

Comment #	Comment Type: SC, GC, EC	Commenter #	Clause	Subclause	Comment (Verbatim)	Commenter's Reason for Revision	Lead Responder's Recommendation: Accepted, Rejected or Blank (no response needed)	Lead Responder's Response to Commenter
1	SC	001P	5.1	'sidelit daylight area'	<p>I would suggest you adopt the definition being put into 90.1-2010 as it is based on a rather complete study by PIER. That wording would be: "sidelighted area: the total sidelighted area is the combined sidelighted area without double counting overlapping areas. The floor area for each sidelighted area is directly adjacent to vertical glazing below the ceiling with an area equal to the product of the sidelighted area width and the sidelighted area depth.</p> <p>The sidelighted area width is the width of the window plus, on each side, the smaller of:</p> <ol style="list-style-type: none"> 1. 0.6 m (2.0 feet) or 2. the distance to any 1.5m (5 foot) or higher vertical obstruction. <p>The sidelighted area depth is the horizontal distance perpendicular to the glazing which is the smaller of:</p> <ol style="list-style-type: none"> 1. one window head height (head height is the distance from the floor to the top of the glazing), or 2. the distance to any 1.5m (5 foot) or higher vertical obstruction" 	To be consistent with the latest empirical data.	Rejected	Thank you for your comment. After ASHRAE 90.1-2010 is promulgated we will consider modifying this definition in a future iteration of the Standard.
2	SC	001P	5.1	'toplit daylight area'	<p>Same suggestion but for toplighted areas plus the consideration that the PIER study found the same definition does not work for both Skylighted areas and areas lighted . Suggested wording would be: "Skylighted area: the total Skylighted area is the combined skylighted area under each skylight without double counting overlapping areas. The skylighted area is bounded by the opening beneath the skylight, plus horizontally in each direction, the smallest of:</p> <ol style="list-style-type: none"> 1. 70% of the ceiling height [0.7 x CH], or 2. the distance to any sidelighted area, or the daylighted area under rooftop monitors, or 3. the distance to the front face of any vertical obstruction where any part of the obstruction is farther away than 70% of the distance between the top of the obstruction and the ceiling [0.7 x (CH-OH)]. <p>Where: CH □ the height of the ceiling at the lowest edge of the skylight OH □ the height to the top of the obstruction</p> <p>And</p> <p>"daylighted area under rooftop monitors: the daylighted area under rooftop monitors is the combined daylighted area under each rooftop monitor without double counting overlapping areas. The daylighted area under each rooftop monitor is the product of the width of the vertical glazing above the ceiling level and the smallest of the following horizontal distances inward from the bottom edge of the glazing:</p> <ol style="list-style-type: none"> 1. the monitor sill height, MSH, (the vertical distance from the floor to the bottom edge of the monitor glazing), or 2. The distance to the edge of any sidelighted area or 3. the distance to the front face of any vertical obstruction where any part of the obstruction is farther away than the difference between the height of the obstruction and the monitor sill height (MSH-OH). 	To be consistent with the latest empirical data.	Rejected	Thank you for your comment. After ASHRAE 90.1-2010 is promulgated we will consider modifying this definition.
3	SC	001P	8.5	8.5.1.3	<p>It is not unusual for the optimal percentage (where energy savings are maximized) to be more like 2-6%. I would suggest: "Between 2-3% of the roof area was installed with skylights, OR between 2-6% of the roof area was installed with skylights and documentation has been provided showing that this percentage represents an optimal level of energy savings."</p>	To encourage the additional use of daylighting where it does not adversely affect energy costs.	Rejected	Thank you for your comment. The Committee agreed to change the optimal percentage to 6% and lighting controls are addressed in other sections of the standard.

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4	SC	001P	8.7	8.7.1-A	Two issues; (1) You have simply taken the 90.1-2007 values and multiplied by 0.9. But for some space types this is going to result in LPDs that can't be met if they are to meet the recommended light levels. In fact, for some space types, groups such as IALD have stated (and have supplied documentation showing) that even the ASHRAE numbers can't be met. I would suggest you want direction from the Lighting Subcommittee of the 90.1 committee as to which space types may be reasonably lowered. (2) Not enough resolution on the metric numbers; go to 3 digits.	Proper lighting	Rejected	Thank you for your comment. We believe it is feasible as written in the standard.
5	SC	001P	8.7	8.7.1-B	Two issues; (1) You have simply taken the 90.1-2007 values and multiplied by 0.9. But for some space types this is going to result in LPDs that can't be met if they are to meet the recommended light levels. In fact, for some space types, groups such as IALD have stated (and have supplied documentation showing) that even the ASHRAE numbers can't be met. I would suggest you want direction from the Lighting Subcommittee of the 90.1 committee as to which space types may be reasonably lowered. (2) Not enough resolution on the metric numbers; go to 3 digits, plus you left off the retail space type and the additional allowance for accent lighting in retail displays. (3) you left off the retail space type and the additional allowance for accent lighting in retail displays.	Proper lighting.	Rejected	Thank you for your comment. We believe it is feasible as written in the standard.
6	SC	001P	8.7	8.7.2.1	'Controlled areas' is not defined.	So that this section may be used.	Rejected	Thank you for your comment. The Committee feels that although "controlled areas" is not specifically defined that it is evident within the section. Therefore a definition does not need to be added to the standard.
7	SC	001P	8.7	8.7.2.1	ASHRAE is eliminating the 5,000 sq.ft limitation. They feel the financial reasons for this limitation no longer exist.	True sustainability in smaller spaces.	Rejected	Thank you for the comment. The 5000 sq.ft. limitation is currently in ASHRAE 90.1-2007. After ASHRAE 90.1-2010 is promulgated we would modify this limitation in a future iteration of the standard.
8	SC	001P	8.7	8.7.6.2	Does this mean: (1) That at least one of the exterior luminaires needs to be pulse-start. or (2) That ALL of the exterior luminaires need to be pulse start, or (3) That if they use metal halide, it has to be pulse start.	Clarity.	Accepted	Thank you for your comment. This credit will be clarified to better describe the committee's intent. The word "all" will be added before exterior lighting.
9	SC	001P	Various	Various	The cutoff classification system has been replaced by the IESNA. Suggest you need to use lumen limitations using the zones defined in TM-15. Plus it has been shown that full cutoff can cause greater light pollution via reflected light than cutoff.	To be current.	Rejected	Thank you for your comment. The Committee has decided not to incorporate your change although some of the language has been clarified.
10	EC	001P	Various	Various	The phrase 'daylit' is not used by the lighting industry, or rather, not accepted by the IESNA. All occurrences of 'daylit' should be replaced with 'daylighted'.	Compatibility with other standard writing organizations.	Accepted	Thank you for your suggestion. The word "daylit" will be replaced by the word "daylighted".
11	EC	001P	Various	Various	The phrase 'fixtures aimed at' is a bit vague; it might be helpful to change all such occurrences to 'fixture's photometric nadir aimed at'.	Technical clarity.	Accepted	Accept these comments as editorial changes.
12	GC	001P	7.5	7.5.1.1	So this sub-clause is stating that any site with an external area that needs 'aimed' fixtures (sports area, receiving area, etc.) cannot get these 3 points no matter how well the aiming job or the resultant lighting performs.		Rejected	Thank you for your comment. A project could achieve this credit if the combined output is less than 10,000 lumens, as stated in the credit language. This will be addressed further in a future iteration of the standard.
13	SC	001P	7.5	7.5.1.3	Several issues: (1) the 0.5 fc limitation is insufficient for a couple of reasons: a) it does not state whether it is for horizontal, vertical, line-of-sight, or some combination thereof. b) Even 0.5 fc at the wrong place, at the wrong angle, can cause a lot of glare (2) Computing 'reflected light' in exterior situations can be a rather sophisticated computation and may be more than a little difficult to obtain. (3) This system does nothing to take into account the area in which the site is placed. Exterior lighting at a site located within a developed area in a state park should be restricted more than at a site in the downtown of a major metropolitan area.	Needs to be more 'exact' and in tune with its surroundings.	Accepted	Thank you for your comment. The Committee agrees to modify the language by referencing IESNA standard for better clarity.
14	SC	001P	7.5	7.5.2	Second bullet is too vague; I would suggest: "... lighting plan with illuminance computations spaced no more than 10' apart."	To provide better direction and to minimize game playing.	Accepted	Thank you for your comment. The Committee agrees with the intent of your comment and the wording has been modified.

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15	SC	001P	12.4.1	12.4.1.1	'Primary occupied spaces' is not defined.	Clarity.	Accepted	Thank you for your suggestion. The definitions section shall be appended to include the following: "primary occupied space: a room or enclosed space designed for human occupancy in which individuals perform activities for which the space has been specifically designed."
16	SC	001P	12.4.2	12.4.2.1	'Primary occupied spaces' is not defined.	Clarity.	Accepted	Thank you for your suggestion. The definitions section shall be appended to include the following: "primary occupied space: a room or enclosed space designed for human occupancy in which individuals perform activities for which the space has been specifically designed."
17	SC	001P	12.4.2	12.4.2.2	With the changes in VDT screens, this lighting requirement is not really needed anymore.		Rejected	Thank you for your comment. However, VDT screens are still used occasionally therefore it seems prudent to retain this requirement.
18	SC	001P	12.4.2	12.4.2.1	This sub-clause encourages lighting below the recommended light levels at determined by IESNA. This should be an all-or-none credit. You get 9 points for meeting the lighting levels in all spaces or no points.	Safety, security, liability and functionality.	Accepted	Thank you for this comment. The committee agrees that this should be an all or nothing credit.
99	GC	002P	8.6	8.6.2.2	It is not clear how the water side economizer will function as described as to use air in lieu of mechanical draft cooling. Does this mean to turn off the fans? If so, why not state this? Not clear in present form.		Accepted	Thank you for your comment. The Committee agreed that the language needed clarification which has been done.
100	SC	002P	9.3	9.3.1.3	"Greenness" of dry cooling is beneficial only in certain circumstances. A broad sweeping strategy to minimize wet cooling such as in this paragraph is misleading.	Wet cooling saves more compressor energy than dry cooling and more than offsets the cost of water used in the tower. The exception is when the ambient WB and DB are low enough that compressor runs at minimum head with either dry or wet cooling.	Rejected	Thank you for your comment. However such compromises and tradeoffs are inherent in all building performance rating systems and it is up to the professionals responsible for the project design to make choices appropriate for their circumstances and context.
101	SC	002P	12.2	12.2.5.1	"No wet towers were installed"	Wet cooling saves more compressor energy than dry cooling and more than offsets the cost of water used in the tower. The exception is when the ambient WB and DB are low enough that compressor runs at minimum head with either dry or wet cooling.	Rejected	Thank you for your comment. However, this subclause is geared toward reducing potential microbial contamination of the moist air accompanying the operation of cooling towers. Therefore your comment will not be accepted at this time.
102	GC	002P	12.2	12.2.5.2	It is not clear why avoiding louvers or basins is "green"			Thank you for your observation. This Subclause has been combined with the previous one. The intent of the clause is geared toward reducing potential microbial contamination of the moist air accompanying the operation of cooling towers.
103	SC	003P	8.6	8.6.2.2	This paragraph needs to be revised to make clear what systems are intended to operate and under what conditions. It is very unclear.	Same as comment.	Accepted	Thank you for your comment. The intent and language of this credit will be clarified.
104	SC	003P	9.3	9.3.1.3	The limitation on evaporative or "wet" cooling is confusing, as dry cooling for HVAC has a more negative impact on the environment in most circumstances, both from energy and water consumption perspectives. As written, the user of this document could be misled in trying to make green choices for building HVAC.	ASHRAE 90.1 and Title 24 in California make wet cooling a base requirement for larger buildings based on energy efficiency, which is a central green theme. A seminar at the ASHRAE meeting in Salt Lake City recently included two presentations that show dry cooling, through the impact of water consumed in mining and power production for the incremental increase in power consumption with dry cooling, actually uses more water than a wet cooled system for many climate zones. The energy savings associated with wet cooled air conditioning systems compared to dry are well known. The provision does not appear to be a "green" requirement as written. No logic for the "greenness" of avoiding wet cooling has been provided.	Rejected	Thank you for your comment. However such compromises and tradeoffs are inherent in all building performance rating systems and it is up to the professionals responsible for the project design to make choices appropriate for their circumstances and context.

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105	SC	003P	12.2	12.2.2.5.1	Avoidance of "wet towers" is not justified on a "green" basis.	ASHRAE 90.1 and Title 24 in California make wet cooling a base requirement for larger buildings based on energy efficiency, which is a central green theme. A seminar at the ASHRAE meeting in Salt Lake City recently included two presentations that show dry cooling, through the impact of water consumed in mining and power production for the incremental increase in power consumption with dry cooling, actually uses more water than a wet cooled system for many climate zones. The energy savings associated with wet cooled air conditioning systems compared to dry are well known. The provision does not appear to be a "green" requirement as written. No logic for the "greenness" of avoiding wet cooling has been provided.	Rejected	Thank you for comment. The Committee will not be incorporating the change at this time. Outdoor cooling towers that may, due to poor maintenance, create microbial contamination of the moist air accompanying the operation of cooling towers is what this subclause is addressing.
106	SC	003P	12.2	12.2.5.2	The language regarding avoidance of louvers and basins difficult to understand relative to "green" concerns.	No rationale is included that would lead to justification for this requirement. Note comments above, and also that the use of modern louver designs and hot and cold water basin designs are much to the advantage of the end user and the environment. The purpose of both aspects of evaporative cooling equipment design is to contain water in the tower, conserving it and minimizing any loss from the cooling system.	Rejected	Thank you for comment. The Committee will not be incorporating the change at this time. Outdoor cooling towers that may, due to poor maintenance, create microbial contamination of the moist air accompanying the operation of cooling towers is what this subclause is addressing.
107	GC	003P				My comments represent my own opinions as a 35+ year experienced individual in engineering of cooling systems for buildings. This is not a position by my company.		Thank you for your comment. We appreciate your input.
108	SC	004P	8.5	8.5.1.4	Adding Clause 8.5.1.4. See documentation below <u>8.5.1.4 In single story buildings greater than 2000 m2 (25,000 ft2) in area, a minimum of 50% of the floor area shall be daylight. All lighting shall be controlled by photocell controls. Toplighting fenestration (skylights, tubular daylighting devices, roof windows, smoke vents) will be exempt from the SHGC values in table 8.4.3. The maximum percentage of roof area that is permitted to be toplighting fenestration is 6%. The haze value toplighting fenestration and other toplighting used shall be 90% or greater per ASTM D1003 and the VLT shall be greater than 0.40 per ASTM E972 or NFRC 200. (note: buildings can claim credit 8.4.3.2 or 8.5.1.4 but not both)</u> <u>8.5 Daylighting Path B -27 points</u> <u>Maximum = 12 points</u> <u>switching by photocell control = 6 points</u> <u>by photocell control = 8 points</u> <u>control = 12 points</u>	See additional supporting letter from AAMA and the AAMA Skylight Council.	Rejected	Thank you for your comment. Although the Committee agrees that solar heat gain must be controlled; they also agree that this is accomplished in other ways in the standard or through code and no additional change is needed at this time.
109	SC	004P	8.4	8.4.3 Table	Change the Solar Heat Gain Coefficients for Climate Zones 1 and 2 in Table 8.4.3. SHGC 0.20 0.20 (replace with) <u>0.30</u> <u>0.30</u>	There is no commercially available toplighting fenestration that can meet a SHGC of 0.20. Reductions in SHGC lower the amount of visible light entering an interior space thus eliminating the benefits of toplighting and increasing the amount of electric illumination.	Rejected	Thank you for your comment. The Committee feels that there isn't sufficient technical justification to include this change.

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110	GC	005P	All	All	Return to the document at each subclause section an objective or intent statements for points	Objective or "big idea" statements for each point section are helpful to a project team – especially an owner. Some of the credits may not be clear to the user audience if this is to be "user friendly".	Rejected	Thank you for your comment. At this time we will not be incorporating your change. The Committee has decided not to include intent statements in each section of the standard. The tools and reference materials that will accompany this standard will address your concern.
111	GC	005P	8		Designate certain points in energy performance as prerequisite to get a Green Globe rating. Consider the same also in water, materials etc...	Prerequisite points in energy are vital to even be considered a "green" building as we address green house gas emissions. All sections which relate to green house gas emissions should have minimal performance.	Rejected	The GBI ANSI committee made a decision to have no mandatory credits or prerequisites as a part of the standard. While we understand and feel there is a heightened sense of importance to some of the credits with their associated documentation, we attempted to weigh these "important" credits with points rather than making them mandatory. The committee also requires a specific number of points to be met in each environmental assessment area. For instance for Performance Path A we require achieving 50% of applicable points in Energy. This approach met the committee's desire to prioritize criteria but to allow flexibility for the variations that result from building type, region, local codes, etc.
112	GC	005P	5.1	Renewable Energy	Include solar thermal and solar hot water systems	Solar thermal systems can make both hot water and power turbines if large scale.	Accepted	This definition will be clarified to include solar thermal.
113	GC	005P	4		Third party verification as outlined by "suggested documentation" needs more detail .	"Suggested documentation" does not convey what will occur to ensure that the design team does the appropriate documentation in sequence and that the project actually meets the point criteria.		Thank you for your comment. GBI's proposed American National Standard cannot require third party certification. While third-party assessment is an important component of green building rating programs, the third-party assessment process is not within the purview of the consensus body.
114	GC	005P	6	6.1.1, 6.1.2, 6.1.3, 6.1.4	Green Globes may want to refer to the Whole Systems Integration Process (WSIP) ANSI standard to clarify both the quantitative and qualitative aspects of green design and delivery.	Concepts to incorporate feed back loops methods of communication and inquiry cross discipline There is no mention of cross discipline alignment or integrative design delivery.	Accepted	Thank you for your comment. The suggestion of adding a reference to the WSIP ANSI standard will be accepted and noted as an "Informational Reference."
115	GC	005P	6	6.1.5	Suggested Documentation should include project schedule, communication plan, diagrams indicating feedback loops	Schedule and process diagrams with feedback loops and communication diagrams if done properly lay the ground work and are indicators of integrative design.	Rejected	Thank you for your comment. While this suggestion is appreciated, it will not be accepted for inclusion at this time. The Committee feels this is dealt with sufficiently in other areas of the standard.
116	GC	005P	7	7.2.1	Provide measurable outcomes in the engineering plan.	Some of these points are good guidance but not conveyed as measurable outcomes.	Rejected	Thank you for your comment. This is meant to be a prescriptive path not a performance based one. Therefore no changes are needed at this time.
117	GC	005P	7.3	7.3.1	Rename the section as site water.	Water that enters the site should stay on the site as consistent with natural hydrological flows – storm water run off connotes a negative rather than an opportunity/resource.	Rejected	Thank you for your comment. Your input is appreciated. The Committee has changed the title of the section to "Storm Water Management".
118	GC	005P	8.1	8.1.1	Clarify section so that modeling cannot be "gamed"	a team designing to less stringent building type and then it looks better than it really is...or another team that designs to a more difficult building type and actually produces a more efficient building than intended...	Rejected	The committee is also very concerned about accuracy in building energy simulation. The third party assessment process, while not within the purview of this consensus body, will ensure that modeling inputs and outputs are justified. In addition the Committee uses ASHRAE Appendix G as a reference in this section.
119	GC	005P	8.2	8.2.1, 8.2.2, 8.2.3	Integrate with energy credits.	If all of these are implemented does this feed into the overall energy reduction? and then does the project get "double credit" for incorporating specific strategies or technologies?	Rejected	Thank you for your comment. The committee has tried to avoid double credit as much as possible. While there may be some energy reduction overlaps with Section 8.1, the majority of the concerns of Sections 8.2.1, 8.2.2 and 8.2.3 is on demand and peak load reduction and not on energy reduction.
120	GC	005P	8.2	8.2.1	Add intent statement or clarify how this applied to large scale commercial building envelopes	Thermal mass in high rise buildings may not be achievable or realistic.	Rejected	Thank you for your comment. High thermal mass buildings tend to have flatter demand profiles than low thermal mass buildings which can significantly reduce peak loads and equipment sizing. It is possible to include thermal mass in a large commercial buildings by incorporating it in elevator or stair cores, floor plates and in the opaque portions of the envelope.
121	GC	005P	8.4	8.4.2	Clarify the intent of north to south to reduce loads	Some projects of located near the equator may need to be oriented differently – see M.E.Rinker Sr. Hall at the University of Florida.	Rejected	While we agree that design teams need to take this issue into consideration, we do not believe a change is needed in the standard.
122	GC	005P	8.4	8.4.4	Add thermal bridging avoidance detailing. Add continuous air barrier detailing.	Address thermal bridging and continuity of air barriers in the documentation.	Rejected	Thank you for your comment. The items noted are addressed in the Resource section of the standard and by the Energy section which requires that a proposed building will comply with ASHRAE 90.1-2007 or local energy code.

