March 2013

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

As we move into the New Year we just can't seem to catch a break with the weather. It sure feels like I moved to Seattle the way it's going.

I really enjoyed meeting our last month's presenter David Underwood. As we discussed at the meeting keep an eye out for David as he is one his way to becoming ASHRAE National President in a few years. Congratulation David and good luck with your adventure, we look forward to seeing and hearing more from you.

What I found most interesting regarding David's presentation was the requirement for Bench Marking a building's energy use. This topic came again up at a recent USGBC meeting I attend where LIPA presented its 2013 Commercial Efficiency Program. They will have a requirement for Bench Marking prior to efficiency upgrades and this need to be done by a certified person. I need to learn more about the program but it sounded great and offers some really opportunities for our business owners. Here is a link to the application. lipower

I also had the opportunity to attend the Stony Brook Student ASHRAE chapter meeting. It was actually a joint meeting with ASME and the students did an excellent job presenting their organizations to one another and generated some great interest in joining them. They were also very excited about getting their members involved in the Student Design competition for next year and I look forward to seeing what they are doing and following their success.

As a side note any companies looking for interns I am sure you can find some excellent candidates from Stony Brook. Andy Manos is the facility adviser for the chapter so please reach out to him as well as Rich Halley our Student Activities Chair for any requests or opportunities.

Last month was Engineer's Week (day) and the EJCLI put on a great event with many impressive topics to gain PDH credits. I look forward to working with this group in the future and sharing our ASHRAE mission with them.

Please come and join us this month for our dinner presenters Ian Rowburrey speaking on Condensing Boilers Design & Applications. Prior to this we will have the final of our Back To Basic by Evans Lizardos discussing Variable Flow Pumping Systems.

I look forward to seeing you all there.

Brian Simkins, LEED AP
President - Long Island Chapter

CHAPTER MONTHLY MEETING

DATE:	**Tuesday, March 12, 2013**
TIME:	6:00 PM - Cocktails/Dinner 6:30 PM - Back to Basics #3 6:45 PM - Dinner Presentations 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 2012/2013 OFFICERS

POSITION	NAME	PHONE	FAX	EMAIL
President	**Brian Simkins, LEED AP**	203.261.8100	203.261.1981	bsimkins@accuspecinc.com
President-Elect	**Andrew Manos, LEED AP**	631.632.2791	631.632.1473	andym22@optonline.net
Vice President	**Richard Rosner, P.E.**	631.737.9170	631.737.9171	rrosner@csfllc.com
Financial Secretary	**Thomas Fields, P.E., LEED AP**	212.643.9055	212.643.0503	thomas.fields@mgepc.net
Treasurer	**Charles Lesniak, P.E**	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Secretary	**Don Kane, P.E.**	631.737.9170	631.737.9171	dkane@csfllc.com
Board of Governors	**Andrew B. Dubel, P.E.**	212.967.7651	212.967.7654	andrew.dubel@leapc.com
Board of Governors	**Richard Halley**	718.269.3809	718.269.3725	rchalley@trane.com
Board of Governors	**Carolyn Arote**	516.568.6550	516.568.6575	carote@adehvac.com

ASHRAE 2012/2013 COMMITTEES

COMMITTEE	NAME	PHONE	FAX	EMAIL
Programs & Special Events	**Andrew Manos, LEED AP**	631.632.2791	631.632.1473	andym22@optonline.net
Membership	**Charles Lesniak, P.E.**	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Chapter Technology Transfer (CTTC)	**Don Kane, P.E.**	631.737.9170	631.737.9171	dkane@csfllc.com
Newsletter Editor	**Liset Cordero**	212.643.9055	212.643.0503	liset.cordero@mgepc.net
Research Promotion	**Richard Rosner, P.E.**	631.737.9170	631.737.9171	rrosner@csfllc.com
Historian	**Thomas Fields, P.E., LEED AP**	212.643.9055	212.643.0503	thomas.fields@mgepc.net
Student Activities	**Richard Halley**	718.269.3809	718.269.3725	rchalley@trane.com
Young Engineers in Training	**Andrew B. Dubel, P.E.**	212.967.7651	212.967.7654	andrew.dubel@leapc.com
Webmaster	**Thomas Fields, P.E., LEED AP**	212.643.9055	212.643.0503	thomas.fields@mgepc.net
Nominating	**Michael Gerazounis, P.E., LEED AP**	212.643.9055	212.643.0503	michael.gerazounis@mgepc.net
Reception & Attendance	**Lee Feigenbum, LEED AP BD+C**	516.558.2075		lfeigenbaum@emcor.net
PR & Engineering Joint Council of LI	**Brian Simkins, LEED AP**	203.261.8100	203.261.1981	bsimkins@accuspecinc.com
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	peter.gerazounis@mgepc.net sfriedman@akfgroup.com

Long Island Chapter - Past Presidents

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

ASHRAE™ Long Island Chapter

PAOE POINTS FOR 2012/2013

Chapter Members	Membership Promotion	Student Activities	Research Promotion	History	Chapter Operations	CTTC	Chapter PAOE Totals
301	350	240	745	350	775	975	3,435

Chapter Monthly Meeting - Program for 2012/2013

September 11, 2012 * At Westbury Manor
Dinner Presentation – International Building Code Requirements for Design & Installation of HVAC&R Components from the Effects of Wind, Seismic, Snow & Flood Loads!

Presenter: Richard Berger

****1 PDH****

October 9, 2012 * *At Westbury Manor*
Dinner Presentation—ASHRAE 52.2, Testing Air Filters on Particle Size versus Efficiency
Presenter: Danja McMillan

****1 PDH****

Resource Promotion Night

Back to Basic Session I -
Fundamentals of Pumping System Design *****1 PDH*****

November 13, 2012 * *At Westbury Manor*
Dinner Presentation-- HVAC Air Duct Leakage Testing and Testing Methodology

Presenter: Lee Feigenbaum, LEED AP BD+C ****1 PDH****

JOINT MEETING WITH SMACNA

Student Activities Night, Membership Promotion, & YEA Night

December 11, 2012
Holiday Party - Westbury Manor

January 8, 2013 * *At Westbury Manor*
Dinner Presentation—Dispute Resolution such as Mediation, Arbitration and Litigation, the pros and cons of each and what to expect
Presenter: Michael D. Ganz, Esq.

