



American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

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President's Message

Happy New Year! I wish health and happiness to all our members in 2021. The New Year brings many new beginnings and opportunities both professionally and personally. I for one certainly look forward to the days ahead.

As we turn the calendar into this New Year, I'd like to thank all the volunteers and board members for all their hard work and devotion. The chapter operates and runs with your dedication. Thank you for the countless hours that you pour into this organization.

As previously announced, the Chapter has elected to transition to a virtual learning environment. This was done in order to help ensure a safe environment for chapter members as well as our presenters.

Please remember that the 2021 AHR Expo has been moved to a virtual format. Make sure you visit the ASHRAE website for course curriculum and seminar listings. For those who are looking for additional online webinars, ASHRAE Journal has a handful of published October seminars.



Please visit: <https://www.ashrae.org/technical-resources/supplier-provided-learning/supplier-webinars>

CHAPTER MONTHLY MEETING

DATE:	Tuesday, January 12, 2021
TIME:	7:00 PM - Presentation
VIRTUAL MEETING:	Please email: Jhanna2@trane.com and xuzhigang@gmail.com for processing Virtual payments as well as live stream web link
FEES:	\$20.00 per person

If you have any questions or concerns, please do not hesitate to contact me. Thank you and I look forward to seeing everyone at our next meeting.

Regards,

James Hanna
President - Long Island Chapter

Long Island Chapter Officers & Committees

ASHRAE 2019/2020 OFFICERS

POSITION	NAME	PHONE	EMAIL
President	James Hanna	718.269.3768	c006@ashrae.net
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Vice President	Murat Bayramoglu	631.312.8818	c006vp@ashrae.net
Treasurer	Michael Nigro	212.643.9055	c006tr@ashrae.net
Secretary	Elizabeth Jedrlinic	516.490.1621	c006sec@ashrae.net
Board of Governors	Matthew Catan	407.489.6684	c006bog1@ashrae.net
Board of Governors	Michael Razzano	516.805.3084	c006bog2@ashrae.net
Board of Governors	Zhigang Xu		c006bog3@ashrae.net
Board of Governors	Frank Paradiso	631.632.2792	c006bog5@ashrae.net





ASHRAE 2019/2020 COMMITTEES

COMMITTEE	NAME	PHONE	EMAIL
Programs & Special Events	Matthew Vitrano	212.643.9055	c006pe@ashrae.net
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Grassroots Government			c006ggac@ashrae.net
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Research Promotion (RP)	Michael Nigro / Matthew Vitrano	212.643.9055	c006rp@ashrae.net
Historian	Zhigang Xu		c006his@ashrae.net
Student Activities (SA)	Elizabeth Jedrlinic	516.490.1621	c006sa@ashrae.net
Young Engineers in ASHRAE (YEA)	Michael Nigro / Elizabeth Jedrlinic	212.643.9055	c006yea@ashrae.net
Webmaster	Frank Paradiso	631.632.2792	c006web@ashrae.net
Nominating	Michael Gerazounis, PE, LEED AP	212.643.9055	nominating@ashraeli.org
Reception & Attendance	Zhigang Xu		reception@ashraeli.org
PR & Engineering Joint Council of LI (EJCLI) Liaison	Andrew Manos, LEED AP	631.632.2792	pr@ashraeli.org
Golf Outing	Peter Gerazounis, PE LEED AP	212.643.9055	golf@ashraeli.org
Awards	Brian Simkins	203.261.8100	c006ha@ashrae.net

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Chapter Monthly Meeting - Program for 2019/2020

September 10, 2019 * At Westbury Manor  Dinner Presentation – Builds & NYC Code Compliance Presenter: Ian Nelson Refrigeration Night **1 PDH**	March 9, 2021 * At Westbury Manor Dinner Presentation - TBD Presenter: TBD **1 PDH** Student Activities Night YEA Night
October 13, 2020 * At Westbury Manor  Dinner Presentation— Perimeter Heating & Cooling: Yesterday, Today, and into the Future Presenter: Andy Siegelson **1 PDH**	April 13, 2021 Dinner Presentation - TBD Presenter: **1 PDH**
November 10, 2020 * At Westbury Manor  Dinner Presentation-- Applying VRF Systems with 3rd Party Air Handlers Presenter: Brandon Sulikowski Membership Promotion Student Activities Night and YEA Night Resource Promotion Night **1 PDH**	May 3, 2021 * Cherry Valley Club, Garden City, NY ANNUAL GOLF OUTING
December 8, 2020 * At Westbury Manor  Dinner Presentation-- Understanding and Applying HVAC Sensors Presenters: Dave Thomas **1 PDH**	May 11, 2021 Annual Field Trip
January 12, 2021 * At Westbury Manor Dinner Presentation– Advanced Energy Design Guide for K-12 School Buildings: Achieving Zero Energy Presenter: Thomas H. Phoenix, P.E. FASHRAE, LEED AP **1 PDH**	June 8, 2021 * At Westbury Manor Free Buffet Dinner for Members PAST PRESIDENTS NIGHT & OFFICER INSTALLATION STUDENT SCHOLARSHIPS TO BE AWARDED ASHRAE History Quiz and prize Give-A-Ways
February 9-11, 2021 ASHRAE Virtual Winter Conference	June 2021 - TBD (4pm-8pm) * Dixie II @ Captree State Park Boat Basin, NY ANNUAL FISHING TRIP
February 9, 2021 * At Westbury Manor – Dinner Presentation– TBD Presenter: TBD Membership Promotion Night Resource Promotion Night **1 PDH**	August 13-15, 2021 CHAPTERS' REGIONAL CONFERENCE (CRC) REGION I
February 16-22, 2021 NATIONAL ENGINEERS WEEK	

