

FOG DISPENSER



GOLDEN GATE, REDWOOD EMPIRE AND SAN JOSE CHAPTERS JOINT MEETING

PROGRAM: AIR CLEANING (PARTICULATE FILTRATION, PORTABLE AND IN-DUCT AIR CLEANERS, COIL CLEANING) AND AIRBORNE INFECTIOUS DISEASES

SPEAKER: MARWA ZAATARI, PHD



Dr. Marwa Zaatari is Partner at D ZINE Partners and co-chair of enVerid Systems Advisory Board. She leads the research and development of "Air as a Service" around heat exchanger coils, ventilation, filtration, and IAQ measurements. Her work continues to advance building science methods in assessing performance-based procedures to design and operate buildings to optimize energy and people efficiency.

Dr. Zaatari is an ASHRAE Distinguished Lecturer and a member of several ASHRAE Committees, a member of the ASHRAE Epidemic task force, Voting Member of Standard 62.1, Chair for TRG4 Indoor Air Quality Procedure, Vice Chair of MTG.HWBE Health and Wellness in the built environment, Vice Chair of TC2.3 gaseous removal contaminants, Voting Member Standard 145.2 laboratory test method for gas-phase air cleaning systems, IAQ2020 Conference organizer, LEED Committee member, and ex-Chair of LEED IAQP Working Group. She also serves on the USGBC board.

Dr. Zaatari has extensive experience in identifying and quantifying the sources, fate, and transport of indoor air pollutants, building energy and environmental manage

continued on next page

INSIDE THIS ISSUE:

Event Calendar.....	2	Membership Promotion.....	10
President's Message	3	Research Promotion.....	11
Government Advocacy	4	CTTC	12
Historian	5	Learning Opportunities.....	13
Student Activities.....	6-7	March Meeting recap.....	14
Sustainability Committee	8	Employment Opportunity ..	15-16
Refrigeration Committee	9	Board and Chair Members	17
Redwood Ashrae.....	9	Sponsorships/Rates	18-19



Thursday, APRIL 22
12 NOON

Goto Meeting
Link will be shared to people who have registered

12:00 PM INTRODUCTIONS
1:00 PM ADJOURN

PRICING:

\$20 - Chapter Members
\$25 - Non-Members

*Hit a financial hardship?
If so, we have an "offer what you can" option too.*

GOLDEN GATE ASHRAE
FOG DISPENSER
VOLUME L17- NUMBER 8
APRIL 2021

ment, assessing performancebased procedures of HVAC ventilation and air cleaning, and developing and applying models for energy efficiency, indoor air quality, exposure assessment, and economic impacts of indoor air pollution. Previously, Dr. Zaatari was Vice President of Building Solutions at enVerid Systems since 2015. She leads the design of ventilation and filtration/sorption systems in buildings, integration into HVAC systems, and was responsible for managing customer-site installation and ongoing operations and field service.

Dr. Zaatari earned a PhD in Architectural and Environmental Engineering from the University of Texas at Austin with a focus on the built environment and a master's degree in engineering management from The American University of Beirut, Lebanon with a focus on energy management..

PRESENTATION SUMMARY:

This presentation provides an overview of air cleaning to minimize infectious diseases spread using ASHRAE COVID-19 filtration and disinfection framework. How to select particulate filters, air cleaners, and how to determine coil cleaning frequency and design considerations with respect to pressure drop, efficiency for different particulate size, by-pass, clean air delivery rate, and by-products will be reviewed. Different approaches using one or combination of control methods will be compared from energy and indoor air quality impact.

EVENT CALENDAR 2021

**FOR MORE INFORMATION AND
DETAILS GO TO WWW.GGASHRAE.ORG**

**NEXT MEETING: VIRTUAL
THURSDAY April 22**

THURSDAY May 20

TOPIC: Product Show - Partnership with ASPE

LOCATION: Virtual

THURSDAY June 17

TOPIC: ASHRAE HQ- Design & Operation; Tech Award Winners,
Project Review, Presidential Year in Review

Hello Golden Gate ASHRAE members!

A lot of exciting things happening this month... First off and most exciting topic, the vaccine ROLLOUT! It's here and it's moving forward. Have you signed up to get your vaccine yet? Counties like mine in Contra Costa are doing a fantastic job, allowing the vaccine to all adults over the age of 16 years old. I am so incredibly hopeful that we may be near the end of the pandemic. I will continue to keep my fingers and toes crossed.

With that being said, I'd like to know your thoughts, as our members, about an end of the year picnic, pending local restrictions permit. Is this something you would be open to? And if so, where? I'd love to see you all at a local park, either in San Francisco or the East Bay, with masks and social distancing, of course. It may be a long shot, but again, I am optimistic!

As it seems to be our theme this year, your Board of Governors and Committee Members have been busy!

I am happy to report we have an unprecedented number of student scholarship applications. We literally went from 10 applications, to almost 30, after myself, Brian Chacon and Alicia Tan personally called each Student Member we thought was eligible. We had a number of reviewers for the applications, and I was just in awe of the amazing work that our student members are doing in their fields of study. Any doubt or fear that I have about our future, tackling climate change, designing future high performance buildings was quickly diminished, given the brilliance of our applicants.

Next up, Technology Awards!!! Have you gotten your projects ready to submit yet? We are looking for outstanding projects with diverse teams. Showcase your company's talent, from the Principal in Charge to the new graduate who burned the midnight oil to get that project out the door!

We have also prepared our Chapter for our first virtual audit! Our core BOG spent about a month reviewing and preparing last year's books for our wonderful Audit Committee. We look forward to completing a successful audit this year.

Our Sustainability Committee has also been busy. What went from a quick phone call to the amazing Manalee Nabar, asking her to head up the committee, has pivoted to her hosting the first of the Sustainability Talks Series. Manalee hosted two powerhouse women, Amy Nagengast of SFO and Erica Levine of Arup, on March 31st. The first of many sessions!

