



MINUTES

TECHNICAL ACTIVITIES COMMITTEE

2016 Winter Meeting

January 23 & 27, 2016

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January 23 & 27, 2016

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ADJOURN

**PRINCIPAL MOTIONS
TECHNICAL ACTIVITIES COMMITTEE
January 23 & 27, 2016**

No.	Motion	Page
1	Draft minutes of the TAC 2015 Fall Web/Conference Call Meeting be approved as drafted	2
2	Title and scope of TC 2.6 (Sound and Vibration Control) be revised as indicated below.	3
3	MTG.CCDG, Cold Climate Design Guide, be disbanded.	3
4	A new multidisciplinary task group titled <i>MTG.OBB (Occupant Behavior in Buildings)</i> be formed as shown below	3
5	A new multidisciplinary task group titled <i>MTG.IAST – Impact of ASHRAE Standards and Technology on Energy Savings/Performance</i> be formed as shown below.	7
6	Section 4.1.5.1 and Appendix G of the TC MOP be revised to remove the requirement that the Section Head and TAC Chair be copied on all TC agendas and minutes distributed to members of committee.	8
7	TAC recommends that a Presidential Ad hoc Committee be formed in order to increase ASHRAE's presence and influence in the technical area of refrigeration.	8

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**NEW ACTION ITEMS
TECHNICAL ACTIVITIES COMMITTEE
January 24 – January 28, 2015**

Action No.	Responsibility	Summary of Action Items	PAGE
1	Peet/Thomle/ Cramm/Wessel	Review and propose changes to the draft TC MOP rewrite	2
2	Vaughn	Add meeting space to the Sunday morning breakfast for new MTG Section.	6
3	Lawrence/ Cooper	Utilize <i>Members' First Newsletter</i> to announce to ASHRAE members the new easy to use TC website template.	7
4	Cooper	E-mail ALL affected TC webmasters and outline for them their responsibilities going forward for updating their new TC website.	7
5	Staff	Change the <i>ALI Coordinator</i> position title in all affected documents and website to <i>Professional Development Liaison</i> pending the approval of the PDC staff liaison	8

**STATUS-ACTION ITEMS
Fall Meeting, September 22, 2015**

Action No.	Responsibility	Summary of Action Items	Status
1	TAC	Review TC MOP Rewrite and provide feedback to Ken Cooper before Jan 1, 2016	On-going

Annual Meeting, 2015

Action No.	Responsibility	Summary of Action Items	Status
2	Cramm/Thomas	Continue to work towards an on-line annual roster update process	On-going

LIST OF ATTACHMENTS

- ATTACHMENT A:** 2015-2016 TAC MBOs
- ATTACHMENT B:** BOD ExO POWERPOINT PRESENTATION
- ATTACHMENT C:** ORLANDO SECTION MEETINGS BREAKFAST HANDOUT

MINUTES

TECHNICAL ACTIVITIES COMMITTEE

January 23 – January 27, 2016
2016 Winter Meeting

MEMBERS PRESENT:

Tom Lawrence, Chair
Mike Bilderbeck, *Vice Chair*
Amir Jokar, *Section 1*
Elbert Phillips, *Section 2*
Jay Kohler, *Section 3*
Dennis Wessel, *Section 4*
Kenneth Peet, *Section 5*
Mark Hegberg, *Section 6*
Adrienne Thomle, *Section 7*
Dustin Meredith, *Section 8*
Krishnan Gowri, *Section 9*
James Tauby, *Section 10*
Thomas Justice, MTG Head
Cynthia Gage, *Training Coordinator*
Kelley Cramm, *Roster Coordinator*
Kenneth Cooper, *Liaison/Special Activities Coordinator*
Ben Leppard, *BOD Ex-O*

GUESTS:

Charlie Culp
James Arnold, *CTTC*
Frank Mills, *MTG.HCDG Chair*
Lew Harriman, *MTG.DB Chair*
Phil Wilkinson, *AIRAH*
Calina Ferraro, *Randall Lamb*
Heather Schopplein, *Haldeman*

ASHRAE STAFF

Mike Vaughn, *MORTS*
Tara Thomas, *TC Staff*

MEMBERS ABSENT:

James Vallort, *Coordinating Officer*

A. CALL TO ORDER & INTRODUCTIONS

Chair, Tom Lawrence, called the meeting to order at 8:00 am, EST on Saturday, January 23, 2016. Members and staff attended as recorded above

B. ADDITIONS AND/OR CHANGES TO THE AGENDA

No additions to the agenda

C. ACTION ITEMS TRACKING AND PRELIMINARY REVIEW OF ACTION ITEMS

STATUS-ACTION ITEMS Fall Meeting, September 22, 2015

Action No.	Responsibility	Summary of Action Items	Status
1	TAC	Review TC MOP Rewrite and provide feedback to Ken Cooper before Jan 1, 2016	On-going

Annual Meeting, 2015

Action No.	Responsibility	Summary of Action Items	Status
1	Staff/Cooper	Work with ASHRAE I.T. to develop a CSV file ,which properly maps roster contact information into MS Outlook	Complete
2	Cramm/Thomas	Continue to work towards an on-line annual roster update process	On-going

D. APPROVAL OF MINUTES

It was moved and seconded that,

- (1) draft minutes of the TAC 2015 Fall Web/Conference Call Meeting be approved as drafted

