

# ASHRAE Bi-State Chapter

# Exchanger

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Serving the Hudson Valley and Western Connecticut

March 2013

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# **Upcoming Events**

- April 10 -Engineering Design Liability Issues
- May 8 -Golf Outing
- June 12 -Hold the date

# Meeting Wednesday March 13, 2013 Research Promotion Night 2 PDH Credits Approved

#### Main Presentation: Hydronic Balancing

Hooman Daneshmand of Tour & Andersson will discuss the principles of hydronic balancing.

#### **Tech Session: Concrete and Masonry Anchors**

John Consolo of Hilti will discuss post-installed concrete and masonry anchors including the fundamental principals of anchor theory, various types of anchoring systems, identify factors that influence anchor performance and understand the correlation between national building codes and their use with post-installed anchors.

Place: Casa Rina, 886 Commerce Street, Thornwood, NY 10592

Program: 5:30 - 6:00 PM Attitude Adjustment Time

6:00 - 7:30 PM Buffet Dinner / Tech Session

7:30 - 8:30 PM Main Presentation

\$25 Members, \$30 Non-Members

Engineering students: complimentary admission

The general public is invited and encouraged to attend. Walk-ins welcome.

#### **Directions to Casa Rina**

From Saw Mill Parkway - North or South

Exit at Marble Avenue - Exit # 27

Make right - continue to second traffic light

Make right onto Commerce Street

Casa Rina is the second house on your left.

Parking is on your right.

#### For questions about the program email:

John Fusco jfusco@olace.com

# President's Message

By John A. Fusco, P.E., LEED AP

Spring is near, and before we know it our chapter year will be coming to a close. We have a great a presentation lined up for April's meeting on Engineering Liability, and for May, we are having our Annual Golf Outing – tentative date is May 8, so pencil it in! Our final meeting in June is still in the planning stages, we may have a building tour and presentation in the works. In the meanwhile our March meeting features two presentations, one on Anchoring Systems presented by Hilti and the second on Hydronic Balancing presented by Tour and Anderson.

Many thanks to John McIlhargy, President Mythic Sports Group LLC, for last month's presentation on "Elements for Designing an Aquatic Center". Thanks to Cliff Konitz for organizing this presentation.

Lastly, please consider contributing to the ASHRAE Research Promotion. Our chapter RP Chair, James Kolk, is coordinating our chapter's fund raising effort. Please contact James for any questions, or any board member as well. More information regarding Research Promotion and its projects being funded can be found at https://www.ashrae.org/standards-research--technology/research-promotion.

Again, I encourage anyone interested in participating in chapter activities, whether it be participating in a committee for programs, student activities, membership promotion, or in any other capacity to talk to any of our committee chairs or Board of Governors about it. It is a rewarding and fulfilling experience to help promote the industry our careers are focused on.

Please check for our emails and our website for information on upcoming events and to download current and past newsletters.

John A. Fusco, P.E., LEED AP Bi-State Chapter President

# **Performance Measurement Guide Published by ASHRAE**

A new guide published by ASHRAE provides tools and techniques for measuring, managing and improving the performance of a facility as demonstrated by its energy and water use and indoor environmental quality. "Performance Measurement Protocols for Commercial Buildings: Best Practices Guide" serves as the how-to guide for continuously evaluating and improving the performance of commercial buildings throughout their service life. The book provides specific best practices in the areas of energy use, water use and four elements of indoor environmental quality: thermal comfort, indoor air quality (IAQ), lighting/daylighting and acoustics.

# **ASHRAE Sponsoring Two Half-Day Short Courses at Penn State University**

ASHRAE is sponsoring two popular half-day short courses, *Energy Management in New and Existing Buildings* and *Project Management for Improved IAQ*, at Penn State University on April 3, 2013. The courses, presented in conjunction with the 2013 Architectural Engineering Institute (AEI) Conference, focus on the essentials of making facilities sustainable through energy management, and new perspectives on the process management strategies that can help ensure good IAQ.

The energy management course weaves together the energy management principles of the ASHRAE Handbook-HVAC Applications, Energy Star Guidelines and practical experience of successful energy managers. The project management course identifies the key components of IAQ to help manage, organize and direct projects, and identifies key issues of the project process that are vulnerable to risk.

