cycle

Bridging the gap between design and construction and continued efficient operation of buildings is critical. In current practice there is a frequent disconnect between teams responsible for development, design, and construction of efficient new buildings; the commissioning of those buildings; subsequent post-occupancy operation. This gap results in buildings that do not or cannot meet performance expectations when new and then deteriorate significantly in only a few years. We need to continue to promote practices that improve the transition from design and construction to operational teams so that buildings may better achieve their high-performance objectives.

8. Energy Efficiency Must be Considered Using Holistic Approaches

Improving energy efficiency often involves the replacement of equipment with higher efficiency versions. As such there can be significant energy embodied in the manufacture and installation of this new equipment that also carries with it consumption of natural resources and associated GHG emissions. The life-cycle environmental impacts including the embodied energy of manufacture and installation of new equipment, continuing throughout its life cycle (including end-of-life), should be considered in the decisions to design or redesign a building. The building's entire life cycle and associated emissions should be considered in the evaluation of overall GHG emissions.

Energy efficiency and water efficiency are linked and should be evaluated in parallel as there can be positive or negative interaction depending on building types and needs.

Commented [WB14]: Unclear

Commented [B15R14]: Agreed, needs rewording.

Commented [WB16]: Bad word choice. "Actual building performance deviates significantly from..."

Commented [B17R16]: Agreed, needs rewording.

Commented [WB18]: This is an assertion with which I disagree and not a proper position.

Commented [B19R18]: Good point. Could we change this to "should provide guidance for EE while maintaining healthy buildings"?

Commented [B20]: This position is making a particular point about the transition from design/construction to operations. The edits are not appropriate. The end of life point is addressed in the following position 8 below.

Commented [WC21R20]: I would say that the codes cover efficiency - to the low level- but barely cover Commissioning and none cover the Operation.

We have Guidelines....but not standards.

This is a real issue about Building Operation aligning with Building Design Intent to achieve the energy targets.

⁵ Öunmaa, L. 2021. "What are the socio-economic impacts of an energy transition?" United Nations Development Programme. <https://www.undp.org/eurasia/blog/what-are-socio-economic-impacts-energy-transition>.

ASHRAE Recommends

Policymakers, Government Agencies and Regulators

We recommend that policymakers adopt:

- ASHRAE energy-related Standards, particularly those Standards listed in Annex 1, and regularly update reference to the most current version of these Standards.
- Policies that encourage transparency of building performance, including regular publicly reported energy and water benchmarking, and policies that enforce consistent means for expressing and labeling performance of buildings.
- Policies that support quality standards for building performance assessments, such as energy audits, to identify energy efficiency opportunities and provide analytical foundations for decarbonization.
- Building performance standards as described in the ASHRAE Technical Resource Guide on Building Performance Standards.⁶
- Funding programs for research, development and demonstration of energy-efficient technologies and practices.
- Policies and regulations that provide financial resources for implementation of energy efficiency measures and energy equity through tax incentives, utility-sponsored incentives, and other mechanisms to improve the building's energy consumption while not impacting indoor environmental quality.
- Programs to provide publicly available databases and tools for energy performance benchmarking, such as the US Department of Energy's Commercial Building Energy Consumption Survey and the US Environmental Protection Agency's ENERGY STAR Portfolio Manager.
- Regulations that require professionals with appropriate credentials and experience such as those cited in ASHRAE Standard 211 to ensure the desired energy savings outcomes.

New Buildings

We recommend that owners and design professionals in new buildings:

- Maximize energy efficiency in new building design to support the goal that all new buildings achieve net zero GHG emissions in operation by 2030⁷.
- Ensure that energy efficiency design practices also enhance indoor environmental quality.
- Review and apply Advanced Energy Design Guides, stretch codes and other forward-thinking guidance for energy-efficient buildings.
- Evaluate investment in energy efficiency alternatives based on life-cycle GHG emissions and costs.
- Employ designs that:
 - Optimize building envelope, orientation, and geometry to reduce energy use.

⁶ ASHRAE Technical Resources. <https://www.ashrae.org/about/tfbd-technical-resources>

⁷ ASHRAE Position Document on Building Decarbonization, 6/26/2022.

https://www.ashrae.org/file%20library/about/ashrae_building_decarbonization_pd_2022rev.pdf

Commented [WB22]: Despite some claims made above, there is nothing here that addresses the connection between energy efficiency and IEQ/healthy buildings.

Commented [B23R22]: The claims made above should be changed to imperatives.

Commented [WB24]: Missing a position that supports the necessity of ensuring that energy, environment, and IEQ goals all are met.

Commented [B25R24]: Agreed. We should edit position 6 above to address this, and also add a bullet on this under each of the subheadings in this section.

Commented [WC26R24]: WADE - Not sure that this was edited as I do not see IEQ in this list.

Commented [JMC27R24]: Focus should be energy efficiency goals, but I agree that IEQ should not be impacted.

- Implement passive and active energy-efficiency measures.
- Apply energy-efficient decarbonization of space and water heating.
- Select energy-efficient equipment, and use low GWP refrigerants as an integrated design choice.
- Provide for effective long-term operations & maintenance, including ongoing tracking of building energy performance post-occupancy.
- Apply water efficient design to reduce energy and water use.
- Select equipment to maximize expected service life and minimize life-cycle GHG emissions.
- Commission the buildings so that they operate optimally.