Meeting Program



Dinner Presentation

Advanced Energy Design Guide for K-12 School Buildings: Achieving Zero Energy

Presented by

Thomas H. Phoenix, P.E. FASHRAE, LEED AP
ASHRAE DISTINGUISHED LECTURER

**Attendees
Will Earn
1 PDH!**

DATE:	TUESDAY, JANUARY, 12, 2021		
Time:	7:00 PM - Presentation	Fee:	\$ 20.00 per person
Virtual Meeting:	Please email: Jhanna2@trane.com and xuzhigang@gmail.com for processing Virtual payments as well as live stream web link		
Presentation:	<p>This month's program will review a brief history of the AEDG Series, and then focus on the newest group in the AEDG series – Achieving Zero Energy. The first volume in this new series is for Zero Energy K-12 School Building Design, and the program will highlight the major steps and integrated, systematic approach for achieving Zero Energy in schools.</p> <p>All attendees will receive 1 PDH.</p>		
About our Speaker:	<p>Thomas Phoenix is a Principal with CPL Architects & Engineers. He has a B.S. degree in engineering from NC State University. He is a Registered Professional Engineer in North Carolina and six other States and has over 35 years of experience in the design, operation, and maintenance of building mechanical and energy systems in commercial, educational, government, and medical office facilities.</p> <p>Mr. Phoenix has been an active member of ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers) since 1982, and was elevated to the grade of Fellow in 2011. He is an ASHRAE Presidential Member, having served as Society President in 2014-15. He served on ASHRAE's Board of Directors for 11 years, and has chaired the Publishing and Education Council and numerous ASHRAE committees. Mr. Phoenix is also an ASHRAE Certified Building Energy Modeling Professional (BEMP), and a Certified Building Energy Assessment Professional (BEAP) and is an ASHRAE Distinguished Lecturer.</p> <p>Mr. Phoenix currently serves as Chair of the Advanced Energy Design Guides Steering Committee, which is composed of representatives from ASHRAE, the American Institute of Architects (AIA), the Illuminating Engineering Society of North America (IES), and the US Green Building Council (USGBC). He also serves on the Board of Directors, and is currently Treasurer, of the</p>		

CHAPTER MAY NOT ACT FOR SOCIETY

An International Organization

Long Island Chapter - Past Presidents

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

PAOE POINTS FOR 2020/2021

Chapter Members	Chapter Operations	CTTC	Communi-cations	GGAC	History	Member-ship	Research Promotion	Student Activities	YEA	Chapter PAOE Totals
282	20	0	0	0	215	450	810	350	775	2,620

Student Activities

Happy Holidays and Happy New Year to all the ASHRAE members.

Virtual Conference 2021

Students, don't forget to register for the virtual winter conference! Students get a discounted rate of \$25 if you are a member and \$60 if you are not. The link to register is below.

<https://www.ashrae.org/conferences/2021-virtual-winter-conference>

2021 Design Competition

Don't forget about the 2021 design competition, there is still time to get involved!



ASHRAE sponsors these competitions to encourage students to become involved in a profession that is crucial to ensuring a sustainable future for our Earth – the design of energy-efficient HVAC systems. ASHRAE will recognize the outstanding student design projects at the 2022 ASHRAE Winter Meeting scheduled for January in Las Vegas, Nevada, United States of America.

The student design competition guidelines provide enough background information to enable the teams to design or select the HVAC system for the given building, or to design a sustainable building implementing an integrated building design process (the architectural and building design for sustainability, and its supporting mechanical and electrical systems) for the given program.

The Integrated Sustainable Building Design (ISBD) competition's aim is to encourage students to extend their knowledge beyond the core mechanical systems. For the ISBD category, the final design level presented may be in a preliminary stage, as the competition's basic intention is to challenge students' imaginative thinking and creative engineering approach to the building and all of its systems.

