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

the Champ

Monthly Newsletter of the
CHAMPLAIN VALLEY CHAPTER OF ASHRAE
Serving Vermont Since 1969

PRESIDENT'S MESSAGE

I hope all of you are doing well as we experience the transformation from the cold shroud of winter to nature's annual renewal and warmth of spring. It's hard to believe that the end of our chapter year is only a couple of months and with that the transition to a new leader in Tom Dacres and the planning for next year's programming approaches. If you have any ideas or thoughts on programs or events for next year I encourage you to share your thoughts with us. I would like to thank the VTC student chapter of ASHRAE and Professor Reilly for hosting the ASHRAE webinar – Dedicated Outside Air Systems - A Path to Balancing Energy and IEQ on April 19 and reporting on their trip to the ASHRAE Winter Conference and AHR expo. Finally the student presentation on their student submission for this year's ASHRAE Student Design Competition was informative and highlighted the capabilities of the senior students at Vermont Technical College.

Our May program will feature a couple of facility tours and an opportunity to socialize with your fellow CVC members. As this is a membership promotion night, the BOG and I thank and recognize the contributions of the Champlain Valley Chapter membership for their continued support of chapter events and activities throughout the year.

Mark your calendars for our final event of the year with an exciting end of the year BBQ and Green Expo on June 9 at the Champlain Valley Fairgrounds. Equipment vendors please see our

Join Us For Our Next Meeting

BOG Meeting
May 30 - 4:00 pm @ Efficiency Vermont

May 9, 2012 Chapter Meeting
Facility Tours in Shelburne, VT

4:45 PM - Shelburne Winery
Full tour, wine tasting, and a souvenir wineglass. Tour will include their HVAC system and information about the wine making process.

6:00 PM – Fiddlehead Brewing Company
Private tour of Fiddlehead Brewery, including beer sampling.

Dinner - After Tours
Wood fired pizza at Folino's

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chapter reports

2011-2012 ASHRAE CVC MEETING CALENDAR

September 7

Location: Hampton Inn

4:00 pm:
BOG Meeting @ VHV Offices

5:30pm:
Tour FAHC Boiler Plant

7:00pm:
Dinner @ Hampton Inn

8:00pm:
Presentation
David Golen FAHC Boiler Room Plant Upgrades

October 5

Location: Hampton Inn

4:00pm:
BOG Meeting @ Hampton Inn

6:00pm:
Tech Session
BMS and Lighting Controls
Randy Mead CTI, C.E.M., CMVP, LEED AP

7:00pm:
Dinner @ Hampton Inn

8:00pm:
Presentation
Utilizing a BMS in the Building Commissioning Process / John R. Butterfield, P.E. Hallam Associates

November 2

Location: Hampton Inn

4:00pm:
BOG Meeting @ Hampton Inn

Membership Promotion Night and Joint Meeting with RSES

6:00pm:
Tech Session
Overview on all Refrigerants
Steve Friedman, PE, HFPD, LEED AP BD+C - Region 1 Refrigeration Chair

7:00pm:
Dinner @ Hampton Inn

8:00pm:
Presentation
Milton Garland Award Winning Project Overview Featuring a CO2 Refrigeration System / Mark Cambria, P.E. , LEED AP BD+C, CCP

December 7

Location: Hampton Inn

4:00pm:
BOG Meeting @ Hampton Inn (Joint Meeting with VGBN)

5:30 - 6:30pm:
Social Mixer

6:30pm:
Presentation
Emerging Energy Modeling Tools
Joshua W. Talbert, P.E., LEED AP BD+C
Christoper K. Wilkins, P.E. Hallam-ICS, Director of Engineering

January 4

Location: Hampton Inn

4:00pm:
BOG Meeting @ Hampton Inn (Joint Meeting with AIA on non-HVAC topic)

6:00pm:
Contract Law & T&M vs Flat Rate Pricing and Billing Strategies

7:00pm:
Dinner @ Hampton Inn

8:00pm:
Section 179D Federal Energy Tax Deduction Seminar

January 16 & 17

Full day Seminar with Efficiency Vt/VGBN/ BED

Energy Modeling in eQuest

RP Fundraiser

February 1

Location: Hampton Inn

4:00pm:
BOG Meeting @ Hampton Inn

6:00pm:
VT Commercial Energy Code and Compliance Plan Seminar - By Tim Guiterman - Navigant and Barry Murphy -Vermont Department of Public Service

7:00pm:
Dinner @ Hampton Inn

8:00pm:
Life Group LEED-EB silver accreditation Project - By Tim Shea

March 7

Location: Hampton Inn

4:00pm:
BOG Meeting

6:00pm:
Tech Session
DL Daniel Nall 50% Small and Medium Office AEDG

7:00pm:
Dinner @ Hampton Inn

8:00pm:
Presentation DL Daniel Nall ASHRAE Building Energy Quotient (bEQ)

April 19

Location: VTC

TBD:
BOG Meeting **APRIL 11** @ Efficiency Vermont

VTC ASHRAE Club as Host

Program
1:00pm - 4:00pm
ASHRAE Webcast "DOAS – A Path to Balancing Energy and IEQ.
4:30pm
Student Report on Chicago ASHRAE show
5:00pm - Dinner
5:45pm
Presentation on 2012 Student Design Competition Submission

May 9

Location: Shelburne Winery & Fiddlehead Brewing Company

May 30
BOG Meeting – 4:00 PM at Efficiency Vermont

Membership Promotion Night

4:45 PM
Shelburne Winery Facility Tour

6:00 PM
Fiddlehead Brewing Company Facility Tour

7:00 PM
Dinner – Folino's

June 6

Location: Champlain Valley Fairgrounds

TBD:
BOG Meeting

Green Technology Expo/product Demonstration

Annual year end BBQ

Watch for future announcements

PRESIDENT'S MESSAGE

(continued from page 1)

flyer in this newsletter for more information on the June 6, 2012 Green Expo if you wish to participate. For more details and to sign up please contact Rob Ward at 802-655-8805 or robw@vhv.com on this first time event for ASHRAE CVC.
I would like to encourage members to use the electronic RSVP available on the chapter website to sign up for our monthly meetings. Remember signing up is necessary to allow us to coordinate head counts with the restaurant to make sure there is enough food for everyone.

