

# Meeting Minutes



## TC 7.6 Building Energy Performance Research Subcommittee

Tuesday January 12, 2021, 3:00 PM–4:00 PM (EST)

Virtual meeting

<https://ashrae-org.zoom.us/j/97562227989?pwd=S2o2Y3d2R2REWUFjYWJQbTI3SmEwUT09>

TC 7.6 is concerned with the estimation, measurement, analysis, benchmarking, and management of whole building and building systems energy and water performance.

### 1. Sign-in / Introduction

No	Name	Affiliation	Email Address
1	Hyojin Kim	New Jersey Institute of Technology	hyojin.kim@njit.edu
2	Scott Hackel	Slipstream	shackel@slipstreaminc.org
3	Joe Farrantello	Envinity, Inc.	j.farrantello@gmail.com
4	Mike MacDonald	EPMI	mmacdonald@epminst.us
5	Paul Mathew	LBNL	pamathew@lbl.gov
6	Amanda Webb	University of Cincinnati	amanda.webb@uc.edu
7	Abed Alkhatib	Willdan	
8	Yeonjin Bae	ORNL	baey@ornl.gov
9	Eric Yang	Energy Systems Group	ericyangcem@gmail.com
10	Bruce Hunn	Consultant	hunnbuildingenergy@gmail.com

### 2. Recently-Completed Projects

- 1702-RP Case Studies to Test Performance Measurement Protocols (2018)
- 1650-RP Training Requirements for Sustainable, High-Performance Building Operations (2019)

### 3. Status of Current Research Projects

No	Project	Contributors	Status (from last meetings)
1	<b>1771-RP</b> Energy Modeling of Typical Commercial Buildings in Support of ASHRAE bEQ Energy Rating Program	(PI) Wangda Zuo (RC) bEQ, (Co-sponsors) TC 7.6 PMS Michael Deru, TC 4.7	(2020 Annual) 18 prototype building types and eight climate zones. Task 5 was completed. Scheduled to be completed by March 2021.  (2021 Winter, from Basecamp) The contractor improved the calibration approach and recalibrated all of models. They completed an intermediate report for Task 6 (final task) and presented this to the PMS. On schedule to complete the project by March 2021.
2	<b>1836-RP</b> Developing a Standardized Categorization System for Energy Efficiency Measures	(PI) Amanda Webb (RC) TC 7.6 PMS Chris Balbach (Co-Sponsors) bEQ, SSPC 100	(2020 Annual) Project is on schedule. Task 1 (literature review and analysis) was completed. Scheduled to be completed by Nov. 2020.  (2021 Winter) Task 2 (developing a categorization system) was nearly completed. No-cost extension was approved. PMS had a discussion on the next step. On schedule to complete all 5 tasks by Sep. 2021.
3	<b>1814-RP</b> Actual Energy Performance of Secondary Schools and Medium Offices Designed to Comply with ASHRAE Standard 90.1-2010	(PI) Joe Zhou (RC) TC 2.8 (Co-Sponsor) TC 7.6	(2020 Annual, from Basecamp) The team recruited more secondary schools building data. Preliminary results comparing 90.1-2004 vs. 2010 using average ECI indicated some data quality issues. Due to COVID-19, responses to our data request have been very slow. The team plans to collect more building data. Expect to request no-cost extension for this project.  (2021 Winter) The recruitment was nearly completed. Challenges include ability to do site energy audit, which is planned late spring or summer. Scheduled to be completed by March 2022.

