

APRIL
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“THE GEE CHEE”

CHARTERED APRIL 14, 1971

THE OFFICIAL PUBLICATION OF THE REGION 4 CHARLESTON CHAPTER 113
AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS, INC.

Happy 40th Anniversary ASHRAE Charleston Chapter!



MEETING SCHEDULE APRIL 12, 2011

**LOCATION: NORTH CHARLESTON
RADISSON HOTEL**

B.O.G MEETING: 5:00-5:30PM

“HAPPY HALF HOUR”: 5:30-6:00PM

TECH PROGRAM: 7:00-8:00PM

8:01.....SEE YOU NEXT MONTH!

COST: \$25 / PERSON + \$5 OPEN BAR

**THIS MONTH'S PRESENTATION BY:
JIM TUTEN**

**TOPIC:
The Clemson Wind Turbine Project**

This Month's Articles:

- President's Message
- Monthly Topic and Speaker
- The CTT Corner
- Your Chapter History
- Member News
- Sponsorships and Investors
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President's Message

Happy 40th Anniversary to our Chapter!

April 14, the Charleston Chapter will be 40 years old. To think that our chapter has made it through the ups and downs of the last 40 years is truly amazing. This is a great accomplishment and something that we all should celebrate. Please see details within the newsletter for a special anniversary party to be held in June. Thank You to everyone that has helped the Chapter throughout the years.

The March lunch meeting was a huge success and I would like to thank everyone who attended. Seth Spangler provided a very interesting and informative presentation on Building Energy Modeling. Thank You to RMF Engineering for their meeting sponsorship.

This month we will be back at our normal location at the Radisson on Tuesday April 12, starting at 5:30 pm. The speaker for this month will be Jim Tuten with Clemson University who will be talking to our chapter about the Clemson Wind Turbine project. This should be a very interesting presentation and something that should not be missed. Please extend the invite to anyone that you feel would be interested.

We still have one meeting and one final social left for this ASHRAE year and sponsorship opportunities are still available for both. Please contact Eric Crawford for details.

We look forward to seeing you all on Tuesday evening.

Thanks to all the supporting members and companies, without you, the Charleston Chapter would have never made 40 years old!

Sincerely,

Brian Keiser, LEED AP
Charleston Chapter President

“ The Gee Chee”

Monthly Topic and Speaker

This month's topic is "*The Clemson Wind Turbine Project*"



Jim Tuten

This month's speaker is:

Jim Tuten

*Project Manager - Wind Turbine Drive Train Test Facility
Clemson University – Restoration Institute*

Mr. Tuten has over 33 years of experience and accomplishment in the development and application of advanced technology. He has been involved in a diverse range of industries and projects over his career as a hands-on researcher, project leader, and manager with a strong focus on analysis and problem solving.

Jim will be presenting on the \$98 million project to build and operate a wind-turbine drive-train testing facility could be the catalyst for making the Clemson University Restoration Institute (CURI) in North Charleston the university's "energy campus."

Jump-started by a \$45 million U.S. Department of Energy grant to Clemson and its partners, the facility could propel South Carolina into a leadership role in the wind-energy economy and serve as a job magnet for the Lowcountry. Already, German-based company IMO Group, a manufacturer of parts used in wind turbines, among other applications, has announced the selection of Charleston region for its first U.S. facility, which ultimately will employ 190 workers and generate \$47 million in capital investment. Company officials acknowledged that the Clemson project reaffirmed IMO's decision to locate in the Charleston region.

But long-range plans go well beyond the testing facility, which will anchor a proposed international center for wind-energy systems, currently in development. Clemson officials envision that CURI could become to energy what the Clemson University International Center for Automotive Research in Greenville is to automotive engineering — a hub for research, graduate education and industry partnerships.

According to John Kelly, vice president for public service and agriculture and CURI director, "A number of strong research niches with potential for supporting a green economy have emerged from the sustainable environment emphasis area centered at CURI, including renewable energy, water resource protection and management and marine conservation."

