

THE LONG ISLAND SOUNDER

April 2009



www.ashraeli.org

ASHRAE Long Island Chapter, Region 1...Founded in 1957

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

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President's Message

Greetings fellow Ashrae members and business colleagues! Our March meeting was successful, very well attended and well received. I would like to once again thank Harvey Rubenstein for presenting the lecture on Energy Recovery and his continued involvement in our chapter. As our nation continues its financial crises, this topic is one of great importance in the quest to reduce energy costs and to consider this application in the design process where warranted.



Our March meeting was also attended by an entire group of young engineering students from Hofstra University and Nassau Community College. They were accompanied by Professor Craig Capria, PE and Dr. Charles Forsberg, PE. The Board of Governors would like to thank them both for their continued support with student activities involvement in the Long Island engineering community. I would also like to thank our past presidents in attendance for their continued support of the Long Island Chapter. They are: (1978) Mr. Evans Lizardos, PE (1993) Mr. Ron Kilcarr, PE (1994) Mr. Jerald Griliches, (2001) Mr. Ray Schmitt, (2006) Mr. John Nally and immediate past president (2007) Mr. Peter Gerazounis, PE LEED AP.

CHAPTER MONTHLY MEETING

DATE:	Tuesday, April 14, 2009
TIME/ LOCATION:	ANNUAL FIELD TRIP SEE PROGRAM SECTION FOR DETAILS
FEES:	
Members/ Guests/ Students	\$20 per person (Includes Dinner and Drinks Afterwards)

The Long Island Chapter is currently seeking two new Board of Governor candidates and committee chair persons for the coming year of 2009-10 which will be headed up by next years president Steven Giammona, PE. Our Nominating Chair, Mr. Michael Gerazounis, PE LEED AP, will be sending out ballots sometime in April to all of the members for voting. If you or someone you know is interested in joining this great group of Board members, please e-mail me or any of the current board members to be considered. You can also e-mail Mike Gerazounis directly at Michael.Gerazounis@mgepc.net

Our 10th annual Ashrae Long Island golf outing is set for May 4th; we are currently receiving applications for this event and is expected to fill quickly. Please send your applications into Peter Gerazounis or myself to guarantee your placement in this great event. Also, we are looking for new and continued sponsors, whether they are individual or company, for the outing. They include the pro shop raffle prizes at dinner, food and beverage services on the course and giveaways during check in. This is Ashrae Long Islands' biggest fund raiser and we rely on your generosity.

Cont'd on Page 3

Long Island Chapter Officers & Committees

ASHRAE 2008/2009 OFFICERS

POSITION	NAME	PHONE	FAX	EMAIL
President	Steven Friedman, HFDP	212.695.1000	212.695.1299	sfriedman@lilker.com
President-Elect	Steven Giammona, P.E.	516.827.4900	516.827.4920	srg@cameronengineering.com
Vice President	Nancy Román	516.568.6509	516.568.6586	nroman@adehvac.com
Financial Secretary	Carolyn Arote	516.568.6550	516.568.6575	carote@adehvac.com
Treasurer	Brian Simkins	203.261.8100	203.261.1981	bsimkins@accuspecinc.com
Secretary	Andrew Manos, LEED AP	631.592.2660	631.630.8883	andym22@optonline.net
Board of Governors	Janeth Costa	631.242.8787	631.242.7084	jcosta@apollohvac.com
Board of Governors	Peter Gerazounis, P.E. LEED AP	212.643.9055	212.643.0503	peter.gerazounis@mgepc.net

ASHRAE 2008/2009 COMMITTEES

COMMITTEE	NAME	PHONE	FAX	EMAIL
Programs & Special Events	Steven Giammona, P.E. Richard Rosner, P.E.	516.827.4900 631.737.9170	516.827.4920 631.737.9171	srg@cameronengineering.com rrosner@csfllc.com
Membership	Carolyn Arote	516.568.6550	516.568.6575	carote@adehvac.com
Chapter Technology Transfer (CTTC)	Andrew Manos, LEED AP	631.592.2660	631.630.8883	andym22@optonline.net
Newsletter Editor	Liset Peña	212.643.9055	212.643.0503	liset.pena@mgepc.net
Resource Promotion	Janeth Costa Andrew Braum, P.E. LEED AP	631.242.8787 516.785.9000	631.242.7084	jcosta@apollohvac.com asb@frigidyne.com
Historian	John Nally	631.331.0215	631.928.4625	jn@atiofny.com
Student Activities	Brian Simkins Carolyn Cammalleri, LEED AP	203.261.8100 212.695.1000	203.261.1981 212.695.1299	bsimkins@accuspecinc.com ccammalleri@lilker.com
Webmaster	Nancy Román	516.568.6509	516.568.6586	nroman@adehvac.com
Nominating	Michael Gerazounis, P.E.	212.643.9055	212.643.0503	michael.gerazounis@mgepc.net
Reception & Attendance	Robert Fuchs	516.612.4322	516.512.0721	rfuchs@alnikmechanical.com
PR & Engineering Joint Council of LI	Peter Gerazounis, P.E. LEED AP	212.643.9055	212.643.0503	peter.gerazounis@mgepc.net
Golf Outing	Peter Gerazounis, P.E., LEED AP Steven Friedman, HFDP	212.643.9055 212.695.1000	212.643.0503 212.695.1299	peter.gerazounis@mgepc.net sfriedman@lilker.com

