Building EQ Committee
January 18, 2021 Virtual Winter Meeting
Meeting Minutes

Attendance

Participants: John Constantinide (Chair), Rob Risley (Vice-chair), Chris Balbach, Michael Deru, Charles Eley, Mahroo Eftekhari, Daniel Redmond, Anoop Peediayakkan, Trent Hunt, Bruce Hunn, Bill Dean (Board CO), Hugh Crowther, Doug Cochrane

Staff: Lilas Pratt (staff liaison), Emily Porcari

Guests: Paul Lindahl (SPC 188), Patrick Villaume, Meghan McNulty (GAC Liaison), Stephen Roth, Soph Davenberry

Principal Motions[1]

Motion #1: Chris Balbach moved and Anoop Peediayakkan seconded that the meeting minutes from the December 15 meeting.
Vote: Motion passed by unanimous voice vote, 7-0-0, CNV

Motion #2: The Business Development Subcommittee recommends that the Building EQ Committee approve the Building EQ surveys of ASHRAE members and Portal Users as presented.
Vote: Motion passed by unanimous voice vote 7-0-0, CNV

New and Open Action Items

January 18, 2021 Building EQ Winter Meeting
- **AI 1: Business Development Subcommittee** to discuss the assignment of MOU liaisons at their February meeting.
- **AI 2: Lilas Pratt** to ask if the PRM Methodology can be executed with the ASHRAE HQ model as it stands right now.
- **AI 3: Lilas Pratt** to follow up with Joslyn Ratcliff on Google Analytics for the Portal.
- **AI 4: Lilas Pratt** to ask Mark Owen and Vanita Gupta about adding a link to the Building EQ Portal into the Technology Portal.
- **AI 5: Lilas Pratt** to set up a meeting with ASHRAE IT and Stephen Roth regarding ASHRAE's single log-in (i.e., synchronized or unified log-in system) for Building EQ. (Include Chris Balbach, Charles Eley, John Constantinide, Rob Risley, Trent Hunt.)
- **AI 6: Rob Risley** to research CEC reporting requirements to see how that might align with Building EQ.

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[1] All votes are recorded as yes-no-abstain.

January 14, 2021 Technical Development Subcommittee Winter Meeting
- **AI 2: Lilas Pratt** to forward background information on the Data Center initiative to Michael Deru as needed.
- **AI 3: Chris Balbach** to invite Amanda Webb to speak at a future subcommittee meeting.

January 12, 2021 Business Development Subcommittee Winter Meeting
- **AI 1: Subcommittee members** to put together a top five list of value propositions for licensing the Portal and send those to Lilas Pratt by Monday, January 18th.

December 15, 2020 Web Meeting
- **AI 2: Lilas Pratt** to request an email blast on the Standard 211 Interpretation and send the same information to ASHRAE Journal staff.
- **AI 6: Committee members** to do a SWAT analysis (strength, weakness, opportunities, and threats) on the following organizational placement options for Building EQ by 2/15/21:
  (NOTE: Action Item on HOLD pending further notice)
  > Members Council: Trent, Bruce, Daniel, Mahroo
  > Technology Council: Charles, Chris, Anoop
  > Pub-Ed Council: Hugh, Doug, Michael

November 12, 2020 Technical Development Subcommittee Web Meeting
- **AI 3: Technical Development SubC** to determine what system level KPI information would be useful to Portal users and whether or not the database information is robust enough to be used to generate targets for those KPIs. **On-going**

September 14, 2020 Web Meeting
- **AI 3: Trent Hunt and Lilas Pratt** to put together an email regarding chapter presentations to send out to chapter program chairs and RVCs.

