



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

Inside this issue:

President's Message	1
LI Chapter Officers	2
Meeting Schedule	3
Program	4
LI Past Presidents	5
PAOE	5
Student Activities	6
Research Promotion	7
YEA	8
CTTC	9-14
History	15
Refrigeration	16
Membership	17
GGAC	18
BOG Minutes	19-20
ASHRAE Social Media	21
ASHRAE Certifications	22
Advertisements	23-25

President's Message

We are quickly nearing the holiday season and Thanksgiving will be here before we know it. I would like to give thanks to the members of the ASHRAE Long Island chapter for their continued support. I am also thankful for the work and dedication of our volunteers and board members serving the chapter.

The ASHRAE Long Island chapter is also appreciative of October's presenter, Mr. Bill Artis BEAP, BCxP, BEMP, who spoke on a Back to Basics: Controlling Hot Gas in Direct Expansion Systems. It was an enlightening, detail rich and well attended presentation.

November is Research Promotion Appreciation Night. We will be acknowledging the donors from the 2018-2019 year and present the importance that your continued donations make to ASHRAE research and its valuable resources such as ASHRAE standards.

Please contact our Research Promotion Chair, Andrew Manos LEED AP, with any Research Promotion related questions.

Research Promotion funding supports thousands of projects addressing topics such as sound, duct design, the effect of oil in refrigerants, load calculations, thermal conductivity, simplified energy analysis procedures, weather data, refrigerant property data, fire and smoke control and solar design. Please consider a personal or company donation as it is a great campaign. Thank you to our chapter officers and chairs who have made personal contributions, as a demonstration of RP support, towards the Full Circle Award.

November also happens to be YEA, Student Activities and Membership promotion night.

Please help us promote the event and invite new members or anyone that would be interested in joining or learning about ASHRAE. That includes YEA members, Young engineer in ASHRAE who are 35yrs and younger. We are also inviting students from the area to join us and learn more about ASHRAE. We should provide all the support and encouragement that we can and develop Student and YEA members for future membership and leadership in ASHRAE and the HVAC&R industry.

Keep up with the Long Island Chapter as we will be planning several social events in the upcoming months. Interest in volunteering for the chapter and assisting in any of our committees is always welcome so please reach out to myself or anyone within the chapter if you would like to participate in any way.

Thank you and I look forward to seeing everyone at our next meeting.



Frank Paradiso
President - Long Island Chapter

CHAPTER MONTHLY MEETING

DATE:	Tuesday, November 12, 2019
TIME:	6:00 PM - Cocktails/Dinner 7:00 PM - Dinner Presentation 8:45 PM - Conclusion
LOCA- TION:	Westbury Manor 1100 Jericho Tpke. Westbury, NY 11590
FEES:	
Members -	\$50.00
Guest -	\$60.00
Student -	Free for November's Meeting

Check the ASHRAE Website for Society news and to join/renew membership!
<http://www.ashraeli.com>

Long Island Chapter Officers & Committees

ASHRAE 2019/2020 OFFICERS

POSITION	NAME	PHONE	EMAIL
President	Frank Paradiso	631.632.2792	c006@ashrae.net
President-Elect	James Hanna	718.269.3768	c006pe@ashrae.net
Vice President	Bill Artis	516.732.2519	c006vp@ashrae.net
Financial Secretary	Matthew Vitrano	212.643.9055	c006tr@ashrae.net
Treasurer	Murat Bayramoglu	631.312.8818	c006tr@ashrae.net
Secretary	Michael Nigro	212.643.9055	c006sec@ashrae.net
Board of Governors	Elizabeth Jedrlnic	516.490.1621	c006bog1@ashrae.net
Board of Governors	Andrew Blom	631.626.1695	c006bog2@ashrae.net
Board of Governors	Matthew Catan	407.489.6684	c006bog3@ashrae.net
Board of Governors	Michael Razzano	516.805.3084	c006bog4@ashrae.net
Board of Governors	Richard Halley	516.490.1616	c006bog5@ashrae.net



ASHRAE 2019/2020 COMMITTEES

COMMITTEE	NAME	PHONE	EMAIL
Programs & Special Events	James Hanna	718.269.3768	c006pe@ashrae.net
Membership (MP)	Michael Razzano	516.805.3084	c006mep@ashrae.net
Refrigeration	Murat Bayramoglu	631.312.8818	c006ref@ashrae.net
Chapter Technology Trans-	Matthew Catan	407.489.6684	c006cttc@ashrae.net
Grassroots Government	Andrew Blom	631.626.1695	c006ggac@ashrae.net
Newsletter Editor	Liset Cordero	212.643.9055	c006ne@ashrae.net
Research Promotion (RP)	Andy Manos	631.632.2791	c006rp@ashrae.net
Historian	Matthew Vitrano	212.643.9055	c006his@ashrae.net
Student Activities (SA)	Elizabeth Jedrlnic	516.490.1621	c006sa@ashrae.net
Young Engineers in	Michael Nigro	212.643.9055	c006yea@ashrae.net
Webmaster	Bill Artis	516.732.2519	c006web@ashrae.net
Nominating	Michael Gerazounis, PE, LEED AP	212.643.9055	nominating@ashraeli.org
Reception & Attendance	Matthew Catan		reception@ashraeli.org
PR & Engineering Joint	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

ASHRAE LI, P.O. Box 79, Commack, NY 11725

Editor's Note: The appearance of any technical data, editorial material, or advertisement in this set of publications does not constitute endorsement, warranty or guaranty by ASHRAE of any product, service, procedure, design, or the like. ASHRAE does not warrant that information is free from errors, and ASHRAE does not necessarily agree with any statement or opinion in this set of publications. The entire risk of the use of any information in this set of publications is assumed by the user. Statements made in this publication are not expressions of the Society or of the Chapter and may not be reproduced without special permission.

Chapter Monthly Meeting - Program for 2019/2020

September 10, 2019 * At Westbury Manor  Dinner Presentation – Builds & NYC Code Compliance Presenter: Ian Nelson **1 PDH** Refrigeration Night	March 10, 2020 * At Westbury Manor Dinner Presentation - Natatorium Design Presenter: Joseph Schmitz **1 PDH** Student Activities Night YEA Night
October 8, 2019 * At Westbury Manor  Dinner Presentation— Back to Basics: Hot Gas Bypass and Hot Gas Reheat (and why mixing them up will cost you money) Commissioning for Dummies (by dummies) Presenter: Bill Artis **1 PDH**	April 14, 2020 Dinner Presentation - TBD Presenter: **1 PDH**
November 12, 2019 * At Westbury Manor Dinner Presentation-- Energy Efficient Solutions for Commercial Kitchen Ventilation Presenter: Dr. Andrey Livchak **1 PDH** Membership Promotion Student Activities Night and YEA Night Resource Promotion Night	May 4, 2020 * Cherry Valley Club, Garden City, NY ANNUAL GOLF OUTING
December 10, 2019 * At Westbury Manor Dinner Presentation-- Belimo Presenters: Belimo **1 PDH**	May 12, 2020 Annual Field Trip
January 14, 2020 * At Westbury Manor Dinner Presentation– Grow Rooms– And how to Design them Presenter: Geoff Kelman **1 PDH**	June 9, 2020 * 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 1-5, 2020 ASHRAE Winter Meeting Orlando, FL	June 2020 - TBD (4pm-8pm) * Dixie II @ Captree State Park Boat Basin, NY ANNUAL FISHING TRIP
February 11, 2020 * At Westbury Manor – Dinner Presentation– TBD Presenter: **1 PDH** Membership Promotion Night Resource Promotion Night	August 13-15, 2020 CHAPTERS' REGIONAL CONFERENCE (CRC) REGION I
February 16-22, 2020 NATIONAL ENGINEERS WEEK	