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123	GC	005P	8.6	8.6.5	Provide points for condensate separation and treatment.	Condensate can be very acidic and effect water quality and aquatic life if discarded to main sewer. .	Rejected	Thank you for your comment. The intention is to focus on reuse instead of treatment as is reflected in the water section.
124	GC	005P	8.6	8.6.7	State the performance ratings and reference the standard	Users may not know the standard but can understand a brief statement of the performance rating intent.	Rejected	Thank you for your comment. The Committee did not agree to add the performance criteria within the standard. Reference guides and other tools will support the user and address this concern.
125	GC	005P	8.9	8.9.1	Define what counts as renewable via credits.	Land fill gas in not clean or "renewable"	Rejected	Thank you for your comment. At this time we will not be incorporating your change. Currently, the standard defines what is considered renewable energy based what is considered on-site and off-site.
126	GC	005P	8.9	8.9.3	Clarify the difference between "rated" generation of on site renewable and actual generation.	Do not give points to projects that are not actually generating power to offset their fossil fuel consumption.	Rejected	Thank you for your comment. The committee feels that the current credit language adequately addresses this concern.
127	GC	005P	12.4	12.4.1.3	Connect shading to energy performance.	Just because there are shaded does not necessarily reduce load or promote passive solar.	Rejected	Thank you for your comment. Not recommended for acceptance. The points are based on eliminating glare and reducing contrast.
128	GC	005P	11	?	Points for use of composting toilets- recommended technology	Could not find in the standard by pdf search...may want to incorporate into the standard	Rejected	Thank you for your comment. Your comment is considered as part of Section 9.
129	GC	005P	?	?	Points for use of hydronic systems or radiant floor systems as recommended technology	Could not find in the standard by pdf search...may want to incorporate into the standard	Rejected	The effects of radiant heating and cooling should be captured under the Performance Path A. With respect to including points under the Prescriptive Path B, radiant heating and cooling, and radiant floor systems in particular, may not be appropriate and/or beneficial in all circumstances.
130	GC	005P	?	?	Are there Natural and Enhanced Remediation Systems?- constructed wetlands etc...	Could not find in the standard by pdf search...may want to incorporate into the standard		Thank you for your comment. Constructed wetlands are addressed in 7.4.1.6.
131	GC	005P	?	?	copper-contaminated stormwater run-off from entering aquatic systems?	Could not find in the standard by pdf search...may want to incorporate into the standard		Thank you for your comment. Path 7.4.1.6 requires the site be left or restored to natural state. Landscape plans referring to Florida Yards and Neighborhoods documents specifically include stormwater runoff water quality. Also note that stormwater is addressed in Section 7.3. This will be considered in a future iteration of the standard.
132	GC	005P	?	?	Green house gas emissions?	Could not find in the standard by pdf search...may want to incorporate into the standard	Rejected	Thank you for your comment. Green house gas emissions is addressed within the standard, for example in the materials,emissions and energy sections.
133	GC	005P	?	?	Edible plantings?	Could not find in the standard by pdf search...may want to incorporate into the standard	Rejected	Thank you for your comment. The committee has agreed to consider this in a future iteration of the standard.
134	GC	006P	10.4.1.	10.4.1.1	I appreciate the adjusting of the lower threshold for points to 10% from 1%			Thank you for your comment. We appreciate your input.
135	SC	006P	4		Must Add: "verified or measured energy performance" by third-party as an assessment for compliance	Verification of energy performance is essential for owner and public officials to show real performance and improvements in energy security are achieved. This must be mandatory for credibility of the draft standard.	Rejected	Thank you for your comment. The Committee agrees that achieving actual performance goals is the ultimate purpose behind this standard and, for instance, requires that a minimum number of points be met in the energy section. However, the committee will not be further changing compliance requirements at this time.
136	SC	006P	4		Add, "ISO Proposed 10951 – 53; Energy Performance of Buildings"	Informational reference(s) are required for users of the standard. Experts from the US and Canada are actively involved in this ISO standard.	Rejected	Thank you for your comment. While not all Informational References are standards, the Committee has chosen not to add this reference while it is still a proposed standard. The Committee will consider this change for future iterations of the Standard.

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137	SC	006P	6.2.3.	6.2.3.1	As an additional alternative measure, recognize that moisture-resistant materials (such as concrete or cement board or paperless drywall) should be used to reduce the risk of mould and indoor air sick building problems.	It is good to protect materials in transit and construction. It is better to have permanent moisture protection for building materials that are used in the building envelope to reduce the risk of mould as a result of wetting during construction, by floods and hurricanes and other events in the life of the building. Construction with moisture resistant materials provides permanent moisture resistance and improves the durability of the building envelope which provides a healthy separation from the outdoor environment. 4 points are recommended as is the case for 6.2.4.1. for IAQ to recognize preventing sick building envelopes is an important measure to be integrated with IAQ.	Rejected	Thank you for your comment. The purpose of this section is to encourage an IAQ plan to be developed early in the process. The recommendation you are making is really covered in section 10 the Resource and Materials section of the Standard.
138	SC	006P	8.3.1	8.3.1.2	Add, "or ISO 10951 – 53; Measured Energy Performance for existing buildings"	For existing buildings and new buildings that have been in operation for at least 1 year the option of calculating measured energy performance is practical	Rejected	Thank you for your comment. While not all Informational References are standards, the Committee has chosen not to add this reference while it is still a proposed standard. The Committee will consider this change for future iterations of the Standard.
139	SC	006P	8.3.2		Add, "Energy Certificate" to suggested documentation. (i.e. ISO)	Annual energy consumption/m ² (/Sq. Ft.) for a building is very useful documentation.	Rejected	Thank you for your comment. The Committee has decided not to include this change because it is already covered in the Energy section.
140	SC	006P	10.1.1.	10.1.1.1	LCA Credit Calculator for building envelope wall assemblies must include life cycle assessment of air barrier system components which are vital for moisture control and higher energy performance.	Air barriers are critical to prevent moisture and mould problems and are legal requirements in many states including MA. Continuous air barriers are included in 10.7.9, therefore their LCA impacts need to be included. Note that vapour retarder components are included in the listings, so it is critical the air barrier components be identified to achieve a code complying better performing assembly.	Accepted	Thank you for your comment. The LCA credit calculator will be updated to remove vapor retarder and we will not designate which items do which functions. We did not intend to distinguish.
141	SC	006P	10.1.1.	10.1.1.1	The wall assemblies need to be reviewed with industry representatives to ensure the most common and good green assemblies are included. LCA for building envelope wall assemblies does not seem to include common and innovative green practices such as spray type insulation and materials with recycled content.	Spray insulation provides better air leakage control and results in faster construction time. Products that have recycled content are good green practice. The wall assemblies need to be reviewed with the criteria used for assembly selection and assessment clearly identified.	Rejected	Thank you for your comment. The wall assemblies were agreed upon by the consensus committee's resources subcommittee, which is comprised of all aspects of the industry. When new additions are considered, there are often limitations based on the availability of LCA data. The originators of the original LCA tool have formed a National Advisory Committee to continue working with a broad base of industry representatives on future iterations of the calculator that will reflect new data on assemblies as they become available.
142	SC	006P	10.6.1	10.6.1.1.	Delete – temporary buildings with a service life of < 10 years. Suggest 3 points for medium life buildings and 4 additional points for long life buildings.	Temporary buildings are not good examples of green building practices and points should not be awarded for temporary buildings. The standard should clarify the point levels for each expected service life.	Rejected	Thank you for your comment. Section 10.6.1 requires a service life plan so that the building is designed for its intended life. Some buildings are intended to have a short life span and this plan should reflect that such a building is not overbuilt and components can be disassembled and/or recycled if appropriate. (See CSA S478-95 and ISO 15686)
143	SC	006P	10.6.1	10.6.1.1	In the information reference(s) the CSA and ISO sources are consensus standards from non-profit organizations. I understand the BSD-144 is not a consensus type document and should not be included.	This standard should only include standards or guidelines from consensus based and non-profit organizations.	Accepted	Thank you for your comment. We will be removing the reference you referred to.

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144	SC	006P	10.7.6.	10.7.6.1.	Add "poured-in-place concrete wall assemblies with continuous extruded polystyrene or spray-in-place polyurethane foam" which are common exterior wall cladding systems. In Information Sources Add: Cement Association of Canada (CAC) Guide to Sustainable Design with Concrete-Version 2.0 – Other "Green" Benefits Guidelines	Poured-in-place concrete assemblies are recognized by insurance companies and Canada Mortgage and Housing Corporation (CMHC) as a good performing exterior wall cladding system. The CAC Guide Version 2.0 includes guidelines from CMHC Concrete Construction Practices.	Rejected	Thank you for your comment. We are using the NIBS guideline, as it is the most commonly used for installed envelope systems in US. While there are systems that fall outside of the NIBS guideline, it remains the committee's choice to use the NIBS guideline. Your example is a good one, and if in the future it is incorporated in the NIBS document it would be relevant.
145	SC	006P	10.7.6.	10.7.6.1.	In Information Sources Add: High-Rise Residential Construction Guide, Ontario New Home Warranty Program. See National Building Code of Canada 2005, volume 2, section A-5.8.1.1.(1)	The Building Code references this Guide which was issued by the Ontario Ministry of Municipal Affairs and Housing and to reflect that a "Build it right the first time" approach is essential for success for builders, designers and occupants. CMHC was partner in the guideline creation.	Rejected	Thank you for your comment. At this time the standard is only meant to apply to building in the US and therefore only US standards are used for informational sources.
146	SC	006P	10.9.1	10.9.1.1	Delete this clause.	Vapor retarders have been required by the Code for many years and have limited or no green attributes. They are less important than air barriers for energy performance and moisture control. These points should be reallocated to energy verification and/or moisture resistant materials.	Rejected	Thank you for your comment. However, this clause refers to a new US IECC 2009 energy code requirement that hasn't been codified regionally. The committee does not feel it is duplicating code.
147	SC	006P	10.9.1	10.9.1.2	The clause is too restrictive. Many parts of north America have basements rather than crawls spaces. Basements are additional affordable living space and provide safe haven in storms. Good green practices for full height basements with a high level of performance must be recognized. insulation, moisture control and	Add an alternative for full height high performance basements that function in terms of livability and moisture control. Add Information References: - Best Practice Guide for Full Height Basement Insulation by Ontario Ministry of Municipal Affairs and Housing, 2008.	Rejected	Thank you for your comment. However, this section only applies to crawl spaces and isn't intended to address basements.
148	SC	007P	12.2.1.1	2	add as last bullet point new item: - any European low VOC emission certification such as Blue Angel, M1, EMICODE, GUT, Indoor Air Comfort Gold, Natureplus, and more add as last bullet point new item: - any European low VOC emission certification such as Blue Angel, M1, EMICODE, GUT, Indoor Air Comfort Gold, Natureplus, and more	European low VOC emission labels showed to describe the same group of products as the US low VOC emission specifications, see attached publications. Indoor Air Quality community tries to harmonize low VOC emission specifications and test methods more and more for easier exchange of products across the oceans and for saving testing costs by avoiding unnecessary repetition of emission testing. Publication of GBI standards 01-200XP would be a great opportunity to promote this movement and facilitate life for internationally operating companies, certifiers and test houses by accepting also European certificates and labels. European low VOC emission labels showed to describe the same group of products as the US low VOC emission specifications, see attached publications. Indoor Air Quality community tries to harmonize low VOC emission specifications and test methods more and more for easier exchange of products across the oceans and for saving testing costs by avoiding unnecessary repetition of emission testing. Publication of GBI standards 01-200XP would be a great opportunity to promote this movement and facilitate life for internationally operating companies, certifiers and test houses by accepting also European certificates and labels.	Rejected	Thank you for your comment. The basis for the committee's acceptance of certification programs were those actively marketed and understood within the US. None of these programs have visibility in the US. In addition, these programs have very significant differences in procedures, criteria and verification. Your comment has not been accepted at this time.
149	SC	007P	12.2.1-A	Remark 2 below table	Add as additional test method: ISO 16000-6/-9/-11 in conjunction with European low VOC emission specification	European low VOC emission labels showed to describe the same group of products as the US low VOC emission specifications, see attached publications. Indoor Air Quality community tries to harmonize low VOC emission specifications and test methods more and more for easier exchange of products across the oceans and for saving testing costs by avoiding unnecessary repetition of emission testing. Publication of GBI standards 01-200XP would be a great opportunity to promote this movement and facilitate life for internationally operating companies, certifiers and test houses by accepting also European certificates and labels.	Rejected	Thank you for your comment. The ISO test method is used as a practice and does not provide sufficient specifics to spell out how the tests needs to be conducted. Additionally, the ISO method requires test points that are wholly inconsistent with the methods already included in the Green Globes criteria.

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150	SC	007P	12.2.1-B	Remark below table 2	Add as additional test method: ISO 16000-6/-9/-11 in conjunction with European low VOC emission specification	European low VOC emission labels showed to describe the same group of products as the US low VOC emission specifications, see attached publications. Indoor Air Quality community tries to harmonize low VOC emission specifications and test methods more and more for easier exchange of products across the oceans and for saving testing costs by avoiding unnecessary repetition of emission testing. Publication of GBI standards 01-200XP would be a great opportunity to promote this movement and facilitate life for internationally operating companies, certifiers and test houses by accepting also European certificates and labels.	Rejected	Thank you for your comment. However, the ISO test method is used as a practice and does not provide sufficient specifics to spell out how the tests needs to be conducted. Additionally, the ISO method requires test points that are wholly inconsistent with the methods already included in the Green Globes criteria.
151	SC	007P	12.2.1-B	Remark below table 1	Add as additional test method: ISO 16000-6/-9/-11 in conjunction with European low VOC emission specification	European low VOC emission labels showed to describe the same group of products as the US low VOC emission specifications, see attached publications. Indoor Air Quality community tries to harmonize low VOC emission specifications and test methods more and more for easier exchange of products across the oceans and for saving testing costs by avoiding unnecessary repetition of emission testing. Publication of GBI standards 01-200XP would be a great opportunity to promote this movement and facilitate life for internationally operating companies, certifiers and test houses by accepting also European certificates and labels.	Rejected	Thank you for your comment. However, the ISO test method is used as a practice and does not provide sufficient specifics to spell out how the tests needs to be conducted. Additionally, the ISO method requires test points that are wholly inconsistent with the methods already included in the Green Globes criteria.
152	SC	008P	2	scope	Better than "multi-family" would be some form of occupancy building type.	"Multi-family" homes is ambiguous and could be non-commercial, or even a converted classic "single family" home. A standard should better define buildings by building code terms.	Rejected	Thank you for your comment. While the word multi-family in the scope has not been modified, we have accepted a modification to the single family homes exclusion as offered by the International Code Council.
153	SC	008P	2	scope	This Standard shall not be used to circumvent any <u>code</u> health, safety, security, or environmental requirements.	Should indicate clearly this statement.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
154	EC	008P	3.1	Table 1	Why list in % - just list points.	Unless you expect total points to change, listing the actual point total is simpler.	Rejected	Thank you for your comment. At this time the Committee feels that using % is appropriate in section 3. They have agreed to change the title to "Percentage achieved out of applicable points."
155	EC	008P	5		bio-based product: commercial or industrial product utilizing at least 50% (by weight) sustainable, biologically generated substances, including but not limited to cellulosic materials (wood, straw, natural fibers) and products made derived from crops (soy-based, corn-based).	Many bio based products, like PLA, are not "made" of corn, but derived from it, via a chemical process. This definition would limit us to hay bales.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
156	EC	008P	5		construction documents: (include BIM, files, CAD, electronic media in the definition)	Do to the increased use of BIM processes, computer files should be a part of the definition.	Accepted	Thank you for your comment. It seems reasonable that the inclusion of these terms within the definition section of this document is reasonable and shall be acted upon.
157	EC	008P	5		graywater: Untreated waste water that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources. Graywater includes waste water from bathtubs, showers, and bathroom wash basins, clothes washers and laundry tubs and similar sources.	In a commercial building, other sources than that found in a home could classify as gray water – such as condensate or some process flow. The definition in this standard should be open to these streams.	Rejected	Thank you for your comment. The committee will not accept this change because graywater is clearly defined in the plumbing codes as originating <u>only</u> from sources such as lavatory wash basins, showers, bathtubs, clothes washers, and laundry tubs. The Committee has added some additional definitions for different types of water to further clarify this issue.
158	SC	008P	5		hazardous materials: any material element, compound, or combination thereof, which is flammable, corrosive, detonable, toxic, radioactive, an oxidizer, an etiologic agent, or highly reactive, and which, because of improper handling, storing processing, or packaging, may have detrimental effects, cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property, upon operating and emergency personnel, the public, equipment and/or the environment.	Attempt to save definition – don't think I did it. Currently corn starch, sugar and other materials could fit the definition. There are federal definitions which vary agency by agency – OSHA, EPA and DOT. 40 CFR 355 contains a list of over 350 hazardous and extremely hazardous substances.	Rejected	Thank you for your comment. The Committee has decided to remove this definition as well as any reference to hazardous material in the standard.
159	SC	008P	5		low-VOC product: products with a low reduced content or emissions level of volatile organic compounds.	Generally, "low-VOC products" are versions of products are formulated to do the same job as a typical product, with reduced VOC emissions or content. They may be made to some standard.	Rejected	Thank you for your comment. The Committee has decided to add VOC to the acronyms section, delete the low-VOC definition from Section 5 and low-VOC will also be eliminated when it does not refer to a table.
160	GC	008P	5		municipally reclaimed water: nonpotable water delivered by a municipal authority that meets or as a result of treatment, meets water quality requirements for its intended uses. The level of treatment and quality of the reclaimed water shall be approved by the Authority Having Jurisdiction.	EXCELLENT DEFINITION!		Thank you for your comment. We appreciate your input.

