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### January Meeting

Tuesday January 10, 2023

#### Main Meeting Topic:

Increase DOAS Performance  
Through Liquid Subcooling

#### Presenter:

Peter Fung

Director of Sales  
Addison HVAC

#### Tech Session Topic:

Lessons Learned (Refrigerant For AC Systems)

#### Presenter:

Steven Tafone

VP of Engineering  
Suffolk Construction

### Register Here!

#### Where:

Embassy Suites by Hilton Waltham  
550 Winter Street  
Waltham, MA 02451

#### Time:

4:00-5:00 BOG Meeting (all are welcome!)  
5:30-6:15 Tech Session  
6:30-7:00 Plated Dinner  
7:00-8:00 Main Meeting (1 PDH)

#### Cost:

Members—\$50  
Non Members—\$60  
ASHRAE Student Members with RSVP—Free



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## BOSTON CHAPTER OFFICERS 2022-2023



## President's Message

Hope everyone had a wonderful Christmas and happy New Year!

The Boston Chapter's December meeting was our annual joint meeting with ASPE, and it was again well attended. I would like to also thank all attendees at the December meeting and a special thanks to the ASPE group for making the joint meeting a success. At this point, we are halfway through our ASHRAE calendar year. I hope you have enjoyed the programs we have put together so far. Here are some events we have lined up in the upcoming months:

- January: Liquid Subcooling; Refrigeration
- February: DEI and ASHRAE; Hydronic Radiant Heating/Cooling (ASHRAE DL)
- March: Geothermal Systems; Well Drilling – Joint Meeting with AEE
- April: Cooling Towers; Tower Piping Practices
- May: Energy Modelling (ASHRAE DL); History – Past President's Night
- May: Annual Golf Tournament

Next month's meeting will be held on January 10th at Embassy Suites in Waltham, MA. Please join us in welcoming our meeting speaker Peter Fung (Addison-HVAC). The meeting will focus on Increasing DOAS performance through Liquid Sub-cooling. We will also have Steven Tafone (Suffolk Construction) presenting a tech session on Refrigeration.

I would like to end by thanking all our sponsors that have supported us through 2022. ASHRAE Boston chapter has made corporate sponsorship opportunities available for 2023. Please contact Bob Persechini <Bob.Persechini@nv5.com> for more information. We look forward to your sponsorship, which will support Boston chapter greatly.

For more information visit the ASHRAE Boston website and follow us on LinkedIn. As always, we appreciate your feedback. Please email me at vineet.nair@mail.ashrae.org or any of our volunteers with questions or concerns.

Thank you for your continued support of ASHRAE and ASHRAE Boston Chapter,  
Vineet Nair  
ASHRAE Boston Chapter President 2022-2023



President  
Vineet Nair  
CRB



**There are many reasons to pursue certification. Find your reason.**

**Employers and Employees- are you interested in learning more about the Value of ASHRAE Certification?**  
Download an **"Executive Summary"** of 2021 survey results today.

### YEA Update



**YEA**

Be on the lookout for the next event in February as we will take on Darts at the Flight Club in Seaport. There will be limited space available so, please pay attention to your email.

Please reach out if you have any questions or suggestions about this upcoming year.

Matt Hallock  
Mary Kandaras

matt@trumbullcampbell.com  
Mary.Kandaras@BuroHappold.com

## January Meeting

### Tech Session: LESSONS LEARNED (REFRIGERANT FOR AC SYSTEMS)

This month’s tech session will be “Lessons Learned” by Mr. Tafone during his 45+ years in the HVAC&R industry on refrigeration for AC systems. He will be discussing the refrigeration cycle for AC systems, the various components including compressors, condensers, hot gas by-pass, etc. He will also be discussing using chillers vs. DX for DOAS and heat pumps. The meeting will be a good opportunity to see what works and what doesn’t work and may help prevent problems with your next design project!

Presenter: Steven Tafone, P.E.

Mr. Tafone has over 40 years of experience in the HVAC and construction fields. He is presently employed at Suffolk Construction Inc., a construction management firm, as Vice President of Engineering. He is a past president of the ASHRAE Boston Chapter. Additionally, he has been teaching various technical courses for over 15 years. Mr. Tafone is a Registered Professional Engineer in MA & NY, has a CFC Universal Certification, LEED AP and holds a MA licenses as a Refrigeration Technician. He received his BSME from Pratt Institute.