Both courses will take place on Wednesday, April 3, 2013 at the Nittany Lion Inn in University Park, PA. The cost to attend each course is \$119. As a special offer, ASHRAE is offering a reduced price of \$29 per course for college students looking to gain in-depth training on energy and project management principles. To register, please visit <a href="https://www.ashrae.org/aeicourses">www.ashrae.org/aeicourses</a>.

# **Research Promotion Contribution Form**

## PLEASE COMPLETE THE INFORMATION BELOW AND RETURN WITH YOUR CONTRIBUTION TO:

James Kolk 528 Middle Street North Babylon, NY 11703

Name	Member #
Company	Chapter <u>Bi-State</u>
Address	
City	StateZip
Please check one: ( ) Perso ( ) Company contribution	nal contribution
Charge my gift to: ( ) Visa ( ) Mas	ter Card ()American Express
Credit Card #	Expiration Date
Signature	
Donors are recognized for their contributions as	follows:
Honor Roll contributors are listed in the October recognizing Giants in HVAC&R invention or inno	r ASRHAE Journal and receive the commemorative coivation.
Individual Honor Roll beginning at \$100	

**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 contributions are tax deductible.

# **Cyber Threats to Energy Sector**

Internet-based attacks on critical U.S. energy infrastructure are occurring at a greater rate than previously understood, according to a recent government report. The report, issued by a cyber-security team that operates within the Department of Homeland Security, found that thousands of control systems used in critical infrastructure are linked directly to the Internet and are vulnerable to attack by viruses and other malware. In the fiscal year that ended September 30, 2012, companies reported 198 cyber incidents to the DHS's Industrial Control Systems Cyber Emergency Response Team, more than 40% of which were directed against companies operating in the energy sector. The team "has been tracking threats and responding to intrusions into infrastructure such as oil and natural gas pipelines and electric power organizations at an alarming rate," according to the report.

The report detailed a number of recent discoveries of malicious software in control systems, including one at an electric utility and another at a power generation facility, both of which were infected by USB devices. Like many organizations, these energy companies believed they had effectively quarantined the networks controlling production facilities from their business IT networks.

"Executives are told the networks aren't connected, and that may be true in a logical sense, but it's not entirely true," said Alan Paller, founder of cybersecurity research and education organization SANS Institute. Even though a so-called air gap prevents the two networks from communicating electronically with one another, such as via email, those networks often share hardware such as routers and printers, which can be used by hackers to hop across from the business IT network to the production network. Those devices are shared for practical reasons; companies need to get production data in the business systems and they need to do maintenance on the production network, Mr. Paller added.

In one instance in early October, a virus was discovered in a turbine control system which impacted approximately ten computers on the control system network of an electric utility. Investigators found the malware gained entry through a third-party technician who used a USB drive to upload software updates during a scheduled equipment upgrade. The technician did not know that the USB drive was infected with malware. The infection prevented the utility from restarting the plant by three weeks.

Some of the most sophisticated and destructive cyber-attacks of 2012 could have potentially been much worse had hackers been able to cross from business to production IT networks. For example, according to the report, hackers in August used the Shamoon virus to attack the production network belonging to Saudi Arabian Oil Co. But the malware only succeeded in destroying data residing on the company's business IT network. The same was true of Qatari natural gas company Rasgas Company Limited, also attacked in August. Both production networks were spared because the companies segregated the networks using an air gap.

But hackers attacking production networks are able to bypass the air gap by using USB devices to transport viruses, as was the case with the Stuxnet virus that disabled an Iranian nuclear facility.

In some instances, energy companies have made it easier for attackers to succeed by connecting critical infrastructure control devices directly to the Internet. These devices can then serve as entry points into control systems networks. The report said that ICS-CERT researchers Bob Radvanovsky and Jake Brodsky, using a specialized search engine called SHODAN, uncovered 7,200 devices in the U.S. that appear to be directly related to control systems of industrial equipment that can be accessed via the Internet. "In some cases, these devices have either weak, default or nonexistent logon credential requirements," according to the report.

