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NOVEMBER MEETING

- When:** November 10, 2020
5:30 —7:45 pm
- Where:** [GoToMeeting](#) ← Sign up link here!
- Details:** Tech Session (5:30—6:30) **1.0 PDH**
Presenter: Thomas Klein, MBA
Topic: Isothermal Humidification *
- Main Meeting (6:45—7:45) **1.0 PDH**
Presenter: Paul Bemis
Topic: Using CFD Modeling to Predict the Transmission of COVID

* If you weren't able to see Mr. Klein's tech session presentation during the October meeting you have another chance! Because of Boston area technical issues, Mr. Klein was unable to present in October and will give his presentation this month instead!

2021 ASHRAE Winter Conference Now Virtual:

2021 AHR Expo Cancelled

The 2021 AHR Expo that was scheduled for January 2021 will now take place virtually February 9-11. The virtual conference will have live, pre-recorded, and on-demand sessions. Additional information about presentations, meetings, and social events (all virtual) will be available at ashrae.org/Chicago.



November Meeting - Tuesday November 10th, 2020

Location GoToMeeting Virtual Webinar—Registration Link [Here](#)
Time 5:30—7:45 pm

- 5:30—6:30 pm Tech Session **1.0 PDH**
- 6:30—6:45 pm Break / Intermission / Main Meeting Run-Over-Time
- 6:45—7:45 pm Main Meeting **1.0 PDH**

Tech Session **Presentation:** Isothermal Humidification
1.0 PDH **Presenter Bio:** Thomas Klein, MBA is the Eastern Regional Manager for Condair Inc. (formerly Nortec Humidity) and holds an MBA from Penn State University in International Business and Logistics. With over three decades of experience and employment with some of the most known and respected consumer and industrial corporations in the world, including 3M, GE and Beiersdorf AG, he brings a passion to help his clients and end customers uncover needs and solve problems for the benefit of all parties. He is well versed in a multitude of applications and utilization of humidification, energy reduction and evaporative cooling within HVAC, Data Center and industrial markets.



Thomas Klein
Condair Inc.

Presentation Overview:

1. Why Humidify
2. Types of Isothermal Humidifiers
3. Steam Transport/Transmission
4. What Happens at the Point of Humidification
5. Humidity Control of the System

Main Meeting **Presentation :** Using CFD Modeling to Predict the Transmission of COVID
1.0 PDH **Presenter Bio:** As the President and CEO of Applied Math Modeling, Paul Bemis brings a wealth of experience and knowledge to the team with over 30 years of involvement in the high technology market. Paul's unique background and education provides an exceptional basis for the pursuit of new and creative ways to solve complex engineering simulation problems. With an undergraduate degree in Mechanical Engineering (UNH), and graduate degrees in both Electrical Engineering, and Business (Northeastern), Paul is well positioned to understand both the technical aspects of product development and predict the market opportunity created by changes in technology.



Paul Bemis
Applied Math Modeling

While at Apollo Computer Inc. and Hewlett Packard Inc., Paul was heavily involved in the development and market success of high performance RISC (Reduced Instruction Set Computer) based multiprocessor systems used in markets ranging from high energy physics to automotive and aerospace design. As the Technical Server Business Line Manager at HP, Paul gained extensive knowledge in the application of HPC systems in leading-edge markets such as medical imaging, structural mechanics, computational fluid dynamics, seismic interpretation, and automotive design. His subsequent move into the software industry as the Vice President of Marketing for both ANSYS and Fluent continued to expand his knowledge of markets and opportunities in the engineering simulation marketplace.

Today Paul is applying all of his experience and knowledge to the CoolSim product line, which works to break the ease-of-use and cost barriers that have constrained the widespread use of CFD-based modeling in the data center design and analysis market. Paul is a member of the ASHRAE TC 9.9 and TC 90.4 Technical Committees that focus on data center environmental and energy specifications respectively. Paul is also the President-Elect of the New Hampshire Granite State ASHRAE Chapter.

Meeting info continued on next page!

