



Upcoming Events

- **April 13th** -
Effective Room Air Distribution
- **May 11th** -
HVAC Noise and Vibration
Control
- **June 8th** -
Golf Outing

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Meeting Wednesday March 9, 2011

Facility Tour



NYPA

White Plains Headquarters

123 Main Street

The event will begin at 6pm in the Jaguar Room on the 1st floor. There will be a presentation and discussion by those within the New York Power Authority organization who were responsible for the building's LEED Gold certification. Then the technical tours will commence. Refreshments will be served; not dinner.

Please make reservations by contacting either:

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President's Message

By Enzo A. Carlesimo

On behalf of the entire Chapter, I would like to extend our gratitude to Society President Lynn Bellenger, PE for her insightful presentation last month. Her presentation on energy conservation for existing buildings was very informative and gave everyone in attendance better insight into all of ASHRAE's research projects. It is not often that a local chapter like ours has the honor of having the Society President present at one of our monthly meetings. As a result, I would like to also extend our gratitude to James Dolan, PE for playing such an instrumental role in organizing the event. Our upcoming meeting on March 9th will not take place at our usual venue, Casa Rina Restaurant but instead at the Rappleyea Building in downtown White Plains. The Rappleyea Building is the administrative headquarters for the New York Power Authority (NYPA). It was the first building in New York State to earn a LEED Gold-Existing Building ranking from the United States Green Building Council (USGBC), and we are fortunate enough to be able to go on a facilities tour on March 9th. Our chapter tries to organize at least one of these facilities tours once a year, and we have been able to visit some entertaining and interesting places over the years, such as the Jacob Burns Film Center, the Heartland Brewery, and the New York Rangers Practice Facility. I am certain that the tour of the NYPA headquarters will not disappoint, and I am looking forward to the 9th, and I hope that you all are too!



Enzo A. Carlesimo
Bi-State Chapter President

Historical Notes — Bob Roston, Bistate Historian

Early Discussion

“Mr. President, I sent that question in for discussion, because I knew nothing about it and wanted to learn something, and was in hopes that somebody here could enlighten me. There are some men who do know something about it, and if there are any of them here I would be glad to hear from them; I think it is unquestionably one of the coming systems of heating, and as a member of The American Society of Heating and Ventilating Engineers we ought to know something about it, or we are not abreast of the times.”

—Stewart Jellett, at the first ASHYE meeting, in 1895, suggesting a discussion topic on electric heating

ASHRAE Hosts Building Energy Modeling Conference, BEMP Certification in April

An integrated design approach to building energy modeling – and learning how to use modeling tools more effectively – improves the accuracy and reliability of simulation results and increases the return on time and resources invested to generate the models. *ASHRAE's Energy Modeling Conference: Tools for Designing High Performance Buildings*, April 4-6, 2011, ASHRAE Headquarters, Atlanta, Ga., will provide hands-on modelers and principals with the information to better harness the power of energy modeling tools. The conference covers modeling fundamentals, building component contributions, software demonstrations and case studies. A collaborative perspective is provided that demonstrates how energy models and computer simulations can assist all project team members in creating energy-efficient buildings. For complete information or to register, visit www.ashrae.org/energymodeling. Registration is \$500 (\$450, ASHRAE, AIA and USGBC members).

“There are industry powerful modeling tools that enable engineers and architects to create and refine our vision of a building – its appearance, systems, operation and performance,” Lynn G. Bellenger, P.E., ASHRAE president and conference keynote speaker, said. “Understanding how to use those tools to model new and innovative system types and learning more about building physics will enable modelers to expand their abilities to design the high-performance buildings our clients demand and expect.”

In the conference's spirit of integrated design, William J. Worthen, AIA, also joins Bellenger as a keynote speaker. Worthen is the American Institute of Architecture's national director and resource architect for sustainability, serving as an expert on sustainability.

Sessions cover ASHRAE standards, the cost of energy modeling, modeling for a variety of building types, such as hospitals, data centers and labs, building information modeling and integrating building performance. Energy modeling software companies are providing 30-minute demonstrations. One-on-one comprehensive demonstrations also are available.

