



# THERMOGRAM



The New Jersey Chapter of ASHRAE Newsletter

www.njashrae.com

March 2011

reply@njashrae.com

## CHAPTER OFFICERS

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973-777-6700

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973-396-4152

### Vice-President

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### Secretary

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### Janet Shipton

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### John Tellefsen, PE

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## Committees

### Attendance/ Reception

Jim Sarno, PE  
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### Audit

Mark Richter, PE  
212-354-5656

### Budget

Roger Shults  
973-396-4152

### Chapter Bylaws

Linda Gallant  
908-418-4949

## ASHRAE

*Modeling a Sustainable  
World*

## NJ Chapter of ASHRAE Meeting

Tuesday, April 5, 2011

Renaissance Hotel  
Route 1 South  
Iselin, New Jersey

**Topic: "ASHRAE 170 and Filter Standards in  
the Health Care Industry"**

**Speaker: Ed Karpenski**  
Senior Sales Engineer  
National Air Filter



**Cost: Members \$50.00**  
**Non-members \$55.00**  
**YEA members \$25.00**  
**Students \$5.00**

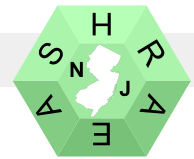
**Time: 5:30 pm**

**RSVP: [REPLY@NJASHRAE.COM](mailto:REPLY@NJASHRAE.COM) or  
Call 732-218-7463**

ASHRAE  
Webcast



**Ground Source Heat Pump Systems –  
Putting the Earth to Work for You**  
April 21, 2011  
1:00-4:00 P.M. EDT



**CTTC — TEGA**

John Tellefsen, PE  
973-565-7622

**Historian**

Bob Daly, PE  
212-566-5764

**Honors & Awards**

Jeffrey Grant  
732-590-1527

**Membership**

Scott Smith  
973-227-8666

**Newsletter Ads & Editor**

Jori Fahrenfeld  
732- 438-1600

**Nominating**

Mark Richter, PE  
212-354-5656

**Programs**

Chris Phelan  
732-547-0546

**Refrigeration**

Dave Halko  
609-520-1600

**Research/Promotion**

Chris Phelan  
973-777-6700

**Scholarships**

James Sarno, PE  
732-938-2666

**Seminars**

Mark Richter, PE  
212-354-5656

**Special Events/ Golf Outing**

Chris Phelan  
973-777-6700

**Student Activities**

Saheel Chandrani  
973-396-4252

**Technical Sessions**

Chris Phelan  
973-777-6700

**Web Page Editor**

Open

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732-218-7463

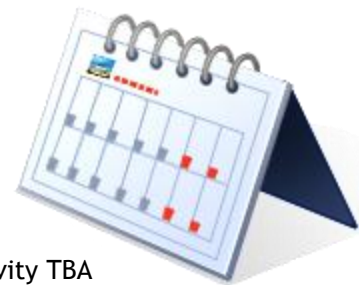
**ASHRAE Society**  
Toll Free Number  
1-800-527-4723

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**Calendar of Upcoming Meetings**

May 3, 2011 Jerry Sipes - Price HVAC  
*Displacement Ventilation*  
Installation of New Officers



June 2011 Spouse's Night— Date and activity TBA



## President's Message

Dear Chapter Members,

As we begin the Spring season, it is time for our Nominating Committee to make recommendations for the 2011/2012 ASHRAE year. I would ask each of you to consider serving the Chapter in some capacity. We need our members to volunteer their time and give back a little to our chapter that has given you a wealth of education over the past years. Please see myself or any of the chapter officers to see how you can help our New Jersey Chapter.

Last month's meeting was held on Tuesday March 1<sup>st</sup>. The topic for the meeting was "The Practical Seismic Restraint for HVAC". The presenter was Richard S. Sherren P. E. Richard is the Chief Mechanical Engineer for Kinetics Noise Control. The attendance was well above average and Richard's presentation was very informative. He was able to give our members valuable information regarding seismic and wind load requirements.

