

FOG DISPENSER

Golden Gate Chapter



ASHRAE

VOLUME XLVI - NUMBER 4

JANUARY 2008

January Meeting Details

Date: Thursday, Jan 10, 2008

Place: Scott's Seafood, 2 Broadway Ave, Oakland
([directions](#))

Schedule:

5:30 pm Registration and social hour
6:30 pm Dinner, announcements, introductions
7:45 pm Break
8:00 pm Speaker presentation
9:00 pm Adjourn

Cost:

	Before noon Mon., 1/7	After noon Mon., 1/7
ASHRAE members	\$40	\$47
Non-members	\$47	\$50
Students	Free with registration	
Voucher holder	Free with registration	

Please make your reservation at
www.ggashrae.org/meetings/2007-2008/jan.htm

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

Natural Ventilation and Mixed-Mode Buildings



Gail Brager, Ph.D., U.C. Berkeley

Gail is a mechanical engineer who has been a Professor in the Department of Architecture at U.C. Berkeley since 1984, and is also the Associate Director of the Center for the Built Environment (CBE), an industry/university collaborative research center focused on improving the design, operation, and environmental quality of buildings. She is a Past-President of the Golden Gate Chapter, has served on several ASHRAE technical and standards committees, and is currently the Chair of the US Green Building Council's Research Committee.

"Mixed-mode" refers to a hybrid approach to space conditioning that uses a combination of natural ventilation from operable windows (either manually or automatically controlled), and mechanical systems for cooling. Although mixed-mode buildings are becoming increasingly popular in Europe and Japan, there are fewer examples in the U.S., primarily due to our industry's lack of understanding about their design, controls, and performance issues related to energy savings, occupant control, and improved comfort. Gail Brager will provide an overview of CBE's research on mixed-mode buildings, including case studies, control strategies, and occupant satisfaction surveys. She will also introduce a project that has just begun in collaboration with LBNL to develop and utilize simulation tools to better understand the climatic limits of feasibility for these systems.

President's Message: Building Performance—The Next Frontier

Robert Marcial, Golden Gate Chapter President

I tend to be a skeptic when it comes to believing that a building is truly “green” or “sustainable”. I’ve almost banned those words from my own vocabulary. I’d like a little bit of truth and actual data that says that a building deserves to be praised. That’s not such an unreasonable request, is it? And if a building isn’t performing well, I’d like to see an open and honest discussion, which is very different than finger-pointing, about why it’s not performing well so I can learn from my or someone else’s mistakes.

As an organization, we have hundreds of competent, honest, and responsible energy modelers and engineers, however, we’re not perfect, nor are the pieces of software that are available to us. And let’s not forget the assumptions we have to make based on information provided to us by other members of the design team. All that said, the truth lies in a building’s actual measured performance, not in modeled predictions. Sometimes, they are in agreement, but more often than not, there are significant differences between the two.

Many years ago, the Architectural Review, a highly regarded architectural journal that dedicates entire issues to energy efficient and environmentally-responsible building design, published an issue that included several buildings that were regarded as models for energy efficiency and occupant well-being. I wrote a letter to the editor about how I hoped he would do a follow-up issue about those buildings’ performance. I didn’t hold my breath and he never did that follow-up issue, however, he did publish my letter—a gesture that supports my positive opinion of this journal. That was about 10 years ago.

I’d like give our members a heads-up about a few recent breaths of fresh air on this topic in hopes that more architects, engineers, and organizations will follow suit to help the building industry learn from what has been built. These are:

- Sandy Mendler and HOK San Francisco’s presentation about “Green Building Confessions”
- UC Berkeley Center for the Built Environment’s Livable Buildings Awards
- High Performance Buildings magazine published by ASHRAE

All three go beyond predicted performance in some way or another. And two of them provide “lessons learned”. I won’t go into their contents in great detail, but it’s worth saying a little bit about each of them.

