



# S.A.A.B.E. TIMES

A Publication of the San Antonio Association of Building Engineers

April, 1999

## Mark Your Calendar —

### **Don't Get Bitten By The Millennium Bug!**

Will it be the end of civilization as we know it? Just another day? Or maybe somewhere in between? If you've heard all the buzz about the Y2K (Year 2000) issue and are not sure you have touched all the bases for your building owners, come and hear Citicorp's Gerald Reiff give a presentation on what he, as their designated Y2K point person, has learned about dealing with the issue as it pertains to vendors and suppliers, building systems, utility providers, and more.

Gerald has been with Citicorp for 7 years, and previous to that has 15 years in law enforcement. He keeps up to date with his field through service as a Deputy Constable for Bexar County as well as participation in the local chapter of the American Society of Industrial Security. He has been actively involved in the Year 2000 compliance issue for over 18 months and has some valuable insight into the potential problems as well as some entertaining stories to tell.

Also — don't forget... we need a good turnout at this meeting so we can get approval on the proposed bylaw changes. Voting members were mailed a copy of the document about a week ago. Call Paul Thompson at 524-9285 if you have any questions about the changes, and please come!

*We'll see you there!*

## **Education Corner**

*by Mike Lusk*

WOW! In case you haven't heard, the Greater Austin Plant Engineering and Maintenance Show is just around the corner. And it's FREE! The dates are Wednesday, April 28, 10 a.m. - 4 p.m., and Thursday, April 29, 10 a.m. - 4 p.m. The show will have the requisite number of product/vendor booths and a whole lot of conferences — sixteen one-hour non-commercial sessions are scheduled. Conferences will cover lots of topics of interest to most of you. The time for pre-registration has passed, but you can still register on-site. For more information or show schedules, you can contact Professional Trade Shows, Inc. at (510) 354-3131. Their website is at [www.proshows.com](http://www.proshows.com). For those of you who did not receive a flyer, you are welcome to call me. I have one which I will share. So where is it? Austin Convention Center, Hall 3.

Don't forget, if you are interested in pursuing further education in the building engineering field, we have St. Philip's College right here in San Antonio. Obviously, I cannot cover the details here, (I do have a catalog that covers the upcoming summer sessions) but I at least want to list some of the subjects they have. You can drop by the campus and pick up a catalog as I did, or you may call me if you have questions. It would probably be best to get answers directly from the college. The phone number is 531-4831, and their web address is [www.accd.edu/spc](http://www.accd.edu/spc). They have all sorts of possibilities including weekends, off-campus, summer sessions, etc. The first summer session is June 1 - July 7. The second summer session is July 12 - August 13. The summer evening session is June 1 - July 22. I do not have information on meeting times or registration dates for specific classes. The catalog for next year's classes is not available yet.

### **Some subjects/courses offered by St. Philip's include:**

- Air conditioning
- Heating
- Refrigeration
- Allied building trades
- Computer information systems
- Electrician
- Plumbing

No NTT course listings this month. Check last month's newsletter, which covered up through May.

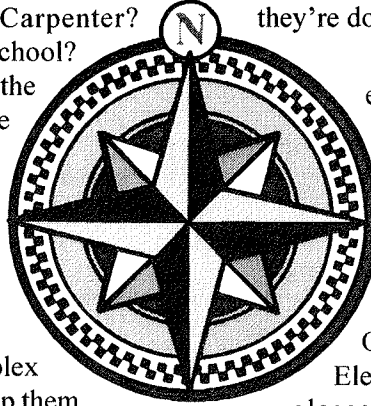
# Above the Ceiling

by Paul Thompson

## Where Are You From?

You know...In your former life? Were you an electrician? AC technician? Plumber? Carpenter? Mechanic? College grad? Navy? Trade school? People come into this trade from all points on the compass, but once you get here, you're expected to know it all. What tests need to be done on a fire alarm system and how often? What's the typical head pressure on your chiller? What's too high? What are the PMs to do on your roof? How do you write a budget?