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President Message (Cont'd.)

For those of you who are interested, this year's Chapter Regional Conference (CRC) will be held on the weekend of August 27th in Albany, hosted by The Northeast Chapter. Our Board of Governors and Committee chairs will be attending as necessary. Please see the attached flyer within the newsletter.

I look forward to our field trip, seeing everyone at John Harvard's Brewery on April 14th. The cost is \$20.00 per person, the chapter is picking up the balance. "Food and Beverages" will be served. Thank you for your continued support of the Long Island Chapter.

Steven Friedman, HFDP
President - Long Island Chapter

Chapter Monthly Meeting - Program for 2008/2009

September 9, 2008 * At Westbury Manor - 1 PDH  Dinner Presentation - DDC Controls MEMBERSHIP PROMOTION NIGHT	February 2009  NATIONAL ENGINEERS WEEK DINNER
October 14, 2008 * At Westbury Manor - 1 PDH  Dinner Presentation - Condensing Boiler Design STUDENT ACTIVITIES NIGHT	March 10, 2009 * At Westbury Manor - 1 PDH  Dinner Presentation - Energy Recovery Systems RESOURCE PROMOTION NIGHT
November 18, 2008 * At Westbury Manor - 1 PDH  Dinner Presentation - Design/Build of LEED Projects ASHRAE DISTINGUISHED LECTURER DR. TOM LAWRENCE, PH.D., P.E., LEED-AP RESOURCE PROMOTION	April 14, 2009 FIELD TRIP - John Harvard's Brewery
December 16, 2008  Holiday Party - Westbury Manor	May 4, 2009 * Cherry Valley Club, Garden City, NY ANNUAL GOLF OUTING
January 13, 2009 * At Westbury Manor - 1 PDH  Dinner Presentation - Cooling High Density Heat Loads in Data Centers MEMBERSHIP PROMOTION NIGHT	May 12, 2009 Dinner Presentation - TBD ASHRAE DISTINGUISHED LECTURER EVANS LIZARDOS, PE / JOHN LIZARDOS, PE REFRIGERATION NIGHT
January 24-28, 2009  ASHRAE Winter Meeting - Chicago, IL	June 9, 2009 * At Westbury Manor PAST PRESIDENTS & OFFICER INSTALLATION
February 10, 2009 * At Westbury Manor  JOINT MEETING WITH SMACNA Dinner Presentation - Design Build - Executing the Project ASHRAE DISTINGUISHED LECTURER E. MITCHELL SWANN, P.E., LEED AP STUDENT ACTIVITIES NIGHT	June 2009 - TBD ASHRAE Annual Meeting

August 2009 - Chapter Regional Conference Region I

PAOE POINTS FOR 2008/2009

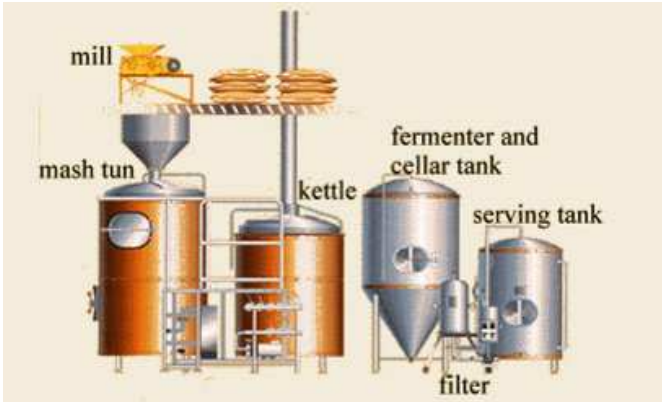
Chapter Members	Membership Promotion	Student Activities	Research Promotion	History	Chapter Operations	CTTC	Chapter PAOE Totals
297	385	705	520	575	1,085	900	4,170