Last but most importantly, I want to thank all of our donors for Research Promotion. We have had a number of companies and individuals step up and make significant contributions to our RP goal. This has been a challenging year, to say the least, but our research within ASHRAE impacted how the world reacted to the airborne COVID-19 virus. Thank you all, so, so much.

With hope and optimism,

Alyse Falconer, Ashrae President 2020-2021



California Energy Commission has published the Draft 2022 Energy Code Express Terms

The CEC has released the latest version of Title 24 Part 6, the Energy Efficiency Standards. The files can be found in docket 19-BSD-03: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-BSTD-03> including the [Draft Standards](#), and [Draft Referenced Appendices](#).



Mitch Pinsker
Chair



Blaine Conner
Member



Scott Wayland
Code Review Chair

The proposed amendments to the 2022 Energy Code would:

- Revise baselines for building performance calculations and prescriptive compliance to encourage heat pump technology.
- Establish electric-ready requirements in low-rise residential buildings.
- Extend prescriptive solar photovoltaic requirements to select nonresidential building types.
- Update minimum residential kitchen ventilation standards to improve indoor air quality and be more protective of the health and safety of dwelling occupants.
- Relocate multifamily provisions into a new dedicated set of chapters;
- Establish new efficiency standards for controlled environment horticulture spaces;
- Update efficiency standards for other commercial and industrial process loads, including computer room air conditioning, refrigerated areas, compressed air systems, and others.
- Improve existing residential efficiency standards for on-site renewables, battery storage, and associated options and exceptions.
- Improve existing nonresidential efficiency standards for building envelope, fan and duct systems, HVAC controls, boilers and service water heating systems, indoor and outdoor lighting systems, and grid integration equipment such as demand responsive controls.
- Make general improvements to the clarity and consistency of existing provisions.

These amendments are significant to the State of California in that they support State clean energy goals, policies, and legislation. These amendments will increase the deployment of on-site renewable energy generation, reduce carbon emissions from new buildings (building decarbonization), reduce growth in energy demand, increase energy demand flexibility, and ensure that California buildings are as energy efficient as is found to be technically feasible and cost-effective.

Stay tuned for a more-detailed break down of the relevant changes that will go into effect in 2023.

New Report Available on Net Zero Carbon Cities

The World Economic Forum's Net Zero Carbon Cities Program has issued a new white paper regarding a global framework and integrated energy approach, defined as "systemic efficiency," as a solution to the climate crisis. Systemic efficiency encompasses clean electrification, smart digital technology, and efficient buildings and infrastructure, along with a circular economy approach to water, waste and materials. Cities currently cover 3% of the earth's land surface but create more than 70% of all carbon emissions. The full report can be found here: <https://www.weforum.org/reports/net-zero-carbon-cities-an-integrated-approach>.



Tom Gilbertson, Chapter Historian

APRIL SHOWERS! 2021

“April showers...may come your way...they bring the flowers...that bloom in May...”

The historical inference is that some setbacks are always followed by good times...For over a year now we have experienced the COVID-19 Virus...and all of its presently inflicted changes...No need to enumerate them for you...You know!

But, because of the last year’s “historic changes”...what does the future bring?

I think it is time to recognize that massive, historic, changes for our industry... are well underway.

Will ASHRAE-technology be required to serve the new-office building market?...yes...but just how many new office buildings will be required?... Working remotely from an office has had so many advantages that the need for office space...and buildings in general, is diminished....for several reasons...Energy savings!...How much has your cost for transportation been reduced this past year?...Commuting?...what commute?... and look how you reduced pollution!...and who really needs all that office space anyway?

A San Francisco Class A Office Building that I am familiar with, had a typical, daily census prior to March of 2020, of 1,700 people. The last 12 months have seen the building’s daily census stabilize at 80... This does not indicate much of a market demand for new office buildings...let alone the old... Demand for our ASHRAE-technology services for office buildings appears to be diminishing...and that is being polite.



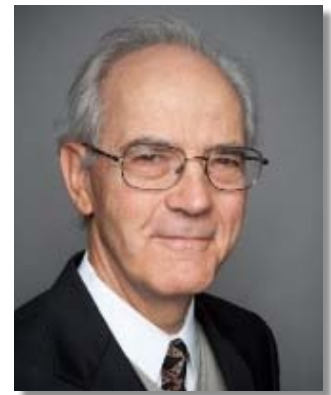
Business opportunities for re-positioning/re-using historic buildings provided ample opportunities in the 70’s, 80’s and 90’s. From 1926 to 1930...the Country built many structures that provided “frames” for being re-used as hotels; from 1995 to 2015. An unintentional consequence of the reuse of existing buildings is the massive savings in energy...think about the re-used steel, concrete, and glass...to say nothing of the avoided cost of demolition, transportation, and using new building material, and the cost to mine, procure, manufacture, and ship all of the “new” materials. Frequently we could re-use pipe, valves, and, as well as sheet metal...to say nothing of electric wire, transformers and switchgear... Lots of avoided energy costs!

Seattle-Northwest Bell Building (1958)... Portland-Meyer & Frank and Lippman-Wolf Department stores (1921 and 1930) and Imperial Office Building (1920)...Salt Lake City-Continental Bank (1927)...New Orleans-Masonic Hall (1924)...Providence-Masonic Temple (1924)...Pittsburgh-Fulton Building (1906)...Milwaukee-Marshall Field Store-(1933)...Denver-Railway Express (1937)...All of these allowed high density applications of ASHRAE-technology to be installed...AND...created job opportunities for HVAC and Plumbing design engineers...(make that “us”...!)...as well as fitters, plumbers, sheet metal workers, electricians...

Going forward...what do we...ASHRAE Golden Gate members...see...in our... soon to be “historic-horizon”?...Design opportunity.. and activity in the hotel and office building market? ...Activity, that is probably quite diminished!

So, with much of our historic market reeling...if not “gone”...we “Golden-Gate Members” may have to pivot...(ah...that word is so popular these days)...and find areas where our ASHRAE-technology can be deployed...profitably...and for good use.

Maybe you should examine the entire ASHRAE Handbook Series...and use it as a...“Guide”... (that is a pun)...to remind and direct you to all of the wonderful areas to which you can put your ASHRAE-related training to use?



