



# QUAKER CITY CLIMATE

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## Dave & Busters

325 N Columbus Blvd  
Philadelphia, PA 19106  
(215) 413-1951

For Directions : [Click Here](#)

Parking is \$12 (\$5 coupon)

Dinner Fees are based on  
online reservations and  
prepayment (\$45 without  
online reservation):

- Philadelphia Chapter  
Members: **\$30**
- ASHRAE Members - Non-  
Chapter Members : **\$40**
- Non- ASHRAE Member :  
**\$40**
- Young Engineers (35 and  
under): **\$25**
- Students: **\$10**

## ROOFS: GREEN, BLACK, WHITE & OTHERWISE

Our next meeting is scheduled for Thursday, September 15, 2011. It will be held at Dave & Busters. There will be a YEA social following the dinner meeting. If you're 35 years old or under, stick around after the meeting for time of hanging out and playing pool with other young engineers. The event schedule is as follows :

- Seminar:  
1:00—4:00pm
- Social Hour with a cash bar:  
5:00—6:00pm
- Dinner  
6:00—7:00pm
- Presentation  
7:00—8:00pm
- YEA Social  
8:00—9:00pm

[Seminar Registration](#)

[Dinner/Presentation Registration](#)



### Dinner Presentation:

This presentation is what engineers need to know about roofs in order to communicate with architects and owners. "This green roof stuff is getting out of hand. It is dumb to do a green roof to save energy. If dirt was energy efficient we would call it insulation and put it in walls. It is just dirt. Insulation is better insulation than dirt – that is why we call it insulation (1). And covering a roof with grass to deal with solar gain is also pretty dumb when you have something much more effective and less expensive available called a reflective membrane. "

### Bio:

JOSEPH LSTIBUREK, B.A.Sc., M.Eng., Ph.D., P.Eng.

Dr. Lstiburek is a principal of Building Science Corporation and an ASHRAE Fellow. He is a building scientist who investigates building failures. Dr. Lstiburek received an undergraduate degree in Mechanical Engineering from the University of Toronto, a masters degree in Civil Engineering from the University of Toronto and a Doctorate in Building Science from the University of Toronto. He has been a licensed Professional Engineer since 1982. When he is not in buildings he drinks red French wine and drives fast German sports cars – but never at the same time.

## 2011- 2012

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Casey Younkings

## PRESIDENT'S MESSAGE

The 2011/2012 ASHRAE year is upon us. Welcome back to another season of ASHRAE! I hope you all had an enjoyable summer! Before I look ahead I would like to say thanks to all the volunteers, participants and sponsors that made our June Golf outing a success. I would like to specially thank Golf Committee Chair Jim Piscopo and all those who assisted to make this event possible. On a similar note I wish to thank John Pardekooper for his outstanding job as Chapter President last year and look forward to his continued support this year.

Your board and committee Chairs have been working hard during the summer months preparing for this year. Our officers and most committee members attended this summers ASHRAE CRC (Chapter Regional Conference), which was held in Scranton, Pa from August 12-13. The CRC is where our Chapter's officers and committee members receive training and instruction on how to perform their duties as committee chairs and outgoing committee chairs receive recognition and awards for their service. Our chapter won many awards: a listing of the awards will be provided later in this newsletter.

### September Meeting

I got a look ahead and have to say I am very pleased with the meetings and activities we have planned and I think you will be too. I hope that you will find them interesting and relevant and encourage you to participate. This is your Chapter and we depend on the support and participation of all our members so please come on out and bring a friend.

The September Dinner will be at Dave & Busters the program will cover Roofs: Green, Black, White & Otherwise - presented by Joe Lstiburek of Building & Science Corporation this is also our first membership night and young engineer's night (YEA). Please consider inviting new associates or recent grads to the meeting and plan on staying after as we have pool tables on reserve. As an added feature we will be conducting an afternoon seminar from 1-4 the topic will cover Best Practices and Options for Data Center Cooling presented by John Menoche, PE, Cooling Business Development Manager for APC by Schneider Electric

I look forward to seeing all of you at any of the season's upcoming events. We have a lot on our plate and I know we will have a great time serving the Chapter Membership

Here's to a great year,

Best Regards,  
Bob Finkboner  
c21@ashrae.net

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This article was written by Steve Solotist, the engineering representative for John F. Scanlan, the manufacturer's representative for Titus air distribution products. Articles highlighting novel HVAC technologies should be submitted to Chapter Technology Transfer Committee Chair Mark Maguire (c021bog5@ashrae.net) for consideration in future newsletters.

