

FOG DISPENSER

Golden Gate Chapter



ASHRAE

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FEB 2006

February Meeting Details

This *dinner* meeting in the East Bay is *Student Night!*

Date: Thursday, February 2, 2006

Place: Scott's Seafood, Jack London Square
2 Broadway, Oakland, California 94607
510-444-3456

Directions:

From San Francisco or the North: Take 580 towards Hayward to 980 (downtown Oakland); exit 11th/12th Street. Go straight on Brush, left on 5th, right on Broadway, then four blocks to Jack London Square.

From the South:

Take 880 North to the Broadway exit; left on Broadway, then four blocks to Jack London Square.

From the East:

Take Highway 24 to 580 towards Hayward, to 980 (downtown Oakland). Take the 11th/12th Street exit, go straight on Brush, left on 5th, right on Broadway, then four blocks to Jack London Square.

Schedule:

- 5:30 – 6:30 PM: Registration and social hour
- 6:30 – 7:30 PM: Dinner with announcements and introductions
- 7:30 – 7:45 PM: Break
- 7:45 – 8:45 PM: Speaker presentation
- 8:45 – 9:00 PM: Marble Draw

Cost: \$40 for members and guests reserved by Thursday, January 26 at noon.

Students – No charge, but please reserve a spot.

\$47 for non-members and late reservations/at the door for members.

\$50 for late reservations/at door for non-members

Please make your reservation via our website. Visit the Event Calendar at <http://www.ggashrae.org/calendr.htm>, click February 2, and fill out and submit the form. Or fax the form on page 11 to Jeff Blaevoet at 415-625-0735.

Remember – if you make a reservation and cannot attend, you need to cancel in advance, or you will be billed.

February Program

Panel Session: Retro-Commissioning



David Sellers, PE (left)
PECI (Portland Energy Conservation Inc)

and

Jay Santos, PE (right)
Facility Dynamics

Glenn Friedman will moderate a panel session on retro-commissioning. The panel will explore the drivers for retro-commissioning projects along with real world experiences on lessons learned. The presenters will share perspectives on the need for retro-commissioning, the secrets to successful retro-commissioning and the do's and don'ts of retro-commissioning.

Come join us for a lively evening with interaction and time for audience questions.

Golden Gate Chapter President's Message, February 2006

Most of us understand the *importance* of teamwork. We are taught to be “team players” from an early age and asked in job interviews to affirm this trait. Companies are typically divided into functional or project teams. Of course, we form our ideals about teams from our unique experiences in work, family, athletics, education, etc. If you agree that teamwork is inevitable and important to our careers, you might ask yourself: how do you evaluate a particular team you are on?

I feel fortunate to be a part of the team that currently runs this chapter of ASHRAE, and I'll use my experiences on the Board of Governors to suggest ways to evaluate and possibly improve the teams of which you are a member. Three team qualities that are particularly important to our chapter are accountability, competence, and latitude. Why is each of these team qualities important, and how can you evaluate your own team in these areas?

Member accountability is possibly one of the most important attributes of a team. By definition, the team collectively relies on each member to do his part. It is the responsibility of each person on the team to be accountable for his actions, and the team should demand such accountability. You can ask yourself if a particular team in which you work holds its members accountable for their duties. Do people do what they are expected to do? Do team members accept responsibilities after considering if the responsibilities can be fit into that person's current work load?

It may sound obvious to say that team member competence is important to the functioning of a team. Certainly we'd prefer to be surrounded by competent people – but what do we do to help team members develop skills needed for their roles on the team? We all bring certain skills and talents to the team, but the set of skills and talents varies across team members. As an example from our local ASHRAE Chapter, when I became chapter Treasurer a few years ago, I didn't have experience with the accounting software we use, and I had never before managed the finances of a non-profit organization. I did, however, have other skills that helped me in my role as Treasurer after my fellow board members helped me learn the software and our system of financial management. It is up to the individual team member to become competent in the skills he needs to serve the team, and up to the team collectively to provide training and development tools to ensure competence. Does your team systematically teach its members the skills they need?

Teams should also grant their members latitude to improve processes. When we operate strictly out of habit we are apt to miss opportunities for innovation. You can evaluate your team by considering whether team members are encouraged to present new methods or systems, or if you operate in auto-pilot without evaluating the possibility of implementing a new technology or procedure that might improve the team's effectiveness.

