



Giga-Joule

Greenville Chapter

October, 2008

<http://www.ashrae4greenville.com/newsletter.php>

Meeting Announcement

The October meeting will be held on Thursday, October 9th at the Roper Mountain Science Center. The details are listed on the Programs Page. For more information, please contact our Programs Chairman, Davin Sandhu, by phone at 864-234-3819 or, email at programs@ashrae4greenville.com

A Message from the President

What a great start to our year. We had 38 attendees at our first meeting to hear Harry King of James M. Pleasants Co. speak on seismic considerations for inline and base mounted pumps. Harry, I would personally like to thank you for all that you have done for the Greenville Chapter and ASHRAE over the years.



We are going to be using the 5 for 4 meal cards again this year, for every 4 meetings you attend, you will get a free 5th meal. Please see Dorothy when you sign in and ask her about the meal cards. We are going to start something new in January; the rates for the lunches are going to change. If you are a chapter member, the rate will remain the same at \$10. If you are a non-chapter member, the rate will be \$15. There is a box on the ASHRAE renewal form that you need to check to pay the local chapter dues of \$25. If you are not a chapter member, you can join for \$25 and get your lunch for that meeting free. What does the \$25 go to you ask? The chapter has expenses that we have to pay for, i.e. food for Board of Governor's meetings that are held monthly, any honorariums and travel expenses by the speakers and making a donation to the Roper Mountain Science Center for the Science Expo Award that we sponsor. So please join the chapter and help us offset the expenses. Besides, 9 PDH's for \$25 is not a bad deal either.

I look forward to seeing all of you next week for our October meeting. If you have any comments or suggestions, please feel free to contact me.

Best regards,

Will Thomason
Greenville ASHRAE President
president@ashrae4greenville.com

Chapter Programs



Davin Sandhu
Programs Chairman
programs@ashrae4greenville.com

We have all the dates set for the events but do not have any speakers for our May or June meetings. If you have any ideas on topics or know of anyone that would like to speak please let me know. I am trying to get another Distinguished Lecturer into our schedule.

Please notice that our February meeting has changed from a Thursday to a Wednesday of the Second Week. This is to cater to our Distinguished Lecturer, Essam Eldin Khalil, Ph.D., that will be coming all the way from Cairo, Egypt. The format of this meeting will be a one hour lecture as typically done for lunch. We will then continue into a 3 hour seminar for those of you that would like to hear more and gain potentially 4 total PDH points. The cost of the dinner session will be the same with the seminar running

The Programs Committee is continually brainstorming for future program ideas. The spring schedule still has some open dates available.

- Has a recent magazine article piqued your curiosity on a new technology or application?
- Do you have a need for specific training?
- Would you like a full or half day seminar on a technical issue?

I would really like to hear your suggestions and extend the offer to join the Programs Committee. Besides proposing meeting subject matter, committee members receive the opportunity to review the suggestions of others and vote on which topics are selected. This is a great way for you to make yourself heard.

October Meeting

Program: 100% DX-DOAS Control Strategy

Jeffrey Hughes will discuss parallel HVAC design with a DX-DOAS integration and its control strategy to achieve the lowest building capital and operating cost. A DOAS can reduce the supply air to eliminate all outside air moisture plus be dry enough to absorb the building's internal moisture loads. Incorporating a DOAS system within a parallel HVAC design allows the engineer to provide the by-products of the DOAS: free heating and cooling.

DX-DOAS compressor control strategies will be explored. The question, "When is a compressor(s) energized and/or staged to minimize operation cost while still controlling humidity?" will be addressed. When utilizing the DX-DOAS by-products, the system must include a leaving air temperature control strategy allowing the offset of building loads with the free by-products while preventing overheating and sub cooling of the building's spaces.

In addition, a discussion on night setback and CO₂ control strategies will be presented. Night setback will discuss an energy saving mode with unoccupied building humidity controlled. Plus, we will explore a simplified CO₂ control strategy for demand control ventilation.

