

November 2009 Meeting

Date: Thursday, November 12, 2009

Place: PG&E Pacific Energy Center ([map](#))

Schedule:

- 4:30 pm Technical Session (Julian Elliot, BAAQMD)
- 5:30 pm Registration and social hour
- 6:30 pm Dinner with announcements and introductions
- 7:45 pm Break
- 8:00 pm Main Program
- 9:00 pm Adjourn

Cost:

	<u>Before 3pm, Fri., 11/6</u>	<u>After 3pm, Fri., 11/6</u>
<u>GG- ASHRAE members</u>	\$40	\$50, but please register
<u>Non-GG ASHRAE members</u>	\$50	\$55, but please register
<u>Students</u>	Free but please register	
<u>Voucher holder</u>	Free but please register	

Please make your reservation at www.ggashrae.org/meetings/2009-2010/nov.htm

NOTE: If you make a reservation and cannot attend, you need to cancel in advance, or you will be billed. Isabelle Lavedrine will be taking reservations. If you need to CANCEL, please send a message to Isabelle at cancellation@ggashrae.org.

Methods of Effective Room Air Distribution



DAN INT-HOUT III, FASHRAE Chief Engineer Krueger

Dan Int-Hout, ASHRAE Distinguished Lecturer & Chief Engineer, Krueger, is responsible for the presentation of technical data and advanced application engineering for the Grilles, Registers and Diffusers, as well as the VAV air terminals, produced by Krueger.

Dan has been in the Air Distribution research and design business since 1973, and has a Masters in Business Management from Central Michigan Univ., and a Bachelor in Biology & Physics from Denison University.

Dan originally joined Krueger in 1981, but has had several other jobs in the industry, including Owens Corning Fiberglas, Carrier, Titus and Environmental Technologies, in engineering, marketing and product research roles.

Dan has written over 40 technical papers and articles on VAV system performance, acoustics, air diffusion, controls and occupant comfort. He was recently Chairman of both ASHRAE Technical and Standards Committees on Thermal Comfort, is a past Chairman of several other related ASHRAE Technical and Standards Committees, as well as ASHRAE Standards, Technical Activities Committee (TAC), & Environmental Health Committees. He received the ASHRAE Distinguished Service Award in 1993 and the Exceptional Service award in 2007. Dan is currently the Chairman of the ARI committee on Applied Acoustics (885) and Chair of ISO 205 US Panel on Thermal Comfort. Dan was installed as an ASHRAE Fellow at the Long Beach meeting in 2007, and is an ASHRAE Distinguished Lecturer. Dan was nominated to Chair the TRG7 Committee to rewrite the Under-floor Air Distribution Guide, at the Chicago ASHRAE meeting in 2009.

Presentation Summary:

In order to meet the increased expectations of building occupants, designers must be aware of the conflicts between first cost economics, occupant productivity and life cycle costs. LEED Certification challenges the engineer to come up with systems 30% better than the baseline VAV systems. Buildings that do not meet the needs of the occupants often result in expensive redesign or worse, result in lawsuits against all parties involved.

Subjects:

LEED: V3 is out, and many are not aware of some significant changes that have resulted in air distribution, IAQ and Comfort requirements.

Air Distribution: Selecting components and system for effective room air distribution. The Pros and Cons of new systems such as Displacement, Under-floor and Chilled Beams need to be understood.

Thermal Comfort: Determining optimum occupant comfort strategies. ASHRAE Standard 55 has been revised.

Acoustics: Accurately predicting end use environments. A new classroom acoustical requirement needs to be understood.

IAQ: The changing face of ASHRAE Standard 62.1, and upcoming developments.

Technical Session: It's Time...To Clear The Air! NOx Levels for Boilers and Hot Water Heaters

Speaker: Julian Elliot, BAAQMD

The Air District has changed the rule for new & existing boilers and water heaters! The Tech Session will provide you a summary of BAAQMD requirements for boilers and water heaters

- Regulation 9, Rule 6 only applies to new boilers and water heaters.
- Regulation 9, Rule 7 applies to both new and existing boilers.

All existing boilers, steam generators, water heaters and process heaters in specified size ranges within the BAAQMD must comply with the new standards. Owners found out of compliance are subject to fines. Compliance schedule requires 33% of devices at a single facility by the effective date, 66% one year later and 100% two years later. For emission requirements for any other fuel other than natural gas, liquid petroleum gas refer to Regulation 9, Rule 7.

Please plan on attending to learn the latest developments directly from the BAAQMD.

