

Minutes

GBI Consensus Body Meeting #19

BSR/GBI 01---201X

Webinar

Friday, July 8th, 2016 11:00 AM ET to 3:00 PM ET

Attendance:

No	Name	Organization(s)	7-9-2016				
1	Gregg Bergmiller	S/L/A/M Collaborative	X				
2	Paul Bertram	Kingspan Insulated Panels, Inc.	X				
3	Allan Bilka	International Code Council	X				
4	Jeff Bradley	American Wood Council	X				
5	William Carroll	American Chemistry Council	X(by Proxy)				
6	Chris Dixon	NBBJ (rep. self)	X				
7	Nicole Dovel--- Moore	CTA Architects Engineers	Absent				
8	Amber Dzikowicz	NSF International	Absent				
9	David Eldridge	Grumman/Butkus Assoc.	X				
10	William Freeman	Resilient Floor Covering Institute	X				
11	Susan Gitlin	U.S. EPA	X				
12	Don Horn	GSA	X (by Proxy)				
13	Josh Jacobs	UL Environment	X				
14	Greg Johnson	Johnson Consulting Services, Greenscape Alliance	X				
15	Karen Joslin		Absent				
16	Malee Kaolawanich	NIH (rep. self)	X				
17	Rachel Minnery	AIA	Absent				
18	Charles Kibert	University of Florida	Absent				
19	Gary Keclik	Keclik Associates	X				
20	Jennifer Kowalonek	Alfred Benesch & Company	Absent				

21	Thomas Pape	Alliance for Water Efficiency	X				
22	Tien Peng	National Ready Mix Concrete Assn.	Absent				
23	Jane Rohde	JSR Assoc. Inc., Vinyl Institute	X (by Proxy)				
24	Gord Shymko	G.F. Shymko & Associates, Inc.	X(by Proxy)				
25	Kent Sovocool	Southern Nevada Water Authority	X				
26	Steve Strawn	JELD-WEN	Absent				
27	George Thompson	Chemical Compliance Systems, Inc.	X				
28	Angela Tin	American Lung Assn.	X				
29	Douglas Tucker	Misubishi Electric Cooling & Heating	X				
30	Erika Winters Downey	American Institute of Steel Construction	X				
Voting Alternates							
	Abby Brokaw	American Lung Assn. (voting Alternate for Angela Tin)	X				
	Paul Karrer	AIA (Alternate for Rachel Minnery)					
	Bill Hoffman	UL Environment (Voting Alternate for Josh Jacobs)					
	Lance Davis	GSA (Voting Alternate for Don Horn)					
	D'Lane Wisner	D'Lane Wisner (Voting Alternate for William Carroll)					
	John Cross	American Institute of Steel Construction (Voting Alternate for Erika Winters---Downey)					
TOTALS			22/30				
Visitors							

	Martha VanGeem	Self (Principal Engineer)	X				
	Gary Madaras	Making Hospitals Quiet	X				
Staff/Consultants							
	Michael Lehman	Chair	X				
	Vicki Worden	Executive Director, GBI					
	Emily Randolph	Secretariat Asst., GBI	X				
	Micah Thomas	Staff, GBI					
	Maria Woodbury	Secretariat, GBI	X				
	Chelsea Amaio	Staff, GBI	X				
	Kim Goldsworthy	Roberts---Rules Consulting	X				

Friday, July 8, 2016

Welcome & Roll Call

Secretariat, Maria Woodbury welcomed participants and conducted roll call to establish quorum. The anti-trust statement was reviewed and participants were requested to comply with it fully.

Woodbury reviewed the participation options, stating that while observers are welcome to participate in the discussion, only Consensus Body Members are able to vote. Participants were reminded to raise hands should they desire to add something new to the discussion and staff would then call on them in order.

At this meeting, no members voted using a voting alternate. There were 4 members voting via proxy (George Thompson for William Carroll, David Eldridge for Gord Shymko, Bill Freeman for Jane Rohde, and Susan Gitlin for Don Horn).

Administrative Procedures and Related Matters

Woodbury informed participants that this meeting will follow the new format instituted during the previous meeting where comments will be grouped according to section. Participants were reminded to keep discussion germane to comment under review.

Woodbury updated participants on the status of the Code of Conduct, stating that the GBI Board of Directors is giving feedback on the working draft. Once the draft has been revised in response to the feedback, it will go to the GBI Executive Committee for approval. Once the Code of Conduct has been approved it will be distributed to participants on GBI calls. In the meantime, Woodbury asked that participants try to keep the tone of meetings positive and professional.

Secretariat Emily Randolph reported on the progress of the Consensus Body through the comments, stating that as of the last CB meeting, 150 comments remained to review Randolph stated that there are an estimated 18 hours of CB meetings remaining if progress continues at the current rate. Randolph informed the Consensus Body that the Energy Subcommittee has completed review of their comments. The final Energy Comments are slated to appear on the Meeting #20 Agenda.

Chair's Opening Comments

Chair Mike Lehman officially welcomed Thomas Pape representing the Alliance for Water Efficiency to the Consensus Body. Lehman reiterated the desire to keep the discussion related to the specific public comment at hand. Lehman stressed that any new topics for discussion should be presented during the time for New Business.

The agenda was reviewed and no changes were requested by the Consensus Body.