Existing Buildings

We recommend that owners and operators in existing buildings:

- Maximize implementation of energy efficiency measures in existing buildings to support the goals that
 - By 2030, existing buildings halve their emissions, with widespread energy efficiency retrofit of existing assets well underway.
 - By 2050, all existing assets achieve net zero GHG emissions in operation.⁸
- Ensure that energy efficiency practices enhance or maintain indoor environmental quality.
- Establish comprehensive energy management programs including setting energy goals, monitoring ongoing performance, engaging all stakeholders, and recognizing success.
- Conduct energy audits performed by qualified professionals using the approaches developed within ASHRAE Standard 211 as a proven analytical foundation for decarbonization plans.
- Evaluate implementation of energy efficiency measures based on life-cycle costs and GHG emission impacts.
- Prioritize energy efficiency measures that reduce loads prior to meeting those loads with supply-side approaches.
- Conduct periodic ongoing commissioning practices to ensure efficient operation over time.
- Support operations & maintenance staff with appropriate training and resources to operate buildings in the most energy-efficient manner, while maintaining occupant comfort, health and safety.
- Use water efficient technologies and operational practices to reduce energy and water consumption.
- When equipment is replaced, select new equipment to maximize expected service life and minimize life-cycle GHG emissions.

Commented [WB28]: This is not sufficient. Does not acknowledge that standards for minimum IEQ ought to be higher.

Commented [B29R28]: This PD is not a PD on IEQ standards. It appropriately addresses the potential impact of energy efficiency on IEQ, but going any further than that would be out of scope.

ASHRAE

We also recommend that ASHRAE continue its important work in energy efficiency codes and standards development and:

⁸ ASHRAE Position Document on Building Decarbonization, 6/26/2022.

- Build tools and infrastructure so that decarbonization plans rely on strong analytical foundations.
- Consider the timing of energy savings and associated GHG emission impacts. Further develop energy efficiency tools and reporting to reflect the value of those savings in supporting the transition to grid-interactive efficient buildings.
- Continue to support policy makers through timely updates to standards and guidelines such as those shown in Annex 1.
- Fund and conduct research to support these energy efficiency policy objectives.

Annex 1: ASHRAE Standards related to Energy Efficiency in Buildings

We recommend that policymakers, government agencies and regulators adopt and regularly update to reference the most current versions of ASHRAE Standards, including:

- **ANSI/ASHRAE/IES Standard 90.1**, *Energy Standard for Buildings Except Low-Rise Residential Buildings*
- **ANSI/ASHRAE/IES Standard 90.2**, *High-Performance Energy Design of Residential Buildings*
- **ANSI/ASHRAE Standard 90.4**, *Energy Standard for Data Centers*
- **ANSI/ASHRAE/IES Standard 100**, *Energy Efficiency in Existing Buildings*
- **ANSI/ASHRAE Standard 105**, *Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions*
- **International Green Construction Code®** and **ANSI/ASHRAE/ICC/USGBC/ IES Standard 189.1**, *Standard for the Design of High- Performance Green Buildings Except Low-Rise Residential Buildings*
- **ANSI/ASHRAE/ASHE Standard 189.3**, *Design, Construction, and Operation of Sustainable High-Performance Health Care Facilities*
- **ANSI/ASHRAE/IES Standard 202**, *Commissioning Process for Buildings and Systems*
- **ANSI/ASHRAE/ACCA Standard 211**, *Standard for Commercial Building Energy Audits*
- **ANSI/ASHRAE Standard 228**, *Standard Method of Evaluating Net Zero Energy and Net Zero Carbon Building Performance*

Annex 2: ASHRAE Guidelines

- **ASHRAE Guideline 14**, Measurement of Energy, Demand and Water Savings
- **ASHRAE Guideline 36**, *High Performance Sequence of Operation for HVAC Systems*

Annex 3: ASHRAE Guides

- **ASHRAE Advanced Energy Design Guides⁹**
ASHRAE and its partners create free guidelines on how to achieve net zero buildings in specific building constructions such as K-12, office buildings, multifamily buildings and others.
- **ASHRAE Building Performance Standards: A Technical Resource Guide**, building performance standards developed in collaboration with the US Department of Energy.
- **ASHRAE Grid-Interactive Buildings for Decarbonization: Design and Operation Resource Guide**

DOCUMENT REVISION COMMITTEE ROSTER

The ASHRAE Position Document on Energy Efficiency in Buildings was developed by the Society's Energy Efficiency in Buildings Position Document Committee, with Jim Kelsey as its chair.

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⁹ AEDG's are found here www.ashrae.org/technical-resources/aedgs.

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Cognizant Committees

The chair of Technical Committee 7.6 and the chair of the ASHRAE Standing Committee also served as ex-officio members.

Amanda Webb TC 7.6 Committee Chair University of Cincinnati	Adrienne Thomle DRSC Liaison, Vice-Chair Standards Committee
	Douglas Fick Chair of Standards DRSC Liaison

DOCUMENT HISTORY

Background

The prior ASHRAE Position Document on Energy Efficiency in Buildings was approved by Board of Directors on November 15, 2019 and was reaffirmed by Technology Council on February 8, 2023.