

ASHRAE Ottawa Valley Chapter

Chapter Meeting #4 – 16 January 2018

Meeting Date:	16 January 2018
Location:	Centurion Conference & Event Center, 170 Colonnade Road South
Attendance:	Total: 69
	Members: 46 Guests: 19 Students: 4
Theme:	YEA – Young Engineers in ASHRAE
Tour:	None
Tech Session:	Adrienne Mitani, Smith + Andersen – Technical background for the program discussion on BIM
Table Top:	none
Program:	The BIM Transition – How Building Information Modeling is Changing the Construction Industry
Speakers:	Spencer Cripps (WSP), Chris Chi (X-L-Air), Robert Van Lin (Perkins + Will), Daniel Redmond (Carleton University)
Prepared by:	Aaron Dobson

Social (17:30 – 18:24)

Business Session 18:24 – 18:38)

- President Adam Graham welcome message, call to order.
- President Adam Graham introduced the Board of Governors and the Executive.
- Secretary Aaron Dobson introduced the 19 guests.
- Membership Promotion Chair Celine Baribeau introduced the 11 new members since last meeting.
- Student Activities Chair Peter Shaw-Wood reaching out to the consulting community for a volunteer to mentor the students at Ottawa University for the student design competition. This would be a once a week commitment at Ottawa University to help for the student design competition. Peter announced that the ASHRAE career fair is March 6th at Carleton University. The signup sheet to register is posted on the ASHRAE website.
- Adam Moons provided a wrap-up on the ASHRAE bowling event last November. 42 people attended the event. The winning team was Ainsworth. Adam is looking forward to having the event for next November.
- President-Elect and Research Promotion Chair Dan Redmond gave an update on Research Promotion. The research campaign is currently at 47% of goal. Four Ottawa Senators tickets and parking pass were donated by Engineered Air for the evenings raffle.
- David Michelin from HTS mentioned there are openings for tablespots. There is availability for tablespots for February's meeting and the remaining meetings.
- President Adam Graham invited Joe Della Valle to talk about this month's theme – YEA (Young Engineers in ASHRAE). Joe talked about the goal of YEA, which is to introduce the younger people to the local chapter through the YEA meetings which are held every month or so. Adam Moons and Joe have been encouraging members to attend the

leadership weekend that will be from March 23rd to 25th in Seattle. The Chapter has allocated funds to pay for a member to attend and will decide on who they select by Thursday. Joe has received a few names of people that have applied and is looking for additional names to pass along. Anyone can attend the leadership weekend. The cost is \$450 plus cost of flight to attend. Joe provided feedback through his experience attending the leadership weekend as a good networking and career development opportunity. Joe mentioned the next YEA event is February 9th which is an Axe throwing event. There are 24 spots available. Cost is \$45 for members and \$55 for non-members. Details to be provided on the ASHRAE website.

- Adam Graham mentioned that February 1st is the cutoff for people who want to register for the leadership weekend and that there will be an announcement on who the Chapter sends to the leadership weekend.

Business Session Finished at 6:38pm

Dinner (18:38 – 19:38)

- Dinner served at 18:38pm
- Dinner was Garden Salad for starter. Roast beef with mash potatoes, carrots and asparagus for main and chocolate cake for dessert

Evening Program (19:38- 21:10)

- Evening program started at 7:38pm
- Adam Graham invited Mike Cation from Engineered Air to draw the winning raffle ticket. Winner of the Ottawa Senators tickets was Michel Deveau. Dan Redmond mentioned that \$620 was raised for ASHRAE research promotion thanks to Engineered Air.
- President Adam Graham introduced the moderator Adrienne Mitani who was responsible for putting together the BIM panel discussion.
- Adrienne will be talking about BIM (Building Information Modeling) and how it is changing the building industry.
- Adrienne welcoming the speakers and giving an introduction of each speaker. Spencer Cripps (WSP), Chris Chi (X-L-Air), Robert Van Lin (Perkins + Will), Daniel Redmond (Carleton University)
- Adrienne opened the discussion with how BIM is different than CAD projects;
 - Spencer (Consultant) – With BIM, the level of effort has increased, decisions must be made earlier on in the design process. BIM modelers/draftsperson need to have a greater depth on how the building operates. The role of the draftsperson becomes more technical when designed with BIM vs a project done with CAD.
 - Robert (Architect) – Makes the design process more efficient with BIM vs CAD. It takes longer to design with BIM vs a traditional approach. If there is a design change it allows the Architect to get to a resolution quicker.
 - Chris (Contractor) – BIM forces sub-contractors to work together to make things work as opposed to CAD which does require contractors to collaborate.
 - Dan (Owner) – BIM allows you to identify issues sooner. There will be challenges or issues with 2d or 3d. Identifying issues earlier on in the process allow better decision-making.
- Adrienne mentioned this also changes the roles in the project;

