FOREWORD

Note that the information contained in this Foreword is not part of this Standard. It does not contain requirements necessary for conformance to the Standard. The Foreword is not subject to public review.

The Green Building Initiative (GBI) is a nonprofit organization that became accredited as an ANSI standards developer in 2005. GBI owns the U.S. license for Green Globes®—a green commercial building rating system that combines education with environmental assessments within interactive online tools for new and existing buildings as well as tenant improvement projects. Green Globes is a unique green management tool that offers flexibility, ease-of-use, and affordability while maintaining its effectiveness for assessing green building design, construction, interior fit outs, operations, and maintenance processes applicable to new commercial buildings and major renovations. GBI has made the commitment to revise its Green Globes rating system using the ANSI consensus process and ANSI approved procedures.

The following document represents revisions to GBI 01-2010 as a result of the second public comment period, objections to responses from the first comment period, and comments submitted by members of the Consensus Body with the first letter ballot on the Standard. Following this third public comment period and subsequent requirements of the ANSI consensus process, the Standard will become the next version of the online Green Globes for New Construction rating system. Upon completion of this revision under ANSI's periodic maintenance requirements, GBI will apply to maintain GBI 01-201X through ANSI's continuous maintenance procedures. This will allow for annual or bi-annual updates. Additionally, GBI is seeking building projects for a pilot of this revised Standard. The pilot will officially begin in 4th quarter of 2017. Contact GBI's Sr. Account Manager Mark Lesher at mark@thegbi.org to make him aware of your interest in pursuing Green Globes for New Construction certification of a new building or major renovation under the pilot program for this revised Standard.

Stakeholder Involvement

GBI maintains a Consensus Body of about 30 members. GBI has encouraged public participation throughout the revision process beginning in 2014. All meetings of the Consensus Body and Subcommittees are public. GBI accepts Subcommittee and Consensus Body applications year-round, and maintains a queue of applicants to fill potential vacancies in five interest categories: Government, User, Testing & Standards Organization, Producer, and General Interest. GBI's Secretariat maintains an email list of interested Stakeholders used for periodic updates on developments or opportunities to participate or comment. More information is available at www.thegbi.org/ANSI.

GBI Encourages Participation in Public Comment Periods

The public comment process is a critical element to developing an ANSI Standard. GBI encourages robust discussion and debate. ANSI consensus processes afford due process to every commenter. Commenters will receive communication from the Secretariat upon receipt of their comment and again following Consensus Body action on their comment.

Flexibility and Minimum Compliance Requirements

One of the many strengths of the Green Globes approach is the flexibility built into the Standard allowing users to consider the whole building life cycle, regional climatic issues, and local laws and ordinances while working to achieve goals that make sense for each building.

"Not Applicables" play a prominent role in Green Globes' flexibility, allowing Users to indicate criteria that are not applicable to a building or project. For instance, if a local code supersedes a criterion in the Standard and/or if

optional features (e.g. cooling towers, etc.) are not included in the project scope, then those criteria could be marked Not Applicable removing those points from the denominator in determining percentages of points achieved.

Compliance thresholds are set by this revised Standard through requirements in Section 3 on achievement levels. Every building that achieves Green Globes certification under these proposed revisions must achieve a minimum of 20% of points in each assessment area as well as a minimum of 35% of points overall.

The 1000 possible points are strategically allocated to direct users toward criteria considered most critical in the reduction of a building's environmental impacts, as well as criteria that maximize a building's opportunity to have a positive impact on a community and its occupants.

The revised Standard, as is consistent with GBI-01-2010, does not contain mandatory criteria.

Instead, additional weighting occurs within each assessment area to encourage pursuit of criteria

considered to be most important.

Through point weightings, the Standard encourages users to strive to earn the highest number of applicable points for the building type, size, and budget, while using the flexibility built into the system to keep on track with the owners' goals and objectives, the planned functionality for the building, and the potential for deconstruction or repurposing of the building. Project teams achieving One Green Globes level of certification (Level 1) on their first project—may strive for higher levels of achievement and recognition in future projects through their lessons learned. The Standard is designed to encourage and recognize incremental achievements that take buildings beyond minimum compliance requirements while incentivizing teams to innovate and strive for Levels 2, 3 or 4, thereby going beyond code and toward achievement of world class performance.

Technical Advances

Reviewers of this revised Standard will find improvements in each assessment area of the Standard that advance the art, form and definition of what constitutes a green building. Highlights of the current revised draft are noted below.

Project Management –
- 6.1.3 Site and Building Resilience was updated to clarify language, include additional Informational References and increase points.
- 6.4 Moisture Control Analysis was updated to revise the language and the points breakdown.

Site –
- 7.2.1 Transportation was modified to clarify the intent of the criteria.
- 7.3.4 Mitigating Heat Island Effect was revised to include solar reflectance.

Energy –
- Points were modified between the Energy paths to improve alignment.

Water –
- 9.1 Indoor Domestic Plumbing was updated to include Not Applicables.
- 9.3.1 Boiler and Water Heaters was revised to eliminate redundancy.

