Welcome to the September ASHRAE Meeting!

Today's Agenda

- Lunch begins – 11:30AM
- Meeting – 12:00PM
- 2023-2024 Sponsors
- Chapter Sponsorship Opportunities
- Membership and Guest Introductions
- Upcoming Events
- Main Speaker Introduction

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Thank You 2022-2023 Chapter Sponsors

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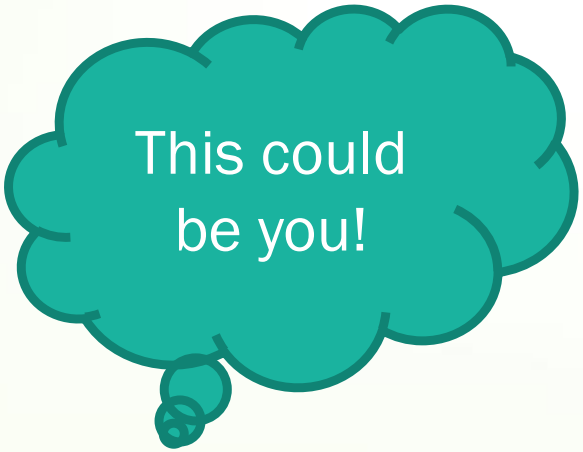
Thank You 2023-2024 Platinum Sponsors

Insert Company Name here



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Reach out to our RP Chairs Paul Shelor & Kyler Asia if you are interested in chapter sponsorship.

Paul.Shelor@gmail.com Kyler.Asia@carrier.com

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Thank You 2023-2024 Gold Sponsors!

Insert Company Name here

This could be you!

Insert Company name here

Reach out to our RP Chairs Paul Shelor & Kyler Asia if you are interested in chapter sponsorship.

Paul.Shelor@gmail.com Kyler.Asia@carrier.com

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Why is Research Promotion so important?

The RP Campaign benefits the funding of numerous ASHRAE programs including:

- ASHRAE Research
- ASHRAE Scholarships for undergrads
- ASHRAE Learning Institute development of new courses
- Graduate Research Projects
- Young Engineers in ASHRAE Leadership Training

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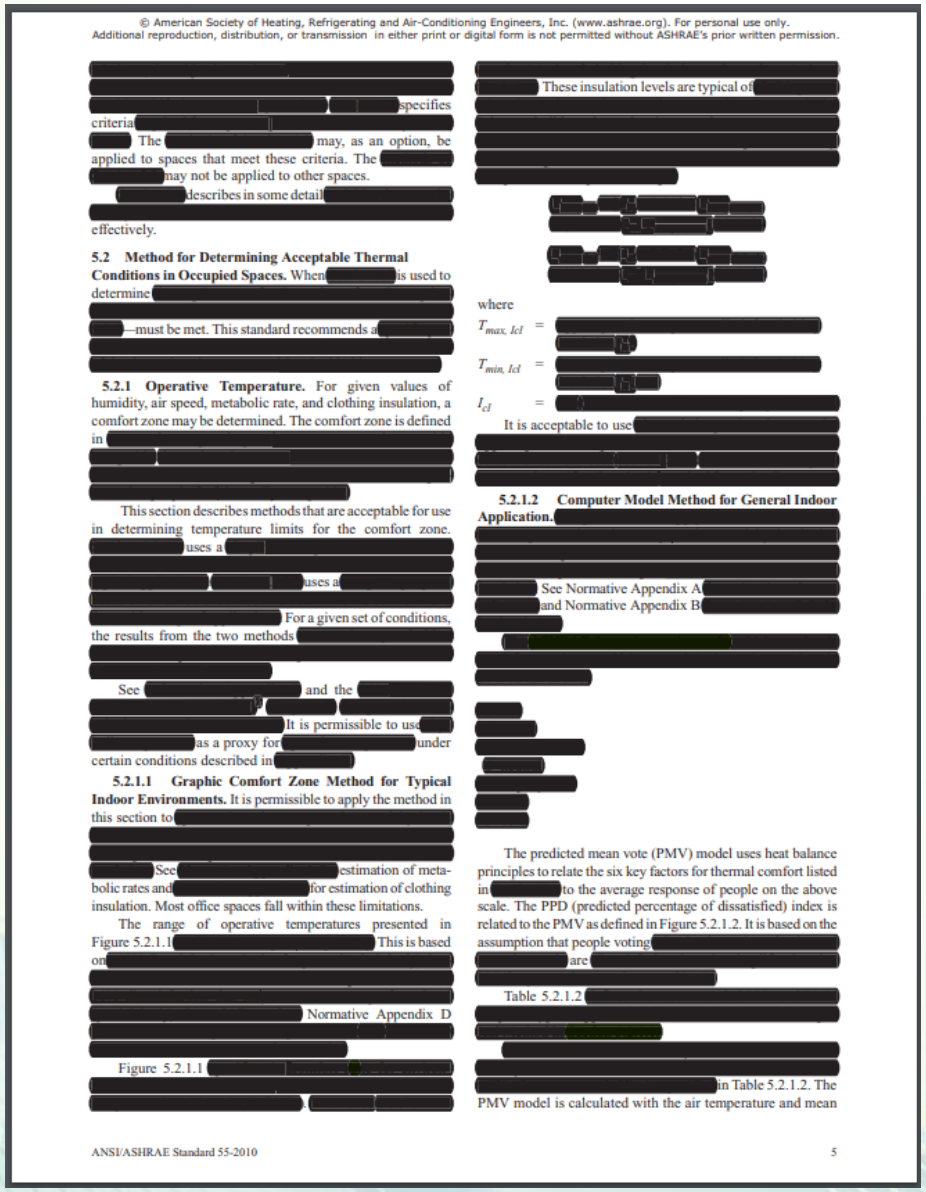
Standard 55 Without Your Support



