

TECHNICAL COMMITTEE 2.8 – Meeting Notes: Winter Conference – Las Vegas

MEETING MINUTES –January 2011

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

TC/TG/TRG MINUTES COVER SHEET

TC/TG/TRG No. TC 2.8 DATE: May 7, 2011

TC/TG/TRG TITLE: Building's Environmental Impact and Sustainability

DATE OF MEETING: January 30, 2011 LOCATION: Las Vegas Convention Center, Las Vegas, NV

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS & ADDIT'L ATTENDANCE
Tom Lawrence (Chair) John Swift Dunstan Macauley H. Jay Enck Andrew Price Frank Mills Ashish Rakheja Raymond Man-Hung Yau Donald Brundage J. Kevin Cross Michael Deru Malcolm Lewis Janice Means Vikas Patraik Mitchell Swann				Kevin Brown Dave Grumman William Coad Paul Torcellini Doug David Fick A. Kader Darwiche Som Shrestha Joy Altwies Harvey Bryan Kevin Cross Marshal Zabel Thomas Kelly John Pulley Jim Crawford Ng Kong Costas Balaras Eric Tu Connor Sansen Clark Bisel Daryn Cline Mark Harris Tom Cappellin Brittany Romig Locke Hutson Gay Powell Stanton Stafford Jim Crawford Jon Roberts Neil Leslie David Ellis Mark Kuk Chris Mueller Kinga Porst Joe Millham Diane Graziano

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DISTRIBUTION

ALL MEMBERS OF THE TC/TG/TRG

TAC CHAIR	Charles C. Wilkin
TAC SECTION HEAD	Brian Fricke
SPECIAL PUBLICATIONS LIAISON	John A. Clark
STANDARDS LIAISON	Hoy Bohanon
HANDBOOK LIAISON	Jeff Traylor
PROGRAM LIAISON	Joy Altwies
RAC RESEARCH LIAISON	Iain Walker
CTTC LIAISON	Jean-Gabriel Joannette
ALI LIAISON	Florentino Mendez
STAFF LIAISON (RESEARCH)	Michael Vaughn
STAFF LIAISON (STANDARDS)	Stephanie Reinche

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

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TC/TG/TRG MEETING SCHEDULE				
LOCATION – past 12 months	DATE	LOCATION - planned next 12 months	DATE	
Albuquerque, NM Orlando, FL	June 2010 Jan 2010	Montreal, Canada Chicago, IL	June 2011 Jan 2012	
TC/TG/TRG SUBCOMMITTEES				
Function		Chair		
International Program Handbook Research Green Guide Existing Buildings		Ashish Rakheja, Frank Mills Kevin Brown Dave Grumman Andy Price John Swift Dunstan Macauley		
RESEARCH PROJECTS – Current		Monitoring	Report Mode	
Project Title	Contractor	Comm.Chm.	At Meeting	
LONG RANGE RESEARCH PLAN				
Rank	Title	W/S Written	Approved	To R & T
HANDBOOK RESPONSIBILITIES				
Year & Volume	Chapter Title	No.	Deadline	Handbook Subcom. Chair/Liaison
2009 Fundamentals	Energy Resources	34		Brundage/ Bansal
2009 Fundamentals	Sustainability	35		Grumman/Bansal
STANDARDS ACTIVITIES - List and Describe Subjects				
TECHNICAL PAPERS from Sponsored Research - Title, when presented (past 3 yrs. present & planned)				

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Appendix 3
TC/TC/TRG Sponsored Symposia - Title, when presented (past 3 yrs. present & planned)
Appendix 4
TC/TG/TRG Sponsored Seminars - Title, when presented (past 3 yrs. present & planned)
Appendix 5
TC/TG/TRG Sponsored Forums - Title, when presented (past 3 yrs. present & planned)
Appendix 6
JOURNAL PUBLICATIONS - Title, when published (past 3 yrs. present & planned)
Lawrence, T.M., 2008, “Selecting CO ₂ Criteria for Space Monitoring”, <i>ASHRAE Journal</i> 50(12):18-27.
Lawrence, T.M., J. Perry and P. Dempsey, 2010, “Making Every Drop Count: Retrofitting Condensate Collection on HVAC Air Handling Units”, <i>ASHRAE Journal</i> 52(1):48-54.
Lawrence, T.M., and J. Perry. 2010, “The Collection of Cooling Coil Condensate in High-Performance Buildings”, <i>High Performance Buildings</i> 3(4):56-61.
Lawrence, T.M., J. Perry and P. Dempsey, 2010, “Predicting Condensate from HVAC Air Handling Units”, <i>ASHRAE Transactions</i> 116(2):3-15.