Materials –
- 10.3 was re-named Product Risk Assessment and language was changed to clarify the intent of the Section.
- 10.6.1.2 was revised to include a detailed list of what should be incorporated into the summary report.
- 10.6.3 Supply Chain Waste Minimization updated for clarity and language was added regarding discarded materials.

Indoor Environment –
- 11.5.2 Sound Masking System was re-added.

How to Submit Public Comments

A public comment form is provided at www.thegbi.org/ANSI. To submit a proposal for a substantive change to the Standard commenters must be specific about the change they are requesting and provide a reason. Commenters are expected to copy and paste a section of the Standard into the comment form and use ~~strikethrough~~ and underline to identify suggested deletions and additions to the text. ***During this third public comment period only the text appearing in the limited revisions will be available for public comment. The limited revisions are exclusively substantive changes made since the second public comment draft of the Standard***.

Learn more about the public comment process or review GBI's ANSI-approved procedures at www.thegbi.org/ANSI.

Who Should Use This Standard

Owners, design teams, developers, contractors, lenders, institutions, various levels of government, tenants, and 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. The Standard does not apply to single-family homes, two-family homes and townhouses that are three stories or less in height. These structures are covered in the ANSI/ICC 700 Standard developed by the National Association of Home Builders (www.nahb.com) and the International Code Council.

BSR/GBI 01-201X includes prescribed levels of achievement that government agencies or other entities wishing to establish specific criteria may consider when adopting this Standard. GBI also develops customized tools for governments to comply with government-specific requirements or other codes and standards. An example is GBI's unique Guiding Principles Compliance program, which is customized for use by federal agencies for compliance with Executive Orders and "High Performance and Sustainable Building" mandates.

To learn more about current Green Globes tools, visit www.thegbi.org. To learn about participation in GBI's Standard development and ANSI consensus processes, visit www.thegbi.org/ANSI or contact GBI's Secretariat Maria Woodbury at comment@thegbi.org or 207-807-8666.

SUBSTANTIVE LIMITED REVISIONS

5.1, page 9: struck definition: ~~**authoritative:** a resource that has been peer reviewed and publicly recognized for use in evaluating specified products.~~

5.1, page 10: added definition: **building resilience:** the ability of a building and project site to withstand and recover rapidly from adverse events and to adapt to changing environmental conditions.

5.1, page 14: added definition: **permeable pavements:** infiltrate, treat, and/or store rainwater where it falls. They can be made of pervious concrete, porous asphalt, or permeable interlocking pavers.

5.1, page 14: added definition: **pervious concrete:** allows some or all water to penetrate the concrete assembly

5.1, page 15: added definitions: **porous asphalt pavement(s):** allows some or all water to penetrate the asphalt assembly.

5.1, page 15: revised definition: **potable water:** water that meets the requirement of the authority having jurisdiction and is satisfactory for…purposes ~~and that meets the requirements of the authority having jurisdiction.~~

5.1 page 15: revised definition: **prefabrication:** off-site…precast concrete. This does not include m~~M~~anufactured…doors, and gypsum sheathing~~, cannot contribute to this credit~~ unless they are incorporated…

5.1, page 16: revised definition: **renewable energy:**…various forms of biomass from recovered waste sources.

5.1, page 16: revised definition: **Renewable Energy Certificates (RECs)**: ~~One REC is issued for each megawatt-hour (MWh) unit of renewable electricity produced. Electricity that is split from the REC is no longer considered "renewable" and cannot be counted as renewable or zero-emissions by the purchaser.~~ renewable energy certificates (RECs) also known as renewable energy credits, green certificates, green tags, or tradable renewable certificates, represent the environmental attributes of the power produced from *renewable energy* projects and are sold separate from commodity electricity. Customers can buy green certificates whether or not they have access to green power through their local utility or a competitive electricity marketer and they can purchase RECs without having to switch electricity suppliers.

5.1 page 16: revised defined term: **risk assessment, product:** a scientific product …

5.1, page 17: added definition: **shared use [multi-user] path:** a form of infrastructure that supports multiple non-motorized transportation opportunities, such as walking, bicycling and inline skating. A multi-use path is physically separated from motor vehicular traffic with an open space or barrier.

5.1, page 18: revised definition: **substantial completion:** …progress of ~~the Work~~ a construction project when the ~~Work~~ project or designated…Contract Documents so that the Owner can occupy or utilize the project for its intended use. ~~for unobstructed use and occupancy by the Owner and the only items of Work remaining to be completed are of a minor nature such as touch-up, adjustments, testing, corrections and omissions to be remedied (AIA A201, 9.8.1).~~

5.2, page 20: added abbreviation: **RCR:** Risk Characterization Ratio

5.2, page 20: added abbreviation: **RELs:** Reference Exposure Levels

6.1.1.1, page 22: revised points column: Five points are earned for a written plan and contract ~~for the work~~ for post-occupancy review and assessment.

