

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
1791 Tullie Circle, NE / Atlanta, GA 30329
404-636-8400
TC/TG/TRG MINUTES COVER SHEET**

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

TC/TG/TRG NO. TC 1.12

TC/TG/TRG TITLE Moisture Management in Buildings

DATE OF MEETING **Jun 20, 2009**

LOCATION **Louisville, Ky**

MEMBERS PRESENT	Term Expires 6-30	MEMBERS ABSENT	Term Expires 6-30	EX-OFFICIO MEMBERS
Hollace Bailey (secretary)		Al Sanchez		
Neil Leslie (Progrm sub chr)		Rodney Lewis (Chair)		
Ray Patenaude (Vice Chr)		Leonard Damiano		
Jeff Traylor (Stds sub chr)		Ron Bailey		
Andres Holm		Andre Dejarlais		
John Murphy		Patricia Jones		
Lou Kelter				
Anton Tenwolde				
Lew Harriman				
CORRESPONDING MEMBERS PRESENT		CORRESPONDING MEMBERS ABSENT		ADDITIONAL ATTENDANCE
Steve Cornick		Doug Abramson		Mark Lawton
Larry Elkin		Gil Avery		Chris Balbach
Achilles Karagiozis		Stephen Barefoot		Alex McGowan
		Marcus Bianchi		Samuel Glass
		Doug Bibee		
		Charles Culp		
		Claudio Darras		
		Chad Dorgan		
		Tom Ferdelman		
		Julie Ferguson		
		Stan Gatland		
		Manfred Gerber		
		Michael Hayes		
		Hugo Hens		
		Hartwig Kuenzel		
		Carl Lawson		
		Mark Lentz		
		Wahid Maref		
		Michael Mathews		

DISTRIBUTION

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

TAC Section Head:	Charles Wilkin
TAC Chair:	Patricia Graef
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	
Manager Of Standards	Claire Ramspeck
Manager Of Research & Technical Services	Mike Vaughn

TC 1.12- Moisture Management in Buildings – June 20, 2009

1. Call to Order Ray in lieu of Rodney – since Rodney was unable to make the meeting
 - a. TPS was read
 - b. Sign up sheet
 - c. Self Introductions
 - d. Discussion re: Roster – Ray will get with Rodney and Lew and get the up to date roster to Society by Wed.
 - e. New Secretary -Steve Cornick
 - f. Check for Quorum – 8 /14
 - g. We have 1 international member – Andres Holm present

2. Programs Subcommittee Report – Neil Leslie

2 programs Louisville:

Seminar #3. Avoiding Moisture and Humidity Problems During Part Load Hours - Lew Harriman chair. TC 8.10 and 8.12 co-sponsoring Sunday 8am

Seminar #8. Case Studies in Moisture Management from Litigation – Neil Leslie chair. TC 1.7 co-sponsoring. Sunday 11am Holly, Rodney, Ray and (Rodney is missing – Ron Bailey has volunteered to do if the slides are there).

Orlando – Jan 23-27 Humidity and Sustainable Indoor Environment

- 1.) Forum – Are energy efficiency retrofits resulting in moisture management problems?
- 2.) Seminar- New EPA Guidelines for Moisture Management in Bldgs
- 3.) Seminar - Hot and Humid climate guide topic –
- 4.) co-sponsored seminar

Motion on Priorities – by Neil – 2nd Jeff -

Discussion – Lew – wants to change the order and speaks against the order proposed.

Neil recalls the motion – approved by 2nd

Motion to new priorities – by Neil – 2nd Jeff

- 1.) New EPA Guidelines for Moisture Management in Bldgs
- 2.) Hot and Humid climate guide topic –
- 3.) Forum – Are energy efficiency retrofits resulting in moisture management problems?
- 4.) co-sponsored one

Discussion –

New info was provided - Priorities are not required - just approval by TC (Motion is now mute and is recalled approved by 2nd)

Motion to submit these 3 seminars and a forum for the appropriate track to be determined by the program committee.

Neil Leslie motion - John Murphy - 2nd unanimous agreement

Neil reports on some news from programs that he has just received – full report will be attached to these minutes:

July 10th submission deadline for Forums and Seminars

Changed the rules and the dates for transactions, seminars, etc.

Added Conference Papers – shorter – peer review expedited– abstracts for Albuquerque due Sept 25, 2009.