November Meeting - Tuesday November 10th, 2020

Presentation Overview:

In this webinar Paul Bemis will be discussing the issue of airborne transmission of COVID-19 and how CFD modeling can be used to both understand and predict the outcome of changes to the indoor environment. Paul will begin this discussion by reviewing recent “super-spreader” events that have occurred, and what the common parameters in those cases are. He will then review CFD modeling results on a variety of cases, including some done by his company as well as from others in the industry. The presentation will incorporate a variety of multi-media material including video and 3D airflow representations to help explain the physical attributes of indoor airflow. Participants in this webinar will witness how CFD modeling can provide the means for visualizing airflow pressure, velocity, as well as the concentration of pathogens in the air.

Notes

To RSVP [CLICK HERE](#)
Meeting is free to all attendees

President's Message

Hi Everyone,

Thank you all who attended our virtual meeting on October 13th! We had a fantastic presentation by Dr. Stephanie Taylor, MD “Engineers Are the Physicians of the Future”. Her presentation stressed the importance of maintaining proper humidity levels in the indoor environment. Unfortunately, we had some technical difficulties with the GoToWebinar platform and our meeting was abruptly cut short before our technical presentation was given. We have moved this presentation to the November 10th meeting. Thomas Klein’s presentation on Isothermal Humidification will be given during the technical session of the November meeting held on the 10th.

Our main meeting presentation, “The Role of HVAC Systems in the Transmission of COVID-19” will be given by Paul Bemis on November 10th. More information on our November meeting is above and on the previous page as well as on the chapter website. This meeting will be virtual and in the same format we have been using with GoToWebinar. Both the tech session and main meeting are PDH approved, so please add your license number when you register so we can make sure you receive credit.

If you are interested in volunteering with the Boston chapter, please get in touch with me and we will have you join our planning meeting to see how you can get involved.

Please email me at c001@ashrae.net or contact any of the volunteers with questions, concerns, or suggestions to help improve our chapter.

With gratitude,



Deanna Adkison
ASHRAE Boston Chapter President



Deanna Adkison
(Fitzemeyer & Tocci)
Boston Chapter President

EVENTS CALENDAR

Date	Event	Location	Main Meeting	Tech Session
November 10, 2020	November Meeting	Online	Paul Bemis—The Role of HVAC Systems in the Transmission of COVID-19 1.0 PDH	Thomas Klein—Isothermal Humidification (6:45—7:45) 1.0 PDH
December 8, 2020	December Meeting w/ ASPE	Online	Refrigeration Fundamentals—Allison Bookstein 1.0 PDH	Piping Fundamentals—Jeff Camuso
January 12, 2021	January Meeting	TBD	David Bennett—ASHRAE Standard 170 and Atomizing Humidification Systems	Brian Soderholm—Ensuring Proper Water Quality for Humidification Systems
January 2021	DiA Event	TBD	TBD	
February 9, 2021	February Meeting	TBD	Steve Tafone—Controls Fundamentals	Eric Edman—Chapter History
March 9, 2021	March Meeting	TBD	Cogen	
April 13, 2021	April Meeting	TBD	In Person Tour (if feasible)	
May 11, 2021	May Meeting	TBD	Installation of Officers	
June 7, 2021	Golf Outing	Granite Links		

** The dates in this calendar should not change but the events may change as we get closer to the events. As always, see the chapter website for the

[Boston ASHRAE Facebook](#)

[Boston ASHRAE Twitter](#)

[Boston ASHRAE LinkedIn](#)



Join and check the ASHRAE Boston Chapter LinkedIn page for the most up to date information!

Boston Monthly Meetings	ASHRAE Courses— Complete List
Boston Chapter Special Events	YEA Events
DiA Events	Other Societies Events

New Member Welcome!

On behalf of everyone at Boston ASHRAE, please help us in welcoming the newest members of our Chapter!

- | | |
|-------------------|-----------------------|
| - Jeffrey Raymond | - Mustafa Alkhatatbih |
| - Donal Lyons | - Daniel Smith |
| - Belinda Vuto | - William Scholl |
| - Daniel Swanson | |

We are always looking for new members to grow our community. If any current members of the Boston ASHRAE chapter are looking to get more involved with the operations of the chapter, the BOG, or just looking to lend a helping hand, we are always looking for volunteers. Please reach out to Lucas Rowe (Membership Promotion Chair at mem01@ashrae.net) for any info on how you can get involved with Boston ASHRAE!