MOTION #1 – PASSED 10-0-0 CNV

E. CHAIR’S REPORT (Lawrence)

- a) Disposition of Motions from Last Meeting Requiring Higher Body Approval – None Submitted
- b) New or Carryover Action Items Assigned to TAC by Tech. Council: None Assigned
- c) New Members Council Referrals: None referred to TAC
- d) New Information Items:
 1. Beta Test #9 of RPM Meetings for TCs 1.5, 2.2, 4.2, 5.8, 6.8, 7.3, 7.9, 8.4, 8.8, 9.2, 10.2, and 10.3 in Orlando - The 9th RPM beta test of (Remote Participation Meetings – Formerly known as E&P meetings), which allows some TC/PC and other committee members to participate in the meeting from a remote location electronically, occurred in Orlando and the following thirty-one groups agreed to participate in this test: TC 1.5, TC 1.12, TC 2.2, TC 4.2 (RP-1699 PMS), TC 4.2, TC 5.8, TC 6.8, TC 7.3 Subc., TC 7.3, TC 7.9, TC 8.4, TC 8.8, TC 9.2, TC 10.2, TC 10.3 (RP-1569 PMS), SGPC 13, GPC 36, SPC 20, SPC 26, SSPC 100 WG, SSPC 100, SSPC 161P, SSPC 169, SPC 180, SPC 201P (twice), SPC 209, SPC 215P, IAQ PD, IEQ-GA, SRS – This represents a 63% increase over the number of RPM TC/PC/Other meetings hosted in Atlanta
 2. Handbook Committee is requesting our help in improving the chapter update process and quality of chapters
 3. New ECC developed TC Website Template being deployed with help from TAC members Cooper & Gage
 4. ECC is also investigating on-line collaborative tools for TCs like Basecamp & electronic authoring tools
- e) MBOs – Attachment A

F. BOD EX-OFFICIO & COORDINATING OFFICER (Leppard)

Viewed and discussed the BOD ExO presentation on Society Activities – **Attachment B**

G. VICE CHAIR’S REPORT (Bilderbeck)

- a) Consideration of TC MOP Rewrite for Approval – AI #1 F15
Proposed changes to the TC MOP were tabled pending future discussion.

Action Item 1 <Peet/Thomle/Cramm/Wessel>
rewrite

Review and propose changes to the draft TC MOP

H. POTENTIAL MOTIONS READY FOR TAC CONSIDERATION (Lawrence)

a) Motion to Change Name & Scope of TC 2.6

It was moved and seconded that,

- (2) Title and scope to TC 2.6 (Sound and Vibration Control) be revised be revised as indicated below.

Title: Technical Committee 2.6 (Sound and Vibration ~~Control~~)

Scope: TC 2.6 is concerned with the fundamental scientific and engineering principles of ~~acoustics~~ sound and vibration, particularly as ~~they are applied to~~ the design and performance of the built environment. ~~problems of sound and vibration associated with air conditioning, heating, ventilating and refrigeration systems.~~

MOTION #2 – PASSED 12-0-0, CNV

b) Motion to Disband MTG.CCDG now that Design Guide is Published MTG

The recently published Cold Climate Design Guide has brought the MTG to an end. The group proposed being upgraded to a TC/TG; however, it was suggested to the MTG chair, Frank Mills, by TAC that the proposed new scope be revised and presented again at a later date.

It was moved and seconded that,

- (3) MTG.CCDG (Cold Climate Design Guide) be disbanded.

MOTION #3 – PASSED 12-0-0, CNV

c) Motion to Form a new MTG titled MTG.OBB (Occupant Behavior in Buildings)

It was moved and seconded that,

- (4) A new multidisciplinary task group titled MTG.OBB (Occupant Behavior in Buildings) be formed as shown below

Scope: MTG.OBB will coordinate TC/TG/TRG technical activities to help implement the recommendations from this MTG. This includes coordinating efforts in education, modeling, research, standards, marketing, advocacy, and fund raising within ASHRAE. Research project initiation as the sponsoring committee is included in the scope of this MTG.

Occupant behavior in buildings refers to occupants' comfort preference, presence and movement, and interactions with building systems that have impact on performance (thermal, visual, acoustic, and IAQ) of buildings. The interactions include adjusting the thermostat settings, opening or closing windows, dimming or turning on/off lights, pulling up or down window blinds, switching on or off plug-loads, and consuming domestic hot water.

MOTION #4 – PASSED 12-0-0, CNV

I. ROSTER COORDINATOR (Cramm)

a) Copies of current 15-16 Rosters

Copies of all 2015-2016 TC/TG/TRG rosters plus rosters for other Society committees that TAC may need to interface with this coming year can be found in the "Rosters" folder within the "Ref. Info" folder on the TAC FTP site.

The current roster can be accessed anytime at <http://ASHRAE.org/MyActiveCommittees> (if you have not logged in lately, you might need to set up a new username and password). 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 every TC Chair in your Section knows how to access the roster.

b) Goals for 16-17 Rollover Rosters

TC/TG/TRG roster update workbooks, which will be used to create the 2015-2016 rosters, was e-mailed by staff to section heads for distribution to their committees in late November/early December. Section heads were asked to have these workbooks distributed to their committees by mid-December. The following tentative deadlines are proposed in order to have rosters ready for distribution to the TCs by the end of May:

- **Wednesday, January 27** – TCs should turn-in the first draft of their completed roster update workbook to their section head for review and approval.
- **February 15th to 28th** - The final draft of all roster update workbooks must be approved by section head and turned into staff for processing during this period. **GOAL: Get 95% of Rollover Rosters turned in by 2/28/16, and remainder turned in by 3/31/16**
- **March to May** – Section head works with staff and TC to finalize 2016-2017 rosters so that they can be distributed to TCs by June 1st. **GOAL: All rosters completed and distributed with liaisons included by 6/15/16**

c) Proposed Changes for Roster Update Process Next Year? – New Online Roster Update System – Poll committees for Pilot Testing

J. LIAISON & SPECIAL ACTIVITIES COORDINATOR (Cooper)

a) Develop plan for chapter outreach to communicate role of TCs & how to get involved – Pending meeting with CTTC.

b) Improve understanding of TC chairs and program subcommittee chairs about how CEC works CEC Liaison (Cramm Lead Discussion) – MBO 2.2

c) Implement regular coordination/interface meeting at Society meetings or via web between TAC ExCOM and ExCOMs of RAC / HBC / StdC / CEC / and new RES (residential standing committee) – MBO 1.5 – Ongoing

d) TAC Inter-society Liaisons – Update list of Liaisons

e) Standing committee Liaisons to TCs – Tips and Suggestions for Speaking Time at Section Head Breakfast

