ASHRAE 90.1-2010

ASHRAE Standard 90.1 is the published minimum standard for the energy efficiency of buildings and building components. The standard covers building envelope, HVAC equipment, lighting, service water heating, building process loads, electrical motors, and transformers.

This presentation will cover the importance of the standard, its scope, and the process by which it is maintained and updated. Additionally, the speaker will review the approved changes to the latest edition, 90.1–2010, as well as the energy saving improvements from the 2004 edition.

See page 4 for meet the speaker column.

COST:
Members w/ RSVP $35.00
Non-Members $45.00
Student Members FREE w/RSVP
No Walk-ins

January Meeting Menu: Page 2
RSVP Deadline for this meeting is 12:00pm on Friday, January 6, 2012
RSVP Cancellation Deadline for this meeting is 12:00pm on Friday, January 6, 2012. Please see page 14 for no show policy information.

Please only RSVP to William Tang at wkt@brplusa.com. Upon receiving RSVP, a confirmation email will be sent back to confirm your reservation. If you have not received a confirmation email, you will need to RSVP again. Thank you.

Special Thanks to All Sponsors for
Region I Chapter Regional Conference and 100th Anniversary Gala for the Boston Chapter

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PRESIDENT’S MESSAGE

By Pat Duffy

Our December meeting was a joint meeting with ASPE, and we had good size crowd. The presentation by Ross Trethewey on Solar Hot Water (domestic and heating) was a great presentation on a technology that is becoming more popular in the sustainable focused world we are all now living in.

A reminder that our monthly meetings continue to give out free PDH credits that are able to be utilized for PE License and some LEED professional continuing education hours.

We have made a few changes to the dinner meeting price chart to streamline our RSVP process. We are in the process of moving to an online registration and payment system that will help speed up check-in at the meetings. For the next couple of months we will still accept payment at the door, but eventually we will move to having all payments online.

Our next meeting will be on Tuesday, January 10, 2012 at the Embassy Suites Hotel (Waltham, MA). The meeting topic will be “What is ASHRAE 90.1-2010” presented by Michael Tillou of Cannon Design. Please make sure to get your RSVP into William Tang and sign up.

Happy Holidays, and see you at the next meeting,

Pat Duffy, President

Editor’s Note

By Stacie Suh

Happy New Year! Please submit employment / want ads for February by January 13, 2012 in Word format. A company logo (in .gif or .jpg format) can be included. Any ideas you would like to share, please email me.

Please submit your project for the project of the month section and also submit your project for the 100th year Gala event.

For more information, please call or e-mail me at 781-258-1002 or Stacie@stebbinsduffy.com.

You can also visit the Boston Chapter website at http://www.ashraeboston.org/committees/northeastaire.html.

January Meeting Menu:

Starter:
Traditional Casear Salad

Main:
Classic Chicken Picatta

Dessert:
Decadent Chocolate Mousse w/ Sliced Berries & Whipped Sweet Cream
MEETING RECAP
By: Pat Duffy

Once again we had our joint meeting with the ASPE Boston Chapter; it was our year to host so the meeting was held at Embassy Suites in Waltham, MA. The meeting drew a good crowd with over 95 people in attendance for the meeting, 75 of those being ASHRAE Members.

The meeting was started with ASHRAE chapter Business, followed by ASPE chapter Business, then both chapters acknowledged past Presidents in attendance.

Ross Trethewey gave his presentation on Solar Hot Water Heating. Ross kept the meeting interesting and full of educational material, but he was able to keep the pace of the meeting up making for an engaging presentation. Ross went over the various applications and methods of sizing Solar Heating systems for various uses - domestic hot water, space heating, and pool heating. The meeting was very informative on a topic that most of us were vaguely familiar with, but needed to brush up on the details.
MEET THE SPEAKER

Michael Tillou, PE, LEED AP

Mr. Michael Tillou is currently the Director of Energy Services at Cannon Design. Prior to joining Cannon Design, Mr. Tillou served as the president and founder of Tillou Engineering – an independent energy engineering services firm. Since completing his Bachelor of Science degree in Mechanical Engineering at Rensselaer Polytechnic Institute, Mr. Tillou has over 16 years of energy efficiency and sustainability consulting experience. His extensive list of credentials includes; registered PE in Massachusetts, LEED Accredited Professional, Certified Building Commissioning Professional, and Building Energy Modeling Professional.

Mr. Tillou’s areas of expertise are in the certification of high performance buildings, whole building energy simulation, measurement and verification, and control system optimization. He is currently promoting the use of whole building energy modeling as a tool that should be used in the early stages of building design.

FREE SUNDAY RIVER & SUGARLOAF DISCOUNT SKI VOUCHERS

SAVE $14 PER ADULT TICKET

The Boston Chapter is participating in the Sunday River/Sugarloaf corporate voucher program again this year. Each voucher entitles you to purchase up to four discounted lift tickets [$66 Adults, $58 Teen, $47 Junior/Senior] at either ski resort by presenting an ASHRAE membership card, picture ID, and voucher. The regular adult price is $80. Contact Ed Waldman 508-405-1554, ewaldman1@verizon.net, if you would like any vouchers. There is no charge for the vouchers and there are no blackout dates. Complete rules below:

How To Use Vouchers
1. Bring your corporate voucher to any participating resorts ticket window.
2. Present your voucher, photo ID, and valid ASHRAE membership card to the ticket seller. In the absence of the individual member, immediate family members defined as spouse and children, must present some form of ASHRAE identification, plus a photo ID in order to receive the discount.
3. Each person expecting the corporate pricing must be present with the corporate voucher holder at the time of ticket purchase. The ticket seller will take the voucher in exchange for up to 4 lift tickets.

2012 Roster & Product Guide

Deadline for all materials is on January 31, 2012.

Please update your product line card for the 2012 ASHRAE Product Guide which is coming out at the end of February! The 2012 edition will be web-based, fully searchable, and updated annually! The annual update cost for a single-page product line card is $100. Please send checks (payable to ASHRAE Boston Chapter) to 66 Morton St, Hanson, MA 02341, attention Bill Garvey.

Please send the product line card in PDF format (best resolution). Also make sure you only list the items that have been changed from the previous Product Guide when filling out the product classification worksheet and refer to product guide list. If you have not received email with these forms, please contact me.

Email all items to Stacie Suh at stacie@stebbinsduffy.com.
Massachusetts is a leading state with a long, successful record of implementing energy efficiency programs for all customer sectors. The state created an aggressive funding mechanism and required electric utilities to provide energy efficiency programs during its restructuring of the industry in 1997. The natural gas utilities in the state have offered energy efficiency programs to customers since the late 1980s. Massachusetts utilities spent $188.7 million on electric energy efficiency programs in 2009 and budgeted $301.9 million for 2010. Natural gas program budgets for 2010 equaled $83.8 million.

On July 2, 2008, the governor signed Chapter 169 of the Acts of 2008, An Act Relative to Green Communities. The new law altered the approval process and timeline for electric and natural gas utility energy efficiency plans and required the utilities to file the plans every three years. The law required the state’s regulatory authority, the Department of Public Utilities (DPU), to ensure that energy efficiency programs “are delivered in a cost-effective manner capturing all available efficiency opportunities, minimizing administrative costs to the fullest extent practicable, and utilizing competitive procurement processes to the fullest extent practicable.”

