

ASHRAE, INC.
1791 Tullie Circle, NE / Atlanta, GA 30329
404-636-8400
TC/TG/TRG MINUTES COVER SHEET

(Minutes of TC/TG/TRG Meetings are to be distributed to those listed below within 60 days after the meeting.)
~~These minutes were approved at the Atlanta 2015 Annual Meeting~~

TC/TG/TRG NO.: **TC 1.12**

TC/TG/TRG TITLE: **Moisture Management in Buildings**

DATE OF MEETING: **January 24, 2015, 1pm to 3pm.**

LOCATION: **Palmer House Hilton, Chicago IL**

MEMBERS PRESENT	TERM EXPIRES 6-30	MEMBERS ABSENT	TERM EXPIRES 6-30	EX-OFFICIO MEMBERS
Steve Cornick	2015	Alexander G McGowan	2015	Stephanie Reiniche
Lan Chi Nguyen	2015	Raymond E Patenaude	2016	
George DuBose	2016	Norman L Nelson	2016	
Florian Antretter	2016	Mikael H Salonvaara	2017	
Stan Gatland	2016			
Fistum Tariku	2017			
Theresa Weston	2017			
Sam Glass	2018			
Christy Cronin	2018			
Lew Harriman	2018			
Hugo Hens	2018			
CORRESPONDING MEMBERS PRESENT	CORRESPONDING MEMBERS ABSENT (CONTINUED)	CORRESPONDING MEMBERS ABSENT (CONTINUED)		ADDITIONAL ATTENDANCE
Peter Adams	James Cummings	Stephen B Martin, Jr		John Bloemer
Marcus Bianchi	Leonard Damiano	Christine C Maurer		Reza Ghias
Andre Dejarlais	Claudio Darras	John A Murphy		Carl Grimes
John G Davis	Larry Elkin	Donald Prather		Ed Light
Gordon Hart	Philip Farese	Benjamin Shafer		Steve Welty
Elliott Horner	Calina Ferraro	Elia M Sterling		
Manfred Kehrner	Diana Fisler	Stacie Suh		
Hartwig Kunzel	Michael P Hayes	Philip Sumang		
Neil P Leslie	Dwight H Heberer	Samuel J Taylor		
Wahid Maref	Dale L Herron	Jeff J Traylor		
Paul Shipp	Casey Hester	Anton TenWolde		
CORRESPONDING MEMBERS ABSENT	Achilles Karagiozis	Davidge Warfield		ADDITIONAL DISTRIBUTION
Fiona Aldous	S Louis Kelter	Alexander Weiss	Section head	Nadar R Jayaraman
Mark M Anderson	Claud E Kissmann	Bede W Wellford	TAC Chair	Eric Adams
Gil Avery	Josephine Lau		Liaisons	
Hollace S Bailey	Carl N Lawson		Standards	Stephanie Reiniche
Ronald B Bailey	Mark D Lawton		Research	Arthur Giesler
Stephen O Barefoot	Paul A Lebbin		Staff	
Douglas Bibee	Rodney H Lewis		Chapter TT	Alexander Weiss
William C Chadwick	Him Ly		ALI/PDC	Darin Nutter
Dane Christensen	Edward G Lyon		Special Pubs	Francis A Mills

TC 1.12 Moisture Management in Buildings

January 24, 2015, 1pm to 3pm.

Palmer House Hilton, Chicago IL

1. Call to order and reading of the title & scope of TC 1.12 (13:00)

The Chair called meeting to order at 13:00 hrs.

2. Self-Introduction of members and guests – Steve Cornick

Those present introduced themselves. Ten voting members were present. Quorum was established.

3. Roll Call/Committee Membership – Steve Cornick

Rolling off in July 1st 2015:

Steve Cornick
Alexander McGowan
Lan Chi Nguyen

Rolling on in July 1st 2015:

Manfred Kehr
Paul Lebbin
Ed Light

New TC Management as of July 1st 2015:

Chair: George DuBose
Vice Chair: Lan Chi Nguyen
Research Sub. Fitsum Tariku

4. Review Agenda

There were no additions were made to the agenda. Item #13 was moved to follow the agenda review to accommodate visitors from IESO and the manager of ASHRAE Standards, Stephanie Reiniche. Lan Chi Nguyen moved to approve the agenda. George DuBose seconded. *Agenda approved (9, 0, 0, CNV).*

5. Approval of minutes from Seattle, June 2014 meeting – Steve Cornick

The Chair posted the Seattle minutes too late for committee members to review. Consequently members were asked to review the minutes by Feb. 15th, 2015 and to send comments to the Chair. A letter ballot will be sent to the TC after Feb. 15.

