



The Champ Monthly Newsletter

of the Champlain Valley Chapter of ASHRAE

PRESIDENT'S MESSAGE



Wow I can't believe it; the end of the year is fast approaching and nearly upon us! I hope everyone enjoyed the Thanksgiving Holiday and got to spend some time with family and friends. It's always nice

to spend quality time with family members, watch some football, and participate in heated politically debates, airing of grievances, and competing in feats of strength competitions. Good times!

In that Holiday spirit we have our 2nd Annual (yes we did it last year) Holiday Mixer on December 5th with our good friends at Vermont Green Building Network (VGBN). We have a great speaker lined up, a past president of ASHRAE CVC; Ken Couture from Green Mountain Power will present on GMP's Smart Grid. It's sure to be a great time again with our new expanded social hour starting at 5:00 PM and Holiday fare. I hope to see you all on Dec. 5th!

As mentioned at the November meeting we are looking for volunteers to sit on the ASHRAE CVC nominating committee. If you would like to serve your chapter or know a good candidate please let me know.

- Tom Dacres

ASHRAE CVC Upcoming Events

December 5, 2012

4:00 pm: BOG Meeting @ Hampton

5:00 pm: Social Hour - Holiday Mixer

6:00 pm: ASHRAE CVC Business

6:30 pm: Dinner @ Hampton

7:30 pm: Sustainable Presentation Joint meeting with VGBN/ AIA

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2012-2013 ASHRAE CVC MEETING CALENDAR

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September 5	October 3	November 7	December 5	January 9
<p>4:30 pm: BOG Meeting @ Hampton</p> <p>6:00 pm: Hydronic System Design & Boiler selection- Edward Sullivan (Weil McLain)</p> <p>7:00 pm: Dinner @ Hampton</p> <p>8:00 pm: Variable Speed pumping - Bill Reid Urell Inc</p>	<p>4:30 pm: BOG Meeting @ Hampton</p> <p>6:00 pm: Brattleboro Food co op - Andy Sapiro</p> <p>7:00 pm: Dinner @ Hampton</p> <p>8:00 pm: 2012 Fire & Building Safety Code - Bob Patterson</p>	<p>4:00 pm: BOG Meeting @ Hampton</p> <p>5:00 pm: Social Hour - Membership Promotion Night</p> <p>6:00 pm: ASHRAE CVC Business</p> <p>6:30 pm: Dinner @ Hampton</p> <p>7:15 pm: Richard Vehlow - Region 1 RVC MP Presentation</p> <p>7:30 pm: Natural Gas in VT. VT Gas future plan/ Fracking-Facts</p>	<p>4:00 pm: BOG Meeting @ Hampton</p> <p>5:00 pm: Social Hour - Holiday Mixer</p> <p>6:00 pm: ASHRAE CVC Business</p> <p>6:30 pm: Dinner @ Hampton</p> <p>7:30 pm: Sustainable Presentation Joint meeting with VGBN/ AIA</p>	<p>4:30 pm: BOG Meeting @ Hampton</p> <p>6:00 pm: Christopher M. McDonlad. IAQ & Mold: Legal Issues and Liability Concerns for Engineers & Related Industry Professionals</p> <p>7:00 pm: Dinner @ Hampton</p> <p>8:00 pm: ASHRAE Continuation of 6pm presentation</p>
February 6	March 6	April 3	May 1	
<p>4:30 pm: BOG Meeting @ Hampton</p> <p>6:00 pm: - TBD</p> <p>7:00 pm: Dinner @ Hampton</p> <p>8:00 pm: - TBD Meeting Theme: Variable Speed Primary Flow presentation</p>	<p>Time TBD</p> <p>Type of Meeting: Tour/ Dinner</p> <p>Meeting Theme: Joint meeting with RSES/ AIA. Facility Tour of the new Green Mountain Coffee Roaster - Essex Facility / dinner Q/A to follow</p>	<p>6:00 pm: - TBD</p> <p>7:00 pm: Dinner @ Vermont Technical College</p> <p>8:00 pm: - TBD</p> <p>Meeting Theme: Meeting at Vermont Tech College, joint meeting with student chapter.</p>	<p>5:30 pm: Tour + BBQ + MP night</p> <p>Meeting Theme: Tour of the Switchback Brewery new bottling line.</p>	



turn to the experts™



Chuck Kabrehl

V.P. Commercial Sales & Engineering
ckabrehl@rjmurray.com

Dan O'Connor

Commercial Sales Engineering
doconnor@rjmurray.com

7 Northway Lane, Latham, NY 12110
79 Holly Court, Williston, VT 05495
518-690-4455 518-690-4990 (f)

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BBD | 2013

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TECHNOLOGY TRANSFER

It's here! There is snow on the mountains, frost on the ground, and wood smoke in the air. Winter and the holiday season in Vermont... It's a great time to be alive.

Last month a survey accompanied the newsletter announcement, and this month I would like to share the results of that survey. There were 49 people who responded and the results are as follows.

The number one reason that prevents members from attending meetings (at 41% of responses) is that the meeting times interfere with family obligations. 28% of responses indicated that the meeting topics were not attractive enough and 14% say that the meeting location is too far away.

The next question on the survey was... "Would you be more likely to attend a 1-2 hour meeting in the middle of the day (with lunch provided) than a 2-3 hour meeting held in the evening with dinner provided?" Our chapter is split on this one. 51% say that they would be likely to attend a lunch meeting, and 49% said that our current scheduled is best for them.

The next question was in regard to the possibility of shorter evening meetings. 71% of our chapter said that they would be likely to attend shorter evening meetings.

When asked about the ability to pay for the chapter meetings on line through the website only 35% said they would utilize this option.

The survey results and comments will be utilized in the future planning of chapter events. Stay tuned in to see what surprises may be coming.

