



# ASHRAE ACTION

## ROANOKE CHAPTER NEWSLETTER

([WWW.ASHRAEROANOKE.ORG](http://WWW.ASHRAEROANOKE.ORG))

JANUARY 2009

### JANUARY MEETING

**PLEASE JOIN US FOR A JOINT MEETING WITH AIA  
AT THE HOTEL ROANOKE!**

**Wednesday, Jan. 7<sup>th</sup> at 6:30 pm**  
Hotel Roanoke  
110 Shenandoah Ave Roanoke VA 24016

**SPEAKER:**

**TERRY TOWNSEND,**  
Townsend Engineering

**TOPIC:**

**ADVANCED ENERGY CONSERVATION  
&  
IEQ DESIGN GUIDANCE**

**AGENDA:**

BOG Meeting: 5:00 pm  
CASH BAR: 5:30 pm  
DINNER: 6:30 pm (Dinner is \$20)  
BUSINESS MEETING AND PROGRAM: 7:00 pm  
**RESERVATIONS MUST BE MADE BEFORE NOON  
on Jan. 5<sup>th</sup> TO Patrick Murdock:**

E-mail: [pmurdock@trane.com](mailto:pmurdock@trane.com)

Phone: 540-563-2828

*Tip: Make your reservation online at our Web Site,  
see link below:*

<http://ashraeroanoke.org/Meetings/registration-form1.htm>

### PRESIDENT'S CORNER

*"Maintain to Sustain – Delivering ASHRAE's Sustainability Promise" – Bill Harrison, ASHRAE President, 2008-2009*

Well the 2008 calendar year ended with a superb presentation on controls and interoperability. Jeff Hamilton did a good job with explaining the differences between some of the major controls operating systems, as well as explaining the similarities between them and the standards behind their development.

We will be starting off 2009 in a HUGE way. Three things will be going on the night of our January meeting.

First off it is "Past Presidents' Night". This means that everyone that was a President of the Roanoke Chapter is admitted into the meeting for **FREE!**

The second thing is that this will be a joint meeting with the local AIA chapter. This month's topic is of great interest to them so they wanted to join us for that evening.

The third thing and the biggest of them all is that the speaker is Terry Townsend. Terry is a Past ASHRAE SOCIETY President as well as an ASHRAE Distinguished Lecturer. Having a Distinguished Lecturer speak to the chapter is a difficult thing to set up, so we are very lucky to have him. If you were to attend one meeting this year, this is the one I would recommend you to come to. How often do you have the opportunity to meet and listen to a gentleman that was in charge of an organization that has a very strong influence on the entire world?

I know I said this last month, but I'll say it again...If I do not see you between now and the end of the year, I hope that you and your families have a Merry Christmas and a Happy New Year.

Dan Lieber

### MARK YOUR CALENDERS:



**February Meeting -- TOUR Of Virginia Tech's  
POWER PLANT AND CHILLER PLANT!!**  
Feb. 10<sup>th</sup> at 6:30 pm (SEE FLYER BELOW)

**March Meeting --- March 10<sup>th</sup> for LUNCH**  
Topic: Sound Control and Duct Design

**April Meeting --- April 14<sup>th</sup> for DINNER**  
Topic: Electronic Air Cleaners

**BOARD OF GOVERNORS MEETING @ HR**  
WEDNESDAY JANUARY 7<sup>TH</sup> - 5:00 BEFORE THE MEETING

### MEMBER RECRUITING BONUS!

Any member who brings a non-member to the January meeting will receive a \$5 discount whether or not the non-member joins.

Any non-member who signs up at the January meeting as a paying member for chapters will have **FREE** admission.

### IS YOUR WALLET A LITTLE THIN?

See page 5 for more ways to save money!

## **SPOTLIGHT ON ... THIS MONTH'S SPEAKER**

TERRY TOWNSEND , P.E., IS THE PRESIDENT OF TOWNSEND ENGINEERING INC. IN CHATTANOOGA TENNESSEE AND PANAMA CITY FLORIDA. IN 2006-07, HE SERVED AS PRESIDENT OF ASHRAE, WHERE HE FOCUSED THE SOCIETY'S EFFORTS ON THE ASHRAE PROMISE: A SUSTAINABLE FUTURE, HIGHLIGHTING ASHRAE'S WORK IN SUSTAINABILITY IN THE BUILDING ENVIRONMENT. HIS ACHIEVEMENTS AS PRESIDENT INCLUDE LAUNCHING ASHRAE'S FIRST EVER CERTIFICATION PROGRAM, ACCELERATING AND EXPANDING THE ADVANCED ENERGY DESIGN GUIDE SERIES, SETTING MORE STRINGENT SAVINGS FOR ASHRAE'S ENERGY STANDARD, AND PROVIDING RESOURCES ON HOW ASHRAE CAN MINIMIZE THE IMPACT OF ITS MEETINGS ON THE ENVIRONMENT.