MOTION: A motion was made and seconded to approve the minutes from the previous Consensus Body Meeting on June 21st and 22nd, 2016. The motion carried with none opposed and 3 abstained.

None Opposed

Abstained: Jeff Bradley, Josh Jacobs, Thomas Pape

Woodbury informed participants that the call was being recorded for the purpose of minute taking and no objection was raised.

Discussion of public comments

Subcommittee Reports:

Indoor Environmental Quality

Presented by IEQ Vice Chair Chris Dixon

- **13 – 19. Substantive. 11.2.1.3**
 - **Comment:** Maximum 8 points
Points are awarded when 90% by area of products in the following categories comply with VOC emissions criteria:
 - **Reason:** Should specify the minimum percent area required by product category to earn VOC emission credits. It could range from 70% to 90%. Otherwise, it must be assumed that the requirement is 100% of the area, which is too aggressive.
 - **Proposed Response:** Accept
 - **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the recommendation of the Subcommittee to accept comment 13 – 19.

VOTE: The motion carried with 20 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **13 – 22. Substantive. 11.2.1.3**
 - **Comment:** VOC emissions shall be determined by a third-party laboratory that is accredited to ISO/IEC 17025 with the specified test method listed in the scope of

its accreditation. VOC emissions results are determined by California Department of Public Health...

- **Reason:** VOC emissions must be determined by third--party laboratories that are accredited under the internationally accepted quality standard ISO/IEC 17025. The method must be listed in the laboratory's scope of accreditation. The methods are relatively complex and QA/QC requirements must be met.
- **Proposed Response:** Accept
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the recommendation of the Subcommittee to accept the comment 13 – 22.

VOTE: The motion carried with 20 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **13 – 23. Substantive. 11.2.1.4.**

- **Comment:** ~~Freestanding furniture consisting of desking, case goods, Furniture, casework, cabinets, workstations, and seating shall comply with specified prescribed limits of VOC emissions criteria and/or be certified.~~
- **Reason:** The most widely accepted furniture emissions standard is consensus standard ANSI/BIFMA M7.1. It is the most highly developed VOC emission standard globally. The standard contains precise procedures for defining surface areas of free standing office furniture and standardized office models for assessing emissions. ANSI/BIFMA M7.1 does not include procedures or models for built in cabinetry. Casework and cabinets should be removed from this credit at this time until consensus standards are developed.

MOTION: The motion was made and seconded to accept the recommendation to reject comment 13 – 23 using the proposed reason.

VOTE: The motion carried with 17 in favor, 1 opposed, and 3 abstained.

Opposed: Chris Dixon

Abstained: Susan Gitlin, Don Horn, Jeff Bradley

- **13 – 24. Substantive. Table 11.2.1.4.**

- **Comment:** (including ~~desking , case goods~~ casework, cabinetry, workstations and seating)
- **Reason:** The most widely accepted furniture emissions standard is consensus standard ANSI/BIFMA M7.1. It is the most highly developed VOC emission standard globally. The standard contains precise procedures for defining surface areas of free standing office furniture and standardized office models for assessing emissions. ANSI/BIFMA M7.1 does not include procedures or models for built in cabinetry. Casework and cabinets should be removed from this credit at this time until consensus standards are developed.
- **Proposed Response:** Reject 13 – 23 and 13 – 24. BIFMA M71 has enough detailed information within where testing laboratories and certifications are using it to determine cabinet emissions.
- **Subcommittee Vote:** 4 in favor, 1 abstained, 1 opposed

MOTION: The motion was made and seconded to accept the subcommittee's recommendation to reject the comment 13 – 24 using the proposed response.

Discussion took place on the motion:

- There were questions raised around the validity of the commenter's thoughts. Some speakers felt that the commenter potentially made a good point.
- One speaker stated that the commenter is wrong according to a BIFMA expert on the line during the Subcommittee call.

VOTE: the motion carried with 17 in favor, 1 opposed, and 3 abstained.

Opposed: Chris Dixon

Abstained: Susan Gitlin, Don Horn, and Jeff Bradley.

- **13 – 25. Substantive. 11.2.1.4.**
 - **Comment:** 3 points Points are awarded when 90% by cost of installed furniture products comply with VOC emissions criteria
 - **Reason:** Should specify the minimum amount of installed furniture that is required to earn VOC emission credits. Cost basis is most convenient for furniture. It could range from 70% to 90%. Otherwise, it must be assumed that the requirement is 100% of the cost, which is too aggressive. There is an opportunity here to provide a points hierarchy similar to paint and coatings, i.e., 1 point if x% by cost meets requirements of ANSI/BFMA X7.1 and 2 points if y% meets requirements of ANSI/BIFMA e3, Section 7.6.2. This will encourage compliance with more protective individual VOC emission requirements.
 - **Proposed Response:** Accept.
 - **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the Subcommittee's recommendation to accept as modified using the proposed reason.

Discussion took place on the motion:

- The question was raised regarding how this comment is different from the first comment the CB voted on. It was clarified that the first comment focused on the definition/semantics between desk and work space, while this comment is looking at what percentage the project would need to achieve to earn points.
- It was stated that there are now different levels for achieving points. The point levels are based on compliance at different levels of off-gassing for 7.6.1.
- The question was raised whether achievement should be fixed at 90% or another number. It was stated that 90% aligns with other product types, 70% lines up with a lower rate and includes all wood furniture, and 100% is the easiest and most achievable.
- One speaker clarified that the tiered approach is addressed in the next comment (#13 – 26).
- One speaker felt that the current wording is confusing.

