



# *Giga-Joule*

**November 2015**

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

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## *Meeting Announcement*

The October meeting will be held on **Tuesday, November 10, 2015** at M.T. Anderson Support Center. For more information, please contact our Secretary, Melissa Angulo, at [secretary@ashrae4greenville.com](mailto:secretary@ashrae4greenville.com).

## *Membership Promotion*

BRING A PROSPECTIVE MEMBER, TAKE HOME A GIFT CARD! For the meeting in Asheville on Wednesday, November 11, bring a prospect to the meeting, and take home a \$25 American Express Gift Card.



*Kevin Brock*  
*Membership Chairman, Greenville Chapter, ASHRAE Region IV*  
[Kevin.Brock@dnvgl.com](mailto:Kevin.Brock@dnvgl.com)

## *Chapter Meeting in ASHEVILLE:*

We will have a meeting in Asheville on Wednesday, November 11 at the Lenoir-Rhyne University Asheville Graduate Center. The Center is located on the 3rd floor of the Asheville Chamber of Commerce building at 36 Montford Ave., just off I-40. We will start serving lunch at noon, with a technical program on Condensing Boiler Applications and Venting by Kevin Smith

Price for lunch:

\$13 in advance \$15 at door for chapter member (catered lunch)

\$20 for non-chapter member (catered lunch)

**Please RSVP by going to the following link**

<http://goo.gl/forms/noLsvRS1yI>

**No later than end of day Monday, November 09, 2015**

If you have any questions, contact Kevin Brock at 828-772-6956 or [kevin.brock@dnvgl.com](mailto:kevin.brock@dnvgl.com).

# *Chapter Board of Governor special message*

## The "New-Old" HVAC Design Challenges

Part 1. About 15 years ago, I faced a string of new design challenges when the increase in code required outside air ventilation intersected with reduced energy requirements. With the drop in cooling loads and the increase in required dehumidification caused by the additional outside air, the design effort went up. Since the majority of my design work then, like now, was in the application of rooftop DX equipment, this was a challenge. I adapted, adjusted, and moved on. (Those of you who know me also know that I "complained" bitterly about the contradictory requirements.)

Part 2. Today, the code demands for outside air ventilation have gone down a little, but other issues bring us back to yesteryear. A recent retail space design was based on typical lighting loads and was well underway when the electrical engineer provided information on the LED lights to be installed. In this case, the price difference between LEDs and fluorescents made the LEDs cost competitive. I reworked the loads with less lighting energy. The result was a drop in equipment size and an increase in space humidity levels. Different project - an office building design with a similar story on LED lighting, and the building is well insulated. The calculated airflow to the space is around 0.5 cfm/square foot. From my experience, this is low and requires some careful thought on air distribution.

Thankfully, there are some solutions available today that weren't around when I was dealing with the challenges of Part 1.

- High efficiency DX equipment will operate on lower airflow per ton providing better dehumidification, but the resulting low supply air temperature may cause duct condensation issues.
- A number of manufacturers are offering products and calculation techniques that make the ASHRAE 62.1 IAQ method of outside air delivery a relatively easy task. This will allow one to reduce the outside air load.
- Hot gas reheat is an option available on many package DX units. This is an effective efficient means of controlling humidity via "free" reheat. The tradeoff - higher first cost, and higher equipment complexity.
- CO2 modulation of outside air is now required for high occupancy spaces. In Part 1 it was just about discouraged.
- In addition, the restrictions on the use of electric reheat or "new energy" for humidity control appears to have been relaxed in the 2009 International Energy Conservation Code as compared to earlier codes.

As the industry and building codes continue to push us towards lower energy use the sensible cooling requirements in buildings will continue to drop making humidity control even more difficult.