[redacted] specifies criteria [redacted] The [redacted] may, as an option, be applied to spaces that meet these criteria. The [redacted] may not be applied to other spaces.

[redacted] describes in some detail [redacted] effectively.

5.2 Method for Determining Acceptable Thermal Conditions in Occupied Spaces. When [redacted] is used to determine [redacted] —must be met. This standard recommends a [redacted]

5.2.1 Operative Temperature. For given values of humidity, air speed, metabolic rate, and clothing insulation, a comfort zone may be determined. The comfort zone is defined in [redacted]

This section describes methods that are acceptable for use in determining temperature limits for the comfort zone. [redacted] uses a [redacted] uses a [redacted] For a given set of conditions, the results from the two methods [redacted]

See [redacted] and the [redacted] It is permissible to use [redacted] as a proxy for [redacted] under certain conditions described in [redacted]

5.2.1.1 Graphic Comfort Zone Method for Typical Indoor Environments. It is permissible to apply the method in this section to [redacted] See [redacted] estimation of metabolic rates and [redacted] for estimation of clothing insulation. Most office spaces fall within these limitations.

The range of operative temperatures presented in Figure 5.2.1.1 [redacted] This is based on [redacted] Normative Appendix D [redacted]

Figure 5.2.1.1 [redacted]

[redacted] These insulation levels are typical of [redacted]

[redacted]

where

$T_{max,\ Icl}$ = [redacted]

$T_{min,\ Icl}$ = [redacted]

I_{cl} = [redacted]

It is acceptable to use [redacted]

5.2.1.2 Computer Model Method for General Indoor Application. [redacted] See Normative Appendix A [redacted] and Normative Appendix B [redacted]

[redacted]

The predicted mean vote (PMV) model uses heat balance principles to relate the six key factors for thermal comfort listed in [redacted] to the average response of people on the above scale. The PPD (predicted percentage of dissatisfied) index is related to the PMV as defined in Figure 5.2.1.2. It is based on the assumption that people voting [redacted] are [redacted]

Table 5.2.1.2 [redacted] in Table 5.2.1.2. The PMV model is calculated with the air temperature and mean

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Heating Projects Funded by ASHRAE Research

1196-RP - Develop Software to Calculate the Application Seasonal Efficiency of Commercial Space Heating Boiler Systems Based on ASHRAE Standard 155P
1267-RP - Development of an ASHRAE Design Manual for District Heating and Cooling Systems
1322-RP - Productivity and Perception Based Evaluation of Indoor Noise
1385-RP - Development of Design Tools for Surface Water Heat Pump Systems (SWHP)
1458-RP - Modeling Person-to-Person Contaminant Transport in a Mechanical Ventilation Space
1478-RP - Measuring Air-tightness of Mid- and High-rise Non-residential Buildings
1504-RP - Extension of the Clothing Insulation Database for Standard 55 and ISO 7730 to Provide data for Non-Western Clothing Ensembles
1544-RP - Establishing Benchmark Levels and Patterns of Commercial Building Hot Water Use
1550-RP - Thermal Performance of Insulating Coatings on Piping and Ductwork
1564-RP - Measurement of Oil Retention in the Microchannel Heat Exchanger
1613-RP - Update Climatic Design Data in Chapter 14 of the 2013 Handbook of Fundamentals
1624-RP - Effective Energy-Efficient School Classroom Ventilation for Temperate Zones
1646-RP - Measurements of Thermal Conductivity of Pipe Insulations at Below Ambient Temperatures and in Wet Condensing Conditions with Moisture Ingress
1674-RP - Research to Support the Revision to Ground Source Heat Pump: Design of Geothermal Systems for Commercial and Institutional Buildings (ASHRAE 1997)
1699-RP - Update Climatic Design Data in Chapter 14 of the 2017 Handbook of Fundamentals
GIA 13-14 - Air-Side Economizer Low-Limits Effect on Energy and Thermal Comfort
GIA 13-14 - Assessing the Performance of Buildings Due to Extreme Weather and Climate Change
GIA 14-15 - Development and evaluation of novel membrane liquid desiccant air conditioning systems for hot-humid and cold-dry climates
GIA 14-15 - Integrating thermal energy storage into hybrid solar assisted heat pump systems for residential houses in cold climate
GIA 14-15 - Numerical and experimental investigation of control schemes for small scale ammonia water absorption heat pumps

