January 2014

THE LONG ISLAND SOUNDER

ASHRAE Long Island Chapter, Region 1...*Founded in 1957* www.ashraeli.org

American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

Inside this issue:

President's Message

Happy New Year! I hope that everyone enjoyed the holidays with friends and family. We thank all those who attended last month's holiday party / member appreciation. I would also like to personally thank Joe Furman for coming all the way through the snow from Connecticut to visit our chapter last month. Joe is our DRC, Director and Regional Chair of ASHRAE Region 1, and came to see how we run our meetings and share with us some knowledge about how other chapters run theirs. He gave us a few pointers that hopefully we can put to good use.

This month's meeting we will have two excellent presentations; Evans Lizardos will be presenting Session II of our "Back to Basics" on Design of Variable Air Volume Systems. Following we have John Knowles presenting on Automatic Flow Balancing. Both of these presentations are PDH approved.

Our committees are working hard and as always we are looking for volunteers to join our team. I know Rich Rosner has been working hard on the product directory and it will be going to print shortly. I hope you are able to take advantage of this great tool for find local products and resources. We are also looking into other corporate opportunities such has product show cases and meeting sponsors to help support our chapter and RP goals.

Next month is Engineers Week. Engineers Week celebrates us—engineers, engineering students, and technicians—and all of the amazing things we do every day to make the world a better place. Our local EJCLI chapter will be having a one day seminar in February 13 with multiple opportunities to gain PDH credits as well and I will let you know more shortly.

The ASHRAE winter meeting will be held NYC this month January 21-23. If you have the opportunity, the AHR Expo is an amazing opportunity to see what's new and who is who. There are also many ASHRAE learning sessions and technical committees to check out.

Thank you to all the volunteers and board members, I appreciate all your time and dedication to our chapter and community.

We look forward to seeing everyone at the January meeting and thank you for your continued support of the Long Island Chapter of ASHRAE.

Andrew Manos, LEED AP BD+C
President - Long Island Chapter

CHAPTER MONTHLY MEETING

DATE:	**Tuesday, January 14, 2014**
TIME:	6:00 PM - Cocktails/Dinner 6:30 PM - Back to Basics #2 6:45 PM - Dinner Presentation 8:45 PM - Conclusion
LOCATION:	Westbury Manor South Side of Jericho Tpke. 25 Westbury, NY 11590
FEES: Members - Guest - Student -	 $40.00 $45.00 $15.00

Reservations requested, but not required.

Call (516) 333-7117

Long Island Chapter Officers & Committees

ASHRAE 2013/2014 OFFICERS

POSITION	NAME	PHONE	FAX	EMAIL
President	**Andrew Manos, LEED AP**	631.632.2791	631.632.1473	president@ashraeli.org
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Board of Governors	**Lee Feigenbaum, LEED AP BD+C**	212.243.2555		bog2@ashraeli.org
Board of Governors	**Brian Simkins, LEED AP**	203.261.8100	203.261.1981	bog3@ashraeli.org

ASHRAE 2013/2014 COMMITTEES

COMMITTEE	NAME	PHONE	FAX	EMAIL
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Young Engineers in Training	**Lee Feigenbaum**	212.243.2555		yea@ashraeli.org
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Nominating	**Michael Gerazounis, P.E., LEED AP**	212.643.9055	212.643.0503	nominating@ashraeli.org
Reception & Attendance	**Frank Paradiso** **Ken Mueller**	631.632.2791 201.395.3761	631.632.1473 763.231.6924	reception@ashraeli.org
PR & Engineering Joint Council of LI	**Andrew Manos, LEED AP**	631.632.2791	631.632.1473	pr@ashraeli.org
Golf Outing	**Peter Gerazounis, P.E., LEED AP** **Steven Friedman, P.E., HFDP, LEED AP**	212.643.9055 212.354.5656	212.643.0503 212.354.5668	golf@ashraeli.org

Young Engineers in ASHRAE (YEA)

Happy New Year to all of our YEA members! I hope all of our students had a great winter break and are looking forward to the coming semester. Enjoy your time in school…it ends too quickly. There is precious little time to plan for the future.

Let our toasts to the coming year serve as a call to action! This is an excellent time to get involved with ASHRAE. Take advantage of your Long Island Chapters excellent learning and leadership opportunities. Meet professionals in your field, and make friends with fellow young engineers who can help guide you on your way. For the past several years ASHRAE has provided excellent employment opportunities for students, as well as opportunities for advancement for just about everyone. Make it your New Year resolution to take advantage of everything that your Long Island Chapter of ASHRAE and get involved today!

For more information about upcoming events, or to sign up, be sure to visit our website at www.ashraeli.org. As always, we look forward to seeing you at our next meeting, and we encourage you to bring a friend.

Cheers!

Lee Feigenbaum
YEA Chairman

Long Island Chapter - Past Presidents

1958	H. Campbell, Jr. PE	1986	Jerome T. Norris, PE
1959	Clyde Alston, PE	1987	Abe Rubenstein, PE
1960	Sidney Walzer, PE	1988	Michael O'Rouke
1961	Sidney Gayle	1989	Mel Deimel
1962	William Kane	1990	Robert Rabell
1963	Louis Bloom	1991	Gerald Berman
1964	Milton Maxwell	1992	Donald Stahl
1965	Will Reichenback	1993	Ronald Kilcarr
1966	Joseph Minton, PE	1994	Jerald Griliches
1967	Irwin Miller	1995	Walter Stark
1968	Walter Gilroy	1996	Joe Marino
1969	Charles Henry	1997	Norm Maxwell, PE
1970	William Wright	1998	Alan Goerke, PE
1971	Louis Lenz	1999	Frank Morgigno
1972	Ronald Levine	2000	Michael Gerazounis, PE, LEED AP
1973	Henry Schulman	2001	Ray Schmitt
1974	Myron Goldberg	2002	Steven M. Stein, PE
1975	John N. Haarhaus	2003	Andrew Braum, PE
1976	Richard K. Ennis	2004	Claudio Darras, P.E.
1977	Kenneth A. Graff	2005	Craig D. Marshall, P.E.
1978	Evans Lizardos, PE, LEED AP	2006	John Nally
1979	Albert Edelstein	2007	Peter Gerazounis, PE, LEED AP
1980	Ralph Butler	2008	Steven Friedman, PE, HFDP, LEED AP
1981	Robert Rose, PE	2009	Steven Giammona, P.E., LEED AP
1982	Timothy Murphy, PE	2010	Nancy Román
1983	Leon Taub, PE	2011	Carolyn Arote
1984	Raymond Combs	2012	Brian Simkins, LEED AP
1985	Edward W. Hoffmann		

ASHRAE Long Island Chapter

PAOE POINTS FOR 2013/2014

Chapter Members	Membership Promotion	Student Activities	Research Promotion	History	Chapter Operations	CTTC	GGAC	Chapter PAOE Totals
296	225	505	825	250	950	450	250	3,255