****1 PDH****

Back to Basic Session II -
Design and Analysis of Pumping System Design *****1 PDH*****

January 2013
ASHRAE Winter Meeting
Jan 28-30
Convention Center, Dallas

February 12, 2013 * *At Westbury Manor*
Dinner Presentation—Introduction to BEQ Labeling Program
Presenter: T. David Underwood P. Eng

Joint Meeting with USGBC
Resource Promotion Night
Membership Promotion Night ****1 AIA****

February 2013
NATIONAL ENGINEERS WEEK
Feb 17 through Feb 23

March 12, 2013 * *At Westbury Manor*
Dinner Presentation—Condensing Boilers Designs and Applications
Presenter: Ian Rowburrey

****1 PDH****

YEA Night

Back to Basic Session III -
The Rise of Variable Flow Primary and Fall of Primary/Secondary/Tertiary Pumping Systems
*****1 PDH*****

April 9, 2013
ANNUAL FIELD TRIP
Sysco Long Island
199 Lowell Avenue
Central Islip, NY 11722

400,000 sq. ft. Food Distributor including 88,000 sq. ft. of Freezer, Ammonia Refrigeration Plant and Hydrogen Fueled Fork Lift Trucks (Indoor Air Quality)

Dinner to follow

May 6th, 2013 * *Cherry Valley Club, Garden City, NY*
ANNUAL GOLF OUTING

May 14th, 2013 * *At Westbury Manor*
Dinner Presentation—Update on Refrigerants: Past, Present and Future
Presenter: Eckhard A. Groll, Dr. Eng.
ASHRAE DISTINGUISHED LECTURER

****1 PDH****

Student Activities Night
Refrigeration Night

June 11, 2013 * *At Westbury Manor*

PAST PRESIDENTS & OFFICER INSTALLATION

Chapter Regional Conference (CRC) Region I
Burlington, VT August 15-17

Board of Governors Meeting Minutes

Attendees:
Brian Simkins-President; Andy Manos – President Elect; Tom Fields – Financial Secretary; Don Kane – Secretary; Andrew Dubel – BOG; Richard Halley – BOG
Guests: Peter Gerazounis, Jaime Moya

The meeting was called to order at 5:15 pm by Brian Simkins – President, at Westbury Manor

Secretary
Don Kane noted that date of the next BOG meeting should have been February 12, 2013. The minutes as published in the Sounder, with this correction were approved.

President
Brian Simkins asked that all submit newsletter material in a timely manner and noted that we should have an "Past-President" interview in the next issue. Brian asked Andy Manos to report on his attendance at the recent ASHRAE National Meeting. Andy reported that it was a positive experience. Brian reported on attending the EJCLI event earlier in the day and noted that there were 77 attendees. It was felt that the recent weather may have had an adverse effect on attendance. Brian noted the importance of newsletter advertising and meeting sponsorships to the Chapter's financial soundness and noted that there are some advertisers whose payments are overdue from last year. He indicated that Charlie Lesniak would follow up on the delinquent payments.

President-Elect/Programs
Andy Manos noted that David Underwood will be our featured speaker tonight, presenting a program on **ASHRAE bEQ.** This is a joint meeting with **USGBC.** USGBC has indicated an interest in a panel type presentation for future joint meetings. Andy noted that planning for this will start to accomplish this for next year.

Chapter Technology Transfer
Don Kane reported that he has spoken to Larry Lowe at Sysco, and arrangements are proceeding for the April Field Trip, which will also be a Chapter Refrigeration Night.

Treasurer
The CRC account remains to be established. Account update to be provided next month.

Historian
Tom Fields stated that a Past-President interview should be ready for the March Sounder. The **History Board Display** will be set up at tonight's meeting. Tom indicated that the digitizing of Chapter records is proceeding in preparation for making them available on the website.

Research Promotion
Don Kane reported for Rich Rosner that the current Chapter RP total is $6,490 (which includes $4,990 already recorded at ASHRAE HQ and $1,500 sent in on February 8, 2013. There is $8,000 remaining to be collected for the Product Directory listings (42 of 50 firms have confirmed at this time). The Product Listing book will go to the printers' the week of February 18, 2013. ASHRAE National has provided an RP PowerPoint presentation which will be shown during tonight's cocktail hour.

Membership Promotion
Brian Simkins reported for Charlie Lesniak that we presently have 301 members (including 35 YEA) and there are 30 delinquent renewals. There have been five (50) new members signed up since January, and 18 since September. One new student member has joined since January, a total of two new student members since September.

Continued on Pg. 6

Board of Governors Meeting Minutes (Cont'd. from Page 5)

YEA

Andrew Dubel indicated that plans for a Chapter fishing trip are proceeding. He will research both Huntington and Captree as points of departure. The trip would be targeting YEA members, but open to all members. It is anticipated that 30 -50 members would participate. Tentative schedule would be for a June trip, subject to what fish is in season.

Student Activities

Rich Halley reported that May will be the next Student Night. He has been continuing to meet with representatives of local colleges to develop interest in forming student chapters and conducting presentations.

- NYIT – Meeting with John Hyde re: Local Scholarships and ASHRAE activity.
- Stony Brook – Controls presentation, Scholarship and student meeting participation.
- SCCC – Setting up energy presentation, Student Chapter interest, Scholarships and Intern program.

Web Master

Tom Fields will follow up on the updating of the website, there is still some old information there, which needs to be changed.

Golf

Peter Gerazounis reported that the May 6th, 2013 date is confirmed at Cherry Valley. There was some discussion concerning a possible increase in charge due to increased costs. Any increase, if needed will be held to the minimum necessary.

Old Business

None

New Business

There was some discussion as to the need to increase the charge for meeting attendance. The Chapter has not increased the charge in a number of years and costs have increased. Further study will be made prior to adopting a change in price.

Time/Place of next BOG Meeting– March 12, 2013. Westbury Manor.

Motion to Adjourn

The meeting was adjourned at 6:00pm

Respectfully submitted,

Donald W. Kane, PE
Chapter Secretary

ASHRAE™
Long Island
Chapter

March Program

Dinner Presentation

"Condensing Boilers Designs & Applications"

Presented by

Ian Rowburrey
Vice President of Sales
Miller Proctor Nickolas

Attendees Will Earn 2 PDH's!

DATE:	**TUESDAY, MARCH 12, 2013**		
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 provide an overview of the major types of boilers used in today's heating and process systems. Standard Boiler terms and definitions will be discussed. The construction features along with the advantages and disadvantages of each type of boiler will be reviewed. The course will define criteria for best selecting a boiler to meet a particular application. **In addition Evans Lizardos, PE, LEED AP will be presenting Part III – The Rise of Variable Flow Primary and Fall of Primary/Secondary/Tertiary Pumping Systems of the 'Back to Basics" series.** **All attendees will receive an additional 1 PDH.**		
About our Speaker:	**Ian Rowburrey** - is the Vice President of Sales for Miller Proctor Nickolas headquartered in Sleepy Hollow, NY and is responsible for the operations of the Long Island regional office. Miller Proctor Nickolas is the NYC Metro Area manufacturer's representative for Cleaver Brooks in addition to several other product lines for the New York commercial and industrial heating market. Ian has over 20 years of experience with boilers and industrial process steam / hot water systems. Ian has been with MPN for over 9 years and during this time has assisted with the implementation of many, modern heating systems employing the use of condensing hydronic boilers, high efficiency steam boilers and the latest in control system technology. Prior to coming to MPN, Ian was a control systems engineer with Preferred Instruments and ABB Power Plant Controls. This experience was proceeded by five years as a field service engineer working on Industrial Gas Turbines and the start-up of Utility power plants. Ian is an engineering graduate of the Maine Maritime Academy and holds an active US Coast Guard Engineer's License.		

