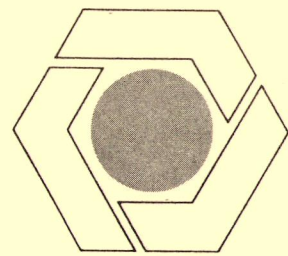


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**JANUARY PROGRAM: ENERGY EFFICIENCY RESEARCH
THE ACT² PROJECT**

NOTE: This month's meeting is at the Engineers' Club

SEE PAGE 1 FOR DETAILS



Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107



Richard A. Charles
C & B Consulting Engineers
150 Spear Street #500
San Francisco, CA 94105

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FOG DISPENSER

Golden Gate Chapter



ASHRAE

VOLUME XXXIII • NUMBER 4

JANUARY 1994

MEETING NOTICE

DATE: Thursday, January 6, 1994
SOCIAL HOUR: 5:30 p.m.
DINNER: 6:30 p.m.
LOCATION: Engineers' Club
160 Sansome St. 17th floor
San Francisco, CA
(415) 421-3184
COST: \$25.00
TO RESERVE: Please phone or fax your dinner reservation to Gail Brager by Tuesday prior to the meeting. A fax form is enclosed for your convenience.
PHONE: (510) 642-1696
FAX: (510) 643-5571

SEE FAX FORM FOR PARKING INFORMATION

IMPORTANT NOTICE

We are saddened to have to report the news that the Engineers' Club will be closing as of January 31, 1994.

We urge you to attend our January meeting, which will be our last one held at the Engineers' Club until further notice. We expect a large crowd, so please make your reservations promptly.

Our February 3 meeting will be held at Gabbiano's. Reservations will be due earlier than usual, on Fri., Jan. 29. Please mark your calendar now.

Future meeting locations are still to be determined. We welcome your suggestions. There is a place on the fax form for submitting your recommendations. Thank you

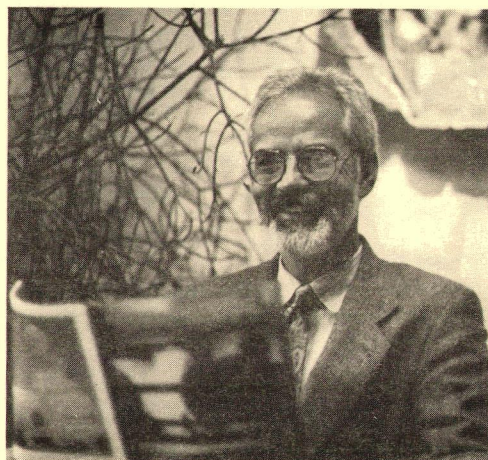
JANUARY PROGRAM

PROGRAM: Energy Efficiency Research:
The ACT² Project

This presentation explains PG&E's Advanced Customer Technology Test (ACT²) for Maximum Energy Efficiency. The ACT² project is a major field demonstration research project of the maximum energy savings possible which can be obtained in customer facilities by utilizing integrated packages of state-of-the-art energy efficient technologies. The ACT² project is a demand side demonstration where advanced technologies are field-tested to determine actual economic and technical performance. The presentation will describe the project's goals, strategy, benefits, project participants, approach and schedule, as well as the status and some preliminary findings. The presentation will emphasize the HVAC technologies and retrofits that have been tested.

SPEAKER: Grant Brohard,
Pacific Gas & Electric Company

Grant Brohard is a registered Professional Engineer with 12 years experience in utility operations project management, energy management for major commercial and industrial plants, and research and development projects. After working with PG&E's Energy Management Dept. and also their Utility Operations, Grant now works with PG&E's R&D Dept., managing the ACT² Demand Side Management demonstration project.



PRESIDENT'S MESSAGE

December's meeting was a hit! Over ninety-five people attended the dinner meeting and over twenty-five people attended the seminar prior to the meeting. Mike Scofield was instrumental in setting up the seminar and meeting on low temperature supply air and deserves our sincere appreciation for his efforts.

This January's meeting may be our last at the Engineer's Club. The Club may be closing its doors due to a sad combination of economic hard times and changes in tax law. We hope to have more information by the time of the meeting. If we do have to find a new venue for our future meetings, we would like your input on potential meeting sites. It is the Board's intention to keep the meetings in downtown San Francisco at a regular location.

As was reported in the December meeting, the Cal Poly Workshop has become defunct due to lack of interest at Cal Poly. We have taken money that would have been used for the Workshop and made a \$500 contribution to the Bay Area Engineering Societies' Committee for Manpower Training. This worthy group provides drafting training to minorities and CAD retraining to the general public. ASHRAE was one of its founding members. Many of our members' companies have taken advantage of the trained manpower this organization provides.

We are looking for an educational cause to take the place of the Workshop. This would be a project for which we would solicit donations and make a yearly contribution in the name of the chapter. We are considering funding HVAC curriculum development for U.C. Extension. They are looking to upgrade their excellent training program for our industry. Mark Hydeman is coordinating our efforts to support this program. To this end, several of you will be receiving survey questionnaires to help U.C. tailor its program to meet our training needs. Please help the Society by responding to this survey.

The expected publication of the roster in January is due to the hard work of Tim Provo. The information contained in the roster is based on the membership renewal forms you return each year with your dues. If you see any errors in your listing, be sure to indicate it on your form for next year.

My warmest New Year's Greetings to you all. Lets resolve to make this year a successful one for ASHRAE membership and research contributions.

Richard Paillon

ASHRAE GOLDEN GATE CHAPTER 1993-1994 COMMITTEES AND CHAIRPERSONS

Attendance..... Richard Charles	Awards..... Jack Kniveton	Auditing..... Hank Mouw
BAEC..... Tom Reinarts	Code..... Bob Voelz	CRC Action..... Gail Brager
Education..... Mark Hydeman	Energy & Tech..... Peter Turnbull	Fog Dispenser..... Richard Nagy
Golf..... Mark Luckes	Government Affairs..... Jon Wintermeyer	Historian..... Bob Phillips
Honor Roll..... Tom Reinarts	Marble Game..... Tim Provo	Membership..... Michael Rubio
Product Show..... Brad Gustafson	Program..... Gail Brager	Publicity..... Sal Giglio
Reception..... Steve Doberstein	Refrigeration..... Jim Davis	Research..... Marie Madden
Roster..... Jim Taylor/Tim Provo	Scholarship..... Debi May	Seminar..... Richard Gistelli
Tennis..... Rich Leao		

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair*:
Michael Rubio (415) 777-5333
(415) 641-4413 FAX

MAIL, FAX or PHONE NEWS TO:
FOG DISPENSER
Rick Nagy, *Editor*
Murakami & Myers Engineers
750 Davis Street
Santa Rosa, CA 95401
Telephone (707) 546-1332
FAX (707) 546-5733

FOG DISPENSER DEADLINES

Meeting Dates	Copy Deadlines
January 6, 1993	December 17, 1993
February 3, 1993	January 14, 1994
March 3, 1994	February 11, 1994
April 7, 1994	March 18, 1994
May 5, 1994	April 15, 1994
June 2, 1994	May 13, 1994

Published monthly, October through June, by the GOLDEN GATE CHAPTER OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, c/o Duplicating associates, 370 Brannan Street, San Francisco, CA 94107

1993-1994 OFFICERS

Richard Paillon	President
Gail Brager	President-Elect
Roy Gifford	Secretary
Dennis Thompson	Treasurer
Board of Governors	
Richard Leao	Ernie French
	Dan Reiter

TECHNICAL SEMINAR UPDATE

The annual Golden Gate Chapter Technical Seminar has been scheduled for the following Thursdays: March 31, April 14, April 21, and April 28. The four seminars will be held from 5 to 7:30 pm at PG&E's Energy Center in San Francisco.

The topic will be *ENERGY RETROFITS* with emphasis on the Federal Energy Management Program (FEMP), life-cycle costing, and package and built-up system design applications. Seminar Chair Richard Jackson-Gistelli (Sandia Labs) intends for each night's seminar to cover a distinct topic allowing for all four nights to offer a comprehensive overview of the design process and business opportunities.

Further information and reservations can be obtained through Richard or by contacting the other members of the technical committee:

Richard Jackson-Gistelli (Sandia Labs)	510-294-3458
John McDonald (Glumac & Assoc.)	415-398-7667
John Stultz (Gulmac & Assoc.)	415-398-7667
Leonard Bertolami (ACCO)	415-593-9469
Jim Brugger (Keller & Gannon)	415-621-1199
Mike Morehead (Flack & Kurtz)	414-398-3833

EDUCATIONAL OPPORTUNITIES

EIT REVIEW CLASSES

San Francisco State University is offering a seven week evening review class for the Engineer-In-Training (EIT) exam. The class will meet on Tuesdays and Thursdays, 7:00 - 9:00 PM, from February 8 to March 24. Students taking the class will be eligible for 3.8 units CEU credit. For

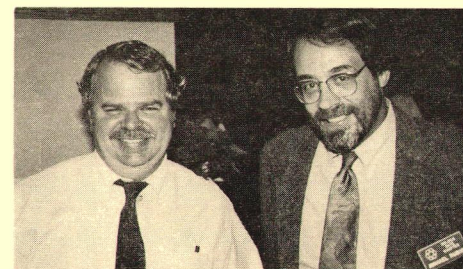
registration information, contact Extended Education at 415-338-1373. For information about the course, contact Dr. Ahmad Ganji at 415-338-1851.

UC Berkeley Extension is offering an evening review class for the Engineer-In-Training (EIT) exam. The class will meet on Mondays 7:00 - 9:30 PM, from November 15 to March 20. Late enrollment is possible. For further information call Continuing Education in Engineering, UC Berkeley Extension, 510-642-4151.

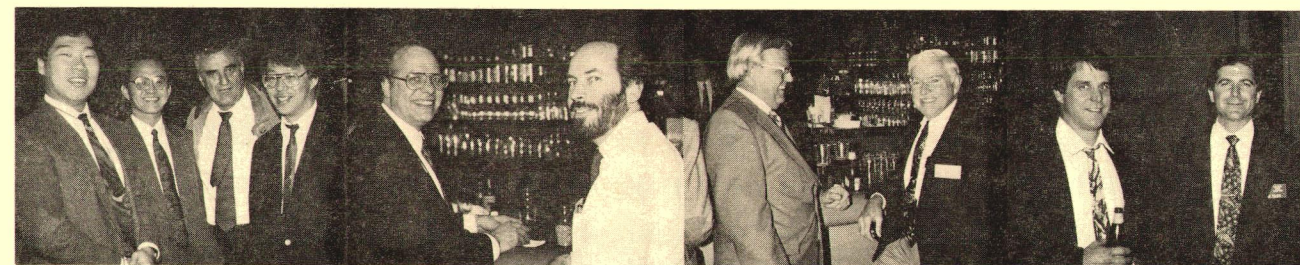
BERKELEY OFFERS HVAC-R CURRICULUM

UC Berkeley Extension and the Golden Gate Chapter of ASHRAE have developed a four-course curriculum intended to provide the basic background in HVAC principles and applications required for work with HVAC systems. On successful completion of the course, a certificate of accomplishment is awarded by the Golden Gate Chapter of ASHRAE.

The courses include *Air Conditioning and Heating Psychrometry and Load Calculations, Heating and Air conditioning Systems Design, Refrigeration Concepts, and Design Considerations in Air Conditioning and Heating Systems*. Related courses of interest to HVAC professionals are offered to complement the basic curriculum. The first course will be offered on Tuesdays, February 1 to April 19, from 7 to 9:30 PM at UC Extension Downtown SF. For further information call Continuing Education in Engineering, UC Berkeley Extension, 510-642-4151.



Membership Chairman, Mike Rubio (right) welcomes new members Don Nurisso of Keller & Gannon Engineers. Call Mike at 415-777-5333 for your ASHRAE Membership Application, and welcome the New Year with us at the January 6, 1994 dinner meeting.



NEW CHAPTER MEMBERS

The Golden Gate ASHRAE Chapter welcomes the following new members:

David Gilbeert	Government of Singapore	Dennis Grnszynski	Overseas Resources
Mustafa Gunan	West Mac Builders	Lowell Hocomb	Holcomb Consulting Engineers
Steven Isaacson	Johnson Controls	Mathew McMahan	Johnson Controls
Chris Reyes	Montgomery & Roberts		

ASHRAE GOLDEN GATE CHAPTER

DINNER RESERVATION FAX

For THURSDAY, JANUARY 6, 1994

Please send Fax by NOON on TUESDAY, JANUARY 3

FAX TO: Gail Brager - UC Berkeley
FAX: 510-643-5571
Phone: 510-642-1696

Please call if you have any last minute changes in plans.
Please cancel your reservation(s) if you cannot attend the meeting.

WHY NOT SHARE THIS FORM WITH YOUR FRIENDS & COLLEAGUES?

FROM:	DICK CHARLES	
COMPANY:	C&B ENGINEERS	PHONE: 415-442-0110
Please make _____ reservation(s) for the following people (fill in names below):		
	DICK CHARLES	_____
	PAUL O'NEIL	_____
	_____	_____

LOCATION: Engineers' Club, 160 Sansome St. 17th Floor, San Francisco, CA, (415) 421-3184

PARKING INFORMATION

The Engineer's Club is between Bush & Pine streets. Parking is available on the street after 6:00 p.m. The following parking garages are also open 24 hours:

1. Embarcadero One, between Sacramento & Clay, enter on Battery. After 5:00 p.m.: \$1/hr, or free if validated (try one of the snack food shops)!
2. Mandarin Hotel, in California Center between California & Pine, enter on Battery. After 6:00 p.m.: \$6.00 flat fee.
3. Bank of America, at Montgomery St., enter on Pine or California, After 5 p.m.: \$7.00 flat fee.

An Urgent Request from Gail:

Due to the closing of the Engineers' Club, we are working on relatively short notice to look for new meeting locations for the rest of the year. Do you have any suggestions? We are looking for something that meets the following criteria: relatively central, easy-to-get-to location in S.F., safe neighborhood with available parking; accommodations for 70-100 people in a single room for dinner and a presentation, cost between \$24-30 (including tax & service), preferably in-house catering for greater flexibility.

If you have any suggestions for meeting locations that might fit these criteria, please let me know!

**ASHRAE GOLDEN GATE CHAPTER
MEETING MINUTES
DECEMBER 2, 1993**

1. President Rick Paillon called the meeting to order at 7:25 p.m.
2. The November meeting minutes were approved.
3. Dan Reiter announced that the Golden Gate and Eric Thor Andresen Memorial Scholarships have been increased to \$1,000 and \$750 respectively. Applications can be obtained from either Debi May or Gail Brager. The Cal Poly Workshop is currently defunct as they are restructuring their program. We will be looking for alternative ways to offer support to student programs.
4. Rick Paillon announced that the Bay Area Engineering Societies' Committee for Manpower Training has had significant budget cuts and are looking for contributions. The Chapter is currently considering donating money to this worthwhile cause.
5. Marie Madden thanked people for their past contributions to ASHRAE Research, and invites everyone as individuals, or on behalf of their company, for contributions of any size.
6. Richard Jackson-Gistelli promoted our upcoming Spring Seminars of the evenings of March 31, April 14, 21 and 28, with a general meeting on April 7. The topic will be Energy Retrofits - Practical Design Considerations. Please let Richard know if you have ideas, comment, or feedback. You can call him at (510) 294-3458.
7. Alma Advani was in India as an ASHRAE Ambassador, and donated ASHRAE guides for distribution to students and Junior Engineers who cannot afford to buy technical books. Chapter members are encouraged to clean your shelves and donate your old sets of ASHRAE guides (not older than 1980). Tempco Equipment Co. has agreed to pack and mail the books. Please contact Alma Advani at (510) 891-3495.
8. Gail Brager announced that Marc Fountain, a former recipient of the ASHRAE Golden Gate Scholarship, recently finished his Ph.D. dissertation on the subject of preferred air movement in warm environments. After meeting Bud Offerman at our October Chapter Meeting, Dr. Fountain will be joining his firm of Indoor Environmental Engineering.
9. Tom White announced that ASHRAE's Centennial starts in Orlando (June '94) and continues through the Chicago Meeting (June '95). We should be thinking about ideas to present.
10. Frank Mayhew confirmed that the HVAC program Cal Poly is dying, but they are still looking consultants to teach there part-time. If anyone is interested, please contact Frank at (510) 537-9381.
11. Tom White reminded the Chapter that we will be hosting the ASHRAE Meeting in 1998, and encouraged the Board and interested members to begin the planning process.
12. Mike Rubio announced that a lot of new members were attending our meeting tonight, and asked them to please meet at the break for a photo opportunity.
13. We enjoyed a large attendance for a lively and informative panel discussion on Low Temperature Air Distribution. This is a technology that we are sure to see a lot more of in the future, and many questions about its viability were answered.

THE MARBLE DRAW

Next Month's Starting Pot: \$105.00+
Odds: 14%
Black Marbles Remaining: 6



FEBRUARY PROGRAM

Please note the new location and earlier reservation date!

Date: February 3, 1994
Place: Gabbiano's, One Ferry Plaza, San Francisco
Program: The Mechanical Design/Build Process
A Panel Discussion
Speakers: Michael Cory, Cory Consulting Services
Karl Guttman, Guttman & MacRitchie
Bob Linford, The Linford Company
Gerald Weisbach, FAIA, Natkin,
Weisbach & Higginbotham

Reservations due to Gail Brager by Friday, Jan 29, 1994.

ASHRAE GUIDE DONATIONS

There are thousands of old ASHRAE handbooks lying on your shelves collecting dirt. In the third world countries there are thousands of poor students and junior HVAC&R engineers who cannot afford to buy technical books and would love to have an old set of ASHRAE handbooks (not older than 1980).

For information on donating ASHRAE handbooks or any other technical books on refrigeration, contact Atma Advani, 44216 Ibero Way, Fremont, CA 94539. Please send donated handbooks to Ron Yaffe or Chuck Shane, Tempco Equipment Co., Inc., 100 North Hill Dr. #12, Brisbane, CA 94005.

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Phil Harris
Shirley Lim
Martha Kraft
Lyn Peterson

FEBRUARY PROGRAM: THE MECHANICAL DESIGN/BUILD PROCESS
A PANEL DISCUSSION
SEE PAGE 1 FOR DETAILS



Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107



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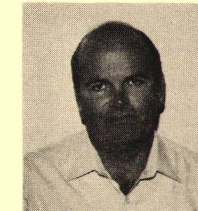


ASHRAE

VOLUME XXXIII • NUMBER 5

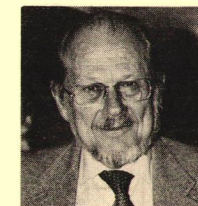
FEBRUARY 1994

SPEAKERS



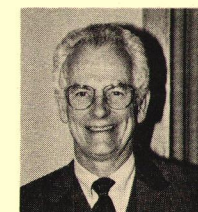
taught an HVAC course for architects at UC Berkeley.