Meeting Program



Dinner Presentation

***“Energy Efficient Solutions for
Commercial Kitchen Ventilation”***

Presented by

Andrey Livchak, Ph.D.
ASHRAE DISTINGUISHED LECTURER

**Attendees
Will Earn
1 PDH!**

DATE:	TUESDAY, NOVEMBER 12, 2019		
Time:	6:00 PM - Cocktails and Hors D'oeuvres 7:00 PM - Dinner Presentations 8:45 PM - Conclusion	Fee:	\$ 50.00 Member \$ 60.00 Guest Free for Students in November
Location:	WESTBURY MANOR (516) 333-7117 1100 Jericho Tpke., Westbury, NY 11590 Directions are posted at @ www.ashraeli.com		
Presentation:	Restaurants are among the buildings with the highest energy intensity in commercial sector. They contribute over 500 trillion Btu to the U.S. annual energy consumption. This presentation will give practical recommendations how to reduce energy consumption of a foodservice facility by up to 50% and improve its indoor environmental quality for better employees' and customers' satisfaction. This presentation will describe new designs as well as recommendations how to improve efficiency of existing commercial kitchens. It will also cover requirements of the latest edition of ASHRAE 90.1 Standard in regards to efficient ventilation design of commercial kitchens. Presentation will be useful for owners, operators, energy and design professionals involved in design, construction and operation of foodservice facilities. All attendees will receive 1 PDH.		
About our Speaker:	Dr. Andrey Livchak has over 30 years of international experience in the HVAC industry. He graduated from Moscow Civil Engineering University in 1983 with honors and M.Sc. degree. In 1989 he received Ph.D. in engineering from the same university. His expertise covers several areas including air distribution, heat recovery, cooling, heating systems, acoustics and commercial kitchen ventilation. Dr. Livchak started his engineering career in 1983 in Moscow working at the government research laboratory. He joined Halton in 1989 working first in its European division and in 1998 moved to the U.S. to manage Halton R&D center. In his current position as the Director of Global R&D for the Foodservice division, Dr. Livchak is responsible for planning and coordinating research and development of five Halton Research Centers in America, Europe and Asia. Dr. Livchak is an active AHRAE member, he works on TC 5.3 (Air Distribution) and SPC-200 Method of Testing Chilled Beams committees, has over 50 publications including more than 20 patents.		

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		

PAOE POINTS FOR 2019/2020

Chapter Members	Chapter Operations	CTTC	Communi-cations	GGAC	History	Member-ship	Research Promotion	Student Activities	YEA	Chapter PAOE Totals
282	70	50	50	0	355	400	0	350	450	1,725

Student Activities

Happy Fall Students!

November's Long Island ASHRAE Chapter meeting will be Student Night! That means it is free for all Students! Please come by and enjoy a great presentation as well as FREE drinks and food.

Did you know that ASHRAE offered Equipment Grants to engineering, technical and architectural schools worldwide?

Grants shall be used to fund equipment and supplies for undergraduate projects and 2-year technical school projects that focus on ASHRAE-related topics. Grants may cover projects lasting from one academic term up to one year.

Applications that create hands on teaching / demonstrations in undergraduate courses will receive higher ranking than projects that are one year undergraduate research-based or research-like projects.

Projects involving the building of working models, testing equipment, experimental teaching aids, and laboratory experiments are encouraged.

The grant application must be submitted by the faculty member(s) responsible for the project. The application may be made from any engineering, architecture, or engineering technology department; however, the project must involve an ASHRAE-related topic. The faculty member(s) and student(s) responsible for the project are NOT required to be members of ASHRAE. The grant is made to the university/college solely for the support of the materials required for the project in an amount not to exceed \$5,000 (U.S.). University overhead, faculty or student salaries, travel expenses, and other non-equipment items will not be funded. Funding from other sources, including in-kind contributions, is encouraged and will receive a higher ranking.

The faculty advisor(s) will submit the application to ASHRAE on behalf of the student(s) who are responsible for completing the project. To be considered, ALL questions must be answered on the electronic application, including a complete project description and a projected itemized budget. Out of schools that are selected for grant awards, judges will award the two highest ranking teams (two students per team max) a trip to the Winter Meeting Student Program to present their project to students. The trip consists of transportation and two nights stay in the hotel. Information will be included in award letters.

Application Link:

<https://fs12.formsite.com/ashrae/form44/index.html>

Applications are due **December 15, 2019**

If you have any questions, please let me know.

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



Research Promotion

I would like to thank the companies who have participated in the annual 2020 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 web-site.

There's still time if you would like your company listed in the directory please contact me. The deadline is December 15th.

The Directory is intended to provide better communications between manufacturers and their sales representatives; engineers who specify products; contractors who purchase and install the equipment; and other interested parties. Product Directory listings are not limited to ASHRAE members and the listings are not to be considered as advertising or endorsement by ASHRAE of any product, manufacturer or representative.

This year's overall resource promotion goal is \$2,600,000 with over 75 research projects on board. Our chapter is expected to raise approximately \$20,500 towards the overall goal of which we have already raised \$2220. I am hoping I can count on the continued support of all of 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. Please help support ASHRAE in any way you can.

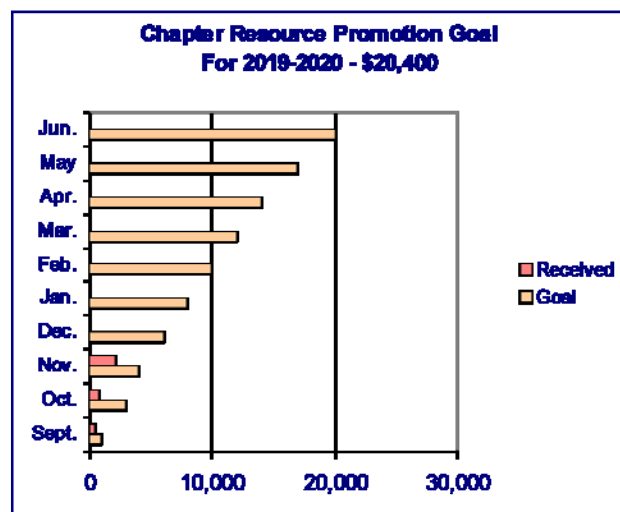
I would like say 'thank you' to all the contributors listed below whom have already donated to ASHRAE this year:

INDIVIDUALS

Brian Simkins
Peter Gerazounis, PE
Michael Gerazounis, PE
John D Nally
Andrew E Manos
Mordechai Chetrit
Evan Lizardos
Elizabeth Jedrlnic
Frank Paradiso
William Artis
Murat Bayramoglu
Matthew Vitrano
Michael Nigro
James Hanna
Richard Halley

COMPANIES

Catan Equipment Sales
Accuspec, Inc
Gil-Bar Industries, Inc.