Research Promotion

It is all about the money in RP. I am fortunate to be following such a great RP chairman, Andy Manos, and having such loyal contributors such as yourselves. Of the $14,681 or more we are expected to raise we are now more than half way there at $7,840 to date. I can't thank the companies enough who have participated in the annual 2013 Product Directory of Manufacturers and their Representatives. Just as a reminder for those who have not sent in payment please do at this time. The space is now closed and the 2013 directory will be back from the printer shortly. The directory is made available to all ASHRAE and non-ASHRAE members at no-cost and will be available at our monthly meetings or from our web-site at **http://ashraeli.org/productdirectory.html**.

Thanks again for the continued support of all of our past contributors who have generously supported us over the years. If you have not already done so please help support ASHRAE in any way you can. Should your company like to have a product showcase during the cocktail hour at our meetings please let me know and we will set it up.

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

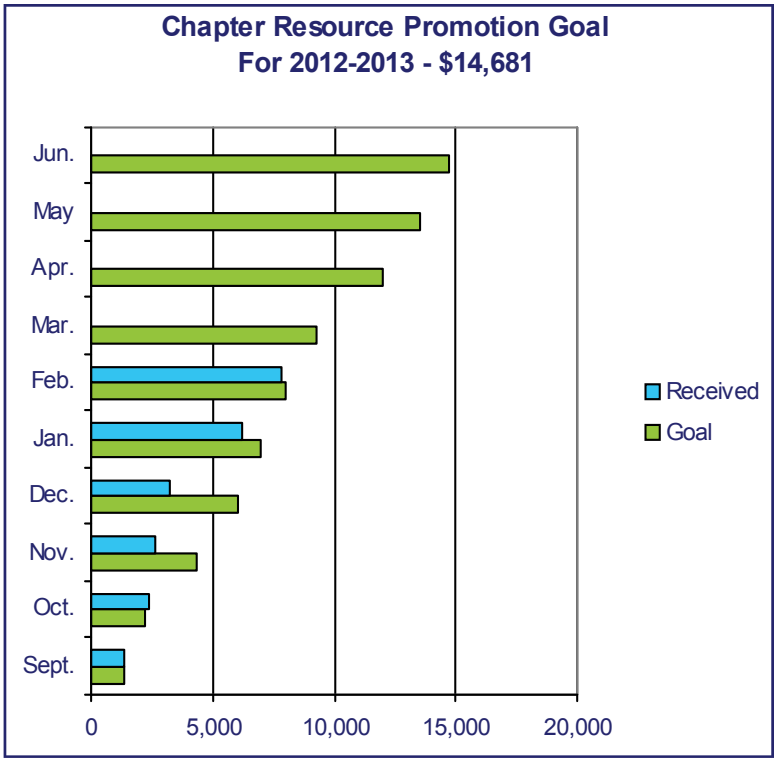
2) You can bring your check to any of the meetings and give it to me. I will mail it into headquarters.

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 - Guide to Recovery of Wasted Heat - The Condensed Version

"Waste not, want not"! How many of us grew up with that directive resonating in our auditory canal? Certainly those of us who experienced viewing monochrome TV shows and, perhaps, sitting around the radio on Saturday nights to listen to the latest exploits of the Lone Ranger can remember it all too well. You see, conservation is not really a new idea, just one that, rather than being mandated by governmental fiat, was enforced on a much more local level at a time when the need for conservation was not driven by efficiency ratings or plaques, but, rather, the need to avoid having to do without the basics of existence.

One would hope that just because improved methods of extraction of natural resources over the years have resulted in ready supplies of fossil fuels, we would not purposely "throw away" valuable energy. At least not when it comes to the heating of the structures in which we live and work and the water that we shower and bathe in (we are, it seems, perfectly content to throw away 2/3 of the energy available in our vehicular fuel, 1/3 out the tailpipe and 1/3 via the cooling system.....except for those who have embraced turbochargers for waste heat energy recovery...but that is a topic for a different venue). For years, the availability of "cheap" fossil fuel has resulted in accepting as "normal" hydronic heating systems which were not getting the most BTUs out of a given fuel as possible, but, when subjected to an economic analysis, were shown to be the least expensive option. When fuel cost was low, the installed cost sometimes overwhelmed the analysis. Fast-forward to today. Fuel oil and, as of late, natural gas costs have, risen and cannot be ignored. Once we have super-insulated our walls, replaced our windows with triple glazed, inert gas filled lites, what is left? It is time to get back-to-basics. The basic combustion process, that is. When we combust natural gas or fuel oil, in the presence of sufficient oxygen to result in complete combustion, the byproducts are heat, CO_2 and water. This directly liberated heat is used to warm the hydronic fluid which is then circulated to various heat exchangers (cast iron radiators, fin-tube radiation or even radiant heating coils). If we only detect CO_2 and no CO, we know that we are operating about as efficiently as we can...so where is the waste. As Clement Moore noted in his reflection on a visit from St. Nick, "Up the Chimney". The water resulting from the combustion process rises up the chimney in the form of water vapor or steam. As the latent heat of vaporization of water represents 970 BTUs per pound of water vaporized, it is clear that this has a significant effect on our energy budget. Not to despair, we simply have to rearrange the topology of our hydronic circuit to "mingle" with the flue gas and bring it below its dew point, resulting in condensate and a transfer of heat energy to the hydronic fluid. Voilà! The condensing boiler. So simple and elegant...why did the concept take so long to get a foothold? Like many brilliant ideas, the available technology was not sufficient for the task at hand. It turns out that while recovering all these BTUs, the resultant condensate is a wee bit corrosive. Conventional vent piping and heat exchangers would soon succumb to the acidic wash that it was getting. New materials were needed that could withstand these corrosive effects, and different design approaches were needed to ensure proper and continued operation of the condensing boilers. Stainless alloys (employing elements such as Chromium, Nickel, Molybdenum and Titanium) were developed to match the fuels used. Heat exchangers utilizing swirling or laminar flow were developed which could, in an inch and one half traverse of a coil of hollow rectangular section tubing, reduce the combustion gas temperature, in some cases, 1500 ^{o}F. These new alloys resulted in extended equipment lifetime even when subjected to this arduous duty. However, while these alloys used for boiler parts and appurtenances extended their life, the acidic condensate generated had the potential to wreak havoc on the sewer system and or septic/drain system into which it flowed. This requires the addition of a device to neutralize the condensate prior to discharge. A simple addition, but one which requires maintenance. For retrofit applications, attempts to vent these condensing boilers into conventional masonry chimneys resulted in early failure of the chimney due to the corrosive nature of the flue gases. Condensing boilers requires new venting utilizing fabricated stainless steel assemblies or lining of an existing masonry chimney to resist the corrosives encountered. Retrofit applications also require evaluation of the existing terminal devices and may require changing some or all to match the characteristics of the condensing boiler technology.