### Main Presentation: INCREASE DOAS PERFORMANCE THROUGH LIQUID SUB-COOLING

Peter will discuss dedicated outside air systems and ventilation requirements from ASHRAE 62. In addition, learn about how liquid subcooling increases DOAS unit performance without the need for larger compressors, while yielding higher EER and smaller footprint / electrical.

- Introduction
  - What is DOAS, Dedicated Outdoor Air System
  - ASHRAE Standard 62 & Thermal Comfort
- Liquid SubCooling & DOAS
  - Impact on Performance
  - Impact on Efficiency, EER
  - Application Guide
- Wrap Up
  - Q&A



Peter Fung  
Director of Sales  
Addison HVAC

Presenter: Peter Fung

Peter Fung is the Director of Sales for Addison-HVAC , an Orlando, FL based manufacturer of Dedicated Outdoor Air Systems offering complete packaged and split systems with dx cooling with integrated condensing units, air cooled and water cooled. Additionally, with today’s De-Carb and Electrification goals, Addison offers Frostshield, an air source heat pump unit that does not require defrost.

Peter’s main role is sales growth, product promotion and education to our field sales offices, consulting engineers, mechanical contractors, owners and architects.

Prior to Addison Peter has represented Arctic Chiller Group, a manufacturer of Oil Free Magnetic Bearing Chillers, and modular chillers.

Prior to Arctic, Peter worked with ClimateCraft and Nortek Air Solutions and has 18 years of experience in custom air handling equipment design and applications with a high focus on heat and energy recovery heat exchangers for load reduction, humidity control and DOAS, dedicated outdoor air systems, for applications in education, university, healthcare, manufacturing, and office space.

Author and certified/registered presenter of continuing education course(s) through PIE, Practicing Institute of Engineering in New York. Courses are: Enthalpy Wheels: Outside Air Correction Factor, Energy Recovery Fundamentals, and Dedicated Outdoor Air Solutions, Fan Arrays for Institutions, and Reducing Air Handling Unit Energy by Optimizing Fan Array Operation and the Design of Modular Chillers with Heat Recovery.

## Presidential Award of Excellence



### Boston Chapter - 2022-2023

Chapter Members	Membership Promotion Points (1600)	Student Activities Points (800)	Research Promotion Points (1050)	History Points (300)	Chapter Operations Points (1200)	Chapter Technology Transfer Points (1050)	Government Affairs Points (1000)	Electronic Communications Points (700)	YEA Points (900)
<u>1002</u>	<u>1365</u>	<u>515</u>	<u>750</u>	<u>245</u>	<u>310</u>	<u>200</u>	<u>0</u>	<u>0</u>	<u>1075</u>

# Historical News

By: Eric Edman - BR+A



Eric Edman  
Historian

Hello fellow members,

From the history desk, it might not come as a surprise to you that all of our committee groups earn "points" these are call PAOE points. In the officer circles, we talk about maintaining PAR with PAOE points. I have to say as history chair, we would meet PAR by just publishing a monthly article and having one meeting of historical nature. Kind of bland in my opinion. We try to make history a lot more fun than that. We need your help. Your suggestions have fueled many a quest for some historical items to be researched. You can share your history questions with us anytime. You can remain anonymous as well. Feel free to drop a dime, or scratch a letter, send a fax, or an email. Texts can work just as well. we do it all. Send them in!!!

I happen to be reading a book on the building of the Panama Canal. Very interesting start to it all. Something I was always interested in. There are a couple of local facts that come from the Panama Canal construction. Some of the largest guns made in America reside in Panama. They were made at the Army Arsenal in Watertown and shipped to Panama. There is a picture in the Army Arsenal Museum.

A luxury item during the building of the canal was ice in your drinks. Yes friends, that ice came from the Boston and Panama Ice Company which had ties to the Ice King himself, Mr. Fred Tudor of Boston. You can read about that a bit in Oct 2020 issue of Northeastaire.

In short, ice from Boston made its way down south to keep the workers cool and hydrated. I could just imagine a cold Coke on a hot day digging must have been truly luxury to many back when.

We send our best to all of you in 2023,  
Eric



*The canal guns were a very big item. Not shipped by Amazon but almost to the Amazon*

## Welcome New ASHRAE Boston Members

We welcome those that joined our  
chapter this summer!