Appendix 1

RESEARCH PROJECTS

TC 2.8 Research Projects Status

No active projects at this time, several RTARs in process.

Active projects

#	Title	Joint TC	Cognizant Subcommittee/ Contractor	PMSC	Dates / status

Appendix 2

RESEARCH PLAN

**Technical Committee 2.8
 Research Plan**

The following outlines the current status in the development of our research objectives and plan.

Title	TC Priority	Prior TC priority	Society status	TC Status	Sub-com
<i>See Research Plan and summary at end of these meeting minutes</i>					
One RTAR voted out by the committee at the Albuquerque meeting (Originally approved in Orlando. The RTAR was misplaced and therefore has to be re-submitted) “Measurement of Energy Performance of ASHRAE Energy Design Guides (AEDG)”	1			Voted for submission (15-0-0)	

Appendix 3

TECHNICAL PAPERS FROM SPONSORED RESEARCH

No projects completed at this time

RP	Title	Contractor	Approved	Paper

Appendix 4

TC/TG/TRG SPONSORED Programs

PRESENT:

Las Vegas, 2011

PLANNED:

Montreal, 2011

- See TC 2.8 Program Plan attached to minutes

ASHRAE TC 2.8 - Building's Environmental Impact and Sustainability

WINTER 2011 MEETING (Las Vegas)

ACTION ITEMS

1. **Roll call and Introductions** Lawrence
 - 1.1. Meeting called to Order w/ Quorum at 5:03
 - 1.2. Roll Call
 - 1.3. Introduction

2. **Accept Agenda/Approve Minutes of Albuquerque Meeting** Lawrence
 - 2.1. Approval of Minutes:
 - 2.1.1. Motion by Andy Price
 - 2.1.2. Seconded by Dave Grumman
 - 2.1.3. Minutes approved unanimously with no amendments (11-0-0).

3. **Announcements/Membership/Listserv** Lawrence
 - 3.1. Starting July Ashish Rakheja will move in as secretary to strengthen the international presence.
 - 3.2. Updated roster information due by Tuesday, February 1st.
 - 3.3. Lawrence encouraged all provisional members to step up take a roll by writing an RTAR or getting involved on the subcommittee. All new incoming provisional members and guests were reminded that the bulk of the TC work is conducted in the subcommittees, which generally meet on Sunday afternoon prior to the full committee meeting.
 - 3.4. The procedures for signing up for the listserv were discussed.

4. **Standing Committee Liaisons (TAC/RAC/StdCom/Program/SpecPub/ALI)**
 - 4.1. TAC
 - 4.1.1. No Liaison present.
 - 4.2. RAC
 - 4.2.1. No Liaison present.
 - 4.3. Standards
 - 4.3.1. No Liaison present.
 - 4.4. Programs
 - 4.4.1. No Liaison present.
 - 4.5. Special Publications
 - 4.5.1. No Liaison present.
 - 4.6. ALI
 - 4.6.1. No Liaison present.

5. **Subcommittee Reports**

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5.1. **Research-** . Andy Price

- 5.1.1. Proposed RTAR 6127 approved in Orlando, “Measurement of Energy Performance of ASHRAE AEDG” was submitted and return with comments. E Mitchell Swann, Kevin Cross, and Paul Bertram will modify the RTAR to address the comments.
- 5.1.2. Discussed setting up Google Groups to work on RTARs in between Annual and Winter meetings.
- 5.1.3. For RTARs with co-sponsors the co-sponsoring TC is required to vote on the RTAR prior to submission.
- 5.1.4. If any of the RTAR topics is of interest, please contact Andy so that it can be assigned.
- 5.1.5. Please contact Andy if you have any ideas for future RTARs.
- 5.1.6. Proposed RTAR, “Towards New Indoor Air Quality Criteria by Understanding the Perception and Sensation of Occupants”, by Diotima von Kempfski requires editing to conform to the submittal requirements. Janice Means will assist.
- 5.1.7. Proposed RTAR, “Documenting Performance of High Performance Buildings by Applying the ASHRAE Performance Metrics Protocol (PMP) and the ASHRAE Building Energy Quotient (BEQ)”, will be written by Michael Deru, Mitchell Swann, and Dunstan Macauley.
- 5.1.8. Proposed RTAR, “Controls Practices Present in Buildings and Trade-Offs with Defined “Green” Practices or Goals”, will be written by Vikas Patnaik, Andrew Price, and Mark Harris.
- 5.1.9. Proposed RTAR, “Integrated Sensors in Buildings for Continuous Monitoring”, will be written by Janice Means, Jay Enck, Doug Fick, Tom Kelly, and Mark Harris.
- 5.1.10. Proposed RTAR, “Condensate Collection and Use”, will be written by Tom Lawrence and Andy Price.
- 5.1.11. Proposed RTAR, “How Can HVAC&R Systems Respond to Peak Load Reduction”, will be written by Tom Lawrence, Daryn Cline and Andy Price.

