

Proposed Changes

April 13, 2018

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Chapter 1 Scope and Administration

P001	LogID 17-063	Chapter 1
Submitter:	Amy Schmidt, The Dow Chemical Company	
Requested Action:	Modify Chapter 1 language	
Proposed Change:	<p>Modify as follows:</p> <p>101.3 Intent. The purpose of this Standard is to establish criteria for rating the environmental impact of design and construction practices to achieve conformance with specified performance levels for green residential buildings, renovation thereof, accessory structures, building sites, and subdivisions. This Standard is intended to provide flexibility to permit the use of innovative approaches and techniques. This Standard is not intended to abridge safety, health, or environmental requirements contained in other applicable laws, codes, or ordinances. <u>This Standard is intended for use by an Adopting Entity as a mandatory or permissive green building standard or as a stand-alone program for use by private parties seeking green building certification.</u></p> <p>...</p> <p>101.5 Appendices. Where specifically required by a provision in this Standard, that appendix shall apply. Appendices not specifically <u>adopted by an Adopting Entity</u> or required by a provision of this Standard shall not apply unless specifically adopted.</p> <p>102 CONFORMANCE</p> <p>...</p> <p>102.2 Conformance language. The green building provisions are <u>This Standard contains provisions</u> written in mandatory language by way of using the verbs “to be”, “is”, “are”, etc. . . .</p> <p>102.3 Documentation. Verification of conformance to green building practices <u>the provisions in this Standard</u> shall be the appropriate construction documents, architectural plans, site plans, specifications, builder certification and sign-off, inspection reports, <u>test reports</u>, or other data that demonstrates conformance to the as determined by the Adopting Entity <u>and/or program certifier</u>. Where specific documentation is required by a provision of the <u>this</u> Standard, that documentation is noted with that provision.</p> <p>...</p> <p>103.1 Administration. The <u>An</u> Adopting Entity shall specify <u>minimum</u> performance level(s) to be achieved as identified in Chapter 3 and shall provide a verification process to ensure compliance with this Standard.</p>	
Reason:	<ol style="list-style-type: none"> 1. It needs to be clear that this Standard can be used as a mandatory/permissive Standard when an adopting entity adopts it as well as by individuals voluntarily seeking green building certification via this Standard. Language is added to make this clarification. 2. It is clear per 101.1 that the term “this Standard” is to be used when referring to this document. The term “green building practices” found in several locations is not defined nor does it describe the true intent of the section. “Provisions of this Standard” has been used to replace this ambiguity. 3. Added “test reports” to Section 102.3 as it seems like an important omission to be corrected. 4. Section 103.2 specifically addresses situations where this Standard is adopted by an Adopting Entity. Therefore, minimum compliance level(s) should be specified. This is standard practice when adopting a standard, code, etc. 	
TG Recommendation (AS or AM or D):	D (Coordination TG)	
Modification of Proposed Change:		
TG Reason:	This could limit the use of the standard by organizations that are not adopting entities or AHJs. Could be more appropriate in another section of the standard.	
TG Vote:	9 – 0 – 3 (motion to disapproved passed)	

P002	LogID 6227	101.2 Scope
Submitter:	Josh Jacobs, UL	
Requested Action:	Revise as follows	
Proposed Change:	This change is a whole document change or addition. While this change is not to this specific section, it seemed to be the best section to propose it. NAHB should put a task group together that can take the new document and develop a truly code level document for use by authorities having jurisdiction. They should not create new requirements, but simply take appropriate existing requirements, turn them into code language, and publish as a true residential green code. NAHB would then have a rating system that can be utilized by anyone that wants to communicate the sustainable qualifications of a residential project and a code that could be given to jurisdictions that are looking to develop a baseline.	
Reason:	While the NAHB National Green Building Standard is a good document, it is not a code. Authorities having jurisdiction have shown a willingness to work with existing green codes in the marketplace, but have done a lot of editing. Taking a rating system with a point system such as this, is probably asking too much for a local jurisdiction to take on. Let's make it easier for them so that we can get more local adoptions of what could be a different transformative document.	
TG Recommendation (AS or AM or D):	D (Coordination TG)	
Modification of Proposed Change:		
TG Reason:	No language proposed. The rating system provides the flexibility needed for various jurisdictional situations.	
TG Vote:	12-1-1	

P003	LogID 6590	101.2 Scope
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>101.2.1 Non-residential options. Non-residential portions of buildings shall comply with either the ANSI/ASHRAE/USGBC/IES Standard 189.1 or this standard.</u> <u>101.2.2 The authority having jurisdiction shall be permitted to deem another program, standard or code as an alternative for the non-residential portion of a specific building.</u>	
Reason:	Some users may prefer to comply with, or already have experience complying with, ASHRAE 189.1 for commercial. This allows the ASHRAE 189.1 without requiring all users to deal with complexity of ASHRAE 189.1. For 101.2.1- A possible option for this change would be to specify that for items outside the building compliance shall be the same as for the residential. The parking lot, landscaping, ... will likely be used by both the residential and commercial portions of the building. For 101.2.2- There may be a few unusual types of non-residential spaces in a specific building where another criteria could better define green. For example an open air cafe, a small laboratory or a hot dog stand that was built into an outside wall. The ASHRAE 189.1 standard can be viewed at https://www.ashrae.org/standards-research-technology/standards--guidelines click on "Standard 189.1-2014"	
TG Recommendation (AS or AM or D):	D (TG-1)	
Modification of Proposed Change:		
TG Reason:	The proponent agrees (2/6/2018 at TG-1 meeting) with disapproval as comments are addressed by action on proposal 6585.	
TG Vote:	18 – 0 – 0	

P004	LogID 6583	101.2 Scope
Submitter:	Steve Ferguson, ASHRAE	
Requested Action:	Revise as follows	
Proposed Change:	101.2 Scope.	

	The provisions of this Standard shall apply to the design, and construction, alteration, enlargement, and renovation of (1) all residential buildings, (2) residential portions of mixed-use buildings, or (3) mixed-use buildings where the residential portion is greater than 50 percent of the gross floor area <u>the residential portion(s) of any building, not classified as an institutional use, in all climate zones.</u> This Standard shall also apply to subdivisions, building sites, building lots, and accessory structures, and the residential portions of alternations, additions, renovations, mixed-use buildings, and historic buildings.
Reason:	ASHRAE is opposed to the revised and expanded scope of ICC 700, and also filed a PINS comment related to how the expanded scope is duplicative with ANSI/ASHRAE/USGBC/ICC/IES Standard 189.1, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings. Previously only residential spaces were in the scope of this standard. As currently written, if 51% of the building is residential and 49% of the building is commercial, the entire building is within the scope of this standard. In accordance with ANSI Essential Requirements 2.4 and 2.4.2, HI and the consensus body responsible for ICC 700 are responsible for making good faith efforts to to resolve potential conflicts between and among existing American National Standards (ANS). HI and the consensus body responsible for writing ICC 700 are also responsible for making thorough and comprehensive efforts to harmonize a candidate ANS and existing ANSs. In our PINS comment, we requested " that the revised scope not be approved". Alternatively, ASHRAE would also be resolved, when the expanded scope applies, "if provisions be included in the standard to reference the appropriate technical content in ANSI/ASHRAE/USGBC/ICC/IES Standard 189.1."
TG Recommendation (AS or AM or D):	D (TG-1)
Modification of Proposed Change:	
TG Reason:	TG-1 recommends disapproval because the Consensus Committee does not have the authority to change the scope. The task group has agreed to recommend inclusion of IgCC/189.1 as an option in the technical requirements for the non-residential spaces.
TG Vote:	N/A
Secretariat Note:	The proposed change to the scope of the standard is in the purview of the Secretariat. It is included in this document for the benefit of transparency. Home Innovation is engaged with ASHRAE through the PINS deliberations process afforded by the ANSI Essential Requirements. Therefore, consensus committee will not be asked to take a formal action on this proposed change and the proposed change will not be included in the committee ballot. Home Innovation procedures address this situation as follows: 4.4.1.2.3 Consensus Committee Action. <i>A consensus committee cannot change the scope, intent or purpose of a standard. A consensus committee may request of the ESC changes to, or clarification on, the scope, intent or purpose of a standard. The ESC shall respond to the consensus committee within 30 calendar days after receiving such request.</i>

P005	LogID 6584	101.2 Scope
Submitter:	Thomas Culp, Aluminum Extruders Council	
Requested Action:	Revise as follows	
Proposed Change:	101.2.1 Residential Designation. For the purpose of this standard, all Group R occupancies as defined by the International Building Code and all buildings within the scope of the International Residential Code shall be considered residential. <u>Dwelling units in a</u> Assisted living facilities, residential board and care facilities, and group homes classified as an I-1 occupancy as defined by the International Building Code shall also be considered residential.	
Reason:	With the expansion to include assisted living facilities, care facilities, and group homes, the residential designation should not include spaces such as patient examination rooms, cafeterias, industrial kitchens, industrial laundry facilities, recreation facilities, lobbies, assembly areas, and offices. This proposal clarifies that it is the dwelling units that should be considered residential spaces within these building types. Alternately, a list of excluded spaces could be added.	
TG Recommendation (AS or AM or D):	Withdrawn by proponent (2/7/2018 at TG-1 meeting)	
Modification of Proposed Change:		

TG Reason:	
TG Vote:	

P006	LogID 6499	102.4 Alternative compliance methods
Submitter:	John Barrows, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>Green Practice Area Recognition-</u> Offer recognition for meeting specific areas of NGBS without receiving certification to the NGBS as a whole. <ol style="list-style-type: none"> 1. Energy 2. Water Efficiency 3. Indoor Environmental Quality/ Wellness 	
Reason:	Comment: Given the rise of focused programs, such as Energy Star and the Water Efficiency Rating Score (WERS), it may be valuable to consider allowing projects to earn recognition in specific green practice areas (such as energy efficiency or water efficiency), without requiring them to achieve entire NGBS certification.	
TG Recommendation (AS or AM or D):	D (Coordination TG)	
Modification of Proposed Change:		
TG Reason:	Waters down the program and introduces confusion in the market. Not sufficient for a green building that requires balance.	
TG Vote:	13-1-0	

P007	LogID 6497	102.4 Alternative compliance methods
Submitter:	John Barrows, self	
Requested Action:	Add new as follows	
Proposed Change:	Medallion of Recognition: along with the certification to NGBS a recognition of performance that corresponds with another program can be awarded. <ol style="list-style-type: none"> 1. Resiliency 2. Wellness 	
Reason:	Comment: It may be beneficial in the current marketplace to award a "Medallion of Recognition" (or similar) for projects going above and beyond by achieving practices related to a specific topic, such as "resiliency" and "wellness". Practices within the 2018 NGBS related to resiliency, as identified by Consensus Committee, would be denoted with a symbol. Achievement of a certain percentage of those specific practices could award a project added recognition in "resiliency", in addition to achieving NGBS certification. Additional practices currently not identified within the 2015 NGBS related to resiliency for respective climate zones/locations (Examples: flood-plain avoidance, forest-fire vegetation setback, etc.) could be added as mandatory or optional practices for achievement of the "Resiliency Medallion." Practices currently within the 2015 NGBS identified as having the possibility of being resiliency related are attached.	
TG Recommendation (AS or AM or D):	D (Coordination TG)	
Modification of Proposed Change:		
TG Reason:	Resiliency or wellness are not defined	
TG Vote:	9-5-0	

Chapter 2 Definitions

P008	LogID 17-003	Section 202 Definitions and Entire Standard
Submitter:	Michelle Foster, Home Innovation Research Labs	
Requested Action:	Add new definition "sleeping unit"	
Proposed Change:	<p>Sleeping Unit: A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a <i>dwelling unit</i> are not sleeping units.</p> <p><i>See attached document of relevant changes to 75 specific NGBS practices.</i></p>	
Reason:	Allows for the NGBS to be relevant for certain R-3 uses and Institutional Uses that are residential in nature as defined by the revised NGBS scope	
TG Recommendation (AS or AM or D):	AM (Coordination TG)	
Modification of Proposed Change:	<p>Sleeping Unit: A room or space in which people sleep, which can may also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a <i>dwelling unit</i> are not sleeping units.</p>	
TG Reason:		
TG Vote:	8 – 0 – 3 chair not voting	