Chapter Monthly Meeting - Program for 2013/2014

September 10, 2013 * At Westbury Manor Dinner Presentation – Characteristics of Throw (Overhead Air Distribution Fundamentals) Presenter: ADE - Frank Bergamini ****1 PDH**** **Membership Promotion Night**	**February 2014** **NATIONAL ENGINEERS WEEK** Feb 16 through Feb 22
October 8, 2013 * *At Westbury Manor* Dinner Presentation—Optimizing Efficiency of Multiple Hydronic Boiler Systems Presenter: Joel Southwell ****1 PDH**** **Resource Promotion Night** ***Back to Basic Session I - Evans Lizardos*** *****1 PDH***** ***"How to Select & Specify Heating & Cooling Coils"***	**March 11, 2014** * *At Westbury Manor* Dinner Presentation—GeoThermal Systems – Design and Installation Considerations Presenter: Ray Schmitt and Panel ****1 PDH**** **Joint meeting with LI-Geo** **YEA Night** ***Back to Basic Session III – Evans Lizardos*** *****1 PDH***** ***"Design & Theory of dedicated Outside Air Systems for Humidity Control"***
November 12, 2013 * *At Westbury Manor* Dinner Presentation—Seismic Design for Building Systems Presenter: Jim Sadler from Mason Industries ****1 PDH**** **Joint meeting with SMACNA** **Student Activities Night & YEA Night as well as Membership Promotion and Upgrade Night**	**April 8, 2014 (5 PM)** **ANNUAL FIELD TRIP** **Long Beach Ice Skating Rink** – See the refrigeration system and hear about the storm damage and recovery. ****1 PDH**** Dinner to follow at a local Restaurant with a "Sandy" story **Joint meeting with RSES**
December 10, 2013 * *At Westbury Manor* **HOLIDAY PARTY** Free Buffet Dinner for Members **VISIT FROM DRC - Joseph Furman**	**May 5th, 2014** * *Cherry Valley Club, Garden City, NY* **ANNUAL GOLF OUTING**
January 14, 2014 * *At Westbury Manor* Dinner Presentation- Automatic Flow Balancing Presenter: John Knowles ****1 PDH**** ***Back to Basic Session II - Evans Lizardos*** *****1 PDH***** ***"Design of Variable Air Volume Systems"***	**May 13th, 2014** * *At Westbury Manor* Dinner Presentation—Introduction to Ammonia Refrigeration Systems Presenter: Douglas T. Reindl, Ph.D., P.E. ****1 PDH**** **ASHRAE DISTINGUISHED LECTURER** **Student Activities Night** **Refrigeration Night**
January 2014 ASHRAE Winter Meeting Jan 18-22 New York Hilton 1335 Avenue of the Americas New York, NY	**June 10, 2014** * *At Westbury Manor* **Free Buffet Dinner for Members** **PAST PRESIDENTS NIGHT & OFFICER INSTALLATION** **STUDENT SCHOLARSHIPS TO BE AWARDED** **ASHRAE History Quiz and prize Give-A-Ways**
February 11, 2014 * *At Westbury Manor* Dinner Presentation—Leed Ver 4 Rating System & ASHRAE 191P Water efficiencies in Bldgs. Presenter: Rich Gerbe ****1 PDH**** **Joint Meeting with USGBC** **Resource Promotion Night** **Membership Promotion Night**	**August 2014** **Chapter Regional Conference (CRC) Region I** **Bi-State Chapter Hosting August 14-16, 2014**

Board of Governors Meeting Minutes

Attendees: Andrew Manos (AM); Rich Rosner (RR); Don Kane (DK); Andrew Dubel (AD); Richard Halley (RH); Lee Feigenbaum (LF); Brian Simkins (BS); Tom Fields (TF); Carolyn Arote (CA)

The meeting was called to order at 5:15pm by Andrew Manos - President, at Westbury Manor.

President: Presidents PAOE points are currently at 740. A motion to approved Novembers 12ths meeting was deferred until a quorum was present. Joe Furman attended BOG meeting and meeting. Generally LI Chapter well organized, food/meetings, BOG works well. Noted that CT chapter uses a service (Star Chapter??) for organizing chapter functions and website updates. Spoke of some of the programs ASHARAE is involved with: Rich Rosner opined that in some cases, ASHRAE efforts with regard to energy efficiency may overlap areas covered by NFPA-70, and an effort is required to avoid conflicts. Joe indicated the ASHRAE's intent is to complement not usurp other accepted codes. Members are to update PAOE points every month.

President Elect/Programs: RR noted all meetings were booked. In the event of a no show, RR and DK noted they could put on a technical presentation which would not have PDH approval on grounding, power quality etc. January will be a double header with a back to basics session on VAV systems and Automatic flow balancing. February meeting to be joint meeting with USGB on LEED V4 and ASHRAE 191P water efficiencies in building. Sponsors for cocktail hour - Past sponsors – Daikin (Sept), October (ATI), November (Trane); January – sponsor will be MGE; February – Sponsor needed; March - Sponsor will be Accuspec; April – Sponsor needed; May – Sponsor needed

Chapter Technology Transfer: CTT PAOE points are current at 400. Generally, CTTC PAOE update follows the meeting, after speaker evaluation reports are filed. DK will continue to send special events information to Liset for incorporation into the sounder.

Treasury: As of December 10th, account balance is $10,357.09. IRS extension and change of address (to PO box) were transmitted to IRS on October 31st. 990EZ should be filed by end of December. Preliminary budget was presented for review and comment. Additional sources of revenue are required to fund CRC planning.

Grassroots Government Activates: GGA PAOE points are current at 250. CL to promote meetings with local, state, and government entities. Joint effort underway with EJCLI (ATI and Accuspec will handle.)

Historian: Historian PAOE points are currently 225. Records are current being digitized.

Research Promotion: RP PAOE points are currently at 375. Total RP collected so far is $6,225, which exceeds the "30%" goal. End-of-Year Goal is $14,900. High five is $21,422. 30% December goal was reached. Congratulations RR.

Membership Promotion: MP PAOE points are currently at 225.

Student Activities: SA PAOE points are currently at 505.

YEA: The 2nd annual Brooklyn Brewery outing will be scheduled for next year. The Stony Brook chapter has been meeting weekly

Webmaster: The website has been updated. RR noted that Anthony has been updating the site content promptly. Chairs to copy relevant files onto chapters FTP site. Links to the FTP site have been sent to all of the chairs and directories have been added.

Golf: The golf outing has been confirmed for May 5th.

Old Business: Ticket books – CA presented the proposed artwork for the discount ticket books for chapter meetings ($400 for eleven tickets. Numbered to indicate book and ticket no. in book.) User will be asked to sign on back of ticket, so we can track usage.

New Business: Region 1 dinner will be held on January 20th at 7:00 PM at Johnny Utah's. It was voted to increase chapter dues $5, which will be in line with NJ and NY. ASHRAE NY is looking for volunteers for the AHR.

The next meeting will be held on January 14th at Westbury Manor.

The meeting was adjourned at 6:00.

Andrew B. Dubel, P.E.
Chapter Secretary

January Program

Dinner Presentation

"Automatic Flow Balancing"

Presented by

John Knowles
Wales Darby, Inc.

Attendees Will Earn 2 PDH's!

DATE:	**TUESDAY, JANUARY 14, 2014**		
Time:	6:00 PM - Cocktails and Hors D'ouevres 6:45 PM - Dinner Presentations 8:45 PM - Conclusion	**Fee:**	$ 40.00 Member $ 45.00 Guest $ 15.00 Student
Location:	**WESTBURY MANOR** (516) 333-7117 Jericho Tpke (South Side), 3/10 of mile east from Glen Cove Rd., Nassau County, NY. **Directions are posted at @ www.ashraeli.org.**		
Presentation:	This month's presentation will discuss the idea that the inclusion of automatic flow control valves will benefit the emerging methods of engineering hydronic systems in areas of performance and commissioning. **In addition Evans Lizardos, PE, LEED AP, will be presenting Part II of the 'Back to Basics' series – Design of Variable Air Volume Systems.** **All attendees will receive 2 PDH's.**		
About our Speaker(s):	**John Knowles** is the Senior Vice President of Application Engineered Design for Wales-Darby, Inc. A graduate of Union College with a BS in Mechanical Engineering, John also holds a LEED AP Certificate. His expertise is derived from years of hands-on application and continuing education into the forms and functions of the equipment and systems that make up his designs. He has been an educator for many years providing training to the engineering community in both group and individual settings. John is proficient in system sizing and design software as well as CAD programs. He believes in creating and maintaining a strong working relationship with the engineering community. John has worked at Wales-Darby for over 25 years.		

