SAABE TIMES

A Publication of the San Antonio Association of Building Engineers *August, 2001*

Mark Your Calendar —

Rain of Terror

Please join us August 15, 2001 for our monthly general membership meeting. Tim Young of Munters Moisture Control Services will present actual news footage of the terrible destruction caused by tropical storm Allison in Houston and surrounding areas in June 2001. Featured in the news reports are the medical center, downtown, and freeway systems that were all under water. Time for questions on recovery procedures will follow.

Munters Moisture Control Services is a division of Munters Corporation, a shareholder owned worldwide company based in Sweden. Munters MCS has thirty offices in the United States and Canada, supplying water damage recovery services for local emergencies caused by pipe breaks, flash flooding and hurricanes.

Tim Young has been in the water damage recovery industry since 1982. He has been with Munters Moisture Control Services for eight years and during this time he has been responsible for drying many different types of water damaged buildings. Tim has been involved in disaster recovery preparation, consultation and continuing education instruction for the State Board of Insurance and training seminars for the State of Texas.

Education Corner

by Kenny Aguilar

Classes being offered:

Chillers: Operation of Chilled Water Systems: August 14-16, San Antonio, TX; July 31-August 2, El Paso, TX; August 7-9, Houston, TX, NTT, 800-922-2820, Cost: $1,195.00 per person.

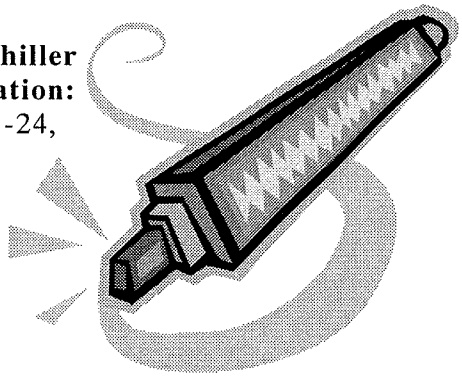
Refrigeration and Air Conditioning: October 30-November 1, San Antonio, TX; NTT, 800-922-2820, Cost: $1,095.00 per person.

Boilers—An Operator's Workshop: October 19-18, San Antonio, TX; NTT, 800-922-2820, Cost: $1,095.00 per person.

Insco Schools

R410A Certification: August 23rd. One day class from 8am to 5pm, Cost $135.00 includes CD-ROM, student workbooks, A/C learning manual. Registration form must be received and confirmed prior to class date. Contact Stan Soulitaire at 210-828-9981 for registration form and confirmation of date.

McQuay Training Courses



Screw Compressor Chiller Maintenance and Operation: Stauton, VA. August 21-24, October 9-12. Cost $1,100.

Centrifugal Chiller Maintenance and Operation: Stauton, VA. August 21-24, October 9-12. Cost $1,100.

For more information contact Linda Custer at McQuay International in Stauton at P.O. Box 2510, Stauton, VA 24402-2510. Telephone 540-248-9646, Fax 540-248-9210, or email at linda.custer@mcquay.com.

A Message from the President by Elena C. Castillo

Mold, Mildew and Air Purifiers .... In Your Home

Mold and mildew problems are cropping up all over – in commercial buildings, industrial buildings, day care centers, federal and city offices, judges' court rooms, etc. The environmental agencies are doing their best to keep businesses in shape by sealing or removing the contaminated areas and then testing the air afterwards. But what is being done on the home front? Is your home safe from this fungus? And just how common are these molds? Information and prevention measures are as follows:

Harvard University School of Public Health conducted a study of 10,000 homes in the United States and Canada and found that half of the homes had "conditions of water damage and mold associated with a 50 to 100% increase in respiratory symptoms."

When molds grow, it's usually in damp places, behind walls and under floors, above ceiling tiles or behind shower walls – wherever there are wet cellulose materials they can feed on, such as wood, ceiling tiles, plasterboard, or accumulations of organic material inside air conditioning and heating systems. Water is the key. Without it, molds can't get started, much less spread. But when water is left to sit for even 24 hours, common molds can take hold. If water continues to sit and areas become completely saturated, that's when a more lethal mold, such as Stachybotrys, can move in.