6. Chairman's Report – Steve Cornick

The Chair stated that he had nothing to report as the Chairman's Meeting was scheduled for the following day. Cornick stated that he would summarize any pertinent items from the meeting and include them with the meeting minutes (below).

2014-2015 Hightower Award Recipient – John Carter, TC 4.3: Mr. John Carter's contributions to ASHRAE TC 4.3 include programs, Handbook Chapters, and a tour through all three officer positions: Secretary, Vice-Chair, and a three-year term as Chair. Mr. Carter's contributions to ASHRAE technical committees and especially to TC 4.3 in the last four years have been exemplary and make him a well deserving recipient of the George B. Hightower Technical Achievement Award.

2014-2015 Service to ASHRAE Research Award Recipient – Iain Walker, TC 4.3: Dr. Walker has been actively involved as a volunteer in some capacity (as a Work Statement Author, a PES member, or

PMS member) on at least five different research projects over the past several years. Dr. Walker's contributions to ASHRAE technical committees in the area of research and especially to TC 4.3 in the last four years have been exemplary and make him a well deserving recipient of the Service to ASHRAE Research Award.

The BOD's reaffirmation of ASHRAE's Code of Ethics provides an opportunity for sharing and reminding ASHRAE members of their responsibilities under this code. Technical Committees are the major drivers behind ASHRAE's technical content, and thus TC Chairs are at the frontline for ensuring that their committees are performing within the Code of Ethics guidelines. If you have any questions or concerns regarding appropriate conduct, contact your Section Head. A copy of the ethics is also attached to this document. See the following link for the latest version of the ASHRAE Code of Ethics: <https://www.ashrae.org/about-ashrae/>

TAC approved the formation of the following new multidisciplinary task group (MTG):

MTG.O&MEE – Operations and Maintenance Activities That Impact Energy Efficiency Scope: MTG.OMBE will coordinate TC/TG/TRG activities to help support the application of ASHRAE guidelines, Standards and other technical resources to support regulatory bodies, utilities, building owners and others who are attempting to enhance efficiency of existing buildings. Responsibilities include suggestions for research, development and presentation of technical programs of all types on maintenance and its impact on energy consumption and efficiency. It will be especially involved with interactions with those who are introducing and evaluating strategies for building efficiency enhancements. This MTG will maintain interface with and call on the resources of TCs in Sections 2, 4, 6, 7, 8 and 9 and maintain an especially close relationship with Standards 90.1 & 2. It will also maintain a relationship with GGAC. It will both draw on their knowledge and contribute areas of interest that it may be productive for them to consider. The chair and vice chair of the MTG is Thursten Simonsen and Robert Baker, respectively. For more information on this MTG and the six other active MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/tcs>

Also since the 2014 annual meeting, MTG.HPAS – High Performance Air-handling Systems for Buildings except Low-Rise Residential Building Voted to disband as a MTG after completing their charge.

E&P Beta Test #7 TC meetings being Held in Chicago: The 7th beta test of Electronic and Physical (E&P) meetings, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Chicago, those interested in possibly having E&P capability for their next TC meeting in Atlanta should contact Mike Vaughn (MORTS@ashrae.net) CEC Seeking Track Suggestion for 2016 Annual Meeting in St. Louis & Other Program Information:

Please submit your suggestions to ASHRAE Staff member Tony Giometti (Giometti@ashrae.org)

7. Research – Steve Cornick

a. Damp Building Measurement Criteria and Inspection Protocol – Lew Harriman.

