

# ASHRAE Ottawa Valley Chapter

## Chapter Meeting #7 – 15 Apr 2014

---

Meeting Date:	15 Apr 2014
Location:	Restaurant International, Algonquin College
Attendance:	Total: 46
	Members: 32                      Guests:14                      Students: 0
Theme:	Research
Tour:	None
Tech Session:	None
Table Top:	Futech PLAD Engineered Pumping Systems Air Solutions Energy Recovery Ventilators
Program:	<b>Ventilation and Heat Recovery in MURBs: Building Science, Code Requirements and Energy Efficiency</b>
Speaker:	Steve Kemp
Prepared by:	Abbey Saunders

---

### ***Social*** (17:30 – 18:35)

### ***Business Session*** (18:35 –18:45)

- President Rod Potter introduced the Board of Governors and Executive.
- Abbey Saunders introduced the guests for the evening.
- President Rod Potter welcomed new members.
- Table tops were introduced by their respective representatives.
- Adrienne Mitani promoted the upcoming Diefenbunker YEA tour
- Adam Graham briefly introduced the upcoming April Controls Seminar.
- Stephen Lynch introduced the nominations for the upcoming year. Call to close nominations was tabled by Glenn McLean and seconded by Pierre Richer.
- Ottawa Redblack's tickets for the Aug 15 game, donated by Don Weekes and Rod Potter, were raffled off raising \$190 for ASHRAE Research with Richard Lemelin the lucky winner.

### ***Dinner*** (18:45 – 20:05)

### ***Evening Program*** (20:05 – 21:00)

- Next the evening program presentation commenced with Mr. Kemp introducing his outline for the evening's presentation.
- Mr. Kemp commenced the presentation reviewing the fact that high rise MURBs ventilation systems present opportunities for improved performance, and reviewed the historic evolution of ventilation requirements for MURBs. High rise ventilation arose from the need to provide corridor ventilation for occupants and control smoke. It has evolved over time to and now helps deal with noise and odor migration, as well as in current facilities ventilation strategies can allow for a more diverse occupancy and lifestyle markets.
- Next we reviewed that air flow through a building requires three (3) things: a pressure differential, a path and an air volume. These three things are highly influenced by stack

pressures acting on high rise buildings.

- Technical challenges associated with high rise buildings that can attribute to increased energy costs include: wind pressures (typically up to 300 Pa), stack pressures (typically up to 120 Pa) and mechanical pressures (typically on the order of 75 Pa).
- Consequences of improper stack effect management in high rise facilities include mold growth on higher floors and odors migrating through the building.
- Next Mr. Kemp reviewed several real world examples with various problems and the various techniques and approaches that were implemented to mitigate these concerns.
- Following the discussion of real world examples next ASHRAE 62.1 was quickly reviewed as it applies to calculating acceptable ventilation rates for MURBs.
- Compartmentalization of spaces is a solution to many of the problems associated with stack effects in MURBs. Creating air locks at suite doors or elevator vestibules are two methods commonly utilized to achieve compartmentalization. Compartmentalization is almost always successful in dealing with air movement problems and odor migration.
- In a perfect world zero leakage for air tightness targets is desired. However, in the real world we do the best we can with reasonable efforts for MURBs. The LEED values for air leakage are the generally accepted targets.
- Independent ventilation of the suites via the use of HRVs and integrated fan coil units for compartmentalization is not only a successful technique to eliminate issues associated with stack effect, but also in general reduces the quantity of ventilation air required for a building which helps to reduce overall energy costs when compared to conventional systems with corridor ventilation.
- Next the Ontario Energy Code SB-10 was briefly discussed. Mr. Kemp outlined that although the code is one of the most stringent in the world, in terms of the mechanical system requirements it isn't that stringent. Mr. Kemp reviewed that the envelope requirements are quite stringent, however our typical envelope construction does not meet the intent of the code. Mr. Kemp did discuss that with improvements in mechanical systems the intent of the energy code can often be met for MURBs.
- Mr. Kemp finished off his presentation by reviewing additional real world examples.
- After a brief question and answer period President Rod Potter thanks Mr. Kemp and the meeting was adjourned at 21:00.