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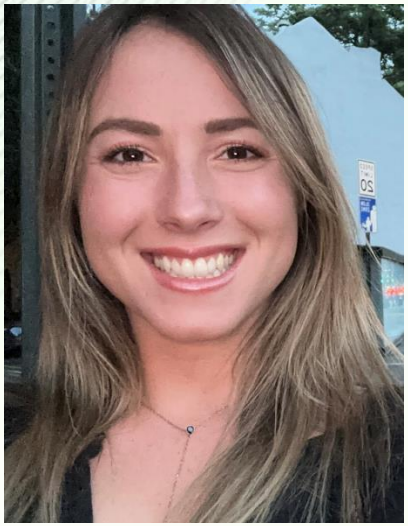

Chapter President

Erica Powell

Erica.Powell@lincolnharris.com

Vice President

Stephen Wren

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Membership Promotion

Mariana Haddad

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Membership Promotion Co-Chair

Tim Cannon

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Research Promotion

Paul Shelor

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Research Promotion Co-Chair

Kyler Asia

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Student Activities

Tyler Tuft

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Student Activities Co-Chair

Adam Parker

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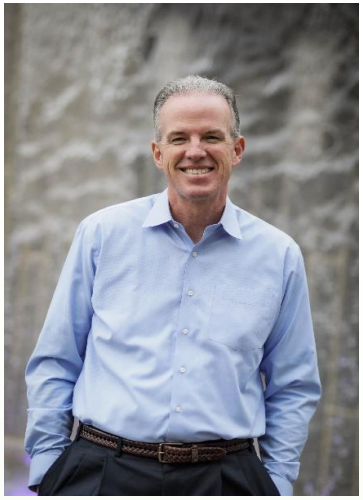
Treasurer

Val Simmons

Valarie.Simmons@cosatron.com



Gov Advocacy Committee Chair

Billy Austin

baustin@shultzeg.com

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CTTC (Programs) Chair

Ben Coy

Benjamin.Coy@rmf.com

CTTC (Programs) Co-Chair

Amir Zare

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YEA Committee Member

Jonathan Alo

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CTTC Committee Member

Ryan Staton

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YEA Chair/Secretary

Patrick Irick

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YEA Co-Chair

Ray Labrador

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Sustainability Chair

Greg Wilson

gwwilson@nhyates.com

Refrigeration Chair

Jeff Magnusson

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Chapter Historian

Chuck Curlin

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Webmaster

Chris Adams

cadams@insightusa.com

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New Members or New Guests?

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Upcoming Events:

Event Name	Date	Time	Location
1st Chapter Meeting: "Humidity Controls for Commercial Buildings" by Mark Nunnelly, PE, CxA	9/7/2023	11:30AM-1PM	Lenny Boy Brewing
YEA Happy Hour – Open tab!!	9/21/2023	5PM-7PM	Wooden Robot
2nd Chapter Meeting: "High Performance Building Design – What the Future Holds for the Direction of Our Industry" – Tom Lawrence	10/5/2023	11:30AM-1PM	Lenny Boy Brewing
3rd Chapter Meeting = ?	11/2/2023	11:30AM-1PM	Lenny Boy Brewing
Fall Annual Golf Tournament for RP w/ AEE	11/8/2023	10AM-6PM	Verdict Ridge
Tech Hour Virtual Meeting – PDHs Available	12/7/2023	11:45AM-1PM	Virtual Meeting
Christmas Auction and 2022-2023 Donor Recognition Event	December ?	6PM-9PM	?

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Humidity Controls for Commercial Buildings

Mark Nunnelly is a mechanical engineering graduate of Auburn University, is a registered professional engineer in several states and a Certified Commissioning Authority. He has been involved in the construction, energy, engineering, and HVAC industry for over 42 years. Mark is the President of Nunnelly & Associates, Inc. The company began as a manufacturers' representative agency in 2000 focusing on engineered sales and application of specialty HVAC products pertaining to humidity control, ventilation air conditioning, energy recovery technologies and other custom air handling products. In 2008, the company's focus transitioned into forensics consulting, building commissioning and professional technical training opportunities. Mark has been a member of ASHRAE since 1985 and has actively served at the local, regional and society levels. Mark is a past President of the Birmingham Chapter and has served as Regional Vice Chair for Membership for Region VII, and as Vice Chair and Chair of the Membership Promotion Committee of Society.

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Humidity Controls for Commercial Buildings

For over 20 years, Mark has been recognized as one of ASHRAE's Distinguished Lecturers and has conducted numerous training seminars and short courses for the Society and for local chapters on topics such as Psychrometrics, Designing for Humidity Control and IAQ Issues, both domestically and internationally. He previously served on the Environmental Health Committee for the Society, has served on several technical of Society's committees and has been a technical contributor to ASHRAE's Handbook of Fundamentals. Mark has authored several technical articles for Industry journals regarding humidity control and IAQ concerns within hospitals, including "Why is it Raining in my Operating Room?", "MOLD: Design or Operations Issue?", and "Preventing Mold in Hospitals".

In his spare time, Mark enjoys spending time with his wife, children and 7 grandchildren. He is also very involved in his church (Shades Mountain Baptist Church) as a teacher and a deacon.

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