



Airways

Hamilton Chapter No. 037

<http://www.vaxxine.com/ashrae/>

American Society of Heating, Refrigeration and Air Conditioning Engineers

Volume 45, No.9

Our 45th Year

May 2004

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Tuesday May 11, 2004

Current Trends in Design and Installation of Filtration Systems for Building HVAC Security

Nationwide, HVAC designers have recently included more outside air – up to 60 cfm/person – to meet IAQ concerns through dilution. Complicating the dilution strategy are ASHRAE 90.1 guidelines calling for higher efficiency in building design. As a result, costly heat exchange devices have become prevalent. Since September 11th, though, the use of outside air has taken on a darker element as designers are asked to protect buildings from potential terrorist attacks that could come in the form of toxic gases released into a building air intake system.

Additionally, 20-60 cfm of untreated air presents air quality problems where heavy smog exists such as hospitals near freeways. Further, the possibility of a terrorist exposing the occupants to a simple gas such as chlorine or a virus such as anthrax makes the use of dilution potentially all the more hazardous. Large office buildings, airports, government labs, stadium arenas and other buildings containing large crowds or key societal functions are susceptible to such an attack.

The presentation will explore air cleaning methods that can complement dilution and can serve as an alternative for building protection.

Tonight's Speaker:

BRIAN MONK, P.Eng.

*Vice President, Sales / Marketing
Circul-Aire (Dectron Internationale)*

Brian P. Monk, P.Eng. is Vice-president, Sales / Marketing, at Circul-Aire (Dectron Internationale), Montreal, Canada, a North American leader in Air Purification and Energy Recovery equipment design and manufacturing. Mr. Monk has been a



***Royal Hamilton Yacht Club
North End of McNab, On Hamilton Harbour***

**5:00 PM Social Hour & Technical Session
6:00 PM Dinner & Business Meeting
7:00 PM Technical Program / Speaker Presentation**

Chapter Members \$ 27.00 • Guests \$ 32.00 • Students \$ 20.00 • Meal Plan \$ 130.00

BRIAN MONK, P. Eng. (cont'd)

member of ASHRAE since 1988 and is currently Vice-Chairman of ASHRAE TRG 2BCBR (Blast, Chemical and Biological Remediation). Previously, as Director of Engineering Circul-Aire, Mr. Monk specialized in the application and design of air filtration and energy recovery systems in the industrial and commercial HVAC market.

His academic background comprises of a college degree in Applied Science (Building Systems Engineering Technology) from Vanier College of Montreal and a Bachelor of Building Engineering from Concordia University of Montreal. Mr. Monk is a Registered Professional Engineer with the Province of Quebec and the Association of Professional Engineers and Geoscientists of British Columbia. Affiliations include AEE (Association of Energy Engineers), ASME (American Society of Mechanical Engineers), AWWA (American Water Works Association), AQME (Quebec Association for Energy Conservation).



Mr. Monk has also been awarded **Distinguished Lecturer** status by ASHRAE.

Recap – Horse Races at Flamboro Downs

Nobody was glued to their seats (guess I shouldn't use the word glue when talking about horses)!!!

Our guest speaker was informative enough to help some of us turn a profit. We even made enough money to show a profit for the event. As well, we got a group picture with the winning horse named Awesome Light which we will add to our Chapter History book.

Thanks to all ASHRAE members and their guests who turned out to support our Chapter.

I never realized how short those jockey's really are!

David Rasmussen, Social Chair 03/04



Darryl W. Singleton
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ASHRAE Hamilton Chapter Golf Tournament Wednesday, June 9, 2004

Great Response to the Golf!!!

It looks like we won't have to go searching to other Chapters to fill our 88 spots.

For those of you who have procrastinated sending me the entry form – do not delay any longer. **I have only 14 openings left.** Don't assume that because you golfed last year, you are automatically on the list for this year. We have new people signed up already that missed out in previous years. Singles or twosomes are also welcome.

Many forms are coming in with **a contact name only and other names "to follow"**. Please secure your foursome and advise me ASAP.

Again we will be having Hole Sponsorships at a cost of \$100. If you were one of our 8 sponsors last year, and your sign is still in good condition, you can bring it at a cost of \$25.00. Anyone wishing to sponsor a hole please contact me by Phone or Fax at (905) 575-5542. Please indicate which hole you wish to sponsor.

If you have not already done so, please complete and return the attached registration form.

David Rasmussen, Social Chair 03/04

This space Could Be Yours!

**Business Card Ad
\$75 For one year**

If you are interested, contact Brian Beninger
brian@beninger.ca

This space Could Be Yours!

**Double Size Ad
Business or Product Advertising**

**\$150 For one year
(includes \$15 Setup Change)**

**Changes can be made any time for an
additional \$15 setup charge**

If you are interested, contact Brian Beninger
brian@beninger.ca

Upcoming Events of Interest

SIEMENS

Siemens global train comes to Canada

The Siemens **exider** train will be visiting Canadian cities in June 2004. The **exider**, which has traveled the world visiting 22 countries and over 120 cities, is a 300 metre-long show on rails filled with exciting, interactive, technology-focused exhibits for Canadian industries of today and tomorrow.