Michael R. Cook

TREASURE'S REPORT

As of today, April 27, 2012 all bills are paid and our TD Bank regular checking account balance is $10,525 - down from last month's "inflated" balance (due to my absence and a few bills not being paid until my return). Our TD Bank CRC-2013 checking account balance is $316. A credit for money spent on a portable PA that didn't work as promised, is pending however. The amount, $523.25, has no been credited - yet. Peter Bailey will confirm this as it develops. We are also tracking it on-line with TD Bank.

Peter Bailey, the candidate winning election as our new treasurer for the 2012-2013 fiscal year, has requested a meeting to go over our Quick Books accounting system. Within the next month or so, that meeting will take place. Pete, having already accepted the separate duties of being the CRC-2013 events financial officer will be serving in the dual capacity of normal treasurer, and the CRC-2013 special event (with separate checking account) fiduciary responsibilities too.

Ken Secor
Treasurer

TECHNOLOGY TRANSFER

ASHRAE Champlain Valley Chapter

WOULD LIKE TO WELCOME YOU TO:

Membership Promotion Night

Wednesday, May 9th

4:45 PM – Meet at the Shelburne Vineyard, 6305 Shelburne Rd. We will receive a full tour, wine tasting, and a souvenir wineglass. The tour will include their HVAC system and information about the wine making process.

FIDDLEHEAD BREWING COMPANY SHELBURNE, VERMONT

6:00 PM- Directly across the road we will have a private tour of Fiddlehead Brewery, including beer sampling. After the tour we will enjoy wood fired pizza at Folino's (in the same building as the brewery).

Membership promotion giveaway!

$30 CVC Members

$35 Non-Members

(Price includes $10/person vineyard tour and pizza dinner)

Sign up On-Line @ http://www.ashraevt.org/meeting-rsvp/

MEMBERSHIP PROMOTION

Hello Champlain Valley Chapter and thanks to all who joined us for the meeting on the 19th at VTC. The ASHRAE webinar was good, and the student chapter did a fine job of presenting on both their trip to the winter meeting, and also on the ASHRAE design project. VTC also provided a great meal. If you did attend the webinar and you have not yet logged into ASHRAE.org to print your certificate (for your continuing ed) then you can do so at this address. http://webcast.ashrae.biz/2012/evaluation/index.html

The membership committee would like to recognize and welcome a couple of new members. Thank you Ravi Parikh, and John Penwarden for joining and supporting our chapter.

I encourage everyone to make the effort to join us for the May meeting. We are in for a special treat. There was some buzz about a magic hat brewery tour for the May meeting but there was complication with that. But fear not we are in for an even better meeting. What could possibly be better than a brewery tour? How about a winery tour… followed by a brewery tour! What could make that better… How about if the brewery was in the same building as a pizza restaurant! If that isn't exciting enough for you, May is going to be our spring membership promotion night, and there are going to be some give aways!

Hope to see you there,
Nathan Mascolino

LEADERSHIP QUOTE of the MONTH

"You gain strength, courage and confidence by every experience in which you really stop to look fear in the face. You must do the thing you think you cannot do"

~ Eleanor Roosevelt

STUDENT ACTIVITIES

VTC Chapter
Committee Chair: Shawn LaBelle
Student Chapter Advisor: Chris Reilly
Student Chapter President: Erin Fajans

I want to take the time to congratulate Erin Fajans who is our 2012 VTC ASHRAE Award & Past Presidents Memorial Scholarship recipient. Erin is a senior at VTC and currently the President of the Student ASHRAE Chapter at VTC. These awards were presented during the Chapter Meeting at VTC on April 19th. Erin will be receiving a check from ASHRAE CVC in the amount of $3,000. Again congratulations Erin!

The scholarship money is funded by all the proceeds from our newsletter advertisement.. So a big thanks goes out to all who paid for a advertisement in the newsletter this year.

Thanks!
Shawn LaBelle

RESEARCH PROMOTION

Thanks to all the donors that have chipped in over the past month! We are nearing our initial fundraising goal and now eyeing our High Five goal which achieved by raising the largest amount for the chapter in the past five years. With a promising June event coming up I am hopeful that we can make a run at it. Thanks again to all of those who have chipped in with your time and donations.

If you are ever wondering what your money is going towards here are just a few examples.

RECENTLY COMPLETED RESEARCH
The projects listed below were recently completed by ASHRAE this Society year. The final reports for these projects are available for purchase and download from the ASHRAE online bookstore or for free download to ASHRAE members logged into www.ashrae.org.

1235-RP
THE NATURE, SIGNIFICANCE AND CONTROL

OF SOLAR DRIVEN VAPOR DIFFUSION IN WALL SYSTEMS

Completed July 2011
Concordia University
Principal Investigator, Dominique Derome
TC 4.4, Building Materials & Building Envelope Performance

The objective of this study is to develop a better understanding of the nature and significance of solar-driven inward vapor diffusion, in order to develop appropriate design guidelines to predict and manage this phenomenon as a function of climate. The knowledge generated from this research project will be directly transferred to the ASHRAE HOF.

1320-RP
THE IMPACT OF HOUSEHOLD REFRIGERATOR STORAGE CONDITIONS ON SHELF-LIFE OF FRUITS AND VEGETABLES

Completed August 2011
Iowa State University
Principal Investigator, Michael Pate
TC 8.9, Residential Refrigerators and Food Freezers

The objective of this research is to quantify the effects of low storage humidity, high fluctuations in storage temperature, and moisture condensation on the shelf life of one type of vegetable (e.g. lettuce) and one type of fruit (e.g. strawberries). Lettuce and strawberries are particularly sensitive to these test parameters. The resulting data and analysis, when published in the ASHRAE Handbook, will give the design engineer a useful benchmark of the "worst case scenario" around which he/she can engineer refrigeration and cabinet insulation systems. Additionally, the conclusions drawn from lettuce and strawberries can be easily applied to all leafy vegetables and all berries, respectively. Since most other types of fruits and vegetables have thick protective skins and other food items in a refrigerator are typically in packages, expanding this research to include other foods would increase the research cost and yield information without commensurate incremental value over the proposed research on lettuce and strawberries.