Technical Papers will be presented for poster session only (still double blind reviews)

Unsolicited papers – not through a TC are welcome at any time

Albuquerque: June 26-30, 2010

3. Research Subcommittee Report- Paul Shipp

- a. John Murphy heading up RTAR 1565 for TC 8.10 – we’ve been asked to co-sponsor At Jan. mtg we voted to support – Work Statement is updated here. Subcommittee voted to co-sponsor with the constructive comments that were provided at the subcommittee meeting (weighting modified and add an envelope expert to Task #2) used as guidance to TC 8.10.

Motion: TC 1.12 reaffirms that it is a co-sponsor of Work Statement #1565 and submits to TC 8.10 the following suggestions for their consideration:

- (1) **Task 1** should be modified to stipulate that at least one individual with specific expertise in building envelopes be included in the group of experts interviewed as part of the extended research and,
- (2) The **Proposal Evaluation Criteria and Weighting Factors** should be modified as follows:

Criteria	Weighting Factor
Contractor’s demonstrated understanding the material, based on the proposal submitted by the contractor and on the relevant skills and experience of proposed team members (include schematics of the typical system and equipment configurations listed in the proposed outline)	45% 50%
Quality of the contractor’s previous publications, based on samples of similar publications submitted by the contractor	45% 25%
Performance of the contractor on prior ASHRAE or other projects (no penalty for new contractors)	10% 15%
Cost	0% 10%

Paul made motion, Anton 2nd - vote 8-0-0 chair voting.

TC 1.12 will need to provide someone for the Project Review Committee

- b. RTAR 1566 – vote in April was 12 of 12 for and 2 abstained (Natatorium evaporation situation) RAC has approved but with some specific requirements.
 - i. WS must show phased approach.
 - ii. TC 8.10 will need to provide more justification for the \$300,000 budget.
 - iii. Anton has volunteered to assist TC 8.10 with the development of the WS.
- c. Paul stepping aside – Larry Elkin to take on the Research Subcommittee Chair position

See full Research Report attached

4. Publications

- a. Web Site – John Murphy

Up to date – meeting minutes are missing on there – Holly to send past ones to John
URL for web site: <http://tc112.ashraetcs.org>

- b. Handbook Subcommittee Chair– Holly Bailey

- i. A direction for this endeavor has finally been developed and was presented– see the full report attached.
- ii. Assistance with the effort is requested – several people volunteered- see the full report.

2. Old Business –

- i. Mold Position document – no new version yet to review

3. New Business –

- a. Presentation topic for Jan. mtg. provided by Larry Elkin – Moisture Management Issues for Architects – will be advertised in the program (15 minute presentation)
- b. Lew – performance testing of Res. Dehus. – testing method is needed (per the group of experts that met) Hugh Henderson, FSEC, NREL etc. is involved – special committee being put together – FYI TC 8.10 is the cognizant TC and they are developing the request for a SPC and a chair and TPS. John Murphy is TC 8.10 chair and all requests desiring to be part of the process need to go to him.
- c. Lew – from the ASHRAE guide for Hot and Humid Climates - standard that owners can use to control humidity in their buildings – is it time to have a discrete standard for humidity control (mold avoidance and energy consumption and ventilation-considering hot and cold climates)
 - i. Motion: Create an ad-hock committee to evaluate and make recommendation to full committee. Jeff , 2nd Anton 8-0-0 chair not voting
 - ii. Lew taking names for the ad-hock committee-

4. Meeting was adjourned 2:45pm

Action Items – Jun 2009

Ray, Lew, Rodney	Update roster and get to Society by Wed.	
Handbook volunteers	Identify chapters that TC 1.12 should be coordinating with and contributing to their chapters	
Larry Elkin	15 minute presentation topic for Jan TC 1.12 meeting	
All TC 1.12 members	Notify Holly Bailey at holly@baileyeng.com of any handbook chapters, guidelines, standards, or other ASHRAE documents that you believe TC 1.12 should be contributing to.	
All TC 1.12 members	Consider participating in the potential SPC for developing a Standard for Performance Testing of Residential Dehumidifiers. Contact John Murphy (jmurphy@trane.com) if you want to participate.	
All TC 1.12 members	Consider participating in the ad-hock committee regarding the development of a discrete standard for humidity control. Contact Lew Harriman if you are interested. (lewharriman@masongrant.com)	
All TC 1.12 members	Check Website	

TC 1.12
Program Subcommittee Report
June 20, 2009
Submitted by: Neil P. Leslie, P.E.

