



THE CHAMP

monthly newsletter

of the Champlain Valley Chapter of ASHRAE

PRESIDENT'S MESSAGE



The colors of October are in full swing and that means we are also in full swing with our ASHRAE year. Our October meeting was a near miss with a last minute speaker cancelation.

Fortunately the BOG pulled together a couple of last minute speaker ideas and Mary Jane Poynter (VEIC) was able to step in and bail us out. She presented on a case study that her and a couple of colleagues had performed on the benefits of properly maintained HVAC equipment. Very well done especially on such a short notice. Thanks again MJ!

Our November 4th meeting includes a presentation on dust collection systems. November is also Research Promotion Night. See Tom Zoller's article on the opportunity to win UVM hockey tickets for your donation to RP. The tickets this year are even better than the ones raffled off last year. I want to encourage you and your company to consider donating to RP both for the importance to our industry and to win some hockey tickets!

Looking ahead, our December 2nd meeting will be on biomass followed by a visit from the Society

President on Monday January 18th.

Finally, thank you for your support and participation with our local Chapter. November and December look good as does the rest of the year. We look forward to seeing you at the next meeting.

Rob Ward
ASHRAE CVC President

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ASHRAE CVC 2015-16 MEETING CALENDAR

MONTH	MONTHLY MEETINGS		LOCATION	TOPIC
	BOG	DINNER		
2015				
Aug.	8/6/15	8/6/15	VHV Office	
Sep.	9/9/15	9/9/15	Holiday Inn	Water Source Heat Pump Design
Oct.	10/7/15	10/7/15	Holiday Inn	DL Visit - BEQ Presentation
Nov.	11/4/15	11/4/15	Holiday Inn	Dust Collection Systems
Dec.	12/9/15	12/9/15	Holiday Inn	Biomass
2016				
Jan.	1/20/16	1/20/16	Holiday Inn	Presidential Visit
Feb.	2/3/16	2/3/16	Holiday Inn	TBD
Mar.	3/2/16	3/2/16	Holiday Inn	Chilled Beams
Apr.	4/6/16	4/6/16	Holiday Inn	Pump selection
May	5/4/16	5/4/16	Holiday Inn	Air and dirt elimination
Jun.	6/1/16	6/1/16	Holiday Inn	Tailgate Event

OCT. 2015

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TECHNOLOGY TRANSFER

Our November meeting will be a presentation from Peter Levitt of Sternvent. Mr. Levitt has numerous years of experience as a sales engineer by offering product technical support and working closely with design professionals, contractors, and sales reps in applying and selecting dust collectors for projects.

He has a broad background and understanding of dust collection system design & product selection for industrial as well as institutional facilities. His specialty is interpreting & applying fire & life safety codes for dust collection systems.

Mr. Levitt will present on the design of dust collection systems, with a focus on high school wood shop applications. His presentation will also include the most current NFPA guidelines and Fire Suppression components that are required for a code-compliant installation.

We hope to see you there! Keep an eye out in your email for the RSVP link.

Upcoming Meetings:

November 4th – Dust & Noise Control

December 2nd – Modern Wood Heating & Biomass

January 13th – Society President

If you have any questions about the upcoming presentations, or have a suggestion for a future topic, please feel free to get in touch with me. I can be reached via email, blaine.conner@vtmechanical.com or by phone at 802-343-8644.

Blaine Conner

ASHRAE CVC CTT Committee Chair

GRASSROOTS GOVERNMENT AFFAIRS COMMITTEE

Masters or Equivalent (MOE)

Activity related to MOE in our geographic area has slowed to a near stall, however on a national basis, it's still alive and well.

My contact at ASME informs me that there is a possibility that the National Society of Professional Engineers (NSPE) is moving to recommend an "alternative" to the master's degree, rather than an "equivalent" to a master's degree as the education requirement for licensure. The general consensus with the Licensing That Work (LTW) team believes that it is a step in the right direction. ASHRAE members who are also members of NSPE are highly encouraged to provide input and comments on the following NSPE policies and position statements:

- PP 168 Engineering Education Requirements
- PS 1737 Licensure and Qualification for Practice
- PS 1739 Engineering Education

NSPE will receive comments through to November 13, 2015. More information can be found at the following NSPE link or the NSPE website:

<http://www.nspe.org/resources/issues-and-advocacy/nspe-position-statements>

Vermont Comprehensive Energy Plan

The Public Service Department (PSD) is in the process of updating the Vermont Comprehensive Energy Plan and the Vermont Electric Energy Plan as required by law. Both of these plans are to be complete and adopted by January 1, 2016. Updates of these plans will be required every six years thereafter.

As part of the updates, the PSD is seeking public input thru written comments and meetings. By the time this newsletter is published, most of the scheduled meetings will have passed; however, the opportunity still exists for any written comments. The deadline for the written comments is 11/9/15. For information on the meeting dates/locations and the form for written comments, please visit the PSD's website at the following link:
http://publicservice.vermont.gov/publications/energy_plan/2015_plan

Dick Wilcox
 ASHRAE CVC GGAC Chair

RESOURCE PROMOTION

Thank you to all the donors that made last year the best year ever for ASHRAE RP in Champlain Valley. We exceeded our Challenge Goal (5% more than our previous high) by 109%, for a total of \$8,452. We ended fourth in the region in PAOE points. We brought home several awards as well – Goal, High Five and Challenge Certificates, Full Circle Chevron, Endowment Chevron, and Silver Treasury Ribbon. We could not have done it without the generous donations of the following 2014-15 Honor Roll Donors:

- | | |
|----------------|----------------------|
| Peter Tousley | Rob Favali |
| Blaine Connor | Peter Bailey |
| Shawn Labelle | Tom Zoller, PE |
| Cody Lezak, PE | Jeremiah Trombly, PE |
| Dick Wilcox | Nathan Mascolino, PE |
| Mike Cook | Rachael Mascolino |
| Rob Ward | Josh Chiappone |
| John Grout | Martha Soule-Holden |

- | | |
|---------------------|-------------------|
| Ray Spears | Greg Liebert, PE |
| Emily Cross | Jim Moore |
| The VLPA | Mercer Management |
| Tom Dacres | Len Pattison |
| Scott Alexander, PE | New England Air |
| Glenn Thomas, PE | |

We are off to a great start in RP for the 2015-16 Campaign. We have raised \$1,464 as of Oct 15, versus a goal of \$5,200 for the year.



We will again be raffling off two UVM Men's Hockey tickets for anyone that donates \$100 or more by the November 4 meeting. These are great

seats, right on the glass at the faceoff circle. So get those donations made early! Winner will be drawn after the main presentation on November 4.

CVC has made the Full Circle award already this year. Full circle is where the chapter leadership – President, Pres Elect, VP, Secretary, Treasurer, and RP Chair all donate \$100 to RP. So your chapter leadership is fully behind this year’s RP campaign.

Current Honor Roll donors for the 2015-16 Campaign include:

Blain Connor	Brent Weigel
Dave Anderson	Jeremiah Tronbly, PE
Scott Alexander, PE	Nathan Mascolino, PE
Peter Tousley	Dick Wilcox
Rob Favali	Rob Ward
Shawn Labelle, PE	Tom Zoller, PE
Rachael Mascolino	Martha Soule

You can donate online at www.ashraerp.com. Click on the upper right “donate” icon and you will be taken to the donation page. All donations are 100% tax deductible and 100% of the donation goes to research.

As always, if you have any questions about ASHRAE Resource Promotion, contact me at tzoller@trane.com, or 383-6444.