1332-RP
REVISIONS TO THE ASHRAE THERMAL COMFORT TOOL TO MAINTAIN CONSISTENCY WITH STANDARD 55-2004

Completed July 2011
Charlie Huizenga
Principal Investigator, Charlie Huizenga
TC 2.1, Physiology and Human Environment

In 1997, ASHRAE published the ASHRAE Thermal Comfort Tool (Fountain and Huizenga, 1997) to provide a simplified, consistent method for evaluating thermal comfort under a range of thermal conditions. The software is consistent with ASHRAE Standard 55-1992 and indicates whether a set of environmental conditions are in compliance with that standard. ASHRAE Standard 55-2004, which incorporates several important changes from Standard 55-1992 (Olesen and Brager, 2004), prompted the initial need for this project. The purpose of this modest project is to make several important changes to the existing ASHRAE software so that it is consistent with the latest version of the standard.

1333-RP
HVAC DUCT EFFICIENCY MEASUREMENTS

Completed July 2011
Texas A&M University - Engineering Experiment Station
Principal Investigator, Charles Culp
TC 5.2, Duct Design

The objective of this project is to provide ASHRAE with additional pressure drop measurements of flex duct and duct fittings ranging in size from 6" to 16" for use in ASHRAE's Duct Fitting Database. Testing will follow ASHRAE Std 120. Also, an as-built test protocol will be defined and tests run under this protocol. The experimental set up was funded by the AIR Distribution Institute and can be used directly for the ASHRAE project. This data will be used for the Fundamentals Handbook and to extend ASHRAE's Duct Fitting Data Base (printed and electronic). Computational Fluid Dynamics, using Fluent, calculations and graphics are part of the ADI project and will be made available to ASHRAE.

1365-RP
THERMAL PERFORMANCE OF BUILDING ENVELOPE DETAILS FOR MID- AND HIGH-RISE BUILDINGS

Completed July 2011
Morrison Hershfield Ltd.
Principal Investigator, Mark Lawton
TC 4.4, Building Materials and Building Envelope Performance

The objective of this project is to develop a design procedure to determine the thermal performance of building envelope details for mid- and high-rise buildings that are covered by ASHRAE/IES Standard 90.1, and to use the procedure to produce a catalogue of design thermal performance data for 40 common architectural details.

This project will have an impact on most, if not all, ASHRAE members, especially those who design for extreme hot or cold climates. The results will provide a tool for better design of building envelope thermal performance, which will contribute to improved HVAC design and moisture control, with corresponding reduced risk of thermal comfort and mold problems. The results could be incorporated into the Fundamentals Handbook, the HVAC Applications Handbook, and into ASHRAE/IES 90.1. Inclusion of this new information would increase the functionality of the Handbook and its relevance for all designers.

1387-RP
THERMAL ENERGY STORAGE DESIGN FOR EMERGENCY COOLING

Completed July 2011
Kansas State University
Principal Investigator, Donald Fenton
TC 6.9, Thermal Storage

In a 24/7 economy, we have become acutely aware of our dependence on cooling systems as much more than a convenience, with the economic implications and, in many cases, issues of life and safety. Whether for preservation of food and medical supplies, or continued operation of data processing centers, health facilities, or critically important emergency response centers, the availability of reliable cooling is a necessity. Cooling system compressors are often essential to the continuous operation of facilities with mission critical requirements. These cooling system compressors can easily represent the largest single load on a disabled or overstressed power supply grid.

Thermal energy storage (TES) systems offer unique advantages in meeting the challenges of emergency cooling applications. Minimal power needs are, of course, the most obvious, but high discharge rates and wide temperature and flow envelopes often add to versatility and flexibility of cooling solutions using TES. Thermal storage systems can eliminate the need for compressor operation during an emergency event, thus improving reliability, reducing cost and alleviating a major burden on a power supply or cooling system infrastructure that is recovering and unstable. In comparison, battery storage is about four times more expensive per useful BTU stored, in addition to pollution concerns about battery components.

This project hence would provide guidelines not just for incorporating TES, but also for other technologies through better understanding of load requirements and management. In turn, it is expected that the design requirements, so obtained would provide guidance to manufacturers and practitioners of TES systems to more optimally design and implement TES systems, not just for traditional benefits like electric bill savings, but also for providing backup cooling.

1388-RP
REEVALUATION OF HIGH-ALTITUDE EFFECTS ON OPERATION OF GAS-FIRED BOILERS AND WATER HEATERS

Completed July 2011
Gas Consultants
Principal Investigator, Carl Suchovsky
TC 6.10, Fuels and Combustion

The experience of knowledgeable gas-fired combustion appliance engineers is that different appliance types (i.e., water heaters versus furnaces versus boilers, natural-draft versus fan assisted combustion, direct-vent versus nondirect- vent, etc.) react differently to the effects of high altitude. Therefore, multiple appliance types are required to be tested and analyzed. Furnaces were previously tested on ASHRAE Research Project RP1182 because they are the highest sales volume gas appliances with the largest gas inputs and because they include a variety of the needed combustion system types. The results of that work were strongly indicative that a much lower derate factor is appropriate for furnaces and that a follow-on project be initiated to analyze two other appliance types, boilers and water heaters.

