Southwest Florida Chapter

January 2024 Edition

Upcoming Events

January 20th – 24th, Chicago

- **2024 ASHRAE Winter Conference**
- **AHR Expo**

SWFL ASHRAE Chapter Meeting Announcement

Date: Wednesday, January 10th, 2024
Location: CROWNE PLAZA AT BELLTOWER SHOPS
Start Time: 11:30 p.m. to 12:00 p.m. Networking
12:00 p.m. to 1:00 p.m. Lunch meeting and main program

Main Program: Challenge Accepted: Tackling the Climate Crisis

"We are living in a climate emergency. Our desire to be more comfortable has brought us to a place where we need to make uncomfortable decisions. We can accept the challenge of our day regarding the impact of our buildings on the climate crisis by equipping our members with the knowledge they nee to design and renovate buildings to address the greenhouse gas emissions of our industry."

Scoggins theme highlights the urgency of addressing the climate crisis, examines measures to reduce human impact on the natural environment and offers strategies for making the built environment and offers strategies for making the built environment more resilient and sustainable.

Presenter:

Ginger Scoggins, P.E.

Ginger Scoggins, P.E. is a licensed mechanical engineer with over 30 years of experience. She is the President and Co-owner of Engineered Designs, Inc., a full-service engineering which she founded over 25 years ago. Ginger is also a certified commissioning agent, as well as a certified energy manager, and works on the design and commissioning of projects ranging from $4 million construction cost up to $90 million construction cost. Her focus is on designing high-performing buildings across a wide variety of markets.

In addition to running her firm, Ginger has been heavily involved in ASHRAE since 1988 when she joined the Triangle Chapter in Raleigh, North Carolina, becoming the first female president of the chapter in the 1995-96 year, the first female Regional Vice-chair, and the first female Director & Regional Chair for Region IV. Ginger was recently named a Fellow of the organization and is the current President-Elect for ASHRAE, becoming ASHRAE president in July of 2023.

A message from Ms. Gena Knight,

SWFL ASHRAE President

Southwest Florida Chapter

Happy New Year SWFL ASHRAE,

I hope 2024 finds you well and in good spirits! New and exciting things for the new year include a visit from ASHRAE President, Ginger Scoggins who is slated as our guest speaker this month followed by the 2024 ASHRAE Winter Conference and AHR Expo. This year's conference is scheduled for January 20th -24th in the windy city, Chicago. Further information may be found on the ASHRAE website (www.ashrae.org). Also don't forget to follow our chapter on Instagram @swfl_ashrae and share all the ASHRAE fun you are having!

- Gena Knight

SWFL Chapter President 2023-2024

Southwest Florida Chapter

Upcoming ASHRAE Meetings (Topics TBD)

February 21st, Lunch

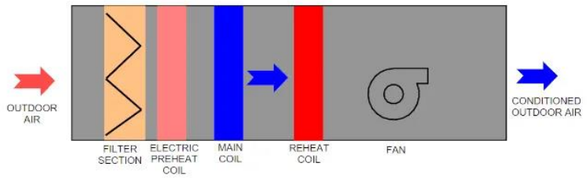
March 13th, Dinner

April 10th, Lunch

May 8th, Dinner

Refrigeration – Jeff Brooks

A One-Time Poultry Farmer Invents the Future of Refrigeration



By Alexandria Stuart & Caley Johnson

Although the main reason for using a DOAS unit is to meet minimum ventilation requirements, these systems also provide other benefits. Conditioning the outdoor air separately from recirculated air makes it easier to verify that each zone is being provided with sufficient outdoor air.

DOAS also improve indoor air quality (IAQ) by filtering outdoor air contaminants before dispersing the fresh air to occupied spaces. DOAS units are also effective dehumidifiers. DOAS units can help keep building pressurized properly. This can prevent unwanted odors, moisture and impurities from entering the building through infiltration. Because DOAS units can handle larger latent loads, other local or central HVAC units can be reduced in size to just handle the building's sensible load. Preconditioning outdoor air at the DOAS unit can also lead to significant energy savings, which can lead to monetary savings when implemented correctly.

The requirements for ventilation rates by building codes and other standards are the main driving factors for installing DOAS. With the growing popularity of DOAS to meet ventilation needs, these systems are provided by various manufacturers and suppliers. Manufacturers are beginning to provide an array of configurations that meet different design needs.