Point of Order: A point of order was raised that the conversation needs to focus on comment 13-25.

MOTION: The motion was made and seconded to withdraw the motion on 13 – 25 to first discuss 13-26. No Objections were raised and the motion was withdrawn.

- **13 – 26. Substantive. Table 11.2.1.4**
 - **Comment:** To determine acceptability of the emission results, VOC product emission concentrations are estimated per ~~testing~~ procedures from ANSI/BIFMA

X7.1 and/or ANSI/BIFMA e3 Section ~~7.6.2, and 7.6.3~~. The maximum allowable concentrations are not exceeded per each sections requirements.

- **Reason:** The basic requirements and correct reference for VOC emissions of TVOC, formaldehyde and total aldehydes from furniture is ANSI/BIFMA X7.1. ANSI/BIFMA e3 Section 7.6.1 simply adopts the X7.1 requirements. E3 Section 7.6.3 rewards furniture for lower formaldehyde emissions. To qualify, the furniture must meet Section 7.6.2 for individual VOCs including formaldehyde. For simplicity, it is recommended that Section 7.6.3 be dropped from this credit.
- **Proposed Response:** Accept as modified using the draft below. The table below maintains the scope and flexibility of the criteria while maintaining technical integrity and intent.

Graduated Point Scale:

Maximum = 3 points

~~3~~1 points is awarded when 100% by cost of installed furniture products comply with ANSI/BIFMA e3 Section 7.6.1

1 point is awarded when 90% by cost of installed furniture products comply with ANSI/BIFMA e3 Section 7.6.2

1 Point is awarded when 70% by cost of installed furniture products comply with ANSI/BIFMA e3 Section 7.6.3

- **Subcommittee Vote:** 3 in favor, 3 abstained

MOTION: The motion was made and seconded to accept the response to 13 – 26.

Discussion took place on the motion:

- It was stated that the requirements for product emissions are more in line the 90-100%. 7.6.1 is a much lower threshold which has been out for at least ten years, so all furniture must meet this threshold.
- Concern was raised that it needs to be clear that the points accumulate.
- It was noted that other sections state “Maximum =”. The stylistic change was made to include “Maximum = ” with no objection.

VOTE: The motion carried with 17 in favor, none opposed, and 1 abstained.

None Opposed

Abstained: Paul Bertram

- **Comment 13 – 25.**

MOTION: The motion was made and seconded to accept subcommittee’s proposed response.

Discussion took place on the motion:

- Concern was raised about the commenter’s ability to interpret the CB response based on another comment. Staff clarified that the same commenter submitted 13--15 and 13--26 so they will be able to see both responses.

VOTE: The motion carried with 17 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **13 – 27. Substantive. Table 11.2.1.4**

- **Comment:** VOC emissions shall be determined by a third-party laboratory that is accredited to ISO/IEC 17025 with the specified test method listed in the scope of its accreditation. VOC emissions-results are determined by ANSI/BIFMA M7.1...
- **Reason:** VOC emissions must be determined by third-party laboratories that are accredited under the internationally accepted quality standard ISO/IEC 17025. The method must be listed in the laboratory's scope of accreditation. The methods are relatively complex and QA/QC requirements must be met.
- **Proposed Response:** Accept
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the subcommittee's proposed response.

VOTE: The motion carried with 18 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **23 – 4. Editorial. 11.2.2.2 Path B**

- **Comment:** Available information indicates that results from sampling with SUMMA canisters and thermal desorption tubes (TDTs) do not produce the same results, even when analyzed using the same analytical method.
- **Reason:** Two different sampling techniques. Probably best to choose one or the other for uniformity or have two databases, one for each method. SUMMA canisters are more likely to collect VOC from the very volatile range while TDTs are more likely to collect VOCs from the lower end of the semi-volatile range. (I like that you bounded the VOC range with C5--C15). [p. 89]
- **Proposed Response:** Reject based on action taken with 53 – 2.
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the proposed response: Reject. T0--15 is a different sampling methodology that is not directly comparable to the solid sorbent thermal desorption methods currently listed.

Discussion took place on the motion:

- One participant spoke against the motion, stating that the commenter is correct and the CB should pick thermal absorption.
- The question was raised whether comment 53 – 2 would need to be reconsidered if this comment is voted down. It was clarified the 53 – 2 applies to Path A while 23 – 4 applies to Path B, which are completely separate. It was stated that T0--15 only appears in one path and is therefore the speaker felt the proposed response is inadequate.

AMENDMENT: The amendment was made and seconded to remove proposed reason and change it to read, "Both methods of collection are used for this method of air test sampling and the committee is not trying to restrict the method of collection.

There were no Objections.

VOTE: The amended motion carried with 14 in favor, 1 opposed, and 6 abstained.