- Jesse Coiro
- Siena Taylor
- Ethan Moore
- Ted Jones
- Ross Bonner
- Sidney Holman
- Ken Carroll
- David Ferber
- Arny Leroy

## Government Affairs

By Ben Pignatelli

### The Massachusetts Commission on Clean Heat has issued its Final Report

The Commission was created by Governor Charlie Baker’s Executive Order 592 and worked throughout 2022 to develop recommendations on the strategies and policies to achieve deep emissions reductions from the use of heating fuels in the Commonwealth. The Commission’s recommendations offer a framework for a long-term decline in emissions from heating fuels as well as policy directions that seek to accelerate the deployment of energy efficiency programs and clean heating systems in new and existing buildings, and transition current distribution systems to clean energy, while doing so as equitably as possible.

### \$100 Million Available for Massachusetts Schools to Make HVAC and Air Quality Improvements

The Baker-Polito Administration announced the availability of \$100 million in grant funding for school districts to improve ventilation and indoor air-quality to support healthy learning environments. The grants will be targeted to schools with high concentrations of economically disadvantaged students, English language learners and communities disproportionately impacted by the COVID-19 pandemic. The funding is available through the American Rescue Plan Act (ARPA) bill and authorized by Chapter 102 of the Acts of 2021.

Ben Pignatelli  
Government Affairs  
c001gac@ashrae.net

## Battle Rankings

**Membership Battle Update - These employers have had the most new members join since July 1st.**

The graphic displays two 'T-FIRST' winners, MIT (Massachusetts Institute of Technology) and WSP, each with a gold medal. Below them, a group of organizations including AHA (Consulting Engineers), ADC, CONSIGLI (Est. 1912), APA (HVAC Technologies), and HARVARD UNIVERSITY are listed as 'THIRD' place winners.



## ASHRAE Honors and Awards

Did you know that most ASHRAE members meet the criteria for an award either on the local, regional or society level. Each month I will be highlighting honors and awards that you the member can pursue. Speaking of member, the main criteria for any awards is that you are a full member, so if you have never upgraded from an associate member to full member that is the first step that will be needed to be done. It is a form you can get online to upgrade your membership, there is no financial impact and will entitle you to other full membership perks.

Take a look at the presentation for an overview of what is available for honors and awards . **Click the slide below!**

Any Questions please reach out to me.

Bob Persechini

[bob.persechini@nv5.com](mailto:bob.persechini@nv5.com)



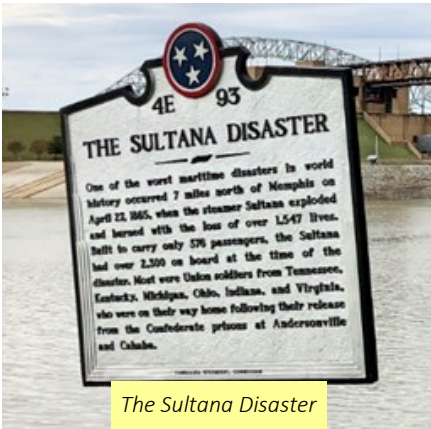
# History Special Feature Eric Edman



Eric Edman  
Historian

## Steam Boiler Explosion... Hundreds Killed and wounded.... *That would be headline news for a few days.*

When was the last time you heard of a boiler explosion? I'll bet none of you have ever heard of such a thing. Well, in the past there were quite a few accidents. So many that by law, we have licensed boiler operators in Massachusetts. Firemen were required to train as boiler operators and still are.



The Sultana Disaster

After any disaster, engineers find ways to prevent them from ever occurring again. Their solutions sometimes worked, and other times did not. *Ever watch engineering disasters on television?* You may recall in last month's column we noted HVAC went everywhere from a submarine to the space shuttle. That my friends, is opportunity. In this month's issue, we connect HVAC to boats, as the boilers on board a steamship were operated by firemen who are related to us within the HVAC trades.

Some of you ask me, where in the world do I get these monthly historical articles? Most of them come from just travelling around. I do consider myself fortunate to have travelled a lot, including cool Memphis, TN. Memphis included a visit to Graceland, the home of Elvis Presley, which was why I went there. One morning on a walk along the banks of the mighty Mississippi River, I stumbled upon and read this historical marker. *I often wonder how many people stop and read these historical markers.* This one perked my interest as a boat owner.

I am going to mention to you this small historical marker marks the number one maritime disaster in US History. It came at a time when we did not need disaster to strike. Disaster struck upon a bunch of men who did not deserve to perish so horribly. Most ships at this time were steam engine driven via boilers. The operation of which was always done by firemen and a chief engineer who reported to the captain.