5.2. **Programs-** Kevin Brown.

- 5.2.1. TC2.8 did not have any programs slotted in Los Vegas.
- 5.2.2. Will resubmit the following slate of programs for Montreal.
 - 5.2.2.1.Seminar: 189.2 (Still needs title), SSPC 189.2 will sponsor, TC2.8 will co-sponsor.
 - 5.2.2.2.Seminar: Low Carbon Cities 3: Needs a Speaker – Mitch Swann following up with Frank Mills to find local speaker.
 - 5.2.2.2.1. In Asia – Raymond Yau
 - 5.2.2.2.2. In UK – Frank Mills
 - 5.2.2.2.3. In India – Ashish Rakheja
 - 5.2.2.3.Seminar: Introducing the Proposed Standard 191 on Water Conservation, SSPC 191 will sponsor, TC2.8 will co-sponsor.
- 5.2.3. Dunstan Macauley move Jay Enck seconded to support TC2.8 programs. Motion passed unanimously (13-0-0).

5.3. **Hand Book** - Dave Grumman

- 5.3.1. TC is responsible for two handbook chapters: “Energy Resource” and “Sustainability”
- 5.3.2. Handbook liaison give a few surprises; due March 8 2012 and has to be approved at the next annual meeting.

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- 5.3.3. Energy Resources chapter is due in spring of 2012. Due to the publishing date of the Energy Outlook data by the Energy Information Administration, the final version of the chapter is allowed to be turned in late so that the data is not more than three years outdated when the handbook is published.
- 5.3.4. Looking for volunteers to review chapters. Please contact Dave Grumman or Tom Lawrence encourage everyone to review Handbook chapters and make specific comments to Dave or Tom.
- 5.3.5. The College of Fellows reviewed the new Sustainability Chapter and made one comment.
- 5.3.6. Discussed subjects for future inclusion into Handbook for example:
 - 5.3.6.1. Evaporative Cooling
 - 5.3.6.2. LEED
 - 5.3.6.3. BEQ
 - 5.3.6.4. Carbon emissions (including methane)
 - 5.3.6.5. Water issues –EPA Water Sense
 - 5.3.6.6. International issues

5.4. **Green Guide** - John Swift

- 5.4.1. 3rd Edition of the Green Guide was released at Green Build – Chicago in Oct.
- 5.4.2. Thank you and gratitude extended to all who contributed to the 3rd edition.
- 5.4.3. The 3rd edition is available as a searchable pdf.
- 5.4.4. Will host a forum in for the 4th edition. The purpose of the forum will be to generate recommendations for the 4th edition.
- 5.4.5. Soliciting ideas to evaluate the 3rd and next leap for 4th.
- 5.4.6. Will consolidate ideas and email to listserve and discuss at forum.

5.5. **International** – Ashish Rakheja / Frank Mills

- 5.5.1. Discussed publications approved setting up subcommittee on Int. committee.
- 5.5.2. Discussed Sustainable city master planning to make sure they are more sustainable. Need more engineering input.
- 5.5.3. CIBSE has organized Ken Dale award.
- 5.5.4. International Committee offered to peer review of Green Guide made make comments to address an International perspective.