The type of equipment used with a DOAS unit may vary depending on building type, spatial constraints and end-user needs. The benefit of a DOAS is that it, unlike a lot of other HVAC equipment, can meet these high ventilation rate requirements.

Read More

ASHRAE Social Media

Follow us on Instagram!

SWFL_ASHRAE

Student Activities – Gary Devore

Upcoming Event Notice:

It's that time of year again! We are so excited to open registration for our 13th Annual Strides for Education 5k Walk/Run. Funds raised provide scholarships to Lee County Public School students, participating in our Take Stock in Children mentoring program.

To register, please follow the link: https://runsignup.com/Race/FL/FortMyers/StridesforEducation5K

Scheduled Technical Tours at B&I Office
Island Coast HS – October 11th - 21 Students/3 Teachers Attended
Cypress Lake HS – November 15th - 23 Students/3 Teachers Attended
Riverdale HS – January 18th (10 am)

Student Training & Advocacy Mentoring Partnership (STAMP)
Realizing the great impact that mentors have on students, The Foundation has implemented the Student Training & Advocacy Mentoring Partnership (STAMP). STAMP is a program that offers students the opportunity to achieve success by providing them college and career planning resources and volunteer mentors to give students assistance, guidance, motivation, and accountability to work hard and to ensure they graduate from high school to continue their education either through technical training or earning a college degree. It is a multi-year commitment for at-risk high school students to invest in their future and increase the high school graduation rate and post-secondary educational opportunities.

The STAMP program strives to accommodate eligible students, match them with mentors, and assist them in acquiring scholarships and grants to cover the cost of attending college or other post-secondary training. Students and their families, mentors, school coordinators, and Foundation staff all work together through the STAMP program and are instrumental in helping students pursue their post-high school education and career goals. Students will also be able to attend STEM@work events to learn about local businesses.

STEM@Work
SCIENCE . TECHNOLOGY . ENGINEERING . MATH
http://www.leeschoolfoundation.org
THE FOUNDATION FOR LEE COUNTY PUBLIC SCHOOLS, INC.
Enhance | Enrich | Excel

Our focus on STEM began with the notion that students need more opportunities in the areas of Science, Technology, Engineering, and Math related fields. The National Science Foundation estimates that 80% of the jobs created in the next decade will require some form of math and science skills.

Our STEM Initiatives are a collaboration between the Foundation and the School District of Lee County. Funded through the generosity of our business partners, this initiative offers students the opportunity to participate in field trips and internships, as well as experience hands-on activities through partnerships with businesses in the community. Check out more information at: https://leeschoolfoundation.org/

The Science Fair is fast approaching. February 17th will be here before you know it. Don't forget to sign up for judging online at zFairs: https://fl-rsef.zfairs.com/
Don't forget to make your tax-deductible contribution to Edison Fairs before the end of the year! All donations are welcome, whether large or small, and can be made online at: https://edisonfairs.org/

2024 Thomas Alva Edison Kiwanis Regional Science & Engineering Fair

Government Affairs – James Martin

ASHRAE Sends Letter to HHS Advocating for Updated Code Usage, Including Reference to Standard 170

ASHRAE sent a letter to the U.S. Department of Health & Human Services (HHS) advocating that the Centers for Medicare & Medicaid Services (CMS) update the Conditions of Participation and Conditions for Coverage to reference the 2024 editions of the Life Safety and the Health Care Facilities Code, which would effectively update an existing reference from ASHRAE Standard 170-2008 to ASHRAE Standard 170-2017. CMS currently requires hospitals to comply with the 2012 edition of the National Fire Protection Association's NFPA 101: Life Safety Code with certain modifications and the 2012 edition of NFPA 99: Health Care Facilities Code (excluding chapters 7, 8, 12, and 13). There are several conflicts between the 2008 and 2017 version of Standard 170, including misalignment with endoscopy pressure differential requirements that could lead to dangerous conflicts that could adversely impact staff and/or patients. The proposed updates are crucial for ensuring a safer environment for patients and staff through improved design strategies and advanced ventilation standards.

