

THE LONG ISLAND SOUNDER

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

May 2011



www.ashraeli.org

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

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President's Message

Greetings! Our last meeting was the annual field trip. We had an excellent tour of the "Workforce Development & Technology Building" at Suffolk County Community College's Grant Campus. It focused on the facilities and instructional approach used in the HVAC/R program, including computer station, hands-on work with equipment and field energy audits. We ended the night with dinner at Bertucci's nearby. Thanks to all who attended and a special thanks to Dr. Manning Associate Dean of Academic Affairs, Eugene Silberstein Professor of HVAC and Refrigeration and Paul Cooper Executive Director of Facilities and Suffolk County Community for their hospitality and extending their resources to our members.



The 12TH Annual ASHRAE Long Island Chapter Golf Outing is being held May 2ND at the Cherry Valley Club in Garden City. This is ASHRAE Long Islands' biggest fund raiser and we rely on your generosity. The sponsorship at the outing has played a major role in our chapters' finances and is used to help keep the cost of the dinner meetings reasonable, provide scholarships for our local schools and help with general chapter operating costs including the holiday party. We greatly appreciate the generosity of our members. Help us in giving back to the community and growing our society as we ask for your support on May 2ND.

For the May meeting, first up is the vendor showcase during the cocktail hour 6:00-7:00PM hosted by Richard Gerbe of SRS Enterprises Inc. The showcase will include Plasma Air's products. Stop by and find out how these products are designed to improve indoor air quality, save on first cost and provide ongoing energy costs. Second we have a Back to Basics program 7:00-7:30PM on basic air handling selections given by David Shaw and James Hanna of the Trane Corporation. This is followed by the main presentation of the night which is Indoor Air Quality, Air Cleaning, Energy and Maintenance given by Duke Wiser, CEO of Environmental Dynamics Group Inc.

An important change that occurred effects the position of Treasury. Ms. Janeth Costa who was the Treasurer this year has stepped down due to business reasons. We thank Janeth for all her past work for the chapter and wish her the best for the future. By Board nomination and appointment, Thomas Fields has moved to the position of Treasurer for the remaining portion of this year and next year; Don Kane who has been helping on the programs committee this year advances to candidate for Board of Governors one year and Andrew Dubel who is the committee chair for the website advances to candidate for Board of Governors two year.

CHAPTER MONTHLY MEETING

DATE:	Tuesday, May 10, 2011
TIME:	6:00 PM - Cocktails/Dinner 6:45 PM - Dinner Presentations 8:45 PM - Conclusion
LOCATION:	Westbury Manor South Side of Jericho Tpke. 25 Westbury, NY 11590
FEES:	
Members -	\$40.00 (New fee)
Guest -	\$45.00 (New fee)
Student -	\$15.00

Reservations requested, but not required.

Call (516) 333-7117

Continued on Pg. 3

Long Island Chapter Officers & Committees

ASHRAE 2010/2011 OFFICERS

POSITION	NAME	PHONE	FAX	EMAIL
President	Nancy Román	516.568.6509	516.568.6586	nroman@adehvac.com
President-Elect	Carolyn Arote	516.568.6550	516.568.6575	carote@adehvac.com
Vice President	Brian Simkins, LEED AP	203.261.8100	203.261.1981	bsimkins@accuspecinc.com
Financial Secretary	Andrew Manos, LEED AP	631.632.2791	631.632.1473	andym22@optonline.net
Treasurer	Thomas Fields, P.E., LEED AP	631.737.6200	631.737.2410	t.fields@fpm-group.com
Secretary	Richard Rosner, P.E.	631.737.9170	631.737.9171	rrosner@csfllc.com
Board of Governors	Thomas Fields, P.E., LEED AP	631.737.6200	631.737.2410	t.fields@fpm-group.com
Board of Governors	Charles Lesniak	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Board of Governors	Steven Giammona, P.E., LEED AP	516.827.4900	516.827.4920	sgiammona@ cameronengineering.com

ASHRAE 2010/2011 COMMITTEES

COMMITTEE	NAME	PHONE	FAX	EMAIL
Programs & Special Events	Carolyn Arote	516.568.6550	516.568.6575	carote@adehvac.com
Membership	Thomas Fields, P.E., LEED AP	631.737.6200	631.737.2410	t.fields@fpm-group.com
Chapter Technology Transfer (CTTC)	Brian Simkins, LEED AP	203.261.8100	203.261.1981	bsimkins@accuspecinc.com
Newsletter Editor	Liset Cordero	212.643.9055	212.643.0503	liset.cordero@mgepc.net
Research Promotion	Andrew Manos, LEED AP	631.632.2791	631.632.1473	andym22@optonline.net
Historian	Charles Lesniak	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Student Activities	Richard Rosner, P.E.	631.737.9170	631.737.9171	rrosner@csfllc.com
Young Engineers in Training	Charles Lesniak	516.484.1020	516.484.0926	charles.lesniak@leapc.com
Webmaster	Andrew Dubel	516.484.1020	516.484.0926	Andrew.dubel@leapc.com
Nominating	Michael Gerazounis, P.E., LEED AP	212.643.9055	212.643.0503	michael.gerazounis@mgepc.net
Reception & Attendance	Don Kane, P.E.	631.737.9170	631.737.9171	dkane@csfllc.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, P.E., HFDP, LEED AP	212.643.9055 212.354.5656	212.643.0503 212.354.5668	peter.gerazounis@mgepc.net sfriedman@akfgroup.com

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President's Message (Cont'd from Page 1)

In keeping you informed of what's to come, the nominating committee has selected the candidates for next year's officers and voting ballots will be sent out shortly. Please take a moment out of your busy schedules to fill them out and return them. Don't miss out on the opportunity to vote and make your voice heard.

Looking ahead in the calendar:

The June meeting is the ASHRAE year-end meeting celebrating our past presidents and new officers. There will be no charge for our chapter members and guests. The installation of new officers will be followed by the history question and answer session with opportunities to win prizes for all. If you've been reading the Long Island Sounder this year then you will know the answers. There will be no technical portion to this night. So come out network, meet the new officers, have dinner and enjoy a night of fun.