Whatever you consider your team to be your work group, your family, or your non-profit industry association, evaluate your team in these areas. If you aren't satisfied with your team's performance, be the person to implement change. I want to thank my fellow Board members Jon Wintermeyer, Glenn Friedman, Robert Marcial, Jeff Blaevoet, and Scott Wayland for being such effective team members and for the tremendous experiences I've had on this team.

We had a great meeting in January with nearly 100 people coming to hear Charles Eley's presentation. I look forward to seeing you in Oakland on February 2 for David Sellers' talk on retro-commissioning. Scott's Seafood is a great restaurant and if you live or work in the East Bay, this meeting will be particularly convenient for you.

Respectfully submitted,
Cory Palmer, Chapter President

David Sellers Biography

David Sellers is a Technical Manager at PECL, leading new and existing building performance projects. Mr. Sellers' experience includes 28 years of system design, fabrication, operation, and analysis focusing on HVAC systems, control systems, plumbing systems, and fire protection systems. He has been involved in all aspects of project design from schematics through construction documents. In addition, he has worked as a mechanical and control systems contractor and a facilities engineer, exposing him to the practical issues associated with system installation and operation in addition to the theoretical issues associated with the design process.

Mr. Sellers' fieldwork typically consists of troubleshooting, system optimization, building automation system control programming, testing and balancing, and commissioning. His experience includes work in new and existing facilities in the commercial, industrial, institutional, and health care sectors. Mr. Sellers also has extensive experience as technical writer and trainer.

Some of his most recent projects at PECL include:

- Currently developing an Application Guideline on Return Fan Speed Control Strategies
- New construction commissioning of the Seattle Federal Courthouse and a LEED(TM) Gold facility for the American Honda Motor Company

- Technical support, consultation, and training to develop an in-house retrocommissioning program and pilot projects for Marriott

- Publishing of four energy design briefs for Pacific Gas & Electric Company. Also design and commissioning-related training

- Development of the Control System Design Guide and Functional Testing Guide for Air Handlers for the California Energy Commission.

Mr. Sellers previously worked as an HVAC and Fire Protection Engineer at Komatsu Silicon America, Inc., where he was responsible for reviewing design, construction, start-up, and day-to-day operation of the HVAC, chilled water, process exhaust, scrubbed exhaust, and fire protection systems. Prior to his Komatsu position, Mr. Sellers spent a significant portion of his career working for McClure Engineering Associates, Inc., where he held a number of positions ranging from field technician to designer to project engineer/project manager. Mr. Sellers is a registered professional engineer in the State of Missouri and holds a B.S. in Aeronautics, with a major in Aircraft Maintenance Engineering, summa cum laude, Parks College of St. Louis University.

Jay Santos Biography

Jay is a Cofounder and Principal of Facility Dynamics Engineering Corp. Jay is involved in DDC master planning, controls and commissioning training, and controls design and commissioning projects. He has 27 years experience: 16 with Facility Dynamics, two with an ESCO and nine with the Air Force. Jay has developed and teaches DDC courses for the University of Wisconsin, Iowa State University and North Carolina State University. He has also developed a "hands-on" commissioning course and teaches this for Iowa and PECL. Jay has overseen DDC/control master plans for the University of California, Davis; American University; Marine Corps Base Hawaii; Fairfax County, VA Public Schools; Lawrence Livermore Labs; and DC Government. He has managed controls design efforts for NIH, GSA, Aerospace Corporation and Wake Forest University.



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The Trane Company proudly supports ASHRAE Research

ASHRAE Research Report

Johanna Gustafsson, Resource Promotion Chair, GG ASHRAE

The Golden Gate chapter has raised 17% of its targeted goal of \$29,601. Many of you have already contributed either through me or directly to ASHRAE when renewing your national membership. For those of you who have not contributed, I look forward to talking with you. Don't forget all contributions to research are tax deductible and you may use a check or credit card.

