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DRAFT

TC/TG/MTG/TRG MINUTES COVER SHEET

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No. TC 4.1 DATE 2/13/2023

TC/TG/MTG/TRG TITLE Load Calculation Data & Procedures

DATE OF MEETING Monday 2/6/2023 LOCATION Georgia World Congress Center, A310 (3)

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Brian Rock				Jim Pegues
Rolando Legarreta				Mark Malkin
Glenn Friedman				Russell Taylor
Robert Doeffinger				Liam Buckley
Chip Barnaby				Jeff Spitler
Chris Wilkins				Elyse Malherek
Larry Sun				Judd Jackson
Som Shrestha				Ardi Moftalchan
Stephen Roth				Graham Wright
Suzanne LeViseur				Mingjun Wei
				Kate Vauter
				Rachel Spitler
				Ed Janowiak

DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:

TAC Section Head: Patrick C. Marks	SH4@ashrae.net
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All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	Staff: shammerling@ashrae.org
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net

Note: These draft minutes have not been approved and not the official, approved record until approved by the TC.



ASHRAE Technical Committee 4.1

ASHRAE TC 4.1 Load Calculation Data & Procedures

Full Committee Agenda

2023 ASHRAE Winter Meeting
Hybrid Conference

In-Person: Georgia World Congress Center, A310 (3)

1. Call to order [2:10 PM EDT] Rolando Legarreta

2. ASHRAE Code of Ethics Commitment Rolando Legarreta
“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 interests.” (See full ASHRAE Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>)

3. Roll call – Determination of a Quorum Rachel Spitler

Suzanne LeViseur	06/30/2024	Robert Doeffinger	06/30/2023
Stephen Roth	06/30/2024	Brian Rock	06/30/2024
Rolando Legarreta	06/30/2025	Chris Wilkins	06/30/2025
Glenn Friedman	06/30/2023	Larry Sun	06/30/2024
Chip Barnaby	06/30/2024	Som Shrestha	06/30/2024

Quorum was determined with ten present

4. Introductions All

a. In Person Sign-In sheet

5. Scope, Mission Statement Rolando Legarreta
Scope: TC 4.1 is concerned with the identification and compilation of engineering data and the development of procedures for calculating heating, cooling, refrigeration, and ventilating loads of structures.

Mission Statement: To serve practitioners by advancing the data and procedures of load calculations

6. Agenda additions All

7. Liaison reports (as they arrive) Liaisons
a. Section Head Patrick C. Marks

Reminder to fill out activity form and get minutes in on-time.

b. Research Dennis Landsberg
Attended the subcommittee meeting only not the main meeting.

8. Chair’s Report Rolando Legarreta



ASHRAE Technical Committee 4.1

- a. Chair's Goal
 - i. Encourage new member involvement.
 - Support subcommittee chairs to complete tasks
 - TC leadership path: serve as Subcommittee Chair – Secretary – Vice Chair -- Chair
- b. Announcement from TC Chairs Breakfast Meeting
 - i. Primarily informative as to ASHRAE organizational structure. There wasn't much given in the way of goals, expectations, and instructions.

9. Approval of minutes from 2022 Virtual Summer Meeting

Rolando Legarreta

Chris Wilkins moved to approve summer meeting minutes; Suzanne LeViseur seconded. No discussion. Approved 8-0-1-0-CNV [1 absent].

10. Subcommittee reports

- a. Programs: Rachel Spitler

Programs do not require a vote, but the committee was in favor of moving forward with the proposed forum submission for Tampa.

- b. Research: Som Shrestha

Funding is getting back to pre-pandemic levels. RAC proposed increasing the funding cap from 250K to 300K.

RP 1816: Investigators had to change devices and find a new test site(s) in post-pandemic project restart. Most data have been collected now but have not yet been processed and analyzed. TC 9.6 might want the data in their own chapter (Applications?), so we may need to reference instead of putting it in our chapter; this will need to be discussed.

RP 1857: Bids are still confidential, but sponsoring TC received the proper number of bids to make a decision. PES has made a recommendation and the executive committee will make a decision 2/7. The challenge will be to try to create a simplified method; the outcome may be that there is only a complicated simplified method, not a simple simplified method.

1850-RTP: The sponsoring TC received two bids but did not select either of them. TC will submit for rebid.

Radiant Cooled Floors RTAR: TC 6.5 has not approached us to co-sponsor and will likely not approach us to co-sponsor. Will be removed from the research list at this point. PMS meetings are fully open, and no one can be turned away, so interested TC 4.1 members could attend if they're curious about the project.

The TC 4.2 WS was rejected; 4.2 will not pursue as a standalone research project.

Chris Wilkins has reached out to the chair for Seminar 26: Human Metabolic and CO2 generation rates to see if there's info from their work that we can use. Lack of sensible-latent split information is a concern, but looked like there were possibilities in what they presented.