CONTRIBUTIONS CAN BE MADE IN THE FOLLOWING WAYS:

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

Andrew Manos, LEED AP BD+C
ASHRAE Research Promotion Chair
c/o Stony Brook University
Campus Planning, Design and Construction
Research and Support Services, Building 17, Suite 160
Development Drive, Stony Brook, NY 11794-6010

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!

Andrew Manos, LEED AP BD+C - Research Promotion Chair

YEA

The Long Island chapter meeting on November 12th, 2019 is YEA Night. This meeting will be a great way to learn about what being a member of your local chapter of ASHRAE has to offer.

ASHRAE offers a wide variety for YEA and (non-YEA) members. In this month's sounder, we will focus on the LeaDRS and YEA Leadership Weekend 2.0!

LeaDRS This regional program allows for the development of future regional leaders thru shadowing of current DRC's at an ASHRAE conference. The LeaDRS program is open to All ASHRAE Members! As a participant in the program, the DRC would select a participant from the Region at a Society Winter or Annual Conference. This great experience is a great way to gain an understanding of how ASHRAE works at the Society level.



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

YEA Leadership Weekend 2.0 (YLW 2.0) is designed to provide additional, more advanced resources to YLW alumni. For this continuation of YLW, we bring back Ralph Kison to facilitate and expand on the skills he taught at the existing YLW event. As YLW alumni, you've had the opportunity to use the resources and connections you gained at YLW to not only grow your professional careers, but develop your participation within ASHRAE. The purpose of YLW 2.0 is to continue that growth and development, and hopefully inspire even further leadership skills and aspirations!

As a reminder, YEA Leadership Weekend 2.0 (Palm Springs, CA May 1-3, 2020) registration opens Friday November 15th, 2019. Please reach out to me if you have any questions. YEA Leadership Weekend 1.0 is a prerequisite.

Michael Nigro
YEA Chair



CTTC

Long Island Chapter, Happy Halloween!!! Big thanks to Bill Artis for his great presentation on Controlling Hot Gas in Direct Expansion Systems! It was great to hear about the uses of Refrigerant control valves in both refrigeration and comfort cooling HVAC systems.

Joke of the Month: Engineer & the Ghost

Ghost: I wish I could find the circumference of my Jack-o-Lantern

Engineer: I'd recommend using Pumpkin Pie

ASHRAE Certification Review: BCXP – Building Commissioning Professional Certification

The BCxP certification, an ANSI-Accredited Personnel Certification Program under ISO/IEC 17024 (#1139), validates competency to do the following:

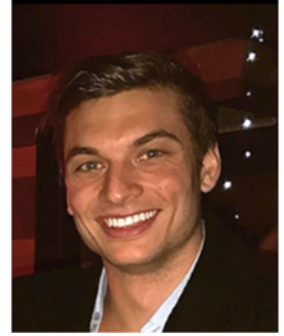
Lead, plan, coordinate and manage a commissioning team to implement commissioning processes in new and existing buildings. The BCxP certification has been recognized by the U.S. Department of Energy (DOE) as meeting the Better Buildings Workforce Guidelines (BBWG).

Chapter Technology Update

We are very excited for our November ASHREA meeting as we have the Distinguished Lecturer Dr. Andrey Livchak presenting on Commercial Kitchen Ventilation Solutions. Dr. Andrey Livchak has over 30 years of international experience in the HVAC industry. He graduated from Moscow Civil Engineering University in 1983 with honors and M.Sc. degree. In 1989 he received Ph.D. in engineering from the same university. His expertise covers several areas including air distribution, heat recovery, cooling, heating systems, acoustics and commercial kitchen ventilation. Dr. Livchak started his engineering career in 1983 in Moscow working at the government research laboratory. He joined Halton in 1989 working first in its European division and in 1998 moved to the U.S. to manage Halton R&D center. In his current position as the Director of Global R&D for the Foodservice division, Dr. Livchak is responsible for planning and coordinating research and development of five Halton Research Centers in America, Europe and Asia. Dr. Livchak is an active ASHRAE member, he works on TC 5.3 (Air Distribution) and SPC-200 Method of Testing Chilled Beams committees, has over 50 publications including more than 20 patents.

See Chapter Technology Article of the Month on the following pages 10-14.

Matthew K. Catan
CTTC Chairman



CTTC

Thermal Comfort in Heated-and-Ventilated- Only Warehouses

Building energy codes and standards contain minimum requirements that provide a path to energy efficient buildings and building systems. ASHRAE/IES Standard 90.1 and the International Energy Conservation Code (IECC) are the main national building code models in the United States. Both Standard 90.1 and the IECC are updated on three-year cycles with the goal of reducing building energy consumption.

Decreased energy consumption in each update is achieved through a variety of energy conservation measures including: increased insulation levels, reduced lighting power density and reduced solar heat gain from fenestration. These measures not only save energy, they also have potential to improve thermal comfort of occupants in non-air-conditioned spaces.

So let's examine the predicted thermal comfort level using a prototype warehouse and compare using Standard 90.1-2004, 2010 and 2016 energy efficiency levels.

The Fanger and Adaptive comfort models will be used to determine occupant thermal satisfaction. The OSHA Heat Index will also be used to evaluate frequency of high-risk hours for occupants and impacts on productivity will be examined.

Using EnergyPlus, a warehouse building model that prescriptively complied with Standard 90.1-2004, -2010, and -2016 for each of the seventeen climate zones (for a total of 51 prototypes) were simulated and the results were compiled for analysis.¹⁻³ The simulations included the Fanger⁴ and Adaptive Comfort⁵ models to determine occupant thermal comfort levels and predict worker productivity impact. The NOAA Heat Index was also used to determine the frequency of high-risk hours for the warehouse occupants.⁶ An additional 17 models were simulated to evaluate elevated air speed impact on worker productivity.

Occupants are present from 6 a.m. until 6 p.m., with the building fully occupied from 8 a.m. to 12 p.m. and 1 p.m. to 5 p.m. The heat gain for the warehouse occupants was calculated to be 730 Btu/h per person based on an average metabolic rate of 2.0 met, heat generation of 5.4 W/ft² (58.15 W/m²) of skin and 20 ft² (1.84 m²) of skin.

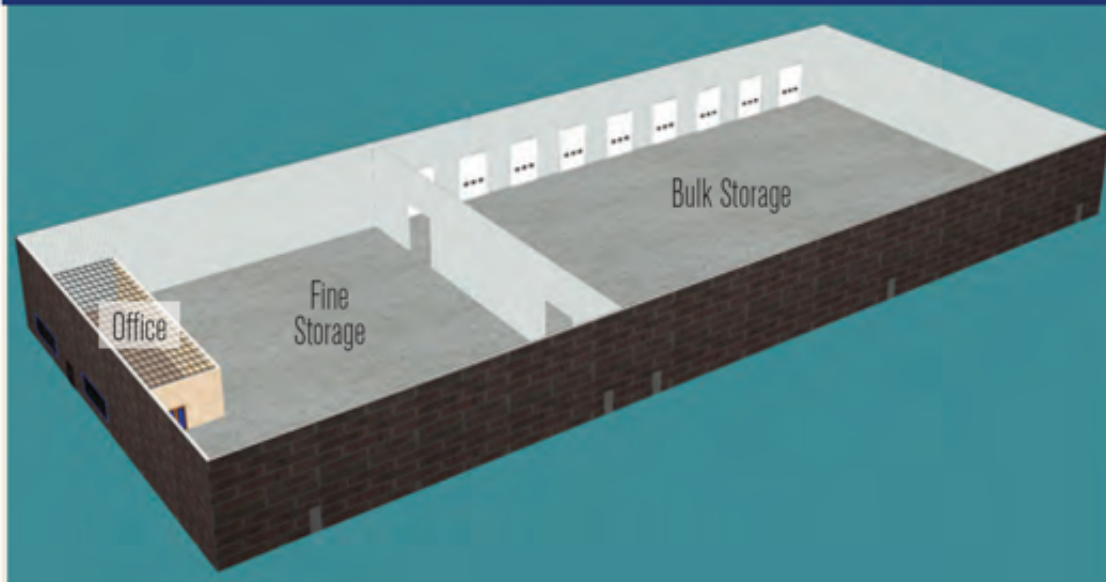
The remaining internal loads were unchanged from the PNNL models.⁸ These loads include 0.75 W/ft² (8.1 W/m²) of plug loads in the office, 2.7 kW of heat gain for each of the three forklifts in bulk storage; lighting power densities were determined by Standard 90.1. Schedules applied to the internal loads were similar to