In addition, the law directed the DPU to appoint and convene an Energy Efficiency Advisory Council (EEAC). The Green Communities Act is ultimately expected to lead to an investment of $2.2 billion in energy efficiency and demand resources between 2010 and 2012. Massachusetts's efficiency procurement approach to their EEERS has resulted in one of the most, if not the most, ambitious fully-funded savings targets of any state at 2.4% annual savings beginning in 2012.

The utility companies manage and implement the programs. The low-income residential demand-side management and education programs are implemented through the state’s low-income weatherization and fuel assistance program. Massachusetts has announced a regulatory policy in favor of decoupling for all of its gas and electric utilities and is requiring each gas and electric utility to include a decoupling proposal in its next rate case. Utility companies can earn a shareholder incentive of approximately 5% of energy efficiency program costs for meeting energy saving, benefit-cost, and market transformation goals.

This priceless document came into my possession recently and I would like to present some excerpts to our respected Associates in the Chapter.

Article I.4 “The principal means of attending these purposes shall be the holding of meetings for the reading of papers, discussions, special studies and the exchange of ideas through personal fellowship.

Article 2.2 “Only members of the Society in good standing shall be eligible to become and remain Chapter members.

Article 3.2 “The elected officers of the Chapter shall be a President, a Vice President, a Secretary and a Treasurer.

Article 4.2 “Special meetings shall be called if requested in writing by 15% of the Chapter members in good standing or by a majority of the Board of Governors.

Article 5.2 “The President. The President shall be the chief executive office of the Chapter and generally supervises its affairs, subject to these By-Laws.

Article 6.18 “The Auditing Committee shall examine the Treasurer’s books and papers and shall certify the accuracy of the Treasurer’s annual report.

Article 7.4 (Nominations and Elections) “Fifteen days (15) prior to the April Meeting, a mail ballot will be sent to the members qualified to vote. The President appointing (3) tellers to conduct the election. (Bad syntax, good stuff)

Article 8.1 A member and one (1) alternate to the Chapter’s Regional Committee shall be nominated by the Chapter Nominating Committee from members of the Board of Governors, one (1) of whom shall be an officer.

Article 9.1 The elected officers of the Chapter shall receive no salary, emolument, (love that word) or compensation for their services as such.

Article 10.1a. The proposed Chapter By-Laws were presented at a regular meeting of the Chapter and certified by the Secretary that they were approved by a two thirds (2/3) vote of the members present at the next regular meeting of the Chapter.

Article 11.1 Amendments to these By-Laws may initiated by a proposal in writing at any meeting of the Chapter by a majority of the Board of Governors, or by not less than five (5) members entitled to vote.

There it is. The efforts of the authors of this document are to be credited with establishing the foundation of our Chapter.

Contact: Jeff Schultz at Jeffrey_Schultz@aha-engineers.com
Save the Date
ASHRAE's 100-Year Anniversary Gala

SAVE the DATE
ASHRAE's 100-Year Anniversary Gala

saturday
8/25 2012
6pm-midnight

Contact Information:
Robert Persechini
rpersechini@dkengineers.com
Darcy Carbone
dcarbone@stebbinsduffy.com

Marriott Boston Hotel
more information to follow
I would like to thank all of the Organizations that have sponsored the 2012 CRC & 100th Gala event. There sponsorship is helping us reach our research promotion goal. There are table tents at every meeting showing the list of current sponsors, keep an eye out!!

Attention Product Show Vendors.... Once again we will have trailer spaces available outside in the parking lot for vendors to showcase larger displays. Please contact Jeff Schultz (Jeffrey_Schultz@aha-engineers.com) for more information.

Contribution envelopes will be available at every meeting to make it easier for you to help out. As always there is a link at the Chapter website (www.ashraeboston.org) and you can pay online.

Did you know that 100% of the money donated to Research Promotion actually goes towards Research? In fact our Region receives over $4 toward research projects and grants for every $1 donated to ASHRAE Research Promotion.

ASHRAE has a general fund that pays for the remaining expenses, such as salaries, travel, reimbursements, etc. So when you donate to ASHRAE Research, every dollar actually goes into the funding of research development that gives us the information we use on a daily basis from the ASHRAE Handbooks and various other standards and information material that ASHRAE supplies!

This year our Chapter Goal is $20,280, slightly up from the previous two years. Please help out the Chapter by donating to ASHRAE Research Promotion today, no amount is too small. We are almost half way to our goal – THANK YOU

Mission: To improve the quality of life and to answer tomorrow's questions through research TODAY.

Over $2 million is raised annually to help fund $16 million in research projects and student grant-in-aides. There are over 80 research project and student grant-in-aides going on.

Research is used to update the Society's standards and guidelines.

Contributions come from more than 6,700 members, non-members, and companies. 100% of all funds raised go directly to research projects that support the HVAC&R industry.

Active research projects are conducted all around the world at various universities and organizations.

ASHRAE is qualified 501(c)3 and all contributions are tax deductible.

Please fill out the form in this newsletter and mail it to me with whatever contribution you can make or you can go to the ASHRAE Boston website at www.ashraeboston.org.

Mailing Address: ASHRAE Boston Chapter c/o Bill Garvey
66 Morton St. Hanson, MA 02341

Click on the Donation Form under Research & Promotion, or go there directly with this link: http://www.ashraeboston.org/researchpromo/donation-form.html

Credit card payments can also be made when via Society's ASHRAE website via this link: https://www.ashrae.org/aboutus/resource_promotion.asp
Membership Promotion

By Teri Shannon

Welcome to the New Year!
The January 10th meeting is designated as a Membership Promotion and YEA meeting. I would like to encourage all of the new members who have recently joined ASHRAE to attend this meeting. Stacie Suh, the YEA Chair, Dan Diorio, the Student Activities Chair, and I will be there to welcome you to the Boston ASHRAE Chapter, introduce you to officers and some of the regular members, and answer any questions you have about ASHRAE.

Haven’t joined ASHRAE yet? Anyone who brings in a completed application to the January meeting can attend this meeting free of charge. Considering advancing your membership? Members at the Associate grade level who bring a completed upgrade application can attend a future dinner meeting free of charge, after the upgrade has been approved by Society. Please send me an email at tshannon@dac-hvac.com if you need an application or have any questions. You may also download an application from the ASHRAE Society website (www.ashrae.org).

At this time, I’d like to welcome the newest members to ASHRAE – be sure to say hi to these folks at future meetings!

Members: Sean Coughlin, Michael Jenkins, Arlene Marge, Kevin Morley, Manuel Tan, Detlef Westphalen, Jon Williamson

Associate Members: Christopher Chamberlan, Nicole Cuff, Jeffrey Fleishman, Paul Kennedy, Frank Lederer, John Ali Massih-Tehi, Robert Quitadomo, Joseph Smith, Christopher Widzinski

Students: Rita Rebelo (MIT), Andrew Richardson (Wentworth Inst. Of Technology, Walter Thomas (UMass Lowell)

Finally, I would like to once again remind all members to verify their membership dues, as well as contact information, are up-to-date. It is very important that dues are renewed in a timely manner in order to avoid a cancellation. Also by keeping your contact information updated, it ensures that the member receives information and updates from both Society and the Boston Chapter.