Mike Cory is President of Michael T. Cory Consulting Services in Moraga, California. Prior to starting his private practice in 1991, he has served as Chief Engineer, President and CEO of Vann Engineering Corporation in Concord, California. For several years, he has



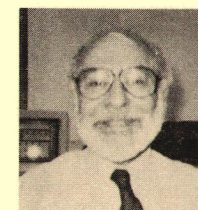
Associates in 1956 and has received national recognition for his hospital and institutional designs.

Karl Guttman is Chairman of the Board of Guttman & MacRitchie Mechanical Engineers in San Francisco. He is a Past President of the Golden Gate ASHRAE Chapter and is a Fellow and Life Member of Society. He was a founding partner of Kasin, Guttman &



of the Year by Contracting Magazine.

Bob Linford is President and CEO of the Linford Company in Oakland. He has served as Chief Engineer, Manager of Estimating and Sales and as Construction Manager. Under his direction, the Linford Company has become one of California's largest design/building contractors with sales of over \$30 million per year. In 1993, the Linford Company was named Contractor



of the State Bar of California.

Gerald Weisbach is a principal of Natkin, Weisbach, Higginbotham, Attorneys at Law in San Francisco. A graduate of UC Berkeley in Architecture, he has taught at UCB, UCLA and The London University and was Associate Dean of Architecture at

MEETING NOTICE

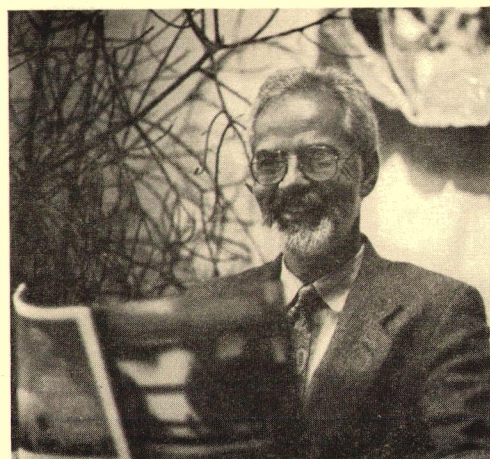
DATE: Thursday, February 3, 1994
SOCIAL HOUR: 5:30 p.m.
DINNER: 6:30 p.m.
LOCATION: Gabbiano's
main floor, Oyster room
1 Ferry Plaza
San Francisco, CA
(415) 391-8403
COST: \$27.00
TO RESERVE: Please phone or fax your dinner reservation to Gail Brager by **Friday, Jan. 28**. A fax form is enclosed for your convenience.
PHONE: (510) 642-1696
FAX: (510) 643-5571

PLEASE NOTE THE NEW MEETING LOCATION

FEBRUARY PROGRAM

PROGRAM: The Mechanical Design/Build Process
A Panel Discussion

This panel discussion brings together individuals with diverse backgrounds and experiences to offer their perspectives on the mechanical design/build process. The panel members will discuss the following issues re: the design/build verses the plans-and-spec's process: Which process gives higher value to the owner? How do construction costs compare? Does one process inherently generate a greater number of change orders? Is one process inherently more efficient by offering scheduling advantages? How are design quality and design costs affected? Are there specific applications for which each process is most appropriate? We will also discuss the legal implication of the mechanical design/building process as it affects both architects and engineers.



PRESIDENT'S MESSAGE

Exactly 100 people attended January's meeting making it the most well attended meeting this season. Thank you, Gail, for arranging the timely program that drew such attendance. My special thanks to those members who have been reminding their fellow workers of our meetings.

January's meeting was the last at the Engineer's Club. Sadly the club is shutting its doors for good. Gail is searching for a new regular meeting place. The Board has agreed that downtown San Francisco is the best location for our meetings. It is convenient to get to from most of the Bay Area at the times of the meetings, and street parking is normally available.

Our next meeting is a joint meeting with the local chapter of the American Institute of Architects. The subject is a timely one: The Design-Build Process. I am sure that this will be one of our most interesting programs of the season. I would like to impress the AIA with a large ASHRAE turnout. Please make your reservation within the new Friday deadline.

Design-Build is a very controversial subject among some of our members and tends to excite emotions. The panel guests have been encouraged to concentrate on analyzing the design-build process rather than the people involved. I am reminding all of you who attend to conduct yourselves in a professional manner during the discussion that will occur during the program. This is especially important since we will be in the presence of a fellow professional society. We do not want to hear anecdotal information about design-build or plans-and-specs companies or individuals. We encourage you to share your knowledge of how the design-build or plans-and-specs processes can be made more successful.

It looks as if my announcement that the roster would be out in January was a bit premature. Look for it later this month or early in March.

We are planning a program for June's meeting that will emphasize Chapter history as well as the ASHRAE Centennial. If you would like to make a contribution to this program, please contact me.

Richard Paillon

ASHRAE GOLDEN GATE CHAPTER 1993-1994 COMMITTEES AND CHAIRPERSONS

Attendance.....Richard Charles	Awards.....Jack Kniveton	Auditing.....Hank Mouw
BAEC.....Tom Reinarts	Code.....Bob Voelz	CRC Action.....Gail Brager
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Product Show.....Brad Gustafson	Program.....Gail Brager	Publicity.....Sal Giglio
Reception.....Steve Doberstein	Refrigeration.....Jim Davis	Research.....Marie Madden
Roster.....Jim Taylor/Tim Provo	Scholarship.....Debi May	Seminar.....Richard Gistelli
Tennis.....Rich Leao		

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair*:
Michael Rubio (415) 777-5333
(415) 641-4413 FAX

MAIL, FAX or PHONE NEWS TO: FOG DISPENSER

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1993-1994 OFFICERS

Richard Paillon President
Gail Brager President-Elect
Roy Gifford Secretary
Dennis Thompson Treasurer

Board of Governors

Richard Leao Ermie French
Dan Reiter

EDUCATIONAL OPPORTUNITIES

EIT REVIEW CLASSES

San Francisco State University is offering a seven week evening review class for the Engineer-In-Training (EIT) exam. The class will meet on Tuesdays and Thursdays, 7:00 - 9:00 PM, from February 8 to March 24. Students taking the class will be eligible for 3.8 units CEU credit. For registration information, contact Extended Education at 415-338-1373. For information about the course, contact Dr. Ahmad Ganji at 415-338-1851.

UC Berkeley Extension is offering an evening review class for the Engineer-In-Training (EIT) exam. The class will meet on Mondays 7:00 - 9:30 PM, from November 15 to March 20. Late enrollment is possible. For further information call Continuing Education in Engineering, UC Berkeley Extension, 510-642-4151

EMPLOYMENT OPPORTUNITY

Mechanical Engineer -- Energy Management

Local firm seeking Mechanical Engineers with special interest in analysis and design of energy efficient building systems. Minimum requirements: B.S., 3 years experience, excellent communication skills. Send resume to: Newcomb Anderson Associates, 755 Sansome St., Suite 500, S.F., CA 94111

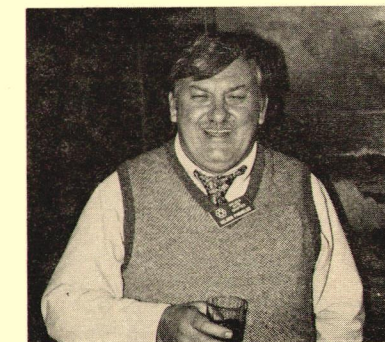
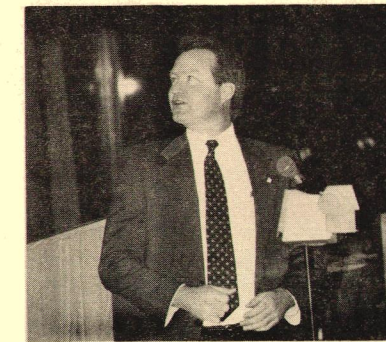
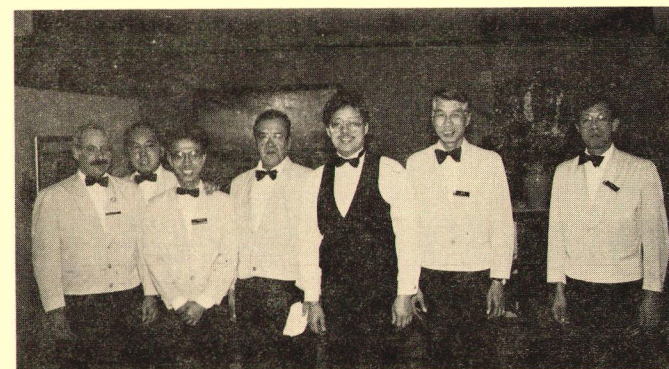
**ENGINEERING TRAINING
FEBRUARY 28, MARCH 4, 1994
AT EDWARD B. WARD & COMPANY**

This abbreviated course is designed specifically for individual's who design and select small commercial packaged HVAC systems. The course provides the skills needed to properly apply and select packaged and split system equipment. Guidelines are also provided for proper interfacing of the packaged equipment with air terminal and air distribution systems.

A sample building with homework assignment is used as the vehicle to help students learn the principles of load estimating, psychometric principles, cooling and heating coil performance, refrigeration principles, and basic performance characteristics of compression equipment. The principles behind proper packaged and split system equipment selection to meet the requirements of the sample building are also covered. Finally, students learn guidelines that help ensure proper air distribution to the conditioned space.

Class Hours: The week begins at 8:00 am Monday. Classes run to approximately 5:00 pm each day except for Friday, when classes end at noon. Please make \$645 tuition check or purchase order payable to Edward B. Ward & Company. We will confirm your registration with a confirmation letter.

For Registration form or questions, please call:
Edward B. Ward & Company
337 Roebing Road
South San Francisco, CA 94080
Attn.: Robin Strobeck



The Golden Gate ASHRAE Chapter says "Farewell" to the Engineer's Club Meeting Location

ASHRAE GOLDEN GATE CHAPTER
DINNER RESERVATION FAX
For THURSDAY, FEBRUARY 3, 1994

Please send Fax by noon on FRIDAY, January 28

FAX TO: Gail Brager - UC Berkeley

FAX: 510-643-5571

Phone: 510-642-1696

Please call if you have any last minute changes in plans.

Please cancel your reservation(s) if you cannot attend the meeting.

WHY NOT SHARE THIS FORM WITH YOUR FRIENDS & COLLEAGUES.

FROM: _____

COMPANY: _____

PHONE: _____

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

LOCATION: Gabbiano's main floor, Oyster room
1 Ferry Plaza
Near Pier 2, behind the Ferry Building
San Francisco, CA
(415) 391-8403

PARKING INFORMATION:

Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25

An Urgent Request from Gail:

Due to the closing of the Engineers' Club, we are working on relatively short notice to look for new meeting locations for the rest of the year. Do you have any suggestions? We are looking for something that meets the following criteria: relatively central, easy-to-get-to location in S.F., safe neighborhood with available parking; accommodations for 70-100 people in a single room for dinner and a presentation, cost between \$24-30 (including tax & service), preferably in-house catering for greater flexibility.

If you have any suggestions for meeting locations that might fit these criteria, please let me know!

**ASHRAE GOLDEN GATE CHAPTER
MEETING MINUTES
JUNE 3, 1993**

1. President Rick Paillon called the meeting to order at 7:23 p.m.
2. The December meeting minutes were approved.
3. Self Introductions.
4. An update on the Spring Seminar was presented. It will be held at the Pacific Energy Center. The general topic will be on Energy Retrofitting. It will begin on March 31, 1994, and pick up again after the April General Chapter Meeting. The last three sessions will be on the 14, 21 and 28 of April. Specific Sessions Topics will be announced. They are designed so that one may attend a single session or the entire seminar.
5. President Paillon pointed out that one of his goals has been for greater General Chapter Meeting attendance, and that the attendance at tonight's meeting seemed to indicate this goal was being reached. He attributed much of this to the fine programs arranged by Gail Brager.
6. Marie Madden made an appeal for contributions to the ASHRAE Research Promotion Program. The Goal this year is over \$20,000.00. Contributions should be made out to ASHRAE Research and should be forwarded to Marie at:

Western Plumbing
600 Treat Avenue
San Francisco, CA 94110
Marie can be reached at (415) 647-0696; FAX (415) 647-6249.
7. President Paillon expressed the Chapter's thanks to the Engineering Club on this the last meeting at the Club. The personnel of the Engineer's Club were given a standing ovation.
8. Following a break, Grant Brohard with PG&E presented an informative discussion of PG&E's "ACT Squared" program. This was followed by a lively "question and answer" period.
9. The meeting was adjourned at 9:00 p.m.

THE MARBLE DRAW

Next Month's Starting Pot: \$154.00+
Odds: 16.6%
Black Marbles Remaining: 5



IMPORTANT NOTICE

We are saddened to have to report the news that the Engineers' Club has closed.

Please take note of our new location for the February meeting, and the earlier deadline for reservations.

Future meeting locations are still being determined. We welcome your suggestions. There is a place on the fax form for submitting your recommendations. Thank you.

MARCH PROGRAM

DESIGNING TO AVOID LITIGATION

SPEAKER: Carl Jordan, Consulting Mechanical Engineer

\$\$ MONEY FOR STUDENTS \$\$

The Golden Gate Chapter offers several forms of support for students:

Feb. 15 Deadline:

Golden Gate Scholarship \$1,000

Eric Thor Andresen Memorial Scholarship \$750

For information and applications, contact:

Debi May 510-732-3400 c/o Prime Air, Inc.

21363 Cabot Blvd., Hayward, CA 94545

or: Gail Brager 510-642-1696, Dept. of Architecture,

Univ. of California, Berkeley, CA 94720

NEW CHAPTER MEMBERS

The Golden Gate ASHRAE Chapter welcomes the following new members:

- Leopoldo D. Marzan ..Ted Jacob Engineering Group, Inc.
- Sean A. Timmons Gayner Engineers, Inc.
- Wayne H. Womer..... PG&E
- Mona Yew PG&E

REGION X CRC IN SAN DIEGO

The annual ASHARE Chapter's Regional Conference for our Region X will be held in San Diego, CA May 4 - 7, 1994.

This conference is where the Chapters in our region gather to guide this great Society.

The host chapter will put on technical seminars, social events, a golf tournament, and generally roll out the red carpet for their ASHARE friends. As you may know, San Diego is a vacationer's paradise with its mild weather and varied attractions including the San Diego Zoo, Wild Animal Park and Sea World. Companion tours of the harbor, old town and the renowned down town malls will be available. The extended forecast for the San Diego area weather is sunny and very hospitable.

Please plan to join your chapter's official delegates, officers and committee chairs in going to San Diego to this official ASHRAE function. The San Diego Chapter reminds you "Don't Forget, You've gotta go, To San Diego!"

MARCH HONOR ROLL

AF/C

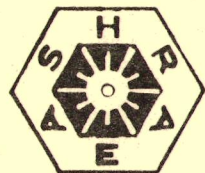
REPRESENTATIVES FOR HVAC EQUIPMENT

BOB SWEZEY
JACK HIATT
SCOTT MOYER

JIM NEMECHEK
MATT GOFF
ADANIA McMAHON

AIR FILTER / CONTROL 1023 CHESTNUT ST. REDWOOD CITY, CA 94063
PHONE: (415) 367-8310 FAX: (415) 361-8403

MARCH PROGRAM: DESIGNING AND INSTALLING PROBLEM FREE
HVAC SYSTEMS TO AVOID LITIGATION
SEE PAGE 1 FOR DETAILS



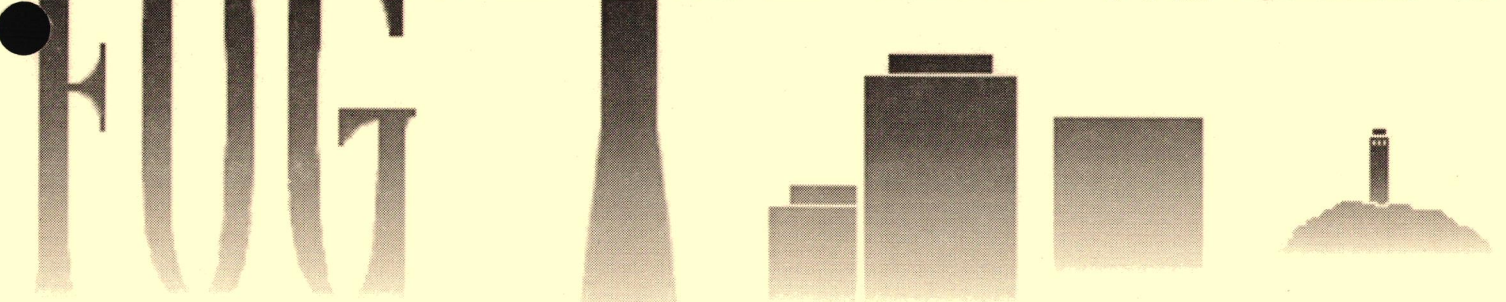
Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107



Richard A. Charles
C & B Consulting Engineers
150 Spear Street #500
San Francisco, CA 94105

RECEIVED
FEB 23 1994
CHARLES & BRAUN

FOG DISPENSER



Golden Gate Chapter  ASHRAE

VOLUME XXXIII • NUMBER 6

MARCH 1994

MEETING NOTICE

DATE: Thursday, March 3, 1994
SOCIAL HOUR: 5:30 p.m.
DINNER: 6:30 p.m.
LOCATION: Gabbiano's (upstairs)
1 Ferry Plaza
San Francisco, CA
(415) 391-8403
COST: \$27.00
TO RESERVE: Please phone or fax your dinner reservation to Gail Brager by Friday, Feb. 25. A fax form is enclosed for your convenience.
PHONE: (510) 642-1696
FAX: (510) 643-5571

Gabbiano's is located near Pier 2, behind the Ferry Building (Clock Tower), 1 block from the Embarcadero BART station. Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25

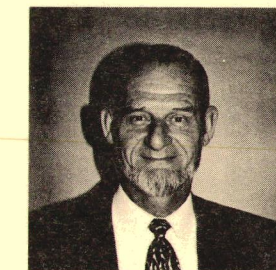
IMPORTANT NOTE: Every month, we are required to guarantee a minimum number for dinner that we are charged for. This number is often difficult to determine, given that we inevitably have people who walk-in without reservations, and people who reserve but do not show up.