Golden Gate Chapter President's Message - Golden Gate off with a bang



This last month, the Golden Gate Chapter got off to a great start of the 2009-2010 year. We had our first dinner meeting and we had our seminar on Zero-Net Energy Buildings. Thanks to the Seminar Committee, PG&E, the speakers and all of the sponsors for helping put on an outstanding event. Please go to the [Seminar website](#) for more info including the presentations.

Normally, I would want to write a follow up to the seminar topic because as you know, words that start with the letter 'E' are my favorite. We have Technology Awards to celebrate. Also, local Team California (Santa Clara University & California College of the Arts) won Third Place for the second time at the [2009 Solar Decathlon](#). Check out the Team Projects, especially Team Germany's First Place "PV Cube".

But today, the Economic and Environmental issues associated with Energy are taking a back seat. Health Care is on my mind for more than one reason.

In case you missed our October meeting, Distinguished Lecturer Marlene Linders, a health care specialist and lawyer from Florida, spoke to us about infectious diseases and risk management for health facilities. I think I can speak for everyone that attended our meeting at Scott's that the information that Marlene presented to us was very compelling and a hard pill to swallow. To see the presentation and a glossary of terms, go to our [Golden Gate ASHRAE 2009-2010 Calendar](#) and select the October Page.

As I write this, we are getting through facing an illness in my own house. My 6 year old daughter last weekend came down with the flu. On Monday, the pediatrician diagnosed her (based on her symptoms, not a blood test) positive for 2009 H1N1, the swine flu pandemic. She is doing well now, but we were being very cautious.

Preventing Airborne Infectious Diseases in facilities is part of ASHRAE's role and purpose. ASHRAE has continually worked with the federal agencies including the CDC to advance the science, codes and regulations that make our buildings healthy.

Unfortunately, the health care industry is continually facing new superbugs and larger numbers of nosocomial infections in hospitals and clinics. It is evident that more research is needed. Marlene Linders pointed out that the pathogens that we need to stop are not identified in the standards we use to select filtration systems. It's becoming clear that perhaps our best standard of care might not be good enough.

In the next few years, industry and government will be looking to us (ASHRAE) for guidance. We need to add to our research the analysis required to upgrade our standards. We need to find a balance between healthy buildings and energy efficiency; neither of these building demands can be compromised.

This will continue to emerge as a challenge, and there you will find a pretty good opportunity to make a difference.

Best Regards,
Scott Wayland, Golden Gate ASHRAE President

Historian Article

Tom Gilbertson – Chapter Historian

Archives of the Golden Gate Chapter of ASHRAE....and the Chapter's predecessor societies....hold a series of comments from the Chapter's minutes and publications that appear somewhat astounding, when read, and reflected upon, in today's world.

A few examples to perhaps allow you to reflect on what has gone on before....and how the world has changed.....(I refrain from writing about any item that took place before I was born.....just so this stuff does not show up to be ancient.)

June 1941 --- **American Society of Heating and Ventilating Engineers (ASHVE).... (ASHRAE is a successor society)...**, **Semi –Annual Meeting June 16-20, 1941**....Meeting to be held in San Francisco...

- a. Meeting lasts five days....and is held at the Palace Hotel in San Francisco!
- b. Team competitions for Golf...and...Deep Sea Fishing!...are scheduled!
- c. Railroad Fares for travel from Chicago to San Francisco feature a special train for ASHVE members to board in Chicago...and travel together....Scenic Route takes **4 days** in each direction...(lets see...that means it will require 13 days of your time to attend the meeting...once you get to Chicago!)
- d. Round trip railroad fare between Chicago and San Francisco is **\$62.50**...and you can add **\$12.80** for an Upper Berth in a Pullman Car...Cost for meals on the train are not included!.....and 150 pounds of luggage are allowed, an no additional cost!
- e. The five-day meeting includes **THREE** Technical Sessions!
- f. The Daily Pacific Builder for June 14, 1941 is dedicated to the ASHVE National Convention....(the paper is in its "51st year of publication)....and the paper is full of discussions about preparations being made for National Defense!.....this is six-months before Pearl Harbor!

What interesting times 1941 must have been for our industry.....long before computers, calculators, CAD drafting...just think how slowly things must have moved.....8 days for a round trip to Chicago.....

December 1, 1949...ASHVE has their annual Christmas Party and adjourns after community singing, accompanied by an accordion.

June 4, 1953....Herb Duncan reports at the ASHVE Meeting that by re-classifying the "Fog Dispenser" with the Post Office.....that mailing costs for postage can be reduced from 3-cents to 1-cent...a substantial savings.

It is clear to me that not so long ago life moved somewhat slower...and it appears with much fewer opportunities....and that a dollar was a pretty valuable item.