Tom Zoller
ASHRAE CVC Research Promotion Chair

STUDENT ACTIVITIES

VTC Chapter

Committee Chair: Brent Weigel

Student Chapter Advisor: Chris Reilly

Student Chapter President: Rebecca Robinson

We have two important Student Activities initiatives underway:

Support of VTC Chapter student attendance at the 2016 ASHRAE Winter Conference.

Formation of our Student Activities Committee.

The ASHRAE Winter Conference and the associated AHR Expo provide an unparalleled opportunity to learn about industry-leading practices and technologies in HVAC&R. The Winter Conference is also a great venue for students to learn about employment opportunities in our industry. With your help in 50/50 raffles, the CVC Student Activities Committee would like to support VTC student attendance at the 2016 ASHRAE Winter Conference and AHR Expo.

I would like to extend a Student Activities Committee invitation to all members of our Chapter. The service and impact of the Student Activities Committee is directly dependent on the talents and energy of our Chapter members. Importantly, we need your help in making new connections with area schools and students. Please let me know of any interest you may have in serving with the Student Activities Committee.

Brent Weigel

ASHRAE CVC Student Activities Chair

THREE VTC STUDENTS RECEIVE ASHRAE SCHOLARSHIPS

The Champlain Valley Chapter of ASHRAE would like to acknowledge and congratulate three VTC students for being awarded Society's 2015-2016 Bachelor of Engineering Technology Scholarships. The three students were selected to receive a one-year \$5,000 scholarship award each at the 2015 Annual Conference in Atlanta. These scholarship awards are based on the student's outstanding scholastic and leadership ability, character, potential service to the HVAC&R profession and financial need.

The recipients of the scholarship awards are Caleb Bristol, Rebecca Robinson and John Kubacz. All three students are Bachelor of Science in Architectural Engineering Technology majors expecting to graduate in May 2016. The students were presented with their ASHRAE scholarship certificates by outgoing CVC President Rob Favali and 2015-2016 CVC President Rob Ward, III on September 9, 2015.



VTC Students with their scholarship certificates from ASHRAE presented on the September 9, 2015 meeting of the Champlain Valley Chapter. (Pictured l to r: John Kubacz, Caleb Bristol and Rebecca Robinson) photo courtesy of Scott A. Sabol, PE, Professor Architectural & Building Technology – VTC

Michael R. Cook
ASHRAE CVC Chapter Historian

BOG SEPTEMBER MEETING MINUTES

Date: 09/09/2015

Location: Holiday Inn, South Burlington VT

Called to Order: 4:19pm

Called to Order By: Rob Ward

Minutes Recorded By: Martha Soule Holden

ATTENDANCE:

Name	Title	Organization	Present
Rob Ward	President	VHV Company	x
Blaine Conner	President-Elect Program Chair	Vermont Mechanical Inc	x
Brent Weigel	Vice President	Control Technologies Inc	x
Jeremiah Trombly	Treasurer	Mountain Air Systems	
Martha Holden	Secretary	VHV Company	x
Rob Favali	BOG Member	Dubois & King	x
Nathan Mascolino	BOG Member	VHV Company	x
Dick Wilcox	BOG Member Grassroots Gov	VHV Company	
Mike Cook	BOG Member History Chair	ARC Mechanical	x
Rachel Mascolino	BOG Member	VEIC	
Shawn Labelle	BOG Member	Vermont Mechanical Inc	
Tom Zoller	Research & Promotion Chair	Trane Inc.	x
Peter Bailey	Refrigeration Chair	DEI Controls	x

OFFICER'S REPORT

1. **Secretary – Martha Soule Holden**

- a. Need to submit August meeting minutes for approval along with September meeting minutes at next BOG Meeting.

2. **Treasurer's Report – Jeremiah Trombly**

- a. Current Status – \$16,648.81.
- b. ASHRAE 2015-2016 Budget Status – not yet finished.

3. **Resource Promotion - Tom Zoller**

- a. CRC takeaway: Comment relative to nothing new at conference to share with members during this meeting.

4. **Chapter Programs – Blaine Conner**

- a. Rob Favali motioned to set a budget amount of \$300 (stay & meals) for the upcoming DL Visit – BEQ Presentation for October 7th ASHRAE Meeting. Nathan M. second the motion and passed.

5. **Membership – Martha Soule Holden**

- a. Needs to be updated asap! Nathan M & Joshua C offered their expertise to get started.

6. **Student Chapter – Brent Weigel**

- a. Nothing new to report.

7. **Grassroots Government – Dick Wilcox**

- a. Not in attendance nothing to report.

8. **General Chapter Business**

- a. RP Night – may do Hockey Ticket Raffle again due to its success last year.
- b. Full Circle deadline coming up soon.

NEW BUSINESS

1. Newsletter write-up due 9/18.
2. Next meeting October 7th at Holiday Inn, SB.

MOTION TO ADJORN

- a. A motion was made by Mike Cook to adjourn the meeting. It was seconded by Blaine Connor and the motion was carried. The meeting adjourned at 5:06 pm

msh

These minutes are the writers understanding of the discussions involved. If there are any exceptions taken, or omissions, please notify the writer immediately.

ASHRAE Learning Institute 2015 Fall Online Course Series

2 WAYS TO REGISTER

Take 3 or more courses and save 15% off registration!

Internet: 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 course. Courses are in US Eastern Time. **Earn CEU/PDH credits.**

Energy Management Best Practices

Mon, October 12, 2015 – 1:00 pm to 4:00 pm EDT

Complying with Standard 90.1-2013: HVAC/Mechanical

Wed, October 14, 2015 – 1:00 pm to 4:00 pm EDT

Commissioning for High-Performance Buildings

Mon, October 19, 2015 – 1:00 pm to 4:00 pm EDT

Combined Heat & Power: Creating Efficiency through Design & Operations

Mon, October 26, 2015 – 1:00 pm to 4:00 pm EDT

Laboratory Design: The Basics and Beyond

Mon, November 2, 2015 – 1:00 pm to 4:00 pm EST

Fundamental Requirements of Standard 62.1-2013

Wed, November 4, 2015 – 1:00 pm to 4:00 pm EST

The following course is comprised of two parts. Registrants must attend both parts in order to receive CEU/PDH credits.

Commissioning Process in New & Existing Buildings

Part 1 - Wed, October 21, 2015 – 1:00 pm to 4:00 pm EDT

Part 2 - Wed, October 28, 2015 – 1:00 pm to 4:00 pm EDT

ASHRAE HVAC Design Training

2 Courses, 5 Days of Intense Instruction

Atlanta • Houston • Miami • Minneapolis

Halifax • Vancouver • Hong Kong • Kuala Lumpur

HVAC Design: Level I – Essentials - Registration is \$1,264 (\$1,009 ASHRAE Member)

Gain practical skills and knowledge in designing and maintaining HVAC systems that can be put to immediate use. The training provides real-world examples of HVAC systems, including calculations of heating and cooling loads, ventilation and diffuser selection using the newly renovated ASHRAE Headquarters building as a living lab.

HVAC Design: Level II – Applications - Registration is \$854 (\$699 ASHRAE Member)

HVAC Design: Level II — Applications provides instruction on HVAC system design for experienced HVAC designers and those who complete the HVAC Design: Level I – Essentials training. The training provides information that allows practicing engineers and designers an opportunity to expand their exposure to HVAC systems design procedures for a better understanding of system options to save energy.

Visit www.ashrae.org/hvactraining to register.