Methods and Procedures

The modeled warehouse (Figure 1) is approximately the same as the warehouse used by PNNL in the 13 development of the Advanced Energy Design Guide for Small Warehouses and Self-Storage Buildings.⁷ It is 50,000 ft² (4645 m²), has a floor-to-ceiling height of 28 ft (8.5 m) and has three thermal zones. The office zone is 2,550 ft² (237 m²). The fine-storage zone of the warehouse is 12,450 ft² (1157 m²). The bulk zone of the warehouse is 34,500 ft² (3205 m²).

The warehouse occupant count was assumed to be zero in the PNNL models.⁸ Based on the internal load assumption of three operating forklifts, it was determined the number of occupants in the bulk warehouse area should be increased. Various sources were evaluated and significantly different occupant densities were noted.

Based on widely varying occupant densities, a conservative value of 5,000 ft² (465 m²) per occupant was used to determine the number of occupants in the fine and bulk storage zones.

FIGURE 1 Warehouse layout.⁷

the occupancy schedule, with the exception of the forklifts which included charging during unoccupied hours.

Minimum ventilation rates were set for each of the three zones based on the version of ASHRAE Standard 62.1 referenced in Standard 90.1; and a well-mixed space was assumed.¹⁰ The PNNL models also include 80,000 cfm (2265 m³/min.) of comfort ventilation (exhaust fans and dampers) in bulk storage. 80,000 cfm (2265 m³/min.) equates to a ventilation rate of approximately five air changes per hour.⁸ With no data source or remarks listed for this assumption, the mechanical ventilation was reduced to 1.5 air changes per hour (24,150 cfm (684 m³/min.)), which was more typical of minimum code construction.

Infiltration rates and schedules were unchanged from the PNNL models with general infiltration based on a combination of 0.038 cfm/ft² (0.193 L/s·m²) of wall area, 500 cfm (14 m³/min.) of leakage from each of the relief dampers, 32 cfm (0.91 m³/min.) per closed dock door, and 783 cfm (22 m³/min.) per open dock door with a truck in place.⁸ Three dock doors are assumed to be open with a truck in place during the occupied hours for the entire year per the PNNL Technical Support Document for the Warehouse Advanced Energy Design Guide.⁷

Single-zone, rooftop units were assigned to the office and fine storage zones, while unit heaters were used in bulk storage. Thermostats were set to 75°F (24°C) for occupied cooling and 70°F (21°C) for occupied heating with a 10°F (5.6°C) reset during unoccupied hours in the office and fine storage zones. The heating setpoint was a constant 55°F (13°C) in the bulk storage during heating and an on-point of 85°F (29°C) was set for the comfort ventilation fans.

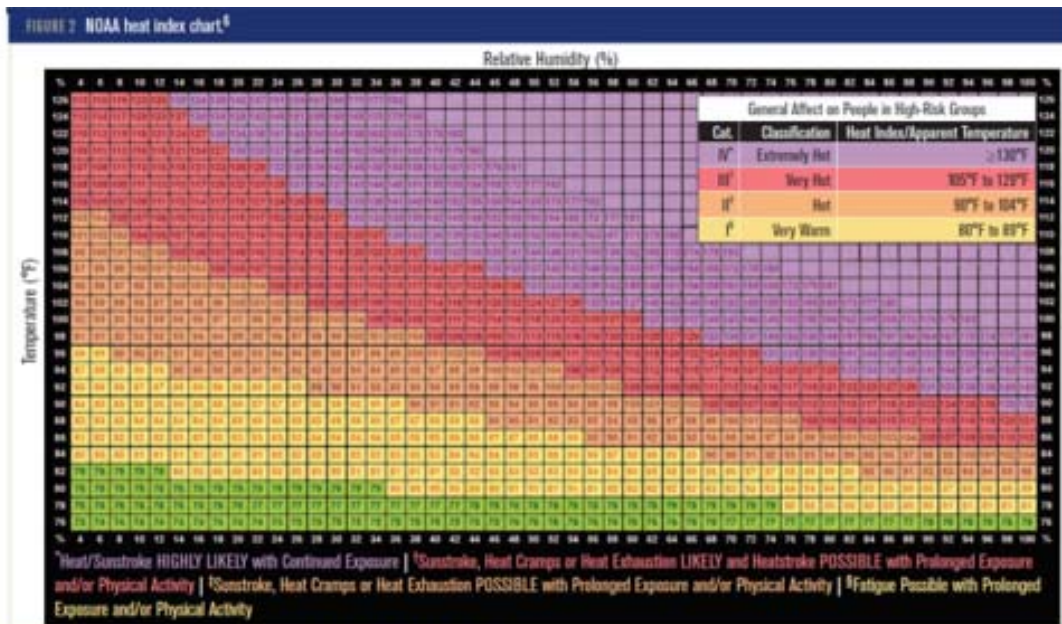
The building envelope's thermal properties were determined by the requirements set forth in

Standard 90.1- 2016. Construction types consistent with a metal building were selected. Windows were provided only in the office area and seven dock doors were located in bulk storage. An internal mass of 19 million pounds (8 618 255 kg) was input in the bulk area to represent the goods stored on the racking as described in the PNNL Technical Support Document.

Comfort Analysis, Productivity and Heat Index

Comfort calculations for the occupant in the bulk storage area were based on the following assumptions: The metabolic rate for the warehouse tasks were assumed to be 75% of the time spent lifting and packing and 25% walking.¹¹ Clothing insulation was based on a dynamic clothing insulation model.

Two different comfort models were included in the building simulations. The first model, ~~Fanger's~~ **Fanger's** Comfort Model, is used to determine the occupants' predicted mean vote (PMV) and the predicted percent dissatisfied (PPD).⁴ PMV values of greater than 0.5 indicate discomfort due to warm thermal sensation and PMV values of less than -0.5 indicate discomfort due to cool thermal sensation.