P009	LogID 17-088	Section 202 Definitions and New for Chapter 9																
Submitter:	Michael Jouaneh, Lutron Electronics																	
Requested Action:	Add new provision as follows																	
Proposed Change:	<p>Definitions <u>Living spaces:</u> conditioned spaces intended for people to occupy including but not limited to living rooms, breakfast/dining rooms, family rooms, studies, kitchens, bedrooms, hallways, dressing rooms, finished basements, recreation rooms, exercise rooms, play rooms, home theater/AV rooms and other spaces that are not used for storage or mechanical or electrical equipment.</p> <table border="1"> <thead> <tr> <th>Nighttime (sleep-time) Light Control</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>Lighting that has:</td> <td></td> </tr> <tr> <td> <ul style="list-style-type: none"> For bedrooms and connected bathrooms include at least one preset lighting level set to a maximum of 10% of full light output; OR </td> <td>1</td> </tr> <tr> <td> <ul style="list-style-type: none"> For bedrooms and connected bathrooms include a time-of-day based control that sets the light output to a maximum of 10% of full light output during typical sleeping hours with override capability that allows users to reach full light output; OR </td> <td>2</td> </tr> <tr> <td> <ul style="list-style-type: none"> For all living spaces include a time-of-day based control that sets the light output to a maximum of 10% of full light output during typical sleeping hours with override capability that allows users to reach full light output. </td> <td>3</td> </tr> <tr> <td>All bedroom windows shall have manually operable shading devised (e.g., shades, blinds, or other window treatments)</td> <td>Mandatory</td> </tr> <tr> <td> <ul style="list-style-type: none"> These shading devise shall have a maximum visible light transmittance of 20% or shall be opaque blinds. </td> <td>1 additional</td> </tr> <tr> <td> <ul style="list-style-type: none"> These shading devices shall utilize a time-of-day based control that closes the shades during nighttime (sleep-time) hours with override capability that allows users to open them. </td> <td>2 additional</td> </tr> </tbody> </table>		Nighttime (sleep-time) Light Control	Points	Lighting that has:		<ul style="list-style-type: none"> For bedrooms and connected bathrooms include at least one preset lighting level set to a maximum of 10% of full light output; OR 	1	<ul style="list-style-type: none"> For bedrooms and connected bathrooms include a time-of-day based control that sets the light output to a maximum of 10% of full light output during typical sleeping hours with override capability that allows users to reach full light output; OR 	2	<ul style="list-style-type: none"> For all living spaces include a time-of-day based control that sets the light output to a maximum of 10% of full light output during typical sleeping hours with override capability that allows users to reach full light output. 	3	All bedroom windows shall have manually operable shading devised (e.g., shades, blinds, or other window treatments)	Mandatory	<ul style="list-style-type: none"> These shading devise shall have a maximum visible light transmittance of 20% or shall be opaque blinds. 	1 additional	<ul style="list-style-type: none"> These shading devices shall utilize a time-of-day based control that closes the shades during nighttime (sleep-time) hours with override capability that allows users to open them. 	2 additional
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Reason:	<p>Improve lighting in homes to minimize sleep disruption when using light at night.</p> <p>Light dramatically affects sleep-wake cycles. Bright lights promote alertness, while dimmed lights signal the body to reduce energy expenditure and prepare for rest. Viewing bright lights during sleeping hours, causes sleep disruption and adverse health effects.</p>																	

TG Recommendation (AS or AM or D):	D (Coordination TG)
Modification of Proposed Change:	
TG Reason:	More substantiation is needed to justify this practice. Mandatory installation of blinds may be out of contractors' scope of work and compliance cannot be verified.
TG Vote:	11-0-1

P010	LogID 17-059	Section 202 Definitions
Submitter:	Paul Cabot, American Gas Association	
Requested Action:	Add new definition to section 202 as follows:	
Proposed Change:	<u>CNG vehicle residential fueling appliance. A residential appliance that supplies compressed natural gas into a CNG vehicle.</u>	
Reason:	Add recognition for CNG residential fueling appliances as a green building practice. The new standard ANSI/CSA NGV 5.1 has been approved and all major model fuel gas installation codes have been updated to require that residential CNG fueling appliances be listed to that standard and installed in accordance with the manufacturer's installation instructions. Home fueling using natural gas is a green practice since it taps into the efficient natural gas transmission and distribution system and avoids the systemic losses from converting crude oil into refined gasoline and diesel. Fueling at home also reduces vehicle mileage by reducing trips to gasoline stations for fueling. The proposed text is structured similar to coverage for electric vehicle charging stations.	
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-5 (Energy Efficiency) due to a similar proposal submitted to Chapter 7.</i>	
TG Recommendation (AS or AM or D):	TG 2: AS TG 5: AS	
Modification of Proposed Change:		
TG Reason:	TG 5: Based on action on 17-061	
TG Vote:	TG 2: 7-1 TG 5: 9-0-1	

P011	LogID 6383	202 Definitions
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	<u>LCA (Life Cycle Analysis/Assessment). An accounting and evaluation of process to evaluate the potential environmental aspects and potential impacts burdens of materials, products, assemblies, services or buildings throughout their life (from raw material acquisition through manufacturing, construction, use, operation, demolition, and disposal).</u>	
Reason:	LCA is about understanding the burdens and burden differences between different methods to achieve the same useful outcome. It is not the product that is the most important focus but rather the benefit that results from the evaluations. The terms aspects and impacts are difficult for many to differentiate and should be replaced with the word 'burden' which is clear and also used by the SETAC (Society of Environmental Toxicology and Chemistry) in their definition. The term 'assemblies' is not defined and could have multiple meanings. Utilizing products and services covers the intent and industry use of LCA processes.	
TG Recommendation (AS or AM or D):	D (TG-3)	
Modification of Proposed Change:		
TG Reason:	The definition for LCA is well established and used extensively by various documents and groups internationally. The proposal removes the accounting portion and changes aspects and impacts to burdens – not all impacts are burdens.	

TG Vote:	9-0-0 chair not voting
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P012	LogID 6336	202 Definitions
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Submitter:	Cambria McLeod, Kohler
Requested Action:	Delete without substitution
Proposed Change:	REGIONAL MATERIAL. Material that originates, is produced, grows naturally, or occurs naturally within: (1) 500 miles (804.7 km) of the construction site if transported by truck, or (2) 1,500 miles (2,414 km) of the construction site if transported for not less than 80 percent of the total transport distance by rain or water. Products that are assembled or produced from multiple raw materials are considered regional materials if the weighted average (by weight or volume) of the distance the raw materials have been transported meet the distance criteria.
Reason:	To increase use of the standard, reduce the complexity, remove these calculations from the body of the Standard and therefore there is no need for the definition. Regional material impacts are captured through EPDs, which are easier for the end user to locate and provide a much better indicator as they focus on the outcome of the various inputs. Individually, single-attributes have little bearing on the final impact so they are being replaced with EPDs. Because EPDs are already a part of this standard, any points removed with this section could be reconfigured into the Product Declarations, Section 611.4.
TG Recommendation (AS or AM or D):	D (TG-3)
Modification of Proposed Change:	
TG Reason:	These two credits (regional materials and EPDs) are two separate credits. The proposal does not offer a new definition for regional materials, which are covered in section 609.
TG Vote:	9-0-0 chair not voting

P013	LogID 17-021	Section 202 Definitions
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Submitter:	James M Williams, AE Urbia
Requested Action:	Add a definition for Resilient Construction
Proposed Change:	SECTION 202 DEFINITIONS <u>RESILIENT CONSTRUCTION. Resilient Construction is a structure, component, or system that has been designed and constructed in accordance with applicable adopted building codes and standards to withstand forces generated by: flooding, snow, wind or seismic (or other natural or manmade disasters as applicable) for a given site.</u>
Reason:	A new section 11.1101 Resilient Construction has been proposed. If adopted, the term, "Resilient Construction," should be defined.
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-7 (Remodeling) because of a proposed new section in Chapter 11 for Resilient Construction as it applies to remodeling.</i>
TG Recommendation (AS or AM or D):	TG 3: D (Stanonik, Prather) TG 7: D
Modification of Proposed Change:	
TG Reason:	TG 3: This definition simply says that the building must meet code. Decision taken based on action for LogID 17-023 as well. Tg 7: Definition is unnecessary
TG Vote:	TG 3: 7-0-0 chair not voting TG 7: unanimous 9-0-0

P014	LogID 6335	202 Definitions
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Submitter:	Cambria McLeod, Kohler
Requested Action:	Revise as follows

Proposed Change:	Plumbing Fixture: A receptor or device that requires both a water-supply connection and or a discharge to the drainage system or both , such as water closets, lavatories, bathtubs, and sinks.
Reason:	The current definition excludes non-water urinals although they are considered a plumbing fixture by both the industry and recognized codes and standards. Note the definition in the International Plumbing code and Uniform Plumbing Codes - IPC: A receptacle or device that is connected to a water supply system or discharges to a drainage system or both. Such receptacles or devices require a supply of water; or discharge liquid waste or liquid-borne solid waste; or require a supply of water and discharge waste to a drainage system. UPC: An approved-type installed receptacle, device, or appliance that is supplied with water or that receives liquid or liquid-borne wastes and discharges such wastes into the drainage system to which it may be directly or indirectly connected. Industrial or commercial tanks, vats, and similar processing equipment are not plumbing fixtures, but may be connected to or discharged into approved traps or plumbing fixtures where and as otherwise provided for elsewhere in this code.
TG Recommendation (AS or AM or D):	D (TG-4)
Modification of Proposed Change:	Plumbing Fixture: A receptor or device that requires both a water-supply connection and or a discharge to the drainage system or both, such as water closets, lavatories, bathtubs, and sinks.
TG Reason:	Delete the term “plumbing fixture” from the definition section. Not necessary to define.
TG Vote:	Cambria moves to disapprove, Hope seconds. Disapprove: Unanimous. Motion passes, proposal is disapproved.

P015	LogID 17-067	Section 202 Definitions
Submitter:	Thomas Pape AWE, Michael Cudahy	
Requested Action:	Define “Reclaimed water”	
Proposed Change:	Reclaimed water is non-potable water provided by a wastewater utility that is used more than one time before it passes back into the natural water cycle. Treated and sanitized to meet requirements of AHJ.	
Reason:	Not defined in the NGBS but used in practice	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Reclaimed water is wastewater that is used more than one time before it passes back into the natural water cycle non-potable water provided by a wastewater utility, treated to meet the requirements of the AHJ for the intended uses. The water may be sanitized to allow for above ground landscape irrigation or flush sanitary fixtures. May also be known as Recycled Water in some areas.	
TG Reason:	Align with industry standard definition.	
TG Vote:	None opposed – passes AM.	