We have some good programs coming in the next weeks. January will bring our distinguished lecturer that always makes for a good and interesting meeting. In February we will have another invited lecture given by one of the presenters at the 2013 Better Building by Design conference. The March Meeting is going to be a good one to put on your calendars. We are going to tour the new Green Mountain Coffee Roaster Facility in Essex VT. This will also be a membership promotion evening so keep an eye out for an announcement of a special event or give-away for that meeting. The April meeting will once again be held at VTC and hosted by our student chapter. I have an exciting announcement to make for our May meeting. We are going to be touring the brand new Switchback bottling line! Yes there will be samples.

Stay warm and put some wax on your skis.

- Nathan Mascolino

MEMBERSHIP PROMOTION

Hello Everyone,

Welcome to December and the fast paced Holiday Season. I hope everyone got to enjoy a few days off to spend with family and friends to celebrate Thanksgiving. It always seems to go by too fast. Anyway, thanks to everyone who attended last month's meeting which coincided with Membership Promotion Night. We had a great turnout from members, student members, new members and guests which added to the success of the night. Congratulations to Todd Hallock on winning the gift card to the Vermont Pub and Brewery. Thanks

to all for participating.

I will continue to encourage everyone to bring guests along to our meetings. As I stated in last months' meeting, the only way ASHRAE strives is through its members and their contributions to the society. We will also be announcing the Membership Promotion Incentive Program in the upcoming meetings that will reward members for bringing guests to our meetings and having them sign on as members to our chapter. Stay tuned!

Finally, please check your membership status and pay any outstanding dues that you may have. Currently we have 15 unpaid members in our chapter. You may be seeing some friendly e-mails coming along to help get our unpaid members to 0 by the end of the year. Any and all help associated with this would be greatly appreciated. Also we are still looking for members to help out on the Membership Promotion Committee. If interested please let me know or see me at this months' upcoming meeting.

I wish everyone a safe and enjoyable Holiday season!

See you at the meeting,
Josh Chiappone
Membership Promotion Chair

Leadership Quote of the Month

"The best executive is the one who has sense enough to pick good men to do what he wants done, and self-restraint enough to keep from meddling with them while they do it."

~ Theodore Roosevelt

TREASURE'S REPORT

As of today, November 19, 2012 our TD Bank account is \$8,230.76 – up a bit from our previous months. All invoices are paid and account is reconciled.

Our CRC-2013 Bank checking account is \$989.70 up from last month as more money has collected for our wonderful 2013 CRC sponsorship donations. Invoices to donating sponsors have been sent out with a due date of January 31st 2013 so Companies can decide to give either this year or next.

I have sent out invoices for our 2012 – 2013 newsletter business card advertising sponsors. This is the first year the Treasurer is responsible for invoicing and collecting monies that will be going into our scholarship fund for this year. This change makes it easier for tracking and depositing funds.

Also, I have been in correspondence with Spencer Morasch at Regional and found out that the CRC subsidies check from was sent back and re-deposited due to a mailing error. The check was re-issued and we are expecting it by the end of this month. The check is in the amount \$3,243.00 and will be deposited in our 2013 CRC account and used for next years CRC.

If at any time, anyone has any questions regarding our chapters financial status please don't hesitate to contact me.

Peter Bailey
ASHRAE CVC Treasurer
2012 - 2013

RESEARCH PROMOTION

2012-2013
Progress!!!

Attached is another small example of what ASHRAE would be without your donations to RP. Most of you are probably familiar with this section of the ASHRAE Fundamentals handbook. Here is what it would look like if the research information was redacted from this page.

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2009 ASHRAE Handbook—Fundamentals

Table 1 Representative Rates at Which Heat and Moisture Are Given Off by Human Beings in Different States of Activity

Degree of Activity	Location	Total Heat, Btu/h		Sensible Heat, Btu/h	Latent Heat, Btu/h	% Sensible Heat that is Radiant ^b	
		Adult Male	Adjusted, M/F ^a			Low V	High V
Seated at theater	Theater, matinee	█	█	█	█	█	█
Seated at theater, night	Theater, night	█	█	█	█	█	█
Seated, very light work	Offices, hotels, apartments	█	█	█	█	█	█
Moderately active office work	Offices, hotels, apartments	█	█	█	█	█	█
Standing, light work; walking	Department store; retail store	█	█	█	█	█	█
Walking, standing	Drug store, bank	█	█	█	█	█	█
Sedentary work	Restaurant ^c	█	█	█	█	█	█
Light bench work	Factory	█	█	█	█	█	█
Moderate dancing	Dance hall	█	█	█	█	█	█
Walking 3 mph; light machine work	Factory	█	█	█	█	█	█
Bowling ^d	Bowling alley	█	█	█	█	█	█
Heavy work	Factory	█	█	█	█	█	█
Heavy machine work; lifting	Factory	█	█	█	█	█	█
Athletics	Gymnasium	█	█	█	█	█	█

Notes:
 1. Tabulated values are based on █ of that for an adult male, and gain from a child is █ of that for an adult male.
 2. Also see Table 4, Chapter █ for additional rates of metabolic heat generation.
 3. All values are rounded to nearest 5 Btu/h.
 4. Adjusted heat gain is based on █ Figure █
 5. Values approximated from data in Table 6, Chapter █, Figure 1/3.
 6. Adjusted heat gain includes █
 7. Figure █

The total light wattage is obtained from the ratings of all lamps installed, both for general illumination and for display use. Ballasts are not included, but are addressed by a separate factor. Wattages of magnetic ballasts are █

The lighting use factor is the █

The special allowance factor █
 █
 █ Use manufacturers' values for system (lamps + ballast) power, when available.

For high-intensity-discharge lamps (e.g. metal halide, mercury vapor, high- and low-pressure sodium vapor lamps), the actual lighting system power consumption should be available from the manufacturer of the fixture or ballast. Ballasts available for metal halide and high pressure sodium vapor lamps may have special allowance factors from about █

An alternative procedure is to estimate the lighting heat gain on a per square foot basis. Such an approach may be required when final lighting plans are not available. Table 2 shows the maximum lighting power density (LPD) (lighting heat gain per square foot) allowed by ASHRAE Standard █ for a range of space types.