6.1.2.1, page 23: Revised points column: … when a minimum of the listed job functions or groups were represented at the following milestones or during the following project phases… Milestone or Project Phase

6.1.3, page 23: revised title: ~~**Planning for Resilience**~~ **Building and Site Resilience**

6.1.3.1, page 22-24: revised title, added informational references, and changed from 1 to 3 points:
Building Risk Assessment…
Informational Reference(s)

- National Academies and the Climate Resilience Toolkit/Climate Explorer: https://toolkit.climate.gov/ (last accessed 6/30/17)
- NOAA Digital Coast: https://coast.noaa.gov/digitalcoast/ (last accessed 6/20/17)
- NOAA NESDIS 142 Series – Regional Climate Trends and Scenarios for the U.S. National Climate Assessment

6.1.3.2, page 24: revised as follows and changed from 1 to 3 points: **Building Operational Continuity or Recovery ~~Function~~ Assessment:** …rapid recovery of various building functions … Informational Reference(s)

- National Academies and the Climate Resilience Toolkit/Climate Explorer: https://toolkit.climate.gov/ (last accessed 6/30/17)
- NOAA Digital Coast: https://coast.noaa.gov/digitalcoast/ (last accessed 6/20/17)
- NOAA NESDIS 142 Series – Regional Climate Trends and Scenarios for the U.S. National Climate Assessment

6.1.3.3, page 24: added informational references and changed from 1 to 3 points: Informational Reference(s)

- National Academies and the Climate Resilience Toolkit/Climate Explorer: https://toolkit.climate.gov/ (last accessed 6/30/17)
- NOAA Digital Coast: https://coast.noaa.gov/digitalcoast/ (last accessed 6/20/17)
- NOAA NESDIS 142 Series – Regional Climate Trends and Scenarios for the U.S. National Climate Assessment

6.1.3.4, page 24-25: added informational references and changed from 1 to 2 points: Informational Reference(s)

- National Academies and the Climate Resilience Toolkit/Climate Explorer: https://toolkit.climate.gov/ (last accessed 6/30/17)
- NOAA Digital Coast: https://coast.noaa.gov/digitalcoast/ (last accessed 6/20/17)
- NOAA NESDIS 142 Series – Regional Climate Trends and Scenarios for the U.S. National Climate Assessment

6.2.1, page 25: changed section point total from 10 to 8 points

6.2.1.1, page 25: revised points column: Maximum = ~~10~~8 points…

- ~~Three~~Two points are earned … in 6.2.1.1.2…
- ~~Three~~Two points are earned … in 6.2.1.1.4.

6.2.1.1.2, page 25: revised third bullet: ~~Includes policies and practices that include continuous reporting mechanism to be reviewed by the assessor~~ Continuous reporting mechanism;

6.2.1.1.3, page 25: revised language: An ~~project *risk assessment*~~ assessment is conducted…identify major risks ~~*risks*~~ …

6.3.1.1, page 26: revised language: … The LCCA study period is not less than the expected life of the building or system ~~that referenced in ASHRAE Standard 189.1-2014, Table 10.3.2.3~~…

6.3.2.1, page 27: revised language: …Provide ~~D~~documentation of the project design *service life*, the listed systems service lives, the basis for determination….in the building ~~is provided~~…~~The *Service Life* is not less than that referenced in ASHRAE Standard 189.1-2014, Table 10.3.2.3~~

6.4, page 27: changed from 8 points to 6 points

6.4.1.1, page 27-28: revised language and point breakdown: …is performed on walls and ceilings adjacent to spaces of added moisture ~~above-grade portions of the building envelope~~ AND/OR on ~~walls and ceilings adjacent to spaces of added moisture in accordance with ASHRAE 160-2009~~ above-grade portions of the *building envelope* in accordance with ASHRAE 160-2009… Maximum = ~~8~~6 points

- Three points are earned when a moisture control design analysis is performed on walls and ceilings adjacent to spaces of added moisture.
  - Not applicable where there are no spaces of added moisture.
- Three points are earned when a moisture control design analysis is performed on above-grade portions of the *building envelope*.
- ~~Four points are earned when wall and ceiling *assemblies* are designed in accordance with moisture-control design criteria.~~
- ~~Four points are earned when roof *assemblies* are designed in accordance with moisture-control design criteria.~~

6.5, page 28: changed from 32 to 29 points

6.5.1.1.1, page 28: changed from 7 to 6 points

6.5.1.1.2, page 28: changed from 7 to 6 points

6.5.1.1.3, page 28: change from 7 to 6 points

6.5.1.1.5, page 28: added a Not applicable if there are no irrigation systems

6.5.1.1.7, page 28: added a Not applicable if there are no elevating/conveying systems

6.5.1.1.8, page 28: revised as follows: Communication AND/OR Sound Masking …Two points are earned…conducted for Communications and/or sound masking systems.

- Not applicable if there are no communications AND/OR sound masking systems.

