

# Austin and San Antonio Chapter of the Association of Energy Engineers

July 2006



Volume 1, Issue 6

## INSIDE THIS ISSUE:

July Field Trip	2
July Featured Technology	2/3
Presentations/Field Trips 2006	4
Chapter / Meeting Information	5
Join Us!	6

## ENERGY INDEX

- 1st Annual Tools and Technology Expo  
hosted by  
Southwest Region Building Commissioning  
Association (BCA)  
Austin, Texas  
October 15-17, 2006  
  
[www.bcxa.org/events/expo.shtm](http://www.bcxa.org/events/expo.shtm)
- Air Quality 2006: Energy Leadership &  
Emissions Reductions Conference  
hosted by  
Texas A&M ESL  
Hilton University of Houston  
Houston, Texas  
October 11-12, 2006  
  
<http://airquality2006.tamu.edu>
- 2006 National Workshop on State Energy  
Building Codes  
Four Points by Sheraton Denver Southeast  
Denver, Colorado  
July 31-August 3, 2006  
  
[www.energycodes.gov/  
news/2006\\_workshop/registration.stm](http://www.energycodes.gov/news/2006_workshop/registration.stm)

## A Note From The President

Greetings once again fellow AEE chapter members and supporters!

I would like to take this opportunity to thank Vince Fuentez of Daikin AC (Americas) for his outstanding presentation on variable refrigerant volume systems. This was a fine example of technology that has been around the world for some time yet is just starting to impact the United States. The unfortunate situation in the Middle East is causing the energy market to become even more volatile. It is important that we do our best to use our resources wisely and to ultimately reduce our dependency on foreign oil.

This month will find us in Selma, Texas at the Munters facility where we will tour the plant, learn about cooling efficiency by reducing latent load and enjoy lunch courtesy of



Munters.

Please check our calendar in this newsletter and/or online. We have filled it with some great topics and field trips. Next month will be the second in back to back field trips. We will be touring the Wide Light Corporation in San Marcos on August 22nd.

Last month's newsletter identified the two candidates that our chapter was supplying to AEE national for consideration in their scholarship program. A big part of the fund raising for this scholarship is through a silent auction which is part of the WEEC conference. For those of you who attended the WEEC's in Austin for the past two

years you may have seen the items up for auction or maybe even bid on an item or two. The conference will be held in Washington, D.C. this year. Local chapter's are asked to provide an item for this very worthwhile cause. If you have any ideas or would like to consider contributing, please contact either myself or any of the board members.

As always I thank our AEE members and supporters for all that you do to make a positive difference. Use our resources wisely and have a great summer!

See you in Selma!

Sincerely,

Frank Thomas, CEM

Chapter President

[frankthomas@nisd.net](mailto:frankthomas@nisd.net)



## July Field Trip Presenter



Humidity Control Unit

*Jacob Burkholder*  
*Regional Sales Manager,*  
*Munters Commercial Dehumidification*

Jacob Burkholder is a Regional Sales Manager/National Accounts Executive with Munters Corporation's Commercial De-

humidification Division. In addition to his regional responsibilities in the South and Western United States, Jacob has national account responsibilities for customers such as Cinemark Theaters and Rite-Aid. Jacob is working to develop a detailed application guide for humidity control in hotels, restaurants, and movie theaters. His previous experience in the HVAC industry includes

time with Air System Components marketing the Tuttle & Bailey brand of air distribution products. He holds a degree in Chemical Engineering from the University of Texas at Austin.

## July Featured Technology

**"Munters is the world's largest manufacturer of desiccant dehumidification equipment"**

### Humidity Control Unit (HCU)

*Reduce Humidity, Save Energy, Help Prevent Mold*

"For most commercial buildings, the key to low-cost and effective humidity control is to dry and humidify the ventilation air before that air can become a load on the other HVAC systems within the

building. When using a dedicated ventilation unit for this purpose, be sure the equipment can remove or add enough moisture to compensate for internal loads as well as the loads from the ventilation air."