Alicia Tan, Chair | Juliana Velez, K-12 STEM Lead | Megan Dawe, Post-High Lead | Richard Paillon, Scholarships and Grants Lead

APRIL ANNOUNCEMENTS

2021 ASHRAE Annual Conference Grants | June 26-30, 2021

By Richard Paillon, Scholarships and Grants Lead

The Golden Gate Chapter would like to invite Chapter Students to apply for a grant for registration at the 2021 American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Annual Conference that will be held on-line. The student registration fee for the previous ASHRAE virtual conference was \$25; the chapter will cover whatever this year's fee will be.

In the past ASHRAE hosted their annual conference and expo in major cities. The conference was normally attended by over 10,000 industry professionals. The Golden Gate chapter would regularly sponsor two student ASHRAE members to attend the conference. This year's virtual conference (due to the Covid 19 pandemic) is a great opportunity to have many more student members take part in the activities. There will be many live technical sessions and more recorded sessions available for 18 months. See <https://www.ashrae.org/conferences/2021-annual-conference-phoenix>. Student members please put this on your calendar. Applicants are required to:

- Be an ASHRAE Student member enrolled in a college or university within the geographical area covered by the Golden Gate Chapter.
- Attend at least 2 sessions at the conference.
- Apply for the grant prior to registering online for the conference.
A confirmation of the grant will then be sent to the student.
- After attendance submit a receipt or acknowledgement of payment for conference registration and a list of the sessions attended.

Students may submit their grant request with their ASHRAE membership number to aggcstudents+Sclships@gmail.com. Those who do not apply for their grant prior to the deadline may still be reimbursed for attendance if there are grants left over after the normal application process.

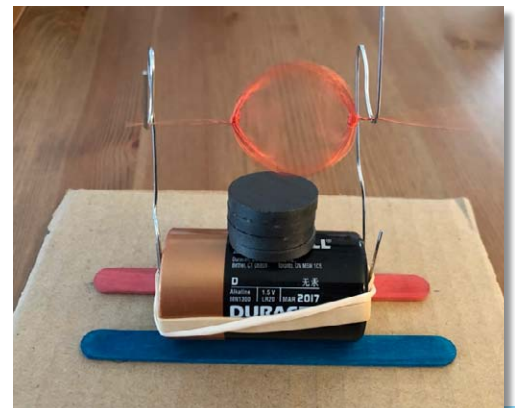
Requests are due no later than 5:00 pm on June 23, 2021.

STEM Kits

By Juliana Velez, K-12 Lead

Looking for STEM activities to do with your kids? We're putting together kits for building an electric motor. These kits are free and will be mailed to you. They have all the materials and instructions on building the motor. Recommended ages 4th grade and up. If you are interested in a kit, please contact aggcstudents+k12@gmail.com.

Continued on next page





On the left is one of our members putting together a kit with his family.

We also have a video on a pressure drop experiment here:

<https://youtu.be/1nIGrLdBwMk>

K12 Virtual Classroom Visits

By Juliana Velez, K-12 Lead

On March 16th, a few of our members participated in a virtual classroom activity with a local 4th grade class. They presented on the Science of Heating and Cooling and led a few hands-on activities that the students could do from their own home. If you are interested in participating in virtual classroom lessons, please contact aggcstudents+k12@gmail.com.

Call for Student Activities Committee Members

By Alicia Tan, Student Activities Chair

Do you share our passion to connect students of all ages to STEM, engineering, and the local HVAC&R industry? In the Student Activities Committee you can help us:

- *Plan activities (the students love interacting with you)*
- *Present at schools (they want to know how to be just like you)*
- *Advertise and award scholarships & grants (they could use our help getting to the next level)*
- *Connect university students to internships & full-time positions (maybe you'll find someone you want to hire)*
- *Crunch some numbers to earn the Golden Gate Chapter some sweet PAOE points (let's be honest... we want to win and beat the other chapters)*

If you are interested in joining the student activities committee, please contact aggcstudents@gmail.com.



Manalee Nabar, Chair



Srushti Dupare, Member



Jena Jadallah, Member

Hello All!

Hello All!

Thank you for your continued support to our Sustainability Committee. End of March, we kicked off our ‘Sustainability Talks’ series in honor of Women’s History Month. This series is geared towards sharing innovative work as well as time tested solutions in Architecture, Construction & Engineering (ACE) industry.

It was a lively conversation with Amy Nagengast, Energy Manager at SFO and Erica Levine, Senior Energy Consultant at ARUP. We heard from them about Updates to Net Zero strategy at SFO during the pandemic and how Artificial Intelligence (AI) helped model over a septillion energy measures’ combinations for an existing Whole Foods.

To say that we geeked out would be an understatement!

With the overwhelming response to our first event, the committee is currently planning its next session which will likely be in the latter half of 2021. If you have suggestions for topics or speakers, please write to us!

The goal of this committee is to facilitate sustainability related discussions and activities in order to raise awareness and provide education. There are myriad HVAC industry resources on Sustainable design, both within and outside ASHRAE, that this committee aims to make more accessible to our members.

*If you are interested in joining this committee and/ or have ideas for events,
please contact Manalee Nabar at Manalee.nabar@wsp.com*



Ken Mozek, Chair



Alan McDermott, Member

A WORD FROM THE ASHRAE REFRIGERATION COMMITTEE

As might be expected California is leading the way when it comes to reducing greenhouse gas (GHG). Going forward expect to see a lot of focus on the use and application of natural refrigerants which have very low global warming potential (GWP) of 0 to 4 like ammonia (R717), CO2 (R744) and propane (R290). The food processing industry has used ammonia for decades and technologies are evolving that make CO2 and propane more desirable. Stay tuned for upcoming technical sessions and potential jobsite visits highlighting the use of the highly efficient and environmentally friendly refrigerants.

REDWOOD EMPIRE UPDATE

Save the Date:

REDWOOD EMPIRE GOLF TOURNAMENT
Tentatively set for
SPRING 2021!