7.1.1.1, page 29: changed from 6 to 14 points

7.1.2.1, page 29: changed from 12 to 14 points and removed N/A: ~~12~~ 14 points ~~or N/A~~ ~~Not applicable where there are no *brownfields*, or *remediated Superfund sites* available.~~

7.1.2.3, page 30: changed from 8 to 9 points

7.2.1.2, page 32: changed from 2 to 1 point

7.2.1.3, page 32: changed from 3 to 2 points

7.2.1.4, page 32: changed from 3 to 2 points and revised the language: … public bicycle path, shared use [multi-user] path…AND There is reasonable, unobstructed access between the ~~A~~ bicycle lane or shared use [multi-user] path and the bicycle parking facilities or ~~connects the public path or lane to~~ the building entrance.

7.2.1.5, page 32: revised: …within 50 ft. (15.24 m) of an entrance, and is either readily visible from~~,~~ a main entrance, or signage indicating the location is posted at main entrances.

7.2.1.6, page 32: revised points column: … Two points are earned where sheltered bicycle parking facilities are provided…Two points where the sheltered bicycle parking is ~~sheltered and~~ secure…

7.2.1.7, page 33: Revised informational reference: ASTM ~~E2843-15,~~ E2843-16a

7.3.1.1.1, page 34: added N/A: Not applicable where projects are interior-only.

7.3.1.2.1, page 34: added N/A: Not applicable where projects are interior-only.

7.3.2.1, page 34: added N/A: Not applicable where projects are interior-only.

7.3.4.1, page 36: Revised language: … shading trees are to ~~may~~ be existing, non-invasive plants…newly, non-invasive planted trees that will provide shade within ~~15~~10 years…
Informational Reference(s):
- ~~BSR/GBI 01 201X, 6.4.1, Moisture Control Analysis~~
- Cool Roof Rating Council (www.coolroofs.org) (last accessed 6/20/17)
- College, state or local university, or agency landscape reference guide
- USDA National Invasive Species Information Center: http://www.invasivespeciesinfo.gov/plants/main.shtml (last accessed 7/14/17)

7.3.4.2, page 36-37: Revised language:

7.3.4.2 Hardscape: The building design addresses hardscape using one or more of the following strategies:
 	
• **7.3.4.2.1 Solar Reflectance:** Hardscape surfaces with a solar reflectance (SR) value of at least 0.28 are used. New concrete and concrete masonry without additional colored pigment are deemed to comply without additional testing.
  ○ Not applicable for interior-only projects.
• **7.3.4.2.2 Shading:** …structures (either the building project or other *existing buildings*), hardscape…footprint ~~will be~~ are intended to be shaded by trees or other vegetation within 10 years. Take the shading measurement at noon Standard Time on the Summer Solstice and document in the shading plan~~In addition, the point in time of the shading measurement will be designated as 12 noon Standard Time on the Summer Solstice and will be documented in the shading plan~~.
~~OR~~
• **7.3.4.2.3 Permeable Surfaces:** At…materials. Permeable materials ~~that~~ include…
  ○ Open-grid pavement system (at least 50% unbound).
	Maximum = 5 points or N/A
	
	• Five points are earned where ≥50% of hardscape surfaces comply with 7.3.4.2.
	• Three points are earned where ≥25% and <50% of hardscape surfaces comply with 7.3.4.2.
	• No points are earned where <25% of hardscape surfaces comply with 7.3.4.2.
	• Not applicable where there are no hardscape surfaces.
	
	~~Maximum = 4 points or N/A~~
	
	~~• Three points are earned where 50% or more of hardscape surfaces (by area) outside the building footprint will be shaded by trees within 10 years.~~
	~~• Two points are earned where 25%-49% of hardscape surfaces (by area) outside the building footprint will be shaded by trees within 10 years.~~
	~~• No points are earned where less than 25% of hardscape surfaces (by area) outside the building footprint will be shaded by trees within 10 years.~~
	~~• Not applicable where there are no hardscape surfaces.~~

	~~Or~~ • ~~Four points are earned when at least 50% of hardscape area is permeable.~~ • ~~Two points are awarded when 25% of hardscape area is permeable.~~ • ~~No points are awarded when less than 25% of hardscape area is permeable.~~ • ~~Not applicable if there are no *impervious hardscape areas*.~~

7.4, page 37: changed from 18 to 21 points

7.4.1.1, page 37: changed from 14 to 17 points and added N/A: Not applicable for interior-only projects.

7.5.1.5, page 40: added N/A: Not applicable for interior-only projects.

7.6.2.2, page 41: changed from 5 to 3 points

8.2.1.1, page 44: changed baseline: The baseline building's site EUI is 35%~~50%~~…
Revised points language: ~~Eighty points are earned where there is a 50% reduction in CO_2e emissions.~~
- ~~Two~~ Four points are earned for…above the baseline ~~50%~~...