1484-RP
ENERGY AND PERFORMANCE OF SECONDARY COOLANT LOW-TEMPERATURE REFRIGERATION SYSTEMS

April 2008 - January 2011 (P)
Purdue University
Principal Investigator, Eckhard Groll
TC 3.1, Refrigerants and Secondary Coolants
AHRTI $36k co-funder

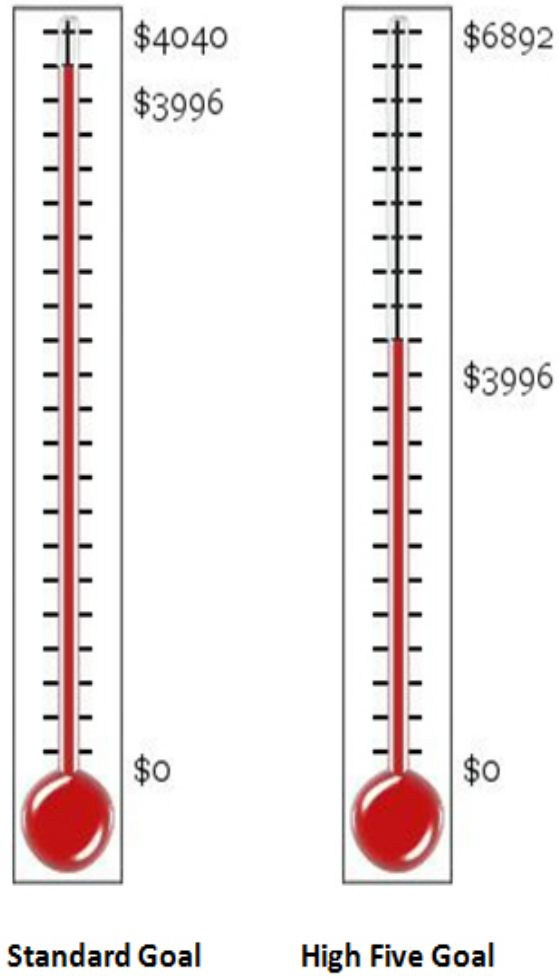
The supermarket industry represents a significant part of U.S. commercial buildings, and the associated refrigeration demands represent about half of the electricity used by a given store. A majority of supermarkets use a centralized direct expansion refrigeration system (DXS) using compressor racks in a mechanical room and refrigerant supplied through piping to coils in the refrigerators. After decades of development and experience with design, installation, and maintenance, DXS systems are used almost exclusively. Current DXS energy efficiency values of COP range from: 2.6 to 2.3 W/W for medium temperature; 1.5 to 1.2 W/W for frozen food; and 1.2 to 1.0 W/W for ice cream.

However, a number of problems are associated with DXS. A significant drawback to centralized DXS is the large refrigerant charge required and an inherent high leak rate. Depending on the size of the system, the refrigerant charge can range from 900 to 1800 kg (approx. 2000 to 4000 lbs.) Leak rates vary from 20 to 40 percent of the total refrigerant charge per year.

Disadvantages of DXS brought about the revival and reconsideration of indirect refrigeration systems, Secondary-Coolant Systems (SCS). SCS allows the supermarket refrigeration system user to gain numerous benefits compared to DXS. The refrigerant charge in the centralized SCS could be reduced by 60 to 80 percent and because the refrigerant is contained in a factory-manufactured leak-tested chiller, leak rates could be decreased to 5 percent or less of the charge per year. Also, chillers are located in a mechanical room and are easily accessible for inspection, maintenance and repair, potentially leading to lower leak rates. The leak-prone distribution system and air coils are filled with a secondary coolant (SC) instead of refrigerant. The cost for the initial refrigerant charge has been reduced although this benefit may be partially or completely offset by the current high cost of the newly developed single-phase secondary coolants. However, the operational costs related to the supplemental refrigerant recharge due to leaks are lower.

The objective of this project is to perform a systematic investigation of the SCS energy efficiency and enhancement potential of the most promising SCS approaches in order to establish design features that will provide comparable or better energy efficiency than DXS. This objective is to be completed in two phases, with Phase I being the only topic of this project. Phase II is anticipated to follow upon completion of Phase I, and would be competitively bid.

Thank you,
Rob Ward
RP Chair



2011-12 Progress !!

BOG MEETING MINUTES

April 11, 2012 BOG Meeting Minutes

Date: 04/11/2012
Location: Offices of Efficiency Vermont, Burlington VT
Time Called to Order: 4:32 pm
Called to Order By: Mike Cook
Minutes Recorded By: Robert J. Favali, Secretary

ATTENDANTS

Mike Cook	ARC Mechanical
Tom Dacres	VHV
Nathan Mascolino	VHV
Dick Wilcox	VHV
Rob Ward	VHV
Shawn Labelle	Vermont Mechanical Inc
Rachael Mascolino	Efficiency Vermont
Peter Bailey	Dodge Engineering Inc
Joshua Chiappone	Johnson Controls Inc
Robert J. Favali	DuBois & King, Inc

LAST MEETING MINUTES

A motion was made by Dick Wilcox to approve March 2012 Meeting Minutes. It was seconded by Pete Bailey and the motion was carried.

OFFICER REPORTS

A.) President: Michael R. Cook

Mike noted that the nominations for Officers and BOG members for the 2012-2013 term are closed. He also stated that no additional names were submitted. The nominations for the 2012-2013 Term will be noted in the May newsletter and a vote will take place at the April meeting. The names are as follows:

1) President: Tom Dacres
2) President-Elect: Nathan Mascolino
3) Vice President: Robert J. Favali
4) Treasurer: Peter Bailey
5) Secretary: Robert Ward
6) BOG Members: Joshua Chiappone, Dick Wilcox, Shawn LaBelle, Mike Cook, and Rachael Mascolino.
7) Chair Positions:
   1. Peter Bailey - Refrigeration
   2. Robert Ward - Research Promotion
   3. Joshua Chiappone – Membership Promotion
   4. Rachael Mascolino – Electronic Communications

A motion was made by Pete Bailey: "In the event that the attendance at April's meeting lacks a quorum of members sufficient for voting for officers and BOG members, an email ballot will be submitted to the current list of Chapter members in good standing in order to vote on the list of offices and BOG members." It was seconded by Nathan Mascolino and the motion carried.

Mike then noted that Joshua Chiappone will attend centralized training in San Antonio at the April ASHRAE meeting. A motion was made by Pete Bailey: "Authorize the Treasurer to cover the cost of Joshua's food and hotel expenses for this training for an amount not to exceed $500.00." It was seconded by Rob Favali and the motion carried.