As June ends the ASHRAE year Region I hosts its CRC in NYC. The 15 chapters involved including officers and committees will meet and prepare for the incoming year. It will be held August 18-20 in the New York Marriott Downtown. Having the CRC locally is a great opportunity for our members to attend the planning meetings and join the tours/activities the New York chapter has planned. Check out our website www.ashraeli.org for more details on this and upcoming events.

If there is a topic you would like to see covered in the following 2011-2012 calendar do not hesitate to contact next years Programs Chair, Brian Simkins at bsimkins@accuspecinc.com The calendar does start filling up as early as early as August so don't hesitate to contact him.











Thank you for your continued support of the Long Island Chapter of ASHRAE and see you on June 14TH.

*Nancy Román, President
Long Island Chapter*

April Field Trip Pictures



Chapter Monthly Meeting - Program for 2010/2011

September 14, 2010 * At Westbury Manor  Dinner Presentation - Variable Refrigerant Flow Systems Presenter: Ray Schmitt REFRIGERATION NIGHT **1 PDH**	February 2011  NATIONAL ENGINEERS WEEK Feb 20 through Feb 26
October 19, 2010 * At Westbury Manor  Dinner Presentation – Harmonic & Power Quality Presenter: Ken Scherer RESEARCH PROMOTION NIGHT **1 PDH** <i>* Meeting will be held on 3rd Tuesday of the month.</i>	March 8, 2011 * At Westbury Manor  Dinner Presentations #1- Back to Basics Presentation Presenter: Evans Lizardos, P.E., LEED AP #2 (Main Presentation)-HVAC for Rail Transportation & new refrigerant development. Presenters: Cameron Akins, Jeff Bachman, Al Lee YEA NIGHT **1 PDH**
November 16, 2010 * At Westbury Manor  Dinner Presentation - Understanding SMACNA's New Duct Leakage Standard Presenter: Mark Terzigni-SMACNA National JOINT MEETING WITH SMACNA **1 PDH** STUDENT ACTIVITIES, MEMBERSHIP & YEA NIGHT <i>* Meeting will be held on 3rd Tuesday of the month.</i>	April 12, 2011  ANNUAL FIELD TRIP Suffolk Community College Brentwood Campus Workforce Development and Technology Building **1 PDH**
December 14, 2010 * At Westbury Manor  HOLIDAY PARTY	May 2, 2011 * Cherry Valley Club, Garden City, NY ANNUAL GOLF OUTING
January 11, 2011 * At Westbury Manor  Dinner Presentation – Standard 189.1 Standard for the Design of High-Performance Green Buildings Presenter: Mark MacCracken Distinguished Lecturer **1 PDH**	May 10, 2011 * At Westbury Manor Dinner Presentation- Indoor Air Quality, Air Cleaning, Energy and Maintenance Presenter: Forwood Cloud "Duke" Wiser III STUDENT ACTIVITIES NIGHT **1 PDH**
February 9, 2011 * At Westbury Manor  Dinner Presentation- Modeling a Sustainable World Presenter: Lynn Bellenger- President ASHRAE & Distinguished Lecturer <i>*Meeting will be held on 2nd Wednesday of the month.</i> Joint Meeting with USGBC **1 PDH** RESEARCH & MEMBERSHIP PROMOTION NIGHT	June 14, 2011 * At Westbury Manor PAST PRESIDENTS & OFFICER INSTALLATION
February 2011  ASHRAE WINTER MEETING - Jan 31-Feb 2 Las Vegas Convention Center, 3150 Paradise Rd, Las Vegas, NV	

August 2011 - Chapter Regional Conference Region I
New York, NY August 18-20

PAOE POINTS FOR 2010/2011

Chapter Members	Membership Promotion	Student Activities	Research Promotion	History	Chapter Operations	CTTC	Chapter PAOE Totals
295	820	125	2,094	350	1.255	975	5,619

May Program

You are cordially invited to our May 2011 Meeting...



Presentation #1

"Basics of Air Handlers"

*By David Shaw and James Hanna
Trane Company*

&

Presentation #2

"Indoor Air Quality, Air Cleaning, Energy & Maintenance"

*By Furwood Cloud "Duke Wiser III
Environmental Dynamics Group, Inc.*



**Attendees
Will Earn
1 PDH!**

DATE	TUESDAY, MAY 10, 2011		
Time	6:00 PM – Cocktails and Hors D'oeuvres 6:45 PM – Dinner Presentation #1 7:15 PM – Dinner Presentation #2 8:45 PM – Conclusion	Fee:	\$ 40.00 Member (New Fee) \$ 45.00 Guest (New Fee) \$ 15.00 Student
Location	WESTBURY MANOR (516) 333-7117 Jericho Tpke (South Side), 3/10 of mile east from Glen Cove Rd., Nassau County, NY. Directions are posted at @ www.ashraeli.org.		
Presentation	<p>Presentation #1: Basics of Air Handlers discussing the following areas of design and specifications: Size range for typical AHU's; General construction and specification details; AHU airflow configurations (Blow-thru, Draw-thru, Stacked); Intakes and mixing boxes; Prefilter and final filter arrangements and available filtration types; Heating medium choices; Cooling medium options; Fan choices; Discharge options</p> <p>Presentation #2: The sole function of the HVAC system is to provide an environment with acceptable temperature, humidity, and contaminant levels. This session discusses the importance of IAQ, the costs associated with it, and various technologies for helping to achieve it. Special attention will be given to the role of air cleaning to ensure IAQ and potentially reduce operating costs. This seminar will earn professional engineers 1 PDH.</p>		
About our Speakers	<p>David Shaw Worked in the HVAC industry for over 18 years in various capacities. He earned a Bachelors of Science Degree in Mechanical Engineering from University of Maine in 1994 and earned an Associates Degree in HVACR from Eastern Maine Technical College in 1990.</p> <p>James Hanna James Hanna, Engineering Sales, is currently a member of the Engineering Team at the Trane Company. A graduated from Farmingdale State University, James has over 6 years of HVAC experience. Recently a graduate from the 2010 Trane GTP Class, James is part of Trane's Long Island Engineering Team. Previous positions James has held at Trane include Project Management as well as Plan & Spec / Design Build Estimating for Trane's Hauppauge location.</p> <p>Forwood Cloud "Duke" Wiser III founded Environmental Dynamics Group, Inc. in 1993 with several partners. The company designs and manufactures systems for cleaning air and saving energy in a broad spectrum of applications. For example, its systems were installed throughout the LEED renovation of ASHRAE Headquarters. EDG's headquarters are in Rocky Hill, New Jersey, manufacturing is outside of Ottawa, Canada, and there a several satellite engineering and sales offices around the country. Sales are around the world. Mr. Wiser is an ASHRAE member, has testified before OSHA on IAQ in the workplace and holds a number of patents in the field..</p>		

