American Society of Heating , Refrigerating, and Air-Conditioning Engineers

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# QUAKER CITY CLIMATE

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Union League
140 S. Broad Street
Philadelphia, Pa 19102
215-405-9578
For Directions
Click Here

Dinner Fees:

- Philadelphia Chapter Members with online reservation and pre-payment: $30
- ASHRAE Members - Non-Chapter Members : $40
- Non- ASHRAE Member : $40
- Young Engineers (35 and under) with online reservation and pre-payment: $25
- Students with online reservation: $10.00

## BUILDING INFORMATION MODELING IN HVAC

Our next meeting is a breakfast meeting scheduled for December 10, 2009 at the Union League. To Register for the event CLICK HERE. Please review Union League's dress code on the registration link.

The event schedule is as follows:

- Registration: 7:00am
- Breakfast: 7:30am
- Presentation: 8:00am-9:00am

Speaker:
Eric Kuszewski

Eric joined KlingStubbins in 2008 after working for several years with an Autodesk reseller. He brings to his position as a Technology Manager a background in HVAC design in an A/E environment. In his current role, he is spearheading Building Information Modeling (BIM) efforts in architecture and MEP and structural engineering using Autodesk® Revit®.

This presentation will touch on the fundamental concepts of Building Information Modeling and specifically how it relates to HVAC design. What benefits does the BIM process bring and what challenges exist for its successful implementation? How does BIM impact workflow and relationships between architects and engineers? How does it benefit contractors and building owners? What information is included in a BIM model and what benefits we can gain from this added information? We will address these questions and discuss where Building Information Modeling stands currently, and where this trend is leading the industry in the near future.

## PRESIDENTS MESSAGE:

I would like to again thank General Aire Systems INC. for providing our speaker, sponsorship and the donation of a pair of Eagle tickets, donated as a raffle for ASHRAE research, in which we collected the amount of $320.00 in making this a successful evening.

This months meeting is a breakfast meeting on BIM (Building Information Modeling) and I would like to thank KlingStubbins for providing our speaker on this design tool.

Please visit our web site to sign up to attend our dinner meetings or our C-Vent invitation. We are still offering for our December thru May dinner meetings the $10.00 discount for any member that is unemployed and has their resume posted on our web site as indicated in our September newsletter.

Please review our CTTC and YEA articles for upcoming activities.

Our chapter needs volunteers to assist our board members and committee chairs. Please contact any board member if you are interested. Specific needs are for YEA, membership and student activities but all committees are open for volunteers.

Our basic design school has started and our advanced school is getting ready to start. Anyone interested in attending the advanced school please contact Mike Witkowski.

I hope to see you at our next meeting and I hope everyone has a happy Thanksgiving.

*Bill Hart*
chick300@aol.com
609-238-2585

# ASHRAE Research – Researching Today to Change Tomorrow

I realize that some may see this as the chapter asking for money again, but I feel it is important to pass on this information to illustrate how ASHRAE responsibly uses the funds collected each year.

When you donate to ASHRAE Research, your money goes a long way. 100% of the donation goes to research projects. Society raises funds from other sources to cover the administrative expenses. Additionally, all funds raised are matched dollar-for-dollar from proceeds of the winter AHR Exposition. $50=$100, $250=$500, $1,000=$2,000, ...

So what are we doing at the Chapter level to support this effort? For starters, the Chapter Board of Governors, and Me (the RP Chair), all donate at the honor roll level ($100 or more). We also hold 50/50 raffles at the monthly meetings. Half of the money raised goes to research and the other half goes to the holder of the winning ticket. Also, we will be organizing a calling campaign this year. The research promotion committee takes to the phones to find chapter members willing to support the cause. For the 08-09 Research Promotion campaign our chapter raised a total of $26,756, this year our goal has been set at $28,000, we have collected $3,462.80 to date so there is a long way to go. Please be generous when asked by a committee member to contribute to this worthy cause.

So what do we get back from ASHRAE Research? Lots! Most notable are updated and newly developed standards, updates to the handbooks and the papers and reports published in ASHRAE Transactions. What most people do not know about is the money that comes back into our chapter/state/region to complete research projects. In 2007, approximately $519,000 was awarded to projects in PA, and approx. $720,000 to projects in Region III. As you can see, the amount of money coming back to our local economies is much greater than what we put into ASHRAE Research.

Finally, donations to ASHRAE Research are tax deductible. Depending on how the federal government solves the mortgage/financial crisis, everyone maybe seeing higher taxes. You can control where some of that money goes by giving to ASHRAE Research.

