



SAABE TIMES

A Publication of the San Antonio Association of Building Engineers

March, 2002

CPS Building Tour Electrifies Attendees

Well, not literally, but those who attended the building tour of the City Public Service Gas and Electrical Operations Control Center at 326 West Jones were truly amazed and impressed at all that goes on in this facility — and with the people that keep it going. Senior Engineer Jose Escamilla started off our tour with an excellent Powerpoint presentation. Then System Operators Walter Bukowski and Kimball Moos showed us the “heart of CPS,” a 108-inch monitor that is used to detect and monitor trouble areas in the city power system. This information is helpful for a number of reasons, not the least of which is to aid field crews in pinpointing, investigating, and resolving problems. The control center also exchanges information with neighboring utilities for added help in identifying problems as they arise. This facility is, of course, a 24-hour, seven-day-a-week operation — and we can certainly attest to the fact that there is hardly ever a dull moment. A special thank you goes out to Jose, Walter, Kimball, and all the others at CPS who took time out of their busy day at the facility to show us around and helped make this tour a great success. A very special thank you goes to Judy Garcia of CPS who handled all the arrangements, and even had a wonderful dinner of monster sandwiches and chips ready for us at the completion of the tour. Stay tuned for details on the next exciting SAABE tour, coming soon to a building near you!

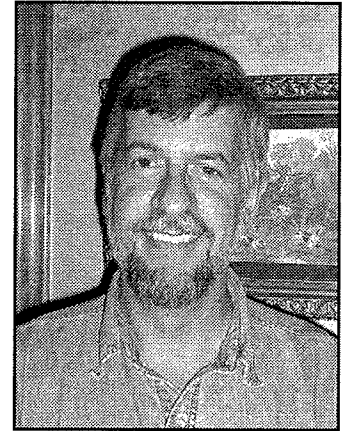
The Envelope Please...

The San Antonio Association of Building Engineers is pleased to name Paul Thompson as 2001 Building Engineer of the Year. This special award recognizes an outstanding contribution to our industry and we congratulate Paul and his fellow nominees, Danny Gonzalez and Mo Serros, for a job well done!

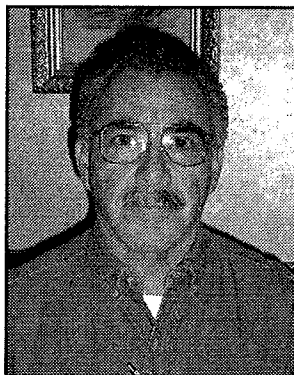
The BEOTY committee interviews all nominees and their buildings and properties are inspected. Critical components of the review process are:

- General building appearance
- Safety equipment inspections up to date
- Licenses, registrations and certifications held
- Overall cleanliness of mechanical room
- Size of building and number of assistants/subordinates

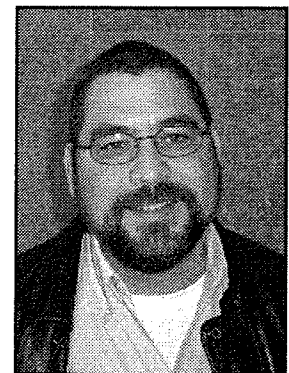
A special thank-you is in order to this year's BEOTY committee: Cesar Alvarado, Bob Beal, Bernardo Chapa, Doug Graves, Kendal Langenberg and Tom Lasater.



*Paul Thompson of
The Trane Company,
Building Engineer of the Year*



*Mo Serros of
Four Thousand One*



*Danny Gonzalez of
Alamo Towers*

Improving HVAC System Performance! (Part Four of Four)

Energy Management

Regardless of what improvements are made, none of these changes should be considered permanent, one-time improvements. HVAC systems need to be monitored at a minimum of once a year, and then adjusted as required. Even system replacements are not permanent, since all systems need to be inspected and maintained. One of the best ways to do this is to establish an energy management program with systematic checks made of various energy-using equipment. Since most equipment is not separately metered, monthly energy bills may be the only method available for making simple checks on energy consumption.

Monthly energy use for all fuels should be plotted using separate graphs for each primary energy source, so that trends can be observed from one year to another (see Tech-Talk #46-48).

Weather-dependent systems, such as HVAC, should be separated from the total monthly energy bill where possible. This can be accomplished by estimating monthly energy use for the other systems (such as lighting, electric power and domestic water heating) that are not weather-dependant. Subtracting this energy use from the overall monthly usage yields energy use related to HVAC.