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161	EC	008P	5		schematic design phase: (include BIM, files, CAD, electronic media in the definition)	Do to the increased use of BIM processes, it should be a part of this definition.	Accepted	Thank you for your comment. It seems reasonable that the inclusion of these terms within the definition section of this document is reasonable and shall be acted upon.
162	EC	008P	5		specialized activities: activities that generate pollutants, that may include <u>but is not limited to</u> , printing rooms, smoking areas, and areas that contain equipment such as , but not limited to, photo process machines, clothing dryers, and grinding machines.	Editorial	Accepted	Thank you for your comment. The committee will accept this change.
163	SC	008P	6.4.1	6.4.1.1	Informational Reference (s) : Green Guide for HealthCare: Version 2.2;	Does not seem to be a consensus document, not sure why it is referred to here.	Rejected	Thank you for your comment. While the Green Guide for HealthCare is not a standard, there are a growing number of project teams that use this document for guidance during the design and construction phase of their health care related projects. There are areas within the GGHC that address building operations and maintenance that may be particular to health care related projects and to this we feel it is appropriate to include it as informational reference. Please note that it is up to each team to decide the approach most applicable for their project.
164	EC	008P	7.1.1	7.1.1.2	7.1.1.2 The site was located within 0.4 km (0.25 mi) of a public transportation facility such as a <u>public bus stop or commuter train-stop station</u> .	Editorial	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
165	EC	008P	7.1.1	7.1.1.4	7.1.1.4 The building was constructed on a <u>previously developed site that was served by existing utilities (electric power, water, and sewer) for a full year before construction began</u> .	Editorial	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
166	SC	008P	7.4.1.8	7.4.1.8.1	7.4.1.8.1 The need for irrigation or watering of <u>exterior vegetated spaces with potable water</u> was eliminated through plant selection, site design and landscaping practices that preserve the natural environment.	To conserve potable water.	Rejected	Thank you for your comment. The Committee agrees that the intent of the language in this section is to conserve water and therefore does not feel this change would be appropriate.
167	SC	008P	9.2.1	9.2.1.1	9.2.1.1 The baseline <u>potable</u> water use, projected <u>potable</u> water use and percentage reduction in <u>potable</u> water use were calculated using Green Globes Water Consumption Calculator. The <u>potable</u> water consumption for the proposed building or project met or surpassed the requirements set forth in the US Energy Policy Act of 1992 (and subsequent revisions and additions up to 2005) by a minimum of 25%.	There are other sources of water a building could use resulting in lower impacts. If a building meets its needs via reclaiming its own water, or reducing the use of potable water it should be encouraged. This section should be based on potable use.	Rejected	Thank you for your comment. The Committee agrees that this isn't the section where potable water needs to be addressed. Instead the Committee notes that it is addressed appropriately in section 9.10.1.1.
168	SC	008P	12.2.6	12.2.6.1	12.2.6.1 The domestic hot water system was designed to maintain hot water storage at or above 55 C (131o F).	This section doesn't work very well with tankless heaters, nor does it indicate an upper limit or use of protective devices.	Accepted	Thank you for your suggestion. The words "or to be a tankless system" will be added to the end of 12.2.6.1 criteria.
169	SC	008P	12.6.2	12.6.2.4	12.6.2.4 The following Measures were implemented to <u>minimize mitigate</u> noise from the Plumbing system such as: Piping was not run above quiet areas and learning spaces. Cast iron waste water piping was used or waste water piping noise is wrapped mitigated using cast iron pipe or with acoustic insulation <u>above quiet areas and learning spaces</u> .	Critical piping such as fire sprinklers systems and distribution rarely generates detectable noise and should not be excluded from quiet or learning areas. Claims of "noisy pipes" are usually exaggerated.	Accepted	Thank you for your suggestion. The Committee felt that additional language was needed to clarify this section. At the end of the first bullet the language "with the exception of sprinklers and radiant heating systems" was added. The Committee agreed to keep the suggested language change of "mitigate" instead of minimize. Also a third bullet was added with the language "Water hammer arrester was used". The Committee agreed to these changes stating that the key for this section is to do whatever is needed to keep noise down.
170	EC	010P	10.7.1	10.7.1.1	Include points for using single ply roofing membrane products that have achieved 3rd party certification for sustainability, i.e., NSF 347 Sustainability Assessment for Single Ply Roofing Membranes.	This would promote the use of sustainable products by recognizing 3rd party certified sustainable roofing membranes as it broadens the environmental impact to the manufacturers by incorporating LCAs and EMSs into product development and performance.	Rejected	Thank you for this comment. However, this section is dealing strictly with correct installation and inspection.
171	EC	010P	12.2.1.1	2	Include points for using wallcovering products that have achieved 3rd party certification for sustainability, i.e., NSF 342 Sustainability Assessment for Wallcovering Products.	This would promote the use of sustainable products by recognizing 3rd party certified sustainable wallcovering products as it broadens the environmental impact to the manufacturers by incorporating LCAs and EMSs into product development and performance.	Rejected	Thank you for your comment. The committee feels that sustainability standards like these often do not require that products adhere to VOC emissions criteria. Compliance to NSF 342 would not ensure low emissions.
172	EC	010P	12.2.1-B	Table 12.2.1-B:Walls	The use of low-emitting wallcoverings should be included for points. As currently written, the table only allows for paints (flat or non flat Latex) or untreated masonry or concrete. In terms of compliance, the CA01350 specification should be utilized.	Low emitting wallcovering products are available to the marketplace, and should be encouraged for use in building applications.	Rejected	The committee sought to include wallcoverings as part of interior fit out products; certifying to CA 01350 criteria is one way to comply with this section's requirements.
173	EC	010P	13		Include NSF Sustainability Specifications in References	NSF works to develop ANSI sustainability standards.	Rejected	Thank you for your comment and it will be considered in a future iteration.

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174	SC	011P	9.3.1.3		<p>9.3.1.3 One of the following strategies was used for cooling:</p> <ul style="list-style-type: none"> • 20% of the <u>annual</u> heat rejected was dissipated with <u>sensible</u> (dry) cooling. • 21% to 50% of the <u>annual</u> heat rejected was dissipated with <u>sensible</u> (dry) cooling • 51% to 75% of the <u>annual</u> heat rejected was dissipated with <u>sensible</u> (dry) cooling. • No wet cooling was utilized where any given compressor unit in a building exceeded 350 kW (100 tons) of total cooling capacity. 	Use of air cooled equipment would increase energy use. The purpose of this clause should be to promote the use of hybrid wet / dry cooling equipment during non-peak cooling seasons, rather than promote higher energy air cooled equipment all year round. The last clause should be deleted; the points should also be adjusted appropriately (four points for 51% or more reduction in water usage).	Rejected	Thank you for your comment. The Committee has inserted annual and sensible as suggested. The Committee agrees that the user needs to balance the water savings to energy savings and the design engineer should recognize that regional factors will influence this. Factors that must be considered include cooling tower pump and fan energy, WB/DB differential (as well as absolute values), and part load efficiency. Having said this, it is also recognized that in some circumstances there may be a negative tradeoff between dry cooling and water conservation. However, such compromises and tradeoffs are inherent in all building performance rating systems and it is up to the professionals responsible for the project design to make choices appropriate for their circumstances and context.
175	SC	011P	9.3	9.3.1	<p>9.3.1.1 Cooling towers for air conditioning systems shall be covered by a water treatment program specifically designed for the site.</p> <p><u>Cooling towers for air conditioning systems achieved one of the following:</u></p> <ul style="list-style-type: none"> • A minimum of 5 cycles of concentration for makeup waters having less than 200 mg/L (200 ppm) calcium carbonate or 3.5 cycles for makeup waters with more than 200 mg/L (200 ppm) calcium carbonate. OR • A minimum discharge conductivity of 1500 mg/L (1500 ppm), or a maximum 150 mg/L (150 ppm) of silica measured as silicon dioxide. 	When installations are situated in areas of extremely poor water quality, it is necessary to address the water treatment of the utility water system on a case-by-case basis to ensure that the minimum water is consumed and minimum chemicals are discharged without damaging any of the equipment in the utility water system. Please consult with water treatment experts and gain their opinion on the matter. All of the experts with whom I have spoken are against setting any minimum number of cycles that governs all sites.	Rejected	Thank you for your comment. However, the committee did not agree to eliminating specific number.
176	SC	011P	12.2	12.2.5.1 & 12.2.5.2	<p>One of the following measures were implemented:</p> <ul style="list-style-type: none"> • No wet cooling towers were installed. OR • Indoor Wet cooling towers were not equipped with side air louvers or open closed basins and ducted inlet/outlet <p><u>Points:</u> N/A if no Indoor Cooling Tower; 2 Points = Closed Basins or ducted inlet/outlet 4 Points = Closed Basins and ducted inlet/outlet</p>	From the wording and its location under 'Source Control of Indoor Pollutants' it appears that this Clause would give points if a building has a dry cooler (ie 4 points for dry cooler, 0 points for no tower, 2 points for closed wet tower) that rejects heat to the inside of the building. This system is terribly inefficient, as the building would still have to reject the heat to the outside through another system to get it outside. Providing points to such a system seems to promote a very inefficient system. Perhaps the points could be given as shown on the left.	Rejected	Thank you for your comment. However, this subclause is addressing outdoor cooling towers that may, due to poor maintenance, create microbial contamination of the moist air accompanying the operation of cooling towers.
177	SC	011P	11.1.2	11.1.2.1	CO emissions that do not exceed <u>0.05</u> 0.4 g/L (50 400 ppm) corrected to 3% O ₂ .	400 ppm is the requirement for any burner, not just low emission ones. See UL975 or ANSI Z21.13. All burners I've ever seen that can actually do 12ppm NOx can also do 50ppm CO without a problem.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
178	SC	011P	11.1.3	11.1.3.1	CO emissions that do not exceed <u>0.1</u> 0.4 g/L (100 400 ppm) corrected to 3% O ₂ .	400 ppm is the requirement for any burner, not just low emission ones. See UL975 or ANSI Z21.13. All Low Nox burners I've ever seen that can actually do 30ppm NOx can also do 100ppm CO without a problem.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
179	GC	011P	8.6.7		Water heaters should have points for exceeding ASHRAE 90.1 minimum efficiencies, just as heating equipment does in 8.6.4		Rejected	Thank you for your comment. The Committee feels that heating equipment is covered under energy use of the building using the 90.1 performance path.
180	GC	011P	8.6.11	8.6.11.3	Is a 5% leakage rate good? What is the industry standard?			Thank you for your comment. SMACNA shows that a 5% leakage rate is commonly understood to represent above-average performance.
181	SC	011P	8.6.8		Points should be given for removing pumps entirely, such as eliminating the secondary boiler loop.	Many boilers can be piped directly into the primary loop, thus eliminating the pump (and piping) of a secondary loop. This certainly exceeds the energy savings of the speed control of a secondary-loop-pump.	Rejected	Thank you for your comment. The Committee feels that the energy benefits of this suggestion would be shown up in the energy calculations and therefore no change is needed.
182	SC	012P	3.3	Table 3	I would suggest utilizing another example in lieu of (e.g. there are no cooling towers....) maybe change to (e.g. if there are no oil fired burners on site....)	First, <i>evaporatively</i> cooled chilled water systems are the most energy efficient chilled water system design. It is apparent in this guideline that it is biased against cooling tower usage. This is evident in the fact that the standard provides increasingly more points "if you do not use cooling towers". The comment in table 3 supports this theory.	Accepted	Thank you for your comment. We agree to change the example.

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183	GC	012P	8		Demand reduction and renewables compliment each other and should be included in both Path A and Path B	By setting up these two different Paths, the energy conservation technologies are separated. Both demand reduction and renewable energy compliment each other and there is no reason that they can not be used on the same project. For example: Thermal Energy Storage (TES) reduces peak demand and shifts energy consumption to non-peak hours. Renewable Wind Energy has little impact during peak energy use periods, but can have a significant impact during non-peak hours. TES provides more non-peak energy (kWh) so wind power can play a larger role.	Rejected	Thank you for your comment. Because Path A is a performance path, all of the items noted are rewarded in Path A. This does not preclude technology, but leaves it up to the team to define appropriate technologies based on building type, function, region, codes, etc.
184	GC	012P	8.1		Path A awards points for CO2 emissions, however, Path B does not. I believe that this should be one of the goals for both Paths.		Rejected	Thank you for your comment. Because Path B does not require a specific performance calculation, it is not possible to request a CO2e conversion at this time.
185	GC	012P	8.1.1	Table	Grid-delivered electricity should consider Time of Use factor	The CO2e Emission Factors list "Grid-Delivered Electricity" with the largest emission factor. I assume that this factor is an average for all hours of the year. Time-of-use should influence this factor. During peak hours, grid congestion is high, requiring all generating units (efficient and inefficient) to operate. Also, transmission and line losses are at their highest level. Off peak hours should see a different mix of generation. Less efficient units should be providing a smaller percentage of the grid power thus fewer emissions and lower line losses. This factor should be adjusted to more accurately represent the time-of-use performance of the grid. Note that the NREL paper referenced in this table mentions that the effects of Time of Use can be significant, but it is difficult and beyond its scope, a study should be commissioned to finish this analysis.	Rejected	Thank you for your comment. The committee is observing the direction that California has headed in providing this type of data. Your comment will be considered for a future iteration of the standard when data outside of California is expanded and readily available.

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186	SC	012P	8.2.1		8.2.1 Passive Demand Response Reduction	The term Demand Response implies that the demand reduction is temporary and will occur only when needed. The sub-sections that follow (8.2.1.1 – 8.2.1.3) and section 8.2.2 provide Permanent Demand Reduction, not demand response.	Accepted	Thank you for your comment. The committee will modify this criteria to include this change.
187	SC	012P	8.2.2	8.2.2.1	12 points or n/a >30% = 4 points >40% = 8 points >50% = 12 points n/a for Optional for Climate Zones 6-8	If it is possible to shift peak power to off peak, it should be utilized, and not be limited by Climate Zones.	Rejected	Thank you for your comment. The Committee did not agree with the change. It is non-applicable because users are not penalized.
188	SC	012P	8.6.2	8.6.2.2	A waterside economizer system was installed with a capacity to use outdoor air for cooling water in lieu of a mechanical chilled water system, draft cooling.	The waterside economizer statement is not correct. In order to have economizer operation, you must have mechanical draft cooling, the comment must refer to eliminating high horsepower mechanical chillers.	Accepted	Thank you for your comment. The intent and language of this credit will be clarified.
189	SC	012P	9.3	9.3.1.1	Cooling towers for air conditioning systems achieved one of the following: • A minimum of 5 cycles of concentration for makeup waters having less than 200 180 mg/L (200 180 ppm) Total Hardness as calcium carbonate or 3.5 cycles for makeup waters with more than 200 180mg/L (200 180 ppm) Total Hardness as calcium carbonate. OR • A minimum discharge conductivity of 1500 mg/L (1500 ppm) micromhos/cm or a maximum 150 mg/L (150 ppm) range of 125 mg/L (125 ppm) to 150 mg/L (150 ppm) of silica measured as silicon dioxide.	Recommend reducing calcium carbonate maximum to 180 ppm, by running at 5 cycles, make-up water with 180 ppm of calcium hardness will run in safer operating ranges of 630 to 900 Ca as CaCO3. Beyond this upper limit of 900 ppm it is a scale forming chemistry which may reduce heat transfer efficiency. Concerning silica, 150 ppm is generally regarded as the maximum safe level of silica in a cooling tower. Silica levels are controlled by using conductivity-controlled blowdown to control the tower cycling. With normal variability in the make-up water it will be impossible to control silica to exactly 150 ppm – too low and you would violate this requirement; too high and you would risk silica scale formation which is extremely difficult to remove. Recommend a range of 125 to 150 micromhos/cm. Conductivity is expressed in micromhos/cm not ppm.	Accepted	Thank you for this comment. We agree with your recommendation and will incorporate these changes.
190	SC	012P	9.3	9.3.1.2	Cooling tower (s) were equipped with makeup and blowdown meters. and Blow-down meters Cooling towers shall be equipped with conductivity controllers.	Blowdown meters equipped with conductivity controllers is confusing, it should say that the cooling tower is equipped with a controller.	Accepted	Thank you for your comment. The Committee agrees that towers should be equipped with makeup and blowdown meters and equipped with a conductivity controller.
191	SC	012P	9.3	9.3.1.3	• 20% of the heat rejected was dissipated with dry wet cooling. • 21% to 50% of the heat rejected was dissipated with dry wet cooling • 51% to 75% of the heat rejected was dissipated with dry wet cooling • No dry wet cooling was utilized where any given compressor unit in a building exceeded 350 kW (100 tons) of total cooling capacity.	This section is really interesting, considering the goal of high performance buildings and LEED is to meet or exceed the energy efficiency requirements of ASHRAE 90.1. This standard was written without complete consideration of the ENERGY requirements involved with air cooled chilled water systems. Also, additional electrical energy consumed by the air cooled equipment will shift the water consumption to the power plant. Evaporative cooled systems will in most cases use significantly less ENERGY than comparably sized air cooled systems. For example, on average a water cooled chiller system operates at .55 kW/ton, whereas an air cooled system operates at 1 kW/ton. A research paper developed by NREL(NREL/TP-550-33905 Consumptive Water Use for U.S. Power Production) puts the average water consumed to generate 1 kwh of electricity at 2 gallons. In addition, eliminating water cooled systems removes the option of economizer operation as recommended in in the Green Globes standard 8.6.2.2 Cooling Towers, which allow the system to potentially operate in the .1 kw/ton range.	Rejected	Thank you for your comment. However such compromises and tradeoffs are inherent in all building performance rating systems and it is up to the professionals responsible for the project design to make choices appropriate for their circumstances and context.
192	SC	012P	9.3.1	9.3.1.4	Cooling tower (s) were equipped with drift eliminators that achieved an efficiency of 0.002% 0.001% or less for counter flow or systems and 0.005% or less for cross flow systems.	A lower drift rate of 0.001% is both possible and achievable in counterflow and crossflow towers.	Accepted	Thank you for your comment. We will incorporate these changes.