Thank you to the following individuals who have donated on the honor level this year:

Corporate Honor Roll (\$1000+)

Norman S. Wright

Corporate Honor Roll (\$250+)

Acutherm	Syserco Integrated Building Systems
Edward B. Ward & Co	The TRANE Company – Oakland Sales Office

Individual Honor Roll (\$100+)

Edward Arens	Dick Friedman	Carl Jordan	Cory Palmer
Jeff Blaevot	Glenn Friedman	Alonzo Laws	Shlomo Rosenfeld
Kyle Blocker	Johanna Gustafsson	Bob Levi	Max Sherman
Richard Charles	Gary Harbison	James Macdonald	Dennis Thompson
John Cross	Mark Hydeman	Robert Marcial	Scott Wayland
Edgar DeGuzman	Robin James	David Nazzaro	Jon Wintermeyer

To contribute to this year's campaign please contact me via phone or e-mail. Thank you for your continued ASHRAE research support!!

Johanna Gustafsson, johanna@norman-wright.com, 415-715-7259

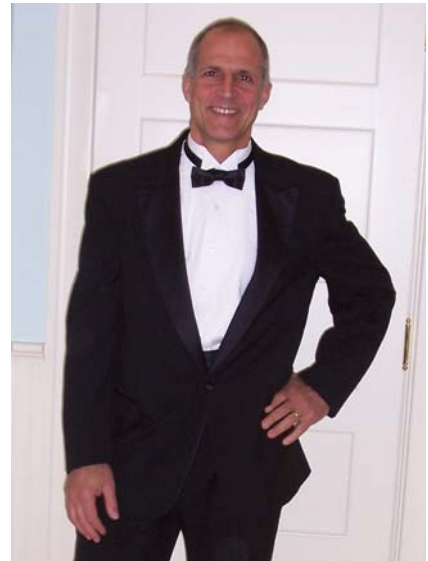
Golden Gate Chapter Spring Seminar

Diagnosis, Repair and Analysis of Duct Leakage in Commercial Buildings

Speaker: Mark Modera, Carrier Aerospace Corporation, Lawrence Berkeley National Laboratory

Date/Time: Friday, April 28, 2006

Location: Pacific Energy Center, San Francisco



Thanks in large part to Dr. Modera's research, the State of California currently leads the nation with respect to requirements for duct tightness and insulation levels. In addition to the duct tightness and performance requirements that have been in place for several years for new construction, as of October 2005 the code requires that existing homes and certain light commercial buildings have verified tight ductwork at the time of replacement of HVAC equipment.

Although there have been duct construction standards in place for large commercial buildings for many years, recent research has shown that a considerable number of these buildings suffer from significant duct leakage problems. This leakage manifests itself in different ways, including problems maintaining adequate pressurization or depressurization of building zones, problems maintaining adequate conditioning or fresh air in some zones, wasting of huge amounts of fan power moving air that does not need to be moved, and excess thermal loads associated with heating or cooling unnecessary quantities of outdoor air.

This seminar will cover tools that have been developed for analyzing the impacts of duct leakage on fan power and thermal loads, diagnostic techniques for quantifying duct leakage in large commercial buildings, field studies of duct leakage levels in different types of commercial buildings, and case studies of the application of the aerosol-based sealing technology in different types of commercial buildings.

One of the diagnostic techniques that will be covered is a simplified tracer-gas technique that measures branch flows accurately enough to determine branch leakage flow rates based upon accurate flow-capture hood measurements. Another technique that will be presented measures VAV damper leakage, and uses that leakage to help determine duct leakage downstream of the VAV box. The final technique that will be discussed uses fan-flow/pressure profiles to detect leakage upstream of VAV boxes.

The case studies to be presented include field applications of the aerosol sealing technology to different types of commercial buildings, including: 1) VAV systems (both upstream and downstream of the boxes), 2) constant-volume 100% -outdoor-air laboratory systems, 3) hospital exhaust systems, 4) high-rise apartment and hotel ventilation and exhaust systems, 5) dual-duct systems, and 6) light-commercial packaged-unit systems. All of these case studies include leakage measurements before, after and during the sealing process, some of which also include monitoring of energy-use implications.

In addition, the seminar will review the new 2005 requirements for duct testing and sealing in existing light commercial buildings.

