

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.  
1791 Tullie Circle, N.E./Atlanta, GA 30329  
404-636-8400

TC/TG/TRG MINUTES COVER SHEET

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

TC/TG/TRG NO.: TC 4.1 DATE: June 13, 2018

TC/TG/TRG TITLE: LOAD CALCULATION DATA AND PROCEDURES

DATE OF MEETING: January 22, 2018 LOCATION: Chicago, IL

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
<b>Voting</b> Larry Sun Suzanne LeViseur Chris Wilkins Chip Barnaby Jingjuan Feng Elyse Malherek Rolando Legarreta Jeff Spittler Jim Pegues  <b>Non-Voting</b> Steve Bruning Glenn Friedman Bob Doeffinger Stephen Roth Christian Bach Rachel Spittler Som Shrestha Liam Buckley Ken Takahashi Manalee Nabar Brian A Rock Justin Wong		<b>Voting</b> [none] <b>Non- Voting</b> Daniel Bustamante Trevor Butler Amanda J Kilbane Siwei Li Mini Malhotra Miguel Quinones Harjit Singh Minh Vu Mufeed Alshakhori Lucy Amankwah David O Ariyo Carsen Banister Alireza Behfar Amit Bhansali Fred S Bauman Benjamin Brannon Sonia B Brown Michael P Case Jui-Chen Roger Chang Charlie D Curcija Carlos Duarte Alan Paul Dunlavy Philip Farese Joseph S Ferdelman Daniel E Fisher Enrica Galasso Francisco Alba Scott Hellendrung Stephen P Kavanaugh Ken-Ichi Kimura Bryan Morris Gabrielle Powell Neeraj Pranavam Raveendran Sahil Priyadarshi Ghani Ramdani Ahmad K. Sleiti Laura Southard Russell D Taylor Branislav B Todorovic Edmund S.W. Wong Kevin C Wood Ke Xu YAO YU		<b>Visitors</b>  Graham Wright Kwang Ho Lee Rob Hitchcock Jeff Munk Scott Hellen Drung Jie Cai Joe Huang

**DISTRIBUTION:** All Members of TC/TG/TRG

**ADDITIONAL DISTRIBUTION:**

TAC Chairman: Michael Bilderbeck

TAC Section Head: Dennis Wessel, P.E.

Research Liaison: Prof. Xudong Yang

ALI/PDC: James W Bochat

2017 HOF:

Standard Liaison:

Mgr of Standards:

Staff Liaison:

David P. Yuill, P.E.

James Dale Aswegan

Stephanie Reiniche

Michael R. Vaughn

"These draft minutes have not been approved and are not the official, approved record until approved by this committee."



## ASHRAE Technical Committee 4.1

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

### **Agenda for - TC4.1 Load Calculation Data & Procedures**

**Chicago**  
**January 22, 2018**

**TC4.1 Load Calculation Data and Procedures**  
**Monday, 2:15 PM to 4:15 PM**  
**La Salle 5, Palmer House**

1. Call to Order Larry Sun
2. Roll Call Jingjuan “Dove” Feng
3. Introduction of Visitors Larry Sun
4. Approval and/or Corrections to Long Beach Meeting Minutes Larry Sun
  - Research subcommittee minutes from 2017 Long Beach meeting was missing in the minutes, Suzanne LeViseur will add to the Long Beach Meeting Minutes
  - Approval of Minutes. Chris Wilkins moved/Jeff Spitler seconded - 9-0-0-0 CNV
5. Liaison Comments  
Section Head Dennis Wessels
  - Notes from Chair’s breakfast, CEC and TAC (see attachment #1)
  - Online roster is available for update
  - Remote TC meeting is available
  - Minute is supposed to go out 60 days before the meeting
  - 125th anniversary: June 2019 and Jan 2020, call for papers and programs.

Chapter Technology Transfer	Christopher Adams
Research Handbook	Michael Pouchak
ALI/PDC	Bass Abushakra
Standards Liaison	James W. Bochat
Staff, Research/Tech Services	James Dale Aswegan
TAC Chairman	Michael R. Vaughn
Assistant Mgr. Standards	Kelly Cramm
	Ryan Shauley
6. Research Subcommittee Report (Attachment #2) Rolando Legarreta
  - RP 1742- heat gain office equipment. Research finished. Glenn Friedman will submit Pending Research Disposition Form. Christion Bach, the PI, will suggest on next research steps
  - RP 1729: " Experimental Verification of Cooling Load Calculations for Spaces with Non-Uniform Temperature Radiant Surfaces” – PMS Chair – Glenn Friedman.
    - PMS meeting on Jan 21st. Progress is on-going, but a no-cost extension is being requested.

TC 4.1 Web Site: <https://tc0401.ashraetcs.org/>



## ASHRAE Technical Committee 4.1

Original start date was 8/2016, but grad student couldn't start till 1/2017, thus request for NCR of January 31, 2019 (5 months). Final review with PMS will occur in 1/2019. The extension should not affect schedule of the proposed program

- Jim Pegues moved/ Suzanne LeViseur seconded to approve the No-cost extension. (9-0-0-0 CNV)
  - RP1816-Imaging Equipment with TC9.6. Pending at TC 9.6
  - RTAR by Joe Huang, TC 4.2 chair, to look at new approach to develop the design weather data. Discussed whether this research is necessary. The current procedure has not created under sizing issue, but there are some use cases, such as night time cooling design, that may benefit from more accurate data. TC 4.2 will decide whether to approve the RTAR. If approved, TC 4.1 will consider co-sponsorship. Chip also suggested the research may inform update of handbook 2025.
  - TC 4.2 work statement for updating the climate design conditions in the 2021 Handbook. Seeking co-sponsorship from TC 4.1. Rolando Legarreta moved/ Chip Barnaby seconded for approval of the WS (9-0-0-0 CNV)
  - Ground temperature RTAR by TC 4.7. Looking for support/co-sponsorship. If the data will be used in TC4.1 handbook, 4.1 should co-sponsor. Chip Barnaby, Chris Wilkins and Dove Feng volunteered to review the RTAR once approved by TC 4.7
7. Programs Subcommittee Report (Attachment #3) Glenn Friedman
- Current program: low energy design impacts on peak heating and cooling load calculation
  - Som and Rachel have chaired the program subcommittee meeting yesterday, as Glenn has conflict
  - 2018 June program proposal:
    - RP-1729 Seminar to discuss background on that research and process. "Radiant and Convective Loads – A Look Inside the Research Process", Track 7 Research Summit. Speaker suggestions: Chris Wilkins, Glenn Friedman and Atila Novoselac. Either fundamental or research track. Contact both track chairs and see which track is a better fit.
    - Second option: Missing link: load calculation to equipment sizing. Workshop or forum. Workshop is preferred as it better engages the audiences. Glenn Friedman to introduce the subject and objective for the workshop, Jim Pegues to provide a tool vendor perspective on applying room loads to calculate system loads for sizing, Steve Burning to provide a practitioner perspective on the same.
  - Rolando Legarreta moved/ Dove Feng seconded for approval of June program. (9-0-0-0 CNV)
  - Future program: Historical committee is looking for programs to celebrate the 125-year anniversary of ASHRAE. These would be for Summer 2019 (Kansas City) and Winter 2020 (Orlando)
8. Standards Subcommittee Report Glenn Friedman
9. Handbook Subcommittee Report (Attachment #4)
- |                         |              |
|-------------------------|--------------|
| Residential Chap 17     | Chip Barnaby |
| Non-Residential Chap 18 | Jim Pegues   |
- Jim will send electronic version to reviewers. There are several volunteers
    - Update coming from RP1729, Dove Feng volunteered to look at it
    - Steve Burning will review chapter 18 table
    - For residential need reviewers
  - Add how to do equipment sizing from load calculation results. Could use feedbacks from the workshop proposed for June 2018
  - Timeline to add new research data into the next handbook.



## ASHRAE Technical Committee 4.1

10. ASHRAE Website for TC4.1

Jim Pegues

- updated

11. BIM.MTG

Jim Pegues

- BIM MTG to tackle how BIM affect the society
- Setven Roth through TC7.5 proposed WS-1810 to support BIM tool to generate gbxml. Creating test suites to test the quality of the gbxml files
- Occupant behavior modeling. Look at integrating the occupant behavior into load calculation and simulations software

12. Old Business

Bob Doeffinger

13. New Business

Bob Doeffinger

14. Adjournment

Bob Doeffinger

Officers and voting members for 2017/2018:

Larry Sun	Chair	Voting
Suzanne LeViseur	Vice Chair	Voting
Jingjuan Feng	Secretary	Voting
Jim Pegues	Handbook Subcommittee Chair / BIM.MTG Liason	Voting
Glenn Friedman	Standards/Programs Sub Chair	Nonvoting
Rolando Legarreta	Research Subcommittee Chair	Voting
Chris Wilkins		Voting
Jeff Spitler		Voting
Charles Barnaby		Voting
Elyse Malherek		Voting



# ASHRAE Technical Committee 4.1

## Meetings

### **TC 4.1 Load Calculation Data and Procedures**

Monday 2:15pm-4:15pm  
La Salle 5, Palmer House 7<sup>th</sup> Floor

### **TC 4.1 Handbook Subcommittee**

Sunday 3:00pm-4:00pm  
Dearborn 2, Palmer House 7<sup>th</sup> Floor

### **TC 4.1 Research Subcommittee**

Sunday 4:00pm-5:00pm  
Dearborn 2, Palmer House 7<sup>th</sup> Floor

### **TC 4.1 Programs & Standards Subcommittees**

Sunday 5:00pm-6:00pm  
Dearborn 2, Palmer House 7<sup>th</sup> Floor

### **RP-1729 Project Monitoring Subcommittee**

#### **Radiant Cooling**

Sunday 8:00am-9:00am  
Buckingham, Palmer House 5<sup>th</sup> Floor

### **Seminar 50**

Low Energy Design Impacts on Peak Heating  
and Cooling Load Calculations  
Tuesday 3:15-4:45pm  
Monroe, Palmer House 6<sup>th</sup> Floor



