



ASSOCIATION OF  
ENERGY ENGINEERS

Bay Area Chapter

# NEWSLETTER

February 2002

## Meeting Information Tuesday, February 26, 2002

*AEE Bay Area Chapter Presents*

### Has the micro-turbine finally arrived?

Distributed/Co-generation in the current climate

**6:00 – 6:30 p.m.**

Social

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

Dinner

**7:30 – 9:00 p.m.**

Chapter Business and Presentation

#### Location:

Rustica Restaurant, Oakland

#### Cost:

\$30.00/Members

\$35.00/Non-members

\$15.00/Student

**Reservations:** Call Rory Moran at (925) 437-2718 or  
FAX (877) 638-4942. See inside for more info...

## President's Message

### A Different Perspective

This month, I would like to give you a different perspective on energy analysis without grinding the numbers or analyzing the data. Don't get me wrong; there is definitely a need for quality data analysis. But I'm a controls guy with a practical sense of how energy is consumed. When I visit a facility for evaluation, I immediately start an audit in my mind. Attention is immediately drawn to the immediate surroundings. Is there adequate lighting or is it too bright? A quick check of fluorescent fixtures can reveal T8 or T12 type bulbs.

How about creature comfort-is it stuffy or is there a sense of adequate ventilation. A trip to the mechanical room - are there time clocks or is there a DDC system? Does the mechanical system appear adequate for the shell? How about fan and pump motors - are they standard or high efficiency? Any VFD's? Now, to the heart of the matter - the temperature control panel or better known as TCP. Are the controls decipherable? If not, chances are there is a lot of energy being wasted due to bad control. A quick trip to an electrical room can be most enlightening. Is there any core or tenant lighting control? Are the contactors mechanically or electrically held? What about exterior lighting? And daylighting?

You get the picture. There's a wealth of information to be gathered immediately without even turning on a computer. It just takes some practical sense.

Hats off to Bruce Chamberlain for his diligent efforts at last month's meeting in San Francisco. We packed the dining room at Sinbad's with about 45 attendees to hear about the new LEED (Leadership in Energy and Environmental Design) program. Well done, Bruce.

Thanks for listening.

John Clark

President, AEE Bay Area Chapter

Stop by the AEE Bay Area Chapter  
Booth at the 1<sup>st</sup> Annual  
Total Buildings Facilities Expo...

April 3 and 4, 2002  
10 am –3 pm

## 2002 Board

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Interested in involvement?

Contact: John Clark  
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MEMBERSHIP?**

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*Bay Area Chapter*

AEE Bay Area Chapter serves as a unique forum for the discussion of energy issues and concerns. AEE Bay Area Chapter provides common professional meeting ground for facility managers, design and specifying engineers, utility and vendor representatives and energy researchers to participate in vigorous peer-to-peer dialogue, learning and group discussion.

AEE Bay Area Chapter strives to provide quality professional development opportunities that build knowledge and skills through meetings, seminars and publications. Emphasis is placed on:

- ? Assessing the applicability of emerging technologies, and
- ? Improving the performance and reliability of current technologies.

Meetings are held on the fourth Tuesday of the month. All interested persons are welcome to attend, participate and join the Chapter. If you are interested in joining the AEE Bay Area Chapter, contact Ryan Wood (800) 770-8539.

# Secretary's Report

## Meeting Presentations for January 22<sup>nd</sup> Meeting at Sinbad's Restaurant, San Francisco

We had two speakers for the evening. The first speaker was Mark Palmer, San Francisco's Green Building Coordinator ([markpalmer@ci.sf.ca.us](mailto:markpalmer@ci.sf.ca.us), [www.sfenvironment.com](http://www.sfenvironment.com)). Mark presented San Francisco's Green Building Program, which has been mandated under the Resource-Efficient Building (REB) Ordinance, which went into effect in July of 1999. The REB program resides in the Dept. of the Environment; and is charged with promoting resource-efficient building standards for all City buildings. The program has following three major goals:

- Provide Green Building Design Training for all city architects, engineers and project managers.
- Oversee the design process for 10 city Pilot Projects involving construction of a variety of building types owned and operated by the City. The projects must demonstrate innovative green building design and construction techniques and building materials.
- Gather data and experience through the Pilot Projects to further refine and extend the REB ordinance to cover all city design and construction projects.

The different aspects of a green building include: (1) SUSTAINABLE SITE (selection planning, landscaping), (2) WATER EFFICIENCY (wastewater, irrigation), (3) ENERGY/ATMOSPHERE (efficiency, clean/renewable energy, no CFCs/HCFCs), (4) MATERIALS/RESOURCES (solid waste reduction, materials reuse, recycling), and (5) INDOOR ENVIRONMENTAL QUALITY (IAQ, daylighting, thermal comfort/control, acoustical quality).

For the "Green Design Process" to be successful, green building strategies should be incorporated into all phases of the project, from programming and budgeting to design, construction, commissioning, and operation and maintenance. These strategies should include: (1) commitment from all parties, (2) collaboration from the beginning of the project, (3) an integrated/systems approach, (4) multi-disciplinary design teams, and (5) life-cycle costing and life-cycle materials analysis. This deviates from the traditional linear approach of architect-to-engineer-to-contractor with discipline separation.