*Save
the
Date*



Sanjil Karki,
Membership Promotion
Chair
Business Development
Associate - REHAU
Sanjil.Karki@REHAU.com



Michelle Dionello,
Membership Promotion
Co-Chair
Facilities O&M Engineer -
Genentech
Dionello.michelle@gene.com

Hello Golden Gate Chapter Members,

Please consider membership advancement, if your current membership status is Associate! Why should a member advance from Associate to Full Member status?

- **Local Chapter Recognition**
- **Service Society, Chapter, or Regional Committees**
- **Qualify for ASHRAE Fellow & other Society awards**

To become a Full Member, complete the following three steps below.

STEP 1: Check if you qualify for advancement. (See next page on attaining full membership)

STEP 2: Update your ASHRAE Profile by logging into your <https://www.ashrae.org/login>. Select "My Profile" and then select Biographical information and update.

STEP 3: Notify/Email ASHRAE by emailing at membership@ashrae.org and let them know that you wish to be considered for a grade advancement

Feel free to reach out if you have any question regarding membership advancement. Golden Gate Chapter would like to welcome the following new member.

NEW MEMBERS

ASSOCIATES:

Nicholas A Caraballo
 John Plecnik
 Dr Rachel Adams
 Mr Christopher Alan Coombs
 Mr Anzi Zhu
 Mr Jesse Lee Harder PE
 Mr Geoffrey Yamasaki
 Dr Thomas Parkinson
 GINA WADE
 Rahimuddin Deyarmand
 Daren K. Wilkinson
 Ashwin Gulati
 Mr Edward Ruan
 Jim McMahon
 Miss Shruti A Kasarekar
 Megan Amelia Gunther
 Mr Kenneth J Mozek
 David Latour
 Dr Nuria Casquero-Modrego PhD
 Mr Ted E Jacob
 Henry Willem
 Rob Bickmore
 Mr Aram B Carney
 Roman Wowk
 Mr Kent A. Dahlquist
 Mr Douglas J Sterling, ES, ME
 Mr Thomas D Carlson

STUDENTS:

JBrittany Holloway
 Ms Margaret P Parker
 Michael Kado
 Eric Futerfas
 Jack Chang
 Teng Zeng
 Danay Kamdar
 Mr Charles J Regan
 Isabelle Hens
 Jonathan J Adams
 Mr Aruna A POTHUMULLE
 Elizabeth Jane Sadler
 Miss Xinwei Zhuang
 Cristhian Jose Lozada Tordoya
 Salma Elmallah
 Miss Patricia Kusumah
 Roshan Anand Jagani
 Jerold Brito
 Ms Arfa Aijazi
 Madison Dack
 Mr Abbas Nasralla
 Mr GEORGE FERREIRA MATOS
 Mr Jake Andrew Nelson
 Sandeep Sanjel
 Miss Tsz Kan Chow



Brian Chacon, Membership Promotion Chair, Research Promotion Chair

Spring 2021 Research Promotion Campaign

The RP Campaign is an annual fundraising campaign benefiting the funding of numerous ASHRAE Programs. It raises over \$2.2 million/year from over 6,000 donors.

SURGE of RP DONATIONS with RECENT CONTRIBUTIONS - \$8000 ONLY \$5,000 Left to hit Our GOAL!

THANK YOU 2020-2021 DONORS:

ORGANIZATIONS \$250 to \$5,000

Taylor Engineering
(\$1,000)
Golden Gate Chapter
Conservation
Mechanical Systems
DMG North
Air Treatment
United Mechanical
Norman S Wright
California Hydronics

INDIVIDUALS Up to \$249

David Jump
Jame Lutz

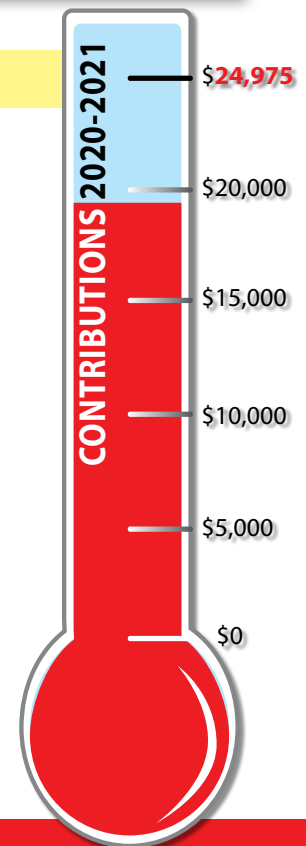
INDIVIDUALS Up to \$249

Cory Palmer
Lori Arakawa
Steve Dobberstein
Moana Reynau
Brian Chacon
Juliana Velez
John Gardner
Alyse Falconer
Jeremy Martinez
Kevin Dowling
Carl Jordan
Isaac Simpson
Glen Leggoe
Kenneth Hill

Matt Justus
Tyler Bradshaw
Reginald Monteyne
Rich Rockwood
Edward Spivey
Nenad Saric
Joseph Pipitone
Max Sherman
Eric Steffen

INDIVIDUALS Up to \$999

James MacDonald
Glenn Friedman
(\$1,000)
Edward Arens



YOUR NAME WILL BE LISTED HERE
Your contribution are much appreciated.
Thank you for making a difference and shaping tomorrow's built environment today.

GOAL:

\$24,975

TOTAL TO DATE:

\$19,111

Donations are tax deductible, by check, credit card or online at www.ashrae.org/contribute

Mail Checks to: ASHRAE RP: 1791 Tullie Circle, NE: Atlanta, GA 30329

For: Golden Gate ASHRAE RP

For more information, please visit Research and Promotions section on www.ggashrae.org or contact RP Chair Brian Chacon at bchacon@ascenthvac.com



Blaine Conner, Co-Chair | **Manalee Nabar, Co-Chair** | **Mitch Pinsker, Member**

Chapter Technology Transfer Committee

Howdy folks!

Hope you all were able to attend the informative and fun March Meeting with ASHRAE President Charles "Chuck" E. Gullledge III.

