

THE LONG ISLAND SOUNDER



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President's Message

The fall season is in full swing, and with it comes a busy stretch for our industry. Between evolving refrigerant regulations and the continued rollout of Local Law 97, there's no shortage of change on the horizon. These shifts highlight exactly why ASHRAE's role is so important — providing a forum where engineers, contractors, and designers can stay ahead of new standards and share practical solutions that keep our built environment moving forward. A big thank-you to LG for delivering an excellent presentation last month on A2L refrigerants, covering critical updates on safety, design, and code compliance. The presentation sparked great discussion and helped set the tone for a year focused on technical depth and collaboration.

Looking ahead, we're excited for our November 4th joint meeting with IEEE, featuring ASHRAE Distinguished Lecturer Darryl Boyce. Darryl is a Senior Engineer at SNOLAB, a world-class research facility located 6,800 feet underground in Sudbury, Ontario, where scientists search for evidence of dark matter in the universe. His presentation will dive into the engineering and construction challenges of building and maintaining this specialized underground laboratory — from budget and commissioning strategies to operational performance in one of the most demanding environments imaginable. It's a truly one-of-a-kind program that connects advanced science with applied engineering practice.

Our YEA Committee is also hard at work planning upcoming technical and social events to help connect younger members with chapter leadership and industry professionals. These events are a great way for new members to get involved, gain exposure, and build long-term relationships within ASHRAE. Stay tuned for details in the coming weeks.

As always, our board continues to plan a full year of programs, tours, and networking opportunities. If you'd like to get involved, share ideas, or learn more about chapter activities, please join us at our Board of Governors meeting at 5:00 PM before the monthly dinner. Your engagement and feedback are what keep this chapter strong and forward-looking.

I look forward to seeing everyone on November 4th for this exceptional joint program with IEEE.

Warm regards,
Matthew Catan
President, ASHRAE Long Island Chapter

MEETING PROGRAM

Attendees
Will Earn
1 PDH!



Darryl K. Boyce

Fees:

Members - \$50 pp

Guests - \$70 pp

Students - \$15 pp

Date: Tuesday, Nov. 4th 2025

Time: 6PM-9PM

6:00 PM - Cocktails/Networking

7:00 PM - Dinner Presentations

8:45 PM - Conclusion

Location: *Westbury Manor*

1100 Jericho Tpke., Westbury, NY 11590

Directions are posted at @ www.ashraeli.org

Presentation Topic:

Creating an Underground Research Facility to Explore the Universe

SNOLAB is a world-leading underground science research facility buried 6,800 feet beneath the Earth's surface, built to detect faint traces of **dark matter and other cosmic phenomena**. Its design and operation demand precision engineering under conditions few projects ever face.

The presentation will review the research requirements and describe how these were translated into the design scope for the facility to be located 6,800 feet below ground level.

We will walk through the construction challenges and review the strategies to keep this specialized facility on budget in a challenging underground construction environment. Designing for commissioning and operation will be discussed as well as the commissioning requirements.

About our Speaker:

Darryl K. Boyce, P.Eng., Fellow/Life Member ASHRAE, was the ASHRAE President for the 2019-2020 term. Boyce has previously served on the board of directors as treasurer, Vice President, Director and Regional Chair Region 2 and director-at-large. Boyce is retired and was previously special advisor to the vice-president (Finance & Administration) – and the assistant Vice President of facilities management and planning – at Carleton University in Ottawa, Ontario Throughout his time spent with ASHRAE and in the HVAC industry, Boyce has worked on various projects to increase energy efficiency. His most recent projects include the SNOLAB project in Sudbury, Ontario, where he is responsible for the design and construction of a world class research facility for underground science. Boyce is a 1982 graduate of the University of Alberta with a Bachelor of Science in Engineering and earned his Engineering Diploma from the British Columbia Institute of Technology in 1973.

Chapter Monthly Meeting - Program for 2023/2024

<p>September 9, 2025* At Westbury Manor</p> <p>Dinner Presentation – ASHRAE 62.1 Understanding the Indoor Air Quality Procedure</p> <p>Presenter: Tim Boyd</p> <p style="text-align: right;">**1 PDH*</p>	<p>March 10, 2026* At Westbury Manor</p> <p>Long Island Trade Show</p>
<p>October 14, 2025* At Westbury Manor</p> <p>Dinner Presentations - VRF and The A2L Refrigerant Transition</p> <p>Presenter- Anthony Frizalone</p> <p style="text-align: right;">**1 PDH**</p>	<p>April 14, 2026</p> <p>Dinner Presentation— TBD</p> <p style="text-align: right;">**1 PDH**</p>
<p>November 4, 2025 * At Westbury Manor</p> <p>Dinner Presentation— Creating an Underground Research Facility to Explore the Universe</p> <p>Presenter- Darryl K. Boyce</p> <p style="text-align: right;">**1 PDH**</p>	<p>May 2026 * Cherry Valley Club, Garden City, NY</p> <p>ANNUAL GOLF OUTING</p>
<p>December 9, 2025 * At Westbury Manor</p> <p>Dinner Presentation—TBD **1 PDH**</p>	<p>May 12, 2026</p> <p>Annual Field Trip—TBA</p>
<p>January 13, 2026 * At Westbury Manor</p> <p>Dinner Presentation— TBD</p> <p style="text-align: right;">**1 PDH**</p>	<p>June 2026 * At Westbury Manor</p> <p>Free Buffet Dinner for Members</p> <p>PAST PRESIDENTS NIGHT & OFFICER INSTALLATION STUDENT SCHOLARSHIPS TO BE AWARDED ASHRAE History Quiz and prize Give-A-Ways</p>
<p>February 10, 2026</p> <p>Dinner Presentation— TBD</p> <p>Presenter: TBD</p>	<p>July 2026- TBD (4pm-8pm) * Dixie II @ Captree State Park Boat Basin, NY</p> <p>ANNUAL FISHING TRIP</p>
	<p>August 2026</p> <p>Chapters' Regional Conference (CRC) Region I GRANIT STATE</p>