The Stachybotrys mold, also known as the "deadly" mold, are small enough to remain airborne, where they are inhaled into the lungs, weaken the blood vessels, and cause the lungs to bleed. This can be fatal for infants and pregnant women. Coughing up blood and frequent nosebleeds are symptoms of Stachybotrys poisoning. Stachybotrys mold is found in wet areas, such as places affected by leaky pipes, or within or on walls exposed to excessive moisture. It is most commonly found on the paper covering of sheet rock but can also be found on wallpaper, ceiling tiles, paper products, carpets with natural fibers, on wood and on general organic debris. This "deadly" mold is wet, black, and slimy, and it smears when touched. This mold is somewhat unique among fungi in that it produces a powerful toxin – just touching it! can give some people a rash (like poison ivy).

If members of your household are suddenly becoming ill with respiratory-related sicknesses or conditions with unusually high frequencies, you may have a mold problem. Increased asthma and allergy attacks, a mildewy smell, and visible signs of mold are also suspect.

Nine ways to reduce mold and mildew in your home and prevent the growth of future mold are as follows:

1. Clean surfaces where there is mold with bleach. (One cup of bleach to one gallon water.)

2. Fix all sources of leaks.

3. Install air conditioning in your home (dries the air out, making it more difficult for mold to survive).

4. Check houseplant soil; make sure it is not always very damp. Mold loves moist soil.

5. Keep firewood outside.

6. If you have a basement, keep it as dry as possible. An air purifier, not an air filter, will destroy mold with its ion and ozone generator.

7. Clean the bathtub, sink, commode, walls, and shower curtain frequently to ensure that mold and mildew does not accumulate.

8. Clean the bottom of your fridge, and underneath it.

However, if a significant amount of mold already exists in your home, then it will be difficult to remove the airborne mold spores with the methods listed above. These airborne mold spores can continue to reproduce and multiply, unless you have an air purifier capable of effectively neutralizing and removing mold spores from the air, which leads us to the ninth recommendation:

9. Place an air purifier in your home that emits negative ions and ozone (and preferably ultraviolet light).

Ozone and ultraviolet light are particularly effective at destroying mold. Both of these purifying agents microbiologically inactivate (destroy) mold spores. As a result, the mold spores are rendered harmless, since they are no longer allergenic or toxic. In addition, they are no longer able to reproduce, so their numbers begin to diminish quickly. The negative ions will also play a small role in settling mold spores out of the air.

According to a study conducted at the University of Minnesota in 1999, both ozonated air and water inactivated mold, rendering the mold cells harmless. Neutralizing the mold spore is the key, since it is the mold spore that actually cause the health and odor problems associated with mold. HEPA filters are pretty efficient, but some are not very effective at removing mold spores, since most mold spores are too small to be captured by them. Ozone, UV light, and negative ions can neutralize and/or remove particles of a

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A Message from the President

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much smaller size from the air. If the ozone air purifier is placed close to the mold location (at least within a couple of feet), it will have a gradual effect on removing the mold itself.

Some tidbits from other sources:

* ASHRAE (American Society of Heating, Refrigeration and Air Conditioning) reports the ozone will control surface mold on packages and walls, and reduces scale development and decay. They also report "The presence of ozone significantly reduces the occurrence of mold."

* An ultraviolet light, according to a major air purifying company, is a powerful germicide that is particularly effective against molds and other bacterial pollutants.

* Several customers also attest to a noticeable improvement in air quality in their homes after using negative ions and ozone units. They also claimed the moldy smell has disappeared.

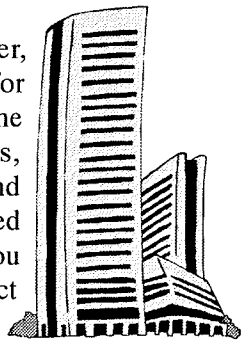
And finally, to get more education on the issue, a free hour-long Mold Session will be held in San Antonio on August 21, see www.moldinspector.com/free_meetings.htm for place and time. Last but certainly not least, talk to your restoration company representative. They deal in dehumidification on a daily basis, and often have excellent seminars and other informative materials available for their customers.