Louisville programs

Seminar 3 Sunday 8:00 – 9:30 in Carroll Ford entitled “Avoiding Moisture and Humidity Problems During Part-Load Hours,” Chair: Lew Harriman

Seminar 8 Sunday 11:00 – 12:30 in Carroll Ford entitled “Case Studies of Moisture Management Issues in Litigation,” Chair: Neil Leslie

Programs planned for Orlando, Albuquerque, and Las Vegas are as follows:

Orlando Winter 2010 (January 23-27) Theme: Humidity and Sustainable Indoor Environment

Seminar entitled “New U.S. EPA Guidance for Moisture Control in Buildings”
Chair: Eric Werling

Seminar entitled “ASHRAE Guidance for Hot and Humid Climates”
Chair: Neil Leslie

Seminar entitled “Practical Ways to Reduce Operating Costs in Hot and Humid Climates”
Chair: Matt Mullin
Sponsor: TC 7.8 Owning and Operating Costs, TC 1.12 to Co-Sponsor

Forum entitled “Energy Efficient Retrofits Resulting in Moisture Management Problems”
Co-sponsor TC 9.1
Chair: Alex McGowan

All proposed sessions will be submitted under the “Humidity Control” track.

Idea from Chicago meeting not further considered: Seminar entitled “Impact of ASHRAE Guidance on Moisture Management in Buildings”
Chair: Gil Avery

Idea from Chicago Meeting not further considered: Wahid Marif Seminar Suggestion:
“Moisture Problems below Grade”

Due date for Seminar and Forum submissions is July 10, 2009. Transactions papers were due review in March 2009 and are no longer being accepted.

Albuquerque Summer 2010 (June 26-30) Theme: Energy Efficient System Design for High Elevations and Dry Climates

Seminars or forums not approved for the Orlando meeting will be re-visited for the Albuquerque meeting.

Seminar entitled “Odd Moisture Management Issues in Dry Climates”

Chair: TBD

Bill Rose – Roof Problems

Holly Bailey – Swamp Coolers

Andreas Holmes – Low Humidity Effect on Humans

Seminar entitled “Update on ASHRAE’s Position Document on Mold”

Chair: Neil Leslie

Due date for Seminar and Forum submissions is after the Orlando meeting, likely date will be early February 2010. ASHRAE has initiated a second paper option entitled Conference Paper, a shorter, single-blind review paper. Unsolicited technical papers are still an option for poster sessions. Transaction sessions are no longer to be offered. Due date for Conference Paper abstracts and Technical Papers for the poster session is September 25, 2009.

Las Vegas Winter 2011 (January 29 – February 3) Theme: Zero Energy Design

Seminars or forums not approved for the Albuquerque meeting will be re-visited for the Las Vegas meeting.

The **TC 1.12 Research Subcommittee** met at 10:00 a.m. on 6/20/2009 with eight members and guests present.

The subcommittee reviewed WS #1565 “Development of the ASHRAE Design Guide for Dedicated Outdoor-Air Systems.” As a result of that discussion, the following motion resulted:

Motion: TC 1.12 reaffirms that it is a co-sponsor of Work Statement #1565 and submits to TC 8.10 the following suggestions for their consideration:

- (1) **Task 1** should be modified to stipulate that at least one individual with specific expertise in building envelopes be included in the group of experts interviewed as part of the extended research and,
- (2) The **Proposal Evaluation Criteria and Weighting Factors** should be modified as follows:

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Quality of the contractor’s previous publications, based on samples of similar publications submitted by the contractor	45% 25%
Performance of the contractor on prior ASHRAE or other projects (no penalty for new contractors)	10% 15%
Cost	0% 10%

The motion was approved (8 – 0 – 0) and was forwarded for Committee approval.

The subcommittee also reviewed RTAR 1566 “Equations to estimate evaporation rates from wetted surfaces in natatoriums, commercial and institutional buildings.” TC 8.10 invited TC 1.12 to also cosponsor this project and TC 1.12 responded affirmatively at the January meeting. A concern was raised as to whether or not the goals and objectives are achievable. It was reported that RAC also considered this question and was satisfied with the responses from TC 8.10. The subcommittee agreed that TC 1.12 remains supportive of the project but requests that the work statement be distributed to the committee with ample lead time for a thorough review prior to being asked to vote on it.