## ASHRAE Standard 62.1: Table 6-2 Zone Air Distribution Effectiveness

### Selection and Review of Air Devices to Reduce Outside Air Requirements

This table presents varying O/A rates based on the location of both the supply and return air devices. In the most widely used application of ceiling supply and return the standard prescribes an Ez factor of .8. This factor is usually applied, as the design professional has time constraints or other limiting factors that prevent the higher standard of care being applied in the design.

In most cases the requirements for reduced outside air quantities (Ez factor of 1.0) are easily complied with by the use of linear slot type products at the perimeter.

The requirements for this specify that in heating mode, a diffuser must have a throw or terminal velocity of 150 fpm at not more than 4.5 ft height from the floor. This assures that the outside air is introduced into the breathing zone and assures the required vertical temperature gradient in heating. That distance/Vt is the limit of the diffuser throw before buoyancy takes over the jet.

Historically, this is usually satisfied with a single slot diffuser taking care of the skin load or a diffuser with multiple slots with one or more slots directed towards the skin across the ceiling or down at a 15 degree angle towards the exposure at 3-4 feet off the floor, and the rest towards the interior in standard ceiling effect.

Several manufacturers offer constant volume position change slot diffusers which change the direction of the deflector throw based on seasonal entering air temperature. This eliminates the waste of sending a portion of your heated air back to interior at the ceiling where it stratifies. Tests have shown the space setpoint being satisfied more quickly with these devices, resulting in 30% energy savings. In cooling mode, all the air is directed towards the interior, in standard ceiling coanda effect application.

Standard square or round air diffusers generally do not have sufficient throw/outlet velocity to achieve the required distance. At best they must be pushed against the wall and that generally will not satisfy the architectural requirements.

Aside from the products chosen, selecting an airflow quantity in heating mode that provides adequate throw is the other factor in compliance. For vav this would likely establish a secondary minimum air quantity aside from the minimum cooling/ventilation rate flow.

Greater airflow in heating from recirculated air is less costly than treating outside air and helps to comply with maximum discharge temperature requirements prescribed by AHSRAE.

If designers and engineers are in fact using the 1.0 Ez factor through their design with a 150 fpm vt @ 4.5 feet off the floor, the air device submittal review is critical.

Many manufacturers have varying types of internal slot deflectors, bars or other deflector styles to alter the geometry of the discharge. The throw, NC and pressure drops will vary.

The design professional must perform the task of "mapping" the throw during design and again during review order to assure compliance. This consists of taking a section view of the space in question and drawing a line from the diffuser centerline, following the ceiling horizontally and down the

skin, or at an angle as selected during the design process. Check the 150 fpm vt at the specified air quantity for the device. The distance to the 150 fpm vt point must not be greater than 4.5 feet off the floor. If it is greater than the required distance from the floor (4.5 feet) the device must be rejected.

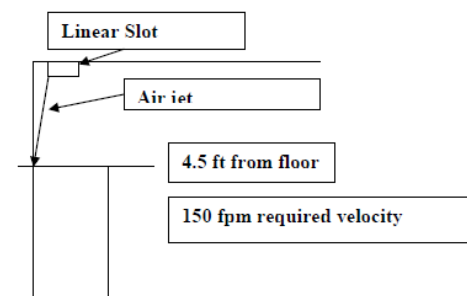
Otherwise your options are:

- 1) Increase heating air flow from the original construction documents to assure throw-this will require a check of NC, pressure drop along with the throw
- 2) Increase the ventilation rate to the Ez factor of .8.

Both solutions have system wide affect in terms of energy use, the potential for re-design looms in the second. The difference in capacity for outside air requirements from Ez factors of .8 to 1.0 should be a driving force when the project has sufficient size and repetitive modules of design. It should also be applied when the building owner intends long term occupancy or is seeking the optional LEED point for Thermal Comfort 7.1 in Version 3.0 (along with the use of ADPI for cooling).