In the light of the pandemic, have your clients been curious about the different methods of air purification? We have got you covered in our upcoming April meeting with Dr. Marwa Zaatari. She is an ASHRAE Distinguished

Lecturer and will provide an overview of air cleaning to minimize infectious diseases spread using ASHRAE COVID-19 filtration and disinfection framework. You do not want to miss this one! Please head to the website for registration. Also reminder that entries are now being accepted for the 2021 Technology Awards. Please see details below!

ASHRAE TECHNOLOGY AWARDS 2021 – Call for Nominations!

ASHRAE Golden Gate Chapter Technology Transfer Committee (CTTC) is now accepting nominations for 2021 Technology Awards. It has been a long-treasured tradition for Bay Area MEP firms to put out a stellar group of energy efficient building designs every year. This year we are expecting nothing lesser and look forward to seeing some of the most versatile buildings out there right now!

"The ASHRAE Technology Awards recognize outstanding achievements by members who have successfully applied innovative building design in the areas of occupant comfort, indoor air quality and energy conservation. Their designs incorporate ASHRAE standards for effective energy management and IAQ. Performance is proven through one year's actual, verifiable operating data." (ASHRAE Technology Awards Webpage)

Winners from the Chapter level will go on to compete at the Regional level (Region X) and if qualified, ultimately to Society level to compete with global entries..

Application form with details on submission can be found at: <https://www.ashrae.org/file%20library/membership/honors%20and%20awards/tech-award-application-short-form-january-2016.pdf>. The buildings can be in any of the six (6) categories:

COMMERCIAL, INSTITUTIONAL, HEALTH CARE, INDUSTRIAL, PUBLIC AND RESIDENTIAL.

Judging will be based on the following criteria –

Energy Efficiency	15 points
Indoor Air Quality & Thermal Comfort	15 points
Innovation	15 points
Operation & Maintenance	15 points
Cost Effectiveness	15 points
Environmental Impact	15 points
Quality of Presentation	5 points
Judge's Prerogative	5 points

DEADLINE EXTENDED!
April 30th

More information on the criteria, sample entries and Frequently Asked Questions can be accessed at the following link: <https://www.ashrae.org/membership/honors-and-awards/technology-awards-program-overview>.

This year for the Judge's Prerogative (5 points) the criteria is **Inclusion & Diversity** (I&D). Did you have a creative and diverse team that took the project to successful completion? We want to hear about it!

Note: Submission by the project Engineer of Record (EOR) is not a prerequisite. As per the ASHRAE guidelines, the entrant (1) must be a member (any grade) of ASHRAE, (2) must have a significant role in the project, and (3) must be willing to supply any additional information if requested by the judging panel.

If you are interested in joining the Chapter Technology Transfer Committee, have ideas on future programming topics or have questions on the Technology awards - please reach out to [Manalee at Manalee.nabar@wsp.com](mailto:Manalee.nabar@wsp.com) or [Blaine at bconner@aeieng.com](mailto:bconner@aeieng.com).

Classes and resources to help you gain new skills and fuel your future



pge.com/energycenterclasses

No-Cost Classes
Tool Lending Library
Expert Consultations

Fans, Ductwork, and Air Handling Components: Design, Performance, and Commissioning

Wed April 28, 2021, 8:30 am to 4:30 pm - webinar

This class focuses on the fundamental building blocks used to create an air handling system: fans, coils, filters, humidifiers, diffusers, motors, and the duct system itself. The training is taught with an eye toward optimizing these components in an integrated air handling system and includes several interactive exercises. A reading list is provided so students can prepare for this training.

<https://pge.docebosaas.com/learn/course/external/view/webinar/938/fans-ductwork-and-air-handling-components-design-performance-and-commissioning>

HVAC System Testing for Energy Efficiency

April 20, 21 & 22, 2021 9:00 am – 11:00 am each day – webinar

This three-day class presents the methods for, and issues with, field testing HVAC systems. It explores the key factors that affect system efficiency, describes HVAC testing tools and how to use them, and examines data collection strategies. Learners will review sample calculations and preview a checklist to guide system testing. We recommend attending all three sessions.

<https://pge.docebosaas.com/learn/public/catalog/view/9?ctldoc-catalog-0=se-%22hvac%20system%20testing%22>

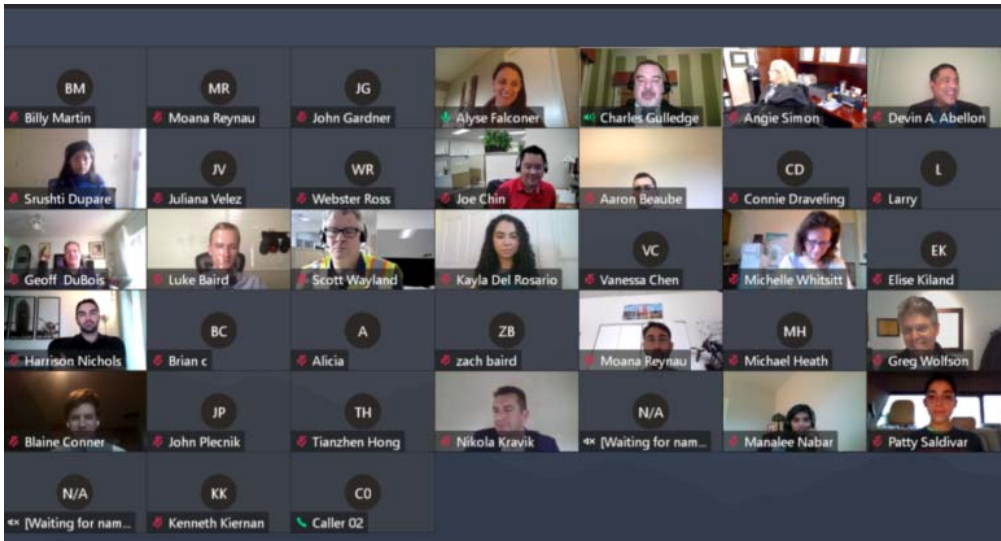
2021 # 4 - Why Building Owners Aren't Ready for Decarbonized Buildings (And What We Can Do the Change That)

Peter Rumsey, Point Energy Innovations



Peter Rumsey, PE, FASHRAE, CEM talks about the challenges we face in electrification and decarbonization in our built environment today. Peter is the Founder of Point Energy Innovations and is internationally recognized for his innovation and leadership in the sustainability and energy efficiency fields. He has designed more LEED Platinum, Zero Energy and radiant cooled buildings than any other engineer in the United States. He was also a participant in our Decarbonization Convening on Buildings in January 2021.