April Program - Field Trip Itinerary

ASHRAE LI CHAPTER'S ANNUAL FIELD TRIP TUESDAY, APRIL 14, 2009



2093 Smithhaven Plaza, Lake Grove, NY 11755

DATE:	TUESDAY, APRIL 14, 2009
ITINERARY:	6:00 PM: Tour Operations and infrastructure. Please meet at the bar. (PLEASE DO NOT BE LATE)
FEE:	\$20 per person (Includes Dinner and Drinks Afterwards)
LOCATION:	John Harvard's Brew House, Lake Grove, NY
ABOUT THE TOUR:	<p>The tour will be given by one of John Harvard's Brew Masters and will include a behind the scenes look of the brewing process of their microbrews. Dinner and drinks will be served after the tour.</p> 

Pre-Registration Required! See next page for RSVP form.

April Program - Field Trip Pre-Registration

ASHRAE LI CHAPTER'S ANNUAL FIELD TRIP TUESDAY, APRIL 14, 2009

John Harvard's Brew House

RSVP Form - Reservations are Required!

Fax to Andy Manos @ (631) 232-1536 or email amanos@jameslasala.com

By April 9th, 2009

I would Like to Attend (NAME):	
Phone #:	

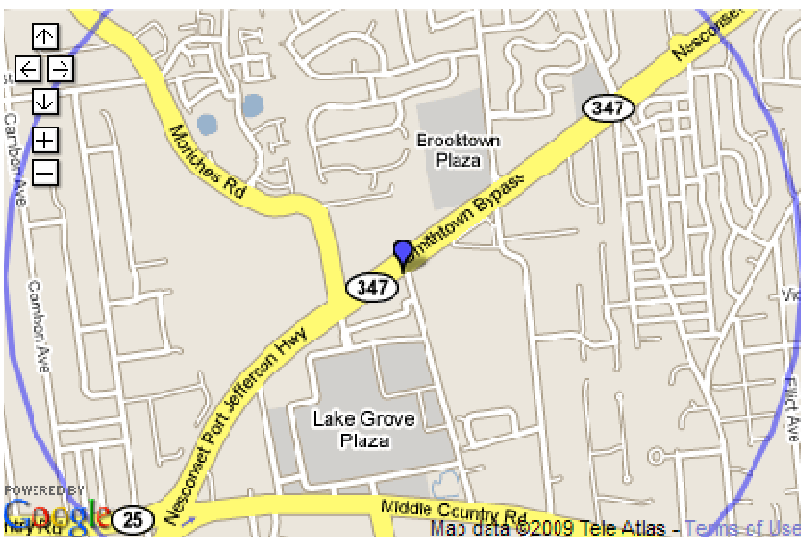
Directions:

John Harvard's Brew House

2093 Smithhaven Plaza
Lake Grove, NY 11755
(631) 979-2739

Driving Directions:

The Brew House is on the south side of 347, across from the Borders, near the Smith Haven Mall.



BOG Meeting Minutes

A meeting of the Board of Governors was held on Tuesday March 10, 2009 at the Westbury Manor. Present at the meeting were Steven Friedman, Steven Giammona, John Nally, Carolyn Arote, Brian Simkins, Peter Gerazounis and Andrew Manos. President Steven Friedman called the meeting into session at 5:02:

Programs- Steven Giammona discussed Mays meeting will be changed to a refrigeration lecture to be given by Evans and John Lizardos. April's meeting has been changed to John Harvard's brewery. Brian and Andrew have finalized the arrangements with John Harvard's including a tour with the brewmaster along with dinner and drinks the price will be \$20 a person.

Resource Promotion- Janeth Costa has a total of 520 PAOE points already and is more than half way to the goal. She has also collected a total of \$3,430 towards our year end goal.

Historian- John Nally is trying to do new things for his article in the newsletter. He has a total of 450 PAOE points so far for the year.

Webmaster- Nancy Roman discussed the website is up to date and it was discussed on updating the website to make it easier to navigate.

Treasurer- Brian Simkins gave a Financial Update. We currently have \$18,396 in savings and \$7998 in the money market account.

Membership – Carolyn Arote has a total of 385 PAOE points. She does a monthly e-mail/phone call campaign for all the delinquents members to catch up on their dues.

Student Activities- Brian Simkins has a total of 705 PAOE points. Applications for one \$1000 scholarship and (2) \$500 scholarships will be made available online.

