

ASHRAE Ottawa Valley Chapter

Chapter Meeting #4 – January 17th 2017

Meeting Date:	January 17 th 2017
Location:	Centurion
Attendance:	Total: 64
	Members: 51 Guests: 13 Students: 2
Theme:	Young Engineers of ASHRAE
Tour:	None
Tech Session:	Duct Leakage, System Effects and SMACNA APPS
Table Top:	American Air Filter / Sanuvox Air Purification
Program:	IAQ Guidelines for Occupied Buildings Under Construction SMACNA's Executive Director Technical Services
Speakers:	Eli P. Howard, II
Prepared by:	Chris Fudge

Social (17:30 – 18:20)

Business Session (18:18 –18:59)

- President Abbey Saunders called the meeting to order.
- President Saunders introduced the Board of Governors and the Executive.
- President Abbey Saunders did a summary of what ASHRAE is and goals, mission and vision and how they are met.
- ASHRAE OVC Past President Cathy Godin and current secretary of MCA Chapter discussed MCA. Local MCA chapter is currently celebrating 50 anniversary.
- President Elect Adam Graham discussed ASHRAE research and thanked those who have donated so far this year. Marc Brown Chairman and Mary Gauthier General Manager of the Ottawa Mechanical Contractors Association presented a 750 dollar cheque on behalf of the Ottawa MCA to ASHRAE research. Mr Graham also gave an overview of where research campaign is to date.
- Research promotion raffle tickets for the evenings donated by JCI.
- Secretary Chris Fudge introduced the guests for the evening.
- Membership promotion chair Celine Baribeau introduced the new members.
- Student Activities co-chair Adriane Mitanni discussed the upcoming career fair on March 2nd at Carleton University. There will be students at this career fair from Colleges and Universities from the Ottawa region.
- President Abbey Saunders reviewed technology awards.
- Peter Shaw-Wood discussed student activities.
- Joe D. Discussed YEA and upcoming archery tag event. Lot of support from all sectors of industry for YEA.

Dinner (19:00 –)

Evening Program (19:30 –)

- Abbey Saunders invited the table top presenters to the podium for a short presentation.
 - o Adam Moons – AAF
 - o Raymond Gatt – Sanuvox

- President Abbey Saunders invited Adam Graham to do the draw for the raffle.
- President Abbey Saunders introduced the speaker for the evening Eli Howard Executive Director of SMACNA Technical Services
- Evenings topic SMACNA’s IAQ Guidelines for Occupied Buildings Under Construction
- IAQ Guidelines for Occupied Buildings under construction 2nd edition is the basis for the evening discussion
- Document does not cover CCOHS CA OSHA USA, lead or asbestos abatement.
- Air pollutants associated with construction
 - o Sources of airborne contaminants
 - o How AB contaminants move through buildings
 - o How AB contaminants impact building occupants
 - o Placing contaminant exposures in perspective.
 - o Hazard assessment
- Sources of air born contaminants
 - o It is as simple as looking at what materials be demolished and what tools will be used.
 - o Then deciding how that can move through the building
 - o Sealants for duct work for example might not be appropriate though they are good on ABC front.
- How Contaminants move through buildings
 - o Via the air
 - o Eyes and Nose
 - o It comes down to two issues:
 - What buildings materials are being demolished or disturbed
 - What machinery is being used?
 - o How can the area under construction be kept at a lower pressure than the rest of the building?

- Building assessment
 - o A full blown study of the buildings and activities to occur in the construction process
 - o Ventilation effectiveness needs to be review via ASRHAE 62.1
 - o Thermal comfort ASHRAE 55
 - o If lead or asbestos is present deal with those first prior to beginning the construction process.