TERRY'S TOPIC OF ADVANCED ENERGY CONSERVATION AND IEQ DESIGN GUIDANCE AND APPLICATIONS, WILL PROVIDE GUIDANCE IN THE AEDG SERIES COUPLED WITH ADVANCED GUIDANCE FROM STANDARDS 90.1, 62.1 AND 55 IN ORDER TO PROVIDE THE DESIGN TEAM WITH TACTICS THAT MUST BE INTEGRATED INTO SUSTAINABLE BUILDINGS AS WE MARCH FORWARD TO NET-ZERO ENERGY FACILITIES. THE PRESENTATION WILL PROVIDE SPECIFIC GUIDANCE FOR BUILDING TYPES AND CLIMATIC REGIONS THAT ATTENDEES WILL BE FAMILIAR WITH.

### **Attention All: Engineering, Architecture, and Building Construction Students**

Join the Roanoke Chapter of ASHRAE for...

## **Pizza and Plant Tour Night**

Get an insider's look at the Virginia Tech power plant and main chiller plant. See first hand the technology that provides power, heat, and cooling to the Tech Campus. For your safety closed toe shoes are required!

**Tuesday February 10<sup>th</sup>**

**6:30 PM**

**The Museum Room,  
Lower Level of Torgersen Hall**

**FREE Pizza and Drinks provided by  
Roanoke Chapter ASHRAE**



**Tours provided by Virginia Tech Facilities**



Facilities

ASHRAE is a professional organization committed to advance the arts and sciences of heating, ventilating, air-conditioning and refrigerating to serve humanity and promote a sustainable world. Visit [www.ashrae.org](http://www.ashrae.org) for more info.

# ASHRAE NEWS!

## ASHRAE HOSTS CONFERENCE ON NET-ZERO BUILDINGS

**ATLANTA** – TO HELP DRIVE THE BUILDING INDUSTRY TOWARD MARKET-VIABLE NET-ZERO-ENERGY BUILDINGS, ASHRAE IS HOSTING A SPECIALTY CONFERENCE ON THE TOPIC IN MARCH IN SAN FRANCISCO.

“WE HAVE REACHED A TIME WHEN THE BUILDING INDUSTRY IS BEING CALLED TO SHIFT TO A NEW LEVEL OF PERFORMANCE THAT WILL REDUCE OUR ENERGY AND CARBON FOOTPRINT,” BILL HARRISON, ASHRAE PRESIDENT, SAID. “IT IS TIME TO ADVANCE NET-ZERO-ENERGY BUILDING KNOWLEDGE.”

ASHRAE'S *COUNTDOWN TO A SUSTAINABLE ENERGY FUTURE...NET-ZERO AND BEYOND* CONFERENCE TAKES PLACE MARCH 29-31 AT HYATT AT FISHERMAN'S WHARF IN SAN FRANCISCO. THE CONFERENCE WILL PROVIDE A FORUM TO DISCUSS THE ROLE OF POLICY AND REGULATORY INVOLVEMENT IN ADDITION TO PROVIDING APPLICATION KNOWLEDGE FOR THE VARIOUS ASPECTS OF NET-ZERO-ENERGY BUILDINGS FOR BOTH RESIDENTIAL AND NON-RESIDENTIAL BUILDINGS. IT WILL INCLUDE BUILDING SCIENCE, ENERGY EFFICIENCY IN HVAC, LIGHTING AND APPLIANCES, AND RENEWABLE ENERGY SOURCES APPLIED TO BUILDINGS.

TO REGISTER OR FOR MORE INFORMATION, VISIT [WWW.ASHRAE.ORG/NETZEROCONFERENCE](http://WWW.ASHRAE.ORG/NETZEROCONFERENCE). ASHRAE DEFINES NET-ZERO-ENERGY BUILDINGS AS THOSE WHICH, ON AN ANNUAL BASIS, USE NO MORE ENERGY FROM THE UTILITY GRID THAN IS PROVIDED BY ON-SITE RENEWABLE ENERGY SOURCES. THESE BUILDINGS USE 50 TO 70 PERCENT LESS ENERGY THAN COMPARABLE TRADITIONAL BUILDINGS, AND THE REMAINING ENERGY USE COMES FROM RENEWABLE SOURCES, LIKE SOLAR PANELS OR WIND TURBINES INCORPORATED INTO THE FACILITY ITSELF, ACCORDING TO HARRISON. HE NOTED THAT THE STATE OF CALIFORNIA RECENTLY ANNOUNCED ITS GOAL OF NEW RESIDENTIAL DEVELOPMENTS BEING NET-ZERO-ENERGY BY 2020 AND NEW COMMERCIAL DEVELOPMENTS BEING NET-ZERO BY 2030.