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193	SC	012P	9.9.1	9.9.1.4	Cooling towers were equipped with non-chemical water treatment so that the blowdown can be used to satisfy the requirements of 9.10.1 Alternate Sources of Water. Suggest adding: 10 pts or n/a for chemical free water treatment	If cooling tower water is to be used for greywater applications such as irrigation or other purposes, it is better for the environment to have chemical free water treatment in the cooling tower.	Rejected	Thank you for your comment. The committee does not agree with your suggested addition. Blowdown from systems treated with chemicals can also be reused.
194	SC	012P	12.2.5	12.2.5.1	One of the following measures were implemented: • No wet cooling towers were installed. OR • Wet cooling towers were not equipped with side air louvers or open basins	Cooling towers provide the most energy efficient means of rejecting heat from buildings. We recommend deleting this section in its entirety. It is biased against cooling towers and in its assumption that they contribute to indoor environmental issues. There is extremely low risk that cooling towers located properly within the building envelope contribute to indoor environmental issues. In addition, the point about side air louvers or open basins does not appear to make sense to us.	Rejected	Thank you for comment. The Committee will not be incorporating the change at this time. Outdoor cooling towers that may, due to poor maintenance, create microbial contamination of the moist air accompanying the operation of cooling towers is what this subclause is addressing.
195	SC	012P	12.2.5	12.2.5.2	Wet cooling towers were not equipped with side air louvers or open basins. Informational Reference (s): • ASHRAE Guideline 12-00.	The reference to open basins and side air louvers cannot be found in ASHRAE Guideline 12-00, nor does this statement make sense.	Rejected	Thank you for your comment. However, wet cooling towers are on the outside of buildings not the inside.
196	SC	013P	5	5.1	bio-based product: ... 50% (by weight) sustainable, biologically generated substances	How is 'sustainable' defined?	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
197	GC	013P	5	5.1	Add landfill gas as an option for on-site renewable energy	Would landfill gas, piped to the location and used as thermal energy or converted to electricity count as renewable energy?	Rejected	Thank you for your comment. The Committee has decided not to include your suggestion as written. The Committee also agrees that landfill gas onsite would apply but offsite would not because it would be considered purchased green energy.
198	SC	013P	5	5.1	Change definition of post-consumer recycled content to the definition from the International Organization of Standards document, ISO 14021—Environmental labels and declarations—Self-declared environmental claims (Type II environmental labeling).	ISO definition is a well recognized definition.	Rejected	Thank you for your comment. The ISO 14021 definition for post-consumer recycled content is the one that is used. (note: recycled material definition is somewhat different than ISO, but captures the intent of ISO)
199	SC	013P	5	5.1	recycled materials: materials that have been diverted from the waste stream and reprocessed and remanufactured to form part, or all, of a new product.	Recycled content could form 100% of a new product.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
200	SC	013P	5	5.1	renewable energy: landfill gas or renewable energy as defined by Green-e: www.green-e.org/docs/energy/Appendix%20Green-e%20Energy%20National%20Standard.pdf	Green-e is a well recognized definition.	Rejected	Thank you for your comment. The Committee has decided not to include your suggested change to the definition.
201	EC	013P	7.1.1	7.1.1.3	If the building is multifamily residential, bicycle parking as described was installed for at least 50% of the units.	Sentence duplicated.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
202	SC	013P	12.2.1	12.2.1.1	2. Materials identified in Tables 12.2.1-A, 12.2.1-B and 12.2.1-C that were used in the building were demonstrated to have attained meet certification requirements in one or more of the following programs:	ANSI standards shall neither encourage nor discourage the use of third-party certification for conformity assessment. The Standard shall accommodate first party (manufacturer), second party (purchaser), and third party (independent of first and second party) claims of conformance. Third party certification shall not be required as the sole means for determining conformance for any prerequisite or optional credit within the Standard.	Rejected	Thank you for your comment. The Committee believes the standard language is stronger and preferred. The criteria uses the word "or" to give the user flexibility. There is not a mandate requiring certification because there is an alternative.
203	SC	013P	12.2.1	Table 12.2.1-A:	Carpet / carpet pads 50 g/L	SCAQMD Rule #1168 limit is very high for indoor carpet adhesive. Carpet adhesive requirement should only allow for CRI Green Label Plus (GLP) or CHPS 01350. Measuring emission rate is more meaningful than VOC content of the adhesive because emission rate models the VOCs released into the building. Note: Green Label Plus uses an emission rate vs. VOC content therefore the unit of measure is different. CRI GLP for Adhesives: 24-Hour Testing Maximum Emission Factor (EF) (µg/m ² ·hr) Total Volatile Organic Compounds (TVOC) = 8000.	Rejected	Thank you for your comment. The technical committee sought to acknowledge prevailing marketplace standards; SCAQMD Rule #1168 is the generally accepted marketplace standard.
204	EC	013P	12.2.1 VOCs	Table 12.2.1-A	VOC Content ¹	The asterisk should be a 1.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
205	SC	013P	12.2.1 VOCs	Table 12.2.1-A	VOC limits content requirements must be tested in accordance with the South Coast Air Quality Management District (SCAQMD) Rule 1168 test protocol .	SCAQMD Rule #1168 is not a testing agency. This Rule established source specific standards to reduce air quality impacts, including VOC limits.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
206	SC	013P	10.6.2	10.6.2.1	Add: <input type="checkbox"/> modular carpet	The use of modular carpet enables the reconfiguration of raised floors and allows for future reconfiguration, demounting and disassembly. If broadloom carpet were used, access to areas under raised floors is challenged, and is less reusable.	Rejected	Thank you for your comment. Although the Committee believes that floor finishings have merit, this section addresses building systems and therefore the Committee decided not to add floor finishings to this section.
207	GC	013P	10.2.1	10.2.1.1		Encouraging the use of LCA is valuable, but there should be some performance requirement that influences the selection of products that have a lower environmental footprint. Comparative LCAs and EPDs are under development and in the future may allow for comparing products based on environmental impact.		Thank you for your comment and it will be considered in future iterations.
208	GC	013P	10.2.2	10.2.2.1	"For EPA-designated products, products meeting or exceeding EPA's recycled content recommendations were used."	Provide link to EPA recommendations on recycled content. If products contain recycled content, but below the EPA recommendation, can they be counted?	Rejected	Thank you for your comment. The Committee has decided to delete the EPA designated products language in the Standard and it will be added as an informational reference.

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209	SC	013P	10.2.3	10.2.3.1	For the purposes of this requirement, a regional product is one that has at least 70% of its constituent materials (by weight) that meet the distance requirements.	The 70% requirement creates an excessive burden of documentation on manufacturers of synthetic products. Petrochemical production routes are inherently complex and geographically diverse. Even if all steps in the supply chain happen to fall within 500 miles, it is nearly impossible to document the exact path of materials from "cradle to gate". Additionally, this credit creates an excessive burden of documentation of manufacturers who use recycled feedstocks. Documenting the location of material recovery is extremely complex if not impossible without further clarification. For example, would the point of recovery be the original consumer's doorstep, intermediate reverse logistics hubs, or the actual recycling location?	Rejected	Thank you for your comment. This credit will be reevaluated in the next iteration of the standard.
210	SC	013P	10.2.4	10.2.4.1	For the purposes of this requirement, a regional product is one that has at least 70% of its constituent materials (by weight) that meet the distance requirements.	See above comment on 10.2.3.1	Rejected	Thank you for your comment. This credit will be reevaluated in the next iteration of the standard.
211	GC	013P	13	13		There are many references listed in section 13 that are not referred to in the text of the standard. How shall they be used by the project?	Rejected	Thank you for your comment. Some clarification will be made to the references.
212	SC	014P	8.6.10	8.6.10.3	Revise threshold for low-leakage dampers downward to 17.0 m ³ /min (600 fpm): Low leakage dampers (dampers with leakage rates of less than 5% of design flow) were used for air handling systems using outside air at a rate of 28.3 17.0 m ³ per minute (4000-600 ft ³ per minute) or greater.	28.3 m ³ /min (1,000 fpm) is excessive and will waste substantial energy as the dampers are in the closed position for much of the year. A lower threshold rate for requiring low leakage dampers will save substantial energy; propose a threshold for low leakage dampers of 17.0 m ³ /hr (600 fpm).	Rejected	Thank you for your comment. The Committee does not agree that there is any technical justification for this proposed change.
213	SC	014P	9.3	9.3.1.3	9.3.1.3 One of the following strategies was used for cooling: • 20% of the heat rejected was dissipated with <u>sensible</u> (dry) cooling. • 21% to 50% of the heat rejected was dissipated with <u>sensible</u> (dry) cooling. • 51% to 75% of the heat rejected was dissipated with <u>sensible</u> (dry) cooling. • No wet cooling was utilized where any given compressor unit in a building exceeded 350 kW (100 tons) of total cooling capacity.	Use of air cooled equipment would result in a substantial increase in energy use, on the order of 30% to 50% as well as an increase in peak energy use (which forces utilities to use the least efficient and most polluting generation sources). The purpose of this clause should be to promote the development and use of hybrid wet / dry cooling equipment, rather than promote higher energy air cooled equipment. These units, such as the HXV from Baltimore Aircoil Company, the WDW from Evapco, and the NCWD from Marley, all reduce water consumption (20% to 90% depending on load profile and climate) at a much lower overall level of energy consumption. These units use evaporative and sensible heat exchange sections to minimize water consumption and maximize energy savings. Based on this, the last clause should be deleted; the points should also be adjusted appropriately (four points for 51% or more reduction in water usage).	Rejected	Thank you for your comment. However such compromises and tradeoffs are inherent in all building performance rating systems and it is up to the professionals responsible for the project design to make choices appropriate for their circumstances and context.
214	SC	014P	12.2	12.2.5.1	Either delete this clause altogether or change as follows: 12.2.5.1 One of the following measures were implemented: • No wet cooling towers were installed. OR • Wet cooling towers were not equipped with side air inlet louvers or open basins. Informational Reference(s): • ASHRAE Guideline 12-00	As written, this clause discourages the use of cooling towers, which offer tremendous energy savings compared to air cooled options. This would also be in conflict with the goals of ASHRAE Standard 90.1. To guard indoor air quality (the title of 12.2), cooling towers, if used, should be equipped with inlet air louvers to avoid splashout. The goal of this section should be to encourage the proper use of cooling towers rather than encourage the use of less efficient air cooled technology. Also see next comment on Clause 12.2.5.2	Rejected	Thank you for your comment. However, wet cooling towers are on the outside of buildings not the inside.
215	SC	014P	12.2	12.2.5.2	Delete this clause: 12.2.5.2 Wet cooling towers were not equipped with side air louvers or open basins. Informational Reference (s): • ASHRAE Guideline 12-00.	This clause is redundant to 12.2.5.1 as revised above. The use of energy efficient water cooled equipment should not be discouraged.	Rejected	Thank you for your comment. Outdoor cooling towers that may, due to poor maintenance, create microbial contamination of the moist air accompanying the operation of cooling towers is what this subclause is addressing.
216	SC	014P	9.3	9.3.1	9.3.1.1 Cooling towers for air conditioning systems shall be covered by a water treatment program specifically designed for the site. 9.3.1.2 Cooling towers for air conditioning systems achieved one of the following: • A minimum of 5 cycles of concentration for makeup waters having less than 200 mg/L (200 ppm) calcium carbonate or 3.5 cycles for makeup waters with more than 200 mg/L (200 ppm) calcium carbonate. OR • A minimum discharge conductivity of 1500 mg/L (1500 ppm), or a maximum 150 mg/L (150 ppm) of silica measured as silicon dioxide.	Achievement of specific water treatment targets is dependent on the materials of construction in the cooling system (chiller, cooling tower, piping, heat exchangers, etc.). Points system should encourage and reward the development and implementation of a water treatment system for the site. As such, award 3 points for the program itself and then another 3 points if the targets listed are met.	Rejected	Thank you for your comment. However, the committee did not agree to include this change.
217	SC	014P	6.4	6.4.1	Add in the list of potential areas: • <u>Cooling equipment service plan</u>	This clause would help to assure that a service plan or program is in place for the cooling system, whether air cooled or water cooled.	Rejected	Thank you for your comment. This proposed standard addresses the maintenance of cooling equipment within the "Schedule for HVAC and Filter Maintenance". It would be redundant to add an additional line specific to "Cooling Equipment Service Plan". Additionally, please note that specific service or maintenance plans would be or is suggested to be included within the commissioning plan for the equipment contained within any particular project.
218	SC	014P	8.6.2	8.6.2.1	Change wording as follows: Maximum = 3 points or n/a Three points will be assigned for any one or combination of measures used. n/a if there is no cooling tower	Points in this category are either 3 points or none. The use of the term "maximum" is unnecessary.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.

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219	SC	014P	8.6.1	8.6.1.1	Increase the points for water cooled equipment as follows: Water cooled equipment - Maximum = 12 points or n/a 0% - 3% = 5 points 3% - 6% = 8 points 7% - 9% = 10 points 10% - 12% = 11 points 13% - 15% = 12 points Air cooled equipment - Maximum = 12 points or n/a 5% - 6% = 2 points 7% - 8% = 4 points 9% - 10% = 6 points 11% - 12% = 8 points 13% - 14% = 10points 15% = 12 points n/a where there is no cooling equipment	Water cooled equipment is much more efficient than air cooled equipment (for example, 0.55 kw/ton versus 1.1 kw/ton). Requiring water cooled equipment to increase efficiency at the same rate as air cooled equipment to earn points will actually promote a switch to lower efficiency cooling equipment, contradictory to the goals of this Standard and other Standards such as ASHRAE 90.1. As such the points system should be revised as proposed here. In this proposal, the use of more energy efficient water cooled equipment would earn points, even if only meeting the ASHRAE 90.1 minimums.	Rejected	Thank you for your comment. However, the committee does not agree with the assertion that wet cooling generally saves energy compared to dry cooling. Factors that must be considered include cooling tower pump and fan energy, WB/DB differential (as well as absolute values), and part load efficiency. Having said this, it is also recognized that in some circumstances there may be a negative tradeoff between dry cooling and water conservation. However, such compromises and tradeoffs are inherent in all building performance rating systems and it is up to the professionals responsible for the project design to make choices appropriate for their circumstances and context.
220	SC	014P	11.2	All	Create a Path A and Path B method similar to the Heating Section. Path A would utilize District Cooling and Path B would utilize site cooling equipment.	District Cooling systems are widely used in many areas (Chicago, Austin, Phoenix, Baltimore, etc.). It is unfair to award points for District Heating and not District Cooling. These systems are very energy efficient and often use thermal storage to provide further benefits (thermal storage, using either chilled water or ice is a "green" technology). Path A – District Cooling would earn the full 21 points. Path B would be as published for site cooling equipment.	Rejected	Thank you for this comment. The Committee agrees that high efficiency cooling system would be beneficial but is dealt with in the Energy section.
221	SC	014P	5.1		Add definition for "Waterside Economizer".	A definition for "waterside economizer" should be added as there is a definition for "air economizer". Reference the definition from ASHRAE 90.1: economizer, water: a system by which the supply air of a cooling system is cooled indirectly with water that is itself cooled by heat or mass transfer to the environment without the use of mechanical cooling.	Accepted	Thank you for your comment. The Committee has decided as a definition for "waterside economizer" per your suggestion.
222	SC	014P	5.1		Add definition for "District Cooling".	A definition for "district cooling" should be added as there is a definition for "district heating". Suggested definition, similar to that for district cooling: district cooling: the distribution of cooling from one or more sources to multiple buildings.	Accepted	Thank you for your comment. The Committee agrees with your suggestion and a definition for "district cooling" will be added to the standard.
223	SC	014P	8.6.8	8.6.8.1	8.6.8.1 Variable speed control of pumps was provided for 15% or more of connected closed loop hydronic pumping power for pumps greater than 3hp.	Insert the words "closed loop" before "hydronic" so this clause is not misinterpreted to apply to open loop systems. Variable flow, properly applied, can also be used on open loop systems. More caution must be used however on open loops; for instance the flow must not be reduced below the minimum flow on cooling towers so as to avoid scaling of the fill surface which in turn can lead to greater energy usage.	Rejected	Thank you for your comment. The Committee agrees that the variable flow should be encouraged for both open and closed hydronic and proper design considerations should be included for either system.
224	EC	015P	8.7.4	8.7.4.1	Recommend adding space/ breaking section between 8.7.4 and 8.7.3.1 section	Consistent with format of rest of document.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
225	EC	015P	8.8	8.8.1.3	Change 8.8.1.3 Suggested Documentation to 8.8.2 Suggested Documentation	Consistent with format of rest of document.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
226	SC	015P	10.1	10.1.1	Recommend that other LCA Calculators be accepted in addition to the Green Globes LCA Credit Calculator for Building Assemblies. (Third party and/or peer reviewed life cycle assessment calculators.)	Other LCA Calculators are available and being developed. There is a precedent in 10.2.1 Furnishings, Finishes and Fit-outs – Life Cycle Assessment that includes BEES 4.0 and Peer reviewed life cycle assessments.	Rejected	Thank you for this comment. The committee has agreed to develop alternative language and this will be addressed in a future iteration of the Standard per previous committee vote.
227	EC	015P	10.1	10.1.1.1	Recommend a numbering change: 10.1 Assemblies – Performance and 10.2 Assemblies - Prescriptive	The numbering currently is inconsistent with the other numbering used throughout the document. In listing the credits, these sections do not align like the rest of the document.	Rejected	Thank you for your comment. Your input is appreciated. It was not possible to be completely consistent with the numbering of different sections of the Standard due to the complex material and content of each section.
228	SC	015P	10.2	10.2.1	Recommend adding "Third party and/or peer reviewed life cycle assessments." to current description.	All life cycle assessments may not be peer reviewed, but may be completed by credible third parties.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
229	EC	015P	10.1	10.1.2	"Materials Content - Assemblies" should read "Material Content Assemblies"	Consistent with 10.2 and it is Material Content versus plural Materials.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
230	EC	015P	10.3	10.3.1	Capitalize "materials" to "Materials"	Typo.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
231	EC	015P	10.4	10.4	"Re-use of Existing Structure's" should reach "Re-use of Existing Structure" of "Re-use of Existing Structures"	Meaning clarification.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
232	EC	015P	10.4	10.4.1 10.4.2 10.4.3	Recommend being consistent: "re-use" or "reuse" throughout the document.	Editorial consistency.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
233	EC	015P	10.6	10.6.2	"Disassembly" should be "Disassembly"	Typo.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
234	EC	015P	10.6	10.6.4	"10.6.4 Suggested Documentation" should be "10.6.3 Suggested Documentation"	Numbering consistency.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.

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235	EC	015P	10.7	10.7.5	Edit is still redlined from last comment review.	Editorial correction.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
236	EC	015P	11.1	11.1 11.2	Recommend using "11.1 Heating Equipment – Path A" and 11.2 Heating Equipment – Path B"	The numbering currently is inconsistent with the other numbering used throughout the document. In listing the credits, these sections do not align like the rest of the document.	Rejected	Thank you for your comment. Your input is appreciated. It was not possible to be completely consistent with the numbering of different sections of the Standard due to the complex material and content of each section.
237	SC	015P	11.3	11.3.1	11.3 Storage of Hazardous Materials (6 points) is stated. However for 11.3.1.1 there are only 3 points listed and no additional credits are listed for 11.3.1. Establish which is correct and verify total points for overall document are accurate.	Points do not align with credit and total.	Rejected	Thank you for your comment. The points have been redistributed throughout the remaining subclauses.
238	GC	015P	ALL	ALL	Recommend adding the amount of points possible next the "11.3.1" level for each section.	This would allow the viewer to total points for each subsection much easier. In assembling a checklist, it was clear that as a user, you would have to add up each subsection as you were moving through the document versus seeing the information more clearly.	Rejected	Thank you for your comment. At this time the committee has decided not to change the format of the document.
239	SC	015P	13	13	REFERENCES AND GUIDELINES: Recommend adding the following standard references from National Sanitation Foundation: NSF 332 – Sustainable Assessment for Resilient Floor Coverings, NSF 336 – Sustainable Commercial Furnishings Fabric Assessment, NSF 347 – Sustainable Assessment for Single Membrane Roofing, NSF 342 – Sustainable Assessment for Wallcovering, NSF/ANSI Standard 140-2007 – Sustainable Carpet Assessment Standard, and BIFMA International: E3-2008: Business and Institutional Furniture Sustainability Assessment Standard	Additional sustainable standards that have been developed for product assessment.	Rejected	Thank you for your comment. However, sustainability standards like these often do not require that products adhere to VOC emissions criteria. Compliance to these standards would not ensure low VOC emissions from products.
240	SC	015P	13	13	Add reference: Chemical Fabrics and Films Association: Mold: Cause, Effect and Response: www.chemicalfabricsandfilm.com	Resource on mold and mildew and indoor air quality.	Rejected	Thank you for your comment. The scope of document is for new construction and this reference is for after a building has been completed.
241	GC	016P			Thank you for adding ceiling systems the list of building systems which should be designed for easy disassembly (10.6.2), however many of our comments from the first comment period do not appear to have been addressed. In the future, please make public comments and GBI's response to these comments available for public review.			Thank you for your comment. All commenters were notified that substantial revisions had been made to the standard and therefore a substantially revised draft of the standard would be released again for a full public comment. GBI's website will be updated to include the public comments from the October 24 draft of the standard and the committee's response to those comments. All commenters will be notified of the committee's responses and will have the opportunity for further communication as is required by GBI's ANSI approved procedures and ANSI essential requirements.
242	SC	016P	3	3.2	The point system still does not make sense. Recommend eliminating the first requirement (must meet 35% of total points) and instead just having two options based on the two performance paths described in Table 2. Again, the first option (35% of total) is superseded by the 50% requirements for option 2 in Table 2.	Simplify and clarify	Accepted	Thank you for your comment. The language has been changed to clarify the points for this section.
243	SC	016P	5	5.1	Add reference year to Global Warming Potential	Recommend referring to a specific GW. For example, 100 year GWP. This will make comparisons between products easier.	Rejected	Thank you for your comment. Your input is appreciated. The definition for GWP was intentionally left without a specific measure. In section 11 where GWP is used in the Standard a specific measure is required.
244	SC	016P	5	5.1	Change definition of Biobased Product to: A product determined by the USDA to be a commercial or industrial product (other than food or feed) that is composed in whole or in a significant part of biological products or renewable domestic agricultural materials (including plant, animal and marine materials) or forestry products.	Recommend that this standard use USDA's (7 U.S.C. 8102) definition for a biobased product. Also, suggest including ASTM's D6866 definition for biobased content: the amount of biobased carbon in the material or product as a percent of the weight (mass) of the total organic carbon in the product. The use of these two definitions allows an established procedure for determining biobased content to be used as supporting documentation for this credit.	Rejected	Thank you for your comment. The Committee does not feel the definition needs to be changed. The definition used in the standard is based on the USDA definition but not as limiting as the USDA definition. Also, in Section 10.2.2.2 which is about using bio-based products, we do recognize USDA products and meeting the USDA designated criteria is acceptable.
245	SC	016P	5	5.1	Include a reference for Hazardous Materials	Numerous lists exist that define hazardous materials. To clarify, please state what list(s) Green Globes will use to determine hazardous waste.	Rejected	Thank you for your comment. The Committee has decided to remove this definition as well as any reference to hazardous material in the standard.
246	SC	016P	5	5.1	Recommend the following definition: Low-VOC Products: products that emit low levels of volatile organic compounds as defined by XXX.	There is no universally recognized definition. The current definition can be interpreted to mean that the product must be positively correlated with better indoor air quality. This is a difficult thing to prove and should be removed from the definition.	Rejected	Thank you for your comment. Instead of changing the definition the Committee has added VOC to the acronyms and deleted low-VOC definition from section 5.
247	SC	016P	7	7.1.1.3	Define "Public bicycle path".	Is it an extra lane on the main road, a signed bike route, or a stand alone feature? In many areas of the country there are no specific bike routes. Also 0.25 mi is a relatively short distance (a city block in some cities), and should be lengthened.	Accepted	Thank you for your comment. The wording will be changed to say "Site has dedicated pedestrian access to connect or in the future will connect to community services, public transportation or both."