July Luncheon Summary

First on the list of highlights from our July luncheon at the Barn Door has to be the presence of Evelyn, Lynn's assistant! We are delighted that she is back to good health after being severely ill and that she was able to join us for lunch. Another highlight was the excellent presentation by Mr. Robert Gleason, president of Alamo Controls, dealing with building automation on open standards. These systems can be adapted unto other already-existing systems to perform duties like energy management, temperature control, and building safety. Bob kept our attention with a graphics display of what the system actually looks like on a computer and how one would perform certain functions with the system in place. Thank you again, Bob Gleason, for a great presentation!

July Building Tour a Great Success!

The July 11 building tour of Alamo Towers was quite an excellent experience! Danny Gonzalez, chief engineer, started things off with a brief history lesson behind all the building improvements that have taken place. He then led us through the old mechanical equipment room (which we had to squeeze through single file) before taking us over to the new, spacious, state-of-the-art mechanical room. Besides being able to spread out a little bit, we were able to witness first-hand the new boilers, chillers, and automated system there at the new plant, which Brandt Engineering designed and installed. Turn to page 7 to view some before and after photos of the mechanical room.



Veronica Rios, property manager, provided huge Subway sandwiches for all to enjoy after the tour. Among the attendees were building engineers, vendors, several SAABE officers, and one more property manager. Stay tuned for the next exciting building tour. If you are interested in hosting one, contact Lynn Forester.

Tio SAABE Asks...

Question: What is the difference between dry-bulb and wet-bulb temperature?

Answer: Bob Wright of Mechanical Maintenance of Texas replies with this answer:

Dry bulb temperature is that indicated by an ordinary thermometer. The temperature sensitive portion of the thermometer is kept dry so that the reading is not in any way affected by water vapor in the air. Dry-bulb is a measure of the intensity of heat, but not of total heat content in the air.

Wet-bulb temperature is measured by devices such as hygrometers, sling psychrometers, or similar instruments. The bulb of a thermometer is covered by a wick that has been thoroughly wetted with water. Water evaporates from the wick when it is exposed to air flow. The heat required for evaporation comes from the thermometer glass and the surrounding air, causing the temperature to drop and eventually stabilize. The lowest temperature reached by this evaporation process is the wet-bulb temperature. Wet-bulb temperature is a measure of both the sensible and latent heat content of the air.

Ask Tio SAABE

by Tom Lasater

The Fire Drill (Part 2 of 2)

In the last article we covered the plan: reporting, evacuation, organization, and the crawl drill. This article will cover training as required by section 1303 of the Uniform Fire Code adopted by the City of San Antonio. The Code requires that all staff and/or employees be trained, but your building security personnel as well as janitorial and construction personnel are also vital groups to consider. Since most fires don't follow a 9–5 schedule, training must include all 24x7 times and associated personnel. The Code requires that all new employees receive training in the emergency plans and their duties as part of new employee orientation and at least annually thereafter.

Section 1303.5 Employee Duties Assignments and Training of the Code requires "employee familiarization with assigned duties, evacuation routes, areas of refuge, exterior assembly areas, procedures for leading groups or assisting individuals to evacuate." The Manager will assume overall responsibility for the safety of the fire drill and sometimes be required to make duty assignment changes depending upon available personnel. The Building Engineer should be the contact person for the fire department due to his intimate knowledge of the facility such as hazardous material locations, electrical panel locations for shutdown of specific areas, floor designations, and all exit areas. He or she should know the location of cut-off valves (gas, water, and sprinkler).

Other duty responsibilities would be a stairwell coordinator to communicate with disabled persons, control traffic flow, and assure stairwell fan operation for positive static pressure and one person assigned to the assembly area (clear of all fire department equipment) for reporting to the manager a total personnel count. For night and weekend a calling coordinator should be assigned to notify all staff members of the emergency. Finally, a media coordinator is helpful to handle reporters in a calm and professional manner. "It's a really bad mess in there and everybody is totally confused" is a good sound bite but does little for your building's reputation.