Teams may compete in one of the three categories:

- HVAC Design Calculations
- HVAC System Selection
- Integrated Sustainable Building Design (ISBD)

ASHRAE recommends that the project groups consist of at least two members from an undergraduate engineering or architecture curriculum for the HVAC Design Calculations or HVAC System Selection and at least three members (architecture or construction, mechanical and electrical) for the ISBD competition. Team members can be from multiple colleges. All team members must be enrolled during the semester/term in which they contribute to the design.

Participating teams are NOT required to have an ASHRAE Student Branch at their university.

<https://www.ashrae.org/communities/student-zone/competitions/2021-design-competition>

Elizabeth Jedrlinic
Student Activities Chair
Elizabeth.jedrlinic@trane.com

Research Promotion

My name is Michael Nigro and I am your RP chair for the 2020-2021 year for the Long Island ASHRAE chapter.

ASHRAE has a \$2.5 million dollar funding raising goal. This supports 140 research projects with a combined value of more than 15 million. The bar has been set pretty high by our former RP Chairs for our chapter's goals.



CONTRIBUTIONS CAN BE MADE IN THE FOLLOWING WAYS:

1) You can mail your checks, made out to ASHRAE Research Promotion, to:

Michael Nigro
ASHRAE Research Promotion Chair
c/o MG Engineering D.P.C.
116 West 32nd Street, 12th Floor
New York, NY 10001

2) You can bring your check to any of the meetings and give it to me. I will mail it into headquarters.

3) You can contribute via PayPal from the ASHRAE LONG ISLAND web site, just click on the donate button.

4) You can contribute directly on-line. www.ashrae.org

**** Please make sure you accredit your contribution to the LONG ISLAND CHAPTER 006 ****

Thank you again for all of your support!

Michael Nigro - Research Promotion Chair

Matthew K. Catan
CTTC Chairman



Research Update on Lower GWP Flammable Refrigerants

Ten years ago, ANSI/ASHRAE Standard 34-2010, *Designation and Safety Classification of Refrigerants*, added a new optional flammability sub-classification, A2L, specifically for low-toxicity refrigerants with low burning velocity. In 2016, ASHRAE, DOE and AHRI began collaborating on a research program to provide the technical knowledge needed to facilitate and accelerate the safe use of these refrigerants (see sidebar, “How It Began”). ASHRAE committed to fund three initial research projects and as of December 2019, two of the projects have published their final reports. What follows is an update of the program.

RP-1806: Flammable Refrigerants Post-Ignition Simulation and Risk Assessment Update

Contractor: Gexcon, US; Principal Investigator: Scott Davis

The project's results will allow for the assessment of the overall risks of using flammable refrigerants in HVAC&R products, considering both ignition event probability and severity.

Prior research focused on the probability of an ignition event when using a flammable refrigerant in various types of air-conditioning and refrigeration equipment. After those results were published, discussion focused on the need to understand the severity or consequences of an event to fully understand the risks.

This project used a computer-based simulation to understand events' severity sides. It is a computational fluid dynamic software that incorporates advanced combustion models. The second objective is to update risk assessments and roll in the total risk, including both probability and severity.

The project's first phase was to take and validate an existing CFD-based simulation code against existing experimental combustion data, and as needed, modify or improve the CFD models to accurately represent ignition and combustion events involving Class 2L and Class 3 refrigerants. Second, run a series of scenarios or cases to simulate ignition and combustion events for several applications and types of equipment. Some

How This Research Began

In June 2016, the U.S. Department of Energy (DOE) invited ASHRAE and the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) into a research collaboration to establish a more robust fact base about the properties and the use of mildly flammable refrigerants. This \$5.2 million research program, with financial contributions from DOE (\$3 million), ASHRAE (\$1.2 million), and AHRI (\$1 million), is part of an ongoing global effort to phase down the use of high-GWP refrigerants and identify appropriate climate-friendly alternatives.

CTTC (Cont'd).

ASHRAE MTG. LowGWP

- Created in January 2012
 - Includes expertise of multiple ASHRAE TCs, SSPCs, and outside organizations
 - Initially formed to coordinate activities related to lower GWP refrigerants within the TCs, SSPCs, etc.
- In 2016, it was given responsibility for direction and management of several of the research projects on flammable refrigerants, three initial projects that ASHRAE committed to fund, plus more projects that followed.

output would look at the severity of the events by various relevant metrics such as the maximum temperature and the maximum pressure that occurs. Finally, take the simulation results and update the risk assessments with the predicted severity data to give a total picture of the risk.

In Phase I, researchers discovered fundamental gaps in the burning velocity database they needed as inputs to their combustion models. It was necessary to perform additional empirical work. These values were added to the input dataset. Once the combustion models were updated, researchers took seven or eight datasets from researchers, simulated each scenario and compared the experimentally measured values to the simulation results. To ensure meaningful interpretation, they set up a model evaluation protocol that considered both qualitative and quantitative rankings of the dataset and how well the simulation from the CFD-model performed.