We work with a large variety of complex systems every day and we're expected to keep them up — it's what we get paid for. Now the city will require you to have a license — basically to show that you meet certain minimum skill levels — if you're a plumber,



electrician, AC tech, etc. After all, if they don't know what they're doing, people's lives can be put in danger.

But it seems strange to me that we who are entrusted to take care of large office buildings, schools, hotels and hospitals with hundreds and thousands of occupants...we who are in charge of all systems, have no such requirements. Evidently, they trust us to do the right thing — which is...?

Education — you've got to get educated. On fire alarm systems. On HVAC. Roofing. Electrical. And in the inevitable paperwork. Take classes. Attend seminars. Sign up for BOMI SMT/SMA classes. And put in your application for the SAABE Certified Building Engineer (CBE). Show them you know what you're doing.

## Bits and Pieces

That CBE mentioned above is in the last stages of an updating review...should have the new application redone and printed in the next couple of months.

We have also completely updated SAABE's bylaws. By now, you should all have received a copy of them in the mail. Please take the time to read them through, as there will be a straight up or down vote to adopt them at the April meeting.

We've been getting a real good response to the salary survey. Again, we should have the results back shortly. (I don't usually repeat myself this much).

Catch the debut of our own "Tio SAABE" question and answer column in this month's issue. Tom Lasater did a stupendous job of digging up some diamonds we could all use. Keep those questions coming!

And it appears our own shy violet, Elena Castillo, still has an opinion or two. Good stuff. Of course, Mike Lusk (Lust?) always keeps us on top of the education front. And The Charlie (Tech Talk) is only now getting his second wind — how about some more poetry, Charlie? Of course, Lynn Forester supplies the glue that holds this whole thing together (along with timely reminders to yours truly). You guys make it look way too easy.

Lastly, but not leastly, let's give a big SAABE hand to John Gormley (Stone Care of Texas) for his great presentation at the March meeting. Way to go, John!

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# In My Opinion

by Elena Castillo

Heating a commercial building during the winter months requires using different methods. Some of the methods used are multizone units with hot and cold decks, 4-pipe constant volume systems, multizone units with electrical reheat, fan-powered vav boxes with varied kw strip heaters, steam heating, and others too numerous to mention. Most of these units require a commercial boiler to enable them to function and maintain a comfortable building.

Commercial boiler manufacturers build various boilers for different applications. There are steam boilers and hot water boilers, fired up by diesel or gas. These boilers produce thousands of BTUs of heat, all designed to heat, cook, sterilize, etc. In San Antonio alone, there are approximately 2,000 boilers.

However, these large vessels are often overlooked in our preventive maintenance logs. We sometimes take them for granted, just like our hot water heaters at home. We log temperatures and pressures daily and relieve safeties and valves manually. In some cases, untrained personnel do not know when a potential problem exists. If a boiler has a defective check or pressure relief valve, dirty burner or combustion control problem, or any type of fuel or water leak, troubleshoot the problem and replace or repair it immediately; otherwise, you may have a *potential bomb* on your hands. If the defective parts are not replaced or repaired, the boiler can build up pressure beyond its hull capacity and actually blow up or take off like a rocket. An

example would be an acetylene cylinder with a broken neck piece shooting off and destroying everything in its path. A boiler would do the same thing, except on a much larger scale. A launched boiler does not discriminate. It hurls itself through concrete floors and walls. It destroys property, yes, and even people.

This is why *Preventive Maintenance* is so important. Your building's insurance company inspects the boilers every two years. It is also the responsibility of the trained maintenance person to inspect his boiler on a regular basis. A *preseason inspection* lessens the possibility of occupant discomfort due to system downtime. A *seasonal startup* ensures minimal problems and allows the building to operate more comfortably and economically. *Operational inspections* ensure continued system reliability. *Seasonal shutdowns* protect your investment and ensure that your boiler will have trouble free operation in future years. Your mechanical company can provide you with more in-depth information about your boiler.

*In my opinion*, if you maintain proper preventive maintenance on your boilers, you may be saving your life, as well as others in your building. After all, you hold the lives of people in your building in your hands. For more information, you can contact Mr. Art Wildberger at 210-281-0333. He is a Deputy Boiler Inspector for the Texas Department of Licensing and Regulation.

