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

ASHRAE Champlain Valley Chapter

THE CHAMP monthly newsletter

of the Champlain Valley Chapter of ASHRAE

FEB. 2016

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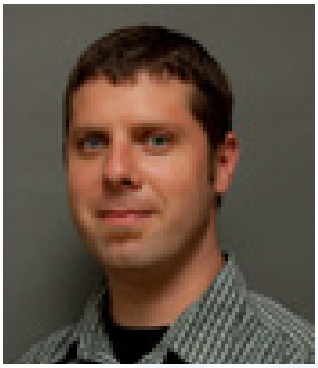
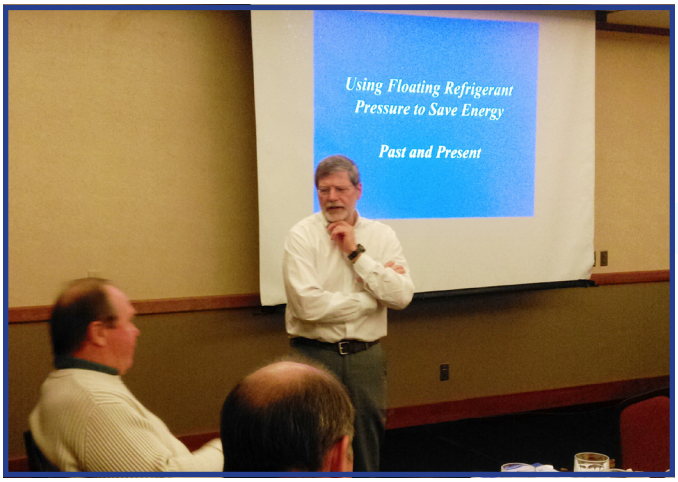
Vol.30 No.6

PRESIDENT'S MESSAGE



Our January 13th meeting featured a presentation on pumps. Bill Reed "The Pump Guy" joined us and gave a great presentation on pump laws.

Coming up on February 12th we will have a lunchtime presentation put on by our very own Ray Hickey and Peter Bailey. They are going to discuss energy saving measures being implemented by the refrigeration industry.

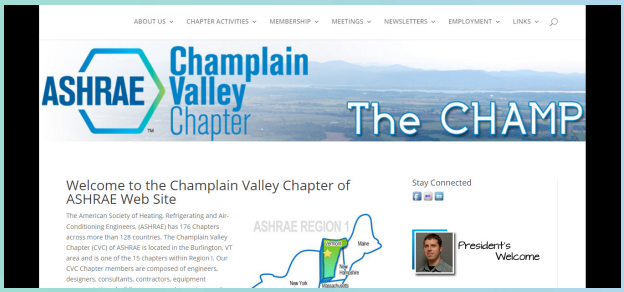


Finally, thank you for your support and participation with our local Chapter. We look forward to seeing you at the next meeting.

Rob Ward
ASHRAE CVC President

ASHRAE CVC UPCOMING EVENTS

Visit us online at
www.ashraevt.org
for a list of upcoming events



IN THIS ISSUE:

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

GRASSROOTS GOVERNMENT AFFAIRS COMMITTEE

Carbon Pollution Tax

In last month's newsletter we reported on the carbon pollution tax bills H.395/H.412. Since that time, there has been a bit of buzz in the local news media that appeared to grab everyone's attention. Their reports focused how the carbon tax would increase the cost of gasoline at the pump by $0.88/gallon. Everyone should be aware that not only would the carbon impact the cost of energy at the pump, but it would impact the cost of energy on fossil fuels consumed by building use. The bill identifies how the tax will be applied for each type of fuel (mobile and stationary uses) and how it is tied to the "Emmisions Factors for Greenhouse Gas Inventories" published by the U.S. Environmental Protection Agency.

So where will all the revenue go that is collected by the tax?? The bill, as currently introduced, indicates that 90% will be allocated to tax credits and rebates with the remaining 10% allocated between the Homes Weatherization Assistance Fund and the Vermont Energy Independence Fund. The bill identifies additional breakdowns on the allocation of the tax from these (2) major categories.