On Tuesday March 22<sup>nd</sup>, our chapter was able to arrange a plant tour of a refrigeration machine room. This tour allowed our members to see the following items: parallel compressor systems with R-404A, VFD compressor capacity control, a medium temperature secondary coolant application, and a low temperature direct expansion (DX) application. Afterwards, we had a great dinner at the Spanish Tavern in Mountainside. I would like to thank Dave Halko for an excellent job arranging this tour. If there are any other plant tours that you feel may be of interest to our members, please let us know and we can make the appropriate arrangements.

On April 21<sup>st</sup> ASHRAE will be hosting a webcast titled "Ground Source Heat Pump Systems—Putting the Earth to Work for You." The free Webcast will take place from 1- 4 p.m. For persons unable to participate in the live webcast, the program replay will be archived online until May 5. However, registration is necessary to view the archived program. The webcast presenters are Jeffrey D. Spitzer, Ph.D., P.E.; Kirk T. Mescher, P.E.; and Mick Schwedler, P.E. ASHRAE President Lynn G. Bellenger, P.E., also will participate. The presentation is sponsored by ASHRAE's Chapter Technology Transfer Committee, the ASHRAE Foundation, and corporate partners.

Our next scheduled meeting is Tuesday April 5<sup>th</sup>. The presenter will be Ed Karpenski, of National Air Filter and the topic for this meeting will be ASHRAE 170 and Filter Standards in the Health Care Industry. This presentation is approved for NY state PDH credits and addresses ASHRAE Standard 170 - Ventilation for Health Care Facilities including its adaptation of the ASHRAE 52.2 filter standards as they currently exist and are applied in health care applications - specifically the inclusion in current the Guidelines for Design and Construction of Health Care facilities published by the Facilities Guidelines Institute.

See you on Tuesday, April 5<sup>th</sup>.

Chris Phelan

Chapter President

### 2010-2011 Presidential Award of Excellence (PAOE) Summary

Chapter #	Chapter Name	Chapter Members/ students	Member Promotion	Student Activities	Research Promotion	CTTC	History	Chapter Operations	Chapter PAOE Totals
007	N.J.	731	475	780	865	1050	200	890	4260



**Speaker Bio: Ed Karpenski**  
**Senior Sales Engineer**  
**NATIONAL AIR FILTER**

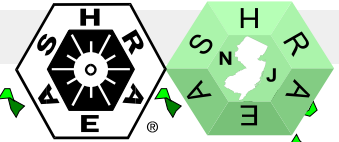
**Presentation Title: ASHRAE 170 and Filter Standards in the Health Care Industry**

Edward Karpenski is a Senior Sales Engineer with National Air Filter of Carlstadt, NJ. He is a graduate of St. Francis University, Loretto PA, and holds a Certificate in Advanced Industrial Ventilation from the American Conference of Governmental Industrial Hygienists from North Carolina State University.

Ed has worked in the air cleaning industry since 1973 with MikroPul, American Air Filter, and has held positions of regional and national responsibility with Farr Company. He has been a featured speaker at the University of Tulsa IAQ Conference and numerous ASHRAE seminars and technical sessions.

He is a contributing author of "Filtration and Indoor Air Quality, A two-Step Design Solution", a member of ASHRAE, and Technical Committees 2.3 and 2.4.

Ed's presentation addresses ASHRAE Standard 170 - Ventilation for Health Care Facilities including its adaptation of the ASHRAE 52.2 filter standards as they currently exist and are applied in health care applications - specifically the inclusion in current the Guidelines for Design and Construction of Health Care facilities published by the Facilities Guidelines Institute.



## **Green ASHRAE News: User's Manual Provides Guidance on 2010 Energy Standard**

Detailed guidance on how to apply the latest ASHRAE/IES standard for the design of energy-efficient buildings is provided in a newly published user's manual.