Sandy Mendler and a few other designers of HOK San Francisco developed a presentation that she gave to our Chapter in October of 2006. The talk is essentially a self-critique of HOK projects and the beginnings of an open and honest discussion of things that HOK did well and things that they didn’t. Sandy and a group of HOK folks have given their own projects “grades” based on some criteria, including energy performance and occupant satisfaction. One of the underlying messages is that buildings that underwent commissioning ended up with energy performance closer to the modeled performance and had higher levels of occupant satisfaction. Surprise, surprise! Thanks to Sandy and HOK for developing this presentation, which is available on our Chapter Web site at www.ggashrae.org/meetings/2006-2007/oct.htm. I wish more architecture and engineering firms would follow HOK’s lead.

By now, if you are an ASHRAE member, you should have received the first issue of High Performance Buildings magazine. It is a quarterly magazine that will feature buildings that are exemplary in their designs to deliver high quality spaces and low energy use. But it goes a step further. In the opening letter from the editor, Fred Turner writes that the magazine will feature case studies, most of which “will include measured performance and try to answer the critical question: Is the building working as intended? This is important to the credibility of the sustainability movement ...” The case studies in the first issue also include a “lessons learned” section where there’s a discussion about what went wrong, what went well and how things could go better the next time. Visit www.hpbmagazine.com to view and download the magazine.

Lastly, the UC Berkeley Center for the Built Environment is now giving awards to buildings that have scored well on occupant satisfaction. It's unique in that regard. The other criteria include resource efficiency and overall design. We need more institutions that give out such awards. Learn more about these awards and the first recipients at <http://cbe.berkeley.edu/livablebuildings>.

I titled this message as "Building Performance—The Next Frontier" as a way of saying that ASHRAE needs to support, promote, and demand open and honest discussions on actual building performance. ASHRAE needs to do this at the local Chapter, Regional, and national Society levels. I'm glad to see that we have the High Performance Buildings magazine as a step in that direction. And perhaps 2008 will unfold more valuable resources.

Please join us on [Thursday, January 10 at Scott's Seafood](#) in Oakland to hear past Golden Gate ASHRAE President and ASHRAE Fellow Gail Brager of U.C. Berkeley discuss mixed-mode buildings. Gail is an excellent and highly-regarded speaker and we're fortunate to have her as part of this season's lineup of speakers.

With Happy New Year regards,

Robert Marcial

Student Activities

Gary Harbison, Student Activities Chair

We are pleased to announce that Mr. Kyle Konis has been awarded a \$1000 travel grant to attend the January 2008 ASHRAE/AHR EXPO in New York. Kyle is currently enrolled at U.C. Berkeley working on his Ph.D. in Building Science. His Faculty advisor is Gail Brager. Kyle began the Ph.D. program at Berkeley in 2006, after working for 3 years in commercial architecture in London, UK.

His research has involved demand response and an ongoing project with LBNL on high-performance building façade Solutions. As California moves towards net-zero energy buildings, it is likely that the façade and perimeter zone of buildings will be a source of substantial energy savings. At the ASHRAE conference, he looks forward to attending workshops and networking with others dealing with facades, daylighting and shading strategies; for both increased energy efficiency and occupant comfort.

Please note that the February meeting is "Student Night". Details to follow in the next Fog Dispenser.

Chapter Technology Transfer Committee (CTTC)

Tyler Bradshaw, ASHRAE Golden Gate CTT Committee Chair

2008 Golden Gate Technology Awards

There are only two months left to submit your application for the 2008 competition; now is the ideal time to start your application. If you are considering submitting one or more of your projects, start by reading the requirements, downloading the required forms and getting the owner's/client's permission. If you have questions on the application process, please email me at the address below.

The 2008 award applications will be due no later than Feb 2008. The following are links for more information on how to get started.