In addition to determining the lighting heat gain, the fraction of lighting heat gain that enters the conditioned space may need to be distinguished from the fraction that enters an unconditioned space; of the former category, the distribution between radiative and convective heat gain must be established.

Fisher and Chantarasrisalat (2006) experimentally studied 12 luminaire types and recommended █ different categories of luminaires,

as shown in Table 3. The table provides a range of design data for the conditioned space fraction, short-wave radiative fraction, and long-wave radiative fraction under typical operating conditions: airflow rate of 1 cfm/ft², supply air temperature between 59 and 62°F, an d room air temperature between 72 and 75°F. The recommended fractions in Table 3 are based on lighting heat input rates range of 0.9 to 2.6 W/ft². For higher design power input, the █ for design power input below this range.

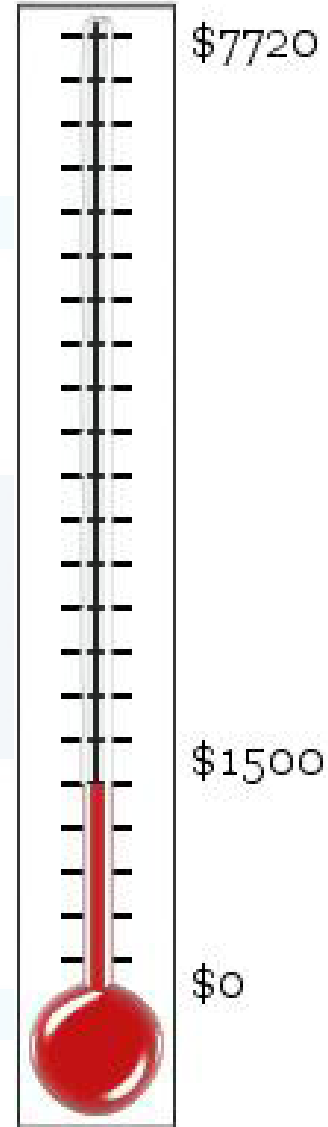
The space fraction in the table is the fraction of lighting heat gain that goes to the room; the fraction going to the plenum can be computed as 1 - the space fraction. The radiative fraction is the radiative part of the lighting heat gain that goes to the room. The convective fraction of the lighting heat gain that goes to the room is 1 - the radiative fraction. Using values in the middle of the range yields █ However, █

notes for Table 3.

Table 3's data are applicable █
 █
 █

If the █ Figure 3 can be used to estimate the lighting heat gain parameters.

Although design data presented in Table 3 and Figure 3 █
 █



I am happy to announce that we will be receiving another Full Circle award this year. Thank you to all the BOG members for making this possible by showing your support with your \$100 donations.

Thank You
 Rob Ward
 RP Chair

2013 August 15'th thru 17'th

Region One Chapter Regional Conference



On August 15-17, 2013, the Champlain Valley Chapter of ASHRAE will be hosting the Region 1 Chapter Regional Conference (CRC). The Conference will be held at the Hilton Hotel, 60 Battery Street, Burlington Vermont and will include the Presidential Dinner at the Echo Leahy Center located on the Lake Champlain waterfront.

Our Chapter is currently seeking sponsorships from all members and vendors to defray the costs associated with the CRC in an effort to reduce the costs for attendees of this event. Typically 100-150 Region 1 ASHRAE Members along with spouses and families attend the CRC. With help from our sponsors, not only will we be able to reduce the costs for members who typically attend the CRC, but also make the registration costs attractive for other members who normally would not consider attending the CRC. Burlington and our surrounding area has so much to offer and our goal is to provide all attendees of the CRC a most rewarding and enjoyable experience!!

The sponsorship levels are noted below with each identifying the benefits for the sponsors:

Platinum Level Sponsor: \$5,000

- Name and logo on tent sign at each table at CVC ASHRAE meetings the entire year.
- Name and logo on signs at CRC2013
- Name and logo on CRC2013 and ASHRAE CVC websites
- Name on CRC2013 brochures
- Special thanks at CRC2013 events
- Two tickets to Friday dinner
- Two tickets to Saturday Awards lunch
- Two tickets to Golf outing
- Listing in 2012-13 CVC Newsletter for CRC sponsorship

Gold Level Sponsor: \$2,500

- Name and logo on tent sign at each table at CVC ASHRAE meetings the entire year.
- Name and logo on signs at CRC2013
- Name and logo on CRC2013 and ASHRAE CVC websites
- Name on CRC2013 brochures
- Special thanks at CRC2013 events
- Listing in 2012-13 CVC Newsletter for CRC sponsorship

Silver Level Sponsor: \$500

- Name on tent sign at each table at CVC ASHRAE meetings the entire year. (No logo)
- Name on signs at CRC2013 (No logo)
- Name on CRC2013 and ASHRAE CVC websites (No logo)
- Name on CRC2013 brochures
- Listing in 2012-13 CVC newsletter for CRC sponsorship
- Special thanks at awards lunch only

Bronze Sponsor: Min \$150

- List in Newsletter and webpage.

Please note that ASHRAE Region 1 is the largest Region in the Society and covers a geographical area of New England, New Jersey and New York with a total of (15) Chapters. This will provide and benefit our sponsors with the largest potential exposure over any other Region within ASHRAE (the larger the Sponsorship Level, the greater the exposure)!!!

If you're interested in helping us sponsor our events, please contact Bill Atkinson, Dick Wilcox or Tom Zoller and they can help finalize the corporate information and Ad setup as applicable. We look forward to hearing from you and sincerely hope you'll consider a sponsorship for this event. As always your donations are tax deductible, the ASHRAE Champlain Valley Chapter is a registered 501(c) (3) charitable organization.