Student Activities - Student Travel Grants to ASHRAE Winter Meeting in Orlando

Gary Harbison – Student Activities Chair

We will be awarding student travel-grant(s), for reimbursement of travel and room & board, for attending either the winter or summer Society Annual Meeting.

The ASHRAE winter meeting will be held January 23-27, 2010 in Orlando, FL with the traditional student breakfast taking place Sunday, January 24; featuring speakers, design competition winners, network opportunities and more! An optional technical tour also is available. More details to come!

The deadline for submitting applications for the winter meeting is December 11, 2009. The application form is on our website at: <http://www.ggashrae.org/awards/index.htm>

The summer meeting is in Albuquerque, NM, from June 26-30, 2010 with application deadline Spring, 2010.

Lastly, if you are a student we invite you to attend any of our regularly scheduled chapter meetings and we will buy you dinner! All that is required is that you are a registered student member of ASHRAE. Student membership application is available on-line at <http://www.ashrae.org/students/page/698>.

Chapter Technology Transfer Committee (CTTC)

Tyler Bradshaw, ASHRAE Golden Gate CTT Committee Chair

2009 Fall Seminar on Net Zero Energy Buildings

This year's seminar was a huge success! We had the best turnout yet since this committee started the climate change themed seminars back in 2007. Our goals were to host a seminar on a subject important and relevant to our members and the world as a whole, to fill the seminar with top notch speakers, to provide financial support for ASHRAE research & scholarships and to make it free to get the maximum impact and participation for our community.

We would not have been able to accomplish these successes without the tireless efforts of our seminar committee and our generous sponsors who made it possible to not only offer this event free to the public but also bring in thousands of dollars for ASHRAE research and scholarship funds. If you have the opportunity, please take a few minutes to thank any of committee members and sponsors for without which we couldn't have reached our lofty goals.

Seminar Committee:

Chair: Clark Bisel – WSP - Flack + Kurtz

Robert Marcial – PG&E

Glenn Friedman – Taylor Engineering

David Okada – Stantec

Tyler Bradshaw – Rumsey Engineers

Anna LaRue – PG&E

Bill Burke – PG&E

Sponsors:

PG&E – Platinum level & event sponsor

WSP - Flack + Kurtz – Platinum level

Alfatech Cambridge – Gold level

Rumsey Engineers – Gold level

Trane Co. – Gold Level

Taylor Engineering – Silver level

Ideate – Silver level

Robert Marcial – Individual level

2009/2010 Technology Awards

It's not too late to start working on your entry for the 2009/2010 competition. **Entries must be submitted by February 28th 2010.**

The submitted project should be completed and occupied for one year by the due date for the Society award application - September 2010. Therefore, your project should have been occupied by September 2009.

Please see our CTTC website or the following links for more info.

<http://www.ashrae.org/publications/detail/14703>

<http://www.ashrae.org/publications/detail/14704>

<http://www.ashrae.org/publications/detail/14692>

<http://xp20.ashrae.org/STANDCOM/ShortForm.pdf>

Join the CTTC Committee

If you like to assist the chapter and get involved with ASHRAE, the Chapter Technology Transfer Committee is one of the best places and we could use your help. Talk to a board member or contact Tyler Bradshaw at tbradshaw@rumseyengineers.com.

Announcements – Technical Session November 12, 4:30 PM at the PEC



AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.

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It's Time To Clear The Air!

The Air District has changed the rule for new & existing boilers!

Summary of BAAQMD Requirements for Boilers

Regulation 9, Rule 6 only applies to new boilers.

Regulation 9, Rule 7 applies to both new and existing boilers.

Any boiler that meets the following must have a permit:

- ≥ 10 Million Btu/hr. Input firing exclusively with natural gas, liquefied petroleum gas, or any combination thereof.
- ≥ 1 Million Btu/hr. Input fired any fuel other than natural gas, liquefied petroleum gas, or any combination thereof.

BAAQMD - Reg. 9 Rule 6

Natural Gas-Fired Boilers / Water Heaters ≤ 2 MMBtu/hr. Input

On 11/07/07 the Bay Area Air Quality Management District (BAAQMD) amended Regulation 9, Rule 6, "Nitrogen Oxides Emissions from Natural Gas Fired Boilers and Water Heaters" to include the following new standards:

Rated Heat Input (Btu/hr.)	NO _x Limit (ppmv dry @ 3% O ₂)	CO Limit (ppmv dry @ 3% O ₂)	Effective Date
75,001 to 400,000	55	N/A	01/01/2008
75,001 to 400,000	20	N/A	01/01/2013
400,001 to 2,000,000	30	N/A	01/01/2008
400,001 to 2,000,000	20	N/A	01/01/2013

Any Boiler / Heater that is installed after the above specified dates must comply with these new standards. Owners found out of compliance are subject to fines.