Presenter: Jeffrey Hughes

Jeffrey Hughes is the Mid Atlantic Regional Sales Manager for Desert Aire Corp. He graduated from the University of Maryland, Baltimore County with a B.S. in Mechanical Engineering. That same year he earned his EIT certification and is now applying for his PE license. Jeff has been working in the HVAC industry since 1986 in many different capacities: service technician, air balancing and testing, mechanical engineering consultant and now manufacturing. For the past 7 years Jeff has focused on specialty refrigeration system design for Indoor Pools Dehumidification and 100% Outside Air Units. He is also an active member of the Baltimore ASHRAE chapter and has worked with their Student Challenge Program for Local High Schools for 3-Consecutive years.

Location: Roper Mountain Science Center (www.ropermountain.org)

Date: Thursday, October 9, 2008

Time: 11:30 a.m. Doors Open
11:35 a.m. Lunch Served
11:45 a.m. to 12:00 p.m. Chapter Business
12:00 a.m. to 1:00 p.m. Main Program

Cost: \$10/person (includes a catered lunch) Guests are welcome!

Education Credit: This program qualifies for 1.0 PDH (including NC PE)

***Please RSVP to programs@ashrae4greenville.com
no later than Noon Tuesday, October 7, 2008***

Membership Corner

Membership in ASHRAE – the American Society of Heating, Refrigerating and Air-Conditioning Engineers – is open to any person associated with heating, ventilation, air conditioning or refrigeration through such disciplines as indoor air quality and energy conservation, for example. Membership in ASHRAE allows access to state-of-the-art HVAC&R technology and provides many opportunities to participate in the development of that technology.

Mark your calendars for Membership Promotion Meeting – November 13, 2008 11:30 at Roper Mountain Science Center

Calling all ASHRAE Members! Invite new potential Non-Members and don't forget about those Young Engineers – ASHRAE offers a special membership for engineers currently under the age of 35 to get involved...these are our future leaders. Please encourage their participation. More details will follow in the November issue of the GigaJoule.

For the membership promotion meeting, members will enjoy a free lunch with their guest's completed ASHRAE Membership form ~ of course your guest will eat free as well.



Chapter Technology Transfer

Return Air Path and Undercut Doors

While working on a design for some high end condominiums I stumbled across a 2003 requirement in the Florida building code. The requirement is as follows:

Provisions shall be made in both residential and commercial buildings to avoid unbalanced air flows and pressure differentials caused by restricted return air. Pressure differentials across closed doors where returns are centrally located shall be limited to 0.01" w.g. or less.



Devon Cortright PE
Chapter Technology
Transfer Chairman
ctt@ashrae4greenville.com

Although the Florida Code does not apply to my South Carolina project, the concept and concern is none the less valid. Undercut doors are the traditional means of providing an air path to the centrally located return in residential applications and some light commercial applications. A door undercut 1" may good for 80 to 100 cfm at .01" w.g. differential. A closed door that restricts the air path can generate pressure differences of .03" w.g. per a US Department of Energy study. These differences exacerbate infiltration with air leaking out of the building envelope in the pressurized area and into the building where the central return is located. Uncontrolled infiltration appears to be a significant factor in mold growth.

I am not aware of any attempts to include this requirement in the International Code, but I am revising some of my designs to provide a better return air path.

Research Promotion

Thanks again to all who donated in the '07-'08 RP campaign. We raised as much as a chapter as we have in many years, over \$7,000, and as a Region we exceeded our goal set forth by ASHRAE. All those who earned coins or plaques will be receiving them directly in the mail. I'd like to thank all donors of \$500 or more from last year:

Johnson Controls
Wade Crow Engineering
Will Thomason
Trane
Bill Knight
L.R. Gorrell Company
McGill Airflow Corporation



Brian Alexy
Research Chairman
rp@ashrae4greenville.com

Please encourage all of your employees, customers, vendors, co-workers, and anyone else to support the golf tournament on October 23rd at Verdae Greens by either participating in it or sponsoring a hole. Please refer to the golf tournament flyer for available sponsorship packages. Teams should register by Friday October 17th, but are encouraged to sign up ASAP!!!

Student Activities

ASHRAE is now accepting applications for undergraduate projects! ASHRAE provides grants to engineering, technical and architectural schools with the goal of increasing student knowledge, learning and awareness of the HVAC&R industry through the design and construction of senior projects.