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The CTT Corner

Submission of projects for technical award is highly encouraged. Project submittals for chapter technical award will be due by April 15. If you have any questions you can contact me at gene_brown_jr@yahoo.com.

Also, I am looking for someone who can help judge the entries. Contact me if you would like to get involved in this.

In March our meeting was held at The Pointe Grill at Patriots Point. This was a lunchtime meeting and we had a good turnout. Seth Spangler gave an outstanding presentation on energy modeling. The program makes individual calculations for the 8760 hours in the year.

Appendix G of ASHRAE 90.1 includes comparison of buildings. This appendix addresses the effect of various enhancements as compared with minimally acceptable buildings.

LEED requires 10% over the baseline building.

Comfortable workers are more productive.

To do building modeling it is necessary to know software and codes.

The entire design team should work together for building modeling.

Seth uses programs by E-Quest. Other modeling programs are available.

DOE 2.2 is the current editor for building modeling.

E-Quest is freeware furnished by California utility companies and others.

Programs include HAP (Carrier), TRACE (Trane), Energy Plus, Apache and Ecotech (Autodesk). There are 392 available programs.

No one program can do everything. E-Quest can't model variable refrigerant flow.

Weather data is required for modeling. The current data is TMY3. (Typical Meteorological Year). There are 1020 stations which collect the data.

The 40% fenestration is allowed for vertical surfaces. The maximum allowed for skylighting is 5%.

Process load: the minimum is 25% of the total load. This includes copiers, computers, communication, coffeemakers etc.

Outside air remains the same for the baseline building vs the building being modeled.

Modeling considers energy rate structure including demand charge.

E-Quest can import a 2D CAD file and expand it into a 3D file.

The CTT Corner (continued)

Modeling determines the type of system. (Rooftop units, VAV, or other)

Baseline does not require an economizer.

Modeling is available with desiccant or refrigerant cycle preconditioner.

It is possible to input data for cooling tower, boiler, and all components. These could be left blank and the program will size the equipment for you.

The results include energy demand, energy usage and dollar operating cost for one system vs another.

The program develops an amazing amount of info.

Energy modeling pays back in a few months time.

Optimal glazing is 20-40% but the fad is to put in as much as possible.

Steps: get climate data; usage of building; determine program requirements of owner; set goals; develop concept and do a model.

Common mistakes include: modeling after design; taking ASHRAE 90.1 and just adding insulation; using 90.1 with no improvement and energy inefficient design.

District energy systems are more efficient than stand-alone bldgs.

The baseline building is a 90.1 bldg which matches the structure you are designing.

It is realistic to get 30% improvement over 90.1-2004.

Some members questioned the requirement by the Corps of Engineers that design exceed 90.1-2007 by 40%. Doubt was expressed that this could be achieved or that the COE would relax the requirement.

Randy Jones is the Director and Regional Chair (DRC) for region IV. He is also on the board for ASHRAE at society level. Randy made a few comments.

ASHRAE has a one-half million to one-million dollar project to get data for 16 building types so that there will be targets for energy use.

ASHRAE 62 and 189 are continuously updated.

By 2020 or 2030 it is hoped that net-zero buildings will be the standard.

“ The Gee Chee”

Your Chapter History

Happy 40th Anniversary ASHRAE Charleston Chapter!



*On April 14, 2011, the Charleston Chapter will be 40 years old **to the day!** Our Chapter was chartered April 14, 1971. A special anniversary party will be held either on June 14 or 17, 2011 at our June meeting. Specific information on this event will be sent in the near future. A brief history of your Chapter follows with a listing of those members who gave us a start and have served well. Congratulations!*

History of the Charleston Chapter of ASHRAE

On September 10, 1894 the American Society of Heating and Ventilating Engineers (ASHVE) was established. On December 5, 1904 the American Society of Refrigeration Engineers (ASRE) was founded. In 1906 the term "Air Condition" was coined by a North Carolinian - Stuart Cramer. On January 29, 1959 ASRE and ASHAE merged to form the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).

