

**TECHNICAL COMMITTEE 2.8 – Meeting Notes: Winter Conference – Orlando**  
**MEETING MINUTES – January 2016**

**ASHRAE**  
 1791 Tullie Circle, NE / Atlanta, GA 30329  
 404-636-8400

**TC/TG/TRG MINUTES COVER SHEET**

TC/TG/TRG No. TC 2.8 DATE: January 29, 2016

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

DATE OF MEETING: January 24, 2016 LOCATION: Hilton Orlando Convention Center

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS & ADDIT'L ATTENDANCE
Mr. Dunstan L Macauley, III	2013	Mr. Ashish Rakheja	2015	Dr. Lisa Ng
Mr. Stanton Stafford	2015	Mr. Tom Cappellin	2012	Mr. Kevin Brown
Ms. Joy Altwies	2012	Mr. David Ellis	2015	Michael Deru
Ms. Calina Ferraro	2015	Mr. Frank Mills	2014	Kevin Cross
Mr. Douglas David Fick	2013			Janice Means
Dr. Thomas Lawrence	2015			Bert Phillips
Mr. Abdel Darwich	2012			Brett Lessard
Mr. E. Mitchell Swann	2014			Milad Abalhasemsem
Mr. John Swift	2014			Marianna Vallejo
Dr. Paul Torcellini	2014			Pavel Wargochi
Ng Yong Kong	2014			Artem Zhokov
				Erica Galasso
				Svein Mornor
				James Sweeney
				Annie Smith
				Edmund Wong
				Kevin Cross

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**DISTRIBUTION**

**ALL MEMBERS OF THE TC/TG/TRG**

TAC CHAIR	Tom Lawrence
TAC SECTION HEAD	Elbert Phillips
STANDARDS LIAISON	Cyrus Nasser
HANDBOOK LIAISON	Larry Akers
RAC RESEARCH LIAISON	Pawel Wargocki
CTTC LIAISON	Chris Fudge
ALI LIAISON	Tom Lawrence
STAFF LIAISON (RESEARCH)	Michael Vaughn

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

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<b>TC/TG/TRG MEETING SCHEDULE</b>				
<b>LOCATION – past 12 months</b>	<b>DATE</b>	<b>LOCATION - planned next 12 months</b>	<b>DATE</b>	
Chicago, IL	January 2015	St. Louis, MO	June 2016	
Atlanta, GA	June 2015	Las Vegas, NV	January 2017	
<b>TC/TG/TRG SUBCOMMITTEES</b>				
<b>Function</b>		<b>Chair</b>		
International Program Handbook Research		Ashish Rakheja, Frank Mills Kevin Brown Doug Fick Joy Altwies		
Green Guide Existing Buildings Energy+Water Nexus		Tom Lawrence Dunstan Macauley Calina Ferraro, Fred Betz		
<b>RESEARCH PROJECTS – Current</b>		<b>Monitoring</b>	<b>Report Mode</b>	
<b>Project Title</b>	<b>Contractor</b>	<b>Comm. Chm.</b>	<b>At Meeting</b>	
1627-RP An Evaluation of the Actual Energy Performance of Small Office and K-12 School Buildings Designed in Accordance with the 30% ASHRAE Advanced Energy Design Guide	Group 14	Altwies		
<b>LONG RANGE RESEARCH PLAN</b>				
Rank	Title	W/S Written	Approved	To R & T
<b>HANDBOOK RESPONSIBILITIES</b>				
<b>Year &amp; Volume</b>	<b>Chapter Title</b>	<b>No.</b>	<b>Deadline</b>	<b>Handbook Subcom. Chair/Liaison</b>
2017 Fundamentals	Energy Resources	34	TBD	Fick / Brundage / Akers
2017 Fundamentals	Sustainability	35	TBD	Fick / Akers

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**STANDARDS ACTIVITIES - List and Describe Subjects**

**TECHNICAL PAPERS from Sponsored Research - Title, when presented (past 3 yrs. present & planned)**

**Appendix 3**

1627-RP An Evaluation of the Actual Energy Performance of Small Office and K-12 School Buildings Designed in Accordance with the 30% ASHRAE Advanced Energy Design Guide

**TC/TC/TRG Sponsored Conference Papers - Title, when presented (past 3 yrs. present & planned)**

**Appendix 4 TC/TG/TRG Sponsored Seminars**

2013-06 Denver Seminar 3 (Basic)

Moving Buildings and the Grid to a Renewable Future

2013-06 Denver Seminar 6 (Intermediate)

Field and Equipment Issues that Impact Economizer Control Performance

2013-06 Denver Seminar 11 (Intermediate)

Performance Based Procurement Process Case Studies

2013-06 Denver Seminar 17 (Intermediate)

Benchmarking and Improving Commercial Building Energy Performance

2013-06 Denver Seminar 28 (Intermediate)

The Largest Zero-Energy Building: What is Under the Hood?