Discussion and evaluation indicated certain experimental datasets involving non-premixed combustion could not be reliably used for model validation and more data was necessary to ensure the CFD-model's accuracy in predicting consequence severity. Additional empirical testing and CFD-model validation were added to determine how good the simulation model is in the context of combustion severity events needed for the risk assessment. The additional experiments are in progress.

Once the CFD-model is updated and validated, a pilot study was proposed to use the validated CFD-model to predict the combustion consequences in context of these risk assessments. The study is updating a previously determined risk assessment for a given refrigeration application and equipment type and analyzing risk differences of A3 and A2L refrigerants. The results are expected to be released this summer.

The project's results have not yet been reviewed and approved.

TABLE 1 Identified gaps in U.S. standards and guidelines.

TOPIC	KEY IDENTIFIED GAP AREAS
TRANSPORT OF FLAMMABLE REFRIGERANT	Cylinder Theft Prevention, Proximity to Heat Sources During Transit
HANDLING AND STORAGE OF FLAMMABLE REFRIGERANT	Damage Protection, and the Location and Maximum Quantities of Cylinders Allowed in Storage Areas
TRANSPORT OF SYSTEMS CHARGED WITH FLAMMABLE REFRIGERANT	Limitations on Quantity of Systems Transported Per Shipment, Structural Integrity of Refrigerant Systems, and Damage Protection
PERSONNEL CERTIFICATION	Safety Training and Certification Requirements for Installers and Technicians
OCCUPATIONAL SAFETY	Work Prior to Installation/Servicing—Notification of Servicing, Safety Radius Around Worksite, etc.
	Work During Installation/Servicing—Electrical Component Repair, Response to Leakage Events, Leakage Testing, Refrigerant Charging
	Refrigerant Recovery/Venting—Venting Requirements For Hydrocarbon Refrigerants and Compressor/Compressor Oil Replacement
	Routine Testing And Emergency Procedures—Maintaining Open Air Passages and Entry Into Areas of Refrigerant Leakage Detection
	Acceptability of Brazing How and When Brazing May Be Safe
SYSTEM AND BUILDING DESIGN	Refrigerant Piping And Relief Devices—Non-Permanent Fittings For Flammable Refrigerants, Access To Valves/ Joints, Relief Devices, and Discharge Quantities.
	Ventilation Features and Functionality—Ventilation System Power Supply/ Circuitry, Ventilation Rate, Operating Modes, and Fan and Duct Design
	Combustion Equipment Co-Located With Refrigerant System Clearance From Combustion Equipment
	Refrigeration Leakage Detection and Alarms—Location Of Leakage Detection Devices and Alarm Activation Conditions, Ventilation Rates Recommended Levels of Ventilation
	Minimizing Buildup of Flammable Concentrations

RP-1807: Guidelines for Flammable Refrigerant Handling, Transporting, Storing and Equipment Servicing, Installation and Dismantling
 Contractor: Navigant Consulting; Principal Investigator: William Goetzler

Introducing flammable refrigerants in the U.S. market could increase the need for specialized processes, training and/or certifications as part of risk mitigation. Several countries have developed substantive flammable refrigerant requirements and best practices to address handling, transport and storage of flammable refrigerants and the installation, servicing and dismantling of equipment using these refrigerants.

This research project investigated installation practices as well as servicing and handling aspects for all equipment that uses A2, A2L and A3 refrigerants in domestic

CTTC (Cont'd.)

TABLE 2 Characteristics of fitting types.

FITTING TYPE	PRESS	COMPRESSION	FLARE (45°)
Maximum Working Pressure	48 bar (700 psi)	38 bar (550 psi)	38 bar (550 psi)
Temperature Range	-40 to 149°C (-40 to 300°F)	-54 to 93°C (-65 to 200°F)	-54 to 121°C (-65 to 250°F)
Available Tube Sizes	1/4 in. to 1-3/8 in.	1/8 in. to 1 in.	1/8 in. to 3/4 in.
Compatible Tube Materials	Copper	Copper, Aluminum, Plastics	Copper, Aluminum, Brass, Steel
Removable?	No	Yes	Yes

and international markets. The project identified gaps in U.S. standards and guidelines in terms of transport and handling, occupational safety and system and building design (Table 1, Page 35).

Future research and testing needs include: maximum storage quantity limits; storage distance from heat/ignition sources; acceptable quantities of systems in a shipment; electrical equipment isolation radius around work-site; brazing on flammable refrigerant systems; allowable residual refrigerant concentration in compressor oil;

TABLE 3 Summary of assembly failures.