Research Promotion

Welcome back and to the start of the New Year. I hope your Holidays were good and you have recovered from that winters nap. Our January meeting is starting off with Evans Lizardos and his back to basics series and then John Knowles will be bringing us up to date on Automatic Flow Balancing. There will be 2 PDH's given out for these lectures and our guest speaker from November, Mr. Jim Sadler, PE from Mason Industries, has informed me that he has made up the PDH certificates for his lecture and will have them plus some more ASHRAE design books at our January meeting for distribution. I was lucky enough to get a book that evening in November and can say they are very good references.

Our chapter is expected to raise $14,900 or more towards the overall goal and we have already raised $8,425 to date, better than 50% even though traditionally we are expected to be at the 30% or better mark at this time, so indeed things are going well. I am going to press all to keep up with the good work and keep those RP checks coming in as I have set my goals on the High Five Challenge level this year which is way up at the $22,514 level.

The 2014 Product Directory of Manufacturers and their Representatives will go to the printer this month. There's still a little time left if you would like your company listed in the 2014 directory. Most everyone has made their submissions so if you haven't please contact me or you might miss out. If you weren't in last year's issue the cost is $250, contact me and we will get you listed. The Product Directory has been prepared as a service to all its members and as a service to the local HVAC industry. It will be will be made available to all ASHRAE and non-ASHRAE members at no-cost and can be obtained at our monthly meetings or directly from our web-site at http://ashraeli.org/productdirectory.html The Directory is intended to provide better communications between manufacturers and their sales representatives; engineers who specify products; contractors who purchase and install the equipment; and other interested parties. Product Directory listings are not limited to ASHRAE members and the listings are not to be considered as advertising or endorsement by ASHRAE of any product, manufacturer or representative.

I am hoping I can count on the continued support of all of our past contributors who have generously supported us over the years. I also look forward to gaining the support of new contributors this year. Please help support ASHRAE in any way you can.

CONTRIBUTIONS CAN BE MADE IN THE FOLLOWING WAYS:

1) You can mail your checks, made out to ASHRAE Research Promotion, to:

Richard L. Rosner, P.E.
ASHRAE Research Promotion Chair
c/o Nassau Suffolk Engineering & Architecture, PLLC
801 Motor Pkway, Suite 103
Hauppauge, NY 11788

2) You can bring your check to any of the meetings and give it to me. I will mail it into headquarters.

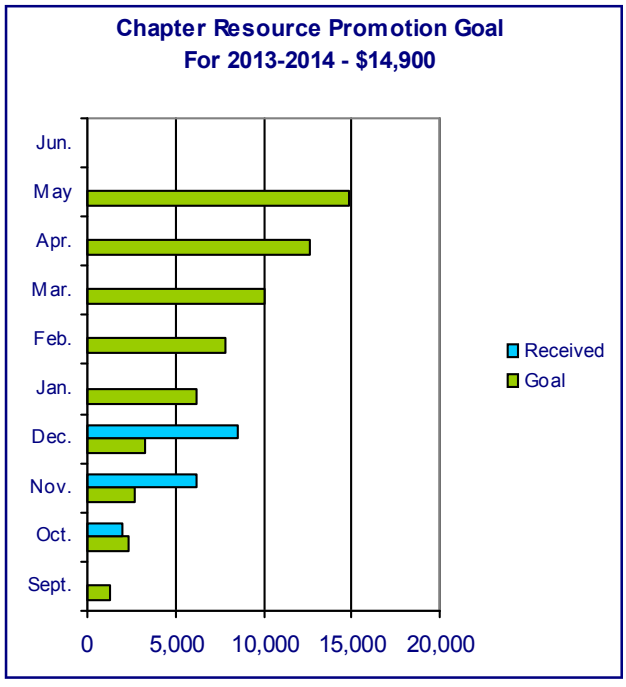
3) You can contribute via paypal from the ASHRAE LONG ISLAND web site just click on the donate button.

4) You can contribute directly on-line. www.ashrae.org

- ***Please make sure you accredit your contribution to the LONG ISLAND CHAPTER 006 ****

Thank you again for all your support!

Richard L. Rosner, P.E.
Research Promotion Chair



CTTC - Hydronic Flow - Let's Strike a Balance

We can all probably agree that for an HVAC system to function correctly (or at least the way it was designed) a balanced condition, both air and water sides, is necessary. What to use as the metric for determining if such a balanced condition exists is where consensus sometimes eludes us. Let us limit ourselves to the waterside for purposes of this discussion and leave the airside for future consideration.

We have all seen designs calling out for balancing valves to be installed downstream of heat exchanging devices, to be used to facilitate the initial system (hydronic) balance, to assure that all circuits are receiving their appropriate ration of BTU's. Good designers will ensure that these valves are accessible through an appropriate access door or panel....really good designers will take into account the furnishings which will occupy the space in front of these doors or panels and locate them to eliminate potential conflicts of access. We can also remember that, prior to the availability of variably speed drives and controls, once the water started flowing, it flowed at a constant rate ("on") or not at all ("off"). It was only logical that to ensure the proper water flow through a given circuit, after consideration for piping sizes, some adjustment should be provided to "balance" the flow to ensure proper division of the heat content to the devices connected. The introduction of the calibrated balancing valve, incorporating means to measure and accurately adjust flow seemed to provide the way to do this. Means were provided to connect instrumentation to measure pressure drop through the calibrated valve section which could be converted to flow (assuming the proper lead in/lead out length of piping was included before and after the valve). If the device were also expected to perform shut-off/isolation duties, some means was provided to "lock-in" the final setting to permit the valve to be returned to the same "open" position determined during the balancing procedure. The balancing procedure is an iterative process, as the setting of one valve in a branch may affect the flow in others. Truly a time consuming, but necessary, process if hydronic balance is to be attained. Needless to say (and yet, we will) if changes to the hydronic circuit are made, this process may have to be performed all over again. Keep in mind, these methods and devices were developed in the era preceding the development of so-called "intelligent" control. Occupant comfort levels were fine tuned, in some cases, by the "open window" method of climate control. The last 25 years have seen the emergence of variable speed pumps, flow limiting devices, addressable control valves (some incorporating regulating features to render them pressure independent, and control systems that can (in concert with the necessary sensors) anticipate heat load (or reduction in same) and effects of outside ambient conditions, to avoid over/under heating/cooling the building spaces. This same time period has also seen debate as to what provision should be made for hydronic balancing, indeed some question the usefulness of balancing a system with all control valves blocked open, when the system will rarely operate in this condition.

Looking for answers, one is first drawn to the *ASHRAE Handbook*, which includes a chapter entitled "Testing, Adjustment and Balancing" (Chapter 38, 2011 - Applications). This chapter starts by discussing the balancing of the water and air distribution systems and the adjustment of the "total system" to provide design quantities. It then progresses into measurements of electrical energy consumption, establishment of quantitative performance for all equipment, verification of automatic controls system operation and sequences of operation, and, finally, sound and vibration measurement. If it wasn't titled "Testing, Adjustment and Balancing", one might think this was the section on system commissioning. The inclusion of the requirement for "total system" adjustment (to provide design quantities), along with the statement regarding the need for air and water balance, implies the intent to accommodate alternative means to ensure proper operation in a balanced manner. What then are the alternatives and what are the positives and negatives associated with each. As luck would have it, Steven Taylor and Jeff Stein have published studies exploring this very question, evaluating eight (8) approaches to achieving this balanced system operation, the results of which are summarized below.