- f) New & Ongoing Referrals - TC/TG/TRG Assignments or Reassignments – **NONE**

K. TRAINING COORDINATOR (Gage)

- a) Roster Webinars for TC chairs - Staff held two webinars on how to complete the roster update workbook on the December 21, 2015 and January 19, 2016.
- b) New Training materials for TC/TG/TRG/MTG members
In conjunction with the release of the new TC websites, the two webinars listed below have been developed and posted to the TC Training webpage
1. Webinar on How to Maintain New TC website
 2. Webinar on Taking & Reporting Meeting Minutes
- c) Update on Research “How to” Training Modules
Progress has been made in developing research training modules. Slides have been developed for five of seven anticipated new modules. Modules are being designed to be no more than 15 minutes each. The completed modules have been sent to RAC for their review and/or correction. It is anticipated that all modules will be recorded and posted to RAC and TACs training sections in time for the St. Louis.
- Overview of ASHRAE Research
 - The RTAR Process – Overview (*Slides completed*)
 - The RTAR Process – Developing the Package (*Slides completed*)
 - The Work Statement Process – Coordination and Submission (*Slides completed*)
 - The Work Statement Process – Developing the WS Package (*Slides completed*)
 - How to Develop a Successful RTAR or Work Statement (*Slides previously developed and posted by RAC*)
 - Project Evaluation Subcommittee (*Slides completed*)
 - Project Monitoring Subcommittee
- d) Training Plans for Orlando
Sunday, January 24
9:45am – 10:45 am – Website Observations and TC/TG Roster Update Workshop
Orlando Ballroom V (LL)
- e) Position training and mentor assignments for new TAC members (Justice, Jokar)?
New TAC members can review the Fall Training presentation that was used for new TAC members (TAC Section Head Training 2015). The slides are in the TAC Reference Information folder of the TAC FTP site. In addition the previous TAC training was recorded and is available on the TAC webpage. For new Section Heads, there is a recorded webinar demonstrating the Dashboard Tool also available on the TAC webpage. Mentor assignments are still needed for our newest members.

L. MTG SECTION HEAD (Justice)

- a) Status of MTGs
1. **MTG.ASEC** – Avoided Sources Energy Consumption Due to Waste Heat Recovery and Heat Technologies – New!
Status: Started July 2015. MTG has three times since Atlanta meeting and is focusing on developing a research project work statement.

2. **MTG.BD** – Building Dampness
Status: Started Jan. 2014. Developing a joint research project in cooperation with cognizant health authorities, related professional societies, and building owners to develop and publish a practical, quantitative, and certain definition and inspection protocol for whole-building dampness.
3. **MTG.BIM** – Building Information Modeling
Status: Started April 2011. TBD May be ready to disband soon?
4. **MTG.CCDG** – Cold Climate Design Guide Development
Status: Started Oct. 2012. Design Guide published in fall 2015. MTG would now like to be converted to TG in order to support updates to design guide and the technical program of the Cold Climate Conference series. See MTG proposal document for additional information.
5. **MTG.ET** – Energy Targets
Status: Started June 2011. Wrapping-up work now on RP-1651 (Development of Maximum Technically Achievable Energy Targets for Commercial Buildings (Ultra-Low Energy Use Building Set). May be ready to disband soon?
6. **MTG.HCDG** – Hot Climate Design Guide Development
Status: Started September 2013. Work continues on development of design guide. Projected end date: **TBD**
7. **MTG.ISPAQE** – Indoor Swimming Pool Air Quality and Evaporation - TC 8.10 New!
Status: Started July 2015. Working to finalize roster so that MTG can have kick-off meeting and begin work on research project work statement. IAQA representative was recently added to roster.
8. **MTG.LowGWP** – Alternative Lower Global Warming Potential Refrigerants
Status: Started January 2012. **TBD**
9. **MTG.O&MIEE** – Operations and Maintenance Activities that Impact Energy Efficiency
Status: Started July 2014. **TBD**

b) Other MTG Related Issues & News

1. Possible ideas for streamlined communication with MTGs - **MBO #1.3**
2. MTG Section Meeting via web prior to Society meetings?

Action Item 2 <Vaughn> Add meeting space to the Sunday morning breakfast for new MTG Section

c) Proposed New MTGs

1. MTG.OBB – Occupant Behavior in Buildings – Covered in Section H.
2. MTG.IAST – Impact of ASHRAE Standards & Technology

It was moved and seconded that,

- (5) A new multidisciplinary task group titled **MTG.IAST – Impact of ASHRAE Standards and Technology on Energy Savings/Performance** - be formed as shown below.

Scope: MTG.IAST will generate research proposal(s) and work with the selected consultants/contractors to conduct research, collect and organize the data in a useful and conveniently summarized format for Initiative 1B of the Society Strategic Plan “ASHRAE will research the true impact of its standards and technology” as requested by the BOD.

MOTION #5 – PASSED 11-0-0, CNV

M. SUNDAY’s SECTION MEETINGS/BREAKFAST AND REMINDERS (Lawrence)

Summarized as **Attachment C**

N. STAFF REPORT

- a) New process for importing TC contact information into MS-Outlook (Thomas) – Complete

O. SECTION HEAD REPORTS

- a) New motions that TAC must consider at this meeting from TCs in section?
 1. Proposed New TC/TG/TRGs, or Merges, or Disbands? - NONE
 2. Proposed Name and Scope Changes - NONE
- b) Updates on any Special Assignments assigned to TCs in section
- c) Effectiveness of New Section Head Dashboard Tool? - MBO #1.1 - On-going – New tool works well! Need better participation by ALL Section Heads
- d) Effectiveness of Top TC award per section – Only one section presented the TOP TC award this term.
- e) Improve TC Websites – Status of Websites in Section - MBO #1.2 - On-going – New standard website template being developed will cut workload on webmasters
 1. TC feedback on new template?
- f) Other Problems & Issues for TAC action or information – Increasing YEA members’ involvement with TAC continues to be a concern. TAC also has questions regarding the position for ALI coordinator.
 1. RPM Meeting Feedback from Orlando (TCs 1.5, 2.2, 4.2, 5.8, 6.8, 7.3, 7.9, 8.4, 8.8, 9.2, 10.2, and 10.3)?