Tom Zoller
CRC 2013 Chairperson
Tel. No.: 802-864-3816 (ext. 2)
Email: TZoller@trane.com

Bill Atkinson
CRC 2013 Committee Member
Tel. No.: (802) 264-1141
Email: Bill.Atkinson@VTMechanical.com

Dick Wilcox
CRC 2013 Committee Member
Tel. No.: (802) 861-6181
Email: DWilcox@vhv.com.com



Thank you to the following companies for their generous sponsorship of the upcoming Region 1 Chapter Regional Conference – August 15-17, 2013
Burlington, VT

Platinum Level (\$5,000 minimum)



TRANE

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Building Partnerships that Work.

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Vermont Heating and Ventilating
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Vermont Mechanical
F.W. Webb
Blake Group
Dubois and King, Inc.

Quality Air Control
Daikin AC
L.J. Early
Yeaton Associates
Hallam-ICS

Bronze Level (\$150 Minimum)

R.F. Peck
ARC Mechanical

Control Technologies
R.J. Murray

2012-2013 Board of Governors



BOG MEETING MINUTES

November 7, 2012 BOG Meeting Minutes

Date: 11/07/2012

Location: Hampton Inn, Colchester VT

Time Called to Order: 4:08pm

Called to Order By: Tom Dacres

Minutes Recorded By: Rob Ward, Secretary

ATTENDANTS

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

LAST MEETING MINUTES

A motion was made by Nathan M. to approve September 2012 Meeting Minutes. It was seconded by Joshua C. and the motion was carried.

OFFICER REPORTS

A.) PRESIDENT: TOM DACRES

a) Tom stated that he now has all the documents required for the ASHRAE State registration and is ready to mail them to Patricia Adelman in Atlanta GA.

b) An update on CRC 2013 was given. To date we are up to \$22,000 in sponsorships. Mike Cook has organized a tour of the Stowe area. Tom stated that he had spoken with Peter Bailey earlier and that the seed money sent from Region I had been sent to us and cashed, but that Peter had never

seen the check. I was suspected stolen and Peter was going to contact the local police department.

c) Nathan Mascolino attended the Vermont State Engineering Board meeting that is handling the MOE (Masters or Equivalent) changes that are in front of the state legislature. He indicated that the issue would most likely not be voted on this year.

d) There was a general discussion about PAOE point standing and whether the report was up to date or not.

e) Tom asked that all write ups for the newsletter be in by the 16th of this month.

f) Tom reported on where we stand as a chapter as far as PAOE points. He asked that everyone be sure to keep their totals up to date.

g) Tom stated that he is currently looking for volunteers for the Presidential Theme project. He mentioned a specific project that he thought would be a good candidate. He also may have some vendors lined up to donate equipment.

B.) PRESIDENT ELECT: NATHAN MASCOLINO – CTTC CHAIR

a) Nathan review the results from the Survey monkey poll that was sent out the members. The results were in favor of having a lunch time meeting and the idea of shorter meetings got a positive response.

b) Nathan stated that he had not yet had a speaker lined up for the December meeting.

C.) VICE PRESIDENT: ROB FAVALI

a) Nothing new to report

D.) TREASURER – PETER BAILEY

a) Peter stated that the seed money was sent on

9/15 and the check had cleared. Spencer from Region I is going to send Peter a copy of the check.

b) Peter is going to mail out invoices for Newsletter ads this week.

E.) CHAPTER SECRETARY: ROB WARD – RESEARCH PROMOTION CHAIR

a) The new chapter banner was presented to the BOG

b) As of the meeting date our Full Circle had not been met. The deadline for this is 11/15.

F.) HISTORY: MIKE COOK

a) Nothing new to report

G.) REFRIGERATION: PETER BAILEY

a) Peter indicated the he would like to hold the Hill Phoenix training class in February or March of 2013.

b) VHV's new training facility was discussed as one of the potential locations.

H.) ELECTRONICS COMMUNICATION CHAIR: RACHAEL MASCOLINO

a) Rachael needs a photo from Steve Poole for the website

I.) MEMBERSHIP PROMOTION CHAIR: JOSHUA CHIAPPONE

a) Josh presented a revised incentive program to attract new members.

b) He purchased ASHRAE pins for new members with the intention of presenting them at the general meeting

J.) STUDENT ACTIVITIES – SHAWN LABELLE

a) Tom Dacres printed out order forms to purchase shirts from the student chapter to help them pay for their upcoming trip.

K.) YEA COMMITTEE: SHAWN L., RACHAEL M.,

JOSH C.

a) Cara Martin from Region I YEA RVC is to speak at VTC in April

OLD BUSINESS:

None

NEW BUSINESS:

None

MEETING ADJOURNED

A motion was made by Tom Dacres to adjourn the meeting. It was seconded by Rob Favalli and the motion was carried. The meeting adjourned @ 5:20 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

November 7, 2012 General Meeting Minutes

Date: 11/07/2012

Location: Hampton Inn, Colchester VT

Minutes Recorded By: Rob Ward, Secretary

ATTENDANTS

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

Jay Pilliod	Efficiency Vermont
Michael VanHorn	Control Technologies
Scott Alexander	LN Consulting
Ray Hickey	Advanced Comfort Systems
Harris Unger	Advanced Comfort Systems
Martha Soule Holden	Vermont Heating & Ventilating
Nick Rock	Control Technologies
Brian Reilly	Pearson & Associates
Howard Merson	Efficiency Vermont
Scott Harrington	Vermont Gas
William Moore	TCorp
Len Pattison	Control Technologies
Carmine DeFeo	Guy DeFeo Company
Rich Fredette	Urel Inc.
Jason Hudspath	Thermal Environmental Sales
Dan Reilly	Gourley Company
Todd Hallock	FW Webb
John Grout	Victaulic Co
Trevor Gensch	Daikin AC
Nigel Churchill	Vermont Heating & Ventilating
Dave Robistow	Vermont Heating & Ventilating
Paul Aspland	Buckley Associates
Joseph Kazukenus	Thermal Environmental Sales
Chris Reilly	VTC
Clark Sweeney	Sweeney Refrigeration & HVAC Service
Bob Gatchell	Johnson Controls
Kristen Gulrajani	VTC
Esther Covey	VTC
Patty Danahy	VTC
Jared Kershaw	Vermont Heating & Ventilating
Cody Lezak	VEIC
Steve Piccolo	Advantix Systems
Steven Wark	VT Gas
Randy Mead	Control Technologies
Steve Omalley	VEIC
Bill Gregory	LJ Early

The meeting was started off with Tom Dacres announcing to the membership that we are looking for volunteers for next year nominating committee. He then handed the floor over to Josh C.. Josh Started by asking all that are members to stand for

the new members to see. He then asked that the new members present at the meeting to come to the front and be presented with an ASHRAE pin.