The User's Manual to ANSI/ASHRAE/IES Standard 90.1-2010, Energy Standard for Buildings Except Low-Rise Residential Buildings, was published this week. The standard, which provides minimum requirements for the energy-efficient design of buildings except low-rise residential buildings, contains 109 addenda approved since the 2007 standard was published.

"The new User's Manual is a very useful resource because it helps guide practitioners in by explaining the intent of provisions in the standard and how they apply to buildings through not only written word but also illustrations and example problems," Steve Skalko, chair of the Standard 90.1 committee, said. "The latest edition of the manual is especially valuable because it specifically identifies what changes have taken place since the 2007 edition and through use of calculations and examples tells how the new provisions apply."

Specific examples of how the User's Manual assists users in regard to the 2010 standard include:

- Application of new requirements in the standard regarding data centers.
- Application of new requirements for building envelopes including vestibules, continuous air barriers, skylights, daylighting controls and the use of dynamic glazing.
- Explanation of new lighting power density requirements and application of revised lighting controls. In the standard, maximum allowed interior lighting power densities were lowered for most space types, additional occupant sensing controls and mandatory daylighting requirements are added for specific spaces and a new five-zone exterior lighting power density table has been added.
- Explanation of how to apply new HVAC requirements, including higher equipment efficiencies, energy recovery provisions in more applications, economizers required in more climates and smaller system sizes and more energy-conserving controls.
- Changes to modeling requirements (e.g. for U.S. Green Building Council LEED® certification) that were clarified and expanded.

Since being developed in response to the energy crisis in the 1970s, Standard 90.1 has become the basis for building codes, and the standard for building design and construction throughout the United States.





### Luncheon Briefing to Focus on Secure and Sustainable U.S. Embassies

As iconic symbols of diplomacy, U.S. Embassies are subject to a range of security and terrorist threats. The ongoing threats to those who live and work in overseas diplomatic facilities drive the security, design, construction and operations of U.S. Embassies.

A briefing of the High-Performance Building Congressional Caucus Coalition (HPBCCC)— established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)—in late March will highlight how sustainable design practices and operations in U.S. Embassies can effectively reduce the consumption of resources at diplomatic facilities, while enhancing security.

Top industry leaders will discuss sustainable building initiatives at U.S. Embassies around the world and how sustainability and security result in design excellence.

“During these turbulent times, we must take into consideration the safety of U.S. citizens as well as the sustainability of the buildings they live and work in,” Doug Read, ASHRAE’s program director for government affairs, said. “We can see that the balance between the two can be struck, leading to security and sound building design.”

The briefing is to be held 11:30 a.m.-1 p.m. Tuesday, March. 29 at 2325 Rayburn House Office Building.

Representatives Judy Biggert (R-Ill.) and Russ Carnahan (D-Mo.), who serve as co-chairs of the High-Performance Building Caucus, have been invited to deliver opening remarks, followed by presentations by Lydia Muniz, deputy director, Overseas Buildings Operations (OBO), U.S. Department of State; Paul Phillips, American Institute of Architects, principal, Karn Charuhas Chapman & Twohey; and Faye Harwell, Fellow of the American Society of Landscape Architects, Rhodeside & Harwell.

The High-Performance Buildings Caucus of the U.S. Congress heightens awareness and informs policymakers about the major impact buildings have on our health, safety and welfare and the opportunities to design, construct and operate high-performance buildings that reflect our concern for these impacts.



### Funds Research to Improve Building Maintenance, Operation through Performance Data

Guidance to specifying engineers and designers on how they can use building data to improve building operations, energy efficiency, comfort and sustainability will be developed through newly funded research from ASHRAE.

Research Project 1633, “Data and Interfaces for Advanced Building Maintenance and Operation,” will result in development of a set of standard data-driven metrics, interfaces and dashboards for advanced building operation and management.