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248	SC	016P	8	8.10 (add new subsection)	Create a new Section which offers credit for low voltage systems.	Low voltage distribution systems including limited current systems (class 2) are becoming increasingly popular in buildings. Solid State Lighting, HVAC controls, fire alarms, data centers, security systems and many other systems are being designed to be low voltage. Low voltage systems reduce overall building energy use, work more efficiently with alternative energy sources such as solar and wind energy and reduce the amount of wiring, transformers, etc. required. Because low voltage systems use direct current (DC) instead of converting direct current to alternative current (AC), energy losses associated with the conversion are avoided (estimated to be 10-20% of the total energy provided). References: www.emergealliance.org , http://hightech.lbl.gov/dc-powering/ and http://www.lbl.gov/Science-Articles/Archive/EETD-DC-power.html	Rejected	Thank you for your comment. We agree that low voltage distribution should be considered as the NEC. The standards body is continually working on defining standards that apply to these systems. This revision will not be incorporated at this time, but we request you continue to keep GBI informed during future public comment periods as this standard evolves.
250	SC	016P	10	10.1	Define Assemblies. It states that "This section does not apply to Furnishings, Finishes and Fit-outs or Mechanical, Electrical and Plumbing Systems" To what does it apply? As written, it is unclear how to apply this performance path.	Clarification	Accepted	Thank you for this comment. The definition that will be added is: Assemblies are structure/envelopes systems categorized as exterior walls internal partitions windows intern floors roofs beams and columns.
251	SC	016P	10	10.5.1	Add the following after the first sentence (Strategies may include donation of material to charitable organizations or participating in manufacturer take back programs)	Including a list of strategies for achieving this credit may assist individual meet requirements.	Rejected	Thank you for your comment. While we agree with your comment, it is not consistent with the structure of the standard. Info such as this is appropriate for a user manual and will be addressed in future iterations of the standard and/or related GBI products.
252	EC	016P	10	10.5.4	Typo – Correct spelling of "landscaping" in the third bullet.		Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
253	EC	016P	12	12.1.4.1	Change the "2" on the second CO ₂ to be a subscript, not a superscript.	Typo	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
254	EC	016P	12	12.2.1.1	Delete the abbreviation "VOC" following "volatile organic content."	VOC" is defined in the Section title as "volatile organic compounds." It is confusing to use the same abbreviation for two different concepts. Typically, VOC is the abbreviation used for "volatile organic compounds," not content. Also consider defining VOC in Section 5.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
255	SC	016P	12	12.2.1.1	Add the following sentence to the end of paragraph 1: "or these materials must meet the emission requirements mentioned below based on calculations that include: area of coverage and ventilation rates based on ASHRAE Standards 62.1-2007, and ventilation volume."	Adding this paragraph adds another industry accepted test method for emissions from volatile organic compound.	Rejected	Thank you for your comment. ASHRAE Standard 62 addresses ventilation rates and not areas of coverage. ASHRAE 62 is used for ventilation.
256	SC	016P	12	12.2.1.1	Recommend clarifying how points will be awarded (for example, 0-40% of what?). Will point be rewarded based on total cost of materials, volume of materials or some other method?	Clarification needed.	Accepted	Thank you for your suggestion. The points column will be appended to include the statement: "Percentages shall be obtained by dividing the weight or quantity of any listed material (that meets the listed limit), by the weight or quantity of all of the same listed material."
257	SC	016P	12	Table 12.2.1-A and B	Add "Also, refer to ASTM D3960-05" to the footnote in both of these tables. Consider adding paints to 12.2.1A (Table A) and walls to Table 12.2.1-C (Table C) and eliminating Table B as VOC content of paint is typically addressed with sealants and adhesives and walls can be included with Floors and Interior Fit Outs"	ASTM D3960 is the "Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings." As such, this standard should be included as the test method for determining VOC content of paints and coatings.	Rejected	Thank you for your comment. This ASTM method is not generally acknowledged in most generally used VOC testing. However, alternatively, International Organization for Standardization (ISO) 11890-2 Paints and varnishes -- Determination of volatile organic compound (VOC) content Part 2: GC/MS method may be used.
258	SC	016P	12	Table 12.2.1-C	Recommend defining and/or including examples of "Interior Fit-out Products" such as "acoustical wall treatments, acoustical ceiling tiles, etc."	Clarification needed.	Accepted	Thank you for your comment. A change will be made to the section to include the products to which the standard's criteria would apply.
259	SC	016P	12	12.6.1.1	Change "acoustically separated areas" to "acoustically sensitive areas" and define.	Clarification	Rejected	Thank you for your comment, however, the committee feels that acoustical control requires a degree of separation.
260	SC	016P	12	12.6.1.1	Delete reference to "ARI 885-90 and ASTM E336-07" and replace with ASTM E1374.		Accepted	Thank you for your input. ASTM E1374 will be added to the list of Informational References.
261	SC	016P	12	12.6.1.1	Change last bullet to read "Open office areas employ significant height furniture systems, high performance ceiling tile and a sound masking system meeting ASTM E1573."	Clarifies and improves standard.	Accepted	Thank you for your input. Last bullet point shall be changed to read: "In open office areas, 60 inch high (minimum) open office furniture and/or high performance ceiling tile is specified, and a sound masking system, based on an acoustical design in which the performance minima for spatial uniformity, temporal uniformity, spectrum shape, and sound level are specified, and confirmed in accordance with ASTM E1573-02."
262		016P	12	12.6.1.1	Change "ANSI S12-2-99" to "ANSI S12.2-2002"		Accepted	Thank you for your comment. Your suggestion is appreciated and the document will be updated.
263	EC	016P	12	12.6.1.2	Add the word "Minimum" before "Sound" such that this section reads "Minimum Sound Transmission Class (STC) ratings...."		Accepted	Thank you for this comment. This change will be incorporated.
264	EC	016P	12	12.6.1.2	Add "classroom" to list of areas in second bullet and change STC for Exterior windows in the fifth bullet to 35.		Accepted	Thank you for your suggestion. The 2nd bullet point shall read: "If adjacent space is a quiet area, speech clinic, health clinic, classroom, or an exterior wall: STC-50." The 5th bullet point shall read: "Exterior windows: STC-30 STC-35."

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265	EC	016P	12	12.6.1.2	Change the word " enhanced background sound levels" in the first sentence to " reduced background sound levels". Add "room background noise using the" prior to Room Criteria in the second bullet such that the sentence reads "Spaces are designed such that room background noise using the Room Criteria (RC) rating comply with ASHRAE..."	Clarifies and improves standard.	Accepted	Thank you for your suggestion. The 1st sentence in subclause 12.6.2.1 shall read: "Measures were implemented to achieve enhanced <u>reduced</u> background sound level performance associated with mechanical systems as follows." The 2nd bullet point shall be changed to read: "Spaces are designed such that <u>room background noise using the Room Criteria (RC) rating</u> comply with ASHRAE Systems Application Handbook-2007, Chapter 47, Table 42."
266	SC	016P	12	12.6.1.3	Delete "without carpet on the floor". Does not matter if carpet is present or not. The idea is to have a ICC of 50 in the room regardless of flooring type.	Clarifies and improves standard.	Accepted	Thank you for your comment. Your input is <u>appreciated and your suggestion will be included.</u>
267	EC	016P	12	12.6.1.4	Delete "using RT 60" This language is not needed and may cause confusion.	Clarification	Rejected	Thank you for your suggestion. Some calculation method must be used.
268	SC	017P	12.2.1	1.1 & 2.1	The ability to evaluate multiple space types – office, multi-family, healthcare, schools, universities, laboratories, industrial and retail buildings – with a single standard seems questionable. A single standard may not be able to evaluate dissimilar space types with sufficient diversity to apply across different space types. VOC emissions from materials used in the building will have a different effect for an office environment compared to a school building because of the higher ventilation rates in a typical school building.	Invalid criteria to determine applicability of one standard across multiple space types.	Rejected	Thank you for your comment. However, the criteria in this credit has been developed so that products can be evaluated independent with how they might be used and into which space type that they might be deployed.
269	SC	017P	12.6	12.6.1 to 12.6.4	The ability to evaluate multiple space types – office, multi-family, healthcare, schools, universities, laboratories, industrial and retail buildings – with a single standard seems questionable. Acoustical treatment for surfaces is based on completely different rationale for different market space types. For example, for effective teacher-student communication in the case of schools, and for privacy and healing in the case of hospitals. A single standard may not be able to evaluate dissimilar space types with sufficient diversity to apply across different space types.	Invalid criteria to determine applicability of one standard across multiple space types.	Rejected	Thank you for your comment. Multiple acoustic standards are mentioned that relate to quantities and qualities being measured and that represent acoustical control measures independently of space type.
270	SC	017P	10.1.3 - 10.1.4, 10.2.3, 10.2.4, 7.1	3.1 & 4.1, 10.2.3.1, 10.2.4.1, 7.1.1.1 to 7.1.1.4	Impact on environmental and human health criteria associated with transportation effects associated with building location and density is not documented. No rationale for the allocation of points is given. GBI should address the issue of point allocation transparently and explicitly.	Inadequate weighting of points and transparency of point allocation process	Rejected	Thank you for your comment. An Analytical Hierarchy Method (AHP) was used to determine global point allocation for each assessment area. AHP is a recognized ASTM standard for making such decisions. The AHP resulting from this body's work was then compared to a similar one conducted by the National Institute of Science & Technology. The AHP is an accepted process that provided definition for subcommittee experts to then determine point allocations for each subsection.
271	SC	017P	7.1 & 7.2	7.1.1.1 – 7.1.1.4 & 7.1.2.1 – 7.1.2.3 & 7.2.1.1 – 7.2.1.3	Existing buildings do not have an option to modify location, orientation, material, etc when the use/O&M phase is considered. Existing buildings, evaluated during the use/O&M phase, do not have control over the infrastructure that surrounds them. Such buildings are unable to take advantage of an integrated means of design that influences the quality of light, energy, and ventilation systems to mention a few impacts. Existing building operation and maintenance should be evaluated using separate standards. The present format of trying to apply the standard developed for new buildings to existing building is not adequate.	New Construction and Existing buildings differ in their operations and maintenance aspects, and hence need to be evaluated using separate standards	Rejected	Thank you for your comment. As the scope indicates, the assessment criteria and rating system within the Standard apply to new commercial buildings and major renovations. Additionally, a clarification is being made to the scope to indicate: "...and include criteria related to planning for <u>subsequent operations and maintenance.</u> " The scope no longer directly references existing buildings except for major renovations.
272	SC	017P	9	9.1.1	Integrated use of environmental criteria across categories of energy, water, site, etc. is necessary to capitalize on advantages/penalties that accrue because of combined use of these criteria. Energy expended due to use of water pumps to convey water should be taken care of under both energy and water categories. The process loads involved in water conveyance need to be accounted for in the energy model for a performance based evaluation.	There is no mechanism to integrate credits across multiple environmental criteria.	Rejected	Thank you for your comment. While the rating system works to help design teams optimize their building based on weighted factors and rewards processes that result in increased energy and water conservation, ultimately the designer is the responsible for balancing the trade offs.

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273	GC	017P	Foreword		<p>We are aware (and GBI itself acknowledges it) that the foreword to the American National Standard 01-2008P Green Building Assessment Protocol for Commercial Buildings is not technically part of such standard. This appears to be an attempt to change the scope of the standard in response to USGBC's publication of the USGBC PINS relating to its Existing Building Operations and Maintenance standard. Change to GBI's scope obscurely referenced in a foreword is not a transparent, balanced, or fair way in which to evade the requirement of review and public consideration of a standard. It cannot supersede USGBC's formal ANSI PINS filing, although it appears a blatant attempt to do so.</p> <p>Interestingly, the GBI standard for the design and construction of commercial buildings during its publication in the first public comment period made no mention of possible application to ongoing operations and maintenance of a commercial building. We want to emphasize that although the foreword in the standard put out for second public comment describes the standard as available for use during the design, construction, operations and maintenance of commercial buildings, no credit or item of the standard appears directed to the actual operations or maintenance of commercial buildings. Rather, the GBI standard is directed to the design and construction of a commercial building only. Points are awarded at best for one-time modeling or benchmark of performance, and at worst to strategies to be employed which may (or may not) be utilized or utilized optimally during actual operation and in regular maintenance.</p>		Rejected	Thank you for your comment. The foreword is not part of the Standard. As the scope indicates, the assessment criteria and rating system within the Standard apply to new commercial buildings and major renovations. Additionally, a clarification is being made to the scope to indicate: <u>"...and include criteria related to planning for subsequent operations and maintenance."</u>
274	GC	017P	Omission		We renew our concerns about the limited access, fairness, balance and public transparency throughout the process utilized by GBI setting out this standard for adoption as an ANSI standard, particularly given the apparent acquisition this past summer by Jones Lang LaSalle (an international real estate firm) of the underlying rights to GBI's ratings tools. As we pointed out previously, this limitation of interest is reflected in GBI's extraordinarily small so-called consensus body of thirty persons.		Rejected	Thank you for your comment. As GBI has stated publicly, the acquisition of ECD Energy & Environment Canada by Jones Lang LaSalle does not impact GBI or the U.S. version of the Green Globes rating system or online tool. ECD Energy & Environment Canada was the creator and GBI's original licensor of the Green Globes rating system in the United States. The net result of the JLL acquisition of ECD was the transfer of GBI's exclusive and perpetual US license for the Green Globes system from ECD to JLL. Like ECD, JLL has no input into the US version of the Green Globes rating system. GBI remains a 501c3 non-profit organization and ANSI standards developer, and is continuing its efforts to establish the first green building assessment protocol for green commercial buildings as an American National Standard. GBI continues to follow ANSI essential requirements and GBI's ANSI approved procedures in the development of the proposed standard, including the formation of the consensus body. As noted to the commenter previously, GBI's standard development activities follow ANSI approved procedures.
275	GC	017P	Omissions in Standard		There is no override device apparent in the event that local law or ordinance prohibit the implementation or design of a particular credit category		Rejected	Thank you for your comment. Should a local ordinance or regulation prevent implementation of a criteria, users are directed to indicate N/A or non-applicable. This is addressed in section 3.3 of the <u>proposed standard</u> .
276	SC	017P	10.6.1		Building Service Life No standard outlining expectation of performance over life of building is set out, merely requirement of plan development	Criteria does not appear to be meaningful	Rejected	Thank you for your comment. However, there is no fixed BSL that is considered environmentally preferable. The issue based on service life is to <u>take the plan into account</u> .

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277	GC	017P	Materials		It is not possible to use this standard to evaluate both new construction and existing buildings O&M. The reasons include: 1. There is an absence of a material purchasing plan for sustainable and energy efficient materials to be used in an existing building for its operation and maintenance. 2. Wherever there is reference to such a strategy, the weighting for points that can be attained is negligible. This does not make the operations and maintenance aspect of this standard robust. Hence a single standard should not be used to evaluate new and existing buildings since it is not relevant will not be robust enough to apply across for different space types as well. Further it is not possible to have one standard to evaluate the performance of all the following space types – office, multi-family, healthcare, schools, universities, laboratories, industrial and retail buildings.	Invalid criteria to determine applicability of one standard for new & existing buildings and across multiple space types.	Rejected	Thank you for your comment. As the scope indicates, the assessment criteria and rating system within the Standard apply to new commercial buildings and major renovations. Additionally, a clarification is being made to the scope to indicate: "...and include criteria related to planning for subsequent operations and maintenance." The scope no longer directly references existing buildings except for major renovations. The standard is however specifically designed to be flexible for various building function issues.
278	SC	017P	8	8.1 – 8.9.3	An energy model for an existing building is shown to have considerable leverage on its design, as is the case with a new building – however, this is not the case.	Existing buildings differ in their energy performance, and hence need to be evaluated using separate standards	Rejected	Thank you for your comment. As the scope indicates, the rating system within the standard applies to new construction and major renovations.
279	SC	018P	5.1	Exterior vegetated space	exterior vegetated space: means outside the building footprint and paved areas. Applies only to sites where the building footprint including paved areas is 50% or less of the site and the site is vegetated with plants that are native, adapted to the ecosystem and/or non-invasive.	The definition should not put a restriction on the area. It appears as though this definition was copied from the requirements in 7.4.1.6 (the second one under path 7) and apply only to 7.4.1.6 (path 7). These requirements do not apply to 7.4.1.2, 7.4.1.3, 7.4.1.5, 7.4.1.5, and 7.4.1.6.	Accepted	Thank you for your comment. We have adopted your suggestion.
280	GC	018P	All			The document needs to be proofread.		Thank you for your comment. Your input is appreciated.
281	SC	018P	5.1	Ozone depletion potential.	A table of all ozone-depleting substances shows their ODPs, GWPs, and CAS numbers.	Where is this table of ozone-depleting substances?	Accepted	Thank you for your comment. The wording will be changed to indicate that manufacturers put out tables of all ozone-depleting substances showing their ODPs, GWPs, and CAS numbers.
282	SC	018P	5.1	Thermal energy storage system	thermal energy storage system: store heat in the form of chilled water, ice, or eutectic solution or other material in a thermal reservoir for later reuse. Its purpose is to balance energy demand between day time and night time needs.	The definition should not be limited to these three materials. Molten salt and other materials have been used.	Accepted	Thank you for your comment. The Committee agrees with your suggestion and the definition for thermal energy storage will be changed.
283	SC	018P	5.1	Vapor retarder	vapor retarder: a membrane that restricts the migration of moisture by diffusion from an area of higher vapor pressure humidity.	Moisture moves from an area of high vapor pressure to lower vapor pressure. The vapor pressure depends on the temperature and relative humidity.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
284	SC	018P	5.1	Vegetated roof	vegetated roof: A roofing assembly that includes vegetation and a growing medium of at least 4 inches in depth over a waterproofing membrane.	Do not specify a depth for the growing medium. The growing medium depth depends on the type of medium and the type of plants.	Accepted	Thank you for your comment. The definition has been changed and addresses your concern.
285	SC	018P	7.3.1.1			Define 24-hour rain event	Accepted	Thank you for your comment. the following definition will be added to the Standard: A 25-year, 24-hour storm event means the maximum 24-hour precipitation event with a probable recurrence interval of once in 25 years, as defined by the National Weather Service.
286	SC	018P	8.4.1-A	Walls above grade, wood frame and other	Climate Zones 4, 5, and 6: R-13.0 + R-3.8 ci or R-19 Climate Zone 7: R-13.0 + R-7.5 ci or R-20.0 + R2.5 ci Climate Zone 8: R-13.0 + R-10.0 ci or R-20.0 + R5.0 ci	Include both the values in the first public review AND the values in the second public review. This change was not discussed at the August meeting. The values were most likely changed to accommodate those who prefer 2x6 framing to 2x4 framing. When insulating above R13, about half of the country uses 2x4 construction with insulation sheathing and the other half uses 2x6 framing. The 2x6 framing introduces more thermal bridging than the 2x4 framing with sheathing. A better compromise would be to state both as is done in the IECC. The change in this draft reduces the stringency of the standard in climate zones 4, 5, and 6.	Accepted	Thank you for your comment. The committee will modify Table 8.4.1-A to include this change.
287	SC	018P	10.1.1	Path B	10.1.2 Materials Content Recycled Content – Assemblies	This section pertains to much more than recycled content. See actual name of section 10.1.2.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
288	SC	018P	10.1.2.1	EPA designated products		Need reference for where to find these and date of document.	Accepted	Thank you for your suggestion. The Committee has decided to delete the EPA designated products.
289	SC	018P	10.5.2.1		10.5.2.1 The project re-used existing materials from off-site for site development or landscaping (e.g. crushing concrete for aggregate base or drain rock, shredding vegetative materials for mulch etc...)	Change back to the language in the first public review draft. Materials for reuse should be encouraged whether they are from on-site or off-site.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.