Action Item 3 <Lawrence/Cooper> Utilize Members’ First Newsletter to announce to ASHRAE members the new easy to use TC website template.

Action Item 4 <Cooper> E-mail ALL affected TC webmasters and outline for them their responsibilities going forward for updating their new TC website.

Action Item 5 <Staff> Change the *ALI Coordinator* position title in all affected documents and website to *Professional Development Liaison* pending the approval of the PDC staff liaison

It was moved and seconded that,

- (6) Section 4.1.5.1 and Appendix G of the TC MOP be revised to remove the requirement that the Section Head and TAC Chair be copied on all TC agendas and minutes distributed to members of committee.

Motion #6 – PASSED 14-0-0, CNV

P. UNFINISHED BUSINESS

No unfinished business to discuss at this time

Q. NEW BUSINESS

It was moved and seconded that,

- (7) TAC recommends that a Presidential Ad hoc Committee be formed in order to increase ASHRAE's presence and influence in the technical area of refrigeration.

MOTION #7 – PASSED 11-0-0, CNV

R. REVIEW NEW ACTION ITEMS

Mr. Bilderbeck reviewed the action items with the committee and staff will distribute to TAC.

ADJOURN

TAC 2016 Winter Meeting adjourned at 10:20 a.m., Wednesday, January 27, 2016

Technical Activities Committee MBOs 2015-2016

ATTACHMENT A

Tom Lawrence, Chair

6/25/2015

Item #	MBO	Status	Date Due	Assigned To	Applicable Strategy #	MBO Comments	Strategic Direction Specific Comments	Fiscal Impact
1.0 Internal Management								
1.1	Monitor use and evaluate effectiveness of new TC activity reporting tool	On-going – New tool works well! Need better participation by ALL Section Heads	January 2016	TC Section Heads	1A, 2A	Tracking TC activity more closely will allow us to spot trends & problems, take action, and accelerate effective technology transfer & increase participation Perhaps investigate potential alternative methods than the spreadsheet?	Efficiency	NA
1.2	Ensure that TC web sites are current and useful. Performance target: 85% of TC web sites are current as of 2014 AM	On-going – New standard website template being developed will cut workload on webmasters	June 30, 2016	TC Section Heads	1A, 2A	Up-to-date and content filled TC websites will help to increase volunteer participation both within and outside North America	Externally focused	NA
1.3	Create a streamlined communication path for MTGs	On-going – Plan expected at TAC fall meeting – MTG Section Meeting prior to each Society Meeting via web meeting a possibility	June 30, 2016	MTG Section Head & staff	1A, 2A	Increased information flow. MTGs currently do not have a defined method for obtaining organizational information from the society. Since the information packet is different than that of a TC, a breakfast meeting may not be appropriate. However some communication vehicle needs to be developed.	Efficiency	Minor
1.4	Together with staff, define further improvements to the Roster Update process	On-going - Good progress made. Beta test of online tool next step.	January 15, 2016	Roster Coordinator & Staff	1A, 2A	Annual updates to TC rosters is a major obstacle to increased volunteer participation due to complex rules, tools, and time commitment.	Efficiency	Potential development cost; \$50k

Item #	MBO	Status	Date Due	Assigned To	Applicable Strategy #	MBO Comments	Strategic Direction Specific Comments	Fiscal Impact
1.0	Internal Management							
1.5	Develop plan for residential position within TechC & TAC	On-going	June 30, 2016	Chair & Staff	2C, 5A	Define direction for residential MTGs or TCs within TAC with the understanding that the one residentially focused TC recently voted to disband. This really is more of an External Relations issue, and MBO will either evolve or a new one created depending on the approach that ASHRAE will take.	Externally focused	
1.6	Investigate the potential for an on-line alternative to the spreadsheet Section Head tool entry	New	June 30, 2016	TC Section Heads, Chair and Staff	1A, 2A	This is a follow-on to the MBO 1.1 which is monitoring the effectiveness of the Section Head reporting tool. The reporting tool was a good development, but compliance has lagged.	Efficiency	Potential development cost; \$50k (Guess, similar to MBO 1.4)
1.7	Methods to streamline the face-to-face meeting times for TAC	New	January 15, 2016	Chair working with all on TAC, staff	1A, 2A	Many of the volunteers who participate in ASHRAE committees are overloaded at the annual and winter meetings attending meetings. This objective will look at ways we can decrease the required face-to-face time, with a target of maybe 2-3 hours maximum on Saturday and 1 hour on Wednesday.	Efficiency	None

Item #	MBO	Status	Date Due	Assigned To	Applicable Strategy #	MBO Comments	Strategic Direction Specific Comments	Fiscal Impact
2.0 External Relationships								
2.1	Develop plan for chapter outreach to communicate role of TCs & how to get involved	On-going	June 30, 2016	Vice Chair & Spec. Act. / Liaison Coord. & Cooper	2C	One of the most important duties for TCs is the creation of programs for the ASHRAE meetings, but this process continues to be misunderstood and a point of contention between the TCs and CEC. First step is the creation of a position within TAC to have a CEC Liaison. Work with the CEC Liaison to develop additional methods for effective communication (beyond the CEC-TAC coordination meeting at 7:00 am Saturday.	Chapter Outreach	Minor
2.2	Improve understanding of TC chairs and program subcommittee chairs about how CEC works	New. CEC Liaison has been created and filled for 2015-2016	June 30, 2016	Chair and CEC Liaison	2C	Work with CTTC to brainstorm simple implementable 5 minute segments to encourage member involvement with TCs. CEC-TAC coordination meeting at 7:00 am Saturday. We have the PowerPoint presentation that was prepared 1-2 years ago, but this tool is not being used it appears.	Efficiency, better programs at ASHRAE meetings	none



ASHRAE Update

ExO Report to Committees





Presidential Ad Hoc: Impact of Centralized Training on CRCs

- Charge: consider effect of centralized training on attendance at Chapters Regional Conferences (CRCs)
- Gathered data and statistics related to attendance at CRCs and Centralized Trainings
- Surveyed past Membership Promotion and Research Promotion Committee chairs to get feedback on experiences
- To present findings at 2016 Winter Conference