## Welcome New Regular Members

### Bruno Vera

USAA Realty Company  
9830 Colonnade Blvd #160  
San Antonio, TX 78230  
Phone 498-1700

### Doug Merisola

R.M. Crowe  
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**John T. Gormley**  
*Owner*

8200 Pat Booker Road • San Antonio, TX 78233  
FAX 210-653-0266

### Reminder

Don't forget to attend the April luncheon! We will be voting on the proposed SAABE bylaw changes. Your input is very important to us!

## Ask Tio SAABE

*Q. My HVAC contractor recommends doing eddy current testing, vibration analysis and oil analysis. Please explain these methods as well as their benefits.*

**Submitted by: Flaco**

**A.** All three tests provide a history of the internal condition of your HVAC/boiler system and are predictive in nature, allowing repairs to be scheduled as preventive maintenance rather than "Houston, we have a problem." Also, contractor reliability, longevity and "know-how" are essential to obtaining valuable usable results over the long haul — call other SAABE engineers for references of contractors.

**Vibration analysis** can locate minute problems, such as pitting of thrust bearings on axial fans or propeller imbalance, long before you hear or see vibration. As with all testing, a "base line" (first test) is the comparative standard, along with manufacturer-provided readings on a yearly basis. If problems are noted, contractor may suggest more frequent testing.

**Eddy current testing** measures pitting both inside and outside tubes in chillers and boilers, along with longitudinal cracks, and should be done every 2-3 years (less often on evaporator tubes). Electric current generates magnetic fields transmitted via a probe and the received signal is displayed on an oscilloscope, with the contractor reading the wave forms. The ideal base line test is prior to initial water line hook up to establish factory conditioning of tubing. Since end bells are removed for this test, rodding of tubes to remove scale is recommended prior to testing.

**Oil analysis** in screw compressors, centrifugals and any other equipment where the oil remains in the system over a long period of time, allows the engineer to determine wear without tear-down and inspection. Base line test is done on new equipment at about 3 months of operation, then again at 6 months, followed by tests at 6 months to 2 year intervals. Trace minerals, such as lead and tin from babbitts, copper or iron, and acid/moisture can be detected. As the test results are known, the contractor can establish test frequency.

The budget concerns for these tests must be balanced against repair costs and tenant inconvenience/rent concessions. Scheduled maintenance always requires less stress counseling for both engineer and manager than, "Houston, we have a problem."

*\* A special thank-you to Bob Gleason for providing most of these facts and to Tom Lasater for compiling the information. Questions for Tio SAABE? Fax them to 520-1337 or call the SAABE office at 521-8838.*



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## Heard It Through the Grapevine



- **Patrick Ehtle** is now the representative for Stanco Plumbing Specialties.
- **Rick Summerville** is now with Advance Uniform. He may be reached at 614-7311.
- **Ernie Sandoval** is now the representative for Monarch Door Services.
- **Gilbert Saldana** of Mack Cali Realty is now at the Century Building. He may be reached at 366-4400.
- **Robert Ramos** of Trammell Crow is now at CityView. He may be reached at 697-8861