The best way to accomplish this is to install current tracers (CT's) on the larger HVAC equipment to track energy usage.

Dividing by the number of heating or cooling degree-days during that month, then graphing the data should then normalize this value. This type of monitoring and tracking provides for early recognition of high-energy use, malfunctioning equipment, or the need for maintenance.

As described in previous issues related to energy accounting and economic analysis, an annual energy index for each building or facility can be developed and compared with similar buildings within the same geographical area or climate region. This annual index should cover all fuels and should be in units of thousands Btu's per square foot of floor space per year.

There are general ranges for energy usage based on the type of occupancy classification, as generally outlined below:

Type of Facility	1,000 Btu's per square foot of floor space per year (estimated)
Office building	75-150
Hospital	150-300
Food store	200-500
Retail store	100-200
School	75-150
College	75-300
Apartment	50-150

These values are very general, but they tend to illustrate the varying energy usage among building classifications. The large range shown within each building type is the result of differences in buildings, usage, and weather.

While these ranges are broad, they still permit a comparison to be made to see where a particular building fits in the range. When the annual energy use is in the upper half of the range, there is probably an opportunity to save energy dollars by applying energy management strategies.

Improving the energy efficiency of an HVAC system is a continuous operation. In general,

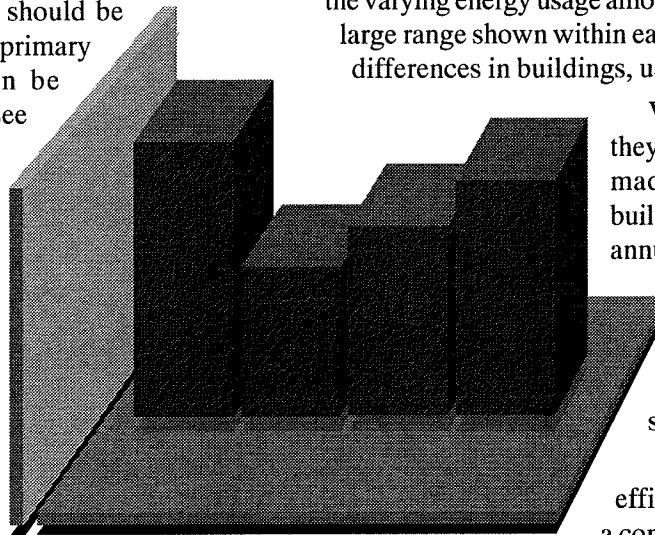
10-30 percent of the energy usage can be saved in systems just by implementing good maintenance practices. What makes energy efficiency difficult is that there are many components in an HVAC system that require annual inspection and maintenance. Savings from any one component may be small, but when all the individual components are added together the savings can be substantial.

Remember, energy conservation is not necessarily the goal. Rather, the goal is to use only the energy needed and to use that energy as efficiently as possible.

Next Month: Daylighting

CHARLIE'S LAW: If it doesn't work, bang on it. If it still don't work, hit it harder. If this didn't do the trick, it needed to be replaced anyway!

JUSTA MAINTENANCE MAN



February Lunch An EnLIGHTening Experience!

Did you know that the purchase price of a light bulb is only 3% of the total cost of owning that product? The February general membership luncheon featured a presentation by Bryan Lesch of Philips Lighting (sponsored by Voss Lighting), who showed us how to see lighting from the TCOO perspective (total cost of ownership). This method looks at all the cost components of a given lighting system, not just the purchase price. Bryan showed us how energy reduction is far more important than anything else when it comes to saving money with a lighting system, as it accounts for almost 90% of total lighting costs. Thanks, Bryan, for enlightening us with your presentation!

Don't forget to set aside some time for our March luncheon, as we will be crowning our 2001 Building Engineer of the Year!



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By Dan Marsh
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Totally Useless Trivia!

- The first Harley Davidson motorcycle was built in 1903, and used a tomato can for a carburetor.
- A ball of glass will bounce higher than a ball of rubber. A ball of solid steel will bounce higher than one made entirely of glass.
- A chip of silicon a quarter-inch square has the capacity of the original 1949 ENIAC computer, which occupied a full city block.
- A device invented as a primitive steam engine by the Greek engineer Hero, about the time of the birth of Christ, is used today as a rotating lawn sprinkler.
- A nylon fiber is stronger than a steel wire of identical weight.
- Actor Arnold Schwarzenegger bought the first Hummer manufactured for civilian use in 1992. The vehicle weighed in at 6,300 pounds and was 7 feet wide.