5.6. **Standards** –

- 5.6.1. SSPC 90.1 will develop checklist to verify buildings are meeting the requirements of 90.1. SSPC 90.1 will coordinate with commissioning TC. The Cx TC wants any standard that references commissioning to include a member from the TC on the standards committee.
- 5.6.2. SSPC 189.1 and Standard 189.1 Design, Construction and Operation of High Performance Green Buildings (Harvey)
 - 5.6.2.1. 189 User Guide for 189.1 is now available in the book store. Committee meeting will be on Tuesday and Wednesday.
 - 5.6.2.2. Discussed work plan for continuous maintenance of standard and harmonization with IGCC.

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- 5.6.3. SPC 189.2P Design, Construction and Operation of High Performance Green Healthcare Facilities (Fick)
 - 5.6.3.1. Committee is getting started by reviewing the recently released Standard 189.1 for changes that would be required for healthcare facilities.

- 5.6.4. SPC 191P Standard for the Efficiency Use of Water in Building, Site and Mechanical Systems (J. Swift).
 - 5.6.4.1. Updated work plan.
 - 5.6.4.2. Committee to have working sessions to get public review before Montreal.
 - 5.6.4.3. Public review will be in September / October timeframe.
 - 5.6.4.4. Vote for approval hopefully by Jan. 2012.
 - 5.6.4.5. Hopefully published by summer 2012.
 - 5.6.4.6. Will hold public session in Las Vegas for Standard 191P.

5.7. **Web Site** - Dunstan Macauley

- 5.7.1. Would like to know how many people visit the site annually.
- 5.7.2. Please provide recommendations on improving the Website.

5.8. **Existing Buildings** – Dunstan Macauley

- 5.8.1. Tom Lawrence and Dunstan Macauley will also write a Journal article Embodied Energy and follow-up with a forum.
- 5.8.2.

6. **Related Activities**

- 6.1. LEED (USGBC – ASHRAE Interaction) - (Jay Enck)
 - 6.1.1. LEED 2012 is out for public review.
 - 6.1.2. LEED 2012 has changed significantly and has become more science based.
 - 6.1.3. Encourage all to review.
 - 6.1.4. Two specific categories of credits in LEED 2012, integrated design and building performance.
 - 6.1.5. They are 14 different LEED systems in 2012.
- 6.2. Advanced Energy Design Guides– (Paul Torcellini)
 - 6.2.1. Now working on 50% series.
 - 6.2.2. Two of the guides are currently being modified.
 - 6.2.3. In 12 months 4 50% series will be out.
 - 6.2.4. Review window for the guides are short; prepare if you would like to comment.
- 6.3. Green Globes/GBI (Harvey J. Bryan)
 - 6.3.1. Going thru ANSI process.
 - 6.3.2. Currently improving website.
 - 6.3.3. Developing healthcare module.
- 6.4. Standard 189.1 ALI courses
 - 6.4.1. High Performance Building Design using 189 (new ALI course).

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6.4.1.1. Testing waters in New Delhi.

6.5. DASH (Michael Deru)

6.5.1. No update.

6.6. Design towards NZEB Short Course (Frank Mills / Dunstan Macauley)

6.6.1. Course will be presented on Tuesday

6.6.2. The course had to be shortened; the presentation in Orlando ran a little long. Added more case studies.

7. Input from other TCS

7.1. Basic discussions of the work done within a couple of other TCs were briefly discussed.

7.1.1. Energy Modeling Course to be presented in Atlanta in April.

7.1.2. Energy Modeling certification exam to be presented in parallel.

8. Old Business- no other reports

8.1. Environmental Health in Green Buildings

8.1.1. Asked to comment on position document. Complined comments and no comments received.

9. New Business

9.1. New eLearning course on Standard 189.1 has been approved.

9.2. ASHRAE purchase Elsevier. Society now has a push is to generate more material.

9.3. Please forward to Tom Lawrence and ideas or topics for future courses.

9.4. Frank Mills thanked Malaysia for hosting first ASHRAE conference outside North America.

9.5. May 18 – 20 3 day course on HVAC design.

10. Adjourn

10.1. Motion by Andy Price

10.2. Seconded by Dunstan Macauley

10.3. Motion passed unanimously (14-0-0).

TC 2.8 Web Site

www.tc28.ashraetcs.org

TC 2.8 E-mail List

This list is only for communications related to ASHRAE TC 2.8 Building Environmental Impacts and Sustainability. Do not distribute messages of any commercial nature.