Cyber security experts say hackers can likewise use search engines to identify devices connected to the Internet and use them to move to other parts of control networks. "ICS-CERT has recently seen a marked increase in interest shown by a variety of malicious groups, including hactivist and anarchist groups toward Internet accessible [industrial control systems] devices," said the report.

"The big problem is that malware is going undetected for weeks or months," said Chris Bronk, fellow at the James A. Baker III Institute for Public Policy at Rice University. On average, malicious software infections are not discovered for 15 months, according to ICS-CERT. That leaves hackers plenty of time to do damage.



Integrated design is changing the way buildings are designed, constructed and operated; different professionals each bring an important element to the table that results in a successful, sustainable building. Education is no different: Students bring the ambition, ASHRAE offers the financial support, and together they create an educational degree that will lay the foundation for a sustainable career.

Please help ASHRAE promote the availability of **more than 20 Society scholarships** for the 2013–2014 school year, available to high school seniors entering college through senior undergraduate engineering students.

- Two High School Senior Scholarships—\$3,000 each
- Three Engineering Technology Scholarships—\$3,000 each
- Six Regional and University-Specific Scholarships—\$3,000—\$5,000 each
- 11 Undergraduate Engineering Scholarships—\$3,000—\$10,000 each



"The support the scholarship provides has relieved an enormous worry about the cost of tuition. The Willis H. Carrier Scholarship has solidified my involvement in ASHRAE and motivated me to work hard to complete my degree so that I can contribute as much to the HVAC&R industry as Willis H. Carrier has."

Partrick McGrail, 2012-2013 recipient of the Willis H. Carrier Scholarship, secretary of the ASHRAE Kansas State Student Branch

#### **Annual Application Deadlines:**

**December 1** for Undergraduate Engineering, Regional and University-specific Scholarships.

May 1 for Engineering Technology and High School Senior Scholarships.

Scholarships are awarded for the academic year following the application deadline beginning with the fall semester. For a list of available scholarships, complete eligibility requirements, and an application, visit <a href="www.ashrae.org/scholarships">www.ashrae.org/scholarships</a>

# ASHRAE Learning Institute 2013 Spring Online Course Series

# **2 WAYS TO REGISTER**

Internet: www.ashrae.org/onlinecourses

Phone: Call toll-free at 1-800-527-4723 (US and Canada) or 404-636-8400 (worldwide)

Note: You may register up to 24 hours prior to an online course. Courses are in US Eastern Standard Time.

Basics of High-Performance Building Design Mon, March 18, 2013 – 1:00 pm to 4:00 pm ET

Air-to-Air Energy Recovery Fundamentals Wed, March 20, 2013 – 1:00 pm to 4:00 pm ET

Advanced High-Performance Buildings Design Mon, March 25, 2013 – 1:00 pm to 4:00 pm ET

Air-to-Air Energy Recovery Applications: Best Practices

Wed, March 27, 2013 - 1:00 pm to 4:00 pm ET

Complying with Standard 90.1-2010: Envelope/Lighting

Wed, April 17, 2013 - 1:00 pm to 4:00 pm ET

Humidity Control Troubleshooting
Mon, April 22, 2013 – 1:00 pm to 4:00 pm ET

Combined Heat & Power: Creating Efficiency Through Design & Operations

Wed, April 24, 2013 - 1:00 pm to 4:00 pm ET

Complying with Standard 90.1-2010: HVAC/Mechanical Mon, April 29, 2012 – 1:00 pm to 4:00 pm ET

The Commissioning Process & Guideline 0 Wed, May 1, 2013 – 1:00 pm to 4:00 pm ET

Fundamental Requirements of Standard 62.1-2010 Wed, April 17, 2013 – 1:00 pm to 4:00 pm ET

\* Take 3 or more courses and save 20% off registration!

# **HVAC Design Training**

2 Courses, 5 Days of Intense Instruction

March 18-22, 2013 • June 3-7, 2013 • August 12-16, 2013

# HVAC Design: Level I - Essentials

This training provides intensive, practical education for designers and others involved in delivery of HVAC services. Gain practical skills and knowledge in designing, installing and maintaining HVAC systems that can be put to immediate use. The training provides real-world examples of HVAC systems, including calculations of heating and cooling loads, ventilation and diffuser selection using the newly renovated ASHRAE Headquarters building as a living lab.