Opposed: Josh Jacobs

Abstained: Susan Gitlin, Don Horn, Gregg Bergmiller, Malee Kaolwanich, Erika Winters--Downey, and Kent Sovocool

- **23 – 5. Editorial. 11.2.2.2 Path B**

- **Comment:** Collecting TVOC data provides good information but without reporting the information it seems an exercise in futility. I suggest having a database in which TVOC results are compiled.
- **Reason:** The suggested database could be "anonymous" which may give groups incentive to add their data. Just not sure why TVOC data would be collected if it is reviewed or evaluated by no one. [p.89]
- **Proposed Response:** Reject. It is not within the Standard's scope to create data bases.
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept proposed response.

Discussion took place on the motion:

- The opinion was expressed that while a database isn't possible, there should be some way (i.e. a forum) to publish findings. The speaker clarified that they were against the motion.
- One speaker stated that how one interprets results isn't clear.
- It was pointed out that the commenter suggests a database but the member questions if there other ways to address the commenter's concern.

Point of Order: A point of order was raised to keep the discussion focused on responding to comment regarding a database, not changing the credit in the Standard.

VOTE: The motion carried with 14 in favor, 6 opposed, and 1 abstained.

Opposed: Susan Gitlin, Don Horn, Josh Jacobs Kent Sovocool, Malee Kaolawanich, and Thomas Pape

Abstained: Gregg Bergmiller

- **24 – 26. Substantive. 11.2.4**

- **Comment:** ~~“ASHRAE Guideline 12—2000: Minimizing the Risk of Legionellosis Associated with Building Water Systems”~~ ANSI / ASHRAE Standard 188- . . . 2015 Legionellosis: Risk Management for Building Water Systems
- **Reason:** Consider shifting to the current standard which can be incorporated into code rather than a guideline which is often considered supplementary and voluntary.
- **Proposed Response:** Accept
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the comment.

VOTE: The motion carried with 21 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **52 – 63. Substantive. 11.2.4.1**

- **Comment:** Replace the citations of ASHRAE Guideline 12---2000 with “ANSI/ASHRAE Standard 188---2015, Legionellosis: Risk Management for Building Water Systems”
- **Reason:** This is the newest standard from ASHRAE on the topic.
- **Proposed Response:** Accept
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the comment.

VOTE: The motion carried with 21 in favor, none opposed, and none abstained.

None Opposed
None Abstained

- **52 – 64. Substantive. 11.2.4.1**

- **Comment:** Revise as follows: 11.2.4 Water Safety and Legionellosis Mitigation. 11.2.4.1 The building water system conforms with ASHRAE 188--2015, Legionellosis: Risk Management for Building Water Systems”
Increase number of points from 3 to 7
- **Reason:** This is the newest standard from ASHRAE on the topic.
We recommend increasing the score associated with development of water safety plans in buildings to spur greater consideration of water quality as gains are sought in efficiency.
We also recommend that the point value be more consistent with that for ensuring indoor air quality in 11.1.1 – which is 9 points.
- **Proposed Response:** Accept as modified. Accept the language. Points will be considered at a later time.
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the recommendation, excluding the language about points being considered at a later time.

Discussion took place on the motion:

- There was a suggestion made to modify the Section title.
- Concern was raised that changing the title is beyond the scope of the comment, clarification that this is included in the comment. It was clarified the comment suggests modification to the title and so changing the title is within the scope of the comment.

AMENDMENT: The amendment was made and seconded to modify the title to “Legionellosis Mitigation in the Building Water Systems”.

No Objections were raised on the amendment.

VOTE: The motion carried with 20 in favor, none opposed, and none abstained.

None Opposed
None Abstained

- **24 – 21. General. 11.2.5.1**

- **Comment:** Does failure to comply with all bulleted point negate a user’s ability to earn these points?
- **Reason:** This criterion only earns one point and the manner in which it is written suggests that a building must have all four of these conditions met. The first 3 conditions seem reasonable for almost any project however the 4th condition (especially with older existing buildings) seems excessive and potentially unachievable.
- **Proposed Response:** Reject as non--persuasive, note that this standard applies to new construction and major renovations not existing buildings. To earn the one point you must comply with all four parts of the criterion.
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept subcommittee’s proposed response.

VOTE: The motion carried with 20 in favor, none opposed, and none abstained.

None Opposed
None Abstained

- **57 – 8. Editorial. 11.5.8**

- **Comment:** 11.5.8.1 With the exception of sprinklers and ~~radiant heating~~ hydronic systems there is no piping running above quiet areas and learning spaces.
- **Reason:** Radiant cooling systems should also be permitted in quiet areas and learning spaces. Hydronic is the term used in model codes to identify heating and cooling systems where water is used to transfer heat.
- **Proposed Response:** Accept with Modification. The Committee accepted the proposed changes and added language as follows for clarification: "...no piping running directly above or adjacent to..."
- **Subcommittee Vote:** 7 in favor, 1 abstained

MOTION: The motion was made and seconded to accept Subcommittee's response.

VOTE: the motion carried with 20 in favor, none opposed, and 1 abstained.