ASHRAE Sends Support Letter for the Mechanical Insulation Installation Incentive Act of 2023

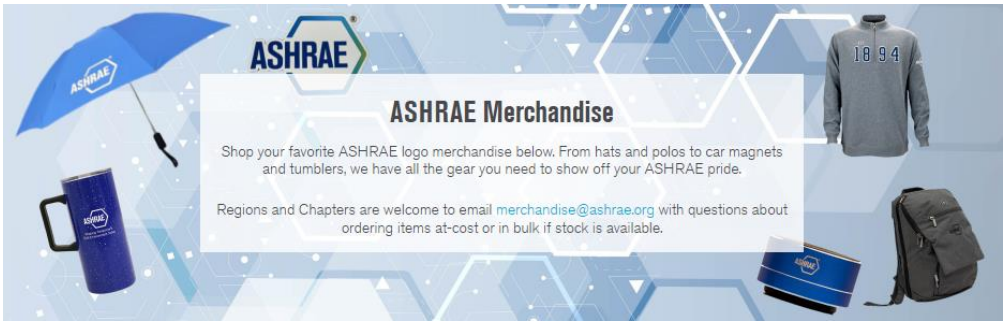
In late 2023, ASHRAE sent a letter to the Chairman and Ranking Member of the powerful House Committee on Ways and Means, advocating for swift passage of H.R. 6104, the Mechanical Insulation Installation Incentive Act of 2023. The legislation would create a tax credit equal to ten percent of labor costs associated with qualifying insulation installation. The tax credit would help offset any potential upfront cost increases, thus incentivizing better insulation, and in turn yielding substantial positive externalities: job creation, economic stimulus, and greenhouse gas emission mitigation. You can read ASHRAE's support letter here, and if you are interested in helping our Society advocate for legislation that aligns with our public policy priorities, you can reach out to government affairs to be trained on how to conduct government outreach events, meet with your legislators, and advocate for legislation like H.R. 6104.

Membership Promotion – Sidney Feldman

Please take the time to welcome our newest chapter members. First we have Franciscus Johannes Knobben from Wilhelmsen Ship Service. Second, we have Jane Sidebottom, who works for Applied Marketing Knowledge. We hope to see them both at future events.

History – Jason Hardman

Water Treatment Facility Tour



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- Assistant or Associate Professor – Mechanical Engineering
- Director of Engineering
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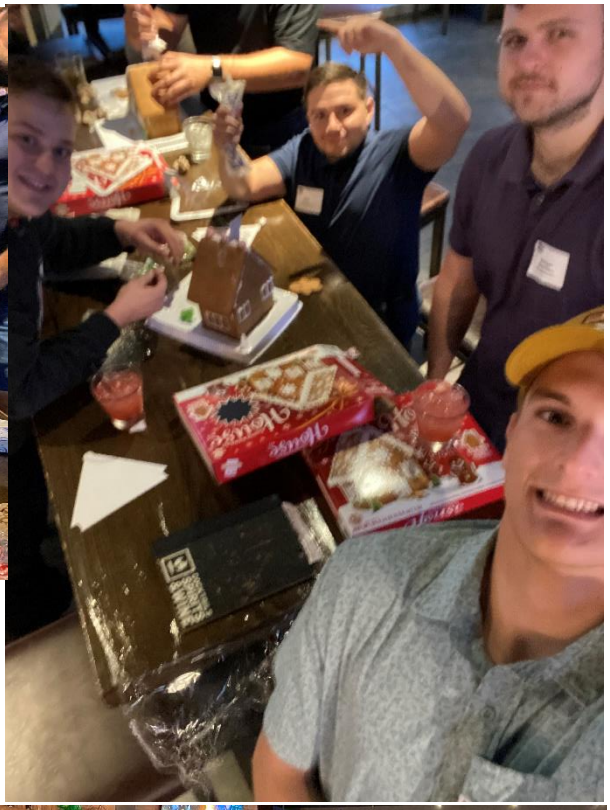
- Mechanical Engineer
- Assistant and Associate Professor Electrical Engineering
- Assistant and Associate Professor Industrial Engineering
- Assistant Professor Civil Engineering
- Faculty Associate Professor or Professor of Computer Science

ASHRAE Jobs

Apply Here

YEA – Camen Andrews

Gingerbread Build-Off and Holiday Social with ABC



Southwest Florida YEA is supporting a Gingerbread Build-Off and Holiday Social with ABC at World of Beer Gulf Coast Town Center see flyer for more information.