A small amount of care in designing perimeter systems with a slot diffuser could greatly reduce capacity requirements for outside air in the major equipment, duct system, air devices and overall energy use.

The simple diagram below does not intend to replicate all the various approaches for the air jet to travel with or without surfaces to adhere to. It is merely a simple pictorial example of the above material.



### Building Energy Assessment Professional (BEAP) Certification

With the growing emphasis on energy consumption reduction and cost savings, there is a recognized need for credible information to help in the assessment of energy use in buildings. The BEAP program certifies individuals' ability to audit and analyze residential, commercial and industrial buildings including determining project scope, collecting data, analyzing building performance, interpreting results, evaluating alternatives, submitting recommendations for energy conservation measures and assisting with implementation of these recommendations.

The BEAP certification complements ASHRAE's Building Energy Quotient (bEQ) program as well as its BEMP certification. Together, the programs provide a valuable toolkit for evaluation and reduction of building energy use.

ASHRAE has developed the BEAP certification program in collaboration with representatives of the bEQ program, the Illuminating Engineers Society (IES), the National Institute of Building Sciences (NIBS), the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) and the Testing, Adjusting and Balancing Bureau (TABB).

The exam is available on computer at proctored testing centers through Applied Measurement Professionals, Inc., which has testing centers in Center City Philadelphia, Wilmington, DE and Robbinsville, NJ.

This is in addition to the other five certification programs currently available:

- Building Energy Modeling Professional;
- Healthcare Facility Design Professional;
- High-Performance Building Design Professional;
- Commissioning Process Management Professional;
- Operations and Performance Management Professional.

Additional information is available on the ASHRAE Website at [www.ashrae.org/certification](http://www.ashrae.org/certification). Or you can email the Philadelphia Chapter Technology Transfer Chair (Mark Maguire) at [c021bog5@ashrae.net](mailto:c021bog5@ashrae.net)

### Chapter Technology Award Competition 2012

ASHRAE will again hold the Technology Award Program to recognize members for innovative designs, communicate that technology to other members, and highlight achievements to other professionals.

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.

Entries will be due in April 2012, stay tuned for details.

Mark M. Maguire, PE

Chapter Chair – Technology Transfer

[c021bog5@ashrae.net](mailto:c021bog5@ashrae.net)

## ASHRAE Philadelphia Chapter

presents a seminar on

### Best Practices and Options for Data Center Cooling

*a half-day workshop on Thursday, September 15 (1–4 pm) at Dave and Buster's (325 N. Columbus Boulevard in Philadelphia). The seminar cost is \$95 and awards a certificate which can be used as proof of attendance at a continuing education event.*

Data center cooling is one of the most critical yet least understood of all IT environmental issues. In every data center excess heat has the potential to create downtime. In addition, the performance and lifespan of IT equipment is directly related to the operation of cooling equipment. If you're involved with the data center design it's critical that you understand the importance of cooling in the data center environment.

The seminar will cover concepts such as:  
Calculating Total Cooling Requirements;  
Environmental Guidelines for Data Center Equipment Rooms;  
Row and Rack Based Cooling Designs;  
Air Containment Options;  
Close Coupled Chilled Water and Pumped Refrigerant;  
UPS Battery Ventilation Requirements;  
Best Practices for Data Center Efficiency

*Course Instructor – John Menoche, PE, Cooling Business Development Manager for APC by Schneider Electric*

**John Menoche, PE** is a specialist with over 13 years of design and assessment experience in Data Center Cooling.

He has a Bachelor of Science in Mechanical and Ocean Engineering from the University of Rhode Island. He is a registered professional engineer and is an active ASHRAE Rhode Island chapter member.

### ASHRAE Region III CRC 2011

Back in August, your Committee Members and Officers attended the CRC in Scranton, Pa. The Philadelphia Chapter once again did an extraordinary job during the 2010-2011 chapter year. I would personally like to congratulate everyone on their awards and for once again making this Chapter a success.