8.3, page 45: changed from 180 to 111 points

8.3.1, page 46: changed from 30 to 20 points

8.3.1.1, page 46-47: Struck language: ~~The thermal resistance (*R-value*/RSI-value) **or** the *thermal transmittance* (*U-factor*), thermal conductance (*C-factor*), and *F-factor*; and for *fenestration* the *U-factor* and SHGC values meet or exceed the prescriptive requirements of the 2012 IECC, section C402, or ANSI/ASHRAE/IES Standard 90.1-2010, section 5.5.~~

struck incorrect reference: ~~ANSI/ASHRAE/IES Standard 90.1-2012, Section 5.5~~

Revised points language: Maximum = ~~20~~ 10 points
- ~~Twenty~~ Ten points are earned where there is a 10% decrease…
- ~~Fifteen~~ Eight points are earned where there is a 5% decrease…
- ~~Ten~~ Five points are earned where *R-value*/RSI-value or *U-factor*…
- ~~Five points are earned where *R-value*/RSI-value or *U-factor*, *C-factor*, and *F-factor*; and *fenestration*, *U-factor* and SHGC meet or exceed prescriptive requirements of the 2012 IECC, section C402, or ANSI/ASHRAE/IES Standard 90.1-2010, section 5.5.~~

8.3.2, page 47: changed to 41 points

8.3.2.1.1, page 47: Revised language:

8.3.2.1.1 … • ANSI/ASHRAE/IES Standard 90.1-2013~~0~~ or 2015~~2~~ IECC baseline	Maximum = 20 points • ~~Ten~~ Five points…IECC.

The control factors from Table 9.6.3 in 90.1-2013 ~~or Table 9.6.2 in 90.1-2010~~ ~~may be~~ are used… Informational Reference(s): • ANSI/ASHRAE/IES Standard 90.1-201~~30~~ • 201~~5~~2 IECC	~~• Five points are earned where LPD complies with ANSI/ASHRAE/IES Standard 90.1-2010 or 2012 IECC.~~ • One additional … for each 2% ~~percent~~ beyond…2015 IECC up to an additional 15 points out of a maximum of 20 points for 8.3.2.1.1.

8.3.2.2.1, page 47: changed from 3 to 2 points

8.3.2.3.1, page 48: revised conversion: 0.5 W/ft^2 (~~0.1~~ 5.4 W/m^2)
Changed from 5 to 3 points:
- ~~Five~~ Three points are earned where more than 90% of light fixtures…
- ~~Three~~ Two points are earned where more than 90% of the of light fixtures…
- ~~Two~~ One point~~s are~~ is earned where there is bi-level control.

8.3.2.3.2, page 48: changed from 5 to 3 points:
- ~~Five~~ Three points are earned where more than 90% of light fixtures…
- ~~Three~~ Two points are earned where more than 90% of the of light fixtures…
- ~~Two~~ One point~~s~~ is earned where there is bi-level control of overhead lighting and separate task lights.

8.3.2.4.1, page 48: changed from 5 to 3 points:
- ~~Five~~ Three points are earned for compliance, excluding spaces…

8.3.2.5, page 49: revised points: Maximum = ~~5~~ 3 points
- ~~Five~~ Three points are earned where there is automatic continuous…
- ~~Three~~ Two points are earned where there is automatic *daylighting*…

~~Three~~ Two points are earned where there is no *daylighting*…

8.3.2.6.1, page 49: revised points column: Two points are earned where LPDs are 20% below ANSI/ASHRAE/IES Standard 90.1-2013.
- ~~Two~~ One point~~s~~ ~~are~~ is earned…

~~• One point is earned where ANSI/ASHRAE/IES Standard 90.1-2010 is met.~~

8.3.3, page 50: changed to 37 points

8.3.3.1.1, page 50: changed from 2 to 1 point

8.3.3.1.2, page 50: changed from 3 to 1 point

8.3.3.2.1, page 50-51: changed from 10 to 5 points: ~~Ten~~ Five points are earned where performance is 10%...
- ~~Seven~~ Three points are earned where performance is 5%...
- ~~Five~~ One point~~s are~~ is earned where performance is…

~~• Three points are earned where performance is equivalent to the requirements of ANSI/ASHRAE/IES Standard 90.1-2010.~~

8.3.3.3.1, page 51: changed from 10 to 5 points: ~~Ten~~ Five points are earned where performance is 10% higher…

- ~~Seven~~ Three points are earned where performance is 5% higher…
- ~~Five~~ One point~~s are~~ is earned where performance is equivalent…

~~• Three points are earned where performance is equivalent to the requirements of ANSI/ASHRAE/IES Standard 90.1-2010.~~

8.3.3.4.1, page 52: changed from 2 to 1 point: ~~Two~~ One point~~s are~~ is earned where performance is 10%...

~~• One point is earned where performance is 5% better than the requirements of ANSI/ASHRAE/IES Standard 90.1-2013~~

8.3.3.5, page 52: removed sub-section: ~~**8.3.3.5 Variable Speed Control of Pumps 8.3.3.5.1** At least 15% of the connected hydronic pumping power is provisioned with variable speed control. Maximum = 5 points or N/A~~

~~Points are earned where a percentage of hydronic pumping power is provisioned with variable speed control:~~

~~• Five points are earned for greater than 75%.~~
~~• Four points are earned for 74%-75%.~~
~~• Three points are earned for 55%-73%.~~
~~• Two points are earned for 35%-54%.~~
~~• One point is earned for 15%-34%.~~
~~• No points are earned for less than 15%.~~
~~• Not applicable where there is no hydronic system or total peak pumping power is under 5 BHP.~~