Having taken care of the chimney and heat exchanger issues, it looks like clear sailing.....maybe not. It turns out that by adding additional heat exchanger size (or a second, heat recovery heat exchanger) we have introduced additional restriction in the heat exchanger "circuit", which can be problematical during need for maximum flow. To address this, it is possible to employ a primary/secondary configuration with hydraulic separation between them to eliminate undesired interactions.

Continued on Pg. 10

CTTC (Cont'd. from Page 9)

What other curves could this "simple concept" throw us? Well, it seems logical that to work well, we would want the flow of the flue gases and the condensate generated to be in the same direction...down. In order to get the hot gases to flow DOWN and, after becoming much cooler gases to flow UP, necessitates the use of induced or forced draft fans. In most cases, the increase in total fuel efficiency will offset the extra cost of these fans, as whenever the fans are running, the condensing boiler is minting cost savings.....but what if one desires to use a common vent arrangement for multiple, staged condensing boilers. In order to keep the flue gases going up the vent instead of back through the non-firing boilers may necessitate operating the fans even when a particular unit is not being fired. Don't forget to include that operational cost in the efficiency analysis.

Some installations, based on the assumption of lower temperatures of the gases to be vented have utilized non-metallic vent tube material as a cost savings measure. Some of these installations, utilizing PVC and CPVC have been found to have deformed due to temperature excursions in excess of the materials rating, resulting in at least a few cases of disengagement of joined sections of tube, allowing flue gases to communicate with occupied spaces. For this reason, use of anything other than a suitable, corrosion resistant metallic vent material should be avoided.

In order to match the capacity of the boiler with the heating requirements of a structure, it is sometimes advantageous to employ modulating condensing boilers (Mod-Cons). This will frequently result in a need for a more elaborate sensor/control system, to fully achieve optimum operation (another item for the analysis spreadsheet). If a pulse ignition type boiler is employed, noise may also become an issue. Even when an advanced control system is installed, if the factory default settings are left unchanged, it is likely that the operating point of the system will not fully utilize the capability of the boiler, operating instead much of the time in the non-condensing region. Outside air reset control is especially critical in this regard. In some applications, the owner may opt to have several condensing boilers which are sized such that in extreme climate conditions they may be forced to operate in the non-condensing mode, lowering, generally, the overall efficiency numbers. An alternative would be to use a hybrid system of condensing and non-condensing boilers. By using the non-condensing boilers for the design-day "cold" days, and having sufficient condensing boilers to handle the remainder of the heating season, one can reduce the first installed cost, while receiving most of the benefit of the condensing boilers. For additional considerations of this, one can refer to the October 2011 issue of the Sounder, in which this very topic was discussed (in case you don't save your copies of the Sounder, back issues may be found at www.ashraeli.org).

In summary, condensing boiler technology (and by parallel, similar technology applied to domestic hot water heaters) is a viable choice for many applications. As is usually the case, the final determination will be an economic one, first cost versus operational costs. It is important to include all of the additional costs which may be incurred due to the nature of the technology and the required ancillary equipment and

Don Kane, P.E.
CTTC Chair

ASHRAE™
Long Island
Chapter

Membership

I would like to say hello to all our new members who signed up in February and all our returning members!

To join ASHRAE you do not even have to be an engineer. We have many members that just want to share the common goal of designing and operating sustainable buildings. So with this ASHRAE is looking to include all trades and professions so anyone who wants to be involved in the building sciences can join ASHRAE.

There are many perks of being an ASHRAE member. With your membership you get discounts on the many publications and standards that ASHRAE produces. You also get a discount at our monthly meetings where you can earn between 1 and 2 PDH credits, enjoy great company, and delicious food. ASHRAE is multinational society with over 51,000 members so you have the ability to add a lot of people to your Facebook friends list. Just kidding, ASHRAE is a great networking opportunity at both the regional levels and at society levels. And ASHRAE is a great place to help engineers new to our field to find their place in it. Another perk is the indisposable 4 books ASHRAE provides us with when renewing our membership.

Please visit the ASHRAE website at http://www.ashrae.org to review and update your bios, and to check if you are up to date with your membership dues.

Charles Lesniak, P.E.
Membership Chairman

Student Activities

The School year is quickly approaching the final turn heading into the home stretch.

Applications for the Long Island Chapter Scholarships have been sent to the various schools. Scholarships are available to well rounded students who show an interest in pursuing a career in engineering. The Application Deadline is May 1st 2013. I have attached a copy to this article and can also email applications if you need one. You can contact me at rchalley@trane.com (see pages 14 and 15).

The committee has been busy over the last month working with SUNY Stony Brook, New York Institute of Technology and Suffolk County Community College on Various activities including; Student Chapter Meetings, Intern placement programs and ASHRAE Student Presentations. Our next Student activities night will be Tuesday May 14th

As always I looking for slightly use ASHRAE handbooks that you are no longer in need of so that we may give them out to students that can put them to good use.

Richard Halley
Student Activities Committee Chair

History

I found this article in our archives and thought it would be interesting to reprint:

There is always special recognition and honor bestowed upon those who are “first” in their field. In the context of this article and relevance to this chapter that honor is owed to Mr. Henry J. Campbell, P.E. As you may be aware Mr. Campbell was the first president of the Long Island Chapter of ASHRAE. Mr. Campbell received his M.E. from Stevens Institute of Technology in 1942 and subsequently acquired throughout his career Professional Engineering licenses in 28 States including his home state of New York. In 1957 Mr. Campbell organized a group of Society members who were either living or working in Long Island and felt the need to have a local chapter in their own area. That same year the Society was petitioned to create a local chapter on Long Island. After working to develop and organize the group and more importantly to get the group functioning like a proper chapter, the chapter charter was issued on October 12, 1957. The first officers of the newly formed chapter were:

President:	Henry J Campbell, P.E.
Vice President:	Clyde Alston
Secretary:	Jim Paige
Treasurer:	Sidney Walzer

Board of Directors meeting were initially held in the officers homes. Much hard work and long hours were spent by the chapters founders preparing the proper documentation that was required to receive our chapters charter from Society, until finally in March of 1958 the first meeting open to the general membership was held. Apparently, the chapter got off to a good start and has been growing ever since…… and the rest is history.

Did You Know?

- The first chapter charter was issued to the Long Island Chapter of “ASHAE” (American Society of Heating and Air Conditioning Engineers) as the “R” for refrigeration was added when ASHAE merged with ASRE (American Society of Refrigeration Engineers) in 1959; forming the acronym ASHRAE as we know it today.
- The first meeting (open to the general membership) was held at the Nassau Inn, 800 Jericho Turnpike, New Hyde Park, New York on March 3, 1958 .
- The cost per person for dinner at this meeting was $3.00.
- Annual dues for the membership in the year 1958 was $5.00.