Lew Harriman reported on the first meeting of the MTG, a one hour teleconference call held on January 20th 2015. The current membership has been set. Members were introduced to each other, including our backgrounds, past and current activities in connection with the MTG issues, and current employers and work focus. Questions were discussed, including items of concern, and suggestions for issues and ideas to include in deliberations. The MTG tasking and planned approach was reviewed. The MTG meeting notes are attached below.

b. ASHRAE Design Guide for Dedicated Outdoor - Air Systems (1712-RP) – Lew Harriman. TC 8.10 (TC 1.12 cosponsors this project.) Lew gave brief background on this project. The project had originally been awarded to another contractor but the project was halted and rebid with a new

- contractor. The first content is to be reviewed in Chicago by the PMS. Instructions to the contractor were that no writing was to be done before the surveys were complete. The project is on schedule. TC 8.10 PMS 1712-RP (10/0) Sunday 10:00 AM–12:00 PM Dearborn 3 (7)
- c. *WS 1566 Water vapour evaporation rates from swimming pools.* – Steve Cornick. TC 8.10 (TC 1.12 cosponsor). Cornick reported that the TC 8.10 will attempt to have the work statement voted out in Chicago.
 - d. *1718-RTAR: Development of a method to determine the moisture transport properties of a roof shingle system under real condition* – Manfred Kehr. TC 4.4 (TC 1.12 cosponsor). Manfred reported 1718-RTAR has been turned into a work statement. The first draft of the work statement was posted to the TC Google site on January 23rd, too early for the committee to review. Members were asked to review the work statement and send comments back to the chair by Feb 15th 2015. A letter ballot will be circulated after TC 4.4 votes out the work statement. First draft of WS due to ASHRAE by May 15, 2016; approval by July 2018
 - e. *RTAR – XXX Modeling Water Vapor Permeation in Pipe Insulation* – Manfred Kehr. TC 1.8 (TC 1.12 cosponsor). Manfred Kehr discussed the RTAR recently posted on the TC Google site. Members were asked to review the RTAR and send comments back to the chair by Feb 15th 2015. A letter ballot will be circulated after TC 4.4 votes out the RTAR.
 - f. *RTAR – XXX Develop a method to determine residential whole home dehumidification capacity requirements* – Sam Glass. TC 1.12 (TC 8.10 co-sponsor). Sam Glass reviewed the status. John Bloemer's draft came out a few days ago. Sam pointed that the Handbook – Fundamentals gives incorrect advice wrt latent loads. The Handbook – Fundamentals equation for latent loads compared to actual measurements underestimates internal moisture generation for 90% of houses. Outdoor conditions currently use peak dry bulb with coincident wet bulb; part load conditions with peak dew point is not accounted for. There will be a teleconference meeting to work on the RTAR; DOE will be funding some similar work at NREL (with Dane Christensen and John Bloemer); there is ongoing correspondence with Glen Hourahan at Air Conditioning Contractors of America; Current comments on the draft RTAR; Is there currently enough information available to write a guide or are there gaps? Do we have enough weather data; i.e. part load conditions, peak dew point? (Yes); Do we have more data in load sensitive data in North America where we are measuring the condensate off the coil and simultaneously measuring the ventilation rate – no we have data perhaps we need a re-analysis (loads and transient phenomenon) Can we involve NHBA? Members will be asked to review the RTAR when it becomes available, probably prior to the June 2014 in Atlanta.
 - g. Status update on potential new RTARs: There was no progress on the following RTARs. The consensus of the committee was that the topics were important enough for them to be left on the research topics list of future work. Steve agreed to help Ed Light in drafting the water activity RTAR.
 - i. *Techniques for Limiting Indoor Dampness and Microbial Growth during Unoccupied Hours and In Buildings That are Seasonally Occupied* – Lew Harriman.
 - ii. *Humidity Loads Generated in Non-residential Buildings* – Theresa Weston, Sam Glass
 - iii. *Techniques for Limiting Indoor Dampness and Microbial Growth in Heritage and Special-purpose Buildings* – Steve Cornick.
 - iv. *Water Activity & Mould* – Ed Light

8. Handbook – Hugo Hens

Hugo Hens, Handbook book chair summarized the status of the two draft chapters. Handbook Committee (HBC) has not approved either chapter; the Fundamentals and Applications chapter; HBC requires more information for the TC; Cornick, Harriman, and Hens will attend the HBC meeting on Sunday January 25th to answer questions.¹ There was a suggestion that both chapters appeared close to the envelope chapters in the Handbooks.

- a. Handbook of Applications – the TC Applications will be coming out in the 2015 edition of the Handbook – Applications. This will be the TC's first Handbook chapter. The Handbook will go to print by April 1st, 2015 and be mailed out in June.

¹ HBC voted unanimously to accept both chapters into the Handbooks on Sunday January 25th, 2015.