The following is a list of the Philadelphia committee chairs and officers that received awards:

#### **Outgoing Officers - Certificate of Appreciation**

Certificate: RVC, Student Activities – Gary Debes

#### **Membership Promotion**

##### **Top Gun Award:**

Description Awarded to the top performing Membership Promotion Chair

Plaque: Jim Piscopo

#### **Student Activities**

##### **Lamp of Knowledge**

Description: Awarded to the top performing Student Activities Chair

Plaque: Mike Witkowski

#### **PAOE Chapter Awards**

Philadelphia Chapter

Certificate: John Pardekooper High Honor Roll, Special Citation, Star

#### **Chapter Research Promotion Awards**

Philadelphia-Goal and High Five

Blue Ribbon

#### **Chapter Technology Transfer**

Plaque: Mark Maguire

#### **Technology Awards**

1<sup>st</sup> Place-Philadelphia

Category Institutional Building Existing

Joseph Monahan: U of P Laboratory Demand Control Ventilation

In closing, I hope that this coming year 2011-2012 will be as good as or even better than last. Please get involved when you can.



# ASHRAE Learning Institute

## 2011 Fall Online Course Series

### 2 WAYS TO REGISTER

**Internet:** [www.ashrae.org/onlinecourses](http://www.ashrae.org/onlinecourses)

**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 seminar. Courses are in US Eastern Standard Time.



#### Basics of High-Performance Building Design

Mon, September 19, 2011 – 1:00 pm to 4:00 pm EST

#### Advanced High-Performance Building Design

Wed, September 21, 2011 – 1:00 pm to 4:00 pm EST

#### Fundamental Requirements of ASHRAE Standard 62.1-2010

Mon, September 26, 2011 – 1:00 pm to 4:00 pm EST

#### Complying with Standard 90.1-2010: HVAC/Mechanical

Thurs, September 29, 2011 – 1:00 pm to 4:00 pm EST

#### Complying with Standard 90.1-2010: Envelope/Lighting

Mon, October 3, 2011 – 1:00 pm to 4:00 pm EST

#### Healthcare Facilities: Best Practice Design

Mon, October 31, 2011 – 1:00 pm to 4:00 pm EST

#### Healthcare Facilities: Best Practice Application

Wed, November 2, 2011 – 1:00 pm to 4:00 pm EST

#### Evaluating the Performance of LEED-Certified Buildings

Mon, November 7, 2011 – 1:00 pm to 4:00 pm EST

#### Project Management for Improved IAQ

Wed, November 9, 2011 – 1:00 pm to 4:00 pm EST

**The following courses are comprised of two parts. Registrants must attend both parts in order to receive CEU/DPH credits. Archiving is available.**

#### Data Center Energy Efficiency – Part 1

Mon, October 10, 2011 – 1:00 pm to 4:00 pm EST

#### Data Center Energy Efficiency – Part 2

Wed, October 12, 2011 – 1:00 pm to 4:00 pm EST

#### Using Standard 90.1 to Meet LEED Requirements – Part 1

Mon, October 17, 2011 – 1:00 pm to 4:00 pm EST

#### Using Standard 90.1 to Meet LEED Requirements – Part 2

Wed, October 19, 2011 – 1:00 pm to 4:00 pm EST

#### Implementing Standard 189.1 for High-Performance Green Buildings – Part 1

Mon, October 24, 2011 – 1:00 pm to 4:00 pm EST

#### Implementing Standard 189.1 for High-Performance Green Buildings – Part 2

Wed, October 26, 2011 – 1:00 pm to 4:00 pm EST



## ASHRAE HVAC Design Essential Workshop

January 11-13, 2012 • ASHRAE Foundation Learning Center • Atlanta, GA

### Obtain the skills needed to:

- Improve overall building performance
- Design high-performance HVAC systems
- Effectively collaborate on an integrated design team

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

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

### Who Should Attend

- Engineers new to the HVAC industry
- Facilities managers involved in new construction or major renovation projects
- Technicians who would like to gain design knowledge
- Architects who want to understand HVAC design
- Construction project managers involved with mechanical systems



Visit [www.ashrae.org/hvacdesign](http://www.ashrae.org/hvacdesign) to register

### ASHRAE Certification Programs

- Building Energy Assessment Professional (BEAP)
- Building Energy Modeling Professional (BEMP)
- Commissioning Process Management Professional (CPMP)
- Healthcare Facility Design Professional (HFDP)
- High-Performance Building Design Professional (HBPD)
- Operations & Performance Management Professional (OPMP)

For more info, visit  
[www.ashrae.org/certification](http://www.ashrae.org/certification)