P016	LogID 6170	202 Definitions
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	GROUND SOURCE HEAT PUMP. Where the earth is used as a heat sink in air conditioning or heat source in heating systems. This also applies to systems utilizing subsurface water. <u>A system that uses the earth or subsurface water as a heat sink for air conditioning and as a heat source for heating.</u>	
Reason:	This is a suggested editorial change to clarify and shorten the definition.	
TG Recommendation (AS or AM or D):	Approve (TG-5)	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

Chapter 3 Compliance Method

P017	LogID 6585	301.1 Environmental rating levels (Compliance Method, general)
Submitter:	Thomas Culp, Aluminum Extruders Council	
Requested Action:	Revise as follows	
Proposed Change:	<p>301.1 Environmental rating levels. The building, project, site, and/or development environmental rating level shall consist of all mandatory requirements plus points assessed using the point system specified within this chapter. Threatening level shall be in accordance with Section 302, 303, 304, or 305.3, as applicable. The designation for remodeled functional areas shall be in accordance with Section 305.4. The designation for accessory structures shall be in accordance with Section 306. <u>Spaces in mixed-use buildings not designated as residential in Section 101.2.1 shall comply with Chapters 6-10 of the ICC International Green Construction Code (IgCC).</u></p> <p>(Add reference to 2018 International Green Construction Code in Chapter 13)</p>	
Reason:	With the scope expansion for multi-use buildings, this provides the appropriate pointer to use the 2018 International Green Construction Code for those nonresidential spaces not covered by the residential designation in Section 101.2.1. The 2018 IgCC is being combined with the technical content of ASHRAE 189.1-2017 with the cooperation of ICC, ASHRAE, USGBC, AIA, and IES. Chapters 6-10 refer to water use; energy efficiency; indoor environmental quality; impact on atmosphere, materials, and resources; and construction and plans for operation, respectively. Chapter 5 on site sustainability has not been included as ICC-700 / NGBS already addresses the overall project site	
TG Recommendation (AS or AM or D):	AM (Culp, Jacobs) 2/6/2018 Opened for more discussion (Jacobs, Conner) 2/7/2018 2 nd AM (Jacobs, Conner) 2/7/2018 – added the exclusion of section 6.3.1 in IgCC	
Modification of Proposed Change:	<p>Add new definition to Section 202: <u>NON-RESIDENTIAL SPACES.</u> <u>Spaces not designated as residential in Section 101.2.1.</u></p> <p>301.1 Environmental rating levels. The building, project, site, and/or development environmental rating level shall consist of all mandatory requirements plus points assessed using the point system specified within this chapter. The rating level shall be in accordance with Section 302, 303, 304, or 305.3, as applicable. The designation for remodeled functional areas shall be in accordance with Section 305.4. The designation for accessory structures shall be in accordance with Section 306. <u>301.1.1 Non-Residential Spaces.</u> <u>Non-residential spaces in mixed-use buildings not designated as residential in Section 101.2.1 shall comply with Chapter X of this Standard or Chapters 6-10 of the ICC International Green Construction Code (IgCC), excluding §6.3.1.</u> (Add reference to 2018 International Green Construction Code in Chapter 13)</p> <p>304.1 Multifamily buildings. All residential portions of a building shall meet the requirements of this Standard. Partial compliance shall not be allowed. Unless specifically addressed in other portions of this standard, all <u>dwelling and sleeping</u> units and residential common areas within a multifamily building shall meet all mandatory requirements. Where features similar to dwelling <u>and sleeping</u> unit features are installed in the common area, those features shall meet the standard of the dwelling unit <u>and sleeping unit</u>. Green building practices for residential common areas may differ from requirements for dwelling <u>and sleeping</u> units. Points for the green building practices that apply to multiple <u>dwelling and sleeping</u> units shall be credited once for the entire building. Where points are credited, including where a weighted average is used, practices shall be implemented in all <u>dwelling and sleeping</u> units, as applicable. Where application of a prescribed practice allows for a different number of points for different <u>dwelling and sleeping</u> units in a multifamily building, the fewer number of points shall be awarded, unless noted that a weighted average is used.</p>	
TG Reason:	To clarify compliance options for non-residential spaces.	
TG Vote:	18 – 0 – 0 (TG-1)	
P018	LogID 17-002	Section 301.2 Awarding of points
Submitter:	Michelle Foster, Home Innovation Research Labs	
Requested Action:	Revise 301.2 Awarding of points	
Proposed Change:	Points shall be awarded as follows:	

	<p>(1) The maximum number of points that can be awarded for each practice is noted with that practice.</p> <p>(2) Point allocation for multifamily buildings shall be as prescribed in Section 304.</p> <p>(3) The Adopting Entity shall allow the use of new and innovative products and practices deemed to meet the intent of this Standard. Points assigned for any new product or practice shall be determined by the Adopting Entity. A maximum of 20 points may be awarded at the discretion of the Adopting Entity. Innovative practices and products shall fall under Chapters 5-10 (Categories 1-6 in Table 303); however, these points shall only be assigned under Category 7. Point values shall be determined by comparing the innovative product or practice to a practice or product already described in the Standard. The applicant shall supply demonstrable, quantified data to support the innovative product or practice and to determine the practice's functional equivalent in the Standard for the points to be awarded.</p>
Reason:	Points for new innovative practices should be awarded in the relevant category for the practice and not be relegated to Category 7.
TG Recommendation (AS or AM or D):	A (Coordination TG)
Modification of Proposed Change:	
TG Reason:	This change will encourage more innovation and provides more flexibility.
TG Vote:	7 – 0 – 2 chair not voting

P019	LogID 6277	303.1 Green buildings
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Submitter:	Aaron Gary, self
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Requested Action:	Revise as follows
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Proposed Change:	<p style="text-align: center;">Table 303 Threshold Point Ratings for Green Buildings</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" rowspan="2">Green Building Categories</th> <th colspan="4">Rating Level Points ^{(a) (b)}</th> </tr> <tr> <th><u>BRONZE</u>CERTIFIED</th> <th>SILVER</th> <th>GOLD</th> <th>EMERALD</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td style="text-align: center;">Chapter 5</td> <td>Lot Design, Preparation, and Development</td> <td style="text-align: center;">50</td> <td style="text-align: center;">64</td> <td style="text-align: center;">93</td> <td style="text-align: center;">121</td> </tr> <tr> <td style="text-align: center;">2.</td> <td style="text-align: center;">Chapter 6</td> <td>Resource Efficiency</td> <td style="text-align: center;">43</td> <td style="text-align: center;">59</td> <td style="text-align: center;">89</td> <td style="text-align: center;">119</td> </tr> <tr> <td style="text-align: center;">3.</td> <td style="text-align: center;">Chapter 7</td> <td>Energy Efficiency</td> <td style="text-align: center;">30</td> <td style="text-align: center;">45</td> <td style="text-align: center;">60</td> <td style="text-align: center;">70</td> </tr> <tr> <td style="text-align: center;">4.</td> <td style="text-align: center;">Chapter 8</td> <td>Water Efficiency</td> <td style="text-align: center;">25</td> <td style="text-align: center;">39</td> <td style="text-align: center;">67</td> <td style="text-align: center;">92</td> </tr> <tr> <td style="text-align: center;">5.</td> <td style="text-align: center;">Chapter 9</td> <td>Indoor Environmental Quality</td> <td style="text-align: center;">25</td> <td style="text-align: center;">42</td> <td style="text-align: center;">69</td> <td style="text-align: center;">97</td> </tr> <tr> <td style="text-align: center;">6.</td> <td style="text-align: center;">Chapter 10</td> <td>Operation, Maintenance, and Building Owner Education</td> <td style="text-align: center;">8</td> <td style="text-align: center;">10</td> <td style="text-align: center;">11</td> <td style="text-align: center;">12</td> </tr> <tr> <td style="text-align: center;">7.</td> <td></td> <td>Additional Points from Any Category</td> <td style="text-align: center;">50</td> <td style="text-align: center;">75</td> <td style="text-align: center;">100</td> <td style="text-align: center;">100</td> </tr> <tr> <td colspan="3" style="text-align: center;">Total Points:</td> <td style="text-align: center;">231</td> <td style="text-align: center;">334</td> <td style="text-align: center;">489</td> <td style="text-align: center;">611</td> </tr> </tbody> </table>	Green Building Categories			Rating Level Points ^{(a) (b)}				<u>BRONZE</u> CERTIFIED	SILVER	GOLD	EMERALD	1.	Chapter 5	Lot Design, Preparation, and Development	50	64	93	121	2.	Chapter 6	Resource Efficiency	43	59	89	119	3.	Chapter 7	Energy Efficiency	30	45	60	70	4.	Chapter 8	Water Efficiency	25	39	67	92	5.	Chapter 9	Indoor Environmental Quality	25	42	69	97	6.	Chapter 10	Operation, Maintenance, and Building Owner Education	8	10	11	12	7.		Additional Points from Any Category	50	75	100	100	Total Points:			231	334	489	611
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Reason:	"Bronze" Certification is not as effective as it Could or should be as a "mark of distinction" for a green home or apartment. For many reasons, the marketplace has come to value silver and gold. Emerald is a rare distinction. Bronze, when awarded often feels to recipients like third place rather than the rarified Olympian step up on the platform. This proposal suggest that our protocol switch to "certified " as the entry level of performance for green certification. This is a subtle but important step to improve the acceptance and marketplace support for the program.
TG Recommendation (AS or AM or D):	D (Coordination TG)
Modification of Proposed Change:	
TG Reason:	Bronze should be included because they are all certified.
TG Vote:	12-2-0

P020	LogID 6446	303.1 Green buildings
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>303.2 Compliance with some of the categories, but not all of the categories shall be permitted. Energy Efficiency, Water Efficiency and Additional Points from Any Category shall still be required. Signage and certification shall promptly indicate which categories complied and differentiate these residences from residences that comply will all categories. The lowest level achieved in categories compiled with shall determine the rating level achieved.</u>	
Reason:	This proposed change is meant to start a discussion. Does it make sense to allow some homes to meet most of the categories, but not all of them? For example, should a house that otherwise meets NGBS, but was too far along to meet Lot Design, Preparation and Development be allowed to be certified to meet the rest of NGBS? Or does the "mostly green" house damage the NGBS brand? Most consider Energy and Water to be the core of green, so these categories would always apply.	
TG Recommendation (AS or AM or D):	D (Coordination TG)	
Modification of Proposed Change:		
TG Reason:	Waters down the program and introduces confusion in the market. Not sufficient for a green building that requires balance.	
TG Vote:	13-1-0	

P021	LogID 6579	303.1 Green Buildings
Submitter:	Steven Rosenstock, Edison Electric Institute	
Requested Action:	Revise as follows	
Proposed Change:	<u>303.1.1 Commercial Spaces. Commercial spaces or areas within green buildings shall comply with ASHRAE Standard 189.1. All actions and practices taken within commercial spaces or areas shall not be eligible for points in Table 303 or points within Chapters 5 through 12.</u>	
Reason:	This addition will allow the standard to adapt to the new scope, and ensure that the original intent of the standard (for residential buildings) remains the primary focus of the standard. ASHRAE 189.1 is a consensus-based ANSI standard for green commercial buildings that is on continuous maintenance and updated every 3 years. The web site link to the standard is: https://www.ashrae.org/resources--publications/bookstore/standard-189-1	
TG Recommendation (AS or AM or D):	D (TG-1)	
Modification of Proposed Change:		
TG Reason:	The proponent agrees (2/6/2018 at TG-1 meeting) with disapproval as comments are addressed by action on proposal 6585. With modification it is clear that practices in the non-residential portion are not applicable for points in the residential portion.	

TG Vote:	19 – 0 – 0
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P022	LogID 6580	303.1 Green buildings
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Submitter:	Steven Rosenstock, Edison Electric Institute
Requested Action:	Revise as follows
Proposed Change:	<p>Table 303</p> <p>...Rating Level Points (a) (b) (c)</p> <p>.....</p> <p>(c) Commercial Spaces or Areas within green buildings are not eligible for points in this Table.</p>
Reason:	This new footnote will correspond to a proposed change for Section 303.1, and will help to clarify that commercial sections of green buildings have to meet a separate standard (ASHRAE 189.1).
TG Recommendation (AS or AM or D):	D (TG-1)
Modification of Proposed Change:	
TG Reason:	The proponent agrees (2/6/2018 at TG-1 meeting) with disapproval as comments are addressed by action on proposal 6585. With modification it is clear that practices in the non-residential portion are not applicable for points in the residential portion.
TG Vote:	19 – 0 – 0

P023	LogID 6281	303.1 Green buildings
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Submitter:	Aaron Gary, self																																																					
Requested Action:	Revise as follows																																																					
Proposed Change:	<p style="text-align: center;">Table 303</p> <p style="text-align: center;">Threshold Point Ratings for Green Buildings</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3" rowspan="2">Green Building Categories</th> <th colspan="4">Rating Level Points ^{(a) (b)}</th> </tr> <tr> <th>BRONZE</th> <th>SILVER</th> <th>GOLD</th> <th>EMERALD</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Chapter 5</td> <td>Lot Design, Preparation, and Development</td> <td>50</td> <td>64</td> <td>93</td> <td>121</td> </tr> <tr> <td>2.</td> <td>Chapter 6</td> <td>Resource Efficiency</td> <td>43</td> <td>59</td> <td>89</td> <td>119</td> </tr> <tr> <td>3.</td> <td>Chapter 7</td> <td>Energy Efficiency</td> <td>3033</td> <td>4548</td> <td>60</td> <td>70</td> </tr> <tr> <td>4.</td> <td>Chapter 8</td> <td>Water Efficiency</td> <td>25</td> <td>39</td> <td>67</td> <td>92</td> </tr> <tr> <td>5.</td> <td>Chapter 9</td> <td>Indoor Environmental Quality</td> <td>25</td> <td>42</td> <td>69</td> <td>97</td> </tr> <tr> <td>6.</td> <td>Chapter 10</td> <td>Operation, Maintenance, and Building Owner Education</td> <td>8</td> <td>10</td> <td>11</td> <td>12</td> </tr> </tbody> </table>	Green Building Categories			Rating Level Points ^{(a) (b)}				BRONZE	SILVER	GOLD	EMERALD	1.	Chapter 5	Lot Design, Preparation, and Development	50	64	93	121	2.	Chapter 6	Resource Efficiency	43	59	89	119	3.	Chapter 7	Energy Efficiency	30 33	45 48	60	70	4.	Chapter 8	Water Efficiency	25	39	67	92	5.	Chapter 9	Indoor Environmental Quality	25	42	69	97	6.	Chapter 10	Operation, Maintenance, and Building Owner Education	8	10	11	12
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Reason:	Due to the delay in implementation of NGBS 2015 by HIRL and the slow rate of adoption of the 2015 IECC around the country the 2018 NGBS Standard should not adjust the baseline in Chapter 7 to anything beyond the 2015 IECC but instead adjust the required points up for Certification by 10%. This strategy has the virtue of pushing projects to adopt additional energy related practices while not increasing the already high barrier of entry. I believe the same adjustment does not need to be implemented at the highest levels of certification (Gold and Emerald) as projects who are performing at that level are already well beyond the baseline.														
TG Recommendation (AS or AM or D):	Disapprove (TG-5)														
Modification of Proposed Change:															
TG Reason:	The proponent requested disapproval as a result of the recommendation to change the baseline to 2018 IECC.														
TG Vote:	14-0-0														