So, the story goes back to a dark time in our history, the US Civil war, a time when brother fought brother. Many who were captured endured unimaginable prison conditions including disease, starvation, & cold. One small cut could lead to an infection and even death. Most Union prisoners were sent to Andersonville and Cahaba. After the war had ended, many of the survivors were being sent home, north or "up" the river. Many boats took the opportunity to cash in on a quick buck and transport men up the river. The Sultana was one such boat. Built in the mid 1860's as a wooden sidewheeler for the cotton trade, she could hold around 300 people. In April 1865 she had taken on 2100 men, former POWs in the south, to where they were from-and home.



Sultana at Helena, Arkansas

The boat developed boiler problems and the chief engineer suggested the boilers needed to be overhauled. The ships captain ordered cheaper repairs, which eventually led to the boiler explosion. *Relief valves may have stopped this disaster.* Disaster struck and most men aboard the vessel, including the captain, perished in the accident. Some The boat sank 7 miles south of Memphis, near the marker that you see in the photograph.



Sultana on fire, from Harper's Weekly

The disaster was overshadowed by another disaster just the day before, the assassination of President Lincoln. To add insult to injury, nobody was ever held accountable for this tragedy. Quite possibly, as the captain went down with the ship, there was nobody to blame. The remains of the Sultana are still stuck in the earth where she sank. However the river does change course. Today the remains are inland a few miles from the river of today.

As we mentioned earlier, ship builders did learn from this event. Especially after two other similar ships had similar explosions. There were changes made in the industry to prevent these disasters. The metal used to build the boilers was eventually discontinued, as it grew weak in repeated use. Tubular boilers were discontinued, as they were difficult to clean with the turbid Mississippi River water. Many advances in boiler construction came from steamboat and

steam engine usage. These machines had varying operating conditions depending upon where they were used. Today, something most of us consider at the design time is what is the water quality going to be like. Boilers in one municipality may have quite different water than another which will factor into proper selections of boilers.

If there is one message for me to pass along to you reading this article, it is to think about water, water quality, the operating conditions your design will operate at, and the skill of the maintenance crews. Even electric boilers have similar considerations. Hopefully this short bit of history gets you thinking.

We certainly look forward to seeing you again at our monthly meetings. Do not be a stranger, your chapter needs your support. Get out of your office, get off your chair, and join in the fun. We liked you virtually, and like you more in person. Until the next meeting, we wish you well in 2023.

— Eric



# 2023 ASHRAE WINTER CONFERENCE

ATLANTA, Feb 4-8 | AHR Expo, Feb 6-8

## REGION I, II & III DINNER

SUNDAY FEBRUARY 5, 2023

6:00 PM—9:00 PM

Sponsors Are Welcomed



101 Marietta Street  
Atlanta, GA 30303  
www.thriveatl.com



### PASSED HOR D'OEUVRES

- Chicken Pot Stickers
- Sweet & Sour Pork Spring Rolls
- Corn Crab Fritters

### PLATTERED HOR D'OEUVRES

- Beet Salad
- Hummus Two Ways

### CARVING STATION

- Organic Chicken Breast
- Herb Striploin  
(mashed potatoes and season vegetables)



**\$60.00 / Person**

### CONTACT INFORMATION

REGION I—ASHLEY KELLER

E: [keller@nepsi.com](mailto:keller@nepsi.com) | Ph: (860) 917-4392

REGION II—DANNY CASTELLAN

E: [danc@uwindsor.ca](mailto:danc@uwindsor.ca) | Ph: (519) 819-5585

REGION III—SHERRY ABBOTT-ADKINS

E: [sadkins\\_a2esg.com](mailto:sadkins_a2esg.com) | Ph: (443) 977-9741#

**Cash Bar  
Mixed Drinks**

**For Payment Visit  
Baltimore Chapter**

<https://ashrae-balto.org/meetinginfo.php?id=94>

**RESERVE YOUR SPOT AND PAY BY  
JANUARY 20, 2023.**

## Register as our 2023 Corporate Sponsors!



### ATTENTION!

All corporate sponsors need to register for the 2023 Calendar Year!

