

ASHRAE 2014 Annual Conference – Seattle

TC 1.5 Computer Applications- Agenda

TC 1.5 Public Web site: <http://tc15.ashraetcs.org/>

TC 1.5 ListServ (mailing list) : tc105_all_lst@listman.ashrae.org (Contact chair or vice chair to be added)

TC 1.5 Members-only Site: <https://sites.google.com/site/ashraetc15/> (Contact chair or vice chair for access)

Main Committee Meeting Monday 6:30-9:00 PM Ravenna A/B (3, Sheraton)

Sponsoring/Cosponsoring:

Workshop 5: Getting the Right Data into and out of Building Information Model

Seminar 21: I Know That I Should be Doing Building Information Modeling (BIM), but ... - How BIM Is Practically Being Introduced and Used By People like You to Move Their Projects and Businesses Forward Toward a Connected and Collaborative BIM World

Seminar 22: Building Information Modeling (BIM) in Action: Beyond Computer Aided Design (CAD)

1. **Call to Order**
2. **Welcome:** Introductions
3. **Roll Call:** List of Voting members from 2013-2014 TC 1.5 Roster:
 - a. Present: Galler (ch), Dwyer (NQ), Rosen , Bourassa, Branson, Pouchak
 - b. Not present: Kennedy, Billedeaux
 - c. 6 VM present including chair. Quorum Achieved.
4. **Review of Agenda**
5. **Approval Of Minutes from 2014 Annual Conference in**
 - a. VOTE- To approve the minutes from NYC
 - i. Vote approved 5-0-0- CNV
6. **Review Action Items from 2014 Annual Conference in NYC:**

Responsible Member	Description	Due Date	Completion Date
Galler	Reserve Seattle Room locations	March	March
Galler	Assign Handbook Chapter review members (Billedeaux assigned Handbook Review Compliance Chair)		
Branson, Kennedy, Clayton	Continued- Draft letter for ASHRAE Society to send to software developers to enhance critical functionality (BEM capabilities vs. BIM capabilities) NEW ACTION ITEM- Branson send relevant definitions to terminology- and ask relevant committees to create definitions. Send letter to terminology instead of Society.	Before Seattle	
Subcommittee Chairs	Update subcommittee web site sections.	Continuing	1 month after mtg.
Galler	Post section announcements on web site.	Continuing	1 month after mtg.

7. **Subcommittee Reports:**

- a. Handbook: Steven Rosen
 - i. Motion to ask TC Chair to approve the handbook as forwarded.
 - ii. 3-4 weeks to perform review to remove historical or outdated content.
 - iii. Motion- For the committee to approve the handbook as updated Rosen. Second Branson.
 - 1. Vote approved 5-0-0-0 CNV
- b. Research: Todd Gottshall
 - i. Active session-
 - ii. Art- liaison
 - 1. RTARs now have accept or reject- 5 approved, 4 rejected. Comments are returned.
 - 2. Will be updating work statement form next
 - 3. When filling out a WS, the list is just suggested- don't copy list. It's there as an example.
 - 4. You can go directly to WS. The flowchart was updated last year.
 - 5. Try to avoid company/product names in the RTAR or WS.
 - iii. Bing Dong work statement discussed- Bing was not at subcommittee meeting, discussed RTAR at main meeting:
 - 1. Seeking co-sponsorship from 3.3 and 1.5- 3.3 is interested.
 - 2. Problem with finding faults in buildings - facility managers do not get good feedback.
 - iv. Gottshall- Motion that we accept this WS- "A BIM and physics based modeling enabled platform for monitoring and visualizing high performance commercial buildings" to be forwarded to RAC. Branson seconds.
 - 1. Vote approved 5-0-0-CNV
 - v. Todd introduced Stuart Donaldson from Honeywell- discuss opportunities to use XML in BACnet
 - 1. Data modeling working group convener.
 - 2. BACnet objects and props in device.
 - 3. Updating web services to provide interchange of data between devices
 - 4. When describing content of controller, need to describe data points.
 - 5. Semantic tagging of contents so it is known what the points actually are.
 - 6. Looking to find others working on this problem to avoid duplicate efforts.
 - 7. Bourassa noted Brent Eubanks/River Hume suggested "object oriented programming for BACnet" – Norm- Stuart should contact them.
 - 8. Heinzerling and Gowri think that Nick Gayeski has an effort that is related.
 - vi. Roth RTAR proposal- follow on to 1468
 - 1. "Development of a reference equipment model for standardization for equipment and device creation."
 - 2. Standardizing the creation of BIM for HVAC equipment- parameters required for HVAC, common parameters. Nothing out there now which tells engineers what points are needed for BIM.
 - 3. More than just performance and geometry.
 - 4. Would cover all categories of HVAC equipment.
 - 5. Deliverable will be a spreadsheet listing the info. Would be published the same way as 1468.
 - 6. Creation of BIM families in major vendor's tools.
 - 7. Dwyer- Similar to ISO 16757?
 - 8. Motion- "To accept RTAR proposal with minor editorial changes"
 - a. Todd motioned, Branson second
 - b. Vote approved 5-0-0-0 CNV