**Corporate Sponsors for 2009-2010 (to date)**

- Associated Engineering Consultants, Inc.
- Associated Steam Specialties
- Bruce E. Brooks & Associates
- Bush Sales Associates, Inc.
- Chase & Associates
- Clapp Associates, Inc.
- CM 3 Building Solutions, Inc.
- E.F. Siegfried Co., Inc.
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- Ewing Cole
- John F. Scanlan, Inc.
- L & R Associates, Inc.
- M.P. Hershman, PE, Inc.
- Peirce-Phelps, Inc.
- Phillips McDade
- R.D. Bitzer Co., Inc.
- Rogers Mechanical Company
- Sass, Moore & Associates, Inc.
- Schiller & Hersh Associates
- Siemens Building Technologies, Inc.
- Universal Motor Distributors, Inc.
- Vinokur-Pace Engineering Services, Inc.

**Individual-RP Contributions (to date)**

- Mr. Charles G. Bash, Jr.
- Mr. Edward D. Blum
- Mr. Barry A Boose
- Mr. Keith E. Crawford
- Mr. Gary C Debes *
- Mr. Robert H. Finkboner *
- Mr. William G Gove
- Mr. George (Bill) W Hart *
- Mr. E. Wayne Holmes
- Mr. Jared A Johnson *
- Mr. Robert L. Jones
- Mr. John E Kampmeyer
- Mr. Richard S Keast
- Ms. Ashley N. Kenyon *
- Mr. Abdul M. Khan
- Mr. Justin Knapp
- Mr. Walter J. Kolibas
- Mr. Rodney W McKenna
- Mr. John G Pardekooper *
- Mr. James D. Piscopo *
- Mr. Robert L Seeler
- Mr. E. Mitchell Swann
- Mr. Michael Witkowski *

*Indicates a Board of Governors member contributing to the Full Circle.

**Corporate-RP Contributions (to date)**

- ASHRAE Philadelphia Chapter
- Alfred D. Wolf Associates
- B. J. Terroni Company, Inc.
- Energy Products Company
- L & R Associates
- Johnson Controls
- Coward Environmental Systems, Inc

# Heat Recovery from Air-Cooled Chillers

This article has been provided by the Carrier Corporation.

## INTRODUCTION

### Why is heat recovery important?

Buildings are responsible for 40% of the total U.S.A. primary energy consumption [1] and 43% of the energy consumed in commercial buildings is used for space and water heating [2] as illustrated in Fig. 1. If a more efficient means of providing heat could be implemented it would represent a tremendous opportunity to reduce energy consumption in buildings and thus reduce total energy consumption in the U.S.A. This white paper explores a more efficient means of generating hot water through the application of air-cooled chiller systems with heat reclaim capabilities to reduce the energy consumption in buildings.