Shaping Tomorrow's  
Built Environment Today

### TC Sign-in Sheet

Meeting Info: TC 4.1 Full Committee Date: JAN 22, 2018

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
JIM. PEGUES	CARRIER	James.f.pegues@carrier.com	YOTING	N
RODRIGO LEGARRETA	Alegio Engineering	rlegarreta@alegio-engineering.com	YOTING	N
Graham S. Wright	Passive House Institute U.S.	graham@passivehouse.us	Guest	N
SUZANNE LEVISEUR	Haddad Engineering	sleviseur@haddadeng.com	VC/VM	N
Christian Bach	Oklahoma State Univ.	cbach@dstate.edu	CM C?	N
Som Shrestha	ORNL	shresthas@ornl.gov	CM	N
Steve Bruning	Newcomb Boyd	sbruning@newcomb- boyd	CM	N
Chip Barbuckley	Consultant	chipbarbuckley@gmail.com	VM	N
Elise Malheur	Twb	elysem@twb.com	UM	Yes
LIAM BUCKLEY	I.E.S. Ltd.	Liam.buckley@iesue.com	Pro CM	Yes



Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	VEA Member? (Yes/No)
Rachel Spitzer	Synterg	rspitzer@synterg.com	Corresponding ✓	Y
Jeff Spitzer	OSU	spitzer@okstate.edu	Noting ✓	No!
James Wilkins	CRB	chswilkins@crbusa.com	Voting ✓	No
Kwang Ho Lee	Humboldt Natl. Univ.	kwlee@humboldt.ac.kr	Guest ✓	No
Rob Hitchcock	Hitchcock Consulting	Rob.Hitchcock@gmail.com	GUEST ✓	No
Glen Friedman	Taylor Engineering	gfriedman@taylor-engineering.com	<del>CM</del> <del>Noting</del> ✓	No
Dave Teng	Taylor Engineering	dvteng@taylor-engineering.com	Secretary ✓	No
Ken Takahashi	Integral Group	ktakahashi@integralgroup.com	<del>CM</del> <del>Noting</del> Member ✓	Yes
Bob DeFinger	ZMPL Inc.	red@zmm.com	Corresponding ✓	No
Manalee Nabar	CB Engineers	nabarmalee@gmail.com	Pro CM ✓	Yes

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
BRITN ROCK	UNIV. OF KANSAS	hracman@ku.edu	CM ✓	No
Jeffrey Munk	ORNL	munkjd@ornl.gov	Guest ✓	No
Scott Hellenbrung	Uponor	Scott.hellenbrung@uponor.com	Guest ✓	No
Tie Cai	Univ. of Oklahoma	jcail@ou.edu	Guest ✓	No
Liang Sun	tkIsC	lsun@tklsc.com	Chair ✓	No
Joe Huang	White Box Technology	jhuang@whiteboxtechnologies.com	Guest ✓	No
Justin Wong	Consultant	wongcsj@justinwong.com	CM ✓	No



	B	C	D	E	F	G	H	I	J	K	L	M
1	<b>TC/TG/TRG Activity Feedback Form</b>											
2												
3	Please provide feedback on your TC/TG/TRG activities and return this form by <b>Tuesday night 9:00 pm</b> to your Section Head by email or drop off a printed											
4	copy in the Section Head's mailbox folder outside the ASHRAE Headquarters Room.											
5	Include activities performed since the last TC meeting (e.g. any letter ballots, submissions to RAC, award nominations, etc.)											
6	<b>PLEASE DO NOT LEAVE NUMERIC CELLS EMPTY. ENTER 0 IN CELLS IF THERE IS NO COUNT.</b>											
7	TC 04.01 Load Calculation Data and Procedures											
8					Chair:		Larry Sun					
9												
10	Meeting was Held (City)		Chicago			(Day)		Monday		(Date)		1/22/2018
11												
12	<b>Membership</b>					Quorum Established			<b>YES</b>			
13						Number Present		Remote Participants		Total on Committee Roster		
14	Voting Members (excluding Non-Quorum Members)					9		0		9		
15	Non-Quorum Members					0		0		0		
16	Corresponding Members					8		0		46		
17	Provisional Members					3		0		6		
18	Visitors/Guests					8		0		n/a		
19	All members/guests who are <b>ALSO</b> YEA members					5		0		0		
20												
21	<b>Handbook Responsibilities</b>					<b>Standards Responsibilities</b>						
22	Total Number of Chapters					2		Total Number of Standards			2	
23	# Chapters voted out this meeting					0		# Standards recommended			0	
24	<b>Special Publications (last six months)</b>					0		Title:				
25												
26	<b>Program Activities (For This Meeting)</b>											
27	Total # of Forums			Total # of Seminars			Total # of Paper Sessions			Other Presentations		
28												
29	Submitted*	Sponsor	Co-sponsor	Submitted*	Sponsor	Co-Sponsor	Submitted*	Sponsor	Co-Sponsor	TC Research Results	Other Papers**	
30	0	0	0	1	1	0	0	0	0	0	0	0
31												
32	<b>Current Research Activities (active)</b>					<b>TC Management</b>						
33	# of new/revised RTARs submitted					0		Minutes completed on time?			YES	
34	# of other active RTARs					0		Agenda distributed on time?			YES	
35	# of Work Statements submitted					0		Did Chair attend training?			NO	
36	# of other active Work Statements					0		Did Vice Chair attend?			NO	
37	# of active TRPs					0		Did Program Chair attend training?			NO	
38	# of active RPs					1		Did Handbook Chair attend training?			YES	
39	Problems getting RTAR/WS approved?					NO		Did Research Chair attend breakfast?			YES	
40												
41	<b>Other Technical Activities</b>					<b>Award Nominations (last six months)</b>						
42	# FAQs updated this meeting					0		# of Distinguished Service Nominations			0	
43	# New members added to roster					4		# of Exceptional Service Nominations			0	
44								# of Other Nominations: Hightower, Research, Fellow,etc			0	
45								Specify Award :				
46												
47	<b>Any Concerns or requests for the Technical Activities Committee? (Please type in Space Below)</b>											
48	We had a researcher who went above and beyond his contracted effort to provide timely information to include in our handbook chapter, is there or could there be a research award based upon a											
49												
50												
51												
52												
53												
54												

Preliminary Draft

**AGENDA****SECTION TC/TG/TRG CHAIR'S BREAKFAST MEETING**

2018 Annual Meeting

Chicago, IL

**Sunday, January 21st****6:30 A.M. – 8:00 A.M. CST****Palmer House Hotel – ALL Section meetings located on 3<sup>rd</sup> Floor****Section 1**, Salon 1 Room, 3<sup>rd</sup> Floor**Section 3** Salon 4 Room, 3<sup>rd</sup> Floor**Section 5**, Salon 6 Room, 3<sup>rd</sup> Floor**Section 7**, Wilson Room, 3<sup>rd</sup> Floor**Section 9**, Salon 12 Room, 3<sup>rd</sup> Floor**Section MTG**, Madison Room, 3<sup>rd</sup> Floor**Section 2**, Salon 5 Room, 3<sup>rd</sup> Floor**Section 4**, Salon 9 Room, 3<sup>rd</sup> Floor**Section 6**, Salon 2 Room, 3<sup>rd</sup> Floor**Section 8**, Salon 10 Room, 3<sup>rd</sup> Floor**Section 10**, Kimball Room, 3<sup>rd</sup> Floor (**TAC MBO #3.1**)

- I. CALL TO ORDER
- II. ROLL CALL AND INTRODUCTIONS (5 minutes)
- III. ADDITIONS AND/OR CHANGES TO THE AGENDA (5 minutes)
- IV. REVIEW ANY SPECIAL ASSIGNMENTS, ACTION ITEMS FROM LAST MEETING, AND NEW ISSUES (10 minutes).  
New Assignments:  
A. **To be determined**
- V. DISTRIBUTE WRITTEN INFORMATION AND REQUESTS FROM SOCIETY LIAISONS TO TC/TG/TRG CHAIRS (30 minutes).

Additional Potential Announcements/Reminders:A. NEW!