February 2, 2020 Business Development Subcommittee Orlando Winter Meeting
- **AI 2: Lilas Pratt** to mine some data from the list of universities downloading course material and provide to the committee for follow-up by the committee. (*Note: Need to request a new list of downloads)* **On-going**

January 13, 2019 Atlanta Winter Meeting
- **AI 1: Lilas Pratt** to contact Montana University regarding ASHRAE use of their one hour course. **On-hold**

January 12, 2019 Business Development Subcommittee Meeting
- **AI 3: Lilas Pratt** to develop French Portal examples (screens/reports/etc.) for use on sales calls to Hydro Quebec. **On-hold**

Meeting Minutes

1. Call to Order – **Meeting convened at 1:03 PM EST**.   Quorum was established.

2. Report from the Chair (John Constantinide)
   - John Constantinide reviewed the progress on the committee MBOs
     (File: *Building EQ MBO Tracking 18Jan2021.xlsx*)

3. Report from the Coordinating Officer
   - Bill Dean reviewed the ExO presentation
     (File: *ASHRAE Leadership Preso to BEQ Winter VC 2021.pdf*)

4. Approval of minutes – December 15, 2020 web meeting

Motion #1: Chris Balbach moved and Anoop Peediayakkan seconded that the meeting minutes from the December 15 meeting.
Vote: Motion passed by unanimous voice vote, 7-0-0, CNV

5. Review of Action Items

6. Life to Date Portal Statistics as of January 3, 2021
   - Users: 1282 *(1141 at beginning of SY)*
   - Projects: 846 *(736 at beginning of SY)*
   - Submitted/Approved projects: 51 *(51 at beginning of SY)*
   - Reports purchased: 7 ($1150) *(7 at beginning of SY)*
   - Paid credentials: 53 (34 at $15 + 19 at $25 = $985) *(46 at beginning of SY)*

7. Business Development Subcommittee Report (BDSC)
   - Trent Hunt reported on the recent activities of the subcommittee. Meeting notes from the Subcommittee Winter Meeting are shown in ATTACHMENT A.
   - Mr. Hunt reviewed the Building EQ Surveys of ASHRAE members and Portal Users and asked if there were any changes or suggestions to proceed. He noted that the Subcommittee approved the surveys 3-0-0, CV

Motion #2: The Business Development Subcommittee recommends that the Building EQ Committee approve the Building EQ surveys of ASHRAE members and Portal Users as presented.
Vote: Motion passed by unanimous voice vote 7-0-0, CNV

   - Mr Hunt reported on the progress made in identifying and prioritizing Society MOUs. Since the Subcommittee meeting, Executive Vice-President Jeff Littleton has forwarded a list of organizational and Society liaisons for the top MOUs prioritized by the committee. The subcommittee will discuss how to assign and reach out to the MOU organizations at their February meeting.
   - The Portal Licensing Value Proposition was briefly reviewed, and the committee was reminded of the action item to provide a list of value propositions so that this can be discussed at the February meeting.
   - Doug Cochrane noted that CTTC is working on scheduling the Building EQ Tech Hour and acknowledged that Building EQ will likely not be the first Tech Hour in the schedule.

- Lilas Pratt reported that the case study template is back in her court. She will be reformatting that template based on feedback from the committee and with an eye towards the examples supplied by Hugh Crowther.

8. Technical Development Subcommittee Report (TDSC)
   - Chris Balbach reported on the recent activities of the subcommittee. Meeting notes from the Subcommittee Winter Meeting are shown in ATTACHMENT B.
   - Chris Balbach noted that ASHRAE HQ As Designed rating initiative has hit a number of snags around the compatibility of the building simulation model with the AS Designed requirements. Additional information on effort and cost required to resolve the compatibility issues has been requested so as to allow the committee to make a recommendation to the ASHRAE HQ Building Ad hoc on how to proceed.
   - A meeting on System Level KPIs is being scheduled for 2nd week of February to discuss the ways of bringing the LBNL work on this to market and how it best fits into the Portal.
   - Michael Deru has agreed to chair a working group on the Data Center initiative that will include representatives from TC 9.9. The work on this should get underway shortly.
   - RP-1836 *Developing a Standardized Categorization System for EEMs* is currently in the final stage of mapping actually EEMs to the taxonomy created in previous tasks. The final report will be reviewed by the TDSC to see if changes are needed to the EEMS in the Portal.
   - 1771-RP *Energy Modeling of Typical Commercial Buildings in Support of ASHRAE Building Energy Quotient Energy Rating Program* should be finishing up work in spring 2021 and will be producing coefficients that may be useful to the Portal.
   - Mr. Balbach noted tha the CarmelSoft SBIR Phase I Project (BuildingSync XML) may be the most interesting of the current projects. This project is progressing nicely and is on target to provide a demonstration at the February subcommittee meeting. The Phase II applications are due soon and Building EQ will want to work with CarmelSoft on the implications of that to the Portal.
   - Chris Balbach noted that the work on the PRM Methodology and integration with Standard 90.1 PRM is mostly complete and that the subcommittee agrees it is a more scalable method for the As Designed rating. The hope is to compare the existing option with his option via the ASHRAE HQ Building. Implementation is really just waiting on funding.