We appreciate receiving your early reservation. If you need to cancel, even at the last minute, we would appreciate your phone call. In the future, if you reserve and do not call to cancel, you may be responsible for sharing the cost of extra dinners we are charged for. **Thank you for understanding.**

MARCH PROGRAM

PROGRAM: Designing and Installing Problem-free HVAC Systems to Avoid Litigation
SPEAKER: Carl H. Jordan, Consulting Mechanical Engineer

Carl Jordan's recent experience has exposed him to a number of HVAC systems whose performance is less than desirable. Without identifying the specific names of projects, engineers, or contractors, Carl will show a number of visual examples of poor designs and installations, many of which resulted in disputes and litigation. Each example represents a misapplication of either a basic principle of physics, or of what would be considered to be good practice engineering or contracting. Carl hopes that, by revealing the examples, we can learn to avoid similar situations in our future designs and installations.



Since 1988, Carl Jordan has had his own practice as a Consulting Mechanical Engineer. Prior to this, for 15 years he was an Associate Partner and Director of Mechanical & Electrical Engineering with Skidmore, Owings & Merrill in San Francisco. He has received

several awards for both his engineering design work and his publications in the ASHRAE Journal. Carl's design experience includes over 300 projects, many of which were large and complex facilities. His consultation experience includes forensic engineering, expert witnessing, arbitration, and mediation.

March is *MEMBERSHIP NIGHT* so please encourage a few friends or colleagues to attend.



PRESIDENT'S MESSAGE

The attendance at February's meeting was astounding - 140 people. The dinner and service at Gabbiano's was also excellent. The staff went out of their way to accommodate our unexpectedly large group. Thank you, Gail Brager, for the excellent program on the design/build process that attracted such a crowd.

The Golden Gate Chapter is making significant contributions to Engineers Week, February 20 through 26. An ASHRAE seminar for students was held at the Pacific Energy Center. An overview of the HVAC industry and career opportunities was presented along with a message about ASHRAE. We can thank Jim Brugger and the Education Committee for organizing this event. In addition, a donation was also given to the Engineers Week Scholarship Fund.

The nominating committee has made their nominations for next year's officers. You will be given the opportunity to add to the nominations at the March meeting. Thank you Barbara Dilts, Carl

Jordan, Jim Nemecheck, Bob Voelz, and Gino Colacchia for serving on the nominating committee.

Chapters Regional Conference will be held in San Diego the first week in May. I encourage all of you to attend but especially committee chairs. The chapter will subsidize those chairs who wish to attend. Please call Gail for details.

I want to remind all of us of our duty to contribute to ASHRAE research. Our membership dues barely cover the printing of the handbooks we receive every year and the overhead of the Society. The knowledge contained in the handbooks is the *raison d'être* of our society. The handbooks can only be kept current with ongoing research. Since we all profit from this knowledge, it is our responsibility to give something back. Please direct your contributions to Marie Madden.

Our next meeting on designing to avoid litigation will again be held at Gabbiano's. Please make your reservation within the new Friday deadline. This is also "Membership Night" so please bring a potential member. Please tell Gail how you liked the service and overall accommodation at Gabbiano's. If anyone has any suggestions for an alternative meeting place also tell Gail.

We are instituting a new policy for meeting "no-shows." If there are extras costs incurred due to people who do not honor their reservations, these cost may be billed to those people. You can easily avoid this by calling if you need to cancel, even at the last minute.

Please remember that the program for June's meeting will emphasize Chapter history as well as the ASHRAE Centennial. If you would like to make a contribution to this program, please contact Robert Phillip.

Richard Paillon

ASHRAE GOLDEN GATE CHAPTER 1993-1994 COMMITTEES AND CHAIRPERSONS

Attendance.....Richard Charles	Awards..... Jack Kniveton	Auditing..... Hank Mouw
BAEC..... Tom Reinarts	Code..... Bob Voelz	CRC Action.....Gail Brager
Education.....Mark Hydeman	Energy & Tech..... Peter Turnbull	Fog Dispenser..... Richard Nagy
Golf..... Mark Luckes	Government Affairs.....Jon Wintermeyer	Historian..... Bob Phillips
Honor Roll..... Tom Reinarts	Marble Game..... Tim Provo	Membership.....Michael Rubio
Product Show..... Brad Gustafson	Program..... Gail Brager	Publicity..... Sal Giglio
Reception..... Steve Doberstein	Refrigeration..... Jim Davis	Research..... Marie Madden
Roster..... Jim Taylor/Tim Provo	Scholarship..... Debi May	Seminar..... Richard Gistelli
Tennis..... Rich Leao		

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair*:
Michael Rubio (415) 777-5333
(415) 641-4413 FAX

**MAIL, FAX or PHONE NEWS TO:
FOG DISPENSER**

Rick Nagy, *Editor*
Murakami & Myers Engineers
750 Davis Street
Santa Rosa, CA 95401
Telephone (707) 546-1332
FAX (707) 546-5733

FOG DISPENSER DEADLINES

Meeting Dates	Copy Deadlines
March 3, 1994	February 11, 1994
April 7, 1994	March 18, 1994
May 5, 1994	April 15, 1994
June 2, 1994	May 13, 1994

Published monthly, October through June, by the GOLDEN GATE CHAPTER OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, c/o Duplicating associates, 370 Brannan Street, San Francisco, CA 94107

1993-1994 OFFICERS

Richard Paillon President
Gail Brager President-Elect
Roy Gifford Secretary
Dennis Thompson Treasurer
Board of Governors
Richard Leao Ernie French
Dan Reiter

EMPLOYMENT OPPORTUNITY

Technical Analysis Corporation

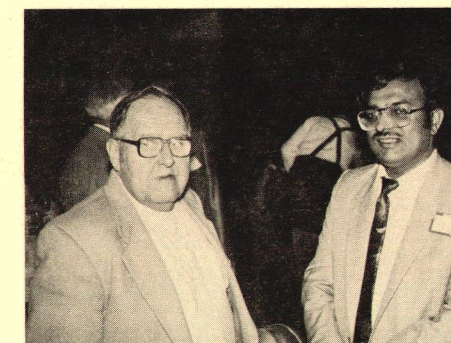
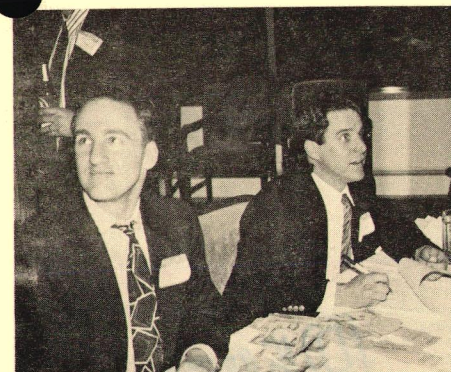
282 Second Street, Third Floor, San Francisco, CA 94105-3130
(415) 521-9970 FAX (415) 521-9981

Technical Analysis Corporation, a small energy consulting firm needs electrical/controls engineer with minimum 2 yrs utility/IPP/NUG power plant construction/operation or DSM/lighting experience. PE/CEM/CCP desired. TAC encourages personal initiative and gives the professional freedom and responsibility that goes with it. Candidates should be comfortable in a loosely structured setting with minimal bureaucracy. Medical, 401K. Non-smoking office. Resumes to Don H. Beckham, Vice President, TAC; 282 Second St., 3rd Floor, San Francisco, CA 94105. No telephone inquiries.

EDUCATIONAL OPPORTUNITIES

"Diagnosing and Mitigating Indoor Air Quality Problems in Buildings" April 21 & 22, 1994, San Francisco, CA. Fee \$785 (\$100 less for ASHRAE members) Contact: Indoor Environmental Engineering, 1448 Pine St. Ste. 103, SF, CA 94109, Attn.: Chad Pfohl, 415-567-7700, FAX 415-567-7763

San Jose Chapter of ASHRAE will be holding a **TITLE 24 Seminar** on April 15, 1994. Seminar will have guest speakers from California Energy Commission and from PG&E to talk about the 1992 New Residential Standards and compliance along with the upcoming 1995 standards. For more information contact Lawrence Ring at Advance Design Consultants at 408-277-1881.



An excellent design/build panel discussion and the new Gabbiano's Restaurant meeting location combined to set attendance records at the February ASHRAE Meeting

ASHRAE GOLDEN GATE CHAPTER
DINNER RESERVATION FAX
For THURSDAY, MARCH 3, 1994

Please send Fax by noon on FRIDAY, February 25

FAX TO: Gail Brager - UC Berkeley

FAX: 510-643-5571

Phone: 510-642-1696

Please call if you have any last minute changes in plans.

Please cancel your reservation(s) if you cannot attend the meeting.

NOTE THE MARCH MEETING IS MEMBERSHIP NIGHT SO WHY NOT SHARE THIS FORM WITH YOUR FRIENDS AND COLLEAGUES.

FROM: DICK CHARLES

COMPANY: C&B ENGINEERS PHONE: 415-442-0110

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

<u>DICK CHARLES</u>	_____
<u>PAUL O'NEILL</u>	_____
<u>IGOR TARJAKOVSKY</u>	_____

LOCATION: Gabbiano's, (Upstairs)
1 Ferry Plaza
Near Pier 2, behind the Ferry Building
San Francisco, CA
(415) 391-8403

PARKING INFORMATION:

Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25

ASHRAE GOLDEN GATE CHAPTER
MEETING MINUTES
FEBRUARY 3, 1994

THE MARBLE DRAW

Next Month's Starting Pot: \$154.00+
Odds: 20.0%
Black Marbles Remaining: 4



1. President Rick Paillon called the meeting to order at 7:50 p.m. Self-introductions followed.
2. The January meeting minutes were approved.
3. Rick thanked Gabbiano's for hosting our first meeting since the closing of the Engineer's Club. Our March meeting will also be held at Gabbiano's. In the meantime, Gail Brager is checking out the many recommendations she received for other places for future meetings.
4. The members of the Nominating Committee were unanimously approved, as follows: Barbara Dilts, Carl Jordan, Jim Nemechek, Gino Colacchia, Bob Voelz and Rick Paillon (ex-officio).
5. Rick encouraged attendees who are not currently members of our Chapter to contact Mike Rubio for a membership form. He can be reached at 415-777-5333.
6. Gail Brager announced that we had a record-breaking attendance for tonight's meeting: 160 people registered and 140 attended. She thanked the attendees for registering early and reminded them, for future reference, to please call if they need to cancel (even if it's at the last minute).
7. PROGRAM: Our venerable panel members (Karl Guttman, Mike Cory, Bob Linford and Jerry Weisbach) did an exceptional job offering their unique opinions about the mechanical design/build (d/b) process. Karl focused on what he believed were the ingredients for a successful job that applied to both the traditional and d/b approaches, and discussed specific applications where he thought d/b would be appropriate. Mike talked about the advantages of the d/b process, and how to select a d/b contractor. Bob followed with his definition of the d/b process using a Noah's Ark analogy, highlighted what he believed were the important elements of a successful d/b process, and addressed common d/b myths and misconceptions. Jerry offered his opinions as both an architect and lawyer, suggested guidelines or tools that are available to minimize the inherent adversarial nature of the process, and challenged the audience with over a dozen questions that one should address before entering a d/b process. The panel members' statements were followed by a lively question-and-answer period, where darts were respectfully thrown with rubber tips.

FUTURE PROGRAMS

Please note the April location and earlier reservation date. The Pacific Energy Center is less flexible than other locations that have in-house catering, so please mark your calendars now and reserve early!

Date: April 7, 1994
Place: Pacific Energy Center, 851 Howard St., S.F.
Program: Direct/Indirect Evaporative Cooling
Speaker: David Laybourn, PG&E Consultant Marketing Products and Services

There will also be a Pre-dinner Technical Seminar on energy issues. The specific topic and speaker will be announced in the next Fog Dispenser.

Reservations due to Gail Brager by Friday, April 1 *no foolin'!*

NOTE: May Field Trip - Wednesday, May 11
Sharks Arena, San Jose
Due to CRC, PLEASE NOTE DATE CHANGE
A bus will be arranged. Details to follow.

NEW CHAPTER MEMBERS

The Golden Gate ASHRAE Chapter welcomes the following new members:

- Ed Arens University of California, Berkeley
- Dave Nazzaro Johnson Controls, Inc.

SAMPLE BALLOT	
Golden Gate Chapter of ASHRAE	
1994 - 1995 Officers	
OFFICE	NOMINEE
President Elect (Two-year Position)	Roy Gifford
Secretary	Dennis Thompson
Treasurer	Dan Reiter
Board Member (One-year Position)	Ernie French
Board Member (Two-year Position)	Ben Sun

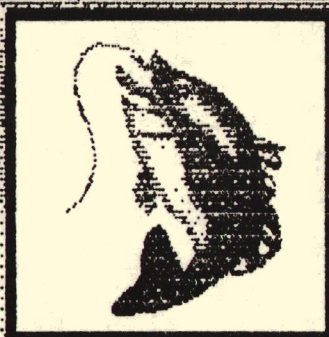


**Don't Forget
YOU'VE
GOTTA GO
TO SAN DIEGO**

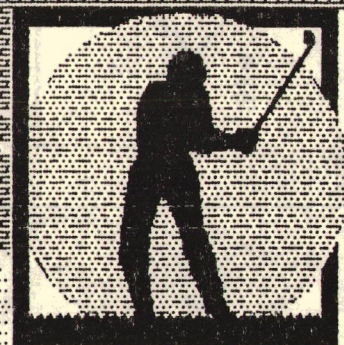


**This year ASHRAE's Region X
Chapter's Regional
Conference - CRC -
will be in SAN DIEGO
MAY 4TH - 7TH 1994.**

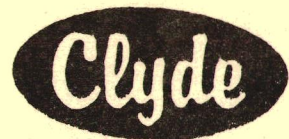
**The Bahia Hotel ON beautiful
Mission Bay has on site water
sports and beach activities,
and is only one block from the
Ocean. Mark your calendar,
tell the boss, spouse and tax
man. But Don't Forget....**



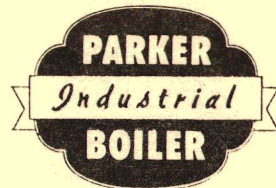
**Contact your Board or
John Leventrager, P.E.
Chairman
4660 North River
Road #101
Oceanside, CA 92056**



APRIL HONOR ROLL



ARMSTRONG



EQUIPMENT COMPANY, INC.

Factory Representatives

P.O. BOX 2358, BERKELEY, CALIFORNIA 94702 (510) 845-6130
920 GRAYSON STREET 94710 FAX 845-7465
ROCKLIN OFFICE Phone (916) 624-1897/Fax 624-7978

APRIL PROGRAM:

**Evaporative Cooling Applications in Northern and Central California
PRE-DINNER TECHNICAL SEMINAR:**

**Evaporative Cooling Techniques for High IAQ and Low Energy Costs
PRODUCT SHOW:**

Displays by local vendors

SEE INSIDE FOR DETAILS



Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107



Richard A. Charles
C & B Consulting Engineers
150 Spear Street #500
San Francisco, CA 94105

FOG DISPENSER

Golden Gate Chapter



ASHRAE

VOLUME XXXIII • NUMBER 7

APRIL 1994

MEETING NOTICE

DATE: Thursday, April 7, 1994
SOCIAL HOUR: 5:30 p.m.
DINNER: 6:30 p.m.
LOCATION: PG&E Energy Center
851 Howard St. (btwn 4th & 5th St.)
San Francisco, CA
(415) 973-7268

COST: \$25.00
TO RESERVE: Please phone or fax your dinner reservation to Gail Brager by **Friday, Apr. 1 (no foolin'!).** A fax form is enclosed for your convenience.

PHONE: (510) 642-1696
FAX: (510) 643-5571

The Center is located 2 blocks south of the Powell St. BART Station. Public parking is available across the street from the Center. **Because the Energy Center uses outside catering, there is less flexibility in accommodating late reservations and walk ins. Please reserve promptly.**

April is student night, and we will be encouraging students from local schools to attend. Please share this information with any students you know who might be interested. We also invite and encourage you to sponsor students (at \$25 each). Please indicate your support on the fax return form.

APRIL PROGRAM

PROGRAM: Evaporative Cooling Applications in Northern and Central California

SPEAKER: Dave Laybourn,
Consultant, Pacific Gas & Electric

"It's not a swamp cooler anymore!" This presentation will include a brief review of the principles of evaporative cooling and potential cooling effect in our climate, followed by a description of specific techniques including direct media, heat exchangers for indirect cooling, rotating wheels, and cooling towers. Dave will also discuss applications such as direct air cooling, indirect/direct, and indirect pre-cooling of ventilation air with a performance review of various techniques based on actual installation data and manufacturer literature.



Dave Laybourn is an internal consultant to PG&E, specializing in HVAC systems. Dave is a Mechanical Engineering graduate of Stanford University, and a registered Professional Engineer in California. His experience includes evaluation and marketing of innovative air conditioning systems such as evaporative cooling and thermal storage

ADDITIONAL APRIL PROGRAM EVENTS!!

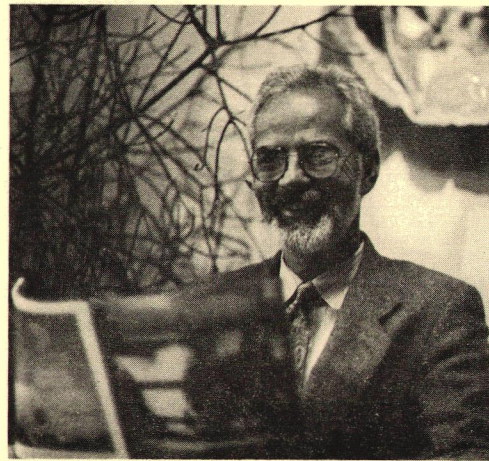
(see inside pages for more details)

Pre-Dinner Technical Seminar, 5:30 - 6:30

Topic: "Evaporative Cooling Techniques for High IAQ and Low Energy Costs"
Speaker: Mike Scofield, Conservation Mechanical Systems.

Product Show, 4:00 - 9:00

The latest developments in HVAC equipment will be on display by local vendors.



PRESIDENT'S MESSAGE

The first Technical Seminar session is this week, March 31, at PG&E Energy Center. If you miss this first meeting you may still attend any or all of the following sessions held on Thursday nights at the Energy Center. Richard Jackson-Gistelli and his committee scheduled the meetings this way for your convenience. I hope you will all take advantage of this valuable training opportunity.