The second model, the Adaptive Comfort Model, is used to determine if space conditions meet the 80% acceptability level based on a seven-day mean, outdoor-air temperature and the calculated indoor operative temperature.⁵

The impact of thermal comfort on productivity was determined based on the Fanger Comfort Model PMV and Equation 1 established by Sinavin and Mohamed.¹²

Equation 1: Productivity Loss Based on Thermal Discomfort

$$PI = 99.91 - 0.796 \times PMV - 1.843 \times PMV_2$$

Variables

PI = Productivity level (%)

PMV = Predicted Mean Vote

Financial impacts of productivity loss were based on the occupancy level for each hour and an hourly wage of \$15.12.¹³

Indoor air temperature and relative humidity were also used to determine the number of hours in each heat stress category of NOAA's Heat Index Chart.⁶ The Heat Index Chart is used by employers to avoid employee heat stress/heat stroke (Figure 2).

Comfort Analysis and Productivity

The Fanger Comfort Model was applied to the representative worker in the bulk storage part of the warehouse and PMV values were calculated for each hour of the year. The comfort zone is between 0.5 and -0.5 on the Thermal Sensation Scale.¹⁴

FIGURE 3 Annual occupied hours with PMV greater than 0.5 for three code versions of building.

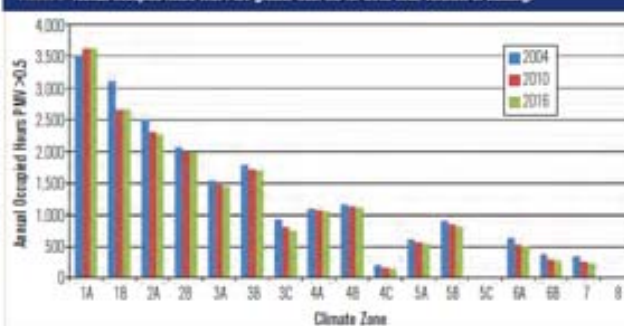


FIGURE 4 Fraction of annual occupied hours with PMV greater than 0.5 for three code versions of building.

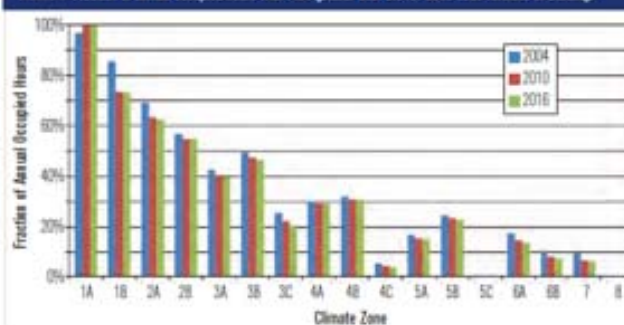
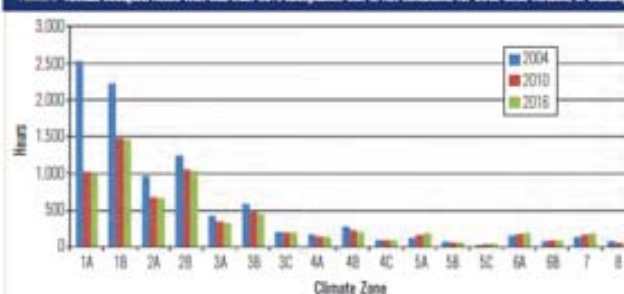


FIGURE 5 Annual occupied hours with less than 80% acceptance due to hot conditions for three code versions of building.



CTTC

Bulk storage has 3,636 occupied hours per year. The number of occupied hours where occupants were predicted to be uncomfortable due to heat ($PMV > 0.5$) for each building simulation are presented in Figure 3.

While the number of hours where occupants were uncomfortably warm decreased slightly with the 2010 and 2016 versions of Standard 90.1, nearly all climate zones maintained a significant percentage of hours outside of the comfort zone per the Fanger Comfort Model noted in Figure 4.

As an alternate to the Fanger Comfort Model, the Adaptive Comfort Model Based on European Standard EN15251 was also used. While occupants' activity levels are higher than the 1.3 met limit for the Adaptive Comfort Model, the adaptive method was applied since the occupants can adjust clothing levels, the dock doors can be opened and closed, and there is no active cooling system in bulk storage. Figure 5 presents the number of occupied hours where the occupants were predicted to be uncomfortable by the Adaptive Model method.

The Adaptive Model shows reduced uncomfortable hours compared to the Fanger model, but still shows a significant number of hours outside the comfort zone.

Financial Impact

The impact on productivity loss of adding 160 fpm (1.8 mph [2.9 kph]) of elevated air speed was evaluated for all climate zones for the Standard 90.1-2016 buildings and is presented in Table 1. 160 fpm (48.77 m/min.) is a typical, average air speed used in cooling comfort applications with circulator fans and is the upper limit of air speed when occupants do not have control of the fan in ANSI/ASHRAE Standard 55.16. The number of uncomfortable hours, and the financial impact on productivity, decreased significantly with the addition of 160 fpm (48.77 m/min.) of elevated air speed.

Heat Index

Heat index combines relative humidity and temperature to create "apparent" temperature, which provides an estimate of how warm indoor air will feel to an occupant. High Heat Index values indicate an

TABLE 1 Annual cost of productivity loss due to high PMV.

CLIMATE ZONE	90.1-2004	90.1-2010	90.1-2016	90.1-2016 AND 160 FPM/48.77 M/MIN.
1A	\$53,409	\$21,203	\$20,923	\$17,047
1B	\$63,676	\$27,318	\$27,113	\$26,956
2A	\$16,975	\$14,083	\$13,829	\$11,383
2B	\$17,909	\$14,931	\$14,738	\$14,331
3A	\$7,504	\$6,813	\$6,580	\$4,803
3B	\$9,444	\$8,720	\$8,470	\$6,963
3C	\$2,001	\$1,633	\$1,484	\$334
4A	\$4,233	\$3,914	\$3,772	\$2,375
4B	\$4,675	\$4,328	\$4,149	\$2,867
4C	\$456	\$375	\$341	\$44
5A	\$1,585	\$1,340	\$1,237	\$431
5B	\$2,406	\$2,052	\$1,897	\$862
5C	\$75	\$36	\$24	\$0
6A	\$1,421	\$1,117	\$1,021	\$276
6B	\$822	\$603	\$538	\$126

FIGURE 6 Heat index hours at

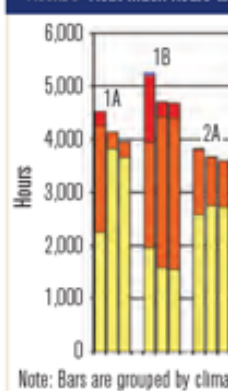


TABLE 2 Example work-rest

HEAT INDEX CATEGORY
I – Very Warm
II – Hot
III – Very Hot
IV – Extremely Hot

TABLE 3 Annual wage cost of breaks due to high heat index hours.

CLIMATE ZONE	90.1-2004	90.1-2010	90.1-2016
1A	\$30,718	\$2,842	\$2,709
1B	\$40,152	\$22,925	\$22,771
2A	\$12,963	\$9,808	\$9,439
2B	\$6,082	\$3,124	\$2,946
3A	\$2,129	\$1,558	\$1,330
3B	\$35	\$0	\$0
3C	\$0	\$0	\$0
4A	\$574	\$321	\$174
4B	\$0	\$0	\$0
4C	\$0	\$0	\$0
5A	\$0	\$0	\$0
5B	\$0	\$0	\$0
5C	\$0	\$0	\$0
6A	\$0	\$0	\$0
6B	\$0	\$0	\$0
7	\$0	\$0	\$0
8	\$0	\$0	\$0

increased likelihood of workers experiencing heat-related illness.