ASHRAE CVC CHAPTER AWARD WINNERS

OVERALL CHAPTER AWARDS

Champlain Valley Endowment Chevron
Champlain Valley Full Circle Chevron
Champlain Valley Bronze Treasury Ribbon

INDIVIDUAL CHAPTER AWARDS

Presidential Award of Excellence – Star Award Special Citation:

Robert J. Favali

Research Promotion Goal, High Five, and Challenge Goal:

Tom Zoller

Outstanding Performance Grass Roots Governmental Advocacy Committee Honorable Mention: Richard Wilcox

Gold Ribbon for History Award:

Michael Cook

Green Ribbon Award – Membership Committee:

Joshua Chiappone

Chapter Service Award:

Steve Poole

Black Ink Award - Honorable Mention:

Rachael Mascolino

Student Activities Best Student Design Competition Participation HVAC Design:

Vermont Technical College
2013-2014 & 2014-2015

Awardees: Bachelor Engineering Technology Scholarship 2015-16

Caleb Bristol
John Kubacz
Rebecca Robinson

ASHRAE ANNOUNCES FALL ONLINE COURSES

ATLANTA – Ten online professional development seminars focused on commissioning, environmental quality, energy efficiency, HVAC applications, and standards and guidelines are being offered this fall by the ASHRAE Learning Institute (ALI).

Participants can access these instructor-led courses from anywhere with an Internet connection, and earn continuing education units/professional development hours for each course completed.

ALI courses provide professional development through in-depth information that is timely, practical and advanced beyond a fundamental level. Online courses are offered every spring and fall.

For pricing or to register, visit www.ashrae.org/onlinecourses.

The courses offered this fall cover a variety of topics relevant to today’s built environment, including:

Commissioning

- Commissioning for High-Performance Buildings, Oct. 19
- Commissioning Process in New & Existing Buildings, Part 1: Oct. 21, and Part 2: Oct. 28

Environmental Quality

- Humidity Control: Applications, Control Levels, and Mold Avoidance, Sept. 16

Energy Efficiency

- Combined Heat & Power: Creating Efficiency through Design & Operations, Oct. 26
- Energy Management Best Practices, Oct. 12

HVAC Applications

- Designing High-Performance Healthcare HVAC Systems, Sept. 21
- Introduction to BACnet®, Sept. 14
- Laboratory Design: The Basics and Beyond, Nov. 2

Standards & Guidelines

- Fundamental Requirements of Standard 62.1-2013, Nov. 4
- Complying with Standard 90.1-2013: HVAC/Mechanical, Oct. 14

NEW RESIDENTIAL IAQ GUIDELINE CONTAINS CHANGES REGARDING USE OF HIGH EFFICIENCY FILTERS

ATLANTA – With recent research showing that ultrafine particles are more hazardous to human health than originally thought,

higher-efficiency filters should be used, according to the newly published 2015 version of ASHRAE's residential indoor air quality guideline.

Guideline 24-2015, Ventilation and Indoor Air Quality in Low-Rise Residential Buildings, provides information on achieving good IAQ that goes beyond the requirements contained in Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, by providing explanatory and educational material not included in the code-intended standard. Guideline 24 is the companion document to Standard 62.2.

"In the 2008 version, we indicated that if a lot of ultrafine particles were expected, higher-efficiency filters should be considered. Period," Paul Francisco, chair of the Guideline 62.2 committee, said. "Now we say a lot more. We cite research that shows that ultrafine particles are a much more significant concern, and we state explicitly that higher-efficiency filters mean MERV 13 or higher."

Rick Karg, a member of the Guideline 24 committee who oversaw the revision of the section, notes that particle filters with minimum efficiency reporting value (MERV) ratings below 6 are poor at filtering out respirable particulates (typically below 2.5 microns), but can do an acceptable job at removing the large visible particles such as fibers, insects, or large dusts or pollens.

ANSI/ASHRAE Standard 52.2, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size, specifies removal efficiency values for particulate filters.

"Recent research suggests that mass of particles below 2.5 microns (PM_{2.5}) may be one of the most significant indoor airborne contaminants in terms of chronic health impact in residences of those that have been well studied," Karg said. "PM_{2.5} is also the most straightforward contaminant to remove from indoor environments through filtration. MERV 10 rated filters and higher are preferred for removing smaller airborne allergens and PM_{2.5} particles."

As such, Guideline 24 recommends that higher-efficiency (MERV 13 and higher) filters should be considered. Multistage particle filtration (a relatively coarse filter followed by a high-efficiency filter) can help filter out different sized particles without overloading the higher-efficiency filters. When selecting filters, consideration should be given to the effects of the filter's pressure drop on delivered airflow, fan capacity and energy use, according to Karg.

Other significant changes to Guideline 24 are:

- Important new definitions, which align the guideline with Standard 62.2.
- Section 4.3.7 Estimating Health Impacts of Contaminant Exposure. Discusses the new methods for quantifying the

impact of contaminant exposure, including Disability Adjusted Life Years (DALY).

- Section 5.4.5 Interplay of Mechanical Ventilation and Infiltration. Addresses the important differences between the manner in which balanced and unbalanced mechanical ventilation impact infiltration (natural air leakage). This difference can significantly impact the total ventilation available (mechanical plus infiltration) in a dwelling.

In addition, several other updates were made. Among these are:

- Tables 4.1, Comparison of Regulations and Guidelines Pertinent to Indoor Environments, and Concentration of Interest for Selected Contaminates. Both of these tables were vetted by a number of experts to bring the data up to date.
- Significant updates and expansion to Sections 7 Moisture; 8.6, Combustion Appliances; 12, Verification of Equipment Performance; and 13, Ventilation Controls Significant updates and expansion.
- Section 10 Mechanical Ventilation Systems Design includes significant updates and expansion A new subsection now includes range hoods and the related discussion of the new metric, capture efficiency.

- References. Approximately 20 references were added and all previous ones were vetted for needed updates.

The cost of Guideline 24-2015, Ventilation and Indoor Air Quality in Low-Rise Residential Buildings, is \$58 (\$48, ASHRAE members). To order, visit www.ashrae.org/bookstore or contact ASHRAE Customer Contact Center at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide) or fax 678-539-2129.

ASHRAE LEGIONELLA STANDARD ADOPTED IN NEW YORK FOLLOWING OUTBREAK

ATLANTA – With 12 confirmed dead and more than 120 cases of infection due to legionellosis, New York City Council on Thursday adopted legislation that requires adherence to part of ASHRAE’s newly published Legionella standard.

The legislation addresses registration and inspection of cooling towers. It requires owners to create and file a plan to maintain equipment to comply with Section 7.2 of ANSI/ASHRAE Standard 188-2015, Legionellosis: Risk Management for Building Water Systems.

The standard provides minimum Legionellosis risk management requirements for the design, construction, commissioning, operation, maintenance, repair, replacement and expansion of new and existing buildings

and their associated water systems and components.

“Standard 188 was published just two short months ago,” ASHRAE President David Underwood said. “Although the circumstances surrounding its use are tragic, ASHRAE is grateful that the standard is available to set requirements to manage risk of this bacteria. We are hopeful other governments will follow the lead of the New York City Council to help safeguard public health.”

Michael Patton, a member of the committee who wrote the standard, testified before the Council earlier this week on behalf of ASHRAE. He spoke to the Council’s proposal to adopt Section 7.2, noting that other sections also would play a role in reducing risks. Section 7.2 lists common tasks and steps for items such as new system start-up and seasonal shutdowns, general system maintenance, water treatment, disinfection plans, etc.

