



TC4.7 Handbook Subcommittee Meeting

Agenda

Tuesday, June 27 3:00 PM – 4:00 PM EDT

Tampa Marriott Waterside, Meeting Room 5 (2)

“Commitment to the ASHRAE Code of Ethics: In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interest.”

(See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>)

3:00 p.m. [5 min]

Introductions

3:05 p.m. [5 min]

I. Chapter structure

- a. Review of current organization, sections (and subsections) alignment. *J.C Baltazar*

3:10 p.m. [30 min]

II. Report Assigned Topics / Tasks

- a. Looking for volunteers to review the chapter 19 for errors and accuracy compared to what we sent to ASHRAE for the 2021 Fundamentals.
- b. Add some content on empirical validation (Standard 140). *Ron J. / Joel N.*
- c. Add content on carbon emissions. Multiple sources of emissions. (Standard 209 has a working group). *Erik K. / Daniel V.*
- d. Update references to ground-coupled systems and expand that content to make it more relevant to today’s usage and design of those systems. *Jeff H.*
- e. Add content on optimization across multiple buildings *Wangda Z.*
- f. Combined Heat & Power Systems – Review two chapters by TC1.10 and add content to Chapter 19 as applicable *Ralph M.*
- g. Grid interaction – Review chapter by TC1.9 and add content to Chapter 19 as applicable *Ralph M.*
- h. Add content on Elevation Variations – Air property issues, address equipment performance, geography vs. tall buildings. Standard 140 *Joel N.*
- i. Add new section on modeling thermal resilience. This would include weatherization and simulation – equipment changes or building changes to improve resilience. How it affects modeling / how modeling affects building choices. *Neil K. will contact Tianzhen H.*

- j. Add content on Dynamic High Frequency System Modeling – Modelica? Ties to grid and controls modeling – 15 minute modeling or less. Additional issues that can arise when sub hourly modeling. *Michael W.?*
- k. Add content on appropriate simplification – Temporal and Spatial. Create table for simplified through complex modeling (with multiple levels) and when to use. Provide references to this table in text and add examples (papers). Level of Detail (LoD) in Building Energy Modeling Review. Example of Model Simplification – any research? *Tianzhen H. / Erik K.*
- l. Add content on thermal zoning - Different zoning for winter vs. summer. Research and references? *Jeff H.*
- m. Add content on renewables. *Jeff H. / Ron J.*
- n. Add content based on RP1741 Fan Coils *Neal K.*
- o. Add some info on resiliency to passive heating/cooling section – thermal resilience. *Ron J.*

3:40 p.m. [15 min]

III. Topics previously discussed for consideration:

- a. Standards under TC4.7's umbrella (Include points that can express what reader can find on the standards):
 - i. Standard 140-2020: Method of Test for Evaluating Building Performance Simulation Software *{ Joel N / Ron J }*
 - ii. Standard 205-2023: Representation of Performance Data For HVAC&R and Other Facility Equipment *{ Ralph M. and Neal K }*
 - iii. Standard 209-2018 -- Energy Simulation Aided Design for Buildings except Low-Rise Residential Buildings (undergoing a revision / update) *{ Erik K }*
 - iv. ASHRAE Standard 229P Protocols for Evaluating Ruleset Implementation in Building Performance Modeling Software
 - v. Standard 232P Schema-Based Building Data Model Protocols
- b. HVAC Toolkit updates (if any) – Only Toolkit II is referenced. Need to add Toolkit I. *{ Jeff H. }*
- c. RTAR's from TC4.7 should include verbiage for Handbook inclusion to be part of the deliverables. *{ Neal K. }*
- d. Completed RP's – We need to contact the authors of the RP's. Names / contacts
 - i. RP 1661 Chiller plant Control Strategies *{ Wangda }*
 - ii. RP 1742 Plug Loads (hospitals)
 - iii. Others?
- e. Decarbonization. Incorporate or compare with item IIIc. How is this modeled? How is it calculated?
- f. Predictive Modeling (determining inputs).
- g. Add some content on code-compliant modeling – commercial vs. residential.
- h. Building Energy Modeling for Net Zero (New Chapter section)

i. Misc. Ideas

- i. Addressing the issue of temperature-based control vs. load-based control in simulation.
- ii. Also address coupling of models? Applications and general methods? Internal vs. external.

3:55 p.m. [5 min]

IV. New Ideas?

4:00 p.m

V. Adjourn