Please do not hesitate to contact me with any questions on your membership at tshannon@dac-hvac.com.

Cheers,
Teri

Student Activities

By Dan Diorio

This installment of the Student Activities article marks the unofficial half-way point of the ASHRAE season. We have already had 4 monthly meetings and there are only 3 remaining before the New Product & Energy Show in April. There are notable student activity opportunities scheduled for the coming months.

WGBH, Boston’s PBS station, and the Lemelson Foundation sponsor an innovation-based mentoring program for 5th-graders called the ‘Time to Invent’ Club. They are currently looking for college students and professional volunteers in the science, technology, engineering, and math (STEM) industry to co-lead the next mentoring program. The next program begins in February 2012 and runs weekly for 8-10 weeks at afterschool sites in Massachusetts. This is a great volunteer opportunity for members, YEA, and student members. For more information, check out the website at www.timetooinvent.org. If you’re interested and would like additional information, please contact me as soon as possible.

Stokes Hall is a brand new, 185,000 sq-ft academic building that is currently under construction on the Middle Campus of Boston College. Over the next 2-3 months, MEP systems and major equipment are being installed. The Student Activities Committee is offering construction tours, focused on MEP installations, to the student members in the (5) student chapters. The tours can include 7 to 10 people at a time and can be most easily accommodated on Fridays. So far, the student chapters from Massasoit Community College and Northeastern University have scheduled tours. Please contact me if you would like to schedule your student chapter for this exciting opportunity to tour this fabulous new building. Below is a link to the construction website:

http://www.bc.edu/offices/pubaf/specialreports/stokeshall.html

Please drop me a line at daniel.diorio.2@bc.edu if you’re interested in helping out with the Student Activities Committee or to suggest ideas for student activities. Happy Holidays.
DOE Releases New Version of Energy Modeling Software

The U.S. Department of Energy (DOE) recently released the latest version of its building energy modeling software EnergyPlus, which calculates the energy required to heat, cool, ventilate, and light a building. EnergyPlus is used by architects and engineers to design more efficient buildings, by researchers to investigate new building and system designs, and by policymakers to develop energy codes and standards. Advanced physics calculations within EnergyPlus allow it to model a wide range of residential and commercial buildings and HVAC system types, including passive building designs and low-energy systems.

EnergyPlus v7.0 features many enhancements and has 25 to 40 percent faster execution speeds on a wide variety of models. EnergyPlus is a part of DOE's strategy of Building Energy Modeling (BEM), a key technology that helps achieve DOE's mission of significantly reducing energy consumption in new buildings and retrofits. In addition to helping architects and engineers find low-energy building designs, BEM is used in the development of building energy efficiency codes and standards, in the creation of energy design guides, in the certification of building energy performance, and other applications. EnergyPlus v7.0 is available free of charge for Windows, Mac OS, and Linux. Source code licenses are also available. For additional information, please see the DOE press release.


Workshop Held on DOE’s Proposed Commercial Building Energy Asset Rating Program

Last week the U.S. Department of Energy (DOE) held a workshop on their proposed Commercial Building Energy Asset Rating (AR) Program. ASHRAE attended this two-day meeting, and previously submitted comments to an earlier request for comments from DOE. ASHRAE’s comments can be viewed at http://www.ashrae.org/advocacy/page/1348. Click on the link titled “ASHRAE Comments to DOE on DOE’s Development of a Voluntary National Asset Rating Program for Commercial Buildings”, under the Letters and Testimony section of the Webpage.

DOE expects to issue a request for information on the design of their pilot AR Program in late February/early March, and to begin the pilot in April, 2012.

ASHRAE Handbook Online

Only $49 for ASHRAE Members!

Go to https://handbook.ashrae.org/
Boston Chapter – Behind the Scenes
By Dan Diorio

Every month, prior to the Main Program, the Boston Chapter of ASHRAE’s Board of Governors meet to discuss Chapter business. This article, based on the Secretary Meeting Minutes, shall serve as an informative summary for members as to what is happening behind the scenes of the Boston Chapter. Please feel free to contact me with any questions or for

Meeting Date: December 13, 2011

Review of October Meeting Minutes
Each Board of Governors meeting begins with a review and eventual vote to approve the previous month’s meeting minutes. Any items that required follow-up are updated and closed or are determined to be carried-forward once again. Revisited items included:

- The Research Promotion deadline for each chapter to reach 30% of its fundraising goal has been extended to December 31, 2011.
- The Boston Chapter’s accounting software has been upgraded. Also, a new credit card scanner (to be used at the monthly meetings) has been ordered.
- PayPal is not being pursued as a method for online meeting registration and payment.

Research Promotion
Research Promotion Committee Chair, Bill Garvey, provided the Officers and Board of Governors with an update as to where the committee stands with reaching 30% of the fundraising goal by December 31, 2011.

2012 Region 1 CRC & Anniversary Gala – Boston
Bill Garvey provided an update on the fundraising that has taken place for the 2012 Region 1 CRC and the 100th Anniversary Gala. Profits from the fundraising will go toward the cost to run the events, therefore, keeping the registration costs as low as possible. All sponsors will have their company name and sponsorship level displayed on the overhead screen at all monthly meetings.

Additional Miscellaneous Items Discussed
The following miscellaneous items were briefly discussed:

- Treasurer’s Report - Bill Garvey, past President and current Treasurer, reviewed all Chapter account balances.
- Monthly Meeting Payment Methods – The Boston Chapter will begin implementing an online payment option for the monthly meetings. Additionally, the credit card machine has been replaced with one that is linked to a tablet for quicker transactions at meeting check-in.
- 2012 New Product & Energy Show – Jeff Schultz has already begun speaking with vendors and equipment representatives about reserving booths and truck/trailer spaces for the April show.
- Roster & Product Guide – A conference call will be taking place to plan for the upcoming annual revision to the publication.
- Boston College Stokes Hall Tours – The Student Activities Committee will be running construction tours (focused on MEP installations) of Stokes Hall on the Boston College Campus for the local Student Chapters.

Presidential Award of Excellence
Boston Chapter - 2011 ~2012

<table>
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<th>Chapter Members</th>
<th>Membership Promotion Points</th>
<th>Student Activities Points</th>
<th>Research Promotion Points</th>
<th>History Points</th>
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Webmaster’s Notes
By Steve Rosen

The ASHRAE Boston website www.ASHRAEBoston.org was awarded the highest honor at the CRC 2011 held this year in New York City, the Webstation of Excellence, for the 2nd year in a row. Many thanks to our website designer Donna Harrington of Avant-garde Graphics, Inc. We will be keeping the site current with information; Check back often!

On the Employment page (under the Chapter Updates section) not only will you see job opportunities, but we are now accepting resumes to post for free from any ASHRAE member in good standing looking for work!

