

ASSOCIATION OF
ENERGY ENGINEERS

Bay Area Chapter

NEWSLETTER

March 2005

Meeting Information
Tuesday,
March 29, 2005

AEE Bay Area Chapter Presents

Ground Source Heat Pumps Tour and Presentation

5:15 – 6:15 p.m.
Tour

6:30 - 7:00 p.m.
Social

7:00 – 8:15 p.m.
Dinner and Presentation

Location:
Pyramid Alehouse, Brewery & Restaurant

Cost:
\$25 Members
\$30 Non-Members
\$15 Students

Reservations:
E-mail to bruce@energy-solution.com or call Bruce Chamberlain at (510) 482-4420 ext 227 or FAX (510) 482-4421 using the handy FAX form. **Please make your reservations by EOB Friday, March 25th.** You can also respond at the chapter website www.aee-sf.org

President's Message (cont.)

He was expelled once from high school because all he did in class was sit in the back of the room smiling and he eventually dropped out at age 16. He flunked the engineering entrance exam in all subjects except math. One of the professors was so impressed with the scores that he accepted him anyway. Although he passed the PhD final exam, he was the only member of his class not to receive an assistant professorship. After being turned down for many scientific positions, he resigned himself to a decent-paying job at a Swiss patent office. After his son was born, he began thinking and studying at all hours of the night, while taking care of the baby.

In 1905, after "a storm broke loose in my mind", he wrote the theoretical paper which came to be called the Special Theory of Relativity. An additional paper included the famous equation: $E = mc^2$, showing that there is tremendous energy trapped inside all particles. This paper became the theoretical basis for nuclear weapons. After the creation of the atom bomb, Einstein said, "If I had only known, I would have been a locksmith."

While we might not be presently living in a time of such major breakthroughs as Dr. Einstein's, research, developments, and change can seem like a blur, making it hard to keep up with the state of our world. A metaphor for his Special Theory where time and motion appear differently to someone traveling in a rocket ship than they would to someone standing on the ground as the rocket ship flies by.

Speaking of theories, one would think a price of \$55 per barrel (as of today) would have a significant impact on our overall economy. When will the other shoe drop, some ask? Some people think we can prevent the "shoe-drop" from happening by tapping the Artic National Wildlife Refuge (ANWR). One could also frame a debate around the comparative economic benefits (cause that's what most people care about) between oil extraction in a designated wilderness and technology improvements and developments that spur business and help meet the Kyoto Protocol and increase global energy efficiency.

(Continued)

President's Message

It just so happens that I'm writing this missive on the birthday (March 14) of the physicist Albert Einstein. In hearing his brief bio on the radio (The Writer's Almanac), I was intrigued with his life. Here was yet another legend and icon of our time who had a very inauspicious beginning and, what with a few lucky or fateful turn of events, went on to, arguably, affect the lives of the majority of people on this planet.

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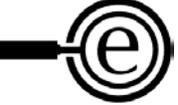


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President's Report, Cont.

According to the United Nations, on February 16, 2005, thirty industrialized countries became legally bound to meet quantitative targets for reducing or limiting greenhouse gas emissions. The international carbon trading market became a legal and practical reality. The Protocol's "emissions trading" regime enables industrialized countries to buy and sell emissions credits amongst themselves; this market-based approach, they believe, will improve the efficiency and cost-effectiveness of emissions cuts.

Only four industrialized countries have not yet ratified the Kyoto Protocol: Australia, Liechtenstein, Monaco, and the United States. Together, the U.S. and Australia account for over one-third of the greenhouse gases emitted by the industrialized world.

As far as change in the local energy "climate", I'd like to, on behalf of the entire Chapter, congratulate a local (Berkeley resident) energy efficiency champion on becoming the most recently appointed Commissioner on the California Public Utilities Commission. Dian Grueneich was sworn in to a six-year term in late January and states that she will "work hard to meet the responsibilities and challenges of my new role with collegiality, openness, and dedication." Let's hope she can engender these qualities in other state-wide, governmental agencies.

The best to you and your family and business. See you at the ground source heat pump tour on March 29th.

Bruce

Bruce Chamberlain
President, Bay Area Chapter
bruce@energy-solution.com

AEE, Bay Area Chapter – DEBUNKING POPULAR LIGHTING PRACTICES

This month the Bay Area's highly qualified and prized lighting specialist, Stan Walerczyk, presented an informative and animated case that showed there is more to engineering and designing lighting systems than meets the eye. He presented 12 common practices that, so to speak, may not actually shine so bright after all. A few of the highlights are:

- Dimming ballasts, often touted for light harvesting and load shedding savings, are less efficient and cost as much as 3X more than extra efficient, instant start, fixed ballasts. They also require commissioning and controls.
- The new T5 lamp technology has great efficacy (lumens/watt) ratings in catalogs but if you account for ballasting (and you must!) the efficacy is less than high performance T8s. Also, T5 "end of life system lumens/watt" is much less than hi performance T8s.
- Energy saving 25W, 28W and 30W F32T8s are perhaps nominal ratings only. Typically "energy savers" do not save the full difference the rating suggests from a high performance full 32W lamp (i.e. $32W - 28W = 2.5W???$). Also, energy savers have less lamp life, cannot be used with some ballasts, and some should not be used with occupancy sensors. It could be a maintenance nightmare to keep track of which lamps can go where.
- Retrofitting reflectors adds very little to no benefit in fixtures that already have good cleanable white paint or powder coat and angled interior sides. Also, delamping 18 cell parabolic 2x4 fixtures can be a very bad idea because repositioned lamps can ruin proper cut-off angles.
- Occupancy sensors may not save as much as projected when used in offices or rooms where people likely have a strong sense of ownership and they are inclined to switch lights off before the occupancy sensor does. (Interesting Lighting Lore: Apparently Hewlett Packard installed occupancy sensors in office copy rooms so people could see from their cubes when the room was not occupied. Thus not wasting time - and saving \$\$\$ - going to a busy copy room.)
- Installing new indirect light fixtures often provides a better overall return than retrofitting existing 2x4 recessed troffers.

Stan discussed various strategies to provide very cost effective low power densities without fancy lighting technology or controls. One of his favorite tips is to save wattage through higher temperature or "spectrally enhanced" (i.e. contain more "blue" and provide lighting more like natural daylight) lamps. Also, Stan praised recent advances in high performance indirect lighting systems. To view the complete PowerPoint presentation, please visit us at <http://www.aee-sf.org/>. For more information visit Stan's website at <http://www.lightingwizards.com/>.

We hope to see you at our next meeting. We'll keep a hi-efficiency T8 on for you.

Jim Kozelka

Jim Kozelka
Secretary

Special Announcement

Commercial Kitchen Ventilation: Optimizing Appliance Position and Exhaust Hood Installation

Wednesday, April 6th, 2005

9:00am - 11:30am

Food Service Technology Center

San Ramon, CA

**Presenter: Don Fisher, President/CEO, Fisher-Nickel, inc,
Manager, Food Service Technology Center**

Arranging equipment under a kitchen ventilation system can be more important than it appears. This seminar will provide guidelines, based on new ASHRAE research, to help assure the most efficient spot for equipment placement and optimal capture and containment. The seminar also will focus on hood installation details that can significantly impact the performance of kitchen exhaust systems.

For information and/or to Register:

Online: www.foodservicetechnologycenter.com

Email: seminars@fishnick.com

Phone: 1-800-398-3782

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:

**Steve Rottmayer
510-834-6420 ext 17**

Membership applications may be downloaded from the AEE website at:

<http://www.aee-sf.org/form.rtf>

or

<http://www.aee-sf.org/form.doc>

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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