Chapter Technology Transfer (CTTC)- Andrew Manos has a total of 700 PAOE points. Andrew also stated all is on track and all the appropriate paper work is being done.

Open Discussion- Arrangements have been made for golf outing. Sponsorship is currently being pursued and requests will be made to various companies for donations of items for the outing. John Nally reported the items that were left over from last year i.e. golf balls/ towels etc... and a list was made of what items to be ordered for this year.

There being no further business to come before the meeting, the meeting was adjourned at 5:54.

Andy Manos, LEED AP
Chapter Secretary

Long Island Chapter - Past Presidents

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

History - Beginning Roots...

Spring is here and it brings with it the promise of new beginnings. Let's take a look a back to when our chapter first sent out roots and came to life.

Around the time I was looking forward to my third birthday, a local group of HVAC industry professionals called "Steering Committeemen" were busy collecting petition signatures and new applications. The purpose of the petition was to request authority to organize the beginning of the Long Island Chapter of the American Society of Heating & Air Conditioning Engineers. This was back in the days when there was no "R" for refrigeration in the acronym and Society headquarters was based in New York City. These fellows with a lot of "leg work", remember there were no faxes or e-mails in those days, collected signatures from 21 Society members and completed applications for 26 new members. With petitions and applications in hand, they all meet on September 12th, 1957 in the auditorium of the Willis Avenue School in Mineola. This was an "organizational meeting" and it was called to order at 8:30 PM by Mr. John Everetts Jr., who was the Society Director of Region1. Mr. Everetts went on to speak about the "aims, purposes, benefits and history" of the Society, tracing its growth from the first Chapter in 1906. The Long Island Chapter would become the 70th Chapter to be formed. Mr. Everetts also spoke about the various research projects and their impact on the industry. After Mr. Everetts concluded, the meeting was turned over to the new Chairman, Mr. Henry Campbell Jr. who spoke on the purposes and benefits of forming a local chapter. Mr. Campbell went on to ask for volunteers for the necessary committees; Nominating, By-laws, Charter Meeting and Membership. After accepting volunteers, Mr. Campbell asked the Steering Committeemen to turn over the petitions and applications to Mr. Fred Hoffman, Assistant to the Executive Secretary of Society for processing at their next admissions and advancement meeting. The meeting was adjourned at 10:45 PM and there were 52 persons in attendance.

The petitions were received at Society on October 2nd, 1957 and on October 12th the Charter for the Organization of the "Long Island Chapter of the Heating and Air Conditioning Engineers" was officially issued. So next time your cruising down the highway and see one of those old 1957 Chevy Bellaire's with the 283 V8 engine, think of the beginning of our chapter and the people who worked hard for its creation. Who knows, maybe our new Charter rode in that car.

Enjoy the spring season.

John Nally
Chapter Historian

Membership

Well since we have had such a great year I though I would take this opportunity to list all of our newest members for this year. We have officially 17 new members and I would like to make sure they each get mentioned, so here they are:

Steven Stein	Reginald Rainard	Christopher Mackey
Joseph Litvaitis	Ryan Achatz	Mike Gregoretti
Carolyn Cammalleri	Chris Sidiris	Sam Martinovich
Al LaBella	Brandon Sulikowski	Stephen Hendricks
Ernst Minschke	Anthony Bikowski	Alan Thompson
Richard Halley	Philip Saglimbene.	

I would like to thank all of our members both new and old for being a part of this society. So far this has been a very successful year and I hope it will continue. Please always feel free to speak to me if you have any prospective members, we can work together to get them involved.

Carolyn Arote
Membership Chairman

Research Promotion

We are very far behind the curve on reaching our goal this year. I know times are tough, but please help support ASHRAE in anyway you can. There is no such thing as a small donation – every bit helps us reach our goal. ASHRAE is an invaluable tool to all of us and we owe it to ourselves to support new technologies and related research in any way we can.

I would like to extend a special 'thank you' to all the contributors listed below whom have already donated to ASHRAE this year:

- Mr. Donald Ross	- Mr Michael Gerazounis, PE
- Brandon Associates	- Ms Janeth Costa
- Mr Jerome T Norris, PE	- Mr Andrew E Manos, LEED AP
- Mr Steven D Friedman, HFDP	- SRS Enterprises, Inc.
- Mr Ronald J Kilcarr, PE	- Mr Robert A Rankel
- Mr John D Nally	- KP Professional Engineering PC
- Mr Michael O'Rourke	- Mr Claudio Darras, PE, LEED AP
- Mr Steven R Giammona, PE	- Chimney Design Solutions
- Mr Raymond G Schmitt	- Mr Brian C Simkins
- Ms Nancy Roman	- Miller Proctor Nickolas, Inc.