<https://caenergyalliance.org/events/2020/9/16-mg7mr-gfdx7-9k4xr-dnhjd-pa2f4-zgl79-656bc>

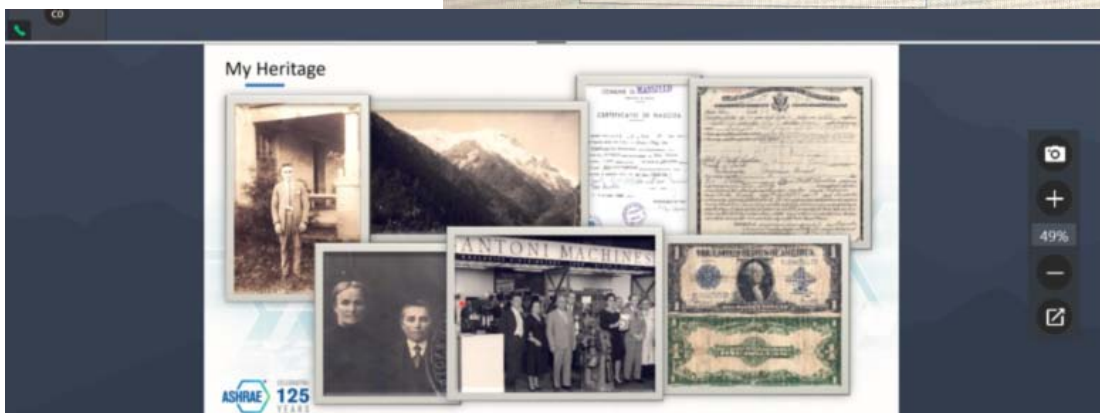
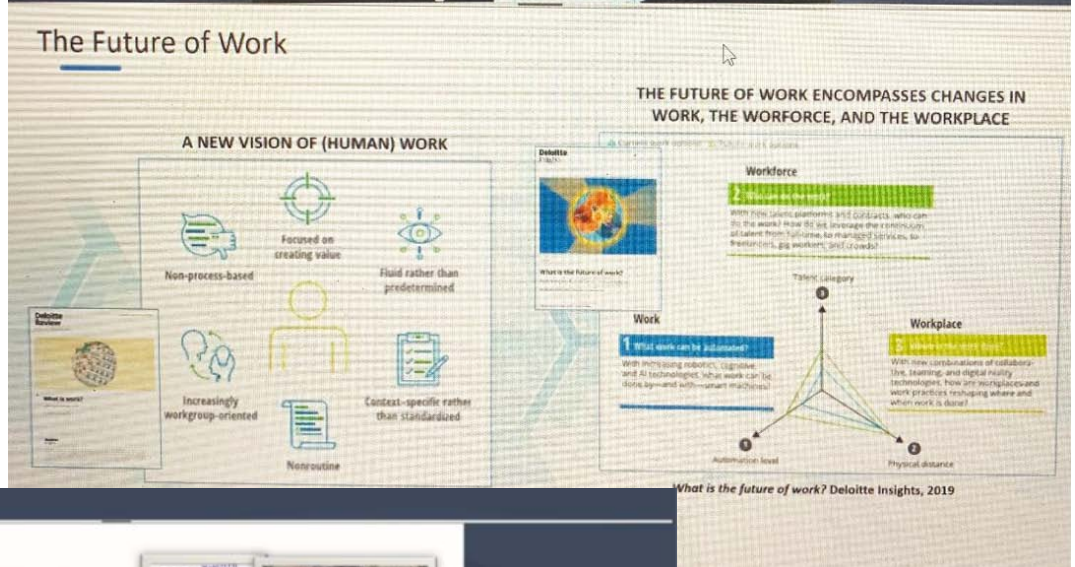


PROGRAM:

The ASHRAE Digital Lighthouse and Industry 4.0

SPEAKER:

CHARLES "CHUCK" E. GULLEDGE III



Position: Experienced Engineer / Project Manager, Consulting Mechanical Engineer Axiom Engineers, Inc.

Seeking experienced consulting engineers for its Monterey, Napa, and Santa Cruz offices.

Description: Consulting engineering for the design of commercial buildings. HVAC, plumbing, site utilities, process piping, fire protection, commissioning, and environmental compliance.

- *Client contact and development of Scope of Work*
- *Facility Programming/Layout: Design concepts, options*
- *Construction drawings and specifications, coordinate with AE design team and client*
- *Compliance with applicable building codes, research non-routine code issues*
- *Delegation and overseeing work of engineers, process and equipment selections, coordination of drawing production and review, quality control*
- *Construction support services on-site*

7+ yrs in consulting mechanical engineering BSME, PE license

Contact: Sheila Tansill, Human Resources

22 Lower Ragsdale, Ste A, Monterey, CA 93940
(831) 641-7052

sheilat@axiomengineers.com

<https://axiomengineers.com>

By Megan Dawe, Student Activities Post-High Lead

Call for Student Internships

Many of our undergraduate and graduate student members seek internships to fulfill their academic requirements and gain hands-on experience. In the remote learning environment, it is more important than ever that students are connected with opportunities to learn from the industry's best.

If your company or organization offers internships, please fill out and/or link the information to our 2021 Internship Catalog here: <https://forms.gle/N1Fy5sovRtKEEjy9>. Alternatively, email your internship information to aggcstudents@gmail.com.

Senior Commissioning Engineer

Arup is a 15,000-person strong, global conglomerate of designers, engineers, planners and consultants, who regularly come together to devise solutions that benefit not just our clients, but also the world. Arup's culture looks a lot like the future: globally-linked, locally-focused, and radically innovative. We are searching for those rare individuals who are as smart and idealistic as they are ambitious. If this sounds like you, please read on.