Harris Unger continued the meeting by introducing the first presenter.

TECH SESSION

Steve Piccolo did a presentation on Liquid Desiccant Technologies

When Steve was done Tom Z. got up and spoke briefly about CRC 2013 donations and new donors. There was a break for dinner after Tom Z. was finished.

MAIN PRESENTATION

Steve Wark for VT Gas did a presentation followed by a question and answer session on natural gas distribution in Vermont

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





VERMONT TECHNICAL COLLEGE
Part-time faculty – Sustainable Design and Technology
SPRING 2013 SEMESTER

Vermont Tech's Sustainable Design and Technology program is seeking candidates for a part-time faculty position to teach a three-credit course for spring 2013 semester, SDT-4110 Building Controls and Commissioning. This senior level course is also open to students in the college's Architectural Engineering Technology program. The course is scheduled as a weekly four-hour meeting and students are located in Randolph Center. However, the course could be offered over Vermont Interactive Technology or via Adobe Connect from Vermont Tech's Williston campus. We have some flexibility in terms of what day the course is offered.

Master's degree preferred plus experience in these subject areas as well as experience teaching adults.

SDT 4110 Building Controls & Commissioning (3) – fall

This course in the Green Building technical core looks at two important areas for sustainable commercial buildings: integrated control systems and the hands-on "fine tuning" that is essential for a building to operate efficiently. The first part of the course will concentrate on an overview of digital control systems (electrical circuits and basic system design). The second part of the course focuses on the detailed knowledge needed for the emerging field of building commissioning, now a requirement of the LEED certification process; 2 hours of lecture, 2 hours of laboratory per week. Prerequisite: ARC 3010 and SDT 3110, concurrent enrollment in ARC 4030.

To apply please submit a completed Vermont Tech employment application, cover letter, and resume to:

Brandi Peloquin at: BPeloquin@vtc.vsc.edu

Human Resources
Vermont Technical College
PO Box 500
Randolph Center, VT 05061

Employment application is available on the Vermont Tech website: www.vtc.edu/employment.

Vermont Tech strongly encourages applications from members of ethnic minority groups and other under-represented backgrounds. Vermont Tech is an Equal Opportunity Employer and a member of the Vermont State Colleges system. In compliance with ADA requirements, we will make reasonable accommodations for the known disability of an otherwise qualified applicant.

ASHRAE TECHNOLOGY AWARDS HIGHLIGHT OUTSTANDING BUILDING PROJECTS SEMESTER REQUIREMENTS

For Release:
Nov. 9, 2012

Contact: Amanda Dean
Public Relations
678-539-1216
adean@ashrae.org

ASHRAE Technology Awards Highlight Outstanding Building Projects

ATLANTA - Engineers play a vital role in their communities, working to provide safe, comfortable and energy efficient buildings for everyone from students to firefighters. The winners of the 2013 ASHRAE Technology Awards have proven the value of engineering in their communities with the design of a fire station, hospital, university recreation center, nature museum, offices and even a national energy laboratory.

The ASHRAE Technology Awards recognize outstanding achievements by members who have successfully applied innovative building design. Their designs incorporate ASHRAE standards for effective energy management and indoor air quality. The awards communicate innovative systems design to other ASHRAE members and highlight technological achievements of ASHRAE to others around the world. Winning projects are selected from entries earning regional awards.

Following are summaries of the winning projects.

Research Support Facility, National Renewable Energy Laboratory (NREL)
C-K Joseph Tai, P.E., Stantec Consulting, Inc., San

Francisco, Calif., receives first place in the new commercial buildings category for the Research Support Facility, NREL, Golden, Colo. The building is owned by the National Renewable Energy Laboratory. Tai and his team also receive the Award of Engineering Excellence for the project.

The Research Support Facility (RSF) is a new 219,105 ft² office building on NREL's campus in Golden, Colo. It includes everything from open and private offices to a fitness center and library. The criteria for designing the building included an absolute energy use intensity (EUI) goal of 35kBtu/sf/year, net-zero energy and the ability to use the building as a living lab to demonstration energy efficiencies strategies.

The key to the RSF's success are its integrated systems. Lighting in the building is an integrated system of architectural and interior design details, daylight control systems, occupancy controls and high efficiency lighting. Ninety-two percent of all typical work spaces are designed to receive adequate daylight using a narrow floor plate and advanced light bouncing device. Thermal comfort is addressed using an integrated system of thermal mass, radiant slabs, night purging and natural ventilation. The total annual energy consumption of the building is 36 percent better than a baseline ASHRAE 90.1-2004 building; the measured EUI is 33kBtu/sf/year, while on-site photovoltaic system is sized at 35kBtu/sf/year.

The RSF offsets the vast majority of its energy footprint by using electrical energy produced by solar panels. The new data center is one of the most efficient in the world due to free cooling and IT efficiency measurements. It consumes 81 percent less energy than its predecessor,

and thus reduces carbon emission by nearly five million pounds per year. In fact, the building is carbon neutral.

Rice Fergus Miller Office and Studio

Shawn Oram, Ecotope, Inc. Seattle, Wash. receives first place in the existing commercial buildings category for Rice Fergus Miller Office and Studio, Bremerton, Wash.