P024	LogID 6581	304.1 Multifamily buildings
Submitter:	Steven Rosenstock, Edison Electric Institute	
Requested Action:	Add new as follows	
Proposed Change:	<u>304.1.1 Commercial Spaces. Commercial spaces or areas within green multifamily buildings shall comply with ASHRAE Standard 189.1. All actions and practices taken within commercial spaces or areas shall not be eligible for points in Table 303 or points within Chapters 5 through 12.</u>	
Reason:	This addition allows the standard to adapt to the new scope, and ensure that the original intent of the standard (for residential buildings) remains the primary focus of the standard. ASHRAE 189.1 is a consensus-based ANSI standard for green commercial buildings that is on continuous maintenance and updated every 3 years. The web site link to the standard is: https://www.ashrae.org/resources--publications/bookstore/standard-189-1 .	
TG Recommendation (AS or AM or D):	D (TG-1)	
Modification of Proposed Change:		
TG Reason:	The proponent agrees (2/6/2018 at TG-1 meeting) with disapproval as comments are addressed by action on proposal 6585. With modification it is clear that practices in the non-residential portion are not applicable for points in the residential portion.	
TG Vote:	19 – 0 – 0	

P025	LogID 6489	304.1 Multifamily buildings
Submitter:	Steven Armstrong, self	
Requested Action:	Add new as follows	
Proposed Change:	Consider a separate multifamily path for scoring tool	
Reason:	Many of the single family practices found in the current scoring tool do not apply to multifamily thus allowing for confusion when presenting to multifamily contractors, engineers and architects.	

TG Recommendation (AS or AM or D):	D (TG-6)
Modification of Proposed Change:	N/A
TG Reason:	This is beyond the scope of this Task Group. The existing scoring tool is sufficient and Home Innovation can continue to modify as needed.
TG Vote:	13 Yes; 1 No

P026	LogID 6439	305.3.3 Mandatory practices
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	<p>305.3.3 Mandatory practices. The building, including any additions and common areas, shall satisfy all practices designated as mandatory in Chapter 11 <u>for One- and Two- Family Dwellings and Chapter X for Multifamily Buildings</u></p> <p>305.3.4 NO CHANGE</p> <p>305.3.5 NO CHANGE</p> <p>305.3.6 NO CHANGE</p> <p>305.3.7 Prescriptive practices. The point thresholds for the environmental rating levels based on compliance with the Chapter 11 <u>for One- and Two- Family Dwellings and Chapter X for Multifamily Buildings</u> prescriptive practices shall be in accordance with Table 305.3.7. Any practice listed in Chapter 11 <u>for One- and Two- Family Dwellings and Chapter X for Multifamily Buildings</u> shall be eligible for contributing points to the prescriptive threshold ratings. The attributes of the existing building that were in compliance with the prescriptive practices of Chapter 11 <u>for One- and Two- Family Dwellings and Chapter X for Multifamily Buildings</u> prior to the remodel and remain in compliance after the remodel shall be eligible for contributing points to the prescriptive threshold ratings.</p>
Reason:	The remodeling of single family homes and multifamily buildings are endeavors of very different scope. Chapter 11 currently does a so-so job of responding to the difference but this could be greatly improved by creating a standalone chapter.
TG Recommendation (AS or AM or D):	D (TG-6)
Modification of Proposed Change:	N/A
TG Reason:	No separate chapter is needed in the opinion of the Task Group. The current structure is adequate.
TG Vote:	14 Yes; 1 No Vote

P027	LogID 6278	305.3.5 Energy efficiency
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Submitter:	Aaron Gary, self																	
Requested Action:	Revise as follows																	
Proposed Change:	<p>305.3.5 Energy efficiency. The energy efficiency rating level shall be based on the reduction in energy consumption resulting from the remodel in accordance with Table 305.3.5.</p> <p style="text-align: center;">Table 305.3.5 Energy Rating Level Thresholds</p> <table border="1" style="width: 100%; margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2"></th> <th colspan="4" style="text-align: center;">Rating Level</th> </tr> <tr> <th style="text-align: center;">BRONZE CERTIFIED</th> <th style="text-align: center;">SILVER</th> <th style="text-align: center;">GOLD</th> <th style="text-align: center;">EMERALD</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Reduction in energy consumption</td> <td style="text-align: center;">15%</td> <td style="text-align: center;">25%</td> <td style="text-align: center;">35%</td> <td style="text-align: center;">45%</td> </tr> </tbody> </table>					Rating Level				BRONZE CERTIFIED	SILVER	GOLD	EMERALD	Reduction in energy consumption	15%	25%	35%	45%
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Reason:	"Bronze" Certification is not as effective as it Could or should be as a "mark of distinction" for a green home or apartment. For many reasons, the marketplace has come to value silver and gold. Emerald is a rare distinction. Bronze, when awarded often feels to recipients like third place rather than the rarified Olympian step up on the platform. This proposal suggest that our protocol switch to "certified " as the entry level of performance for green certification. This is a subtle but important step to improve the acceptance and marketplace support for the program.
TG Recommendation (AS or AM or D):	D (Coordination TG)
Modification of Proposed Change:	
TG Reason:	Bronze should be included because they are all certified.
TG Vote:	12-2-0

P028 LogID 17-055 305.3.5 Energy Efficiency	
Submitter:	Chris Schwarzkopf, Energy Diagnostics
Requested Action:	Modify as follows
Proposed Change:	<p>Modify Section 305.3 to create a path for Remodel Certification that does not penalize properties that have recently been renovated. For instance, if a MF property recently upgraded all the fixtures to water-efficient fixtures, then it will be extremely difficult, if not economically unfeasible, to reach an incremental 20% improvement.</p> <p>305.3.5 Energy efficiency. <u>The project must meet one of the following options from 305.3.5.1 or 305.3.5.2:</u></p> <p><u>305.3.5.1 Energy Consumption Reduction. The energy efficiency rating level shall be based on the reduction in energy consumption resulting from the remodel in accordance with Table 305.3.5.</u> [Table 305.3.5 – No Change] [no change to existing text from 1 --- The reduction in energy consumption resulting from the remodel shall be based ... entire building including all dwelling units and common areas.] <u>If project can demonstrate through invoices and/or permits that the renovation started earlier and has been a phased investment, the energy baseline can be measured up to 3 years before project registration.</u></p> <p><u>305.3.5.2 Alternative Performance Paths: Project must select option a or b</u></p> <p><u>a. Bronze/Silver Path: Follow the 704.1 HERS index target compliance. Worst case units must achieve HERS [70] or lower</u></p> <p><u>b. Exceed the minimum building code requirement at the time of last substantial remodel by +15%, +25%, +35%, 45%? (Verify by permit date the time of, if any, last substantial remodel) (Adaptive reuse projects must use as designed units to the minimum 1980 code defaults)</u></p> <p><u>305.3.6 Water efficiency. The project must meet one of the following options from 305.3.6.1 or 305.3.6.2:</u></p> <p><u>305.3.6.1 Water Consumption Reduction. The water efficiency rating level shall be based on the reduction in water consumption resulting from the remodel in accordance with Table 305.3.6.</u> [Table 305.3.6 – No Change] [no change to existing text from 305.3.6.1 --- Water consumption shall be based on the estimated annual use ... entire building including all dwelling units and common areas.] <u>If project can demonstrate through invoices and/or permits that the renovation started earlier and has been a phased investment, the water baseline can be measured up to 3 years before project registration.</u></p> <p><u>305.3.6.2 b. Alternative Prescriptive-based: (Bronze Only) Must meet requirements from</u></p> <ul style="list-style-type: none"> • <u>801.2 At least one appliance meets (1) (2) or (3)</u> • <u>801.3 (1) and 801.3 (2) a or b</u> • <u>801.4 (1) and (2)</u> • <u>801.5 (2) and (3)</u> • <u>If property has newly installed irrigation system, the irrigation system must be installed and designed by a certified professional per 801.6.3 (Mandatory Practice)</u> <p>No change to section 305.3.7</p>
Reason:	We believe this proposal will expand the market of project that may pursue the Remodel certification. In Chapter 11's original form properties that have recently upgraded energy or water systems may find achieving the energy or water reductions extremely difficult.

	For instance, if a Multifamily project upgraded the water fixtures to the latest flow rates two years ago, they would find it especially difficult to generate an additional 20% savings. By offering two new paths, we can make the program more accessible while still maintaining a high bar. The first option would be to recognize WEM that were installed within 3 years of the project registration. The second option (305.6.2) offers a prescriptive path to demonstrate that the building is already above code and meeting NGBS water requirements.
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-7 (Renovations and Additions) as Section 305 falls under their direct purview.</i>
TG Recommendation (AS or AM or D):	TG 5: Disapprove TG 7: Disapprove
Modification of Proposed Change:	
TG Reason:	TG 5: The language is vague and unenforceable. TG 7: In favor of action on Log 17-029
TG Vote:	TG 5: 8-2-0 TG 7: unanimous 8-0-0

P029	LogID 6171	305.3.5.1 Energy consumption reduction
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Submitter:	Keith Dennis, NRECA
Requested Action:	Revise as follows
Proposed Change:	The reduction in energy consumption resulting from the remodel shall be based on the estimated annual energy cost savings or <u>site energy savings</u> or source energy savings as determined by
Reason:	The source energy calculations contain flaws, which is why DOE recently underwent a process to adjust them. Some of the issues are that source energy for renewable energy treat that energy as if it were from a fossil fuel plant and multiplies it by about 3, creating a counterproductive result. Similarly, nuclear energy, which makes up 20% of our national fuel mix and generates no emissions is treated worse than fossil fuel because nuclear reactions are hot. This has little to do with CO2 emissions goals or energy efficiency. Using site and source energy provides flexibility.
TG Recommendation (AS or AM or D):	Approve (TG-5)
Modification of Proposed Change:	
TG Reason:	Consistent with actions 6172
TG Vote:	10-3-1

P030	LogID 6149	305.3.5.1 Energy consumption reduction
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Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	305.3.5.1 Energy consumption reduction. The reduction in energy consumption resulting from the remodel shall be based on the estimated annual energy cost savings or source <u>site</u> energy savings as determined by....
Reason:	Site energy is measurable, verifiable, and is directly correlated to energy costs in a remodeled building. Source energy estimates are widely variable and can be easily used to "game" the system. In addition, source energy proponents claim that grid-based renewables have the highest "source" factors, penalizing builders and customers that use renewable forms of electricity. Site energy is also consistent with the equipment energy efficiency metrics shown in Chapter 7. ASHRAE has also stated that site energy is the preferred choice when looking at "net zero" energy buildings or energy comparisons.
TG Recommendation (AS or AM or D):	Disapprove (TG-5)

Modification of Proposed Change:	
TG Reason:	Consistent with IECC that allows for the use of source energy as an option for compliance
TG Vote:	12-1-1