Our San Francisco office is looking to add a Senior Commissioning Engineer to our multi-disciplinary team. Our commissioning team works on a wide range of high-profile projects and has continued to see a strong pipeline of work. You would be supported by our strong Sustainability group to help achieve sustainable quality outcomes.

Responsibilities

- Lead and continue to develop the commissioning group of Arup San Francisco.
- Lead and mentor our junior staff on a variety of projects such as healthcare, large technology company campuses, data centers, and aviation
- Coordinating with multiple disciplines and working in conjunction with project managers to help complete work you're doing
- Writing reports for internal and external purposes based on findings
- Assist with business development efforts by strengthening current client relationships
- Presenting technical material in traditional and innovative ways for review by technical and non-technical audiences
- Understanding trends and standard methodologies in commissioning, monitoring based commissioning and retro-commissioning
- Participating in local Professional Associations

Qualifications

- Bachelor's Degree in Controls, Mechanical, Electrical or Architectural Engineering
- 6 or more years of experience in commissioning for new construction projects
- HVAC and building controls emphasis, is required client facing experience required,
- The ability to prioritize effectively, balance assigned work and exceptional organization skills are required for our constantly evolving environment
- Strong interpersonal and communication skills essential for team-based working
- Presentation skills with colleagues and clients of all levels

Preferred Qualifications

- LEED AP and other LEED accreditations
- PE License in mechanical engineering
- Sustainability and modeling experience
- Industry recognized certifications such as CCP, CMVP, CEM.
- Experience using Facility Grid, CxAlloy, or similar commissioning-based software are desired.

Benefits

Arup is an employee-owned company that offers an excellent benefits package. Outlined below are a few of the benefits Arup has to offer you as a FT employee of the firm:

- Global Profit Share - paid out bi-annually
- Personal Health Insurance
- 401(k) - with a dollar for dollar company match up to 10%
- Paid Time Off (PTO)
- Professional Membership and Certification reimbursement
- Short Term and Long-Term Assignment Career Opportunities around the Globe

Arup is an equal opportunity employer committed to a diverse and inclusive work environment where our people are encouraged to grow. EOE including disability/veteran.

Please apply at: <https://jobs.arup.com/jobs/senior-commissioning-engineer-2821>

We can also be reached at: joinarupamericas@arup.com

Board of Governors

PRESIDENT

Alyse Falconer, P.E.
Point Energy Innovations
(724) 448-5959
alyse@pointenergyinnovations.com

PRESIDENT-ELECT

Brian Chacon
Ascent HVAC
(714) 401-3828
bchacon@ascenthvac.com

SECRETARY

Jeremy Martinez
CHC
2293 Tripaldi Way
Hayward, CA. 94545
(510) 695-1415
jmartinez@chchydro.com

TREASURER

John Gardner
RF MacDonald
(510) 736-6829
john.gardner@rfmacdonald.com

BOARD OF GOVERNORS

Juliana Velez
Hatch Data
(510) 703-3848
juliana.velez@hatchdata.com

Moana Reynau

PAE
(510) 579-1750
moana.reynau@pae-engineers.com

IMMEDIATE PAST-PRESIDENT

Jason Lesser
American Mechanical Inc.
1275 Boulevard Way
Walnut Creek, CA 94595
(408) 569-0422
Jason.lesser@ami-hvac.com

Committee Chairs

CHAPTER TECHNOLOGY TRANSFER

Manalee Nabar
manalee.nabar@wsp.com

Blaine Conner
bconner@aeieng.com

Mitch Pinsker
mpinsker@aeieng.com

MEMBERSHIP PROMOTION

Sanjil Karki
(415) 613-6760
sanjil.karki@rehau.com

Michelle Dionello
(650) 303-7566
michelle.dionello@gmail.com

RESEARCH PROMOTION

Brian Chacon
(714) 401-3828
bchacon@ascenthvac.com

Jason Lesser
jason.lesser@ami-hvac.com

STUDENT ACTIVITIES CHAIR

Alicia Tan
aggcstudents@gmail.com

HISTORIAN

Tom Gilbertson
(925) 376-4516
tomagilbertson@msn.com

YEA (Young Engineers in ASHRAE)

Jake Barker
C: (402) 643-0661
jbarker@airtreatment.com

Alan McDermott
(415) 535-4241
amcdermott@siglers.com

FOUNDATION BOARD

Glenn Friedman
(510) 263-1542
gfriedman@taylor-engineering.com

REDWOOD EMPIRE

Harrison Nichols
(626) 808-1589
Harrison.Nichols@trane.com

HONOR AND AWARDS

Scott Wayland
(510) 508-2244
sewayland@comcast.net

PUBLICITY

William Martin
(541) 729-0904
wmartin@normanwright.com

TENNIS CHAIR

James Gronek
(415) 874-4913
jgronek@esdglobal.com

ELECTRONIC COMMUNICATIONS

Moana Reynau
(510) 579-1750
Moana.Reynau@pae-engineers.com

GOVERNMENT AFFAIRS

Mitch Pinsker
(415) 764.3751
mpinsker@aeieng.com

NOMINATING COMMITTEE

Cory Palmer
(415) 317-6194

REFRIGERATION COMMITTEE

Ken Mozek
(925) 989-2892
kmozek@airtreatment.com

SUSTAINABILITY

* See page 7

A big thank you to the following sponsors for supporting publication of the Fog Dispenser.



Southland Industries is a proud supporter of

ASHRAE GOLDEN GATE CHAPTER

As one of the nation's largest building systems experts, Southland Industries provides innovation, practical solutions for your engineering, construction, service, and energy needs.