Board of Governors Meeting Minutes

DATE: Tuesday, April 12, 2011
 LOCATION: Grant Campus-Brentwood - Suffolk Co. Community College

Attendees were Nancy Roman, Carolyn Arote, Brian Simkins, Andy Manos, Richard Rosner, Tom Fields, Charlie Lesniak, and Guest Donald Kane.

President Nancy Roman called the meeting into session at 4:08 PM.

General: Nancy Román – Asked to approve the meeting minutes from the last meeting which then were approved. All articles for May & June newsletter due **no later** than Monday 4/18. Copies to be sent to Andrew Dubel, Andrew.Dubel@leapc.com & Anthony Bikowski abikowski@dnbmechanical.com when submitting articles to Nancy and Liset. While Liset is on maternity leave from work, articles shall be sent to Andrew Dubel. Carolyn Arote has attended the president elect training. The golf outing is completely booked. All checks for the outing are due by 4/15. Ballots for next year's officers have been finalized and are being sent out. May vendor showcase will feature Rich Gerbe's at a premeeting table. Nancy also mentioned that a package deal was not available yet for the CRC which will be in NYC this year.

Programs: Carolyn Arote & Don Kane – Updated Newsletter Calendar for May Meeting (Speaker/Topic/PDH's to be offered)

Resource Promotion: Andy Manos – The RP Goal has been met. The High Five plus 5% is Andy's new goal.

History: Charles Lesniak – History Articles have been completed. The past presidents pictures have been sent to Alex Weiss, who is the next regional historian. In June we will play a history game at the meeting with bottles of wine as prizes. A PAOE update was reported as 350 points.

Webmaster: Andrew Dubel – Will advertise the poster contest on the website. Pictures on the web will be updated as well as pictures from the upcoming golf outing will be uploaded. A PAOE update was given. Andrew is ready to take over on a temporary basis the newsletter from Liset during the time she will be out for the baby. Payments need to be made for the internet service and web page.

Treasury: Thomas Fields – Account transfers have made to Tom Fields. A report was given showing a financial update, with TD Bank having a balance of \$7338.23 and the money market account steady at \$8,017.03. All were reminded that newsletter advertising Invoices will be sent out and money collected for this term.

Membership Promotion: Tom Fields – Paul Meyers is requesting help to join after having trouble with the web, Tom to help. Tom sent an updated member list to Liset for voting purposes. Tom has met Par for the PAOE points. Tom needs to know if you are a YEA member (35 and under).

Student Activities: Richard Rosner – The Student Poster Contest for high schools is moving along and all schools have been either emailed or sent letters announcing the program. A final flyer was reviewed by the board. The due date is May 16th for the posters. Additional scholarship letters have gone to all of the colleges and include some high schools also. No applications have been received yet. Sponsorship for YEA members attending the conference was discussed.

Chapter Technology Transfer (CTTC): Brian Simkins – Advised there will be a ground source heat pump webinar on April 25th. The PAOE points were updated and Brian has also made over Par.

YEA: Charlie Lesniak, Andrew Dubel – There will be a Back to Basics presentation at the May meeting as well as Rich Gerbe will have a premeeting table showcase. PAOE points were updated.

Golf Outing: Steve Friedman, Peter Gerazounis – The date is May 2ND 2011. The outing is now fully booked. All Checks are due by 4/15.

Having discussed all open issues, the meeting was adjourned at 5:02 PM.

Richard L. Rosner, P.E.
Chapter Secretary, 2010-2011



Research Promotion

I would like to thank the companies who have participated in the annual 2011 Product Directory of Manufacturers and their Representatives.

The Product Directory has been prepared as a service to all its members and as a service to the local HVAC industry. It will be made available to all ASHRAE and non-ASHRAE members at no-cost and can be obtained from our monthly meetings or directly from our web-site.

The Directory is intended to provide better communications between manufacturers and their sales representatives; engineers who specify products; contractors who purchase and install the equipment; and other interested parties. Product Directory listings are not limited to ASHRAE members and the listings are not to be considered as advertising or endorsement by ASHRAE of any product, manufacturer or representative.

This year's overall research promotion goal is \$2,001,900 with over 75 research projects on board. Our chapter is expected to raise approximately \$12,881 towards the overall goal of which we have already raised \$14,285. I am hoping I can count on the continued support of all of our past contributors who have generously supported us over the years. I also look forward to gaining the support of new contributors this coming year. Please help support ASHRAE in any way you can.