- b. Handbook of Fundamentals – Comments were requested on the latest draft by Oct. 31st, 2014. No substantive comments were received. We are still missing North American data on interior moisture, the current bias is towards Europe and heating climates. The draft is ready to be turned into Handbook – Fundamentals languages and format. Lew Harriman will put the draft chapter into the current Handbook format for comment by March 15th. Comments are due June 1st. A draft will be circulated to TCs 4.1, 4.4, 8.10 and 8.12 for comment as well. The intent is to vote out the chapter in Atlanta. A chapter revision schedule is attached to the minutes.

9. Program – Steve Cornick for Ray Patenaude (Program Chair)

- a. Chicago: There were no TC 1,12 sponsored programs in Chicago.
- b. Atlanta (June 2015):
 - i. Seminar on tools and techniques for assessing dampness in buildings. Steve Cornick will chair this session and will be assisted by Ed Light and Lew Harriman.
 - ii. None of your Damp Business – a forum on establishing a dampness protocol for buildings to be chaired by George Dubose.
- c. Orlando (January 2015):
 - i. A forum on building physics and moisture management – a collaboration between Ray Patenaude and Richard Rooley of TC 1.7.
 - ii. Moisture management guidance from ASHRAE. A program on the applications and fundamentals chapter. Lew Harriman, Hugo Hens, and Norm Nelson to collaborate on this.
 - iii. Program on managing construction moisture to be chaired by Ed Light
- d. St. Louis (June 2016): Not discussed.

Important dates:

Atlanta Meeting - June 27 – July 1, 2015:

Conference Paper accept/reject notifications sent January 30, 2015/Seminar, Forum and Workshop Proposals Due on February 9, 2015 /Revised Conference Papers/Final Technical Papers due February 13, 2015 /Conference and Technical Paper Final Accept/Reject Notifications sent Feb. 27, 2015/Seminar, Forum, Workshop Accept/Reject Notifications sent March 23, 2015/All PPTs Due Online by June 5, 2015/ Final Day for Commercialism Revision Upload prior to on-site by June 17, 2015 /Speaker's Lounge Opens on June 27, 2015 /Conference Website: <http://www.ashrae.org/atlanta/>

Orlando Meeting - January 23 - 27, 2016:

Conference Paper abstracts due on March 23, 2015 /Conference Paper Abstract Accept/Reject Notifications sent April 6, 2015 /Technical papers due by April 20, 2015 /Website Opens for Seminar, Forum and Workshop Proposals on June 4, 2015/Final Conference Papers Submitted for Review by July 6, 2015/Conference Paper accept/reject notifications sent August 3, 2015 /Seminar, Forum and Workshop Proposals Due on August 10, 2015/Revised Conference Papers/Final Technical Papers Due on August 21, 2015 /Conference and Technical Paper Final Accept/Reject Notifications sent August 28, 2015 /Seminar, Forum, Workshop Accept/Reject Notifications sent September 11, 2015/Conference Website: <http://www.ashrae.org/orlando/>

Program Focus at Orlando Winter Conference

Track 1: Systems and Equipment /Track 2: Fundamentals and Applications/Track 3: Design Build /Track 4: International Design /Track 5: Standards, Guidelines and Codes /Track 6: Cutting-Edge Technologies /Track 7: The Great Debate /Track 8: Modern Residential Systems

10. Special Publication “Techniques for Minimizing Construction Moisture Problems.” Paul Shipp, Ed Light, and Lew Harriman. Ed Light filled out the forms for a new special publication. Cornick will post the forms on the TC website and asked to the TC for comments on the Title, Purpose, and Scope. Members were invited to comment by March 1st.

11. Old Business – Steve Cornick

“Developing a prototype for measuring water activity” Ed Light discussed this as a possible RTAR / presentation. Steve Cornick agreed to help develop the RTAR.

12. New Business – Steve Cornick

No new business to report.