To review the full details on the bill, go to the following document location:
http://legislature.vermont.gov/assets/Documents/2016/Docs/BILLS/H-0412/H-0412%20As%20Introduced.pdf

Other Bills Introduced

Since the start of our State Legislation session there has been hundred of bills introduced on the floor. Of those bills introduced, the following may be of interest to our members:

Bill	Date Introduced	Title
S.222	1/5/2016	An act relating to creating a wood energy forester position
S.226	1/5/2016	An act relating to energy facility siting
S.230	1/5/2016	An act relating to improving the siting of energy projects
S.232	1/5/2016	An act relating to municipally owned hydroelectric plants
S.191	1/5/2016	An act relating to siting of wind generation facilities
S.204	1/5/2016	An act relating to siting renewable electric generation
S.205 1	/5/2016	An act relating to renewable energy development and protecting agricultural and forest soils
H.577	1/19/2016	An act relating to voter approval of electricity purchases by municipalities and electric cooperatives

H.589	1/20/2016	An act relating to banning industrial wind
H.607	1/21/2016	An act relating to increasing the cumulative net metering system cap
H.596	1/21/2016	An act relating to local land use regulation of electric generation facilities
H.621	1/22/2016	An act relating to the motor fuel tax and diesel tax
H.630	1/26/2016	An act relating to required reporting of air conditioner refrigerant in motor vehicles
H.633	1/26/2016	An act relating to the distributed renewable generation category of the Renewable Energy Standard
H.634	1/26/2016	An act relating to solar generation and renewable energy credits
H.660	1/27/2016	An act relating to energy facility siting
H.762	1/28/2016	An act relating to allocating siting approval of electric generation between the District Commissions and the Public Service Board
H.703	1/28/2016	An act relating to municipal solar net metering facilities
H.704	1/28/2016	An act relating to the clerk of the Public Service Board and energy-siting recommendations
H.748	1/28/2016	An act relating to funding participation by municipalities and adjoining landowners in the energy facility siting process
H.822	1/29/2016	An act relating to noise from wind turbines
H.841	1/29/2016	An act relating to reauthorizing the fuel gross receipts tax and increasing the rate on certain fuels

US Federal Legislative & Regulatory Activities

Overall it's been pretty quiet on the Federal level. The Energy Bill that we reported on last month is essentially stalled as Congress focuses on other matters.

The ASHRAE GGAC website indicates that the DOE is seeking comments on a proposed renewable, non-combustible energy accounting. For more information, refer to the website:

https://www.federalregister.gov/articles/2016/02/16/2016-03118/request-for-information-accounting-conventions-for-non-combustible-renewable-energy-use

Dick Wilcox
GGAC Chair

BOG JANUARY MEETING MINUTES

Date: 01/13/2016
Location: Holiday Inn, South Burlington VT
Called to Order: 4:11pm
Called to Order By: Rob Ward
Minutes Recorded By: Blaine Conner / Martha 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	Cx Associates	x
Jeremiah Trombly	Treasurer	Mountain Air Systems	x
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	x
Mike Cook	BOG Member History Chair	ARC Mechanical	x
Rachael Mascolino	BOG Member	VEIC	x
Shawn Labelle	BOG Member	Vermont Mechanical Inc	x
Tom Zoller	Research & Promotion Chair	Trane Inc.	x
Peter Bailey	Refrigeration Chair	DEI Controls	x

OFFICER'S REPORT

1. Secretary – Blaine Conner / Martha Soule Holden

a. Shawn L. motioned to approve minutes of last meeting; Brent W. seconded; motion passed.

2. Treasurer's Report – Jeremiah Trombly

a. Current Balance: $15,027.35

3. Chapter Programs – Blaine Conner

a. Tonight's speaker Bill Reed with Urell Inc. presenting on Grundfos Pumps.

b. Next program to be during a lunch meeting 11:30am to 1:00pm with Peter Bailey and Ray Hickey on various ways the refrigeration industry has improved design for saving

energy.

c. The Presidential Visit has been cancelled, but he may make another offer to come at a later date.

4. Resource Promotion - Tom Zoller

a. RP currently at 50% of our goal.

5. Membership – Martha Soule Holden

a. Working on contacting delinquent and past ASHRAE members and associates.

6. Website –Rachael Mascolino

a. According to Mail Chimp blasts the third mailing was not looked at, so suggested should sending only two email blasts before each meeting.

b. Cara to format the website in order to make it easier to change and add content.

c. Rachael presented info in conjunction with Rob W. on the NORTHEAST BIOMASS HEATING EXPO 2016, see General & New Business below for more detail.

7. Student Chapter – Brent Weigel

a. No change.

8. Grassroots Government – Dick Wilcox

a. Some communication on the Federal level, none on the Local level, otherwise no change.

9. History – Mike Cook

a. No change.