The building is owned by Fifth Street Hilltop Partners, LLC.

The Rice Fergus Miller (RFM) Office and Studio is helping to revitalize historic downtown Bremerton, Wash., by turning an abandoned warehouse into a state of the art office building. After one year, the project has an EUI of 21.8 kBtu/sf/year, 76 percent better than the national average for office buildings, which is 93 kBtu/sf/yr. Notably, the building performance is coming within 10 percent of the modeled performance without calibration.

The RFM Office and Studio relies on occupants to play an active role in the operation and tuning of the building using an innovative “passive/active” hybrid mechanical system. The HVAC systems are designed to turn off when the outdoor temperatures are within the “passive mode” range. Red and green lights are used to signal the building mode to the occupants; green indicates passive mode when operable windows can be used for ventilation and cooling.

A high efficiency variable refrigerant volume/flow heat pump (VRV/F) system provides space heating and cooling for 23 independent zones. The VRV/F system is switched from heating to cooling on either side of the passive operation mode; however, the super-insulated naturally ventilated building allows the heat pumps to be off for 70 percent of the year. Ventilation is provided by two energy recovery ventilators (ERV) controlled in stages based on CO2 levels. A large de-stratification fan

is positioned over a central opening between the upper and lower floors. The fan mixes the space, acting as a replacement for a traditional ducted distribution system and at higher speeds provides cooling. Waste heat from the server room is recovered and used to heat the building.

The project makes use of the plentiful rainfall for irrigation and toilet flushing from a 6,000 gallon rainwater storage, filtration and pumping system in the garage. The design offsets over 60,000 gallons of potable water use annually.

Portland State University Academic and Student Recreation Center (PSU ASRC)

Mark Koller, P.E., Interface Engineering, Portland, Ore, receives first place in the new educational facilities category for the design of the Portland State University Academic and Student Recreation Center, Ore. The building is owned by the University.

This new building on PSU’s downtown campus is home to the School of Social Work, the Oregon University System Chancellor’s Office, the recreation center-including a gymnasium and natatorium-bike hub and the City of Portland Archives.

The natatorium is served by a dedicated indoor dehumidification unit, which has air-to-air plate heat recovery, variable speed fans with dew-point control and heat recovery. The building’s gym, which consists of three courts and an elevated running track, is served by a dedicated air handler with a well water cooling coil, heating coil, variable speed fan and economizer with stack relief. The exercise equipment contains small generators which feed electricity to the building. This is used to teach building occupants how much effort is involved in generating a single kilowatt.

Radiant loss through the high percentage glazing in the lobby of the building is offset by the use of hydronic floor heating, as well as hydronic perimeter convectors. Fan-powered terminal units were utilized in most exterior zones in order to help offset envelope losses. Also, the street level retail spaces are served by a water source heat pump system that uses water from the on-site well. In the cooling season the building rejects heat to this water which is then pumped back to the ground via an injection well. In the heating season those spaces that need heat will be able to extract heat from this 56 F water.

Eastside Fire and Rescue Station 72

Jonathan Heller, P.E., Ecotope, Inc., Seattle, Wash., receives first place in the new other institutional facilities category for the design of the Eastside Fire and Rescue Station 72, Issaquah, Wash. The building is owned by the City of Issaquah.

The new fire station includes offices, living quarters, three truck bays and support spaces. The building uses 70 percent less energy and 50 percent less water compared to other typical fire stations in the region. The building was able to achieve these reductions through the use of super-insulation, heat recovery ventilation, radiant heat distribution, ground source heat pumps, solar water preheat, high efficiency appliances, advanced lighting designs and controls, and real-time energy use feedback to the occupants.

The station is held at relatively constant temperature with radiant heating and cooling in the slab. However, due to the stressful and physically demanding work required of the firefighters, the sleeping rooms are equipped with 4-pipe fan coils with individual temperature control in each private room. This allows firefighters access to cooling on demand when needed to relax after an emergency call. Also, since firefighters

often have to leave the station quickly, there is not time to turn off equipment and lights. Therefore, every room has occupancy sensors for shutting off lights and unnecessary equipment. The plug receptacles that are switched from the occupancy sensors are color coded so that all non-critical equipment can be turned off with occupancy.

One innovative aspect of the fire station is the interconnection between the solar thermal and ground source heat pump systems. A large solar thermal array was included due to the high level of hot water use in the fire station. If the solar preheat water tanks are satisfied, the excess heat collected by the solar thermal system is discharged to the geothermal loop field to recharge the ground temperature.

Swedish Issaquah Hospital

Jeremy McClanathan, ASHRAE-Certified Building Energy Modeling and Healthcare Facility Design Professional, CDi Engineers, Lynnwood, Wash., receives first place in the new health care facilities category for the Swedish Issaquah Hospital, Issaquah, Wash. The owner is Swedish Health System.

The new hospital includes an emergency department, operating rooms, imaging, cardiology and in-patient rooms. Through innovative design, the building was able to achieve a 54 percent energy savings compared to a baseline EUI 250 kBtu/sf/year for a typical hospital. Efficiency measures include a central plant heat recovery system (HRS); the use of variable air volume (VAV) air systems; recirculating air handling units (AHU) with select units 100 percent outside air capable for pandemic mode; low velocity ductwork, high efficiency AHUs and chillers; and efficient envelope and lighting.

The most innovative efficiency measure employed in the project was the central plant HRS that is estimated

to provide approximately 80 percent of the building's heating and domestic hot water with energy recovered from internal loads. It utilizes a centralized heat pump, advanced controls, heat recovery coils and a series of heat exchangers to move heat from the chilled water system to the hot water systems. In order to maintain the required pressure relationships mandated in hospitals for infection control, the building utilizes return and exhaust air tracking terminal units and venture valves in its ventilation system. This allows central AHUs to vary supply airflow rates based on demand.