- 1. 2017-2018 George B. Hightower Award Recipient – Art Hallstrom – TC 1.6
- 2. 2017-2018 Service to ASHRAE Research Award Recipient – Brian Silveti – TC 6.9
- 3. Discuss if TGs, TRGs, and MTGs in section will continue in 18-19 Society Year
- 4. 17-18 Rosters Access & Distribution
- 5. MTGs that have been formed since Long Beach Meeting – MTG.EBO (Effective Bldg. Operations)
- 6. TC Website template – Feedback or Suggested Improvements, if any?
- 7. New Restructured TC MOP (Manual of Procedures) – Feedback or Suggested Improvements, if any?
- 8. How to Import Your TC Roster Information into MS-Outlook
- 9. Updated TAC Presentation Template Available for TC members to use with local Chapter
- 10. Basecamp Information from ECC

B. AT THIS MEETING

- 1. On-Site Training Options – TC Chair Training of Roster Update Process for SY 18-19 roster
- 2. Location of Section Head Mailboxes & Free Wi-Fi Access at this Society Meeting
- 3. RPM (Remote Participation Meetings)

C. UPCOMING DEADLINES

- 1. TC Activity Forms for the Chicago Meeting are Due to Section Heads before Wednesday, 1/24/18
- 2. Seminar and Forum proposals for Houston are due by Friday, February 9, 2018

D. REMINDERS

- 1. 2017-2018 Rosters Access & Distribution
- 2. Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE Website
- 3. Request for each TC to review ASHRAE Code of Ethics at start of TC meeting
- 4. Make Special Effort to Welcome New Members and Visitors (Potential Members) to TC Meeting
- 5. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings
- 6. Is your TC Website Up-to-date?
- 7. 17-18 TC Master Calendar – Now Available through Google

E. RECENT ANNOUNCEMENTS

1. RAC Prioritizing Research Topics Related to Residential Sector
2. CEC's Standing Request for Future Society Meeting Program Track Suggestions
3. CEC Seeks TC Volunteers willing to Support Content Development and Quality Control for Society Technical Program at Society Meetings
4. The Professional Development Committee (PDC) is seeking ideas for new ASHRAE Learning Institute (ALI) courses

F. CURRENT & UPCOMING ASHRAE CONFERENCE PROGRAMS

1. Program Focus of Chicago Meeting
2. Houston Meeting – June 23 – 27, 2018
3. Atlanta Meeting – January 12 – 16, 2019

G. OTHER UPCOMING WORKSHOPS AND CONFERENCES

1. TBD

VIII. REMARKS FROM SOCIETY LIAISONS TO TC/TG/TRG CHAIRS

Liaison members from Research Administration, ASHRAE Program, Handbook, Standards, and other standing committees will have an opportunity to describe their committee activities that relate to the TC/TG/TRG functions, if time permits. Written announcements must be provided as a minimum by liaisons in order to have an opportunity to speak at this meeting.

ADJOURN

**Note: This agenda will be discussed and finalized during the full TAC meeting in Chicago. This draft of the agenda is only intended to promote thinking prior to and discussion during that meeting.**

## Announcements and Reminders for TC/TG/TRG & MTG Chairs CHICAGO 2018

### A. NEW!

1. **Discuss and confirm that TGs, TRGs, and MTGs in section will continue in 17-18 Society Year or disband**  
TBD
2. **17-18 Rosters Access & Distribution** - Remember, the current 2017-2018 roster for your TC, TG or MTG is in effect until after the June meeting this year – through Friday, June 30th.

By now, each TC, TG and MTG chair should have received a PDF & MS-Excel file of their new 2017-2018 roster from their Section Head or staff for distribution to the committee. In addition, each member can view all of the rosters of their committees on the ASHRAE Website. Go to [www.ashrae.org](http://www.ashrae.org) <http://www.ashrae.org>, click on the "Membership & Conferences" tab in the header, click on "My Membership" text in the left sidebar, and log in (if you have not logged in lately, you might need to set up a new username and password). Click on the "Update Your Bio / View or Edit Tour Profile" link. Now, you should see your current "bio info". Click on "Committees" on the left sidebar; all of the committees you are a member of will appear. Click on the "blue" roster text at the left hand side of a committee to reveal the roster with linked contact information. Make sure everyone on your committee also knows how to access the roster.

The Provisional Corresponding Member (PCM) position is a relatively new position on TC/TG/TRG rosters. This position allows potential new members to be added by staff to the committee roster any time a request for membership is made by an individual. The position has a 2-year term on the committee. Staff will notify the chair and reissue a new roster to the committee chair any time a provisional member is added. The TC/TG/TRG chair has the option each year during the regular roster update process to convert provisional CMs that have been active participants on the committee the past year into regular CMs or voting members or drop them. If no action is taken, they will time expire from the roster and be removed by staff.

### 3. **Let's Celebrate ASHRAE's Technical Excellence Historically!**

ASHRAE is highly regarded for its technological advances. Consider that these advances evolved from the efforts of our predecessors and you, and the current members of ASHRAE's Technical Committees in advancing HVAC&R technology are building on a deep foundation. So, what is the historical foundation of your Technical Committee specialty? ASHRAE will be celebrating its 125th anniversary in a couple years. The Historical Committee has a project to publish articles in the ASHRAE Journal and organize paper presentations celebrating our technical heritage for the anniversary. We plan to emphasize technical advances after 1920. Can you help with an article or a paper or can your TC organize and sponsor a program session for the 2019-2020 meetings?

Here is a list of topics that TC members have already suggested.

- Development of open communication protocols such as BACNET.
- Modern improvements in psychrometrics (Goff & Gratch).
- History and effect of the Environmental movement on our technology. How technology and equipment has improved the indoor environment.
- The refrigerant revolution
- Solving the problems of "sick buildings."
- The re-discovery of past technology and its application today (such as district energy, hydrocarbon refrigerants, off peak energy storage, "total energy" systems, etc.)
- History of the application of electronics to HVAC&R technology.
- ASHRAE's long history in applying innovative technology.
- History and importance of frozen food technology.

All of these topics and others you may think of need to be written up and/or presented by someone.

How about YOU?

The 125th anniversary will be celebrated at the 2020 winter and Annual meetings. The Historical Committee has been charged with the responsibility of organizing Society and industry history projects for the 125th. If you would like to submit an article or a paper or organize a program session, contact Emily Sigman, Historical Committee Staff Liaison at [esigman@ashrae.org](mailto:esigman@ashrae.org).

There is a deadline – please submit abstracts or outlines before **February 28, 2018**.

**4. Oversight of TC websites with regard to *Technical Bulletins* (White Papers) and alignment with Society positions, policy, or opinions**

TCs are allowed to develop Technical Bulletins - A Technical Bulletin does not result from a technical meeting and is a brief 1-2 page statement on a special interest HVAC&R topic that has been developed by either a technical or grassroots committee of ASHRAE. After the TC approves the Technical Bulletin, TAC is responsible for coordinating a peer review by a minimum of three persons with expertise in the field of the bulletin before it can be posted. In addition, ASHRAE's policy for websites states the following: **"4 (3) f. Statements and presentations may not appear on web sites that state, purport, or imply that they present ASHRAE positions, policy, or opinions."**

**5. Additional TC E-mail Position Aliases Now Available**

New position e-mail alias addresses have now been created for each of the remaining mandatory positions of the Technical Committee management team (Secretary, Standards Sub. Chair, Program Sub. Chair, Handbook Sub. Chair, and Webmaster). The 17-18 E-mail Alias list with these new position aliases is posted on the ASHRAE website [www.ashrae.org/TCs](http://www.ashrae.org/TCs) under the heading *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs*.

**6. New Restructured TC MOP (Manual of Procedures) issued**

TAC has restructured the TC MOP so that it is easier to navigate and find information. The new TC MOP can be found on the ASHRAE website [www.ashrae.org/TCs](http://www.ashrae.org/TCs) under the heading *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs*.

**7. Distribution of TC minutes changed in TC MOP**

The TC MOP and *TC/TG/MTG/TRG Minutes Cover Sheet* form have both been updated and you are no longer required to send the TAC chair a copy of your minutes after each meeting. The new minutes cover sheet can be found on the ASHRAE website [www.ashrae.org/TCs](http://www.ashrae.org/TCs) under the headings *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs – Routine Forms for TC/TG/MTGs/TRGs*.

**8. How to Import Your TC Roster Information into MS-Outlook**

Detailed instructions on how to import your TC roster information into MS-Outlook has been created and an e-mail announcement will be issued to all TC chairs, vice chairs, and secretaries once these instructions and the restructured TC MOP are posted to the TC page of the website ([www.ashrae.org/TCs](http://www.ashrae.org/TCs) )

**9. Updated TAC Presentation Template Available for TC members to use with local Chapter**

TAC recently updated the standard presentation and presentation notes that TC members can use, without a lot of effort, to explain what TCs do for the Society and how that work benefits members in your local ASHRAE Chapter. You should also know that use of this presentation at a chapter meeting in SY 17-18 will earn a chapter 50 (100 points maximum) PAOE points. Additional PAOE points are also possible in SY 17-18 for a presentation(s) on the work of one specific TC.



The new presentation and presentation notes files are posted now at the following link [www.ashrae.org/tcs](http://www.ashrae.org/tcs) under the heading *General TC Information* at the top of the page in case you prefer to direct others to these files posted online. The presentation material is now also available in both English and Spanish.

#### **10. Basecamp Information from ECC**

More and more TCs and standing committees are making use of ASHRAE's subscription to Basecamp3 to better organize, store, and distribute online committee files that are needed for their meetings through a dedicated committee Basecamp site. If you would like to learn more about Basecamp and how to request a site for your particular committee, please go to the Electronic Communications Committee (ECC) web page: (<https://www.ashrae.org/society-groups/committees/electronic-communications-committee> ) and scroll down to the section titled *Guidance for Basecamp 3*

#### **11. Participation Requested for an Survey being Conducted for an ASHRAE Research Project ASHRAE RP-1650: Training Requirements for Sustainable, High-Performance Building Operations, which is sponsored by TC 7.3.**

We are conducting a survey of the Facility Managers in the industry who are involved in the O&M of High Performance Building Operations. The aim of this survey is to gain an insight into the knowledge and skill requirements needed for O&M staff to operate high performance buildings. The results of the survey will help us formulate training documents that address knowledge and skill sets that are required for O&M personnel to effectively operate such buildings. We would like to request you to make this survey available to the members of your TC. Their input regarding their experience with the O&M of High Performance buildings and systems would greatly benefit and inform this survey. TC members are also encouraged to share the survey link with colleagues that may be better positioned to respond to such a survey.

Filling out this survey should take about 15 minutes of your time.