Thank you,

*Devon Cortright  
VP of Mechanical Engineering  
H2L Consulting Engineers Inc.  
gov6@ashrae4greenville.com*

*In efforts to keep you updated, visit us at:*

WEBSITE: [www.ashrae4greenville.com](http://www.ashrae4greenville.com)

LINKEDIN: [https://www.linkedin.com/groups?home=&gid=8154388&trk=anet\\_ug\\_hm](https://www.linkedin.com/groups?home=&gid=8154388&trk=anet_ug_hm)

EVENTCALENDAR: View ASHRAE Greenville Chapter Meetings calendar



**Faulkner / Haynes & Associates, Inc.**  
The Carolinas' Premier Commercial HVAC and Power Quality Reps

# November Meeting

**Presenter:** Raymond Patenaude

Raymond E. Patenaude, PE, CMA, CIAQP, CEM, RPIH, Principal Engineer for the Holmes Engineering Group LLC, is a registered Professional Engineer specializing in HVAC systems, moisture intrusion into buildings, and microbial contamination of building environments. He has been a Consulting Engineer for over thirty-eight years involved with the analysis, design and construction of building HVAC systems. As a recognized expert in his field, Mr. Patenaude, provides professional consultation and investigation in building science including: cause and origin of construction defects; building envelope assessments; HVAC failure causation analysis; energy analysis; moisture intrusion; mold growth investigations; and remediation management. Mr. Patenaude is a former ASHRAE Vice President, DRC for Region XII and Chair of TC 1.12, Moisture Management in Buildings. In addition he was the Chair of the Project Monitoring Sub-Committee for the new "ASHRAE Guide for Buildings in Hot and Humid Climates". Currently Mr. Patenaude serves ASHRAE as a member of Standard 100, "Energy Conservation in Existing Buildings" and TC 1.12, "Moisture Management in Buildings". In addition, Mr. Patenaude is also a member of the National Society of Professional Engineers, the Florida Engineering Society, the National Academy of Forensic Engineers, the National Academy of Building Inspection Engineers, the National Institute of Building Sciences, Association of Professional Industrial Hygienists, the American Conference of Governmental Industrial Hygienists, American Industrial Hygiene Association and Chairman of the Board of the Certified Indoor Air Quality Professionals.

## **LECTURE TOPIC:**

### **Fundamentals of Building Envelopes and Humidity Control in Hot & Humid Climates**

Designing buildings in hot & humid climates requires the integration of techniques found in the ASHRAE Guide for Buildings in Hot and Humid Climates and the ASHRAE Humidity Control Design Guide. Mr. Patenaude, P.E. will provide a presentation on the fundamentals of building envelopes in hot and humid climates, estimating dehumidification loads, control of outdoor ventilation air with the use of dedicated outdoor air systems and building air pressurization. These techniques are the main cause for concern for HVAC Engineers and comprise most building failures in hot and humid areas.

**Programs:** Fundamentals of Building Envelopes and Humidity Control in Hot & Humid Climates – 1 PDH

**Location:** M.T. Anderson Support Center  
100 Blassingame Road  
Greenville, SC 29605

**Date:** Tuesday, November 11, 2014

**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 p.m. to 1:00 p.m. Program

**Cost:** Lunch Program: \$13 in advance \$15 at door for chapter member (catered lunch)  
\$20 for non-chapter member (catered lunch)

**Education Credit:** The Technical Programs qualify for 1.0 PDH (including NC PE) for each program attended.

**Please RSVP by going to the following link**

<http://goo.gl/forms/aY135vJHvH>

**No later than Noon Monday, November 09, 2015**

# ASHRAE Greenville Chapter Board 2015-2016 Committee

Chapter President	Tigue Garick
Chapter President Elect	Rodney Hinton
Chapter Vice President	Myrna Dayan Daniel Lowe
Chapter Secretary	Melissa Angulo
Chapter Treasurer	Jeff B Beard
Chapter Board of Governors	Devon Cortright
Chapter Board of Governors	Karl Counts
Chapter Board of Governors	Bill Knight
Chapter Board of Governors	Carol Suttles
Chapter Board of Governors	Brandt H Williams
Chapter Board of Governors	Rodney Hinton
Chapter Technology Transfer Chair	Dorothy Bertolini
Chapter Membership Promotion Chair	Kevin Brock
Chapter Research Promotion Chair	Jeremy Butdorf
Chapter Student Activities Chair	Daniel Lowe & Ryan Tonnsen
Chapter Grassroots Government Activities Chair	Bill Knight
Chapter Historian	Daniel Lowe
Chapter Honors and Awards	Devon D Cortright
Chapter Webmaster	Karl F Counts
YEA CHAIR	Jeremy Butdorf