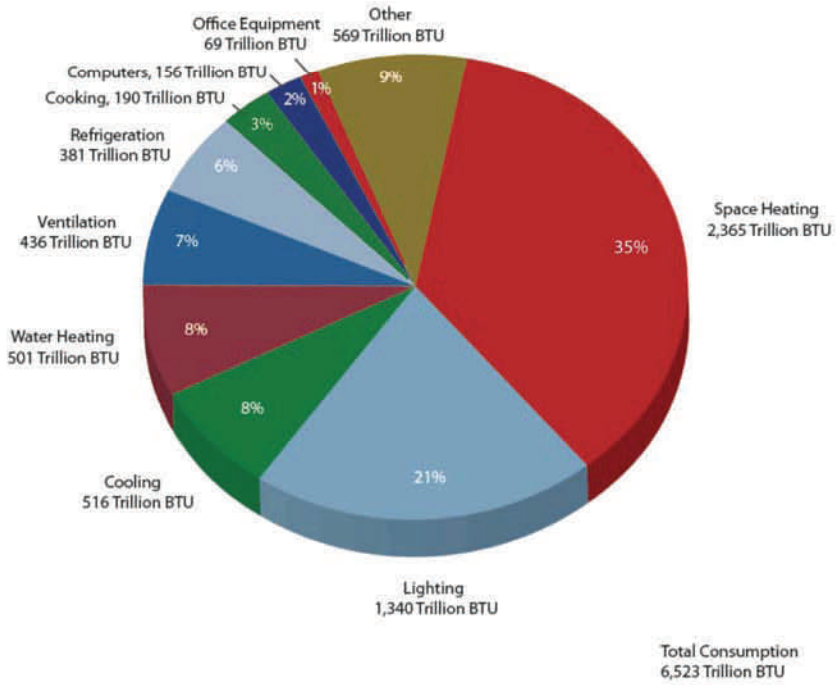


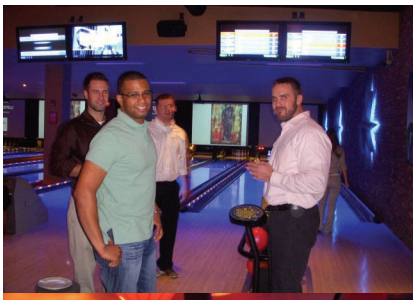

*Fig. 1. 2003 Commercial Buildings Energy Consumption Survey - Major Fuel Consumption by End Use for All Buildings*

For the remainder of the article please visit the ASHRAE Philadelphia Website by clicking HERE

# Young Engineers in ASHRAE

Young Engineers in ASHRAE

The 2nd YEA Bowling Night was great! It was held at Lucky Strike in Center City and was a fun time of food and bowling!! John F Scanlan Inc sponsored the event and the bowler with the highest score won a gift certificate to Best Buy! Don't miss the next YEA Bowling Night!!



YEA Philadelphia has setup a Facebook group for you to join to keep you updated on all the latest information including YEA specific meetings and a forum for young engineers to discuss amongst one another.

The group is located Here

## ASHRAE, IES Seek to Lighten Energy Use through Changes to Standard 90.1

ATLANTA – Requirements to "lighten up" energy use and costs through fenestration, parking lot lighting and other proposed measures are being recommended for Standard 90.1.

ANSI/ASHRAE/IESNA Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential Buildings, provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings. Currently, 15 proposed addenda to the standard are open for public review.

"As the industry continues to call for buildings and systems that use less energy, the Standard 90.1 committee is striving to find ways to reduce energy uses and costs," Mick Schwedler, chair of the Standard 90.1 committee, said. "The proposed changes not only reduce energy use but move the standard closer to the workplan goal of a 2010 standard with 30 percent energy cost savings compared to the 2004 standards."

Among the proposed addenda out for public comment is addendum cd, which would require active exterior control rather than just require the control capability; add bi-level control for general all-night applications, such as parking lots to reduce lighting when not needed; and add control for façade and landscaping lighting not needed after midnight.

Eric Richman, chair of the standard's lighting subcommittee, noted that studies from the California Lighting Technology Center at the University of California at Davis found that control strategies reduce lighting energy use by significant amounts during night time hours. A study by Polytechnic State University showed that parking lot lighting operates in a low mode 68 percent of the time.

Additional information from a study by Navigant Consulting shows that parking lots account for 22 Twh out of a total 57 TWh used for outdoor lighting annually nationwide. While this estimate includes all lit parking areas, the potential for energy savings in parking areas that are directly associated with specific building projects are significant and should be supported by the standard.

A second public review of proposed addendum bn would reduce solar loads by orienting the fenestration in more appropriate directions. Changed in response to comments during the first public review, this approach gives flexibility to building design teams to work with siting and fenestration and orientation as well as fenestration area to comply with the requirement.

Proposed addendum bb updates building envelope requirements for opaque elements, such as walls and rooms, and fenestration (windows and skylights). A number of changes were made in response to public comments during the first public review.

"I would like to thank all of those who met with the Standard 90.1 committee during our fall interim meetings for their candor, input and willingness to work toward an addendum that can reach consensus and save both energy and energy costs," Schwedler said.

The proposed addenda to ASHRAE/IESNA Standard 90.1 are available for comment only during their public review period. To read the addenda or to comment, visit www.ashrae.org/publicreviews.

ASHRAE, founded in 1894, is an international organization of some 50,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.

# CHAPTER TECHNOLOGY TRANSFER COMMITTEE

## Milton W. Garland Commemorative Refrigeration Award for Project Excellence

ASHRAE offers two competition-based awards encouraging the design of innovative refrigeration system awards. The Milton W. Garland Commemorative Refrigeration Award for Project Excellence recognizes non-comfort refrigeration systems. The Refrigeration Comfort Cooling Award for Project Excellence is oriented toward comfort refrigeration systems.

The Philadelphia Chapter Technology Transfer Committee is currently accepting applications for both competitions for 2010.

The Garland Award competition is open for the design of mechanical refrigeration machinery for applications other than human comfort: e.g., food processing/ preservation, industrial/ manufacturing processes, life support in extreme environments, recreational facilities.