The link to this survey is provided below:

[https://montana.qualtrics.com/jfe/form/SV\\_2ixnELa2V9lfaRL](https://montana.qualtrics.com/jfe/form/SV_2ixnELa2V9lfaRL)

We plan on closing this survey on **Wednesday, February 2018.**

### **B. AT THIS MEETING**

#### **1. On-Site Training Options**

##### **i. TC/TG/TRG Chair's Training Workshop Reminder**

Sunday January 21<sup>st</sup>, 9:45-10:45 AM in Chicago Room, 5<sup>th</sup> Floor, in the Palmer House Hotel. The training will start with a presentation on how to use the new on-line TC roster update system and answer any questions you have regarding this new system. The moderator will then conduct a Q&A session with the Chairs in order to get a better understanding of what they need or want from TAC in the form of training. The moderator will also ask for feedback on the current TAC training modules and close by laying out his potential vision for future training modules.

##### **ii. RAC's Research Subcommittee Chair's Breakfast**

Monday, January 22<sup>nd</sup>, 6:30 AM – 9:30 AM in Grand Ballroom, 4<sup>th</sup> Floor, Palmer House Hotel. Please encourage your Research Subcommittee Chair or another representative from the TC to attend this meeting so that your RAC Research Liaison (RL) can get an update on the TC's research activities and so that your RL can help any resolve issues & questions that the TC may have concerning their research program. The training portion of this meeting will focus on changes to the Research Manual.

iii. **TC Program Subcommittee Chair Training in Long Beach**

Tuesday, January 23<sup>rd</sup>, 11:15 AM – Noon, Salon 10 Room, 3<sup>rd</sup> Floor, Palmer House Hotel.

*Don't complain about the meeting program and your TC's submissions if you have not been to training.*

A few things you might learn in training are as follows:

- Incomplete program submissions is the biggest reason for rejection now. All information is needed up front for CEC selection process.
- A packaged session on a similar topic is the best way to greatly improve your chances for acceptance.
- There is no difference in how CEC handles 60 and 90 minute program slots. 60 minute slots are just as good as 90 minute slots if complete.

**2. Location of Section Head Mailboxes & Free Wi-Fi Access at this Society meeting**

Mailboxes are located just outside ASHRAE Headquarters Office (Salon 3 Room – Salon Level (3<sup>rd</sup> floor) – Palmer House Hotel. ).

Also, Internet access and computers for e-mail are available in the Cyber Café located in the registration area during operating hours. Please be considerate to others and limit your usage to five minutes.

Wireless internet will be available in all meeting rooms at the Hyatt, Renaissance, and Long Beach Convention Center. ASHRAE will be working with the internet provider to manage the bandwidth so that member expectations of accessibility and speed are fulfilled. We would like to request that everyone limit their usage to functions that do not use excessive bandwidth. Applications such as Facebook, YouTube, streaming video, etc. use excessive bandwidth.

Palmer House Hotel Wi-Fi Access: **PH Meeting Room** is the network, username is **ASHRAE18** and password is **chicago** all (case sensitive).

**3. RPM (Remote Participation Meetings) being held in Chicago**

The 13th RPM (Remote Participation Meeting) Capable Society Meeting, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Chicago and the following sixteen TCs have agreed to participate in this effort: TC 1.12, TC 2.1, TG2(HVAC), TC 4.1, TC 4.2, TC 4.3, TC 4.7, TC 5.11, TC 6.9, TC 7.3, TC 7.8, TC 9.2, TC 9.3, TC 9.4, TC 10.3, and TC 10.6 – This is an increase of one in the number of TCs that hosted RPM meetings in **Long Beach**. A total of 46 RPM meetings will be hosted in **Chicago** when you include project committee and other committee meetings. For comparison, a total of 33 RPM meetings were hosted in **Las Vegas** last year at this time.

The chairs of those TCs participating should provide to their Section Head feedback on their RPM meeting experience before TAC meets on Wednesday morning, 1/24.

**4. Name Badges**

As offered in the past, members of TCs who are not registered for the Conference and plan to only attend TC meetings may receive a free, plain white name badge. The purpose of these badges is for TC members not registered for the Conference to be able to identify one another in meetings.

To receive your badge, please go to the ASHRAE Registration desk located in the Exhibit Hall room at the Palmer House Hotel and look for the sign for "TC Badges." Please identify yourself as someone only attending committee meetings, not registered for the Conference, who would like a white name badge. An ASHRAE staff person will create a badge for you that includes your name, company name and city, state and country (if outside the U.S.). The badge will not have a QR code and will not allow you into the Technical Program.

However, if you'd like to register for the entire Conference you can do so in advance or on-site. We realize your time is limited, one-day registrations (\$270 for Members) are available as well as one-session registrations (\$70). If you wish to register for one day of the Technical Program you or one session, you can do so at the ASHRAE Registration desk. The One-Day option gives you access to the Virtual Conference which is viewable on-demand for 18 months. Questions? Contact [meetings@ashrae.org](mailto:meetings@ashrae.org).

### C. UPCOMING DEADLINES

**1. TC Activity Forms for the Chicago Meeting are due to Your Section Head before Wednesday, 1/24/18**

*TC/TG/TRG Activity Feedback Form (Excel)* can be downloaded from the Technical Committee webpage under the "TC Forms and Documents" page - <https://www.ashrae.org/standards-research--technology/technical-committees/tc-forms-and-documents>. Section heads can also provide an electronic copy of the form if requested.

**2. Seminar and Forum proposals for Houston are due by Friday, February 9th, 2018.**

Please visit the following site to submit your proposal:

<http://submissions.miramsmart.com/ASHRAEHouston2018/Splash.aspx>

For more information, go to: <https://www.ashrae.org/membership--conferences/conferences/2018-ashrae-annual-conference>

**3. 2018 RPM (Remote Participation Meetings) Request for Houston Meeting**

ASHRAE has streamlined the process for requesting RPM meetings moving forward, which will allow us to confirm meeting information earlier in advance of the actual meeting dates.

The updated procedures are as follows:

- ALL committees that want to be considered for an RPM capable meeting in Houston next June must turn in an *ASHRAE Meeting Room Request Form* for Houston to the ASHRAE Meetings section.
- The request should include the reasons why you are requesting RPM meeting capability.
- RPM meeting requests for the upcoming Houston Annual meeting should be submitted by Friday, April 9<sup>th</sup> or sooner
- Confirmation emails (verifying the requests) will be sent out in May 2018
- Requests received after the above date may not be accommodated due to high and growing demand for this service.

### D. REMINDERS

**1. Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE website** Information for TC/TG/TRG and MTG chairs can be found on the Technical Committee page of the ASHRAE website at the following link: <http://www.ashrae.org/tcs>

**2. Request for each TC to briefly review ASHRAE Code of Ethics at start of meeting** See the following link for the latest version of the ASHRAE Code of Ethics: <https://www.ashrae.org/about-ashrae/>

**3. Make a Special Effort to welcome new Members, and Visitors to TC meeting**

Potential new members for your committee have been encouraged to drop-by your meeting. As a result, please make a special effort to recognize and warmly welcome all visitors to your meeting – A TC can never have too many willing and able volunteers.

- 4. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings** More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar requests on to the Manager of Research and Technical Services, Mike Vaughn, at [mvaughn@ashrae.org](mailto:mvaughn@ashrae.org) or [MORTS@ashrae.net](mailto:MORTS@ashrae.net)

**5. Is Your Committee Website up to Date?**

If not, please ask your webmaster to at least post the latest minutes and the Chicago meeting times and agenda. If your website has been neglected, add an action item for this meeting to appoint a responsible member of the TC/TG/TRG who will bring it back to life. The new TC website template has greatly simplified the duties of the TC webmaster and this form of communication is critical to the efficient operation of your committee, and for attracting new members.

The recent conversion to a new TC website platform highlighted a couple areas where a refresher of the ASHRAE rules on website maintenance is warranted. First be aware that ASHRAE Products (i.e., handbook chapters, journal articles, final reports from research projects, etc.) cannot be published on your TC's website. It is very appropriate to post the title and scope of the product and then link the reader to the ASHRAE bookstore or other location on the ASHRAE site where the product may be purchased. Any possible exceptions to this rule must be sent through Steve Comstock for review and approval ([scomstock@ashrae.org](mailto:scomstock@ashrae.org)). The second issue involves timely posting of the draft minutes. Draft minutes (and final, approved minutes from the prior meeting) should be posted to your website (or otherwise distributed to the members) within 60 days after the meeting. Please ensure that your secretary and webmaster are aware of this deadline. To assist your secretary in understanding the procedures for taking and reporting minutes, a video has been developed and posted on the Technical Committees' Training page (<https://www.ashrae.org/standards-research--technology/technical-committees/tc-training-and-presentations>). On the same page, a video has also been posted for use by webmasters to learn about the procedures and schedule to maintain the new websites.

- 6. TC 2017-2018 Master Calendar – Now Available through Google** - The Technical Committee Master Calendar is now available through Google. In order to access this calendar you need to have a Google account.

Once you log into your Google account, follow the instructions below:

To add a friend's calendar, just follow these steps:

- At the bottom of the calendar list on the left, click Add and select Add a friend's calendar.
- Enter the appropriate email address ([techservices1791@gmail.com](mailto:techservices1791@gmail.com)) in the field provided, then click Add.

This calendar is public and will appear under 'Other Calendars' in the left column.

To set up Google Calendar Sync to your Outlook:

- Make sure you're using a supported operating system and Outlook version.
- Download Google Calendar Sync (version 0.9.3.6) at [http://dl.google.com/googlecalendarsync/GoogleCalendarSync\\_Installer.exe](http://dl.google.com/googlecalendarsync/GoogleCalendarSync_Installer.exe)
- Once a dialog box appears, click Save File. The downloaded file should open automatically. If it doesn't, manually open it from your browser's download window.
- Click OK to confirm that you're aware this is an executable file.
- Read through the Google Calendar Sync Terms of Service, and click I Agree.
- Follow through the Installation Options and click Install to finish the set-up process.