None Opposed

Abstained: Kent Sovocool

- **42 – 8. Substantive. 11.5.8**

- **Comment:** 11.5.8.1 With the exception of sprinklers and ~~radiant heating~~ hydronic systems there is no pressure piping running above quiet areas and learning spaces. --- 0.5 point
11.5.8.2 Waste water piping noise is mitigated using ~~cast iron pipe or with~~ acoustic insulation noise attenuating methods above quiet areas and learning spaces, ~~and a water hammer~~ arrester is used— 0.5 point
- **Reason:** The proper term is hydronic system, which could heat or cool the space. There are several approaches to quieting waste water pipe, but water hammer arrestors are not used with waste systems.
- **Proposed Response:** Accept with modification. The committee accepted changing from radiant heating to hydronic. The committee rejects the addition of word pressure. The committee wants both pressure and gravity systems to be addressed. The committee removed 11.5.8.2 from the rating system and .5 points will be added to 11.5.8.1 for a full point credit.
- **Subcommittee Vote:** Note: there were two votes of this comment. 1.) on 11.5.8.1: 5 in favor, 2 abstained. 2.) on 11.5.8.2: 6 in favor, 1 abstained.
- **Note:** The commenter was present on the call and stated that they no longer felt the inclusion of "pressure" to be necessary.

MOTION: The motion was made and seconded to accept the proposed response.

VOTE: The motion carried with 19 in favor, 0 opposed, and 3 abstained.

None Opposed

Abstained: Kent Sovocool, David Eldridge, and Gord Shymko

- **57 – 9. Substantive. 11.5.8**

- **Comment:** ~~11.5.8.2 Waste water piping noise is mitigated using cast iron pipe or with acoustic insulation above quiet areas and learning spaces, and a water hammer arrester is used~~
- **Reason:** Section doesn't make sense. Recommend deletion. Section 11.5.8.1 already states don't run pipe which could generate noise over the specific areas and offers the same points. Also, water hammer arresters are not used on waste water systems, they are for pressure piping.
- **Proposed Response:** Accept.
- **Subcommittee Vote:** 6 in favor, 1 abstained

MOTION: The motion was made and seconded to accept the comment.

VOTE: The motion carried with 19 in favor, none opposed, and 1 abstained.

None Opposed

Abstained: Kent Sovocool

- **15 – 1. Substantive. 11.5.8**

- **Comment:** 11.5.8.1 Pressure Piping --- With the exception of sprinklers and radiant heating systems there is no piping running above quiet areas and learning spaces.
- **Reason:** This proposed change creates a separate section for pressure piping and in conjunction with Public Comment Helms2, clarifies the requirements for pressure and non---pressure.
- **Proposed Response:** Reject. The committee has included all piping in 11.5.8.1 whether it's pressure or gravity.
- **Subcommittee Vote:** 5 in favor, 1 abstained.

MOTION: The motion was made and seconded to accept the subcommittee's recommendation to reject the comment.

VOTE: The motion carried with 20 in favor, none opposed, and 1 abstained.

None Opposed

Abstained: Kent Sovocool

- **15 – 2. Substantive. 11.5.8**

- **Comment:** 11.5.8.2 Sanitary or Storm (DWV) Piping --- Waste water piping noise is mitigated using cast iron pipe or with acoustic insulation above quiet areas and learning spaces, ~~and a water hammer arrester is used~~ With the exception of cast iron, all plastic systems above quiet areas and learning spaces must be installed with acoustic insulation.
- **Reason:** Sound attenuation is an important environmental consideration for building occupants and heavily emphasized in the international building rating systems. Noise generated by mechanical systems can be effectively addressed by pipe insulation. Sound attenuation properties are based on the pipe's density. Because plastic systems are less dense than cast iron, plastic systems installed in quiet areas should be installed with acoustic insulation. This proposed change also creates a separate section for non---pressure piping.

- **Proposed Response:** Reject. The committee feels that there isn't a source or a standard that we can refer to that matches the desired result. The first section applies to all piping.
- **Subcommittee Vote:** 6 in favor, 1 abstained.

MOTION: The motion was made and seconded to accept subcommittee's recommendation to reject the comment.

VOTE: The motion carried with 17 in favor, none opposed, and 4 abstained.

None Opposed

Abstained: Susan Gitlin, Don Horn, Kent Sovocool, and Erika Winters-Downey.

SITE Subcommittee Comments

Presented by the Subcommittee chair, Greg Bergmiller

- **36-11. Substantive. 7.3.2.1**

- **Comment:** Define "adaptive".
- **Reason:** Many invasive species could be considered *adaptive*. It seems like the current text could inadvertently promote invasive species, which seems to contradict other areas of the standard such as 7.5.1.3.2.
- **Proposed Response:** Accept as modified. The committee agrees with the commenter, but rather than defining "adaptive" the committee has chosen to delete it where it appears in the document.
- **Subcommittee Vote:** Unanimously in favor

MOTION: The motion was made and seconded to accept the subcommittee's recommendation.

Discussion took place on the motion:

- There were questions raised regarding if the Standard has a definition for "Site Adaptive". It was clarified that the Site Subcommittee recommends removing the term "Adaptive" from the Standard. The Subcommittee now recommends awarding points based on water-efficient plants based on the regional definition of "Drought-tolerant"

VOTE: The motion carried with 15 in favor, 1 opposed, and 3 abstained.