Mike led a general discussion and reviewed the following items:

1. All reports and minutes need to be into Mike Cook and Cara Gorman by April 26, 2012.
2. Mike reminded that we need to continue to update of our PAOE (Presidential Award of Excellence) points before June 1st.
3. He discussed the list of attendees for the CRC-2013 and noted that it is still in development.
4. Pete Bailey noted that the portable speaker system that was authorize for purchase last month was received; tested; and returned due to defects. The money will be refunded to the General Fund.

No action on these items; for information only.

B.) President Elect- Tom Dacres – CTTC Chair

Tom gave an update on the status of upcoming meetings. The April meeting will be at VTC; the May meeting (Membership Meeting) will be at the Magic Hat Brewery; and the June "Tailgate" event will be at the Champlain Valley Expo.

No action on these items; for information only

C.) Vice President – Nathan Mascolino - Membership Chair

Nathan noted that the net Membership night will be May or June (TBD). No action on these items; for information only

D.) Treasurer – Ken Secor

Noting new to report

E.) Chapter Secretary – Rob Favali

Nothing new to report

F.) History – Gretchen Langfeldt

Nothing new to report

G.) Refrigeration – Peter Bailey

Pete reviewed the results of the Hill-Phoenix presentation on March 21, 2012. He noted that the Chapter had a net profit of $1,694.24 from the event. This included the donation of books and training by Hill-Phoenix valued at $900.00.

A motion was made by Pete Bailey to authorize the Treasurer to allocate $900.00 of the net profit from the event to Research Promotion with recognition given to Hill-Phoenix and the balance amount of $794.24 to go into the Chapter's General Fund. It was seconded by Rachael Mascolino and the motion was carried.

Tom Dacres then made the following motion to authorize the Treasurer to donate $200.00 from the General Fund to the Lynn G. Bellenger Endowment Fund. It was seconded by Nathan Mascolino and the motion was carried.

H.) Student Activities – Shawn LaBelle

Shawn noted that both the VTC-ASHRAE Award Scholarship and the Past President's Memorial Scholarship (both totaling $3,000.00) was awarded to Erin Fajans a senior at VTC. There was no action required for this item as it was for information only.

I.)Research Promotion – Rob Ward

Rob updated the status if RP and noted that we are at 98% of our Fund goal. He also stated that we are at 53% of the "High Five" goal. He stated that June 29th is the last day to report.

OLD BUSINESS:

None

NEW BUSINESS:

Dick Wilcox made a motion for the Chapter to provide plaques to Ken Secor and Hill-Phoenix for their past support of the Chapter. It was seconded by Nathan Mascolino and the motion was carried.

Due to the May meeting being at the Champlain Fair Grounds, the next BOG Meeting will be at the offices of Efficiency Vermont on May 30, 2012 at 4:00PM

MEETING ADJOURNED

A motion was made by Nathan Mascolino to adjourn the meeting. It was seconded by Dick Wilcox and the motion was carried. The meeting adjourned @ 6:17 PM.

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

GENERAL MEETING MINUTES

April 19, 2012

Date: 04/19/2012
Location: Vermont Technical College, Randolph VT
Minutes Recorded By: Michael R. Cook, President

ATTENDANTS (31)

Ray Hickey	Advanced Comfort Systems
Mike Cook	ARC Mechanical
Brice Kosnik	Basix Automatiom Integrators
Justin Webb	Control Technologies
Charles Veronneau	Control Technologies
Pete Bailey	Dodge Engineering
Rachael Mascolino	Efficiency Vermont
James Ashley	Green Mountain Geothermal
Steve Dumas	Liebert Engineering
Brian Reilly	Pearson & Associates
Erin Fajans	Student
Stephen Piro	Student
Victoria Cousino	Student
Brian Smith	Student
Kristen Gulrajani	Student
Sam Rosen	Student
Tim Meyer	Student
Elizabeth Aluxek	Student
Jere Berger	Tcorp Inc
Rich Fredelle	Urell Inc.
Nigel Churchill	Vermont Heating & Ventilating
Tom Dacres	Vermont Heating & Ventilating
Nathan Mascolino	Vermont Heating & Ventilating
Dick Wilcox	Vermont Heating & Ventilating
John Grout	Victaulic Company
John Ostrum	VT B&S Waterbury
Chris Reilly	VTC Faculty
Scott Sabol	VTC Faculty
Barbara Conrey	VTC Faculty
Tyler Devoe	

TECH SESSION

The main technical presentation at April's meeting at VTC was to view the ASHRAE webcast Dedicated Outdoor Air Systems – A Path to Balancing Energy and IEQ. The

program was introduced by Ron Jarnagin, ASHRAE President. Presenters included Tim McGinn, PE, LEED AP; Stan Mumma, PhD, PE and John Murphy, LEED AP and moderator Jennifer Gladstone. These industry experts discussed the role of DOAS within a buildings HVAC system. The educational goals of the webcast were:

- Understand the role of DOAS in the overall HVAC system.
- Describe characteristics of DOAS with a parallel system vs conventional all air systems.
- Recognize issues and challenges unique to DOAS.
- Identify common design and operational pitfalls.

As a viewing participant of the webcast I would agree that these objectives were met and thought the presentation provided useful and instructive information applicable to our project designs.

GENERAL MEETING AND MAIN PRESENTATION (AS REPORTED BY PRESIDENT MIKE COOK

After dinner I (Mike Cook) announced that no floor nominations had been received since April's meeting where the ballot of nominations for 2012-2013 Champlain Valley Chapter officers and BOG were presented by the nominating committee. I introduced all officers and BOG nominees to the CVC members in attendance and made a motion to approve the ballot of officers and Board of Governors as presented by the nominating committee. (a quorum of membership was present) The motion passed unanimously without objection.