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

INDIVIDUALS

Mr Andrew B Dubel
 Mr Andrew E Manos
 Mr Anthony J Rosasco, Sr
 Mr Brian C Simkins
 Ms Carolyn Arote
 Mr Charles J. Lesniak
 Mr Charoulis Charalambous
 Mr David Robert Jendras
 Mr Douglas Constantine, PE
 Mr Evans J Lizardos
 Ms Janeth Costa
 Mr Jerome T Norris
 Mr Jerome A Silecchia
 Mr John D Nally
 Mr Joseph V Marino
 Mr Michael Gerazounis, PE, LEED AP
 Mr Michael O'Rourke
 Ms Nancy Roman
 Mr Patrick J Lama
 Mr Raymond G Schmitt
 Mr Richard L Rosner, PE
 Mr Ronald J Kilcarr, PE
 Mr Steven D Friedman, PE, HFDP, LEED AP
 Mr Steven R Giammona, PE
 Mr Thomas Fields, PE

COMPANIES

Accuspec Inc
 A D E Systems Inc
 Air Control Supply
 A O Smith Water Heaters
 Anron Heating & Air Conditioning Inc
 Applied Technologies of NY Inc
 ASAP Sales
 Bladykas Engineering PC
 Bush Wholesalers
 Carrier Northeast
 Catan Equipment Sales
 Chimney Design Solutions Inc
 Clean Air Company
 Daikin US Corp.
 Dellon Sales
 Gil-Bar Industries
 J-Mar Controls
 Leonard Powers Inc
 Liebert-Emerson Network Power
 Lizardos Engineering Associates PC
 Mason East Inc.
 Mason Industries Inc
 Miller Proctor Nickolas
 Mitsubishi Electric & Electronics USA Inc
 M V Controls
 National Grid
 PVI Industries
 Rathe Associates
 Siemens Building Technologies Inc
 Taco Inc
 Technical Air Systems Incorporated
 Tower Enterprises of New York & New Jersey
 Trane
 Twinco Supply Corporation
 Viessmann
 Wales Darby Incorporated
 Wallace Eannace Associates

Continued on Pg. 8

Research Promotion (Cont'd. from Page 7)

CONTRIBUTIONS CAN BE MADE IN THE FOLLOWING WAYS:

1) You can mail your checks, made out to ASHRAE Research Promotion, to:

Andrew Manos
ASHRAE Research Promotion Chair
c/o Stony Brook University
Campus Planning, Design and Construction
Research and Support Services, Suite 160
Development Drive, Stony Brook, NY 11794-6010

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

3) You can contribute via paypal from the ASHRAE LONG ISLAND web site just click on the donate button.

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

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

Thank you again for all your support!

Andrew Manos, LEED AP
Research Promotion Chair

Mission: To improve the quality of life and to answer tomorrow's questions through research TODAY.

Over \$2million raised annually to help fund \$10million in research projects and student grant-in-aids.

Research is used to update the Society's standards and guidelines.

Contributions come from more than 6,700 members, non-members, and companies.

100% of all funds raised go directly to research projects that support the HVAC&R industry.

Active research projects are conducted all around the world at various universities and private organizations.

ASHRAE RESEARCH PROMOTION

Important Links:

www.ashrae.org/rp

www.ashrae.org/contribute*

www.ashrae.org/consumer

www.ashrae.org/pressroom

www.ashrae.org/research

*ASHRAE is a qualified 501(c)3 and all contributions are tax deductible.

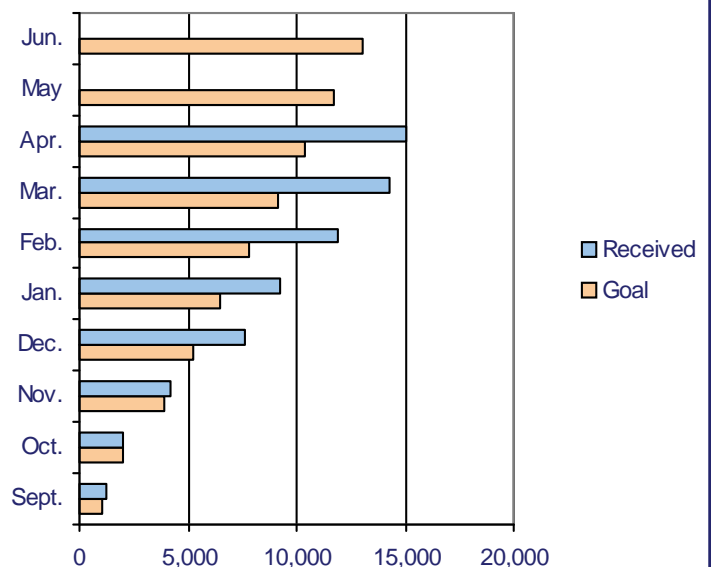
Important Contacts:

Patricia Adelman
RP Manager
(404)636-8400 ext. 1114
PAdelman@ashrae.org

John Rhodes
RP Committee Chair
(972)206-2590
Gopher56@swbell.net

ASHRAE RESEARCH PROMOTION

**Chapter Research Promotion Goal
For 2010-2011 - \$12,881**



CTTC - Global Standards For Filter Testing

The ISO and the IEC are cooperating with the European Union's CEN (see *Table 1* for acronym definitions) and other standards organizations to create global standards for building air filters. The United States, through ANSI, is represented on ISO Technical Committee (TC) 142, Cleaning Equipment for Air and Other Gases, Working Group (WG) 3, General Ventilation Filters. This group is writing an ISO standard for a test method for general ventilation air filters. Several other countries are participating and the list is being updated continuously (see ISO/TC 142 Web site for the latest information).

A review of the major U.S., European, and international standards in the air-cleaning field should help ASHRAE members in designing and specifying air filter systems in the global HVAC market. We encourage members to help develop international standards in this technology as they have with Society standards.

In this article, we discuss test standards for particulate and gaseous contaminant air filters in general ventilation systems. Usually, along with test standards are filter rating systems, which also need to be understood by filter specifiers.

Abbrev.	Organization	Location	Internet Site
ANSI	American National Standards Institute	USA	www.ansi.org
AFNOR	Association Française de Normalisation	France	www.afnor.fr
BSI	British Standards Institution	UK	www.bsi-global.com
CEN	Comité Européen de Normalisation European Committee for Standardization	Belgium	www.cenorm.be
CSA	Canadian Standards Association	Canada	www.csa.ca
DIN	Deutsches Institut für Normung	Germany	www2.nabau.din.de
DOD	U.S. Department of Defense	USA	www.dod.gov
DOE	U.S. Department of Energy	USA	www.energy.gov
IEC	International Electrotechnical Commission	Switzerland	www.iec.ch
IENT	Institute of Environmental Sciences and Technology	USA	www.ient.org
ISO	International Organization for Standardization	Switzerland	www.iso.ch
MIL-STD	Military Standard (USA) (Document source)	USA	www.dsp.dla.mil
SAE	Society of Automotive Engineers	USA	www.sae.org
UNI	Ente Nazionale Italiano di Unificazione	Italy	www.uni.com

Table 1: Abbreviations and Internet sites for standards organizations.