## PHILADELPHIA CHAPTER PROGRAMS CALENDAR 2010-2011

Date	Location	Topic	Theme	Joint Meeting
9/15/2011	Dave & Buster's	<u><a href="#">SEMINAR: Best Practices and Options for Data Center Cooling</a></u>		
9/15/2011	Dave & Buster's	<u><a href="#">Roofs: Green, Black, White &amp; Otherwise - presented by Joe Lstiburek of Building &amp; Science Corporation</a></u>	Membership/ YEA	AIA
10/13/2011	Crystal Tearoom	Duct Leakage Manual & Phone Application - presented by Eli Howard of SMACNA National	SMCA Engineer's Night	SMCA
11/17/2011	Holiday Inn	HVAC Systems Design for Airborne Infection Control Spaces in Healthcare Facilities - presented by ASHRAE Distinguished Lecturer Wei Sun	Research Promotion	ASHAE
12/8/2011	Union League	Contract Documents - presented by Adam Harrison of the Harrison Law Group		
1/31/2012	Wells Fargo Center	Flyers vs Winnipeg Jets		
2/16/2012	Dave & Buster's	ACT 129	Student Night & YEA	DVGBC
3/15/2012	Fisher's Tudor House	Hydronic Balancing presented by Bill England of Flow Design, Inc.	Trade Show	SMCA
4/19/2012	Holiday Inn	Responsible Use of Refrigerants presented by Distinguished Lecturer Julian DeBuliet	Refrigeration	RSES
5/17/2012	Holiday Inn	Dealing with Dampers - Design and Code Issues presented by Mark Jelinske of Cator-Ruma Associates	Past President's Night	
7/TBD/2012	Northampton Valley CC	Golf Outing		

*\*\* Program calendar is subject to change. Please refer to [ASHRAE Philadelphia Website](#) for up to date information.*

### ASHRAE Region III CRC



The Philadelphia  
Chapter of the  
American Society of  
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and Air Conditioning  
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Republication of material contained herein is expressly forbidden without official Chapter authorization. The Chapter does not speak or act for the Society. Any member with material to submit for inclusion in the *Climate* can send the information to:

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Material can include letters to the editor, member news, upcoming events, comments on chapter programs or issues, etc.

## NOTICE

On January 7, 2010 the Legislature enacted and the Governor signed into law P.L. 2009, C. 294 which requires Professional Engineers licensed in New Jersey to complete continuing education. The effective date of the new law is January 12, 2011. At this time, the State Board of Professional Engineers and Land Surveyors ("Board") is working on proposed regulations to provide guidance and clarification to its licensees and interested parties. This Notice is intended to provide information about the continuing professional competency requirements.

- A licensee shall complete not more than 24 continuing professional competency credits related to the practice of Professional Engineering in every biennial license renewal cycle, 2 of which shall be in professional practice ethics.
  - The Board does not have a process in place to approve educational programs and providers at this time. However, the Board is working on proposed regulations to address these matters.
  - A licensee is not required to acquire continuing professional competency credits until January 12, 2011. However, the Board anticipates that a current licensee shall be required to obtain 15 continuing professional competency credits, 2 of which shall be in professional practice ethics, on or before April 30, 2012 to meet the requirements for the 2012-2014 biennial renewal period.
  - The Board anticipates that for the 2014-2016 biennial renewal period, and every 2 years thereafter, a licensee shall be required to complete 24 continuing professional competency credits, 2 of which shall be in professional practice ethics.
- <http://www.njleg.state.nj.us/2008/Bills/PL09/294.HTM>

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## NEW MEMEBERS

Mr Zeiad Hussein, Associate  
Mr Justin Christopher Prior, Associate  
Kurt J Massa, Associate  
Mr Christopher Andrews, Associate  
Mr Dustin Frank, Associate  
Ms Michelle Rittmann, Associate  
Mr Michael Ellis, Associate  
Zuharia Alhafi, Student  
Dr Laurent Abbas, Associate  
Mr Dave Rheiner, Associate  
Ms Gwendolyn L Foster, PE, Associate  
Mr Donald L Hutchison, Member



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## **Gary C. Debes**

*Vice Chair, Region III*  
Membership Promotion

Reply to: 998 Cain Meetinghouse Road  
Coatesville, PA 19320-2109

☎ (484) 886-7400  
Fax (484) 694-0847  
[gary.debes@comcast.net](mailto:gary.debes@comcast.net)

August 30, 2011

Dear Region III Members:

I have the pleasure of inviting you to attend the **Region III Winter Meeting Dinner**. It will be held on Monday, January 23, 2012 at The Rock Bottom Brewery, 1 West Grand Avenue, Chicago, Illinois 60654. ☎ (312) 755-9339.