Figure 6 presents the number of hours in each Heat Index Category the warehouse workers would experience for each version of Standard 90.1.

The hours in the Extremely Hot category are essentially eliminated for Climate Zones 1A and 1B with 2010 and 2016 revisions to Standard 90.1. The hours in the Very Hot and Hot categories are generally reduced and moved closer to outdoor air conditions. The general shift to lower categories will provide decreased risk of heat stress to warehouse workers and potentially provide financial benefit to employers.

OSHA recommends a work-rest schedule be developed for times when the Heat Index is above 90°F (32°C), Category II – Hot.¹⁷ Table 2 presents an example work-rest schedule used to mitigate the likelihood of heat related illness/injury.¹⁸

Based on the number of rest minutes per hour for a moderate work schedule, the cost of Category II, III, and IV Heat Index break time was estimated. Table 3 summarizes annual cost for each location and version of 90.1.

While the cost of breaks decreases dramatically in the 2010 and 2016 versions of Standard 90.1, in climate zones 1A through 3A, the annual lost wages are still significantly high and could be used to financially justify the addition of some ECM to decrease worker heat stress

Summary and Discussion

The impact of hot and humid conditions on the occupants of heated- and-ventilated-only warehouses in climate zones 1 through 4 is significant and costly. While the 2010 and 2016 versions of Standard 90.1 have increased worker comfort and productivity levels, six climate zones still showed more than forty percent of the occupied hours outside of the comfort zone for the "Typical Meteorological Year." The lost productivity and wages from the high PMV conditions represent a large opportunity for financial justification of incorporating additional thermal comfort measures into the design of warehouses.

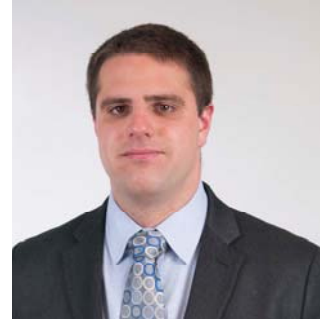
If thermal comfort continues to be ignored by energy codes, and in initial designs of buildings, building occupants will seek thermal comfort by adding additional equipment to the building.

The example comfort measure of elevated air speed resulted in significant reductions in uncomfortable hours and productivity losses in Climate Zones 1A, 2A, 3A, 3B, 3C, 4A, 4B, 5A, and 5B. Air speeds of 250 fpm (76 m/min.) are relatively practical to achieve in warehouse environments. The increased air speed would provide increased occupant comfort and improve worker productivity.

This article was published in ASHRAE Journal, December 2018. Copyright 2018 ASHRAE. Posted at www.ashrae.org. This article may not be copied and/or distributed electronically or in paper form without permission of ASHRAE. For more information about ASHRAE Journal, visit www.ashrae.org

History

While reading through some of the older ASHRAE files that we have stored, I found a history article from 2012 that I would like to bring back to the surface. The following is an article written by Richard Rosner, P.E. who many of us fondly remember, about the evolution of air conditioning on Long Island as seen by him as he grew up. Richard contributed a lot to our chapter, and is missed by everyone!



***The history/future of home and commercial Air Conditioning as seen through my eyes.
By: Richard L. Rosner, PE (LI Chapter ASHRAE Historian 2011-2012)***

Being born more than 60 years ago has given me the ability to reflect on many things in the category of as "I remember when....." Although this article will be on my memory of home and commercial air conditioning, here are a few off topic things I remember from my younger days: Gasoline \$.25/gallon, No Throgs Neck or Verrazano Bridges, no striping on roads, no Seaford Oyster Bay expressway, no Nicholls Rd., Sunrise Hwy ended in Oakdale, 495 didn't go to Riverhead, all the fields at Jones Beach were open even field 9, all planes had propellers except those noisy air force jets breaking the sound barrier. We watched Sputnik go over but had to wait a day(s) for the planes to fly the news reels over from Europe or other countries, no Internet heck no cell phones, area codes, zip codes. I remember the \$.10 Carvel cone and a whopping \$.15 for the large but there wasn't much air conditioning around.

I went through Grade and High school with no air conditioning. We had windows that opened that let the fresh air in. I remember sticking to the papers on my desk on those hot spring days. Still the sweet smell of those ditto's was always pleasing only to find out later in life that was PCB oil that they used that smelled so nice. When we got home there was no air conditioning there. The first window unit to come to our house was 6500 BTU's and drew 12 amps. It was put in the 2nd floor bedroom and was only used when the temp was over 90°F. We went to Roosevelt field mall but it was open to the outdoors and not closed in. We didn't go there often so I don't remember the various changes there. I do remember that the South Shore Mall was also open walking between stores outside.

When new department stores opened they had big grand opening ceremonies. One such store I remember was EJ Korvettes in Babylon on sunrise hwy. There we found Brian Hyland "Itsy Bitsy Teenie Weenie Yellow Polka Dot Bikini" playing in the parking lot for us. It was common to have celebrities at these grand openings. Victor Borge was playing the piano for us at the Bee Hive in the Patchogue grand opening. My sister and I had autograph books for these special occasions. The thing these stores had that drew the crowds was the air conditioning. People were amazed how cool it was while it was roasting out and in non-air conditioned stores.

Drive-in theaters were common as it was nice to sit outside in the night time cool air and watch a movie. Indoor theaters were filled with smoke so thick it didn't matter if you smoked or not when you got home your cloths smelled of smoke. To cut down on the smoke, theaters used 100% outside air systems and a lot of them used ground water cooling coils to lower the temperature. Some of these are still in place as they worked very well and are now big energy savers. A large part of the air can be returned as no smoking is allowed now.

My mom, a stark 'no I don't need air conditioning' person, gave in two summers ago and let me put in a window unit in her bedroom. To her amazement she loved it! I find it almost odd that something that was just a special occasion mechanical system has become a necessity that few will live without, no matter where they go. As systems have progressed they can hold a set point within a degree if we want but with our different backgrounds, body masses, temperature preferences, likes and dislikes there seems to be no temperature setting that will satisfy all in a group of people.

Where do we go from here? We can tweak the energy savings and efficiencies but we are probably at a reasonable end to the temperature control as there is no point to control to the 1/10 or 1/100 of a degree. Perhaps more even temperatures around a room from outside walls/windows to low and high stagnated air spaces could be achieved that might yield better comfort. Radiant floors seem to be making a resurgence probably because we like warm floors and even heat. Maybe chilled ceilings/walls with separate humidity control systems will become the rage. No matter where the future takes us one thing can be assured, air conditioning will required.