Long Island Chapter Officers & Committees

ASHRAE 2024/2025 OFFICERS		
POSITION	NAME	EMAIL
President	Matthew Catan	c006@ashrae.net
President-Elect	Michael Razzano	c006pe@ashrae.net
Vice President	Zhiganag XU	c006vp@ashrae.net
Treasurer	Richard Smith	c006tr@ashrae.net
Secretary	Michael S. Gerazounis	c006sec@ashrae.net
Board of Governors	Thomas DiBenedetto	c006bog1@ashrae.net
Board of Governors	Pete Conte	c006bog2@ashrae.net
Board of Governors	Steven Gerazounis	c006bog3@ashrae.net
Board of Governors	Michael Nigro	c006bog4@ashrae.net
Board of Governors	Richard Smith	c006bog5@ashrae.net

ASHRAE 2023/2024	COMMITTEES	
COMMITTEE	NAME	EMAIL
Programs & Special Events	Michael Nigro	c006pe@ashrae.net
Membership (MP)	Michael Gerazounis	c006mep@ashrae.net
Refrigeration	Kenny Balci	c006ref@ashrae.net
Chapter Technology Transfer (CTTC)	Michael Razzano	c006cttc@ashrae.net
Government Activities (GGAC)	Rich Smith	006ggac@ashrae.net
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Research Promotion (RP)	Peter Conte	c006rp@ashrae.net
Historian	Elizabeth Jedrlinic	c006his@ashrae.net
Student Activities (SA)	Katlyn Coolbaugh	c006sa@ashrae.net
Young Engineers in ASHRAE (YEA)	Steven Gerazounis	c006yea@ashrae.net
Webmaster	Frank Paradiso	c006web@ashrae.net
Nominating	Michael Gerazounis, PE, LEED AP	nominating@ashraeli.org
Reception & Attendance	Steven Gerazounis	reception@ashraeli.org
PR & Engineering Joint Council of LI (EJCLI) Liaison	Andrew Manos, LEED AP	pr@ashraeli.org
Golf Outing	Peter Gerazounis, PE LEED AP	golf@ashraeli.org
Awards	Brian Simkins	c006ha@ashrae.net
ASHRAE LI, P.O. Box 79, Commack, NY 11725		

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Long Island Chapter - Past Presidents

1958	H. Campbell, Jr. PE	1982	Timothy Murphy, PE	2006	John Nally
1959	Clyde Alston, PE	1983	Leon Taub, PE	2007	Peter Gerazounis, PE, LEED AP
1960	Sidney Walzer, PE	1984	Raymond Combs	2008	Steven Friedman, PE, HFDP, LEED AP
1961	Sidney Gayle	1985	Edward W. Hoffmann	2009	Steven Giammona, P.E., LEED AP
1962	William Kane	1986	Jerome T. Norris, PE	2010	Nancy Román
1963	Louis Bloom	1987	Abe Rubenstein, PE	2011	Carolyn Arote
1964	Milton Maxwell	1988	Michael O'Rourke	2012	Brian Simkins, LEED AP
1965	Will Reichenback	1989	Mel Deimel	2013	Andrew Manos, LEED AP BD+C
1966	Joseph Minton, PE	1990	Robert Rabell	2014	Richard L. Rosner, P.E.
1967	Irwin Miller	1991	Gerald Berman	2015	Thomas J. Fields, P.E., LEED AP
1968	Walter Gilroy	1992	Donald Stahl	2016	Donald Kane, P.E.
1969	Charles Henry	1993	Ronald Kilcarr	2017	Andrew Dubel, P.E., LEED AP
1970	William Wright	1994	Jerald Griliches	2018	Richard Halley
1971	Louis Lenz	1995	Walter Stark	2019	Frank Paradiso
1972	Ronald Levine	1996	Joe Marino	2020	James Hanna
1973	Henry Schulman	1997	Norm Maxwell, PE	2021	Matthew J. Vitrano
1974	Myron Goldberg	1998	Alan Goerke, PE	2022	Murat Bayramoglu
1975	John N. Haarhaus	1999	Frank Morgigno	2023	Michael Nigro
1976	Richard K. Ennis	2000	Michael Gerazounis, PE, LEED AP	2024	Elizabeth Jedrlinic
1977	Kenneth A. Graff	2001	Ray Schmitt		
1978	Evans Lizardos, PE, LEED AP	2002	Steven M. Stein, PE		
1979	Albert Edelstein	2003	Andrew Braum, PE		
1980	Ralph Butler	2004	Claudio Darras, P.E.		
1981	Robert Rose, PE	2005	Craig D. Marshall, P.E.		



YEA

Hello everyone, I am your YEA chair, Steven Gerazounis. I hope you all are looking forward to another great year! For all the new members if you are unfamiliar with the YEA committee, its purpose is to provide ASHRAE members 35 years old or younger with opportunities to network, educate and grow themselves through chapter events. Please check back regularly to the newsletter and on ASHRAE's website for all the news and opportunities available. I look forward to seeing as many of you as possible in the upcoming months at ASHRAE and YEA events!

We are currently planning two events for October, one factory tour and one social event. Stay tuned and check your emails for more details!

On a Society level, ASHRAE offers many programs and events that can enhance the professional development of YEA members, such as Leadership Weekend, Leadership U, LeaDRS, ASHRAE Connect, and the HVAC Design Scholarship.

YEA Events



YEA Leadership Weekend 1.0

LEARN MORE



YEA Leadership Weekend 2.0


LEARN MORE



YEA Leadership International


LEARN MORE

YEA Programs




Leadership U

LEARN MORE




LeaDRS

LEARN MORE




HVAC Design Scholarship

LEARN MORE



Presidential Initiative Challenge
(formerly YEA Design Initiative)

LEARN MORE



ASHRAE Connect

LEARN MORE

<https://www.ashrae.org/communities/young-engineers-in-ashrae-yea/yea-events-and-programs>

Leadership Weekend 1.0

Coming to Seattle this fall (November 7th-9th) is YEA Leadership Weekend 1.0 (YLW)! This event is for young professionals who are looking to improve in the areas of leadership, networking, communication, and professional development. YLW is led by Ralph Kison as he guides individuals through a self-discovery process that reveals their strengths, talents, gifts, and passion. In addition, there will be an optional technical tour of Benaroya Hall on November 6th. Please use the link below to register, and hurry if you are interested as registration closes on October 10th!