9. Potential Building EQ Portal Revenue Streams
   - John Constantinide introduced this discussion item by noting that additional revenue streams are needed to continue to improve the Portal.
   - The problems with the current As Designed methodology have highlighted the need to move to the more accessible PRM methodology. Chris Balbach noted that the As Designed rating is unlikely to generate revenue streams in the short term and possibly not in the long term. DOE has been identified as a possible funding source for some initiatives including the PRM methodology for the As Designed assessment and System Level KPIs.
   - One aspect to this discussion is looking at how to get more revenue from the current user base. The other aspect is to grow the user base (and project base) in order to build the database and use that as a revenue stream. During the pandemic, focusing

on the current user base probably makes some sense, but ultimately the user base needs to be expanded as that is good for the Society and the Portal. Determining how the data will be anonymized and accessed as a revenue stream will be a key element to using the database as a revenue stream.

- Revenue comes from reports that provide value and the committee needs to identify those reports that currently exist or are developed new. The Portal is free but there is a cost to get the benefit of the reports. This is a short sales cycle, that requires not a lot of effort in that it is automated.
- The committee may also want to talk about the difference between reports that are in the "premium model" of the Portal and reports that are not.
- Schema Server is a channel partner for Building EQ in that it brings in new users. The Schema Server provides additional users to make this picture work.
- Schema Server is the channel that is going to link to Building EQ via an API is the first of its kind, but there is nothing that would prevent another firm from developing something similar. This is a way down the road, but a small monthly fee could be charged for other firms to use an API with the Portal.
- Another revenue source is to license the Portal to organizations/entities that want a customized experience which brings in a lot of money but that takes a lot of effort and has a long sales cycle.
- The real test of success is that the product gets used and it adds value.
- Another suggestion is to look into linking the Technology Portal to link to Building EQ Portal. A simple link would be the first step. If Building EQ is able to move to the single log-in system (i.e., synchronized/unified log-in) with the ASHRAE website at some point in the future, additional links could more easily be incorporated.
- There are other opportunities to provide revenue to ASHRAE such as joint training programs with some of the MOU organizations.
- Soph Davenberry noted that California Energy Commission requires reporting as part of their acceptance testing for lighting and mechanical systems. This requirement seems to parallel some of the discussions going on here. It would be helpful to look into the report requirements and how they might align with Building EQ.

10. Upcoming Meetings
- BEQ Business Development SubC, February 9, 2021, 11:00am-12:00pm EST
- BEQ Technical Dev (Method) SubC, February 11, 2021, 11:00am-12:00pm EST
- Building EQ Committee: March 2021 (Doodle poll will be sent out)

11. Adjourn – **Meeting adjourned at 2:58pm EST**

Building EQ Business Development Subcommittee
ASHRAE Winter Meeting
January 12, 2021

Available: Trent Hunt (chair), Daniel Redmond, Mahroo Eftekhari, Anoop Peediayakkan
Other Committee: John Constantinide, Rob Risley, Chris Balbach, Michael Deru, Bruce Hunn, Bill Dean, Doug Cochrane,
Staff: Lilas Pratt (staff liaison), Emily Porcari,
Guests: Bruno Martinez (YEA Liaison)

NEW Action Items:
- **AI 1: Subcommittee members** to put together a top five list of value propositions for licensing the Portal and send those to Lilas Pratt by Monday, January 18th.
- **AI 2: Lilas Pratt** to send out a placeholder calendar invite for a standing subcommittee meeting on the 2nd Tuesday of the month starting in February 2021.