Let employers find you on the ASHRAE Boston website! We will continue this year to post past meeting presentations for our members to review, and our Chapter is continuing our efforts to reduce waste by eliminating printed handouts at our meetings. As always you will also be able to link to following:

- Chapter officers and committee chairs contact information (who's who)
- Chapter monthly meeting info (when, what, where)
- Region I website, and view the Chapter history
- Sign up for the e-mailed newsletter
- ASHRAE membership information
- Current chapter newsletter, past newsletters,
- Upcoming events and future meetings
- Other functional Chapter committee pages;
- Membership, RP, SA, Programs, CTT.
- Most recent and past BOG/Meeting minutes
- Look soon for a pre-registration payment online system!

ASHRAE BOSTON
UPCOMING EVENTS
Visit www.ashraeboston.org/index.html for more information.

Lessons Learned
When: February 7, 2012
Where: Embassy Suites, Waltham
FMI: www.ashraeboston.org/index.html

2012 ASHRAE Winter Conference
When: January 21~25, 2012
Where: Palmer House Hilton, Chicago
FMI: www.ashrae.org/events/page/chicago2012#register

ASHRAE Region I CRC & Gala Event
When: August 23~25, 2012
Where: Boston Marriott, Boston
FMI: www.ashraeboston.org/index.html

Sustainable Performance Institute
UPCOMING EVENTS
Visit http://sustainable-performance.org/events for more information. All event location is at 38 Chauncy St, 7th FL. Boston, MA 02111

AFE Chapter 74-Worcester Area-Central MA
UPCOMING EVENTS

USGBC MASSACHUSETTS CHAPTER
UPCOMING EVENTS
Visit www.usgbcma.org for more information.

IFMA BOSTON CHAPTER
UPCOMING EVENTS
Visit http://www.ifmaboston.org/events.html for more information.

AEE NEW ENGLAND CHAPTER
UPCOMING EVENTS

IBPSA BOSTON CHAPTER
UPCOMING EVENTS
Sustainability Column

By Jim Armstrong

ASHRAE standard 90.1 is no longer a stagnant document as we continue to improve the way we look at design. This month's meeting will be discussing the newest version of 90.1-2010 “the energy code” and discussing how the country is now looking to ASHRAE as a nationwide building design standard. Everything from equipment efficiencies, to systematic approach to building and system design are now part of the standard. This should be a great meeting as one of our own Michael Tilou from Cannon Design is our speaker.

The January AHRE conference in Chicago will also be an opportunity to learn about many new products and services. I have attended for the last six years and always learn new things that I apply to my work. Remember Thomas Edison said that a smart person is not someone who knows it all but someone who knows where to find the information he needs.

The sustainability committee will start our conference calls in January and we will be looking for members to assist us in developing our objective. Our objective is to educate our membership in sustainability. This month's meeting on testing and balancing is one of the cornerstones of sustainability. Thinking with the end in mind and balancing the systems to meet the loads of the buildings.

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YEA

By Stacie Suh

Happy New Year! January is a Membership Promotion and YEA night. Please join me and ASHRAE members on Tuesday, January 10, 2012 at Embassy Suites in Waltham. Please email William Tang at wkt@brplusa.com to sign up for the event.

One of the tools that I learned at the YEA Leadership Weekend in Atlanta was on Mind Mapping. Please check out page 24 for more information. If you are interested in attending this event next year please let me know via email.

We will be hosting YEA events throughout the year and we would really appreciate your inputs. Please send me your ideas! YEA events are a great way to network with other engineers in this industry and also have a lot of fun. Please look out for my email in the near future, I would like to get some of your inputs for the events.

Want to know more about ASHRAE Technical Committees?
Visit on the website at http://www.ashrae.org/YEAtechinfo and also contact techstaff@ashrae.net to learn more about technical committees.

If you are on Facebook, check out www.facebook.com/ashraeyea#!/ashraeyea.

Be sure to join Young Engineers in ASHRAE (YEA) on Facebook.

If you interested in getting involved in YEA committee please contact me.
Please feel free to contact me at stacie@stebbinsduffy.com / (781) 258-1002.
Notice to Members (and Non-Members)

In an effort to clean up our meeting mailing list, we are asking that all ASHRAE members log in and ensure their information is current and up-to-date, especially the e-mail address. We would like to minimize the amount of returned mail notices that are received plus ensure that our members are receiving the meeting notices in a timely manner. We will soon be switching to sending emails only to members at the email addresses that are listed with ASHRAE. If you are not sure that you have recently updated you information (especially email address!) please take a minute login to http://www.ashrae.org/ with your membership card and update your information. For those that are no longer members, please consider re-upping or follow the new mailing list procedure below.

For all non-members, if you wish to continue receiving notices of the meetings you must opt in by sending a specific request to remain on the mailing list. Please send your request to Enrique de los Reyes at Enrique.de.los.Reyes@mail.ashrae.org. Again this will help to keep our mailing list up-to-date. As of October 30, all non-members who have not requested to be on the mailing list in this manner will be removed from the list.

Thank you in advance for your assistance.

Regards,

Teri Shannon  
Enrique de los Reyes  
William Tang

Membership Promotion Chair  
Membership Promotion Committee  
Attendance Chair

We are looking for companies, people, places and things that have formed our engineering community for the past 100 years. ASHRAE Boston Chapter would like to showcase them in our monthly newsletters and website. We look forward to your submission of projects and pictures to be displayed in Call for Information section of the newsletter.

Please email the project information to Stacie@stebbinsduffy.com.

Please submit your projects.

Attention to all ASHRAE Boston Chapter Members:

No–Show Policy

Each member is responsible to RSVP cancellation on or before the deadline. If member RSVP after deadline, he or she will be charged for the meeting fee. If you have any questions, please contact William Tang at
On August 23rd-25th, 2012, the Boston Chapter will be hosting the ASHRAE Region I Chapter Regional Conference (CRC). This meeting coincides with the Boston Chapter’s 100th Anniversary Celebration Gala which will be held on Saturday, August 25, 2012 directly after the Region I Conference. Both exciting events will be held at the Marriott Copley Place in downtown Boston.

Region I consists of 15 Chapters which includes New England, New York and New Jersey. At the Conference, there will be over 150 active ASHRAE members along with their families to enjoy all that the City of Boston has to offer. At the must attend Gala event, we are expecting over 700 people. Attendees will consist of local engineering firms, contractors, manufacturers, facilities and building owners, as well as other professional societies. As always, your donations are tax deductible, the ASHRAE Boston Chapter is a registered 501(c)(3) charitable organization.

Please join us at the Gala for plenty of food, beverage and live entertainment from Las Vegas!

Request for sponsorships and advertizing have been sent out. If you did not receive or have misplaced the solicitation please reach out to Darcy, Bill or Bob.

To date the following companies have taken out sponsorship and we appreciate the support.

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<th>Entertainment Sponsor</th>
<th>Gold Sponsors</th>
<th>Premier Advertise Sponsors</th>
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<td>GMP Lab Products</td>
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If you are interested in helping us sponsor our events, please contact Darcy, Bill, or Bob and they can help finalize the corporate information and final ad setup. We look forward to hearing from you and sincerely hope you’ll consider a sponsorship for this event.