<https://www.ashrae.org/communities/young-engineers-in-ashrae-yea/yea-events-and-programs/yea-leadership-weekend>

Leadership U

If you wanted the opportunity to participate and follow regional and society officers there are two great options to do so! With Leadership U (4) YEA members will be selected for the winter or annual conference and attend all of their respective society officer's events, board meetings and social activities. Applications for the 2026 Winter Conference in Las Vegas are open now. Please use the link below to register and for more information.

<https://www.ashrae.org/communities/young-engineers-in-ashrae-yea/yea-events-and-programs/leadership-u>



2025 Winter Leadership U Participants

Mohammed Murtaza, ASHRAE Falcon Chapter, RAL

Kaustubh Deepak Wani, Pune Chapter, Region XV

Bin Lin, Macao Chapter, Region XIII

Steven Gerazounis, Long Island Chapter, Region I

<https://www.ashrae.org/communities/young-engineers-in-ashrae-yea/yea-events-and-programs>

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<https://www.ashrae.org/communities/young-engineers-in-ashrae-yea/yea-events-and-programs/leadership-u>

Technical Committees

Are you looking to get more involved with your industry or ASHRAE as a whole? Take a look to see if there are any technical committees that interest you!

<https://ashrae.org/technical-resources/technical-committees>

Getting more involved gives you the opportunity to directly impact our industry and expand your knowledge base. To learn more about these committees you can also reach out via phone or email at:

404-636-8400

tcstaff@ashrae.net

YEA Awards

So many YEA members are deserving of awards for their hard work, dedication and faithful service to this society but don't receive them because people don't know they are eligible to be nominated. Please look into the numerous awards available for YEA members under the Honors and Awards tab.

<https://www.ashrae.org/communities/young-engineers-in-ashrae-yea/honors-and-awards>

For any awards that you cannot nominate yourself or another YEA member you may need to reach out to your YEA Regional Vice Chair, Society YEA Committee member or Director and Regional Chair to provide them with the information they require to submit a nomination form.

ASHRAE Connect

Are you a first-time attendee at the ASHRAE Conference, or have you attended before but felt overwhelmed by the many options? This new shadowing program offers the perfect opportunity to gain first-hand experience by following a member of ASHRAE through committee meetings and conference events.

Designed for ASHRAE members seeking to build stronger connections and deepen their understanding of ASHRAE's processes, this program aims to help you navigate the conference with guidance and insight from experienced members. By participating, you'll not only gain valuable knowledge but also feel welcomed in committee meetings, ensuring you have a seat at the table and a voice in the discussions that shape our industry.

[ASHRAE Connect](#)

2025-2026 Presidential Initiative Challenge

The Presidential Initiative Challenge (previously the Decarbonization Challenge) is a year-long competitive fund (\$1,000 - \$10,000) program to implement projects within local chapters that are tied to the year's presidential theme. Bill McQuade has announced his presidential theme, Indoor Environmental Quality. This year's program will be centered around implementing IEQ projects. This program is implemented through the YEA committee with grass roots outreach through the YEA chairs/committees at each chapter. Applications for the program will remain open until November 3rd, 2025.

<https://www.ashrae.org/about/yea-presidential-initiative-challenge>

Please feel free to reach out to me with any questions or comments about YEA.

-Steven Gerazounis



Government Affairs

Just when you thought the push for electrification was cooling down, Here We GO!

DOE Cancels Energy Projects

On October 2, the Department of Energy (DOE) cancelled roughly \$7.6 billion in funding predominantly for energy projects in states represented by Democrats in the Senate. Affected states include Connecticut, California, Colorado, Delaware, Hawaii, Illinois, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New Mexico, New York, Oregon, Vermont, and Washington. The cancellations would also affect 136 congressional districts, including 108 held by Democrats and 28 held by Republicans. However, DOE may cancel additional grants. An [unconfirmed list](#) includes the already-terminated grants with roughly 300 more, including some in Republican-led states and districts. These grants were funded under regular appropriations, the Bipartisan Infrastructure Law (BIL), and the Inflation Reduction Act (IRA). The \$2.8 million Resilient and Efficient Codes Implementation (RECI) grant ASHRAE secured is also included in this list. DOE has not made a final decision on which projects from this list will be terminated.

California Passes more than their fair share of Legislation

*California Governor Signs Legislation Requiring
Maximum Indoor Temperature Limit*

California Gov. Gavin Newsom signed into law [SB 655](#), legislation aimed at ensuring that indoor temperatures in all dwelling units can attain and maintain a safe maximum indoor temperature.

Energy Grid Bills Vetoed in California

In early October, California Gov. Newsom vetoed AB 740, which would have required the state to adopt a deployment plan for virtual power plants. This would have enabled distributed energy resources such as solar panels and batteries to be aggregated thereby allowing the power they generate to be available nearly instantaneously during spikes in demand on the power grid.

California Governor Signs Energy and Environmental Bills Into Law

Despite vetoing bipartisan legislation to expand virtual power plants, Governor Newsom signed multiple major energy and environmental bills into law.

Michigan Proposes Commercial Energy Code Update to Latest Edition of ASHRAE Standard

The Michigan Department of Licensing and Regulatory Affairs [recently announced a proposed update](#) to the state's commercial energy code to the latest (2024) edition of the International Energy Conservation Code (IECC) and ASHRAE Standard 90.1-2022

Maryland Announces Electrifying Community Buildings Grant Program

The Maryland Energy Administration [announced that funding is available](#) for the Electrifying Community Buildings Grant Program, which is focused on connecting community-serving buildings with funding to facilitate electrification of building systems, energy efficiency and weatherization upgrades, and reducing greenhouse gas emissions. Community-serving buildings that qualify include hospitals, private schools, museums, and houses of worship. Approximately \$6.8 million is expected to be available from this program for FY 2026; grant applications are due by December 31.