Presidential Ad Hoc: Chapter Volunteerism and Engagement

- Developing an easily replicated plan to mobilize, engage and inspire chapter volunteers to bring the message of ASHRAE's mission to the broader community
- Identified three broad areas for further investigation (titles are preliminary and descriptive only)
 - Mentoring/Rewards
 - Facilitating Chapter Participation/Volunteering
 - ASHRAE Message to Broader Community
- To provide final report at 2016 Annual Conference



Presidential Ad Hoc: Building Performance Alliance

- Charge: develop a strategy to create training and tools that will enable building operations staff to meet or exceed a building's design performance potential
- Held a workshop in Washington, D.C., with 11 organizations represented
- Good feedback provided on key questions
- Final committee report expected at 2016 Annual Conference

New Tools

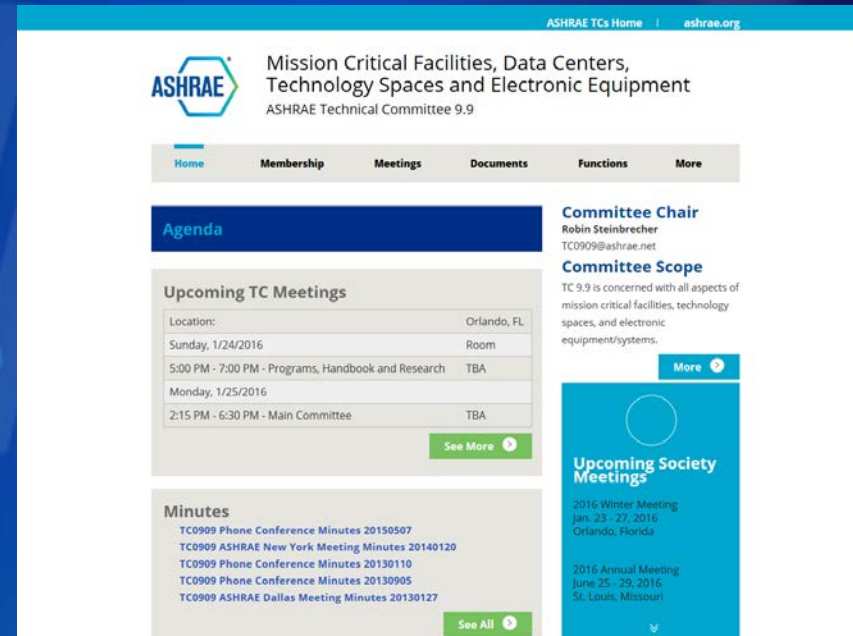
ASHRAE

90.1 ECB, 90.1 Energy Cost Budget (ECB) app

- A tool for modeling compliance with ASHRAE/IES Standard 90.1-2010
 - Automates calculations needed to show a building project's compliance with Standard 90.1-2010 using the Energy Cost Budget (ECB) Method
 - Input project parameters and then calculate proposed design's projected performance and compliance—*no need to build your own spreadsheet.*
 - Output results in Microsoft[®] Excel[®] for clients and project records
 - Learn more at 901ecb.ashrae.org

Updated TC Websites

- Goal: to simplify editing process of technical committee websites
- All sites that chose to migrate are now live; ahead of previous goal of 2016 Annual Conference
- Very positive response
- Demo available at www.ashrae.org/TCWebsiteDemo



ASHRAE TCs Home | ashrae.org

ASHRAE Mission Critical Facilities, Data Centers, Technology Spaces and Electronic Equipment
ASHRAE Technical Committee 9.9

Home Membership Meetings Documents Functions More

Agenda

Upcoming TC Meetings

Location:	Orlando, FL
Sunday, 1/24/2016	Room
5:00 PM - 7:00 PM - Programs, Handbook and Research	TBA
Monday, 1/25/2016	
2:15 PM - 6:30 PM - Main Committee	TBA

[See More](#)

Minutes

- TC0909 Phone Conference Minutes 20150507
- TC0909 ASHRAE New York Meeting Minutes 20140120
- TC0909 Phone Conference Minutes 20130110
- TC0909 Phone Conference Minutes 20130905
- TC0909 ASHRAE Dallas Meeting Minutes 20130127

[See All](#)

Committee Chair
Robin Steinbrecher
TC0909@ashrae.net

Committee Scope
TC 9.9 is concerned with all aspects of mission critical facilities, technology spaces, and electronic equipment/systems.

[More](#)

Upcoming Society Meetings

- 2016 Winter Meeting
Jan. 23 - 27, 2016
Orlando, Florida
- 2016 Annual Meeting
June 25 - 29, 2016
St. Louis, Missouri



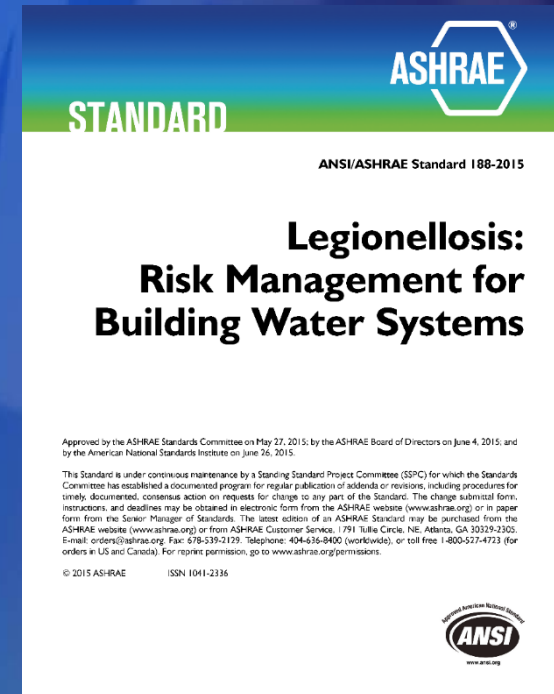
Collaborative Software and Handbook

- Launching document collaboration software for Handbook chapters
- Allows several authors to work on a document together
- Eliminates members having to email large files
- Good record of changes
- Available spring 2016



Legionella – Standard 188

- Establishes minimum legionellosis risk management requirements for building water systems
- Less than two months after publication, portions adopted in New York City following an outbreak that left at least 12 confirmed dead and more than 120 cases of infection





IAQA Update

- Discovering more opportunities for ASHRAE/IAQA collaboration: IAQ 2016, IAQ Position Document
- Full complement of staff on board
- Implemented reciprocal membership discounts
- Current focus is on growth of IAQA through implementation of the new Strategic Plan which centers around Education & Training, Regulatory & Industry Affairs, and Member Engagement

Education & Training

- IAQA University
- Training Courses
- Webinars

Regulatory & Industry Affairs

- Regulatory Affairs
- Industry News

Member Engagement

- Annual Meeting
- Chapters
- Technical Committees

Make Plans to Attend!