Darcy Carbone – CRC 2012 General Chair  
Contact #: (617) 957-2567 E-mail: dcarbone@stebbinsduffy.com

Bill Garvey – CRC 2012 General Co-Chair  
Contact #: (781) 910-9576 E-mail: wgarv@aol.com

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The NorthEastAire is published monthly, September through June. It is posted on the Chapter website at www.ashraeboston.org. A link is sent each month to all members of the Chapter, currently over 900.

Newsletter Rate:
$200 for 1/4 page
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The Commissioning Process in New & Existing Buildings
Saturday, Jan 21 – 8:00 a.m. to 3:00 p.m.

Data Center Energy Efficiency
Saturday, Jan 21 – 8:00 a.m. to 3:00 p.m.

Integrated Building Design
Saturday, Jan 21 – 8:00 a.m. to 3:00 p.m.

Using Standard 90.1 to Meet LEED Requirements
Tuesday, Jan 24 – 9:00 a.m. to 4:00 p.m.

Energy Modeling Best Practices and Applications: HVAC/Thermal
Tuesday, Jan 24 – 9:00 a.m. to 4:00 p.m.

Half Day Short Courses
$159/$119 ASHRAE Member -- Earn 3 PDHs/AIA LUs or .3 CEUs

Understanding Air-to-Air Energy Recovery Technologies & Applications
Sunday, Jan 22 – 2:00 p.m. to 5:00 p.m.

Understanding & Designing Dedicated Outdoor Air Systems (DOAS)
Sunday, Jan 22 – 2:00 p.m. to 5:00 p.m.

Application of Standard 62.1-2010: Multiple Spaces Equations & Spreadsheet Calculation
Sunday, Jan 22 – 2:00 p.m. to 5:00 p.m.

Basics of High-Performance Building Design
Monday, Jan 23 – 8:30 a.m. to 11:30 a.m.

Complying with Standard 90.1-2010: Envelope/Lighting
Monday, Jan 23 – 8:30 a.m. to 11:30 a.m.

Energy Management in New & Existing Buildings
Monday, Jan 23 – 8:30 a.m. to 11:30 a.m.

Advanced High Performance Building Design
Monday, Jan 23 – 2:30 p.m. to 5:30 p.m.

The Commissioning Process & Guideline 0
Monday, Jan 23 – 2:30 p.m. to 5:30 p.m.

Comply with Standard 90.1-2010: HVAC/Mechanical
Monday, Jan 23 – 2:30 p.m. to 5:30 p.m.

Evaluating the Performance of LEED-Certified Buildings
Monday, Jan 23 – 2:30 p.m. to 5:30 p.m.

Combined Heat & Power
Tuesday, Jan 24 – 9:00 a.m. to 12:00 p.m.

Healthcare Facilities: Best Practice Design
Tuesday, Jan 24 – 9:00 a.m. to 12:00 p.m.

Project Management for Improved IAQ
Tuesday, Jan 24 – 9:00 a.m. to 12:00 p.m.

Healthcare Facilities: Best Practice Applications
Tuesday, Jan 24 – 1:00 p.m. to 4:00 p.m.

Design Toward Net Zero Energy Commercial Buildings
Tuesday, Jan 24 – 1:00 p.m. to 4:00 p.m.

ASHRAE HVAC Design Essential Workshop
January 11-13, 2012 • ASHRAE Foundation Learning Center • Atlanta, GA

Obtain the skills needed to:
- Improve overall building performance
- Design high-performance HVAC systems
- Effectively collaborate on an integrated design team

ASHRAE has created the HVAC Design Essentials to provide intensive, practical education for designers and others involved in delivery of HVAC services. Developed by industry-leading professionals, this workshop provides participants with training design to accelerate their evolution into effective member on a design, construction or facilities maintenance team.

In addition to gaining in-depth knowledge and understanding, attendees will receive real-world examples of HVAC systems based on the newly renovated ASHRAE Headquarters building. The workshop teaches a systematic approach to guide a design team to a solution that optimally meets the client’s expectations.

Visit www.ashrae.org/hvacdesign to register
ASHRAE Technology Awards Highlight Outstanding Building

ATLANTA – Designers of systems for a university building, a cancer center, an ice rink and other commercial building are recognized by ASHRAE for incorporating elements of innovative building design. The ASHRAE Technology Awards recognize outstanding achievements by members who have successfully applied innovative building design. Their designs incorporate ASHRAE standards for effective energy management and indoor air quality. The awards communicate innovative systems design to other ASHRAE members and highlight technological achievements of ASHRAE to others around the world. Winning projects are selected from entries earning regional awards.

“Every year, the judging panel looks forward to the reviewing the outstanding projects submitting by our membership,” Nathan Hart, chair of the judging panel said. “Being a consulting engineer myself, I appreciate the effort involved in submitting an entry to Society-level competition. I enjoy seeing what fellow ASHRAE members are doing to strive for more energy efficient, well ventilated maintenance friendly building designs. Many of the entries this year incorporated innovations and technologies that took advantage of their specific geographical locations to provide more energy efficient systems—helping to highlight that one size does not fit all and that a more energy efficient design solution may be available when considering the project as a whole.”

Following are summaries of the winning projects.

Mountain Equipment Co-op
Roland Charneux, P.Eng., ASHRAE Fellow, ASHRAE Certified Healthcare Facility Design Professional, Pageau Morel & Associates, Montreal, Quebec, Canada, receives first place in the existing commercial buildings category for the Mountain Equipment Co-op store, Longueuil, Quebec, Canada. The building is owned by the Mountain Equipment Co-op. The Mountain Equipment Co-op store, a 2,600 sq. ft. single story retail sporting goods outlet, was designed and built so as to have a minimal impact on the environment. Traditionally, artificial lighting contributes to a large part of the total energy consumption in commercial retail stores. It was thus decided to maximize day lighting through a series of clerestory with a saw tooth shape roof. Also, light sensors were integrated in the design to partially or completely shut down the artificial lighting when natural lighting is sufficient. Occupancy sensors were integrated in small spaces to completely shut off lighting when not in use. Optimization of the envelope resulted in an envelope insulated near twice the recommendations of the Model National Energy Code for Buildings, thus reducing the overall energy needs for the building. Structural Insulated Panels (SIP) were used for their efficiency, tightness and minimal construction time. Energy simulations showed a measured annual energy saving of 54 percent and cost savings of 57 percent. Taking into consideration new, unpacked products that retail stores carry—which bring pollutants into the occupied zone—and racking which impedes good air distribution if supplied from the ceiling, air is supplied via underground air distribution with displacement ventilation diffusers at floor level. Additionally, the building utilizes active solid thermal energy storage in its concrete slab; an underground cistern to collect rain water and to feed the water closet, as well as waterless urinals; and natural/hybrid ventilation with leeward vents at roof level, to name just a few innovations. Overall, the new store consumes 57 percent less than the recommendations provided by the Canadian Energy Model Code.