As you can see, many of the policies adopted by NY, NYC and CA are being integrated to the surrounding states and picking up speed.

What Codes are you coming across in other states and are you seeing the trend? We would love to hear from you.

Richard Smith – GAC Chair.
006ggac@ashrae.net



Historian

*"History is not a burden on the memory but an illumination of the soul."
– Lord Acton*

The Fire Island Lighthouse: Guiding Mariners Through History

The Fire Island Lighthouse, located at the western end of Fire Island, New York, has a rich history as a critical aid to navigation along the Atlantic coast. Originally constructed in 1826, the first lighthouse was deemed inadequate and replaced in 1858 by the current 168-foot structure. Built with durable cream-colored brick encased in a distinctive black-and-white spiral design, the new tower provided a more powerful light visible for up to 21 miles, assisting ships navigating the treacherous waters around Long Island.

The lighthouse was constructed with practical materials and techniques, emphasizing strength and longevity. Its walls, nearly 11 feet thick at the base, tapered to 2 feet at the top, ensuring stability against coastal weather conditions. The light was fueled initially by whale oil and later by kerosene before being electrified in the 20th century.

For the keepers who lived and worked there, heating and cooling were essential but rudimentary. Heating was provided by coal or wood-burning stoves, common in the mid-19th century. These stoves were efficient for the time but required constant maintenance to keep the quarters warm during frigid winters.

Cooling was even simpler, relying only on natural ventilation. The thick brick walls helped regulate indoor temperatures by retaining heat in winter and offering some insulation from the summer heat. Keepers would open windows and position them strategically to catch sea breezes, which provided relief during warmer months.

The Fire Island Lighthouse was decommissioned in 1974 but was later restored and reopened as a museum and active aid to navigation in 1986. It now stands as a symbol of resilience and maritime history, offering visitors a glimpse into the lives of its keepers and the ingenuity of 19th-century lighthouse construction.

Thomas DiBenedetto, PE
Historian





Sustainability

Empire Technology Prize Finalists Introduction

Local firm MPN has been announced as a finalist for NYSERDA's \$10 million Empire Technology Prize, a statewide initiative designed to accelerate innovation in clean energy and sustainability. This recognition shines a spotlight on the engineering excellence right here on Long Island and showcases how our local professionals are contributing to the future of energy efficiency across New York State.

This topic also reflects the broader challenges and opportunities shaping our profession today. As engineers, we continuously balance technical advancement, evolving regulations, and the human side of design and innovation. By approaching our work with curiosity and adaptability, we can continue to find meaningful ways to make a lasting impact on the built environment.

Members are encouraged to consider how these industry shifts influence their own projects, client relationships, and professional growth. Applying these insights means asking critical questions, collaborating with peers, and developing systems that meet both performance and sustainability goals. As the industry evolves, the importance of ASHRAE's mission—and the dedication of each committee—remains vital. Every member contribution strengthens not only our technical knowledge but also the sense of community that defines ASHRAE Long Island. Together, we're continuing to advance engineering excellence while paving the way for a more sustainable, energy-conscious future.

Learn more about the Empire Technology Prize and the innovative work happening across New York by visiting nysesda.ny.gov.



Refrigeration

Check out an article regarding Optimizing CO2 Systems. See below link:

[Optimizing CO2 Systems for Year-Round Efficiency | ACHR News](#)

Optimizing CO2 Systems for Year-Round Efficiency

Exploring low-side evaporator and superheat optimization techniques can help save energy. For food retailers actively pursuing their sustainability goals, reducing greenhouse gas (GHG) emissions from refrigeration is a top priority. This can be achieved in two ways: 1) transitioning to lower-GWP refrigerants to reduce Scope 1 emissions, and 2) improving system energy efficiency to reduce Scope 2 emissions.

Selecting refrigeration equipment is a long-term investment, as these systems can be expected to remain in operation for 15 to 20 years. Energy efficiency, combined with reliable performance, is crucial for reducing the total cost of ownership (TCO).

With an ultra-low GWP of 1, the natural refrigerant CO2 (R-744) is gaining global popularity for its favorable sustainability and performance characteristics. In recent years, original equipment manufacturers (OEMs) and system designers have made tremendous progress in enhancing CO2 system energy efficiencies.

High-side system strategies (i.e., at the condenser and/or gas cooler) are designed to optimize CO2 system performance according to the installation's climate, accounting for high ambient temperatures and seasonal impacts on energy efficiency. Common high-side strategies include adiabatic gas cooling and parallel compression.

Until recently, the potential for energy optimization on the low side (i.e., evaporator) of a CO2 system had largely been overlooked. A recent study commissioned by Copeland, in collaboration with research partner Future Green Now, has uncovered significant opportunities for annualized (i.e., year-round) energy savings through low-side strategies.

CO2 Superheat Study

The CO2 superheat study evaluated the impact of suction-side evaporator technologies that increase the saturated suction temperature (SST) of CO2 booster refrigeration systems. Since the efficiency of a refrigeration system is primarily influenced by the pressure differential that compressors must overcome, the study tested the following theory: by increasing SST (i.e., suction pressure), the compressor's pressure differentials are reduced, allowing systems to achieve the same cooling capacity with less energy.

The study's baseline was a typical CO2 booster system configuration with no high-ambient system design optimization strategies. It encompassed 214 display cases and 50 unit coolers from major U.S. OEMs, operating with a standard 10°F temperature differential (TD) to meet current applicable Department of Energy (DOE) and food safety standards.

The first stage of the CO2 low-side study was to test the effects of lowering the standard configuration of a 10°F TD evaporator coil and 10°F superheat on the lowest-temperature load. Since the SST for a refrigeration suction group must be set according to the lowest product temperature and the specifications of unit coolers or display cases, the study evaluated the impacts of reducing the evaporator coil TDs on the lowest-temperature load in a suction group.