10. Refrigeration – Peter Bailey

a. No change.

GENERAL / NEW CHAPTER BUSINESS

1. Co-host Northeast Bio-Mass Heating Expo 2016 March 30 through April 1st at the Sheraton Conference Center at no cost to our chapter. We would provide support by publicizing in our Newsletter and chapter meetings. The consensus was in favor of supporting their coming to the area and holding this excellent expo.
2. Tom Zoller to Chair the Nominating Committee and produce a list of member names to pre-

sented at the February meeting. Blaine Conner offered to be on the committee.

3. Rob Ward asked for input for the Newsletter due 1/25.
4. Next monthly meeting to take place February 12th lunchtime meeting at the Holiday Inn due to Better Building by Design Conference first week in February.

MOTION TO ADJORN

a. Rob F. motioned to adjourn the meeting and Dick W. seconded, motion was carried. The meeting adjourned at 4:56 pm

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

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 Learning Institute

Seminars & Courses at ASHRAE's Winter Conference in Orlando, FL

2 WAYS TO REGISTER

Internet: www.ashrae.org/orlandocourses
Phone: Call 1-800-527-4723 (US and Canada) or 404-636-8400 (worldwide)

Full-Day Professional Development Seminars

$485/$395 ASHRAE Member -- Earn 6 PDHs/AIA LUs or .6 CEUs

Commercial Building Energy Audits
Saturday, January 23, 2016 – 8:00 a.m. to 3:00 p.m.

Commissioning Process in New & Existing Buildings
Saturday, January 23, 2016 – 8:00 a.m. to 3:00 p.m.

Designing HVAC Systems to Control Noise & Vibrations
Saturday, January 23, 2016 – 8:00 a.m. to 3:00 p.m.

Energy Modeling Best Practices and Applications
Tuesday, January 26, 2016 – 9:00 a.m. to 4:00 p.m.

Operations & Maintenance of High-Performance Buildings
Tuesday, January 26, 2016 – 9:00 a.m. to 4:00 p.m.

Half-Day Short Courses

$159/$119 ASHRAE Member -- Earn 3 PDHs/AIA LUs or .3 CEUs

Laboratory Design: The Basics and Beyond
Sunday, January 24, 2016 – 3:30 p.m. to 6:30 p.m.

Troubleshooting Humidity Control Problems
Sunday, January 24, 2016 – 3:30 p.m. to 6:30 p.m.

Understanding & Designing Dedicated Outdoor Air Systems
Sunday, January 24, 2016 – 3:30 p.m. to 6:30 p.m.

Variable Refrigerant Flow System Design & Applications NEW!
Sunday, January 24, 2016 – 3:30 p.m. to 6:30 p.m.

Air-to-Air Energy Recovery Applications: Best Practices
Monday, January 25, 2016 – 8:30 a.m. to 11:30 a.m.

Applications of Standard 62.1-2013
Monday, January 25, 2016 – 8:30 a.m. to 11:30 a.m.

Building Demand Response & the Coming Smart Grid
Monday, January 25, 2016 – 8:30 a.m. to 11:30 a.m.

Energy Management Best Practices
Monday, January 25, 2016 – 8:30 a.m. to 11:30 a.m.

Advoiding IAQ Problems
Monday, January 25, 2016 – 2:45 p.m. to 5:45 p.m.

Commissioning Process & ASHRAE Standard 202
Monday, January 25, 2016 – 2:45 p.m. to 5:45 p.m.

Complying with Standard 90.1-2013: HVAC/Mechanical
Monday, January 25, 2016 – 2:45 p.m. to 5:45 p.m.

Evaluation and Control of Legionella in Building Water Systems NEW!
Monday, January 25, 2016 – 2:45 p.m. to 5:45 p.m.

Exceeding Standard 90.1-2013 to Meet LEED Requirements
Monday, January 26, 2016 – 9:00 a.m. to 12:00 p.m.

IT Equipment Design Evolution & Data Center Operation Optimization
Monday, January 26, 2016 – 9:00 a.m. to 12:00 p.m.

Designing High-Performance Healthcare HVAC
Monday, January 26, 2016 – 1:00 p.m. to 4:00 p.m.

ASHRAE HVAC Design Training

2 Courses, 5 Days of Intense Instruction

Atlanta • Halifax • Hong Kong • Houston

Kuala Lumpur • Miami • Minneapolis • Vancouver

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 COLLEGE OF FELLOWS: GRADUATE STUDENT TRAVEL AWARD

Did you know that the College of Fellows awards Graduate students up to $2,000 to attend two ASHRAE Conferences ($1,000/conference)? These funds go directly to the selected candidates to cover travel, lodging, and meals!