Thank you,
Lucas

EMPLOYMENT ADS FOR SALE!

Is your company hiring? Your employment ad could be here next month! Purchase an employment ad through the Boston ASHRAE Chapter and get your ad seen by all of our readers and members.

\$500 gives you one full month of advertising. ASHRAE Boston will post your employment ad on the Chapter website for one month, on all social media platforms one time (LinkedIn, Twitter, Facebook), and print a full page ad in one month of NorthEastAire which is sent by email to over 1,000 members!

Reach out to the Newsletter Editor, Allison Bookstein, at northeastaire@gmail.com if you have questions or want to purchase an employment ad.



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Current open positions in Boston, MA:

BIM Manager






HVAC Department Head

Senior Project Manager (MEP)

Current open positions in Andover, MA:

Electrical Engineer

Mechanical Engineer

 <p>#27 Top 500 Design Firms 2020</p>	<p>TOP RANKED #1 2020 HOT FIRM ZWEIG GROUP</p>	<p>#60 Top 150 Global Firms List 2020</p> 	<p>Commissioning #12 Top 25 GIANTS 2019</p> 
<p>FORTUNE #20 Fastest Growing Companies 2019</p>	<p>MEP GIANTS Top 100 #19</p> 	<p>BD+C #5 Top 40 Engineering Architecture Firms 2019</p>	<p>100 LOCATIONS WORLDWIDE 4,000 EMPLOYEES 1,500 TECHNICALLY LICENSED</p> 

Research Promotion

Dear ASHRAE Members,

Our research promotion goal for 2020-2021 is to raise \$27,300 for ASHRAE. We have raised \$920 so far this year.

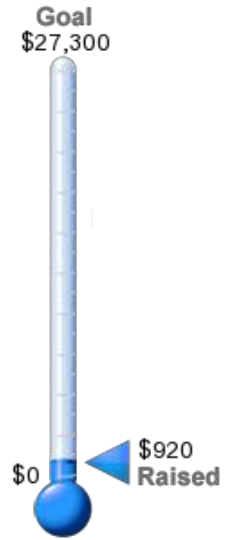
You can start helping ASHRAE reach our goals by donating online at www.ashrae.org/donate. Let me know if you are interested in donating in another way other than online. We can always accept donations at upcoming meetings as well. Please contact me with any other questions you may have or if you would like to be directed to additional resources.

Thank you!

Will Cunningham

2020-2021 Research Promotion Chair

c001rp@ashrae.net



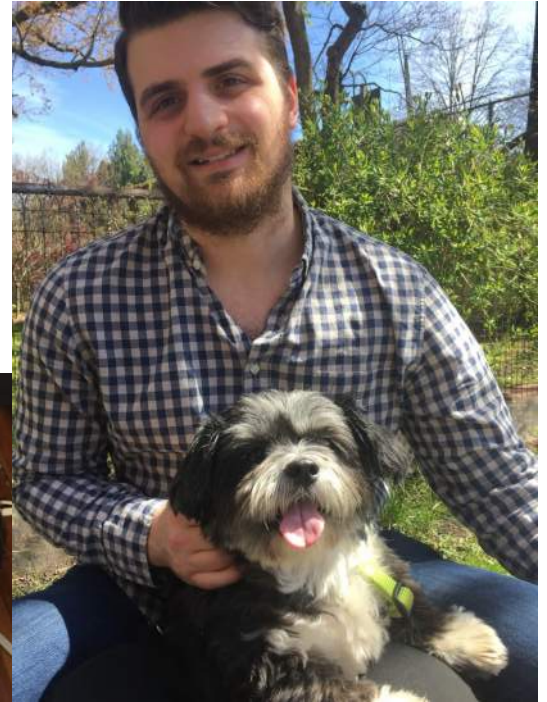
NOVEMBER PET OF THE MONTH!

Champ!