Meeting Notes:
1. Call to Order – Meeting convened at 11:02am EST. Quorum was established.

2. On-going Development Updates
   a. Building EQ Surveys of ASHRAE members and Portal Users
      - Trent Hunt provided background on the proposed Portal Surveys. The goal of the survey is to identify additional information about users and what they value in the Portal. The intent is to send one survey to Portal users and one to ASHRAE membership at large (non-users).
      - The committee reviewed the proposed survey shown in the Attachment. Adjustments were made to the survey based on the discussion (changes shown in red).
      - There was agreement in the subcommittee that the final survey language should be brought for a vote in the full committee meeting.
      - Some questions were raised about how the survey will be administered.
      - One option is to send a single survey to all potential participants and have them self-select the correct survey option (user vs. non-user). While this would require only one mailing, the disadvantage is that people may self-select incorrectly.
      - Another option is to send two separate surveys. This would require adjusting the ASHRAE membership list to remove Portal users so that that group does not get two surveys.

Motion #1: Daniel Redmond moved and Mahroo Eftekhari seconded that the surveys be approved by the subcommittee and forwarded to the full committee for consideration.
Vote: 3-0-0, CV

   b. Building EQ Tech Hour
      - Doug Cochrane reported that there has been no change in status since last meeting.
      - This initiative is with CTTC and they are still working on how to bring this to fruition.

    c. Case Studies Update
- Lilas Prat reported that the case studies are being reworked based on input from the committee. Hugh Crowther provided additional input and examples on the direction the case studies should take.
- The new case study example should be available for review at the next Subcommittee meeting in February.

    d. Society MOU Priorities
- Bill Dean noted that the prioritized MOU list has been provided to ExCom who have added discussion of the list to the agenda for their meeting during the virtual winter conference.

3. New Business
    a. [Portal Licensing Value Proposition](#) Document/Bullet Points
- It was suggested that the document follow the format of the fact sheets.
- The subcommittee may wish to talk to Pub-Ed staff about language in other licensing opportunities within the Society.
- ASHRAE could possibly license Building EQ to other countries and jurisdictions thereby giving them a custom platform to enter their information.
- One question is how to handle if an organization/jurisdiction wants additional features to meet their specific needs.
- This document was intended to be a marketing document that could be used when speaking with an organization/jurisdiction about licensing opportunities.
- The document should outline options and benefits that licensing could provide such as climate zone customizations or dashboards.
- What is the benefit to ASHRAE and what is the uptake to other organizations or jurisdictions?
- One of the values propositions is that Building EQ is a program that can help with benchmarking and improvement of energy performance. Also, users are adding to an existing database where aggregate data can be shared and that will increase in value as more building data is accumulated.
- Subcommittee members were asked to come up with a list of value propositions for additional discussion on the next web meeting call.

4. Other Business
    a. Standing Monthly meeting day/time
- A recurring meeting for the 2nd Tuesday of the month has been suggested.
- A calendar invite will be sent out to the committee as a placeholder for this meeting, starting with the February 9, 2021 meeting.

5. Adjourn – **Meeting adjourned at 11:56am EST**

Building EQ Surveys (Market At Large and Portal Users)

Building EQ Survey – For Market at Large (ASHRAE members)

1. Which of the following features are important to you?
   (click all that apply)
   a. Having your building's energy performance recognized
   b. Comparing your building's energy performance to other similar buildings to see if your building needs to be improved
   c. Assessing your building's energy performance with a Level 1 Energy audit
   d. Comparing modeled design options for your building

2. Does the jurisdiction you are working in require:
   (click all that apply)
   a. Benchmarking
   b. Level 1 Energy Audit
   c. Level 2 Energy Audit
   d. Building Energy Use Reporting (i.e., government)
   e. Building Energy Use Disclosure (i.e., real estate)
   f. Building Energy Use Label/Certificate
   g. Unknown