- **March 14-16: 6th International Conference on Energy Research and Development**, State of Kuwait
- **April 21: ASHRAE Webcast, Making Net Zero Positive: Solving the Efficiency and Cost Paradox**
- **Jun 25-29: 2016 Annual Conference**, St. Louis, Missouri
- **Aug. 10-12: ASHRAE/IBPSA-USA SimBuild 2016: Building Performance Modeling Conference**
- **Sept. 12-14: IAQ 2016 Defining Indoor Air Quality: Policy, Standards and Best Practices**, Alexandria, Virginia, co-organized by Air Infiltration and Ventilation Centre (AIVC)
- **Sept. 22-23: 2nd International Conference Efficient Building Design: Materials and HVAC Equipment Technologies**, Beirut, Lebanon
- **Sept. 20-22: AHR Expo Mexico**, Monterrey, Mexico

**Announcements and Reminders for TC/TG/TRG & MTG Chairs
ORLANDO 2016**

A. NEW!

1. 2015-2016 Hightower Award Recipient – Steve Duda, TC 4.3 & TC 9.1

Mr. Steve Duda's contributions to ASHRAE TC 4.3 and TC 9.1 in the past four years include 8 program presentations and 19 successful honors & awards nominations. He has also written 8 articles for the *ASHRAE Journal* and contributed to 6 Handbook chapters. Lastly, he has served in the past in all three officer positions (Chair, Vice Chair, and Secretary) for TC 9.1.

Mr. Duda's contributions to ASHRAE technical committees, and especially to TC 4.3 and TC 9.1 in the last four years, have been exemplary and make him a well deserving recipient of the George B. Hightower Technical Achievement Award.

2. 2015-2016 Service to ASHRAE Research Award Recipient – NONE

No nominations were received this year from any TCs for the Service to ASHRAE Research Award. The submission deadline for TC nominations for this award is September 1st each year. If you believe you have a deserving candidate on your TC, please go to the ASHRAE Research page (www.ashrae.org/research) and review details on this award under the heading *Research Grants and Awards*.

3. Four New Multidisciplinary Task Groups (MTGs) have been formed since Atlanta meeting

MTG.ASEC – Avoided Source Energy Consumption Due to Waste Heat Recovery and Heat Pump Technologies

Scope: MTG.ASEC will coordinate development of credible quantification methodologies of the avoided electric power generation and/or primary energy consumptions resulting from the application of heat pump and waste energy recovery technologies. Responsibilities of the MTG include the development of research and/or tool needs, and development of technical programs.

Ability to quantify avoided source energy reduction or recovery potentially impacts any building efficiency analysis. This MTG has the potential to significantly impact a number of other TCs including 1.5, 2.5, 2.8, 4.7, 5.5, 6.2, 6.8, 6.9, 7.4, 7.6, 8.7, 8.11 and potentially more. Efforts have been made to interface with all of these TCs to discuss the potential development in this MTG.

The chair of this MTG is Cary Smith.

MTG.IAST – Impact of ASHRAE Standards and Technology on Energy Savings/Performance

Scope: MTG.IAST will generate research proposal(s) and work with the selected consultants/contractors to conduct research, collect and organize the data in a useful and conveniently summarized format for Initiative 1B of the Society Strategic Plan

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“ASHRAE will research the true impact of its standards and technology” as requested by the BOD.

This MTG will provide information on the global impact of ASHRAE’s technology and standards efforts allowing ASHRAE’s groups to make adjustments in our efforts as required. The time period of this MTG is expected to be two years to no more than four years.

The chair of this MTG is Dan Pettway.

MTG.ISPAQE – Indoor Swimming Pool Air Quality and Evaporation

Scope: MTG.ISPAQE will coordinate the research project which will assess/identify the factors affecting air quality problems at indoor swimming pools including: air handling/air distribution system design and operation; water quality/water chemistry; pool water treatment operation and maintenance; pool types(flat water, agitated water, hot water); bather load; and evaporation rates of indoor pools to recommend changes to the ASHRAE Standard 62.1 (Ventilation for Acceptable Indoor Air Quality) indoor pool & deck ventilation rate and update the evaporation formula in the ASHRAE HVAC Applications Handbook volume.

This MTG will have a direct impact on the activities of the SSPC 62.1 and technical committees: TC 8.10 (Mechanical Dehumidification Equipment and Heat Pipes), TC 4.3 (Ventilation Requirements and Infiltration) and TC 9.8 (Large Building Air-Conditioning Applications), as well as, the Center for Disease Control (CDC) sponsored Model Aquatic Health Code (MAHC) code for design and operation of indoor pools.

The chair of this MTG is Keith Coursin.

MTG.OBB - Occupant Behavior in Buildings

Scope: MTG.OBB will coordinate TC/TG/TRG technical activities to help implement the recommendations from this MTG. This includes coordinating efforts in education, modeling, research, standards, marketing, advocacy, and fund raising within ASHRAE. Research project initiation as the sponsoring committee is included in the scope of this MTG.

Occupant behavior in buildings refers to occupants’ comfort preference, presence and movement, and interactions with building systems that have impact on performance (thermal, visual, acoustic, and IAQ) of buildings. The interactions include adjusting the thermostat settings, opening or closing windows, dimming or turning on/off lights, pulling up or down window blinds, switching on or off plug-loads, and consuming domestic hot water.