FITTING TYPE	FITTING SIZE	EXPERIENCED NORMAL	EXPERIENCED DIFFICULT	INEXPERIENCED NORMAL	INEXPERIENCED DIFFICULT
Brazed	1-1/8 in.	0/10	0/5	0/5	3/5
Press	3/8 in.	0/20	0/10	0/10	0/10
Press	1-1/8 in.	0/20	0/10	1/10	0/10
Compression	3/8 in.	1/20	0/10	2/10	0/10
Compression	3/4 in.	1/20	1/10	2/10	1/10
Flare	3/8 in.	0/20	0/10	1/10	0/10
Flare	3/4 in.	1/20	0/10	1/10	2/10

venting safety and requirements for hydrocarbons; clearance from combustion equipment; quantity of refrigerant discharged through pressure relief device; and requirements for fixed leak detector/monitor system use.

Matt Guernsey and Samuel McClive authored the ASHRAE Research Project Report that was published in December 2018. ASHRAE members can access the report for free at <https://technologyportal.ashrae.org/>. RP-1808: Servicing and Installing Equipment Using Flammable Refrigerants: Assessment of Field-Made Mechanical Joints

Contractor: Creative Thermal Solutions; Principal Investigator: Stefan Elbel

Some joining techniques used in the HVAC&R industry can be prone to failure if precaution is not used during equipment installation, servicing and repair, particularly when using flammable refrigerants. This research investigated the robustness and leak tightness of field-made mechanical joints. This project's results provide input to ASHRAE standards and relevant codes related to refrigerant and system safety.

The three mechanical fitting types investigated include press or crimp fittings, compression fittings and flare fittings (Table 2). One-hundred fittings of each type were evaluated with three focuses: fitting assembly (Table 3); fitting durability through a series of harshness tests; and leak rates of different fittings.

Results show press fittings have the quickest assembly time, lowest assembly failure rate, highest durability and relatively higher, yet very reasonable leak rate (~1.0 g/yr). Compression fittings have the second quickest assembly time and lower leak rate (~0.4 g/yr). Flare fittings have significantly longer assembly time, are most prone to leaks and have the lowest leak rate when properly tightened (~0.2 g/yr).

In terms of leak rates, press fittings are fairly consistent while compression and flare have greater variation.

Advertisement formerly in this space.

CTTC (Cont'd).

Identifying Odorants

Using flammable refrigerants with low GWP in household refrigerating appliances or air-conditioning equipment means there must be a way to detect them in case of leaks. Because R-290/propane (A3) or R-32/difluoromethane (A2L) are odorless and colorless, they are difficult to detect.

Adding odorants to refrigerants isn't common in the HVAC&R industry. ASHRAE Research Project RP-1794 (Eric Fossell, principal investigator; Jensen Hughes, contractor) focused on identifying odorants from other industries that can be potential candidates for flammable refrigerants based on their physical properties, odor and toxicity thresholds and HVAC&R appliance material compatibility. A literature survey

identified 200 possibilities and ultimately winnowed those down to four: hydrogen sulfide, carbonyl sulfide, trimethylamine and methyl mercaptan. More analysis and testing is necessary to fully evaluate these candidates for suitability in refrigerating and air-conditioning systems.

This is the first research project in what will likely be a series of projects that explore the possibility of introducing odorants into refrigerant systems with compromising the systems, said Michael Vaughn, P.E., Member ASHRAE, ASHRAE's manager of research and technical services. The ASHRAE Research Project Report was published in March 2019. ASHRAE members can access the report for free at <https://technologyportal.ashrae.org/>.

Technician experience level generally has the most significant effect on fitting assembly time and success, although to a lesser extent for the press fittings. Smaller flare fittings were prone to failure during repeated freezing and thawing of water on the tube.

Neal Lawrence and Sharat Raj authored the ASHRAE Research Project Report that was published in December 2019. ASHRAE members can access the report for free at <https://technologyportal.ashrae.org/>. More details are

available in the final report.

Conclusion

Future research projects are in various stages of development. For example, the contract has been awarded for RP-1855, Determination of the Impact of Combustion Byproducts on the Safe Use of Flammable Fluorinated Refrigerants, with the project kickoff meeting held in January 2019. ■

History

I hope everyone enjoyed the holidays and had a very Happy New Year! We will start off this year with a brief history of the ASHRAE Handbook. The Handbook began in 1922 titled "Heating and Ventilation Guide" published by the American Society of Heating and Ventilating Engineers (ASH&VE). Useful and reliable data of heating and ventilation at the time was not necessarily the easiest to come across. This is exactly what the goal of the society technically committees, task groups, and individuals goal was: To obtain data and prepare chapters using an information from any authoritative source. In addition, society-sponsored research provided much information.



ASH&VE, which later became the American Society of Heating and Air-Conditioning Engineers (ASHAE), published *The Guide* until 1961, when it was merged with the American Society of Refrigerating Engineers' (ASRE) *Refrigerating Data Book*, published since 1932, following the merger of the two societies in 1959. The combined publication was called the *ASHRAE Guide and Data Book*. Separate volumes were issued for *Fundamentals* and *Equipment*, and *Applications*.