*from: [Humidity Control Design Guide](#),*

*ASHRAE, 2001 Chapter 10, page 160.*

Previous approaches to treat make up air have had drawbacks. Traditional direct expansion (DX) air conditioners require the air to be overcooled to lower the humidity. This requires a lot of energy, and makes clients in places like restaurants and theaters uncomfortably cold. Many systems use reheat, which overcools then reheats the air, which is very energy inefficient and adds complexity to the equipment.

Another approach is to use



## July Featured Technology - Continued...

ERVs in addition to DX cooling. This works well at design conditions. But most hours in the year are at off-peak conditions when ERVs do little or no dehumidification.

### The HCU solution

The HCU combines the benefits of desiccant dehumidifiers with the cooling of DX air conditioners to pre-treat make up air before it is brought into a building. The energy required to regenerate the wheel is recycled waste heat from the condensing unit, so the energy consumption is minimal. Compared to a DX unit, the HCU can save up to 40% operating energy cost, because the air doesn't need to be overcooled.

See the psychrometric chart comparison below. DX units cool from point A to B and then reheat to provide air within ASHRAE comfort zone conditions. The HCU only needs to cool from point A to C. The temperature rises as the wheel further dehumidifies, so dry air is discharged at comfort zone conditions without needing reheat.

The energy savings is accomplished by only cooling to point C vs. overcooling to point B. When reheating is used, the DX unit's operating energy cost is even higher.

Typically, DX equipment doesn't run unless there is a call for sensible cooling. In most climates more than half the hours when dehumidification is required there is no sensible load which means the equipment is off and there is no humidity control. The HCU dehumidifies even at these conditions, providing optimal humidity control whenever it's needed.

### Preventing Mold

Mold spores can be found dormant in any building. Once the spores make contact with a surface, they only require three elements to germinate and grow; a food source, suitable temperature and moisture. Molds get their

nutrients from feeding on dead organic matter which can be found in any building. The temperatures that molds thrive in are the same that humans live in as well and therefore impractical to change. The remaining element that can be controlled is the moisture.

When the indoor humidity is elevated, building materials and furnishings absorb that moisture thus providing a place for mold to grow. When the indoor humidity is below 60% RH, those same materials and furnishings will not hold enough water for mold to grow.

### Ideal markets to pre-treat make up air

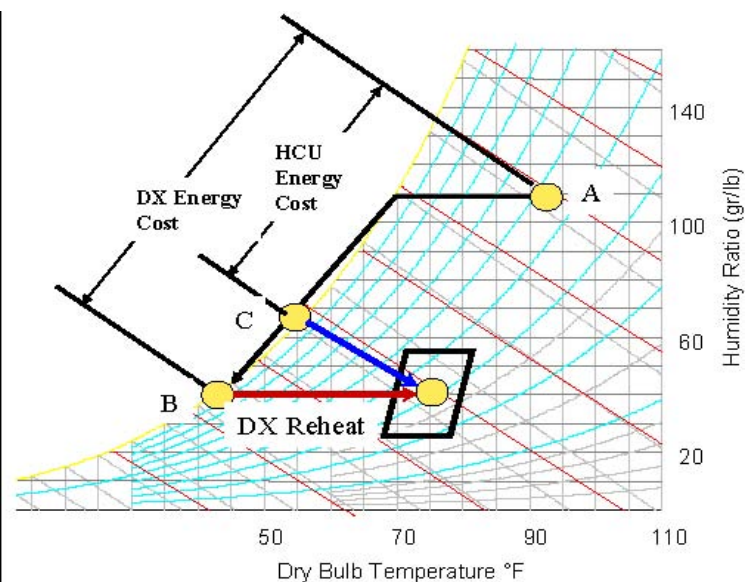
The HCU economically provides cool, dry air without overcooling for many applications including:

- Schools
- Supermarkets
- Convenience stores
- Restaurants
- Hospitals
- Theaters
- Hotels

### HCU Benefits

- The most economical way to treat make up air
- Provides cool dry make up air without overcooling
- Independent temperature & humidity control
- Equally effective at design & off-design conditions
- No reheat required; complies with AHSRAE Standard 90.1
- Lower dewpoint helps eliminate wet floors, saturated duct, mold & mildew.
- Higher COP's: large condenser coil and higher suction temperatures