The chair of this MTG is Tianzhen Hong.

For more information on these four new MTGs and the seven other existing MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/tcs> .

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If your TC would like to have a voting representative on a particular MTG, please contact the ASHRAE Manager of Research and Technical Services, Mike Vaughn, at MORTS@ashrae.net.

4. Updated TC Website Template – Initial Feedback, if any?

Since the Atlanta meeting, the Society's Electronic Communication Committee (ECC), ECC staff, TAC volunteers Gage and Cooper, and a consultant have been working to modernize and streamline the template for TC websites and now most of the TC websites have been moved to this new template. The new template so far includes WIZYWIG editing, automatic rosters, and simplified document uploading. There is no longer a need for HTML editing. If you have any feedback on the new template or suggestions for additional features, please let your Section Head and MORTS know.

5. New TC E-mail Position Aliases Created for 15-16 Society Year

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 15-16 E-mail Alias list is posted on the ASHRAE website www.ashrae.org/TCs under the heading *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs*.

6. CEC & TAC are looking for your feedback on ASHRAE's Technical Program Submission Process

CEC and TAC are soliciting your feedback on ASHRAE's Technical Program submission process, particularly if your program submissions are frequently rejected and you are frustrated with the current process. Please send information on some of your past submissions and any process improvement suggestions that you might have to TAC member Kelley Cramm at TACcoord2@ashrae.net before June 1, 2016.

B. AT THIS MEETING

1. On-Site Training Options

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

Sunday January 24th, 9:45-10:45 AM in Orlando V Room (Lower Lobby Level) in the Orlando Hilton Hotel. The presentation will start with a brief discussion of website issues observed while repopulating the TC websites. The presentation will also inform the chairs about the new training webinars developed to help resolve some of the issues. Roster Update training will be the primary topic along with **Refresher Training on TC Websites and Minutes**.

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

Monday, January 25th, 6:30 AM – 8:00 AM. 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 resolve issues & questions that TC may have concerning their research program.

iii. **TC Program Subcommittee Chair Training in Orlando**

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Tuesday, 1/26, 11:15AM – Noon, Room Lake Down B, (Lobby Level) Orlando Hilton 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 (Key Largo A – Lower Level – Orlando Hilton 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 Hilton. 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. Wi-Fi Access: **ASHRAE2016** is the network, **orlando16** is password (case sensitive).

3. RPM (Remote Participation Meetings) being held in Orlando

The 9th RPM beta test (Remote Participation Meetings – Formerly known as E&P meetings), which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Orlando and the following fourteen TCs have agreed to participate in this test: TC 1.5, TC 1.12, TC 2.2, TC 4.2 (RP-1699 PMSC), TC 5.8, TC 6.8, TC 7.3, TC 7.9, TC 8.4, TC 8.8, TC 9.2, TC 10.2, TC 10.3 (RP-1569 PMSC) – This represents a 20% increase over the number of RPM TC meetings hosted in Atlanta.

The chairs of those TCs participating should provide to their Section Head feedback on their RPM meeting experience before TAC meets on Wednesday morning, 1/27.

4. Women in ASHRAE Continental Breakfast – Monday, 1/25, 7 am to 8:30 am Orlando Hilton, Florida Ballroom 5-7, Lower Level

The purpose of this event is to encourage women to be active ASHRAE participants at the chapter, region, and/or society level and to provide ideas and information about how to do so. Current ASHRAE members will be on hand to provide insight and to share their experiences.

C. UPCOMING DEADLINES

1. 16-17 Roster Update Process & TC Input Deadline

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Remember, the current 2015-2016 roster for your TC, TG or MTG is in effect until after the June meeting this year. The new committee rosters for Society year 2016-2017 will be created based upon the update information that each TC, TG or MTG provides to their section head at this meeting by midnight, Tuesday, 1/26/16 and these new rosters will go into effect on July 1, 2016. Please see your section head for the 2016-2017 Roster Update form if you still need a copy.

2. TC Activity Forms for the Orlando Meeting are due to Your Section Head before Wednesday, 1/27/16

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.

3. Seminar and Forum proposals for St. Louis are due by Monday, February 8th, 2016. Please visit the following site to submit your proposal:

<http://ashraem.confex.com/ashraem/s16/cfp.cgi>

For more information, go to: www.ashrae.org/stlouis.

D. REMINDERS

1. 15-16 Rosters Access & Distribution - Remember, the current 2015-2016 roster for your TC, TG or MTG is in effect until after the June meeting this year – through Thursday, June 30th.

By now, each TC, TG and MTG chair should have received a PDF & MS-Excel file of their new 2015-2016 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>, 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.

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2. 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>

3. 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/>

4. 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.

5. 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 or MORTS@ashrae.net

6. Is Your Committee Website up to Date?

If not, please ask your webmaster to at least post the latest minutes and the Orlando 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). 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) by 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 schedules for maintain the new websites.

7. TC 2015-2016 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.

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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) 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
- 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

Starting in the 2015-2016, 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

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tracks for the Long Beach 2017 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). You can also add your track suggestion in the "Comment" section of the TC Activity form for the Atlanta 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. **TAC Presentation Template for TC members to use with local Chapter**

The new presentation template allows TC members, without a lot of effort, to give a presentation to their local chapter on TAC and the TCs in general and to also customize a few slides with information specific to their own TC or TCs. The template is posted now on the Technical Committee page of the ASHRAE website for download

5. **Employment Discipline added to ASHRAE BIO Online Input Form**

A new input field titled Employment Discipline has been added to the ASHRAE online member (BIO) graphical input form and TAC would like ALL TC members to self-declare their employment discipline prior to the start of the new Society year on July 1, 2016 by going to the Members Only section and enter their employment discipline information. The following link should take you directly to the screen, which is located under demographics:

(<https://eweb.ashrae.org/eweb/DynamicPage.aspx?Site=ASHRAE&WebKey=8396a37a-9fc2-4f50-9332-5eebebe73494>)

Thus far, approximately 30.6% (up 2.6% since Atlanta meeting) of TC Members have declared their discipline.