2014-01 New York Seminar 7 (Advanced)

The Façade Odyssey: Solutions for Design of High Performance Buildings

2014-01 New York Seminar 29 (Intermediate)

Advanced RTU Campaign: Accelerating Efficiency

2014-01 New York Seminar 35 (Intermediate)

Sustainable Development in Africa

2014-01 New York Seminar 41 (Intermediate)

Blue is the New Green: The Emerging Focus on Building Water Use Reduction

2014-01 New York Seminar 49 (Intermediate)

Are Renewable Resources Renewable Energy? A Life Cycle Assessment Perspective

2015-01 Chicago Seminar 21 (Intermediate)

Blue Is the New Green: The Emerging Focus on Integrated Water Management

2015-01 Chicago Seminar 61 (Intermediate)

Biomass Combustion Strategies for Building Applications: Energy Efficiency with Low Emissions

2015-06 Atlanta SEMINAR 24 (Intermediate)

What is a Zero Energy Building, and How Can We Get There?

2015-06 Atlanta SEMINAR 46 (ADVANCED)

Energy Efficiency and Renewable Energy Sources for Cold Chain Energy Supply

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2015-06 Atlanta SEMINAR 56 (BASIC)  
Innovation for Food Retail: The 50% Advanced Energy Design Guide for Grocery Stores

2016-01 Orlando SEMINAR 5 (Intermediate)  
Commissioning: Closing the Loop

2016-01 Orlando SEMINAR 13 (Intermediate)  
Updates and Perspectives on the New Version of ICC 700,  
The Residential Green Building Standard

2016-01 Orlando SEMINAR 17 (Intermediate)  
Integrating ASHRAE Standard 189.1 and IgCC Compliance Requirements: Options and  
Issues

2016-01 Orlando SEMINAR 23 (Intermediate)  
Metrics Matter: How Should We Judge Energy Performance?

**Appendix 5**

**TC/TG/TRG Sponsored Forums**

2015-01 Chicago Forum 2 (Intermediate)  
AASA: A Dream Come True?

2015-06 Atlanta FORUM 4 (ADVANCED)  
Best Practices in Sustainable Design around the Globe Track: High Performance Buildings

**Appendix 6**

**JOURNAL PUBLICATIONS - Title, when published (past 3 yrs. present & planned)**

**ASHRAE TC 2.8 - Building's Environmental Impact and Sustainability**

**2016 WINTER MEETING (Orlando)**

**1. Roll call and Introductions** (Macauley)

- 1.1. Meeting called to Order w/ Quorum at 5:05 PM
- 1.2. Roll Call
- 1.3. Introduction

**2. Accept Agenda/Approve Minutes of Previous Meeting** (Stafford)

- 2.1. Review Meeting Agenda
  - 2.1.1. Revisions / Modifications
    - 2.1.1.1. N/A
- 2.2. Approval of Atlanta Meeting Minutes:
  - 2.2.1. Motion by Torcellini
  - 2.2.2. Seconded by Kong
  - 2.2.3. Minutes approved unanimously with amendments (8-0-1, CV)

**3. Announcements/Membership/Listserv** (Macauley)

- 3.1. Review of ASHRAE Code of Ethics.
- 3.2. Updates from TAC / Section 2
  - 3.2.1. Women in ASHRAE event
- 3.3. Tom Lawrence was nominated as Director at Large for ASHRAE Board
- 3.4. Doug Fick was nominated RAC Region 5
- 3.5. Yong Kong was nominated RAC Region 13

**4. Standing Committee Liaison**

- 4.1. TAC
  - 4.1.1. Elbert Phillips in attendance.
- 4.2. RAC
  - 4.2.1. N/A
- 4.3. Handbook
  - 4.3.1. N/A
- 4.4. Standards
  - 4.4.1. See below for 189.1 Liaison update.
- 4.5. Special Publications
  - 4.5.1. N/A
- 4.6. ALI
  - 4.6.1. N/A

**5. Subcommittee Reports**

- 5.1. Research (Altwies)
  - 5.1.1. Progress Report on 1627-RP (by Group 14): An Evaluation of the Actual Energy Performance of Small Office and K-12 School Buildings Designed in Accordance with the *30% ASHRAE Advanced Energy Design Guide*
    - 5.1.1.1. Small office EUIs are tracking the AEDG target

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5.1.1.2. School EUIs are better than AEDG target

5.1.2. Research Liaison report

5.1.3. MTG.ASEC was approved by TAC at the Atlanta meeting. Kevin Brown volunteered to serve as TC 2.8's representative. 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.