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290	SC	018P	10.6.1.1		<u>10.6.1.1 An architect or design professional provided a letter documenting how the building design uses materials efficiently and/or minimizes the use of raw materials. The letter included specific measures, calculations, drawings and specifications.</u>	Use language from first public review draft. One of the best ways to minimize resources is to design for efficiency.	Accepted	Thank you for your comment. Your input is appreciated and your suggestion will be included.
291	SC	018P	10.6.2.1		<u>10.6.2.1 An architect or design professional provided a letter documenting how the building design uses assemblies that perform multiple functions. The letter included specific measures, calculations, drawings and specifications.</u> Informational Reference (s) : • <u>Appendix O</u>	Use language from first public review draft. Assemblies that perform multiple functions are one of the best ways to minimize material use. These multiple functions include structural members that also act as interior or exterior finishes, or for fire resistance, wind resistance, or enhanced thermal performance.	Accepted	Thank you for your comment. Your input is appreciated and your suggestion will be included.

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292	SC	018P	Table 12.2.1-B: Walls	VOC content	Untreated concrete or masonry. Negligible Not applicable	Untreated concrete and masonry walls have negligible VOC content and are assumed to meet this requirement. The way this is worded in the public review draft implies that the walls have to meet the VOC requirement of "negligible." The intent of the subcommittee was to acknowledge that untreated masonry and concrete do not have measurable VOC content and no testing is needed. This comment was made to the first public review draft and it was my understanding that this was to be corrected in the second public review draft, but it was not.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
293	SC	018P	12.3.2.1		Adapted from ASHRAE July 2008 draft Indoor Air Quality Guide - Best Practices for Design, Construction and Commissioning.	It is inappropriate to reference a draft ASHRAE guide. This is stated on the draft guide and the guide has not completed public review.	Accepted	Thank you for your comment. We will implement your suggestion.
294	SC	018P	12.6.2.1		ASHRAE 1322-RP	This document could not be found on the internet or on the ASHRAE website. The reference should be deleted or corrected.	Accepted	Thank you for your comment. The Committee agrees that research papers and proposed standards will not be included in the standard.
295	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): Appendix N - The Green Globes LCA Credit Calculator for Building Assemblies	The LCA Credit Calculator is oversimplified. Putting it into the hands of users who are not LCA practitioners will give them a false sense of security that the answer is accurate and robust. In fact, the calculator makes many oversimplifying assumptions. Energy standards and codes do not allow the use of simple energy trade off programs (and neither does this standard). LCA is even more complex than energy analysis, and simplified programs should not be allowed.	Rejected	Thank you for your comment. The decision to use the assembly comparison approach was taken by the full voting committee as a basic method that has been highly successful in other rating systems and is consistent with the general level of understanding and competence of design teams. It moves the use of LCA into the mainstream without requiring that design teams retain specialized consultants or purchase additional software.
296	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): Appendix N - The Green Globes LCA Credit Calculator for Building Assemblies	The LCA Credit Calculator makes many assumptions that will give a misleading or wrong answer. For example, the recycled content of cementitious materials and the total cementitious materials in concrete has a large effect on LCA results and should be included in a simplified tool for accuracy and educational purposes. Yet, the LCA Credit Calculator assumes all concrete has the same cement content and recycled materials content. Furthermore, it assumes there is no recycled content in masonry, which usually has recycled content. The reason concrete does not fair well in the LCA Credit Calculator is because of the heavy weighting on CO2 emissions of cement. Yet, the LCA Credit Calculator provides no means of using less cement or a replacement for cement (such as fly ash or slag cement), which has a major effect on the embodied CO2 of the concrete. Concrete is the most used material on earth besides water. The LCA Credit Calculator does not address the major LCA issues that designers can control when specifying concrete. ISO 14044 and 21930 indicate that inputs and outputs should have environmental relevance. The assumptions for concrete in the LCA Credit Calculator (with one amount of fly ash that is not commonly used) are not consistent with environmental relevance. Similarly, the assumptions for masonry in the LCA Credit Calculator (with no replacements for portland cement) are not consistent with environmental relevance.	Rejected	Thank you for your comment. The Resources Subcommittee devoted considerable time to assessing all assembly definitions and assumptions, ensuring a reasonable level of accuracy and comprehensiveness without making the calculator too complex. In the case of supplementary cementitious materials (SCMs), the subcommittee agreed to a relatively high SCM content compared to the national average in order to ensure that relevant concrete was not unduly penalized. Other decisions with regard to basic materials assumptions were made on the advice of industry experts and/or relevant literature, with sensitivity analyses as required to ensure that basic assembly comparison and ranking would not be unduly affected.

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297	SC	018P	10.1.1.1		<p>Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): Appendix N – The Green Globes LCA Credit Calculator for Building Assemblies</p>	<p>The LCA Credit Calculator does not include energy use and includes only material use; so assemblies with more insulation or more thermal mass will have a lower score. This will encourage designers to optimize their design so that they are using just enough insulation and thermal mass to get the energy credits while still getting the optimum amount of LCA credits. This approach will NOT move designers towards zero energy buildings, because they will be penalized for using additional insulation and thermal mass. The combination of the energy portion of this standard and the LCA Credit Calculator do not encourage integrated design because the energy and LCA portions are not integrated.</p>	Rejected	<p>The decision to use the assembly comparison approach was taken by the full voting committee as a basic method that has been highly successful in other rating systems and is consistent with the general level of understanding and competence of design teams. It moves the use of LCA into the mainstream without requiring that design teams retain specialized consultants or purchase additional software. The use of this approach precludes taking operating energy into account as part of credit 10.1.1.1, but operating energy is taken into account in the energy section of the rating system. The potentially lower LCA score for assemblies that have high operating energy performance reflects a real world trade-off, and the LCA credit calculator does not have the degree of flexibility to allow the level of point hunting suggested by the comment.</p>
298	SC	018P	10.1.1.1		<p>Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): Appendix N – The Green Globes LCA Credit Calculator for Building Assemblies</p>	<p>The functional unit in the LCA credit calculator is not consistent with ISO 14044 and ISO 21930. A wall that serves more than one function, such as fire resistance, wind resistance, or resistance to noise is penalized because these have not been considered in the functional unit of the LCA Credit Calculator. The LCA Credit Calculator does not encourage integrated design because it does not consider integration of the assemblies with other functions of the building.</p>	Rejected	<p>Thank you for your comment. The decision to use the assembly comparison approach was taken by the full voting committee as a basic method that has been highly successful in other rating systems and is consistent with the general level of understanding and competence of design teams. The selected assemblies represent a range of commonly used assemblies for the relevant climate zones and were agreed upon by the voting committee.</p>
299	SC	018P	10.1.1.1		<p>Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): Appendix N – The Green Globes LCA Credit Calculator for Building Assemblies</p>	<p>developed to account for differences in insulation between northern and southern climates. Yet the thermal performance of the exterior walls within those categories is not equivalent. Most of the concrete walls have R-values of approximately 21. Plus concrete has thermal mass that improves its energy performance to provide equivalence above this value. Therefore, the concrete wall has approximately twice as much insulating value as the R-13 steel frame walls. These are not thermally equivalent. This violates the description of how the LCA Credit Calculator works as well as the principles of functional units in ISO 14044 and ISO 21930.</p> <p>Walls in the LCA Credit Calculator should be chosen to meet a particular performance, such as the energy requirements in Table 8.4.1-A and B. Here, the total wall U-factors in cold populated climates (Climate Zones 5 and 6) are a U-factor of 0.090 for concrete (about twice as high as the R-22 [U = 0.045] assumed in the LCA Credit Calculator for concrete), 0.064 for steel framed (in between the R-13 and R-18 in the LCA Credit Calculator), and 0.064 for wood frame. The amount of insulation in the concrete walls should be lowered to meet common energy code and above code programs, so that the concrete and steel are equivalent thermal functional units. Too much insulation has a negative impact on the performance of concrete in the LCA Credit Calculator.</p>	Rejected	<p>Thank you for your comment. We are changing this to be consistent with Table 1.4.7 and therefore this change will be addressed by the the LCA Credit Calculator.</p>

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300	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): - Appendix N - The Green Globes LCA Credit Calculator for Building Assemblies	The description of the steel framed walls in the LCA Credit Calculator do not match the R-values. The R-value of a steel framed wall with 1 in. of rigid insulation is 7, not 13. The R-value of a steel framed wall with 2 in. of rigid insulation is 11, not 18. Source: ASHRAE 90.1-2007, Table A3.3.	Rejected	Thank you for your comment. The Committee has changed the table being used which addresses your concern.
301	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): - Appendix N - The Green Globes LCA Credit Calculator for Building Assemblies	Steel imported from China is 5 times more polluting than steel manufactured in the US. The quantity and the associated impacts for steel used for construction imported from China and other emerging economies needs to be taken into account in the LCA Credit Calculator.	Rejected	Thank you for your comment. The Committee agrees that current data does not distinguish steel from China. It was also pointed out that a table is available which shows which data the eco-calculator uses. While desirable to have exact data travel with products, this is not practical today.
302	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): - Appendix N - The Green Globes LCA Credit Calculator for Building Assemblies	The impact weightings are too heavy based on CO2 because that is the fad at the present time. We have forgotten our history and the severe damage to the environment and human health in the US caused by emissions to air and water as well as solid waste. These toxic emissions to air and water as well as solid waste are now occurring in the countries where most of our materials are made. We have regulations concerning emissions to air and water as well as solid waste in the U.S. so they did not rate high in the NIST exercise because they are "under control" and not on our radar. CO2 is what we have yet to control in the U.S. However toxic substances in the air, water, and solid waste are a serious health hazard and their effects should not be diminished by a scoring system that is heavily weighted by CO2. A more balanced weighting of impacts such as is traditionally used in LCA models should be used. The following impacts are used in the UK tool (which is quoted as being similar to the EcoCalculator): climate change, fossil fuel depletion, ozone depletion, human toxicity to air, waste disposal, water extraction, acid deposition, eutrophication, ecotoxicity, summer smog, minerals extraction, and human toxicity to water. Impacts on flora and fauna and due to hazardous wastes should also be included. My notes from the Aug 2008 GBI meeting reflect that Mr. Trusty indicated that the LCA Credit Calculator impacts would be changed to those in Traci before the 2nd public review draft. This has not occurred.	Rejected	Thank you for your comment. The voting committee conducted a facilitated Analytical Hierarchy Process (AHP) to determine the percentage of points to be assigned to each assessment within the rating system and the relative weights to be assigned to the impact measures in the credit calculator. The weights were compared to those developed for the impact measures used in the NIST BEES tool and found to be consistent. The work on the revised set of impact measures was not completed in time for the second public comment release of GBI 01-200XP, but that work is ongoing and the final version of the system will include the TRACI formulations of the impact measures required under ISO 21930.
303	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): - Appendix N - The Green Globes LCA Credit Calculator for Building Assemblies	The LCA Credit Calculator does not have an impact indicator related to loss of flora and fauna that is based on a functional unit of the assembly. This is required so that inputs and outputs have environmental relevance. The resource impact is based on weight of material but should be based on sq ft of functional unit.	Rejected	Thank you for your comment. There is no accepted measure of flora and fauna loss and the current measure of ecologically weighted resource use is based on the mass of specific resources used in the production of products, which in turn reflects the square footage of selected assemblies.
304	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): - Appendix N - The Green Globes LCA Credit Calculator for Building Assemblies	ISO 14044 does not allow combining of impact indicators. Therefore, points in the LCA Credit Calculator should be provided for each impact, not for the impacts combined.	Rejected	Thank you for your comment. The impact indicators for each assembly are evaluated separately. There is a range and an average number for each indicator (such as GWP) on every assembly. It is possible to rank any set of assemblies by individual indicators. The impacts were then weighted by the Committee using an Analytical Hierarchy Process. Only then are they combined into a composite number so that points can be awarded in Green Globes. This is similar to the RBFFAM system.

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305	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): ~Appendix N The Green Globes LCA Credit Calculator for Building Assemblies	There is no explanation of how CO ₂ is addressed for forest products. For instance, are all forests considered sustainably managed? What is the cycle for growth? Are the CO ₂ absorption rates realistic? How is imported wood and its impacts handled?	Rejected	Thank you for your comment. The management of forest resources and related sustainability issues are outside the purview of LCA and are separately covered in clause 10.3.2. Data embedded in the credit calculator related to forest production extraction, manufacturing, transportation and use is taken for the U.S. LCI Database maintained by the National Renewable Energy Laboratory, as is data for cement, steel and other materials. In addition the data used for CO ₂ in the calculator is from the international panel on climate change which says to be neutral.
306	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): ~Appendix N The Green Globes LCA Credit Calculator for Building Assemblies	Forest fires in the U.S. are a major contributor to global warming and melting of glacial ice. Soot from the fires settles on glacial ice, decreases its solar reflectance, and speeds melting. This should be accounted for in the LCA Credit Calculator. ISO 14044 and 21930 indicate that inputs and outputs should have environmental relevance. Source: The Scientific Certification Systems 2008 draft standard SCS-002-2008, "Type III Life-Cycle Impact Profile Declarations for Materials, Products, Services, and Systems"	Rejected	Thank you for your comment. Forest fires are neither an input nor an output associated with the manufacture and use of wood products.
307	SC	018P	10.1.1.1		Delete Path A: 10.1.1.1 The Green Globes LCA Credit Calculator for Building Assemblies was used to evaluate building assemblies (structural system and envelope) in the conceptual design phase based on life cycle impacts. Informational Reference (s): ~Appendix N The Green Globes LCA Credit Calculator for Building Assemblies	The air and water pollution indexes in the LCA Credit Calculator are for the worst pollutant. This is an oversimplification because it considers only the worst and not the cumulative effect of all the pollutants. My notes from the Aug 2008 GBI meeting reflect that Mr. Trusty indicated that the LCA Credit Calculator impacts would be changed to those in Traci before the 2nd public review draft. This has not occurred. ISO 14044 and 21930 indicate that inputs and outputs should have environmental relevance.	Rejected	Thank you for your comment. The work on the revised set of impact measures was not completed in time for the second public comment release of the rating system, but that work is ongoing and the final version of the system will include the TRACI formulations of the impact measures required under ISO 21930.

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308	SC	018P	A new section 10.1.1.2		<p>10.1.1.2 Performance Option Life Cycle Assessment. Perform a life cycle assessment (LCA) according to ISO Standard 14044 and ISO 21930 for a minimum of two building alternatives: a baseline building and the proposed building. Each building shall meet the minimum point requirements for Section 8. The baseline building shall have building assemblies that have points awarded (more than zero) in the Green Globes™ LCA Credit Calculator for Building Assemblies. The service life of the buildings shall be 75 years.</p> <p>LCA Performance Metric. The impact categories used shall be those in the Green Globes™ LCA Credit Calculator for Building Assemblies or ISO 21930, and shall use the same weightings as the Green Globes™ LCA Credit Calculator. The proposed building for the project shall have an improvement over the baseline building assessed in the LCA. The points awarded will be based on the percent improvement for the proposed building compared to the baseline building, with the points awarded based on the percent improvement up to a maximum of 25 points.</p> <p>Procedure. An LCA consists of the following three steps: Step 1: Perform a life cycle inventory (LCI). The LCI accounts for all the individual environmental flows to and from the products in a building throughout its life cycle. Step 2: Compare the two building alternatives using a published third-party impact indicator method that includes, at a minimum, the impact categories required. An LCA report shall be prepared containing: 1. A description of the two building alternatives including: i. a description of the system boundary used, ii. the design life of each building, and iii. the physical differences between buildings. 2. The impact indicator method and impact categories used, including an explanation of the rationale for choosing the impact categories used. 3. The results of the LCA indicating the % improvement in the proposed building compared to the baseline building, including an explanation of the rationale for the weighting and averaging of the impacts. Step 3: Conduct a critical review by an external expert independent of those performing the LCA.</p>	Add language for an LCA performance path as agreed upon at the GBI August 2008 meeting. A working group was formed to develop the language but the chair did not convene the working group. The language submitted to the working group is provided again here. The LCA Credit Calculator is oversimplified and does not have many common assemblies. A performance path is required to provide equity for assemblies that are not in the LCA Credit Calculator.	Rejected	Thank you for your comment. The Committee agreed that this is alternative equivalent approach and that it would work for simple systems but not for a whole building. The Committee noted that this is a high priority and the working group will continue to explore appropriate alternative language for a future iteration of the standard.
309	GC	019P	Landscape and Irrigation	All sections	The Irrigation Association applauds GBI's flexible approach to program recognition in the landscape and irrigation portions of this draft standard.	It is refreshing to see a program of this nature offer equivalent available credit for innovative solutions that may in fact prove to provide more net environmental benefits to the site and its surroundings rather than defer solely to limited or passive strategies that require little or no thought and planning.	Accepted	Thank you for your comment. We appreciate your input.
310	SC	019P	5	Moisture sensors	Strike this definition and include separate definitions for rain sensors and soil moisture sensors using similar text as contained in the draft.	These devices perform separate functions and should therefore be defined separately.	Accepted	Thank you for your comment. We followed your suggestion and added rain sensors to the glossary, as well as added to the list in 7.4.1.8.4.
311	SC	019P	5	Predominantly wet climate zone	Strike or modify this definition and modify all sections affected by the use of this definition.	An unsubstantiated conclusion is made that an average of 600mm of rainfall in 12 months renders an irrigation system unnecessary. Timing and amounts of rainfall are unpredictable. Short-term drought may cause mortality or significant harm to plants and be detrimental to the site. The irrigation system is a tool used to supplement moisture and maintain plant health. The standard's goal should be to incorporate innovative methods and technologies, such as efficient irrigation systems that reduce or eliminate water waste while ensuring plant health and survivability. This also prevents the negative impacts of plant mortality and assists in the effort to maximize the benefits of healthy plants.	Rejected	Thank you for your comments. Although the Committee decided not to include your change at this time the language in the section has been clarified.
312	SC	019P	7	Path 2-7	The text should be modified to allow the merit of irrigation to new and existing plants to be determined locally.	The addition of a building envelope and accompanying hard surfaces creates a tremendous impact on the site and its surroundings. Existing plants will encounter new stresses related to those impacts. An irrigation system, appropriately designed, installed and maintained, may prevent significant natural plant loss.	Rejected	Thank you for your comment. While we agree that irrigation can help prevent plant loss, this area of the standard is focused on maintaining or restoring the natural state of the site; therefore irrigation is not a necessary part of the credit intent.
313	GC	019P	7	Path 2-7	This section seems to imply that overall environmental performance of native plants is superior to any alternative.	As we learn more about the conventional, cultivated landscape, specifications should be modified to reflect maximum environmental performance of the landscape.	Rejected	Thank you for your input. Your comment will be considered in future versions of the Standard.
314	SC	019P	7	7.4.1.7.1	The text should also allow irrigation design development by an Irrigation Association Certified Irrigation Designer.	The irrigation plan should be developed by a person or persons with specific knowledge in correct irrigation principles, including an Irrigation Association Certified Irrigation Designer. www.irrigation.org	Rejected	Thank you for your comment. The Committee has decided not to include this change in order to ensure that the standard maintains its impartiality.
315	SC	019P	7	7.4.1.8.1	Modify to allow maximum 10 point credit for use of no irrigation or reclaimed, non-potable water source.	Reclaimed or non-potable water use in the landscape places no strain on potable sources and offers a constructive disposal / retention / recharge system that requires innovation and planning that should be rewarded as a functional equivalent to "no irrigation".	Rejected	Thank you for your comment. The Committee did not agree with your proposed change, however we have modified the language in Section 7 for greater clarity.
316	SC	019P	7	7.4.1.8.2	Delete this section and replace this text with variable point rewards, reflecting the amount, by percentage, of alternative water supply utilized by the irrigation system.	It would be difficult or impossible to earn all three points from this section. If our recommendation is used pertaining to section 7.4.1.8.1, this section could allow lesser point totals for percent reduction in potable water use.	Rejected	Thank you for your comment. We have partly followed your suggestion to adjust points for either system, and moved the reclaimed rainwater option.
317	SC	019P	Appendices	Appendix I	Suggest adding "Certified Irrigation Contractor" to acceptable parties in developing site maintenance contracts.	The Irrigation Association's Certified Irrigation Contractor program equips the candidate with all the tools necessary to complete tasks designated to irrigation professionals in this section. www.irrigation.org	Rejected	Thank you for your comment. The Committee has decided not to include this change to ensure that the standard maintains its impartiality.
318	EC	009P	6.2.2	6.2.2.1	<p>6.2.2 Clean Diesel Practices</p> <p>Mandatory regulatory requirements were supplemented by including engine idle reduction strategies, use of clean alternative fuels (such as biodiesel and ULS), engine retrofits and/or engine repowers.</p> <p>Informational Reference (s): www.epa.gov/cleandiesel</p>	The suggestions are primarily editorial in nature. However, the changes make it clear that a point is achieved through doing one or more of the listed measures that go beyond regulatory mandates.	Rejected	Thank you for your comment. Please note that we have included the "Informational Reference of US EPA Clean Diesel Campaign in section 6.2.1.2 as a potential strategies that can be used to achieve this point.