In 1967, the information in the *Guide and Data Book* was regrouped into a *Handbook of Fundamentals*, with separate *Systems*, *Applications*, and *Equipment* volumes. In 1973, the *Guide and Data Book* was renamed the *ASHRAE Handbook*. In 1985, separate I-P and SI unit volumes were issued, and in 1986, a separate Refrigeration volume was established. Although volume groupings have shifted over the years, the name and the essential method by which the *ASHRAE Handbook* is compiled has continued to the present.

Zhigang Xu
History Chairman

Membership Promotion

"The secret of getting ahead is getting started." – Mark Twain

Hope everyone had a great holiday and new year. Just like the above Mark Twain quote, the Membership Promotion Committee is focused on getting started to recruit new members, retain existing members, and reward members for their involvement. Our recruitment efforts will continue the momentum built the last year by my current team together with the help of our new president, James Hanna. Along with strengthening our current chapter, we will focus on its growth and increasing new member participation in chapter meetings & events. We hope to continue having a few Membership Promotions themed nights this year that will include incentives for bringing non-members to chapter meetings, as well as getting new members to sign up with ASHRAE & the Long Island Chapter.



Lastly, we will be working on a number of events, as well as outing for our chapter members this year. As far as our regular outings and events, they are tentatively being discussed. These events are exceptional opportunities to further encourage member engagement and our team will try to accommodate some sort of events.

Please contact me with any questions regarding the Smart Start Program and/or ASHRAE membership needs.

Looking forward to another great month and thank you in advance for your support, time & guidance.

Michael Razzano
Membership Promotion Chair

Elizabeth Jedrlinic & Michael Nigro
Membership Promotion Co-Chair

Refrigeration

CONCRETE DAMS (EXCERPT FROM THE ASHRAE HANDBOOK 2018 CHAPTER 45)

CONCRETE DAMS

Without the application of mechanical refrigeration during construction of massive concrete dams much smaller construction blocks or monoliths would have to be used which will slow construction by removing unwanted heat refrigeration can speed construction improve the quality of the concrete and lower the overall cost.

METHODS OF TEMPERATURE CONTROL

Temperature control of massive concrete structures can be achieved by selecting the type of cement, replacing part of the cement with pozzalanic materials using embedded cooling coils, or precooling the materials. The measures used depend on the size and type of structure and under the time permitted for its construction.

Cooling with Chilled Water and Ice

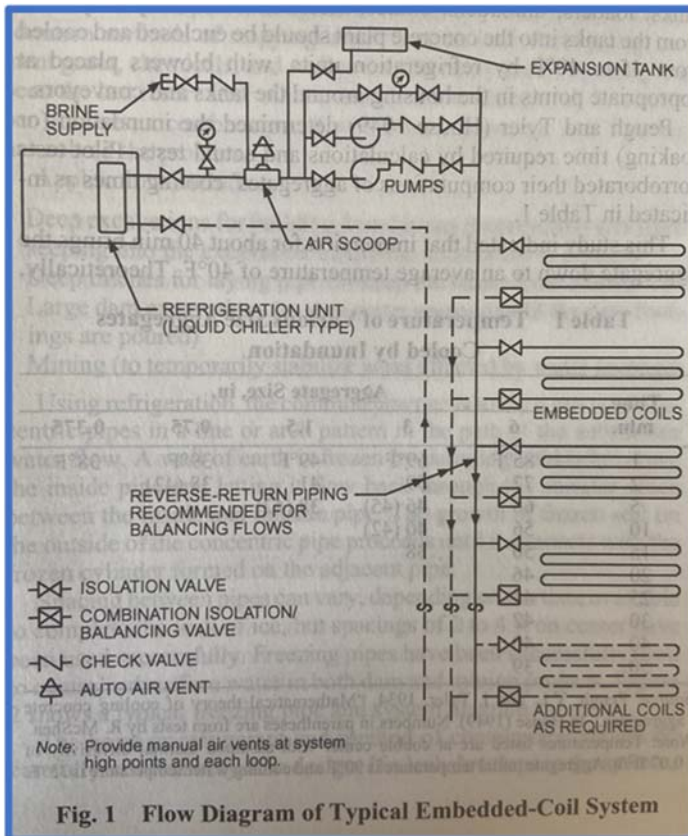


Fig. 1 Flow Diagram of Typical Embedded-Coil System

The actual temperature of the mix at the time of placement has a greater effect on the overall temperature changes and subsequent contraction of the concrete than any change caused solely by varying the heat generating characteristics of the cementing materials. Further, placing the concrete at a lower temperature normally results in a smaller overall temperature change than that obtained with embedded coil cooling because of these inherent advantages precooling measures have been applied to most concrete dams.