Once Google Calendar Sync is installed on your computer, the Google Calendar Sync Settings window will appear:

In the Settings window, enter your email address and password and select the Sync Option you prefer. Read about each Sync Option.

You'll also be able to set the time interval for syncing to occur. Please keep in mind that 10 minutes is the minimum time interval allowed.

After the initial set-up, you can access the Google Calendar Sync Settings window again by double-clicking the calendar icon in your Windows System Tray.

## **E. RECENT ANNOUNCEMENT**

### **1. RAC Prioritizing Research Topics Related to the Residential Sector**

Continuing in 2017-2018, RAC will be prioritizing for bid accepted research topics that support Goal #3 below from the Research Strategic Plan.

**Goal #3:** To reduce significantly the energy consumption for HVAC&R, water heating and lighting in existing homes.

### **2. CEC's Standing Request for Future Society Meeting Program Track Suggestions**

The Conferences and Expositions Committee (CEC) oversees ASHRAE's annual and winter conferences and other specialty conferences and expositions globally. The CEC continually works to improve the conference experience for all attendees. To help keep a "pulse" on the technical issues facing professionals in the HVAC&R marketplace, and to create meetings that reach all of ASHRAE's constituencies, the CEC seeks ideas for tracks for the Atlanta 2019 winter meeting and annual and winter conferences beyond as well as topics for specialty conferences from TC members.

Please submit your suggestions to ASHRAE Staff member Tony Giometti ([Giometti@ashrae.org](mailto:Giometti@ashrae.org)). You can also add your track suggestion in the "Comment" section of the TC Activity form for the Chicago meeting.

### **3. CEC Always Seeks TC Volunteers willing to Support Content Development and Quality Control for Society Technical Program at Society Meetings**

Provide to your Section Head after each Society meeting a list of qualified volunteers from your TC that are potential Technical Session chairs and reviewers of session papers that are related to TC's scope for use by the Conferences & Expositions Committee (CEC) in developing technical content for future technical programs.

### **4. The Professional Development Committee (PDC) is seeking ideas for new ASHRAE Learning Institute (ALI) courses.**

The Professional Development Committee (PDC) is actively seeking ideas for new ASHRAE Learning Institute (ALI) courses. We need practical courses of broad interest to be presented as face-to-face seminars or short courses, instructor-led online courses and self-paced courses. Examples include courses with a focus on new technologies that need to be shared, fundamentals for engineers new to the discipline, standard applications that need explanation, and courses based on new design guides. Does your TC have a potential course idea? Contact Karen Murray (ASHRAE staff) [kmurray@ashre.org](mailto:kmurray@ashre.org) or Karen Thrasher (2017-18 PDC chair) [PDCchair@ashrae.net](mailto:PDCchair@ashrae.net) with your course ideas.

## **F. CURRENT & UPCOMING ASHRAE CONFERENCE PROGRAMS**

### **1. Chicago Winter Conference – Jan. 20 – Jan. 24, 2018**



Conference Website: <https://ashraem.confex.com/ashraem/w18/cfp.cgi>

Conference Program Chair: Michael Collarin

Program Focus at Chicago Winter Conference

- i. Track 1: Systems and Equipment
- ii. Track 2: Fundamentals and Applications
- iii. Track 3: Standards, Guidelines and Codes
- iv. Track 4: Earth, Wind & Fire **NEW!**
- v. Track 5: Transportation IAQ and Air Conditioning **NEW!**
- vi. Track 6: Tall Buildings
- vii. Track 7: Modeling Throughout the Building Life Cycle **NEW!**
- viii. Track 8: Heat Exchange Equipment
- ix. Track 9: Refrigerant Mini Track @ Expo\*
- x. Track 10: Residential Mini Track @ Expo\*

**2. Houston Annual Conference - June 23 – June 27, 2018**

Seminar and Forum proposals for Houston are due by **Friday, February 9th, 2018**. Conference Website: <https://www.ashrae.org/membership--conferences/conferences/2018-ashrae-annual-conference/call-for-papers>

Conference Program Chair: Cindy Moreno Email: [cindym@tmmechanical.com](mailto:cindym@tmmechanical.com)

Program Focus at Houston Annual Conference

- i. Track 1: HVAC&R Systems and Equipment
- ii. Track 2: Fundamentals & Applications
- iii. Track 3: District Energy and Cogeneration Plants **NEW!**
- iv. Track 4: Safeguarding our HVAC&R System **NEW!**
- v. Track 5: Residential: Modern Buildings in Hot & Humid Climates
- vi. Track 6: Professional Skills
- vii. Track 7: Research Summit
- viii. Track 8: HVAC&R Control Freaks **NEW!**
- ix. Track 9: HVAC&R Analytics **NEW!**

**G. OTHER UPCOMING WORKSHOPS, CONFERENCES AND EVENTS**

**1. 2018**

- i. **Business and Technical Aspects of Deep Energy Retrofit of Buildings** – Jan. 18 to 20, 2018 – Chicago, IL USA

- ii. **THE Global Women in STEM Leadership Summit** – Mar. 19 to 20, 2018, Four Seasons Hotel, Atlanta GA USA. This is the only one of its kind 2-day summit held in the world that is dedicated to giving women in STEM access to powerful tools, strategies and networks to advance their careers and realize their full potential. [Learn More >>](#)
- iii. **2018 ACEEE Hot Water Forum** – Mar. 20 to 22, Portland, OR USA - <http://aceee.org/conferences/2018/hwf>
- iv. **13th International HVAC&R Technology Symposium** – Apr. 12 to 14, Istanbul, TURKEY [More Information >>](#)
- v. **Roomvent & Ventilation 2018 Conferences** – Jun. 2 to 5, Espoo, FINLAND - <http://roomventilation2018.org/>
- vi. **1st IIR International Conference on the Applications of HFO Refrigerants** – Sep. 2 to 5, Birmingham, UNITED KINGDOM - [hfo2018@ior.org.uk](mailto:hfo2018@ior.org.uk)
- vii. **IBPC 2018** – Sep. 23 to 26, Syracuse, NY USA - <http://ibpc2018.org/>
- viii. **2018 Building Performance Analysis Conference and SimBuild co-organized by ASHRAE and IBPSA-USA** – Sep. 26 to 28, 2018 – Chicago, IL USA – Contact: [ashrae.org/BuildPerform2018](http://ashrae.org/BuildPerform2018)
- ix. **The Third International Conference on Efficient Building Design** – Oct. 4 to 5, 2018 – Beirut, LEBANON – Contact: [ashrae.org/Beirut2018](http://ashrae.org/Beirut2018)
- x. **14th Asia Pacific Conference on the Built Environment** – November 18 to 19, 2018 – Kuta-Bali, INDONESIA– Contact: <https://ashraem.confex.com/ashraem/bpa17/cfp.cgi>
- xi. **2<sup>nd</sup> ASHRAE Developing Economies Conference** – Nov. 10 to 11, 2017, Delhi, INDIA – Contact: [ashrae.org/14thAsiaPacific](http://ashrae.org/14thAsiaPacific)

**Conferences and Expositions Committee Information Items for Technical Committees  
Winter Meeting, Chicago, 2018**

**1. Presentation Deadlines:**

CEC has had an ongoing issue with presentations not being uploaded for commercialism review before the conference. This is problematic because it requires a "fire drill" for CEC on Saturday and Sunday to process commercial reviews for these presentations before they can be uploaded to the system. For clarification, presentation requirements include:

- a. Uploads need to be substantially complete; including the AIA Disclaimer and Learning Objectives. Blank slides and place holders do not constitute a substantially complete presentation.
- b. Recent Presentation Upload History
  - i. For Chicago, 38 presentations had not been uploaded by the January 10<sup>th</sup> deadline.
    1. 24 presentations were still not uploaded as of 1/20/2017.
    2. 22 of those 24 were TC sponsored.
  - ii. For Long Beach, 41 presentations were not uploaded by the final due date.
  - iii. For Las Vegas, 48 presentations were not uploaded by the start of the conference.

CEC needs to hold speakers accountable for making deadlines. Starting with the 2017 Winter Meeting in Las Vegas, CEC started enforcing a 3 strike policy for speakers who do not upload their presentation by the published deadline. If a speaker receives 3 strikes they will not be able to present for the following year (two conferences).

**2. Program statistics for Chicago; for a total of 106 available slots:**

<b>Seminars</b>	<b>Workshops</b>	<b>Panels</b>	<b>Forums</b>
115 submitted	10 submitted	11 submitted	16 submitted
67 presented	5 presented	1 presented	2 presented
 <b>Debates</b>	 <b>Conference Papers</b>	 <b>Technical Papers</b>	
10 submitted	132 abstracts submitted	21 submitted	
3 presented	92 abstracts approved	18 presented	
	67 CP presented	6 Technical Paper Sessions	
	17 Conference Paper Sessions		

**3. Potential Sources Bias Disclosure:**

Since the 2016 Annual Meeting in St. Louis, speakers are required to fill out a potential sources bias disclosure document that will note affiliations/ involvement with any organizations with financial or commercial interest in the subject matter to be discussed, in accordance with the ASHRAE code of ethics. This IS REQUIRED to present at an ASHRAE Conference.