Opposed: Thomas Pape

Abstained: Greg Johnson, David Eldridge, and Gord Shymko

- **28-1. Substantive. 7.5.1.3.1**

- **Comment:** Minimum of 50% of the vegetated area uses ~~drought tolerant~~ site adapted and non-invasive plants;
- **Points column:** change all references from "drought tolerant" to 'site adapted and non-invasive.'
- **Reason:** For many locations adaptation to wet conditions is more important than drought resistance. "Site adapted" allows placement of the appropriate species regardless of site condition. An invasive plant is automatically site adapted so this is the appropriate place to prohibit invasive plants.
- **Proposed Response:** Reject. Drought-tolerance is a plant attribute that the committee is trying to encourage. A plant may be site-adapted but not necessarily survive in a drought.
- **Subcommittee Vote:** 4 + proxy in favor, 2 opposed, and 1 abstained.

MOTION: The motion was made and seconded to accept the subcommittee's recommendation.

Discussion took place on the motion:

- It was clarified that “adaptive” means a plant is drought tolerant. This is on a fine line for determining what plants are appropriate for certain sites. The speaker was against the motion.
- One participant stated that there is no widely-used definition for “Site-Adaptive”
- A suggestion was made to those with concerns to submit comments during the second public comment period.

VOTE: The motion carried with 13 in favor, 1 opposed, and 5 abstained.

Opposed: Greg Johnson

Abstained: Thomas Pape, Malee Kaolawanich, Jeff Bradley, David Eldridge, and Gord Shymko

- **37 – 1. Substantive. 7.3.4.X**
 - **Comment:** At least 50% of the planned hardscape area (walkways, patios, driveways, etc.) use permeable materials that can include one or more of the following: Clay or concrete paver with pervious joints/openings; Bricks; gravel; vegetative paving systems; mulch; pervious concrete; and/or porous asphalt.
 - **Reason:** Several research studies have identified that permeable hardscapes can mitigate urban heat island (UHI) effect due to their high air void nature (Li 2012, Li 2013, Stempihar 2012, Kevern 2012, Haselbach and Gaither 2008, Kim et al. 2007, Haselbach et al. 2011).

- Due to the high void nature, permeable hardscapes cool faster than conventional pavements; They have a rapid cooling effect via evaporation within the structure's air voids (Cambridge Systematics, 2005; Kevern 2012).
- As a result, researchers have recorded permeable pavements with lower nighttime temperatures compared to other materials with similar or higher albedo (Stempihar 2012, Golden 2006). In addition, not only can permeable pavement systems reduce stored pavement energy, they insulate the ground, which also has an urban heat island mitigating impact (Haselbach and Gaither 2008).
- Recognizing this, even EPA has identified permeable pavements including porous asphalt, as a "Cool Pavement" technology (EPA 2008) for urban heat island mitigation and other agencies and organizations have followed suit (Greenroads, Global Cool Cities Alliance and R20, 2012, Houston Advanced Research Center 2009--- representing Dallas, CTL Group 2012---representing City of Chula Vista, City of Las Vegas 2010).

Li, Hui (2012) Evaluation of Cool Pavement Strategies for Heat Island Mitigation. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-12-33

Li, Hui; Harvey, JT; Holland, TJ; and Kayhanian, M. (2013). "The use of reflective and permeable pavements as a potential practice for heat island mitigation and stormwater management. Ev

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- **Proposed Response:** Accept as modified. Apply the language to 7.5.1.6 and then move 7.5.1.6 under 7.3.4.2 as an alternative to existing language. The points will be reworked at a later time.
- **Subcommittee Vote:** 7 in favor, 1 abstained

MOTION: The motion was made and seconded to accept the subcommittee’s recommendation.

Discussion took place on the motion:

- Clarification was provided on what a vegetative paving system is and it was stated that turf and grid paving systems would be included.
- A member of the Site Subcommittee provided background information on the credit, stating that this language originally said “50% of *planned* hardscaped area”. The language was changed to “installed” because it was felt to be more appropriate.

VOTE: The motion carried with 13 in favor, 0 opposed, and 5 abstained.

None Opposed

Abstained: Susan Gitlin, Don Horn, David Eldridge, Gord Shymko, and Thomas Pape

Whole Document Comments

presented by Chairman Mike Lehman

- **49 – 3. Substantive. All.**
 - **Comment:** Provide minimum requirements in each section of the standard. These could align with the Federal Guiding Principles or other accepted green building practices.
 - **Reason:** Certain levels of achievement and efficient performance are expected for buildings to be considered green. The credibility of the standard will be based on the minimums required for compliance. As written, the standard does not provide an acceptable path for meeting the Federal Guiding Principles.
 - **Proposed Response:** Consider federal guiding principles by Section to justify transition and acceptance between our document and federal guiding principles.
Note--- editorial guidance into the Standard

MOTION: The motion was made and seconded to accept the proposed response.

Discussion took place on the motion:

- One speaker stated that this response assumes every Subcommittee will take the Federal Guiding Principles into consideration
- It was stated that the response is unclear and could be “accept as noted”.
- Concern was raised that this is about prerequisites. The speaker stated their opposition to both this motion and the concept of prerequisites.
- Clarification was provided that this response is formatted as a note to the Committee and the Subcommittees and that the response will be edited before going out to the commenter. It was stated that this applies to privately owned buildings that hope to secure federal leases/tenants.
- It was stated that the Standard already requires 20% of applicable points to be earned in each assessment area as a minimum requirement.
- One member stated there should be something in the introduction acknowledging the Federal Guiding Principles.