I awarded both the ASHRAE VTC Scholarship Award of $500.00 and the CVC Past President's Scholarship of $2,500.00 to Erin Fajans of Vermont Technical College. I congratulated Erin on her academic success at VTC and wished her well in her professional career. Coincidentally Erin is the current president of the Student Chapter of ASHRAE at VTC. I thanked membership for their continued support of our scholarship funding by their business card advertisements in our chapter newsletter.

At the August 2011 CRC in New York, the ASHRAE Student Design Competition award for best HVAC design for Region 1 was awarded to last year's VTC student submission. In recognition of getting their students involved in this competition, their instruction and mentoring of students I formally presented the award to Professor John Reilly and Professor Scott Sabol.

A quick summary report of the student trip to the Chicago ASHRAE Winter Conference and AHR expo was presented by three students who went on the trip. The students attended several of the special programs available to students at the conference including workshops, solar demonstrations and facility tours and Chicago landmarks as well as exploring the AHR exhibits. The students also attended the Region 1 dinner where they got to meet with members of the Region 1 delegation of ASHRAE. All the students who attended the conference felt the trip was educational and an enjoyable experience. The students thanked the CVC chapter for providing a portion of the funding to make the trip possible.

The final presentation was an overview of the senior student's HVAC submission for the annual ASHRAE Student Design Competition. This year's project was the Joe and Rika Mansueto Library located at the University of Chicago. The students are given access to drawings and documents for the facility as well as guidelines with background information to enable design teams to design an HVAC system for the given building. The competition's intention is to challenge student's imaginative thinking and creative engineering approach to the building and its systems. Highlights of this particular building was that its lowest level is 55 feet below grade, the uppermost main atrium and public space is at grade covered by a dome structure with the highest point 35 feet above grade. The students had to follow national and local codes, applicable ASHRAE standards, conducted energy analysis and economic payback studies, developed drawings and selected the main equipment. The VTC student submission is based on a ground source (vertical well) heat pump design feeding radiant floors, walls and terminal units.

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

2013 CRC COMMITTEE

CRC2013 committee report:

The CRC2013 committee (Chapters Regional Conference) will meet again in mid-May . Our next tasks are firming up the meals budgets, getting a first draft of the presentation that we will do at the end of CRC2012 in Boston, working on a webpage and Twitter account, planning the companion activities, planning AV needs and planning for technical session speakers. We plan to have as many committee members as financially possible attend the CRC2012 in Boston to see what they do to make it a memorable event and learn what we can to make our CRC run smoothly. We will be putting together a sponsorship package outlining all the possible opportunities for companies to sponsor parts of the CRC events and help reduce the total cost of the CRC. So, vendors, contractors, and engineering firms, stay tuned for those details.

The CRC2013 committee is currently Tom Zoller, Steve Poole, Dick Wilcox, Heather Smith, Mike Cook, Nathan Mascolino, Tom Dacres, Peter Bailey, Bill Atkinson, Shawn Labelle, and Gus Mastro.

If you are interested in joining the committee or helping out in any way, please let Tom Zoller know.

-Tom Zoller

REFRIGERATION

This year our 2012 Refrigeration Rack Day Seminar was another great success. Even with the extreme record setting temperatures we had in March, our attendance was good. I want to thank all of the people who attended and especially the companies that supported them to stay in training even as the temperatures were 85 degrees that day.

We had a total of 31 people in attendance. Rusty Walker from Hill Phoenix did a great job engaging everyone in various discussions and reviewing the Hill Phoenix ISTM program (Installation, Startup, Troubleshooting and Maintenance) of racks. Rusty also spent a few hours on the new CO2 systems available. We are already planning for next years Seminar that would include some hands on training.

Thanks again to the many people who attended:

Roy Bradley	ARC Mechanical
Shaylor Duranleau	ARC Mechanical
Adam Cate	ARC Mechanical
Edward Sawyer	ARC Mechanical
Richard Cutone	ARC Mechanical
Clark Sweeney	Sweeney Refrigeration Service
Kirk William	Alliance Mechanical
Eric Sicard	Alliance Mechanical
Alan Blow	Vermont Heating & Ventilating
Taylor Christie	Vermont Heating & Ventilating
Lance Freeman	Vermont Heating & Ventilating
Dan Gibbs	Vermont Heating & Ventilating
Dave Johnson	Vermont Heating & Ventilating
Sean Lacroix	Vermont Heating & Ventilating
Hugh McNally	Vermont Heating & Ventilating
Jeff Morris	Vermont Heating & Ventilating
Scott Royce	Vermont Heating & Ventilating
Ravi Parikh	Burlington Electric Inc.
Gary Gawor	EnSave Inc.
Grant Reynolds	Hussmann
Richard Hill	Supervalu
Gary Wright	Shaw's
Gene Barton	
Dan Barton	
Glenn Erb	Architectural Engineer
Cody Lezak	Efficiency Vermont
Tim Blake	Vermont Mechanical
Lee Parry	Vermont Mechanical

Roger Sawyer	Vermont Mechanical
Nermin Smajovic	Vermont Mechanical
Peter Bailey	Dodge Engineering & Controls, Inc

All who attended will receive certificates for the seminar within the next few weeks.

A special thanks to Henry Pellerin from Hill Phoenix who contacted me after the seminar and said Hill Phoenix Training would donate their portion of costs to our chapter again.

Our ASHRAE Champlain Valley Chapter is very thankful for their great donation of $900.00 that will go towards our Research Promotions Fund.
A Big thanks for their help again.

CHANGES RELATED TO DATA CENTERS

For Release:
April 9, 2012

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

Changes Related to Data Centers, Lighting, Space Heating Energy Source Proposed for ASHRAE/IES Energy Standard

ATLANTA – A proposed change to the ASHRAE/IES energy standard regarding data centers recognizes the role that system efficiencies – vs. only equipment – can play in reducing energy consumption.

"This change regarding data centers represents a building block as we work to build on the foundation of energy conservation in the standard," Drake Erbe, 90.1 vice chair, said. "We recognize that equipment used in buildings is reaching maximum capabilities in energy efficiency. We now must examine the role that system efficiencies play in saving energy. Inclusion of data centers in the standard was a step in that direction."