ASHRAE YEA Southwest Florida Chapter

Year	President
2023-2024	Gena Knight
2022-2023	David Moorhead
2021-2022	James Martin
2020-2021	James Martin
2019-2020	Kathleen Simpson
2018-2019	Kathleen Simpson
2017-2018	Ashley Fernandez
2016-2017	Richard Brooks
2015-2016	Jason Hardman
2014-2015	Woody Wilson
2013-2014	Robin Bryant
2012-2013	Autumn Spalding
2011-2012	Chuck Spelman
2010-2011	Lawrin Ellis
2009-2010	Randy Muncy
2008-2009	Sam Moreland
2007-2008	Michael Myers
2006-2007	Kurt Vega
2005-2006	John Pennington
2004-2005	Guy Van Meulebrouck
2003-2004	Mark Brant
2002-2003	Jason Allen
2001-2002	Randall Charles-James Saul
2000-2001	Don Pine
1999-2000	Don Pine
1998-1999	Ms Winifred W Weaver
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1995-1996	Mr Jason N Grabowski
1994-1995	Lisa Duritsch
1993-1994	Jeff Zenoniani
1992-1993	Mr Gary H Griffin
1991-1992	Mr Gary H Griffin
1991-1992	Nelson Tarbox
1989-1990	Tom Delnay
1988-1989	Mr William W Malphus
1987-1988	Kermit Rood
1986-1987	Jeff Dorini
1985-1986	Ross Montgomery
1984-1985	Dennis Holland
1983-1984	Ed O'Neal
1982-1983	Ed O'Neal

ASHRAE Southwest Florida Chapter

Thank you to our 2023-2024 Annual Sponsors!

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2023-2024 Bronze Sponsors

SPELMAN ENGINEERING, INC

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August, 2023

From: ASHRAE Southwest Florida Chapter

Subject: ASHRAE Southwest Florida Sponsorship Opportunities for 2023-2024

The ASHRAE Southwest Florida Chapter RP fund-raising events are excellent sponsorship opportunities. Your company reaches many key decision makers and sends a strong message of supporting the research that the community relies upon for comfort and sustainability.

The Southwest Florida Chapter is continuing to make sponsorships even easier by offering levels that include the promotion of your company at all chapter events! If you are unable to contribute at one of these levels, sponsorship opportunities for the Golf and Fishing tournaments will be offered separately before each event!

Go To: https://www.swflashrae.org/sponsorship for an on-line payment option!

Annual Sponsorship Levels

Diamond Level - $6,000 (Savings: $825) ***One Available***

- "Happy Hour" Sponsorship - One drink ticket per attendee with sponsor's logo ***(Value: $2,000***)
  - Swag distribution during happy hour by reception chair ***(Value: Priceless)***
- Golf Tournament: Gold Sponsorship Package ***(Value: $1,750)***
  - (8) Player Entries, (1) Tee Sponsorship, (1) Flag Sponsorship, (8) Mulligans, (1) Arm Length Raffle, (8) Putting Contest Entries
- Fishing Tournament: Gold Sponsorship Package ***(Value: $500)***
  - (4) Entries, Company Logo on Shirt, and special recognition
- Tech Topic Presentation ***(Value: $250)***
- A Complimentary Fishing Charter ***(Value: $1,000)***
- (15) Monthly Meeting Tickets ***(Value: $525)***
- (2) Meeting Sponsorships ***(Value: $500)***
- Signage at each monthly meeting ***(Value: $100)***
- (10) Yeti Raffle Tickets ***(Value: $100)***
- Logo on Monthly Newsletter ***(Value: $100)***

SOLD!!!

Gold Level - $3,000 (Savings: $300)

- Golf Tournament: Gold Sponsorship Package ***(Value: $1,750)***
  - (8) Player Entries, (1) Tee Sponsorship, (1) Flag Sponsorship, (8) Mulligans, (1) Arm Length Raffle, (8) Putting Contest Entries
- Fishing Tournament: Gold Sponsorship Package ***(Value: $500)***
  - (4) Entries, Company Logo on Shirt, and special recognition
- Tech Topic Presentation ***(Value: $250)***
- (10) Monthly Meeting Tickets ***(Value: $350)***
- (1) Meeting Sponsorships ***(Value: $250)***
- Signage at each monthly meeting ***(Value: $100)***
- Logo on Monthly Newsletter ***(Value: $100)***

Silver Level - $1,500 (Savings: $175)

- Golf Tournament: Silver Sponsorship Package ***(Value: $1,000)***
  - (4) Player Entries, (1) Tee Sponsorship, (4) Mulligans, (1) Arm Length Raffle, (4) Putting Contest Entries
- Fishing Tournament: Silver Sponsorship Package ***(Value:$300)***
  - (2) Entries, Company Logo on Shirt
- (5) Monthly Meeting Tickets ***(Value: $175)***
- Signage at each monthly meeting ***(Value: $100)***
- Logo on Monthly Newsletter ***(Value: $100)***