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319	EC	020P	Foreword	Who Should Use This Standard	...and the International Codes Code Council	International Code (singular) Council	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
320	SC	020P	Foreword	Who Should Use This Standard	Owners, design teams, developers, contractors, lenders, institutions, various levels of government, tenants, occupants, as well as facility managers and maintenance personnel can apply this Standard to a broad range of commercial building types—such as office, multi-family, health care, schools, universities, labs, industrial, and retail. It does not apply to single-family homes, <u>two-family homes and townhouses which are three stories or less in height, as such structures which</u> are covered in the ANSI Standard developed by the National Association of Home Builders (www.nahb.com) and the International Codes Council. This standard includes prescribed levels of achievement that government	The ICC 700 ANSI Standard which is being developed by NAHB and ICC is applicable to all residential occupancies, from single-family to high-rise multi-family. The International Residential Code (IRC) is applicable to single-family homes, two-family homes and townhouses. A townhouse is specifically defined in the IRC as "A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with open space on at least two sides." If this change is accepted by the committee, the preceding definition of townhouse should be included in Clause 5.1 of the GBI 01-200XP standard.	Rejected	Thank you for your comment. The foreword is not part of the standard. However, the scope of the standard will change to reflect your suggestion.
321	SC	020P	2	SCOPE	This Standard applies to a broad range of commercial building types, including offices, multi-family, health care, schools, universities, labs, industrial, retail, etc., as well as to major renovations. The Standard does not apply to single-family homes, <u>two-family homes and townhouses which are three stories or less in height.</u> The Standard includes a point-based assessment or rating system that allows users to identify solutions that earn points for outcomes likely to achieve levels of performance commonly valued as having desirable environmental and efficiency outcomes. The assessment criteria apply to new buildings and major renovations, and include operations and maintenance criteria that are relevant to both new and existing buildings. The seven areas of assessment within the Standard include Project Management, Site, Energy, Water, Resources, Emissions and Storage of Hazardous Materials, and Indoor Environment. This Standard shall not be used to circumvent any health, safety, security, or environmental requirements. It is the sole responsibility of the user of this Standard to establish appropriate safety and health practices, to follow local codes, and to assess the applicability of criteria based on other possible regulatory limitations prior to use.	The ICC 700 ANSI Standard which is being developed by NAHB and ICC is applicable to all residential occupancies, from single-family to high-rise multi-family. The International Residential Code (IRC) is applicable to single-family homes, two-family homes and townhouses. A townhouse is specifically defined in the IRC as "A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with open space on at least two sides." If this change is accepted by the committee, the preceding definition of townhouse should be included in Clause 5.1 of the GBI 01-200XP standard.	Accepted	Thank you for your comment. Your input is appreciated and your change will be included.
322	GC	020P	5.1	Air economizer Building envelope Climate zone Commercial zone Construction Documents Existing buildings Fenestration Fenestration area Gray water Hazardous materials Low slope roofing Luminaire Nonpotable water Potable water Projection factor R-value Steep slope roofing U-factor Vapor retarder	For consideration, if GBI 01 is intended as an implementable or enforceable extension of state or jurisdictional authority (voluntary or otherwise), consistency with prevailing definitions used by state and jurisdiction-based field implementers adopting the ICC International Codes.	In the interest of avoiding non-uniform interpretation and non-uniform enforcement. For example: Section 11.3.1 and "Hazardous Materials;" Is it the intent to address "flammable and combustible gases, liquids, solids" by constructing and exhausting "specific use areas" uniquely compared to the International Building and Fire Codes, or rather to identify areas where janitorial cleaning agents, mop-sinks may result in poor indoor environmental quality issues? 11.2.3: What is meant by "Mechanical Rooms"? ICC International Mechanical Code (IMC) and ASHRAE 15 specify particular safety requirements for "Machinery Rooms" where the quantity of refrigerant in an independent circuit of a system exceeds Maximum Allowable Quantities (MAQ's). This is not the case for "Mechanical Rooms." Compare and contrast "Refrigerant Monitors" and "Leak Detectors." ICC IMC requires "Refrigerant Detectors" for "Machine Rooms."	Accepted	Thank you for your comment. Other commenters have raised similar issues. The Committee addressed several comments related to hazardous materials and substituted more appropriate wording (e.g. janitorial supplies).
323	SC	020P	5.1	Climate zone	<u>climate zone: see Section 5.1.4 of ANSI/ASHRAE/IESNA Standard 90.1-2007, or Section 301 of the 2009 International Energy Conservation Code (IECC).</u>	Collectively the International Codes are adopted at the state or local level in 50 states plus Washington, D.C. Of those states, the IECC Commercial provisions are administered state-wide in 29 states and Washington, D.C., and at the state and local level in 10 of the remaining 21 states http://www.energycodes.gov/implement/state_codes/state_status_full.php . The 90.1 Standard is administered state-wide in six (6) states. The 2009 IECC continues to refer to the provisions of Standard 90.1-2007 as an equivalent extension of the commercial efficiency provisions of the IECC.	Accepted	Thank you for your comment. The Committee has agreed to include your suggestion.

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324	GC	020P	5.1	Energy Code	energy code: ANSI/ASHRAE/IESNA Standard 90.1-2007, the 2009 International Energy Conservation Code (IECC) or the local energy code or standard, whichever is more stringent.	For consideration; In expanding the inclusive bounds of reference, the technical requirements of the proposed GBI 01 can be offered and implemented to cities counties and states implementing the commercial provisions of their local energy code or that of a prevailing national model energy code, whichever they are lawfully bound to uphold by ordinance or statute.	Rejected	The Committee discussed this suggestion and decided not to include it in Section 5. The Committee agrees this is dealt with sufficiently in Section 8.
325	EC	020P	5.3	Abbreviations and Acronyms	ICC: International Code Council, Inc.	Not incorporated	Accepted	Thank you for your comment. The revised document will read International Code Council.
326	SC	020P	8	Performance and Prescriptive design options	Both the Performance Design Option (Path A) and the Prescriptive Design Option (Path B) requires require that the proposed building design comply with ANSI/ASHRAE/IESNA Standard 90.1-2007, the 2009 International Energy Conservation Code (IECC) or the local energy code or standard, whichever is more stringent.	By referencing the 2009 IECC, the technical requirements of the proposed GBI 01 can be offered and implemented to cities counties and states implementing the Commercial provisions of the 2009 IECC in addition to those of Standard 90.1. As in our comment to 5.1 Definitions, such reference will permit greater market penetration of the proposed GBI 01 in addressing clear and present adoptions of the IECC as chosen by most U.S. cities, counties, and states that adopt codes.	Rejected	Thank you for your comment. The Appendix G is more thorough in 90.1 and therefore your suggestion will not be included.
327	SC	020P	8.1	8.1.1.1	The proposed building's Energy Use Intensity (EUI) is calculated using a computer-based simulation program that conforms to the requirements outlined in Section 506 of the 2009 International Energy Conservation Code or ANSI/ASHRAE/IESNA Standard 90.1-2007, Appendix G, Section G2.2.	From testimony in support of EC151-07/08 (Approved and appearing in the 2009 IECC), the DOE is supportive of the use of integrated design processes and whole building simulations in the commercial sector. While DOE recognizes that not all design teams will want to utilize whole building simulations for code compliance, DOE wants to make sure that those teams who do wish to use a whole building approach do it properly. The Department has noted that there was considerable discrepancy between the level of detail provided for the whole building compliance approach in Standard 90.1 (§11, ECB) and the Total Building Performance approach found in the 2006 IECC (§506). This proposal acknowledges the improved format of §506 of the 2009 IECC. DOE does believe that the level of specification provided in Standard 90.1 is adequate for an Energy Cost Budget investigation, but the format and requirements are difficult to implement and enforce. IECC §404 and §505 addressing residential and commercial performance-based design, a strong following and a well developed format that is simple to use and with which building officials are becoming familiar. Therefore the DOE and ICC Members felt this format should be adapted for jurisdictions implementing the IECC for commercial buildings. If practical and useful total building performance is to be supported by the proposed GBI 01, then the modification is a step in the right direction. The main difference between using the improved §506 of the 2009 IECC and that of Standard 90.1 is the reference to baseline requirements and simplified mechanical requirements with fewer exceptions provided in the IECC.	Accepted	Thank you for your comment. Your suggestion will be included in the standard.
328	SC	020P	8.2	8.2.1.1	Informational Reference (s): • ANSI/ASHRAE/IESNA Standard 90.1 – 2007 • 2009 International Energy Conservation Code (IECC)	Climate zones and Heat capacities of construction materials are similarly specified in the 2009 IECC. If practical and useful compliance assessment for commercial building efficiencies is to be benchmarked and supported by the proposed GBI 01, then the modification is a step in the right direction, and consistent with adoptions of the IECC as chosen by most U.S. cities, counties, and states that adopt codes.	Rejected	The committee has reviewed your suggestion and determined that the IECC does not distinguish mass material the same way 90.1 does and therefore it would not be an appropriate addition in this section.
329	SC	020P	8.5	8.5.1.3	Informational Reference (s): • ANSI/ASHRAE/IESNA Standard 90.1 – 2007 • 2009 International Energy Conservation Code (IECC)	Climate zones and Heat capacities of construction materials are similarly specified in the 2009 IECC. If practical and useful compliance assessment for commercial building efficiencies is to be benchmarked and supported by the proposed GBI 01, then the modification is a step in the right direction, and consistent with adoptions of the IECC as chosen by most U.S. cities, counties, and states that adopt codes.	Accepted	Thank you for your comment. The Committee has agreed to include your suggested informational references.
330	SC	020P	8.6	8.6.1.1	The seasonal energy efficiency ratio (SEER), energy efficiency ratio (EER), integrated part-load value (IPLV), coefficient of performance (COP) or kilowatt per ton (kW/ton) of the cooling equipment exceeded ANSI/ASHRAE/IESNA Standard 90.1 – 2007 or the 2009 International Energy Conservation Code requirements by 5-15%. If ANSI/ASHRAE/IESNA Standard 90.1-2007 or the 2009 International Energy Conservation Code requires more than one efficiency rating, the more efficient one was used. (remainder unchanged)	Equipment and appliance efficiencies are similarly specified in the 2009 IECC. If practical and useful compliance assessment for commercial building efficiencies is to be benchmarked and supported by the proposed GBI 01, then the modification is a step in the right direction, and consistent with adoptions of the IECC as chosen by most U.S. cities, counties, and states that adopt codes.	Accepted	Thank you for your comment. Your suggestion will be included in the standard.
331	SC	020P	8.6	8.6.3.1	The heating efficiency for heat pump applications exceeded ANSI/ASHRAE/IESNA Standard 90.1 - 2007 or 2009 International Energy Conservation Code requirements heating seasonal performance factor (HSPF) or coefficient of performance (COP) requirements by 5-15%. (remainder unchanged)	(same as reason to SC 8.6.1.1) Equipment and appliance efficiencies are similarly specified in the 2009 IECC. If practical and useful compliance assessment for commercial building efficiencies is to be benchmarked and supported by the proposed GBI 01, then the modification is a step in the right direction, and consistent with adoptions of the IECC as chosen by most U.S. cities, counties, and states that adopt codes.	Accepted	Thank you for your comment. Your suggestion will be included in the standard.

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332	SC	020P	8.6	8.6.4.1	The following measures were implemented: <ul style="list-style-type: none"> • Heating equipment exceeded ANSI/ASHRAE/IESNA Standard 90.1 – 2007 or 2009 International Energy Conservation Code annual fuel utilization efficiency (AFUE), thermal efficiency (Et) or combustion efficiency (Ec) requirements by 1-15%. (remainder unchanged) 	(same as reason to SC 8.6.1.1) Equipment and appliance efficiencies are similarly specified in the 2009 IECC. If practical and useful compliance assessment for commercial building efficiencies is to be benchmarked and supported by the proposed GBI 01, then the modification is a step in the right direction, and consistent with adoptions of the IECC as chosen by most U.S. cities, counties, and states that adopt codes.	Accepted	Thank you for your comment. Your suggestion will be included in the standard.
333	SC	020P	8.6	8.6.7.1	All domestic hot water heaters met the efficiency requirements of ANSI/ASHRAE/IESNA Standard 90.1 – 2007 or 2009 International Energy Conservation Code, and were equipped with intermittent, electric igniters and low NOX burners. (remainder unchanged)	(same as reason to SC 8.6.1.1) Equipment and appliance efficiencies are similarly specified in the 2009 IECC. If practical and useful compliance assessment for commercial building efficiencies is to be benchmarked and supported by the proposed GBI 01, then the modification is a step in the right direction, and consistent with adoptions of the IECC as chosen by most U.S. cities, counties, and states that adopt codes.	Accepted	Thank you for your comment. Your suggestion will be included in the standard.
334	SC/GC	020P	8.6	8.6.12.2	Ventilation heat recovery was used on systems not required by ANSI/ASHRAE/IESNA Standard 90.1-2007 or 2009 International Energy Conservation Code and included the following design items: <ul style="list-style-type: none"> • Pressure-drop impact on fan power. • Bypass for economizer operation, if applicable. • Filtration. • All connections and leak paths were sealed with metal-backed UL181A tape in accordance with the ICC 2009 International Mechanical Code or the local mechanical code, or standard whichever is more stringent. 	SC: (please see reason to SC 8.6.1.1) Sealing of duct systems is a fundamental requirement of prevailing model mechanical and energy conservation codes. Is this then a "best practice," standard operating procedure? GC: For consideration, how to define (what constitutes) "included in?" With respect to the "design items" referenced, does "included in" mean considered, contemplated, installed, value-engineered, post-construction commissioned or validated, etc?	Accepted	Thank you for your comment. Your suggestion will be included in the standard.
335	SC	020P	9.1	9.10.1.1	<i>Non-Potable water</i> applications used alternate sources of water that included, but were not limited to, the following: <ul style="list-style-type: none"> • Air conditioner condensate • Cooling tower blowdown • Foundation drain water • <i>Graywater systems, such as prescribed by the International Plumbing Code (IPC) or the Uniform Plumbing Code (UPC).</i> • Pass-through cooling water • Rainwater harvesting • Recycled, treated wastewater (<i>municipally reclaimed water</i>) • Stormwater harvesting • Swimming pool filter backwash water 	Graywater is the only item listed in 9.10.1.1 which contains considerable amounts of organic and biological materials, which can be a significant health hazard the system is not properly designed and installed. Both the IPC and UPC have provisions for graywater systems. Just as it makes sense to reference ASHRAE 90.1 and the IECC for energy provisions in this standard, it also makes sense to reference the IPC and UPC for plumbing provisions.	Rejected	Thank you for your comment. The Committee agrees with the intent of your comment. The comment was accepted in part. The clarifying language for <i>Graywater</i> will be added in the "Definitions" section of the document.
336	SC	020P	10.9	10.9.1.1	The interior side of framed walls in Climate Zones 5, 6, 7, 8 and Marine 4 were installed with a Class I or II vapor retarder that was in accordance with the 2009 International Energy Conservation Code (IECC), the local commercial building code, energy conservation code or standard whichever is more stringent 2007 Supplement.	The 2009 IECC contains the most contemporary provisions addressing moisture-forgiving wall systems designed and constructed to dry inwards, outwards and to both sides in all climate zones. Published Supplements are useful for tracking code development concerns between cycles, and are not likely to be widely adopted by U.S. cities, counties, and states that adopt codes.	Rejected	Thank you for your comment. The Committee has agreed to take out the language after "energy code..." and add "2009 International Building Code Section 1405.3"
337	SC	020P	11.2	11.2.3	One of the following measures were used: <ul style="list-style-type: none"> • If refrigerants were used in cooling equipment, mechanical machinery rooms were equipped with: – A leak detector capable of detecting leakage rates down to 2.0% per year for each HVAC Product – An alarm capable of alerting the building operator to leakage thresholds. OR <ul style="list-style-type: none"> • No refrigerants were used (not including portable cooling equipment, refrigerators, temporary cooling equipment, or equipment with less than 0.5 kg (1 lb) of refrigerant). Any HVAC refrigerants used in the building must comply with the US EPA's Significant New Alternative Policy (SNAP) Listing. Maximum = 7 points Refrigerant monitors, as required by ASHRAE Std. 15, are considered safety devices, and are not considered leak detection devices. No refrigerants = 7 points	Both the 2006 International Mechanical Code and ASHREA 15 use the term machinery room, not mechanical room, to describe enclosed spaces which contain refrigerants. For consideration. It is unclear what is meant by "Mechanical Rooms"? The ICC 2009 International Mechanical Code (IMC) and prevailing model mechanical codes are typically the "front line" of compliance assessment for commercial refrigerant applications. Along with reference to ASHRAE Standard 15, these model mechanical codes specify very particular safety requirements for "Machinery Rooms" (not "Mechanical Rooms") where the quantity of refrigerant in an independent circuit of a system exceeds Maximum Allowable Quantities (MAQ's). This is not the case for "Mechanical Rooms." Compare and contrast "Refrigerant Monitors" and "Leak Detectors." What is the intent of GBI 01 here? ICC IMC requires "Refrigerant Detectors" for "Machine Rooms," not for rooms identified on the construction documents as simply harboring elevator hydraulic equipment (a.k.a., a mechanical room).	Accepted	Thank you for your comment. This change will be accepted.