With publication of the 2010 standard, ANSI/ASHRAE/IES Standard 90.1-2010, Energy Standard for Buildings Except Low-Rise Residential Buildings, data centers were included within its scope for the first time. Most data centers were required to have economizers, but some in the data center industry disagreed with the requirement, maintaining that economizers are subject to static discharge due to low humidity, gaseous contaminants and reliability.

Erbe said the 90.1 committee worked with the data center industry and ASHRAE's technical committee on mission control facilities, technology spaces and electronic equipment to develop an alternative path known as power usage effectiveness (PUE) to allow use of developing technologies for which there are no energy modeling tools available. The path is addressed in proposed addendum ap, which is currently open for public comment.

"This is a significant issue to design professionals in that without a simulation program available to model these systems they have to receive approval from the authority having jurisdiction for an exceptional calculation method, which, in most cases, is beyond the jurisdiction's knowledge level," Erbe said. "The PUE values were developed using water cooled chillers with water size economizers and air cooled chillers with air side economizers, using prescriptive requirements currently in the standard. The PUE values for all climate zones are able to be achieved by both of these conventional system types."

In total, 15 proposed addenda to Standard 90.1 are open for public review. For more information, visit www.ashrae.org/publicreviews.

Also open for public comment is addendum ao, which offers an alternative compliance path for lighting requirements aimed at the large number of smaller, simpler buildings that make up a majority of new construction and retrofit activity, according to Eric Richman, chair of the standard's lighting subcommittee. It provides a less complicated set of requirements that should be easier to apply to these types of facilities, and also includes more stringent Lighting Power Density (LPD) limits that may restrict the application of more lavish space lighting designs not commonly found in these facilities. This compliance path will replace the current whole building LPD table and only applies to a subset of building types that encompass many of the smaller, simpler buildings. The use of this method is optional and the full space-by-space method used by most designers for larger more complex facilities still remains for application to any building type, Richman said.

In addition, addendum al is open for public review. Users of Appendix G of the standard have noted that the baseline energy budget is different depending on whether electricity or natural gas is chosen for either space heating and water heating, according to Don Brundage, a member of the Energy

Cost Budget subcommittee. In some cases, this can provide greater energy savings estimates from Appendix G when using one fuel versus another, and provides a strong incentive to specify the fuel that will provide the greatest energy savings using Appendix G.

"Proposed addendum al would make the baseline building energy budget (the minimum code baseline for determining energy savings) the same regardless of the choice of fuel in the proposed building, eliminating this bias," Brundage said. "This is done by setting rules to determine the fuel to be used in the baseline building for space and water heating. These rules are based on climate zones for space heating and type of building usage for water heating. This would make energy savings estimates using Appendix G more consistent and fair than under the current version of the standard."

In addition to addendum al, ao and ap, eight other addenda are open for public review from March 23 until May 7. They are addenda af, ag, ai, am, an, aq, ar and at.

Four addenda are open for public review from March 23 until April 22. They are addenda ad, ah, aj and as.

ASHRAE, founded in 1894, is a building technology society with more than 50,000 members worldwide. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry. Through research, standards writing, publishing and continuing education, ASHRAE shapes tomorrow's built environment today.

DUMB MOVES LIMIT SMART BUILDING POTENTIAL

By tmitchell
Created Mar 26 2012 - 2:13pm
Green technologies exist, but face human obstacles

The capabilities for smart buildings exist today, but most building managers and tenants are missing out on this opportunity to save energy and create more efficient living spaces, according to a panel of green building experts.

Buildings accounted for roughly 40 percent of total U.S. energy consumption in 2010, according to the U.S. Energy Information Association. Each time a toilet is flushed, a thermostat mismanaged, a sprinkler left on in the rain, or a light left turned on, energy is being wasted. The proliferation of smart meters and building management systems have the potential to reduce energy consumption and improve conservation.

The potential for smarter buildings exists

"The concept of smart, connected buildings is here today," said Dan Probst, chair of energy and sustainability services at Jones Lang LaSalle.

Probst spoke along with a number of green buidling professionals at the recent VERGE conference in Washington, D.C. The panelist agreed that while the technology needed for smarter buildings might be ready to go, it has yet to see widespread implementation.

"We are just doing a lot of dumb things in buildings," said David Bartlett, Vice President of Industry Solutions at IBM. "Every building has an opportunity to be managed more efficiently," he said.

Bartlett said that IBM has started using analytics in buildings, and has been able to achieve as much as 40 percent reductions in energy and 50 percent reductions in water use.

"When we start listening holistically, we begin to better understand what's happening across these buildings," Bartlett said.

And many utilities are now able to "listen" to buildings as frequently as every 15 minutes, which means a lot of data needs to be analyzed and understood.

"Utilities have never had that amount of data ever made available to them," said Saul Zambrano, part of PG&E's customer energy solutions team. Zambrano said the key now is to get third-party developers involved in making that data even more consumable.

Getting companies, employees on board

Although the technology needed to achieve smarter, greener buildings exists today, it's only part of the solution. Real reductions

in energy use are also going to require cultural changes and a shift in the way people perceive conservation.

"We have enough technology," said Dave Pogue, Global Director of Sustainability at real estate company CBRE.

Pogue said that if building occupants aren't willing to participate and invest in energy conservation, progress will be much slower -- no matter how good a building's energy technology and management system may be.

"You need to get the attention and the cooperation of the people that are actually occupying these buildings," Pogue said, noting that real estate is a reactive business. When tenants begin to demand sustainable technology and buildings, "that's when the equation is flipped."

Getting employees and tenants to appreciate green buildings is a primary focus at Google, where an entire team is dedicated to making buildings more desirable and efficient.

"We want people to come to the office," said Anthony Ravitz who leads Google's Real Estate and Workplace Services Green Team.

BILL GATES ON THE FIVE MIRACLES NEEDED FOR ENERGY AND CLIMATE CHALLENGES

By Heather King | March 29th, 2012

Last Thursday, at the Wall Street Journal ECO:nomics conference in Santa Barbara, Bill Gates talked with several hundred CEO's and corporate leaders about why and how he has accelerated his involvement in clean energy solutions.