**4. AIA/CES Presenter Quality Commitment:**

All Presenters are REQUIRED to complete the following documents in order to have their presentation included in the conference program:

- AIA/CES Presenter Quality Commitment Statement
- Consent to Record

Continuing the Student Paper Awards that were initiated at the 2017 annual meeting, we have selected the following . Certificates will be awarded to the following students at their assigned conference paper session. There will be (1) “Best Paper” and (2) Honorable Mentions for graduate candidates and PDH candidates (6 total papers awarded). (2)

Conference Paper Session 3 – Improvements in Heat Transfer Equipment - Sunday, January 21, 2018:  
11:00 AM-12:30 PM

Conference Paper Session 3 - Improvements in Heat Transfer Equipment - **Sunday, January 21, 2018:**  
**11:00 AM-12:30 PM**

Conference Paper Session 5 – Designing Building Systems for Thermal Comfort - **Monday, January 22, 2018: 8:00 AM - 9:30 AM**

Email: [kmarple@benzco.com](mailto:kmarple@benzco.com)

- **Track 7: Research Summit:**

Track Chair: Melanie Derby

Email: [derbym@ksu.edu](mailto:derbym@ksu.edu)

- **Track 8: HVAC&R Control Freaks:**

Track Chair: Gary Debes

Email: [gcdebes@verizon.net](mailto:gcdebes@verizon.net)

- **Track 9: HVAC&R Analytics (Mini-Track)**

Track Chair: Vikrant Aute

Email: [Vikrant@umd.edu](mailto:Vikrant@umd.edu)

## 2. 2019 ASHRAE Winter Conference in Atlanta, GA: <http://www.ashrae.org/atlanta>

- Conference Paper Abstracts are due Monday, March 5, 2018
- Seminar, Forum, Debate, Panel and Workshop submissions begin Monday, June 4, 2018
- Conference Papers are due Friday, July 6, 2018
- Seminar, Forum, Debate, Panel and Workshop proposals are due Friday, August 3, 2018
- Program notifications go out Friday, September 7, 2018
- Web site opens for presentation uploads on Friday, November 30, 2018
- Presentation uploads due Monday, January 7, 2018

- **Track 1: Systems and Equipment**

Track Chair: Joe Firrantello

Email: [j.firrantello@gmail.com](mailto:j.firrantello@gmail.com)

- **Track 2: Fundamentals and Applications**

Track Chair: Rick Hermans

Email: [herma015@umn.edu](mailto:herma015@umn.edu)

- **Track 3: Refrigeration**

Track Chair: Sonya Pouncy

Email: [sonya.pouncy@gmail.com](mailto:sonya.pouncy@gmail.com)

- **Track 4: Construction, Operation, and Maintenance of High Performance Systems**

Track Chair: Leticia De Oliveira Neves

Email: [leneves@gmail.com](mailto:leneves@gmail.com)

- **Track 5: Common System Options and Misapplications**

Track Chair: Lee Riback

Email: [lee.riback@gmail.com](mailto:lee.riback@gmail.com)

- **Track 6: 207.2 (55+62.1+90.1): The Convergence of Comfort, Indoor Air Quality, and Energy Efficiency**

Track Chair: Ashish Rakheja

Email: [ashish.rakheja@aeonconsultants.in](mailto:ashish.rakheja@aeonconsultants.in)

- **Track 7: Building Integrated Renewables and Natural Systems**

Track Chair: Maggie Moninski

Email: [maggie.moninski@gmail.com](mailto:maggie.moninski@gmail.com)

- **Track 8: The Engineer's Role in Architecture**

Track Chair: Ashu Gupta

Email: [ashu.energy@gmail.com](mailto:ashu.energy@gmail.com)

## 7. TC Opportunities:

- TC members who want to submit a program should consult the Track Chair for assistance in preparing a good abstract, learning objectives, and Q&A to help assure complete submission.
- TC's and Sections are welcome to suggest new presentation formats (like how the Workshop was born). Best way to present material to benefit attendee is a goal.
- TC's and Sections are encouraged to work with a track chair to put together a series of sessions that can be used as a mini-track.
- Putting together an entire track of programs in cooperation with other TC's is also encouraged; keeping in mind that track subjects are typically determined 14-15 months prior to a conference.



- e. CEC welcomes suggestions for tracks! We value your input. TAC/CEC agreed that the Comment Section on the activity form is the location for the TC to provide this information.

#### **8. Speaker Ratings:**

About 12 speakers from Long Beach had speaker ratings below 3.5 out of 5.0. These speakers were sent letters indicating that if they receive two additional low ratings they will be required to provide proof that they have received speaker training before they will be permitted to speak again.

#### **9. CEC Announces a Call for Reviewers and Paper Session Chairs:**

ASHRAE has a number of conferences coming up that include papers, and CEC seeks your help in reviewing them. Additionally opportunities to chair a paper session are available. Specifically, there is an immediate need for reviewers and session chairs for the 2018 Annual Conference and various specialty conferences.

Please submit your interest in reviewing a paper or chairing a paper session using the online form: [http://web.ashrae.org/cec\\_request/](http://web.ashrae.org/cec_request/). Please contact Tiffany Cox, ASHRAE Assistant Manager, Conference Programs, at [tcox@ashrae.org](mailto:tcox@ashrae.org) for more information.

#### **10. ASHRAE 125<sup>th</sup> Anniversary Call for Papers**

The Historical Committee has announced a call for papers on technologies and topics that occurred between the years 1920 – 2000. Accepted papers will be published in ASHRAE Transactions and presented at a Society Winter or Annual Conference during the celebration year. Abstracts are due March 2018. Upon acceptance, papers are due September 2018. To submit an abstract, go to [mc.manuscriptcentral.com/ashrae](http://mc.manuscriptcentral.com/ashrae). For more information, contact Jeff Haberl, 979-845-6507, [jhaberl@tamu.edu](mailto:jhaberl@tamu.edu).

#### **11. Specialty Conferences**

ASHRAE's topical conferences are focused on a particular aspect of the industry and bring together professionals for networking and professional development. Two specialty conferences are available for the remainder of 2018.

##### 2018

Date	Conference	Location	Website
Sept 26-28	ASHRAE Building Performance Analysis Conference and SimBuild	Chicago, IL	<a href="http://ashrae.org/BuildPerform2018">ashrae.org/BuildPerform2018</a>
Oct 4-5	3 <sup>rd</sup> International Conference on Efficient Building Design	Beirut, Lebanon	<a href="http://ashrae.org/Beirut2018">ashrae.org/Beirut2018</a>

#### **12. CLIMA 2019**

The CLIMA 2019 Congress has announced a call for papers and a call for reviewers. The congress takes place May 26 -29, 2019 in Bucharest, Romania. Papers are requested in the areas of advanced HVAC&R technology and IEQ; high performance buildings; information and communication technologies for intelligent building management; and sustainable urbanization

and energy system integration. Abstracts are due Sept. 30, 2018. Upon acceptance, papers are due Nov. 30, 2018. Reviewers with a background in these topics are requested. To submit an abstract, sign-up to be a reviewer or for more information, visit <http://www.clima2019.org>.

### 13. Program Types:

**Technical Paper Session:** TC sponsored/organized paper sessions are encouraged and may be submitted at: [http://web.ashrae.org/cec\\_request/](http://web.ashrae.org/cec_request/). Final approval is contingent upon successful peer review of the individual paper. These sessions present papers on current applications or procedures, as well as papers resulting from research on fundamental concepts and basic theory. Papers presented in these session have successfully completed a rigorous peer review. Forms for written comment are available at each session, and sent to respective authors for reply and publication in ASHRAE transactions, if received by a certain date.

**Conference Paper Session:** TC sponsored/organized paper sessions are encouraged and may be submitted at: [http://web.ashrae.org/cec\\_request/](http://web.ashrae.org/cec_request/). Final approval is contingent upon successful peer review of the individual paper. These sessions present papers on current applications or procedures, as well as papers reporting on research in process. These papers differ from technical papers in that they are shorter are length and undergo a much less stringent peer review.

**Seminar:** These sessions feature presentations on subjects of current interest. There are not papers attached to seminars.

**Workshop:** These sessions enable technical committees and other ASHRAE committees to provide a series of short presentations on a topic requiring specific expertise. These short presentations are provided with an increased emphasis on audience participation and training in a specific set of skills. There are not papers attached to workshops.

**Forum:** The sessions are “off-the-record” discussed held to promote a free exchange of ideas. Reporting of forums is limited to allow individuals to speak confidentially without concern of criticism. There are not papers attached to forums.

**Panel Discussion:** Panel discussions can feature a broad range of subjects and explore different perspectives on industry related topics. This session format includes a panel of 3-4 speakers each addressing a facet of the session topic, followed by an interactive discussion lead by the session chair. Panel Discussions may be 60 minutes or 90 minutes in length and will be posted online in the Virtual Conference.

**Debate:** Debates highlight hot-button issues commonly faced by our membership. Industry experts, either on teams or as individuals, argue opposing sides of an issue, concluding with position summaries and audience feedback. Debate sessions may be 60 minutes or 90 minutes in length and will be posted online in the Virtual Conference.



## ASHRAE's Historical Committee

### Announces Call for Papers for the Society's 125th Anniversary

ASHRAE will celebrate the 125th anniversary of its founding during the 2019-2020 Society year.

As a part of the celebration, the Historical Committee has announced a call for papers on technologies and topics that occurred between the years 1920 – 2020. What do you consider are the milestone industry advances in heating, ventilating, refrigeration and air conditioning? How did they develop, who did it, how does it impact us now? HVAC&R engineering changed our lives! What did we engineers do? How did we do it? Your topic can be specific or broad, but let's document the history. Accepted papers will be published in ASHRAE Transactions and presented at a Society Winter or Annual Conference during the celebration year.

OR  
LATER →

Abstracts are due March 2018. Upon acceptance, papers are due September 2018. Papers can be a maximum of 30 double-spaced pages in length and undergo a double-blind review.