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

Young Engineers in ASHRAE (YEA)

This month we will have our third and finial back to basic seminar of the year. Evans will continue his series on the basics of hydronic systems intended for our YEA members. This month he will be discussing the rise of variable primary flow and the fall of primary/secondary/tertiary pumping systems. This lecture will be worth one PDH in additional to the PDH credit which is available for our main presentation on condensing boiler.

Have you liked ASHRAE YEA on Facebook yet?

Take a look at http://www.facebook.com/ashraeYEA.

ASHRAE can be found at http://www.facebook.com/ASHRAEupdates.

They can also be followed on twitter at https://mobile.twitter.com/ashraenews.

Andrew B. Dubel, P.E.
YEA Chairman

Pictures from February's Chapter Meeting

ASHRAE Annual Student Scholarship Application

American Society of Heating, Refrigerating & Air Conditioning Engineers
Long Island Chapter, Region 001

ANNUAL STUDENT SCHOLARSHIP

The Long Island Chapter awards up to two (2) $1,000.00 or (1) $1,000.00 and (2) $500.00 scholarships annually to those who are well rounded and show an interest in pursuing an engineering career. Eligible entries for the 2012/2013 year must be submitted by May 1, 2013. Email address rchalley@trane.com

Application date:_____

Personal information:
Last Name First Middle

Home address City State Zip

School address City State Zip

Phone # E-mail address -Home

Cell # -School

Faculty Reference:
Name Address Phone #

1._____

Personal Reference:
Name Address Phone #

1._____

2._____

Education:
High School: Location Years Attended Graduation Date

College/University graduating Location Years Attended Date

College major GPA

ASHRAE Annual Student Scholarship Application

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Essay: Please describe your interests, activities, goals and why you deserve this scholarship (Attach additional sheets as necessary).

I also agree that my misstatement or omission of any information requested in this application shall be valid reason for rejection of this application. In the event I am selected to receive the application, I agree to attend the local chapter award dinner. The dinner will be free of cost to the award recipient.

No question on this application is asked for the purpose of limiting or excluding any applicant's consideration for reasons proscribed by federal, state or local law, and discussions are based entirely on knowledge, skills and ability. Qualified applicants are considered without regard to race, color, religion, sex, national origin, disability or age to the extend prohibited by law.

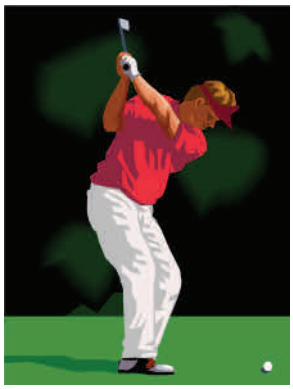
Applicant signed

Faculty advisor signed

ASHRAE Golf Outing - Monday, May 6, 2013

14th Annual LI ASHRAE GOLF OUTING

Monday – May 6th, 2013



Place:	**Cherry Valley Club**
Brunch:	**11:00 am**
Shotgun:	**12:30 pm**
Reception:	**5:30 pm**
Dinner:	**6:30 pm**

This Event fills up fast, to guarantee a spot RSVP Soon.

(2) Foursome Limit Per Company.

Proper golf attire and shoes are required. Locker room and shower privileges are included.

CHECKS MUST BE IN BY APRIL 12, 2013 (No Exceptions)

Fax, Email or Mail entire sheet or cut this half and return

Name: _____ Company: _____

Address: _____ Phone: _____

City, State, Zip: _____ Fax: _____

I have read and understand the Cherry Valley Rules and Regulations (Signature): _____

Guest 1: _____ Company: _____

Guest 2: _____ Company: _____

Guest 3: _____ Company: _____

Please make check payable to:

ASHRAE – Long Island Chapter

Mail Checks To:

MG Engineering, P.C.
Attn: Peter Gerazounis, P.E. LEED AP
116 West 32nd Street
New York, NY 10001
Fax No.: (212) 643-0503
Email: peter.gerazounis@mgepc.net

Fund raising is primarily through the contributions of our sponsors. Please consider our sponsorship opportunities listed below.

Golf & Meals:	**$ 350 pp x ____**		**= $_____**
Reception & Dinner:	**$ 130 pp x ____**		**= $_____**
Sponsor Dinner:	**$1,000**	☐ **Yes**	**= $_____**
Sponsor Lunch:	**$ 500**	☐ **Yes**	**= $_____**
Sponsor Reception:	**$ 500**	☐ **Yes**	**= $_____**
Sponsor Prizes:	**$ 500**	☐ **Yes**	**= $_____**
Sponsor Beverage Cart:	**$ 500**	☐ **Yes**	**= $_____**
Sponsor Hole:	**$ 200**	☐ **Yes**	**= $_____**

ASHRAE Golf Outing - Monday, May 6, 2013

Cherry Valley Club
28 Rockaway Avenue at Third Street
Garden City, NY
Telephone: (516)746-4420
Fax: (516)746-4421

Program:

11 a.m. Brunch in the Clubroom & Lounge – including Omelet station, deluxe deli board with rolls, chicken scarpiello, danish, croissants, bagels & cream cheese, sliced nova, fresh fruit and cheeses, Good Humor ice cream cart.

12:30 p.m. Shotgun Start Golf – Playing individual scores. Prizes for long drive, closest to the pins, low gross and callaway. Refreshments at the halfway house will include packaged snacks and whole fresh fruit, hot dogs, beer & soda. A snack cart will also be on the course. Carts, forecaddies, driving range, locker room and showers are all included in the price.

5:30 p.m. Following Golf - Open Bar with hot and cold horsd'ouvres in the Main Lounge. Fresh mozzarella with sundried tomatoes, cajun chicken, spring rolls, baby lamb chops, sesame chicken, turkey canapés, fried oysters, cheeses, fresh fruit, lobster halves, fresh clams & oysters, shrimp and crab claws.

6:30 p.m. Reception Dinner – Awards and raffle in the Main Dining Room. Carving stations of beef tenderloin & turkey breast. Chafing dishes of chicken & salmon featuring the chef's specialty, pasta station with marinara or vodka sauce, and choice of tossed or Caesar salad. Viennese dessert table following the dinner featuring pastries, fruit, cookies, assorted cakes and pies. Full beverage service throughout is included.

Women are also invited to attend and participate. There are locker room facilities available. The Cocktail hour and Dinner will also be available for those who cannot attend during the day for the golf.

Note: We are limited to 128 golfers. Openings will be filled on a first come-first serve basis. Corporate sponsorships will be available and raffle items will be welcome. Proper golf attire is a requirement for the golf course. Soft spikes are required. Please wear a jacket for the dinner.

Directions:

From the North Shore of Long Island: Take the Long Island Expressway to Exit 34 South (New Hyde Park Road Southbound), Grand Central Parkway (Northern State Parkway) to Exit 26 South (New Hyde Park Road Southbound) or Jamaica Avenue (Jericho Turnpike) Eastbound to New Hyde Park Road. Travel Southbound on New Hyde Park Road for approximately 5 to 7 miles to Stewart Avenue (You will cross over a set of railroad tracks). Take Stewart Avenue eastbound for approximately 1-1/2 miles to Cherry Valley Avenue. Travel Southbound on Cherry Valley Avenue for 1/2 mile, Cherry Valley Avenue becomes Rockaway Avenue. Continue on Rockaway Avenue and the entrance to Cherry Valley Club will be on your right.