It was one of three projects totaling \$430,000 approved by ASHRAE at its 2011 Winter Conference. The 1633 project is sponsored by Technical Committee 1.4, Control Theory and Application, and co-sponsored by 7.6, Building Energy Performance, and TC 7.9, Building Commissioning, and was awarded to KGS Buildings, Cambridge, Mass.

“Analyzing and interpreting building performance data is critical to the success of high performance buildings,” Stephen Samouhos, Ph.D., principal investigator, said. “This research will help fill a void in standards literature by establishing data-driven metrics, interfaces and dashboards, organized by building type, that clearly quantify and communicate building performance to a diverse set of building stakeholders.”

The other two projects approved at the Winter Conference are:

- 1580-RP, “Study of Input Parameters for Risk Assessment of 2L Flammable Refrigerants in Residential Air Conditioning and Small Commercial Refrigeration Applications,” sponsored by TC 3.1, Refrigerants and Secondary Coolants; awarded to Navigant Consulting Inc.
- 1613-RP, “Update Climatic Design Data in Chapter 14 of the 2013 Handbook, Fundamentals,” sponsored by TC 4.2, Climatic Information, awarded to Numerical Logistics Inc.



Free ASHRAE Webcast Highlights Ground Source Heat Pumps: Registration Open

While temperatures above ground vary with the seasons one constant is the temperature underground, which stays relatively the same all year. Designers in the built environment using ground source heat pump systems are harnessing the energy underground to help with heating and air conditioning in the buildings they design.

ASHRAE’s upcoming webcast, “Ground Source Heat Pump Systems - Putting the Earth to Work for You,” focuses on this method of using underground temperature to create a system using natural resources to save energy and money at the same time. The webcast takes place April 21, 2011, from 1- 4 p.m. EDT.

“The overwhelming choice from our several webcast surveys has been ground source heat pump systems,” Dave Shugars, chair of ASHRAE’s Chapter Technology Transfer Committee Webcast Ad Hoc Committee, said. “This webcast will highlight several critical factors in the evaluation and design process that are essential to deliver system efficiency. From understanding ground characteristics, to avoiding pitfalls of design and installation, the webcast is a must see for discerning owners and designers alike.”

The webcast presenters are Jeffrey D. Spitler, Ph.D., P.E., professor in the School of Mechanical and Aerospace Engineering, Oklahoma State University, Stillwater, Okla.; Kirk T. Mescher, P.E., principal, CM Engineering, Inc., Columbia, Mo.; and Mick Schwedler, P.E., manager, Applications Engineering, Trane, LaCrosse, Wis.

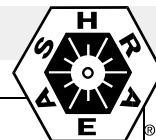
Three Professional Development Hours (PDHs) or three AIA Learning Units (LUs) may be awarded to viewers who complete the participant reaction from online by May 5, 2011.

The live program will be archived online until May 5, 2011, for viewers who are unable to participate on April 21. Registration is required to view the archived program.

Online registration for the webcast begins March 21, 2011. For more information on the webcast program, continuing education credits and ASHRAE ground source heat pump resources, visit [www.ashrae.org/ghpwebcast](http://www.ashrae.org/ghpwebcast). If you have questions about the webcast, call 678-539-1200 or email [ashrae-webcast@ashrae.org](mailto:ashrae-webcast@ashrae.org).



**Ground Source Heat  
Pump Systems –  
Putting the Earth to  
Work for You  
April 21, 2011  
1:00-4:00 P.M. EDT**



## Do Clothes Make the Man Hotter or Cooler? Role of Fashion in Thermal Comfort Studied by ASHRAE



The role of international fashions in determining how cool or hot we are is being studied by ASHRAE. It's not the impact of Gucci or Channel on our style but rather how non-western wear, such as burqas or saris, affects our thermal comfort. Comprehensive data exists on western clothing insulation values but little research exists on non-western. Having information on attire like saris could influence the design of ventilation and air-conditioning systems to provide the best thermal comfort for occupants.