While Patton encouraged full adoption of the standard, he said it was helpful that at least Section 7.2 was included. Patton was thanked by chairman Jumaane Williams for making himself and ASHRAE available so quickly.

“Section 7 is very good by itself,” Patton testified, “but it doesn’t really address the whole idea of informing building owners, managers, property managers how to put a plan for a whole building into place and what it should contain.”

Underwood said ASHRAE will continue its work in getting the full standard adopted in New York

City and in other locations.

Specific requirements in the standard include:

- Minimum Legionellosis risk management requirements for buildings and their associated potable and non-potable water systems.
- Establishment by building owners of a Program Team and (in turn) a Water Management Program for which they are responsible in order to comply with the standard.
- Provision of specific and detailed requirements for what Legionellosis control strategies must accomplish and how they are to be documented – but, does not provide (or place restrictions on) what specific strategies are to be used or applied.

ASHRAE PROVIDES ASSISTANCE TO FUTURE ENGINEERS THROUGH SCHOLARSHIPS

ATLANTA – Twenty-nine students are receiving \$152,000 worth of financial assistance for the 2015-16 school year via ASHRAE’s scholarship program.

In addition, ASHRAE announced creation of several new scholarships, which will be available for 2016-2017. Those are:

- **Gordon V.R. Holness Scholarship**, named in honor of ASHRAE Presidential

Member Holness, P.E., Fellow ASHRAE, Life Member, who served as president in 2009-10.

- **ASHRAE Central New York Chapter King-Traugott Scholarship**, named in memory of Fritz Traugott, Ph.D., Fellow ASHRAE, Life Member, and Harry King, Life Member. King created the Air Conditioning Engineering Technology program at SUNY Canton in 1946 and helped orchestrate its tremendous growth until his retirement in 1983. After receiving his doctorate from Syracuse University, Traugott went on to become a guest lecturer and lifelong supporter of the University, sharing a vision for the motivation, inspiration, and education of young engineers, especially in energy conservation.
- **James R. Bullock Jr. Scholarship**, named in honor of Bullock, P.E., Life Member, a longtime ASHRAE member who serves as president of Environmental Air Systems Inc.
- **Freshman Engineering Scholarship**

Over the course of 27 years ASHRAE has awarded more than \$1.45 million to over 300 deserving undergraduate and graduate students. The 29 recipients of ASHRAE's scholarship assistance for 2015-2016 are:

- **Willis H. Carrier Scholarships:** \$10,000 each for one year, Kayland Adams, East Carolina University, mechanical engineering; and Anna Schleifer, Clemson University, mechanical

engineering. The scholarship was established by the Carrier Corp. in memory of its founder, who installed the world's first scientifically designed air-conditioning system.

- **Reuben Trane Scholarships:** \$10,000 each to be awarded over two years, Ivan Beeentjes, University of Waterloo, mechanical engineering; Quentin Williams, California Maritime Academy, mechanical engineering; and Michael Newman, University of Manitoba, mechanical engineering. The scholarship was established by the Trane Co. in memory of its founder, an innovative engineer, inventor and business executive.
- **Lynn G. Bellenger Engineering Scholarship:** \$5,000 for one year, Caroline Feldman, University of Dayton, mechanical engineering. The scholarship recognizes a female undergraduate engineering student and is named in memory of the Society's first female president.
- **Lynn G. Bellenger Engineering Technology Scholarship:** \$5,000 for one year, Erin Adkins-Oury, University of Southern Mississippi, construction engineering technology. The scholarship recognizes female engineering technology students.
- **Region IV Benny Bootle Scholarship:** \$5,000 for one year, Hung Van Nguyen, University of South Carolina, mechanical engineering. The scholarship is awarded to an undergraduate engineering or

architecture student attending an institution in ASHRAE Region IV, which covers North Carolina, South Carolina and Georgia. It is named for a former Region VI chair and regional director on the ASHRAE Board of Directors.

- **Frank M. Coda Scholarship:** \$5,000 for one year, Michael Schlosser, University of Windsor, mechanical engineering. The scholarship was created in memory of ASHRAE's former executive vice president, who served from 1981-2004.
- **David C.J. Peters Scholarship:** \$5,000 for one year, Victoria Brinemugha, Pennsylvania State University, architectural engineering. The scholarship is awarded to qualifying students attending Pennsylvania State University, Virginia Tech, California State University, Oklahoma State University, University of Texas, Clemson University, North Carolina State University, University of Nebraska, Cal Poly State University or University of Nevada. The scholarship was created by Southland Industries to honor Peters, an advocate of recruiting quality.
- **Duane Hanson Scholarship:** \$5,000 for one year, Jordan Shefchik, University of Wisconsin-Madison, mechanical engineering. The scholarship was established by Gayner Engineers and is named for the company's former president.
- **Alwin B. Newton Scholarship:** \$5,000 for one year, Andrew Palcan, Milwaukee School of Engineering, architectural

engineering. The scholarship is named for an industry pioneer and ASHRAE Fellow who was granted 219 patents.

- **General Scholarships:** \$5,000 each for one year, Scott Tucci, Missouri University of Science and Technology, mechanical engineering; and Yirong Zhang, University of Illinois at Urbana-Champaign, mechanical engineering.
- **Legacy Scholarship:** \$5,000 for one year, Zeb Pontius, Miami University, mechanical engineering.
- **Bachelor Engineering Technology Scholarship:** \$5,000 each, Yoginder Rana, Ferris State University, HVAC& technology; Rebecca Robinson, Vermont Technical College, architectural engineering technology; Caleb Bristol, Vermont Technical College, architectural engineering technology; and John Kubacz, Vermont Technical College, architectural engineering technology.
- **Associate Engineering Technology Scholarship:** \$5,000 for one year, Maturin Songang, Cegep Limoilou, mechanical building technology.

The following awards provide one-year \$3,000 scholarships:

- **Minnesota Chapter Scholarship:** Matthew Hamilton, University of Wisconsin, mechanical engineering.
- **New Jersey Chapter Scholarship:** Adel Njeim, City College of New York, mechanical engineering.

- Henry Adams Scholarship:** Smart Maduka, University of Lagos, mechanical engineering. The scholarship was established by Henry Adams, Inc. in memory of its founder, a charter member and sixth president of ASHRAE'S predecessor society, ASHVE, established in 1899.
- Region III Boggarm S. Setty Scholarship:** Andrew Brouwers, Pennsylvania State University, architectural engineering/mechanical engineering option. This scholarship is awarded to an undergraduate engineering student attending an institution within ASHRAE Region III, which covers Delaware, Maryland, Pennsylvania, Virginia and Washington, D.C. and is named after Setty, Fellow ASHRAE, Life Member.
- Region VIII Scholarship:** Brandon Comisarenco, University of Texas, architectural engineering. The scholarship is awarded to a student attending a school in ASHRAE Region VIII, which includes Arkansas, Oklahoma, Mexico and parts of Louisiana and Texas.
- High School Senior Scholarships:** Claire Feind, Texas A&M University, engineering; Rachel Hutzel, Purdue University, mechanical engineering technology; Brooke Bialas, South Dakota School of Mines and Technology, mechanical engineering; and Morgan Kelley, Texas A&M University, engineering. The scholarships are provided for high school seniors entering

their freshman year of college in an engineering or engineering technology program.

For more information on ASHRAE scholarships, visit www.ashrae.org/scholarships. Applications are now being accepted for the 2016-2017 undergraduate, regional/chapter and university-specific scholarships. The deadline is December 1, 2015.

Do You Know Your ASHRAE REGION I Chapters?