From Local Points North: Take Old Country Road or Stewart Avenue to Franklin Avenue. Travel Southbound on Franklin Avenue to Fourth Street (just after crossing over railroad tracks). Turn right on Fourth Street and continue until it ends (Rockaway Avenue). Cross over Rockaway Avenue into the Cherry Valley Club's parking lot.

From the South Shore of Long Island: Take the Southern State Parkway to Exit 19 (Peninsula Boulevard-Hempstead/Garden City). Travel Northbound on Peninsula Boulevard for approximately 1/2 mile to President Street. Bear left on President Street (Northbound) for approximately one mile and cross over Hempstead Turnpike. President Street will become Cathedral Avenue. Continue on Cathedral Avenue for one mile to Fourth Street. Make a left on Fourth Street (Westbound) and continue until it ends (Rockaway Avenue). Cross over Rockaway Avenue into the Cherry Valley Club's parking lot.

From Local Points South: Take Hempstead Turnpike to Franklin Avenue. Travel Northbound on Franklin Avenue to Fourth Street. Turn left on Fourth Street and continue until it ends (Rockaway Avenue). Cross over Rockaway Avenue into the Cherry Valley Club's parking lot.

ASHRAE Golf Outing - Monday, May 6, 2013

Cherry Valley Club
Golf Outing Guidelines

To add the enjoyment of your day, we ask that you abide by Cherry Valley Club's basic rules of The Club, dress, golf etiquette & safety, golf carts, and care of the course.

Club Rules

1. **Smoking is not permitted in the Club House.**
2. **Cell Phones are permitted in the parking lot only. Use of Cell Phones beyond the parking lot is strictly prohibited. This includes the Golf Course.**

Dress Code

1. Jeans, designer or otherwise, are not acceptable on club property. This not only includes pants, but skirts, and cut-offs.
2. T-shirts and tank tops are not in keeping with the atmosphere of the club and as such, are not acceptable. The definition of T-shirt includes those with psychedelic coloring or suggestive printing.
3. If the Main Dining room is going to be utilized for any purpose, jackets are required.
4. Short shorts are not permitted on the golf course, practice tee or putting green by either male or female. Bermuda shorts of acceptable length are permitted. Jogging attire and denim pants are not considered proper attire for the golf course.
5. **Soft spikes** are mandatory at all times on our fine golf course. If your shoes need soft spikes, arrive early so we can change them. There is a nominal fee. There is **no** exception to this rule.

Golf Etiquette and Safety

1. Slow play shows lack of consideration for the players in your group and, more important, for the players behind you. Golf is made much more enjoyable if all players adhere to the following points in the conduct of play:

    - Minimize the time spent looking for balls by watching the flight of balls hit by everyone in your group. If a ball appears to be lost or out of bounds, hit a provisional ball before leaving the tee.
    - Signal the players behind you to play through if it becomes apparent that a ball will not easily be found and you are holding up play.
    - Don't rush addressing and striking the ball but move briskly between shots.
    - If your ball is some distance from the golf cart and the exact club selection is in doubt, take several clubs with you when you leave the cart to walk to the ball.
    - When play reaches the area of the green, park the golf cart(s) behind the green or adjacent to the next tee. Walk briskly off the rear or side of the green after putting out. Mark your score cards after your group is off the green.
    - Once a score of double par has been posted, pick up and move on to the next hole.

2. No player should play until the players in front are out of range.
3. If your ball appears headed for a player or group of players immediately shout "fore" in a loud clear voice.
4. No one should move, talk or stand close to or directly behind the ball or the hole when a player is addressing the ball or making a stroke.

ASHRAE Golf Outing - Monday, May 6, 2013

Cherry Valley Club
Golf Outing Guidelines (Cont'd.)