- Robert (Architect) – using BIM as a communication tool across the construction team. With everyone using the same tool, it allows for better understanding and collaboration. BIM breaks down barriers vs traditional approach which operated independent of each other.
- Spencer (Consultant)– BIM used as a tool as integrated project delivery (IPD) and allows a collaborative process. Role provides for more responsibility. Allows to make more decisions early on and changes with minor impact.
- Chris (Contractor)– Contractor inherits the issues with the model from the Architect. Contractor's model is more detailed since it is used for fabrication. More collaboration required on the construction side. This is a work in progress.
- Spencer (Consultant)– Collaboration requires more development. Typically, the designer's model does not get used for the fabrications. It is still a work in process. Designers do not know what is required to take their model to fabrication ready since they are not sure who the contractor is and their requirements.
- Dan (Owner)– Owner's representative role does not change that much from a design process. Still have the same objective to provide a building to turn over to the client. Does not change his role, but does provide insight to what challenges might be faced early in the process.
- Adrienne asked what would they like for the model to do in the end;
 - Dan (Owner)– As an information tool to manage the asset for the next 50 years and integrate into the operations team to understand what is there and how to maintain it.
 - Robert (Architect) – BIM is a database of information. During phases of project, Architect starts with the 3D orientation. By the time it gets to the Owner, at the end of the project, it is imbedded with all the information. Success to using BIM as a process, is the understanding during the timeline what information is important to enter the model at certain times and what you can get from the model at certain times.
 - Dan (Owner)– Need to understand from the beginning the level of detail required by the Owner. This will impact the time required in putting together the model during the course of the project.
- Adrienne asked of the learning curve for BIM and their experience getting started;
 - Spencer (Consultant)– The learning curve is getting familiar with the technology using revit. Once you are immersed in the tool it becomes easier. Consistency is key. It takes a few projects to develop a list of questions to ask the Architect/Owner and develop your own design process.
 - Robert (Architect) – Architects have been using BIM for the last 7-8 years. The last 5 years it has become mainstream where most of the architectural firms have started to use BIM. The learning curve is less as schools have been adopting the technology and preparing new graduates. The firms have made the investment in getting the database/libraries created.
 - Chris (Contractor)– It is a challenge getting started when the model is only received after the project is awarded to the Contractor. The time is limited in getting the model ready for fabrication. Time frame could be a week and could be a challenge for contractors new to the process. Time frame for contractors to develop the fabrication model is a lot less than the time the

- Architect/Consultant has to develop the design model.
- Adrienne asked what are the expectations of the model and are there any misconceptions;
 - Robert (Architect) – Writing a good execution plan is key for the project team to understand what is expected.
 - Spencer (Consultant)– Fear of the unknown. People think that this changes everything and that they cannot be a designer anymore or how to build a building. There is a misunderstanding that things need to change right away, which they do not.
 - Chris (Contractor)– Misconception that the revit model is error free. The error is less for new construction than existing. Revit models are not always updated with the issued change orders during the project, so issues could still be present on-site due to interferences. Especially with a project with a lot of changes, it is very difficult to catch all the elements that could cause a problem.
 - Dan (Owner)– All buildings are unique and there will always be problems. There needs to be an understanding from the project team that there will still be challenges, still be discrepancies.
 - Adrienne – asked what would make a BIM project successful;
 - Robert (Architect) – Understanding at start of project of how far do you take the BIM model. Clear expectations of that model.
 - Spencer (Consultant)– Understanding the level of detail required from each group.
 - Chris (Contractor)– More time to develop BIM and to educate field-level staff on revit software.
 - Dan (Owner) – Planning and developing the BIM execution plan to meet your targets. Designated BIM coordinator to maintain model.
 - Adrienne asked who owns the BIM process;
 - Robert (Architect) – BIM model is authored by the design team at the beginning of the project, but the ownership evolves over the life of the project timeline. There are different people that are the primary user of the model over the course of the project.
 - Spencer (Consultant)– There is a handover process from the Consultant to the Contractor with design assist where the Contractors are working at the same level as the Consultant on the BIM model or it's a hard turnover where there is expectation for the Contractor to start their as-builts and coordination right away.
 - Dan (Owner)– The ownership rotates through different user groups, the Owner, design team, contract, back to Owner etc.
 - Adrienne asked what are the reasons to do a BIM project;
 - Robert (Architect) - Speed, increased efficiencies/productivity over time, increased collaboration, resolving complex issues sooner and quicker.
 - Spencer (Consultant)– There are certain buildings worked on in revit that would not have figured out in CAD. Architects are creative with their building shapes. BIM allows Consultant to figure out placement of equipment in spaces not thought possible. Client visualization. Less RFIs down the road because of better design and coordination.
 - Chris (Contractor)– Better to visualize the Consultant's design. Better to coordinate with other trades. Creates more communication with other trades

that have an impact on each other.

- Dan (Owner) – Better understanding how the building is constructed. Database is an accurate representation of what is there for building maintenance and operation. Provides future design teams a starting point of what is there for future projects.
- Adrienne asked what is the future of BIM in the industry;
 - Spencer (Consultant)– Started with larger projects, now starting with smaller projects. Would like to incorporate the mechanical design calculations into revit.
 - Chris (Contractor)– Incorporate the use of mobile devices with the revit model for the field staff to use. Use of estimating plug-ins.
 - Dan (Owner) – Incorporate building automation system functionality into the revit model to uncover issues with building operation vs design/performance.
 - Robert (Architect) – Design performance plug-ins to automate functions and simplify complex processes.
- Adrienne concluded the end of the panel discussion and opened it up for questions
- Questions – 6 questions asked
- President Adam Graham reminding members and guest to fill out evaluation form
- President Adam Graham saying thank you and reminding that next meeting is February 20th, 2018 at the Centurion Conference Centre.

Meeting adjourned 9:10