Our goals stated at the beginning of the business year are being met! Attendance at meetings is up significantly. We had over 90 people at the March meeting. A rough count of

names in the roster shows an increase of 50 over last year. Planning works. It motivates people. I was encouraged to plan and set goals for this chapter at last year's Chapters Regional Conference.

This year's CRC will be held the first week in May in San Diego. It looks like this year there will be many more Golden Gate members in attendance than last year. Get your reservation in early. The chapter will subsidize attendance of officers and committee chairs. Because of the large number planning to attend, we will not be able to subsidize as much per individual as last year. Please contact a member of the board if you are interested. I encourage employers to also subsidize attendance. It's good training for your employees.

Brad Gustafson is organizing this year's Product Show. To increase attendance over last year's show, we have decided to combine the Product Show with the April meeting. Come to the meeting. You will probably see many new faces there as a result of the Product Show.

We seem to be lagging behind our goals for ASHRAE research contributions. There is still time to catch up. I can't emphasize too strongly how important this research is to all of you individually. We need your support. Please direct your contributions to Marie Madden.

Richard Pailon

ASHRAE GOLDEN GATE CHAPTER 1993-1994 COMMITTEES AND CHAIRPERSONS

Attendance..... Richard Charles	Awards..... Jack Kniveton	Auditing..... Hank Mouw
BAEC..... Tom Reinarts	Code..... Bob Voelz	CRC Action..... Gail Brager
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Golf..... Mark Luckes	Government Affairs..... Jon Wintermeyer	Historian..... Bob Phillips
Honor Roll..... Tom Reinarts	Marble Game..... Tim Provo	Membership..... Michael Rubio
Product Show..... Brad Gustafson	Program..... Gail Brager	Publicity..... Sal Giglio
Reception..... Steve Doberstein	Refrigeration..... Jim Davis	Research..... Marie Madden
Roster..... Jim Taylor/Tim Provo	Scholarship..... Debi May	Seminar..... Richard Gistelli
Tennis..... Rich Leao		

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair*:
Michael Rubio (415) 777-5333
(415) 641-4413 FAX

**MAIL, FAX or PHONE NEWS TO:
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Rick Nagy, *Editor*
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June 2, 1994	May 13, 1994

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1993-1994 OFFICERS

Richard Pailon President
Gail Brager President-Elect
Roy Gifford Secretary
Dennis Thompson Treasurer
Board of Governors
Richard Leao Ernie French
Dan Reiter

APRIL 7

PRE-DINNER TECHNICAL SEMINAR

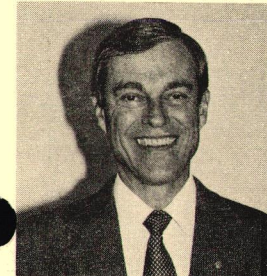
PG&E Energy Center

5:30 - 6:30

TOPIC: Evaporative Cooling Techniques for High IAQ and Low Energy Costs

SPEAKER: Mile Scofield
Conservation Mechanical Systems

Mike will present design concepts behind the operation and performance of a heat pipe air-to-air heat exchanger, with emphasis on its more recent application to indirect evaporative cooling. The use of indirect/direct evaporative cooling for low temperature supply air systems in dry climates will also be analyzed. Illustrations will show how two-stage evaporative cooling may be employed throughout the arid western states to reduce cooling costs and provide beneficial humidification.



Mike Scofield is a graduate of the Univ. of Colorado at Boulder with degrees in both Mechanical Engineering and Business Administration. He has served ASHRAE extensively at both the Society and local Chapter levels, having served as President of both the San Jose and Denver chapters.

Mike has written numerous papers and articles dealing with the use of air-to-air heat exchangers and evaporative cooling techniques to reduce energy consumption. He received the ASHRAE Journal Best Paper Award in 1987

APRIL 7 PRODUCT SHOW

PG&E Energy Center

4:00 - 9:00

Don't miss the annual ASHRAE Golden Gate Chapter Product Show, where the latest developments in HVAC equipment will be on display by local vendors. This is a great opportunity for local engineers, architects, designers, plant engineers and contractors to meet with equipment representatives at a convenient San Francisco location. There will be up to 40 tables with small displays, literature, charts, catalogs, pamphlets and other handouts.

EMPLOYMENT OPPORTUNITIES

PRODUCT/PROJECT ENGINEER

EnergyLine Systems, a leading developer and manufacturer of embedded micro controller products for commercial and residential HVAC and industrial markets is seeking a creative BSME or MSME level person to serve as a group HVAC resource and project/product development manager. This position requires extensive knowledge and/or 5-7 years experience with commercial and residential HVAC equipment and systems; knowledge and experience of DDC control systems (unit controls and networks), and familiarity with IBM-compatible personal computers (PCs) using MS-DOS and/or Windows. Ability to program in a high-level language (C preferred) and some knowledge of basic electronics, communications networks and protocols, is desirable. Ability to work independently with little supervision as well as compatibility with other members of a project team is essential. Domestic and possibly international travel will be required.

Send resume to:

Carolyn Pugh, Human Resource Director
EnergyLine Systems, PO. Box 12027
Berkeley, CA 94701-2027



An informative presentation by Carl Jordan was attended by friends new and old.

ASHRAE GOLDEN GATE CHAPTER

DINNER RESERVATION FAX

For THURSDAY, APRIL 7, 1994

Please send Fax by NOON on FRIDAY, APRIL 1

FAX TO: Gail Brager - UC Berkeley

FAX: 510-643-5571 Phone: 510-642-1696

Please call if you have any last minute changes in plans.

Please cancel your reservation(s) if you cannot attend the meeting.

FROM: DICK CHARLES

COMPANY: C9B ENGINEERS

PHONE: 415 - 442-0110

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

PAUL O'NEIL

DICK CHARLES

LOCATION: PG&E Energy Center
851 Howard Street, San Francisco, CA
(415) 973-7268

STUDENT SPONSORSHIP

Remember - April meeting is student night

Please show your support!

YES, I would like to provide students with the opportunity to attend our meetings.

I would like to support students for the current meeting.

I am willing to sponsor _____ student(s) at \$25 each, if any are interested in attending.

I would like to make a long-term commitment.

I am willing to sponsor _____ student(s) to attend ASHRAE meetings at \$25 each, up to _____ per meeting, and/or a total of _____ per year.

Signature: _____

Company: _____ Phone: _____

PLEASE MAKE CHECKS PAYABLE TO "ASHRAE"

ASHRAE GOLDEN GATE CHAPTER
MEETING MINUTES
MARCH 3, 1994

1. Meeting called to order at 7:20 p.m.
2. Minutes of February General Meeting were approved.
3. Self Introductions.
4. Guests were welcomed as a part of "New Membership" Night.
5. The President, Rick Paillon, indicated that with the new meeting location, our attendance must be within a few percentage points of the reservations we make. We may have to start charging those who fail to show for a portion of the overcharge should one be assessed.
6. An announcement concerning the Election of Officers was made by President Paillon.
7. Tim Provo, Chair of the Roster Committee, thanked all who have helped to put the Roster together and all those who got their membership dues in early to make getting the Roster completed possible. President Paillon also thanked Tim for his fine efforts.
8. Jim Davis, Chair of the Refrigeration Committee, asked for any volunteers to serve with him on the committee. He also announced that the field trip to the Sharks Arena is planned for May 11, 1994. A bus is planned. Further information will be forthcoming. As soon as the announcements are received, Jim asked that all respond as quickly as possible.
9. Mark Luckes, Chair of the Golf Tournament, announced that the tournament will be the first Friday in June and will be at Harding. Flyers will be forthcoming.
10. The CRC will be the first weekend in May for Region 10 and will be held in San Diego. President Paillon encouraged all to attend - especially the Chairs of the various committees.
11. John Wintermeyer, Chair of the Education and Government Affairs Committee, announced that the latest information from the Government concerning CFC's was available at the meeting.
12. Richard Jackson-Gistelli, Chair of the Seminar Committee, indicated that Registration Forms were in the Fog Dispenser and are also in a separate mailing. There is no way that he can bill people. The preferred method is to pay in advance when sending in the registration; however, payment can be made at the door.
13. Tom White, newly appointed Co-Chair of the Centennial Committee, made a brief announcement indicating that he and Bob Phillips are developing programs and information for the upcoming Centennial Celebration.
14. Bud Offerman announced that Brochures for Spring Air Conditioning Courses were available at the meeting.

15. A moment of silence was held in honor of Pete Filios, long time member of the Golden Gate Chapter ASHRAE, who passed away recently.
16. Marie Madden, Chair of the Research Promotion Committee, made an additional appeal to all to contribute to the Research Program. Every member of ASHRAE has benefited from ASHRAE Research in some way. Marie's appeal was enhanced by President Paillon's introduction concerning his time in the Peace Corps.
17. Brad Gustafson announced that the Table Top Show will be at the next General Meeting and will be held at the PG&E Energy Center on April 7, 1994. Brochures are available at the meeting.
18. After the break, an excellent speech on "Trouble Free Design" was presented by Carl Jordan.
19. Following questions and answers, the meeting was adjourned at 9:40 p.m.

THE MARBLE DRAW

Next Month's Starting Pot: \$325.00+
Odds: 25%
Black Marbles Remaining: 3



FUTURE PROGRAMS

FIELD TRIP TO SAN JOSE ARENA

Date: Wednesday, May 11, 1994
Transportation: Bus, first come, first served, \$10.00 Round-trip
Dinner: Dinner served at the Arena by in-house food service. Menus and pricing are still being determined
Reservations: Jim Davis (415) 456-6958 (Fax & Phone)
Reservations due to Gail Brager by Friday, May 6.

NEW CHAPTER MEMBERS

The Golden Gate ASHRAE Chapter welcomes the following new members:

- J. D. Deilgat Eco-Air Products, Inc.
- Dave Nazzaro CDI Corporation

Did you notice any information errors in this year's Roster? If so, please contact Tim Provo, at 510-758-2835.

MAY HONOR ROLL

**Air
Treatment
Corporation**

**ABB
VARIABLE SPEED DRIVES**



6116 MERCED AVE., #303
OAKLAND, CA 94611
PHONE: (510) 655-3990
FAX: (510) 655-7966

HVAC Manufacturers Representative

DAVID H. EISENBERG, P.E.
DAN NOONE
ROY GALE (SACRAMENTO)

**MAY PROGRAM: FIELD TRIP TO SHARKS ARENA
SEE PAGE 1 FOR DETAILS**

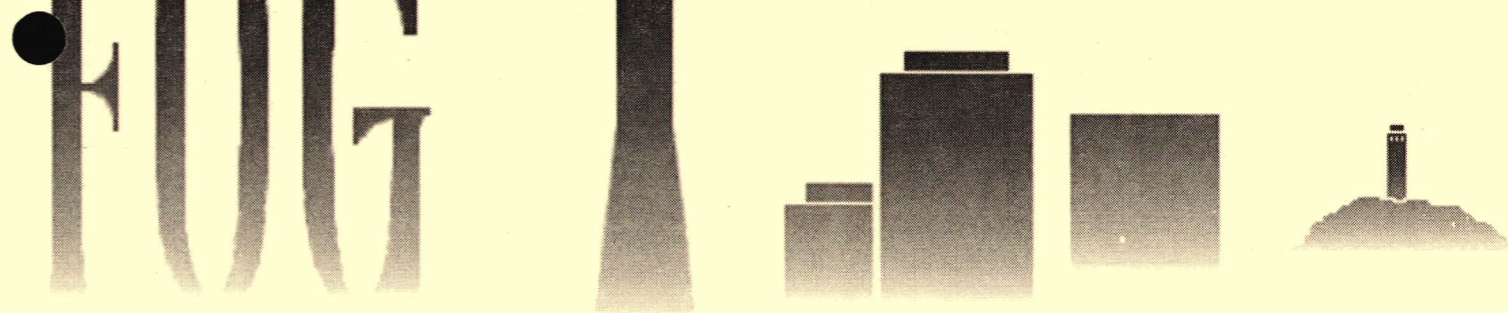


Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107



Richard A. Charles
C & B Consulting Engineers
150 Spear Street #500
San Francisco, CA 94105

FOG DISPENSER



Golden Gate Chapter



ASHRAE

VOLUME XXXIII • NUMBER 8

MAY 1994

MEETING NOTICE

Note different meeting & reservation dates!

DATE: Wednesday, May 11, 1994

BUS: (Optional)
Loading at 4:45 p.m.
Departs 5:00 p.m. SHARP

LOCATION: Mission Parking Garage
5th & Mission
San Francisco, CA
Loading from Mission Street side

COST: \$10.00 (round-trip)

TOUR: 6:30-7:30 p.m.

LOCATION: Sharks Arena
San Jose, CA
(408) 999-5874 (Securities Office)
See insert for details

DINNER: Follows tour, estimate dinner to start
between 7:45 and 8:00 p.m.

LOCATION: Tied House Cafe & Brewery
65 N. San Pedro Street
btwn St. John & Santa Clara Sts.
San Jose, CA
(408) 295-2739

COST: \$25.00

TO RESERVE: Please phone or fax your dinner and bus
reservations to Gail Brager by
Wednesday, May 4. A fax form is
enclosed for your convenience

PHONE: (510) 642-1696

FAX: (510) 643-5571

QUESTIONS: Call Jim Davis

PHONE: (415) 456-6958

MAY PROGRAM

Field Trip -- Sharks Arena !!

PROGRAM: Behind-the-scenes tour of the new Sharks
Arena HVAC systems

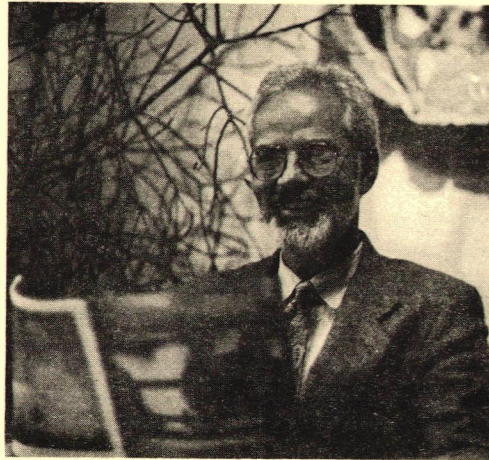
TOUR GUIDE: Mike Ludwig, Johnson Controls

The new San Jose Arena is home to the National Hockey
League's San Jose Sharks. The Arena is considered a state-
of-the-art facility incorporating the best technological designs
available today. Sitting on approximately 17 acres, the Arena
is 117 ft. high with 450,000 sq. ft. of internal space. It has a
maximum seating capacity of 20,000 and was built at a cost
of \$162.5 million. Its most prominent exterior feature is a
magnificent glass pyramid entry soaring 10 stories above the
ground.

The Arena's total HVAC system delivers 2300 tons of
refrigeration and 500,000 cfm of air. There are six chillers --
four for air conditioning and two for the ice plant. The Arena
ice floor requires 10,000 gallons of water to make competition
ice, and contains 15,000 ft. of piping with 280 loops.

We've recently learned that *the Sharks Arena will no longer
be offering tours of any kind, ours is the last one.* Don't miss
this unique opportunity to get a behind-the-scenes tour of the
Arena's sophisticated mechanical systems.

**Please see pull-out for map, driving directions, parking
info, and instructions for late stragglers. Be sure to bring
this pull-out page with you.**



Richard Jackson-Gistelli and his committee deserve recognition for presenting the technical seminar last month. Attendance and income for this event was up over last year.

By the time you read this, the Chapter's Regional Conference will be right around the corner. I will have a full report next month. I can tell you that last year's CRC inspired changes you have seen take place in the chapter's approach to many issues. These changes have paid off in higher membership, increased meeting attendance and better programs. Since more chapter members are attending CRC this year, you should see even more creative approaches next year.

I hope you will all turn in your ballots for next year's chapter officers. New officers will take over in June.

If you haven't made your ASHRAE research contribution yet, please do so. Research is the key to our existence as a professional society.

Last month's meeting attendance was over 110. Last year's average attendance was 79. Thank you Gail Brager for organizing such well received programs. Thank you to all the other members who have participated in our programs. Thank you Rick Nagy, Leo Copper and Mike Scofield for the great publicity effort put into this newsletter.

Richard Paillon

PRESIDENT'S MESSAGE

Are you on the bus or off the bus? I hope to join you on the bus to our field trip this month to the Shark's Arena in San Jose. Both the trip and the presentation promise to be a lot of fun.

The product show held last month before our regular meeting was well received. Brad Gustafson did a terrific job organizing the event. Attendance was much greater than last year and exhibitors had to spend less time. Next year we hope to have even better attendance by increasing advance publicity.

ASHRAE GOLDEN GATE CHAPTER 1993-1994 COMMITTEES AND CHAIRPERSONS

Attendance.....Richard Charles	AwardsJack Kniveton	Auditing.....Hank Mouw
AEC.....Tom Reinarts	CodeBob Voelz	CRC Action..... Gail Brager
Education Mark Hydeman	Energy & Tech..... Peter Turnbull	Fog Dispenser.....Richard Nagy
Golf.....Mark Luckes	Government Affairs..... Jon Wintermeyer	Historian..... Bob Phillips
Honor Roll.....Tom Reinarts	Marble Game Tim Provo	Membership..... Michael Rubio
Product Show Brad Gustafson	Program.....Gail Brager	PublicitySal Giglio
Reception..... Steve Doberstein	RefrigerationJim Davis	Research Marie Madden
Roster Jim Taylor/Tim Provo	Scholarship.....Debi May	Seminar.....Richard Gistelli
Tennis..... Rich Leao		

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair*:
Michael Rubio (415) 777-5333
(415) 641-4413 FAX

**MAIL, FAX or PHONE NEWS TO:
FOG DISPENSER**

Rick Nagy, *Editor*
Murakami & Myers Engineers
750 Davis Street
Santa Rosa, CA 95401
Telephone (707) 546-1332
FAX (707) 546-5733

FOG DISPENSER DEADLINES

Meeting Dates	Copy Deadlines
May 5, 1994 -----	April 15, 1994
June 2, 1994 -----	May 13, 1994

Published monthly, October through June, by the GOLDEN GATE CHAPTER OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94107

1993-1994 OFFICERS

Richard Paillon President
Gail Brager President-Elect
Roy Gifford Secretary
Dennis Thompson Treasurer

Board of Governors

Richard Leao Ernie French
Dan Reiter

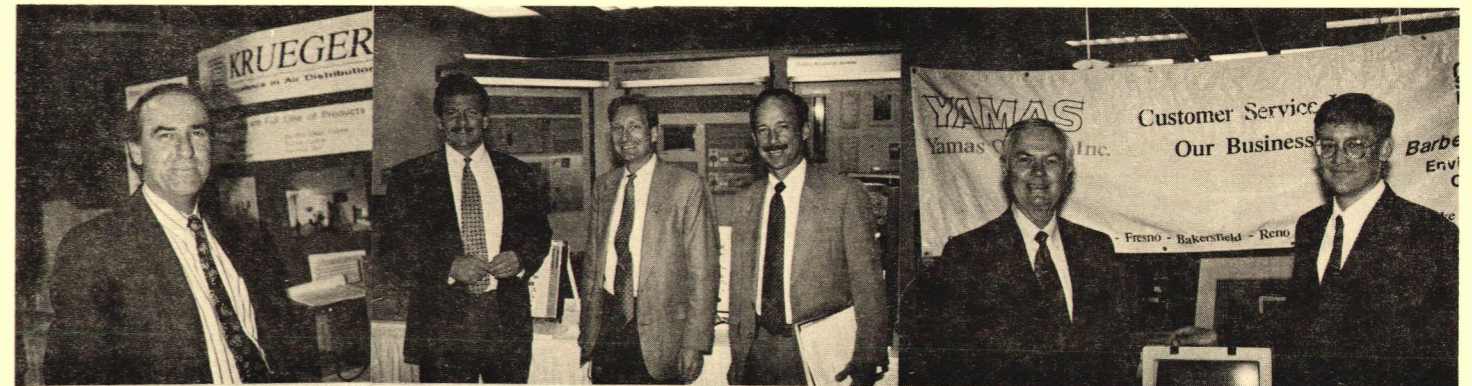
We sadly report that Life Member and long time friend to many Peter Filios passed away last month. We offer our condolences to his family and friends.

