

Volume XXV, Issue 8

Serving the Hudson Valley and Western Connecticut

April 2012

Due to programming problems there will be no April meeting.

Online registration is open for the below program. Please visit: <u>www.ashrae.org/doaswebcast</u>

Upcoming Events

- May 9th -Super High Efficient Chillers
- June 13th -Golf Outing

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April 19, 2012 1:00 PM-4:00 PM EDT

Dedicated Outdoor Air Systems:

A Path to Balancing Energy and IEQ

Hear leading experts discuss the role of Dedicated Outdoor Air Systems in the overall HVAC system and describe various DOAS equipment configurations, characteristics, and applications. This webcast will identify common design and operational pitfalls, and cover challenges unique to DOAS.





Ron Jarnagin, 2011–12 ASHRAE President Staff Scientist | Pacific Northwest National Laboratory | Richland, WA

Tim McGinn, PE., LEED AP Principal | DIALOG | Calgary, AB, Canada

How to Participate

- You may register to view the Webcast on your PC
- You may host a webcast viewing site for your colleagues
- View the webcast at a site

PDH Credits

Three (3) Professional Development Hours (PHDs) or three (3) AIA Learning Units may be awarded to viewers who complete the "Participant Reaction Form" by May 3, 2012.

Brought to you by the ASHRAE Chapter Technology Transfer Committee

For more information about the program, presenters, continuing education credits, sponsorships, and DOAS resources please visit us at **www.ashrae.org/doaswebcast**



Stan Mumma, Ph.D., PE. Professor Emeritus | Pennsylvania State University | University Park, PA



lebcast

John Murphy, LEED AP Applications Engineer | Trane | La Crosse, WI







EngA ENGINEERED AIR



President's Message

By Nicholas Salomone

I would like to thank Fred Ferrara and Rob Walton for their great presentations last month. The Pressure Independent Controls presentation was very informative; especially the case study of a Las Vegas school, and the ping pong ball video demonstration of which duct fittings have the least comparative losses was very entertaining. We are taking a break this month from presentations and look forward to finishing the year strong with our last presentation meeting of the year in May. The Golf Outing in June will conclude another great year for the ASHRAE Bi-State chapter!

Nicholas Salomone Bi-State Chapter President

Operation and Maintenance Guideline from ASHRAE Now Available

A newly published guideline from ASHRAE gives facility managers and building operating staff a strong foundation on which to improve performance of all buildings.

ASHRAE Guideline 32-2012, Sustainable, High Performance Operation and Maintenance, provides guidance on optimizing operation and maintenance of buildings to achieve the lowest economic and environmental lifecycle cost without sacrificing safety or functionality.

"The guideline will assist those who operate and maintain buildings to achieve high performance: safe, productive indoor environments; low economic life-cycle cost; low energy, water and resource use; and low impacts on the environment," says Michael Bobker, chair of the Guideline 32 committee. "The guideline applies to all buildings, not just new ones. We believe that all buildings can move toward sustainable high performance in their operations and maintenance."

The guideline applies to the ongoing operational practices for buildings and systems with respect to energy efficiency, occupant comfort, indoor air quality, health and safety. These systems include the building envelope, HVAC&R, plumbing, complementary energy systems, and utilities and electrical systems.

"Modern air conditioning systems protect the health, comfort and productivity of building occupants," says ASHRAE presidential member Bill Harrison, whose presidential theme focused on the need for operation and maintenance. "Unfortunately, they consume a lot of energy while providing these benefits. When these systems are not operated properly, the energy they use can increase by 50 percent or more. ASHRAE Guideline 32 helps building owners and managers evaluate and eliminate the wasted energy caused by poor operating procedures. The elimination of non-value-producing energy helps protect our environment while saving the building owner money. Guideline 32 provides a no-regrets path to improving energy efficiency in our buildings."

The guideline contains recommendations for three levels of building oversight: senior managers, facility managers and technicians. Checklists for tracking that appropriate steps are being taken to move toward high-performance operation and maintenance are included for each.

Among the items on the checklist are:

Technicians: Develop an HVAC system maintenance program using ANSI/ASHRAE/ACCA Standard 180, Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems. Maintain access and code required clearances to all HVAC and electrical equipment.

Facility managers: Develop and implement protocols for good facility/system documentation. Establish performance baselines and targets. Institute a system for regular reporting and evaluation.

Senior managers: Assess buildings, workforce, practices, management tools and systems. Measure and report on building performance as part of regular business analytics.