In addition to the defrayed costs, these award recipients are mentored prior to and during the meeting, having one on one help in determining which sessions and Technical Committee meetings they will attend and introductions to various ASHRAE Members who also specialize in their chosen area of research. This award allows future HVAC researchers the ability to become involved with ASHRAE TCs and participate in preparing and potentially bidding on ASHRAE projects

The requirements are:

- be an ASHRAE Student Member,
- be a Ph.D. candidate within 24 months of graduation
- have a thesis topic within ASHRAE's scope of research.

The 2016-17 Conferences covered by this award are the 2016 Annual ASHRAE Conference – St. Louis (June 25 – 29) and the 2017 Winter ASHRAE Conference – Las Vegas (January 28 – February 1).

The award application and details may be downloaded from the ASHRAE College of Fellows website (http://www.ashraecof.org/). Submittal may be by email (submit to COF@ASHRAE.org or MHezlep@ashrae.org) or mail to Megan Hezlep, COF Staff Liaison, 1791 Tullie Circle, Atlanta, GA, 30329. **All applications must be received by March 11, 2016** and award recipients will be notified by the beginning of April.

ASHRAE ANNOUNCES CALL FOR PAPERS FOR 2017 WINTER CONFERENCE, 1/28–2/1, LAS VEGAS

Contact: Jodi Scott
Public Relations
678-539-1140
jscott@ashrae.org

ATLANTA – ASHRAE has announced a call for papers for its 2017 Winter Conference in Las Vegas, Nev., Jan. 28-Feb. 1, 2017.

The conference seeks papers that address the new conference tracks and other prevailing issues in the industry.

"Today's HVAC&R profession is facing challenges unlike those from the past," Leon Shapiro, Conference chair, said. "The rapidity with which technology advances the modeling, design, equipment, systems, construction and operation of the buildings we deal with, along with the speed with

which climate change is significantly altering the conditions around which we design, are creating problems for today's ASHRAE members. The conference seeks to address those problems."

The conference seeks papers on new tracks that address the changes in technology:

- The relationship between water usage and energy systems becomes more prominent as the demands of development and over use as well as climate change continue to drain resources. The Water-Energy Nexus track highlights research in this area. It also explores technologies and designs intended to reduce the gap between energy and water efficiency.

- The Advances in Mission Critical Design and Operation track highlights developments in mission critical facilities and the challenges of meeting increasing load demands while minimizing the impact on energy and water usage.

- Climate change will have an increasing effect on the design and operation of the built environment. The Climate Change and Its Effects on HVAC&R Design and Technologies track focuses on methods to increase building resiliency and facilitate climate adaptation.

- Energy Efficient Industrial Buildings and Life Safety spotlights energy efficiency in industrial buildings and how it can be achieved without compromising life safety considerations.

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In addition, the conference seeks papers on Fundamentals and Applications, HVAC&R Systems and Equipment, Commercial and Industrial IAQ and Building Operation and Performance: Meeting the Modeling Expectations.

"The industry's goal is to design, build and operate buildings today that are efficient and sustainable, and that are intended to remain efficient and sustainable into the future," Shapiro said. "How do you accomplish that if tomorrow promises to be notably different than today? No sensible design decisions can be made without taking into account not only the world as it has been or is, but also the world as it will be. The 2017 ASHRAE Winter Conference attempts to bridge this design challenge through the tracks and papers and programs accepted for the program."

ASHRAE offers two types of paper submissions:

Conference Papers: Abstracts due March 14, 2016. Upon acceptance, papers will be due July 6, 2016. These "final" papers undergo a single-blind review, are submitted

as a PDF and have an eight single-spaced page maximum length.

Full Technical Papers, which are due April 18, 2016. Papers submitted for review must be both technically accurate and clearly written. These papers undergo a rigorous double-blind review and can be a maximum of 30 double-spaced pages.

To submit a Conference paper abstract or a technical paper and for more information about the conference, visit www.ashrae.org/lasvegas.

NEW COURSE ON VARIABLE REFRIGERANT FLOW OFFERED IN ASHRAE SPRING ONLINE COURSESS

Contact: Jodi Scott
Public Relations
678-539-1140
jscott@ashrae.org

ATLANTA – A new course, "Variable Refrigerant Flow System Design & Application," is one of 11 offerings in ASHRAE's Spring Online Course series.