Glen Canyon Dam shows the installation required. The concrete was placed at a maximum placing temperature of 50°F during summer, when the aggregate temperature was about 87°F, cement temperature was as high as 150°F, and the River water temperature was about 85°F. maximum air temperatures averaged over 100°F during this summer. They selected system including cooling aggregates with 35°F water jets on the way through to the storage bins, adding refrigerated mix water at 35°F, and adding flaked ice for part of the cold-water mix. Subsequent cooling of the concrete to temperatures varying from 40°F at the base of the dam to 55°F at the top was also required. Their total connected break power of the ammonia compressors in the plant was 6200 HP with a refrigeration capacity equal to making 6000 tons of ice per day.

The maximum amount of chilled water that may be added to the concrete mix is determined by subtracting the amount of surface water from the total mix water, which is

free water. Frequently, if a chemical admixture is specified, some water (usually about 20% of the total free water) must be added to dissolve the admixture. this limits the amount of ice that can be added to the remaining 80% of determined, the size of the ice making equipment can be fixed. When determining equipment capacity, allowances should also be made for cleaning, service time, and ice storage during nonproductive times.

When calculating heat removal, consider eyes to be 32°F when introduced into the mixer. earth chilled water is assumed to be 40°F entering the mixer, even though it may be supplied at a lower temperature.

ASHRAE handbooks provide vast amount of information for engineers at all levels. Take a look.

Murat Bayramoglu
Refrigeration Chair



BOG Meeting Minutes

BOG February Meeting Long Island Chapter
December 8, 2020 / 5:00 PM / Virtual Teams Meeting

Board of Governors		
President	James Hanna	X
President Elect	Mathew Vitrano	X
Financial Secretary	Murat Bayramoglu	X
Treasurer	Michael Nigro	X
Secretary	Elizabeth Jedrlinic	X
BOG-1	Andrew Blom	
BOG-2	Mathew Catan	
BOG-3	Michael Razzano	X
BOG-4	Xhigang Xu	X
BOG Immediate President	Frank Paradiso	X
Committee Member	Matthew Catan	
Committee Member	Brian Simkins	
Committee Member	Andy Manos	

President (James Hanna) Chapter Operations [min-600/Par-1200] Total Points: x

- Review Minutes- Frank moved to approve November meeting. Mike N seconded.
- ~~May 2020 Field Trip logistics-~~
- May 3, 2021 Golf Outing- 2 pre-paid people, they will roll over to next year. Sponsors will roll over as well.
- Chapter assessment check will be cut today and mailed this week.
- Newsletter: Newsletter and meeting notice separate.
- Please try to have your articles to Liset 1 Week before meeting. Board members to send in articles.
- TAXES!!!!

Programs (Matt Vitrano)

- Field Trip: Early thoughts with Membership committee
- PJ mechanical new shop , May 2021
- October Presenter- Filtration
- November- Trench Heating ADE
- **December- Belimo- Virtual Option Only. He is doing it remotely. Change in December location because we may not be able to have it at smaller location. Regular meeting room. Potentially a purely remote meeting.**
- Need to fill January- DL, virtual meeting
- February or March- Rath Associates
- April- field trip if possible.

Chapter Technology Transfer (Matthew Catan) [min-550/par-1050] Total Points: x

- Work with Matt Vitrano (Programs) for PDH certified presentations
- PDH Sign in sheet and Presentation Survey sheets- Virtual sign in sheets currently, paid, invoices out, all covered for this meeting. Potential easier ways for virtual sign in, paypal link.
- Also looking into DL speakers.
- Speaker evaluation forms emailed to attendees/ there are blank ones in the box at Westbury Manor

Treasurer (Michael Nigro)

- Account status: staying flat
- Chapter Assessment – James to pay for this year (\$1200)
- Any outstanding Invoices or bills?
- PO Box Cost- Frank to Photograph receipt
- (2) \$500 checks for Student Scholarship recipients.
- Murat will file taxes for September 2019 to September 2020
- Budget for the year- chairs to start that.

BOG Meeting Minutes

Government Affairs (James Hanna) [min-500/par-650] Total Points x

- Activities: December meeting with NYSERTA/ Region I ASHRAE virtual event potentially.
- Update local Politician list
- Public relations Andy Manos
- Engineer's Week - February - Topic:
- Day on the Hill-

Historical (Zhigang Xu) [min-100/par-300] Total Points x

- Articles/interviews of past president's Potential life-members/fellows or historical journal articles.
- Frank P.
- History boards location- get picture of the board

Honors and Awards Chair (Brian Simkins)

- Service awards/Technical Awards
- Candidate Projects
- If there are any projects let Brian know

Research Promotion (Michael Nigro, Matthew Vitrano) [min-800/par-1050] Total Points x