AMENDMENT: The amendment was made and seconded to change the response to read, “Accept in principle. We are considering federal guiding principles by Section to justify transition and acceptance between our document and federal guiding principles.”

Objections were raised on the amendment.

Discussion took place on the Amendment:

- It was suggested that after “accept in principle” the response could read “Minimum point requirements have already been specified in each section of the Standard.”
- The concern was raised that projects can meet the minimum points and not be considered “green” by the green building community. The speaker stated that they are speaking against the motion and are in favor of prerequisites.
- The opinion was expressed that this comment is general and that a general comment merits a general response.

AMENDMENT TO THE AMENDMENT: The amendment was made and seconded to add “a different response to the issue is proposed” in parentheses after “accept in principle”.

No Objections were raised to the amendment.

VOTE: The amended amendment carried with 14 in favor, none opposed, and 5 abstained.

None Opposed

Abstained: Josh Jacobs, Susan Gitlin, Don Horn, Jeff Bradley, and Thomas Pape

VOTE: The amended motion carried with 14 in favor, 3 opposed, and 2 abstained.

Opposed: Susan Gitlin, Don Horn, and Josh Jacobs

Abstained: Jeff Bradley and Thomas Pape

- **11 – 1. General. All.**
 - **Comment:** Use of a numbering system is much more efficient and provides an “ease of use” for the standard which other green building rating systems have abandoned in recent iterations.
 - **Reason:** None Given
 - **Proposed Response:** Accept as noted, the Standard does have a numbering system

MOTION: The motion was made and seconded to accept the proposed response.

VOTE: the motion carried with 17 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **24 – 1. General. All.**
 - **Comment:** The tables should be reformatted so that goals identified in Column 1 are aligned with Point Amounts detailed in Column 2
 - **Reason:** As presented the information does not translate clearly from one column to the next.
 - **Proposed Response:** Reject. Not all criteria are able to have the points column align in this manner.

MOTION: The motion was made and seconded to accept the proposed response.

VOTE: The motion carried with 18 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **24 – 2. General. All.**

- **Comment:** Many sections make reference to specific charts or tables that appear in separate Reference Standards. In some cases those tables are reproduced in the BSR/GBI 01--201X document and in others they are not. Should more references be included within this document?
- **Reason:** The fewer external chart / table based resources a user needs to access, the easier this performance metric is to use.
- **Proposed Response:** Accept in principle. Reference material is included by extraction from the source document where permitted by the copyright owner

MOTION: The motion was made and seconded to accept proposed response.

Discussion took place on the motion:

- Questions were raised whether this response is accurate. The speaker felt that this is a promise to include every reference where permitted by the copyrightowner.

AMENDMENT: The amendment was made and seconded to strike "is", replacing with "may be".

No Objections were raised to the amendment.

VOTE: The amended motion carried with 16 in favor, none opposed, and 3 abstained.

None Opposed

Abstained: Erika Winters-Downey, Susan Gitlin, and Don Horn

- **57 – 5. General. All.**

- **Comment:** Zurn PEX supports the no mandatory component of the draft standard, we think this adds flexibility for a standard that could be used in locations anywhere in the world.
- **Reason:** None Given
- **Proposed Response:** Accept as noted

- **42 – 5. General. All.**

- **Comment:** We support the no mandatory component of the draft standard, we think this adds flexibility for a standard that could be used in locations anywhere in the world.
- **Reason:** None Given
- **Proposed Response:** Accept as noted

MOTION: The motion was made and seconded to accept proposed response to 57-5.

AMENDMENT: The amendment was made and seconded to vote both 57--5 and 42--5 at the same time.

There were no objections to the amendment.

VOTE: The amended motion carried with 13 in favor, none opposed, and 5 abstained.

None Opposed

Abstained: Susan Gitlin, Don Horn, Josh Jacobs, Kent Sovocool, and Thomas Pape

- **52 – 2. Editorial. Forward.**

- **Comment:** We suggest changing the term "lifecycle" or "life-cycle" to "life cycle."
- **Reason:** To create consistency throughout document
- **Proposed Response:** Accept as noted. The committee prefers life cycle

MOTION: The motion was made and seconded to accept the proposed response.

Discussion took place on the motion:

- It was clarified that all three terms are used in literature and this change is being made because it's important to keep consistency in the Standard but none are incorrect.

VOTE: The motion carried with 18 in favor, 1 opposed, and none abstained.

Opposed: Thomas Pape

Abstained: none

- **42 – 1. General. 3.2.**
 - **Comment:** PPFA supports the higher point weighting for water conservation, now second to energy conservation. Encouraging the use of alternative sources of water and conserving methods is critical. A drought can occur in any state unexpectedly.
 - **Reason:** None Given
 - **Proposed Response:** Accept as noted
- **57 – 1. General. 3.2.**
 - **Comment:** Zurn Pex supports the higher point weighting for water conservation, now second to energy conservation. Encouraging the use of alternative sources of water and conserving methods is critical. Water shortages are already critical in some areas and are expected to continue to worsen.
 - **Reason:** None Given
 - **Proposed Response:** Accept as noted

MOTION: The motion was made and seconded to accept proposed response for 42--1 and 57--1.