In addition, on April 6, the U.S. Department of Energy is launching its development roadmap for EnergyPlus, OpenStudio, EPGUI and other tools. Attendees can provide feedback on the roadmap and on DOE's general activities in the simulation tools area.

Also on April 6, ASHRAE will administer its Building Energy Modeling Professional (BEMP) certification examination. The BEMP certifies an individual's ability to evaluate, choose, use, calibrate and interpret the results of energy modeling software when applied to building and systems energy performance and economics and to certify individuals' competence to model new and existing buildings and systems with their full range of physics. Certification applications (submitted online) must be received by ASHRAE 30 days prior to the exam. The application fee is \$415 (\$295 ASHRAE member).

Membership Promotion — Erica L. Ross, Chairman

With the closing of the winter months, it is time to focus our minds on the warm design days ahead! With only three meetings left, we should be thinking about encouraging new staff members to take part in the ASHRAE experience. Luckily, March's meeting will be a tour! Great way to give those excited new engineers a taste of the real world! LEED has become such a large part of our design culture, we would be doing our colleagues an injustice if we didn't try and share the knowledge. So please, grab your co workers and make it a night out! Remember to find us on facebook at <http://www.facebook.com/BISTATE>.

Student Activities — Carmen B. Yellen, Chairman

Engineers' week came and went quite fast, but we have set the groundwork for a long lasting coalition between local schools and companies. As a professional society, and with our network, we are able to offer students insight into our industry and encourage their interest in engineering careers related to HVAC-R.

The first of two schools we have worked with is Fox Lane High School. Through The *Senior Program for Internships & Research Enrichment*, also known as the ASPIRE program, we matched up Marc, a High School Junior, with IBM Senior Engineer W.Bunker, one of our chapter members. Here is a summary of his experience;

"Mr. Bunker met me in the morning and toured me through one of the main facilities at the plant, explaining the purpose of the machinery as we went. We went through various rooms that controlled cooling, exhaust, etc., and looked through into the main manufacturing area. Mr. Bunker then introduced me to some coworkers who showed me how they monitor the state of the machines via computers and ensure that all systems are running smoothly. I am undecided as to whether I want to go into engineering and found the day an interesting and useful look into career."

Additionally, ARBPE, PLLC Consulting Engineers, has accepted the application of another Fox Lane High School Senior, for a 6 week internship this May. She submitted a very impressive resume, with related coursework in computer aided design, is an honors student, and is actively exploring engineering outside the classroom as well.

The second school is Brewster High School. The BHS Engineering Club was founded on the premise that students today miss out on hands on engineering and construction practices in the modern school curriculum. Their goal is to teach these skills and to expose them to real life problem solving and professional interaction by entering engineering competitions and sponsoring some of their own. This year the group has won the regional Punkin' Chunkin' pumpkin throwing competition and is currently engaged in a school building project, solar energy project, bridge building competition sponsored at the school in conjunction with the local Brewster Education Foundation, and are learning to weld this spring. The second group/program within BHS is the Research Science class. This academic class is organized to teach students science research skills in the context of mentor/mentee relationships with industry and academia. ASHRAE serves as the "go-to" organization for engineering and design contacts and we all hope to build this relationship to a greater and deeper extent in the future.

User's Manual Provides Guidance on 2010 Energy Standard

Detailed guidance on how to apply the latest ASHRAE/IES standard for the design of energy-efficient buildings is provided in the newly published User's Manual to ANSI/ASHRAE/IES Standard 90.1-2010, *Energy Standard for Buildings Except Low-Rise Residential Buildings*. The standard, which provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings, contains 109 addenda approved since the 2007 standard was published.

"The new User's Manual is a very useful resource because it helps guide practitioners in by explaining the intent of provisions in the standard and how they apply to buildings through not only written word but also illustrations and example problems," Steve Skalko, chair of the Standard 90.1 committee, said. "The latest edition of the manual is especially valuable because it specifically identifies what changes have taken place since the 2007 edition and through use of calculations and examples tells how the new provisions apply."