To submit an abstract, go to [mc.manuscriptcentral.com/ashrae](http://mc.manuscriptcentral.com/ashrae).

For more information, contact Jeff Haberl, 979-845-6507, [jhaberl@tamu.edu](mailto:jhaberl@tamu.edu).

Instructions to submit an ASHRAE 125th Anniversary paper:

1. Go to: <https://mc.manuscriptcentral.com/ashrae>
2. Enter the paper details:
  - a. Title
  - b. Short 100 words or less promotional abstract
  - c. Select the publication subcategory of the Conference in which you prefer to present the manuscript: Atlanta 2019 or Kansas City 2019. The 2019 ASHRAE Winter and Annual Conferences take place as follows: Jan. 12 – 16 in Atlanta, GA and June 22 – 26 in Kansas City, MO > Save and Continue
  - d. Select 3 keywords
1. Enter the author and co-author information: To check if an author already exists in the journal's database, enter the author's e-mail address and click "Find." If the author is found, their information will automatically populate for you. > Save and Continue
2. Cover letter: Use the space provided to indicate "ASHRAE 125th Anniversary Paper"
3. File Upload: Use the file upload module to submit your review abstract in Word format.
4. Review the details entered and submit

<https://www.ashrae.org/membership--conferences/conferences/papers-and-programs>

# Publications Committee

## Information for TC/TG Chair's Breakfast Meetings

2018 ASHRAE Winter Conference, Chicago  
Sunday, January 21, 6:30 to 8:00 a.m.  
[www.ashrae.org/publications](http://www.ashrae.org/publications)

### Publications Committee Scope

- Books
- Papers
- Magazines
- Digital, online pubs
- Software
- Apps
- *ASHRAE Journal, Insights, related newsletters*
- Revisions, maintenance

### Content Requests

- Research Projects
- Special Projects
- TC-approved efforts
- Multidisciplinary task group (MTG) managed efforts
- Conference compilations
- *ASHRAE Journal* articles (technical, for practicing engineers)
- *ASHRAE Insights* news (local chapter programs)

Contact the Publications Committee with your idea. Use the Comment on Publications or the Publications Request form on this page of the ASHRAE website: <https://www.ashrae.org/resources--publications>.

Maybe the Publications Committee can help your vision become a reality.

### Tools

- **Newest! 90.1 Portal** ([www.ashrae.org/901portal](http://www.ashrae.org/901portal))
  - Standard 90.1-2016
  - 90.1 User's Manual (for 2016 edition)
  - Redline version of Standard 90.1-2016 compared with Standard 90.1-2013
  - Copy/print, annotation, interpretations, errata
  - **FREE TRIAL!** Sign up before March 15 to preview the software for **FREE**. (ends March 15, 2018)
- **New! ASHRAE Technology Portal** ([www.ashrae.org/technologyportal](http://www.ashrae.org/technologyportal))
  - ASHRAE Journal Articles (free to members!)
  - ASHRAE Research Reports (free to members!)
  - ASHRAE Transactions and Conference Papers (available by subscription)
  - ASHRAE Conference Seminars (available by subscription)
- **ASHRAE Authoring Portal**
  - Multiple authors review, revise, and edit a document together in Word
  - ASHRAE-approved, secure platform for copyrighted intellectual property
  - For more information, visit [www.ashrae.org/authoringportal](http://www.ashrae.org/authoringportal)
  - To get your TC, TG, MTG, or other authoring group started using the portal, contact Mark Owen ([mowen@ashrae.org](mailto:mowen@ashrae.org))
- **ASHRAE Terminology**
  - Free online glossary of more than 3700 terms related to the built environment
  - Help your publication development efforts
  - Give your input to TC 1.6 by checking for accuracy and omissions
  - Check it out at [www.ashrae.org/ASHRAETerms](http://www.ashrae.org/ASHRAETerms)

### Questions?

Contact

- Publications Committee liaison *or*
- Publications Committee chair ([pubchair@ashrae.net](mailto:pubchair@ashrae.net)) *or*
- Staff Editor, Mark Owen (telephone: 678-539-1187; email: [mowen@ashrae.org](mailto:mowen@ashrae.org))

Section 4 Research Liaison - Michael Pouchak

**TC 4.1 RESEARCH PROJECTS**

1. **RP 1729 RADIANT LOADS** - " Experimental Verification of Cooling Load Calculations for Spaces with Non-Uniform Temperature Radiant Surfaces" – PMS Chair – Glenn Friedman. Presentation to PMS on Sunday January 21. Progress is on-going.  
No cost time extension requested by Researcher.  
Original Completion September 31, 2018.  
No Cost Extension (NCE) to January 31, 2019. – Granted by TC 4.1 – Refer Minutes for approval  
- Original start date was 8/2016; but graduate student wasn't able to start until January 2017, thus request of NCE. Final Review by PMS will occur in January 2019.
2. **RP 1742 - EQUIPMENT HEAT LOADS** – Research is finished, and Research Paper is under review. **Pending Research Disposition Form** to close with MORTS (Mike Vaughn); At the meeting Glenn will fill-out the form (emailed 1/22/18). Steve Recommended seeking award for this researcher because they stepped up to a challenging task in a timely manner. There doesn't seem to be an award along these lines, but Chris will look into this.  
  
Update on equipment Loads in 2020  
Narrow down to 0.4 w/sf; maybe 10 years before it is done again. Probably for the 2025 HB – Start Research in 2021-2022;
3. RP-1816WS (Imaging Equipment) still pending TC 9.6 input. Glenn (Liaison) has been communicating with TC 9.6.
4. TC4.7 – Load calcs for slabs in basements – Vote to Co-sponsor RTAR on ground heat loss/conduction, authored by Neal Kruis and Tim McDowell. They are bringing this forward in TC 4.7 and are looking for support from TC 4.1 and SSPC 90.1. RTATC4.7 to be discussed today (1/22/18) once comments are incorporated it will be sent to Rolando Legarreta for distribution to TC Voting Members and obtain an email ballot?  
Reviewers for RTAR and comments back to TC 4.7/TC 4.1  
Chip  
Dove  
Chris  
Since this information will appear in our chapter TC4.1 should co-sponsor (Steve B and Larry S.)
5. Joe Huang - Chairman TC 4.2 – Updated weather data for design day formulation – Currently Statistics and use such to determine the peaks. What qualifies as a design day. RTAR written down to be reviewed by TC 4.2; once done it may be send to our committee to define if it will be co-sponsored.
6. Weather Data Update – with TC 4.2 Guys - Didier - 4.2 is proposing update of weather data as they do every cycle. Request 4.1 co-sponsor. TC4.1 voted and will co-sponsor.



**TC 4.1 Research Report**  
**Chicago, Monday, January 22, 2018**

7. Steve will review HB tables to define which tables need to be updated and which ones can be removed. Tables that require update will more than likely require some sort of Research.

**RAC UPDATE**

- a. Service to ASHRAE Research Award was presented to Brian Silveti from TC 6.7
- b. March 15 deadline for submission for RTAR and WS.
- c. Proposals update:
  - i. 2 RTARs considered, both were accepted with comments
  - ii. 2 Work Statements considered; both were returned.
  - iii. Voted to release all outstanding TRPs for bid.
- d. Awards:
  - i. Selected the recipient for the Homer Adams award
  - ii. Selected six finalists for the innovative Research Grant (IRG) proposal.
  - iii. New investigator award will be reviewed and selected in the next few months.
- e. Announcements
  - i. Full votes and co-sponsoring TCs on RTAER and WS submission forms required. IF co-sponsoring PES and PMS should be formed by all TCs involved. This way ensure co-sponsored research projects are multidisciplinary and will get the support and expertise to evaluate.
  - ii. Any conditionally approved RTARs must acknowledge how conditions were cleared.
  - iii. **Include** milestones in WS.
- f. Disposition of ASHRAE Sponsored Research Results form
  - i. At the conclusion of the project, the PMS shall prepare and submit a "Disposition of ASHRAE Sponsored Research Results" form to the MORTS (Mike Vaughn).
  - ii. RAC is still waiting submission on several projects.
  - iii. RAC is considering ways to ensure forms are submitted. Research Subcommittee Chairs should ensure forms are submitted within next three months.

**8. Any Proposed Research Projects for Upcoming HB?**

See Item 7.

**TC 4.1 Programs/Standards and Some Research Projects Discussion**  
**Chicago, Monday, January 22, 2018**

Glenn Friedman, Program and Standards Chair with Dr. Som Shrestha [shresthass@ornl.gov](mailto:shresthass@ornl.gov) and Rachel Spitler [rspitler@cyntergy.com](mailto:rspitler@cyntergy.com), Co-Chairs