# **HVAC Design: Level II - Applications**

Developed by industry-leading professionals, the training course provides participants with advanced level information about designing, installing and maintaining HVAC systems that can be put to immediate use. Participants will gain an in-depth look into Standards 55, 62.1, 90.1, and 189.1 and the Advanced Energy Design Guides, as well as a range of other HVAC topics including: HVAC equipment and systems; energy modeling; designing mechanical spaces; designing a chiller plant; and BAS controls.

#### Creating Effective, Highly Skilled Engineering Team Members

- Gain knowledge to make immediate contributions to design projects
- Participate in in-depth, practice-focused training
- Learn from industry leaders selected by ASHRAE
- Receive free bonus resources valued at over \$200

Visit www.ashrae.org/hvacdesign to register

# **Bi-State Chapter Officers and Governors 2012—2013**

Position	First Name	Last Name	Email	Phone	Fax
Officers					
President	John	Fusco	jfusco@olace.com	(914) 747-2800	(914) 747-0453
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Treasurer	Dennis	LaVopa	dlavopa@dlFlowTech.com	(845) 265-2828	(845) 265-2745
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Golf	Steven	Abbattista	sabbattista@olace.com	(914) 747-2800	(914) 747-0453

# 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.

# **ASHRAE Region I 2012-13 Executive Committee and Society Contacts**

#### **DRC - Director & Regional Chair**

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# ARC – Assistant Regional Chair &

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#### **Nominating Committee Member**

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#### **Nominating Committee Alternate**

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### Nominating Committee 2<sup>nd</sup> Alternate

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#### **RVC Membership Promotion**

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#### **Regional Chapter Programs Chair**

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#### **Regional Refrigeration Chair**

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mcambria@meengineering.com

### **Regional Historian**

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Heather L. Platt, P.E.

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#### **Regional Electronics Communication**

**Committee Alternate** Kevin Gallen, P.E.

Gallen Engineering, PC

# **Regional Representative**

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#### **Regional Young Engineers in ASHRAE**

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#### **Director of Member Services**

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Joyce Abrams

Jodi Scott

#### **Communications Manager**

ASHRAE 1791 Tullie Circle, N.E. Atlanta, GA 30329 404.636.8400 jscott@ashrae.org

# **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



















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Register

Early for the Best Deal!

> w.ashrae.org/ denver

LAWRENCE STURGIS

EXECUTIVE VICE PRESIDENT



# Join us at **ASHRAE's 2013 Annual Conference**Denver, Colorado | June 22–26, 2013

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.

Research Summit — held in conjunction with the 2013 Annual Conference. The summit addresses the latest research results, innovative research techniques and forecasts future research directions.

Technical Program — presentations and papers focus on current research worldwide; core HVAC&R applications and systems; and Integrated Project Design, Energy Modeling and Building Efficiency Performance.

**Networking** — share ideas and learn from fellow members from your hometown and around the world.

ASHRAE Learning Institute — seven in-depth training courses including a new Professional Development Seminar on Operations and Maintenance of High-Performance Buildings and a new Short Course on Optimization of HVAC Systems and their Components.







**\$\$\$** Special first time attendee registration fee available!

# **Employment Opportunities**

# **Energy Modeler**

**Kohler Ronan, LLC** is a leading Consulting Engineering Firm with offices in New York, NY, and Danbury, CT specializing in the design of commercial & institutional projects. The Firm is currently in search of a Building Energy Modeler. Join a high-energy office with a young professional environment. Work side-by-side with industry experts on projects ranging from nationally recognized cultural institutions and museums, to universities and higher education. Be rewarded for independent thought and creative solutions. And most importantly, enjoy the work you do.

This position requires knowledge of energy systems, energy efficiency, renewable energy, and sustainable practices for commercial building systems.

Individual must be familiar with Energy Modeling and Building Simulation software:

DOE-2, eQuest, Required

Ecotect, IES-VE, Trane Trace, Carrier HAP Preferred

Applicants must have:

- BS Mechanical Engineering or related field
- Self-Motivated
- Background in building energy efficiency and renewable energy.

Kohler Ronan offers:

- Competitive salary
- Health Benefits
- 401K plan
- Paid Vacation
- Great office atmosphere
- Opportunity to work closely with industry experts
- Summer Hours

More information about the firm can be found at www.kohlerronan.com.