Contributions can be made in three ways:

1) You can mail your checks, made out to Ashrae Resource Promotion, to:

Janeth Costa
Ashrae Research Promotion Chair
c/o Apollo HVAC Corp.
225 North Fehr Way
Bay Shore, NY 11706

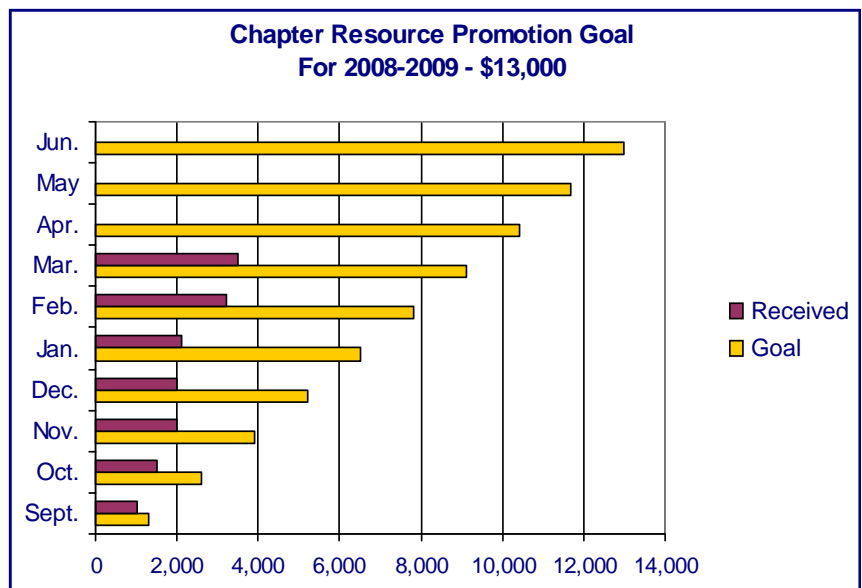
2) You can bring your check to any of the meetings and give it to me. I will mail it for you.

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

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

Thank you again for all your support!

Janeth Costa
Resource Promotion Chair



CTTC

Heat Pumps for Cold Climates

The majority of air-source heat pumps (ASHPs) are in-stalled in moderate to warm areas of the United States, mostly south of the Mason-Dixon Line.

Two major issues make conventional ASHPs unattractive as a heat source in cold climates. First, buildings in colder climates often have appreciably smaller design cooling loads than design heating loads. Second, ASHP heating capacity and coefficient of performance (COP) decrease as the outdoor temperature, T_o , decreases because the temperature lift across the compressor increases. For these reasons, conventional ASHPs sized to meet cooling loads cannot meet the full heating loads at lower T_o , necessitating extensive use of costly, and energy-inefficient, electric resistance heating.

Conceptually, a heat pump designed for a cold climate would have sufficient capacity to meet heating loads around $T_o \sim 0^\circ\text{F}$ at a reasonable COP, and would require limited (ideally, no) electric-resistance heat on an annual basis. Such a design would enable effective use of heat pumps in much colder climates than current designs. For example, it could extend the region where heat pumps could reduce heating primary energy consumption or cost over much of the northern U.S.

Several design modifications and technologies have been proposed or introduced (alone and in combination) for cold-climate heat pumps.

Sizing the ASHP for heating instead of cooling can increase capacity. It does not, however, address the problem of reduced heating cycle efficiency and capacity as T_o decreases. It also can lead to excessive cycling—and the resulting efficiency decrease—at moderate heating loads and during cooling season (since the system is oversized for those conditions). Excessive cycling can, in turn, significantly decrease dehumidification effectiveness.

Multiple or modulating compressors address mismatched loads by sizing compressor capacity to meet heating design loads at full capacity, while part-load operation efficiently satisfies cooling loads and dehumidification. The problem of reduced heating cycle efficiency as T_o decreases still remains.

Geothermal heat pumps, also known as ground- or water-coupled or ground- or water-source heat pumps (GSHP), overcome the problem of reduced cycle efficiency in cold ambient air by extracting heat from the soil or groundwater at approximately constant underground temperatures. In theory, they can achieve near-constant heating and cooling efficiencies year-round. In practice, in colder regions the quantity of heat extracted from the ground (during the heating season) is larger than that rejected to the ground, which depresses the ground temperature around the loop and GSHP efficiency. Still, effectively designed GSHPs in the northern U.S. can achieve average heating COPs on the order of 3 (including pumping power).