IKEA Brossard Distribution Center
Ken Sonmor, Ecosson Consulting, Montreal, Quebec, Canada, receives first place in the existing commercial buildings category for the IKEA Brossard Distribution Center, Quebec, Canada. The building is owned by the IKEA Distribution Services, CA LP. The extensive distribution center (79,750 sq. m.) belonging to one of the largest furniture retailers in the world consists of a warehouse, where goods are received, stored and then shipped, along with adjoining office spaces. On the lighting front, nearly 700 T12 high output (HO) lighting fixtures were replaced with a combination of T8 and T5 HO lights. An additional 510 high-intensity discharge fixtures were replaced with T5 HOs fixtures with custom made reflectors to bring the light where needed. Motion sensors were installed throughout the entire facility shedding 250kW of lighting power. Luminosity sensors near windows in the office areas turn off lighting when not required thus harvesting daylight. A 160T geothermal system is now the principal source of heat for the building. To attain the greatest possible efficiency, a dual maglev frictionless compressor heat pump was chosen. A greater number of wells than average maintain a very close approach with the ground temperature of 50 F. This higher temperature permits the reduction of glycol concentration which benefits the efficiency of the heat pump, the heat transfer through the vertical geothermal wells and lower pumping power. These improvements allow for a coefficient of performance of 5-7 in heating—representing a 50 percent improvement over a traditional geothermal layout. During a typical winter, the geothermal system is capable of supplying 70 percent of required heat. The overall project thus provides greater human comfort, with never-before cooling in the warehouse while realizing greater than 50 percent dollar energy savings.

Université de Sherbrooke
René Dansereau, Dessau, Longueuil, Quebec, Canada, receives first place in the educational facilities category for the design of the Université de Sherbrooke—Campus de Longueuil, Quebec, Canada. The building is owned by the Université de Sherbrooke. With its 16-story glass tower built in the heart of Longueuil’s downtown area, the Université de Sherbrooke’s new campus building is one of the tallest structures on Montreal’s South Shore. The 650,000 sq. ft. campus includes classrooms, offices and labs for nine faculties under a single roof. Its architectural design focuses on open spaces and gathering areas, such as a green roof “oasis,” to enhance a sense of community within the campus.

CONTINUES ON PAGE 22
SOCIETY NEWS

Determined to create an eco-friendly building, Dansereau and his firm took a unique approach to engineer the heating, ventilation, and air-conditioning systems: Right from the start, designers chose an integrated design approach to the project. Though geothermal energy is rarely used in urban settings, designers connected a chiller to a geothermal system consisting of 37 vertical boreholes. The 165-ton screw chiller acts essentially like a heat pump and provides about 25 percent of the building’s heating and cooling capacity. With average winter temperatures falling significantly below freezing in the Montreal area, fresh air treatment can be quite costly. To enhance energy savings, three enthalpy wheels were installed on new ventilation units. These wheels recover latent and sensible heat that is usually lost in exhaust air. With an efficiency rate of 76 percent, the wheels help reduce annual heating, cooling and humidity demands. Along with several other energy efficient innovations, energy consumption was reduced by 46 percent, consequently saving over $250,000 a year on energy invoices. Including subsidies, the return on investment for energy-saving equipment is approximately two and a half years.

Abbotsford Regional Hospital and Cancer Centre

Paul Marmion, Stantec Consulting, Vancouver, British Columbia, Canada, receives first place in the new health care facilities category for the design of the Abbotsford Regional Hospital and Cancer Centre, British Columbia, Canada. The building is a Public Private Partnership (P3) sponsored and operated by Laing Investments Management Services (Canada). The building is owned by the hospital. The Abbotsford Regional Hospital and Cancer Centre (ARHCC) is an acute care hospital built in the province of British Columbia. The hospital is a technologically advanced, 63,000 sq. m., $355 million, 300 bed acute care hospital with nine operating theatres, pediatric and maternity services, inpatient isolation rooms, medical imaging and radiation cancer treatment facilities. Marmion and his team were responsible for the design of the HVAC, plumbing and fire protection systems of the hospital, helping to successfully complete the fast tracked health care facility on time and on budget. The building incorporates several features to conserve energy, one of which is two 900 ton chillers which are piped in a counter-flow configuration with chilled water temperature reset control to optimize energy efficiency, consuming a maximum of .5 Kw/ton of cooling. There was no incremental capital cost of adding the counter-flow configuration, resulting in an annual energy saving of $3,400, providing in instant payback. Additionally, the water use in the hospital has been reduced by 20.6 percent through the innovative use of dual flush toilets, even in the inpatient rooms, low flow lavatory and kitchen sinks and low flow showers. The ARHCC is running 56 percent below the Environmental Protection Agency’s energy benchmark, using just 153 kBu/t2 compared to the typical 350 kBu/t2 for a similar building. It has also been determined that the hospital is producing 3140 metric tons of CO2, compared to an equivalent facility which produced 8470 metric tons of CO2. Ultimately, the savings in CO2 emissions is equivalent to taking 1,400 cars off the road.

Thermal Energy Corporation—Thermal Energy Storage

Blake Ellis, P.E., Burns & McDonnell, Kansas City, Mo., receives first place in the new industrial facilities or processes category for Thermal Energy Storage at the Texas Medical Center, Houston, Texas. The owner is Thermal Energy Corporation, Houston, Texas. In 2007, master planning determined that the cooling load of the 80,000 ton chilled water system that served the Texas Medical Center would double over the next two decades. With that in mind, the owner sought the most cost effective way to provide the increased quantity of chilled water to the campus while maintaining the high level of reliability to serve the critical needs of the medical center. It was determined that thermal energy storage (TES) in a load leveling scheme was the most cost effective first step to meet the increased chilled water demand. This resulted in the selection of an 8.8 million gallon stratified chilled water storage tank; with a height of 150 ft., it is the tallest stratified chilled water storage tank in the world. Connecting such a tall tank that is open to the atmosphere to a closed chilled water system creates 65 psig of pressure at the bottom of the tank on both the chilled water supply and return lines connected to the tank. A traditional single direction pumping scheme could no longer be utilized and a unique simultaneous dual direction pumping scheme was created. Conventional wisdom would indicate that a TES system uses more energy than an equivalent non-TES system. However, TES systems use slightly less energy (BTUs or kW-hr) by shifting chilled water from the middle of the afternoon when the highest wet-bulb temperatures of the day are experienced to the evening when the temperatures are lower. The lower wet-bulb temperatures yield lower condenser water temperatures, which allow the chillers to operate more efficiently during the night hours when the tank is charged.

Arena Marcel Dutil

Luc Simard, Compressor Systems Control (CSC), Les Coteaux, Quebec, Canada, receives first place in the existing industrial facilities or processes category for the renovation of Arena Marcel-Dutil, St-Gédéon-de-Beauce, Quebec, Canada. The building is owned by the Municipalite St-Gédéon-de-Beauce. In 2010, the arena was equipped with the first 100 percent CO2 based refrigeration system for ice rinks in the world. The existing R22 chiller was removed, as well as the existing ice mat, and the concrete slab was retrofitted to install the new system. The system uses R744 as both a primary and secondary working fluid, a natural, non-toxic, non-corrosive and highly efficient refrigerant listed A1 in the B52 code. Because there is no secondary fluid, the evaporating temperature of the CO2 can be set at -7 C while keeping the ice sheet at -5 C. The result is an evaporating temperature higher than all other standard ice rink refrigeration systems. The refrigeration system has a 3kW variable speed CO2 pump that reduces the power needed for circulating the cold fluid by 90 percent compared to secondary fluid installations. For a typical ice rink facility, the savings can be up to 125,000 kWh per year. The arena was also compared to similar projects in the area and was found to have a 25 percent reduction in total energy costs. Also, when comparing the new system with the old chiller using R22, and considering an annual leak rate of 15 percent for the old system, the total greenhouse gas reduction associated with the new 100 percent CO2 refrigeration system is up to 100 tons per year.