Carbon emissions for the building are 47 percent lower than a baseline building, reducing 6,513 tons of carbon emissions each year. Additionally, the plumbing fixtures, selected to provide both water and energy savings, save 30 percent and 50 percent of the water used by standard fixtures.

Montréal Biodôme

André-Benoit Allard, Eng., Ecosystem, Québec City, Québec, Canada, receives first place in the existing public assembly category for the Montréal Biodôme, Quebec, Canada. The building is owned by Montréal Space for Life.

The Montréal Biodôme, a Space for Life, is filled with flora and fauna from five different replicated ecosystems from the Americas that are under one roof but vary greatly in terms of temperature, humidity and light requirements. An energy saving retrofit was performed on the building from 2008 to 2010. Overall, the building has experienced 55 percent energy savings since the retrofit and an 80 percent reduction in greenhouse gas emissions.

Central to the retrofit is an energy recovery and energy transfer system between the various ecosystems that is used to cool and heat other parts of the building. The

heat recovery system includes four heat pumps with a total rated capacity of 1,450 tons. This design allows completely secure operation, even if one of the heat pumps suffers a technical problem. The chillers-or heat pumps-of the new power plant run on R-134a. The plant has three 450-ton heat pumps used for cooling and a fourth 250-ton heat pump is dedicated to the sub-polar region of the building where colder water/glycol solution is needed. This configuration allows the three heat pumps to work in a better efficiency range.

Additionally, 42 fan and pump motors have been replaced by high efficiency motors. A number of motors were resized depending on the load they carried. They are powered by variable frequency drives and fan speed is adjusted according to each ecosystem's unique schedule and temperature setpoint. The fresh air supply in certain sectors, such as the tropical rainforest, is controlled by CO2 sensors.

The Biodôme employs one of the biggest open-loop ground-source heat pump systems in Canada, with water drawn from the underground water some 30 meters below the building at a rate of 720,000 gallons/day. Depending on the time of year, the system meets heating and cooling needs that the heat recovery system cannot meet alone. During the summer, it is thus possible to transfer the heat from the heat pumps to the underground water and store the heat for the heating season.

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.

CHALLENGE ACCEPTED: THE DOE INSPIRES THE DEVELOPMENT OF HIGHER-EFFICIENCY ROOFTOP UNITS

In January 2011, the U.S. Department of Energy (DOE) joined industry partners in the Commercial Building Energy Alliance (CBEA) to release a design specification for 10-ton capacity commercial air conditioners, or rooftop units (RTUs). The specification was issued as an “RTU Challenge,” since it aimed to catalyze the market introduction of cost-effective, energy-saving RTUs that would significantly outperform any models that were currently available. Less than two years later, manufacturers are rising to the challenge.

As recently announced by the DOE, Daikin McQuay’s Rebel RTU is the first to meet the specs of the challenge, and four other manufacturers—Carrier, Lennox, 7AC Technologies, and Rheem—are aiming to do the same.

The lasting effects of the challenge could be significant. RTUs are used in nearly half of all conditioned commercial spaces in the United States, and RTUs built to the DOE Challenge specification are expected to reduce energy use by as much as 50% compared with the current ASHRAE 90.1 standard, depending on location and facility type.

If all 10-20 ton commercial units were replaced with units built to this specification, nationwide, businesses would save about \$1 billion each year in energy costs. Primary features of the DOE specification include a high-performance integrated energy efficiency rating (IEER) of 18, direct digital controls, and operational fault detection.

For more information on the energy efficiency of emerging RTU technology and how it might benefit your customers, contact Efficiency Vermont at 888-921-5990.

SAVE THE DATE: BBD 2013

Better Buildings by Design: February 6-7, 2013 at the Sheraton Conference Center in Burlington, VT. A number of workshops will feature HVAC, including a session on rooftop unit optimization and the RTU challenge by the New Buildings Institute. NBI will also present at the ASHRAE meeting on February 6.

BBD 2013 is currently seeking exhibitors and sponsors. Don’t miss the chance to reach more than 1000 building and design professionals interested in the latest innovations. For more information on sponsoring the event or reserving exhibit space, visit www.encyvermont.com/conference

Registration to attend BBD begins in December 2012.

2012 CRC AWARDS

Here are the (7) awards the Champlain Valley Chapter received at the 2012 CRC in Boston on August 25, 2012 during the awards luncheon.

- ▶ Champlain Valley Research Promotion – Rob Ward -Full Circle, Goal, High Five, Challenge
- ▶ Champlain Valley PAOE Awards – Honor Roll, Star, Special Citation – Michael R. Cook
President
- ▶ 2011-2012 ASHRAE Region 1 CTTC -Award of Excellence – Tom Dacres
- ▶ 2011-2012 ASHRAE Region 1 Black Ink Award “The Champ” – Cara Gorman
- ▶ 2011-2012 ASHRAE Region 1 Websitation of Excellence – Cara Gorman and Rachael Mascolino
- ▶ 2011-2012 Certificate – Participation in Student Design Competition, HVAC Design – Shawn LaBelle and VTC Student Chapter
- ▶ 2010-2011 ASHRAE Region 1 CTTC PAOE Sustainability Award – Michael R. Cook

2012-2013 PRESIDENTIAL NEWSLETTER

DATE: April 12, 2012

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: Thomas E. Watson, PE

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 built environment and a resource everywhere in the world.

My Presidential theme, “Broadening ASHRAE’s Horizons” emphasizes the role of ASHRAE members as leaders in the application of sustainable design and practices in our communities worldwide.

This marks the seventh 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 and guides our daily decisions.

Several new activities have been added to support the presidential theme and they focus on community involvement.

50 points for grassroots advocacy training for chapter officers and future leaders (minimum 1 hour of training) (100 points maximum)

50 points for establishing and maintaining a chapter grassroots advocacy committee with at least two members to promote ASHRAE with state, provincial, and local governments

50 points for establishing a Chapter Sustainability Committee that meets periodically that organizes at least two HVAC&R related sustainability activities per year

50 points for chapter publicity that includes issuing at least six (6) press releases or arranging one (1) or more TV appearances promoting the work of ASHRAE (150 points maximum)

500 points for chapter sponsored community sustainability project or event in conjunction with a non-profit organization (Note: ASHRAE provided Community Sustainability Project Tool Kit is available to assist.)