No Balancing - Or, more correctly, no dedicated balancing valves installed, relying instead on control valves to "dynamically" balance the system. The upside? Lower installed cost (no balancing valves, no balancing process), changes to the system (additions or deletions) may be made with no additional "balancing". The downside? Concerns about the system operating with control valves "full open" as during warm-up (heating) or cool-down (cooling) and controllability issues when valves have to operate partly closed at design flow, especially when located close to pumps. Taylor and Stein found that in a twenty (20) story building, with all valves fully open, the (heating) valves closest to the pump would be flowing 212% of the design flow while those furthest from the pump would be flowing 75% of the design flow. Due to the non-linearity of coil performance, the coil flowing 75% of design flow would still result in a coil capacity of 96% of design capacity. For this same system, to reduce the 212% flow to the design flow rate would require the valve closing to 75% of full open. With proper attention to valve size and characteristics as well as the selection of an appropriate operator, it is felt that this configuration could, in some cases, be a viable approach, while in the case of some direct return systems, other approaches would be advisable.

Cont'd. on Page 9

CTTC - Hydronic Flow - Let's Strike a Balance (Cont'd. from Page 8)

Manual Balancing using Calibrated Balancing Valves - The traditional approach, both labor and material intensive, offers the benefits of permitting control valves to be fully open at full design flow, increasing controllability and the incorporation of test ports is useful to establish base-line data as well as for future diagnostics. On the negative side of the ledger are the increased material costs for the valves (even more so if a separate isolation valve is required), the cost to balance and the need to rebalance if the system configuration is changed. The balancing valve will also require additional pump energy due to the resistance offered to flow.

Automatic Flow Limiting Valves (AFLV) - These in-line devices, preset to limit flow when the differential pressure across them is maintained within the proper range, do not require any balancing labor and permit system configuration changes without change to existing circuits. On the negative side we have: the need for a strainer to prevent clogging of the device orifices (requiring, as a minimum, cleaning to remove construction debris at start-up), possible failure due to spring aging, control valves near pumps may still see over-pressurization and the need to carefully track where each valve is installed as they are customized for specific locations.

Reverse Return - By arranging the risers so the last floor supplied is the first returned, total piping lengths are, essentially, equalized. No additional balancing may be necessary and future changes to the system (additions or removals) will not upset the balance. Control valves close to the pump are not generally subject to over-pressurization and, pump head is reduced due to the use of larger pipe. Disadvantages to this approach include the additional cost of the reverse return piping and possible physical constraints of building design precluding this layout.

Oversized Main Piping - This approach attempts to equalize the differential pressure in the system by reducing pressure drop in piping which is intentionally oversized. This approach lends itself easily to future additions, reduces over-pressurization of control valves close to the pump as well as reducing pump head losses. The down side is the use of larger pipe, which increases the material and labor cost. For larger structures (and the requisite larger size piping required), the labor especially can be significant.

Undersized Branch Piping - This approach relies on the use of the smaller branch piping to achieve proper flow balance. There is some savings from the use of smaller piping and it also reduces over-pressurization of control valves nearest the pump. However, limited availability of different pipe sizes as well as the need for significant design and analysis work makes this less attractive as an alternative, as does the increased pumping losses.

Undersized Control Valves - In theory, similar to the undersized branch piping approach, there may be some material cost savings along with the lack of need for balancing, however, limited available control valve selection defeats the potential effectiveness and increased pumping losses are expected. As with the use of undersized branch piping, the use of undersized control valves will incur a penalty in excessive design and analysis costs.

Pressure Independent Control Valves - These devices, incorporating a pressure regulating section upstream of the control element ensure that the control valve is always seeing the correct design pressure, permitting accurate control with no additional balancing. Since the regulator section precedes the control valve section, valves close to pumps are not subject to over-pressurization. Nothing is a free ride though, as these valves require strainers to minimize clogging as well as the labor to clean the strainers of construction debris at start-up. Care must be taken to install at the correct locations in the system as they are location specific. As with anything using a spring element, the spring and wear and/or fail with time.

Other Approaches -While not included in the Taylor and Stein study, one could envision a topology utilizing a building loop (with a variable flow pump) with secondary loops for each branch with smaller variable flow pumps, decoupled from the building loop, servicing each branch. Since the pumps would not be throttled by control valves, overall pumping losses may decrease (the frictional pipe loss being the only component remaining). Of course, changes in coil heat transfer at the lower flows would have to be taken into consideration (similarly to when valves are throttling the flow though a branch), but when energy costs have to be factored in (remember, Chapter 38 addresses the need for energy measurements) this approach may provide some benefit.

In conclusion, we find, as with most design issues, much of the decision process will be based upon an economic evaluation. Keeping in mind that reducing or eliminating the need for manual balancing valves will not eliminate the need to test and measure the system operation requiring some provision for flow measurements to be accomplished (can't turn a pipe into a piece of Swiss cheese like you can with a duct J).

Don Kane, P.E.
CTTC Chair - cttc@ashraeli.org

Membership

I'd like to begin my first newsletter of the New Year with best wishes for a happy and healthy 2014. I also wish both new and continuing success to you all! In the past months your Long Island Chapter of ASHRAE has had the privilege of welcoming 12 new members to our family. Our membership is our greatest strength, and we are looking forward to welcoming even more new members in the coming year!

Rest assured, we will continue to offer great programs, leadership, and learning opportunities that will serve you all – even our newest members – very well as you navigate through the coming year. These opportunities will provide vital stepping stones to success by way of education, networking, and friendships. Make ASHRAE your resolution. Please visit our website at www.ashraeli.org for more information about upcoming events. We look forward to seeing you at our next meeting, and encourage you to bring a friend. Let's toast the promise of the New Year together!

Cheers!

Lee Feigenbaum, LEED AP BD+C
Membership Chairman

Grassroots Government Activities Committee (GGAC)

As most of you know ASHRAE is no longer a US based society it has moved itself to a global society. During this past summer CRC ASHRAE wanted to started a new committee in their local chapters to help it grow globally so it created the GGAC. The main purposes of the GGAC is to serve as a communicator between the local ASHRAE chapters and national, serve as a communicator between the local ASHRAE chapters and other trade organizations, and to update local government officials on ASHRAE standards and technical issues.

So for this ASHRAE season we are having at least four joint engineering meetings. We are having our joint meetings with SMACNA, USGBC, LI-Geo, RSES. And we are looking to see if other organizations would like to join us for joint meetings. We will also be sponsoring an activity for the National Engineer's Week in February.

Charlie J. Lesniak, P.E.
Grassroots Government Activities Chair

ASHRAE™
Long Island
Chapter

History - The History of ASHRAE, 1st in a Series

A Long, Strong Pull Together

In the late nineteenth century, the science of heating and ventilation was not well understood. When installing heating and ventilating systems, most contractors based their calculations solely and unquestionably on data in fan manufacturers' catalogues. Only a few contractors were educated and had formal training in engineering.