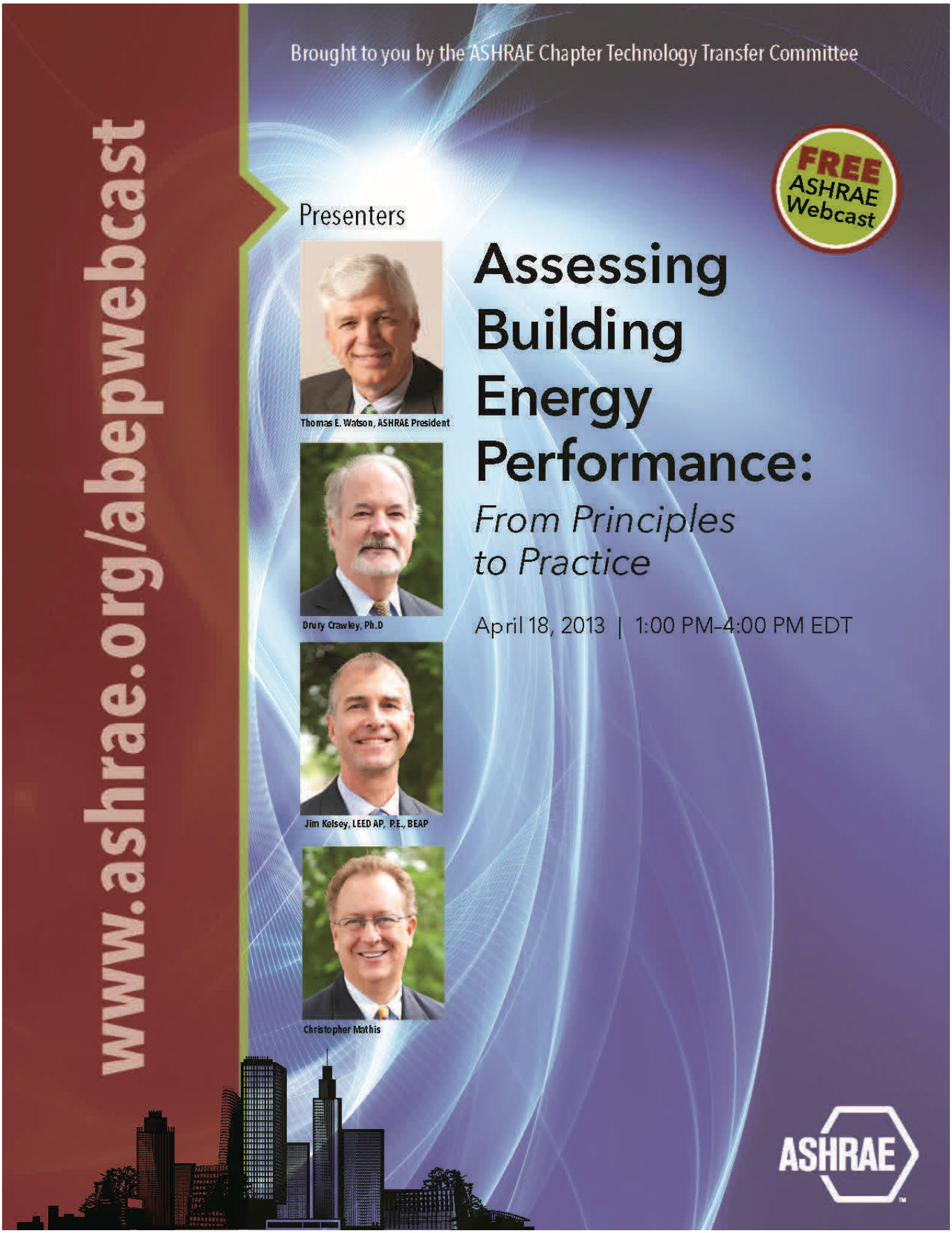
Golf Carts

1.No more than two people are to be in a cart at one time.
2.No more than 2 bags are to be carried on one golf cart.
3.Members and their guest must observe all cart directional signs and use cart paths and designated golf cart parking areas where provided.
4.Good judgment, reasonable care, and observation of club rules are expected of any member or guest when operating a golf cart. Damaged golf carts will be repaired at the responsible member's expense. Each member or guest who rents a golf cart agrees to indemnify and hold Cherry Valley Club harmless of and free from any and all damages, judgment, court costs, attorney's fees or other expenses incidental to and incurred by Cherry Valley Club which may arise from misuse of a golf cart by such member or guest.
5.Members and their Guests must keep golf carts at least 10 yards away from greens trees or traps. They should keep a reasonable distance away from soft or wet areas and they must respect directional signs.

Care of the Course

1.Before leaving a sand trap, a golfer should carefully rake and smooth over all holes and footprints made by him.
2.From tree to green, a player should ensure that any turf cut or divot displayed by him is replaced at once and pressed down, and that any damage to the putting green made by a ball is carefully repaired.
3.Golf bags should never be brought onto a green. The flagstick should be carefully handled to ensure that no damage is done to the hole or the putting green. Don't dent the green with the flagstick or by leaning on your putter.
4.In taking practice swings, players should avoid causing damage to the course by taking divots. This is particularly true on the tees and in the vicinity of the greens.
5.Only putters are to be used on the practice greens. A separate practice green adjacent the driving range is available for chipping and sand trap practice.

Assessing Building Energy Performance



Assessing Building Energy Performance

The Presenters

Thomas E. Watson,
ASHRAE President

Drury Crawley, Ph.D

Jim Kelsey, LEED AP, P.E., BEAP

Christopher Mathis

How a Webcast Works

A webcast is the streaming of audio and video to an audience over the internet. The "live" webcast will originate from Encompass Digital Media in Atlanta, GA. The internet link to access the webcast page will be emailed to participants when they complete registration. The link to access the webcast will be added approximately five (5) minutes prior to the start of the webcast.

Tentative Program

1:00 PM Part I – Opening Presentations, Q & A

2:30 PM Break

2:40 PM Part II – Roundtable Presentations, Q & A

3:55 PM Closing

Thomas E. Watson, ASHRAE President
Chief Engineer | Daikin McQuay | Staunton, VA
Thomas Watson is the 2012–13 Society President. His presidential theme is "Broadening ASHRAE's Horizons", which emphasizes the role of ASHRAE members as leaders in the application of sustainable design and practices worldwide. Watson's past service includes Director-at-Large, ASHRAE Vice President, and ASHRAE Treasurer.

Drury Crawley, Ph.D
Director of Building Performance | Bentley Systems | Washington, DC
Drury Crawley has more than 30 years of experience in buildings energy efficiency, renewable energy, and sustainability. He is a registered architect and has a Ph.D in Mechanical Engineering. Crawley is Chair of ASHRAE Standard 169, and is a current and past member of numerous ASHRAE technical and standards committees.

Jim Kelsey, LEED AP, PE, BEAP
Principal | kW Engineering | Oakland, CA
Jim Kelsey is a licensed mechanical engineer and a LEED accredited professional. He has a B.S. in Physics and earned a Masters in Mechanical Engineering. Kelsey is interested in the technical side of energy efficiency to develop ways to save energy in commercial and industrial facilities. He is a voting member of ASHRAE Technical Committee 7.6 and Standard 100.

Christopher Mathis
President | MC Squared | Asheville, NC
Christopher Mathis has spent the past 30 years focusing on how buildings and building products perform. He earned a Bachelors degree in Physics and a Master of Science in Architecture Studies. Mathis has published a variety of technical papers and books, and is an active participant in ASHRAE Standard development.

Assessing Building Energy Performance

What Will I Learn?
After attending this webcast, participants will be able to:

- Explain the importance of building energy performance and its far-reaching implications in both new and existing buildings
- Assess various tools and approaches available for assessing building energy performance
- Recognize the opportunities that Assessing Building Energy Performance (ABEP) presents
- Explain the differences among, and application of, ASHRAE building audit levels 1, 2, and 3
- Recognize the different approaches, team skills, and knowledge needed to properly assess building energy performance in new and existing buildings

How Do I Register?
You must register for the webcast. On-line registration for the Webcast begins **March 18, 2013** on our website at **www.ashrae.org/ABEPwebcast**. There is no fee for registration. The registration form requests that you confirm your email address. Your email address will be required to login to the live webcast. The Internet link to access the webcast page will be emailed to participants when they complete registration.

How can I participate?
- Host a webcast site for your colleagues.
- View the webcast at a site.
- Register to view the webcast on your PC

Can I earn PDHs?
YES! Three (3) Professional Development Hours (PDHs) or Three (3) American Institute of Architects (AIA) Learning Units may be awarded to viewers who complete the **"Participant Reaction Form" by May 3, 2012**. Visit **www.ashrae.org/ABEPwebcast** for more information.

Unable to Attend?
If you are unable to participate in the live webcast, it will be archived online for two weeks following the broadcast. Registration will be necessary to view the archived program.

You may also purchase a DVD by:
- Calling ASHRAE Customer Service at 1-800-527-4723
- Sending an email to: orders@ashrae.org
- Going to the website at: www.ashrae.org/Bookstore

Test Your Equipment
When you complete registration, you will be given a link to test your system. This test will alert you immediately if your computer system is not properly set to see and hear a webcast.

Group Logistics/Planning Checklist

One to Two Months in Advance
- Secure a viewing location. Know and coordinate your technical support staff names, phone numbers, and addresses.
- Promote the webcast program. Target a wide audience. Use the media kit at **www.ashrae.org/ABEPwebcast**.
- Register online March 18, 2013 at **www.ashrae.org/ABEPwebcast** and save the link provided with your email confirmation to access the webcast.
- Reserve and test your equipment.
- Initiate and maintain an accurate participant headcount. Use a signup sheet or email RSVP. Site coordinators are responsible for maintaining accurate attendee headcount.
- Encourage participants to arrive at least 20 minutes prior to the webcast.