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## INTERESTED IN HAVING A COPY OF TOM WATSON'S PRESENTATION??

WE HAD A VERY INFORMATIVE PRESENTATION BY TOM WATSON OF McQUAY ON COMPRESSOR TECHNOLOGY & REFRIGERANT SELECTION IN OCTOBER.

JEFF CONSROE HAS A COPY OF THIS PRESENTATION FOR ANYONE INTERESTED.

IF YOU WOULD LIKE ME TO BURN A CD FOR YOU, JUST LET ME KNOW

[jeff@breeden-collier.com](mailto:jeff@breeden-collier.com)



# OTHER HVAC NEWS!

## MSU PROFESSOR COMES UP WITH “COOL” IDEA

**EAST LANSING, MICH.** – A MICHIGAN STATE UNIVERSITY RESEARCHER AND A COLLEAGUE HAVE WON THE BOSTON INNOVATION PRIZE FOR THE DESIGN OF A LOW-COST, ENERGY-EFFICIENT METHOD OF COOLING AND DEHUMIDIFYING RESIDENTIAL AND SMALL COMMERCIAL SPACES.

NORBERT MÜLLER, ASSISTANT PROFESSOR IN MICHIGAN STATE UNIVERSITY’S DEPARTMENT OF MECHANICAL ENGINEERING, AND JOHN BARRIE, OF THE APPROPRIATE TECHNOLOGY COLLABORATIVE IN ANN ARBOR, MICH., COLLABORATED ON THE AWARD-WINNING PROJECT.

“THE TECHNOLOGY USED FOR THIS AIR CONDITIONER IS RADICALLY DIFFERENT,” MÜLLER SAID. “WE ARE USING THE MOST NATURAL REFRIGERANT, WATER.”

MULLER SAID THE PROJECT IS PART OF A BROADER CONTEXT OF HIS RESEARCH TO REDUCE ENERGY CONSUMPTION AND THAT THE AWARD IS AN ACKNOWLEDGEMENT OF THE PROGRESS THAT HAS BEEN MADE.

THE INNOVATION PRIZE WAS DEVELOPED BY THE BARR FOUNDATION, A PRIVATE FAMILY FOUNDATION COMMITTED TO ENHANCING THE QUALITY OF LIFE FOR CITIZENS IN THE BOSTON AREA, AND THE CAMBRIDGE ENERGY ALLIANCE (CES), AN ORGANIZATION THAT SEEKS TO REDUCE THE CARBON FOOTPRINT OF CAMBRIDGE, MASS., IN THE NEXT FIVE YEARS. MÜLLER AND BARRIE WERE AWARDED \$30,000 FOR THE COOLING TECHNOLOGY THEY SUBMITTED AS PART OF THE CONTEST. IT WAS ONE OF 38 SUBMISSIONS REVIEWED BY A PANEL OF NATIONAL EXPERTS.

“WE LOOKED AT A NUMBER OF IMPRESSIVE DESIGNS, BUT THIS ONE REALLY STOOD OUT BECAUSE OF ITS POTENTIAL TO CONSUME SIGNIFICANTLY LESS ENERGY AND REDUCE PEAK DEMAND COMPARED TO STANDARD AIR CONDITIONERS,” SAID KENDRA TUPPER, A MEMBER OF THE PANEL OF JUDGES AND A SENIOR CONSULTANT AT THE ROCKY MOUNTAIN INSTITUTE.

THE AIR CONDITIONER USES WATER VAPOR AS THE REFRIGERANT. WHEN WATER VAPOR IS USED THIS WAY IT IS REFERRED TO AS R-718. WATER VAPOR CAN BE MORE EFFICIENT THAN TRADITIONAL REFRIGERANTS, BUT ENGINEERING THE COMPRESSOR IS DIFFICULT AND EXPENSIVE, MULLER ADDED.