Ardi will take over as Research Chair July 1, Som will continue until June 30. Copy both Som and Ardi on all research emails to Som in the meantime.



ASHRAE Technical Committee 4.1

c. Handbook:

Jim Pegues

July 2024 is the submission deadline for our chapters.

Jim attended the Residential Building Committee meeting this morning and presented residential load questions (main meeting members are code officials, academic, with a consulting engineer and a manufacturer). They said it was of value, yes. They want the art & science pushed, want more of a global perspective, helpful for academic due to scientific underpinning. They also said they would support research if needed (?). The residential trend side of things will take a bit more work, but we can now discuss it. This is a longer-range work than would be ready for the 2025 HoF.

There was a lot of discussion between the committee members and a couple of guests as to what purposes the residential load calculations chapter should serve.

A guest from ACCA (Ed Janowiak) was interested in ASHRAE developing a slightly simpler form of the current load calculation methodologies presented in the current residential chapter. Chip B. has been trying to engage the ASHRAE residential committee and has not been successful until Bill Healy put it on their agenda. The question is: is there a need for a residential load calc chapter? The consensus is "yes" even though it is the realm of ACCA. However, ACCA is focused on North America, while ASHRAE is focused on the international community. Chip mentioned that the ASHRAE residential committee has a listserv of 300 people. We could possibly solicit feedback from them. Won't affect the 2025 HoF but possibly the 2029 HoF.

Ed from ACCA says there's still a place for pen and paper for calculating Manual J8 loads, especially for international. Spittler mentioned he would rather use a spreadsheet that do it by hand. CLTD method. Even with ACCA method it's still difficult w/ a spreadsheet. Google Doc?

Chip: In this day and age, lots of people use computers.

Spittler: If designing for a passive house. still a role for ASHRAE for such a niche market.

Glenn Friedman: In 1998, ACCA completed Manual J8 Manual. The outcome of that is subjective from POV, ASHRAE always felt they were the cognizant body to look at load calcs. Didn't wish to hand over to ACCA as cognizant group. What Glenn hears is a # of things: what is the issue trying to solve? load calcs won't solve installation issues; air balancing, etc. We can agree what are fundamentals to calc room load? To do a good load calc involves a 8760 run, perhaps? It takes a good computer.

Ed Janowiak: more simplified and accessible to users.

However, let's talk about the edge cases: passive house; net zero house, etc.

Ed Janowiak: In Toronto Summer meeting, he didn't see any interest in moving forward w/a residential product. ACCA was actually happy about that. Borderline surprised at pro-doing something.

What Ed sees as a whole is the simplified method. both satisfactory methods.

Glenn proposed two paths forward: - Discuss with members to put forward a motion to create a simplified model or discuss putting together an RTAR to do the research to create a simplified load calc/tool.

Due to time constraints, the Handbook discussion was stopped at this point to return to the agenda; the Handbook discussion was returned to in the last fifteen or so minutes in the meeting time scheduled.



ASHRAE Technical Committee 4.1

d. Standards: Glenn Friedman
There was no update.

e. Web site: Jim Pegues
There was no update.

11. Old Business Rolando Legarreta
a. NA

12. New Business Rolando Legarreta

a. Publications:
The Load Calculation Applications Manuals are worth updating, but the other two documents are not necessarily (if electronic versions can be offered, that might be worthwhile). Chip suggested putting the RP-1199 data on GitHub, as there isn't much if any commercial value left in it; the Publications liaison will investigate this.

The ASHRAE/ACCA Residential Heating and Cooling Load Calc Manual from 1996: what to do about it? Offer it on a CD? There are no plans to update it. Another publication: Annotated Guide from 1996. It is obsolete. There is an RTAR to update the Application Manual.

b. Back to Handbook:
Brian Rock: Reconfigure the Non-Res handbook chapter to better serve consulting engineers/talk about fundamental concept of loads; steady-state terms.; Then, have a 2nd chapter talk about the calcs: RTS method, heat-balance and other methods.

This would be a longer-range project possibly for the 2029 HoF. Proceed with current method for the 2025 HoF. Later on, have a 2nd chapter on transient loads; for design cooling and heating.

Therefore, 3 chapters total in 2029 HoF and beyond:

- 1: Basic concepts including heating
- 2: Residential - cooling only
- 3: Non-Residential - cooling only

Brian Rock: Develop an ASHRAE article about this topic. Also, submit a forum for Tampa about this topic.

Someone asked: Is this a radical rewrite or evolutionary change?

Brian Rock: Load calc manual would be revised more often. heavy duty material is in load calc manual so simplify the HoF chapters.

Friedman: Transient method, heat balance method. Peak loads, Steady-state. "Transient method" term is not a good one. Apply heat balance: transient.



ASHRAE Technical Committee 4.1

13. Adjourn [4:05: PM EDT]

Rolando Legarreta

Larry motioned, Rolando/Chris seconded.