Please contact

**Bob Persechini**

*bob.persechini@nv5.com*

For more information



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Please contact

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*bob.persechini@nv5.com*

For more information

# EVENTS CALENDAR

Date	Event	Location	Event Information
<del>Sept. 13, 2022</del>	<del>September Meeting</del>	<del>Doubletree Boston-Cambridge</del>	<del>Topic: COMPRESSOR TECHNOLOGY Presenter: Mark W. Fly, PE</del>
<del>Oct. 11, 2022</del>	<del>October Meeting</del>	<del>Embassy Suites Waltham</del>	<del>Topic: DECARBONIZATION OF EXISTING BUILDINGS Presenter: Joe Dussault &amp; Jesse Stallions</del>
<del>Nov. 2, 2022</del>	<del>Product Show</del>	<del>Marriott Quincy</del>	<del>Details on Page 4</del>
<del>Dec. 7, 2022</del>	<del>YEA Social</del>	<del>Night Shift Brew</del>	<del><a href="#">Details here.</a></del>
<del>Dec. 13, 2022</del>	<del>December Meeting</del>	<del>Doubletree Boston / Cambridge</del>	<del>Topic: HEAT EXCHANGERS Presenter: Tracey Putnam</del>
Jan. 10, 2023	January Meeting	Embassy Suites Waltham	Topic: LIQUID SUBCOOLING Presenter: Peter Fung
Feb. 15, 2023	February Meeting	Doubletree Boston / Cambridge	Topic: DEI & ASHRAE: DOES IT REALLY MATTER? Presenter: Devin Abellon, P.E.
Feb. 21, 2023	YEA/DiA Joint Social	TBD	Details to follow.
Mar. 14, 2023	March Meeting	Embassy Suites Waltham	Topic: GEOTHERMAL SYSTEMS Presenter: Andrew Kozak, P.E.
Mar. 2023	YEA Event	TBD	Details to follow.
Apr. 11, 2023	April Meeting	TBD	Topic: COOLING TOWERS Presenter: TBD
Apr. 2023	DiA Event	TBD	Details to follow.
May 9, 2023	May Meeting	TBD	Topic: ENERGY MODELING Presenter: Drew Crawley
May 15, 2023	ASHRAE Golf Outing	Granite Links	Details to follow.
June 2023	YEA Event	TBD	Details to follow.

[Boston ASHRAE Facebook](#)



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\*The calendar is subject to changes, please see the [ASHRAE Boston Chapter website](#) for the most up to date information!

Boston Monthly Meetings	ASHRAE Society— <a href="#">Complete List</a>
Boston Chapter Special Events	YEA Events
DiA Events	Other Societies Events

# BOSTON CHAPTER OFFICERS



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Vineet Nair  
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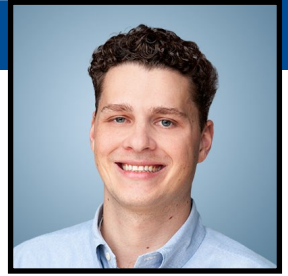
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## COMMITTEES

<p><b>Attendance</b> Drew Brown FIA Inc.</p> <p><b>Communications, Web, &amp; Publicity</b> Ben Kleine-Klacht CMTA c001web@ashrae.net</p> <p><b>Diversity in ASHRAE</b> Amy Gebhardt Emerson Swan c001bog2@ashrae.net</p> <p><b>Golf Outing</b> Matt Hallock APA Benjamin Almond HTS</p> <p><b>Government Affairs</b> Ben Pignatelli Energy Solutions c001gac@ashrae.net</p>	<p><b>Historian</b> Eric Edman BR+A c001his@ashrae.net</p> <p><b>Honors &amp; Awards &amp; Nominating</b> Bob Persechini NV5 c001ha@ashrae.net</p> <p><b>Newsletter Editor</b> Jake O'Donnell FES jake@fesone.com</p> <p><b>Membership Promotion</b> Timothy Driscoll Siemens c001memc@ashrae.net</p> <p>Josephine Wendroth CMTA jwendroth@cmta.com</p>	<p><b>Refrigeration</b> Steven Tafone Suffolk Construction c001ref@ashrae.net</p> <p><b>Research Promotion</b> Will Fisher FIA, Inc. c001cttc@ashrae.net</p> <p><b>Special Events</b> Amy Gebhardt Emerson Swan c001bog2@ashrae.net</p> <p><b>Student Activities &amp; Scholarship</b> Steven Rosen Jacobs steven.rosen@jacobs.com</p> <p><b>Sustainability</b> Kiersten Washle CMTA c001sus@ashrae.net</p>	<p><b>Technology Transfer</b> Lance Brown AKF c001sec@ashrae.net</p> <p><b>Young Engineers in ASHRAE</b> Matt Hallock APA c001yea@ashrae.net</p> <p>Mary Kandaras Buro Happold</p> <p><b>Corporate Sponsorships</b> Bob Persechini NV5 c001ha@ashrae.net</p>
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**Professional Development**  
Professional Development Chair Needed!

Positions are open!  
Please contact Chapter President at c001@ashrae.net if you are interested!