“IN EUROPE WHERE THERE ARE HIGH ENERGY COSTS, WATER VAPOR IS USED AS A REFRIGERANT IN LARGE PROJECTS,” MULLER SAID. “THE ECONOMICS OF MAKING A SMALLER SCALE R-718 COMPRESSOR HAVE, IN THE PAST, PROVEN TO BE PROHIBITIVE.”

MÜLLER INVENTED A WAY TO MAKE AN ECONOMICAL COMPRESSOR THAT IS SMALL AND LIGHTWEIGHT BY DESIGNING A NOVEL TURBO COMPRESSOR WOVEN OUT OF HIGH-STRENGTH FIBERS WITH AN INTEGRATED MOTOR.

“IT GIVES WONDERFUL CONTROL. IT’S EFFICIENT AND COMPACT,” SAID MÜLLER, WHO POINTS OUT THAT UP TO 30 PERCENT OF U.S. ELECTRICITY IS USED FOR COOLING AND AIR CONDITIONING. “ANOTHER PLUS FOR THE NEW R-718 TECHNOLOGY IS THAT BY EXPERIENCE IT IS SURPRISINGLY QUIET.” BARRIE IS AN ARCHITECT AND INDUSTRIAL DESIGNER. HE AND MÜLLER HAVE TEAMED UP FOR OTHER GRANT PROPOSALS.

“I WORK TO DEVELOP AND PROMOTE INNOVATIVE SUSTAINABLE TECHNOLOGIES,” SAID BARRIE. “MY CONTRIBUTION TO THIS PROJECT IS AS A CONSULTANT ON HOW AIR CONDITIONING FUNCTIONS IN THE REAL WORLD.”

MÜLLER AND BARRIE WANT TO DEVELOP PROTOTYPES OF THE AIR CONDITIONER AS ADDITIONAL FUNDING FOR DEVELOPMENT BECOMES AVAILABLE.

[HTTP://NEWS.MSU.EDU/STORY/5749/](http://news.msu.edu/story/5749/)

## ELECTRONIC NEWSLETTER

Any member with material to submit for inclusion in the monthly newsletter may send the information to:

Jeff Consroe  
11 Dalewood Ave.  
Salem, VA 24153

E-mail: [jeff@breeden-collier.com](mailto:jeff@breeden-collier.com)  
Phone: 540.797.7899  
Fax: 540.526.9460

**This is your newsletter. We welcome your contributions and commentary.**

Material can include letters to the editor, member news, upcoming events, comments on chapter programs or issues, etc.

## ROANOKE CHAPTER ASHRAE

### *2008– 2009 OFFICERS AND GOVERNORS*

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### *2008 – 2009 COMMITTEE CHAIRS*

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Home page	James Sledd	540-344-5200	<a href="mailto:James.Sledd@aecom.com">James.Sledd@aecom.com</a>

## ATTENTION MEMBERS:

### *INTERESTED IN SAVING MONEY?*

STAR CARDS ARE AVAILABLE FOR PURCHASE. PAY NOW AND **SAVE** LATER!

**\$50.00 STAR CARD** – ADMISSION TO ANY THREE MEETINGS

**\$100.00 STAR CARD** – ADMISSION TO ANY SIX MEETINGS

### *WANT TO SAVE EVEN MORE MONEY?*

IN SUPPORT OF THE SOCIETY GAME (GREENING ASHRAE MEETINGS AND EXPOSITIONS) PLAN, THE ROANOKE CHAPTER WILL OFFER DISCOUNTS ON MEMBERS WHO CARPOOL OR USE ALTERNATIVE TRANSPORTATION TO ATTEND MEETINGS.

**\$2.00** DISCOUNT FOR DRIVING A CARPOOL.

**\$1.00** DISCOUNT FOR ANY OF THE FOLLOWING:

- RIDING IN A CARPOOL
- WALKING
- BIKING
- RIDE PUBLIC TRANSPORTATION
- DRIVE HYBRID VEHICLES
- DRIVE ALTERNATIVE FUELED VEHICLES

BE SURE TO LET **JUSTIN BILLER** KNOW IF YOU QUALIFY FOR THE MEETING DISCOUNT WHEN YOU PAY FOR THE MEETING.

The poster features a green and red color scheme. At the top, it says "SUSTAINABLE Urban Design" with a logo of a city skyline and a gear. Below that, it reads "engineering tomorrow... today" in a stylized font. The main text announces "ASHRAE's 2009 Winter Conference January 24-28" and "AHR Expo Jan. 26-28". At the bottom, there is a photo of a modern city skyline and the website "www.ashrae.org/chicago".