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

The need is for 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 would include courses with a focus on new technologies that need to be shared, fundamentals that may have been forgotten, standard applications that need explanation, and courses based on new design guides.

The objective of the ASHRAE Learning Institute (ALI) is to provide quality, authoritative and practical technical information of broad interest.

Contact Karen Murray (ASHRAE staff) at kmurray@ashre.org or Cameron Labunski (PDC chair) at cameronl@tgce.com with new course ideas.

F. CURRENT & UPCOMING ASHRAE CONFERENCE PROGRAMS

1. **Program Focus at Orlando Winter Conference**

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The Orlando Conference Technical Program addresses a wide variety of topics in the application of technology to practice. Specific program tracks are as follows:

- i. Track 1 - Cutting-Edge Technologies
- ii. Track 2 - Design Build
- iii. Track 3 - HVAC&R Fundamentals and Applications
- iv. Track 4 - International Design
- v. Track 5 - Modern Residential Systems
- vi. Track 6 - Systems and Equipment
- vii. Track 7 - The Great Debate
- viii. Track 8 - Guidelines and Codes

One particular track to note above is the *Modern Residential Systems Track* and the greater emphasis that the Society is now placing on the residential sector through this track, as well as through the new Residential standing committee, and the prioritization given by RAC to TC sponsored research focused on the residential sector.

2. St. Louis Annual Conference - June 25 – June 29, 2016

Seminar and Forum proposals for St. Louis are due by **Monday, February 8th, 2016**.

Conference Website: <http://www.ashrae.org/stlouis/>

Conference Program Chair: Tom Kuehn Email: kuehn001@umn.edu

Program Focus at St. Louis Annual Conference

- i. Track 1: Advances in Refrigeration Systems and Alternative Refrigerants
- ii. Track 2: Research Summit
- iii. Track 3: Fundamentals and Application
- iv. Track 4: HVAC Systems and Equipment
- v. Track 5: Smart Building Systems/Remote Monitoring and Diagnostics
- vi. Track 6: Indoor Environment: Health, Comfort, Productivity
- vii. Track 7: Professional Skills Beyond Engineering
- viii. Track 8: Renewable Energy Systems and Net Zero Buildings

G. OTHER UPCOMING WORKSHOPS, CONFERENCES AND EVENTS

1. 2016

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- i. **International Air-Conditioning, Heating, Refrigerating Exposition** (AHR Expo) – 2016 - January 25 to 27, 2016 - Orlando, FL USA – Contact: <http://www.ahrexpo.com/>
- ii. **6th International Conference on Energy Research and Development** – March 14 to 16, 2016 – State of KUWAIT – Contact: <http://www.ashrae.org/kuwait2016>
- iii. **XII International HVAC&R and Plumbing Symposium** – March 31 to April 2, 2016 – Istanbul, TURKEY – Contact: <http://www.ttmd.org.tr/sempozyum2016/eng/?p=program>
- iv. **ASHRAE 2016 Webcast** – *Making Net Zero Net Positive: Solving the Efficiency & Cost Paradox* – April 21, 2016 – 1 pm to 4 pm EDT – Contact: <https://www.ashrae.org/membership--conferences/webcasts>
- v. **CLIMA 2016** - May 22 to 25, 2016 - Aalborg, DENMARK – Contact: <http://www.clima2016.org/welcome.aspx>
- vi. **2016 ASHRAE Annual Meeting** – June 25 to 29, 2016 – St. Louis, MO USA – Contact: <http://ashraem.confex.com/ashraem/s16/cfp.cqi>
- vii. **Indoor Air 2016** (14th International Conference of Indoor Air Quality and Climate) – July 3 to 8, 2016 – Ghent, BELGIUM – Contact: <http://www.indoorair2016.org/>
- viii. **2016 Purdue Conferences** - *Compressor/Refrigeration & Air Conditioning/High Performance Buildings Conferences* – July 11 to 14 – West Lafayette, IN USA – Contact: <https://engineering.purdue.edu/Herrick/Events/Conferences>
- ix. **ASHRAE and IBPSA-USA SimBuild 2016: Building Performance Modeling Conference** – August 10-12, 2016 – Salt Lake City, Utah USA – Contact: <http://ashraem.confex.com/ashraem/ibpsa16/cfp.cqi>
- x. **IAQ 2016** - *Defining Indoor Air Quality: Policy, Standards and Best Practices* – September 12-14, 2016 – Alexandria, Virginia USA – Contact: <http://ashraem.confex.com/ashraem/iaq16/cfp.cqi> Paper abstracts are due Nov. 30, 2015. Upon acceptance, papers are due March 14, 2016.
- xi. **AHR Expo Mexico** – September 20-22, 2016 – Monterrey, MEXICO – Contact: www.ahrexpomexico.com
- xii. **2nd International Conference Efficient Building Design: Materials and HVAC Equipment Technologies** - September 22 to 23, 2016 - Beirut, LEBANON – Contact: <https://www.ashrae.org/membership--conferences/conferences/2016-2nd-international-conference-efficient-building-design>
- xiii. **IAQVEC 2016** (9th International Conference on Indoor Air Quality Ventilation & Energy Conservation in Buildings) – Oct. 23 to 26, 2016 - Seoul, SOUTH KOREA – Contact: <http://iaqvec2016.org/>

2. 2017

- i. **2017 ASHRAE Winter Meeting** – Jan. 28 to Feb. 1, 2017 – Las Vegas, NV USA – Contact: <http://ashraem.confex.com/ashraem/w17/cfp.cgi>
- ii. **12th IEA International Heat Pump Conference** - May 15 to 18, 2017 – Rotterdam, NETHERLANDS – Contact: <http://hpc2017.org/>

H. NEW TAC GUIDELINES FOR STANDING COMMITTEE LIAISONS SPEAKING AT SECTION BREAKFAST OR A TC MEETING

TAC has developed a new set of speaking guidelines (attached) for standing committee liaisons that wish to speak at the section breakfasts or at a TC meeting. These guidelines have been distributed to all standing committees that interface with TAC and the TCs regularly. TC chairs should expect that all liaisons wishing to speak to TC will adhere to these guidelines going forward.