3. Do you perform Level 1 or Level 2 energy audits?
   a. Yes
   b. No

4. Do you use commercial software for energy audits?
   a. Yes
   b. No

5. What tools have use used to do building comparisons (benchmarking)?
   (click all that apply)
   a. ENERGY STAR Portfolio Manager
   b. Building EQ
   c. DOE Building Energy Asset Score
   d. DOE Audit Template
   e. DOE Building Performance Database (BPD)
   f. BOMA 360
   g. ASHE Energy to Care
   h. APPA Facilities Performance Indicators
   i. GRITS for APPA
   j. SimuWatt
   k. Other proprietary software program (please specify)

Building EQ Survey – For Portal users

1. For projects that you were you are working on, are you looking to:
   (click all that apply)
   a. Have your building's energy performance recognized
   b. Compare your building's energy performance to other similar buildings to see if your building needs to be improved
   c. Assess your building's energy performance with a Level 1 Energy audit
   d. Compare modeled design options for your building

2. For your projects, are you:
   a. Assessing your own buildings/property
   b. Assessing your customer's buildings/property

3. Does the jurisdiction you are working in require:
   (click all that apply)
   a. Benchmarking
   b. Level 1 Energy Audit
   c. Level 2 Energy Audit
   d. Building Energy Use Reporting (i.e., government)
   e. Building Energy Use Disclosure (i.e., real estate)
   f. Building Energy Use Label/Certificate
   g. Unknown

4. Do you do energy audits as part of your work?
   a. Yes
   b. No

5. What other tools have you used?
   (click all that apply)
   a. ENERGY STAR Portfolio Manager
   b. DOE Building Energy Asset Score
   c. DOE Audit Template
   d. DOE Building Performance Database (BPD)
   e. BOMA 360
   f. ASHE Energy to Care
   g. APPA Facilities Performance Indicators
   h. GRITS for APPA
   i. SimuWatt
   j. Other proprietary software program (please specify)

6. What features in the Building EQ Portal do you find most valuable for enhancing your work?
   (click all that apply)
   a. Building EQ Building Performance Score
   b. Importing Data from ENERGY STAR Portfolio Manager
   c. Multi-use Property Building Type
   d. Energy Efficiency Measures
   e. IEQ Survey and spot measurements
   f. The Portal as a repository for historical building data
   g. Energy Audit Reports
   h. Building EQ Label Report
   i. Other (please specify)

Portal Licensing Value Proposition Document/Bullets

From: John Constantinide
Sent: Friday, December 18, 2020 3:00 PM
To: Pratt, Lilas; Trent Hunt
Cc: Risley, Rob

Trent, this just came to mind as I read the notes and thought about our discussion. Would it be possible for the Business Development Subcommittee to come up with a value proposition document or bullet points for such a document for Building EQ Portal licensing? We may be able to use the existing fact sheet flyers as a starting point in order to take advantage of existing content and document layout.

For the few prospective clients that benefit from licensing, such as NYSERDA, this would be a good opportunity to have this marketing document on hand to provide. GAC may even benefit from this document, as most prospective clients would be state and local governments.

This is a low priority item that can come up in the Subcommittee once other higher priority items are completed.

John

Building EQ Technical Development Subcommittee
ASHRAE Winter Meeting
January 14, 2021

Available: Chris Balbach (chair), Charles Eley, Bruce Hunn, Michael Deru
Other Committee: John Constantinide, Rob Risley, Trent Hunt, Mahroo Eftekhari, Bill Dean, Doug Cochrane
Staff: Lilas Pratt (staff liaison)
Guests: Stephen Roth

New Action Items:
- **AI 1: Chris Balbach** to forward Charles Eley and Michael Deru the Doodle poll information for the System KPI meeting with LBNL and DOE.
- **AI 2: Lilas Pratt** to forward background information on the Data Center imitative to Michael Deru as needed.
- **AI 3: Chris Balbach** to invite Amanda Webb to speak at a future subcommittee meeting.
- **AI 4: Lilas Pratt** to ask Shanta Tucker about effort and cost to update the model to meet BEQ requirements. (Note: Email sent on 1/14/2021)
- **AI 5: Lilas Pratt** to send the simplified PRM proposal draft to subcommittee members for review prior to the February subcommittee meeting.

Meeting Notes:
6. Call to Order – **Meeting convened at 11:02 EST**. Quorum was established.