Bronze Level - $1,000 (Savings: $150)

- Golf Tournament: Tee Sponsorship ***(Value: $500)***
- Fishing Tournament: Bronze Sponsorship Package ***(Value: $200)***
  - (1) Entry, Company Logo on Shirt
- (2) Entries in either Golf or Fishing Tournaments ***(Value: $250)***
- Signage at each monthly meeting ***(Value: $100)***
- Logo on Monthly Newsletter ***(Value: $100)***

Officers 2023-2024

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Gena Knight

President Elect
Casey Hazen

Secretary
Kathleen Simpson

Treasurer
Woody Wilson

Board of Governors
Bill Malphus
Pat Graef
Robin Bryant
Jason Hardman

Research Promotion
Tony Amitia

Membership Promotion
Sidney Feldman

Golf and Fishing Tournament Flyers will be distributed ahead of each event if you are interested in event-specific sponsorship packages.

If you wish to be a 23-24 ASHRAE Sponsor or have any questions about the process please reach out to:

Tony Amitia
(239)470-5036
tamitia@bandiflorida.com

We greatly appreciate your assistance and support.

Portion of Proceeds to Benefit ASHRAE Research and the SWFL ASHRAE Chapter Endowment Fund
SWFL ASHRAE is a 501©(3) not for profit organization

Coordinating ASHRAE Standards

How to Do a Combined Standard 62.1/170 Ventilation Calculation

BY ABDEL K. DARWICH, P.E., C.ENG., HFDP, MEMBER ASHRAE

Health-care facilities are complex buildings. They have a mix of "health-care spaces" (e.g., patient rooms, operating rooms, etc.) and "non-health-care spaces" (e.g., offices, break rooms, conference rooms). When ASHRAE/ASHE Standard 170 was first published in 2008, it became ASHRAE's standard for ventilation of health-care spaces. By 2010, ASHRAE Standard 62.1 removed all ventilation rates for health-care spaces. Since then, any designer of a health-care facility has found themselves applying two standards, ASHRAE Standard 62.1, *Ventilation and Acceptable Indoor Air Quality*, and ASHRAE/ASHE Standard 170, *Ventilation of Health Care Facilities*, side by side. However, neither Standard 62.1 nor Standard 170 provided designers with a clear methodology for "mixed" systems serving spaces regulated by both standards. This article discusses a simple, easy to use method that would not yield any under- or over-ventilation to be used in these "mixed" systems.

Background

Addendum *n* to Standard 170-2008 provided users with two pathways to calculate outdoor air ventilation. One was by simple summation of outdoor airflow required by Standard 170. The other was using ASHRAE Standard 62.1's Ventilation Rate Procedure (VRP), assuming the rates in Standard 170 as zone outdoor airflow (V_{oz}). The two methods were mutually exclusive. Designers had to choose one or the other. Later in 2015, SSPC 170 answered a Request

Abdel K. Darwich, P.E., C.Eng., HFDP, is a principal with Guttmann and Blaevoet Consulting Engineers in Sacramento, Calif. He is a voting member of SSPC 62.1 and both the Standard 62.1 and the Standards Project Liaison Subcommittee Liaison to SSPC 170. He led the joint 62.1/170 working group to develop the methodology covered in this article.

for Interpretation (IC-170-2013-6), advising that designers could assume an area ventilation rate (R_a) to use the Standard 62.1 Ventilation Rate Procedure.

As shown in *Figure 1*, the VRP in Standard 62.1 has three corrections:

1. Ventilation Effectiveness (E_z): An adjustment for how well ventilation is distributed in the zone itself.

2. Diversity (D): Accounts for the fact that there may be fewer occupants in the area served by a ventilation system than the sum of all individual zones.

3. Ventilation Efficiency (E_v): An adjustment based on how well a system is distributing ventilation to all the zones. (Note: As of the 2019 version of Standard 62.1, E_v is calculated from the diversity [D]).

As of the 2019 edition of Standard 62.1, all ventilation rates calculated based on "a standard other than Standard 62.1" needed to be considered as the uncorrected outdoor air intake flow or V_{ou}. (This requirement is in clause 6.2.4.1.3 in Standard 62.1-2019).