CTTC (Cont'd. from Page 9)

Item	ANSI/ASHRAE Standard 52.2-1999	EN 779:2002
Test Duct ¹	Straight allowed, return bend preferred; positive pressure only; rather strict dimensioning; conductive walls	Straight specified; positive and negative pressure ducts permitted, with leakage evaluation; more dimensional freedom; conductive walls
Test Air	Room or recirculated air; 10°C–30°C, 20%–65% RH	Room, recirculated or outdoor air; RH < 75%, temperature not specified
Test Aerosol	Dry, approximately spherical, polydisperse KCl (potassium chloride)	Liquid, spherical, polydisperse DEHS (diethylhexyl sebacate)
Sampling	Primary/secondary and diluters allowed; upstream and downstream lines must have same geometry, be rigid and conductive; deviation from isokinetic flow condition is specified.	
Discrete Particle Counter or Counters	Optical or aerodynamic counters allowed, a matched pair of counters upstream and downstream, or single counter, switched; 0.3–10 µm in 12 set diameter ranges.	Optical counter specified; 0.2 µm–3.0 µm in a minimum of 5 diameter ranges in near-logarithmic steps; specifies a single counter switched between upstream and downstream.
Test Stand Qualification Tests ²	Both standards require items 1–13. Standard 52.2-1999 also requires items 14–17. (1) air velocity uniformity; (2) aerosol uniformity; (3) particle counter size accuracy; (4) particle counter overloading; (5) particle counter zero; (6) zero filter efficiency; (7) 100% filter efficiency; (8) aerosol generator response time; (9) neutralizer activity; (10) manometer calibration; (11) dust feeder airflow; (12) duct leakage; (13) efficiency and stability of final filter; (14) effectiveness of downstream mixing; (15) upstream/downstream correlation ratio; (16) upper limit of aerosol count; (17) empty test section pressure drop.	
Maintenance Tests	Both standards require repetition of Qualification Tests 1–12 at various intervals. ASHRAE 52.2 also requires periodic repetition of Tests 13 and 16, and adds two others: (18) check of the dust feeder venturi throat dimension for wear, and (9) evaluation of the resistance and arrestance and particle-size efficiency of a group of "reference filters."	
Electrified Fiber Filter Testing	Mention of possible decay of electrostatic effects, no recommendation. Addendum on a preconditioning procedure to eliminate electrostatic effects is under discussion.	Includes procedure for conditioning filter to inhibit electrostatic effects and allow measurement of non-electrified efficiency.
Dust and Fiber Shedding	Flow of HEPA-filtered air is continued after the efficiency test following an increment of dust loading for 20 minutes. Particle count indicates amount of shedding.	Discussed but not specified.

Notes

1. With positive pressurization, the static pressure inside the test duct is above the pressure outside the duct; with negative, the static pressure inside the duct is below the pressure outside.

2. The upstream/downstream correlation ratio is the ratio (upstream count/downstream count) when no filter is between the upstream and downstream samplers. This ratio, computed for each size range, is used to correct the efficiency calculation for differences in between upstream and downstream sampling line losses.

Table 2: Comparison between ANSI/ASHRAE Standard 52.2-1999 and EN 779:2002.

CTTC (Cont'd. from Page 10)

MERV	Average Efficiency (E), Percent in Diameter Range			Average Arrestance, (A)	Minimum Final Resistance
	0.3 μm –1.0 μm	1.0 μm –3.0 μm	3.0 μm –10.0 μm		
1	n/a	n/a	<20%	<65%	75 Pa
2	n/a	n/a	<20%	65% \leq A<70%	75 Pa
3	n/a	n/a	<20%	70% \leq A<75%	75 Pa
4	n/a	n/a	<20%	75% \leq A	75 Pa
5	n/a	n/a	20%<E<35%	n/a	150 Pa
6	n/a	n/a	35%<E<50%	n/a	150 Pa
7	n/a	n/a	50%<E<70%	n/a	150 Pa
8	n/a	n/a	70% \leq E	n/a	150 Pa
9	n/a	E<50%	85% \leq E	n/a	250 Pa
10	n/a	50%<E<65%	85% \leq E	n/a	250 Pa
11	n/a	65%<E<80%	85% \leq E	n/a	250 Pa
12	n/a	80% \leq E	90% \leq E	n/a	250 Pa
13	<75%	90% \leq E	90% \leq E	n/a	350 Pa
14	75%<E<85%	90% \leq E	90% \leq E	n/a	350 Pa
15	85%<E<95%	90% \leq E	90% \leq E	n/a	350 Pa
16	95% \leq E	95% \leq E	90% \leq E	n/a	350 Pa

Table 3: Classes defined by ANSI/ASHRAE Standard 52.2-1999.

Test Standards and Rating Systems For Particulate Filters

Filters used for building general ventilation are tested at the time of their market introduction, and subsequently for quality control. ASHRAE Standard 52.1-1992, *Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter*, and CEN's EN 779:1993, *Particulate Air Filters for General Ventilation— Requirements, Testing, Marking*, were quite similar standards, specifying several tests. These included filter resistance as a function of flow; resistance rise when a coarse synthetic dust was fed to the filter; dust removal efficiency (arrestance) on the same synthetic dust at each fed increment; and efficiency on ambient atmospheric dust (atmospheric dust spot test), at each increment of dust fed.

For many years, these tests served to characterize and compare filters but failed to evaluate an important filter characteristic: the efficiency of the filter at specific particle sizes. In addition, the dust-loading information was merely comparative.