Commonly-recognized benefits of green design include reductions in pollution, energy consumption, and resource extraction. Other benefits also include reduced waste disposal costs, and reduced maintenance and replacement costs due to greater durability of materials. Increased human productivity is a less easily measured benefit. A DOE/RMI study has derived a 6% productivity increase due to improved indoor air quality and daylighting. A Verifone Corp. study has also attributed a reduction of 45% in absenteeism due to the same types of improvements. These human effects address the major cost of building operation: Building owner/employer costs for a building over a 30 year span are 2% for construction, 6% for operations and maintenance, but 92% for labor.

Mark briefly presented photos of each the 10 green building pilot projects: The S.F. EcoCenter and Dept. of Environment offices, Moscone West Convention Center Expansion (C&D waste recycling), West End Pavillion in Golden Gate Park, Visitacion Valley Clubhouse, 525 Golden Gate Office Building, Laguna Honda Hospital, California Academy of Science in Golden Gate Park, Islais Creek Muni Maintenance & Operations Facility, Golden Gate Park Concourse Underground Parking Garage, and the 23<sup>rd</sup> and Treat Park Recreation Center.

Mark moved on to discuss green buildings programs outside of the San Francisco program. Other cities with green building programs are Berkeley, Oakland, San Jose, Los Angeles, Santa Monica, San Diego, Seattle (plus surrounding King County), New York City, Portland, Austin, and Hennepin County in Minnesota. The Federal Government (Exec. Order 13123 of 6/1999) and California State (Exec. Order D-16-00 of 8/2000), SB 1088, Calif. Integrated Waste Management Board Sustainable Building Program, Building Better Buildings: A Blueprint for Sustainable State Facilities, Green Building Task Force) also have programs.

The LEED (Leadership in Energy and Environmental Design) Green Building Rating System is a program of the US Green Building Council (web site: [www.USGBC.org](http://www.USGBC.org)), applicable primarily to commercial buildings. The rating system is a voluntary, consensus-based, market-driven building rating system based on existing proven technology. It evaluates environmental "whole building" performance (contrasted to EPA's "Energy Star" program, which is based on energy alone) based on the categories of sustainable sites, water efficiency, energy & atmosphere, materials & resources, indoor environmental quality, and also has a bonus points category. The System gives a total of 65 possible points, 80% of which can be obtained through non-prescriptive or optional means. A building can achieve one of four possible ratings: LEED, Silver, Gold, or Platinum. A LEED certification application will take 150 to 200 hours to assemble by a team member, so is likely to be pursued only on multi-million dollar projects.

To date, only 16 projects have been certified, while about 270 projects are currently registered for potential certification. LEED certification must be applied for by a LEED-certified professional. Day-long training programs are available, and can be found through the USGBC web site. A training will take place in March in the Bay Area.

To address residential green building issues, our second speaker was Meri Soll, Program Manager for the Alameda County Waste Management Authority (ACWMA) ([msoll@stopwaste.org](mailto:msoll@stopwaste.org), [www.stopwaste.org](http://www.stopwaste.org)). Meri presented the ACWMA's Green Building Guidelines applied to residential construction. She first presented information regarding the reasons that a waste management program has for developing building guidelines. The issue stems from the Authority's mission to reduce waste.

## Secretary's Report Continued

California's AB 939 mandated a 50% reduction by 2000, and Alameda County's Measure D establishes a goal of 75% reduction (from what?) by 2010. Since 20 to 30% of landfill waste is generated from construction and demolition, the building industry is an important factor in the landfill quantity equation. The typical 2000 SF home generates 12 tons of construction waste alone.

ACWMA's involvement with green building addresses salvage of reusable materials and reuse of existing buildings, job site recycling, recycled content in construction materials, and durable construction methods. Their approach to these issues has involved provision of tools to the building industry for incorporation of green building features, support to municipalities in working with the building industry, and development of green building guidelines.

Meri passed out copies of the Green Building Guidelines. Other copies are available through ACWMA (510-614-1699). The guidelines were developed as an educational and reference tool, a guidance document, and a resource for further information. They were assembled by a development committee (of developers, contractors, architects, purchasing agents, building inspectors, and city staff) with help from an external consultant. ACWMA has promoted the Guidelines in various workshops, through speakers, technical "handholding", and their "Resource-full Trailer".

The City of Pleasanton has embraced the Guidelines, and has incorporated some features into Condition of Use permits. The city staff there is developing a Green Building Policy as well as a rating system.

Meri showed features of a Green home in Emeryville. The home incorporated shade control, xeriscaping, concrete with fly ash content, certified woods, fiber cement siding, and energy efficient windows. Some of the easiest green elements to include are low/no VOC paints, adhesives and finishes, compact fluorescents, water saving devices, and EnergyStar appliances.

Submitted by Stan Boghosian

**Do you know someone who might be interested in joining AEE Bay Area Chapter?**

The benefits of joining include:

- ?? Participating in exciting and informative programs
- ?? Receiving a monthly newsletter containing information on meetings, events, and job openings
- ?? Communicating with other energy professionals

For membership application:  
**Contact Ryan Wood**  
**(650)-596-1160**

Meetings are held on the fourth Tuesday of each month. All interested persons are welcome to attend, participate and join.



*Bay Area Chapter*

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IT IS TIME TO RENEW YOUR MEMBERSHIP