22222 Western Ave., Union City, CA 94587
+1.876.477.3300 | +1.800.812.0245




Air Systems
An EMCOR Company



AIR TREATMENT CORPORATION HVACR

SIEMENS

Siemens Industry, Inc.
Building Technologies Division

25821 Industrial Blvd
Suite 300
Hayward, CA 94545

Dennis W. Thompson
Director, Business Development
Smart Infrastructure
Northern California District

Phone +1 510 589-0054
Fax +1 510 293-2100
dennis.thompson@siemens.com



Design
Plan
Build
Service

21819 Eighth Street East
Sonoma, CA 95476
Engineering@petersonmechanical.com
CA Lic # 171486

Office: (707) 938-8481
Service: (707) 938-8677
PetersonMechanical.com

FMB **FRANK M. BOOTH, INC.**



NORMAN S. WRIGHT
Mechanical Equipment Corporation

arb

ANDERSON, ROWE & BUCKLEY, INC
MECHANICAL CONTRACTORS

2833 3rd Street
San Francisco, CA 94107
(415) 282-1625
www.arbmechanical.com

SPONSORSHIP RATES:

One time rate: \$50 | 4-month rate: \$125 | Yearly Rate (9 issues): \$400

Contact the Fog Dispenser editor Jeremy Martinez - jmartinez@chchydro.com

Thank you to our 2020 Decarbonization Sponsors



TAYLOR ENGINEERING
1080 Marina Village Pkwy, Suite 501 Alameda, CA 94501

Glenn Friedman, PE
Principal

gfriedman@taylor-engineering.com
www.taylor-engineering.com

Office: (510) 749-9135
Direct: (510) 263-1542
Mobile: (510) 220-5895



BRIAN CHACON
SALES ENGINEER

Cell: 714-401-3828
bchacon@ascenthvac.com
www.ascenthvac.com
23 Railroad Avenue #97
Danville, CA 94526



BLUE FOREST ENGINEERING

Tyler Bradshaw, PE, LEED AP
Principal

3622 Kingsley Street, Oakland, CA 94610-2833
o: 510.924.8224 x101 | m: 408.674.3918 | f: 510.924.8225
tbradshaw@bfengr.com | www.bfengr.com



Jeremy Martinez
BUSINESS DEVELOPMENT REPRESENTATIVE

Email jmartinez@chchydro.com
Direct 510.266.7817
Cell 510.695.1415
Office 510.293.1993
CHCHYDRO.COM

2293 TRIPALDI WAY, HAYWARD, CA 94545



Henry McElvery, C.E.M.
Commissioning Engineer

415.906.5486
415.665.5046
hmcclvery@ambient-e.com

580 California Street, 12th Floor
San Francisco, CA 94104

DBE, SBE, WBE, EDWOSB



Richard F. Leao
President & CEO
rleao@norman-wright.com

NORMAN S. WRIGHT
Mechanical Equipment Corporation

99A South Hill Drive
Brisbane, CA 94005-1282
tel 415.467.7600

www.norman-wright.com

San Francisco • Santa Clara • Santa Rosa • Oakland • Sacramento • Stockton • Chico • Reno • Pleasanton • Honolulu • Guam
Affiliates: Fresno • Pismo Beach • Las Vegas • Salt Lake City



Guttman & Blaevoet
CONSULTING ENGINEERS
a JUST organization

Steven Guttman
PE, LEED Fellow, BCxP
Principal, Director of Quality Assurance

d: 415.655.4036 c: 415.999.6599
e: sguttman@gb-eng.com



Christian J. Agulles PE
MANAGING PRINCIPAL
m: 702-235-3200 | d: 415-767-2716
christian.agulles@pae-engineers.com


50% less card; 100% more innovation.

pae-engineers.com


THE APRIL MODEL:

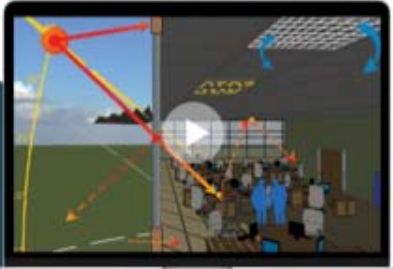
Do you want to learn about ASHRAE's preferred method for loads calculations? IES Ltd. has provided technical article about the **ASHRAE Heat Balance Method** which includes a free online training.

<https://www.iesve.com/discoveries/article/10017/ashrae-heating-and-cooling-load-calculations>



Heating & Cooling Loads with ASHRAE's Heat Balance (HB) Method

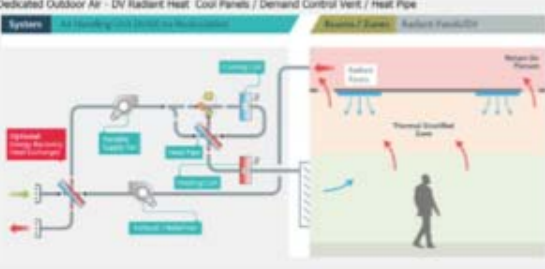




Airside System Selection

Packaged Terminal Units, Single Zone, Variable...

- ☒ DOAS - DCV / Four pipe FCU
- ☒ DOAS - Separate OA to Rooms / F
- ☒ DOAS - Air Source VRF
- ☒ DOAS - Water Source VRF
- ☒ Underfloor Air Distribution (UFAD)
- ☒ UFAD - Return Air Bypass - VAV P
- ☒ UFAD - Heat Pipe - VAV PFP Box
- ☒ UFAD - VAV 4 Pipe PFP Box - Heat
- ☒ Radiant Cooling or Heating
- ☒ DOAS - Active Chilled Beams
- ☒ DOAS - Heated Beams / Four-pipe
- ☒ DOAS - Recirc path / Heated Beam



FREE Training Webinar
ASHRAE Loads Calculations

- 3D Model Geometry & HVAC Zoning
- Envelope, Solar & Internal Gains
- Ventilation & Infiltration
- Loads Calculations using the **ASHRAE Heat Balance Method**
- Export results in PDF & XLS formats
- Compare against Rules of Thumb

Move up to the BEST in Loads Software

- ✓ Room and Zone Loads Calculating
- ✓ HVAC Systems and Equipment Sizing

IESVE software offers the most practical, efficient and accurate engineering tools available.

www.iesve.com

EUROPE | NORTH AMERICA
ASIA | AUSTRALIA