P031	LogID 6464	305.3.5.1 Energy consumption reduction
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Submitter:	Chuck Foster, self
Requested Action:	Revise as follows
Proposed Change:	The reduction in energy consumption resulting from the remodel shall be based on the estimated annual energy cost savings or source energy savings as determined by a third-party energy audit and analysis or utility consumption data.
Reason:	Source energy is an unstable metric for estimating energy performance, especially in a time of rapidly changing electric generation fleets. In addition, source energy overtly discriminates against the use of renewable energy sources, thereby putting it at tension with the goals and purpose of the NGBS.
TG Recommendation (AS or AM or D):	Disapprove (TG-5)
Modification of Proposed Change:	
TG Reason:	Consistent with IECC that allow the use of source energy as a option for compliance.
TG Vote:	12-1-1

P032	LogID 6279	305.3.6 Water efficiency
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Submitter:	Aaron Gary, self														
Requested Action:	Revise as follows														
Proposed Change:	<p>305.3.6 Water efficiency. The water efficiency rating level shall be based on the reduction in water consumption resulting from the remodel in accordance with Table 305.3.6.</p> <p style="text-align: center;">Table 305.3.6 Water Rating Level Thresholds</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">Rating Level</th> </tr> <tr> <th>BRONZE CERTIFIED</th> <th>SILVER</th> <th>GOLD</th> <th>EMERALD</th> </tr> </thead> <tbody> <tr> <td>Reduction in energy consumption</td> <td style="text-align: center;">20%</td> <td style="text-align: center;">30%</td> <td style="text-align: center;">40%</td> <td style="text-align: center;">50%</td> </tr> </tbody> </table>		Rating Level				BRONZE CERTIFIED	SILVER	GOLD	EMERALD	Reduction in energy consumption	20%	30%	40%	50%
	Rating Level														
	BRONZE CERTIFIED	SILVER	GOLD	EMERALD											
Reduction in energy consumption	20%	30%	40%	50%											
Reason:	"Bronze" Certification is not as effective as it Could or should be as a "mark of distinction" for a green home or apartment. For many reasons, the marketplace has come to value silver and gold. Emerald is a rare distinction. Bronze, when awarded often feels to recipients like third place rather than the rarified Olympian step up on the platform. This proposal suggest that our protocol switch to "certified " as the entry level of performance for green certification. This is a subtle but important step to improve the acceptance and marketplace support for the program.														
TG Recommendation (AS or AM or D):	D (Coordination TG)														
Modification of Proposed Change:															
TG Reason:	Bronze should be included because they are all certified.														
TG Vote:	12-2-0														

P033 LogID 6280 305.3.7 Prescriptive practices

Submitter:	Aaron Gary, self														
Requested Action:	Revise as follows														
Proposed Change:	<p>305.3.7 Prescriptive practices. The point thresholds for the environmental rating levels based on compliance with the Chapter 11 prescriptive practices shall be in accordance with Table 305.3.7. Any practice listed in Chapter 11 shall be eligible for contributing points to the prescriptive threshold ratings. The attributes of the existing building that were in compliance with the prescriptive practices of Chapter 11 prior to the remodel and remain in compliance after the remodel shall be eligible for contributing points to the prescriptive threshold ratings.</p> <p style="text-align: center;">Table 305.3.6 Prescriptive Threshold Point Ratings</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">Rating Level</th> </tr> <tr> <th>BRONZE CERTIFIED</th> <th>SILVER</th> <th>GOLD</th> <th>EMERALD</th> </tr> </thead> <tbody> <tr> <td>Reduction in energy consumption</td> <td style="text-align: center;">88</td> <td style="text-align: center;">125</td> <td style="text-align: center;">181</td> <td style="text-align: center;">225</td> </tr> </tbody> </table>		Rating Level				BRONZE CERTIFIED	SILVER	GOLD	EMERALD	Reduction in energy consumption	88	125	181	225
	Rating Level														
	BRONZE CERTIFIED	SILVER	GOLD	EMERALD											
Reduction in energy consumption	88	125	181	225											
Reason:	"Bronze" Certification is not as effective as it Could or should be as a "mark of distinction" for a green home or apartment. For many reasons, the marketplace has come to value silver and gold. Emerald is a rare distinction. Bronze, when awarded often feels to recipients like third place rather than the rarified Olympian step up on the platform. This proposal suggest that our protocol switch to "certified " as the entry level of performance for green certification. This is a subtle but important step to improve the acceptance and marketplace support for the program.														
TG Recommendation (AS or AM or D):	D (Coordination TG)														
Modification of Proposed Change:															
TG Reason:	Bronze should be included because they are all certified.														
TG Vote:	12-2-0														

P034 LogID 17-029 305.4 Criteria for remodeled functional areas of buildings

Submitter:	Paul Gay, US-EcoLogic (with John Barrows, Chris Schwarzkopf, Stephen Evanko)
Requested Action:	Modify as follows
Proposed Change:	<p>305.4 Criteria for remodeled functional areas of buildings</p> <p>305.4.1 Applicability. The provisions of Section 305.4 shall apply to remodeling of one or more of the following functional areas of the existing building as follows:</p> <ol style="list-style-type: none"> 1. Addition, kitchen, bathroom, or basement in buildings other than multifamily buildings. 2. Kitchen or bathroom of an individual dwelling unit in a multifamily building. <p>305.4.1.1 Additions. The total above-grade conditioned area added during a remodel shall not exceed 400 square feet.</p> <p>305.4.2 Compliant. Projects that meet all applicable requirements of Chapter 12 for that functional area shall be designated as <i>compliant</i>.</p> <p>305.4.3 Designation. The designation achieved under Section 305.4 applies only to the specific functional area of the existing building. The existing building may have more than one <i>compliant</i> functional area.</p> <p>305.4.4 Additions. A bathroom(s), kitchen, or finished basement included in an addition shall comply with all criteria specifically applicable to those functional areas in accordance with the provisions of Chapter 12.</p> <p>305.4.5 Mandatory. Projects shall satisfy all applicable practices designated as mandatory in Chapter 12.</p> <p>305.4.6 Existing attributes. The attributes of the existing building that were in compliance with the applicable provisions of Chapter 12 prior to the remodel and remain in compliance after the remodel shall be eligible for contributing to demonstration of compliance under Section 305.4.</p>

	<p>Delete entire Chapter 12</p> <p>Replace with:</p> <p>305.4 Criteria for Phased Remodeling of Apartment Units and or Functional Areas, and Building Systems</p> <p>305.4.1 Applicability: Provide for a phased remodeling path that leads to certification for the whole single family residence or multi-family building.</p> <p><u>305.4.1.1 Remodeling of Apartment Units and or functional areas (or rooms) such as kitchens, baths, individual rooms, additions of less than 400 SF.</u></p> <p><u>305.4.1.2 Remodeling of building systems such as building envelope, individual HVAC components centralized systems , indoor environment, and water conservation practices</u></p> <p><u>305.4.2 Compliance: Functional areas and systems are provided with a certification of compliance when the applicable Chapter 11 prescriptive practices are achieved.</u></p> <p>305.4.2.1 Single Family Compliance:</p> <p><u>(a) Single Family functional areas are provided with certification of compliance</u></p> <p><u>(b) Single Family building systems are provided with a certification of compliance when practices as outlined in a pre-project evaluation are met. Pre-project evaluation can take the form of a NGBS pre-score, Energy Audit, or other recognized program that provides recommended and prioritized list of practices</u></p> <p><u>(c) Full certification to NGBS Chapter 11 is provided when point threshold levels of all certifications total the target level for certification to Chapter 11</u></p> <p>305.4.2.2 Multifamily Compliance</p> <p><u>305.4.2.2.1 Individual Multifamily Units: Individual multifamily units with their own and separate energy source and water source:</u></p> <p><u>(a) Single Unit functional areas are provided with certification of compliance</u></p> <p><u>(b) Single unit building systems are provided with a certification of compliance when practices as outlined in a pre-project evaluation are met. Pre-project evaluation can take the form of a NGBS pre-score, Energy Audit, or other recognized program that provides recommended and prioritized list of practices</u></p> <p><u>(c) Full certification to NGBS Chapter 11 is provided when point threshold levels of all certifications total the target level for certification to Chapter 11</u></p> <p><u>305.4.2.2.1 Centralized Multifamily Units: Multifamily units with their centralized energy source and water source:</u></p> <p><u>(a) Single Unit functional areas are provided with certification of compliance</u></p> <p><u>(b) Single unit building systems are provided with a certification of compliance when practices as outlined in a pre-project evaluation are met. Pre-project evaluation can take the form of a NGBS pre-score, Energy Audit, or other recognized program that provides recommended and prioritized list of practices</u></p> <p><u>(c) Full certification to NGBS Chapter 11 is provided for the entire building when point threshold levels of all certifications total the target level for certification to Chapter 11 for the entire building.</u></p>
Reason:	<p>The existing Functional Area Remodeling Certification is a starting point and NGBS should promote and recognize practices that lead to full building certification. Many remodeling projects start with a goal in mind and are phased in over time for budget or convenience reasons. Providing certification to functional areas and building systems will promote such efforts if accomplished within ___ yrs. Remodeling of Functional Areas will require a minimum of points from the applicable practices in Chapter 11. Remodeling and upgrading building systems will require a pre-project evaluation to determine the priorities that ensure that upon completion all systems comply with the practices of Chapter 11</p>
TG Recommendation (AS or AM or D):	Approve as Modified (TG-7)
Modification of Proposed Change:	See attachment
TG Reason:	<p>We believe this proposal will expand the market of projects that may pursue the Remodel certification. In Chapter 11's current form, properties that have recently upgraded energy or water systems may find achieving the minimum energy or water reductions extremely difficult relative to their already high-performance starting points.</p> <p>Renovation in Multifamily properties is often undertaken through staged investments spanning many years. Many of the improvements in these renovations cover green, energy-efficiency and water-efficiency practices in the NGBS standard. Unfortunately, as the standard is currently written, we are missing the opportunity to support green certification for these properties.</p> <p>This proposal lays out several alternatives to the energy reduction in Table 305.3.5 (15%, 25%, 35%, 45%) and water reduction in Table 305.3.6 (20%, 30%, 40%, 50%). We propose including options to:</p>

	<p>(a) Improvement-based: Use the current energy reduction and water reduction tables but grant a look-back period of up to 3 years for investments that can be substantiated with invoices, etc.</p> <p>(b) Prescriptive-based: Leverage the Chapter 7 Energy Practices and Chapter 8 Water Practices to ensure that the project meets similar minimum point thresholds for each category</p> <p>In each of these alternative paths, we are maintaining a high bar to ensure that only green, energy-efficient and water-efficient properties can earn the NGBS certification.</p> <p>To highlight this opportunity, we offer several scenarios:</p> <p>For instance, if a Multifamily project upgraded the water fixtures to the latest flow rates two years ago, they would find it especially difficult to generate an additional 20% savings. By offering two new paths, we can make the program more accessible while still maintaining a high bar. The first option would be to recognize WEM that were installed within 3 years of the project registration. The second option (305.6.2) offers a prescriptive path to demonstrate that the building is already leveraging water-efficient practices and meets NGBS water practices.</p>
TG Vote:	(unanimous 10-0-0)

P035	LogID 6438	305.4.1 Applicability (Criteria for remodeled function areas of buildings)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	<p>305.4.1 Applicability. The provisions of Section 305.4 shall apply to remodeling of one or more of the following functional areas of the existing building as follows:</p> <ol style="list-style-type: none"> 1. Addition, kitchen, bathroom, or basement in buildings other than multifamily buildings. 2. Kitchen or bathroom of a <u>An individual dwelling unit or residential common area</u> in a multifamily building. <p>305.4.1.1 Additions. The total above-grade conditioned area added during a remodel shall not exceed 400 square feet <u>per functional area</u>.</p> <p>305.4.2 NO CHANGE</p> <p>305.4.3 NO CHANGE</p> <p>305.4.5 NO CHANGE</p> <p>305.4.6 Existing attributes. The attributes of the existing building that were in compliance with the applicable provisions of Chapter 12 for <u>One- and Two-family Dwellings</u> and Chapter X for <u>Multifamily Buildings</u> prior to the remodel and remain in compliance after the remodel shall be eligible for contributing to demonstration of compliance under Section 305.4.</p>
Reason:	The remodeling of single family homes and multifamily buildings are endeavors of vastly different proportions. The functional areas of importance in multifamily buildings are not bathrooms or kitchens but whole dwelling units and common spaces. Creating a new Chapter of the Standard to address this would greatly strengthen the use-case for existing multifamily buildings
Concurrent Review Staff Note:	This proposal is also being reviewed by TG-7 (Renovations and Additions) as Section 305 falls under their direct purview.
TG Recommendation (AS or AM or D):	TG 6: D TG 7: **Adopt other TG Recommendation**
Modification of Proposed Change:	
TG Reason:	TG 6: No separate chapter is needed in the opinion of the Task Group. The current structure is adequate. TG 7: No need for the remodeling chapter to differ from the rest of the standard.
TG Vote:	TG 6: 14 Yes; 1 Abstain; 1 No vote TG 7: (unanimous 8-0-0)