13. Mini-Presentation – Task group report on ASHRAE Standard Guide on Assessment of Mold in Schools – Lan Chi Nguyen

BSR/IESO/ASHRAE Standard 3210-20xx Draft Standard Guide for the Assessment of Education Facilities for Moisture Affected Areas and Fungal Contamination The TC was only recently made aware of the this new standard and many of the members expressed concern about the process by which this situation came about, the lack of consultation with various ASHRAE Committees within which the scope of the proposed Standard falls, and content and structure of the document. To this end the Chair asked one of the TC members, Lan Chi, to form a small task group (TG) to review the standard and report back to the committee the findings of the task group and to make appropriate recommendations. The .ppt is attached to the minutes. Based on the TG's report and recommendations and after a lengthy discussion at the main committee meeting the TC passed the following motion:

ASHRAE TC 1.12 recommends that the Board of Directors postpone co-sponsorship of the proposed IESO ANSI Standard Guide for evaluation of mold and moisture in schools to allow both ASHRAE technical committees and school district administrators and facility managers to contribute to both the structure and content of the standard, based on our extensive experience with this subject.

The motion passed with a vote of 9 for, 0 against, and 1 abstention (for lack of familiarity with issue):

14. Adjourn – Theresa Weston moved to adjourn the meeting at 15:00 hrs.

Next meeting: Atlanta GA, Saturday June 27, 2015 - 13:00 – 15:30

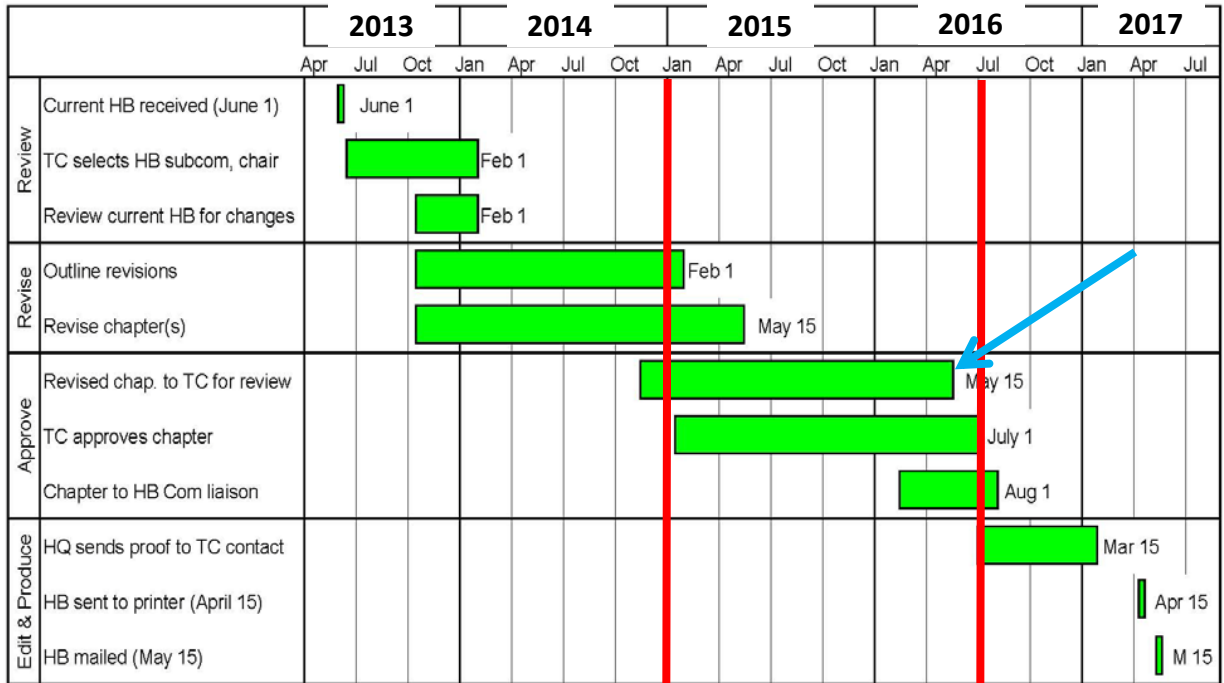
Action items as of January 2015

WHO	ITEM	DEADLINE
Cornick	Post minutes to Google Site and ask for comments by Feb 15, 2015; letter ballot	May 1 st , 2015
Cornick	Post 1718-WS to Google Site and ask for comments by Feb 15, 2015, letter ballot	May 1 st 2015
Cornick	Post Pipe insulation RTAR to Google Site and ask for comments by Feb 15, 2015, letter ballot	May 1 st 2015
Cornick	Post TPS for construction moisture special pub to Google Site and ask for comments by March 1st, 2015, letter ballot	May 1 st 2015
Cornick	Submit – Seminar or tools and techniques for assessing dampness in buildings.	Feb 9 th , 2015
Harriman	Distribute Handbook draft in Word document and ASHRAE form for committee to review	June 2015