<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>

2008 Spring Seminar

Our 2007 seminar was a huge success; many thanks to this year's seminar committee for all their hard work. The CTTC is already planning to build upon this success with next year's seminar currently scheduled for May 1, 2008 at the PG&E Energy Center. Check back for announcement of specific topics, speakers and schedule as they are firmed up.

We are now accepting sponsorship donations for the 2008 seminar; the earlier you submit, the longer the exposure will be.

Sponsorship Levels:

Platinum = \$1,000

Gold = \$500

Silver = \$250

Personal Contributor = \$50

Note: all proceeds will go towards ASHRAE research and local student scholarships!

If you are interested in sponsoring as an individual or company, please contact Tyler Bradshaw at tbradshaw@rumseyengineers.com to receive a sponsorship payment form or for additional details.

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 could use your help. Talk to a board member or contact Tyler Bradshaw at tbradshaw@rumseyengineers.com.

ASHRAE History Touches (Lightly) Golden Gate Chapter

Tom Gilbertson, Golden Gate Chapter Historian

Do you know when, and who, “invented” fin tube radiation?...and what company was “built” on that “discovery?” Carrier Corporation, now a division of United Technology, was basically built on the technology that was used to develop Willis Carrier’s understanding of psychometrics and the development of the centrifugal compressor operating with a “safe” refrigerant. Assemble all of Carrier’s ideas and create a marketing program to support the ideas, and just like that, you have an “80+ -year-old” “overnight” success.

Another giant of our industry was buoyed upward from a humble beginning when Merrill Benson, a University of Minnesota graduate in mechanical engineering, whose father had helped Merrill land a job with a small heating outfit in La Crosse, Wisconsin.

Into the 1920’s comfort heating meant “cast iron” radiators, using steam, or occasionally, hot water. It is reported that Merrill showed his idea for “fin-tube radiation” to Reuben Trane...Reuben took a real interest. The comparison of the cost to manufacture a cast product with the piece of tubing that has fins, especially if they could deliver nearly the same result, makes for a very interesting business situation. The opportunity was not lost on the Trane Company. Merrill continued work in the development of the cast iron headers for heat transfer air coils. (One summer I worked at the foundry company that made the cast iron headers for Trane...and I decided that foundry work probably was not what I really wanted to do as career.)

The sale of the “new” fin tube radiation product was a very important aspect to the funding of the growth of the Trane Company. Consider the cost advantage of being able to both ship and manufacture an “equal-in-performance” product that weighed perhaps 4 pounds vs. a product that weighed 125 pounds, and required a cast iron foundry. Realize that into the 1920’s Trane produced and sold a clever draft control device for keeping a wood fire burning through the night; just to understand how times have changed!

Merrill Benson after working on more heat transfer products like cooling and heating coils eventually went to work for, and helped form “Super Radiator”, in 1927, and continued his activity that was based on heat transfer innovation. (Super Radiator continued in business as an independent coil manufacturer until it was purchased by McQuay in 1976; subsequently it became privately-held some years later.)

The historical point is...if there is any...is that Trane made very good use of the product development of “finned tube radiation”; initially a very profitable item.

In 1938, Trane published the “Trane Air-Conditioning Manual”. This was written by William O. Goodman when he lived in La Crosse and worked for Trane. Mr. Goodman’s son, Phillip, and I went to school together in 1942. Phillip brought a copy of the book to “show & tell” that year, to our kindergarten class!

A little background about The Trane Company--the founder was Ruben Trane, the son of a plumbing contractor, Peter Trane, who had emigrated from Norway, and that started the ball rolling. The Trane Air-Conditioning Manual, Trane’s extensive, 6-month sales engineer training program, and their well-written catalogues helped push the company upwards. Their product development of the “hermetic-centrifugal water chiller” in about 1951 was a major breakthrough.