8.3.3.6, page 52: revised: **8.3.3.~~6~~5.1** … *ANSI/ASHRAE/IES Standard 90.1-201~~0~~3*…
Changed from 10 to 6 points

8.3.3.7, page 52: revised: **8.3.3.~~7~~6.1** …*ANSI/ASHRAE/IES Standard 90.1-201~~0~~3*…
Changed from 10 to 6 points: ~~Ten~~ Six points are earned where HVAC…

- ~~Seven~~ Four points are earned where…

8.3.3.8, page 53: revised: **8.3.3.~~8~~7.1** …ANSI/ASHRAE/IES Standard 90.1-*201~~0~~3*…
Changed from 5 to 3 points

8.3.3.9.1, page 53: revised: **8.3.3.~~9~~8.1** changed from 10 to 6 points: ~~Five~~ Three points are earned where project complies…

- One additional point…each 10% ~~5%~~ less than…maximum of ~~10~~ 6 points.

8.3.3.9.2, page 53: revised: **8.3.3.~~9~~8.2** Changed from 6 to 3 points

8.3.3.9.3, page 53: struck language~~**8.3.3.9.3** The Project installs controls to shut outdoor air and exhaust air dampers during periods when the system is not operating. 1 point~~
~~**8.3.3.9.4** The air dampers in the air handling system are *low leakage*. 1 point~~

8.3.3.10, page 53: revised: **8.3.3.~~10~~9**
struck language: ~~Damper submittals;~~

8.3.4, page 53: revised: **8.3.4 Energy Simulation Aided Design & Integrative Process (13 points)**

8.3.4.1, page 53: changed from 15 to 8 points

8.3.4.2, page 54: changed from 10 to 5 points

8.5.1.2, page 56: revised points column: One point each…maximum for 5 points.

- One point is earned for each listed system where *sub-metering* is installed to a maximum of 5 points.
- ~~Five points are earned where *sub-metering* is installed for five or more of the listed systems.~~
- ~~Four points are earned where *sub-metering* is installed for four of the listed systems.~~
- ~~Three points are earned where *sub-metering* is installed for three of the listed systems.~~
- ~~Two points are earned where *sub-metering* is installed for two of the listed systems.~~
- ~~One point is earned where *sub-metering* is installed for one of the listed systems.~~

8.5.2.1, page 57: revised language in points column: One point is…space energy consumption. ~~The focus of electronic information access is to provide awareness and education that encourages behavioral changes and lead to further energy reductions.~~

8.6.1.1, page 58-59: revised urls: Guide…Construction ~~– *Renewable Energy* Feasibility Study: http://www1.eere.energy.gov/femp/reconstructionguide/feasibility_study.html~~ https://energy.gov/sites/prod/files/2013/10/f3/re_construction_guide.pdf (last accessed 6/30/17)

- ~~Guide to Integrating *Renewable Energy* in Federal Construction – Life cycle Cost Analysis: http://www1.eere.energy.gov/femp/reconstructionguide/budgeting_lccanalysis.html~~
- ~~Guide to Integrating *Renewable Energy* in Federal Construction – Assessing *Renewable Energy* Options: http://www1.eere.energy.gov/femp/reconstructionguide/renewable_energy_options.html~~
- National…Program: ~~http://www1.eere.energy.gov/femp/information/download_blcc.html~~ https://www.nist.gov/publications/blcc-nist-building-life-cycle-cost-program-version-50 (last accessed 6/30/17)

9.1, page 60: revised charging language: Four paths are provided for assessing Indoor Domestic Plumbing. **If no path is achieved ~~chosen,~~ 75 total points…Area**:

- **Path A: ANSI/ASHRAE/USGBC/IES Standard 189.1-2014, Section 6.3.2.1…**

9.1.1, page 61: revised language: ANSI/ASHRAE/USGBC/IES Standard 189.1-2014, Section 6.3.2.1. added N/A: Not applicable where no fixtures or fittings exist.

9.1.2, page 61: added N/A: Not applicable where no fixtures or fittings exist.

9.1.3, page 61: added N/A: Not applicable where no fixtures or fittings exist.

9.1.4, page 62: revised language in points column: Seventy-five total points are deducted…Path D, (Note: Points are deducted from the Water Assessment Area)

9.3.1.1, page 63-64: revised language: ~~**9.3.1.1.1: Boilers and water heating systems of 50 boiler horsepower (BHP) and above have a boiler feed makeup *meter*;**~~

- revised points column: ~~One point is earned where boilers and water heating systems of 50 BHP and above have a boiler feed makeup meter.~~
- Two points…where ~~non steam~~ boilers have conductivity controllers.
    - Not applicable where there are no boilers ~~are less than 50 BHP~~.
- ~~One point is earned where steam boilers have conductivity meters.~~

~~○ Not applicable where there will be no steam boilers or where steam boilers are less than 200 BHP.~~

9.4.4.2, page 66: revised language: *Water features* use ~~approved by the authority having jurisdiction~~ *alternate water...*
added N/A: Not applicable where prohibited by the authority having jurisdiction.