#### 4. WS and RTAR In-Progress

No	Project	Contributors	Status (from last meetings)
1	???-WS MTG defensible measures of environmental and economic impact	Nate Boyd	(2020 Annual) WS was completed and went out for bids. Two or three bids (including Laurence Technical University) –No updates from Boyd  (2021 Winter) No updates. Hyojin will ask Nate Boyd for updates.
2	1861-WS Thermal Comfort in U.S. and Canadian Residences: Indoor Conditions, Occupant Behavior and Energy Consumption	Hyojin Kim  (RC) TC 2.1 (Co-Sponsor) TC 7.6	(2020 Winter) WS submitted to the subcommittee basecamp. Ready for review. Due by Feb. 16.  (2021 Winter) The team received feedback from RAC. There were concerns with data collection and a large scope proposed. Feedback from TC 2.1 includes to remove the field work and consider a meta-analysis instead. The team agreed to work on the revision in summer 2021.
3	1822-RTAR Supplemental Normalization Parameters for Alternate/Enhanced Expression of Energy Performance	Dennis Landsberg  (RC) TC 7.6 (Co-Sponsor) SSPC 100	(2020 Annual) WS in progress; to be completed before the next conference.  (2021 Winter, from Basecamp) WS draft is ready but needs polishing; to be completed after the winter conference.
4	1872-RTAR Updating Site Energy Targets for ASHRAE Standard 100-2018 - Energy Efficiency in Existing Buildings	Joe Firrantello (lead), Dennis Landsberg, Patrick Carpenter  (RC) TC 7.6 (Co-Sponsor) SSPC 100	(2020 Annual) There is a site/source discussion within TC. Terry has taken it independently from DOE. This project potentially can be removed from the list.  (2021 Winter) Terry Sharp’s team has made a good progress on this subject. They have been updating the targets based on CBECS 2012 data and plan to do the work proposed in this RTAR once CBECS 2018 becomes available in mid-2022 or later. There is no reason to do further work on this subject under ASHRAE.  <b>Action Item:</b> Hyojin Kim will officially notify Michael Vaughn to withdraw this RTAR.
5	Draft RTAR from “Building Data Exchange”	Nick Long	(2020 Annual) RTAR in progress  (2021 Winter, by email) Draft RTAR is ready and will be discussed in Building Data Exchange Subc. Meeting.
6	New Idea Data center data set for RP-1771	Nate Boyd, TC9.9	(2020 Annual) Needs RTAR (low priority)  (2021 Winter) No updates. Hyojin Kim will ask Nate Boyd for updates.
7	New Idea Code compliance secondary research to inform 90.1	Scott Hackle	(2020 Annual) The ASHRAE research project would be to compile existing code-compliance studies for individual code elements in FL, NE, IA, IL, MN, CO, OR, HI, CT, MA, RI, etc., normalize and make the results consistent, and analyze those combined results for lessons that they can package for all the ASHRAE committees that work on energy codes- and standards-related work.  (2021 Winter) An alternative idea to pursue the work was discussed considering 18-months lead time to get approval from ASHRAE. Bruce Hunn commented this topic is worth the effort to go through ASHRAE research. Scott Hackle will further discuss this idea at the Standards subcommittee meeting and decide if he will pursue/write a RTAR.
8	New Idea Do buildings designed to 90.1 / 189.1 comply with Standard 100?	Scott West, Joseph Firrantello	(2020 Annual) Scott West to obtain the input from ASHRAE 189.1 and Joe F. to obtain the input from ASHRAE 100.  (2021 Winter) No updates.
9	New Idea Costs and Benefits of Cx Building Controls	Scott Hackle	(2020 Annual) ASHRAE TC1.4 meeting suggested a research project on the ‘costs and benefits of Cx building controls’, notably including the persistence and longevity impacts. Scott will mention it at TC 1.4 Research meeting again, and see if the others involved in the idea are making any progress or want to continue.  (2021 Winter) Agreed to eliminate this idea from the list.

## 5. New Ideas / Topics / Business

- a. Question about ASHRAE funding
  - Hyojin Kim expects to give an update on this after the Section 7 Research Subc. Chair meeting.
- b. Grid flexibility/operability metrics or M&V (Scott Hackle)
  - Discussed to what extent ASHRAE/TC 7.6 should be involved and if ASHRAE standards/guidelines address this.
  - There is a presentation from DOE discussing possible metrics. New Building Institute presented an optimum framework at 2020 ACEEE. TC 7.5 has the subcommittee Smart Grid which focuses on technology (not metrics).
  - **Action Item:** Scott Hackle and Abed Alkhatib will have a further discussion on this before the next meeting.
- c. Water-energy nexus topic (Eric Yang)
  - Eric Yang questioned any prior discussions on this topic. Bruce Hunn commented some efforts done by Jeff Haberl at Texas A&M based on Wh/gal.
  - **Action Item:** Eric Yang will follow up directly with Jeff Haberl.

## 6. Adjourn