"My foundation is committed to helping the very poor and to improving education. It is clear that if you want to help humanity, you have to get energy prices down," he explained.

"Energy is a huge constraint to economic advancement in the developing world."

Yet this focus extends beyond energy pricing and availability. Gates wants carbon neutral energy sources. Anything that contributes to global warming will be "a disaster."

"The goal has to be zero emissions," he said. "The goal is very daunting."

To this end, Gates is dedicating an increasing amount of time and resources in pursuit of clean energy solutions. His goal is to get the world's emissions to zero within 75 years. He's a believer in innovation and in pursuing multiple options.

"We need five miracles to make this happen," he said. Our efforts must comprehend advancements in carbon capture, nuclear, solar, wind and biofuels.

Notably, coal and natural gas are not in his portfolio because they contribute to warming.

"If you put aside climate change, natural gas is a very good thing," he explained. "But even a small amount of leakage is a dramatic negative for global warming."

Gates waxed enthusiastic about 'fourth generation nuclear' as an area of great promise. Fourth generation nuclear uses depleted uranium – the 99.3 percent that is not used in current nuclear production – to generate electricity. He admits that although nuclear is "not very popular" that it has terrific potential to meet our energy needs, and claims that fourth generation nuclear provides full, passive (not human dependent) safety.

Because our national government is shy of nuclear investments, he himself has provided financing. Gates is currently invested in TerraPower, a leader in next generation nuclear technology. The company expects to have a demo reactor operating by 2022, and a replicable design available by 2028.

Gates emphasized the need for investment and research in all five areas – and a concurrent focus on efficiency.

"For society's sake we need to fund energy research much more aggressively," he said. "We also need a carbon tax. We need policy that drives innovation and conservation."

Gates is concerned that people are overly optimistic about how quickly and how extensively clean energy technology can help solve our climate and energy challenges.

"People underestimate how hard energy innovation is," he remarked. "The IT revolution was easy in comparison. The pace of IT innovation was extremely fast. It's a different thing to generate paradigm shifts in energy."

ASHRAE RP

Champlain Valley Chapter

Expo On Wheels Vendor Sign-up

Come and show off your latest Green Sustainable HVAC&R products Tailgate Style!

June 6th 2012

Time: TBD

Location:

Champlain Valley Expo

For details & to sign up contact Rob Ward

802-655-8805 ext.194

robw@vhv.com

Bring Your:

-Demo Vehicles

-Trade show booths

Fee:

$300 Per Spot

All profits go to ASHRAE Research Promotion

2011 CRC AWARDS

Here are the (12) awards the Champlain Valley Chapter received at the 2011-2012 CRC in New York City on August 18-20, 2011.

- Champlain Valley Full Circle
- Champlain Valley PAOE – Honor Roll, Special Citation – Shawn LaBelle President and Star
- Champlain Valley Sustainability Activities PAOE – Shawn LaBelle President
- Champlain Valley Runner Up Research Promotion (% of goal)
- 2008-2009 History – Amy K. Patenaude
- 2009-2010 History – Gretchen Langfeldt
- Certificate of Achievement, Recognition for Exceeding Goal – Sandra LaFlamme
- 2010-2011 ASHRAE Region 1 Outstanding Performance Research Promotion Honorable Mention – Sandra LaFlamme
- 2011 Chapter Service Award – Thomas W. Zoller2010-2011 ASHRAE Region 1
- Black Ink Award "The Champ" – Natasha Yaryna and Cara Gorman
- 2010-2011 ASHRAE Region 1 Best Student Design Competition, HVAC Design – Shawn LaBelle and VTC Student Chapter
- 2010-2011 ASHRAE Region 1 Outstanding Performance Chapter Programs Honorable Mention – Michael R. Cook

Congratulations to the efforts of the entire 2010 – 2011 Champlain Valley Chapter team including Of-

2011-2012 PRESIDENTIAL NEWSLETTER

2011 -2012 Presidential Award of Excellence (PAOE)
2011-2012 PRESIDENTIAL NEWSLETTER

DATE: May 16, 2011 (revised July 7, 2011)

TO: Chapter Presidents
ASHRAE Membership Promotion Committee, ASHRAE Student Activities Committee, ASHRAE Research Promotion Committee, ASHRAE Chapter Technology Transfer Committee, Young Engineers in ASHRAE Committee, Regional Historians, Assistant Regional Chairs, Board of Directors

FROM: Ronald E. Jarnagin

SUBJECT: PRESIDENTIAL AWARD OF EXCELLENCE (PAOE)

ASHRAE chapters are the backbone of this Society and play a central role in helping the Society achieve its goals. Through our collective efforts, ASHRAE chapters are a vital force in the HVAC&R community and a resource for the global community.

My Presidential theme, "Sustaining ASHRAE Through Leadership," highlights the role ASHRAE members play as leaders in sustainable design and practices.

This marks the sixth consecutive year that the Presidential theme has focused on sustainability. This focus should be so ingrained in our lives that our mission "to serve humanity and promote a sustainable world" inspires our daily decisions.

Several new activities have been added to support the presidential theme and they focus on Leadership, Training, Marketing, Young Engineers in ASHRAE (YEA), Building Energy Quotient (bEQ) and Refrigeration.

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 2006-2007 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	(2011-12)
Membership Promotion	800	115
Student Activities	500	891
Technology Transfer	850	1300
Research & Promotion	1050	1305
History	300	0
Chapter Operations	600	555
Chapter TOTAL	**4100**	**4166**

2011-2012 BOARD OF GOVERNORS	
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Robert Ward III T: 802-655-8805 x194	Dick Wilcox T: (802) 655-8805 Company: Vermont Heating @ Ventilation, Inc. dwilcox@vhv.com
Gretchen Langfeldt T: (802) 651-4114	Shawn LaBelle T:(802)862-5900 x.146 shawn.labelle@vtmechanical.com

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Subscription to the newsletter and membership questions should be directed to Nathan Mascolino (802) 655-8805 or nathanm@vhv.com