Another aspect of training is the location and operation of all fire extinguishers and to know the PASS method of operation –Pull the pin, Aim the nozzle at the base of the fire, Squeeze the trigger, Sweep the fire at its base. Training should include the location of all pull stations at all exits to notify fire control of fires on other floors or areas. Since it's possible for duties of personnel to change or be coordinated

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Heard It Through the Grapevine

- **John Blackledge** is now the SAABE rep for Cummins Southern Plains.
- **J.R. Eniguel** of Wells Fargo Bank has relocated to Denver, Colorado.

Ask Tio SAABE

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with someone else's, it's necessary for each person to know the responsibilities of others and also be familiar with the duties of the floor monitor. The Code requires that all personnel be familiar with fire alarm signals and to know the sequence of events associated with the fire alarm – elevator doors automatically close and go to the ground floor, the emergency generator starts, HVAC air handlers are turned off, etc.

Well, now we are all set for a practice fire drill, but not quite – we need the input of our own fire department. The city web site www.ci.sat.tx.us/safd/ in the section Fire/EMS has a listing of the "code amendments adopted 1999" and in that document (scroll about half way down the page) High Rise Buildings Article 38 lists additional information concerning fire drills. The fire department will review your plan and participate in your original drill to offer suggestions and advice for improvement. An Emergency Manual is also available, which includes procedures for transferring persons who need assistance exiting the building, floor warden duties, and general guidelines. Lt. Machelle Cevallos with the fire education department at 207-7953 or 207-8422 or mcevallos@sanantonio.gov (the new web address) will be able to assist you in obtaining a copy of the Emergency Manual and scheduling assistance for your fire drill.

From a recent fire drill in Cypress Tower, Property Manager Kelly DeFonte' gave us a summary of the outcome of that drill. Once the plan was developed, they held a preliminary fire drill meeting with staff, tenant coordinators, and a representative of the Fire Department Lt. Roger Dominguez. With the Emergency Manual and video from the fire department, the procedures were discussed along with the use of Evacutrack chairs (a stretcher-like device with straps and tractor type wheels for the stairs) to assist handicapped persons. Every tenant was given a diagram of the property showing designated assembly areas to eliminate confusion for this vital personnel accounting phase of the drill. The SAFD had trucks on site and two officers to observe the drill process and conduct a review meeting following the drill. The building's staff surveyed each floor to assure complete evacuation and also reported from the assembly areas with two-way radios before ending the fire drill. The whole process took about 15 minutes due to some tenants wondering the halls or going to the restroom- the very people who might be overcome by heat or smoke in a real fire. Although the drill took longer than scheduled, the safety over speed principle provided a safe evacuation with the secure knowledge that all persons were out and no firefighter would have to put his life on the line to rescue people trapped in a fire.

"Practice makes perfect" surely applies to fire drills and leads to a safe and orderly evacuation when facing the real threat of fire in a high rise building. For practice drills using the building fire alarm system, you can notify your monitoring facility so no alarm will be sent to SAFD. We trust that any building without a fire drill plan will develop and implement one before 2001 comes to close. This year we have already had a transformer fire and laundry room fire which required building evacuation.

Our thanks to the following persons for their contribution to this article:

Kelly DeFonte, Transwestern Commercial Services

Lt. Machelle Cevallos, Education Department SAFD

Tech Talk #51

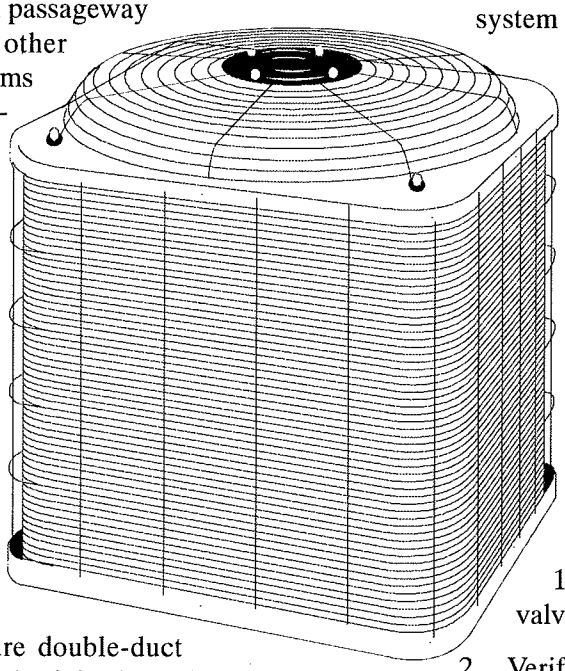
by The Charlie

HVAC Piping & Ducting Systems!