A very clever Trane engineer, Robert “Bobby” Miner adapted a Johnson Service Company T-400 room thermostat mechanism to be piloted by a current coil instead of a bi-metal strip, and made the inlet vane control for the water chiller both doable, and economical. This development allowed the hermetic-centrifugal water chiller to be applied, and replace the large DX systems of the day. (Does anyone remember using a “Schnacke Compressor”?) The packaged hermetic - centrifugal water chiller led the Trane Company into a major position in the air-conditioning industry....and the funding for the development was, in part, funded from the sale of finned-tube radiation product

Eric Thor Andresen Memorial Scholarship Fund Update

Jeff Blaevoet, Golden Gate Chapter President-Elect

Last October, Eric's father, Flemming Andresen, generously donated another \$10,000.00 to the already substantial ETAMSF investment account. The Golden Gate ASHRAE Chapter Board wishes to express its gratitude to Flemming for the scholarship opportunities this enhanced fund will provide to qualifying students.

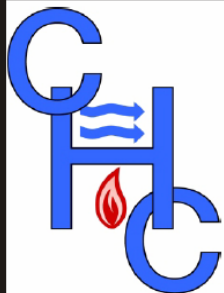
The purpose of the Eric Thor Andresen Memorial Scholarship Fund is to provide financial assistance and encouragement to qualifying students with the intent to help them further their education and pursuit of academic excellence in the area of energy conservation, control of the indoor environment or related areas of interest in the HVAC field.

There are some specific eligibility criteria for this scholarship, regarding college location, choice of Engineering or Architectural study major and ASHRAE student chapter affiliation with the Golden Gate Chapter - please see the Chapter website for further details. Any student selected cannot have received the scholarship before and must be attending classes' full time, or be enrolled in an authorized work/study program. The final selection of a student to receive the ETAMSF Award is made by the Student Activities Committee and approved by the Chapter Board.

The monies for this Scholarship are from the interest earned on the principal of the Fund. The Golden Gate Chapter of ASHRAE is the administrator of this account and its investment portfolio. There have been annual Tennis Tournaments sponsored by the Chapter for the purpose of raising money to increase the principal of the ETAMSF. The Andresen Family has been generously matching those amounts and other family and friends of Eric have continued to send memorial checks to build the principal and allow for a larger scholarship amount.

The Golden Gate Chapter is proud to annually award the ETAMSF check in Eric's memory, to help continue his legacy to the environment through better HVAC, keep his youthful spirit alive in the Chapter Tennis Tournaments and to aid and support the Student members of ASHRAE achieving their educational goals.

The 2008 award in March is soon approaching, so applications for this scholarship are actively encouraged.



CALIFORNIA HYDRONICS CORPORATION
2293 TRIPALDI WAY
P.O. BOX 5049
HAYWARD, CA 94540-5049

Training Contact: Barbara Zrout
Phone: 510-266-7876
Fax: 510-293-3080
Bzrout@calhydro.com

**CALIFORNIA HYDRONICS CORPORATION
IS PLEASED TO ANNOUNCE OUR
2008 TRAINING SEASON**

BASIC HYDRONICS

Wednesday, February 20, 2008
Wednesday, September 24, 2008

MODERN PLUMBING:

DOMESTIC BOOSTER SYSTEMS, SUMP & SEWAGE, DHW HEATING

Wednesday March 19, 2008
Wednesday, November 12, 2008

STEAM SYSTEM DESIGN

Wednesday, April 9, 2008

CONDENSER WATER SYSTEMS

Wednesday, Oct 15, 2008

Registration: 8:00 a.m.
Instruction: 8:30 a.m. - 4:00 p.m.
Lunch and course materials included

**FOR FURTHER DETAILS OR TO REGISTER ONLINE,
PLEASE VISIT OUR WEBSITE AT www.calhydro.com**

**CLASS SIZE IS LIMITED TO A MAXIMUM OF 30 STUDENTS.
PLEASE DO NOT MISS THE CHANCE TO ATTEND
ONE OF OUR POPULAR SEMINARS OFFERED
TO YOU AT JUST \$50 PER CLASS.**