NEW CHAPTER MEMBERS

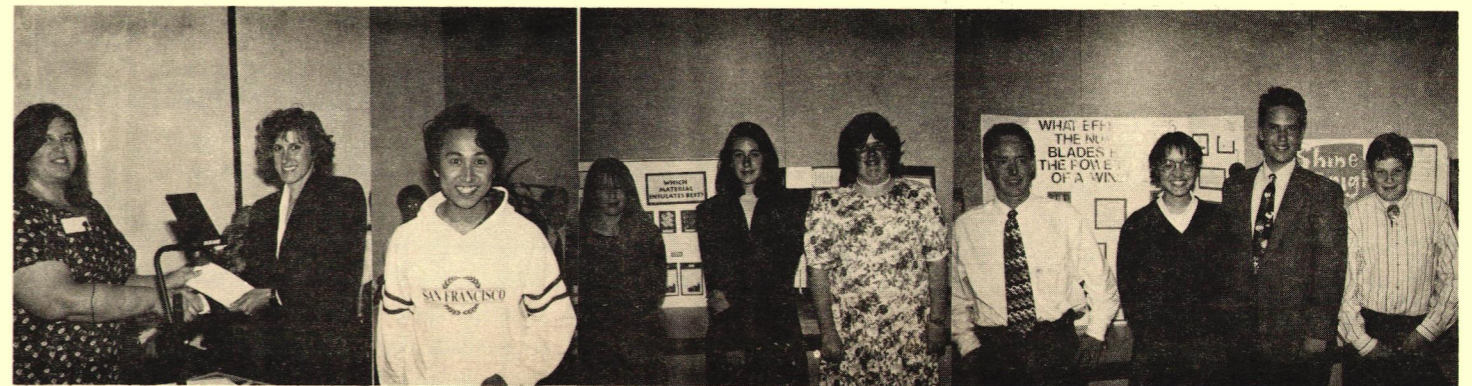
The Golden Gate ASHRAE Chapter welcomes the following new members:

Jiri Dokladal
Allan J. Montpellier
Doug Nakano

Eco-Air Products, Inc.
Flack + Kurtz Consulting Engineers
Landis + GYR



The Pre-meeting Product Show featured familiar faces and new technology



Student Night Scholarship and Technical Project Award Win

**ASHRAE GOLDEN GATE CHAPTER
MEETING MINUTES
APRIL 7, 1994**

1. President Rick Paillon called the meeting to order at 7:45 p.m. Self-introductions followed.
2. The March meeting minutes were approved.
3. Gail Brager encouraged members to attend the upcoming CRC meeting in San Diego.
4. Jim Davis described the Wednesday, May 11 Field Trip to the Sharks Arena in San Jose (details in this newsletter).
5. Richard Jackson-Gistelli announced that the first seminar took place on March 31 and was a strong success. The general theme of the seminar series is Energy Retrofits. Future dates are April 14, 21, and 28.
6. Gail Brager and Ed Arens offered their perspectives on the importance of donating to ASHRAE Research. ASHRAE research is subjected to a rigorous review process, and is the starting point for the information contained in the handbooks and standards that we all rely on. Please give generously.
7. Rick Paillon announced that several Chapter members recently received ASHRAE awards: Bud Offerman (Distinguished Service Award), Tom White (Andrew T. Boggs Service Award), and Ed Arens (Best Symposium Paper Award). Congratulations to all of you!
8. Debi May gave awards (and checks) to our two scholarship winners: Suzanne Wolf from the S.F. Maritime Academy, and Tengfang Xu from U.C. Berkeley.
9. Mark Hydeman introduced the student participants from the 41st Annual Bay Area Science Fair who received awards both from our Chapter and from PG&E. These students' projects all related to either HVAC or to fundamentals of comfort and heat transfer in buildings.
10. Rick Paillon recognized our student sponsors tonight. We extend our appreciation to Karl Guttmann, Matt McMann, Mike Scofield, Ben Sun, Dennis Thompson, and PG&E.
11. Nominations were taken from the floor for the election of next year's officers to add to the Nominating Committee's nominated slate. In our traditional fashion, nominations were closed without any additions.
12. PROGRAM: Dave Laybourn, consultant to PG&E, discussed evaporative cooling applications in Northern and Central California.

JUNE PROGRAM

Centennial Theme, Spouse Night, Award Night

Date: Thursday, June 2, 1994
 Place: Gabbiano's, 1 Ferry Plaza, San Francisco
 Program: A Light Look Back
 Speakers: Tom White, Karl Guttmann, Jack Kniveton and Tom Gilbertson

Four Past-Presidents will each offer their favorite anecdotal stories about different periods of our Chapter History. (They've all promised - only five minutes each!)

June is also the night we recognize the hard-working members of our Chapter who have contributed to our various activities. We encourage all Committee Chairs to mark your calendar and plan to attend.

June is also Spouse Night. Book your baby-sitters, grab your spouse, and we promise a fine dinner with fabulous views.

Reservations are due to Gail Brager by Friday, May 26.

REMINDER

CRC- May 4-7, 1994
 San Diego, CA

Please let Gail Brager know if you'll be attending!

Wed., May 4: Golf Tournament
 Thurs., May 5: Technical Seminar, Welcome Party
 Fri., May 6: Workshops; Cruise, Banquet and Dance
 Sat., May 7: Workshops, Awards Luncheon

**SCHOLARSHIPS AWARDED AT APRIL
MEETING**

Scholarship chair Debi May awarded the Golden Gate ASHRAE Scholarship for \$1000 to Suzanne Wolfe of the Maritime Academy. The Eric Thor Andresen Scholarship for \$750 was awarded to UC Berkeley student Tengfang Xu. Thanks to the scholarship committee and all those who donated to the scholarship fund.

The Fog Dispenser is looking for a few good people.

Producing the Fog this year has been a group effort. Do you enjoy working on a team project? Are you familiar with a word processing or desktop publishing software? If you are the Fog editorial staff can use your help. The Fog is published monthly from October through June. Have you been looking for an opportunity to get involved in your Chapter? Here's your chance. Call Gail Brager to inquire or volunteer. (see page 4 for phone numbers)

JUNE HONOR ROLL



HVAC CONSTRUCTION, SERVICE AND ENGINEERING

Construction: 2850 Poplar Street, Oakland, CA 94608 510-834-2430 FAX 510-834-9413
Service: 2863 Cypress Street, Oakland, CA 94608 510-834-1082 FAX 510-834-8642

ASHRAE MEMBERS:

Bill Call
Chip Eskildsen
Wayne Huie

Bob Linford
Rob Linford
Angie Palazzolo

Dave Rifkin
Steve Sprague
Val Tatasciore

JUNE PROGRAM: A Light Look Back

SEE INSIDE FOR DETAILS



Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107

RICHARD A CHARLES
C&B CONSULTING ENGINEERS
150 SPEAR STREET #500
SAN FRANCISCO CA 94105



RECEIVED
MAY 25 1994
CHARLES & BRAUN

FOG DISPENSER

Golden Gate Chapter



ASHRAE

VOLUME XXXIII • NUMBER 9

JUNE 1994

MEETING NOTICE

DATE: Thursday, June 2, 1994
SOCIAL HOUR: 5:30 p.m.
NOTE: We will not be setting up a bar upstairs. Instead, buy your drinks downstairs at Happy Hour prices!
DINNER: 6:30 p.m.
LOCATION: Gabbiano's (upstairs)
1 Ferry Plaza
San Francisco, CA
(415) 391-8403
COST: \$27.00
TO RESERVE: Please phone or fax your dinner reservation to Gail Brager by Friday, May 27. (before Memorial Day Weekend, please!) A fax form is enclosed for your convenience.
PHONE: (510) 642-1696
FAX: (510) 643-5571

Gabbiano's is located near Pier 2, behind the Ferry Building (Clock Tower), 1 block from the Embarcadero BART station. Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25

SPOUSE NIGHT: Book your baby-sitters, grab your spouse, and we promise a fine dinner with fabulous views.

MEMBER RECOGNITION: June is also the night we recognize the hard-working members of our Chapter who have contributed to our various activities. We encourage all Committee Chairs to mark your calendar and plan to attend. Let us give you the recognition you deserve!

JUNE PROGRAM

PROGRAM: A Light Look Back

The June meeting will be the kick-off to our Centennial celebration, which will continue throughout the 1994-95 year. Four Past-Presidents will each offer their favorite anecdotal stories about different periods of our Chapter History. But don't come expecting our Past-Presidents to reconstruct a comprehensive history of the Chapter in only 5 minutes each! Instead, our speakers will entertain us by focusing on interesting insights and humorous highlights that took place during each of their terms as leader of our growing Chapter. This is sure to be an interesting evening!

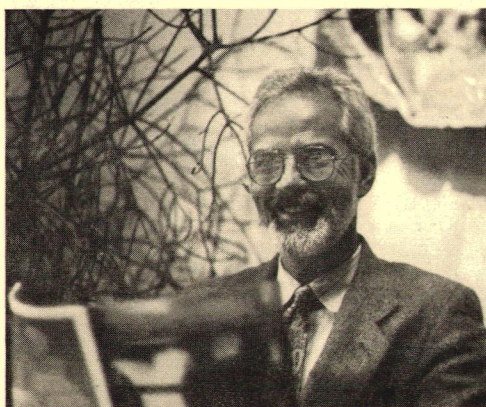
HOST: Bob Phillips, Chapter Historian

SPEAKERS: Tom White
retired
Past-President, 1952-53
Karl Guttman
Guttman & MacRitchie
Past-President, 1960-61

Jack Kniveton
Norman Wright Equipment Co.
Past-President, 1963-64

Tom Gilbertson
Thomas A. Gilbertson & Assoc.
Past-President, 1979-80

Please join us for the last meeting of the year before our long summer break! Mark your calendars for the first Fall meeting on Thursday, October 6.



PRESIDENT'S MESSAGE

I hope to see you all at the June meeting with your spouses or special friends. Bob Phillips has arranged a terrific program based on chapter history to kick off celebrations for the ASHRAE centennial.

Although I missed the bus, the May field trip to the Shark's Arena was a great success. Over 70 members attended. This was up from approximately 50 at last year's field trip. Special thanks to Jim Davis for making all the arrangements.

The Chapters Regional Conference in San Diego was very rewarding. Golden Gate Chapter had nine members in attendance. I know Gail and Roy picked up many ideas for improving chapter activities next year.

I now have accurate figures on the success of the board's efforts to improve chapter activity. We were able to report to CRC a 38 percent increase in average attendance at our chapter meetings. We had a 12 percent increase in dues paying membership. Again I need to recognize the efforts of Gail Brager, our program chair; Rick Nagy, our editor, Leo Copper, assistant editor; and Mike Scofield,

"cheer leader", for increasing meeting attendance. I must also acknowledge Mike Rubio, our membership chairman, for his efforts.

Success builds on success. The technical seminar held on four nights instead of during one long daytime session was very well received. Special merits to Richard Jackson-Gisteill, seminar chair and committee members Leonard Bertolami, John McDonald, John Stultz, Mike Morehead, and Jim Brugger.

I would also like to commend Steve Doberstein for assuming the chair of the reception committee and doing a fine job of having our badges available at meetings. Mark Hydeman has been very active as education committee chair, helping with seminar arrangements, engineer's week, and the science fair. Jim Brugger was the key man in putting together the ASHRAE reception for students. Brad Gustafson put on a great product show this year.

Marie Madden deserves much credit for her efforts as the chair of the research promotion committee that includes Mike Moorehead, Ron Yaffe, Peter Byron, Wayne Huie, and Shannon Welsh. Marie has been putting in many hours to correct a snafu on the part of Society which was supposed to supply her with preprinted mailing material. You will be getting a call from her committee shortly if you haven't already been contacted. There is still time to mail in your checks for research promotion so that we can make our quota by June 30.

Tim Provo deserves credit for raising nearly \$600 for research and for providing meeting entertainment with the marble game.

I hope you all have a wonderful summer. Your board will still be meeting monthly to plan for next year's activities. I would like to tell you all how much I enjoyed serving as your president. To have achieved the goals that we set last summer gives me a great deal of pride. I wish to thank you all for the honor of serving as president and for the satisfaction it has brought me.

Richard Paillon

ASHRAE GOLDEN GATE CHAPTER 1993-1994 COMMITTEES AND CHAIRPERSONS

Attendance..... Richard Charles	Awards..... Jack Kniveton	Auditing..... Hank Mouw
BAEC..... Tom Reinarts	Code..... Bob Voelz	CRC Action..... Gail Brager
Education..... Mark Hydeman	Energy & Tech..... Peter Turnbull	Fog Dispenser..... Richard Nagy
Golf..... Mark Luckes	Government Affairs..... Jon Wintermeyer	Historian..... Bob Phillips
Honor Roll..... Tom Reinarts	Marble Game..... Tim Provo	Membership..... Michael Rubio
Product Show..... Brad Gustafson	Program..... Gail Brager	Publicity..... Sal Giglio
Reception..... Steve Doberstein	Refrigeration..... Jim Davis	Research..... Marie Madden
Roster..... Jim Taylor/Tim Provo	Scholarship..... Debi May	Seminar..... Richard Gistelli
Tennis..... Rich Leao		

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact Membership Chair:
Michael Rubio (415) 777-5333
(415) 641-4413 FAX

MAIL, FAX or PHONE NEWS TO: FOG DISPENSER

Rick Nagy, Editor
Murakami & Myers Engineers
750 Davis Street
Santa Rosa, CA 95401
Telephone (707) 546-1332
FAX (707) 546-5733

FOG DISPENSER DEADLINES

Meeting Dates Copy Deadlines
June 2, 1994 May 13, 1994

Published monthly, October through June, by the GOLDEN GATE CHAPTER OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, c/o Duplicating Associates, 370 Brannan Street, San Francisco, CA 94107

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Gail Brager President-Elect
Roy Gifford Secretary
Dennis Thompson Treasurer

Board of Governors

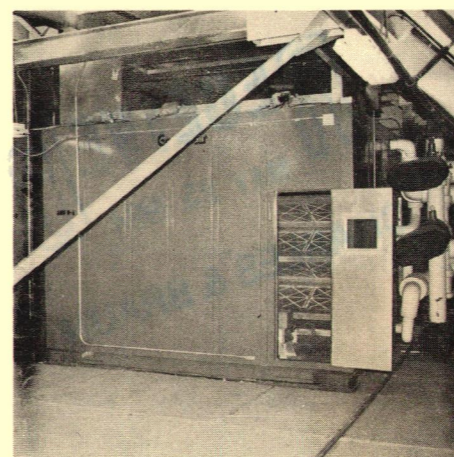
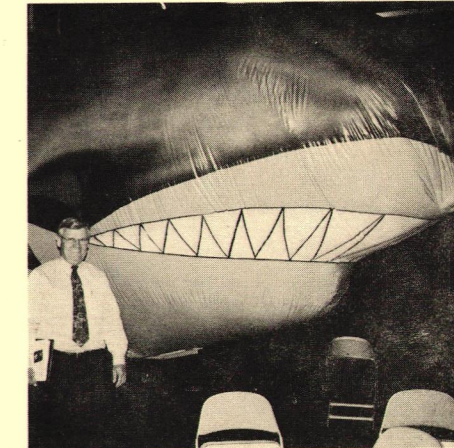
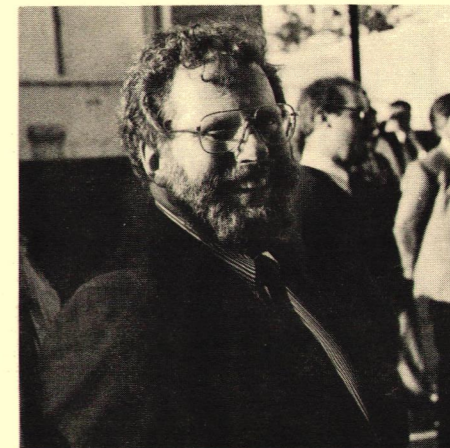
Richard Leao Ernie French
Dan Reiter

NEW CHAPTER MEMBERS

The Golden Gate ASHRAE Chapter welcomes the following new members:

- | | |
|--------------|---------------|
| Chuck Cook | Weinman Pumps |
| Wayne Gaw | Flack & Kurtz |
| Jose Herrera | Flack & Kurtz |
| Wasil Popow | Flack & Kurtz |

The Fog Dispenser apologizes to new member Jiri Dokladal of CDI Corporation West whose name or company affiliation has been misprinted in past issues.



San Jose Sharks Arena Field Trip - A "Chilling" Experience

ASHRAE GOLDEN GATE CHAPTER
DINNER RESERVATION FAX
For THURSDAY, JUNE 2, 1994

Please send Fax by noon on FRIDAY, MAY 27

FAX TO: Gail Brager - UC Berkeley

FAX: 510-643-5571

Phone: 510-642-1696

Please call if you have any last minute changes in plans.

Please cancel your reservation(s) if you cannot attend the meeting.