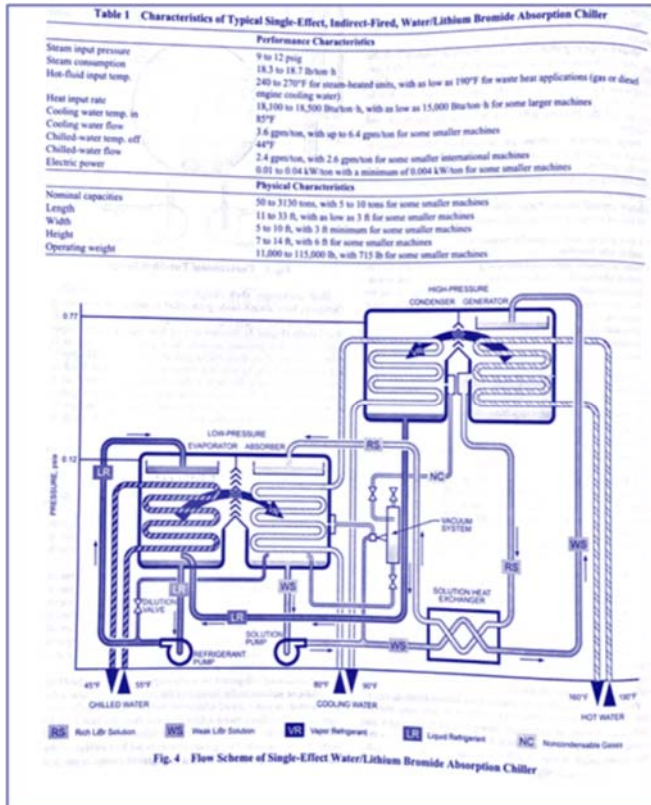
**Matthew Vitrano
History Chairman**

Refrigeration

WATER/LITHIUM BROMIDE ABSORPTION EQUIPMENT (SUMMARY OF ASHRAE HANDBOOK 2018 CHAPTER 18)

Absorption equipment using water as the refrigerant and lithium bromide as the absorbent is classified by the method of heat input to the primary generator (firing method) and by whether the absorption cycle is single effect or multiple effect. The additional stage has been called second stage.

Single-Effect Lithium Bromide Chillers



Most single effect chillers are heated with hot water or steam, usually generated as a by-product of a power generation with gas or diesel engines in combined heat and power plants.

During operation, heat is supplied to tubes of the generator in the form of hot fluid or steam, causing dilute absorbent solution on the outside of the tubes to boil. This desorbed refrigerant vapor (water vapor) flows through eliminators to the condenser, where it is condensed on the outside of tubes that are cooled by a flow of water from a heat sink (usually a cooling tower).

The condensed refrigerant passes through an orifice or liquid trap in the bottom of the condenser and enters the evaporator, in which liquid refrigerant boils as it contacts the outer surface of tubes that contain a flow of water from the heat load. Refrigerant that does not boil collects at the bottom of the evaporator, flows through a refrigerant pump, and resprayed over the evaporator tubes.

The dilute absorbent solution that enters the generator increases in concentration as it boils and releases water vapor. The resulting strong absorbent solution leaves the generator and flows through one side of solution heat exchanger, where it cools as it heats a stream of weak absorbent solution passing through the other side of the solution heat exchanger on its way to the generator. This increases the machine's efficiency.

The cooled strong absorbent solution then flows to a solution distribution system located above the absorber tubes and drips or is sprayed over the outer surface of the absorber tubes. The absorber and evaporator share a common vapor space at a pressure of about 0.1 psia. This allows refrigerant vapor, which is evaporated in the evaporator, to be readily absorbed into the absorbent solution flowing over the absorber tubes. This absorption process releases heat of condensation and heat of dilution, which are removed by cooling water flowing through the absorber tubes. The resulting weak absorbent solution flows off the absorber tubes and then to the absorber sump and solution pump. The pump and piping convey the weak absorbent solution to the heat exchanger, where it accepts heat from the strong absorbent solution returning from the generator. From there, the weak solution flows into the generator, thus completing the cycle.

Murat Bayramoglu
Refrigeration Chair

Grassroots Government Activities Committee (GGAC)

The following is from the ASHRAE's government affair update:

Letter from Manufacturers Backing Legislation on HFC Phase-Down

CEOs and Presidents of several manufacturers sent a letter to U.S. Senate and House committee leadership overseeing the U.S. EPA, which supports legislation that phases down the use of hydrofluorocarbons (HFCs), a type of refrigerant with high-Global Warming Potential (GWP). The letter was sent by more than 34 members of the Air-Conditioning, Heating, and Refrigeration Institute and the Alliance for Responsible Atmospheric Policy. The letter says that "Federal legislation phasing down HFCs represents a chance to put America first, and to keep American workers at the forefront of this important global industry."



DOE's EERE Office Publishes a Guide to Improve Resilience in Public Buildings

The Department of Energy's Office of Energy Efficiency and Renewable Energy's (EERE) published a guide in September titled How Distributed Energy Resources Can Improve Resilience in Public Buildings: Three Case Studies and a Step by-Step Guide. In the guide, you will find information about two tools DOE offers to provide assessments on the size and cost of onsite energy systems. Additionally, the guide explains how energy efficiency improvements can help reduce the overall costs of meeting resiliency goals. For more information, [click here](#).

New York Launches NYStretch Energy Code

The State of New York has launched the NYStretch Energy Code 2020, a statewide model building code that communities can voluntarily adopt to reduce energy consumption, operating costs, and greenhouse gas emissions. NYStretch Energy Code 2020 incorporates ANSI/ASHRAE/IES Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings. NYSERDA developed NYStretch for New York jurisdictions to meet their energy and climate goals by accelerating the savings obtained through their local building energy codes. For jurisdictions that adopt it, NYStretch will provide savings of roughly 11 percent over the 2020 Energy Conservation Construction Code of New York State (2020 ECCCNY) when that energy code is released by New York State Department of State. Additionally, NYSERDA developed a NYStretch toolkit that includes an estimated cost-benefit analysis for the most common new building construction projects, frequently asked questions, template legislation and more to assist municipalities in immediate adoption of NYStretch.

Andrew Blom

Grassroots Government Activities Chair

Membership Promotion

This month's meeting is our chapter's first membership promotion night, YEA night, as well as Student Activates Night. This is an excellent opportunity for all to network and make acquaintances. Please encourage any people associated with the HVAC&R community to attend this meeting. As always, you can join ASHRAE online at ASHRAE.org.

Being it's Student Activates Night, please let all students know that it is **FREE** and to have them attend. Knowing it is Student Activities Night, I would like to let our senior students know about the Smart Start Program. It is a great way for ASHRAE student members to continue receiving the many member benefits of ASHRAE after finishing college. Smart Start is a 3-year program that allows Student members to transfer to Associate grade membership at a rate that is recent-graduate friendly. It allows new graduates to pay only \$25 for the first year of associate membership after college, \$85 for the second and \$110 for the third. When moving from student to associate member, the participant is allowed access to all ASHRAE has to offer, including annual copies of the ASHARE Handbook, the ASHRAE Journal, and various other publications and services.

I would like to informally welcome our new members this month:

1. Bran Charles Coren
2. John Lahey, PE
3. Stephen M. Monez
4. Alejandro Centeno
5. Anthony Michael Tallerico

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



BOG Meeting Minutes

BOG September Meeting Long Island Chapter
September 10, 2019 / 5:00 PM / Location: Westbury Manor

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

President (Frank Paradiso) Chapter Operations [min-600/Par-1200] Total Points: 0

- Review Minutes.
- Newsletter: Newsletter and meeting notice separate.
Please have your articles to Liset by Monday October 21st.