All these requirements created confusion for designers attempting to use Standards 62.1 and 170 on the same system. Since it was first published in 2008, Standard 170 requires any of its outdoor airflows be considered as V_{oz}; thus diversity (D) would be applied to the result. Adding further confusion, the standard did not stipulate ventilation rates per person, so how diversity was supposed to be incorporated was not clear. In contrast, the 2019 and 2022 versions of Standard 62.1 require the same airflow to be considered as V_{ou}; thus, diversity (D) should not be applied.

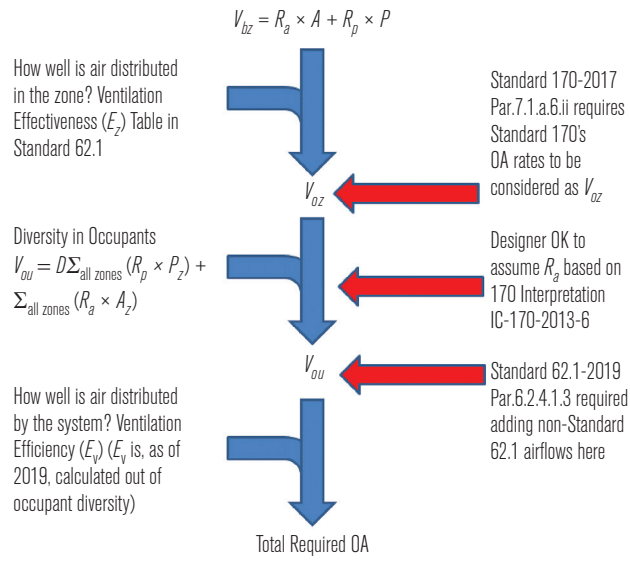
To resolve this confusion, a working group of various SSPC 62.1 and SSPC 170 members was considered in 2020. The group convened in early 2021 and met monthly throughout 2021 with constant reporting back to both committees.

Considered Methods

The working group considered three possible methods for doing a combined Standard 62.1/Standard 170 ventilation calculation.

- **Method 1: Combined Diversity E_v.** This method looks at the system as one. Designers obtain occupant diversity (D) by looking at Standard 62.1 and Standard 170 spaces together and derive a single E_v, which is applied to both Standard 62.1 and Standard 170 spaces.

FIGURE 1 The existing confusion in doing combined Standard 62.1/Standard 170 calculations.



- **Method 2: Individual Additive E_v-less for 170.** In this method, no E_v is applied to Standard 170 spaces. Designers apply an E_v correction for Standard 62.1 spaces. Then, they simply add the outdoor airflow from Standard 170 spaces to the result.

In equation form, System OA flow = $\text{OA}(V_{ou62.1})/E_{v62.1} + \text{OA}_{170}$).

- **Method 3: Most Conservative E_v.** This method looks at occupant diversity for Standards 62.1 and 170 separately. Designers obtain an E_v for the Standard 62.1 spaces and E_v for the Standard 170 spaces; then they use the most conservative of the two values for the entire system.

The Selection

The working group evaluated the pros and cons of each method. The SSPC 170 group provided two major items of feedback:

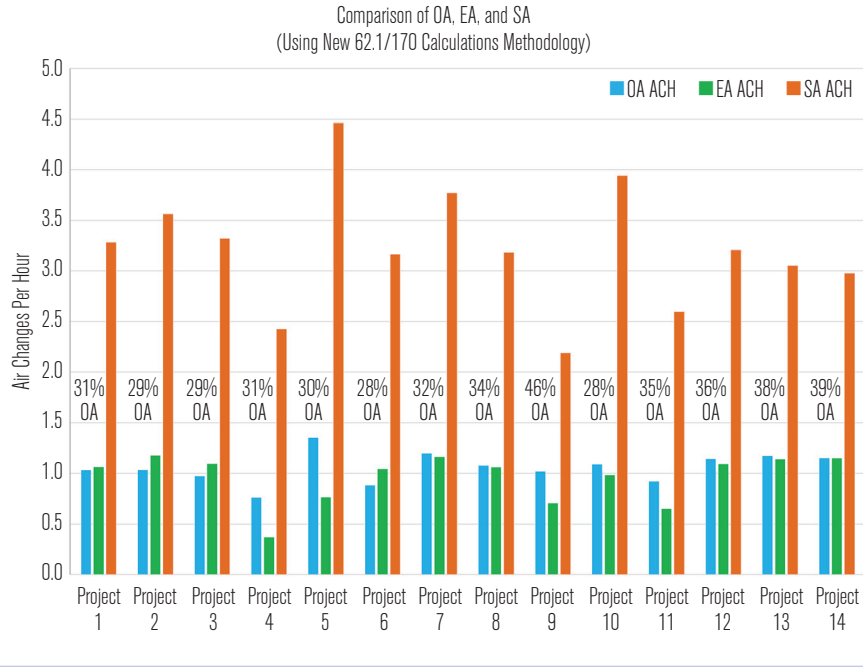
1. Since the outdoor air requirements in Standard 170 are volumetric-based (air changes) rather than people or area based, diversity (D) cannot be applied to any ventilation rate calculated per Standard 170. There is no diversity in building volume.
2. Standard 170 does not consider either ventilation effectiveness (E_z) nor ventilation efficiency (E_v).