The cost of ASHRAE Guideline 32, Sustainable, High-Performance Operations and Maintenance, is \$69 (\$59, ASHRAE members). To order, visit the <u>ASHRAE bookstore</u>.

Research Promotion Contribution Form

PLEASE COMPLETE THE INFORMATION BELOW AND RETURN WITH YOUR CONTRIBUTION TO:						
Terry Connor Johnson Controls 8 Skyline Drive Hawthorne, NY 10532						
Phone: 914-593-5223 Fax: 914-593-5201						
Please accept my research investment in the amount of \$ Make checks out to ASHRAE Research .						
NameMember #						
CompanyChapter_Bi-State						
Address						
CityStateZip						
Please check one: () Personal contribution () Company contribution						
Charge my gift to: () Visa () Master Card () American Express						
Credit Card #Expiration Date						
Signature						
Donors are recognized for their contributions as follows:						
Honor Roll contributors are listed in the October ASRHAE Journal and receive the commemorative coin recognizing Giants in HVAC&R invention or innovation.						
Individual Honor Roll beginning at \$100 Corporate Honor Roll beginning at \$150						
Investors with contributions of \$250 or more receive a wall plaque that can display six commemorative coins.						
Contributions in any amount are gratefully received and 100% of the contribution goes directly to research. All contribu- tions are tax deductible.						

3-D Designs Can More than Double the Solar Power Generated from a Given Area

Intensive research around the world has focused on improving the performance of solar photovoltaic cells and bringing down their cost. But very little attention has been paid to the best ways of arranging those cells, which are typically placed flat on a rooftop or other surface, or sometimes attached to motorized structures that keep the cells pointed toward the sun as it crosses the sky.

A team of MIT researchers has come up with a different approach: building cubes or towers that extend the solar cells upward in three-dimensional configurations. The results from the structures they have tested show power output ranging from double to more than 20 times that of fixed flat panels with the same base area.

The biggest boosts in power were seen in the situations where improvements are most needed: in locations far from the equator, in winter months and on cloudier days. The new findings, based on both computer modeling and outdoor testing of real modules, have been published in the journal *Energy and Environmental Science*.

"I think this concept could become an important part of the future of photovoltaics," said the paper's senior author, Jeffrey Grossman, the Carl Richard Soderberg Career Development Associate Professor of Power Engineering at MIT.

The MIT team initially used a computer algorithm to explore an enormous variety of possible configurations, and developed analytic software that can test any given configuration under a whole range of latitudes, seasons and weather. Then, to confirm their model's predictions, they built and tested three different arrangements of solar cells on the roof of an MIT laboratory building for several weeks.

While the cost of a given amount of energy generated by such 3-D modules exceeds that of ordinary flat panels, the expense is partially balanced by a much higher energy output for a given footprint, as well as much more uniform power output over the course of a day, over the seasons of the year, and in the face of blockage from clouds or shadows. These improvements make power output more predictable and uniform, which could make integration with the power grid easier than with conventional systems, the authors say.

The basic physical reason for the improvement in power output — and for the more uniform output over time — is that the 3-D structures' vertical surfaces can collect much more sunlight during mornings, evenings and winters, when the sun is closer to the horizon, says co-author Marco Bernardi, a graduate student in MIT's Department of Materials Science and Engineering (DMSE).

The time is ripe for such an innovation, Grossman adds, because solar cells have become less expensive than accompanying support structures, wiring and installation. As the cost of the cells themselves continues to decline more quickly than these other costs, they say, the advantages of 3-D systems will grow accordingly. "Even 10 years ago, this idea wouldn't have been economically justified because the modules cost so much," Grossman says. But now, he adds, "the cost for silicon cells is a fraction of the total cost, a trend that will continue downward in the near future." Currently, up to 65 percent of the cost of photovoltaic (PV) energy is associated with installation, permission for use of land and other components besides the cells themselves.

ASHRAE Funds 22 Undergraduate Programs

ASHRAE has awarded grants this year totaling \$100,000 to 22 schools worldwide for the ASHRAE Undergraduate Senior Project Grant Program. The grants are intended to promote the study and teaching of HVAC&R and encourage senior undergraduate students to pursue related careers. The grants are used to design and construct projects. A team from Purdue University-Calumet in Hammond, Ind., was deemed the top grant award winner for its project, "Refrigeration and Heat Pump Teaching System." Two students from the university have been invited to present their project as part of the Student Program at the 2013 ASHRAE Winter Conference in Dallas.