## Meeting Dates for 2015-2016

Tuesday 09/08/2015	ASHRAE Standard 62.1-2010, IAQ Procedure	Greenville, SC	Presenter: Charlie Waddell, Global Plasma Systems
Tuesday 10/13/2015	Condensing Boiler Applications & Venting	Greenville, SC	Presenter: Kevin Smith
Wednesday 10/14/2015	Condensing Boiler Applications & Venting	Asheville, NC	Presenter: Kevin Smith
<b>Tuesday 11/10/2015</b>	<b>Fundamentals of Building Envelopes in Hot &amp; Humid Climates</b>	<b>Greenville, SC</b>	<b>Presenter: Ray Patenaude, PE, CMA, CIAQP, CEM, RPIH ASHRAE Distinguished Lecturer</b>
<b>Wednesday 11/11/2015</b>	<b>Fundamentals of Building Envelopes in Hot &amp; Humid Climates</b>	<b>Asheville, NC</b>	<b>Presenter: Ray Patenaude, PE, CMA, CIAQP, CEM, RPIH ASHRAE Distinguished Lecturer</b>
Tuesday 12/15/2015	Modern Pump Selection	Greenville, SC	Presenter: Chris Edmondson ASHRAE Distinguished Lecturer
Tuesday 12/16/2015	Modern Pump Selection	Asheville, NC	Presenter: Chris Edmondson ASHRAE Distinguished Lecturer
Tuesday 01/12/2016	Permanent Magnet Motors	Greenville, SC	Presenter: Andrew T. Holden, PE
Tuesday 02/9/2016	DOE Recommended Details for Chiller Plant Optimization	Greenville, SC	Presenter: David Pleasants, PES
Tuesday 03/8/2016	HVAC Systems for Pharmo/Bio Facilities	Greenville, SC	Presenter: Manuel A. del Valle
Tuesday 04/12/2016	Commissioning of the Built Environment - Principles, Process, Procedures, and the	Greenville, SC	Presenter: Ross Montgomery, PE,CXA,CPMP,BEAP, BEMP ASHRAE Distinguished Lecturer
Wednesday 04/13/2016	Commissioning of the Built Environment - Principles, Process, Procedures, and the	Asheville, NC	Presenter: Ross Montgomery, PE,CXA,CPMP,BEAP, BEMP ASHRAE Distinguished Lecturer
Monday 04/18/2016	Research Promotions Golf Tournament	Clinton, SC	Location: Musgrove Golf Club
Tuesday 05/10/2016	AHRI ratings for Energy Recovery & DOAS equipment	Greenville, SC	Presenter: Eric VanUytfanck Venmar



Unless otherwise stated meetings are:

**2<sup>nd</sup> Tuesday of the Month**

11:30am – 1pm

MT Anderson Support Center

100 Blessingame Road. Greenville, SC 29605

Each program provides at least 1 PDH



## Networking/ Social Events for 2015-2016

Wednesday 09/16/2015	Willis Carrier Student Scholarship Presentation	Greenville, SC	Clemson University
Monday 11/09/2015	ASHRAE Fall Fishing Trip	Elizabethton, TN	Watauga River
Monday 04/11/2016	ASHRAE Spring Fishing Trip	Elizabethton, TN	Watauga River

# ASHRAE Winter Conference

Start Planning for 2016 ASHRAE Winter Conference, Jan. 23– 27, Orlando, FL.

Visit [www.ashrae.org/orlando](http://www.ashrae.org/orlando).



2016 Winter Conference  
Jan. 23-27  
Orlando Hilton  
Orlando, FL

AHR Expo  
Jan. 25-27  
Orange County Convention Center  
Orlando, FL