- Chapter 3 Control measures
 - o This is the standard most groups such as ASHRAE, USGBC etc... use in their specifications
 - o HVAC Protection
 - o Source Control
 - o Pathway interruption
 - o Housekeeping
 - o Scheduling
 - o Occupant relocation

- Included in LEED V4
- HVAC Protection
 - Do not use permanent HVAC for construction site's air condition needs.
 - Block all intake openings within the construction area
 - LEED requires MERV 13 filters when using during construction. Bypass around filters is a major problem when running permanent equipment during construction.
- Source control
 - Product substitution
 - Low VOC paints /adhesive
 - Modify equipment or operation
 - Modify work practices
- Pathway interruption
 - Barriers
 - Plastic sheeting etc...
 - Pressurization
 - Negative pressure in construction site positive in occupied sides.
- Housekeeping
 - Suppress dust with wetting agents or sweeping compounds
 - Increase frequency based on visual inspections
 - HEPA vacuums, central vacuums with outside exhaust.
- Scheduling
 - Can extremely odorous or dust generating activities be done weekend or at night with HVAC off?
 - See examples in Chapter 12
 - Various examples there of office or hospital scenarios
- Occupant relocations
 - Try to maintain buffer zone between construction and occupied spaces
 - Consider relocating workers who complain of effects to more isolated locations
 - Consider temporary facilities
 - Is it the renovation going on in the building or is it some other factor that are causing issues with occupants.
 - This decision really needs to involve the building owner
- Equipment cleaning
 - Specified in contract
 - Evaluate existing HVAC systems? Or just the new stuff?
 - Closing ducts in part of the system will affect other parts of the system by increasing velocities.
 - Need to decide to clean before or after the completion of the work
- Establishing pressurization
 - Easy to say difficult to maintain
 - Factors working against the best plan
 - Wind
 - HVAC Economizer Operation can pose challenges
 - Exhaust fans, bathroom kitchen etc...
 - Taller buildings

- Stack effect and piston effect of elevators
- Chapter 5 Managing the renovation process
 - Project organization
 - Selecting IAQ Controls
 - Source and tools drive this process
- Chapter 6 Pre-renovation building evaluation
 - Objectives, procedures and follow up
- Chapter 7 Containment
 - General considerations – Offices to Hospitals
 - Guidelines – ASHRAE, CDC, Hygienists
 - Basic Containment – Plastic and Tape
 - Intermediate containment – Barriers
 - Advanced containment – Solid barriers, vestibules, controlled & monitored pressurization
 - Advanced are applications such as health care. Basic and intermediate are found in schools or offices.
- Chapter 8 Moisture and mold control
 - General characteristics of mold
 - Water is required and dirt. Beware of mold resistant materials, they need to be cleaned
 - Moisture problems associated with construction – wet concrete and open buildings are biggest water concerns.
 - Preventing mold growth
 - Mold cleanup issues, after assessing what kinds of mold were found
- Chapter 9 Quality Control
 - Standards – Ultimately set by occupants
 - Surveillance Criteria – Eyes and Nose
 - Enforcing work practices
 - Reoccupancy criteria need to be outlined.
 - Project documentation –Make sure that the IAQ Management Plan establishes accountability
- Chapter 10 Communication with occupants
 - Occupant education
 - What, when and who
 - Complaint response
 - Have a legal liability to address complaints.
- Chapter 11 Troubleshooting
 - Typical complaint scenarios?
 - Timing, location reason
 - What were pressurization differentials?
 - What activities were taking place on the construction site at time of complaint?
 - What solutions and adjustments are possible to address complaint?
- Chapter 12 Examples
 - Minor office reconfiguration
 - Roof replacement
 - Hospital renovation
 - High School renovation (Two Options)
 - These examples walk through all the material covered in chapters 1-11.

- Questions from audience regarding good and bad mold. There is bad mold but not really any good mold. Mold should be removed regardless of what type it is. Some molds are much more harmful than others. When mold is discovered an expert should be brought in to investigate.
- Question from the audience regarding types of air purification products are covered in the standard. This is not covered in the SMACNA standard. There is a brief on certain products that clean up air born contaminants by the ASHRAE environment health committee. This brief covers pros, cons and unknowns of various products.
- Questions in regards to temporary HVAC be considered during design. This is something that should be discussed with the owner during the early design phase. Considerations should be given to impact on permanent based equipment vs cost of temporary equipment.
- President Saunders and Mary Gauthier MCA Ottawa general manager presented Mr. Howard with a gift
- President Abbey Saunders announced IES trade show taking place next week.
- Next meeting is back at Algonquin College Restaurant International next month.
- President Saunders reminded guests to complete evaluations forms
- Meeting adjourned at 20:24