7. On-going Development Updates
   a. System Level KPIs (Balbach)
      - Chris Balbach reported that a meeting is being scheduled for the 2nd week of February with Tianzhen Hong (LBNL), Han Li (LBNL), Harry Bergman (DOE), and Nick Long (NREL) to discuss collaboration for translating the work from LBNL to the market.
      - Charles Eley and Michael Deru would both like to attend that meeting as well.

   b. Adding Data Centers to Portal
      - Michael Deru noted that he expects to be able to initiate additional work on this by the end of the month.
      - Lilas Pratt will verify that Michael Deru has all the background information that he needs.

8. Research and Other Project Updates:
   a. RP-1836 Developing a Standardized Categorization System for EEMs (Balbach)
      - Chris Balbach reported that the researchers are now on the 3rd task.
      - They have finished the categorization system and are now preparing examples of how that categorization system will be used. They expect to finish that in about two months.
      - This subcommittee will likely be interested in the system format and examples. The PI, Amanda Webb, will be invited to a future meeting to provide additional details.

- Some of what the advisory board has suggested in regard to applying and testing the system is out of scope for this project, but the researchers are developing other projects to address some of those needs.

  b. 1771-RP Energy Modeling of Typical Commercial Buildings in Support of ASHRAE Building Energy Quotient Energy Rating Program (Wangda Zuo)
     - Chris Balbach noted that the researchers spoke at a recent subcommittee meeting.
     - Michael Deru reported that an intermediate report for Task 6 (final task to reconcile 90.1-2004 models with CBECS data) has been provided to the PMS and the researchers are working to complete that task now.
     - The project end date is March 31, 2021, so the final report is expected to the PMS in late spring. One question is what data will be available from the project.   The meta models and data should be included in the report.
     - Charles Eley noted that this work may be helpful to the PRM methodology proposal. In addition, the committee may be able to leverage the work to make some estimates of impact/savings potential of changes in design as an additional feature in the Portal.

  c. CarmelSoft SBIR Phase I Project – BuildingSync
     - Stephen Roth noted that the project is essentially promoting the BuildingSync schema which is used to transfer energy audit information.
     - One use case is to transfer information from the DOE Audit template to a Schema server being developed by Carmel Software and then to the Building EQ Portal. The goal is to then transfer a score back from Building EQ.
     - The way it will work is that from the Audit Template, a user will be able to push a button and send information to the Schema server which will validate the data. The validated information would then be sent to the Building EQ Portal.
     - The call would be to send some set of data and if that data meets some set of criteria, the response would be a Building Energy Performance Score.   If the data does not meet the criteria, they will be told what data is missing that is required to get a score. The schema will prepopulate Building EQ and the user can add data.
     - There is an API from the Schema Server to Building EQ, but the data exchange with other tools would be exchanging data with the BuildingSync schema.
     - The project is also taking advantage of the Portfolio Manager API to get utility data for the project.
     - A demonstration will be targeted for the February subcommittee call.

9. As Designed Rating ASHRAE HQ Building Update
   - Atelier Ten has received an updated model from Integral. However, it is not configured in the way that the As Designed rating requires.   The HVAC system is configured to auto size and the lighting is aggregating space types.
   - The model used is IES Virtual Environment and updating the model to meet Building EQ requirements would require significant work.
   - It was noted that if the information was in Revit, could possibly transfer to a simpler energy modeling software.

10. Updates on Proposed Portal Changes
    a. PRM Methodology – Integration with Standard 90.1 PRM

- Chris Balbach noted that there is a parallel effort for a Simplified PRM method being proposed for 90.1. It is meant to be an additional option for more simple building types and systems.
- The simplification is around ease of creating the PRM baseline. The intent is that modeling tools would automatically create the simplified methodology.
- If this were to be adopted, there would be no real change to the methodology for Building EQ, but there would be changes to how you get to the PRM baseline.

b. Site-Source Energy conversion factors and incorporating change in ZeroTool methodology
- No updates to report

c. Std 62.1 Tables for ventilation quantities and measurements (COMNET)
- No updates to report.

11. Review of AD/IO Spreadsheet Methodologies (All)
- No updates at this time.

Adjourn – **Meeting adjourned at 11:50am EST**