Two Weeks Prior to the Webcast
- Test your equipment. Confirm technical arrangements.
- Confirm headcount.

One Day before the Webcast
- Test your equipment.
- Inspect your viewing location.
- Check seating capacity and, if possible, reserve extra chairs.

Assessing Building Energy Performance

- Expect participant questions and, if possible, provide 3"x 5" question cards.
- Talk to prospective participants to identify questions for the speakers.
- Make arrangements for coats and other personal items to be safely stored (closets, coat racks, coat hooks, etc.).

At Least One Hour Prior to the Webcast

- Arrive at the site.
- Check with the technical support staff to ensure that equipment is operational.
- Notify your technical coordinator if problems occur with audio or video transmission, and if necessary, contact technical assistance. Resolve any communication or technical problems that may arise at your site.
- Welcome attendees and help them feel comfortable with the set-up ("housekeeping notes") and to field any last-minute questions. (Note: You may wish to include your own educational programming information as part of the schedule of events.)
- Remind viewers to be in their seats 10 minutes before the program begins.
- Plan to complete all activities before the webcast is scheduled to start. The Internet link to access the webcast page will be emailed to you when you complete registration. Site Coordinators should log on with their email address approximately ten (10) minutes prior to the start of the webcast.
- Check your program agenda so you are aware about 5 minutes ahead of time when the Question and Answer segments will begin. You should move to the side/front of the room so that the audience can see you.

During the Webcast

- Have a technical support manager on site.
- Be prepared for troubleshooting and problem solving.
- Facilitate interaction.
- Email your questions to the webcast presenters using the interface on your screen.
- Download the program presentation slides. The link to download the slides will be accessible in the webcast viewing auditorium on April 18th.

Technical Personnel

Please ensure that someone who knows how to operate the equipment is available prior to and during the webcast. The technician must be onsite by 11:00 a.m. EDT the day of the webcast to set up and test the equipment. Please use this time to resolve any technical problems that may arise.

The technician should—

- Recommend the type of equipment to be used.
- Set up any needed audio or video lines from the PC to the video projector and audio system. Make sure that the audio can be heard in all areas of the room.
- Be prepared to access the link to the webcast approximately ten (10) minutes prior to the start of the webcast.
- Set up a house microphone for in-room speeches and announcements at your site before, during, and after the webcast (optional).
- Assure that the room is dark enough for the attendees to easily see the video image on the screen.

Following the Webcast

Direct participants to complete the "Participant Reaction Form" online at **www.ashrae.org/ABEPwebcast.**

For More Information About the Webcast

Visit **www.ashrae.org/ABEPwebcast** for information and complete details about the program, continuing education credits, speakers, and registration.

You can also scan this tag with your smart phone for more information.

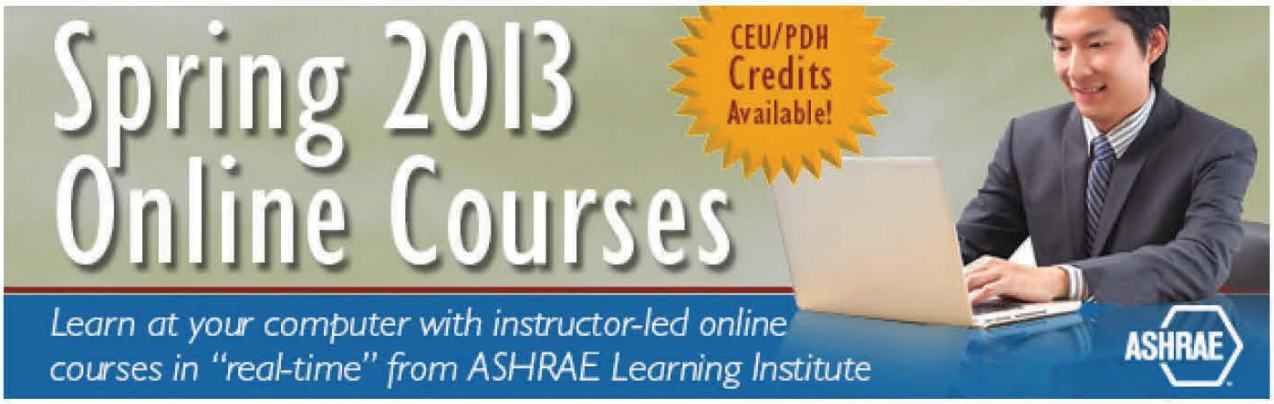
If you have additional questions, contact us at: 678/539-1200, or ashraewebcast@ashrae.org

How can I become an ASHRAE Member?

We encourage you to join ASHRAE, the source of the lastest technology for the built environment. To learn about ASHRAE membership, visit **www.ashrae.org/membership**.

The ASHRAE Learning Institute

The ASHRAE Learning Institute (ALI) is offering four related online courses on high-performance and energy efficient buildings. Learn cost-effective and efficient ways to improve energy efficiency by applying design methods, concepts, resources and tools for measuring and reporting building performance.



Register Early & SAVE!

Register **BEFORE** March 8th:
$239 (ASHRAE Member: **$179**)

Register **AFTER** March 8th:
$259 (ASHRAE Member: **$199**)

Take 3 or more courses and save 20%.

2 Ways to Register

1. Internet: www.ashrae.org/onlinecourses
2. Phone: call toll-free at
   1-800-527-4723 (US and Canada)
   or 404-636-8400 (worldwide)

NOTE: You may register up to 24 hours prior to an online course. Course times are in Eastern US Time Zone.

Earn 3 PDHs/AIA LUs or .3 CEUs | Take 3 or more Courses & SAVE!

Courses are archived for a period of time after their initial presentation.

Basics of High-Performance Building Design
Mon, March 18, 2013-1:00 pm to 4:00 pm, EDT
Instructor: Tom Lawrence, Ph.D., P.E., Member ASHRAE, LEED® AP

Air-to-Air Energy Recovery Fundamentals
Wed, March 20, 2013-1:00 pm to 4:00 pm, EDT
Instructor: Paul Pieper, P.Eng., Member ASHRAE

Advanced High-Performance Building Design
Mon, March 25, 2013-1:00 pm to 4:00 pm, EDT
Instructor: Jeff Ross-Bain, P.E., Member ASHRAE

Air-to-Air Energy Recovery Applications: Best Practice
Wed, March 27, 2013-1:00 pm to 4:00 pm, EDT
Instructor: Paul Pieper, P.Eng., Member ASHRAE

ADVERTISEMENTS

ADVERTISEMENTS

If you would like to place an advertisement in The Long Island Sounder please contact our Chapter Treasurer, Mr. Charles Lesniak, P.E @ 516.484.1020 or via email charles.lesniak@leapc.com for further details. Thank you.

Advertising Rates:

Business Card	***$200***
Triple Size	***$350***
Half Page	***$500***
Full Page	***$800***