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Why Be Involved in a Local Chapter?

- Learn about the latest technologies presented in the program sessions
- Attain continuing education credits
- Meet industry associates and discuss local concerns
- Network amongst designers, installers, vendors, educators, in your local area to help improve business for all
- Share experiences with others
- Enjoy a social hour
- Carry out ASHRAE's mission on a local level To advance the arts and sciences of heating, ventilating, air conditioning and refrigerating to serve humanity and promote a sustainable world.

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ASHRAE Region I Roster 2011-12 Executive Committee

DRC – Director & Regional Chair

Spencer Morasch Jersey Central Power & Light 331 Newman Springs Road, Bldg. 3 Suite 325 Red Bank, NJ 07701 –5688 732-212-4133 smorasch@firstenergycorp.com

ARC – Assistant Regional Chair & Treasurer Joseph Furman Automated Logic 16 Country Way Wallingford, CT 06492-5356 203-678-2208 joe.furman@automatedlogic.com

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Regional Refrigeration Chair Steven D Friedman, PE, HFDP, LEED AP AKF Engineers, PC.

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Regional Historian

Alexander Weiss, PE

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Regional Electronics Comm. Chair & Newsletter Judge Heather L. Nowakowski, P.E. Roswell Park Cancer Institute Elm & Carlton Streets Buffalo, NY 14263 716-845-3521 heather.nowakowski@roswellpark.org

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Director of Communications and Publications Jodi Scott ASHRAE 1791 Tullie Circle, N.E. Atlanta, GA 30329 404-636-8400 idunlop@ashrae.org

ASHRAE Region I Roster 2011-12 Executive Committee (continued)

Regional Representative Garry N Myers WSP Flack + Kurtz 73 Bonnie Way Allendale, NJ 07401-1127 212-951-2815 Garry.Myers@wspfk.com Regional Young Engineers in ASHRAE Cara S Martin Novus Engineering 25 Delaware Ave Delmar, NY 12054 518-439-8235 cmartin@novusengineering.com

Net Zero Energy Buildings on the Rise

The number and diversity of commercial net zero energy buildings (NZEBs) in the U.S. are growing rapidly, according to a new report. The New Buildings Institute (NBI) and the Zero Energy Building Consortium identified 99 buildings that are either zero energy, zero energycapable or NZEBs currently under construction or recently completed. The buildings are being built in most climate zones across the country. The report says that, while in the past NZEBs were primarily small, "demonstration" buildings, projects are expanding in size and building type.

Join ASHRAE at its 2012 Annual Conference

June 23-27, 2012/San Antonio, Texas



First time attendee registration fee a special rate of \$320 if you register by June 1; \$480 during onsite registration that begins June 11.

Join ASHRAE in San Antonio! Take advantage of the opportunity to discuss and examine the latest topics in the building industry, such as high performing buildings and integrated design, through the technical program; participate in technical tours; attend ASHRAE Learning Institute courses; and earn professional credits.

Technical Program – From integrated energy systems to indoor environmental applications, the Technical Program features seven tracks addressing topics and principles important in the HVAC&R industry today. The technical program also features a new mini-conference format on Integrated Building Controls. Earn PDHs, AIA LUs and LEED AP credits.

Virtual Conference – If you can't make it to San Antonio, take advantage of the knowledge shared in the technical program with the on-demand Virtual Conference recordings of all the presentations.

ASHRAE Learning Institute – ASHRAE Learning Institute provides high-quality courses presented by industry-recognized subject matter experts. Select from two all-day seminars and six half-day courses to stay current on HVAC&R trends.

www.ashrae.org/sanantonio

Exchanger

Notice to business card advertisers:

We are currently accepting business card advertisements for this year's newsletters. The cost of a business card ad is \$125.00. The newsletter is published monthly, September through June (ten issues). That means for \$125.00 (\$12.50 an issue), your business card ad will circulate to approximately 300 recipients a month or an advertising cost of approximately 4 cents/recipient.

If you are interested in placing an ad, please forward a business card and check (payable to ASHRAE Bi-State) to:

ASHRAE Bi-State Chapter DL Flow Tech 2421 Route 52 Hopewell Junction, NY 12533



Employment Opportunities

Employment ads may be submitted for inclusion in **The Exchanger** as follows:

- 1. \$100.000 from companies placing ad for one (1) month.
- 2. \$150.00 from companies placing ad for two (2) months.
- 3. No charge for members looking for employment.