By optimizing the baseline system with internal heat exchangers, evaporator superheat can be reduced from the industry standard of 10°F to a coil's optimal design point. Thus, a 5°F superheat was used as the baseline for both medium- (MT) and low-temperature (LT) suction groups. Then, the study evaluated the impacts of using the highest, average, and lowest coil TDs: 10°F, 6°F (MT), and 7°F (LT), and 4°F, respectively.

Compared to using the highest 10°F TD coil, an average coil TD increased SSTs from 18°F to 22°F on MT and -25°F to -22°F on LT, resulting in 6.8% annualized energy savings. When the lowest 4°F TD coils were used rather than the highest 10°F TD coil, the annualized energy savings rose further to 7.9% (see Figure 1).

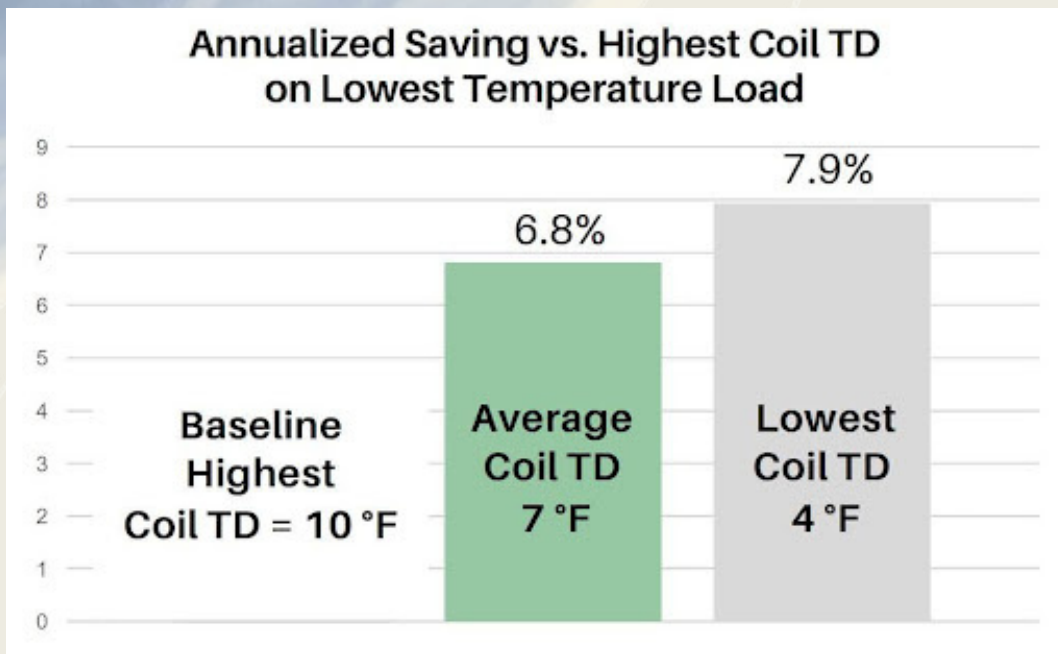


FIGURE 1: Using the lowest TD coil (4°F) increased efficiency by 7.9%. (Courtesy of Copeland)

Dual-Suction System Architectures

Food retail applications have multiple temperature requirements across various refrigerated cases and unit coolers. In a typical single-suction line configuration, the MT and LT suction groups must accommodate the lowest temperature requirements and the lowest SST based on the TD of the shared assets.

The study tested the theory that designing systems with dual-suction lines on each MT and LT suction group could isolate parts of the system to operate with higher SSTs, thereby increasing energy efficiency. To validate this approach, the study compared the capacities and efficiencies of single- and dual-suction system configurations (see Table 1).

Suction Group #	Capacity (BTU)	Highest TD Coils Compressor SST (°F)	Lowest TD Coils Compressor SST (°F)	Average TD Coils Compressor SST (°F)
Single Suction				
MT	400,000	18	22	22
LT	100,000	-25	-19	-22
Dual Suction				
MT1	240,000	18	22	22
LT1	70,000	-18	-16	-16
MT2	160,000	28	32	30
LT2	30,000	-25	-19	-22

TABLE 1: Comparing single- and dual-suction line capacities for the highest, lowest, and average TD coils. (Courtesy of Copeland)

The study showed that even when using the highest evaluated TD coils, a dual-suction design can increase system SST and, consequently, improve system efficiency by 7.2%. As Table 1 demonstrates, the MT2 portion of the dual-suction system enables 40% of the MT loads (160 of 400 MBH) to operate at 28°F SST (462 psig), instead of 18°F SST (394 psig). This results in a 68 psig higher suction pressure, which reduces compression ratios and enhances energy savings. For the remaining 60% of MT1 loads (240 MBH) in the dual-suction system, operation stays at 18°F SST. On the LT side, 70% of LT loads (70 MBH on LT1) can operate at -18°F SST (208 psig) instead of -25°F SST (181 psig), enabling the circuit to operate at 27 psig higher suction pressure. The remaining 30% of the LT load (30 MBH on LT2) continues to operate at -25°F SST. Combined, the higher SSTs of MT2 and LT1 result in annual energy savings of 7.2% with standard 10°F TD coils. When used with the lowest TD coils (4°F), a dual-suction, optimized superheat strategy offers the potential for an annual energy savings of 14.2%.

Zero Superheat Strategies

The final key objective of the CO₂ superheat study was to evaluate how reducing evaporator superheat affects SST and overall system efficiency. Maintaining a minimum compressor suction superheat is vital for protecting the compressor from failure due to inadequate lubrication. Operating with ultra-low to zero superheat can dilute the oil and reduce a compressor's ability to protect internal bearing surfaces. Most compressor manufacturers require a minimum superheat of 20°F (11°K), though some may specify up to 36°F (20°K).

Nearly half of the compressor superheat is generated by the evaporators; the remainder is achieved through the pressure drop in the suction line, heat absorption from ambient temperature, internal heat exchange, or hot gas injection.