Programs (James Hanna)

- Fundraising opportunities for cocktail hour sponsorship
- Suggestions for topics & presenters for the remaining programs open slots.
- Field Trip: Early thoughts with Membership committee
Sterilization Plant , May 2020
Brewery
Dry-aging Room

Chapter Technology Transfer (Matthew Catan) [min-550/par-1050] Total Points: (0)

- MBO's for the year?
- Work with James (Programs) for PDH certified presentations
- PDH Sign in sheet and Presentation Survey sheets
- Has the DL paperwork for November's presenter been submitted to the Region? Yes
- Distinguished Lecturer ideas for the year.
- November – Distinguished Lecturer Dr. Livchak

Financial Secretary (Matthew Vitrano) - Financial Report Received

- Develop Monthly finance report with using actual bank statement with all the credits and debits accounted for.
- Review at BOG meetings - monthly income and spending.
- Bill to bring financial book w/ tax forms. File tax extension.

Treasurer (Murat Bayramoglu)

- Account status?
- 2019-2020 Long Island Chapter Assessment (\$2,688.00) by December 31, 2019.
- CRC 2017 profit share still outstanding, review accounting to find paperwork and update amount if incorrect.
- All hands on deck to seek and fundraise sponsorships for chapter operations
- Invoice/update Newsletter Advertisements early in the chapter year (Andy with help from Matthew V. & Michael N.)

Government Affairs (Andrew Blom) [min-500/par-650] Total Points (0)

- Activities:
- Update local Politician list
- Public relations Andy Manos

BOG Meeting Minutes

Historical (Matthew Vitrano) [min-100/par-300] Total Points (0)

- Articles/interviews of past president's Potential life-members/fellows.
- Boards are going to be updated.

Honors and Awards Chair (Brian Simkins)

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

Research Promotion (Andy Manos, Michael Nigro, Matthew Vitrano) [min-800/par-1050] Total Points (0)

- Vendor Book status.
- 50/50, (other ideas to increase raffle purchases)
- Head Start on Full circle, 150 pp. (Please donate, thank you if you have donated already)
- MBO's for the year?
- RP Goal is \$20,400.

Refrigeration (Murat Bayramoglu)

- Northrop Grumman visit (Mike R)

Membership Promotion (Michael Razzano, Co-chairs, Elizabeth Jedrlinic, Michael Nigro) [min-500/par-800] Total Points (0)

- Membership Upgrades: Few new members this month
- Discussion/suggestions on increasing chapter meeting attendance & Increase chapter membership:
- November is membership promotion night, discussion on promotion thoughts.
- Plan a social event with YEA? Oktoberfests are here.

Planning for event at Plattduetsche Park in November

Student Activities (Elizabeth Jedrlinic) [min-500/par-800] Total Points (0)

- Stony Brook, Suffolk Community College, Hofstra, NYIT and others.
- Discuss which local universities/colleges student chapters are active and which can be re-activated.
- November is student activities night, any ideas about a brief update on info for Student members?
- Any ideas for social events that can include students
- Liz to begin working on presentation on STEM

YEA (Michael Nigro) [min-300/par-800] Total Points (0)

- MBO's for the year?
- 2019 Collaborate with Membership Promotion and Student Activities for Social events throughout the year in order to interest new chapter involvement, volunteers etc.
- November is YEA night, any updates for social events?
- Mike to put slides together for November meeting

Reception & Attendance (Matt Catan, Michael Razzano)

- Crushing it 2.0 :
Actively monitor membership list at reception.

Electronic Communications [min-250/par-650] (0)

- 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 volunteers to assist Bill and learn to maintain:
Email service / Weebly website / Linked In

Golf (Peter Gerazounis/Tom Fields)

- May 4th 2020: Cherry Valley Golf event.

New Business...

Next BOG Meeting: 11/12/10 @ 5:00 PM
Location: Westbury Manor

Join ASHRAE on Social Media!



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.

Follow us on [Twitter](#)



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



ASHRAE CERTIFICATIONS

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>

ADVERTISEMENTS**PLACE YOUR AD HERE****OR
HERE****OR
HERE****OR
HERE****OR
HERE**

AN AD OR BUSINESS CARD LISTING IS A GREAT WAY TO GET YOUR COMPANY'S NAME IN FRONT OF THE HUNDREDS OF LI CHAPTER MEMEBERS, AND TO HELP SUPPORT THE CHAPTER'S ACTIVITIES.

If you would like to place an advertisement in the Long Island Sounder, please contact our Chapter Financial Secretary, James Hanna @ 718.269.3768 or by email at finsec@ashraeli.org for further details. Thank you.

Rates (includes all issues September-June):

Business Card \$200

Half Page \$500

Triple Size \$350

Full Page \$800

ADVERTISEMENTS

**PLACE YOUR
AD HERE**

GB₁ GIL-BAR INDUSTRIES

MATT ROMANELLI
E-MAIL: MROMANELLI@GIL-BAR.COM

NEW YORK OFFICE
5 WEST 19TH STREET
NEW YORK, NY 10011
TEL: (212) 331-8272
FAX: (212) 331-8273

LONG ISLAND OFFICE
25 NEWBRIDGE ROAD
HICKSVILLE, NY 11801
TEL: (516) 216-4310
FAX: (516) 869-4042



631-491-1300 x16
FAX 631-491-8551

Ultimate Power Inc.

INDUSTRIAL BURNERS • BOILERS
GAS • OIL • BURNER SERVICE • A/C & INSTALLATION
NATIONAL BOARD CERTIFIED "R" STAMP REPAIR CO.
DDC CONTROL SYSTEMS
MECHANICAL CONTRACTORS FOR OVER 36 YEARS

RONALD MILANO

45 NANCY STREET
WEST BABYLON, NY 11704-1498

EMAIL: RMILANO@ULTIMATE-POWER.COM

Leonard Van Sicklin
President



Mechanical Services Inc.
• HEATING & AIR CONDITIONING •
• SHEET METAL • SERVICE •

440 Wyandanch Avenue
North Babylon, NY 11704
lv@anronac.com
www.anronac.com

Phone: 631-643-3433
Fax: 631-491-6983
Cell: 631-860-4349

== JAR ==

J. A. Robertson, PE
Mechanical Engineer
HVAC/Plumbing System Design

P.O. Box 4982
Richmond, Virginia, 23220
jar4d@alumni.virginia.edu
Licensed: DC/MD/VA

**PLACE YOUR
AD HERE**

**PLACE YOUR
AD HERE**

Frank D. Morgigno - President/CEO fm@atiofny.com

ATI Applied Technologies Of NY, Inc.
Manufacturers Representatives

90 Plant Ave. • Ste. 110 • Hauppauge, NY 11788
Tel: 631-331-0215 • Fax: 631-928-4625
www.atiofny.com

SIEMENS

Industry

Siemens Industry, Inc.
Building Technologies Division

50 Orville Drive
Bohemia, NY 11716
USA

Tel: +1 631 218-1000 Ext. 214
Fax: +1 631 218-1009
Mobile: +1 516 924-2913
vincent.catalano@siemens.com
usa.siemens.com/buildingtechnologies

Vincent Catalano, C.E.M.
Account Manager

**chimney
DESIGN
solutions®**

134 W. 29TH ST., 11TH FL., NY, NY 10001
800-685-7077 FAX: 212-685-4777
chimney design solutions.com

**PLACE YOUR
AD HERE**

ADVERTISEMENTS

**PLACE YOUR
AD HERE**

Advertising Rates:

Business Card **\$200**

Triple Size **\$350**

Half Page **\$500**

Full Page **\$800**