# Tech Talk #23

by The Charlie

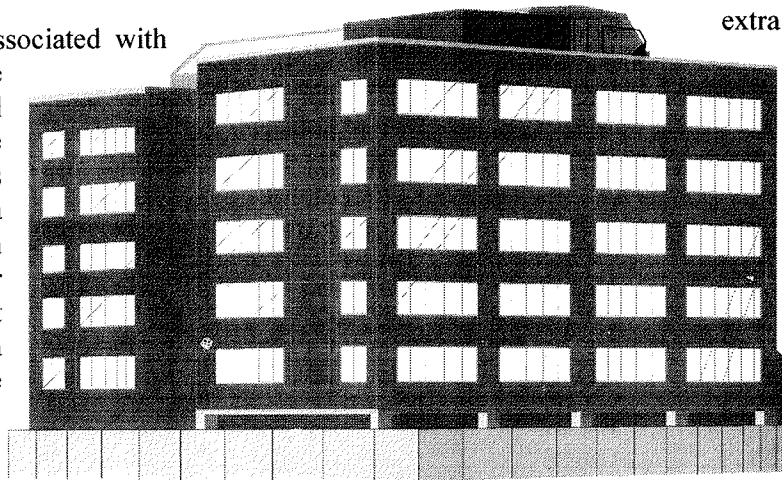
*(Part one of two)*

## On The Inside, Looking Out!

How many times have you said to yourself, "who ever designed this building must have been nuts — surely someone was asleep during the design and development stages." Well, other than items which are completely inane (open cell cooling towers located on a horizontal plane lower than the chillers and pumps, chillers of different tonnage which are piped in series, cooling towers located inside of a parking garage, etc.), they are usually, at the least, thought of momentarily by the individuals making the decisions.

The premier driver associated with the decision to incorporate some rather off the wall products is termed "value engineering." This term is often implemented when a budgetary number (an amount a bean counter determines what the cost per square foot of a building should be before any pricing is established), is not readily achievable after the GMP (Guaranteed Maximum Pricing), has been produced. Therefore, a typically limited MEP system is typically the first target area to reduce the cost per square foot.

These limited MEP systems are usually established during the development stage of a project. As a means to keep the soft costs (architectural, civil, etc.), at a minimum during a projects. The MEP systems are entered into the project as a bargain Willies, off-the-shelf type system. These MEP systems can be anything from a chiller with multiple air handling units, a chiller with multiple water-cooled package units or even roof top package units. The type of system is directly related to the favoritism of an engineer and the engineering firm and how much the cost per square foot needs to be curtailed. To worsen matters, a block load assumption will be used as opposed to an actual load calculation for the sizing of equipment, due to the restrictions of the soft costs. If only a block load is performed, this does not come close to the actual MEP requirements needed to address the amount of outside air



intake or accommodating the common trend of open floor tenants. Therefore, this system that was already short from the git-go, will inevitably be shortened during the "value engineering" course. Without input from individuals such as us, buildings are going up with problems before they are finished. One case in point, a project was block loaded at 700 tons (two 350 ton chillers). Quite enlightening, isn't it? Imagine a project 260 tons short from the git-go. It happens more often than not! If the GMP was produced utilizing the

block load, forget trying to arrange the extra dollars for upgrading. This is similar to trying to arrange the deck chairs on the Titanic (right before it sinks).

When a project is approaching the design stage, it is worth great benefit to pick the firms and the individuals of the firms that you are accustomed to working with and share the same ideas. If you miss this step, you will inevitably have an unpleasant journey.

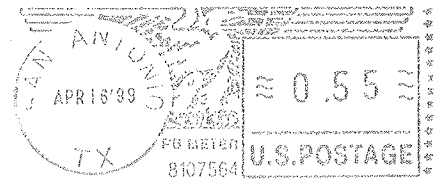
There will be many different opinions regarding various different items. Having everyone on the same page is extremely important. Too many times, the things that are brought to the table are items which someone has a cut sheet on from the manufacturer, or someone elsewhere designed it. Everyone with a better mouse trap sends their literature to the architects and engineers and the next thing you know, it is being implemented into your project. The architects and engineers have all of these manufacturers cut sheets on their performance and cost, but no one ever brings to the table or mentions that the very same items have not proven to be effective and carry a very high maintenance cost associated with them. Additionally, no one ever accepts input from the service industry where we know how these systems operate, their limitations, long term effects and short term life cycles.

"Still and always, just a maintenance man."

*The Charlie*



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**S.A.A.B.E. TIMES**  
April Issue

**Y2K**  
235 Days And Counting...

### 1999 Board of Directors

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### Membership Luncheon April 21, 1999

**Time:** 11:30 a.m.

**Location:** Tex's Restaurant  
in the Airport Hilton

**Topic:** Y2K Compliance Issues for Properties

**Speaker:** Gerald Reiff  
Security Manager with Citicorp

**Sponsor:** SAABE

**Upcoming Luncheon:**  
**May 19:** City Public Service will provide a presentation on their Y2K readiness regarding transmission and distribution of the city's electricity.

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



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