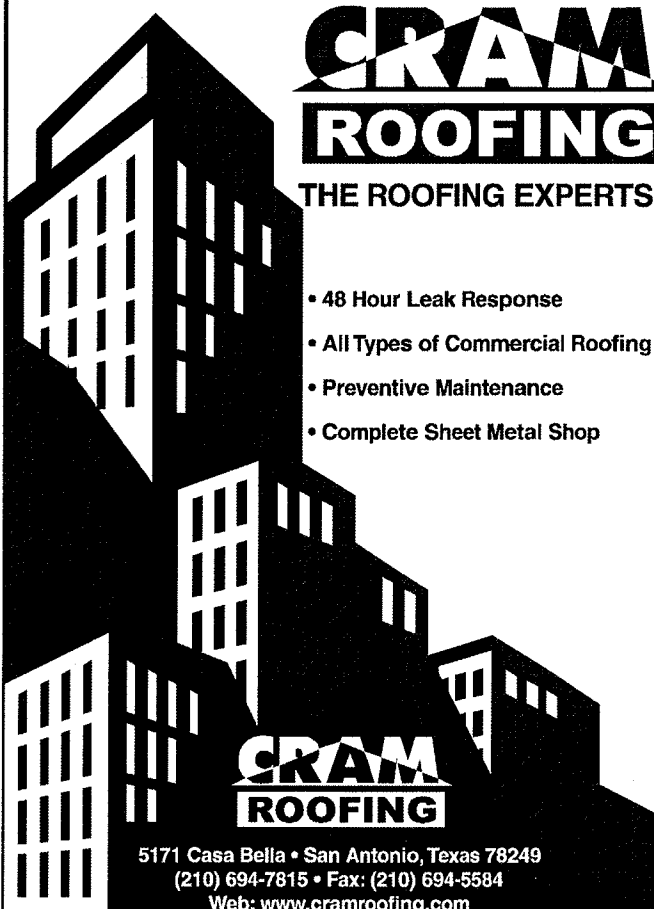
- Air conditioning was invented by Willis Carrier to help a Brooklyn, New York printer get decent color during hot, humid weather. Air conditioning wasn't used for cooling people until 1924 when it made its debut at the J.L. Hudson Department Store in Detroit, Michigan.
- An airplane's black box (recorder) is actually orange.
- An ordinary TNT bomb involves atomic reaction, and could be called an atomic bomb. What we call an A-bomb involves nuclear reactions and should be called a nuclear bomb.
- As of 2000, about 94 million people in the United States owned a cell phone.
- In December 1957, Shippingport, Pennsylvania became the site of the first full-scale nuclear power plant in the United States. The plant was able to generate 60 megawatts of electricity after reaching full power 21 days after going on-line.



Heard It Through the Grapevine

Mike Copp is now the SAABE representative for the Nowlin Building.

Kenny Aguilar of Enrionova has a new phone number: (210) 859-5237.



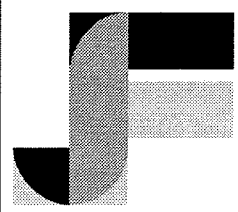
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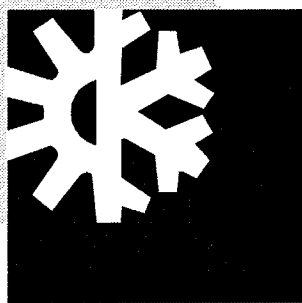
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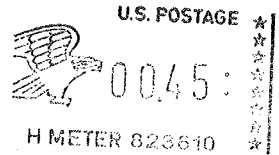
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**SAABE TIMES
March Issue**

Final Thought —

*If there really is a pole at the North Pole, I bet there's
some dead explorer guy with his tongue stuck to it.*

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**Membership Luncheon
March 20, 2002**

Time: 11:30 a.m.

Location: Old San Francisco Steakhouse

Program: Building Engineer of the Year Award

Upcoming Luncheon:

April 17, 2002

Program: Highway Construction
Update from Texas Department of Transportation

The SAABE Times is produced monthly for the San Antonio Association of Building Engineers by:



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