More Info:

Max Sherman (MHSherman@lbl.gov)

Continued next page

Golden Gate Chapter Spring Seminar continued

Mark Modera Biography

Mark Modera, B.E., M.S., Ph.D., P.Eng., is the General Manager of Carrier-Aeroseal, a division of Carrier Corporation, and maintains a limited position as a Staff Scientist at Lawrence Berkeley National Laboratory. Dr. Modera has been a long-time ASHRAE Member, having chaired several Technical Committees, a Standards Project Committee (ASHRAE 152 - Method of Test for Determining the Design and Seasonal Efficiencies of Residential Thermal Distribution Systems), and various subcommittees. He is currently a voting member of TC 6.3 (Central Forced Air Heating and Cooling Systems), TC 5.12 (Ventilation Requirements and Infiltration), and the ASHRAE Standards Committee. He has published over 60 articles in ASHRAE, ASTM, ACEEE, and various academic journals.

Dr. Modera has been a Staff Scientist at Lawrence Berkeley National Laboratory for the past 26 years. During that time his research has focused on building energy efficiency and indoor air quality, but has also included thermal comfort and various aspects of wood combustion. Starting in the late 1980s he has devoted more of his efforts towards investigating and improving the energy efficiency of thermal distribution systems in buildings, principally duct systems.

In 1997, Dr. Modera founded a start-up company to commercialize the innovative aerosol-based duct sealing technology that he developed at Lawrence Berkeley National Laboratory. That company, Aeroseal, was purchased by Carrier Corporation in 2001. Since that time, Dr. Modera has worked within Carrier to incorporate the technology into their standard business practices. After Carrier received a license to apply the technology to large commercial buildings in 2003 from Lawrence Berkeley National Laboratory, Dr. Modera has concentrated on developing the technical and business practices needed for applying the technology to those types of buildings.

Dr. Modera has numerous patents in his name, including various patents for aerosol-based duct sealing technologies, a patent for a new flow capture hood, and a patent for a novel technique for measuring the leakage of building envelopes.

Dr. Modera received an undergraduate degree in Mechanical Engineering from the Cooper Union, a Masters degree in Mechanical Engineering from the University of California at Berkeley and a PhD in Mechanical Engineering at the Royal Institute of Technology in Stockholm, Sweden.

January Meeting Student Sponsors

A big thank you to those who sponsored students at the last meeting:

- Taylor Engineering (one student)

Remember, anyone can sponsor a student at a meeting! It's easy to do (especially the February meeting, since it is designated Student Night!) and is a great opportunity to meet the next generation of engineers. We request students and sponsors sit together to enhance the networking opportunities.

Chapter Technology Transfer Committee (CTTC)

Scott Wayland, ASHRAE Golden Gate CTTC Committee Chair

2006 Golden Gate Technology Award Applications are due at the end of the month!!!

As you know, over the last few years our chapter has had outstanding participation in the Technology Awards. The Technology Transfer Committee would like to encourage all members to consider participating in the Technology Awards this year. **Entries must be submitted to the Golden Gate TEGA Committee by February 28th 2006.**

There are three stages of competition and awards: Chapter, Region and Society. The first step in this process is to submit your project to the chapter level competition.

First place winners from the Chapter competition move onto the Region X Award Competition. Then the Regional first place winners are eligible to move onto the Society competition.

Every year ASHRAE conducts the Technology Awards program to:

- Recognize ASHRAE members who design and/or conceive innovative technological concepts that are proven through actual operating data;
- Communicate innovative systems designs to other ASHRAE members;
- Highlight technological achievements of ASHRAE to others, including associated professionals and societies worldwide, as well as building and facility owners.

Each year Society presents awards in some of the thirteen categories: Commercial Buildings (New and Existing); Institutional Buildings (New and Existing); Health Care Facilities (New and Existing); Industrial Facilities or Processes (New and Existing); Public Assembly (New and Existing); Residential (New and Existing); Alternative or Renewable Energy Use.

For each category a first, second, and honorable mention winner may be named. Also, one of the category first place winners may be selected to receive the ASHRAE Award of Engineering Excellence. The recipient will have demonstrated the best overall compliance with the judging criteria.

Society's bar is set pretty high for the awards as indicated in the very short list of awards from the last few years.

The submitted project should be completed and occupied for one year by the due date for the Society award application - September 2006. Therefore, your project should have been occupied by September 2005. By that time there should be good measurement and verification data available. This is not a requirement for the Chapter award but it is a strong suggestion. This is a requirement for the Society award competition.