To subscribe or unsubscribe to the list, you can go to the TC 2.8 list web site:
<http://lists.onebuilding.org/listinfo.cg/tc28-I-onebuilding.org>

To send a message to all subscribers to the list, address your message to:

tc28-I@lists.onebuilding.org

Note: ASHRAE does not operate this list. Please do not ask them for help. If you have any questions, please contact: Jason Glazer JGlazer@gard.com

Thanks to Jason and GARD Analytics for hosting this list!

RESEARCH PLAN (See Research Report above)

January 2011

RESEARCH TOPICS (not listed in order of priority)

1. Measurement of Energy Performance of ASHRAE Energy Design Guides (AEDG)
Author: E Mitchell Swann, Kevin Cross, Paul Bertram
Possible co-sponsors: TRG4, TC 7.1, TC 7.6, TC 7.8, TC 7.9
Submitted to ASHRAE, Comments have been received, working on changes.
2. Control practices present in buildings and trade-offs with defined “green” practices or goals (possible precursor to guidelines).
Author: Vikas Patnaik, Andrew Price, Mark Harris
Possible co-sponsors: TC 1.4
3. Documenting performance of high performance buildings using Standard 189.1-2009 by applying the ASHRAE Performance Metrics Protocol (PMP) and the ASHRAE building labeling method.
Author: Mitchell Swann, Michael Duru, Dunstan Macauley, Tom Kelly
Possible co-sponsors: TC 7.6
4. Towards new indoor air quality criteria by understanding the perception and sensation of occupants.
Author: Diotima von Kempfski, Janice Means
Possible co-sponsors: TC 2.1
5. Integrated sensors in buildings for continuous monitoring.
Author: Janice Means, Jay Enck, Doug Fick, Tom Kelly, Mark Harris
Possible co-sponsors:
6. Condensate collection and use.
Author: Tom Lawrence, Andrew Price
Possible co-sponsors:
7. How can HVAC&R Systems respond to Peak Load Reduction
Author: Tom Lawrence, Andy Price, Daryn Cline
Possible co-sponsors:

CO-SPONSORED

1. Comparative study of energy and water usage for HVAC systems using evaporative, dry or hybrid cooling equipment.
Author: Tom Bugler
Possible co-sponsors: TC 8.6 (lead), TC 3.6, TC 2.8, SPC 191
2. Energy use for air conditioning and its effects on office productivity in hot-humid tropical regions.
Authors: Eric Adams, Pawel L Wargocki, David Wyon
Possible co-sponsors: TC 2.1 (lead), TC 2.5, TC 2.8, TC 5.12, TC 7.6

ADDITIONAL IDEAS

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- Impact of tenant behavior on building performance.
- Documenting persistence of high performance buildings.
- What information do building operators need to maintain and operate a green building?
- Sustainability Assessment of Absorption, Adsorption, and Vapor Compression Chillers.
- Utility management practices (smartgrid, etc.) and impact on HVAC performance, reliability and “green” practices (will smartgrid achieve its desired result at the expense of HVAC equipment/customers?)
- What are best “green” maintenance practices and what building management, control or system functions are necessary to support them?
- ASHRAE 62 requires mechanical ventilation & natural ventilation. Comfort & Energy Impact
- How can building systems respond to peak reduction?
- Real time pricing and the impact on high performance buildings.
- What water chemistry is allowed for irrigation?
- Ammonia Systems for Building Systems.
- Light Pollution
- Heat Island Effect on Building Loads
- Strategy 1.1 Develop design guidance to integrate indoor environmental quality (IEQ), energy efficiency and other aspects of sustainable building performance.
- Strategy 1.2 Lead the drive toward the design, construction and operation of net-zero-energy buildings through research, publications and education.
- Strategy 1.3 Develop performance metrics and rating systems to certify operational performance of buildings for energy efficiency and IEQ.
- Strategy 1.4 Provide training, guidance and tools for building operators.
- Strategy 1.5 Conduct research and develop guidance to enhance the effectiveness of maintenance procedures.
- Strategy 1.6 Promote the use of life-cycle-cost analysis to building owners that will encourage sustainable building construction, operation, and renewal.
- Strategy 1.7 Collaborate with other organizations to integrate HVAC&R systems with other building systems to enhance the effectiveness of Total Building Design and Integrated Practice.
- Strategy 1.8 Promote research leading to the development of equipment & systems that support sustainable buildings.