“Given the growing energy needs of large nations such as India, China and Pakistan, all of which often have different clothing styles from western nations, knowing more about the impact of clothing on comfort is essential to improving ventilation and air-conditioning systems for these countries,” John Stoops, head of the project monitoring subcommittee for Technical Committee 2.1, Physiology & Human Environment, which is overseeing the project, said. “The project also will look at how different fabrics and body postures and movements impact the insulation value of cloth. We expect to find that the results of non-western wear on thermal comfort will be different than that of western wear due to looser fit, long gowns and lighter materials that promote movement of air.”

1504-TRP, “Extension of the Clothing Insulation Database for Standard 55 and ISO 7730 to Provide Data for Non-Western Clothing Ensembles, Including Data on the Effect of Posture and Air Movement on that Insulation,” is one of 17 projects currently out for bid by ASHRAE. The deadline to submit proposals for all projects is May 16.

Results of 1504 would be of fundamental importance to both ASHRAE and the International Organization of Standardization (ISO) standards, building and building system designers and vehicle designers around the world. Specifically, it could expand the scope and reach of ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy, to a worldwide audience.

Other projects open for bid are:

- 1399-TRP, “Survey of Particle Production Rates from Process Activities in Pharmaceutical and Biological Cleanrooms,” responsible committee: TC 9.11, Clean Spaces
- 1410-TRP, “Effect of System Chemicals toward the Breakdown of Lubricants and Refrigerants,” TC 3.2, Refrigerant System Chemistry
- 1413-TRP, “Developing Standard Procedures for Filling Climatic Data-Gaps for Use in Building Performance Monitoring and Analysis,” TC 4.2, Climatic Information
- 1458-TRP, “Modeling Person-to-Person Contaminant Transport in a Mechanical Ventilation Space,” TC 4.10, Indoor Environmental Modeling
- 1495-TRP, “Effect of Lubricant on the Distribution of Water Between the Vapor and Liquid Phases of Refrigerants,” TC 3.3, Refrigerant Contaminant Control
- 1499-TRP, “The Effect of Humidity on the Reliability of ICT Equipment in Data Centers,” TC 9.9, Mission Critical Facilities, Technology Spaces and Electronic Equipment
- 1550-TRP, “Thermal Performance of Insulating Coating,” TC 1.8, Mechanical System Insulation
- 1557-TRP, “Lab Comparison of Relative Performance of Gas Phase Filtration Media at High and Low Challenge Concentrations,” TC 2.3, Gaseous Air Contaminants and Gas Contaminant Removal Equipment
- 1564-TRP, “Measurement of Oil Retention in the Microchannel Heat Exchanger,” TC 8.4, Air to Refrigerant Heat Transfer Equipment
- 1565-TRP, “Development of the ASHRAE Design Guide for Dedicated Outdoor-Air Systems,” TC 8.10, Mechanical Dehumidification Equipment and Heat Pipes
- 1581-TRP, “Develop Alternate Set-up Guidelines for Unitary Air Conditioner Test Configurations Which Cannot Adhere to ASHRAE Standards 37 and 116 Specified Duct Dimensions and External Pressure Tap Locations,” TC 8.11, Unitary and Room Air Conditioners and Heat Pumps



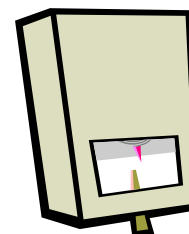


**Do Clothes Make the Man Hotter or Cooler? Role of Fashion in Thermal Comfort Studied by ASHRAE (cont'd)**

- 1592-TRP, “CHP Design Guide - Update to the Cogeneration Design Guide (1996),” TC 1.10, Cogeneration Systems
- 1603-TRP, “Role of HVAC Systems in the Transmission of Infectious Agents in Buildings and Intermodal Transportation,” TC 9.3, Transportation Air Conditioning
- 1604-TRP, “Demand Controlled Filtration for Clean Rooms,” TC 9.11, Clean Spaces
- 1606-TRP, “Laboratory Testing of Flat Oval Transitions to Determine Loss Coefficients,” TC 5.2, Duct Design

*New ASHRAE Guideline Published*  
**ASHRAE Guideline Addresses Interactions Affecting Indoor Environmental Quality**

ASHRAE has published a new guideline that provides guidance on achieving good indoor environments by considering the interactions of air quality and thermal conditions, as well as lighting and acoustics. Guideline 10 is especially important in the design of low-energy buildings in order to ensure full consideration of indoor environmental quality and its effects on occupants.