ASHRAE has 14 Regions that reach virtually into the entire world. Vermont is in Region I which has 15 chapters from Maine to New Jersey.

Boston	Boston, MA
Rhode Island	Providence, RI
Connecticut	Hartford, CT
Long Island	Garden City, NY
New Jersey	Newark, NJ
New York	New York, NY
Northeast	Albany, NY
Central New York	Syracuse, NY
Rochester	Rochester, NY
Niagara Frontier	Buffalo, NY
Champlain Valley	Burlington, VT
Maine	Lewiston, ME
Twin Tiers	Owego, NY
Bi-State	White Plains, NY
Granite State	Manchester, NH

REFLECTIONS ON 45 YEARS OF ASHRAE CVC

On January 15, 2015 our chapter invited all past presidents of the Champlain Valley Chapter of ASHRAE to recognize our 45th year as an ASHRAE chapter. Of the 45 past presidents, 22 were able to attend this event along with 51 people including wives, friends, and members to reflect on this milestone and reacquaint with old friends and current members of the chapter.



“Twenty-two past CVC Presidents pose with ASHRAE President Tom Phoenix and Region 1 DRC Joe Furman, on January 15, 2015, in recognition of the 45th anniversary of the Champlain Valley Chapter.”

We learned from William “Bill” Lotz that the Champlain Valley Chapter (CVC) was born from a group discussion of individuals who as ASHRAE members discussed alternative means to participate in ASHRAE without making the 3-1/2 drive to Boston, our designated chapter at the time. Why not start our own local chapter?

Bill Lotz was the first president of ASHRAE CVC for the 1969-1970 calendar year, when much of the organizational planning was accomplished. On October 2, 1970 the Champlain Valley Chapter of ASHRAE was chartered with ASHRAE National President W. Hole, Montreal Chapter President P. Gaudette and over 150 people in attendance. Forty-five years later it remains an active and relevant group committed to serving Vermont’s ASHRAE membership.

We were delighted and privileged to be joined by current Society President Tom Phoenix, PE and Region 1 Director and Chair, Joe Thurman to celebrate this milestone event.

ASHRAE CVC: Membership and Volunteerism Strength

Tom graciously volunteered (don’t we all) to be our featured speaker for the evening presenting his presidential theme for the year. Tom’s presidential theme focused on three areas of ensuring ASHRAE’s success: People, Passion and Performance, which was well suited for this occasion.

People – Key Factor #1: ASHRAE’s greatest assets are the volunteers who have the biggest impact. Of the 54,000 members worldwide, those

who invest their time, energy, and talent make ASHRAE a premier engineering organization. Volunteers will continue to build the Society into a more viable and innovative organization into the future. As it pertains to the success of ASHRAE, both nationally and internationally, the success of local chapters like Champlain Valley will be determined by the continued engagement and growth of the engineers, design professionals, facility personnel, contractors, manufacturers and vendor representatives that make up our membership (currently 130 strong) and serve the Vermont community. Most importantly the volunteers who actively contribute and serve as officers, board members and chairs determine the continued existence of the chapter planning the monthly educational and technical programs of speakers, presenters and social events contributing to future success and accomplishments for CVC. We are grateful to have a committed group of employers and vendor companies that actively support their employees who participate in the operation of the Champlain Valley Chapter of ASHRAE in terms of time commitment and willingness to provide financial support for the chapter and its fund-raising activities.

Passion – Key Factor #2: Individuals throughout society commit their time and energy to causes and organizations they perceive to be valuable and worthwhile. It is this belief to actively contribute and participate we call ‘passion’, a motivating factor to persevere through issues which initially may seem daunting or unsolvable yet some inner energy of purpose keeps small groups of people working together to accomplish a goal or mission. Borrowing a statement from businessman, motivational speaker and

president of High Point University, Dr. Nido Qubein, “Passion ignites energy. Energy ignites a purpose. Having a purpose leads to success. But nothing happens unless there is passion.” (ASHRAE Journal August 2014)

I would venture to say there was not a past CVC president who did not experience this “passion” of group purpose and energy at some point during their tenure. Whether planning a roster of topics and presenters to engage membership to attend our monthly meetings or an educational seminar, soliciting funds for chapter events, planning a CRC, funding our two scholarship funds or ASHRAE Research Promotion, passion was evident. My experience shows this passion is built from a comradery developed among our volunteers where everyone is willing to help each other because as volunteers we recognize our time is limited. I suspect our membership has experienced this “passion” in their professional, family or community life whether as a member of a building design team working through the process of sorting through the many options and alternatives for selecting an HVAC system, maintaining a budget and time constraints that a construction team muddles through towards providing a client with the most energy efficient, aesthetic, healthy and quality building. In the end a well-deserved feeling of accomplishment and satisfaction is felt from all our efforts.

Performance – Key Factor #3: Measurement either quantified or qualified, or extent of achievement towards accomplishing a goal, mission or outcome. Per Tom’s discussion ASHRAE performance has many meanings: the performance of our volunteers and staff to meet members’ expectations; the performance of

A 45 Year Timeline (1969-2014) History of Alternative Energy and Fossil Fuels

Jan. 1969	Santa Barbara Oil Spill Draws National Attention
1970s	Solar Cells Begin to Lower in Price & Become Cost Effective for Use on Land (\$100/W to \$20/w)
1970	Oil Production Peaks in Lower 48 states (9.4 million bbl/day)
1973	OPEC Oil Embargo Against the US Causes Gas Shortages and Rationing
Nov. 1973	Trans-Alaska Pipeline Authorization Act of 1973 Passed to Increase Domestic Oil Supplies in Wake of Oil Embargo
1975	Corporate Average Fuel Economy (CAFÉ) Standards Set by the Energy Policy Conservation Act
Dec. 1975	Formation of the Strategic Petroleum Reserve; President Ford Signs into Law the Energy Policy & Conservation Act
1977	Formation of the Solar Energy Research Institute (SERI)
Apr. 1977	President Carter Delivers Famous Energy Speech Arguing for Conservation and Alternative Fuels
Aug. 1977	Department of Energy Organization Act is Signed, creating the US Department of Energy
1978	World's First Solar-Powered Village; Tohono O'odham Reservation, Arizona
Nov. 1978	Solar Photovoltaic Energy Research, Development, and Demonstration Act of 1978
Mar. 1979	Three Mile Island Nuclear Accident in Pennsylvania Creates Widespread Public Opposition to Nuclear Power
Dec. 1980	World's First Wind Farm Built in New Hampshire; 20 Turbines Rated 30KW each at Crotched Mountain (It Failed)
1981	Solar One: First Large Scale Solar -Thermal Power Plant Begins Operation in Dagett, California (produced 10 MW of Electricity from 1982-1986)
1981	Construction Begins on the World's Largest Wind Farm in California's Altamont Pass; Bird Deaths from Wind Turbines (~4,700 Bird Deaths/Yr.); 4800 Small Turbines w/Capacity of 576MW, Generating About 1.1 Terawatt-hrs of Electricity;
1982	First Complete Decontamination and Decommissioning of a Nuclear Reactor in the US (Shippingport)
Apr. 1986	Largest Nuclear Accident Ever Takes Place at Chernobyl in the Former Soviet Union
Mar. 1989	Exxon Valdez Disaster in Alaska Becomes the Largest Oil Spill in US Waters (11 million Gallons Released into Environment)
Jan. 1990	Congress Passes Act to Stimulate Development of Hydrogen Power
1994	US Begins Importing More Petroleum Than It Produces
Apr. 1996	Solar Two Plant (10MW) Demonstrates Low Cost Method of Storing Solar Energy - Built On Site of Its Predecessor Solar One
1997	EV1 Electric Car is Made Available to the Public For Lease; Lease Program EV1 Later Dismantled by GM; About 1000 Produced Before Plug Pulled Due to Insufficient Demand
Feb. 2003	President Bush Unveils the Hydrogen Fuel Initiative to Promote Hydrogen Fuel Cell Development

the buildings we design, construct and operate to meet our clients' expectations; and the performance of our Society. Tom indicated the Society had recently adopted a new strategic plan defining what we want and hope to accomplish going forward. Building performance will remain as one of the top driving forces in the HVAC industry and has been and will continue to be one of ASHRAE's priorities for many years. Our existing standards and guidelines are regularly updated as research and new information is provided and acted upon as well as the development of new standards for the industry as new challenges and needs surface or are identified.