Increased outdoor coil capacity enables the ASHP extract more heat at a given T_o .

Carbon dioxide (CO_2) refrigerant cycles that exploit the thermodynamic characteristics of CO_2 to provide about 35% greater capacity at $T_o = 17^\circ\text{F}$. This decreases the use of electric resistance heating and also significantly reduces system oversizing relative to the design cooling load. CO_2 also rejects heat over a wider temperature range, enabling higher air delivery temperatures without thermodynamic penalty.

Mechanical liquid subcooling increases capacity (~10%) and efficiency (~5%).

CTTC (Cont'd. from Page 9)

Optimization of the indoor and outdoor coil circuiting for heating mode also could enhance capacity and efficiency.

Within the past five years, at least two U.S. companies have introduced ASHPs designed for cold climates. Units developed by both companies have two compressors that operate in series. At moderate T_o , a single compressor (with multiple capacities) operates to meet the heating loads. When T_o falls below the point where the single compressor can effectively meet the heating load, a second “boost” compressor with a large volumetric capacity also runs. In one unit, the refrigerant exiting the first compressor enters the second compressor. The other unit has a heat exchanger that transfers heat between two vapor-compression cycles, i.e., the condenser of the first cycle serves as the evaporator of the second cycle, but each cycle uses separate refrigerant. Both configurations decrease the lift of both compressors, increasing their efficiencies and capacities.

In addition, two-stage units can incorporate a refrigerant economizer that expands a portion of the liquid refrigerant leaving the condenser to a pressure between that of the evaporator and condenser (i.e., the inlet pressure of the second compression stage). This expanded refrigerant accepts heat from the liquid refrigerant, subcooling the liquid prior to expansion, and further increasing cycle capacity and efficiency. As a result, their heating capacities drop off more slowly than conventional ASHPs while maintaining a COP of greater than 2 at $T_o = 0^\circ\text{F}$.

The rest of this article focuses on these recently introduced ASHPs optimized for cold climates.

Energy Savings Potential

At moderate temperatures, ASHPs have superior primary energy efficiency, e.g., at $T_o = 45^\circ\text{F}$ – 50°F , an ASHP consumes about half the primary energy of a gas furnace with an 80% annual fuel utilization efficiency (AFUE). As T_o decreases, however, its primary energy efficiency decreases rapidly and, below the balance point (i.e., where the heating load equals heat pump capacity), requires inefficient electric resistance heat.

A simple analysis comparing the performance of a two-stage cold-climate ASHP to three conventional heating options, 80% and 90% AFUE furnaces and a 85% AFUE oil heat boiler, to meet the hourly space heating loads of ~3,000 ft (280 m) homes constructed since 2000 in Chicago, Minneapolis, and New York. The heating COP and capacity data are based on curve fits for laboratory test data for an ASHP designed for cold climates. When the heat pump lacked sufficient capacity to meet space heating loads, the model assumed that the system activated electric resistance heating to meet the remaining heating load.

The analysis found that, relative to an 80% AFUE furnace, the heat pump designed for cold climates will achieve negligible primary energy savings in Minneapolis and appreciable savings in Chicago and New York (~12% and 19%, respectively). When compared to an AFUE = 85% oil boiler, the heat pump reduces primary energy consumption by about 12% in New York, and has a marginal primary energy impact in both Chicago and Minneapolis. Relative to a high-efficiency furnace (AFUE = 90%), it would realize moderate primary energy savings in New York (~6%), negligible savings in Chicago, and consume more (~9%) primary energy in Minneapolis. In all three cases, the heat pump modeled had an average annual COP of between 2.6 and 3.0, similar to GSHPs in those climates.

In addition, the heat pump offers some energy savings during the cooling season relative to units meeting the minimum SEER required for residential central air-conditioning units. Due to the relatively small space cooling loads in the target climates, the annual and national cooling energy savings would be small.

Market Factors

CTTC (Cont'd. from Page 10)

In heating-dominated climates, heat pumps compete for market share against furnaces and boilers. Using the prior energy consumption analyses described for the homes in Chicago, Minneapolis, and New York and applying average residential energy costs,§ the heat pump designed for cold climates would reduce space heating energy costs by approximately 28 to 38% relative to an AFUE = 80% gas furnace and 19% to 30% relative to an AFUE = 90% gas furnace. Relative to an AFUE = 85% heating oil-fueled boiler, the estimated energy cost savings range from 51% to 58%.

As expected, the percent savings are greatest in the warmer location (New York) and least in the coldest location (Minneapolis), with the maximum energy cost savings occurring in the Chicago climate.