The schedule for the tour is as follows:

- Vancouver – June 2-3, 2004
- Calgary – June 8-10, 2004
- Montreal – June 17-18, 2004
- Toronto – June 22-23, 2004

The **exider** train showcases Siemens breadth of technology through innovative products, solutions and services for process industries, manufacturing, machine building, construction and building technologies. See the future of automation on board in simulated customer-specific applications in pharmaceutical, chemical and food & beverage industries, automobile manufacturing, commercial power distribution, building comfort, life safety and security.

For more information please contact:

Meagan Madill
416.645.2326
meagan.madill@cundari.com

From this chart it is easy to see how much moisture can be contained in a cubic foot of air at any temperature. For example, at 70°F a cubic foot of air will hold 8.1

grains of moisture at 100%RH. Again, at 50%RH that cubic foot of air would contain only 4.05 grains.

To determine the humidification demand load (how much humidification you need), follow these steps.

1. Determine the grains of moisture to add to each cubic foot of air to be humidified.

Example: Desired = 70°F/50%RH, Outside Air = 0°F/50%RH

- a. From the previous chart, 70°F/50%RH = 8.10 grains X 0.50 = 4.05 grains/ft³
- b. From the previous chart, 0°F/50%RH = 0.48 grains X 0.50 = 0.24 grains/ft³
Grains to add to each cubic foot of dry air = 3.81 grains/ft³

2. Determine the maximum volume of air to be humidified in one hour. Example: area is 200' by 150' by 25' high, with 30,000 cfm of exhaust and 10,000 cfm makeup. Assume 1 air change by natural infiltration. (Use 1 air change/hour for most buildings, 1 ½ for a loose building, and 2 for a building with door opening and closing.)

- a. Volume of area = 200 X 150 X 25 = 750,000 cubic feet/hour
- b. Volume of exhaust = 30,000 X 60 min/hour = 1,800,000 cubic feet/hour
- c. Volume of makeup = 10,000 X 60 min/hour = 600,000 cubic feet/hour
- d. Use the *largest* of these volumes = **1,800,000 cubic feet/hour**

3. Determine the basic humidification demand load formula:

$$\frac{[\text{Volume of air to be humidified}] \times [\text{grains/ft}^3 \text{ needed} - \text{grains/ft}^3 \text{ available from outside air}]}{7000 \text{ grains/lb}}$$

$$\frac{[1,800,000 \text{ cubic feet/hour}] \times [3.81 \text{ grains/ft}^3]}{7000 \text{ grains/lb}} = 980 \text{ pounds/hour}$$

The result of these steps is a lbs/hr load, which is the normal capacity rating of all commercial/industrial humidifier systems.

Obviously you would need to use a humidifier of this minimum capacity in order to reach the desired level of humidity.

Submitted by Ralph Kosir, President 03/04

2003 - 2004 Meeting Schedule

This year's meeting schedule is summarized below. Except for some special events, all meetings will be held at the **Royal Hamilton Yacht Club, North end of McNab St. on Hamilton Harbour - If you need a map, check out our web site at <http://www.vaxxine.com/ashrae/>**. During the 5:00 PM to 6:00 PM Social Hour, a half hour "technical session" on the basics of a particular subject relating to our industry is presented. If a session sounds interesting to you, feel free to attend. Presentations are made by our members and this forum is open to all who wish to share his or her expertise. New products and/or services are presented informally via a "table top demonstration". After dinner, the main topic of the evening is presented by a "feature speaker". If you are interested in presenting a technical session, booking the table top space to promote your product or service or, if you have a suggestion for a feature subject and/or speaker, please contact Chris McClelland, our Programs Chair. There is a charge of \$ 75.00 for "Table Top" demonstration space and this includes a business card ad for two months.

2003 – 2004 ASHRAE HAMILTON CHAPTER PROGRAM ACTIVITY				
Month/Date	Theme	Tech Session 5:00 – 6:00 p.m.	Table Top Presentation	Guest Speaker/Main Topic
May 11, 2004	History	Social	Circul-Aire	Brian Monk of Circul-Aire Current Trends in Design and Installation of Filtration Systems for Building HVAC Security
June 9, 2004	Research	Annual Golf Tournament @ Whirlpool		
September 14, 2004	Programs	Under Floor Air Distribution	York	Gas Fired Refrigeration

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ASHRAE HAMILTON CHAPTER

GOLF TOURNAMENT REGISTRATION

DATE: WEDNESDAY JUNE 9, 2004
LOCATION: WHIRLPOOL NIAGARA FALLS, ONTARIO
COST: \$150.00 PER PERSON
INCLUDES: 18 HOLES ON ONE THE BEST COURSES IN NIAGARA
ONE POWER CART PER TWO GOLFERS
LUNCH AFTER YOU FINISH 9 HOLES
BUFFET SUPPER

**PLEASE COMPLETE THE FOLLOWING AND FAX OR E-MAIL.
WE ARE RESTRICTED TO THE FIRST 88 GOLFERS**

___PLAYER 1. _____ ___PLAYER 2. _____

___PLAYER 3. _____ ___PLAYER 4. _____

PLEASE INDICATE BEFORE EACH PLAYER THE SIZE OF VEST
THEY WEAR.....AS THIS WILL BE THE PRIZE GIVEN OUT.
ie: S M L XL XXL

PREFERRED TEE OFF TIME (Starting at 12:10 pm) _____

Designated Contact: _____

Phone: _____ Fax: _____

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