Given that the Champlain Valley Chapter has remained relevant is an indication that the performance of our past presidents and volunteers over the past 45 years is a testament to outstanding performance.

A Historical Backdrop of the Energy Challenge Through the Chapter's Existence

So let's take a look back over the previous 45 years as we initiate our third generation of local ASHRAE leaders of the Champlain Valley Chapter. Following is a reflection of what has been established and accomplished by the chapter and where we have been and where we are going. When CVC was chartered in March 1970, Richard M. Nixon was President of the United States, and the nation was deeply involved in the Vietnam War, the country was experiencing political tensions and stress at home through racial issues, an anti-war movement and a point of national pride, the NASA space program landed the first humans on the moon.

The one dominating and persistent theme since the inception of our chapter and the following 45 years as well as ASHRAE as a whole could be termed the “Era of Energy Consciousness” and the challenge to address this dominant issue. To the left is a timeline of energy-related events which have occurred since CVC became an ASHRAE chapter. It illustrates a story of progress, setbacks, disasters and optimism highlighting that the journey is never a straight forward experience and the great challenges nations undertake should have tempered expectations of the speed which accomplishment can be achieved.

In 1973, the Organization of the Petroleum Exporting Countries (OPEC) implemented an oil embargo in retaliation for a US decision to re-supply the Israeli military during the 1973 Arab-Israeli War to gain leverage to the post war peace negotiations. Our re-supply actions were in response to Soviet Union sending arms to Egypt and Syria. The embargo banned petroleum exports to targeted nations including the US and cut oil production. The United States post WWII economy and its prosperity had thrived on cheap energy (mainly oil) at that time oil prices were declining as world oil production was increasing. However our consumption was out pacing national production so we were becoming more reliant on foreign oil. The 1973 embargo severely strained the US economy. Due to the increased dependence on foreign supplies of oil began a rapid trajectory increase in oil prices leading to a national oil shortage. The 1973 oil embargo brought attention to America’s energy demand and vulnerability to supply disruptions. This shortage was illustrated in Photographs of the time of motorists lined up at gas stations to

Timeline Continued

Feb. 2003	Plans Announced to Build FutureGen, the World's First Zero Emissions Coal Power Plant
Nov. 2005	US House Prevents Drilling for Oil in the Arctic National Wildlife Refuge
Nov. 2007	IPCC Report Concludes Climate Change is Happening and is Mostly Human Caused
Feb. 2008	First Commercial Cellulosic Ethanol Plant Goes into Production in Wyoming
Oct. 2008	National Biofuel Action Plan Unveiled; Goal to Cut US Gasoline Consumption by 20% Over the Next 10 Years
Feb. 2009	American Recovery and Reinvestment Act of 2009 Contains Billions of Dollars for Renewable Energy and Energy Efficiency Developments
Apr. 2009	First Framework for Wind Energy Development on the US Outer Continental Shelf Announced
May 2009	US Announces \$467 Million in Recovery Act Funding for Solar Energy and Geothermal Energy Development
Oct. 2009	US Invests \$3.4 Billion to Modernize Energy Grid (to be Matched by Industry for a Total Public-Private Investment Over \$8 Billion)
Oct. 2010	BP Oil Rig Explodes & Causes Largest Oil Spill in US History (Estimates of 30 Million Gallons Released; Surpasses Exxon Valdez by 3 Times)
Mar. 2011	Earthquake Off Coast of Japan Damages Six Power Plants at Fukushima Dai-ichi: Nuclear Crisis Eventually Reaches Level 7, the Highest Level Possible
Sept. 2011	Solar Power Company Solyndra Declares Bankruptcy After Receiving \$528 Million in Federal Loan Guarantees (also \$1 Billion in Private Capital)
Feb. 2012	US Nuclear Regulatory Commission (NRC) Approves New Nuclear Power Plants for First Time Since 1978; Two Reactors to be Built in Georgia
Mar. 2012	EPA Announces First Clean Air Act Standard for Carbon Pollution from New Power Plants (New Rule Proposes all New Fossil Fuel Plants Meet Output-Based Standard of 1,000 lbs of CO2 Per Megawatt Hr.)
Apr. 2012	EPA Issues First Ever Clean Air Rules for Natural Gas Produced by Fracking
June 2013	President Obama Releases His Climate Change Action Plan Including Increased Use of Renewable Energy and Carbon Pollution Restrictions for Power Plants
Sept. 2013	EPA Issues New Proposed Rules to Cut Greenhouse Emissions from Power Plants
Feb. 2014	Ivanpah, the World's Largest Concentrated Solar Power Generation Plant, Goes Online; Mojave Desert, CA., 392MW
June 2014	EPA Proposes First Ever Rules to Reduce Carbon Emissions from Existing Power Plants (Goal to Cut CO2 Emissions by 30% by 2030, Compared to 2005)
Sept. 2014	Rockefellers and Over 800 Global Investors Announce Fossil Fuel Divestment (Investors Have Pledged to Withdraw a Total of \$50 Billion from Fossil Fuel Investments Over the Next Five Years)

ProCon.org (2013, June 13). Historical Timeline. Annotated from <http://alternativeenergy.procon.org/view.timeline.php?timelineID=000015>

buy gasoline. The average car mileage in 1970 was only 13.5 mpg and one gallon of gas at the pump was less than a quarter.

This began new US policy measures towards energy conservation and efficiency in concert with development of domestic energy sources. Early responses were focused on boosting production and voluntary measures to promote energy conservation. Faced with price hikes increasing from \$3 to \$12 per barrel practically overnight; national leaders called for measures to conserve energy by imposing gas rationing and closing gas stations on Sunday. Lasting impacts of these policy measures include price controls (regulation), national speed limits, creation of strategic petroleum reserve, Energy Policy and Conservation Act of 1975, creation of the Department of Energy (1977) and many government funded projects and research in alternative fuel development, alternative sources of power like wind, solar and nuclear in addition to energy conservation.

Historical trends converged in the 1970's can be seen as a turning point towards an ongoing transition from fossil fuels. We have made gains in some areas but have experienced no gains in other areas. Today, roughly 50% of electrical generation is still dominated by coal, oil still drives transportation and both coal and oil remain lower in price compared to alternatives. An ongoing battle in policy decision making of competing interests between public ownership of resources and the regulated commerce of these resources by private interests which were given the right to extract, process into products and services for profit. Our mix of energy resources changes over time slowly as we have to wait

for technological breakthroughs, innovation, entrepreneurial vision and consumer demand to change the marketplace. However this political clash in determining the level of private/public control over energy resources results in a political gridlock in sound decision making at a time when it is needed most.