BAAQMD - Reg. 9 Rule 7

Boilers, Steam Generators & Process Heaters >2 MMBtu/hr. Input

Rated Heat Input (MBtu/hr.)	NO _x Limit (ppmv dry @ 3% O ₂)	CO Limit (ppmv dry @ 3% O ₂)	Effective Date	Periodic Emission Testing	Registration
>2 to 5	30	400	01/01/2011 ¹	Not Required	Yes, if not Permitted
>5 to <10	15	400	01/01/2012 ¹	Not Required	Yes, if not Permitted
10 to <20	15	400	01/01/2012 ¹	Every 2 Years	No (Should be Permitted)
20 or more, load-following unit	15	400	01/01/2012 ¹	Every Year	No (Should be Permitted)
20 to <75	9	400	01/01/2012 ¹	Every Year	No (Should be Permitted)
75 to More	5	400	01/01/2012 ¹	Every Year	No (Should be Permitted)

¹Later of date shown or 10 years after the original manufactured date.

²Later of date shown or 5 years after the original manufactured date.

All existing Boilers, Steam Generators and Process Heaters in these size ranges within the BAAQMD must comply with these new standards. Owners found out of compliance are subject to fines. Compliance schedule requires 33% of devices at a single facility by the effective date, 66% one year later and 100% two years later. For emission requirements for any other fuel other than natural gas, liquid petroleum gas refer to Regulation 9, Rule 7.

Tune-Up Requirement:

Effective 1/1/2009

- No person shall operate a boiler, steam generator or process heater unless they do at least one of the following each calendar year:
 - Operate at less than 10% on its annual maximum heat capacity during the calendar year: or
- Perform an inspection and tune-up at least once per calendar year by a technician in accordance with the procedure specified in Section 9-7-604.



Insulation Requirement: Effective 1/1/2010

- No person shall operate a boiler or steam generator unless the exposed, external surface of the device, including all pipes and ducts heated by the device, does not exceed a temperature of 120°F. This requirement shall not apply to any of the following:
 - Any device that meets the definition of a high-temperature water boiler in California Code of Regulations, Title 8.
 - Any surface or appurtenance that must remain un-insulated for safety or operational reasons.
 - Any surface that has at least one inch of insulation, or that does not exceed a temperature of 140°F with no insulation.
 - Any surface heated by a source other than the boiler or steam generator, including sunlight.
 - Any exhaust stack surface.

Stack Gas Temperature Limit: Effective 1/1/2011

- No person shall operate a boiler or steam generator with a stack gas temperature (downstream of any economizer) that exceeds the indicated maximum temperature:
 - Firetube – the greater of 100°F over saturated steam temperature / hot water temperature or 250°F ambient temperature (gaseous fuel) or 300°F ambient temperature (non-gaseous fuel).
 - Watertube – the greater of 150°F over saturated steam temperature / hot water temperature or 250°F ambient temperature (gaseous fuel) or 300°F ambient temperature (non-gaseous fuel).

Registration Requirement: Effective 1/1/2011

- No person shall operate any boiler, steam generator or process heater >2 MMBtu/hr. to <10 MMBtu/hr. unless the device is registered in accordance with Regulation 1, Section 410. Any person registering a device shall pay the fees specified in Regulation 3. This registration requirement shall not apply to any device for which the operator holds a District Permit to Operate.

New Source Compliance with Emissions Standards – Devices Rated <10 MMBtu/hr. Input:

- The manufacturer shall obtain confirmation from an independent testing laboratory that each boiler, steam generator or process heater model it sells or distributes for sale into the District that is subject to the requirements of Section 9-7-307.1 or 307.2 has been tested in accordance with the procedures in Sections 9-7-601 and 602. This requirement shall not apply to burner assemblies sold as retrofit packages.

A complete copy of BAAQMD Regulation 9, Rule 6 or Regulation 9, Rule 7 is available online:

www.baaqmd.gov/dst/regulations/index.htm

Let's get started!



Young Engineers of ASHRAE Bowl Night

Come meet other young members of your chapter and enjoy a few games of bowling!

Date: November 5th, 2009

Time: 6:00pm ~ 8:00pm

Where: Yerba Buena Bowling Center

(Folsom between 3rd and 4th in San Francisco)

Cost: \$5.00 (includes bowling, pizza, and fun!)