The group concluded that both Methods 1 and 3 would require determining diversity (D) and applying ventilation efficiency (E_v) to outdoor airflow

FIGURE 2 Area percentage of the 14 projects on which Method 2 was tested.

	62.1 Area %	170 Area %
Project 1	26%	74%
Project 2	43%	57%
Project 3	23%	77%
Project 4	51%	49%
Project 5	17%	83%
Project 6	23%	77%
Project 7	42%	58%
Project 8	67%	33%
Project 9	69%	31%
Project 10	67%	33%
Project 11	79%	21%
Project 12	53%	47%
Project 13	48%	52%
Project 14	52%	48%
Average	47%	53%

FIGURE 3 Comparison of outdoor air, total supply air and exhaust airflow for the 14 projects using Method 2.



calculated based on Standard 170. That would contradict the feedback received from SSPC 170. On the other hand, most spaces in the scope of Standard 170 require 2 ach of outdoor air, which generally equates to 0.6 cfm/ft^2 (3 L/s·m^2) for a typical 9 ft (3 m) ceiling space. In almost all cases, this is much higher than what any Standard 62.1 space would require. Applying ventilation efficiency (E_v) to outdoor air calculated based on Standard 170 would only increase the total ventilation. Accordingly, the working group selected Method 2 (code named Individual Additive E_v-Less for 170) as the method to explore further.

Testing the Methods

To test the accuracy of Method 2, the working group applied it to 14 health-care projects. In addition, to test the sensitivity of Method 2, the working group made sure the 14 projects:

- Were mixtures of acute care and outpatient facilities;
- Represented a large sample (the total area of the 14 projects was 867,000 ft^2 [80 547 m^2]);
- Were a mixture of small and large projects (smallest project was 17,000 ft^2 [1579 m^2], and the largest was 220,000 ft^2 [20 439 m^2]); and
- Had good representation of Standard 62.1/Standard 170 balance in spaces. (See *Figure 2* and in particular projects highlighted in red. Project 5 had a majority of Standard 170 spaces, while Project 11 had a majority of Standard 62.1 spaces.)

The Results

For the 14 projects, *Figure 3* shows the resulting required outdoor airflow using Method 2, the total supply air and the total exhaust air (for reference).

The percentage of outdoor air to total supply air is indicated in black next to each project's columns. Except for one outlier project, which had 46% OA, all the projects had OA between 28% to 38%, with the majority between 28% and 35%, which is the typical percentage of OA in health-care facilities based on engineers' feedback from actual projects designed. Thus, the working group concluded Method 2 yielded accurate and stable results for different building sizes, types and mixture of space. The group recommended this method for adoption in both Standards 62.1 and 170.

The Addenda

Method 2 was subsequently written in code language in Addendum *f* to Standard 170-2021. It was officially published in July 2022. The addendum changes Standard 170 to allow two pathways for outdoor air calculations. *Figure 4* provides a visual presentation of Addendum *f*.