P036	LogID 17-015	305.4.1.1 Additions
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Submitter:	James M Williams, AE URBIA
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Requested Action:	Delete section 305.4.1.1
Proposed Change:	305.4.1.1 Additions. The total above-grade conditioned area added during a remodel shall not exceed 400 square feet.
Reason:	It does not make any sense to limit the size of an addition to 400 square feet.
TG Recommendation (AS or AM or D):	Disapprove (TG-7)
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P037	LogID 6426	Other for Chapter 3 (include section number and title below)
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Add new as follows	
Proposed Change:	<u>307 HEALTH AND WELL BEING OPTIONAL DESIGNATION (see each chapter as relevant)</u>	
Reason:	To include a new sub-section and Designation within the Protocol to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health. Proposing each Chapter would include a new section for "Health and Well Being", as relevant. Suggest including new subsection at end of each chapter, immediately preceding Innovative Practices.	
TG Recommendation (AS or AM or D):	D (Coordination TG)	
Modification of Proposed Change:		
TG Reason:	Wellness is not defined. No language provided.	
TG Vote:	12-2-0	

P038	LogID 6586	Other for Chapter 3
Submitter:	Thomas Culp, Aluminum Extruders Council	
Requested Action:	Add new as follows	
Proposed Change:	<u>304.2 Alternative IgCC Compliance. As an alternative, any multifamily or mixed-use building that complies with the ICC International Green Construction Code (IgCC) shall be designated as achieving the gold rating level.</u> <u>(Add reference to 2018 International Green Construction Code in Chapter 13)</u>	
Reason:	With the scope expansion to include multi-use buildings that combine nonresidential and multifamily spaces, there will be more overlap with projects that fall under the scope of the 2018 International Green Construction Code, which is now a joint development with the technical content of ASHRAE 189.1-2017 under cooperation of ICC, ASHRAE, USGBC, AIA, and IES. Separate proposals clarify how to use the IgCC for just those nonresidential spaces not covered by the residential designation in Section 101.2.1. In addition, if the project owner decides to use the 2018 IgCC for the entire building project, it should be provided the appropriate rating level under ICC-700 / NGBS.	
TG Recommendation (AS or AM or D):	AM (TG-1)	
Modification of Proposed Change:	<u>304.2 Alternative IgCC Compliance. As an alternative, any multifamily or mixed-use building that complies with the ICC International Green Construction Code (IgCC) shall be designated as achieving the gold silver rating level.</u> <u>(Add reference to 2018 International Green Construction Code in Chapter 13)</u> Add:	

	<u>Additionally, acceptable air tightness of individual residential units shall be demonstrated by a blower door test. The testing and sampling procedure shall be in accordance with the ENERGY STAR Multifamily High Rise Program Testing and Verification Protocols, Version 1.0, Revision 03 - 2015, with an allowable maximum leakage of 0.3 cfm/sf of enclosure bounding the apartment at an induced pressure difference of 50 pascals.</u>
TG Reason:	Adds a compliance path for a preexisting code level multiuse document. The TG felt a silver rating level was more appropriate due to the energy section. The lack of compartmentalized blower door testing in IgCC has been addressed.
TG Vote:	16 – 0 – 1 chair not voting (2 nd motion to approve as modified passes)

P039	LogID 17-064	Chapter 3 Compliance Method
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Submitter:	Matthew Dobson, Vinyl Siding Institute, TG3 Member
Requested Action:	Add new as follows
Proposed Change:	<p><u>301.1.2 Site design and development obtaining thresholds in Table 302 may be verified, certified, and marketed as such prior to the verification of green buildings.</u></p> <p><u>301.1.2.1 Developments may market green subdivision. Developer must provide clear explanation that the rating only applies to the development and not buildings.</u></p> <p><u>303</u></p> <p><u>Exception: Where the builder is unable control a majority of items in Chapter 5 due to timing and lack of relationship to the Lot Design, Preparation, and Development, green ratings on the home maybe still be obtained by eliminating rating requirements and points from Chapter 5. Rating thresholds requirements may be adjusted accordingly. Builder must provide evidence of this impossibility and provide disclaimer statement on marketing materials when this occurs.</u></p> <p><i>Should the designations in Table 302 be the same as Table 303, instead of stars use bronze, silver, gold, emerald?</i></p>
Reason:	<p>Ultimately we want developments to be built and certified from beginning to end, but we know this is not always practical.</p> <p>In some cases developers will sell off developed lots that have reached certain Green Subdivision levels in Section 302 of the standard but the builder may or may not build homes certified green at that point. We should give developers a better ability to certify those lots and encourage the builder to also go for certification to the standard.</p> <p>In other cases a builder may buy lots that the developer did not develop green but we should still enable the builder to be able to at least certify the homes are green even if the development was not.</p> <p>Although we don't want to encourage this practice, and I think the language provided is clear on that, we should at least try to address and allow it when necessary.</p>
TG Recommendation (AS or AM or D):	AS (TG-2)
Modification of Proposed Change:	
TG Reason:	
TG Vote:	5-3

P040	LogID 17-085	Chapter 3 Compliance Method
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Submitter:	Craig Conner, Building Quality
Requested Action:	Revise as follows

Proposed Change:	For all levels, add all of the required points for site development into the “other” category. Retain the same number of total points for the building.
Reason:	Some builders don’t get to design their site. Let them get the same number of points in other categories that they control. Usage of the NGBS has shown site development to be a problem for some builders.
TG Recommendation (AS or AM or D):	D (TG-2)
Modification of Proposed Change:	
TG Reason:	Not enough specificity.
TG Vote:	Unanimous

New Chapters

P041	LogID 17-023	New Chapter 13 Resilient Construction
Submitter:	James M Williams, AE URBIA	
Requested Action:	Add a new Section 13.1101 RESILIENT CONSTRUCTION (for new construction). Move current CHAPTER 13, Referenced Documents to new chapter 14.	
Proposed Change:	<p><u>13.1101 RESILIENT CONSTRUCTION</u></p> <p><u>13.1101.0 Intent.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure (above building code minimum design loads) so the structure can better withstand forces generated by: flooding, snow, wind or seismic (as applicable) and reduce the potential for the loss of life and property.</p> <p><u>13.1101.1 Minimum structural requirements (base design).</u> The design and construction of the structure, components and systems shall comply with the minimum: structural requirements, loads, and forces, as described in the applicable adopted ICC IRC and ICC IBC for a given site. (Mandatory)</p> <p><u>13.1101.2 Enhanced resilience – 10% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by: flooding, snow, wind or seismic (as applicable) that are 10% higher than the base design. (3 points)</p> <p><u>13.1101.2 Enhanced resilience – 20% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by: flooding, snow, wind or seismic (as applicable) that are 20% higher than the base design. (5 points)</p> <p><u>13.1101.2 Enhanced resilience – 30% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by: flooding, snow, wind or seismic (as applicable) that are 30% higher than the base design. (10 points)</p> <p><u>13.1101.2 Enhanced resilience – 40% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by: flooding, snow, wind or seismic (as applicable) that are 40% higher than the base design. (12 points)</p> <p><u>13.1101.2 Enhanced resilience – 50% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by: flooding, snow, wind or seismic (as applicable) that are 50% higher than the base design. (15 points)</p>	

Reason:	Resilient and durable design and construction of the structure reduce the potential for the loss of life and property which result from natural (and manmade) disasters and are sustainable practices which should be recognized and rewarded. Future subsections could include emergency power, emergency water, etc
TG Recommendation (AS or AM or D):	D (TG-3)
Modification of Proposed Change:	
TG Reason:	It would be difficult to determine how much of an improvement could be calculated. The baseline would be dependent on the locality. The proposal is outside of the scope of the green building code. Resilience, as described by the proponent, is inadequate and incomplete – for example, a generator would not be included in this description despite it being part of a resiliency plan.
TG Vote:	7-0-0 chair not voting

P042	LogID 17-069	New Chapter 13 Production Builders
Submitter:	Michelle Foster, Aaron Gary, Bill Sanderson, Matt Dobson, Jerud Martin, Matt Cooper	
Requested Action:	Add new chapter as follows	
Proposed Change:	See attached.	
Reason:	Add new chapter that provides a fifth path for compliance (“certified”) that can be used by larger volume production builders that generally don’t control land development (and therefore can’t earn many points for Lot Design), have a limited ability to incorporate many green practices, and have a need to streamline compliance over a wide range of home types and plans. This compliance path doesn’t have levels or points – all requirements within the Chapter must be met for compliance. This compliance path would be considered below Bronze, however, given that it has a broad applicability and desirability for the large production builders it has the potential to impart a far greater environmental benefit than even the higher certification levels.	
TG Recommendation (AS or AM or D):	AM (Coordination TG)	
Modification of Proposed Change:	See attached	
TG Reason:		
TG Vote:	8 0 0	

P043	LogID 6592	New Section
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	<p><u>CHAPTER 13</u></p> <p><u>NON-RESIDENTIAL NEW CONSTRUCTION</u></p> <p><u>1301.1 Intent.</u> This chapter provides green requirements for the non-residential portion of a building.</p> <p><u>1301.2 Scope.</u> This chapter shall apply to the non-residential portions of buildings. Unless specifically stated otherwise, references to the “building” shall mean the part of a building that is within the scope of this chapter. Occupancy classifications shall be determined in accordance with the <i>International Building Code</i>.</p> <p><u>1301.2.1 Exempt buildings and systems.</u> This chapter shall not apply to temporary structures approved under Section 108 or Section 3103 of the <i>International Building Code</i>.</p> <p><u>1301.3 Incomplete spaces.</u> Specific requirements inside the building envelope shall be satisfied if the requirements that are stated in the construction documents, even if the non-residential inside construction is not complete provided:</p>	

- 1) The residential space in the building has received occupancy permit(s) or has progressed to the point to receive an ICC 700 certification.
- 2) The authority having jurisdiction deems it impractical to implement that specific requirement prior to the residential building receiving occupancy permit(s) or ICC 700 certification.
- 3) There is adequate space to meet the possible requirements at a future date.

A specific requirement applying to some, but not all, the non-residential occupancies that could be in the incomplete spaces is a valid reason for that specific requirement being listed in the construction documents but not completed.

The requirements for the thermal envelop and items outside the building shall be met before certification of the building.

1301.4 Approved programs and standards. The authority having jurisdiction shall be permitted to deem a national, state or local program or standard to meet or exceed this chapter. Approval for a specified application, limited scope or specific locale shall be permitted. Buildings approved in writing under such a program or standard shall be considered in compliance with this chapter.

1302 SITE DEVELOPMENT AND LAND USE

1302.1 Intent. Develop building sites to minimize negative environmental impacts and to protect, restore and enhance the natural features and environmental quality of the site.

1302.2 Protected areas. Construction shall comply with jurisdictional, state and Federal regulation concerning park lands, agricultural lands, flood hazard areas, conservation areas, greenfields, brownfields, sites adjacent to surface water bodies and wetlands. Construction documents shall show the location of the protected areas on, or adjacent to the building site. Construction documents shall show required buffer zones around protected areas.

1302.2.1 Flood hazard areas. New construction shall not be permitted in *flood hazard areas*. Where the authority having jurisdiction makes an exception, this chapter shall apply.

1302.2.2 Surface water protection. Construction and site improvements shall not occur within the ordinary high-water mark of seas, lakes, rivers and streams.

Exceptions:

1. Construction and site improvements related to the use of the associated body of water.
2. Construction and site improvements permitted under an approved wetlands permitting program.

1302.3 Vegetation and soil protection. Construction documents shall identify existing vegetation and soils on a *building site* to be preserved and protected. Protected areas and plants with undisturbed soils shall be provided a physical barrier, such as temporary fencing or other physical barrier. Perimeters around trees shall be a circle with a radius of not less than 1 foot (305 mm) for every inch (25.4 mm) of tree diameter, with a minimum radius of 5 feet (1524 mm). Perimeters around shrubs shall be not less than twice the radius of the shrub.