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Exchanger



ASHRAE, founded in 1894, is a building technology society with more than 50,000 members worldwide. The Society and its members focus on building systems, energy efficiency, indoor air quality and sustainability within the industry. Through research, standards writing, publishing and continuing education, ASHRAE shapes tomorrow's built environment today.

ASHRAE will be the global leader, the foremost source of technical and educational information, and the primary provider of opportunity for professional growth in the arts and sciences of heating, ventilating, air conditioning and refrigerating.

Upcoming Meetings

Month	Date	Promotion	Main Presentation	Tech Session
Мау	5/9/2012	Student Activities	Super High Efficient Chillers	
June	6/13/2012	Student Scholarships	Golf Outing	

China Now Largest HVAC Market

In addition to being the largest producer of heating, ventilating and air conditioning products in the world, China is now also the largest market for HVAC, a new report claims.

The top three Chinese manufacturers, Haier, Midea and Gree, can supply 50% of the world's demand for HVAC products, according to the report by Frost & Sullivan.

Driven by a boom in China's commercial property, high-end real estate and energy saving policies, it is estimated that China's HVAC market was £5bn in 2011, a 20% increase on 2010. With an annual growth rate of 20%, it is predicted that the total market size will reach £11bn in 2015.

Far eastern manufacturers Daikin, Hitachi, Toshiba and Samsung took the largest market share (32%) in 2011. Western companies York, Carrier, Trane, Mcquay and Dunham-Bush had 23% of total market size. Domestic brands Haier, Gree and Midea accounted for 22% of the market.

Google Data Center Cooled by Recycled Water

Google is cooling its suburban Atlanta, Georgia data center using recycled water that has been through the bathrooms of the surrounding community. The company has partnered with the local water and sewer authority (WSA) to divert greywater. The facility, built in 2007, initially used local potable water for its evaporative cooling system. "But we soon realized that the water we used didn't need to be clean enough to drink," Jim Brown, Google's data center facilities manager in Georgia, wrote on the company's blog. About 30% of the water is diverted from the WSA's system to a plant that Google built about five miles (8 km) away from the data center. After being used at the facility, any of the water that doesn't evaporate is sent to an effluent treatment plant on the Google grounds, then is released to a nearby river.

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ASHRAE Society Updates

Spring 2012



Do you have questions that we can answer in the next ASHRAE Society Update? Send an email to <u>kfulcher@ashrae.org</u> and your question will be forwarded on to staff.

New Changes to Members Council

During the 2011 fall meeting in Atlanta, a motion was approved to remove the Director and Regional Chairs (DRCs) as members of Members Council and to have them sit on the Board of Directors only. The DRCs will be replaced by a new position from each region called the Region Members Council Representative. Pending approval by the membership for an ASHRAE Bylaws change, this will become effective July 1, 2013.

New Insurance Coverage for Chapters

The Manual for Chapter Operations (MCO), Section 4.6 was updated to include a section for ASHRAE Chapter Event Insurance. This coverage is provided at the chapter's expense to cover sporting events such as racing, skiing, firearms, boating, mechanical bulls and other activities. See the MCO for full details or visit the ASHRAE website <u>http://www.ashrae.org/society-groups/chapters/Manual-for-Chapter-Operations</u> and click on the link under "MCO Bookmarked Sections and Appendices."

New Member Benefit

Beginning July 1, 2011, the decision was made to provide a complimentary 12-month subscription to ASHRAE Handbook Online to all new Members and Associates with an election date of July 1, 2011 and onward, since they will not receive their print or CD Handbook until June, 2012. The new members and associates will receive an email message with instructions on how to access their complimentary Handbook Online subscription. This is a one-time benefit for new members, and at the end of their subscription, they will be prompted to renew the Handbook Online at the \$49 member rate.

Two chapter Resources are available online:

Centralized Training for MP:

http://www.ashrae.org/societygroups/committees/membership-promotion-centralizedtraining

Membership Promotion Blog

Visit our blog for training and resources - provide feedback as well! http://ashraemptraining.wordpress.com/

Airmail Only \$10 (USD)

Members outside the United States will be happy to learn Airmail delivery of the ASHRAE Journal is now only \$10. ASHRAE encourages all members outside the U.S. to select this option on their membership renewal to ensure faster delivery of the industry's leading magazine, ASHRAE Journal. Click <u>here</u> to renew your membership.