100 points for chapter sponsored community sustainability project publicity (outside of normal Chapter advertisements) that includes Print, Audio or Electronic media at a local, state, provincial, national or industry level promoting the work of ASHRAE and/or the local chapter (500 points maximum)

25 points for chapter officers or MP Chair promoting ASHRAE membership to local companies (e.g. reception, one/one meeting, company presentation) in order to increase their support in ASHRAE (150 points maximum)

25 points for each article (minimum 250 words) on a grassroots advocacy-related (i.e., state provincial, or local legislative or regulatory issue) published in a chapter newsletter or posted on a chapter website with copy sent to RVC (maximum of two articles per month) (300 points maximum)

There are six categories included in this year's PAOE: Chapter Operations, Chapter Technology Transfer, Historical, Membership Promotion, Research Promotion, and Student Activities. To achieve PAOE, the chapter must earn the minimum points in four of the following five categories: Chapter Operations, Chapter Technology Transfer, Membership Promotion, Research Promotion, and Student Activities. Please refer to the criteria specified in each of the categories for calculating the PAOE points. For additional information or clarification, check the PAOE Frequently Asked Questions (FAQ) section on the ASHRAE website. Please note that appropriate documentation should be kept by the Chapter to support PAOE point input, and that "chair" is defined as the individual listed in the Chapter Information Questionnaire (CIQ) on file with Society.

I appreciate your dedication, enthusiasm and hard work in improving our Society and providing value to our membership. I look forward to working with you during this Society year.

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	2012-13
Membership Promotion	800	0
Student Activities	500	0
Technology Transfer	850	250
Research & Promotion	1050	420
History	300	100
Chapter Operations	600	405
Chapter TOTAL	4100	1175

2012-2013 BOARD OF GOVERNORS

Joshua Chiappone T: (518) 817-8669 joshua.j.chiappone@jci.com	Shawn LaBelle T: (802)862-5900 x146 shawn.labelle@vtmechanical.com
Rachael Mascolino T: (802) 540-7846 rmascolino@veic.org	Mike Cook T: (802) 291-0911 mcook@arcmech.com
Dick Wilcox T: (802) 655-8805 dwilcox@vhv.com	

2012-2013 CHAPTER OFFICERS

President	Thomas Dacres, Jr., LEED AP BD+C (802) 655-8805 x 152 tomd@vhv.com
President- Elect	Nathan Mascolino, PE, LEED AP (802) 861-6148 nathanm@vhv.com
Vice President	Robert J. Favali, LEED Green Associate (802) 764-2704 rfavali@dubois-king.com
Secretary	Robert Ward III, LEED AP (802) 861-6194 robw@vhv.com
Treasurer	Peter Bailey (802) 434-2278 pfbaily@deicontrols.com

COMMITTEE CHAIRPERSONS

Student Activities	Shawn LaBelle (802)862-5900 x146 shawn.labelle@vtmechanical.com
Membership	Joshua Chiappone (518) 817-8669 joshua.j.chiappone@jci.com
Research Promotion	Robert Ward III, LEED AP (802) 861-6194 robw@vhv.com
Technology Transfer	Nathan Mascolino, PE, LEED AP (802) 861-6148 nathanm@vhv.com
Refrigeration	Peter Bailey (802) 434-2278 pfbaily@deicontrols.com
Historian	Mike Cook (802) 291-0911 mcook@arcmech.com
Electronic Communications	Rachael Mascolino (802) 540-7846 rmascolino@veic.org
Newsletter Editor	Cara Gorman cara@ashraevt.org
2013 CRC	Tom Zoller (802) 864-3816 x2 TZoller@trane.com
2013 CRC Vice Chair	Steve Poole (802)861-6133 spoole@vhv.com

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

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Toll free (877) DEI-CTRL
Fax: (978) 244-1422



Brian Sager
Vice President/Designer/LEED AP

bsager@arcmech.com
www.arcmech.com

603-443-6111
Lebanon, NH

802-222-9255
Bradford, VT

603-444-3440
Littleton, NH



James D. LaVallee
Director of Business Development

Direct 802.264.1158 Jim.LaVallee@vtmechanical.com
Fax 802.264.1109 www.vtmechanical.com
Mobile 802.324.3355



Thomas F. Dacres, Jr. 16 Tigan St., Suite A, Winooski, VT 05404
Design Engineer 802.655.8805 phone
tomd@vhv.com ext. 152
802.655.8809 fax



Tom Zoller PE
Account Manager

175 Leroy Road
Williston VT 05495
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Engineering Manager

P: 802-264-1232
C: 802-238-1284

jmharrington@neair.com

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JOHN F. GROUT

10 Benning Street, #168
W. Lebanon, NH 03784
Email: jgrout@victaulic.com

Cell: 508/878-9155
Fax: 610/923-3464



Dan Connelly

500 WINDYBROOK - COVINGTON, NH 03041

Direct (816) 488-2877

Main (816) 488-2876

Fax (816) 488-2187

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Executive Vice President

15 Adams Street
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LEONARD PATTISON, C.E.M.
President

lpattison@controltechvt.com

121 Park Ave Suite 10
Williston, VT 05495
DID: (802) 764-2223
Cell: (802) 999-4282
Phone: (802) 764-2200
Fax: (802) 764-2299

www.controltechinc.com

Other Offices
Manchester, NH
Great River, NY
Woburn, MA
Anaheim, CA



Joshua Chiappone
Systems Sales Engineer
Building Efficiency

116 Railroad Avenue, Albany, NY 12205 USA
Tel 518 451 2709 Cellular 518 817 8669
Fax 518 451 2701 joshua.j.chiappone@jci.com
www.johnsoncontrols.com

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