For Release: November 28, 2011 Contact: Amanda Dean / Public Relations /678-539-1216/ adean@ashrae.org
YEA– MIND MAPPING

As participants at the last YEA Leadership Weekend in Atlanta learned, Mind Mapping is an important tool for organizing, creating and directing both their professional and personal lives.

British psychology author Tony Buzan claims to have invented modern Mind Mapping. Buzan argued that while "traditional" outlines force readers to scan left to right and top to bottom, readers tend to scan an Mind Map in a non-linear fashion. Buzan used popular assumptions about cerebral hemispheres in order to promote the use of Mind Mapping over other forms of note making. The Mind Map continues to be used in various forms and for many applications including learning and education, planning and engineering practice.

A Mind Map is a diagram used to represent ideas, tasks or other items linked and arranged around a central key word, theme or idea. They are a visual tool used to generate, visualize, structure and classify information, and as an aid to solve problems and make decisions.

The elements of a Mind Map are arranged intuitively according to the importance of the concepts, and are classified into groups or “branches” with the goal of representing connections between portions of information. By presenting ideas in graphic and non-linear manner, Mind Maps encourage a brainstorming rather than a linear approach to planning. This orientation towards brainstorming encourages users to connect concepts without a hierarchy.

I use Mind Mapping as a tool for corporate planning to capture key themes and ideas and quickly create a visual representation of what is held or “trapped” inside people’s minds. It is very useful to create action plans from which implementation strategies are created. I also find Mind Maps provide a useful visual summary or a project or task’s current status from which revisions can be made. Interestingly, some people save their Mind Maps to provide a visual record of the development and evolution of ideas and concepts and associated resources or activities connected to the task or idea. A journal of Mind Maps can be referenced for similar projects in order to jump start or create content in the future.

**HOW DO YOU CREATE A MIND MAP?**

There are a few standard ways to generate a Mind Map, but it will be more personal if, with a little practice, you develop your own style of Mind Mapping. Here are some starting points:

- Start in the center with an image or text of the topic
- Use multiple colours to encode or group information
- Use images, symbols, codes and dimensions throughout
- Select key words and print using upper or lower case letters
- Each word/image is best alone and sitting on its own line
- Lines should be connected, starting from the central image
- Central lines are thicker, organic and thinner as they radiate from the centre
- Make the lines the same length as the word/image they support
- Use emphasis and show associations in your Mind Map
- Maintain clarity by using radial hierarchy or outlines to embrace your branches or groupings

Written By Ralph Kison, President of Kison Inc., Professional Development Specialists
ASHRAE is pleased to be returning to Chicago for the 2012 Winter Conference. Members have the chance to discuss and examine the latest topics in the building industry, such as high performing buildings and integrated design, as well as participate in technical tours; attend ASHRAE Learning Institute courses; earn professional credits; and obtain ASHRAE certifications.

Chicago will also serve as the site of the AHR Expo, co-sponsored and held in conjunction with the Winter Conference. The two events combine to create the ideal atmosphere for those interested in advancing the building industry to network, inspect the latest technology and learn about the newest practices for the built environment.

Don’t miss the chance to participate in ASHRAE’s historically best-attended Conference.

Registration Costs
Registration will re-open January 9 and will remain open for duration of the conference.

Members: $680; Non-members: $685 (includes 1 year of membership)

Once online registration is completed, registrants receive an email confirmation from orders@ashrae.org.

Housing
The Palmer House Hilton serves as the ASHRAE Headquarters Hotel. Housing information is currently being e-mailed to all ASHRAE committee members. Those who serve on an ASHRAE committee and do not receive housing information, notify ASHRAE at meetings@ashrae.org.

Those who do not serve on an ASHRAE committee and want to stay at the Palmer House must check the housing box on the registration form and the ASHRAE housing link will be e-mailed. Rates at the Palmer House are $164.

Visit the conference website at www.ashrae.org/chicago for more information and to register.
The Grillroom Chophouse & Winebar

ASHRAE Winter Meeting 2012
Region I Dinner

Chicago is known for Steaks. Join the members of Region I for Dinner at a near by steakhouse for an evening of fun. Please RSVP by January 18th, 2012 to Heather Nowakowski via e-mail heather.nowakowski@roswellpark.org. Clips of the menu are below:

**Seafood**
- Horseradish Crusted Salmon / White Wine Thyme Broth 22
- American Whitefish / Lemon Caper Butter 19
- Ahi Tuna / Roasted Eggplant / Red Wine Reduction 29
- Laughing Bird Shrimp / Delmonico Style 26
- Rainbow Trout / King Crab Crust / Saffron Butter 25

**Theatre Favorites**
- Lemon-Rosemary Chicken / Yuzu Glazed Brussels Sprouts 19
- Herb-Parmesan Crusted Veal Chop / Arugula Salad 39
- Baby Back Ribs / 5 Spice Ginger BBQ Sauce 22
- Apple Bacon Wrapped Meatloaf / Shiitake Demi 18
- Bucatini Fresca / Cherry Tomatoes / Fresh Basil / Mozzarella 16
- Beef Stroganoff / Fettuccine / Veal Red 21
- Farm Fresh Vegetable Plate / Chef's Creation 18

**Sides and Vegetables**
- Wood Smoked Mushroom & Onions / Veggie Demi Butter 8
- Steamed or Grilled Asparagus / Lemon Butter 9
- Broccolini-Spinach Duo / Olive Oil / Roasted Garlic 8
- Fresh Shucked Creamed Corn 9
- Crispy Yukon Golds / Parmesan Herb 8
- Michigan Wild Rice / Sun Dried Cranberry 7
- Red Flannel Hash / Caramelized Onions / Apple Bacon 9
- Buttery Yukon Mashed Potatoes 8
- Giant Baked Potato / Sweet Onion Butter 8

**Meat and Chops**
- Single Cut Filet 8oz 29
- Double Cut Filet 12oz 39
- Bone in Filet Medallions 36
- NY Strip 14oz 41
- Rib Eye (Tomahawk Bone In) 26oz 49
- Porterhouse 22oz 54
- Center Cut Sirloin 8oz 27
- Butcher Block Pork Chop 24
- Australian Lamb T-Bones 31

**Additions**
- Oscar Style 15
- Surf & Turf Any Steak with 6oz. Lobster Tail 24
- Grilled Jumbo Shrimp Skewer 12
- Fried Egg 3
- Wood Smoked Mushrooms 4

**Sauces**
- Béarnaise Roquefort
- Peppercorn
- Horseradish Cream Chimichurri
- Red Wine Demi 5 Spice BBQ
- Add 2 Each

**Steak Temp**
- Rare Red Cool Center
- Medium Rare Red Warm Center
- Medium Pink Hot Center
- Medium Well Hot Slightly Pink Center
- Well Done Cooked Throughout

Dinner is within walking distance of the Palmer House. The bill will be one check per table, please bring cash to cover the semi-annual “dutch treat” dinner.