The Refrigeration Comfort Cooling Award competition is open for the design of mechanical refrigeration machinery for human comfort applications.

Both submissions must be made within 36 months of the initial operating date of the system, and will be judged on the following criteria:

- Complexity of Problem
- Solution Concept
- Architectural Integration
- Originality
- Achievement of Performance Criteria
- Energy Effectiveness
- Budget Compliance

Ease of Maintenance

Additional information can be obtained from Mark Maguire (mmaguire@klingstubbins.com), Chapter Transfer Technology Chair, or by visiting the chapter Website:

http://www.ashrae.org/members/page/797.

## Chapter Technology Award Competition 2010

The Technology Award Program recognizes members for innovative designs, communicate that technology to other members, and highlight achievements to other professionals.

The Chapter Technology Transfer Committee will be accepting applications for the 2010 Chapter Level competition in March 2010 in the following categories:

- Commercial Buildings, New and Existing
- Institutional Buildings, New and Existing
- Health Care Facilities, New and Existing
- Industrial Facilities or Processes, New and Existing
- Public Assembly Facilities, New and Existing
- Residential Buildings, New and Existing (Single Family and Multi-Family)
- Alternative or Renewable Energy Use

Entries will be judged on energy efficiency, indoor air quality and thermal comfort, innovation, operation and maintenance, cost effectiveness, environmental impact and quality of presentation.

The process for the ASHRAE Technology Awards starts right here at the Chapter level. Chapter Competition winners will be judged in the Regional Technology Award Competition. Regional winners will then submit a long form application for the Society Technology Award Competition. Winners of the Society Competition will also be featured in the ASHRAE Journal.

For more information on the Technology Award Program, including application forms please visit the CTTC section of the chapter Website http://www.ashrae-phila.org/storage/cttc.htm

Mark M. Maguire, PE
Chapter Chair – Technology Transfer
mmaguire@klingstubbins.com

# *BACK BY POPULAR DEMAND!*

# ASHRAE

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND
AIR-CONDITIONING ENGINEERS, INC. PHILADELPHIA CHAPTER

## ADVANCED HVAC SYSTEM DESIGN COURSE

Through this challenging course, students will use architectural building backgrounds to develop a complete HVAC system. Design concepts will encompass air systems, chilled and hot water hydronic systems and equipment selections such as chillers, boilers and unitary rooftop. The schedule is a demanding one-year, 28-night course culminating in a student generated total system design. Additionally, there are plenty of out-of-class assignments to help students manage their workload.

**This course is a fantastic opportunity to develop the tools necessary to further an HVAC Career.**

### 2009-2010 Course Subjects Include:

Code Evaluation
Load Calculation
System Evaluation & Selection
Equipment Selection
Layout
Controls
Specifications

All books and reference materials will be supplied. Classes will meet one evening each week, beginning in early September and continuing until the end of April. The location and tuition fee are still to be determined.

If you are interested in possibly enrolling in this course and would like to receive further information, please contact:

Hope Silverman
Philadelphia Chapter of ASHRAE
Phone 610-971-2169
hope@mmco1.com

# PHILADELPHIA CHAPTER PROGRAMS CALENDAR 2009-2010

| Date | Location | Topic | Theme | Joint Meeting |
|---|---|---|---|---|
| 10/8/2009 | The Rittenhouse | Joint Meeting with SMCA | | SMCA |
| 11/12/2009 | Maggiano's Center City | Standard 52-2007 | Donor recognition and Research Promotion | |
| 12/10/2009 | Union League | BIM in A/E Design | | |
| 1/14/2010 | Maggiano's Center City | Philly Sustainability / Clinton Climate Initiative / 90.1-2007 | Sustainability | |
| 2/11/2010 | Dave & Busters | Energy Mgmt. in existing buildings | Student Night & Membership Promotion | SMCA |
| 3/11/2010 | Crown Plaza - King of Prussia | LEED Measurement & Verification | Tradeshow | |
| 4/14/2010 | Union League | Std. 189.1 High Performance Buildings | Sustainability | |
| 5/13/2010 | Maggiano's Center City | BIM and CFD | Past Presidents | |
| 6/4/2010 | Northampton Valley CC | Golf Outing | | |
| Mid June 2010 | Temple University | 2010-2011 Planning Meeting | | |

# ASHRAE CERTIFICATIONS

ASHRAE offers certification programs in five areas:

- Healthcare Facility Design
- High-Performance Building Design
- Operations and Performance Management
- Commissioning Process Management
- Building Energy Modeling (coming in March 2010).