Larry Elkin has agreed to serve as the next TC 1.12 Research Subcommittee Chair to replace the outgoing chair.

Respectfully submitted,

Paul Shipp
TC 1.12 Research Subcommittee Chair

The Research Chair meeting occurs after all of our TC 1.12 meetings. So here is a brief review of what was presented on Monday morning.

ASHRAE 2010-2015 Strategic Research Goals

ASHRAE has developed 10 different goal areas in which to focus research efforts. They are:

- 1) Maximize actual operational energy performance of existing buildings and facilities.
- 2) Progress toward cost-effective net-zero energy buildings.
- 3) Residential retrofit for energy efficiency.
- 4) Quantification of IEQ benefits.
- 5) Energy Standards Development; Compliance and Enforcement.
- 6) Building information modeling of energy efficient, high-performance buildings.
- 7) Load calculation methods, energy calculation methods and design procedures suitable for low energy and net-zero energy buildings.
- 8) Natural refrigerants and refrigerant charge reduction.
- 9) Improve specific components of HVAC&R systems.
- 10) Transform engineering and architectural education.

We should focus our research efforts to meet ASHRAE's goals. At first glance, it appears that our mission coincides well with Goals 1, 2, 3, 4, 5, and 10. Please start thinking about RTARS and other ideas.

ASHRAE RESEARCH WEBSITE AND NEWS

- The less than intuitive website for ASHRAE Research is www.ashrae.org/technology/page/39
- RAC is developing an internal method to assist TC's with literature reviews. This is good news as ASHRAE does not currently fund literature searches.
- Project Monitoring Subcommittees (PMS's) will now be required to submit Research Project Performance Evaluations (RPPE's) to MORTS (Manager of Research and Technical Services) in addition to meeting minutes and quarterly reports. RPPE's (may?) will be considered as part contractor pay requests.
- There are several awards and grants available at the winter meeting
 - Grad Student Grant in Aid
 - New Investigator Award (young faculty)
 - Homer Addams Award for ?
 - Service to ASHRAE Research Award

See you in Orlando.

Larry Elkin

TC 1.12 Handbook Sub-committee Report – Holly Bailey chair:

TC 1.12 has had a hard time finding our place in the handbook without overlapping other TCs. Recent discussions with TC 4.4, TC 9.1 and a couple other groups of people has helped to identify a hole in the handbook that needs to be filled and TC 1.12 is a perfect TC to meet the need.

Need:

Checklist for the Engineer / Architect conversation that should occur at the beginning of a project about managing moisture in buildings. Start with the Top 10 issues with moisture management in buildings

(this goes back to the ad-hock mold committee's top 10 things to avoid – Lew will provide a copy of those to Holly for a starting point)

This topic prompted other discussion – regarding issues within ASHRAE documents that need to be followed up on – to be sure they are properly dealing with the moisture issues. Examples are:

- Airtightness - Addendum Z 90.1 status?
- IBD was supposed to be part of 90.1 – has it been included? (critical to good moisture management)
- Define how the interactions happen in buildings – TC 1.12
- Get involved in other handbook chapters – folks from TC 1.12 get involved in those committees, to make sure moisture management is handled.

Alex – will look at handbooks and see where we can get involved - to show the interaction

Additional discussion occurred regarding multiple topics that might be part of the Top 10 and / or things that TC 1.12 needs to participate in...

“Flashing a window” – architects want to talk about

Vapor pressures – architects don't want to talk about

How much insulation , what kind – where to put it- airtightness – how to achieve?

Owner's requirements (expectations) – first cost vs operational cost ---

Commissioning (Guideline 3) – taking the \$ away from the prettiness of the building!

How long is the building to be used – tie to sustainability....

Performance parameters visible to the consumer...

Engineer is reading the chapter – communication tool?

Architects who attend- building council –

Special Pub – “ASHRAE for Architects” – Larry would help with

Applications

Fundamentals – why is moisture in buildings important? – part load issues

Architect's views – Fundamentals – needs to be stripped of all the technical info-

For every kw you let in – you need to take it out times xxx

Simplified concepts – big picture – generalized info - not the detail

Anton – moisture in houses article for McGraw Hill – another starting point for developing an outline

Holly is going to take the above ideas and flush out a couple of options for TC 1.12 to consider as a direction to take. Volunteers in this effort are: Alex, Hartwig, Lew, Andres, Lou, Larry