Hamp Crow
Student Activities
Chairman
sa@ashrae4greenville.com

The grant application must be submitted by the faculty member(s) responsible for the project. The application may be made from any engineering, architecture, or engineering technology department; however, the project must involve an ASHRAE-related topic. The grant is made to the university/college solely for the support of the materials required for the project in an amount not to exceed \$5,000 (U.S.). The complete electronic submission must be received at ASHRAE Headquarters by December 15, 2008. Late or incomplete entries will not be accepted. For more information and to apply, visit <http://www.ashrae.org/students/page/743>.

ASHRAE also has other scholarships available for undergraduates, graduates, and engineering technology students. The deadline for four-year college applications is December 1st. The deadline for technical college applications is May 1st. See <http://www.ashrae.org/students/page/1271> for more information.

UPCOMING NATIONAL EVENT

ASHRAE Returns to Chicago for Winter Conference and AHR EXPO



Chicago, with one of the most recognizable skylines in the United States, has long-standing status as a livable urban center. That the city has stood the test of time makes it the perfect backdrop for this year's ASHRAE Winter Conference theme: Sustainable Urban Design: Engineering Tomorrow...Today.

The Palmer House Hilton will once again host ASHRAE January 24 – 28, with the ASHRAE co-sponsored AHR Expo taking place Jan. 26-28 at McCormick Place. The conference promises to be a great way to kick off the new year, with opportunities to interact with colleagues, learn technical information, and hear Keynote Speaker Chris Luebke of Arup speak on sustainability and thoughtful design and Technical Plenary speaker Adrian Bejan, Ph.D., explain technical evolution through “constructal theory” which he says can predict how everything flows through time and space.

The technical program highlights the conference theme and will feature presentations on energy conservation, indoor environmental quality, sustainability efforts and more that will help you earn your PDHs. Seeking to create additional value for Expo and Conference attendees, ASHRAE is launching “Wednesday Welcome,” at which all ASHRAE technical program sessions on Jan. 28 take place at McCormick Place. The “Wednesday Welcome” includes 18 hands-on, applications-type programs, held from 9 a.m. to 1:30 p.m., leaving the afternoon open to tour the Expo with more than 1,850 exhibits covering a world of equipment, systems, components and technology for the building industry. Admission to the “Wednesday Welcome” is included with your full ASHRAE Winter Conference registration or you can purchase a ticket for the full day for \$99.

You can also earn PDHs and CEUs at Professional Development Seminars and Short Courses brought to you by the ASHRAE Learning Institute.

Networking opportunities and chances to see Chicago are plentiful at the ASHRAE Winter Conference. Meet with old friends at the Welcome Party, Presidents Luncheon and Member's Night Out. Technical tours of the city take you to the Intercontinental Hotel and The Art Institute of Chicago and you can see mansions and temples of the city, or take a cooking class on one of the general tours.

For complete, updated information and to register for the ASHRAE Winter Conference, go online to www.ashrae.org/chicago. Visit www.ahrexpo.com to learn more about the AHR EXPO.

Tentative Event Dates for 2008-2009

Thursday 09/11/2008	Seismic design of pumps	Harry King James M. Pleasants
Thursday 10/09/2008	100 % DX-DOAS Control Strategy	Jeffery Hughes Desert Aire Corp.
Thursday 10/23/2008	Fall Golf Tournament	Verdae Greens Golf Club
Thursday 11/13/2008	Mediation and Arbitration	Skip Lewis H2L Consulting Engineers
Thursday 12/11/2008	LEED presentation at QS/1 – LEED Silver Building	Lee Chapman Devita Engineering
Thursday 01/08/2009	Pressure Independent Control Valves – Why you need them	Chris Edmondson
Wednesday 02/11/2009	Issues for International Collaboration OR Air Flow, Thermal and Humidity Patterns in Ventilated Archaeological Tombs, Valley of the Kings, Luxor	Cairo Distinguished Lecturer (DL) Essam Eldin Khalil, Ph.D
Tuesday 03/10/2008	Joint meeting with Mechanical Contractors Association (MCA)	
Thursday 03/12/2008	Field Erected Cooling Towers	Frank Bowman CCS
Thursday 04/16/2009	TBD	
Wednesday 04/22/2009	Satellite Broadcast: Indoor Air Quality	
Thursday 05/14/2009	TBD	



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Region IV
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