9.6.4, page 69: added language: Designer's drawings…*non-potable* sources and *alternate water sources*;

9.7.1.5, page 69: added N/A: Not applicable where there is no multi-unit development.

9.8.1.3~~2~~ page 70: revised language: Not applicable where ~~there is~~ no irrigation system is installed.

10.1.1.1, page 72: revised language: No other impact indicator exceeds the reference design by more than 5%.~~Other impact indicators do not exceed the reference design by more than an average of 5%.~~

10.2.1.1, page 73: added informational reference: Informational Reference(s):

- *Multi-attribute Standards (MAS): products compared use the same MAS. Examples include the following:*
  - *NSF/ANSI 140-2015 Sustainability Assessment for Carpet*
  - *NSF/ANSI 332-2015 Sustainability Assessment for Resilient Flooring*
  - *NSF/ANSI 336-2011 Sustainability Assessment for Commercial Furnishings Fabric*
  - *NSF/ANSI 342-2014 Sustainability Assessment for Wallcovering Products*
  - *NSF/ANSI 347-2012 Sustainability Assessment for Single Ply Roof Membranes*
  - *ANSI/NSC 373-2014 Sustainability Assessment for Natural Dimension Stone*
  - *ANSI/BIFMA e3-2014: Business and Institutional Furniture Sustainability Standard (BIFMA e3) and Level® Sustainability Certification Program for Furniture*
  - *Tile Council of North America's Green Squared Certification (ANSI A138.1-2011)*
  - *UL 100: Sustainability of Gypsum Boards and Panels (2012)*
  - *UL 102: Sustainability of Swinging Door Leafs (2009)*

10.3, page 74: revised language: **10.3 *Product Risk Assessment* (19 points)**

10.3.1, page 74: revised language: **Screening-Level *Product Risk Assessment***

10.3.1.1, page 74-75: revised language: At least one *formulated product…* screening-level *product risk assessment* in accordance with the chemical characteristics identified in NSF/GCI/ANSI 355…and completion of a~~n authoritative~~ peer reviewed exposure model in accordance with 10.3.2…Points are earned~~awarded~~ for discrete…the screening-level *product risk assessment*…Product Screening-Level *Product Risk Assessment* Reporting…screening-level *product risk assessment*…the screening-level *product risk assessment*, including …the formulation (diminimus of 0.1% for carcinogens and 1% for other hazardous ingredients); and…screening-level *product risk assessment* for human health…Note: Human health and safety risk and ecological screening-level *product risk assessment*s…Informational Reference(s):
Screening-Level product Risk assessment tools…
Maximum = 19 points
Points are earned where products undergo a screening-level *product risk assessment:*

10.3.2, page 75: revised language: Product Screening-Level *Product Risk Assessment* Report includes:

- Description of how the screening-level *product risk assessment*… The product screening-level *product risk assessment* report additionally…

10.4.1.1, page 76: revised language: Sustainable Attribute % = Sum for all materials: (Portion of the Material with the Attribute x materials cost)/(*Total Material Value*)

10.4.2, page 76: revised language: Manufacturer's product data sheets or a statement from manufacturer(s) certifying claims or third-party certification from an organization that has the program in its ISO 17065 scope of accreditation.

10.5.1.1, page 77: struck language: ~~OR~~
~~Percentage = 100 x (C÷D), where:~~
~~C = Total mass of reused existing structural systems~~
~~D = Total mass of structural systems in the project~~

10.6.1.1, page 78-79: A preconstruction waste management plan is created ~~made~~ prior to any construction or demolition activities. This plan describes ~~includes~~ the project team's strategy for reducing construction waste and diverting materials from landfilling via reuse or recycling~~major categories of materials expected to be generated throughout demolition and construction activities.~~
~~For each major material category identified, t~~The preconstruction waste management plan will include:

- ~~Indicates~~ the strategies planned for construction waste reduction~~source reducing,~~ salvaging, recycling, returning to supplier/manufacturer, or other methods for~~ways of~~ diverting waste from landfill;
- ~~Indicates~~ the facility…diverted;
- ~~Indicates~~ whether…commingled; ~~and~~
- ~~Includes approximate generated quantities, if possible;~~
- ~~Identifies a target diversion rate that the contractor should meet or exceed;~~
- ~~Includes~~ the name…management plan;
- ~~Includes~~ reporting…provisions;
- Target construction waste rate per 10.6.1.3 below; and
- Target waste diversion rate. ~~provides average facility recycling rates. For each recycling facility used, it should be noted whether the recycling operation is certified through a state, local, or a third-party independent certification.~~

10.6.1.2, page 79-80: A final waste management ~~is a~~ summary report is completed after construction ~~that documents~~ documenting the results of the implementation of the preconstruction waste management plan, including: ~~project that includes all waste and recycling/*reuse* materials, their weight/volume, recycling rate for each line item on the plan, and an overall recycling rate for the project.~~

- The weight or volume of the total quantity of construction and demolition waste;
- The calculated construction waste per unit area for the project (see 10.6.1.3 below);
- The weight or volume of the major categories of materials that were reused or recycled;
- The reuse/recycling rate for each major category of waste material;
- The overall reuse/recycling rate for the project;
- A description of the processing of materials through source separate or by a comingled waste hauler;
- Copies of receipts and invoices used to track the progress of the waste management effort;
- A statement that describes if a waste recycling facility was used whether it was certified by a government or non-government organization;
- The organization and contact information of the author of the waste management summary report and the name and contact information of the person at the off-site recycling facility responsible for date collection and reporting.