When operating with ultra-low to zero superheat, liquid refrigerant is also more likely to return to the suction line. To prevent this, designers often use suction accumulators (i.e., low-side receivers) with liquid drain and auxiliary connections to redirect captured liquid and lubricant. Thus, zero superheat strategies are generally designed to maintain MT evaporators with the lowest SST loads and manage liquid accumulation:

Liquid ejectors redirect liquid and/or vapor from the suction line to the flash tank; and
Liquid to LT redirects collected liquid from the low-pressure receiver to LT electronic expansion valves (EEVs).

Note: Due to the liquid management requirements, both zero superheat strategies introduce complexity to system designs.

Findings from the CO2 superheat study showed that when using the lowest TD coils (i.e., 4°F), liquid ejectors delivered the potential for 3.2% annualized energy savings, while liquid to LT offered 3.9% annualized energy savings. Then, when comparing the cumulative potential annualized energy savings of using the lowest TD coils combined with each superheat optimization strategy, dual suction offered the highest savings (see Figure 2):

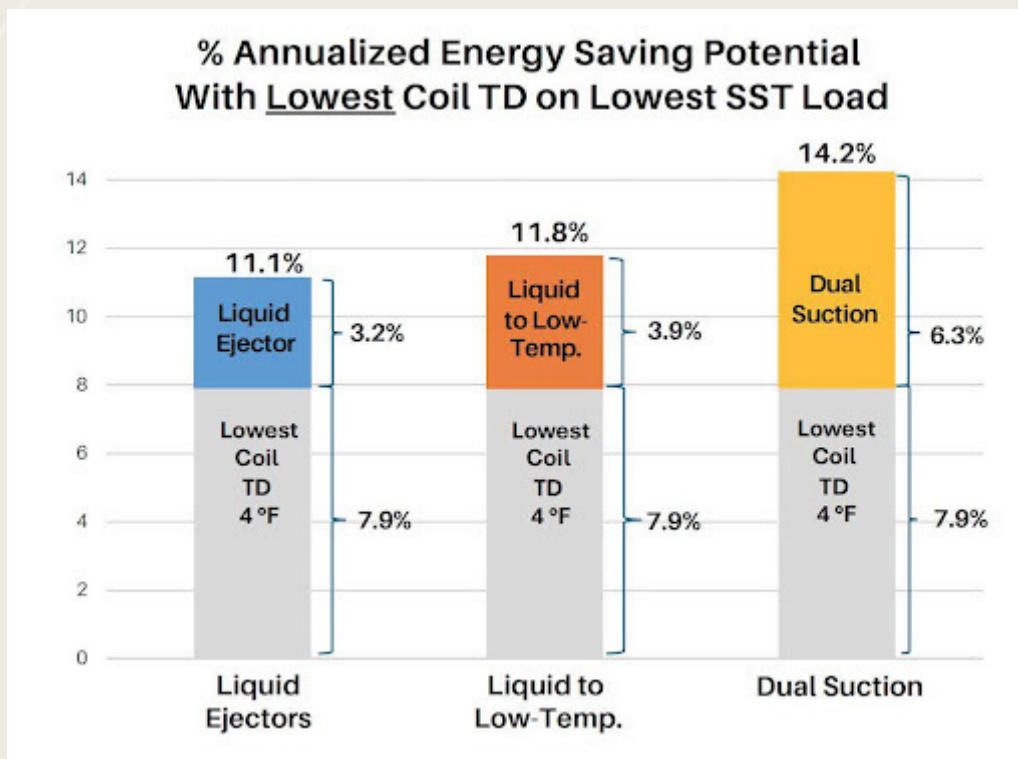


FIGURE 2: Energy savings comparison of low-side strategies using 4°F TD evaporators on the lowest-temperature loads to those using standard 10°F TD coils. (Courtesy of Copeland)

Year-Round Energy Optimization

Low-side evaporator optimization strategies can have positive year-round impacts on a CO2 system's energy efficiency and thus, its TCO. Doing so requires understanding the roles of evaporator TDs and employing applicable low-side optimization strategies.

When selecting evaporators on display cases or unit coolers, their TDs alone can have significant impacts on energy efficiency, especially when applied to the lowest-temperature load in a single-suction group. Generally, a lower TD results in a higher SST required to achieve the same air temperature, thereby increasing suction pressure, lowering compression ratios, and improving system energy efficiency.

When combining evaporator TD selection with an ultra-low to zero superheat optimization strategy, it's essential to understand the efficiency impacts. For example, superheat optimization may have significant annualized savings when employed with high-TD evaporators but may demonstrate incrementally less savings with a low-TD coil.

Finally, among the three low-side technologies explored in the CO₂ superheat study, the dual-suction architecture — considered the least complex to deploy — provided the highest potential annualized energy savings of 14.2% when combined with a low-TD coil.

-Kenny Balci

Diversity, Equity & Inclusion



FACES OF ASHRAE:
Haleh Moghaddasi

Haleh Moghaddasi, Ph.D., Assoc. AIA, Member ASHRAE, LEED GA, ENV SP, joined ASHRAE in 2018. She is currently a Senior Manager in Energy & Sustainability at EXP, FL.

▶ **What is your current job?**

At EXP, I focus on developing energy and decarbonization strategies for schools and residential projects, leading sustainability initiatives, and collaborating with municipalities and industry partners. I also serve as a faculty member at the University of Miami, School of Architecture, teaching sustainable building practices and net zero design, integrating real-world applications to connect design, energy efficiency and environmental impact. A key achievement has been supporting the department in earning the Zero Energy Design Designation from the U.S. Department of Energy (DOE), showcasing our dedication to building science education and sustainable design leadership.

▶ **What is your level of education?**

- Ph.D., Net Zero Energy, Texas A&M University, Texas.
- M.Sc., Sustainable Systems, Rochester Institute of Technology, N.Y.
- MARCH., Architecture & Design, Yerevan State University of Architecture and Construction, Yerevan, Armenia.
- B.Sc., Architectural Engineering, Qazvin, Iran.

▶ **Years of industry experience?**

I began my engineering career in 2004 as a student at a consulting firm and have since accumulated 20 years of experience across industry and academia. My professional journey in the U.S. started in 2015 with the City of Rochester (COR), N.Y.