Champ is a “COVID rescue” who arrived at his home in April of this year in time to quarantine with his new humans! He is about 8-9 months old now and loves people, walks, squeaky toys, and playing fetch (on his own schedule). Champ was obese from abuse when he arrived home but has dropped 20% of his bodyweight is now only considered overweight. He is now energetic, goes on frequent hikes, and always greets you when you get home! Champ belongs to ASHRAE Boston’s President Elect, Will Cunningham.

Nominate your pet by emailing a picture (or a few) and small bio to northeastaire@gmail.com!

(Please, I really want to meet your pets.)



Presidential Award of Excellence



Boston Chapter - 2020-2021

Chapter Members	Membership Promotion Points	Student Activities Points	Research Promotion Points	History Points	Chapter Operations Points	Chapter Technology Transfer Points	Government Affairs Points	Electronic Communications Points	YEA Points
<u>1000</u>	<u>500</u>	<u>150</u>		<u>230</u>	<u>60</u>			<u>580</u>	<u>875</u>



DOE Plans 10 Virtual Sessions for the Solar Decathlon

The U.S. Department of Energy (DOE) is hosting a series of educational programs on various aspects of the [Solar Decathlon](#). For more information on these free webinars, click on the links below:

- [A Virtual Hands-On Energy Workshop for Families](#) | Wednesday, November 18, 2020, 1–2 p.m. EDT
- [Solar Student Leaders of Tomorrow Showcase](#) | Wednesday, December 16, 2020, 1–2 p.m. EDT
- [Resilient Home 411: Strategies to Weather and Recover from Natural Disasters](#) | Wednesday, January 20, 2021, 1–2 p.m. EDT
- [Zero Energy Ready Homes: New and Growing Fast](#) | Wednesday, February 17, 2021, 1–2 p.m. EDT
- [The Future of Solar: A Tour of Cutting-Edge Solar Research with the U.S. Department of Energy](#) | Wednesday, March 17, 2021, 1–2 p.m. EDT
- [Solar Decathlon Build Challenge Team House Tour](#) | Friday, April 16, 2021, 1–2 p.m. EDT
- [Winning Solar Home - The DOE Solar Decathlon Build Challenge Winners](#) | Wednesday, May 19, 2021, 1-2 p.m. EDT



Will Fisher
Government Affairs
c001gac@ashrae.net

Historical News

By: Eric Edman - BR+A

This is a strictly a mathematical viewpoint and it goes like this:

What Makes 100% ?

What does it mean to give MORE than 100%?

Ever wonder about those people who say they are giving more than 100%?

We have all been to those meetings where someone wants you to give over 100%.

How about achieving 103%?

What makes up 100% in life?

Here is a little mathematical formula that might help you answer these questions:

If:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Is represented as:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26.

Then: H-A-R-D-W-O-R-K

$$8+1+18+4+23+15+18+11 = 98\%$$

And K-N-O-W-L-E-D-G-E

$$11+14+15+23+12+5+4+7+5 = 96\%$$

But, A-T-T-I-T-U-D-E

$$1+20+20+9+20+21+4+5 = 100\%$$

And, B-U-L-L-S-H-I-T

$$2+21+12+12+19+8+9+20 = 103\%$$

AND, look how far ass kissing will take you.

A-S-S-K-I-S-S-I-N-G

$$1+19+19+11+9+19+19+9+14+7 = 118\%$$

So, one can conclude with mathematical certainty, that while Hard work, and knowledge will get you close, and Attitude will get you there. It's the Bullshit, and Ass Kissing that will put you over the top.

Now you know why Politicians are where they are! Have you ever seen a better explanation than this formula? How true it is!

We always look forward to seeing you at our monthly meetings.

Eric Edman

c001his@ashrae.net



Eric Edman
Historian

History Special Feature

Think of your job, and how easy you have it. You have access to published books, design guides, computers, and all the other electronic gadgets that aid in the control of the flow of liquids— things as simple as pumps moving water. Now consider if these were not available. How would you design without? How about using only renewable energy. Solar, wind, water, and gravity. These were the challenges our forefathers faced and their ingenuity is incredible.