Perhaps the best summary of the late 1890s was written by Stewart A. Jellett, a charter member and the second president of The American Society of Heating and Ventilating Engineers. He explains:

"Until about 1890 the business of heating and ventilating had been largely based on the most ancient rule known to engineers, the rule of thumb...I believe it was the stress of competition, the commercial side of the business, that finally forced the recognition of the necessity for more scientific consideration, both in regard to the manufacture of the apparatus and in its application for regular work.

"Between the so-called 'Heating and Ventilating Engineer,' who did not understand his business, and the heating and ventilating engineer who was 75 percent. fakir [sic], the public was getting but a poor return for its money. There was general ignorance on the subject of heating and ventilation, and there were any number of contractors who had patented schemes, designed to give all the heat desired at practically no expense for fuel; in fact, after reading some of the descriptive matter, one felt that a coal bin had ceased to be a necessary adjunct to any building.

"The results of the efforts of contractors and engineers of this class was that the installation of steam and hot water heating apparatus was so generally unsatisfactory that the outlook for business was not favorable."

Matters of Business vs. Engineering

In 1889 the Master Steam and Hot Water Fitters Association was formed to protect the interests of the contractors. Also at this time, more sophisticated scientific approaches to heating and ventilation were being imported from Europe and, in particular, England.

In response to the wishes of members who were interested in learning more about these scientific approaches, a few technical papers were presented at the Association's meetings. But the majority of members were business and sales men, and they were not particularly interested in the arts and sciences of heating and ventilation. In fact, according to Mr. Jellett, they felt that "the conventions were principally for the discussion of business matters, and but scant courtesy was given to the reading of these papers, and practically no discussion followed." This conflict led to the organization of The American Society of Heating and Ventilating Engineers.

During the Association's 1894 National Convention, three technical papers were scheduled to be presented by David M. Nesbit, of London, England; Edward P. Bates, of Syracuse, New York; and Arthur Walworth, of Boston, Massachusetts. The reception of these papers "very much disgusted" the members who were at the Convention to hear and discuss them, and inspired one member, Hugh J. Barron, to write a critical article, which appeared in the July 15, 1894 issue of *Heating and Ventilation*:

"There was one thing conclusively shown by this Convention, and that was that engineers are in a decided minority; the majority are more anxious about getting work and money than about the mere art of heating. Imagine any other society in the world inviting men to give them the results of their thoughts, and one gentleman actually coming three thousand miles to do so, and having a resolution passed that, in the future, papers must only take ten minutes to read.

"The facts are that the majority of American heating and ventilating engineers are not members of the Master Steam and Hot Water Fitters' Association, and that a majority of the Association are really business men only...It is a pity that there were not at least a thousand present to hear Mr. Nesbit's paper, and to intelligently discuss it, as English societies of engineers would discuss a paper presented to them by an American engineer of equal eminence."

Mr. Barron's article was submitted to Louis H. Hart, business manager of *Heating and Ventilation*. During a meeting with Mr. Barron to discuss its publication, Mr. Hart talked with him about forming a society to give consideration to engineer-

Cont'd. on Page 12

History - The History of ASHRAE, 1st in a Series (Cont'd. from Page 11)

ing matters connected with heating and ventilation only. Following this meeting, Mr. Hart spoke with and inspired William M. Mackay. Mr. Hart then took it upon himself to ask the opinions of fifty to seventy-five engineers known to be much interested in their chosen line of work, as to the advisability of forming such an organization. He received many favorable replies.

Organizational Meetings

As a result, about 25 invitations were sent to engineers in New York City to attend a meeting at the offices of *Heating and Ventilation* on Thursday, August 2, 1894. Sixteen attended: A. A. Cary, James A. Harding, George B. Cobb, Hugh J. Barron, H. M. Swetland, William M. Mackay, W. A. Russell, W. B. Wilkinson, Thomas Barwick, F. P. Smith, Albert A. Cryer, Edward A. Munro, Percival H. Seward, O. C. Breckenridge, Morris S. King, and Louis H. Hart. They became known as the Committee of Sixteen.

Fred P. Smith was elected temporary chairman to run the meeting, and Mr. Hart was elected temporary secretary. After discussing the best way to form the society, Mr. Barron moved that a Committee on Organization be selected. Appointed to serve on the Committee on Organization were Messrs. Smith, Barron, Harding, Mackay and Cary. All those present, by motion of Mr. Cary, were made charter members. The meeting was then adjourned to September 10, 1894.

During the next six weeks, the Committee on Organization met five times. Invitations to become a charter member were sent to 157 engineers, and circulars explaining the necessary qualifications were sent out with the invitations. The Committee also worked on drafting a constitution and by-laws.

The first regular meeting, which was purely a business meeting, was called to order at 3:00 p.m. on September 10, 1894 at the Broadway Central Hotel, New York, New York; seventy-five persons accepted the invitation and became charter members. Mr. Smith chaired the meeting, and Mr. Hart was secretary.

In his opening remarks, Mr. Smith defined the objects, advantages and policy of this proposed society. He spoke at length about the importance of good fellowship to the society's success, especially with respect to discontinuing the practice of discrediting another engineer's work when presenting a competitive bid.

"It is only through the united efforts of the members of the society that we may expect to attain that improvement for which we are looking," said Mr. Smith. "There is no reason in the world why the society cannot, if properly managed, aid us in raising a high standard of work, and regulate the price we ought to get for our work. What we want is a long, strong pull together, and that is exactly what I meant when I spoke of good fellowship."

The first order of business was to choose a name for this new society. Mr. Jellett recalls the debate:

"The Committee on Constitution and By-Laws suggested 'The Society of Heating and Ventilating Engineers' as a title for the new society. The debate that followed this suggestion was a spirited one. One member objected to the proposed name and wanted a more definite title, while another thought the name was all right; that other societies might be founded, but they would not count for much, and that the word 'THE' in large letters expressed his ideas of what the society was bound to become. Still another member, our Secretary,

Mr. Mackay, suggested that the society be called 'The International Society of Heating and Ventilating Engineers,' inasmuch as foreign engineers had been invited to become members. Mr. Mackay's idea seemed to be to take in the entire world and prevent infringements, on the general idea expressed by the first members, that we were 'The' society with a capital T.

"After a long discussion...the members reached the conclusion that the heating and ventilating engineering required in America would be a sufficient tax on the society for some years to come, and when Mr. Harding, and Mr. Barron seconded, the motion that the society be called 'The American Society of Heating and Ventilating Engineers,' the motion prevailed."

They next read and discussed the proposed Constitution and By-Laws section by section. This discussion was also spirited, and after a number of revisions, it was adopted. Section 4 in Article 1 of the Constitution clearly stated eight objects of the Society that would guide its work in years to come:

Cont'd. on Page 13

History - The History of ASHRAE, 1st in a Series (Cont'd. from Page 12)

- The promotion of the arts and sciences connected with heating and ventilation, and to encourage good fellowship among its members.
- Improvement in the mechanical construction of the various apparatus used for heating and ventilation.
- The maintenance of a high professional standard among heating and ventilating engineers.
- To establish a clearly defined minimum standard of heating and ventilation for all classes of buildings.
- To favor legislation compelling the ventilation of all public buildings in accordance with the standard of this society.
- To encourage legislation favorable to improvement in the arts of heating and ventilation, and to oppose legislation inimical to the business of the engineer.
- The reading, discussion, and publication of professional papers, and the interchange of knowledge and experience among its members.
- To establish a uniform scale of prices for all professional services.