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Your Chapter History (continued)

The Charleston Chapter of ASHRE was chartered on April 14, 1971. Thirty – six members petitioned Society at that time to establish the Chapter. The current Charleston Chapter grew from the division of the South Carolina Chapter in Columbia SC and the Savannah Chapter in Savannah GA (now disestablished). Thirty – six members petitioned Society at that time. Of those charter members, F.A. Bailey III ('71), Clyde Poplin ('72), Tom Saunders ('73), Ivan Valdes ('74), Furman Cullum ('75), Bob Townsend ('76) and Mel Bundy ('79) served as Presidents of the Chapter. As of 2006, four charter members frequented meetings – Furman Cullum, Bob Townsend, George Rast, and Mel Bundy. Sadly four charter members have passed, F. A. Bailey III, Clyde Poplin, Jack Clayton, and Charles Hipp, II. As recently as 2003, a third generation member, Charles Hipp III, served as President.

The Charleston Chapter has Charleston, SC (Charleston County) as its headquarters and encompasses the Low Country from the North Carolina/South Carolina line to and including Savannah, GA. The Chapter nick name is the “Gee Chee” Chapter – a local pre-Civil War Gullah term.

Charleston Chapter has had the fortune to charter two sections and two student chapters, all currently active. The Student Chapter at the Savannah School of Art and Design, Savannah, GA, was chartered in 2003. The Student Chapter at College of Charleston, Charleston SC, was chartered in 1993. The Myrtle Beach Section of ASHRAE, Myrtle Beach, SC, was chartered April 8, 1997. The Savannah Section of ASHRAE, Savannah GA, was chartered April 7, 1995.

A gala 25th anniversary celebration of the Charleston Chapter was held April 8, 1997 on the deck of the U.S. Navy Aircraft Carrier, the U.S.S. Yorktown. Our chapter will celebrate its 40th anniversary on April 14, 2011 at a festive party in a lovely home on the Charleston Battery. The Chapter has maintained a "historian archive" since 1971 and at present it remains with the Historian.

ASHRAE's success as the world's leader in the HVAC & R industry is the direct result of leadership, continued involvement, unselfish volunteerism, and the dedication of the society's membership including our Charleston Chapter.

“ The Gee Chee”

Member News

If you have recently moved to the Charleston area and wish to transfer your membership, please contact our Membership Chair, **Philip Runyon**, or make the change online at www.ashrae.org.

Sponsorships and Investors

2010-2011 ASHRAE Research Investors

Gold

Chapman Company
Triad Mechanical Contractors
Thermal Resource Sales
Liollo Architecture

The Wall of Honor

Individual Donations of \$100.00 or More

**Randy Jones
Dennis Knight
Pete Conroy
Steve Marek
Eric Crawford
Pam Phillips
Brian Keiser
Clarence Ham
Mike Cladakis**

Much of ASHRAE Research funding comes in through individual donations, so, please give.

CAN WE PUT YOUR NAME HERE?

ASHRAE CHAPTER MEETINGS

January Meeting

Tuesday January 11, 2011

Location: North Charleston Radisson Hotel

Speaker: Kent Maune

February Meeting

National Engineers Week

Tuesday February 8, 2011

Location: Citadel Alumni House

Speaker: TBD

March Meeting

Tuesday March 8, 2011

Location: Shriners at Patriots Point

Speaker: Seth Spangler

April Meeting

History Night

Tuesday April 12, 2011

Location: North Charleston Radisson Hotel

Speaker: Jim Tuten

May Meeting

Tuesday May 10, 2011

Location: North Charleston Radisson Hotel

Speaker: Tom Lawrence

June Meeting

Chapter Social

Tuesday June 14, 2011

Location: TBD

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GET INVOLVED

CONTACT ONE OF OUR COMMITTEE CHAIRS TO SEE HOW YOU CAN MAKE A DIFFERENCE

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