Preliminary information suggests an approximate installed cost premium of between \$3,000 and \$4,000 relative to conventional ASHPs. This estimate is based on products from a single manufacturer, so the entry of an additional manufacturer into the market will likely decrease the first cost premium, e.g., one manufacturer estimates that their reentry into this market will decrease the incremental first cost by approximately \$1,000. Taking this at face value and comparing conventional ASHP costs with those of gas furnaces and oil boilers, heat pumps designed for cold climates should have a first-cost premium of about \$4,500 to \$5,500 relative to an AFUE = 80% gas furnace, \$3,900 to \$4,900 relative to an AFUE = 90% gas furnace, and \$2,600 to \$3,700 relative to an AFUE = 85% oil-fired boiler). These translate into simple payback periods (SPPs) on the order of nine to 11 years, 11 to 13 years, and two to three years, respectively. All of these SPPs would decrease when compared to the additional cost of installing a central air-conditioning system. Interestingly, a GSHP has an installed cost premium of approximately \$1,200 to \$2,200 while achieving a similar heating COP in colder climates (including parasitics).

In addition, laboratory test data indicate that at least one ASHP designed for cold climates can deliver air at higher temperatures than conventional ASHPs, i.e., at 99°F (37°C) or higher under most conditions.

ASHPs designed for cold climates are new products and, as such, they have not yet had the opportunity to establish their reliability. Limited field testing of an earlier model of a cold climate ASHP found that it had significant reliability issues. In addition, the earlier model did not approach its laboratory performance in the field, i.e., the units had significantly lower COPs and also delivered air at appreciably lower temperatures than anticipated. It is not clear if newer models have addressed these reliability issues and performance discrepancies. To realize their energy and energy cost savings potential and, ultimately, their market potential (since cost savings impact SPP)—newer units will need to match their laboratory performance in the field.

In addition, both developers are smaller companies that will need to establish the full infrastructure to successfully market and support these products.

Andrew Manos

Chapter Technologies Transfer Committee Chair



Student Activities

Field Trip

There is engineering involved in everything we do from designing the space shuttle to brewing beer. We would like to invite our engineering students to join us on our field trip to John Harvard to learn how engineering is involved in brewing your favorite fermented beverage. John Harvard's is a small brew pub with some impressive equipment and engineered products. This is an age restrictive event if you plan on participating in the tasting portion.



Scholarships

Apply Now for the 2008-09 Long Island Chapter Scholarships. Please contact bsimkins@accuspecinc.com for applications.

Don't miss a great opportunity for internships!

Employers, meet students! Students, meet employers!

This ASHRAE program allows business owners and employers to post their available internships, and provides ASHRAE student members a place to search for and apply for positions meeting their search criteria. There is no better way for students to gain industry experience! And there is no better way for employers to get the cream of the crop on their staff!

Valuable Resources

Student Activities offers a wide range of resources to help you learn the benefits of becoming a student member of ASHRAE and about careers in HVAC&R.

Please visit: <http://www.ashrae.org/students/> for more information on all the Student ASHRAE activities and opportunities.

Brian Simkins - Student Activities Committee

Carolyn Cammalleri, LEED AP - Vice Chair



ASHRAE Golf Outing 2009 - Monday, May 4th, 2009



10th Annual LI ASHRAE GOLF OUTING Monday – May 4th, 2009



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 17, 2009 (No Exceptions)

Fax 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

Golf & Meals:	\$ 300 pp x _____	= \$ _____
Reception & Dinner:	\$ 130 pp x _____	= \$ _____
Sponsor Dinner:	\$1,000 <input type="checkbox"/> Yes	= \$ _____
Sponsor Lunch:	\$ 500 <input type="checkbox"/> Yes	= \$ _____
Sponsor Reception:	\$ 500 <input type="checkbox"/> Yes	= \$ _____
Sponsor Prizes:	\$ 500 <input type="checkbox"/> Yes	= \$ _____
Sponsor Beverage Cart:	\$ 500 <input type="checkbox"/> Yes	= \$ _____
Sponsor Hole:	\$ 200 <input type="checkbox"/> Yes	= \$ _____

ASHRAE Golf Outing 2009 - Monday, May 4th, 2009



10th Annual LI ASHRAE GOLF OUTING ***Monday – May 4th, 2009***

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 hors d'oeuvres in the Main Lounge. Fresh mozzarella with sun-dried 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 2009 - Monday, May 4th, 2009



10th Annual LI ASHRAE GOLF OUTING ***Monday – May 4th, 2009***

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 2009 - Monday, May 4th, 2009***10th Annual LI ASHRAE GOLF OUTING***
Monday – May 4th, 2009**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.