- vii. Branson- developing RTAR to form definitions for daylighting.
 1. “Development of a reference BIM for daylighting optimization”
 2. Follow on to 1468
 3. Galler asks Branson and Roth to align RTAR content so 1468 development remains consistent.
 4. Motion- To accept this RTAR with minor editorial changes Norm/Rosen
 5. Vote approved 5-0-0-0 CNV
- viii. Gottshall- there is about \$2M available for research.
- ix. Roth- that money has to be spent
- x. RTAR from Pouchak-
 1. In new format
 2. “HVAC system thermal control and energy performance using work and data exchange processes”
 3. Using Guideline 20 use case to exchange controller information
 4. Deliverable would include Guideline 20 use cases, and BIM design data.
 5. Cosponsor with 1.4- they have approved, seeking from 7.5, 7.1?
 6. Gottshall motions to approve, Rosen seconds “to accept RTAR with minor editorial changes”
 7. Vote approved 6-0-0 CV
- c. Emerging Applications: Norm Bourassa (delay for Art Hallstrom)
 - i. Very vibrant meeting, well attended.
 - ii. Discussed ASHRAExCHANGE - Pouchak challenged them to post one issue on ASHRAExCHANGE.
 - iii. Art Hallstrom talked about Dynamic Commissioning, presenting for full committee
 1. Good information, relevant to ASHRAE
 2. Hallstrom- committee interested in apps, maybe to be used with 90.1 and Comcheck program.
 3. Hallstrom - TC 1.6 launched new website/location
 4. TC 1.6 is also interested in symbology (graphic symbols) Standard 134 being revised. Hallstrom encourages interested people to join new committee.
 5. Dynamic commissioning- multiple names- continuous commissioning, smart buildings, intelligent buildings, FDD, etc.
 - a. Software program that takes the building BMS data by system or transfers it to a central database for analysis.
 - b. Works with hvac and lighting systems using BACnet communications.
 - c. Slides are available on the EA Google web site.
 - d. Hallstrom suggested an ad-hoc subcommittee sponsored by Emerging Apps.
 - i. Krishnan, Galler, Hallstrom (chair), Pat Carpenter
 - ii. Do market survey
 - e. Motion- To create an ad-hoc subcommittee to discover industry state of high resolution commissioning software” Bourassa Branson seconds.
 - f. Vote approved 6-0-0 CV
- iv. 4 new business items
 1. Object oriented programming for BACnet
 2. Gottshall- radiant comfort model tool
 3. Gottshall- XML schema for BACnet