- Vendor Book status- in progress
- 50/50, (other ideas to increase raffle purchases)- trying to do 50/50 at tonight's meeting in person
- Full circle – Due 10/15 – board members \$150,
- RP Goal is: \$20,400, 30% Was Met!
- Centralized training starts 9/11, 9/18. 9/22, 2-4 PM

Refrigeration (Murat Bayramoglu)

- Update

Membership Promotion (Michael Razzano, Co-chairs, Elizabeth Jedrlinic, Michael Nigro) [min-500/par-800] Total Points X

- Membership Upgrades: 276 members
- Discussion/suggestions on increasing chapter meeting attendance & Increase chapter membership:.
- Plan additional social events with YEA if allowed
- Joint YEA event with NYC and NJ? If possible.

Student Activities (Elizabeth Jedrlinic) [min-500/par-800] Total Points X

- Stony Brook, Suffolk Community College, Hofstra, NYIT and others.
- Discuss which local universities/colleges student chapters are active and which can be re-activated.
- Stonybrook Chapter- Virtual meetings
- Any ideas for social events that can include students
- Liz to begin working on presentation on STEM
- Suffolk County Community College for STEM
- Start distributing "William Artis Memorial" Student Scholarship applications to student chapters
- Liz attended Central Training in August 2020
- Student Night 11/10
- Scholarships. Grants due December 2020
- Winter Virtual Conference options for students

YEA (Michael Nigro / co-chair Elizabeth Jedrlinic) [min-300/par-800] Total Points X

- Collaborate with Membership Promotion and Student Activities for Social events throughout the year in order to interest new chapter involvement, volunteers etc.
- Keep monitoring how the year goes and respond accordingly.
- Looking into virtual happy hour
- Top gold with NYC?

Reception & Attendance (Mike Razzano / Zhigang Xu)

- Actively monitor membership list at reception.

BOG Meeting Minutes

Electronic Communications [min-250/par-650] (50)

- Recovery of old address (Still Ongoing)
- Email from Tom Fields, will investigate
- Add Historical Newsletters to website (2018-19 Chapter year)
- E-Communication committee
- Webcasting meeting idea for LI chapter (Society hosts go to meeting.)
- Looking for consultant to maintain:
- Email service / Weebly website / Linked In
- Memorial for Bill on the website

Golf (Peter Gerazounis/Tom Fields)

- May 2021

New Business...

January meeting will be virtual.

Good chance February will be as well.....

AHR Expo 2021

Winter ASHRAE Conference Chicago Jan 23 – 27 has been cancelled.

Winter Conference will be Virtual – the online format will take place between February 9 – 11th. It will include a mixture of live, pre-recorded and on-demand sessions. Additional details about the conference and committee meetings will be available in the coming weeks

I know a lot of our members attend the winter conference to catch up with the continuing education credits. So, for those who are looking for additional webinars, ASHRAE Journal has a long list of online seminars. Please visit:

<https://www.ashrae.org/technical-resources/supplier-provided-learning/supplier-webinars>

Motion to Close: Mike R, Second Mike N.

Next Virtual Meeting: 01/12/21 @ 6:00 PM



ASHRAE VIRTUAL WINTER CONFERENCE - FEBRUARY 9-11, 2021

To Register visit:

<https://www.ashrae.org/conferences/2021-virtual-winter-conference>



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Registration

**Women in ASHRAE
Keynote Speaker**

Stephanie Taylor, M.D.
Buildings are Our Best Medicine
Feb. 10 at 10:00 a.m. EST



ASHRAE VIRTUAL WINTER CONFERENCE - FEBRUARY 9-11, 2021



New ASHRAE Headquarters Building Tour with Live Q&A

Hosted by Ginger Scoggins and members of the ASHRAE HQ Building Ad Hoc Committee and ASHRAE President Chuck Gullledge.
Feb. 10 at 4:30 p.m. EST

STACK Infrastructure Data Center Tour with Live Q&A

Hosted by Brian Medina, Kevin Cooper, Aaron Duda and presented by the Chicago Host Committee.
Feb. 8 - Available on-demand
Feb. 12 at 11:00 a.m. EST Live Q&A



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Registration Rates

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Registrants can participate live or watch later, and have access to all content through August 2022. This program will be accepted for many jurisdictions' continuing education requirements and most sessions are approved for LEED AP credits and AIA learning units.

Individual Registration

Member \$249
 Non-Member \$479*
 Student Member \$25
 Student Non-Member \$60
 Life Member, Speaker \$64

Company Packages

3-5 Employees \$1,060
 6-10 Employees \$1,995
 11- 20 Employees \$3,735

*Non-member registrants receive one FULL year of ASHRAE membership in addition to their registration. **Benefits include access to the ASHRAE Handbook, subscription to the ASHRAE Journal and more!**

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▶▶▶ February 9-11, 2021

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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.

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

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