In his book, *Collapse, How Societies Choose to Fail or Succeed*, Jared Diamond claims a society's response to its problems depends on its political, economic and social institutions and cultural values and are significant factors affecting whether that society solves (or attempts to solve) its problems. We have to ask ourselves: Are we ready to acknowledge the seriousness of the environmental problems facing us? If the answer is "yes" it will require the courage to practice long term thinking and make courageous and anticipatory decisions to address the problems before they reach crisis proportions.

An unanticipated benefit of the energy crisis and ensuing energy conservation movement was the birth of environmental awareness as US citizens and the world began to think about energy differently including energy conservation, carbon footprint and public health (pollution, smog, CO2 build-up) that are still be related and forthright in our thinking today. The energy crisis has allowed the developed countries the benefit of getting a head start addressing climate change by decreasing carbon emissions as a result of energy conservation and efficiency measures undertaken. Prior to 1973 US carbon emissions were growing at 4.5% annually, since then only at 0.4% annually, a significant reduction. It goes without saying that current emissions are still

unsustainably high and need drastic reductions to avoid the long term serious effects of climate change.

Reflecting back on the last 45 years should provide us optimism that technological solutions to global environmental problems can be a factor in addressing climate change, that government research support can yield payoffs, bipartisan action on national/global environmental problems can be achieved when directed at people's economic decision making.

Over the last 45 years, accounting for over 400 CVC sponsored presentations, workshops, seminars and building tours, topics other than energy conservation and efficiency measures included indoor air quality concerns due to tighter buildings, the phase-out of CFC based refrigerants towards more environmental friendly and natural refrigerants to address the depletion of the ozone layer as examples. Our Engineers and designers have had to become familiar with, adopt, comply with and utilize energy codes and standards which were developed for the industry by ASHRAE and others in response to the challenges of energy awareness. Many programs presented topics introducing new technologies like air and water source heat pumps, air to air heat exchangers, heat recovery equipment, condensing boilers, economizers, evolution of ATC controls from pneumatics to DDC and energy management systems. We have recently seen an emphasis on higher insulated building envelopes and high efficiency windows in response to high performance and net zero building trends. We have experienced the emergence of variable speed drives for pumps and fans, the application of systems like VAV, DOAS, radiant heating and cooling, and

VRF as common practice. The introduction and application of the next generation of renewable energy systems such as solar, wind and biomass is becoming accepted and applied within the industry. The implementation of building and HVAC and lighting systems commissioning to align design intent with ensuring operational performance and maintainability during and upon completion of construction is becoming standard practice for most of the larger commercial and institutional buildings. Recently building labeling, benchmarking of energy performance and energy utilization has become a focus of ASHRAE. Again this illustrates over the entire spectrum of monthly topics the primary focus of ASHRAE CVC has been in response to the energy challenge and accompanying environmental awareness evolving from the 1973 oil embargo.

A Non-Inclusive List of Topics That We Can Look Forward To Keep Our Attention

- Buildings account for 40% of the nation's CO2 emissions per the US Department of Energy. To reduce the building sector's impact on climate will require bringing current building practices up to the level of best practices for significant energy and cost savings in particular applying to the nations' existing building stock. Best practices should be applied to existing buildings when significant upgrades, additions and renovations are planned. Specific focus should be on space heating, ventilation, air conditioning, lighting and domestic water heating as well as building envelope and windows as opportunities arise. Bringing the existing building stock

up to best practices will be a challenging and long term process as our economic system does not account or plan for obsolescence very well but represents a significant market to address reducing CO2 emissions and impact of climate change. It has been reported that new building construction will only account for about 10% of the nation's building stock between now and 2050 showing that 90% of the nation's building stock is already in place and operating inefficiently in terms of energy use.

- An integrated and holistic design approach between engineering and architecture taking into account of building operations, green building concepts, durable, sustainable, efficient and recyclable materials and equipment manufactured locally when available. To introduce and apply alternative energy systems. This process involves all building professionals, and interested parties to share their experience and bringing their knowledge to the table in the development of a building design and to justify the multiple choices of equipment, systems and product selections. Decisions need to be sound in principle and appropriate to the application under consideration utilizing modern software tools like energy modeling and energy savings analysis programs.
- Increased application of on-site power generation using renewable energy sources interfaced with the electric grid preferably using local, sustainable and obtainable energy sources.
- Alternative urban design, land use planning and utilization (compactness and mixed use) to accomplish the following: (1) reduce vehicle miles traveled (2) reduced space conditioning thru the use of integrated design approaches and district heating and cooling systems (3) reduce municipal infrastructure requirements.
- Increased awareness on the efficient use of natural resources, waste reduction, energy supplies, energy efficient appliances Indoor air quality (IAQ), water conservation, occupant health and productivity.
- Development and usage of energy labeling and rating programs as well as building energy use metrics will continue to evolve and be refined to provide a necessary performance data collection and documentation procedure to create a usable database for benchmarking purposes (like ASHRAE BeQ).
- Continue the trend to incorporate smart self- learning ATC and the measurement of performance relative to building type/ classification, occupancy and weather conditions with the goal of minimizing energy consumption and wear and tear on equipment. Other features emerging from DDC based controllers are self- diagnostic programs, fault conditions, remote access for diagnosis and control functionality checkouts and wireless technology.
- Sustainability has been recently introduced and will continue to dominate

the conversation which requires an understanding and awareness of the availability of our natural resources such as water, air, energy, minerals, forests, fisheries etc. so as to provide for the needs of the present without compromising the ability of future generations to fulfill their needs.

- The LEED process has allowed us to explore optimum solutions in terms of cost of energy and materials, functionality, and which technologies are considered and appropriate for specific applications (building types and occupancy). Recently constructed LEED high performance and emerging net zero buildings are giving us an abundance of examples to showcase the benefits and features of sustainable design to the public while reinforcing and rewarding the creativity of the design professional.

ASHRAE as a professional society will continue to share its knowledge, contributing to the knowledge base and literature of the HVAC field, be active in supporting and conducting HVAC research, writing new and updating existing industry standards, and encouraging and supporting students to pursue engineering.

Professional development and education on timely subjects and the sharing of knowledge amongst ourselves and the monthly social comradery will remain the main objective of chapter activities. ASHRAE will continue to be the foremost technical resource and purveyor of educational information for the professional growth of its members to assist in their daily



ACHIEVEMENTS 1969 - 2015

Chartered as an ASHRAE Chapter on October 2, 1970

Champlain Valley Chapter hosted four Chapter Regional Conferences (CRC's):

- Stowe – September 20 – 21, 1973
- Burlington – August 14 – 16, 1986
- Burlington – August 10 – 12, 2000
- Burlington – August 15 – 17, 2013

Individual ASHRAE Recognitions of Note

- Joe Canavan became the first CVC Chapter member to become an ASHRAE Life Member, November 1973
- Gordon W. Root, Sr., PE awarded ASHRAE grade of Fellow at 1994 Winter Meeting in New Orleans
- Gus Mastro was elected and serves as Region 1 Director and Chair (DRC) from 1996-2000
- Region 1 Golden Gavel Award Winners
- Edward E. Pearson, PE, CVC President 1990-1991
- Michael Rose, CVC President 1997-1998
- Tom Zoller, PE, CVC President 2004-2005
- Bill Atkinson, PE, CVC President 2005-2006
- Thomas F. Dacres, Jr., CVC President 2012-2013

Accomplishments of Note

More women work in HVAC engineering and affiliated professions and three women have served as CVC Chapter President.