Variable refrigerant flow (VRF) systems are now being applied in a range of building types across North America. Benefits of VRF include zoning applications, variable capacity, distributed control, low operating sound, simultaneous heating and cooling, effective energy usage, quick installation, low ambient operation and low maintenance costs.

The course, which takes place May 16, provides non-manufacturer specific concepts of how to apply VRF systems to buildings. It will supplement the fundamental technology introduction presented in the 2012 ASHRAE Handbook, HVAC Systems and Equipment, offering the consulting engineers who already have a basic knowledge of VRF technology.

Eleven 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 Process & Standard 202, March 30

Energy Efficiency

- Energy Efficiency Combined Heat & Power: Creating Efficiency through Design & Operations, March 28
- IT Equipment Design Evolution & Data Center Operation Optimization, April 6

HVAC Applications

- Air-to-Air Energy Recovery Applications: Best Practices. April 27
- Laboratory Design: The Basics and Beyond, April 18
- Operation & Maintenance of High-Performance Buildings, May 17 and 18
- Variable Refrigerant Flow System Design & Applications, May 16

Standards & Guidelines

- ASHRAE Standard 188-2015 – Successfully Managing the Risk of Legionellosis, April 25
- Complying with Standard 90.1-2013: HVAC/Mechanical, April 13
- Exceeding Standard 90.1-2013 to Meet LEED®, April 11 and 20
- Fundamental Requirements of Standard 62.1-2013, May 2

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 54,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today. More information can be found at www.ashrae.org/news.

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

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.

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 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 O.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

ASHRAE Champlain Valley Chapter

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

... advertising/sponsors continued on page 32

ASHRAE CHAMPLAIN VALLEY CHAPTER PAST PRESIDENTS RECOGNITION PAGE

Order	Society Year Served	Name	Order	Society Year Served	Name
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

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
Chapter Operations	1000	510
Technology Transfer	1050	150
Grassroots Government Advocacy	650	0
Historical Criteria	300	0
Membership Promotion	800	75
RP	1050	0
Student Activities	500	510
Chapter TOTAL	**5350**	**1605**

GENERAL MEETING

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 rmascolino@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
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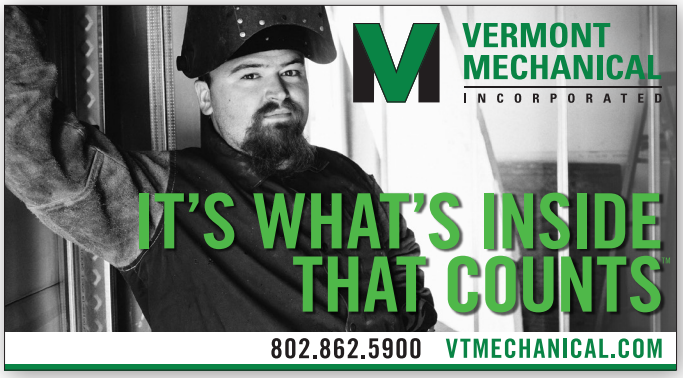
COMMITTEE CHAIRPERSONS	
Student Activities	Brent Weigel
Membership	Martha Soule (802) 655-8805 | email
Resource Promotion	Tom Zoller 802- 861-6194 | robw@vhv.com
Technology Transfer	Blaine Connor 802-264-1134 | blaine.conner@vtmechanical.com
Refrigeration	Peter Bailey 802-434-2278 | pfbailey@deicontrols.com
Historian	Mike Cook 802-291-0911 | mcook@arcmech.com
Electronic Communications	Rachael Mascolino 802-540-7846 | rmascolino@veic.org
Grassroots Gov't Activities	Richard Wilcox, LEED AP T: (802) 655-8805 x 181 | dwilcox@vhv.com
Honors and Awards	Thomas Dacres, Jr., LEED AP BD+C T: (802) 861-6152 | tomd@vhv.com

Subscription to the newsletter and membership questions should be directed to Joshua Chiappone (518) 817-8669 or joshua.j.chiappone@jci.com



VHV Vermont Heating & Ventilating
A Mechanical Company

Thomas F. Dacres, Jr.
Design Engineer
tomd@vhv.com

16 Tigan St., Suite A, Winooski, VT 05404
802.655.8805 phone
ext. 152
802.655.8809 fax

Tom Zoller PE
Account Manager

TRANE

175 Leroy Road
Williston VT 05495
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