4. First round of results of the DOE apps for energy competition. Asked committee to think about how to create similar contest for ASHRAE (Galler suggested).
 - d. Program: Stephen Roth
 - i. 7 submissions, 3 accepted (see list at end of report)
 1. Workshop- well attended, results were very useful commentary
 - a. Todd- best advertisement for use cases.
 2. Sem 21- Dwyer- 3 good speakers, capacity crowd- well over 100 people
 - a. Speakers were well prepared, talks worked well together, reinforced each other.
 3. Sem 22. BIM in action- “Roth- one of the best seminars seen in a long time”
 - a. Setty- emerging apps- what’s coming out- important to attract new members.
 4. Roth- need a steady flow of BIM seminars.
 - ii. Chicago- due date for submittals August 11 ashrae.org/Chicago to submit program
 1. Gottshall- UT – pretty cool tool, but not a lot of traction. Talked about it in SPC 35? Not many knew about it
 - a. Suggests talk on tools to perform building analysis.
 - b. Benchmarking tools to compare buildings.
 2. Galler SCADA security workshop- Galler presents, will open up to get viewpoints of ASHRAE membership on biggest issues in security.
 3. Dwyer- Krishnan- BIM workflow for engineers- simple BIM usage
 4. Roth- will contact NEST or similar
 5. Carpenter- suggests we need Big Data- Krishnan takes lead
 - e. Web Page: Mike Galler
 - i. Carpenter- needs update
 - f. E&P: Dave Branson
8. **YEA mixer with TCs:** Grondzik
 - a. Galler attended, no YEAs accepted
9. **ASHRAExCHANGE update:** Pouchak
 - a. Pouchak challenged members to register.
10. **Chair’s Report:**
 - a. New Strategic Plan
 - b. Updates from TAC and RAC
 - c. Membership- Kennedy and Crosby rolling off after this meeting- Roth and Gottshall rolling on. Galler rolling off as Chair, Branson rolling on as Chair.
 - d. Discussion on changes to TPS
 - e. Note to members to update ASHRAE profile when info changes
 - f. Announcements
 - g. Subcommittee mentors- new idea for TC?
 - h. Step-up-to-the-plate awards
 - i. Dinner plans
11. **Liaison Reports:**
 - a. GPC-20
 - b. IAI/BIM Society Subcommittee Report: Steven Rosen
 - c. TC 7.3- WS 1609 - Defining the Capabilities, Needs and Current Limitations of Building Information Modeling (BIM) in Operations and Maintenance for HVAC&R
 - d. TAC
12. **Old Business**
13. **New Business**

14. **Next Meeting Times:** ASHRAE Winter Conference, Chicago, IL Jan 24-28, 2015

15. **Adjournment**

a. Branson moves, Pouchak seconds

TC 1.5 Meeting Schedule

TC 1.5 Computer Applications	Monday	6:30-9:00p	Ravenna A/B (3, Sheraton)
TC 1.5 Emerging Applications	Sunday	5:00-6:00p	Seneca (4-Union St. Tower, Sheraton)
TC 1.5 Research	Sunday	6:00-7:00p	Seneca (4-Union St. Tower, Sheraton)
TC 1.5 Program	Sunday	7:00-8:00p	Seneca (4-Union St. Tower, Sheraton)
TC 1.5 Handbook	Monday	6:00-6:30p	Ravenna A/B (3, Sheraton)

TC 1.5 Programs Schedule

Sunday, June 29 8:00 AM – 9:00 AM, Room: 606

WORKSHOP 5 (INTERMEDIATE)

Getting the Right Data into and out of Building Information Model

Track: Installation, Commissioning, Operation, Maintenance of Existing Buildings

Sponsor: 07.03 Operation and Maintenance Management, 01.05, 04.01, SGPC 20, 04.01 Load Calculation Data and Procedures

Chair: Robert J. Hitchcock, Member, Hitchcock Consulting, Kelsey, CA

Getting the right data into and out of a building information model requires properly defining work flows. Getting work flows right requires input from BIM experts and ASHRAE professionals. This interactive workshop presents an overview of the BIM work flow specification process, then breaks out into working groups to review drafts of operations and maintenance work flows for ASHRAE Guideline 4, Preparation of Operating and Maintenance Documentation for Building Systems; Service Life and Maintenance Cost Database; ASHRAE Standard 105, Standard Methods of Determining, Expressing and Comparing Building Energy Performance and Greenhouse Gas Emissions; ASHRAE/ACCA Standard 180, Standard Practice for Inspection and Maintenance of Commercial-Building HVAC Systems; and the Performance Measurement Protocols publications. Come share your experiences and tell us what we are getting wrong.