You are cordially invited to join other members from Region III for an evening of delicious food, drinks and fellowship.

The Rock Bottom Brewery is just 8 blocks from the Palmer House Hilton. We will meet at the restaurant bar for cash bar. It is a brisk walk from the Palmer House some may wish to meet in the lobby to share a cab ride.

Dress is business casual

The schedule for the evening has been arranged as follows:

6:00 PM	Meet at the Palmer House Hilton lobby to take a leisurely stroll to the restaurant.
6:30 PM	Arrive at The Rock Bottom Brewery for cocktails (cash bar).
7:30PM	Dinner will be served. Our menu:
	• Chicken Picatta, <u>or</u>
	• 11 oz. Top Sirloin, <u>or</u>
	• 10 oz. Prime Rib, <u>or</u>
	• Atlantic Salmon.

All are served with mixed green salad, fresh bread, seasonal vegetable, desert display and choice of white cheddar mashed potatoes or rice pilaf.

Coffee and Hot Tea

Desert: Selections from the desert tray.

**We are once again inviting our Student Members to join us, if you are interested in sponsoring one or more of these students please feel free to contact me, Kevin Fallin, Paul Petrilli or Dan Pettway.**

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

A N I N T E R N A T I O N A L O R G A N I Z A T I O N

The price for this great evening is \$40.00 per person. Please complete the reservation form below and return it to me, along with your check made payable to: "**ASHRAE REGION III**", so that I will receive it **no later than Monday, January 16, 2012.**

If you cannot mail it by that date, fax or e-mail your dinner reservation to me but, please, bring your check with you to dinner. It is really important to respond quickly; I must make firm reservations before the ASHRAE meeting begins. **THANKS !!!**

Once again, I look forward to seeing you on January 23rd!!!!

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Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Total Quantity \_\_\_\_\_ X \$40.00 = \_\_\_\_\_

**NOTE: MAIL BACK OR FAX THIS RESERVATION TO GARY DEBES AT:**

Gary Debes  
998 Caln Meetinghouse Road  
Coatesville, PA 19320  
(484) 886-7400  
(484) 694-0487 Fax

**Please use this reservation as your receipt**

# ASHRAE – PHILADELPHIA CHAPTER

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

## **BASIC HVAC SYSTEM DESIGN COURSE**

This is a demanding one-year course that introduces students to the fundamentals of HVAC design. Classroom activities will include lectures and problem solving sessions, supplemented by home reading and study assignments.

**Participants are eligible to receive continuing education credit**  
**Participants can receive up to 59 LUs (equivalent to 59 PDHs = 5.9 CEUs)**

### **2011-2012 Course Subjects Include:**

Fundamentals and Psychometrics  
Load and Heat Transfer Fundamentals  
Load Calculations  
Pumps, Piping & Piping Systems  
Basic Steam & Boilers  
Fans, Air Distribution & Duct Design  
Refrigeration  
Controls & Instrumentation  
Equipment Selection

**The class is a great way to further, or even begin, a career in HVAC.**

Classes will meet Tuesdays and Thursdays from 6:15 PM to 8:30 PM beginning in October and continuing until the end of March. All classes will be held at Drexel University's Center for Automated Technology – located at 3101 Ludlow Street (near 31<sup>st</sup> and Market Streets).

The Basic Class tuition is \$1,200 (\$1,000 for ASHRAE Members who have paid both their National and Philadelphia Chapter dues). Tuition includes all course materials.

Class size is limited to 30 students. To enroll, complete and submit the application including a **non-refundable** deposit of \$200 payable to "Philadelphia Chapter ASHRAE". Balance due at first course session.