▶ **What technical committees or other parts of ASHRAE are you involved with?**

I am a Full Member Grade of ASHRAE and have been serving in leadership roles within the Miami Chapter, including MP Chair, GA Chair, SA Chair, Secretary, and Board of Governors Member. I also participate in TC 2.5 (Global Climate Change), TC 2.8 (Building Environmental Impacts), and TC 7.6 (Building Energy Performance). Additionally, I am an ASHRAE-DOE Pilot Member and part of the School Leadership Team for the ASHRAE Schools Partnership Program in collaboration with DOE and LBNL, supporting district outreach initiatives. I actively participate in chapter meetings and annual ASHRAE conferences, contributing to discussions on climate-responsive building design, energy performance, and sustainability.

▶ **What got you into the industry?**

Coming from an engineering family, I have always seen the industry as a practical extension of academic knowledge. To truly validate what is learned in academia, it must be applied in real-world settings. This philosophy has shaped not only my career but also my teaching approach, where I engage students with industry experts and real projects. This method encourages both creativity and functionality, helping students understand the real-world impact of their study and its significance to society.

▶ **What is your favorite part of your job?**

The opportunity to improve the quality of life for underrepresented residents and students in disadvantaged communities. Through scalable energy equity solutions, I help bring sustainable and affordable advancements to those who need them most. The direct impact of reduced energy burdens to healthier living and learning environments is truly fulfilling. I appreciate the trust and encouragement of my manager John Flint, Senior Vice President at EXP, whose support has been a key in advancing this mission.

▶ **What advice do you have to young people starting out in ASHRAE?**

I joined ASHRAE as a student, taking on active leadership roles which helped me build a strong network of industry leaders—many of whom became valued mentors and friends. Through ASHRAE, I gained access to invaluable resources, speaking opportunities, and professional development, all while becoming part of a supportive community. My advice to students: Don't overlook opportunities that can shape your future—joining ASHRAE is one of them! It's a gateway to learning, networking, and career growth in the industry.

▶ **What are your career goals?**

When I moved to the U.S., my goal was to "change the world." Over time, through further education and experience, that vision evolved into "making the world a better place for all." I have dedicated my work to developing a Net Zero Energy (NZ) model—a scalable, practical, and globally adaptable solution. My aim is to expand its application across different project scales, helping to accelerate global climate targets and drive meaningful progress in sustainability.

▶ **What are the biggest challenges you see that the industry is facing?**

One of the biggest challenges is achieving global climate targets through net zero solutions. Many industries promote NZ initiatives, yet the absence of a unified definition leads to uncertainty and delays. Without clear and consistent criteria, it becomes difficult to assess whether a project truly meets net zero standards. Achieving industry-wide consensus is critical for advancing sustainability efforts effectively.

▶ **How do you think the industry could best address those challenges?**

To overcome this, the industry must adopt a standardized yet flexible net zero definition that accommodates regional variations while ensuring uniform measurement and reporting. Establishing clear, trackable, and transparent NZ frameworks will improve accountability and implementation, ultimately driving faster and more effective climate action.

▶ **What has been your favorite part of being an ASHRAE member?**

The opportunity to collaborate with engineers, government agencies and students has been incredibly rewarding. As Chair of Government Affairs (GA), Student Activities (SA), and Sustainability, I have worked with Local Education Agencies (LEAs) to help secure federal funding for improving energy efficiency and indoor air quality in schools within disadvantaged communities. At the same time, engaging with college students has allowed me to support their professional growth through scholarships, mentorships, networking, and technical courses, ensuring they get the most out of ASHRAE.

▶ **What do you enjoy doing when you are away from work?**

Outside of work, I dedicate time to my ASHRAE responsibilities and enjoy quality time with my puppy, Piccolo, as well as family and friends. I also focus on continuing education to stay current with certifications and am actively writing my first book, which explores clarifying the net zero definition.



CTTC Corner: Exploring the Depths of Innovation (and the Universe)

This month's technical presentation takes us to new depths literally! We're diving 6,800 feet underground into SNOLAB, one of the world's leading underground research facilities, designed to detect faint traces of dark matter and cosmic phenomena. The presentation, "Creating an Underground Research Facility to Explore the Universe," will walk us through the extreme engineering challenges and innovations required to make science possible even beneath the Earth's surface!

Our speaker, Darryl K. Boyce, P.Eng., Fellow/Life Member ASHRAE, brings an impressive legacy to the table. As a past ASHRAE President (2019–2020) and a career leader in facilities management and sustainable design, Darryl has spent decades advancing energy efficiency and high-performance systems. From university campuses to cosmic laboratories, he's seen it all and somehow managed to keep both his hard hat and sense of humor intact!

After you come up for air from this month's technical deep dive, please take a moment to fill out our Region I Evaluation Form using the QR code below. Your feedback helps us shape future sessions, speakers, and topics that matter to you and yes, it's also your chance to tell us whether our jokes are improving or getting worse.

ASHRAE Region I Evaluation Form



And speaking of excellence, don't forget to nominate your firm's standout projects for the ASHRAE Technology Awards. Whether you've designed a system that saves megawatts or one that simply makes your commissioning agent smile, this is the time to showcase your work. These awards highlight practical applications of innovative technologies and celebrate the engineers who push our industry forward (preferably without breaking any pipes in the process).

Engineering, like the universe, keeps expanding and so does ASHRAE's reach. From the depths of SNOLAB to the bright minds in our own Long Island chapter, the drive to innovate, educate, and elevate continues.

Let's keep pushing boundaries together above ground and below!

Michael H. Razzano, CTTC Chair – ASHRAE Long Island Chapter



Research Promotion

"If we knew what we're doing it wouldn't be called research"
– Albert Einstein

I would like to thank the companies who have participated in the annual Product Directory of Manufacturers and their Representatives. The product Directory has been prepared as a service to all its members and as a service to the local HVAC industry. It will be made available to all ASHRAE and non-ASHRAE members at no-cost and can be obtained from our monthly meetings or directly from our website.