An ASHRAE certification lets employers and clients know that the certification earner has mastered a significant body of knowledge in a specific aspect of HVAC&R design. A firm that employs ASHRAE certification earners demonstrates a corporate commitment to the professional development of its employees and a dedication to providing the best possible resources for building design projects.

Each category has eligibility standards, which are a combination of educational and experience criteria. After filing an eligibility request and being approved by ASHRAE, a candidate takes an electronically-administered exam at an Applied Measurement Professionals (AMP) testing center. After passing the 2 to 2½ hour test (depending on the category), the candidate can then claim to be ASHRAE-certified in that area.

ASHRAE offers a recertification process, including an ethics statement and a continuing education requirement. Additional information, including a candidate guidebook, is at ashrae.org/certification.

*Mark M. Maguire, PE*
Chapter Chair –
Technology Transfer
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ASHRAE Philadelphia Website



## Making a Case for Energy Efficiency in Existing Buildings: New Industry Publication

ATLANTA – Improving energy use all comes down to green – the green of energy efficiency and resource sustainability as well as the green of money.

So, show them the money. Building owners and managers of existing buildings need to understand the economic benefits of improving systems and operations. A new publication from leading industry organizations provides guidance for the business case to achieve energy savings as much as 30 percent.

Energy Efficiency Guide for Existing Commercial Buildings: The Business Case for Building Owners and Managers provides the rationale for making economic decisions related to improving and sustaining energy efficiency in existing buildings. Approximately 86 percent of U.S. annual building construction expenditures relate to renovation of existing buildings vs. new construction.

"Our goal is to enable business owners to break down the 'mystery' of energy conservation opportunities into business-based scenarios that are both practical and cost-justifiable," said George Jackins, who chaired the committee overseeing the book. "To achieve true sustainability in the building industry, we must help owners learn that investing in energy efficiency translates into a high rate of return with a low associated risk. Owners and managers typically view buildings in terms of short-term economics. We must make the transition from best value vs. lowest first cost of buildings."

Specifically, the guide provides straight-forward applications that could produce energy savings from 10 to 15 percent to a more aggressive approach that could save 30 percent or more.

The book is a collaboration between ASHRAE, the American Institute of Architects, the Building Owners and Managers Association, the Illuminating Engineering Society of North America, the U.S. General Services Administration and the U.S. Green Building Council.

Here are the five important tips that owners and managers need to know to make their buildings energy efficient:

Know your current energy utilization index (EUI) (kBTU/SF-year).

Establish a target EUI and an initial budget estimate for achieving this goal.

Conduct an internal energy study/audit (using ASHRAE's Procedures for Commercial Building Energy Audits as a basis) or have the facility retro-commissioned by a certified retro-commissioning firm. This activity may result in a modification to the original estimated budget amount.

Identify energy efficiency measures with attractive rates of return on energy retrofit or renovation investments.

Implement the recommended energy conservation measures that will get the facility to the desired goal with the stipulated budget.

Commission the energy conservation measures by a certified commissioning firm. This process should include training of facility personnel on properly operating and maintaining equipment and systems.

The bookis the first of three planned guides on energy efficiency. The second will be aimed at providing technical guidance in undertaking existing building renovation programs. The third will provide operation and maintenance guidance to help sustain the energy efficiency.

The cost of Energy Efficiency Guide for Existing Commercial Buildings: The Business Case for Building Owners and Managers is $69 ($59, ASHRAE members). To order, contact ASHRAE Customer Service at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit www.ashrae.org/energyguide.

ASHRAE, founded in 1894, is an international organization of some 50,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education.

## Membership Promotion

New Members November

Mr Con Kergides - Associate
Mr Edward J Retzbach - Associate
Mr Glenn G Pettit - Associate
Mr Thomas George Miller - Associate
Dr Philippe Bonnet - Associate
Mr Donald A Hamme III - Member
Mr Wadeed Albert Tewfik - Member
Mr Timothy J Weikunat - Member

ASHRAE is no longer accepting applications for grade advancement. To advance from associate to member, a member must update their ASHRAE bio online, and notify membership@ashrae.org they have an updated bio and wish to be considered for grade advancement. Tips for updating bios:

i. Go to www.ashrae.org
ii. Login
iii. In Member Central, Click "Update Your Bio"
iv. Go through each of the small blue tabs to enter demographics, contact information, education, professional registration, etc. It's very easy!

Bob Finkboner
Membership Promotion Chair