The final order of business was to elect officers to serve until the annual meeting. The Constitution and By-Laws stated that the affairs of the Society would be managed by a Board of Managers and a Council that would review membership applications. Those elected were:

President	E. P. Bates
First Vice President	W. M. Mackay
Second Vice President	W. F. Wolfe
Third Vice President	C. S. Onderdonk
Secretary	L. H. Hart
Board of Managers	F. P. Smith, H. J. Barron, A. A. Cary, J. A. Harding and Henry Adams
Council	Charles W. Newton; R. C. Carpenter; A. A. Cryer; F. W. Foster; V. G. Halley; E. P. Bates, president; and L. H. Hart, secretary.

First Annual Meeting

The Society was incorporated in the state of New York on January 24, 1895. To comply with the laws of this state, the date of the annual meeting was specified in the Constitution as the last week in January. Accordingly, the charter members agreed to have their first annual meeting in January 1895, at which time papers on heating and ventilation topics would be read and discussed. The Constitution also specified that the Society would have a Semi-Annual meeting as well, though the first one would not occur until 1897.

The dates of January 22-24, 1895 were confirmed for the first Annual Meeting, and President Bates called the meeting to order at 10:50 a.m. on January 22, 1895 in the hall of the American Society of Mechanical Engineers (ASME), 12 West 31st Street, New York.

In his opening address, President Bates commented on the potential and the importance of the Society's work, "The purposes for which this society was formed are commendable in every respect. If we carry out the wise provisions named in the preamble to our Constitution and By-laws, we shall be public benefactors...Our work, however, will not stop with any class; it will benefit all classes, and the amount of benefit received will be commensurate with the labor expended."

He also spoke about maintaining a high standard of members, "We need to gather about us men devoted to the work; men of character and reasonably ambitious of success; men who will think, study, and work until they see the fruition of their hopes. We need also, in this infantile state, to avoid adding to our number any who are not really engineers in our acceptation of the word."

In conclusion, President Bates said, "In order to carry out the objects of the Society, we shall need, first, the hearty cooperation of all its members; we shall need, further, a practical, intelligent devotion to the purpose for which we are organized. With these points carefully covered by each member, there is a work before us, which never has been thoroughly done, but will be accomplished by the members of this Society, to the credit and the good of the race."

Eight papers were presented during the three-day meeting, along with a series of topical discussions. Among them was a learned exchange about the future of electric heat, about which those attending concluded was too expensive even for trolley cars. The members also talked about wooden air conduits, but the discussion was cut short when they learned

Cont'd. on Page 14

History - The History of ASHRAE, 1st in a Series (Cont'd. from Page 13)

that galvanized iron had generally replaced wood. As a result of comments made by Mr. Jellett, a lengthy debate ensued over whether steam heating contractors and engineers should get paid for preparing plans and specifications for architects. This debate was the start of an argument about conflict of interest that would rage on for many years.

Secretary Hart reported that the Society had seventy-five members, and in the absence of Treasurer J. A. Goodrich, he reported that since its founding, the Society had received $750.00 and had expended $256.82 for a total of $493.18 cash on hand. President Bates then reported that after December 1, 1894, the Society's business offices would be located at ASME headquarters, 12 West 31st Street, New York City.

The members then elected officers, Board of Managers and Council for 1895-96:

President	Stewart A. Jellett
First Vice President	William M. Mackay
Second Vice President	C. S. Onderdonk
Secretary	Louis H. Hart
Treasurer	Judson A. Goodrich
	Board of Managers James A. Harding, chairman; B. F., Stangland, Geoffrey B. Cobb, U. G. Scollay, William McMannis, Stewart A. Jellett, president; and Louis H. Hart, secretary.

Membership

The Constitution and By-Laws established four levels of membership: Members, Honorary Members, Associates and Junior. Members and Associates were required to pay an initiation fee of $15.00 and annual dues of $10.00. The initiation fee of Junior members was $10.00 and their dues were $10.00. A Junior member, being promoted to full membership, paid a further initiation fee of $5.00. Honorary Members were defined as "distinguished persons elected by the society." Within two years, membership rose from 75 to 109 members.

In his short history of the Society, published in 1904, Mr. Jellett pointed out that the membership roles listed quite a few more names than those counted as active members. This is in part due to deaths and in part due to some joining for commercial reasons.

As Mr. Jellett said, "It did not take a very great length of time to disabuse their minds of this idea and to clearly impress upon them the fact that the commercial side of the business of heating and ventilation was to be left to the Master Steam Fitters' Association. This fact accounts for the disappearance during the first three or four years of a large number of names from the list of members."

Issues of the Day

The work of the Society began during the First Annual Meeting. President Bates called the members to action in his address by clearly defining the Society's priorities:

"I believe we should not cease our labors when public buildings are thoroughly warmed and ventilated, but our zeal for a good cause should eventually take us into every building which shall be constructed for any purpose...There are cases where factories and workshops are fairly well ventilated, but in comparison they are rare...Every family has the right to have an abundance of good fresh air, even if it is not aware of its rights."

The members responded to his inspiring words and to the lively discussions during the meeting by appointing various committees:

- The Committee on Tests "for the purpose of making such tests as may be for the interest of the society"
- Committee on Standards "to establish a clearly defined minimum standard of heating and ventilation for all classes of buildings"
- Committee on Compulsory Legislation "to favor legislation compelling ventilation of all public buildings in accordance with the standards of this society"

Cont'd. on Page 15

History - The History of ASHRAE, 1st in a Series (Cont'd. from Page 14)

- Committee on Uniform Contract and General Conditions of Governing Specifications "to establish a uniform scale of prices for all professional services"
- Nominating Committee for the purpose of identifying and nominating candidates for officers, Board of Managers and Council

Each year, beginning in 1895, the Society documented its work by publishing the proceedings, papers and discussions from the annual and semi-annual meetings in *Transactions of The American Society of Heating and Ventilating Engineers.*

President Bates said of this new society and the work to be done, "We need to look backward but a very few years to find that our profession was unknown. The rapid strides of modern civilization have created many new professions, and ours among them. There is a wide field open before us, and it yet remains to be seen how well we shall occupy it. The child is born, and it gives great promise of a grand future."

Thomas J. Fields, P.E., LEED AP
History Chair

Student Activities

The ASHRAE Senior Undergraduate Project Grant Program is still accepting applications. This program provides grants to engineering, technical and architectural schools worldwide with the goal of increasing student knowledge, learning and awareness of the HVAC&R industry through the design and construction of senior projects. Grants are to be used to fund equipment and supplies for senior projects and 2-year technical school projects that focus on ASHRAE-related topics. Grants may cover projects lasting from one academic term up to one year. See the Student Zone for more information

If you haven't seen it yet ASHRAE Student Zone http://www.ashrae.org/membership--conferences/student-zone is a great place for student to go on line and learn more about ASHREA and the multiple resources available to you, The 2013 Student Design Competition, K-12 /STEM Resource Center, The2014 Solar Decathlon and much more.

Students who are currently enrolled or soon to be enrolled in an engineering undergraduate degree should take a look at www.ashrae.org/scholorships. There are 13 undergraduate scholarships available ranging from 10,000 to 3,000 dollars!

If you would like more information take a look at the website or see me.

Richard Halley
Student Activities Committee Chair

December Holiday Party Photos

December Holiday Party Photos

ASHRAE'S Career Enhancement Curriculum Program

ASHRAE's Career Enhancement Curriculum Program

ASHRAE Learning Institute

ASHRAE's new Career Enhancement Curriculum program provides an effective way for you to expand your knowledge of IAQ and Energy Savings Practices through completion of a series of select ASHRAE courses. You choose the courses that best meet your career goals. No matter your experience level, the courses offer comprehensive, up-to-date instruction from known industry experts, providing you an opportunity to gain valuable HVAC knowledge to accelerate your career growth.