## **PROGRAMS**

1. **Report By:** Dr. Som Shrestha [shresthass@ornl.gov](mailto:shresthass@ornl.gov) and Rachel Spitler [rspitler@cyntergy.com](mailto:rspitler@cyntergy.com) are participating as Co-Chairs to support Glenn Friedman.
2. **Current Program:** Tuesday, January 23, 3:15 PM - 4:45 PM Seminar 50  
 (Monroe, Floor 6) Low Energy Design Impacts on Peak Heating and Cooling Load Calculations, Track: Fundamentals and Applications
  - a. Chair: Glenn Friedman, P.E., Fellow ASHRAE, Taylor Engineering, Alameda, CA
    - i. Energy codes like Standard 90.1 and technological change have reduced peak loads significantly. This trend continues in RP 1742, Update to Measurements of Office Heat Gain Data, used in the latest ASHRAE Handbook, Fundamentals volume. This significantly impacts design of HVAC and other building systems and can create a new set of pitfalls. Engineers should recognize these trends and the impact they have on old "rules of thumb." Likewise, these trends can have a significant impact on energy modeling and built environment energy use. Tuning existing buildings and systems to take advantage of these trends is a major industry opportunity.
  - b. Speaker 1. Heating and Cooling Load Trends: Down, Down, Down, Steven Bruning, P.E., Fellow ASHRAE, Newcomb & Boyd, Atlanta, GA
    - i. As energy codes have evolved over the years since ASHRAE 90-75, their requirements have steadily improved building envelopes and reduced allowable lighting loads. While technology exploded with the advent of personal computers in the early 80's, plug loads resulting from that technology at first significantly increased cooling loads. More recently that trend has reversed with improved technology, thin clients and cloud technology. What impact have these trends had on HVAC design, the old one cfm/sf rule of thumb is literally out the window.
  - c. Speaker 2. Decreasing Internal Loads: Could This Lead to Problems? Christopher K. Wilkins, P.E., Member, CBR USA, Cambridge, MA
    - i. This presentation reviews the downward trend for internal loads over time, with an emphasis on lighting loads and plug loads. The presentation also discusses the most recent research by TC 4.1 on low energy lighting (LED) and plug load measurements. The presentation also introduces the question of determining the point where lower loads can present system or indoor air quality issues.
  - d. Speaker 3. Low Loads: Reap the Benefits but Read the Fine Print, Manalee Nabar, P.E., Associate Member, CB Engineers, San Francisco, CA
    - i. Low loads, both overall and internal plug/lighting are pivotal factors when achieving energy efficient (Passive House, Net Zero, etc.) building design. This presentation first delves into the basic components of heating and cooling loads and examines how different load calculation methods handle the interdependency and time lag between them. Next, strategies to minimize internal loads is discussed. Lastly, common pitfalls in HVAC system sizing due to low loads is discussed and what factors should be kept in mind when specifying equipment.

**TC 4.1 Programs/Standards and Some Research Projects Discussion**  
**Chicago, Monday, January 22, 2018**

**3. Future Program:**

- a. Proposed program for Houston, proposals submission due February 9, 2018
  - i. Seminar: "Radiant and Convective Loads – A Look Inside the Research Process"  
Why we needed the research on load calculations for the radiant cooling system + RP1729 research details and the outcome  
Track 7 Research Summit
  - ii. Workshop: "The Missing Link – Load Calculations to Equipment Sizing".  
Ventilation & Infiltration Impact on Loads (Who's doing this? Is this a system issue? Where does this exist in ASHRAE [Std 62?]? Is this done manually?)  
Think about a program by our committee and decide on changes to Chapter after. Is this a Forum or Workshop?  
Track 2 HVAC Fundamentals
- b. Future Program Ideas
  - i. Historical committee is looking for programs to celebrate the 125 year anniversary of ASHRAE these would be for Summer 2019 (Kansas City) and Winter 2020 (Orlando)
  - ii. Seminar including, Workflow of Process for Cooling and Heating Load Calculations (Forum or Seminar) & Energy Calculations, Energy vs. Load Processes, Sample Comparisons of Loads results from different Energy softwares (Sun/Landreth, Roth?)
  - iii. Atrium and large space load calculations, empirical case studies (Bauman?)
  - iv. Ventilation and infiltration
  - v. How Load Calculations Interact with Other ASHRAE Chapters
    - Weather
    - Infiltration
    - Building skin color
    - Ventilation
    - Fenestration, dynamic windows

**STANDARDS**

- 1. No agenda.
-

**TC 4.1 Programs/Standards and Some Research Projects Discussion**  
**Chicago, Monday, January 22, 2018**

**PROGRAM TRACKS for Houston:**

- Track 1: HVAC&R Systems and Equipment Track Chair: Frank Schambach  
Email: [frankschambach@mindspring.com](mailto:frankschambach@mindspring.com)
- Track 2: Fundamentals and Applications Track Chair: Dennis Alejandro  
Email: [denzjac@yahoo.com](mailto:denzjac@yahoo.com)
- Track 3: District Energy and Cogeneration Plants Track Chair: Kimberly Pierson  
Email: [kdpwildcat@gmail.com](mailto:kdpwildcat@gmail.com)
- Track 4: Safeguarding your HVAC&R System Track Chair: Rich Rose  
Email: [richr@mticontrols.com](mailto:richr@mticontrols.com)
- Track 5: Residential - Modern Buildings in Hot and Humid Climates Track  
Chair: Dimitris Charalambopoulos  
Email: [dimitris@ashrae.gr](mailto:dimitris@ashrae.gr)
- Track 6: Professional Skills Track Chair: Kevin Marple  
Email: [kmarple@benzco.com](mailto:kmarple@benzco.com)
- Track 7: Research Summit Track Chair: Melanie Derby  
Email: [derbym@ksu.edu](mailto:derbym@ksu.edu)
- Track 8: HVAC&R Control Freaks Track Chair: Gary C. Debes  
Email: [gcdebes@verizon.net](mailto:gcdebes@verizon.net)
- Track 9: HVAC&R Analytics Track Chair: Vikrant Aute  
Email: [vikrant@umd.edu](mailto:vikrant@umd.edu)



# ASHRAE Technical Committee 4.1

## Handbook Subcommittee Report

### Chicago

January 21, 2018

#### 1. Work Schedule for 2021 Handbook – Fundamentals – Chapters 17 and 18

Date or Timeframe	Work Phase	Description
1/2018 – 6/2018	Review	Review current chapter to identify revisions and additions.
7/2018 – 1/2020	Construction	Make revisions and additions
1/2020 – 6/2020	Approval	Committee vote to approve revisions
6/2020	Submission	Submission of revised chapters to ASHRAE staff.
6/2021	Publication	Handbook sent to members.

#### 2. Chapter 18 - Non-Residential Chapter Review

- a. Chris Wilkins, Rolando Legaretta, Larry Sun volunteered to recruit reviewers for the Chapter. Action: Jim Pegues to send electronic copy of 2017 chapter with ASHRAE review form following Winter meeting. Chris, Rolando, Larry will recruit engineers within their firms to review.
- b. Brainstorming about ASHRAE Research that could affect chapter content:
  - 1729-RP – Load Calculations for Radiant Cooling Systems – Will supply material that needs to be included in Chapter. Current projection is that project results will be available in January 2019. Fred Bauman indicated he also has research related to radiant system load calculations that could be helpful.
  - 1816-WS – Heat Gain From Hospital Imaging Equipment – Data from this project would update/expand the hospital equipment heat gain tables in Chapter 18. This project is in the work statement phase. Might not have data until January 2021. Glenn Friedman will be TC 4.1's representative on the project committee.
  - 1414-RP – Update to Fenestration Performance Tables – This TC 4.5 project will likely be canceled and started over due to unresponsive contractor. The fenestration U-value and SHGC data this project would have provided is in input to the example problem in Chapter 18.
- c. General Brainstorming
  - Steve Bruning will check Chapter 18 tables and bring proposals to Houston for tables with old data that should be updated thru new research, or old data that can't be updated and should be removed.
- d. The goal is to use output of reviews to build a work plan at the summer meeting in Houston.

#### 3. Chapter 17 - Residential Chapter Review

- a. Reviews – Stephen Roth volunteered to review part or all of Chapter 17. Action: Jim Pegues to supply electronic copy of 2017 chapter and ASHRAE review form to Stephen after Winter conference.
- b. Chip Barnaby indicated (in prior conversation) there could be value in adding data for newer, highly insulated wall and roof assemblies, and in updating solar heat gain factor correlations.
- c. Consensus was this chapter continues to have significant value even though much of the industry uses ACCA Manual J.

#### 4. Chapter 18 Member Inquiries

- a. Minor typos in Equations 24 and 25 (heat balance equations) were identified and corrected with the help of Jeff Spitler. Corrections will be in next errata and in the 2021 edition.

- b. Table 23 - Basement Floor U-values – Member in Canada indicated he could not reproduce the basement floor effective U-values using Equation 40. Initial investigation indicated the key is choosing the correct  $R_{other}$  factor. Jeff Spitler worked on this table in about 2005. His records indicate that  $R_{other} = 1.47$  BTU/(hr-sqft-F) was used for calculations, and this R includes all thermal resistance except the soil (i.e. inside surface plus floor covering plus concrete plus insulation, as applicable). This information will be added to the Chapter 18 text for clarity.

Table 23 Average U-Factor for Basement Floors				
$z_f$ (Depth of Floor Below Grade), ft	$U_{avg,bf}$ Btu/h·ft <sup>2</sup> ·°F			
	$w_b$ (Shortest Width of Basement), ft			
	20	24	28	32
1	0.064	0.057	0.052	0.047
2	0.054	0.048	0.044	0.040
3	0.047	0.042	0.039	0.036
4	0.042	0.038	0.035	0.033
5	0.038	0.035	0.032	0.030
6	0.035	0.032	0.030	0.028
7	0.032	0.030	0.028	0.026

Soil conductivity is 0.8 Btu/h·ft·°F; floor is uninsulated. For other soil conductivities and insulation, use Equation (40).

 The average below-grade floor U-factor (where the entire basement floor is uninsulated or has uniform insulation) is given by | $$U_{avg,bf} = \frac{2k_{soil}}{\pi w_b} \times \left[ \ln \left( \frac{w_b}{2} + \frac{z_f}{2} + \frac{k_{soil} R_{other}}{\pi} \right) - \ln \left( \frac{k_{soil} R_{other}}{\pi} \right) \right] \quad (40)$$ ||  |  | where | $w_b$  = basement width (shortest dimension), ft   $z_f$  = floor depth below grade, ft (see Figure 14) |
|  |  | Representative values of  $U_{avg,bf}$  for uninsulated basement floors are shown in Table 23. |  |