(Part Two of Three)

HVAC Duct Systems

During most hours of operation of an HVAC system, filtered air is mechanically heated or cooled and then blown to the conditioned space through a system of ductwork. The duct system conveys the air needed to heat, ventilate, or cool the conditioned spaces through a passageway made of galvanized sheet metal or other suitable material. Supply duct systems may be single-duct, or dual- or double-duct systems. Return air systems may or may not be ducted. Return systems that are ducted from return air inlets are single ducts.



Single-duct systems are used in low, medium- and high-pressure systems. Supply ducts may end at a "terminal box," where the air volume, and noise level are controlled. Or terminate at an air distribution device such as a diffuser or grille.

Dual- or double-duct supply systems are normally used in medium- and high-pressure systems, although there are some low-pressure double-duct systems. The ducts will end at a terminal-mixing box where the air volume, static pressure, and the noise level are controlled. One of the two ducts (the hot duct) conveys heated air to the terminal box. This air, supplied by the air-handling unit, may be either heated by a coil, or may be warm return air from the conditioned space. The other duct (the cold duct) conveys cold air to the terminal box. This cool air may be either cooled and dehumidified by an evaporator or chilled water coil, or may be cool outside air that has been brought in through the outside air economizer.

HVAC Performance Testing: A Total System Approach

HVAC systems have become very complex and varied over the years, and there is a genuine need to test the performance of these systems to assure that the system will perform according to design and the engineer's design intent. Since a large portion of the total energy consumption of a building comes from the operation of the HVAC system, inefficient systems can significantly increase operating costs. Additionally, providing acceptable indoor air quality and maintaining energy efficiency are equally important components of the HVAC design and operation.

Performance testing of an HVAC system must be a total system approach because each system is a group of interacting components. Each component might work fine alone, but until the system has been performance tested there is no assurance that the entire HVAC system is functioning properly.

Pipes and Pumps

Pumps can be used as flow meters to determine the approximate water flow in the piping system. This test requires the correct pump curve chart and verification of the installed impeller size. Follow these steps:

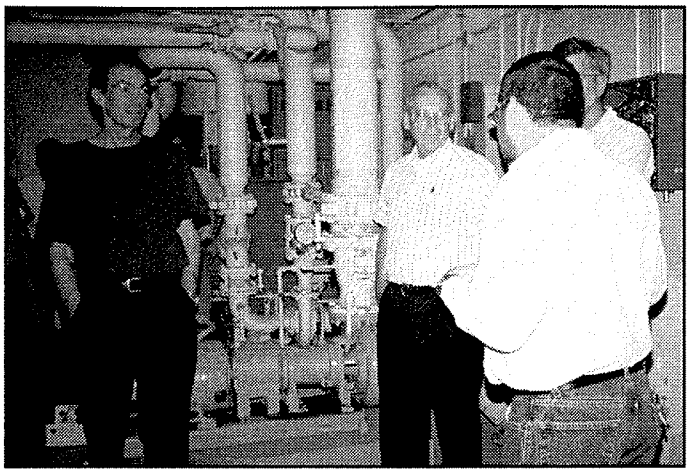
1. Mark the position of the discharge valve.
2. Verify that the suction valve is fully open.
3. Use a bourdon tube test gauge or other appropriate test instrument to read the static pressure (SP) in psig on the suction and discharge sides of the gauge taps (it is recommended to use the same gauge).
4. Calculate the psi rise across the pump by subtracting the suction pressure from the discharge pressure (if the suction is in a vacuum, convert the reading to psig and add the result to the discharge pressure)
5. Multiply the pump rise by 2.31 to get the pump rise in feet of water.