The earliest use of water was agricultural. In Mesopotamia, the hanging gardens of Babylon was an engineering feat. They took advantage of, and used water power. They grew plants in the desert as high as 350 feet above the river level using water wheels to lift the water and gravity to let it flow for irrigation. It was considered one of the seven wonders of the world! I would give anything for a photograph of all that!

The Romans advanced plumbing considerably. Fresh water and sewage removal worked by water power as well. Our ancestors knew that the freshest water was upriver, and the not so fresh water was down river. Around 800 BC, the Romans built the Cloaca Maxima which is the main drainage trunk going right thru the center of Rome. Guess what? It is still in use today—that is some history for you.

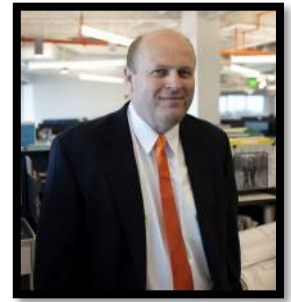
A little later on came the great aqueducts and distribution systems. Lead was the mainstay of piping, they were not aware of lead poisoning as yet, but they also used bronze, tile, and wood. Water cocks also showed up around this time. Some historians believe the plumbing systems- including pipe production may have been completed by women as many men were out fighting in the great Roman legions.

The dark ages came along, and they are really dark as plumbing took a back seat for 1,500 years or so. Kingdoms had “toilets” that dropped effluent into the moat which sometimes spoiled the drinking wells. Simple water diseases such as Cholera and Dysentery killed approximately 1 in 5 people. Sure, science and our understanding of things began to grow in the Italian Renaissance of the 15th century but plumbing still had a long way to go.

Fast forward a few hundred years, and the very first water works on our continent was built right here in Boston in 1652. Water came from a spring near today's Water Street, (see the photo on the following page).

The system was used primarily for fire fighting and used buried wooden pipes for distribution. The fire plug was invented around this time for any of you curious types. By the early 1700's NYC had a water pipe system as well; they could not let Boston get ahead.

On the other side of business- sewage disposal was still treated via outhouses. America it seemed did



Eric Edman
Historian

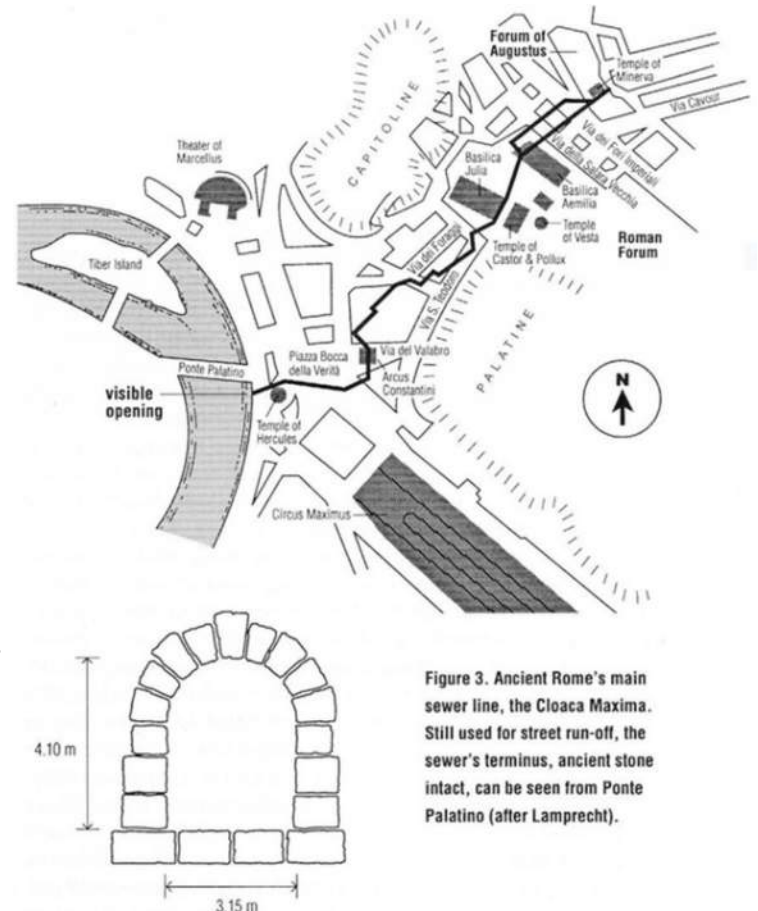
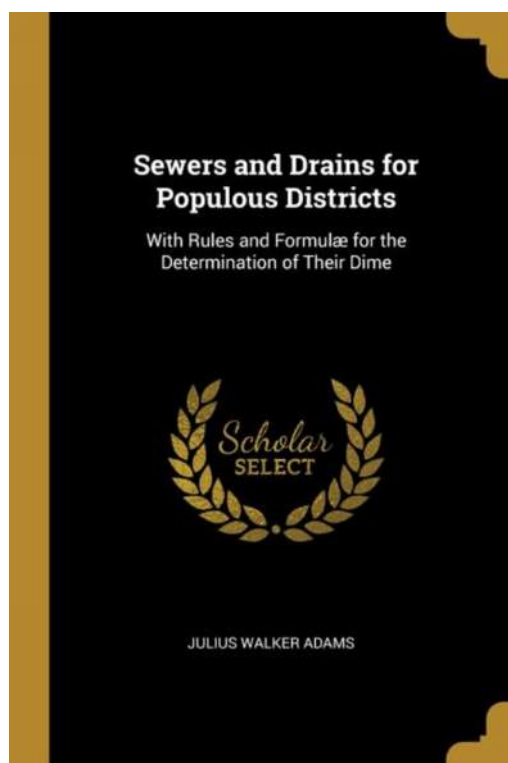