Contact Scott Wayland and the TEGA Committee regarding submitting at 510-508-2244 or at sewayland@comcast.net

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

[Technology Awards Program](#)

[Sample Technology Award Entry](#)

[Chapter/Regional Application -- Short Form](#)

[Society Level Application -- Long Form](#)

From the Chapter Historian

Carl H. Jordan, Life Member/Fellow and GGASHRAE Historian

L. L Roy Gifford, Part 1

Here's a short story about a great guy with a wonderful attitude.

Roy was born in 1936 in Wyoming. He lived in a log cabin with neither electric power nor running water. It did have a "two-holer".

In the mid 1959 he received his bachelor's degree from Abilene Christian College in Texas. In 1958 he went into the military and ended up in intelligence work in Germany. After that, he returned to Abilene and did HVAC/P design for a consulting engineer.

From 1964 until 1967 he worked with Charles & Braun and did such projects as the Bulk Mail Facility in Oakland, and he joined ASHRAE.

In 1967 he went to Rhodesia where he designed and built a 72 building school, including infra-structure utilities, where his father was the manager.

From 1970-1975 he again worked with Charles & Braun. But more importantly, he married Virginia.

(Historian's Survey: if you regularly read these historian's articles, please e-mail me at Wcjordan@aol.com and say so. A mere "yes" will do. Thanks)

Roy worked for Vann Engineering from 1975-1985. His projects included Pacific Gateway, one of the first design-build projects in San Francisco. He was the MEP/FP coordinator for Williams & Burrows from 1985-1999; and for Stolte Inc/PCL Construction in 1999. He started his own consulting business in 2000 and his projects have included the Nikko Hotel in San Francisco, the San Ramon Community Hospital and the renovation of the Fairmont Hotel in San Jose.

He is still involved in some major projects and some court cases.

Roy contracted throat cancer in 1999 and now has a permanent tracheotomy. Although this has changed the quality of his voice, it hasn't changed the spirit of his cheerful message.

He was our Chapter President in 1995-96. (You will hear more of that in Part 2, in our next Fog Dispenser). And, he delivered the invocations at two of Society's Winter Meetings in San Francisco.

Currently, Roy is building, with his own hands, their "retirement home" in Pleasant Hill.

Thanks, Roy.

Watch for Part 2 next month.

(Information from personal recollection and his brief autobiography)

Minutes of Golden Gate Chapter Meeting, January 12, 2006

Carnelian Room, Bank of America Building, San Francisco

- The meeting started at 12:00 pm with lunch.
- Following lunch were self-introductions by members and guests of the Golden Gate ASHRAE and SFAIA Chapters.
- Golden Gate Chapter President Cory Palmer started the announcements at 12:15 PM.
- Cory asked for a motion to approve the minutes of the December 8, 2005 meeting, which was made, approved and seconded.
- Gary Harbison announced the award of two student travel grants of \$1,000 each to Timothy Moore and Therese Peffer, both graduate students at UC Berkeley.
- Cory requested anyone going to the Chicago ASHRAE meeting who could share a room with a student to contact him.
- Cory made an announcement about the Spring 2006 Golden Gate Chapter Technical Seminar, which will be "Duct leakage in Commercial Buildings" by Mark Modera.
- Johanna Gustafson made an announcement regarding ASHRAE Research.
- Scott Wayland, CTTC Chair, made an announcement about the upcoming deadline for ASHRAE Technology Award submissions.
- Robert Marcial, Treasurer, Golden Gate ASHRAE, introduced the featured speaker of Charles Eley, who made a presentation on the 2005 Title 24 California Energy Code.
- Becky Carta did the Marble Draw at 1:45 PM.
- The meeting adjourned at 1:50 PM.
- Next meeting: Thursday, February 2, 2006. Student Night at Scott's Seafood Restaurant, Oakland. Topic: Retro-Commissioning. Speaker: Davis Sellers, PECL.

Minutes by Jeff Blaevoet

Student Activities

Gary Harbison

The February dinner meeting is a designated Student Night. All students welcome to attend – spread the word! If you are interested in sponsoring a student (covering the student's dinner cost) for the meeting, please tell the people at the ASHRAE registration table before the meeting. This is a good opportunity to introduce students to our industry.