This year's overall research promotion goal is \$2,720,000 with many research projects on board. Our chapter is expected to raise \$56,987.00 towards the overall goal. I am hoping that I can count on the continued support of all our past contributors who have generously supported us over the years. I also look forward to gaining the support of new contributors this coming year. Last year we were successful in beating our goal and am hopeful that this year we can continuously raise the bar.

We are hosting the 2025 ASHRAE REGION 1 CRC and have sponsorship packages available.

Thank you to our contributors!
Individuals

Mr. John D. Nally
Mr. Peter J. Conte, PE
Ms. Elizabeth Jedrlinic
Mr. Kenny Balci
Mr. Steven Gerazounis
Mr. Murat Bayramoglu
Mr. Michael Steven Gerazounis
Mr. Matthew K. Catan
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Mr. Richard W. Smith
Mr. Donald W. Kane, PE
Mr. Michael H. Razzano
Mr. Frank Paradiso
Mr. Michael F Schiavo
Mr. James R Tauby, PE
Mr. James W Armstrong

Contributions can be made in the following ways:

Mail checks, made out to ASHRAE Research Promotion to:

Peter Conte

ASHRAE Research Promotion Chair

PO BOX 79

Commack, NY 11725

Hand check to me at any of the chapter meetings.

PayPal from the ASHRAE Long Island Website

Click Donate Button

www.ashrae.org

Please make sure you accredit the contribution to the Long Island Chapter 006





Student Activities

Hello everyone — and welcome to a brand new month of opportunity, growth, and connection! I'm honored to serve as your Student Activities Chair for 2025–2026, and I look forward to working with all of you to make this year one of our best yet.

This section of the newsletter will keep you informed about programs, events, scholarships, and ways to get involved. I also encourage you to share your ideas, projects, and successes — we want to spotlight your amazing work!

Spotlight on Hofstra University

One of our highlights this past few weeks has been the incredible momentum we've built with Hofstra University. We proudly helped establish Hofstra as an official ASHRAE Student Branch, expanding our student network and deepening our commitment to future professionals in the HVAC&R field. Our team has also had the pleasure of attending Hofstra's student branch meetings, where we've delivered talks about the value of ASHRAE — from scholarship and research opportunities to networking and career development. It's been inspiring to witness the enthusiasm and curiosity of Hofstra students, and we look forward to continuing our collaboration in the coming year!

ASHRAE Scholarships — 2026–2027 Cycle

Are you looking for funding to support your education while making an impact in the HVAC&R industry?

Through ASHRAE's Scholarship Program, we aim to support students pursuing degrees in engineering, technology, and related fields that contribute to sustainable built environments.

Key Details:

- Scholarships range from **\$3,000 to \$12,500**
- Applications typically open in **October**
- Awards are for the **2026–2027 academic year**
- Multiple categories available: Undergraduate, Engineering Technology, Regional/Chapter, and University-specific

I strongly encourage all eligible students to apply — I'll share reminders and tips once the application period opens.

[**SCHOLARSHIPS**](#)

2025–2026 High School Design Competition

Calling all students aged 13–18 who are interested in HVAC, design, or sustainability! This year's **High School Design Competition** is a fantastic opportunity to learn how to design a system for a hypothetical building while applying real-world engineering principles.

Important Dates:

- Submission Deadline: **December 30, 2025**
- Topic and guidelines will be posted in **early fall**

Form a team with friends from school or a local club, and bring your creative and technical skills to life!

[2025-2026 ASHRAE High School Design Competition](#)

Undergraduate Program Equipment Grants

For those working on senior projects or capstone designs: you may be eligible to secure funding for materials and equipment related to ASHRAE-relevant work.

Grant Highlights:

- For engineering, technical, or architectural programs
- Typically supports projects lasting one academic term up to one year
- **Application deadline:** December 15, 2025

About Undergraduate Program Equipment Grants

Get Involved

- **Leadership Opportunities:** ASHRAE offers society-level leadership development, mentoring, and committee involvement. Programs like Leadership U and LeaDRS are a great way to grow.
- **Contribute to the Newsletter:** Have you recently completed a research project, internship, or won an award? We'd love to highlight your achievements.
- **Branch Events & Webinars:** I'll be working with student branches to host local events, webinars, and mixers. Got ideas? Let's talk!

I'm truly excited to get this year underway and help make it meaningful for everyone involved. If you have questions, want to collaborate, or have suggestions for student engagement — please don't hesitate to reach out.

Here's to a productive, engaging, and inspiring 2025–2026!

Warmly,

Katlyn Coolbaugh

Student Activities Chair, ASHRAE Long Island

Certification



Certified

ASHRAE, accredited by ANSI under ISO/IEC 17024 for the High-Performance Building Design Professional (HBDP) program, has certified more than 2,000 Built Environmental Professionals.

Energy Assessment

Energy Modeling

Commissioning

Healthcare
Facility Design

High-Performance
Building Design

Building Operations

ASHRAE certification programs:

- Are developed by industry practitioners who understand the knowledge and experience that are expected for superior building design and system operation
- Assure employers and clients of subject mastery
- Serve as a springboard for continued professional development
- Offer an easy-to-apply process

FOR MORE INFORMATION GO TO - <https://www.ashrae.org/education--certification/certification>



Follow **ASHRAE** on **Twitter** @ashraenews for up-to-date news, events, and articles about HVAC&R. Search #MyASHRAE on Twitter to see member photos from around the world.

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Most Popular Tweets

Does It Cost More To Build Green? Benefits include reduced operating costs & construction waste.

Online Thermal Comfort Compliance Tool Included In New ASHRAE User's Manual.

87% of households in the US have #AC, 5% do in India. India's tough choice on air-conditioning and climate.



The November issue of the Journal is tested for binding strength to see how many times a page can be turned before the binding would fail.

Harvard & SUNY Upstate Medical University find that workers are healthier and happier in certified green buildings.

ASHRAE Standard 90.1 has been redefining energy savings since 1975. A new version is available now.

Adapting historical buildings for sustainable reuse.

Get To Know ASHRAE





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