Minutes prepared by C. Cronin & S. Cornick

Unapproved

2017 Handbook Revision Schedule



ASHRAE Damp Building MTG - Update 1-22-15

Multidisciplinary Task Group Proposed by TC 1.12 - Moisture Management in Buildings

Task Group Progress as of 1-22-15

Based on guidance received from the TAC Chair at the ASHRAE annual meeting in June 2014 in Seattle, the Chair of this Task Group, Lew Harriman, recruited a group of six (6) MTG members, including experts from ASHRAE TC's concerned with this issue, and also members with direct experience of HVAC design, building occupants's difficulties, multi-unit building management, public health investigation and public health epidemiology. Nominated members are described on the attached pages, which also summarize the original MTG tasking and our approach to these tasks.

On Tuesday, January 20th, the MTG held our kickoff meeting as a one-hour telephone conference. All members were in attendance. During the meeting, we:

- Reviewed the MTG tasking and the planned approach
- Introduced all members to each other, including our backgrounds, past and current activities in connection with the MTG issues, and our current employers and work focus.
- Discussed questions, items of concern, and suggestions for issues and ideas to include in our deliberations.

Points raised by members during our brief introductory discussion were many, including:

- a. Members commented favorably on the useful diversity of the group; a mixture of experienced professionals who deal with building investigations every day, those who deal with occupant and public health perspectives, those who must deal with the realities of multi-unit, global building management and more than one who is well-familiar with peer-reviewed literature on problems in damp buildings.
- b. One member noted that his participation in the 13-year process of developing ASHRAE Std 160 provides useful experience, limited optimism and cautions for the development of a damp building definition.
- c. The peer-reviewed literature is of very limited use in quantifying the relationship between dampness and health effects. The evidence is overwhelming that there is a relationship. Yet quantitative measurements are few and these are poorly correlated with microbial growth, occupant exposure and health outcomes.
- d. The published literature provides a multitude of damp building definitions (32 by the count of one member's recent paper for Indoor Air 2014), none of which, unfortunately, is reliably quantitative.
- e. Several members share the suspicion that any damp building definition will be a multifactorial, population-dependent definition; eg: "This measurement, plus that measurement, plus this other factor, plus this other qualitative evaluation in THIS situation, but not a different situation... equals a damp building or a damp space that may prove to be a health problem...for some people... and probably not for others."
- f. Based on consultants' and investigators' experiences, it may be true that the best we can achieve will be a definition and protocol of use to professionals, but not to owners and occupants, most of whom simply tune-out when they encounter the complex reality of damp building problems.

The next meeting (conference call) is planned for February 24th. The Chair will propose an agenda based on the input received from members at this initial conference, and on input received during the ASHRAE conferences in Chicago.

Respectfully submitted by:
Lew Harriman, FASHRAE
MTG Chair

ASHRAE Damp Building MTG - Update 1-22-15

Multidisciplinary Task Group Proposed by TC 1.12 - Moisture Management in Buildings

Committee Members

Chair

Lew Harriman, FASHRAE - Director of Research & Consulting
Mason-Grant
Portsmouth, NH 03801 USA
LewHarriman@MasonGrant.com
(603) 431-0635

1. Representing the perspective of the ASHRAE Environmental Health Committee

Mark J. Mendell, PhD, Epidemiologist
Indoor Air Quality Section / EHLB / DEODC
California Department of Public Health
Mark.Mendell@cdph.ca.gov
510-620-2861

2. Representing the perspective of ASHRAE TC 9.6 - Healthcare Facilities

Rick Peters, PE - President
TBS Engineering
7302 Pearl St.
Bainbridge Island, WA 98110
rp@tbs-engineering.com
206-842-0143

3. Representing the perspective of ASHRAE TC 1.12 - Moisture Management in Buildings

George DuBose, P.E. - President
Liberty Building Diagnostics Group
3700 Dohnavur Drive
Zellwood, Florida 32798
g.dubose@libertybuilding.com
407-703-1300

4. Representing the perspectives of occupants who have experienced building-related health effects

Carl Grimes, IEP - President
Healthy Habitats LLC
1811 S Quebec Way #99
Denver, CO 80231
grimes@habitats.com
303-671-9653