Change of Address?

All members who wish to make changes in their membership data (change of email address, change of address or change of employer are the most common) must make those changes through the national ASHRAE site <http://www.ashrae.org>.

THE GOLDEN GATE CHAPTER CANNOT MAKE THESE CHANGES FOR YOU

In order to change your membership data, you will need your ASHRAE member number and confidential PIN number, both of which are on the ASHRAE card issued to you each year. Go to the Change of Address link of the ASHRAE website, log in, and then go to Membership Records. If you don't have your PIN or membership card, please call Customer Service: 1-800-5-ASHRAE (US and Canada).

Employment Opportunities

Engineers

Successful SF consulting engineer firm serving premier architects and building owners seeks MECHANICAL and ELECTRICAL ENGINEERS, COMMISSIONING ENGINEERS, and ENERGY ANALYSTS with at least 5 years of building system design and construction consulting experience. Experience with EnergyPro, DOE 2.1E, Savings-By-Design, and T-24 essential for energy analysts. Commissioning candidates must have at least 10 years of relevant experience which may include t&b, controls, facilities engineering, consulting and/or contracting. PE and LEED AP preferred. Email cover letters and resumes in WORD format, and note on the Subject Line: Fog Dispenser and the position you are applying for to: restacio@gb-eng.com

2005 - 2006 Event Calendar

<i>Date</i>	<i>Venue</i>	<i>Presentation Topic</i>	<i>Speaker</i>
Thursday, Feb 2, 2006 Student Night	Scott's Seafood, Oakland	Retro-Commissioning	David Sellers, PE, Portland Energy Conservation, Inc. (PECI) and Jay Santos, PE, Facility Dynamics
Thursday, Mar 2, 2006 Joint Meeting with Redwood Empire Chapter	Embassy Suites, San Rafael	HVAC Design Tools	John Kennedy, Green Building Studio, Inc.
Thursday, Apr 6, 2006 Product Show and Student Awards	Pacific Energy Center, SF	Product Show and Student Night and Science Fair award winners	Various
Friday, April 28, 2006 Spring Seminar	Pacific Energy Center, SF	Duct leakage in Commercial Buildings	Mark Modera, Carrier-Aeroseal
Thursday, May 11, 2006 Lunch/Field Trip	California Culinary Academy	Tour of the new naturally ventilated high-rise San Francisco Federal Building	
Thursday, Jun 1, 2006 Spouses Night	Carnelian Room, S.F.	Spouse and Significant Other Night	General Interest Speaker: TBD

ASHRAE Golden Gate Chapter – Dinner Reservation Fax

For Thursday, February 2nd

Please reserve prior to Thursday, January 26 at noon.

Please reserve on-line by visiting <http://www.ggashrae.org/calendr.htm>, click on February 2, fill out the form and submit. Or FAX this page to Jeff Blaevoet at 415-625-0735.

Members with vouchers – you too must send in your reservation. We need to know how many meals to request. Please cancel your reservation if you cannot attend.

FROM: _____
COMPANY: _____ Phone: _____
Please make _____ reservation(s) for the following people (fill in names below):

Pay for meetings using your credit card

The Chapter has set up a PayPal account. You may now pay for your meetings using your credit card if you have a PayPal account. It's a very simple process, and the instructions are on the website.

- There will NOT be any service charges to you from PayPal nor the Chapter.
- The Chapter does NOT see your private card or bank information.
- The Chapter does NOT even see the last four digits of your credit card number.
- You can cancel your personal PayPal account whenever you want.

NOTE: At the meeting, we will have a list of those that have paid through PayPal, but we will not be accepting credit card payments at the meeting. All credit card payments MUST go through PayPal. If you want to pay at the meeting, it is business as usual...cash or checks only.

Photos from Golden Gate Chapter January meeting

Photos by Wasil Popow



Left: Speaker Charles Eley addresses questions from the audience.

Right: A large turnout for a good presentation.



Left: Gary Harbison makes Student Activities announcement.

Right: Happy Golden Gate chapter members look on.



Left: Table with board members and the presenter, Charles Eley.

Right: Even the announcements caught everyone's attention.