You will be recognized with a certificate for successfully completing the defined series of courses for each curriculum. The knowledge you gain will enhance your journey towards a successful career.

IAQ Practices Career Enhancement Curriculum

The IAQ Practices curriculum provides you with the necessary skills and competencies in organizing, managing and directing IAQ projects.

Courses that apply to this curriculum are labeled **IAQ Practices**

Energy Savings Practices Career Enhancement Curriculum

The Energy Savings Practices curriculum provides you with cost-effective procedures that reduce energy consumption and help improve the energy efficiency of new and existing buildings.

Courses that apply to this curriculum are labeled **ES Practices**

Select Your Career Path

ASHRAE EXCHANGE

ASHRAExCHANGE℠ is an online discussion board intended for real-time discussion and information exchange for design, construction, operation and support of the built environment. It is THE place to post and generate discussion on topics related to ASHRAE and HVAC&R.

Use ASHRAExCHANGE℠ to:

- exchange information with your peers
- communicate directly with ASHRAE leaders
- stay up-to-date in a fast-paced industry

Anyone can view the discussions.

Free registration is required to post to the discussions.

Once registered, you can easily sign up for daily or weekly email updates on the boards that interest you most.

The online platform is simple, quick, and free.

Join or start a discussion at ASHRAExCHANGE℠

Get information on existing topics like the ones below, or start your own thread:

Topical Discussions		Last Post
	Indoor Air Quality	Health Care Facilities - 100% OA or Recirculation ... -
	Data Centers	Watts per Square foot - what is it really?! -
	ASHRAE Strategic Plan	ASHRAE Strategic Plan -
	General ASHRAE Discussion	ASHRAE and the Residential Market

ASHRAE Winter Meeting 2014

Welcome to New York!
Come join us in New York City for the 2014 ASHRAE Winter Conference, Jan. 18–22, and the AHR Expo, Jan. 21–23!

The ASHRAE Host Committee has planned exciting technical tours at some of the most famous skyscrapers along with fun-filled general tours of the city. You will be welcomed with a reception in a private space at the Rockefeller Center with a view of the famed ice skating rink. Of course, there are the stunning shows on and off Broadway, shopping in the chic areas of SoHo and 5th Avenue, amazing food from all cultures and acclaimed museums. You can spend time soaking in the energy of the city while strolling along the streets in the glittering winter lights.

Come visit your favorite cafes and enjoy a nice evening with a show at the Lincoln Center or Carnegie Hall. After a full day of stimulating technical conferences and visiting the Expo, the entertainment possibilities are limitless. We look forward to welcoming you to our city so register today and make sure you get a spot on the tours before they're gone. Register today at www.ashrae.org/newyork.

Jin Jin Huang
ASHRAE New York City Host Committee chair

We look forward to seeing you in New York.
If you have any questions, please contact us at meetings@ashrae.org.

ASHRAE Conference Sponsors:
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Bookstore: AHRI CERTIFIED

For information about sponsoring the 2014 Winter Conference, contact Greg Martin at gmartin@ashrae.org.

ASHRAE Winter Meeting 2014

Unlock New Opportunities for Professional Growth in New York

ASHRAE

New York, NY | January 18–23, 2014

Full or Half-Day Training

Earn 6 PDHs/AIA LUs or .6 CEUs

Full-Day Professional Development Seminars:
Sat., Jan. 18—Thurs., Jan. 23
$485 (ASHRAE Member: $395)

Half-Day Short Courses:
Sat., Jan. 18—Weds., Jan. 22
$159 (ASHRAE Member: $119)

Earn 3 PDHs/AIA LUs or .3 CEUs

3 Ways to Register

1. Internet: www.ashrae.org/newyorkcourses
2. Phone: call toll-free at 1-800-527-4723 (US and Canada) or 404-636-8400 (worldwide)
3. On-site: New York Hilton or Javits Center

(Online registration will close at midnight before the start of each seminar and course. After that, please register onsite at the ASHRAE registration booth at the New York Hilton or Javits Center.)

ASHRAE Winter Meeting 2014

Full-Day Seminars

Click on course titles for more information or to register.

NEW! Commercial Building Energy Audits
Saturday, Jan.18, 2014 | New York Hilton | 8:00 am-3:00 pm
Instructor: Jim Kelsey, P.E., Member ASHRAE, BEAP, LEED® AP

Healthcare Facilities: Best Practices for Design & Applications
Saturday, Jan.18, 2014 | New York Hilton | 8:00 am-3:00 pm
Instructors: Robert Cox, P.E., Member ASHRAE; Daniel Koenigshofer, P.E., Member ASHRAE, HFDP; and Michael Sheerin, P.E., Member ASHRAE

Energy Modeling Best Practice and Applications ES Practices
(Co-sponsored by IBPSA-USA and RMI)
Tuesday, Jan.21, 2014 | Javits Center | 9:00 am-4:00 pm
Instructors: Erik Kolderup, P.E., Member ASHRAE, BEMP, LEED® AP and Annabel Marston, Ph.D., BEMP, LEED® AP

NEW! Significant Changes to Standard 90.1-2010 and IECC 2012 ES Practices
(Co-sponsored by ICC)
Tuesday, Jan.21, 2014 | Javits Center | 9:00 am-4:00 pm
Instructor: Mack Wallace, P.E., Member ASHRAE, LEED® AP

Effective Energy Management in New and Existing Buildings ES Practices
Wednesday, Jan.22, 2014 | Javits Center | 9:00 am-4:00 pm
Instructor: Richard Pearson, P.E., Fellow/Life Member ASHRAE

NEW! Complying with Standard 90.1-2013 ES Practices
Thursday, Jan.23, 2014 | Javits Center | 8:00 am-3:00 pm
Instructors: Mack Wallace, P.E., Member ASHRAE, LEED® AP and Joseph Deringer, Member ASHRAE, AIA, LEED® AP

Operations & Maintenance of High-Performance Buildings
Thursday, Jan.23, 2014 | Javits Center | 8:00 am-3:00 pm
Instructors: Angela Lewis, Ph.D., P.E., Member ASHRAE, LEED® AP and Laurie Gilmer, P.E., Member ASHRAE, LEED® AP

NEW! Introduction to Building Enclosure Commissioning
Thursday, Jan.23, 2014 | Javits Center | 8:00 am-3:00 pm
Instructors: Fiona Aldous, P.E., Member ASHRAE; Jay Enck, P.E., Member ASHRAE, HBDP, CPMP, BEAP, LEED® AP and William Nash, Member ASHRAE

Register Now

ASHRAE Winter Meeting 2014

Half-Day Short Courses

Click on course titles for more information or to register.