~~The Summary Report includes:~~

- ~~An overall recycling rate for the project;~~
- ~~Material categories;~~
- ~~Amounts of materials salvaged, reused, recycled, donated, sold or returned to manufacturers with take-back programs, as well as the achieved recycling rate for each line item;~~
- ~~Names of take back programs, recyclers, salvage and reuse companies and/or material exchanges that were used;~~
- ~~Records of donations, sales, recycling and landfill/incinerator manifests, weight tickets, hauling receipts, and invoices;~~
- ~~For each recycling facility used, it should be noted whether the recycling operation is certified through a state, local, or a third-party independent certification.~~

~~The report includes a separate average recycling rate for materials sent to facilities that accept or process co-mingled construction and demolition materials. For those materials sent for off-site sorting by a construction and demolition materials recycling facility, the average facility recycling rate is included. Include the name and contact information for the person(s) responsible for developing and implementing the waste management plan, the person responsible for the off-site facility recycling rate and the person responsible for the content of the final waste management report.~~

10.6.3.1, page 81-82: Revised language: Products used…production/manufacturing of these ~~chosen~~ products. ~~The scope of a qualifying product at least~~ This criterion applies gate-to-gate – ~~to~~ all material inputs and outputs ~~related~~ to...products. ~~This is also known as "gate-to-gate".~~ The diversion…x100

Discarded materials resulting from the recycling of an external waste stream as an incoming materials should not be considered a discarded material and should not appear in either the denominator or numerator.

The Diversion Rate is multiplied by 1.5 for products that have been produced or manufactured in a facility that meets the following standards and certification programs:

- Business or facilities that have achieved Zero Waste certification from the US Zero Waste Business Council; or
- Have followed and certified to UL2799

The…different process;

- ~~Redesign to eliminate waste;~~

10.7.2.1, page 83: added informational reference: CSA Z783-12 *Deconstruction* of Buildings and Their Related Parts

11.2.2.1.1, page 92-93: The VOC and Particulate Matter sampling…
Added to Table 11.2.2.1.1: Particulate ($PM_{2.5}$) 35 (24-hr)
Particulates (PM_{10}) 150 (24-hr)

11.3.1.1, page 95: changed from 6 to 5 points: Maximum = ~~6~~ 5 points

- ~~Six~~ Five points are earned where ≥75% of the floor…
- ~~Five~~ Four points are earned where ≥50 and <75~~-74~~% of the floor…
- ~~Four~~ Three points are earned where ≥25 and <50~~-49%~~ of the floor…
- ~~Three~~ Two points are earned where ≥75% of the floor…
- ~~Two~~ One points are earned where ≥50 and <75%~~-74%~~ of the floor…
- ~~One points are earned where ≥25% and <50- 49% of the floor area achieves a DF of 2 to <3~~.

11.3.1.2, page 96: changed from 4 to 3 points

11.3.2.1, page 96: changed from 6 to 5 points

11.4.1.1, page 99: changed from 15 to 14 points

11.4.2.1, page 100: changed from 10 to 9 points

11.5.2, page 101-102: added section:

11.5.2 Sound Masking System	

11.5.2.1 The building design incorporates a sound masking system with an overall level specified to an A-weighted decibel (dBA) value within the following spaces and ranges:
 	
• **Offices:**
  ○ Open: 45-48dBA
  ○ Enclosed: 35-45dBA
  ○ Meeting/Conference: 30-45dBA
  ○ Circulation: 45-48dBA
• **Healthcare:**
  ○ Patient room: 40-48dBA
  ○ Private offices and exam/treatment room: 35-45dBA
  ○ Waiting area: 45-48dBA
  ○ Corridor and public spaces: 45-48dBA
  ○ Circulation: 45-48dBA
• **Other:**
  ○ All other areas where speech privacy, concentration, or sleep/relaxation is required: 35-48-dBA
  ○ The measured overall level is within 0.5dBA of that specified.
  ○ The measured spectrum conforms to the National Research Council's COPE Optimum Masking frequency range and 1/3 octave band levels, or the project acoustician's specified 1/3 octave band levels, within +/-2.0dB.
 	
Informational Refence(s)
• National Research Council's COPE
• ASTM E1374-06, Open Office Guide
• FGI Guidelines, 2014
• Facilities Guideline Institute, "Sound & Vibration", 2010
• GSA, Facilities Standards, P100, 2014
• GSA, Sound Matters, 2012
	3 points

11.5.5.1, page 103: added language: … *Chapter 48, Table1; use 2014 FGI Guidelines for Healthcare Spaces.*