Circulating Satisfaction Since 1957

Minutes of Golden Gate Chapter Meeting—December 13, 2007

Scott Wayland, Golden Gate Chapter Secretary

Meeting Date: Thursday, December 13th, 2007

Location: Burlingame Double Tree Hotel

- Registration, Dinner started at 6:30
- Robert Marcial, GG Chapter President, welcomed the members and called the meeting to order at 6:45 p.m.
- Announcements and administrative discussion
 - o Tim Goepfner (Student Activities) announced that UCB Ph. D Student Kyle Konis received a Travel Grant to go to the Winter ASHRAE meeting.
 - o Tyler Bradshaw (CTTC Chair):
 - announced that the next Seminar (webinar) will be on May 1st, more info to come...
 - 2008 Technology Awards Due in February, and the Tech Transfer committee has already received one entry!
 - o SJ Chapter President Brian Maher announced upcoming SJ meetings, including the January Lunch meeting, the Tech Seminar and the Bocce Ball Tournament. See the Chapter website for more info.
 - o Robert Announced the Society Magazine HPB, showcasing M&V in High Performance buildings.
- Self introductions
- Jeff Blaevoet introduced the speaker for the main presentation: Martin Dodd on the upcoming 2008 Title 24 Part 6 Energy Standards. (Code effective April 30, 2009) go here for more info:
<http://www.energy.ca.gov/title24/2008standards/>
- Main presentation: 2008 Title 24 Part 6 Energy Standards.
- Marble draw raffle by Beck Courter of Norman Wright and Annie Foster of Flack+Kurtz
- Next meeting: Thursday, January 10th @ 5:30 p.m. at Scott's Seafood in Oakland, with Gail Brager, Ph.D., UCB on Natural Ventilation and Mixed-Mode Buildings
- Motion to adjourn the meeting at 9 pm.

2007 - 2008 Event Calendar

<i>Date</i>	<i>Venue</i>	<i>Presentation Topic</i>	<i>Speaker(s)</i>
Thursday January 10, 2008 Dinner	Scott's Seafood, Oakland	Natural Ventilation	Gail Brager, U.C. Berkeley
Thursday February 7, 2008 Dinner	Pacific Energy Center, S.F	Radiant Cooling	Timothy Moore, Center for the Built Environment
Thursday March 6, 2008 Dinner	Embassy Suites, San Rafael	TBD	TBD
Thursday April 3, 2008 Dinner	Pacific Energy Center, S.F.	TBD	TBD
May 1 2008 virtual building tour Dinner	Scott's Seafood, Oakland	TBD	TBD
Thursday Jun 5, 2008 Dinner	Carnelian Room, S.F.	TBD	TBD

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 Jeff Blaevoet at jblavoet@gb-eng.com.

Photos from the December 2007 GG and SJ ASHRAE Meeting



Left: Jeff
Blaevoet, Alex
Salter, Tim
Brown



Right: Loek
Vaneveld,
Dennis
Thompson,
Robert Marcial



Left: Martyn
Dodd



Right: George
Dimic, Becky
Hill



Left:
Unidentified
attendee,
Mehrdad
Gholamalipour,
Elham
Eshraghi



Right: Scott
Gainer, Brian
Maher,
Kristin
DeMartini



Left: San Jose
ASHRAE
President,
Brian Maher



Right: Golden
Gate Chapter
President-
Elect
Jeff Blaevoet



Left: San Jose
ASHRAE
members

Right: Krystal
Naillon, Justin
Murray



Left: Dick
Charles, Tom
Gilbertson,
Don Druyanoff

Right: Steve
Pronchick,
Student



Left: Jeffrey
Violet, Ken
Mozek, Mike
Cleary

Right: Stephen
Roth, Madhav
Chikhale



Left: Becky
Courter, Annie
Foster during
raffle

Right: Tim
Brown, Tyler
Bradshaw