One cannot predict the service life of a filter from the dust-holding capacity provided by the two standards, because the dust used for the loading test does not represent what is found in actual air-handling systems.

The first of these inadequacies has essentially been overcome for revisions of both standards: ANSI/ASHRAE Standard 52.2-1999, *Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size*, and EN 779:2002, *Particulate Filters for General Ventilation: Determination of the Filtration Performance*, include methods that determine filter efficiency vs. particle diameter. The problem of a better simulant for "real" dust in air-handling systems is the subject of the completed ASHRAE Research Project RP-1190.1 The results of this study could influence future revisions of ASHRAE standards.

Standard 52.2-1999 and EN 779:2002 are detailed although not identical. Table 2 compares the standards. The similarity between the standards and the involvement of U.S. representatives on ISO/TC142/WG3 offers the possibility that a global standard for this class of filters can be written soon.

Continued on Pg. 12

CTTC (Cont'd. from Page 11)

Many manufacturers still use Standard 52.1-1992, testing by its methods and publishing ratings based on them. Standard 52.2-1999 and EN 779:2002 make use of the arrestance and dust-loading procedures from Standard 52.1-1992 almost verbatim. Standard 52.1-1992 retains the atmospheric dust spot test, and also includes a procedure that evaluates automatic self-renewing filters (e.g., roll-type filters). Annex A of EN 779:2002 includes procedures for evaluating the electrostatic augmentation of aerodynamic filtration, which could be adversely influenced by many unknown factors, such as the capture of small particles and captured conductive or oily particles. A proposed addendum to Standard 52.2-1999 dealing with this problem completed its first public review in December 2004 and is still under discussion inside ASHRAE Standing Standards Project Committee 52.2.

Both EN 779:2002 and Standard 52.2-1999 include classification systems for general ventilation filters. *Table 3* shows the MERV levels found in Standard 52.2-1999, and *Table 4* shows the F and G Classes found in EN 779:2002. The system used by EN 779:2002 is simpler, placing filters in categories determined by their arrestance (for coarse filters) and by their efficiency on 0.4 μm DEHS particles (for fine filters). This size was chosen because it approximately matches the dust spot efficiency value measured in Standard 52.1-1992 that is widely used.

The Standard 52.2-1999 MERV (Minimum Efficiency Reporting Value) system requires several steps. First, the efficiency in all 12 particle size ranges is determined at each dust increment during the dust-loading procedure. The minima for efficiency for each size range may occur for a clean filter, or at some specific dust load, so the second step is to select the minimum values throughout the loading procedure.

The next step is to average the minimum efficiencies in three size groups: 0.3 – 1 μm , 1 – 3 μm and 3 – 10 μm . For a filter to rate a given MERV level, these minima must exceed the values listed for that level in *Table 3*. Note, however, that only MERV levels 13 and above make use of all three particle size ranges, and the lowest MERV levels are still based on average arrestance, rather than the count procedure just described.

There is no exact correspondence between any of the categories in the two rating systems. Standard 52.2-1999 provides in its Appendix E a table that attempts to correlate its MERV ratings with Standard 52.1-1992 arrestance, dust spot efficiencies, and the ratings for HEPA and ULPA filters tested according to other standards. *Table 5* lists the approximate equivalents given in Standard 52.2-1999 Appendix E, to which we have added the approximately equivalent EN 779:2002 and EN 1822:19982 ratings. Complaints have been raised as to whether the final resistance specified by the ASHRAE table for loading—which influences average efficiencies as well as dust shedding—are realistic. The final resistances specified by EN 779:2002 are even higher (450 Pa [1.8 in. w.g. for F filters) than those specified by Standard 52.2-1999.

Test Standards for Gaseous Contaminant Filters

Test standards for general ventilation gaseous contaminant filters have not progressed as far as those for particulate filters. Many reasons exist for this. Gaseous contaminants may be toxic, odorous, annoying, and damaging or disastrous for manufacturing processes or building materials. These effects and the performance of adsorptive and chemisorptive filters depend on physical and chemical properties of individual contaminants; on their concentrations; on the temperature and humidity of the airstream reaching the filter; and on the cumulative exposure of the filter media, to mention a few factors.

Hundreds of contaminants are of serious concern, and each has different properties. Standards writers must select a limited number of test contaminants that represent those found in field applications, and also select test conditions that are representative and sufficiently realistic to give meaningful evaluations of filter media.

CTTC (Cont'd. from Page 12)

A group of standards has been produced by American Society for Testing Materials (ASTM) to provide quality control of many properties of gaseous contaminant adsorption filter media. However, the ASTM standards that evaluate the mass of contaminant that a given mass of adsorptive media captures and/or holds (D5228-92:2000, D5160-95:2003, D5742-95:2000, and D6646-03:2003, 3–6 for example) use contaminant concentrations far higher than those that prevail in HVAC systems, and do not measure contaminant penetrations through filters in the course of their loading with the contaminant. ASHRAE has sponsored research to establish a gaseous contaminant filter test, and Standards Project Committee 145 has prepared a draft standard incorporating this work. The standard 7–9 is to include sections defining tests that evaluate loose granular filtration media, full-scale filtration devices and installed systems. Unfortunately, the standard is only in draft form for committee discussion.

Conclusion

Much has already been accomplished in developing air filter standards that have worldwide acceptance. Additional standards are moving through the approval process. Undoubtedly, new technologies will require new standards. The continuation of this work by international standards bodies, including revision of existing standards as better testing methods develop, is important to HVAC system designers.

Class	Final Resistance	Average Arrestance, (A)	Average Efficiency (E) On 0.4 μm Particles
G1	250 Pa	$50\% \leq A \leq 65\%$	n/a
G2	250 Pa	$65\% \leq A \leq 80\%$	n/a
G3	250 Pa	$80\% \leq A \leq 90\%$	n/a
G4	250 Pa	$90\% \leq A$	n/a
F5	450 Pa	n/a	$40 \leq E \leq 60$
F6	450 Pa	n/a	$60 \leq E \leq 80$
F7	450 Pa	n/a	$80 \leq E \leq 90$
F8	450 Pa	n/a	$90 \leq E \leq 95$
F9	450 Pa	n/a	$95 \leq E$

Table 4: G and F Classifications defined by EN 779:2002.

