ASHRAE Ottawa Valley Chapter

Chapter Meeting #5 – February 23rd 2017

Meeting Date:	February 23rd 2017					
Location:	Centurion					
Attendance:	Total:	79				
	Members:	64	Guests:	15	Students:	6
Theme:	Chapter Technology Transfer Committee					
Tour:	None					
Tech Session:	Introduction to Control Sequences of Operation					
Table Top:	Renew Air / Hydro Ottawa /					
Program:	Retro-commissioning "A Tune-up for Buildings"					
Speakers:	Martin Sign, Director of Sustainable Design, WSP Trevor Freeman, Program Officer of Conservation and Demand Management, Hydro Ottawa					
Prepared by:	Chris Fudge					

Social (17:30 – 18:20)

Business Session (18:00 –18:59)

- President Abbey Saunders called the meeting to order.
- President Saunders introduced the Board of Governors and the Executive.
- Secretary Chris Fudge introduced the guests for the evening and noted that the ASRHAE Design Essentials 1 and 2 are taking place in Toronto, May 8th -12th 2017
- Dan Redmond provided an update on the the ASHRAE Winter meeting he attended in January. Two big take aways from the winter meeting for Dan were; from Region 11 Tim McGin won the nomination for DAL. Darry Boyce was nominated as Society Treasurer.
- Incoming Society Treasurer Darryl Boyce spoke to the honor of being nominated for this position and thanked the chapter for their support. Mr. Boyce will be the 6th Society president to come from Canada.
- CTTC Chair Jeff Watson provided an update on CTTC. Role of the CTTC Chair
  Transfer of information from Society down to the Chapter (press releases/bulletins/etc). Administration of the Distinguished Lecturer Program. We have 3 DL's this year. ASHRAE Webcast – annual free webinar in April. This year's webcast is April, 20 and the topic is "Using Analytics to Drive Building Performance"
  Putting together the Program – our Chapter has a dedicated Program Chair for this task. Very important as the Program is what attracts new members and retains members. Members are the lifeblood of ASHRAE.
  Technology Awards
- President Abbey Saunders invited each of the table top speakers to come to the podium to say a few words about their respective table tops.
- Trevor Freeman from Hydro Ottawa spoke briefly about incentive programs that will be covered in detail later tonight.
- Ahmed Farag from Master spoke of RenewAire.

- Student Activities Co-Chair Peter Shaw-Wood provided an update on the tour that will take place at Carleton University on March 2nd. The tour will be guided by Guillaume Beaudin.
- 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.
- RVC Student Activities Ben Oliver provided an update on Student Activities at the regional level.
- Adam Graham provided an update on research promotion and announced donation to RP of 5,000 from Hydro Ottawa. He also discussed the upcoming seminar that will be taking place on March 22nd. The seminar will be two parts each a half day. The first part will be focused on CSAB52 while the second half of the seminar will be focused on VRF. Details of the seminar and registration are located on the ASHRAE OVC web site.
- Nick Lea did an overview of TC's, how to join a TC and the TC he is involved in.
- President elect Adam Graham and President Abbey Saunders drew the winning ticket for the RP raffle. Steve Moons won the draw for the tickets donated by Walmar. 510 dollars were raised for research promotion.

Dinner (19:00 –)

Evening Program (19:30 –)

- Nick Lea did an overview of TC's, how to join a TC and the TC he is involved in.
- President elect Adam Graham and President Abbey Saunders drew the winning ticket for the RP raffle. Steve Moons won the draw for the tickets donated by Walmar. 510 dollars were raised for research promotion.
- President Saunders detailed review of both Mr. Freemans and Mr. Sings back grounds and qualifications.
- President Saunders invited Trevor Freeman to the podium to do start the first half of the evening's program.
- The purposed of the department for which Mr. Freeman works facilitate building owners and managers to reduce their consumption and offset demand. Mr. Freeman is going to review retro commissioning and incentives available through Hydro Ottawa. Mr. Freeman started his presentation with the definition of retro commissioning; systematic process to improve an existing buildings performance. There are several different terms used in the area of commissioning; building commissioning, re-commissioning, retro-commissioning, ongoing commissioning. Retro-commissioning is used for buildings that may have never been commissioned or buildings that have had a lot of change. Ongoing commissioning is what takes place after building commissioning or retro-commissioning.
- Retro-commissioning focuses on operation and usually involves an energy audit. Operations include sequences of operation, functional testing and ultimately system optimization.
- Why would a building owner look at doing retro-commissioning? The system will operate more efficiently which means less operating cost. The system overall performance should be improved. It is also a vehicle for obtained a more improved maintenance process. Building operator training is also part of this process. Better system performance means happier occupants and streamlined maintenance and operator training mean further reductions in operating costs.
- Typicaly retro-commissioning projects save roughly 16 % on energy and have a payback period of 13 months.