5. Representing the perspectives of owners/operators who regularly assess moisture-related problems

Rick Frey, P.E. - Senior Director | Engineering Support - Architecture & Construction
Hilton Worldwide
755 Crossover Lane
Memphis, TN 38117
Rick.Frey@Hilton.com
720.468.3143

6. Representing the perspective of members of NACCHO.org

The National Association of County and City Health Officials
(Public health officials who regularly inspect and assess reported moisture-related health problems in buildings)
Robert Maglievaz, MSPH, RS CIH - Environmental Specialist III
Florida Department of Health in Volusia County
121 W. Rich Ave
DeLand, Florida 32720
Robert.Maglievaz@flhealth.gov

ASHRAE Damp Building MTG - Update 1-22-15

Multidisciplinary Task Group Proposed by TC 1.12 - Moisture Management in Buildings

Motion Approved by TC 1.12 on Saturday, January 18th, 2014

Establish a multidisciplinary task group reporting to the Technical Activities Committee to implement the recommendation of paragraph 3.c. of the ASHRAE Board of Director's February 2013 Position Document titled: *Limiting Indoor Mold and Dampness in Buildings*.

Background

In February 2013, the Board of Directors reaffirmed the position of the Society with respect to limiting indoor mold and dampness in buildings. That document contained four recommendations. The 3rd recommendation (paragraph 3.c) is that:

"ASHRAE should establish 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. Both the professions and the public need to know when a building is "dry enough" to reduce dampness-related health risks."

The scope of ASHRAE TC 1.12's activities includes: "... the interaction between the weather, the building envelope, its systems and its occupants which either lead to moisture accumulation or which prevent it. The committee performs cross-cutting research, and collects and distributes information to help the public and the professions avoid problems associated with excessive moisture. These efforts are coordinated with other technical committees, industries and professions which are responsible for individual systems, building components and public health and safety."

Consistent with the responsibilities inherent in our scope, TC 1.12 proposes to implement the recommendation of paragraph 3.c of the 2013 mold position document, in a manner consistent with the direction established by the BOD in that document.

Project Plan

ASHRAE TC 1.12 will nominate the Chair and no more than six (6) voting members for a task group to develop a draft definition of a "damp building," along with a protocol to assess buildings in light of that definition. The task group will also propose research project(s) to field-test both the definition and the protocol with respect to its relevance to the durability of materials and systems, in addition to the needs of health professional for a quantitative, repeatable and economically practical tool for measuring occupant's exposure to building dampness.

Application of this definition and protocol to public health regulation is not part of this effort. We recommend that any application to public health regulation remain the province of cognizant public health authorities rather than ASHRAE. The Board's guidance for any such protocol is outlined in further detail in the position document, which is attached to this motion for reference.

We recommend that membership on this committee be balanced in accordance with applicable ASHRAE M.O.P's. To achieve balance, we recommend that the Chair nominate members after consultation with ASHRAE TC 1.12, the ASHRAE Environmental Health Committee, cognizant health authorities, occupant representatives, related professional societies, building owners, facility managers and operating engineers.

ASHRAE Damp Building MTG - Update 1-22-15

Multidisciplinary Task Group Proposed by TC 1.12 - Moisture Management in Buildings

The Task Group Assignment

The following text is extracted from the 16-page mold position document. This information provides additional guidance from the Board of Directors with respect to recommendation three (paragraph 3.c) – Damp building definition and assessment protocol:

DAMP BUILDING DEFINITION AND THE NEED FOR ITS IMPROVEMENT

For many years, public health researchers have observed that health problems are more common in “damp buildings” (IOM 2004, WHO 2005, Cox-Ganser 2005, etc.). Further, for decades the mechanisms of mold growth in buildings have been clear, and computerized mold growth models have been well correlated with laboratory experimental results (ASHRAE 2009a, Viitanen 1997, Rowan et al. 1999, Pasanen et al. 2000, and Sedlbauer et al. 2001).

Recently, public health researchers (WHO 2009; Mendell et al. 2011) have noted that negative health effects among occupants have been more commonly reported when a building exhibits evidence of excessive moisture, such as:

- a. Visual evidence of water damage or water stains
- b. Visible mold growth
- c. Moldy or earthy odors

While these research results are helpful, they are not sufficient. They provide no actionable definition of a “damp building.” And they provide no quantitative definition of how many water stains, how much visible mold growth, or what strength of musty odors are sufficient to suggest that action is required to avoid negative health effects. Many buildings have one or more of these problems, in small amounts, in different parts of the building, without any recognized negative health effects.