NOTE JUNE'S MEETING IS SPOUSE NIGHT SO WHY NOT INVITE YOUR SPOUSE

FROM: DICK CHARLES

COMPANY: C&B ENGINEERS PHONE: 415 442-0110

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

DICK CHARLES _____

LOCATION: Gabbiano's, (Upstairs)
1 Ferry Plaza
Near Pier 2, behind the Ferry Building
San Francisco, CA
(415) 391-8403

PARKING INFORMATION:

Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25

**ASHRAE GOLDEN GATE CHAPTER
MEETING MINUTES
MAY 11, 1994**

May's program was the tour of Shark's Arena in San Jose. Twenty members rode a chartered bus from San Francisco and approximately 50 others arrived by car. Our tour guide was excellent. He guided us through the whole facility including the press box, catwalks, mechanical rooms, the private boxes, locker rooms, etc. Everyone appeared to enjoy the experience. Due to this high level of interest, we arrived at the restaurant late, but had nice meals and plenty of good cheer.

DID YOU KNOW

Did you know that the popular factor "1.08" in the formula $\text{Btu/hr} = 1.08 \times \text{cfm} \times \text{TD}$ is obsolete? As explained on the bottom of page 26.15 of the 1993 ASHRAE Handbook, the factor is now 1.10. The old factor 1.08 ($0.075 \text{ \#/cu. ft.} \times 0.24 \text{ Btu/\#}\cdot^\circ\text{F} \times 60 \text{ min/hr}$) was for dry air. The 1.10 factor makes allowance for the heating or cooling of the moisture that is in the air.

This month's "Did You Know" information courtesy of Carl Jordan, P.E.

Do you know any useful factoids that you would like to share with your colleagues? This feature will be printed each month in next year's Fog Dispenser. Send your suggestions to the Fog Editor. Next year's deadlines will be published in the October edition.

INDUSTRY NEWS

EVAPORATIVE COOLING PROFESSIONALS:

Entries for the *Evaporative Cooling Consumer Guide, Volume III: Professional Listings* are now being solicited. If you are an evaporative cooling professional in Manufacturing, Contractor / Installer, or Architect / Engineer / Energy Consultant, who actively offers products or services in California and you wish to receive a survey form, please contract:

John Butler, California Energy Commission
Opportunity Technology Commercialization Program
1516 Ninth Street, MS-43, Sacramento, CA 95814
916-654-4544 or FAX 916-654-4676

The Commission is also soliciting Case Studies to feature in *Volume II* of the *Evaporative Cooling Consumer Guide*. Case Studies should be sent to:
Philip Misemer (address same as above).

POSITION AVAILABLE

**MECHANICAL ENGINEER
NATIONAL TUBERCULOSIS CENTER**

Under contract with the University of California at San Francisco and located at the California Department of Health Services (CDHS) in Berkeley, the mechanical engineer will work with the Tuberculosis Control Nurse Specialist and others in CDHS to promote effective institutional TB control programs in the San Francisco Bay Area.

DUTIES

Provide consultation on TB environmental control measures in institutional settings; develop and pilot test model guidelines on environmental control measures for TB; train institutional staff on TB environmental control measures; participate in TB outbreak investigations.

REQUIREMENTS

Bachelor's degree in mechanical engineering. Possession of a current California registration as a professional mechanical engineer (or ability to obtain one in 3 months if in possession of out-of-state license); valid California Class "C" driver's license at time of appointment or the ability to obtain one within 3 months if in possession of an out-of-state license; participation in tuberculin skin testing program; wearing of respirator, if necessary. Use of own car for travel within San Francisco Bay Area at approximately 30% time.

PREFERRED WORK EXPERIENCE

Eight years of varied and progressive mechanical engineering experience in the HVAC field in health care facilities or conducting scientific investigations related to building ventilation systems and indoor air quality. Hands-on experience with airflow measurement techniques and instrumentation including tracer gas equipment.

SALARY

\$4,075 — 6,112 per month

For additional information, please contact Melissa Ehman at 415-502-4600 at the National Tuberculosis Center. Posting closes on June 3, 1994.

NOTE: See insert for information about the upcoming Golf Tournament

THE MARBLE DRAW

Next Month's Starting Pot: \$386.00+

Odds: 33.3%

Black Marbles Remaining: 2



We Need Your Special Skills & Enthusiasm

We are already making plans for creating a fabulous '94-95 year for the ASHRAE Golden Gate Chapter. Don't be a passive participant! Enjoy the rewards of being part of the winning team that makes this happen!!

If everyone contributes just a little bit in '94-95, our Chapter will explode with activity while minimizing the load on any single volunteer. **Please help out!** You can choose to co-chair or be a member of a committee, or simply be available to offer suggestions and help out on an as-needed, on-call basis.

NAME _____ PHONE _____

"I would be interested in offering my services and/or suggestions to the following committee(s). Please call me to discuss what is needed and how I can be part of the '94-95 winning team!"

<input type="checkbox"/> Attendance. Foster increased participation in the chapter, encourage attendance at chapter meetings.	<input type="checkbox"/> Product Show. Assist with the planning and promotion of the annual Table-Top Product Show
<input type="checkbox"/> Awards. Promote the recognition of outstanding chapter members by nominating them for awards.	<input type="checkbox"/> Program. Assist with planning and coordination of programs and pre-dinner technical seminars.
<input type="checkbox"/> Centennial. Promote '94-95 Centennial activities, including programs, articles, and public outreach.	<input type="checkbox"/> Publicity. Promote activities of the Chapter in <i>Insights</i> and other publications.
<input type="checkbox"/> Education. Develop and coordinate programs to students of all levels, including continuing education.	<input type="checkbox"/> Reception. Set up name-tags; play host to guests and new members at monthly meeting.
<input type="checkbox"/> Energy & Technical. Assist in planning, scheduling and coordinating of programs & seminars.	<input type="checkbox"/> Refrigeration. Promote the interests and activities of members concerned with refrigeration.
<input type="checkbox"/> Fog Dispenser. Assist with the monthly newsletter by gathering, creating, or organizing the information.	<input type="checkbox"/> Research. Develop a plan, and assist in fund-raising efforts to benefit ASHRAE research.
<input type="checkbox"/> Gov't Affairs. Provide input to, and maintain liaisons with local, provincial and state government.	<input type="checkbox"/> Roster. Assist in the design and production of our annual Roster.
<input type="checkbox"/> Historical. Maintain and update historical records of our Chapter. Assist with Centennial committee.	<input type="checkbox"/> Scholarship. Coordinate, and promote scholarship and other student incentive awards.
<input type="checkbox"/> Membership. Attract new members who will take an active part in the activities of the Chapter.	<input type="checkbox"/> Seminar. Plan, coordinate, and promote the annual Seminar series.

"I would be interested in meeting informally 1-2 times a year with other members of our Chapter to discuss mutual interests, and to offer our collective input to help shape the content of chapter programs. I would be interested in the following topics:"

<input type="checkbox"/> Air distribution design	<input type="checkbox"/> Controls	<input type="checkbox"/> Fire & smoke control	<input type="checkbox"/> Thermal comfort
<input type="checkbox"/> CFC's	<input type="checkbox"/> Cooling towers	<input type="checkbox"/> Hydronic systems	<input type="checkbox"/> Thermal storage
<input type="checkbox"/> Cogeneration	<input type="checkbox"/> Energy conservation	<input type="checkbox"/> Indoor air quality	<input type="checkbox"/> Ventilation
<input type="checkbox"/> Cold air distribution	<input type="checkbox"/> Energy efficiency	<input type="checkbox"/> Refrigeration	<input type="checkbox"/>
<input type="checkbox"/> Commissioning	<input type="checkbox"/> Evaporative cooling	<input type="checkbox"/> Software	<input type="checkbox"/>

**Please bring this survey with you to the June 2 meeting, or return it by June 15 to:
Gail Brager, Dept. of Architecture, Univ. of California, Berkeley, CA 94720.
Phone: (510) 642-1696. Fax: (510) 643-5571 (no cover sheet required)**

OCTOBER HONOR ROLL

**Air
Treatment
Corporation**

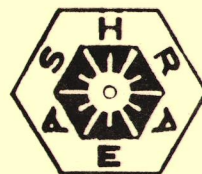
HVAC Manufacturers Representative

6116 MERCED AVE., #303
OAKLAND, CA 94611
PHONE: (510) 655-3990
FAX: (510) 655-7966

**ABB
VARIABLE SPEED DRIVES**



DAVID H. EISENBERG, P.E.
DAN NOONE
ROY GALE (SACRAMENTO)



Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107



RECEIVED
SEP 28 1994

CHARLES & BRAUN

RICHARD A CHARLES
C&B CONSULTING ENGINEERS
150 SPEAR STREET #500
SAN FRANCISCO CA 94105

FOG DISPENSER

Golden Gate Chapter



ASHRAE

VOLUME XXXIV * NUMBER 1

OCTOBER 1994

MEETING NOTICE

DATE: Thursday, October 6, 1994
SOCIAL HOUR: 5:30 p.m.
After checking in upstairs, please buy your drink(s) downstairs to enjoy the Happy Hour prices!
DINNER: 6:30 p.m.,
LOCATION: Gabbiano's (upstairs)
1 Ferry Plaza
San Francisco, CA
(415) 391-8403
COST: \$27.00
TO RESERVE: Please phone or fax your dinner reservation to Ernie French by Monday, Oct 3. A fax form is enclosed for your convenience
PHONE: (415) 589-8313
FAX: (415) 266-6888

Gabbiano's is located near Pier 2, behind the Ferry Building (Clock Tower), 1 block from the Embarcadero BART station. Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25.

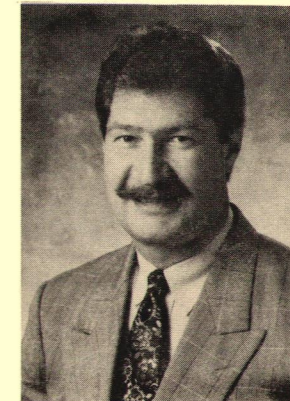
OCTOBER PROGRAM

PROGRAM: Building Automation and Controls Networks (BACnet)

SPEAKER: **Mark J. Weldy**, Vice-President & General Manager, Building Automation Systems Division
Trane Company, St. Paul
Minnesota

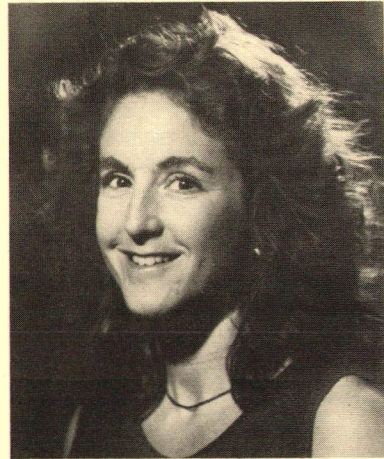
ASHRAE subcommittee SPC 135P has been working to define and maintain a Standard Open Protocol that will allow different manufacturers'

building automation and monitoring systems to share data with one another. Under the auspices of this committee, BACnet is being developed as a generic, high performance protocol to provide a cost-effective solution for supporting a variety of the most popular physical wiring connection, while being able to incorporate future technology changes easily. It is anticipated that BACnet will be accepted as an industry standard by early 1995. If you are a manufacturer, designer, consultant, or contractor, come attend this presentation and learn how you can benefit from these new advancements.



Mark Weldy is a mechanical engineering graduate of the University of Wisconsin, and has been involved in the controls and automation business for fourteen years. Since joining Trane in 1985, Mark has held a variety of marketing and sales positions. He is currently vice president and general manager of the Building Automation Systems Division.

Please join us for the first meeting of the year after our long summer break!. Why not encourage interested friends or colleagues to join you?!!



PRESIDENT'S MESSAGE

Welcome back. Along with celebrating the ASHRAE Centennial, our theme for this year is TEAMWORK (Together, Everyone Achieves More). If everyone contributes just a little bit, our chapter will explode with activity while minimizing the load on any single volunteer. Come join us!

I'd like to offer my gratitude to members who are taking on new responsibilities this year committee chairs: Frank Mayhew (FOG), Matt McMahon (Scholarship), Rachel Murray (Publicity), Joe Olivier (Product Show), and Tom Gilbertson (Centennial), I would also like to thank several of our chairs who have already hit the ground running over the summer, including

Mike Rubio (Membership), Dick Charles (Attendance), and Tim Provo (Roster).

Some of our goals for the year, include the following:

- Increased membership through participation in the Society dues collection program, and through active recruitment efforts. (Have you renewed yet?)
- Continuation of high meeting attendance through well-planned programs and pre-dinner technical seminars.
- Recognition of the ASHRAE Centennial through historical theme programs, displays, and publications.
- Earlier strategic planning and promotion of Chapter fund-raising events, such as Golf, Tennis, Seminar, Product Show, Scholarship, and Research Promotion.
- Greater Chapter publicity and member recognition both locally, and nationally through ASHRAE Insights.
- An improved Roster, mailed by the first week of 1995.
- Improved coordination between committee chairs and board liaisons, creating clear "paper trails" to minimize start-up learning curves in subsequent years.

We'll need everyone's help! As a start, please fill out the enclosed Membership Update Form. It's necessary. We also encourage you to be a Roster Sponsor. Show your support!

Gail Brager

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair*:
Michael Rubio (415) 777-5333
(415) 641-4413 FAX

MAIL, FAX or PHONE NEWS TO:
FOG DISPENSER
Frank Mayhew, *Editor*
ECTC Consulting
3160 Hicks Road
Sebastopol, CA 95472
Telephone (707) 824-9381
FAX (707) 824-9381

FOG DISPENSER DEADLINES

Meeting Dates	Copy Deadlines
November 3, 1994-----	October 7, 1994
December 1, 1994 ----	November 4, 1994
January 5, 1995-----	December 9, 1994
February 2, 1995-----	January 6, 1995
March 2, 1995-----	February 3, 1995
April 6, 1995-----	March 10, 1995
May 4, 1995-----	April 7, 1995
June 1, 1995-----	May 5, 1995

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1994-1995 OFFICERS

Gail BragerPresident
Roy GiffordPresident Elect
Dennis ThompsonSecretary
Richard LeaoTreasurer

Board of Governors

Ernie French -- Dan Reiter -- Ben Sun

ASHRAE GOLDEN GATE CHAPTER 1994-1995 COMMITTEES AND CHAIRPERSONS

Attendance.....	Richard Charles	Awards.....	Jack Kniveton	Auditing.....	Hank Mouw
BAEC.....	Tom Reinarts	Code.....	Bob Voelz	CRC Action.....	Roy Gifford
Education.....	Mark Hydeman	Energy & Tech.....	Peter Turnbull	Fog Dispenser.....	Frank Mayhew
Golf.....	Mark Luckes	Government Affairs.....	Jon Wintermeyer	Historian.....	
Honor Roll.....	Tom Reinarts	Marble Game.....	Tim Provo	Membership.....	Michael Rubio
Product Show.....	Joe Olivier	PAOE.....	Rick Paillon	Program.....	Roy Gifford
Publicity.....	Rachel Murray	Reception.....	Steve Doberstein	Refrigeration.....	Jim Davis
Research.....	Marie Madden	Roster.....	Tim Provo	Scholarship.....	Matt McMahon
Seminar.....		Tennis.....	Rich Leao	PAOE.....	Rick Paillon

Dr. Francis Hutchinson, Ph.D., was posthumously awarded the ASHRAE Hall of Fame Award. Dr. Hutchinson was an ASHRAE Fellow and a highly respected Professor of Mechanical Engineering at the University of California, Berkeley and at Purdue University, Lafayette, Indiana. He was one of the pioneers of the air-conditioning and refrigerating industry and, as a teacher, inspired many young engineers to pursue a career in the HVAC&R industry.

NEW LIFE MEMBERS

We would like to congratulate the following people in our area who became new ASHRAE Life Member as of July 1, 1994. We appreciate your long-standing dedication and service to ASHRAE, and look forward to your continued participation in our Chapter.

- Ishan H. Ali
- Robert G. Caughey
- Richard Friedman
- Frank F. Gonden
- Dick M. Glumac
- Dick H. Fujitoka
- Joseph A. McQuillan
- John D. O'Brien
- Robert D. Montgomery

ENERGY CONSERVATION

Energy Investment, Inc. is a full service energy management firm which offers engineering, design and implementation services to utilities and large facility owners. We are seeking a **Project Engineer** for our expanding Fremont office. Will perform energy audits, including commercial lighting and HVAC analyses, and assist on industrial audits (motors, refrigeration, compressed air systems). Position requires a BSME, strong technical, analytical, writing/verbal skills and 2-3 years related experience, preferably energy analysis, modeling using DOE 2.1, HVAC systems design and Title 24 energy standards. Send your resume with salary history to Marilyn Tromer, Dept. ASH.SF, **Energy Investment, Inc.**, One Winthrop Square, Boston, MA 02110

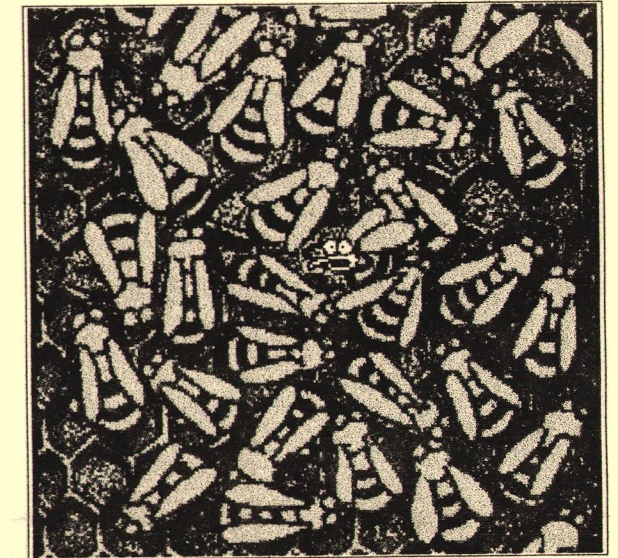
MECHANICAL ENGINEER

Innovative SF Engineering firm seeks experienced HVAC Design Engineer for medical and similar facilities. Minimum BS, PE, 5 years experience, AUTOCAD and project management experience desirable. Full benefits & excellent work environment. EOE. Send full resume to **Newcomb Anderson Associates**, 755 Sansome St., Suite 500, San Francisco, CA 94111

MECHANICAL ENGINEER

Full service design firm seeks licensed HVAC mechanical engineer with a minimum of five years experience to lead this newly established and promising discipline. Project management and marketing skills a must. Excellent compensation package. Resumes to Rose Moesinger, **The Sear-Brown Group**, 2749 E. Parley's Way, Suite 300, Salt Lake City, UT 84109. EOE.

