# The Herring Choker

**ASHRAE**
**NB PEI CHAPTER**



The next Chapter meeting is scheduled for **October 8th** at Maverick's Steakhouse & Grille (40 Lady Ada Blvd., Moncton)

This month's meeting will feature a presentation by Rick Lawlor P.Eng. Rick will be speaking on Energy Recovery from Waste Water.

A social hour will begin at 5:00 PM with a cash bar, followed by the presentation at 6:00 PM, and dinner at 7:00 PM.

## Executive Meeting Notice

A reminder to the Executive, Board of Governors, and the Committee Chairpersons that the Executive meeting will start at 3:30 PM at Maverick's Steakhouse & Grille.

*"The US Department of Energy website states that a staggering 350 billion Kw-Hrs of energy is discarded annually through drains. This represents only the energy from water-heaters tested by DOE. The addition of wastewater energy from industrial, institutional, and commercial activities significantly expands this figure. Mechanical Energy-recovery technology is available to address the extensive energy opportunity that has been ignored for years."*

**Speaker Biography:**

Rick is a Mechanical Engineering graduate of UNB (1980) and a 30+ year HVAC Industry veteran. Following graduation he entered the field of Engineering Sales with the Trane Company, with field-assignments initially in Saint John and Ottawa, before entering the Graduate Training program in LaCrosse Wisconsin. Post-training, further field-sales assignments in account management followed, beginning in Toronto (1981) and Hamilton (1984). Rick's activities and responsibilities during his engineering career included the selection and application of HVAC equipment from simple packaged Unitary systems, to centralized Air-handling and Chiller-plants, heat-recovery technologies, VAV systems, and the deployment of System-level Building Controls for energy optimization. Rick held Sales Leadership and Management roles in Hamilton and in Toronto between 1995 and 2010, where he oversaw experienced and junior graduate engineers, sales teams, and support staff. As well, he was responsible for implementation of corporate plans and initiatives to meet company financial and growth objectives.

In 2010 Rick ventured out as a Consultant within the HVAC Equipment Industry to help private firms and manufacturers grow and meet equipment Sales objectives. In 2013 he partnered with International Wastewater Systems (IWS) of Vancouver BC in efforts to commercialize and expand IWS presence and exposure in the arena of emerging Green technologies.

Rick acquired LEED AP certification in 2009, is a registered P. Eng in Ontario, and is a member of ASHRAE. He resides in Hamilton Ontario and enjoys time at the family summer home along the lower St. John river.

**Summary of September 10th Meeting:**

September meeting was a presentation by Marc Naccache of Enertrak on Demystifying Electronically Commutated Fan Motor (ECM) in Data Centers.

The presentation highlighted the various factors that contribute to the ECM motors in a data center application, how to measure efficiency in data center applications, the technology of EC motors and applying the technology in different environments.

**Why we used ECM motors in Data center application:**

Some reasons to implement the EC motor technology in computer room is social reasons such as depletion of fuel reserves and global warming. Financial reasons such as energy used and operating costs. Design reasons are also a major factors that affect the implement of the EC motors technology.

The data center managers must pay special attention to energy consumption related to the operations of data centers and evolution of their rooms both energy levels and design. The technologies have evolved in the last 12 years to support IT changes such as compression, ventilation etc…
The energy usage in a data centers:

- 100 times the density of a commercial building
- 24 hours of operation per day
- 365 days of operation per year

**How to measure efficiency in data center applications:**

The current energy landscape of data centers is servers 46%, UPS 8%, Lighting 4%, HVAC Fans 8%, HVAC mechanical cooling 23% and other energy consumption 11%. The average percentage of the total energy consumption of HVAC space is about 31% after the servers 46% and therefore we have all the responsibility to reduce the energy consumptions.

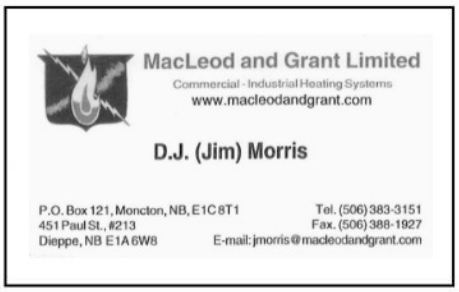
Energy efficiencies measures:

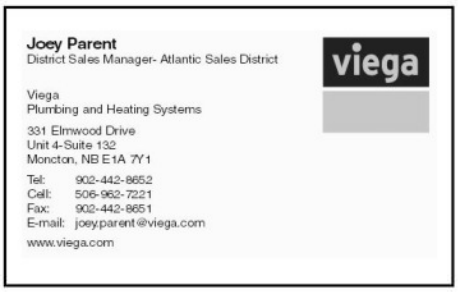
- **DCIE** Data Center Infrastructure Efficiency
- **PUE** Power Usage Effectiveness (total energy consumption of the space/energy consumption of IT equipment)

EC fans have been accepted as the latest in energy efficient air movement technology. The EC motor is a DC motor receiving AC power via an integrated electronic card.

EC fan motors are:

- Permanent magnets
    - high efficiency, synchronous operation and not slip losses.
- Power electronics
    - each individual motor → redundancy
    - variable speed (continuously variable or in steps) → load matching


- Controls electronics
  - convenient customer interface
  - process control, proportional–integral–derivative controller (PID controller)
  - direct digital control DDC

- Completely integrated system
  - complete overload protection, electrical filters, ease of wiring, compatibility, low sound, warranty

- Coupled to high-efficiency fans of various types and numerous sizes

Completely integrated in motor casing:

- Compatibility with the motor
- Line side filters for low emissions
- harmonics, radiofrequency & conducted noise
- Overload protection
- Low start-up current
- Low sound
- Simple hookup

Controls:

- Process control integrated PID loop
- 0-10V, 4-20mA, dry contact
- Modbus communication for commissioning + diagnosis from remote
- Sensor signal conversion from analog to DDC at no cost.
- Very detailed motor information for advanced load management

Some of the key feature of the EC technology:

- Ventilation
- Condensing boilers
- Cleanroom manufacturing- ceiling filter units with active power factor controls.
- Air- cooled condensers.
- Walk- in coolers, display case.
- Vending machines, coolers

Marc Naccache delivered a very informative presentation on the latest technologies in Data Centre Cooling. Marc demonstrated the advantages and disadvantages of each type of technology from an energy and application standpoint.

## NB/PEI ASHRAE Chapter Meeting Schedule 2013/2014

**October 8, 2013**
Topic: Energy Recovery from Waste Water

**November 12, 2013**
Topic: New Generation of Water Source Heat Pumps

**December 10, 2013**
Topic: Real Estate

**January 7, 2014**
Topic: Building a Smart Building for a Low Construction Cost

**February 11, 2014**
Topic: Low Temperature Heating / LEED

**March 11, 2014**
Topic: Dehumidification for natatoriums and Ice Rinks

**April 8, 2014**
Topic: Distinguished Lecturer – To be Announced

**May 7-8, 2014**
MEET Show

**June 10, 2014**
Topic: To Be Announced



### Social Events

**ASHRAE NB/PEI CHAPTER**
**AFTERNOON OUT WITH THE MONCTON MIRACLES**

**Date and Time:** **Sunday November 17th, 2013 at 2:00 PM**

**Information & Registration:** [www.ashraenbpei.com](http://www.ashraenbpei.com)

### CORRECTION

The 2013 Golf Tournament Closest to the hole winner in the September Edition of the Herring Choker was incorrect. It should have read Mark McGinnis from Tweedie & Associates.