NEW! Electric Rates, Rules and Regulations
Saturday, Jan.18, 2014 | New York Hilton | 8:00 am-3:00 pm
Instructor: Frank Pucciano, P.E., Member ASHRAE

Air-to-Air Energy Recovery Applications: Best Practices ES Practices
Sunday, Jan.19, 2014 | Javits Center| 2:00 pm-5:00 pm
Instructor: Paul Pieper, P.Eng., Member ASHRAE

Laboratory Design: The Basics and Beyond
Sunday, Jan.19, 2014 | Javits Center | 2:00 pm-5:00 pm
Instructor: John Varley, P.E., Member ASHRAE, HBDP, LEED® AP

Mathematical Optimization Techniques and their Applications to HVAC&R Systems and Components
Sunday, Jan.19, 2014 | Javits Center | 2:00 pm-5:00 pm
Instructors: Reinhard Radermacher, Ph.D., P.E., Fellow ASHRAE and Vikrant Aute, Ph.D., Member ASHRAE

Combined Heat & Power: Design through Operations ES Practices
Monday, Jan.20, 2014 | Javits Center | 8:30 am-11:30 am
Instructor: Lucas Hyman, P.E., Member ASHRAE, LEED® AP

High-Performance Building Design: Applications & Future Trends ES Practices
Monday, Jan.20, 2014 | Javits Center | 8:30 am-11:30 am
Instructor: Tom Lawrence, Ph.D., P.E., Member ASHRAE, LEED® AP

NEW! IAQ Best Practices for Design, Construction and Commissioning IAQ Practices
Monday, Jan.20, 2014 | Javits Center | 8:30 am-11:30 am
Instructor: Hoy Bohanon, P.E., Member ASHRAE, BEAP, LEED® AP

Commissioning for High-Performance Buildings
(Co-sponsored with BCA, IES, NEBB)
Monday, Jan.20, 2014 | Javits Center | 2:45 pm-5:45 pm
Instructor: Walter Grondzik, P.E., Fellow/Life Member ASHRAE, LEED® AP

NEW! Designing High-Performance Healthcare Facilities
Monday, Jan.20, 2014 | Javits Center | 2:45 pm-5:45 pm
Instructor: Daniel Koenigshofer, P.E., Member ASHRAE, HFDP

NEW! Exceeding Standard 90.1-2013 to Meet LEED® Requirements ES Practices
Monday, Jan.20, 2014 | Javits Center | 2:45 pm-5:45 pm
Instructors: McHenry Wallace, P.E., Member ASHRAE and Joseph Deringer, AIA, Member ASHRAE, LEED® AP

ASHRAE Winter Meeting 2014

NEW! Fundamentals and Applications of Standard 55 IAQ Practices
Tuesday, Jan.21, 2014 | Javits Center | 1:00 pm-4:00 pm
Instructors: Robert Bean, P.Eng., Member ASHRAE; Lawrence Schoen, P.E., Fellow ASHRAE; and Peter Alspach, P.E., Member ASHRAE, LEED® AP

NEW! Designing Commercial Ground Source Heat Pumps
Tuesday, Jan.21, 2014 | Javits Center | 1:00 pm-4:00 pm
Instructor: Kirk Mescher, P.E., Member ASHRAE

Data Center Energy Efficiency ES Practices
Tuesday, Jan.21, 2014 | Javits Center | 1:00 pm-4:00 pm
Instructors: Don Beaty, P.E., Member ASHRAE and Roger Schmidt, Ph.D., P.E., Member ASHRAE

NEW! Application of Standard 62.1-2013: Multiple Spaces Equations and Spreadsheets
IAQ Practices
Wednesday, Jan.22, 2014 | Javits Center | 9:00 am-12:00 pm
Instructor: Hoy Bohanon, P.E., Member ASHRAE, BEAP, LEED® AP

Troubleshooting Humidity Control Problems IAQ Practices
Wednesday, Jan.22, 2014 | Javits Center | 1:00 pm-4:00 pm
Instructor: Lew Harriman, Fellow ASHRAE

Register Now

ES Practices—This training applies to the Energy Savings Practices Career Enhancement
IAQ Practices—This training applies to the IAQ Practices Career Enhancement Curriculum

ASHRAE Winter Meeting 2014

New York City

ASHRAE Annual Meeting 2014

REGION I DINNER

Monday, January 20th, 2014 - Dinner: 7pm

ASHRAE Region I

New York City is not only home of this year's Winter Conference, and the sports capital of the world, it's hosting Region 1 Dinner time! Please join the members of Region I for an evening of dining in the Big Apple.
Johnny Utah's, home of Manhattan's original mechanical bull, has redefined the urban cowboy experience. The restaurant boasts an authentic Southwestern menu and impressive cocktail list.
Each attendee will order from the prefix menu and will be responsible for their own check…dinner price will be $40 plus Tax and Gratuity. All cocktails extra.

Dinner selections include Marinated Chicken, Steak, or fresh jumbo shrimp Fajitas, and Slow Cooked Baby Back Ribs …also featured are the Appetizers of Chicken Wings, and Sliders that may be your new savory favorite. For sides Mac n' Cheese or French Fries.
Enjoy a tasty meal and if you're up for it – the mechanical bull awaits….

RSVP: Frank Rivera Jr. by January 15th at frivera@mechheat.com

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http://www.johnnyutahs.com/

ASHRAE HVAC Design Training

ASHRAE's HVAC Design Training

Don't miss the first Training Session of 2014

HVAC Design: Level I—Essentials

ASHRAE's *HVAC Design: Level I — Essentials* provides intensive, practical training for HVAC designers and others involved in the delivery of HVAC services. In three days, gain practical skills and knowledge in designing, installing and maintaining HVAC systems that can be put to immediate use. **This training is aimed at:**

- Graduates new to consulting practices and engineering teams
- Facility engineers with assigned HVAC responsibilities
- Experienced engineers who would benefit from a review of the basics and the new technology options to save energy
- Engineers, technicians and building operating personnel in career transition

See Why Your Peers Recommend This Training:

"Although my background is not in HVAC design or other environmental control systems, I certainly appreciate the value that this course has given me in terms of how it has expanded my ability to converse effectively with contractors. This basic knowledge should greatly improve my ability to act as an owner's rep in my project management work involving HVAC Design."
Evan B. — Dallas, TX

"The most valuable HVAC course I have attended. I learned numerous nuggets that I will implement immediately. Valuable for engineers at all levels of experience."
Kevin T. — Saskatoon, Canada

"This course was very valuable and will be applied completely to the scope of work that I do. The knowledge obtained through the very detailed and explained presentations will help a lot in design."
Jose G. — Houston, TX

HVAC Design: Level 1—Essentials

When: February 24–26, 2014

Where: Ted Weiss Federal Building
New York, NY

Cost: $1,239 (ASHRAE Member: $989)

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ASHRAE HVAC Design Training

HVAC Design: Level II—Applications

ASHRAE's *HVAC Design: Level II — Applications* provides advanced instruction on HVAC system designs for experienced HVAC designers and those who complete the HVAC Design: Level I — Essentials training. In two days, gain an in-depth look into *Standards 55, 62.1, 90.1, 189.1* and the *Advanced Energy Design Guides*. Training will focus on a range of topics including: HVAC equipment and systems, energy modeling, designing a chiller plant, and BAS controls. **This training is aimed at:**

- Engineers with HVAC design experience
- Participants who attended HVAC Design: Level I-Essentials
- Architects who want an in-depth understanding of HVAC design
- Construction project managers involved with mechanical systems

See Why Your Peers Recommend This Training:

"I wish this training was mandatory for everyone in the HVAC industry, especially design engineers! When applied, the instructors' accurate and concise suggestions make the whole HVAC design process clear and effective. Their examples prove that the design process can be simplified while still resulting in higher performing and healthier buildings."
Tiffany B. — San Diego, CA

"This course served as an effective means of combining lessons learned from the Level I course in real-life mock design scenarios."
Justin B. — San Francisco, CA

"I learned about new ASHRAE codes, standards and HVAC developments. I wish to recommend this training for all engineers involved in HVAC design."
Sunday S.— Kadune, Nigeria

HVAC Design: Level II—Applications

When: February 27–28, 2014

Where: Ted Weiss Federal Building
New York, NY

Cost: $829 (ASHRAE Member: $679)

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