5.1.4. List of research topics ideas:

<b>Past Research Topic Idea</b>	<b>Generated by</b>	<b>Update/Status</b>	<b>Next Step</b>
Training Requirements for Sustainable, High Performance Building Operations (TC 7.3, 1650-TRP)	TC 7.3, from Michael Bobker	TRP status, near ready to bid in spring 2016. TC 7.3 needs to finalize RFP and PES roster with ASHRAE staff.	Kevin Brown (and Lisa Ng) volunteered to serve on the PMS once ready to form. Joy can follow up again with Michael.
Do buildings built to Standard 189.1 perform as expected?	Kevin Cross, Joy Altwies, Tom Lawrence	Kevin Cross and Brent Stephens developed an early stage RTAR	Still keeping on hold until further buildings are built, perhaps 1 year or more. Looking into whether preliminary data can be collected on 189.1 buildings
Embodied energy of building systems & equipment – how much more efficient does it need to be to outweigh its embodied energy?	Kevin Cross & Dunstan	Will potentially pursue after Journal article is published	Keeping on the list, waiting on Dunstan to publish paper
Energy Efficiency in Agriculture Buildings	TC 2.2	new research topic – potentially several RTAR's to investigate need	Dunstan was going to try to attend the TC 2.2 meeting last June in Atlanta.
Comparing high-performance homes to code-built homes	Dunstan	This was posed as a way to provide some research/data in regard to potential rollback/delay of code update cycles (due to pushback from homebuilders on costs.)	Dunstan to follow up with Grassroots Government Activity committee

## 5.2. Programs (Brown)

### 5.2.1. Orlando Programs

#### 5.2.1.1. SEMINAR 5 (Intermediate)

Commissioning: Closing the Loop  
Track: International Design  
Room: Orange Ballroom F  
Chair: E. Mitchell Swann  
Sunday, Jan 24, 8:00 AM-09:00 AM

#### 5.2.1.2. SEMINAR 13 (Intermediate)

Updates and Perspectives on the New Version of ICC 700,  
The Residential Green Building Standard  
Track: Standards, Guidelines and Codes  
Room: Orange Ballroom D

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Chair: Jeff Inks  
Sunday, Jan 24, 11:00 AM-12:30 PM

- 5.2.1.3. SEMINAR 17 (Intermediate)  
Integrating ASHRAE Standard 189.1 and IgCC Compliance Requirements: Options and Issues  
Track: Standards, Guidelines and Codes  
Room: Orange Ballroom D  
Chair: Neil Leslie  
Sunday, Jan 24, 1:30 PM-3:00 PM

- 5.2.1.4. SEMINAR 23 (Intermediate)  
Metrics Matter: How Should We Judge Energy Performance?  
Track: The Great Debate  
Room: Orange Ballroom G  
Chair: Richard Sweetser  
Monday, Jan 25, 8:00 AM-9:30 AM

- 5.2.2. STANDING SEMINAR: Blue is the New Green
- 5.2.3. IN DEVELOPMENT: Comparing Green Building Rating Systems – As-designed vs. Actual Performance (targeting Las Vegas)
- 5.2.4. IN DEVELOPMENT: Definitions of Renewable Energy (targeting St. Louis)
- 5.2.5. Public Sessions related to Residential at Las Vegas (broadly defined): actual presentations will be on the floor in the main convention center in Vegas.
- 5.2.6. PROGRAM IDEA: Neil Leslie – requesting conference papers relating to residential
- 5.2.7. PROGRAM IDEA: Energy Water Nexus track may be offered. Start identifying speakers/topics in Orlando. Energy Water Nexus is Track 3 (Las Vegas).
- 5.2.8. PROGRAM IDEA: Add output from Research Subcommittee on successful use of 30% AEDG (targeting Las Vegas).
- 5.2.9. PROGRAM IDEA (Torcellini): What do ASHRAE members do in their own houses? Actual data, Case Studies on actual residences. (targeting Las Vegas).
- 5.2.10. PROGRAM IDEA (Altwies): How to predict whether your clients will adopt a new technology (targeting St. Louis).