**Humidity Control Units (HCU) help clients comply with ASHRAE 62-2001 ventilation for acceptable indoor air quality**



## Presentations/Field Trips 2006

The following speakers, presentations, and field trips are scheduled for upcoming meetings:

July: Cooling Efficiency by Reducing Latent Load @ Munters Corp—Lunch Provided

August: Electronic HID Ballasts @ WideLite Corp—Lunch Provided

September: Energy Interactive—Load Profiling

October: CPS Energy Coal Plant Tour

November: Infrared Imaging Solutions

December: End of Year Luncheon/Program

Do you have any ideas for future topics, speakers, or field trips? Please contact Bob Spiegial [Rspiegel@ieee.org](mailto:Rspiegel@ieee.org) or Linda Rickard [Linda.rickard@austinenergy.com](mailto:Linda.rickard@austinenergy.com)

## Understanding Engineers...Take Nine

An engineer was crossing a road one-day when a frog called out to him and said, "If you kiss me, I'll turn into a beautiful princess."

He bent over, picked up the frog and put it in his pocket. The frog spoke up again and said, "If you kiss me and turn me back into a beautiful princess, I will stay with you for one week."

The engineer took the frog out of his pocket, smiled at it and returned it to the pocket. The frog then cried out, "If you kiss me and turn me back into a princess, I'll stay with you and do ANYTHING you want" Again the engineer took the frog out, smiled at it and put it back into his pocket.

Finally, the frog asked, "What is the matter? I've told you I'm a beautiful princess, and that I'll stay with you for a week and do anything you want. Why won't you kiss me?"

The engineer said "Look, I'm an engineer. I don't have time for a girlfriend, but a talking frog, now that's cool."



Newsletter Comments? Contact Bruce Dschuden at [brucedschuden@nisd.net](mailto:brucedschuden@nisd.net)



## 2006 Officers

Frank Thomas	President	<i>frankthomas@nisd.net</i>
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Karma Nilsson	Treasurer	<i>knilsson@cps-satx.com</i>
Sid Rodriguez	Membership (Austin)	<i>isidro.rodriquez2@austinenergy.com</i>
Robert Spiegel	Programs, Webmaster	<i>Rspiegel@ieee.org</i>
Linda Rickard	Programs	<i>linda.rickard@austinenergy.com</i>
Carol Harwell	Communications	<i>Carol.Harwell@austinenergy.com</i>

### Our Mission:

- ◆ Advance the professional careers and the common purposes of its members. Facilitate networking, social exchange and training.
- ◆ Present and discuss energy, environmental topics, and members' ideas. Stay abreast of fast changing developments. Anticipate their future.
- ◆ Disseminate information to the trade and to the general public via meetings, publications, trade shows and presentations.
- ◆ Build an exciting, expanding chapter
- ◆ Cooperate with other AEE chapters and related organizations.
- ◆ Promote energy efficiency.
- ◆ Promote renewable resources

### July Chapter Meeting

July 25, 2006  
 Munters Plant Tour  
 16900 Jordan  
 Selma, TX  
 AEE Contact Bob Nelson  
 Cell 210.508.2434  
[\(map\)](#)





Austin/San Antonio Chapter of the Association of Energy Engineers

<http://www.txaee.org>

**Local Chapter Dues for 2006: \$ 20.00**

Date \_\_\_\_\_

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Business Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Suggested Speaker Topic or Tour: \_\_\_\_\_

*Chapter meetings typically are held the 4<sup>th</sup> Tuesday of each month at 11:30 a.m. Location for the meetings is posted on the Austin/San Antonio AEE Web Site <http://www.txaee.org/calendar.htm>. Look forward to informative, professional, and educational presentations in the energy field, plus field trips to various locations in Austin and San Antonio.*

*For inquiries regarding this invoice please contact Isidro Rodriquez at 512-322-6333 or [isidro.rodriquez@austinenergy.com](mailto:isidro.rodriquez@austinenergy.com)*

**Remit to:** Austin AEE, PMB 287, 815-A Brazos Street, Austin, TX 78701-2509

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