Specific examples of how the User's Manual assists users in regard to the 2010 standard include:

- Application of new requirements in the standard regarding data centers.
- Application of new requirements for building envelopes including vestibules, continuous air barriers, skylights, day lighting controls and the use of dynamic glazing.
- Explanation of new lighting power density requirements and application of revised lighting controls. In the standard, maximum allowed interior lighting power densities were lowered for most space types, additional occupant sensing controls and mandatory day lighting requirements are added for specific spaces and a new five-zone exterior lighting power density table has been added.
- Explanation of how to apply new HVAC requirements, including higher equipment efficiencies, energy recovery provisions in more applications, economizers required in more climates and smaller system sizes and more energy-conserving controls.
- Changes to modeling requirements (e.g. for U.S. Green Building Council LEED® certification) that were clarified and expanded.

Since being developed in response to the energy crisis in the 1970s, Standard 90.1 has become the basis for building codes, and the standard for building design and construction throughout the United States.

The cost of the 90.1-2010 User's Manual is \$99 (\$84, members). To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide) or visit www.ashrae.org/bookstore.

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**.

Name _____ Member # _____

Company _____ Chapter _____ Bi-State _____

Address _____

City _____ State _____ Zip _____

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 contributions are tax deductible.

ASHRAE Learning Institute Spring 2011 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 seminar. Courses are in US Eastern Standard Time.



Using Standard 90.1 to Meet LEED Requirements
Monday, March 28, 2011 – 1:00 p.m. to 4:00 p.m.

District Cooling & Heating Systems: Central Plants
Wednesday, April 20, 2011 – 1:00 p.m. to 4:00 p.m.

Fundamental Requirements of ASHRAE Standard 62.1-2010
Wednesday, March 30, 2011 – 1:00 p.m. to 4:00 p.m.

Understanding Air-to-Air Energy Recovery Technologies & Applications
Monday, April 25, 2011 – 1:00 p.m. to 4:00 p.m.

Application of ASHRAE Standard 62.1-2010
Wednesday, April 6, 2011 – 1:00 p.m. to 4:00 p.m.

Basics of High Performance Building Design 
Wednesday, April 27, 2011 – 1:00 p.m. to 4:00 p.m.

The Commissioning Process & Guideline 0
Monday, April 11, 2011 – 1:00 p.m. to 4:00 p.m.

Complying with Standard 90.1-2010 HVAC/Mechanical
Monday, May 2, 2011 – 1:00 p.m. to 4:00 p.m.

Avoiding IAQ Problems Using ASHRAE's New IAQ Guide
Wednesday, April 13, 2011 – 1:00 p.m. to 4:00 p.m.

Advanced High Performance Building Design 
Wednesday, May 4, 2011 – 1:00 p.m. to 4:00 p.m.

Understanding Standard 189.1 for High Performance Buildings
Monday, April 18, 2011 – 1:00 p.m. to 4:00 p.m.

Complying with Standard 90.1-2010 Envelope/Lighting
Wednesday, May 11, 2011 – 1:00 p.m. to 4:00 p.m.



ASHRAE HVAC Design Essential Workshop

May 18-20 • ASHRAE Foundation Learning Center • Atlanta, GA

ASHRAE Certification Programs

In three days, you will

- Participate in in-depth, practice-focused training
- Improve overall building performance
- Effectively collaborate on an integrated design team
- Learn from industry leaders selected by ASHRAE
- Gain real-world experience to make immediate contribution to design projects

ASHRAE created the HVAC Design Essentials to provide intensive, practical education for HVAC designers and others involved in delivery of HVAC services. Developed by industry-leading professionals, this workshop provides attendees with the fundamental and technical aspects of HVAC design in commercial buildings.

In three days, you will gain practical skills and knowledge to design, install and maintain HVAC systems that can be put to immediate use. The workshop provides real-world examples of HVAC systems including calculation of heating and cooling loads, ventilation and diffuser selection using the newly renovated ASHRAE Headquarters building as a living lab.


Who Should Attend

Professionals at:

- Mechanical design firms
- Architectural firms
- Mechanical consulting firms
- Facility management departments
- Sales engineering firms
- Utility companies



Visit www.ashrae.org/hvacdesign to register

- Building Energy Assessment Professional (BEAP) 
- Building Energy Modeling Professional (BEMP)
- Commissioning Process Management Professional (CPMP)
- Healthcare Facility Design Professional (HFDP)
- High-Performance Building Design Professional (HBDP)
- Operations & Performance Management Professional (OPMP)

For more info, visit
www.ashrae.org/certification

Officers and Governors 2010—2011

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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."