#### 5.3. Handbook (Fick)

- 5.3.1. CH34 / Energy Resources (Final DRAFT due June 2016)
- 5.3.2. CH35 / Sustainability (Final DRAFT due March 2016)
  - 5.3.2.1. The recently published Definition of Zero Energy Buildings will be referenced in the chapter.
  - 5.3.2.2. A reference to energy density will be included in the chapter.
  - 5.3.2.3. The 2015 United Nations Climate change Conference (Paris) will be referenced.
  - 5.3.2.4. Building Envelope Air Tightness will be referenced in the chapter.
  - 5.3.2.5. Reference to Water-Energy Nexus.
  - 5.3.2.6. ASHRAE encouraging RPs in Handbook. Altwies to provide reference to 1627-RP.
  - 5.3.2.7. A request will be sent to the international members on an active Cap and Trade system.

#### 5.4. Green Guide (Lawrence)

- 5.4.1. Initial Drafts were originally due in January 2016; revised due date of June 2016.
- 5.4.2. Reviewed the status of each chapter update chapter by chapter. File names have been standardized.
- 5.4.3. Discussed doing a supplement to be used as a textbook for university level course textbooks.
- 5.4.4. Residential Chapter - the philosophy of how much to cover the complete set of topics was discussed
- 5.4.5. Energy/water nexus will be included. Subsection of Energy-Water Balance.
- 5.4.6. Discussed and confirmed the need for the “Completing Design and Documentation” chapter.
- 5.4.7. Green Tips are being moved to a stand-alone chapter.
- 5.4.8. Targeting June 2017 approval by TC 2.8 for publication.



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5.5. International (Rakheja / Mills)

5.5.1. No formal meeting. Chair(s) unavailable to attend.

5.6. Standards (Lawrence)

5.6.1. SPC 189.1 Standard for the Design of High-Performance Green Buildings except Low-Rise Residential Buildings

5.6.1.1. Merger with IGCC; ASHRAE developing technical content

5.6.1.2. IGCC 2018 will represent official merger between ICC and 189.1.

5.6.2. SPC 189.3P Design, Construction and Operation of High Performance Green Healthcare Facilities

5.6.2.1. Committee meeting to review comments on latest draft.

5.6.3. SPC 191P Standard for the Efficiency Use of Water in Building, Site and Mechanical Systems

5.6.3.1. Mechanical water and water balance sections are complete in Draft format.

5.6.3.2. Process sections (ex. commercial kitchens) in development.

5.6.3.3. Working towards a performance modeling protocol.

5.6.3.4. Public review pending.

5.7. Existing and Future Building Challenges (Macauley)

5.7.1. Focus A - how to improve the indoor health of buildings.

5.7.2. Focus B - develop programs / tools to teach life cycle costing as a means to sell retrofits.

5.7.3. Provide input to Chapter 19 of Green Guide V5.

5.7.4. Embodied energy of existing buildings / elevate to RTAR for research.

5.8. Water-Energy Nexus Subcommittee (Ferraro, Betz)

5.8.1. Review of Subcommittee scope definition.

5.8.2. Update on SPC 191 (see above).

5.8.3. Programs in development / need champions (targeting Las Vegas; St. Louis as outside possibility).

5.9. Website (Ng)

5.9.1. New website is up and running.

**6. Related Activities Reports**

6.1. Advanced Energy Design Guides (AEDG): no major updates since June 2015.

6.2. ASHRAE bEQ: recent focus has been on how to adapt and market bEQ versus other benchmarking programs. 40% of bEQ applicants are for buildings outside of the U.S.; bEQ committee is discussing how to liaise with non-U.S. programs in these markets (vs. forcing U.S. standards onto non-U.S. markets)

6.3. TC 7.2 (Design-Build): opportunity to work together to push sustainability / integrated strategies

**7. Old Business**

7.1. TC 2.8 Scope to be distributed to the TC for Comment (Macauley)

**Technical Committee 2.8** is concerned with the environmental, social and economic impacts of buildings and their effects on long-term sustainability of the indoor and outdoor environment and the well-being of the building occupants. The committee works to enhance ASHRAE member awareness of technologies to address these issues and the resiliency needed to adapt to a changing climate. Building impacts of concern include, but are not limited to, ecological damage and mineral resource depletion; environmental impacts of energy and water production, conversion, delivery and use; availability of energy resources and systems; pollution of air, water, and soil; and encroachment on sensitive habitats and ecosystems.

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**8. New Business**

8.1. There are many opportunities for new member involvement in TC 2.8 (Lawrence).

**9. Adjourn**

9.1. Motion by Lawrence.

9.2. Seconded by Darwich.

9.3. Motion approved unanimously (9-0-0, CNV)

9.4. Meeting adjourned at 6:30 PM

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**TC 2.8 Web Site**

<https://tc0208.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-l-onebuilding.org>

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

[tc28-l@lists.onebuilding.org](mailto:tc28-l@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](mailto:JGlazer@gard.com)*

*Thanks to Jason and GARD Analytics for hosting this list!*