CARL'S CORNER



"I can't take it! I can't take it! That incessant buzzing sound from the air conditioning!"

SUPPORT THE ROSTER

YOUR SUPPORT IS NEEDED FOR PUBLICATION OF THE GOLDEN GATE CHAPTER 1994 / 1995 ROSTER

LIST YOUR COMPANY'S ANNOUNCEMENT IN THE ROSTER !!!
ORDERS ARE NOW BEING TAKEN !

HERE IS HOW IT WORKS!

Business Card Size:	(3.5" X 2.25")	\$ 30.00
Half Page:	(3.5" X 4.5")	\$ 50.00
Full Page:	(3.5" X 8.5")	\$100.00

Please submit your camera ready artwork or business card to:

Timothy Provo, Roster Chair
4009 Fariss Lane
El Sobrante, CA 94803

Please make donation checks payable to:
GOLDEN GATE ASHRAE

**ASHRAE
Golden Gate Chapter Meeting
MINUTES June 7, 1994**

1. President Rick Paillon called the meeting to order at 7:20 p.m. Self-introductions followed.
2. The minutes of the previous meeting were approved.
3. Dennis Thompson announced the golf tournament on 6/3/94. There are 22 FOREsomes.
4. Rich Leao announced the tennis tournament, 6/24/94.
Rick Paillon announced awards for:
Rick Nagy-Fog Dispenser Editor (with help from Leo Copper, Mike Scofield, and Richard Gistelli-Jackson.)
Marie Madden-Research
Debi May- Scholarship
Tim Provo-Roster/Raffle
Jim Davis-Refrigeration
Steve Doberstein-Badges
Sal Gilgo-Promotion
Gail Brager-Program
Brad Gustafson-Product Show
Mike Rubio-Membership
Tom Reinarts-Honor Roll
Bob Phillips-Historian
Jon Wintermeyer-Government Affairs
Bob Voelz -Code Committee
Gail Brager-CRC Action
Jack Kniveton- Awards
Dick Charles-Attendance
Peter Turnbull-Energy & Technical
Mark Luckes-Golf
Hank Mouw-Auditor
5. Rick presented Gail Brager the gavel and he signed the back of the charter. Rick thanked his wife for the help she gave over the years.
6. Rich Leao thanked Rick Paillon for the year and presented him with a certificate from the society for the past and present and with a plaque from the chapter. Gail Spoke about being president this coming year.
7. The marble draw was held, Kitty Nemechek had the winning ticket, but drew a black marble.
8. Gail announced the program emcee, Bob Phillips. The speakers were Tom White, Karl Guttman, Jack Kniveton and Tom Gilbertson. Bob Phillips wrapped up the program.
9. The meeting was adjourned at 8:45 PM.

**FOG Staff Writers Needed To
Support the Centennial**

Here's an opportunity to give as little or as much as you can, on your own time schedule. Are you interested in getting more involved with ASHRAE, but have been reluctant to make a

commitment because of lack of time? Do you have a latent interest in writing, but have never had an opportunity to let it blossom? Do you have a special interest in the history of HVAC technology, in our chapter's history, or simply in giving more recognition to individuals or companies that have made important contributions to our industry?

Here's your opportunity! We're looking for people who would like to contribute a special-interest article to the FOG Dispenser, sometime during the year, to support our Centennial theme. As examples, you might interview a prominent member of our chapter, or write an historical article of a local or national nature, covering chapter history, historical technology, or other historically-oriented material. If you are interested, please contact Tom Gilbertson, Centennial Chair, (510) 376-4516, or Rachel Murray, Publicity Chair, (415) 397-0442

DID YOU KNOW?

There is no rule that says the supply duct static pressure sensor should be located "2/3 of the way down the duct"... The ASHRAE Handbook suggests that the sensor should be located "from 3/4 of the way to the last terminal or at the end of the duct". Using this "rule of thumb" is costing VAV system owners by using excess energy every day. On multiple ducts, and multiple floors, there should be sensors at the end of every major duct run.

The farther out the duct, the lower the control point setting can be and the lower the fan operating energy.

Submitted by Frank Mayhew

**Golden Gate Members Receive Awards
at
Orlando ASHRAE Meeting**

Thomas J. White, P.E. ASHRAE Fellow and Life Member received the 1994 Andrew T. Boggs Service Award. The award recognizes a past Distinguished Service Award recipient for continuing, unselfish, dedicated and distinguished service.

Francis (Bud) J. Offerman, III, P.E. received the ASHRAE Distinguished Service Award. He has written more than 70 papers, articles and presentations on indoor air quality, air cleaning, ventilation efficiency and energy conservation. He has chaired TC 2.3, Gaseous Contaminants, TC 4.10, Indoor Environment Modeling and SPC 145P, Test Method for Assessing the Performance of Gas Phase Air Cleaning Equipment.

**ASHRAE GOLDEN GATE CHAPTER
DINNER RESERVATION FAX**

For THURSDAY, October 6, 1994

Please send Fax by noon on Monday, October 3

FAX TO:

Ernie French - Yamas Controls

FAX: (415)-266-6888

Please call if you have any last minute changes in plans.

Phone: (415)-589-8313

Please cancel your reservation(s) if you cannot attend the meeting.

FROM: _____

COMPANY: _____

PHONE: _____

Please make _____ reservation(s) for the following people (*fill in names below*):
Please check all boxes for each person attending.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

LOCATION: Gabbiano's (upstairs) 1 Ferry Plaza San Francisco, CA (415) 391-8403

Gabbiano's is located near Pier 2, behind the Ferry Building (Clock Tower), 1 block from the Embarcadero BART station. Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25.

NOVEMBER PROGRAM
Student Night Centennial Theme

Please note: we will be meeting at the PG&E Energy Center

DATE: Thursday, November 3rd.

PLACE: PG&E Energy Center, 851 Howard St., S.F.

PROGRAM: At Home with the Air Conditioner: A visual history of the evolution of air-conditioning as it has been portrayed through advertising.

SPEAKER: Brett Miller M. Arch student, U.C-Berkeley

RESERVATIONS: Due to Ernie French by Monday, October 31



NOVEMBER HONOR ROLL

Phoenix Controls

Corporation

Manufacturer of Precision Airflow Controls

Bill Schultz, Western Regional Sales Manager
2000 Powell Street, #1200 Emeryville, CA 94608
Phone: (510) 596-1788 FAX: (510) 596-1789

Distributed in Northern California by
Norman Wright Mechanical Equipment Corporation

Airflow Controls



Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107



RICHARD A CHARLES
C&B CONSULTING ENGINEERS
150 SPEAR STREET #500
SAN FRANCISCO CA 94105

FOG DISPENSER

Golden Gate Chapter



ASHRAE

VOLUME XXXIV * NUMBER 2

November 1994

MEETING NOTICE

Date: Thursday, November 3, 1994
Social Hour: 5:30 p.m.
Dinner: 6:30 p.m.
Location: PG&E Energy Center
851 Howard St. (Between 4th & 5th)
San Francisco, CA
(415) 973-7268
Cost: \$27.00
To Reserve: Please phone or fax your dinner reservation to **Ernie French by Monday, Oct 31**. A fax form is enclosed for your convenience
Phone: (415) 589-8313
Fax: (415) 266-6888

The Center is located 2 blocks south of the Powell St. BART Station. Public Parking is available across the street from the Center. **Because the Energy Center uses outside catering, there is less flexibility in accommodating late reservations and walk-ins.** Please reserve promptly!

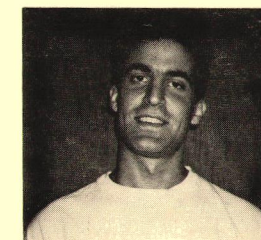
November is student night, and we will be encouraging students from local schools to attend. Please share this information with any students you know who might be interested. We also invite and encourage you to sponsor students (at \$27 each). Please indicate your support on the FAX reservation form.

NOVEMBER PROGRAM (Please note new meeting location)

PROGRAM: At Home with the Air Conditioner
A visual history of the evolution of air-conditioning as it has been portrayed through advertising.

SPEAKER: Brett Miller,
Student, U. C. Berkeley

In 1949, the window air conditioner appeared on the American market and rapidly found its place in the American home. The air conditioner did not make a quiet entrance onto the domestic scene, but was heralded as the vehicle to a better life. Advertisements shaped this image by presenting the air conditioner as a solution to widespread social dilemmas and as a necessity for the home. Along with painting an ideal portrait of domestic life, the ads reflected the popular expectations for the new technology of air conditioning.



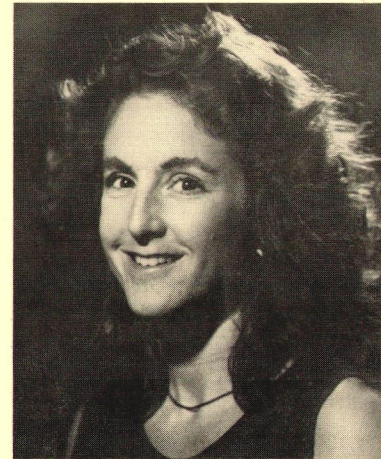
Brett Miller is a student at the University of California, Berkeley, in the Masters of Architecture program. His interests include the thermal performance of buildings, design with climate, and architectural lighting. While an undergraduate student at

Harvard College, Brett began his research in environmental controls, and also received an International Illumination Design Award for and architectural lighting installation on Le Corbusiers Carpenter Center.

New Members

**The Golden Gate ASHRAE Chapter
welcomes the following new members:**

Bob Gold.....Kaiser Permanente
Steve Doberstein.....Norman Wright Mechanical
Henry Kwan.....Chamberlain & Painter
Hementa Agarwala.....The Bentley Co.



PRESIDENT'S MESSAGE

Our year began with 75 people attending an excellent program given by Paul Ehrlich of the Trane Company, who flew out from St. Paul, Minnesota to talk with us about the benefits and challenges of creating a solution to the need for interoperability between building control systems.

Be sure to mark your calendar NOW for the first Thursday of each month - we have many more excellent programs planned for the year. Please also mark each Monday prior to the meeting, with a reminder to make your reservations.

Our November meeting is Student Night. In recognition of our Centennial Theme, Brett Miller has prepared a very entertaining slide show for us. Grab a colleague, sponsor a student, and come join us at the PG&E Energy Center.

Several committees are already actively beginning the new year. **Marie Madden** with **Research Promotion** has already collected BIG BUCKS from several companies and individuals. We will continue to acknowledge these contributions at the chapter meetings - don't be left out. **Rachel Murray** with **Publicity** is helping to ensure our chapter gets the recognition it deserves this year. Please keep and fill out the enclosed Activities Sheet and let us know whenever you've given a presentation, published an article, received an award, etc. **Tom Gilbertson** with the **Centennial** committee has a long list of great ideas, including a time capsule, which he'll be talking to us more about in November.

Regarding **Membership and Roster**, we need you to do two things for us: 1) If you haven't paid your dues, please contact **Mike Rubio** ASAP, and 2) Please fill out the Membership Update Form and return it to **Tim Provo** to ensure your information in the Roster is correct and to update the mailing list for the Fog Dispenser.

Gail Brager

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair*:
 Michael Rubio (415) 777-5333
 FAX (415) 641-4413

MAIL, FAX or PHONE NEWS TO:
 FOG DISPENSER
 Frank Mayhew, *Editor*
 ECTC Consulting
 3160 Hicks Road
 Sebastopol, CA 95472
 Telephone (707) 824-9381
 FAX (707) 824-9382

FOG DISPENSER DEADLINES	
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Gail Brager President
 Roy Gifford President Elect
 Dennis Thompson Secretary
 Richard Leao Treasurer

Board of Governors

ASHRAE GOLDEN GATE CHAPTER 1994-1995 COMMITTEES AND CHAIRPERSONS			
Attendance.....	Richard Charles	Awards.....	Jack Kniveton
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Publicity.....	Rachel Murray	Reception.....	Steve Doberstein
Research.....	Marie Madden	Roster.....	Tim Provo
Seminar.....		Tennis.....	Rich Leao
		Auditing.....	Hank Mouw
		CRC Action.....	Roy Gifford
		Fog Dispenser.....	Frank Mayhew
		Historian.....	
		Membership.....	Michael Rubio
		Program.....	Roy Gifford
		Refrigeration.....	Jim Davis
		Scholarship.....	Matt McMahon

MINUTES October 6, 1994

The meeting was called to order at 6:30 PM by President Gail Brager.

The June meeting minutes were approved.

Roy Gifford thanked all of the chapter members for their continued support for his rehabilitation and asked all to include him in their thoughts and prayers. Roy was recently diagnosed with throat cancer and is currently undergoing radiation treatments and chemotherapy.

Dick Friedman was recognized as our chapters newest Life Member. Congratulations Dick!

Gail recognized all of the committee chairs and their assistants.

Marie Madden recognized her first corporate Research donations from Western Plumbing & Heating, Norman S. Wright, Tempco Equipment, and the Mechanical Contractors Association. The chapter Board of Governors was challenged to meet the "High Five" promotion campaign for \$100 donations by all board members.

Tim Provo asked each member to complete the Membership Update Form in the Fog Dispenser. Please include your name.

Chapter dues will now be billed with the Society dues on one invoice. This is being done to assist the chapter with membership tracking and management.

The Trane Company and Ajmani & Pamidi Consulting Engineers were recognized for their exceptional attendance numbers at this meeting.

Rachel Murray needs assistance with the Publicity Committee and also ideas on how to promote chapter functions.

Tom Gilbertson announced the goals of the Centennial Committee:

1. Interview the daughter-in-law of ASHRAE Hall of Fame member Dr. Willis Carrier.
2. Develop a Time Capsule project.

The program speaker was Paul Ehrlich of the Trane Co. Paul gave a presentation on the development status of ASHRAE Committee SPC 135 Building Automation Communication Networks- BACNet.

Meeting was adjourned at 8:50 PM

Respectfully submitted,
 Dennis Thompson, Chapter Secretary

Errata
Paul Rosenthal was left off the list of new **Life Members** by those little elves that do such things. Congratulations to Paul and the other newest member **Dick Friedman**. It is valuable to have your experience and friendship around.

ASHRAE Golden Gate, Chapter
 "ASHRAE HANDBOOK DONATIONS"

Last year **Atma Advani, Safeway Stores**, started a project to send ASHRAE Handbooks to India for use by students. The following is his report.

Thanks to all the following donors for donating ASHRAE Handbooks for needy HVAC-R engineering students abroad. A total of 59 guides were shipped to the President of the ASHRAE chapter in India, who will distribute them to needy HVAC-R engineering students. Thanks also to **Chuck Shane, President of Tempco Equipment Co. and Ron Yaffee of Tempco**, who donated their valuable time and funds to collect all the guides, pack and ship them to India (shipping cost \$230).

List of Donors:

- Jerry Yaffe, Gerald Yaffe Associates
- James Van-Buskirk
- Ron Yaffe, Tempco Equipment Company
- Mike Scofield, Conservation Mechanical Systems
- Hendrik J. Mouw, Hendrik J. Mouw & Associates,
- Lewis P. M. Brooks, Brooks Enterprises
- Dieter C. Meissner, Hewlett Packard
- Doug Herbert, Tempco Equipment Company
- Jack Kniveton, Norman Wright Equipment Co.
- Barbara Dilts, Pacific Gas & Electric
- Carol D. Frank, Industrial Power Technology
- Gale C. Corson, Industrial Power Technology

Atma Advani requests the rest of you to send your guides (not older than 1980) to Tempco for collection and shipping.

Address: **Tempco Equipment Co. Inc.**
100 North Hill Drive 412
P.O. Box 400
Brisbane, CA 94005

I am now looking for new donors who will pack and ship guides to Pakistan and Bangladesh. My goal is to send 1,000 guides to 15 different countries. Please help me.

For more information contact Atma Advani at 510 891-3495

Golden Gate ASHRAE Membership / Roster Information Form

Please return by November 1, 1994

Fax or mail to:

T. Provo, Fax: (510) 222-2935
4009 Fariss Ln., El Sobrante, CA 94803

Because of a change in membership dues collection procedures this year, we are asking that you review the following information and respond as soon as possible. Please type or print clearly.

Membership Dues

Did you receive an ASHRAE Society Membership Dues Renewal Form ? YES NO

Did you pay your 1994/95 Chapter Dues ? YES NO

_____ To Society _____ To Golden Gate directly _____ Approximate date mailed

If you paid your dues directly to the Chapter, where were they sent ? _____

Roster Update Information

Please check your entry in the 1993/94 Roster, and fill out the entire section below. If there were no changes to your personal information, just fill out your name and check the box below.

There are no changes to my personal information as listed in the 1993/94 Roster.

NAME _____
(Last) (First) (Middle Initial) (Spouse's first name)

COMPANY _____

COMPANY ADDRESS _____

HOME ADDRESS _____

WORK PHONE _____ Preferred Mailing Address (Circle one)

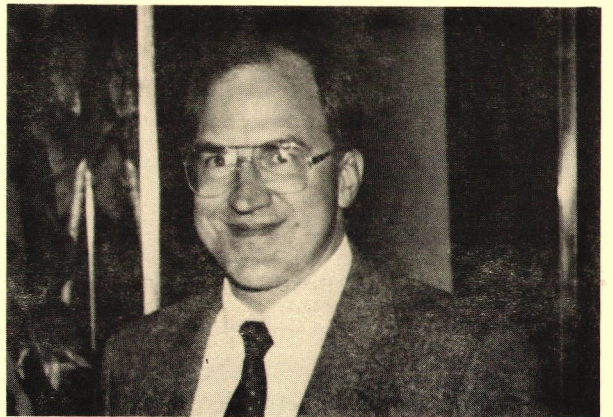
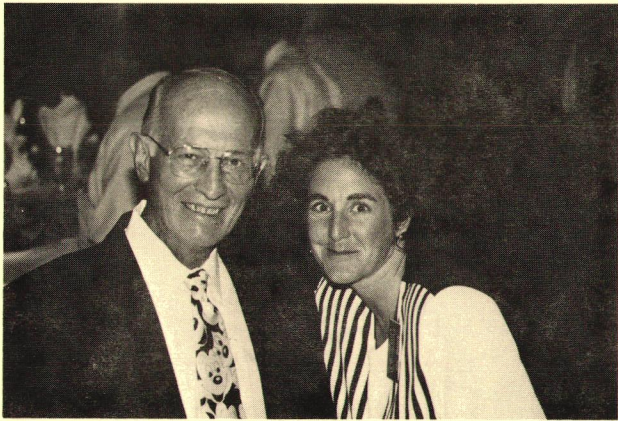
FAX _____ Home Work

HOME PHONE _____

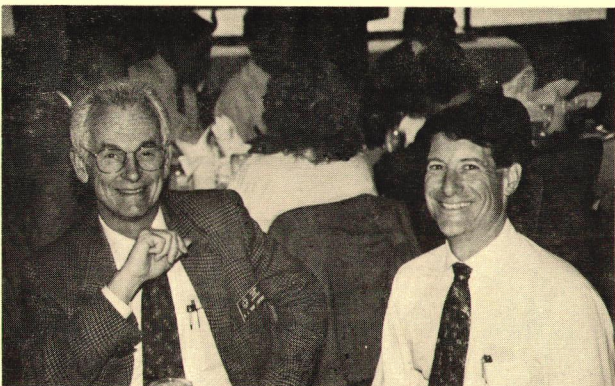
Have you noticed any other typo's in the Roster ?