CHARLIE'S LAW: A .44 Magnum beats 4 aces every time!

JUSTA MAINTENANCE MAN

Alamo Towers Mechanical Room

Before...



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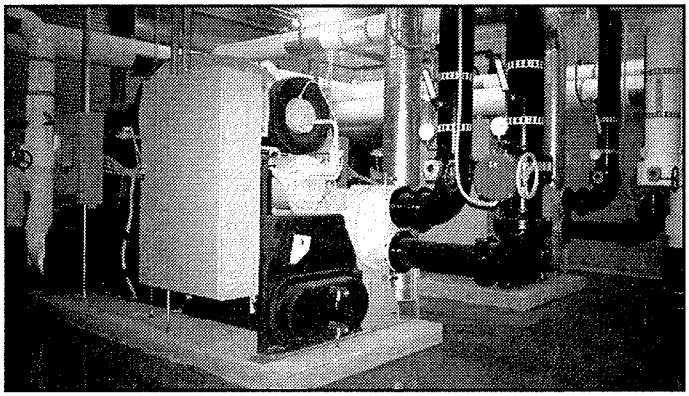

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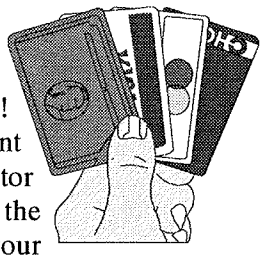
Dimensions	1 Issue	3 Issues	1 Year
Full Page (7.25"w x 9.5"h)	$110	$280	1,000
Half Page (7.25"w x 4.35"h)	60	150	575
Half Page (3.5"h x 9.5"h)	60	150	575
Quarter Page (3.5"x 4.75"h)	30	75	280
Business Card (3.5"w x 2"h)	20	50	190

Send ad copy (camera-ready black and white laser, or black and white velox) and payment to SAABE, P.O. Box 691861, San Antonio, TX 78269.

Common Credit Myths:



1. If you catch up on your late payments, it won't show up on your credit report. False! Each time you make a payment late, you run the risk of the creditor reporting the late payment to the credit bureau. If you catch up, your credit report must show that you are caught up — but it will also show that you were late.

2. If you pay a small amount by the due date, it will be counted as a full payment. False! You must pay the minimum amount required by the due date. Otherwise your creditor may report the payment as late.

3. If you have a good reason for not paying, it will be overlooked. False! Contact the creditor if you experience a crisis, like losing your job or becoming seriously ill. You may receive a grace period or a payment plan from the creditor but never assume such an agreement is automatic.

4. When paid, the bad debt will go away. False! Because credit reports provide a history of your credit, bad debts, charge-offs, and late payments, can stay on your credit report for seven years. You can, however, provide your own explanation of the situation for inclusion in the report received by future creditors.

5. You're not responsible for debts on joint accounts or co-signed accounts if they are not your purchases. False! Any time you are a joint account owner or co-signer, regardless of whether you've paid your share, both parties can be held completely responsible for the payment. The same is true for divorces.

6. You are not allowed to see your credit report. False! You have a right to see what is in your credit report. A copy of your credit report may be free or may cost you a small amount of money.

7. Once you have credit problems, your credit score will not improve for seven years. False! You can improve your credit score over a shorter period of time because recent entries to your credit report carry more weight. So keep working toward better credit! (For more information about CreditSmart, visit www.freddiemac.com/creditsmart)

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SAABE TIMES
August Issue

Final Thought —

"When fortune comes, seize her firmly by the forelock, for, I tell you, she is bald at the back." — Leonardo da Vinci

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Lynn Forester (830) 981-5223
Association Coordinator (lynnfor@mindspring.com)

Membership Luncheon
August 15, 2001

Time: 11:30 a.m.

Location: The Barn Door
8400 N. New Braunfels Ave.

Topic: Houston Flood

Speaker: Tim Young

Sponsor: Munters Corp.

Upcoming Luncheons:

September 19, 2001
Sponsor: SimplexGrinnell

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