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338	SC	020P	11.3	11.3.1	Spaces used for the storage of hazardous materials / including janitorial supplies was <u>were</u> equipped <u>enclosed</u> with full-height floor-to-floor walls extending from floor to the underside of the floor or roof deck above. Openings in such walls were equipped with doors, and transfer openings were not located in the doors. Mechanical ventilation is used to exhaust the space directly to the exterior.	The original language in this provision could have been interpreted to insinuate that some janitorial supplies qualified as hazardous materials, while others do not. This revision clarifies that janitorial supplies are to be considered hazardous materials. The standard's Foreword indicates that it is intended to be used by "various levels of government". It is important that the language of the standard be coordinated with that used in building codes so that code enforcement officials may readily interpret and apply the provisions of the standard. The revisions here regarding the walls, as well as their openings, are coordinated with the 2006 International Building Code's requirements for the construction of incidental use areas (which include refrigerant machinery rooms) in Section 508.2.2.1. Note that builders, contractors, designers and engineers are also typically familiar with code language.	Rejected	The Committee has made changes to the title of section 11 as well as some of the subsections. The Committee has also decided to remove the definition for hazardous materials and any reference to hazardous material will be removed from the standard.
339	SC	020P	12.1	12.1.2.1	The following measures were implemented: • The quantity of ventilation air for the building was compliant with ASHRAE Standard 62.1-07, the ICC 2009 International Mechanical Code (IMC), or except where local codes or standards, whichever required a the greater quantity of ventilation air. (remainder unchanged)	Resulting from final action to M44-06/07, the 2009 IMC is technically consistent with ventilation rate procedures defined in ASHRAE Standard 62.1-2007 as indicative of the latest research on building indoor air and environmental quality. The improved procedures require designers to account for pollutant sources other than occupants, such as building materials and furnishings, and to account for the efficiency of the ventilation system to deliver outdoor air to the breathing zone. Ventilation systems designed using the new procedures will result in slightly lower outdoor rates for most occupancies compared to the former 2006 IMC, thereby reducing first costs and energy costs. This proposal acknowledges the improved format of Chapter 4 of the 2009 IMC addressing ventilation for human health. In approving the improved Chapter, the U.S. code compliance and assessment community does believe that the level of specification provided in Standard 62.1 is adequate for an Indoor Air Quality investigation, but the format and requirements are difficult to implement and enforce. Standard 62.1 is not widely adopted by U.S. cities, counties, and states that adopt codes for mechanical	Accepted	Thank you for your comment. Your input is appreciated and your suggestion will be included.
340	SC	020P	12.1	12.1.3	12.1.3.1 Ventilation systems were equipped with the following features: (unlisted remain unchanged) • For each air handling system in single or multiple arrangements, filters were compliant with ASHRAE 62.1-07: Section 5.9 or Section 605 of the 2009 International Mechanical Code, whichever is more stringent. • Outdoor air inlets and outlets, including louvers and rain hoods, were sized appropriately per ASHRAE 62.1-07: sections 5.6.2 through 5.6.5 or Sections, 401.4, 401.5 and 401.6 of the 2009 International Mechanical Code, whichever is more stringent. Informational Reference (s): • ASHRAE 62.1-07: section 5.6 • ICC 2009 International Mechanical Code, Sections, 401.4, 401.5 and 401.6	This proposal acknowledges the improved format of Chapter 4 of the 2009 IMC having always addressed the fundamentals of preserving the weather-resistant-integrity of building intake openings, as well as media-type and electrostatic-type filtration devices. Standard 62.1 is not widely adopted by U.S. cities, counties, and states that adopt codes for mechanical and ventilation safety and health concerns.	Rejected	Thank you for your comment. The Committee has agreed to delete language listing specific sections and add an informational reference to include Section 605 of the International Mechanical Code.
341	SC	020P	12.2	12.2.3.1	For all portions of HVAC equipment requiring routine and periodic maintenance, the following measures were implemented: • Access to equipment and equipment sections is provided in accordance with the ICC, 2009 International Mechanical Code or local mechanical standards, and the manufacturer published and/or suggested recommendations whichever is more stringent. • Access locations and clearances, including clearances for full and partial equipment were indicated on design drawings. • Distribution systems were installed in accordance with ASHRAE 62.1-07: Section 5.14 and SMACNA's "HVAC Duct Construction Standards: Metal and Flexible." • Architectural features related to access were installed in accordance with the International Building Code. • Full degree (minimum) swing for all hinged doors or fully removable access doors were indicated on design drawings for all access doors on all HVAC equipment	This proposal acknowledges prevailing mechanical codes as having always addressed the fundamentals of access to systems and equipment and duct system installation and integrity. Where the IMC is adopted in U.S. cities, counties, and states that adopt codes and conflicts between the IMC and referenced standards occur, the more restrictive generally takes precedent. As is the case with most conflicts among public health and public welfare (energy/sustainability) concerns, Ventilation, mechanical safety and public health concerns generally take precedence. Standard 62.1 is not widely adopted by U.S. cities, counties, and states that adopt codes for mechanical and ventilation safety and health concerns.	Rejected	Thank you for your comment. The Committee agrees to add the International Mechanical Code. But will not add the language "or local mechanical standards" and "whichever is more stringent". The Committee will also delete the words "and/or suggested recommendations". Lastly and informational reference will be added for IMC 2009 Section 13.

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342	GC	020P	12.3	12.3.2.1	<p>Measures to assess applicability for controlling the entry of radon included, but were not limited to these three steps (adapted from ASHRAE July 2008 draft Indoor Air Quality Guide: Best Practices for Design Construction and Commissioning.</p> <ul style="list-style-type: none"> • The potential for radon entry considered action levels, regional and local radon Synergy of radon control techniques to address other IAQ issues was identified and considered • The cost of retrofitting a radon control system versus the cost of including radon control in new construction was compared <p>Informational References:</p> <ul style="list-style-type: none"> • EPA Map of Radon Zones, http://www.epa.gov/radon/zonemap.html • ASTM 1465: Standard Practice for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings 2007 • Large Buildings Characteristics as Related to Radon Resistance: A Literature Review. United States National Risk Management; Environmental Protection Agency Research Laboratory; Research Triangle Park, NC 27711; Research and Development EPA/600/SR-97/051 July 1997 http://www.p2pays.org/ref%5C07/06403.pdf • ASHRAE July 2008 draft Indoor Air Quality Guide: Best Practices for Design Construction and Commissioning- place holder for final document • ICC 2009 International Residential Code APPENDIX F. RADON CONTROL METHODS 	For consideration, How to interpret "Measures to assess...included?" Do such measures, where identified for remediation, have to be implemented?	Rejected	Thank you for your comment. The suggestion has to do with remediation if you find radon in the building. This is not addressed in the standard because the standard is only addressing prevention.
343	SC	020P	12.5	12.5.2.1	The building design was determined to be in conformance with ANSI/ASHRAE Standard 55-04 or <u>Section 302.1 of the 2009 International Energy Conservation Code (IECC).</u>	Section 302.1 of the 2009 International Energy Conservation Code (IECC) indicates that "The interior design temperatures used for heating and cooling load calculations shall be a maximum of 72 degrees F (22 degrees C) for heating and minimum of 75 degrees F (24 degrees C) for cooling. This is basically the "centroid" of the range used by ASHRAE Standard 55-04. The two requirements are very similar. As the IECC is widely used in the US, it should be referenced in order to coordinate the GBI 01 200XP standard with other widely adopted codes. This will only serve to further the chances that the standard will be adopted and implemented.	Rejected	Thank you for your comment. The Committee feels that this language is not equivalent and therefore will not be including this suggestion.
344	GC	021P	8		In reviewing the fenestration and daylighting requirements, while there are always details with room for improvement, the proposed requirements are generally very appropriate while promoting advanced building design. I applaud your work!			Thank you for your comment. We appreciate your input.
345	GC	021P	10	new	Include an additional credit for using 2.5% of project materials from Cradle-to-Cradle certified materials.	Cradle-to-Cradle (C2C) is a growing program which goes beyond most LCA assessments, which only look at materials from cradle-to-grave. C2C also looks at 'closing the loop' and recyclability at the end of product-life. C2C also includes criteria for efficient water use and renewable energy use during production of building components, and fair labor standards in the workplace. GBI should support this excellent program with a specific credit for C2C certified materials.	Rejected	Thank you for your comment. The C2C has not been included in this standard at this point. As C2C continues to develop this may be changed in a future iteration

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346	SC	021P	10.1	10.1.1.1	Modify the LCA credit calculation for aluminum windows to include an input for % recycled content.	<p>I applaud the strong promotion of LCA analysis, but there is a significant technical flaw in the LCA credit calculator related to aluminum windows. The calculator does not account for different levels of recycled content in aluminum windows. The calculator is using the primary embodied energy and associated emissions for either new aluminum (0% recycled) or some assumed constant value of recycled content. Either way, the calculator is wrongly penalizing and causing a disincentive for products using higher amounts of recycled content.</p> <p>Making new aluminum is energy intensive, at roughly 210 MJ/kg (but please note that the industry continues to significantly reduce this -- the greenhouse gas emissions associated with aluminum production has been reduced by 56% per ton between 1990 and 2005). On the other hand, recycled aluminum only takes 5% of the energy to produce as new aluminum, or around 11 MJ/kg. Therefore, the primary energy, GWP, and related emissions will vary significantly based upon the recycled content. The aluminum in window frames can vary from 0% up to perhaps 70% recycled content, with more and more recycled content being driven by green programs like Green Globes and LEED. This leads to very large error in the LCA analysis if different levels of recycled content are not accounted for, as well as unwarranted penalty / disincentive for using higher recycled content.</p>	Rejected	Thank you for your comment. The decision to use the assembly comparison approach was taken by the full voting committee as a basic method that has been highly successful in other rating systems and is consistent with the general level of understanding and competence of design teams. The selected assemblies represent a range of commonly used assemblies for the relevant climate zones and were agreed upon by the voting committee.
347	EC	021P	12.1	12.1.2.1	<p>Modify as follows:</p> <p>** For naturally ventilated buildings : - All points within habitable spaces considered to be naturally ventilated are within 7.6 m (25 ft) of a permanent or operable wall, <u>window</u>, or roof opening to the outdoors."</p>	Editorial change highlighting that operable windows are an acceptable method for creating natural ventilation.	Accepted	Thank you for your suggestion. The 2nd bullet point, 1st sub-bullet point, in subclause 12.1.2.1 shall read: * For naturally ventilated buildings : - All points within habitable spaces considered to be naturally ventilated are within 7.6 m (25 ft) of a permanent or operable wall, <u>window</u> , or roof opening to the outdoors." The other three sub-bullet points under subclause 12.1.2.1 shall remain unchanged.
348	SC	022P	12.2.2.1	(2)	Materials identified in Tables 12.2.1-A, 12.2.1-B and 12.2.1-C that were used in the building were demonstrated to meet the VOC emission requirements have attained certification in one or more of the following programs:	<p>Please consider this objection as a negative vote on the standard. The requirement for mandatory certification should be changed to require compliance with the criteria because an American National Standard for conformity assessment should neither encourage nor discourage third party certification. The GBI draft is intended to be an American National Standard and is being developed in accordance with the principles of ANSI. ANSI is a founding member of the International Organization for Standardization (ISO) and supports the development of standards in accordance with ISO principles. See: http://www.ansi.org/standards_activities/overview/overview.aspx?menuid=3.</p> <p>The National Conformity Assessment Principles of the United States (NCAP) references ISO Guide 2: <i>Standardization and Related Activities, General Vocabulary</i> to define conformity assessment as "any activity concerned with determining directly or indirectly that relevant requirements are fulfilled." The NCAP notes that conformity assessment includes sampling and testing, inspection, supplier's declaration of conformity, certification and management system assessment and registration, and accreditation of the competence of those activities by a third party. The NCAP includes products, services, processes, systems, personnel qualifications and organizations within the framework of this discussion. See: http://www.ansi.org/conformity_assessment/ncap.aspx?menuid=4.</p>	Rejected	Thank you for your comment. The Committee believes the standard language is stronger and preferred. The criteria uses the word "or" to give the user flexibility. There is not a mandate requiring certification because there is an alternative.

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349	SC	022P	12.2.2.1	(2)	Add references to the documents defining the criteria for each of the program listed AND add the revision levels of each document.	<p>Please consider this comment as a negative vote on the standard because of conflict with the ANSI Essential Requirements for Due Process.</p> <p>Note the <i>Greenguard Environmental Institute: Method for Measuring Chemical Emissions from Various Sources Using Dynamic Environmental Chambers</i> cited for the Greenguard Children & Schools Certification program WAS REVISED DURING THIS PUBLIC COMMENT PERIOD. Therefore no single version of this Greenguard document was available for review during the full comment period, making it impossible to obtain ANSI approval of the GBI standard based on this comment period if the Greenguard document is included as a requirement for compliance.</p> <p>The specific standards for each cited program must be available for public review both during and following the ANSI public comment period, as the requirements of these programs are apparently incorporated into this draft ANS and are therefore subject to the ANSI Essential Requirements for Due Process. For example, the RFCI Floorscore program should be listed, with the SCS EC 10.2-2007 standard, <i>Environmental Certification Program, Indoor Air Quality Performance</i>, available at www.scs-certified.com.</p>	Rejected	Thank you for your comment. The test method is publicly available on the website and serves as an alternative to the California DHS method. This issue was reviewed, discussed and approved by the committee.
350	SC	022P	12.2.2.1	Table 12.2.2.1A, B, and C, (2)	2. VOC emissions results are determined by either of the following test methods: California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions Sources Using Small Scale Environmental Chambers" (CA/DHS/EHLB/R-174)." Or " GREENGUARD Environmental Institute: Method for Measuring Chemical Emissions from Various Sources Using Dynamic Environmental Chambers " used in conjunction with the GREENGUARD Children & Schools Certification Program. Source of the VOC emissions criteria is CA/DHS/EHLB/R-174.	<p>Please consider this comment as a negative vote on the standard.</p> <p>It is of paramount importance for consumers, manufacturers, and specifiers to harmonize on openly available consensus standards whenever practical to maximize efficiency and minimize confusion. This is a key tenet of the ANSI Essential Requirements for Due Process, specifically to reduce unnecessary duplication or proliferation of conflicting standards. While elements of the Greenguard Children & Schools program are based on the CA 01350 protocol, the GEI method document is not consistent with the CA 01350 standard practice in all cases.</p> <p>The CA 01350 standard practice is publicly available and has been directly adopted by the CRI Green Label Plus Program, the SCS Indoor Advantage Gold Program, the Green Guide for Health Care, and the Floorscore program. The USGBC LEED for Healthcare and USGBC LEED for Schools standards have also primarily based their emissions requirements on the CA 01350 standard practice. The Collaborative for High Performance Schools (CHPS) has long based their low-emitting requirements on the CA 01350 standard practice. Note, CHPS only accepts Greenguard Children and Schools certified products under limited and specific circumstances due to the variations involved in the Greenguard test method, see http://www.chps.net/manual/CHPS_GEI_Final_Agreement2007.pdf.</p> <p>The programs of the Greenguard Environmental Institute are proprietary and are linked to Air Quality Sciences, the single for-profit laboratory required by the Greenguard programs. Air Quality Sciences and the GEI share a headquarters building and their</p>	Rejected	Thank you for your comment. The test method is publicly available on the website and serves as an alternative to the California DHS method. This issue was reviewed, discussed and approved by the committee.
351	SC	023P	8	8	It is unclear why there is a weighting difference in the minimal required points between the Energy performance (Path A) and prescriptive paths (Path B).	We support the availability of more points in Path A, however, it appears that there is a higher relative and absolute point threshold for compliance for Path A (150 min/300 potential) vs. Path B (100 min/250 potential). Would suggest a more explicit explanation of this.	Rejected	Thank you for your comment. A comparison of several example buildings were performed using both Path A&B in various Climate Zones. Results from Path A suggest that a high bar was being established. For example, a building 50% better than the Energy Performance Rating (Target Finder) score of 50 would generate an Energy Performance Rating of approximately 92. Whereas a good Path B scoring building of approximately 150 points would just be approaching an Energy Performance Rating of 92. Thus, the committee believes that 150 points would be a good starting point for Path A scoring. This weighting could change in future iterations of the standard based on additional comparisons and data points.
352	GC	023P	8.1.1.1	8.1.1.1	Use of Target Finder to baseline building is now correct	Per our suggestions submitted 6/2008		Thank you for your comment.

Comment #	Comment Type: SC, GC, EC	Commenter #	Clause	Subclause	Comment (Verbatim)	Commenter's Reason for Revision	Lead Responder's Recommendation: Accepted, Rejected or Blank (no response needed)	Lead Responder's Response to Commenter
353	SC	023P	8.1.1-A	8.1.1-A	The table of emissions factors is incomplete (eg. No district heating or cooling fuel factors)	Suggest using the emissions factors published by EPA Climate Leaders and Energy Star programs as more complete and well-documented. Use of these factors will also align directly with the GHG emissions calculations provided by Target Finder.	Rejected	Thank you for your comment. Table 8.1.1 does allow for district heating by having a waste heat emission factor.
354	SC	023P	8.1.1-A	8.1.1-A	Contractual purchase of RECS should not be acknowledged towards improving the energy/environmental performance of an individual building.	Purchasing the environmental attributes of a green power product may reduce the emissions footprint of an organization, however, it does not improve the energy performance or efficiency of a building either from a thermodynamic or carbon intensity perspective. Underperforming buildings should not be allowed to claim improved energy performance from green power purchases. Suggest that this is removed from the energy performance path, and placed in a separate section of this protocol.	Rejected	Thank you for your comment. The committee is concerned about the practices of the voluntary REC industry. We hope the industry will move to more verifiable practices. We do limit this credit to 50 points, thus it would be difficult for an underperforming building to successfully pass the Energy Section by only purchasing RECs.
355	SC	023P	8.1.1-A	8.1.1-A	Regional emissions factors for grid supplied electricity should be used instead of one national factor. Although it doesn't direct relate to the point assessment, the carbon intensity of electricity can vary by a factor of 3 throughout US distribution grids. Use of a national factor will lead to poor accuracy of emissions footprinting for buildings following this protocol.	The WRI Protocol recommends a hierarchy of preferred emissions factor data sources. For U.S. grid-supplied electricity, WRI recommends using a regional or power pool emissions factor, such as those provided by US EPA's eGRID database. In Canada, the Canadian GHG Challenge Registry publishes provincial grid emission factors. We would recommend following the EPA's Climate Leaders and Energy Star Buildings program approach using eGRID subregions as a practical resolution of electricity origin to determine U.S. electricity emissions factors.	Rejected	Thank you for your comment. The committee believes that using national CO2 emission factors will better estimate the CO2 impacts from new buildings. Regional eGRID based CO2 emission factors are good for determining an exiting buildings CO2 emissions, however new buildings will require new (marginal) capacity to meet the new demand that is created. For example, in the Pacific Northwest no new hydro is being built, thus most likely the electric load for a new building in Seattle would met with fossil-fuel generated electricity from somewhere like Wyoming. Hopefully, with better data more accurate local emission factors for new buildings can emerge.