Exception: Approved alternative perimeters appropriate to the location and the species of the trees and shrubs shall be permitted.

1302.4. Topsoil protection. Topsoil that could be damaged by construction or equipment shall be removed and stockpiled for future reuse. Topsoil stockpiles shall be protected with temporary or permanent soil stabilization measures to prevent erosion or compaction.

1302.5 Soil reuse and restoration. Soils that are being reused shall be prepared, amended and placed to establish or restore the ability of the soil to support the planned vegetation.

1302.6 Pervious and permeable pavement. Pervious and permeable pavements including open grid paving systems and open-graded aggregate systems shall be permitted where they do not interfere with access and egress of fire and emergency vehicles or personnel; utilities; or telecommunications lines.

1302.6 Stormwater. Stormwater management for the *building site* shall address the potential increase in runoff that would occur resulting from construction. Stormwater shall be permitted to be managed for a group of *building sites*, such as the *building sites* within a development or the development as a whole. Where approved, stormwater shall be permitted to flow into adjunct areas designed to accept the stormwater. Stormwater management shall either:

1. Manage rainfall on-site to retain, use or infiltrate at a minimum, the volume of a single storm which is equal to the 95th percentile rainfall event, or

2. Improve, maintain or restore the pre-development stable runoff of the site in an approved manner. Runoff rate and volume shall not exceed predevelopment rates.

1302.6.1. Rainwater catchment. Where allowed by the jurisdiction, rainwater catchment shall be permitted to be used as part of stormwater management.

1302.6.2. Site infiltration. Infiltration into the site or development shall be permitted to be used as part of stormwater management. Site infiltration includes drainage of impermeable surfaces onto vegetated areas, rain gardens, permeable hardscapes, swales, ponds, or other approved areas.

1302.6.3. Adjoining lots. The stormwater management system shall not cause increased erosion or other drainage related damage to adjoining areas or public property.

1302.8 Building site waste management. Land-clearing debris shall be reused or otherwise diverted from landfill or other disposal. Land-clearing debris includes rock, trees, stumps and associated vegetation. Land-clearing debris may be temporarily stockpiled on the site until reused. Storage of site waste shall be in compliance with the combustible waste material requirements of Section 304 of the International Fire Code.

Exception: Section 1302.8 shall not be required where it is in conflict with jurisdictional, state or Federal regulation.

1303.1 Walkways and bicycle paths. Walkways and bicycle paths shall connect to existing paths or sidewalks, or shall be designed to connect to planned future paths, or both. Walkways and bicycle paths shall be designed to support stormwater management. Walkways and bicycle paths shall not interfere with fire and emergency apparatus, vehicle or personnel access.

1303.2 Bicycle parking. Bicycle parking shall comply with 1303.2.1 through 1303.2.3.

1303.2.1 Minimum number of spaces. Bicycle parking spaces shall be at least four per hundred-occupant load, with a minimum of four bicycle parking spaces. Occupant load shall be determined based on Section 1004 of the *International Building Code*. Accessory occupancy areas shall be included in the calculation of primary occupancy area.

Exceptions:

1. Bicycle parking shall not be required where the total non-residential conditioned space in the building is less than 1,000 square feet (232 m²).

2. The minimum number of spaces shall be permitted to be reduced by the authority having jurisdiction based on the occupants expected use of public transit or walking to the building.

Bicycle parking spaces for multiple buildings shall be permitted to be combined, provided that the spaces are sufficient for the combined occupant load of the buildings.

1303.2.2 Description of spaces. Bicycle parking spaces shall comply with the following:

1. shall be provided with illumination of not less than 1 footcandle at the parking surface,

2. shall have an area of not less than 18 inches (457 mm) by 60 inches (1524 mm) per bicycle, and

3. shall be provided with a rack or other facility for locking or securing each bicycle.

1303.2.3 Location of spaces. The location of bicycle parking shall be designated on the site plan.

Vehicle parking spaces, other than those required for local zoning requirements and the accessible parking required by the *International Building Code*, shall be permitted to be used for the installation of bicycle parking spaces. Bicycle parking shall comply with both of the following:

1. Bicycle parking spaces shall be located within 100 feet of the main building entrance and visible from the main entrance.

2. Bicycle parking shall be located at the same grade as the sidewalk, or at a location reachable by ramp or accessible route.

Exception: Provided there is signage at the main building entrances giving the location of bicycle parking, bicycle parking shall be permitted to be located inside a building or other locations on the site that are not visible from the main entrance.

1304.1 Site Hardscape. In climate zones 1 through 4 not less than 50 percent of the site hardscape shall have a minimum initial *Solar Reflectance* of 0.30 when determined in accordance with the *CRRC-1 Standard*. Alternately shading shall be provided by structures or trees based on the projected peak sun angle on the summer solstice. Construction documents shall show solar reflectance and shading used to comply with this section.

1304.2.2 Shading structures. Shading shall be permitted to be provided by elements of a building or structure. Shading includes areas covered by solar photovoltaic arrays, solar thermal or solar water heating collectors. Open trellis-type freestanding structures with vegetation shall be permitted to provide shading based on the coverage of mature vegetation.

1304.2.3 Shade by trees. Where trees provide shading, construction documents shall show the planting location and anticipated ten-year canopy growth of the trees. Shading by existing trees to be retained

shall be permitted to be included in the shading provided by trees. The contribution to hardscape shading by trees shall include only the *hardscape* areas beneath the tree canopy.

1303 MATERIAL RESOURCE CONSERVATION AND EFFICIENCY

1303.1 Intent. Materials are conserved, resources are used efficiently and negative environmental impacts are reduced.

1303.2 Construction waste amount. Construction waste shall meet one of the following criteria:

1) Construction waste sent to disposal shall not exceed 3 lb/ft² of *gross floor area*. The materials sent to disposal shall be documented.

2) Not less than fifty percent of the construction waste shall be diverted from disposal by reuse, recycle, salvage, donation, or sale. The fifty percent shall be determined by weight or volume, but not both. The materials diverted from disposal and the materials sent to disposal shall be documented. Both sorting and diversion on site and storage of waste materials for sorting and diversion at another location shall be permitted.

1303.3 Hazardous waste. Hazardous waste shall be handled in accordance with laws, rules and ordinances applicable in the *jurisdiction*.

1303.4 Waste storage. Storage of construction waste shall be in compliance with the combustible waste material requirements of Section 304 of the *International Fire Code*.

1303.5 Used materials and components. Salvaged or reused materials and components shall comply with the provisions for such materials in accordance with the applicable code, or shall be approved. Reuse of materials and components from other projects shall be treated as a reduction in the construction waste of this project.

1303.5.1 Concrete, asphalt and base materials. The use of aggregate, fly ash, slag, and the like in concrete; reuse of asphalt and aggregate to make asphalt; and the reuse of recovered materials as base materials shall be treated as a reduction in the construction waste of this project.

1303.5.2 Materials and components from other sources. Salvage and reuse of materials and components from other projects shall be treated as a reduction in the construction waste of this project.

1303.6 Construction phase moisture control. Porous or fibrous materials and other materials subject to moisture damage shall be protected from moisture during the construction. Material damaged by moisture or visibly colonized by fungi either prior to delivery or during the construction shall be cleaned and dried, or where damage cannot be corrected, shall be removed and replaced.

1304 ENERGY EFFICIENCY AND RENEWABLES

1304.1 Intent. This section promotes the effective use of energy and on-site renewable generation.

1304.2 Energy calculations. Energy costs shall be calculated in accordance with Section C407 of the *International Energy Conservation Code*.

1304.2.1 Alternative energy calculations. The energy costs shall be permitted to be calculated in accordance with Appendix G to ASHRAE Standard 90.1. Energy costs shall not include plug loads.

1304.2.2 End uses and renewables. The energy costs shall include only the following specific end uses: heating, cooling, service water heating, ventilation including fans, and lighting. On-site energy production from renewable, waste, and recovered energy shall be permitted to be included as a reduction in energy use. On-site energy production from renewable, waste, and recovered energy for the residential portion of the building shall not be also included as a reduction in the non-residential building energy use.

1304.4 Electric vehicle charging. Plug-in electric vehicle charging capability shall be provided for at least 4 percent of the parking stalls. The number of charging stations shall be rounded to the nearest even number. A post with multiple charging outlets shall be counted as the number of charging outlets. Electrical capacity in main electric panels shall support Level 2 charging (208/240V-40 amp).

A level 3 charger with 208V with 3 phase AC shall be permitted to substitute for 4 Level 2 chargers.

1304 Energy compliance alternatives.

1304.1 Compliance options. Buildings shall comply with Section 1304.2, prescriptive options; Section 1304.3, 15% energy savings; or Section 1304.4, prescriptive.

1304.2 Prescriptive options. Buildings in compliance with at least 3 items in Table 1304.2 shall be deemed to be in compliance with this section. Items used to comply with the International Energy Conservation Code shall not be counted towards the 3 required items.

TABLE 1304.2 PRESCRIPTIVE OPTIONS

Measure	Description
<u>Heating and cooling equipment efficiency</u>	-heating equipment rated with an AFUE shall be at least an AFUE of 95 in zones 5 through 8; at least an AFUE of 92 in zones 1 through 4; at least an AFUE of 85 if oil. If rated with an HSPF shall be at least an HSPF of 9. -cooling equipment rated with a SEER shall be at least a SEER 18 in zones 1 through 4; at least a SEER 15 in zones 5 through 8. Or -Exceed the equipment efficiency requirements listed in Tables C403.2.3(1) through C403.2.3(7) of the IECC by 10%. -Equipment shall be sized. HVAC design loads shall be determined in accordance with ANSI/ASHRAE/ACCA Standard 183 or by an approved equivalent procedure. -Equipment shall be commissioned.
<u>Lighting efficiency</u>	Meet lighting power density (LPD) maximum of 90 percent of the lighting power values specified in IECC Table C405.4.2(1). Or 90% of lighting fixtures or lamps over 15w have an efficacy of at least 70 lumens/watt.
<u>Renewable energy</u>	Provide at least 0.5 watts per ft ² (5.4 W/m ²) of conditioned floor area as renewable energy. Renewables shall be assigned to residential or non-residential, but not both.
<u>UA reduction</u>	Reduce the total building UA by 15% from that specified in the IECC. The total building UA shall be computed as sum of the U-factor times the area for each building thermal envelope component for which a U-factor is specified in IECC Tables C402.1.2 and C402.3. The areas of the envelope components, including windows, shall be as in the building constructed.
<u>Day lighting</u>	Provide day lighting with automated controls for at least 70% of the floor area.
<u>Increased water heating efficiency</u>	For buildings in the <i>water intensive use group</i> , water heating efficiency that complies with Sections 1304.5 and 1304.6. Hot water supply is within 10 feet of hot water use, or pipes are insulated with at least R6.
<u>Other energy savings</u>	Decrease energy costs by 4% using any approved energy saving measure(s) beyond IECC compliance. The additional 4% shall not count other items selected from this table, or any mandatory requirements in this chapter.

1304.3 Compliance based on 15% energy savings. Buildings with projected energy costs at least 15% less than a building complying with the International Energy Conservation Code shall be deemed to be in compliance with this section.

1304.4 Prescriptive.

1304.4.1 HVAC Equipment efficiency. HVAC equipment shall meet the following:

- 1 a) heating equipment shall
if rated with an AFUE be at least an AFUE of 95 in zones 5 through 8; at least an AFUE of 92 in zones 1 through 4; at least an AFUE of 85 if oil.
If rated with an HSPF shall be at least an HSPF of 9.
Or
exceed the efficiency requirements in IECC Tables C403.2.3(1) through C403.2.3(7) by at least 10%.
Or
be ground source heat pump shall meet this requirement.
- b) cooling equipment rated with a SEER shall be at least a SEER 18 in zones 1 through 4; at least a SEER 15 in zones 5 through 8.
- 2) Equipment shall be sized based on HVAC design loads determined in accordance with ANSI/ASHRAE/ACCA Standard 183 or by an approved equivalent computational procedure.
- 3) Heating, cooling and ventilation equipment shall be commissioned.