If you would like to enroll or receive further information, please contact:

Hope Silverman  
Philadelphia Chapter ASHRAE  
994 Old Eagle School Road, Suite 1019  
Wayne, PA 19087-1866  
Phone 610-971-2169 / Fax 610-971-4859  
E-mail: [philachapter@mail.ashrae.org](mailto:philachapter@mail.ashrae.org)

# ASHRAE

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

## **ADVANCED HVAC SYSTEM** **DESIGN COURSE**

This is a demanding course that is designed to help students, draftspersons, designers, engineers, construction managers, etc. gain an in-depth understanding of HVAC design and engineering.

### **2011-2012 Course Subjects Include:**

Code Evaluation  
Load Calculation  
Psychometrics  
Duct Design  
Piping Design  
Pipeflo Introduction  
Fan Selection  
Pumping  
System Evaluation & Selection  
New Technologies  
Heat Recovery Equipment  
LEED  
Controls

**The class is a great way to further your career in HVAC.**

Classes will meet Wednesdays from 6:15 PM to 8:30 PM beginning mid-October and continue until the end of March. All classes will be held in Philadelphia.

The Advanced Class tuition is \$1,200 (\$1,000 for ASHRAE Members who have paid both their National and Philadelphia Chapter dues). Tuition includes all course materials.

Class size is limited to 15 students. To enroll, complete and submit the application including a **non-refundable** deposit of \$200 payable to "Philadelphia Chapter ASHRAE". Balance due at first course session.

If you would like to receive further information, please contact the Advanced Class Coordinator:

Jeff Crozier  
The Procz Group  
Phone 267-614-6446  
[jcrozier@proczgroup.com](mailto:jcrozier@proczgroup.com)

# Philadelphia Chapter ASHRAE

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

## Continuing Education Application

I am applying for: ☐ Basic HVAC Course ☐ Advanced HVAC Course

### Personal Information

Name: \_\_\_\_\_  
Last First Middle Initial

Home Address: \_\_\_\_\_  
Street City State Zip

Phone No.: \_\_\_\_\_ Age: \_\_\_\_\_ Application Date: \_\_\_\_\_

Email: \_\_\_\_\_

### Current or Most Recent Employment

Employer: \_\_\_\_\_ From: \_\_\_\_\_ To: \_\_\_\_\_ Total \_\_\_\_\_  
Firm Name Date Date Years

Business Address: \_\_\_\_\_  
Street City State Zip

Job Title: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Discipline: ☐ Engineer ☐ CAD/Designer ☐ CAD/Drafting ☐ Sales Rep ☐ Trades ☐ Administration

### Learning Goals

Please describe what you hope to learn and take away from this class.

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### Education

	School (Name & Location)	Years Attended	Major	Degree Or Diploma
High School	_____	_____	_____	_____
College	_____	_____	_____	_____
Other	_____	_____	_____	_____

PLEASE SEE REVERSE SIDE FOR PAYMENT



## **PAYMENT**

### **AMOUNT:**

**Members:** \_\_\_\_\_ \$200 Deposit \_\_\_\_\_ \$800 Balance Due \_\_\_\_\_ \$1,000 Total Fee  
Members are those who have paid both their ASHRAE National and Philadelphia Chapter Dues

**Non-Members:** \_\_\_\_\_ \$200 Deposit \_\_\_\_\_ \$1,000 Balance Due \_\_\_\_\_ \$1,200 Total Fee

*The balance due must be received by our office prior to the first evening of class.*

**PAYMENT BY CHECK:** \_\_\_\_\_ (made payable to "Philadelphia Chapter ASHRAE")

**PAYMENT BY CREDIT CARD:** \_\_\_\_\_ VISA \_\_\_\_\_ Master Card \_\_\_\_\_ American Express

Total Amount to be Billed to Card: \_\_\_\_\_

Credit Card Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Name on Card (please print): \_\_\_\_\_

Billing Address for Card: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RETURN THIS FORM WITH PAYMENT TO:

Hope Silverman  
Philadelphia Chapter ASHRAE  
994 Old Eagle School Road  
Suite 1019  
Wayne, PA 19087-1866  
Phone 610-971-2169  
Fax 610-971-4859  
[philachapter@mail.ashrae.org](mailto:philachapter@mail.ashrae.org)

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### **For Official Use Only**

Date Received: \_\_\_\_\_ Tuition: \_\_\_\_\_ Deposit: \_\_\_\_\_ Check No.: \_\_\_\_\_ Balance \_\_\_\_\_