It is only by aggregating many buildings that health studies have documented the consistent, significant associations of these problems with respiratory and allergic effects. However, the studies have not identified threshold amounts of one or more of these problems that merit action.

To be useful for those who intend to prevent problems in buildings and investigate them when they do occur, a definition of a damp building likely to produce negative health effects needs to include:

- a. Discreet threshold levels of concern for the moisture content of building materials that have been frequently observed to be either sensitive to mold growth and/or that serve as reservoirs of moisture that transfers to nearby sensitive materials.
- b. A material moisture content measurement technology, sampling procedure, and inspection methodology that is sufficient (in the real world of large buildings and complex building assemblies) to repeatably and economically identify at least three levels of health concern for the general population: low, medium, and high probability of negative health effects among a randomly-selected population.
- c. Health concern adjustment factors for important segments of the general population that are known to have elevated sensitivity to health effects of damp buildings including (at least) infants and the elderly, asthmatics, and individuals with compromised immune systems.
- d. An empirical foundation for the definition and protocol that includes a correlation of the protocol results with observed negative health effects in real-world buildings and real world populations.
- e. Documented tests using a random selection of building owners and building investigators that demonstrate that the protocol is relevant, repeatable, and economical enough for general use.

ASHRAE alone does not have the expertise to lead such a research effort, but our technical and standing committees can and must be a part of the research to help ensure that the resulting protocol is **relevant, repeatable, and economical enough for everyday use by both building investigators and building owners**. (Emphasis added)

BSR/IESO/ASHRAE Standard 3210-20xx
**Draft Standard Guide for the
Assessment of Education
Facilities for Moisture Affected
Areas and Fungal
Contamination**

High Level Review for

Presentation to TC1.12 – Chicago, January 24, 2015

BACKGROUND

- Standard guide prepared by the Indoor Environmental Standards Organization's (IESO's) Educational Facility Standard Committee.
- IESO is:
 - wholly owned subsidiary of IAQA, now a subsidiary of ASHRAE.
 - an accredited standards development organization by the American National Standards Institute (ANSI).



Indoor Environmental Standards Organization

- Document out for comments from November, 2014 to early January 2015.

BACKGROUND

- Some concerns expressed about the document brought to the attention of TC1.12.
- Task Group (TG) of 5+ members to:
 - Do a high level review of the document; and
 - Report to TC with comments and recommendations.
- With all due respect to the IESO Committee members: the intent is to be helpful and to clarify some thinking behind the document.
- TC has no “veto” power!



TECHNICAL ISSUES

- Too much sampling for mold - before and after rehabilitation vs. proper visual investigation by IAQ qualified professionals of building envelope and cavities, HVAC system, etc., to characterize potential exposures.
- Sampling and characterization of moisture is inadequately written and explained.
- Timeliness of references – More recent references.
- Fungal contamination section is minimally written for IAQ professionals.
- Concerns about the lack of references on risk (considering that it is for a sensitive population (school children)).
- Mold evaluation process is inadequate to facilitate a thorough mold investigation.

STRUCTURAL

- Intended Readership
 - At odds with the reality of how mold is being addressed in schools
 - Governance and operation;
 - In-house staff vs. consultants;
 - Duration of the assessment.
- Organization and Clarity of Document
 - Is the document a standard guide or a Standard of Care (Code language)?
 - Document is too long to be useful as a guide.
 - Document is too detailed in certain aspects.
 - Document is too broad of scope (mold in schools) to be addressed in one standard guide.
 - Document needs to be technically edited.

PROCESS

- What is the intended relationship between IESO/IAQA and ASHRAE in term of document review/publication?
- How does this document fit in the ASHRAE standard publication process including comments/reviews by cognizant TCs?
- How does this document fit in with other ASHRAE documents on mold and moisture (e.g., the ASHRAE Building Dampness Position Statement) as well as documents from other cognizant authorities?



CONCLUSIONS

- Document should be subjected to further review and comments from appropriate ASHRAE TC's.
 - Major issues to be addressed:
 - Technical
 - Structural
 - Process
 - TC 1.12 should be asked to be a part of the review process. Committee members' expertise and knowledge would be useful for the completion of this document.
- Unapproved