Reserve with: michelle.yigil@arup.com



California Hydronics Corporation

NAZZARO and ASSOCIATES

Marble Draw

Many thanks to our sponsors, California Hydronics, Norman Wright, RF MacDonald and Engineered Environmental Systems for the donating prizes at October meeting! Through our raffle ticket sales, we are well on our way to meeting our research donation goals. We had an exciting start to the year with Kathryn Lee winning the first \$500 marble draw prize. The pot for the November meeting is \$500 and the odds are 1 in 9, so get ready to buy your raffle tickets! We are always in need of raffle sponsors. If you would like to donate a prize for a future meeting, please contact Sheila Ruder at sruder@rumseyengineers.com or 510-663-2070.

Golden Gate Chapter ASHRAE 2009-2010 October Chapter Meeting Minutes

Date/Time – Thursday, October 15, 2009 at 5:30 PM

Location – Scott's Seafood Oakland, CA

1. 5:30 pm Registration and social hour
2. 6:30 pm Meeting called to order by Scott Wayland
3. Self Introductions
4. Announcements:
 - a. Introduce new board of governors and committee chairs
 - b. Tyler Bradshaw – CTTC
 - i. October 21 technical seminar webinar space available
 - ii. ASHRAE society technology award results. GG did great!
 - c. Michelle Vigil – YEA
 - i. Leadership weekend experience
 - ii. First event; November 5th Yerba Buena Bowling
5. Gary Harbison introduced the meeting speaker: Designated Lecturer, Marlene Linders The Philanders Group
6. Marble Draw – Sponsored by Norman Wright, California Hydronics, Engineered Environmental Systems & RF McDonald. Kathryn Lee won the marble draw pot of \$500.
7. Meeting was adjourned at approximately 9 pm.

Kristin DeMartini, Secretary Golden Gate Chapter BOG

2009 - 2010 Event Calendar

<i>Date</i>	<i>Venue</i>	<i>Presentation Topic</i>	<i>Speaker(s)</i>
Thursday, November 12 4:30 pm – 9:00 pm (map)	PG&E Pacific Energy Center, San Francisco	Tech Session: 4:30 pm – 5:30 pm, Julian Elliot, BAAQMD Effective Room Air Distribution...IAQ, Acoustics, Air Distribution, Thermal Comfort & Relationship to Std 90.1 and LEED	TBD, BAAQMD Daniel Int-Hout Krueger
Thursday, December 3 5:30 pm - 9:00 pm (map)	San Mateo Fairgrounds Event Center, Sequoia Room, San Mateo	Joint meeting with San Jose Chapter Maintain to Sustain	William A. Harrison Society Past President Trane Arkansas
Thursday, January 7 5:30 pm – 9:00 pm (map)	Scott's Seafood, Oakland	ASHRAE/USGBC/IESNA Standard 189.1 for High-Performance Green Buildings	Kent Peterson, P2S Engineering
Thursday, February 4 5:30 pm - 9:00 pm (map)	Scott's Seafood, Oakland	Getting to Zero: Lessons Learned from Designing Net Zero Energy Building	Brad Jacobson EHDD Architects
Thursday, March 4 5:30 pm – 9:00 pm (map)	Sausalito Yacht Club, Sausalito	Joint meeting with Redwood Section Water Reclamation, Conditioning & Conservation-Rainwater, Graywater, Reverse Osmosis, Deionization	Brian Soderholm Water Control Corporation
Thursday, April 1 DeYoung Museum	TBD	Presentation of the Arup Design and Building Tour	Ray Keane Timmons Design Engineers, formerly with ARUP
April Tech Tour		TBD	TBD
Thursday, May 6 (map)	PG&E Pacific Energy Center, San Francisco	Showcase/Tech Awards/Student Science Fair	Vendors and Award Recipients
Thursday, June 3 5:30 pm - 9:00 pm (map)	Scott's Seafood, Oakland	Targeting Net-Zero-Energy/Zero-Carbon-Emissions (Z2).	Peter Rumsey, Rumsey Engineers David Kaneda, Integrated Design Associates

TBD = To Be Determined

Visit www.ggashrae.org/calendr.htm for updates, presentation summaries, speaker biographies and to register for the meetings. If you have suggestions for meeting topics, please contact Scott Wayland at sewayland@comcast.net

Photos



Left: Gary
Harbison &
Dale Yager

Right: Stephen
Pronchick &
Scott Weyland
& David
Nazarro



Left:
Michelle Vigil

Right:
Sheila Ruder &
Yoko
Matsuyama



Left: Paul
McGrath &
Julie Goodwin

Right: Scott
Weyland &
Marlene
Linders