Please send your resume and cover letter to krce@kohlerronan.com.

# **Mechanical / Electrical Engineers / Project Managers**

**Kohler Ronan, LLC** is a leading Consulting Engineering Firm with offices in New York, NY, and Danbury, CT specializing in the design of commercial & institutional projects. The Firm is currently in search of experienced Mechanical and Electrical Engineers / Project Managers with 5 to 10 years of experience. Join a high-energy office with a young professional environment. Work side-by-side with industry experts and leaders on projects ranging from nationally recognized cultural institutions and museums, to universities and higher education. Be rewarded for independent thought and creative solutions. And most importantly, enjoy the work you do.

Applicants must have:

- BS Mechanical or Electrical Engineering or related field
- PE preferred
- Self-motivated and well organized individual with excellent communication skills
- Experienced background in commercial and institutional projects

Kohler Ronan offers:

- Competitive salary
- Health Benefits
- 401K plan
- Paid Vacation
- Great office atmosphere
- Opportunity to work closely with industry experts
- Summer Hours

More information about the firm can be found at www.kohlerronan.com.

Please send your resume and cover letter to krce@kohlerronan.com.

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.



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
March	3/13/2013	Research Promotion	Hydraulic balancing seminar	
April	4/10/2013	Sustainability	Nahom A. Gebre, Esq., P.E. Risk Management Attorney Victor O. Schinnerer & Company, Inc. Engineering Design Liability Issues	
May	5/8/2013	Student Activities	Golf Outing	
June	6/12/2013	Student Scholarships	Hold the date	

# MIT's Ernest J. Moniz Nominated Secretary of Energy

President Barack Obama has announced the nomination of MIT's Ernest J. Moniz to head the U.S. Department of Energy (DOE). Moniz is the Cecil and Ida Green Professor of Physics and Engineering Systems, as well as the director of the MIT Energy Initiative (MITEI) and the Laboratory for Energy and the Environment. At MIT, Moniz has also served previously as head of the Department of Physics and as director of the Bates Linear Accelerator Center. His principal research contributions have been in theoretical nuclear physics and in energy technology and policy studies. He has been on the MIT faculty since 1973.

"President Obama has made an excellent choice in his selection of Professor Moniz as Energy Secretary," said MIT President L. Rafael Reif. "His leadership of MITEI has been in the best tradition of the Institute—MIT students and faculty focusing their expertise and creativity on solving major societal challenges, a history of working with industry on high- impact solutions, and a culture of interdisciplinary research." Reif continued, "We have been fortunate that Professor Moniz has put his enthusiasm, deep understanding of energy, and commitment to a clean energy future to work for MIT and the Energy Initiative—and we are certain he will do the same for the American people."

Moniz is the founding director of MITEI, which was created in 2006 by then—MIT President Susan Hockfield. MITEI is designed to link science, innovation and policy to help transform global energy systems. Under Moniz's stewardship, MITEI has supported almost 800 research projects at the Institute, has 23 industry and public partners supporting research and analysis, and has engaged 25 percent of the MIT faculty in its projects and programs.

At last count, more than two thirds of the research projects supported through MITEI have been in renewable energy, energy efficiency, carbon management, and enabling tools such as biotechnology, nanotechnology and advanced modeling. The largest single area of funded research is in solar energy, with more than 100 research projects in this area alone. Projects supported through MITEI have fostered the development of such innovative technologies as low-cost solar cells that can be printed directly onto paper or other flexible, inexpensive materials; utility-scale liquid batteries that could enable grid integration of intermittent energy sources; transparent solar cells that could be built into display screens or windows; and bioengineered batteries. Over 100 MITEI seed fund projects have served to attract many MIT faculty to energy-related research. Several MITEI-supported projects have led to the formation of start-up companies, reflecting the Institute's long-standing focus on commercializing technology solutions.

In addition, MITEI has a major focus on education. It has awarded 252 graduate fellowships in energy, 104 undergraduate research opportunities and, in 2009 established a new energy minor, which is already one of the largest at the Institute. MITEI also supports a range of student-led research projects to green the MIT campus.