ASHRAE Society Updates

Spring 2012



Leadership U participants at the Chicago Winter meeting.

Leadership U – San Antonio

Have you ever wondered what ASHRAE Officers do at the ASHRAE Winter & Annual Conferences? Here is your chance to find out! Through Leadership U (offered by the YEA Institute), a handful of YEA members are selected for each conference to be matched up with Society Officers and participate in all of their events and board meetings, including social activities. Leadership U not only allows you to experience a conference like an Officer, but it is also a great opportunity to network and form connections with those active in ASHRAE.

If selected to participate in Leadership U, the costs of attending the Conference (transportation, lodging and registration) will be covered by ASHRAE. In addition, those selected will document their experiences and share them with the YEA Committee, their chapter and their region.

Submit your <u>application</u> today! All applications must be received by the close of business **April 16, 2012**. To learn more about this opportunity or if you have any questions, visit <u>www.ashrae.org/yea</u>.

HVAC Design Essentials Workshop Scholarship

Presented by the ASHRAE Learning Institute, the threeday <u>HVAC Design Essentials Workshop</u> allows attendees to focus on both the fundamental and technical aspects of HVAC design in commercial buildings, providing practical strategies for HVAC designers and others involved in delivery of HVAC services. The next HVAC Design Essential Workshop will be held May 21-23, 2012 at ASHRAE Headquarters, Foundation Learning Center.

To encourage attendance by young professional ASHRAE members, the YEA Institute offers one full scholarship for attendance to the HVAC Design Essentials Workshop (Level I of the workshop only). The full cost of registration to Level I of the workshop will be covered by ASHRAE.

If you have an interest in attending this workshop, this <u>scholarship</u> is the perfect opportunity for you. All <u>applications</u> must be received by the close of business **April 9, 2012**.

RP Chairs- Visit the RP Blog

Messages to donors, non-donors, reminders, graphics, and articles about Research are available at the RP blog (http://ashraerp.wordpress.com/)

CRCS Set For Spring 2012

Region VI - May 3 - 6

Minnesota Minneapolis, MN

Visit the website -

http://ashrae6.blogspot.com/

Region VIII - April 26 - 28

Northeastern Oklahoma Tulsa, OK

Visit the website - http://region8.ashraeregions.org/crc.htm

Region XI - May 10 - 12

Manitoba Winnipeg, MB

Visit the website-

http://region11.ashraeregions.org/

Please contact Vickie Grant at ASHRAE Headquarters for questions or to request more information about CRCs.

ASHRAE Society Updates

Spring 2012

Registration Open for ASHRAE Dedicated Outdoor Air Systems Webcast!

Registration is now open at www.ashrae.org/doaswebcast for the April 19, 2012 Webcast, "Dedicated Outdoor Air Systems – A Path to Balancing Energy and IEQ." This free webcast is being brought to you by ASHRAE's Chapter Technology Transfer Committee with support from Valent Air Management Systems, Rotor Source, Inc., Engineered Air, Munters, and Heat Pipe Technology.

Webcast Archive Available!

If you are unable to participate in the live webcast, the program replay will be archived online until May 3, 2012. Registration will be necessary to view the archived program. The webcast presenters are:

Ron Jarnagin ASHRAE President 2011-12, Staff Scientist Pacific Northwest Laboratory Richland, WA

Tim McGinn, P.E., LEED AP, Principal DIALOG Calgary, AB, Canada

Stanley Mumma, Ph.D., P.E., Professor Emeritus Pennsylvania State University University Park, PA

John Murphy, LEED AP, Applications Engineer Trane, La Crosse, WI

There is no fee for registration. To register and learn about the webcast program, continuing education credits, and ASHRAE dedicated outdoor air systems resources, visit www.ashrae.org/doaswebcast. If you have questions about the webcast, call 678-539-1200 or email <u>ashrae-webcast@ashrae.org</u>

Modeling for a Sustainable Future

ASHRAE seeks to advance the industry's ability to more accurately model and simulate a building's energy use.

Building on the successful Energy Modeling Conference format in April 2011, this conference will begin with an interactive session with modeling software developers presenting common modeling scenarios on how their specific software can model a scenario, whether there are any limitations and what might be the best work around and exceptional modeling practices to obtain acceptable results when the tool cannot model the scenario "out-of-the-box".

Click here for the <u>Conference Announcement and</u> <u>Call for Presenters</u>



ASHRAE conferences provide great opportunities for knowledge sharing and networking.