CTTC (Cont'd. from Page 13)

ASHRAE Standard 52.2 MERV	Approx. ASHRAE Standard 52.1 Values Avg. Dust Spot Efficiency	Arrestance	EN 779: 2002 Classes	EN 1822: 1998 Classes
20	n/a	n/a	n/a	H14
19	n/a	n/a	n/a	H14
18	n/a	n/a	n/a	H13
17	n/a	n/a	n/a	H13
16	n/a	n/a	n/a	H10
15	>95%	n/a	F9	n/a
14	90%–95%	>98%	F8	n/a
13	80%–90%	>98%	F7	n/a
12	70%–75%	>95%	F6	n/a
11	60%–65%	>95%	F6	n/a
10	50%–55%	>95%	F5	n/a
9	40%–45%	>90%	G4	n/a
8	30%–35%	>90%	G4	n/a
7	25%–30%	>90%	G4	n/a
6	<20%	85%–90%	G3	n/a
5	<20%	80%–85%	G3	n/a
4	<20%	75%–80%	G2	n/a
3	<20%	70%–75%	G2	n/a
2	<20%	65%–70%	G2	n/a
1	<20%	50%–65%	G1	n/a

Table 5: Approximate comparison of MERV classes with performance determined by other air filter tests.

Brian Simkins
CTTC

Article In:

ASHRAE Journal, August 2006. Please see article for all references and credits.

By **Paolo Tronville, Ph.D.**, Associate Member ASHRAE; and **Richard D. Rivers**, Fellow ASHRAE

History



For this month's interview I interviewed Mr. Donald Stahl who is now happily retired.

I decided to interview him because of the praise that Joe Marino gave to him in last month's interview and he seemed like the perfect person to close out my interviews with.

What made you become an engineer?

My father! In 1953 I was aimlessly drifting my way thru my Gravesend Brooklyn Junior High School when my father bellowed and made this run-on statement:

"Your good with numbers; take the Brooklyn Technical High School entrance examination; pass the exam; become an engineer." It was more of a command than a statement.

Brooklyn Tech was a great high school and was the technical corner-stone of my engineering career. My beloved old fashioned father was the corner-stone of my life's value system.

Where did you go to school?

I attended Pratt University from 1958 to 1960 and Mechanics Institute at night from 1961 to 1964.

In between this time period I married Marianne, a wonderful Long Island girl. I then enthusiastically helped produce two children, Jamie and Jennifer, who became the stuff that dreams are made of.

What was your first engineering job and did you have any mentors?

My first engineering job was in 1960 with Joseph P. Wohlpart Associates, Consulting Engineers in NYC. On the first day of the job I met Walter Bishop, who became my mentor for 10 years and my friend for 50 years. Walter went on to become the owner and president of Walter P. Bishop Associates, P.C., a consulting engineer that enjoyed an outstanding reputation in the metropolitan New York area.

In 1976 I went to work for Lizardos Engineering Associates, P.C. (LEA). I had already known Evans Lizardos and his brother George, having done engineering "moonlighting" in the basement of their homes before they had opened the Albertson L.I. office. Thru the grace of the Greek Gods, Evans became my teacher and mentor for the next 19 years. We still are very close friends and see each other often after all these years. I retired as a Senior Associate from LEA in 1995. It was exciting and wonderful being part of LEA in the early years of the company's growth and watching Lizardos Engineering Associates become the elite consulting engineering organization it is now.

What was the memorable project you worked on?

The most memorable project I worked on was the first large new building that I served as the lead mechanical design engineer on. The project was the Fairleigh Dickenson University School of Dentistry located in New Jersey. The building was a 5 story 1968 state-of-the-art facility with special operating suite, laboratory, and animal room requirements. The HVAC systems consisted of absorption chiller units, medium pressure steam boilers, perimeter fan coil units, humidification and pneumatic-electronic temperature controls.

Being an integral part of this complex project from the conceptual design phase to building owner occupancy was fascinating to this young engineer. The interface and coordination between owner, architect, structural engineer, the engineering design team, the building trades contractors, equipment suppliers and local government authorities was a priceless education.

When the building was successfully completed and occupied by the dental school students, teachers, and administrators, I was personally proud and immensely satisfied.

I got the same feelings of pride and satisfaction on all future facility projects that I had the American opportunity to be

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part of.

What ASHRAE positions have you held? And when did you become the chapter president?

I was an active member of ASHRAE throughout my engineering career. The ASHRAE Society was the perfect mix of technology education, business opportunities, and social pleasures for my personality. It was also a way to give a little back to an industry that was very good to me and my family.

I served on most of the committee positions and chair positions of the ASHRAE Long Island Chapter, becoming the chapter's president in 1992-1993. During my tenure, the Long Island Chapter received the "Presidential Award of Excellence" for significant improvements in membership, attendance, research promotion, education, and energy management. This achievement was largely due to the support I received from an excellent Board of Governors. Ronald Kilcarr was the President-Elect during my tenure and I will always be grateful for his un-selfless efforts and support.

How has this industry changed in your tenure?

The following is a list of mechanical systems and components that were fundamental during my career. These systems and components were an essential part of a heating, ventilating, air conditioning and refrigeration design engineers' everyday application. I'm sure that most of the items on this list can now be placed in the Smithsonian Institute next to the vacuum tube and the horse and buggy.

- | | |
|--|--------------------------------------|
| -Dual Duct High Velocity HVAC Systems | -Pneumatic Temperature Controls |
| -Irish Linen Drawing Cloth | -Drafting Pounce Bags |
| -Reheat coil Temperature Controls Systems | -Steam Absorption Chiller Units |
| -Tracing Light Tables | -Blueprint Drawings |
| -Multi-Zone Units | -Vacuum Pumps |
| -3-Pipe Heating & Air Conditioning Systems | -Monoflow Fitting Heating Systems |
| -Ink Drawings | -Stampats |
| -Draftsmen's Apron | -Low Pressure Steam Radiator Systems |
| -Slide Rule Calculations | -Induction Units |

Which technologies and outside influences have made the biggest changes to the industry and where do you see the industry going?