ASHRAE Region I Roster 2010-11 Executive Committee

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HELP WANTED

Employment ads may be submitted for inclusion in the following month's issue of **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.

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

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'World's First Skyscraper' Helped Changed Culture

The world's first skyscraper was built by early farmers to awe early settlers into settling down, archaeologists say. Nomadic hunter-gathers settled into farming next to the Jordan River and built a 28 ft (8.5 m) stone tower around 11,000 years ago. The structure was found by scientists in 1952. Built out of concentric rows of the stones, it also contains an enclosed stairway. Israeli archaeologists recently concluded it was built to mark the summer solstice and as a symbol that would entice people to abandon their nomadic ways and settle down. They found that when the tower was built the nearby mountains cast a shadow on it as the sun set. On the summer solstice, the shadow fell exactly on the structure and covered the entire village.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers advances the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world. Membership is open to any person associated with the field including indoor air quality, building design and operation, and environmental control for food processing and industry.

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	3/9/2011	Membership Promotion	Tour of LEED Accredited Building (NYPA White Plains)	
April	4/13/2011	Sustainability	Effective Room Air Distribution	Introduction to Hydronic Heating and Cooling
May	5/11/2011	Student Activities	HVAC Noise and Vibration Control	Variable Refrigerant Flow Fundamentals
June	6/8/2011	Membership Promotion	Golf Outing	

Six ARPA-E Projects Generate More than \$100 Million in Follow-On Funding

In a little over one year, six projects that received a total of \$23.6 million in seed funding from the Department of Energy’s Advanced Research Project Agency – Energy (ARPA-E) have generated more than \$100 million in outside private capital investment, Energy Secretary Steven Chu announced recently. The six projects, which received between \$750,000 and \$8 million each, focus on improving solar and wind energy technologies and advanced battery storage.

“This amount of private capital support indicates that the business community is hungry to invest in truly innovative solutions to the country’s energy challenges,” said Secretary Chu. “These game-changing projects are going to ensure America’s energy, economic and environmental prosperity is secure. The goal of the ARPA-E program is to swing for the fences, to focus on truly transformative energy research, and that’s exactly what we are seeing.”

The six projects singled out by Secretary Chu include:

1366 Technologies, Lexington, Mass. – 1366 Technologies is a small startup developing a new way to make silicon wafers – the key part in solar panels – for 80% less than the current cost. The company received \$4 million investment from ARPA-E and since then has secured an additional \$33.4 million from investors and interested customers.

Envia, Hayward, Calif. – Envia Systems, in partnership with Argonne National Laboratory, received \$4 million from ARPA-E in December 2009 to develop lithium-ion batteries with the highest energy density in the world. They recently received an additional \$17 million in venture capital funds.

FloDesign, Wilbraham, Mass. - FloDesign Wind Turbine (FloDesign) received \$8.3 million from ARPA-E to accelerate the development of a new wind turbine inspired by airplane jet engines. ARPA-E funding helped FloDesign raise an additional \$27 million, recruit a stellar executive team, and more than double its staff from 20 to 50 employees.

SunCatalytix, Cambridge, Mass. – Sun Catalytix, a start-up spun out of MIT, received \$4 million from ARPA-E to develop their technologies for combining sunlight and water to provide affordable, highly distributed solar energy to the individual. They have since received an additional \$9.5 million in venture capital funds.

General Compression, Newton, Mass. – General Compression is developing fuel-free compressed air energy storage technology to enable low-cost grid storage and to help make intermittent renewable power (such as from solar and wind) fully dispatchable. The company received a small ARPA-E grant of \$750,000 to test an improved version of their technology with significantly higher efficiency and lower cost, which has been built and is now in testing. Following the ARPA-E award, General Compression has received over \$12 million in additional funding from existing and new investors.

24M, Cambridge, Mass. – 24M is a start-up that was spun out of MIT and A123 Systems after receiving an ARPA-E award of \$2.55 million. The company is developing a new battery architecture that could take batteries for electric vehicles well beyond the performance and below the cost of lithium ion batteries. Shortly after spinning out, the company secured \$10 million in venture capital funds.

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