CRC 2009 - August 27th thru August 29th, 2009

ASHRAE Region I Chapters Regional Conference

**Hosted by:
The Northeast Chapter
Albany, NY**



***August 27th—29th
2009***



Area Attractions

- New York State Museum
- Saratoga Thoroughbred Race Track
- Saratoga Gaming & Harness Track
- U.S.S. Slater WWII Destroyer
- Half Moon historic sailing ship
- Historic Shaker Village
- Historic Downtown Saratoga
- Lark Street / Pearl Street Club Districts
- Adirondack Mtn. Region
- Historic Saratoga Spa
- Ft. William Henry/Lake George
- Saratoga Battlefield National Park
- Albany Aqua Duck Tours
- Hudson River Cruise



CRC 2009 - August 27th thru August 29th, 2009

CRC 2009 Conference Agenda

Thursday, August 27

All Day	Registration
9:30am–2pm	Golf
2:30pm–4:30pm	Tech Session I: Steam Theory and Application
2:30pm–4:30pm	Tech Session II: Nanotechnology
4:15pm–6:30pm	Welcome & 1st Business Meeting
7pm–10pm	"Welcome Reception
10pm	Hospitality Suite Open

Friday, August 28

All Day	Registration
All Day	Hospitality Suite Open
7am–9am	"Breakfast
8am–9:45	Caucus
9:30am–4:30pm	Saratoga Outing for Companions (Lunch not included)
10am–11:45pm	Chapter OPS Workshop
12pm–1:30pm	"Lunch with distinguished lecturer
1:45pm–3:45pm	Executive Session
6pm–8pm	"President's Dinner
8pm–10pm	Casino Night

Saturday, August 29

7:30am–10am	Registration
7am–9am	"Breakfast
8am–9:30am	2nd Business Meeting
9am–11am	Aqua Duck Tour for Companions
9:30am–12pm	Workshops
12pm–2:30pm	"Awards Luncheon
2:45pm–4pm	3rd Business Meeting

Welcome Reception

Thursday, August 27th at 7 pm
The Desmond
Hotel & Conference Center



Please Join us for
Hors d'oeuvres!
Drinks!
Good Times!

For further information please contact:

Stan Westhoff, CRC General Chair
 Unilux Advanced Manufacturing

518-344-7490

swesthoff@uniluxam.com

CRC 2009 - August 27th thru August 29th, 2009

Registration Form

Complete one form per family attending

<input type="checkbox"/>	Full Package w/Golf*	\$440	Late Fee \$550
<input type="checkbox"/>	Full Package (no golf)*	\$330	\$410
<input type="checkbox"/>	Companion Pkg w/golf *	\$260	\$325
<input type="checkbox"/>	Companion Package (no golf)*	\$150	\$190
<input type="checkbox"/>	One Day Registration**	\$205	\$275
<input type="checkbox"/>	Awards Luncheon	\$55	\$65
<input type="checkbox"/>	Technical Sessions	\$70	\$90

Deadline: **July 15th** to avoid late fee!

* Includes all meals (see agenda)

** Includes Breakfast and Awards Luncheon (Sat.)

Totals_____

Name_____

Companion_____

Address_____

City State Zip_____

Phone_____

Email_____

ASHRAE Chapter_____

Chapter Officer_____

Committee Chair_____

Make Checks Payable to:
Northeast Chapter CRC 2009
Mail to:
ASHRAE Northeast Chapter
PO Box 13933
Albany, NY 12212-3933

Accommodations

The Desmond
660 Albany Shaker Road
Albany, NY 12211

Call (800) 448-3500 to reserve your room.
Special ASHRAE room rate of \$148 per night + taxes
if reserved by **August 6th, 2009**.

Reserve with Group Id: 11E8VV
www.desmondhotels.com



The Desmond is conveniently located off Exit 4 of the Northway I-87 (Albany Airport Exit). **From North on I-87:** Take Northway (I-87) to Exit 4- Albany Airport exit. On ramp, bear to right. At end of ramp is traffic light, go left onto Old Wolf Road. At the next light, make a right, you will immediately see Desmond on your left. **From South on I-87:** Take Northway (I-87) to Exit 4- Albany Airport Exit. At the end of the ramp, go left on Wolf Road. At next light, go left onto Albany-Shaker Road, pass under highway and go 200 yds, you will see Desmond on your left.

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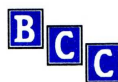
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Business Card	\$200
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