Obviously the computer sciences, energy concerns and environmental issues have made the biggest changes to the heating, ventilating, air conditioning, and refrigeration industry in my life time. Having been retired a long time I cannot even venture a guess on new game changer technologies or where the industry will be going in the future. The one thing I am certain is the basic rules of all engineering projects will remain the same as they were when I was a young mechanical design engineer 50 years ago:

Phases of a Project

Enthusiasm
Disillusionment
Panic
Search For The Guilty
Punishment For The Innocent
Praises and Honors For The Non-Participants

Any pearls of wisdom to the current engineers out there?

Perseverance and determination alone are omnipotent. The slogan "press on" has solved and will always solve the problems of the human race. If you meld these virtues with nurturing caring and loving human relationships, everything should work out fine.

Please remember to send in any old ASHRAE photographs, papers, articles, and speeches of people who have been through the Long Island Chapter of ASHRAE. I would like to upload this information to our chapter's website. Everything sent in will be returned.

Student Activities

Our chapter student scholarship program has closed for this year as of May 1st and the winners are being selected. The winners will be invited to our June 14th meeting for recognition and awarding of the funds. Thank you to all of those who entered and those who supported the event.

This is the last chance to enter our poster contest for grades 9 through 12 in high school. The deadline for entries is May 15th, 2011. iTunes gift cards of \$50 and \$25 will be awarded to winners who demonstrate the ability to relate their artistic skills to our theme of "Building a Sustainable Future". For applications and complete information email me at rosner@nassausuffolkea.com. This contest has been named the "Henry Shulman High School Poster Contest" to honor our esteemed past president of the chapter and friend to all, who we lost this year.

This May 10th meeting is our last Student Activities night for this year. Members, this is the time for you to pick up those new graduates or those entering programs for intern or full time positions. Students come out and meet your future employers and hear a wonderful presentation.

Important Notice!!! Students, please send us your change of address information or we might lose touch with you.

Please find additional information on the web at the below links:

Please find additional information on the web at the below links:

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[ASHRAE National Scholarships](#)

Richard L. Rosner, PE
Student Activities Committee Chair

Anita B. Singh, LEED AP
Assistant Student Activities Committee Chair



Donate your old Handbooks

Please bring your old handbooks to the meetings for donations to our student members who do not have complete sets at this time. Rich Rosner will be collecting them.

Young Engineers in ASHRAE (YEA)

This Month the YEA (Young Engineers in ASHRAE) committee will have a back to the basics presentation. Mr. David Shaw and Mr. James Hanna of the Trane Corporation will present "Basic Air Handling Selections". They will review how to pick the proper air handler based on design criteria for a standard package roof top unit or a custom unit. It will be held 7:00-7:30PM before the main presentation. Anyone can attend. If you are a young engineer (35 years old or younger) please attend. Even if you do not fall in this category please show your support in helping our society to grow and encourage a YEA to attend.

We will be planning additional back to the basics seminars for next year. If there is a Back to Basics topic you would like to see added to our calendar next year please do not hesitate to contact myself or anyone on the Board of Governors as we are here to provide information for you.

Charlie Lesniak
YEA Chairman



Membership

This is a particularly good month for Long Island ASHRAE members. We have the upcoming golf outing, which is always an excellent time to network with our members and their guests. If you are attending, please take the time to introduce yourself to a new member at the breakfast and the dinner. And hit 'em straight.

Please take some time to review your ASHRAE bio on www.ashrae.org. ASHRAE uses this information for all mailings, so keeping your bio up to date is vital to chapter operations.

As May will be our last technical meeting before our June installation dinner, I hope all members will consider attending. This is a good opportunity to get PDH credits before the summer. Please encourage potential new members to attend. We have had a good year and I look forward to a growing membership in the future.

Thomas J. Fields, PE, LEED AP
Membership Chairman

Corrections and Clarifications to March's Presentation 1 "Psychrometrics" by Evans J. Lizardos

Alan Goerke pointed out that my presentation inferred that a forced air heating system required humidification and a hot water heating system did not.

My apologies if my presentation gave that impression. In theory, low ambient air when heated by whatever means will yield a low relative humidity. To this point refer to the attached article in the March issue of the ASHRAE Journal, "Do Furnaces Dry Air" excerpt:

The only possible support for this myth that we can propose, is that houses with forced-air systems may have higher infiltration rates due to duct leakage. Hydronic systems would not have this issue. One might experience lower winter indoor humidity levels if they changed from hydronic to forced-air and blamed the furnace for this effect.

One more time with feeling on room sensible heat factor (RSHF).

When you go to the movies and the outdoor conditions are 90+ dry-bulb and 75+ wet-bulb make sure you take a sweater and avoid shorts. Why? Because the RSHF will be 75% the leaving coil will be 50 dry bulb, 54 wet bulb and the movie space temperature 68 dry bulk and 60% relative temperature.

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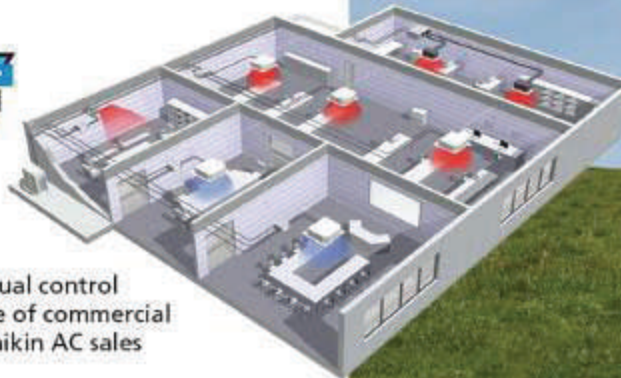
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