Learning Objectives:

1. Define the BIM work flow specification process.
2. Describe how subject matter experts can work with BIM experts to get BIM work flows right.
3. Describe ASHRAE Research Project 1609 that is defining work flows for operations and maintenance practices.
4. Apply the BIM work flow specification process to a professional activity of personal interest.

1. Overview of the BIM Work Flow Specification Process, Robert J. Hitchcock, Member, Hitchcock Consulting, Kelsey, CA

2. Providing Subject Matter Expert Feedback on BIM Work Flows, Steve Bruning, P.E., Fellow ASHRAE, Newcomb & Boyd, Atlanta, GA

Monday, June 30, 2:15 PM-3:45 PM, Room 603

SEMINAR 21 (BASIC)

I Know That I Should be Doing Building Information Modeling (BIM), but ... - How BIM Is Practically Being Introduced and Used By People like You to Move Their Projects and Businesses Forward Toward a Connected and Collaborative BIM World

Track: HVAC&R Fundamentals and Applications

Sponsor: 01.05 Computer Applications, MTG.BIM Building Information Modeling

Chair: Tim Dwyer, Fellow ASHRAE, Bartlett School of Graduate Studies, University College London, London, United Kingdom

This seminar includes presentations from a range of practicing engineering consultants showing how they have taken hold of the BIM way of working, explaining the challenges and the current (and potential) benefits to their business, profession, end user and environment.

Learning Objectives:

1. Describe what is meant by the term BIM (in high level, applied terms)
2. Explain how the workflow would require adapting to incorporate BIM
3. Identify the activities and resources that would likely form the focus of a successful transition to BIM working

4. Distinguish between BIM and traditional 3D/4D CAD

1. Are You Ready to Take the BIM Plunge? The Top 10 Things You Need to Know

Raj Setty, P.Eng., Member, Setty and Associates, Washington, DC

2. Taking the First Step Toward Realizing the Value of the "Information" in BIM: Moving Beyond 3D Drafting

Dennis Knight, P.E., Member, Whole Building Systems, LLC, Charleston, SC

3. What Keeps Some Consultants Away from BIM? Should It?

David Branson, P.E., Member, Compliance Services Group, Lubbock, TX

Monday, June 30, 4:00 PM-5:30 PM, Room 603

SEMINAR 22 (BASIC)

Building Information Modeling (BIM) in Action: Beyond Computer Aided Design (CAD)

Track: Professional Skills

Sponsor: 07.01 Integrated Building Design, BIM-MTG, 01.05 Computer Applications

Chair: Krishnan Gowri, Ph.D., Member, Pacific Northwest National Laboratory, Seattle, WA

BIM has gained wide acceptance by the building industry as a productivity enhancement vehicle by creating a single electronic repository of building data. This BIM model can be used from the earliest design stages of architectural modeling to commissioning and construction completion. In several instances, the BIM model is seen as a living digital representation of the building that is updated and maintained throughout the life of the building. Recently, BIM models are used to perform energy modeling, construction clash detection and quantity estimating beyond the traditional CAD and rendering. This session features BIM industry experts who have implemented BIM requirements in real-life projects, providing tips and tricks in working with BIM models.

Learning Objectives:

1. Explain advantages and example applications of BIM beyond CAD and rendering
2. Define the requirements for a BIM model to perform energy modeling
3. Describe how BIM can be used for clash detection and constructibility
4. Provide a summary of BIM standards and information exchange processes for HVAC design engineers

1. BIM for Constructibility and Clash Detection

Michael Smith, P.Eng., Intergraoh Corporation, Houston, TX

2. The Evolution of BIM from Design to Construction - Case Studies

Raj Setty, P.Eng., Member, Setty and Associates, Washington, DC

3. BIM Workflow for Energy Modeling

Chien Si Harriman, Carmel Software Corporation, San Rafael, CA