- Lois Root , CVC President 1986-1987
- Amy (Cota) Patenaude, PE, CVC President 2002-2003
- Heather (Condon) Smith, CVC President 2008-2009

Vermont Technical College Student Chapter formed 1995-1996

It should be noted that several VTC Student Chapter members later joined the CVC and served as Presidents. These are:

- Russ Pratt , CVC President 2001-2002
- Amy (Cota) Patenaude, PE, CVC President 2002-2003
- David Anderson, CVC President 2003-2004

VTC students have regularly participated in the annual ASHRAE Student Design Competition against other US colleges and universities. VTC has been awarded Region 1 Best Student Design several times.

CVC Newsletter "The Champ" was first published September 1988 to keep members informed of news and events. Coincidentally the newsletter won its first Region 1 Black Ink award its first year thanks to the efforts of the Roots'. The newsletter has been published electronically for the last decade and continues to be recognized and awarded Black Ink awards.

PAOE Accomplishments

Individuals throughout the years have been recognized and awarded for their PAOE accomplishments while serving as Chapter Chairs of various functions of operations.

professional activities. The Champlain Valley Chapter is committed to offer programs that are relevant, timely and educational to keep our membership engaged, informed and involved.

If the last 45 years was the era of energy consciousness and addressing the challenge through energy conservation measures; hopefully the next 40 to 50 years of continued ASHRAE leadership and involvement will not only continue a transition from fossil fuels to renewables but aspire us to transform how we design, construct and operate (maintain) our built environment especially as applied to building energy systems. If the past is any indication I believe that ASHRAE and the Champlain Valley Chapter will be enthusiastic, engaged and informed participants.

The Champlain Valley Chapter will continue to support the *“ASHRAE mission is to advance the arts and sciences of heating, ventilation, air conditioning, and refrigeration to serve humanity and promote a sustainable world.”*

The foundation of this article is a compilation of material gathered from Champlain Valley Chapter, end of year summaries and ASHRAE Society publications including the ASHRAE Journal and other sources where necessary for historical perspective and the personal observations of the author of this article.

Submitted by
Michael R. Cook
CVC Historian, 2015



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ASHRAE CHAMPLAIN VALLEY CHAPTER PAST PRESIDENTS RECOGNITION PAGE

OCT. 2015
Vol. 30 No. 2

Order Society		Name	Order Society		Name
Year Served			Year Served		
1	1969-70	William Lotz, PE	25	1993-94	Jon A. Soter, PE
2	1970-71	Robert Miller	26	1994-95	Leo Ioannou
3	1971-72	Richard Bowler Jr., PE	27	1995-96	Michael A. Gallo, PE
4	1972-73	Robert Coughlin	28	1996-97	Steve Poole
5	1973-74	Don Johnson	29	1997-98	Michael Rose
6	1974-75	Gordon W. Root, Sr., PE	30	1998-99	Leo Ioannou
7	1975-76	Jack Couture, PE	31	1999-2000	Ken Couture
8	1976-77	Giustino N. Mastro, PE	32	2000-01	Peter Tousley
9	1977-78	Neil Vallencourt, PE	33	2001-02	Russ Pratt, PE
10	1978-79	William Moore, PE	34	2002-03	Amy (Cota) Patenaude, PE
11	1979-80	Oscar Blatchly, PE	35	2003-04	David Anderson
12	1980-81	Stuart N. King	36	2004-05	Tom Zoller, PE
13	1981-82	Andrew Rudin, PE	37	2005-06	Bill Atkinson, PE
14	1982-83	Ted Meade, PE	38	2006-07	Jay Pilliod
15	1983-84	William A. Fyfe, PE	39	2007-08	Jerry Chabot, PE
16	1984-85	Edward Seraydarin	40	2008-09	Heather Condon
17	1985-86	Roger M. Kerr	41	2009-10	Peter F. Bailey
18	1986-87	Lois Root	42	2010-11	Shawn LaBelle, PE
19	1987-88	Mike Poirer	43	2011-12	Michael R. Cook
20	1988-89	Thomas Wolfstitch	44	2012-13	Thomas F. Dacres, Jr.
21	1989-90	Bernard J. Young	45	2013-14	Nathan Mascolino, PE
22	1990-91	Edward E. Pearson, PE	46	2014-15	Robert J. Favali
23	1991-92	Gordon W. Root, Jr., PE	47	2015-16	Rob Ward
24	1992-93	Richard J. Wilcox			



Chapter Past Presidents with Tom Phoenix & Joe Furman

GENERAL MEETING

Mission Statement

ASHRAE will advance the arts and sciences of heating, ventilation, air conditioning, refrigeration and related human factors to serve the evolving needs of the public and ASHRAE members.

Vision Statement

ASHRAE

- ~ Will be the global leader in the arts and sciences of heading, ventilation, air conditioning & refrigeration.
- ~ Will be the foremost, authoritative, timely and responsive source of technical and educational information, standards and guidelines.
- ~ Will be the primary provider of opportunity for professional growth, recognizing and adapting to changing demographics, and embracing diversity.

PRESIDENTIAL AWARD OF EXCELLENCE TOTALS

Presidential Award of Excellence (PAOE) is the point system ASHRAE Region and Society use to help track the Chapter's activities. The chapter gets points in the below categories for activities that we do throughout the year. The awards banner that you see at the meetings represents CVC's accomplishments over the years. Below are definitions of what some of those awards are. If you want to know more about PAOE check out the www.ashrae.org website and do a search for the PAOE newsletter.

End of Year Awards Available to the Chapter:

PAOE: Minimum in five of the six categories

Special Citation: Minimum in 5 of the 6 categories with a minimum total of 4600 points

STAR: PAR in all categories

Honor Roll: PAOE for at least 4 consecutive years

High Honor Roll: STAR for at least 4 consecutive years

Premier: PAOE every year since the chapter's inception or since 1970; minimum of 4 years; chapter's first year is excluded

Sustainability Activities Award: A Chapter Sustainability Award in the form of a certificate is available for each chapter that obtains a total of at least 200 points from the items listed under Sustainability

Activities in the Chapter Operations category of PAOE. The Chapter with the highest PAOE Sustainability point total will receive a Regional award in the form of a glass plaque and a certificate. Level 1 = less than 100 members; Level 2 = 100-249, Level 3 = 250-449, Level 4 = 500 or more.

Category	PAR	2015 - 2016
Membership Promotion	800	0
Student Activities	500	0
Technology Transfer	1050	0
Research & Promotion	1050	0
History	300	0
Grassroots Government Activities	650	0
Chapter Operations	1050	0
Chapter TOTAL	5400	0

2015-2016 BOARD OF GOVERNORS

Richard Wilcox, LEED AP T: (802) 655-8805 x 181 dwilcox@vhv.com	Shawn LaBelle T: 802-857-5011shawn. ShawnL@amivt.com
Rachael Mascolino T: 802-540-7846 rmascalino@veic.org	Robert J. Favali, LEED Green Associate T: 802- 764-2704 rfavali@dubois-king.com
Nathan Mascolino T: 802-861-6148 nathanm@vhv.com	

2015-2016 CHAPTER OFFICERS

President	Robert Ward III, LEED AP 802-861- 6194 robw@vhv.com
President-Elect	Blaine Connor 802-264-1134 blaine.conner@vtmechanical.com
Vice President	Brent Weigel phone# email
Secretary	Martha Soule (802) 655-8805 email
Treasurer	Jeremiah Trombly 802-862-6199 jtrombly@masvt.com

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Student Activities	Brent Weigel
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Resource Promotion	Tom Zoller 802- 861-6194 robw@vhv.com
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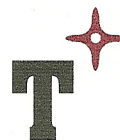
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