- In the Ottawa area the stats are similar. Five buildings were looked at the average savings was 16 % while the average payback was 2.2 years. On the Ottawa projects roughly 50 % of the energy audit cost was covered by Hydro Ottawa.
- Hydro Ottawas has programs that can help building owners reduce the cost for; energy audits, retro-commissioning studies, building system audits.
- Audit funding program was reviewed in detail. There are several paths to getting funding for projects with Hydro Ottawa. There are three main paths; audit funding programs, existing building commissioning, process and system engineering studies.
- If you are considering doing a project there are some important steps to follow to make sure incentives are received at the end of a project. The first step is to establish eligibility of your project by getting in touch with Hydro Ottawa as soon as possible (before any work is done). Once you have established eligibility submit your application and obtain pre-approval. Once the project is completed submit post-project documentation and then receive cheque.
- Martin Sing begins the second half of the evening's presentation. Mr. Sing began by providing some additional details on retro-commissioning. Additional details of the process were highlighted. The planning phase, investigation phase, implementation phase and hand off phase were reviewed. In the planning phase the merits of the project are reviewed with the owner, the site walk through is done, the retro-commissioning plan is made and the team assembled that will do the work of the project. The investigation phase, functional testing, site monitoring, facility documentation is reviewed, a master list of findings is compiled and then operational improvements are priorities and selected. In the implementation phase an implementation plan is developed, selected operational improvements are implemented and the results are verified. In the hand off phase a final report is developed, system manual is completed, the recommissioning plan is developed and operator training is performed.
- Mr. Sing reviewed some examples of real projects. 275 Slater was the first project in Ottawa that received LEED Silver for existing buildings. The building recently underwent a retro-commissioning two years ago. When is received the LEED Silver rating 7 years ago it received energy star score in the mid 80's. The recent retro commissioning findings that there was an available 9 % energy savings with a simple payback of 4 years. Main findings were refining the free cooling loop operation, AHU setpoint optimization and unoccupied space temperature control. The Sir Wilfred Laurier Building was pursuing LEED Gold Certification. 29 % energy reduction was identified with a 5 year simple payback. Measures were from very simple to a chiller replacement. The building operators over time had changed the operation of the building in order to address tenant complaints. The result was the building operated much less efficiently. Much of the energy improvements were gained from reversing some of the changes that were made. Economizer operation was refined. The economizer dampers were locked out although the controls were there to modulate the dampers. Exhaust fans ran continuously although the building was not occupied in the evenings. Setpoint adjustment were also made. The chiller plant was also looked at. It was found the chiller plant they had was oversized. The tonnage of the plant was reduced from 800 to 500 tons. The money saved was invested in other changes made in the building was well as a more efficient chiller. TD place was a combination of an energy audit and a retro commissioning project. The retro-commissioning project was done on the south side of the building. This part of the building was only 1.5 years old at the time of the project. Significant energy savings measures were identified. 12 % energy savings were identified with a simple payback of 6 years. Most of the energy savings came from low cost to no cost measures and 4 % came from capital improvements. The energy audit was done on the north side of the building because most of this part of the building is nearing end of

life. Some of the key findings on this project were event based control and unoccupied control, set point adjustments, sensor repair, additional BAS control as well as exhaust fan and pump optimization. Some of the low cost no cost measures have been implement none of the capital improvements have been made. The next step of the project is to get approval from the owner and implement the remaining recommendations.

- President Abbey Saunders thanked both speakers and presented them with a gift.
- President Abbey Saunders reminded the audience of the career fair, CTTC Tech Awards Submission and the upcoming ASHRAE Design Essentials course.
- Meeting adjourned at 21:30