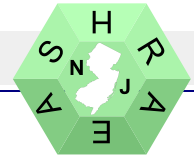
ASHRAE Guideline 10-2011, *Interactions Affecting the Achievement of Acceptable Indoor Environments*, calls attention to many interactions that designers might not have previously recognized or understood. The guideline contains an assembly of available knowledge on the complexity of the indoor environment and its impact on building occupants.

“The guideline summarizes what research and experience have taught us about the complex interplay of the wide range of factors that determine occupants’ reactions to the buildings they inhabit,” Hal Levin, chair of the committee writing the guideline, said.

Levin explains that the guideline is intended to help users understand and use existing documents that deal with indoor environments, including the ASHRAE standards related to energy, ventilation, indoor air quality and thermal conditions with a more complete understanding of their combined effects on occupants.

“It can provide assistance to building design professionals and building operators by making them aware of the major interactions that have the potential to impact the indoor environment,” he said. “We believe the guideline will help draw attention to the narrowly-defined scopes of the widely-used standards and the significance of combined or interactive effects in determining the acceptability of an indoor environment.”

The cost of Guideline 10-2011, *Interactions Affecting the Achievement of Acceptable Indoor Environments*, is \$54 (\$46, 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/bookstore](http://www.ashrae.org/bookstore).



## Condensed Meeting Minutes: February 2011

The February 8, 2011 Board of Governors Meeting of the New Jersey Chapter of ASHRAE Board of Governors was called to order at 4:44 PM.

The 12/7/2010 meeting minutes were reviewed and accepted.

Chris Phelan recapped the highlights of the Winter meeting in Las Vegas.

KGS Buildings has been approved to do an ASHRAE research project, and will present to the ASHRAE NJ membership at a future meeting.

There have been two application for scholarship

The Golf Outing will be in the end of May. Exact date and location TBD.

Saheel has reached out to two professors at NJIT to establish Student Chapter at NJIT.

Saheel will encourage students to attended future ASHRAE meetings.

There is a downloadable ASHRAE presentation that could be useful for the student chapter.

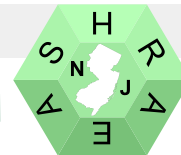
The meeting was adjourned at 5:38 PM.

NEXT BOARD MEETING                      3/1/2011

Respectfully submitted,  
Scott Smith, Secretary  
New Jersey Chapter of ASHRAE



Per Section 68.11 of the New York State Education Board for Engineering and Land Surveying, one (1) Continuing Education Hour will be available for Ed Karpenski's presentation



# Advertise with NJ ASHRAE

## Advertising Rates

### Newsletter Ad Includes:

- ◆ Business Card ad in 3 Newsletters (next newsletter is April, will be published the end of the month)

COST: \$75

### Website Ad Includes:

- ◆ Business card ad on website for 1 year (starts month payment and business card are received)
- ◆ Link to your website

COST: \$300

### Newsletter and Website Includes:

- ◆ Business card ad in newsletters through June 2011
- ◆ Business card ad on website for 1 year
- ◆ Link to your website

COST: \$350



## Business Card Ad

 <p>LAW OFFICE OF <b>MICHELE L. ROSS, LLC</b> MICHELE L. ROSS ATTORNEY AT LAW</p>
<p>CONTRACT REVIEW COMMERCIAL CONTRACT DISPUTES COLLECTION MATTERS/MECHANIC'S LIENS</p>
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