**Reserve your spot TODAY...**
Contact: Heather L. Nowakowski
E-mail: heather.nowakowski@roswellpark.org
## Boston ASHRAE 2011 - 2012 Meeting Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Main Program</th>
<th>Speaker</th>
<th>PDH Credits</th>
<th>Meeting Manager</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>October</td>
<td>It is time for Third Party TAB</td>
<td>Howie McKew</td>
<td>1.0</td>
<td>Darcy Carbone</td>
<td>Embassy Suites, Waltham</td>
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<tr>
<td>Tuesday, October 11, 2011</td>
<td>Student Night/ Membership Night</td>
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<td><a href="mailto:dcarbone@stebbinsduffy.com">dcarbone@stebbinsduffy.com</a></td>
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<tr>
<td>November</td>
<td>Dedicated Outdoor Air Systems - Design and Field Experiences</td>
<td>Stanley Mumma, PHD</td>
<td>1.5</td>
<td>John Morrill</td>
<td>Embassy Suites, Waltham</td>
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<tr>
<td>Tuesday, November 8, 2011</td>
<td>History Night / Research Promotion Night</td>
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<tr>
<td>December</td>
<td>Solar Heating</td>
<td>Ross Trehewey</td>
<td>1.5</td>
<td>Dan Denisi</td>
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<tr>
<td>Tuesday, December 13, 2011</td>
<td>ASPE Joint Meeting</td>
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<td><a href="mailto:jeff@bc.edu">jeff@bc.edu</a></td>
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<td>January</td>
<td>ASHRAE 90.1-2010</td>
<td>Michael Tilou</td>
<td>TBD</td>
<td>Dan Diorio</td>
<td>Embassy Suites, Waltham</td>
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<td>Tuesday, January 10, 2012</td>
<td>Membership Night/YEA</td>
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<tr>
<td>February</td>
<td>Lessons Learned</td>
<td>Steve Tafone</td>
<td>TBD</td>
<td>Steve Tafone</td>
<td>Embassy Suites, Waltham</td>
</tr>
<tr>
<td>Tuesday, February 7, 2012</td>
<td>Past President’s Night/YEA Night</td>
<td></td>
<td></td>
<td><a href="mailto:stafone@berry.com">stafone@berry.com</a></td>
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</tr>
<tr>
<td>March</td>
<td>Energy Modeling Case Studies</td>
<td>TBD</td>
<td>TBD</td>
<td>Jim Armstrong</td>
<td>Embassy Suites, Waltham</td>
</tr>
<tr>
<td>Tuesday, March 13, 2012</td>
<td>Joint meeting with AEE and IBPSA</td>
<td></td>
<td></td>
<td><a href="mailto:jarmstrong@siemens.com">jarmstrong@siemens.com</a></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>2012 - 2012 New Product &amp; Energy Show</td>
<td>N/A</td>
<td>NA</td>
<td>Jeff Schultz</td>
<td>Lantana Randolph</td>
</tr>
<tr>
<td>Tuesday, April 10, 2012</td>
<td>Seminar Mgrs: Enrique de los Reyes &amp; Bill Garvey</td>
<td></td>
<td></td>
<td><a href="mailto:jeff_schultz@aha-engineers.com">jeff_schultz@aha-engineers.com</a></td>
<td></td>
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<tr>
<td>May</td>
<td>Installation Of Officers</td>
<td>N/A</td>
<td>NA</td>
<td>Steve Nicholas</td>
<td>TBD</td>
</tr>
<tr>
<td>Tuesday, May 8, 2012</td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:snicholas@airinds.com">snicholas@airinds.com</a></td>
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<tr>
<td>June</td>
<td>Golf Outing</td>
<td>N/A</td>
<td>NA</td>
<td>Bill Garvey</td>
<td>Halifax Country Clubs</td>
</tr>
<tr>
<td>Monday, June 4, 2012</td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:wgarv@aol.com">wgarv@aol.com</a></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>Region 1 CRC 100th Anniversary Gala</td>
<td>Darcy Carbone</td>
<td></td>
<td>Bob Persechini</td>
<td>Boston Marriott Boston</td>
</tr>
<tr>
<td>August 23-25, 2012</td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:dcarbone@stebbinsduffy.com">dcarbone@stebbinsduffy.com</a></td>
<td></td>
</tr>
</tbody>
</table>

(Boston ASHRAE 2011 - 2012 Meeting Schedule)
2011 - 2012
BOSTON CHAPTER OFFICERS, BOARD OF GOVERNORS & CHAIRPERSONS

OFFICERS

President
Patrick Duffy, VAV International, INC
781-935-7228
pduffy@vavint.com

President-Elect
Stephen Nicholas, Air Industries
978-682-9993
snicholas@airinds.com

Vice President
Teri Shannon, DAC
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Secretary
Daniel Diorio, Boston College
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Treasurer
William Garvey, WSP Flack+Kurtz
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2011 - 2014

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BOARD OF GOVERNORS

COMMITTEES

CRC 2012 CO-Chair
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100th Year Gala Chair
Bob Persechini
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Rpersechini@RDKengineers.com

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Chapter Technology Transfer
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Chapter Technology Transfer
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John Morrill
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Honors & Awards
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Membership Promotion
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Nominating
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Stacie@stebbinsduffy.com

Product Show - April 2012
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781-372-3053
Jeffrey_Schultz@aha-engineers.com

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sbosland@eypae.com

Publicity
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Website
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srosen@eypae.com

YEA
Stacie Suh, Stebbins Duffy
781-258-1002
Stacie@stebbinsduffy.com
Your contribution puts us closer to achieving our goal. Please send what you can today! Individual contributions of $100 or more and Corporate contributions of $150 or more receive this year’s Commemorative Coin and Honor Roll Contribution status.

CALL Bill Garvey NOW! at 781-910-9576, OR: wgary@aol.com

Mail Check (Payable to “ASHRAE Research) to:
ASHRAE RESEARCH
C/O Bill Garvey
66 Morton St
Hanson, MA 02341

Name: ____________________________
Company: __________________________
Address: __________________________
TEL: _______________________________

<table>
<thead>
<tr>
<th>INDIVIDUAL</th>
<th>$25.00</th>
<th>$50.00</th>
<th>$100.00</th>
<th>$200.00</th>
<th>Other: __________</th>
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<td>CORPORATE</td>
<td>$250.00</td>
<td>$500.00</td>
<td>$1,000.00</td>
<td>$2,000.00</td>
<td>Other: __________</td>
</tr>
</tbody>
</table>

NorthEastAire

ASHRAE - BOSTON CHAPTER www.ashraeboston.org

Stebbins Duffy, INC
10 Technology Drive
Peabody, MA 01960

ADDRESS SERVICE REQUESTED