- If a system serves only spaces within the scope of Standard 170, the total system outdoor air is simply

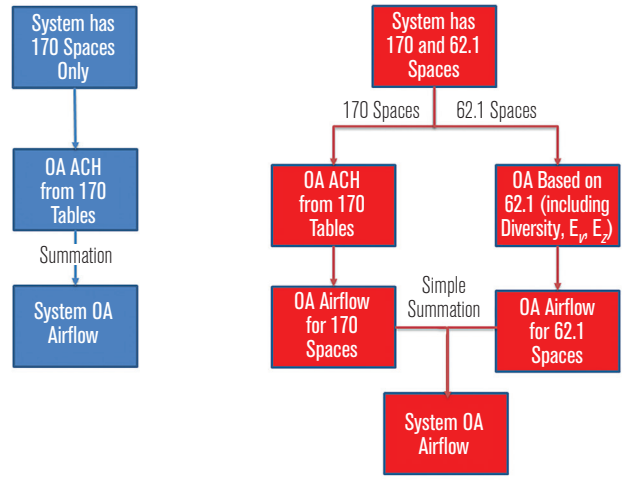
the summation of the individual space outdoor airflow as required by Standard 170 (blue pathway in *Figure 4*).

- If a system serves a mixture of spaces in the scope of both Standards 62.1 and 170, the aforementioned Method 2 will be used. (See the red pathway in *Figure 4*.)

To see an example of the use of this calculation method, visit https://tinyurl.com/JournalExtras.

Once Standard 170 Addendum *f* was published, an accompanying addendum to Standard 62.1-2022 was developed. This addendum adds an exception to Standard 62.1-2022 Clause 6.2.4.1.3. It allows the Standard 170-2021 method for systems serving a mixture of Standard 62.1 and Standard 170 spaces. For clarity and to avoid future confusion, SSPC 62.1 elected to reference Standard 170 instead of restating the full method. Since this addendum passed the public review process so close to the publication date of the 2022 version of Standard 62.1, it was not included in that revision. This was subsequently published as Addendum *m* as of Sept. 30, 2022.

FIGURE 4 Visual representation of Addendum *f* to Standard 170.



Acknowledgments

The author would like to thank the entire working group who helped develop this method and would like to also thank Travis English, Jeremy Fauber and Dave Mason for their review and valuable feedback on this article. ■

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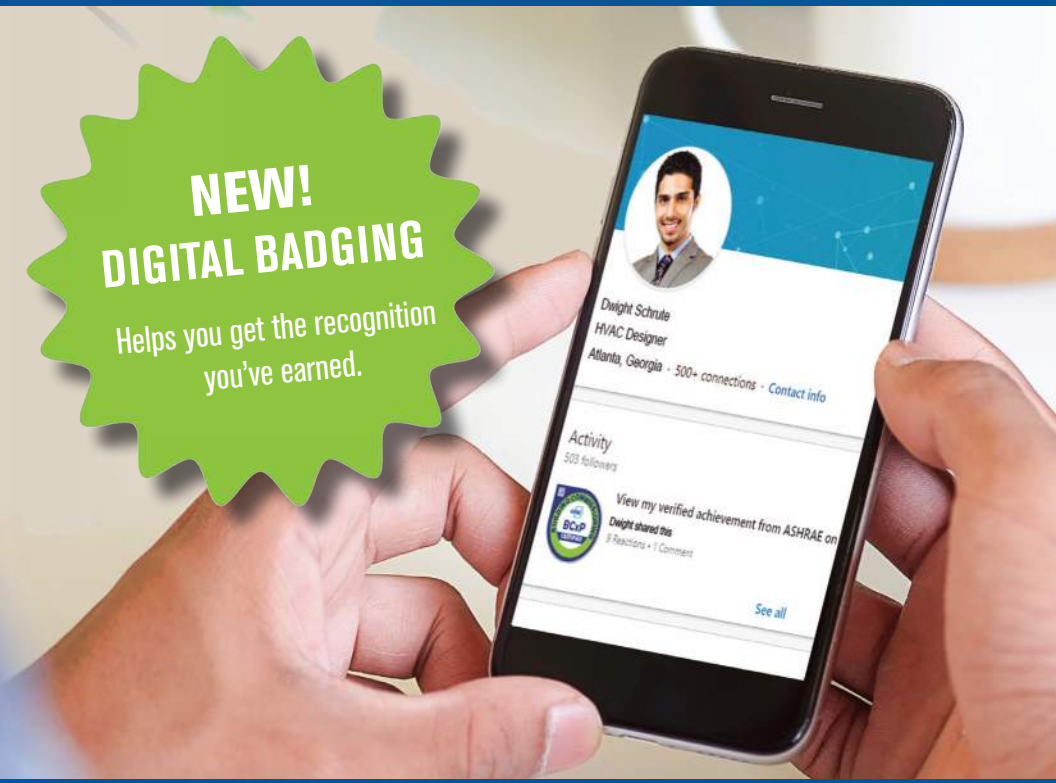

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