Discussion took place on the motion:

- Clarification was requested regarding what the Action Item would be for these comments. It was clarified that there is no action being requested.
- The opinion was stated that the proposed response is misleading to commenter. It was stated that Energy and Water Sections are not given equal points. The speaker was in opposition to the motion.

AMENDMENT: The amendment was made and seconded to modify the proposed response to “Thank you for the comment” and apply this change to all previously made “Accept as Noted” responses. There were no objections to the amendment.

Discussion took place on the amended motion:

- There is no “accepting” these comments because the commenter isn’t asking for anything.

VOTE: the amended motion carried with 18 in favor, none opposed, and none abstained.

None Opposed

None Abstained

- **52 – 3. Substantive. 3.2.**
 - **Comment:** Revise the point allocation system such that each individual criterion, no matter what section it is located in, is granted a number of points that reflects its benefit to the environment.
 - **Reason:** We are concerned about the imbalance in the number of points available for the different assessment areas, as well as the number of points required for compliance in those areas. The justification provided in the Foreword is that the Consensus Body gave more points to those areas that it deemed to be of higher critical importance. Such an approach seems

conceptually reasonable, but it is not clear that the actual application of the points truly reflects a risk--based evaluation nor that it takes into consideration the potential for overlap between the different sections. How did the Consensus Body determine that the criteria contained in the Energy section could benefit society 173% as much as the criteria in the Site, Materials, or Indoor Environment assessment areas? For that matter, how did it determine that Site, Materials, and Indoor Environment were all of equal importance to society? If no clear method has been developed and applied to determine relative importance, the decision to give one area more points than another is difficult to justify.

As an example of the potential overlap, note that some of the criteria in the Site assessment area could have tremendous impacts on the energy use associated with a building. A study funded by USEPA showed that the energy required for transportation to and from a site can be as much as that used in the building itself. That particular study focused on residential buildings, but the overall point is that the location of a building is extremely significant in the calculations of the total energy use caused by any given building. Yet, the criteria that aim to reduce transportation energy use currently are allocated a total of only 22 points. What justification was used to determine that they are worth 3 fewer points than the criteria in the Metering, Monitoring, and Measurement section of 8.5 or 15 fewer points than the criteria in the Renewable Source of Energy section of 8.6?

One of the problems in the point allocation system is that, rather than evaluate all criteria independently, assessment areas are allowed a total number of points, and the criteria within that area compete with one another for points. Why not "free" each criterion from the confines of a point limit within a section and give it the number of points that reflects the potential benefits to the environment due to the activities described in that criterion?

Moreover, because the point allocation system is difficult to justify, it is all the more difficult to justify minimum achievement requirements based on that allocation system. The point allocation system creates a shaky ground...and yet section 3.2 uses that same system to build the next level. If it is important that each building constructed under this standard demonstrate some level of achievement in all of the areas, then we recommend that the minimum level of points be equivalent across the board. In cases where a certain percentage of the points are not applicable, then perhaps the minimum number of points could be reduced by some amount.

- **Proposed Response:** Reject. The Consensus Body allocated points to each assessment area based upon their impact on the environment in its professional judgment. With guidance from technical experts comprising the Subcommittees, Individual commenters have been afforded the opportunity to persuade both

the subcommittees and the consensus body as to the relative importance of each subject area. Point awards reflect this process.

MOTION: The motion was made and seconded to accept proposed response.

Discussion took place on the motion:

- The concern was raised that it's too soon to respond to this comment. It was stated that the points have not been finalized for and the speaker felt that the CB needs to look at credits and point allocation on the Standard as a whole.

AMENDMENT: The amendment was made and seconded to change "allocated" to "allocates".

Objections were raised on the amendment.

Discussion took place on the Amendment:

- It was stated that the comment recommends an arduous process and that the CB has already agreed on the process of allocating points. The speaker was in favor of the amendment.
- The opinion was expressed that the response should say "Thank you for your comment", not "reject".
- It was stated that some credits receive less points than their environmental impact would indicate because the points are allocated at the Assessment Area level and some assessment areas have fewer points to allocate.

VOTE: The amendment carried with 13 in favor, 2 opposed, and 3 abstained.

Opposed: Susan Gitlin, Don Horn

Abstained: Paul Bertram, Josh Jacobs, Thomas Pape

AMENDMENT: The amendment was made and seconded to alter the response from Reject to "Thank you for your Comment".

Discussion took place on Amendment:

- It was stated that "Thank you" is not an appropriate response because the comment requests action to take place.
- The opinion was raised that the Consensus Body needs to give a better response indicating that they are taking a hard look at how points are being allocated.
- It was stated that the response needs to be within GBI's procedures to "accept", "reject" or "accept with modification".

VOTE: The amendment failed with 5 in favor, 11 opposed, and none abstained.

Opposed: David Eldridge, Gord Shymko, Susan Gitlin Don Horn, Paul Bertram, Bill Freeman, Erika

Winters---Downey, Greg Johnson, Gary Keclik, Jeff Bradley, and Josh Jacobs

None Abstained

MOTION: The motion was made and seconded to adjourn the meeting.

VOTE: The motion carried with 3 opposed.

Opposed: Bill Freeman, Jane Rhode, Greg Johnson

None Abstained

Comment 52-3 will be addressed under "Unfinished Business" at next CB meeting.

---Meeting adjourned: 3:03 PM ET---