Figure 3. Ancient Rome's main sewer line, the Cloaca Maxima. Still used for street run-off, the sewer's terminus, ancient stone intact, can be seen from Ponte Palatino (after Lamprecht).

History Special Feature continued...

not have a culture of cleanliness. It wasn't until Pasteur's germ theory of disease gained popularity that people made the connection between dirty water and health problems. Here in Boston, we built what may be the first building (a hotel) with indoor plumbing. In 1829 the Tremont Hotel had a system of water and toilets using a newly invented steam pump to lift water up to an elevated tank. Early plumbers lacked scientific knowledge for an effective system, such as trapping and venting, so everything was done by trial and error.

Things changed in 1857 when the City of Brooklyn commissioned an engineer, Mr. Julius Adams, to design a sewer system. For those of you who don't know, Brooklyn was the second largest city in America for many years. From scratch, he developed guidelines and better yet-he published all this information.



Another engineer-Col. George Waring published a landmark book in 1876 *Sanitary Drainage of Houses and Towns* which sparked municipal reform around our great country.

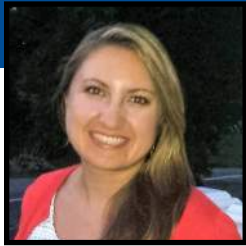
Much of the last 150 years is very well documented. You can each think about piping, HVAC and plumbing, but one very great medical research doctor made a statement in 1984. Yes, that is 1984. "There is no question that our public health has improved dramatically in the last century. One thing is certain. It did not happen because of medicine, or medical science, or even the presence of doctors. Much of the credit should go to the plumbers and the engineers of the western world. The contamination of drinking water by human feces was once the greatest cause of death for mankind. It remains so in the third world. Typhoid, Cholera, and Dysentery have all but disappeared in this century and on this continent thanks to plumbing."

Some of you may say this has no bearing on heating systems or ASHRAE. I may agree, but development of piping standards and water distribution are our commonality. Plumbing and heating are often put together and the history of this bond goes a VERY long way back. Some of those Roman plumbers also built the great radiant heating systems as well. In many areas of this country, the plumbing engineer and the heating engineer are the same person. It stands to reason a lot of the advances of science between our two disciplines are joined by the importance of advancing our way of life.

The next time you enjoy your warm home on a cold day, and fresh water in the shower and a flushing toilet, think about all the work that went into it. Your historical committee wants to wish each of you the very best Thanksgiving 2020. Next year marks 400 years since the first Thanksgiving!

Eric Edman
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