If so, please list them below and we will be sure to correct them in this year's publication

October 6, 1994 Meeting
Swapping Stories After Summer Vacation



New Member Mark Manson
Western Plumbing and Heating



The Quilgumms □ Buddy Hickerson



Frank tries a new marketing ploy.



DECEMBER HONOR ROLL

Cornely Company

Mechanical Contractors

1277 Howard Street, San Francisco, CA 94103

Telephone (415) 252-1800

FAX: (415) 252-1813

Lo Nox Burners, Boiler Flame Safeguards, Combustion Controls and Energy Management Systems Supplied, Installed, and Serviced for the Engineering Community.

*Wishing You All a Warm Holiday Season
Ed Greenwood ** John Kraft ** John Heppler*



Golden Gate Chapter
ASHRAE
370 Brannan Street
San Francisco, CA 94107

RICHARD A CHARLES
C&B CONSULTING ENGINEERS
150 SPEAR STREET #500
SAN FRANCISCO CA 94105
C



FOG DISPENSER

Golden Gate Chapter



ASHRAE

VOLUME XXXIV * NUMBER 3

DECEMBER 1994

MEETING NOTICE

Date: Thursday, December 1, 1994

Social Hour: 5:30 p.m.

Dinner: 6:30 p.m.

Location: Gabbiano's (upstairs)
1 Ferry Plaza
San Francisco, CA
(415) 391-8403

Cost: \$27.00

To Reserve: Please phone or fax your dinner reservation to **Ernie French by Monday, Nov. 28**. A fax form is enclosed for your convenience

Phone: (415) 589-8313

Fax: (415) 266-6888

Gabbiano's is located near Pier 2, behind the Ferry Building (Clock Tower), 1 block from the Embarcadero BART station. Limited parking is available along the Embarcadero (there is a change machine in the center strip parking area). Valet parking is also available for \$4.25.

NOVEMBER PROGRAM

PROGRAM: Pharmaceutical Facility HVAC Design Considerations

SPEAKER: Steven Murphy, P.E.,
Engineered by Murphy

Pharmaceutical facilities represent a rapidly growing industry with unique requirements for HVAC design. This talk will cover some of the special temperature, humidity and room pressurization control considerations for these facilities. Steve will then discuss design implications for animal research laboratories, exhaust and fume hood control systems, and validation and certification procedures. This industry offers a great opportunity for many of our Golden Gate members. Come learn more about it.

Steve Murphy is the owner of Engineered by Murphy, a consulting engineering service company specializing in the design, analysis, and troubleshooting of HVAC, piping and control systems, and the validation and certification procedures. He is the instructor for the U.C. Berkeley Extension's course in "HVAC Applications for Electronics and Biotech Manufacturing". Steve has been a member of ASHRAE since 1980, and is also a founding member and the first president of the Northern California Chapter of Cal Poly's Air Conditioning Alumni Association.

New Members

The Golden Gate ASHRAE Chapter
welcomes the following new members:

Sonia Colachia.....Keller and Gannon
Wasil Popow.....HOK
Alison Kwok (Student Member)....U.C. Berkeley
Jim SharpeAffiliated Engineers
Magnus HerrlinBellcore

**December is Membership Promotion Night.
Please bring a friend or colleague who is not
yet a member of the Golden Gate Chapter.**



PRESIDENT'S MESSAGE

If you weren't at our November meeting (or left after dinner), you missed an excellent presentation by U.C. Berkeley Student Brett Miller, including a humorous slide show with insightful interpretations of society's perceptions of air conditioning in the 50's. Our program was a recognition both of student night and of the ASHRAE Centennial.

This month's program, "HVAC Design Considerations for Pharmaceutical Facility Applications" will be packed with information regarding a rapidly growing industry in which

many of our members are becoming increasingly involved. **Make your reservations early**, and don't be left out!

The December meeting is also "Membership Promotion Night" **Please bring a friend or colleague who is not yet a member of the Golden Gate Chapter.** We will be giving special recognition to the company with the greatest number of employees in attendance, and to the individual who personally brings the most guests.

The **Roster** is going through its final proof-reading and will soon be going out for production. If you have not submitted your Membership Information Form to update your information in the Roster, or if you would like to be one of the Roster Sponsors, call **Tim Provo** to find out if it's not too late.

Do you need a blue Golden Gate ASHRAE name badge? Steve Doberstein, our Reception Chair, is the man to talk to. Call him at 415-777-5333. He is putting in a new order and has promised to speed up the turn-around time for badges for new members.

Do you know any students who would like to go to one of the ASHRAE Society meetings in 1995? If so, encourage them to apply for the **Golden Gate Student Travel Grant.** Contact Ben Sun at 415-398-3834 ext. 234 for more information.

Gail Brager

DO YOU KNOW A PROSPECTIVE NEW MEMBER?

Contact *Membership Chair:*
Michael Rubio (415) 777-5333
FAX (415) 641-4413

MAIL, FAX or PHONE NEWS TO:
FOG DISPENSER

Frank Mayhew, *Editor*
ECTC Consulting
3160 Hicks Road
Sebastopol, CA 95472
Telephone (707) 824-9381
FAX (707) 824-9382

FOG DISPENSER DEADLINES

Meeting Dates	Copy Deadlines
January 5, 1995 -----	December 9, 1994
February 2, 1995 -----	January 9, 1995
March 2, 1995 -----	February 9, 1995
April 6, 1995 -----	March 9, 1995
May 4, 1995 -----	April 9, 1995
June 1, 1995 -----	May 9, 1995

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1994-1995 OFFICERS
Gail BragerPresident
Roy Gifford..... President Elect
Dennis ThompsonSecretary
Dan Reiter Treasurer
Board of Governors
Ben Sun - Ernie French - Rick Pailon

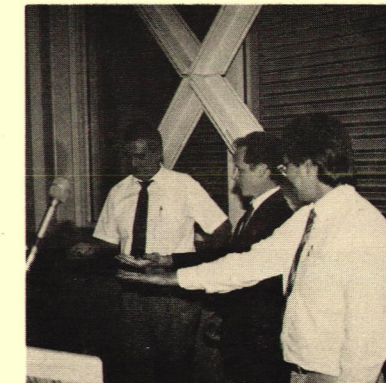
ASHRAE GOLDEN GATE CHAPTER 1994-1995 COMMITTEES AND CHAIRPERSONS

Attendance..... Richard Charles	Awards.....Jack Kniveton	Auditing..... Hank Mow
BAEC..... Tom Reinarts	Code.....Bob Voelz	CRC Action..... Roy Gifford
Education.....Mark Hydeman	Energy & Tech.....Peter Turnbull	Fog Dispenser..... Frank Mayhew
Golf..... Mark Luckes	Government Affairs.....Jon Wintermeyer	Historian..... Hank Mow
Honor Roll..... Tom Reinarts	Marble Game..... Tim Provo	Membership..... Michael Rubio
Product Show..... Joe Olivier	PAOE..... Rick Pailon	Program..... Roy Gifford
Publicity..... Rachel Murray	Reception..... Steve Doberstein	Refrigeration..... Jim Davis
Research..... Marie Madden	Roster..... Tim Provo	Scholarship..... Matt McMahon
Seminar..... Mike Moorehead	Tennis..... Rich Leao	

NOVEMBER 3, 1994 GOLDEN GATE ASHRAE Chapter Meeting Photos



Hirsute Frank Mayhew receives Certificate of Appreciation



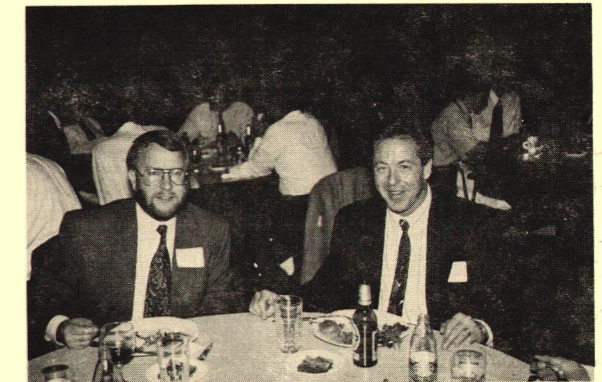
Gentlemen: Show us your marbles! Ben Sun bags the BIG BUCKS!



Mark Hydeman welcomes the students attending student night



Mike Rubio (center) introduces new members (left to right) Jim Sharpe, Wasil Popow, Charles Cook and Erik Aboutboul



The Reception Committee Chairman, Steve Doberstein (right) at work



No, we're students -- really!!



Can I deduct this dinner from my PG&E bill?

ASHRAE GOLDEN GATE CHAPTER
DINNER RESERVATION FAX
For THURSDAY, December 1, 1994

Please send Fax by noon on Monday, November 28

FAX TO: Ernie French - Yamas Controls
FAX: (415)-266-6888 Please call if you have any last minute changes in plans.
Phone: (415)-589-8313 Please cancel your reservation(s) if you cannot attend the meeting.

FROM: DICK CHARLES

COMPANY: CHARLES & BRAUN **PHONE:** 415-442-0110

Please make 1 reservation(s) for the following people (fill in names below):
Please check all boxes for each person attending.

PAUL O'NEIL _____

_____ _____

_____ _____

LOCATION: Gabbiano's (upstairs) 1 Ferry Plaza San Francisco, CA (415) 391-8403

Gabbiano's is located near Pier 2, behind the Ferry Building (Clock Tower), 1 block from the Embarcadero BART station. Limited parking is available along the Embarcadero. Valet parking is also available for \$4.25.

(Cut here to FAX or be friendly and call, the FAX paper tree you save may be your own)

1995 Student Travel Grant

This year the Golden Gate Chapter will award a grant, of \$550, to encourage student involvement in the HVAC&R industry. The grant is given to support student's travel to either the Society 1995 Winter meeting and Exposition (Chicago, January 28 to February 1, 1995) or the ASHRAE Annual Meeting (San Diego, June, 1995). The grants are limited to ASHRAE student members attending San Francisco State University, U.C. Berkeley, The Maritime Academy, Humbolt State University, Cal Poly, or Stanford University. If you know of any ASHRAE student member that would benefit from attending these meetings please have them contact:

Ben Sun
Flack + Kurtz Consulting Engineers
343 Sansome St. #450
San Francisco, CA 94104-1304
Phone: (415) 398-3833, FAX: (415) 433-5311

APPLICATION MUST BE RECEIVED BY DECEMBER 20, 1994

266 6888

MINUTES November 3, 1994

The meeting was called to order at 6:50 PM by President Gail Brager.

The October meeting minutes were approved on a motion by Tim Provo with a second by Carl Jordan.

ANNOUNCEMENTS

Yamas Controls and the **California Maritime Academy** were recognized for their exceptional attendance.

Mark Hydeman (Education Chair) recognized those individuals involved in the U.C. Extension classes. Don Bryants' involvement was noted as a driving force behind the program. Mark highly encouraged members to get involved with educational activities.

Ernie French encouraged early dinner reservations as it does help the chapter plan and manage dinner expenses.

Tim Provo emphasized the deadline for Roster updates. Final proofing of the Roster will be in the third week of November with printing soon thereafter.

Dennis Thompson (Golf Chair) made a preliminary announcement for this years' Golf Tournament. It has been suggested that we investigate a joint tournament with the San Jose Chapter. We plan on having a decision and preliminary plan for the December meeting. **Ed DeGuzman** volunteered to act as co-chair for this committee.

Jon Wintermeyer (Government Affairs Chair), made a brief presentation on San Francisco Proposition G, establishing a Building Inspection Committee, and urged all members to seriously consider this proposition.

Steve Doberstein (Reception Chair), asked all members who need new or replacement badges to notify him immediately.

Dennis Thompson (interim Program Chair), announced the December speaker. Steve Murphy (Engineered by Murphy) will present HVAC Design Considerations for Pharmaceutical Facility Applications.

Tom Gilbertson (Centennial Chair), announced the Time Capsule program for the Centennial Celebration and asked members for ideas regarding its inclusions. Two capsules will be opened on the 200th Anniversary of ASHRAE,

and on the 100th Anniversary of the Golden Gate Chapter (in the year 2037).

The following were recognized for sponsoring students for the nights dinner:

Keller & Gannon **The Trane Company**
Carl Jordan **Pacific Gas & Electric**
ACCO

Ben Sun (Scholarship Chair), announced the Scholarship and Travel Grant award programs. Members were asked to encourage students to apply for the Grants that provide travel funds to go to the ASHRAE Society meetings.

Frank Mayhew was recognized for this years' work as Fog Dispenser editor. This is a tremendous task which requires coordination with a lot of other people. Good work Frank!

Barbara Dilts was recognized for her work and assistance with the membership database and Membership, Roster, Attendance and Fog Dispenser committees. Thank you very much Barbara!

Ben Sun won the final jackpot of the Marble Game, The take was \$575!!!

The program speaker was **Brett Miller**, a student at U.C. Berkeley in the Masters of Architecture program. Brett gave a presentation on the evolution of the residential air conditioner and the marketing of this equipment since 1941. Brett presented a great slide show of how this marketing conditioned our minds and our environment.

Meeting was adjourned at 8:43 PM

Respectfully submitted,
Dennis Thompson, Chapter Secretary

DID YOU KNOW?

An ASHRAE paper by Merle L Guyton reports on the energy performance of two identical two-story apartments. For one the ducts were within the insulated building envelope. For the other, they were outside the insulation, in the crawl space and attic. The apartment where the ducts were within the insulated envelope used 33.8% less heating energy and 71.4% less cooling energy! The savings were attributed to the fact that the duct surface conduction losses and air leakage did not represent wasted energy if the ducts were within the insulated envelope.

Submitted by **Carl Jordan**

(Do you have an item for DID YOU KNOW? Send it to the Editor, Fog Dispenser.)

Spreading the Word

Atma Advani, Safeway Stores presented at a technical seminar at the Food Market Institute Annual Energy Conference entitled "**Air Balance and Kitchen Ventilation in Supermarkets**" September 1994. In 1993, Atma presented three technical papers on alternate refrigerants, indoor air quality and energy savings in supermarkets.

Schlomo Rosenfeld, Schlomo I. Rosenfeld & Associates, authored a paper entitled "**Thermal Energy Storage Design: Back to Square One**" that appeared in the August, 1994 issue of *Heating, Piping and Air Conditioning*. The paper indicates that the California Energy Commission (CEC) is developing a supplemental computer program that will produce a weather tape for California locations based on specific design conditions and the 16 regional weather tapes used by the California Energy Code (Title 24). This computer program is now available from the CEC. Weather tape produced by this program could be used for more accurate HVAC equipment sizing and energy simulation.

Mike Scofield, Conservation Mechanical Systems, co-authored a paper entitled "**Low Temperature Air Systems Can Work Even in Cooler, Damper Climates**" that appeared in the *Air Conditioning, Heating and Refrigeration News*, in December, 1993. He also gave a seminar on "**Indirect Evaporative Cooling Techniques for High IAQ and Low Energy Costs**" at the PG&E office in Fresno this last May.

Ben Sun, Flack + Kurtz, gave a presentation, in November, to first year engineering students at City College of San Francisco providing them with an overview of the HVAC industry.

Be sure to tell us of your recent accomplishments so that other Chapter members may learn of your expertise (and perhaps earn PAOE points for our chapter) by completing the FAX Activities Report provided in last month's Fog Dispenser, or call Rachel Murray, (415) 397-0442.

Position Available

Mechanical (HVAC) Engineer with 5 to 10, or more years experience for **Project Engineer** position; competitive salary/benefits to match abilities; office, retail, lab, restaurant, remodel, winery, school, and government experience and a license are pluses; excellent career opportunity. Send or FAX resume to:

Lefler Engineering
1651 Second St.
San Rafael, CA 94901
FAX (415) 456-1248

EIT Review Class at

San Francisco State University

San Francisco State University is offering a seven week evening review class for the Engineer-in-Training (EIT) exam. The class will meet on Tuesdays and Thursdays, 7:00-9:45 p.m., from February 14 to March 30. Students taking the class will be eligible for 3.8 units CEU Credit.

For registration information, contact Extended Education at (415) 338-1373. For more information about the course, contact Dr. Ahmad R. Ganji at (415) 338-7736.

CELEBRATE ASHRAE CENTENNIAL

1995 ASHRAE WINTER MEETING

Chicago, Illinois

January 28-February 1, 1995

What is in store for the next 100 years? Come to Chicago, relive the past, participate in the present, and help set the direction for generations to come.

Don't miss this opportunity to participate in this ASHRAE meeting and play a role in effecting change within the Society and the industry. Society committee meetings, technical committees and standards project committees will meet during the course of the Winter Meeting. ASHRAE members are invited to participate in these meetings and help direct the Society's activities in those areas.

More than 250 peer-to-peer technical sessions will be presented in Chicago on all subjects encompassing our industry.

All meetings and technical sessions will be held at the headquarters hotel, The Palmer House Hilton Hotel.

Come, learn, become of part of the guiding force in air conditioning and refrigeration.

Check the latest issue of *ASHRAE Insights* for registration information.

International Air-Conditioning, Heating, Refrigerating Exposition

January 30 thru February 1, 1995

McCormick Place

Held in conjunction with the ASHRAE Winter meeting in Chicago, more than 300,000 sq. ft. of exhibits from more than 900 suppliers displaying the latest industry innovations, the International Air-Conditioning, Heating, Refrigerating Exposition is the best source for products, systems, services and solutions to help you build your best business environment.

Sales Engineer Position Available-San Diego

Landis & Gyr- San Diego has immediate openings for General and Sales Engineers

Contact Frank Shadpour Phone: (619) 693-8711, or FAX your Resume (619) 693-1896