1304.4.2 Air barriers. The air barrier requirements in IECC Section C402.5.1 shall be met.

1304.4.3 Lighting. 90% of the lighting fixtures or lamps over 15w shall have an efficacy of at least 70 lumens/watt. Alternately, the building shall meet the lighting power density (LPD) maximum of 90 percent of the lighting power values specified in IECC Section C405.3.2.

1304.5 Service water heating equipment efficiency. Service water heating for *water intensive use group* shall be provided by one of the following:

1. Natural gas, propane, or oil water heater with a minimum of an 0.80 energy factor, or with a minimum of an 0.90 thermal efficiency;
2. Electric water heater with a minimum of a 2.0 energy factor;
3. Ground source heat pump;
4. Desuperheater on a vapor compression air conditioner, heat pump, or ground source heat pump projected to supply a minimum of 30% of the energy required for service hot water.
5. On-site renewable energy water-heating systems projected to supply a minimum of 30% of the service hot water energy use.
6. Tankless coil with a boiler with a minimum of 85 AFUE.
7. Waste heat recovery projected to provide a minimum of 30% of the energy required by water heating.
8. Any combination of the above projected to provide at least 30% of the service water heating energy.

1304.6 Drain water heat exchangers. The specified functions shall be provided with drain water heat exchangers that are projected to recover at least 25 percent of the temperature difference between the incoming cold water and the drain water.

1. Group F, Laundries, washing machines;
2. Group A-3, Health Clubs and Spas; showers, washing machines that use both hot and cold water,
3. Group I-2, Hospitals, Mental hospitals and Nursing homes; washing machines that use both hot and cold water, staff showers, patient showers if long-term care

Exceptions: The following shall not require drain water heat exchangers:

1. Where the functions are located on the lowest floor of the building and the authority having jurisdiction determines it is not practical to install a drain water heat exchanger.
2. Where washing machines are piped only with cold water and space is provided to add a future drain water heat exchanger.
3. In applications that produce *grease-laden waste* or are required to have grease or oil separators in accordance with Section 1003 of the *International Plumbing Code*.
4. Where the function is located in a private area.

1304.7 Circulating hot water system controls. Controls that allow continuous, timer, or water temperature-initiated (aquastat) operation of a circulating pump are prohibited. Gravity or thermosyphon circulation loops are prohibited. Pumps on circulating hot and tempered water systems shall be activated on demand by either a hard-wired or wireless activation control of one of the following types:

A normally-open, momentary contact switch.

Motion sensors that make contact when motion is sensed. After the signal is sent, the sensor shall go into a lock out mode for not less than 5 minutes to prevent sending a signal to the electronic controls while the circulation loop is still hot.

A flow switch.

A door switch.

The controls for the pump shall shut off the pump with a rise in temperature. The controls shall have a lock-out to prevent operation exceeding 105°F degrees in the event of failure of the device that senses temperature rise. The controls shall have a lock out mode for not more than 5 minutes that prevents extended operation of the pump if the sensor fails or is damaged.

1305 WATER CONSERVATION AND EFFICIENCY

1305.1 Intent. This section is intended to conserve water, protect water quality, provide for safe water consumption and protect water resources.

1305.1 Fitting and fixture consumption. Plumbing fixtures and fixture fittings shall comply with the maximum flow rates specified in Table 1305.1. Plumbing fixtures and fixture fittings in Table 1305.1 shall have a manufacturer's designation for flow rate.

Exceptions: The following fixtures and devices shall not be required to comply with the reduced flow rates in Table 1305.1.

Clinical sinks having a maximum water consumption of 4.5 gallons (17 L) per flush.

Service sinks, bath valves, pot fillers, laboratory faucets, utility faucets, and other fittings designed primarily for filling operations.

Fixtures, fittings, and devices whose primary purpose is safety.

TABLE 1305.1 MAXIMUM FLOW RATES AND FLUSH VOLUMES

<u>FIXTURE OR FIXTURE FITTING TYPE</u>	<u>MAXIMUM FLOW RATE OR FLUSH VOLUME</u>
Showerhead ^a	2.0 gpm at 80 psi
Lavatory faucet and bar sink-private	1.5 gpm at 60 psi
Lavatory faucet-public (metering)	0.25 gpc ^b at 60 psi
Lavatory faucet-public (non-metering)	0.5 gpm at 60 psi
Kitchen faucet-private	1.8 gpm at 60 psi ^f
Kitchen and bar sink faucets in other than dwelling units and guest rooms	2.2 gpm at 60 psi
Urinal	0.5 gpf or nonwater urinal
Water closet	1.28 gpf ^{c,d}
Prerinse Spray Valves	1.3 gpm
Drinking Fountains (manual)	0.7 gpm ^e
Drinking Fountains (metered)	0.25 gpc ^{b,e}

a. Includes hand showers, body sprays, rainfall panels and jets.

b. Gallons per cycle.

c. Dual flush water closets in public bathrooms shall have a maximum full flush of 1.28.

d. The flush volume for water closets that are located at least 30 feet upstream of other drain line connections or fixtures and having less than 1.5 fixture units upstream of the water closet's connection to the drain line shall be not more than 1.5 gpf.

e. Bottle filling stations associated with drinking fountains shall not have limitations for flow rate.

f. Where a faucet has a pot filler mode, the flow shall not exceed 2.2 gpm at 60 psi. Such faucets shall automatically return to 1.8 gpm when the pot filler mode activation mechanism is released or when the faucet flow is turned off.

1305.2 Multiple water outlet showers. For showers with multiple water outlets, the maximum shower flow rate shall apply to the combined flow of all water outlets that are capable of being operated simultaneously. Multiple water outlet showers shall comply with at least one of the following flow rate limits:

Shower compartment - 2.0 gpm, or 2.0 gpm per 2600 in² of shower compartment floor area.

Gang shower - 2.0 gpm per shower position

Shower compartment complying with Chapter 11 of *International Building Code* - 4.0 gpm or 4.0 gpm / 2600 in² of shower compartment floor area.

1305.6.1 Once-through cooling for appliances and equipment. Once-through or single-pass cooling with potable or municipal reclaimed water is prohibited.

1305.6.2 Clothes washers. Clothes washers rated with an IWF (integrated water factor), MEF (modified energy factor), or IMEF (integrated modified energy factor), shall be rated as follows:

Residential Clothes Washers, Front-loading, > 2.5 cu-ft

maximum IWF 3.2 minimum IMEF 2.76

Residential Clothes Washers, Top-loading, > 2.5 cu-ft

maximum 4.3 IWF, minimum IMEF 2.06

Residential Clothes Washers (≤ 2.5 cu-ft)

maximum 4.2 IWF, minimum IMEF 2.07

Commercial Clothes Washers

maximum 4.0 IWF, minimum MEF 2.20

1305.6.3 Food Service.

1305.6.3.1 Dipper wells. The water supply to a dipper well shall have a shutoff valve and flow control valve. The maximum flow shall not exceed 1 gpm (3.78 lpm) at a supply pressure of 60 psi (413.7 kPa). The dipper well shall have a manufacturer's designation of flow rate.

1305.6.3.2 Food waste disposal. The disposal of food wastes that are collected as part of preparing ware for one or more of the following shall accomplish washing:

A food strainer (scrapper) basket that is emptied into a trash can.

A garbage grinder where the water flow into the food waste disposer is controlled by a load sensing device such that the water flow does not exceed 1 gpm under no-load operating conditions and 8 gpm under full-load operating conditions

A pulper or mechanical strainer that uses not more than 2 gpm of potable water.

1305.6.3.3 Pre-rinse spray heads. Food service pre-rinse spray heads shall have a manufacturer's designation of flow rate, shall comply with the maximum flow rate in Table 1305.1, and shall shut off automatically when released.

1305.6.3.4 Hand washing faucets. Faucets for hand washing sinks in food service preparation and serving areas shall be of the self-closing type.

1305.1 Heat exchangers. Once-through or single-pass cooling with potable or municipal reclaimed water is prohibited. Heat exchangers shall be connected to a recirculating water system such as a chilled water loop, cooling tower loop, or similar recirculating system.

1305.2 Humidification systems. Except where greater humidity is required for medical, agricultural, archival or scientific research purposes, humidification systems shall be capable of limiting humidification to times when the relative humidity in the space is less than 55 percent.

1305.1 Water softeners. Water softeners shall comply with Sections 1305.1.1 through 1305.1.3.

1305.1.1 Demand initiated regeneration. Water softeners shall be equipped with demand- initiated regeneration control systems. Such control systems shall automatically initiate the regeneration cycle after determining the depletion, or impending depletion of softening capacity.

1305.1.2 Water consumption. Water softeners shall have a maximum water consumption during regeneration of 5 gal (18.9 L) per 1000 grains of hardness removed as measured in accordance with NSF 44.

1305.1.3 Waste connections. Waste water from water softener regeneration shall not discharge to reclaimed, gray water or rainwater water collection systems and shall discharge in accordance with the International Plumbing Code.

1306 INDOOR ENVIRONMENTAL QUALITY AND COMFORT

1306.1 Intent. Improve the interior environment's impact on human health and well-being.

1306.2 Duct protection during construction. Duct and other air distribution component openings shall be covered with tape, plastic, sheet metal or by another approved method from the time of rough-in installation until startup of the heating and cooling equipment. Dust and debris shall be cleaned from duct openings prior to building occupancy.

1306.3 Sealed air handler. Air handlers with a flow rate less than 3000 cfm shall have a manufacturer's designation of air leakage. The air handler air leakage shall be not more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.

1306.4 Air handling system access. Air handlers, air filters, fans, coils and condensate pans shall be provided with access for purposes of cleaning, repair, and replacement.

1306.5 Filters. Filters for air conditioning systems shall be rated at MERV 11 or higher and system equipment shall be designed to be compatible. The air handling system design shall account for the pressure drop across the filter. The pressure drop across clean MERV 11 filters shall be not greater than 0.45 in. wc. at 500 FPM filter face velocity. Filter performance shall be shown on the filter manufacturer's data sheet.

1306.6 Venting and combustion air. Fireplaces and fuel-burning appliances shall be vented to the outdoors and shall be provided with combustion air from the outdoors in accordance with the International Mechanical Code and the International Fuel Gas Code. Solid-fuel-burning fireplaces shall be provided with combustion air directly from the outdoors and shall be provided with a means to tightly close off the chimney flue and combustion air outlets when the fireplace is not in use.

1306.7 Unvented combustion. Permanently installed unvented combustion devices fueled by gas, alcohol or kerosene shall be prohibited.

1306.3.1 Radon testing. Radon testing is Mandatory for Zone 1.

Exceptions:

- 1) testing is not mandatory where the authority having jurisdiction has defined the radon zone as Zone 2 or 3.
- 2) testing is not mandatory where the occupied space is located above an open space

1306.3.1.1 Testing specification.

Testing is performed as specified in (a) through (k).

(a) Testing is performed after the building passes its airtightness test.

(b) Testing is performed after the radon control system installation is complete and operating (if an active system)

(c) Testing is performed at the lowest level which will be occupied, even if the space is not finished.

Spaces that are physically separated and severed by different HVAC systems shall be tested separately.

(d) Testing is not performed in a closet, hallway, stairway, laundry room, furnace room or bathroom or kitchen.

	<p>(e) Testing is performed with a commercially available test kit or with a continuous radon monitor that can be calibrated. Testing with test kits shall include two tests, which are averaged. Testing shall be in accordance with the manufacturer's instructions.</p> <p>(f) Testing can be performed by the builder or a third party.</p> <p>(g) Testing shall extend at least 48 hours or to the minimum specified by the manufacturer, which ever is longer. This initial testing can extend past occupancy.</p> <p>(h) Test results shall be provided directly to the owner by the test lab or testing party. The test results may be delivered before or after occupancy.</p> <p>(i) An additional pre-paid test kit shall be provided to the owner to use when they choose. The test kit shall include mailing, or emailing the results from the testing lab to the owner. The builder may also receive the test results.</p> <p>(j) This section does not require a specific test result, rather it requires the test be performed and the results provided to the owner.</p> <p>(k) The owner shall be informed prior to occupancy and in writing that "A radon test result of 4 pCi/L or above is the 'action level' set by EPA." EPA suggests radon reduction measures to lower radon levels below 4 pCi/L." Or "For a radon test result of 4 pCi/L or above [name of builder or jurisdiction having authority] suggests radon reduction measures to lower radon levels below 4 pCi/L."</p> <p>202 Definitions WATER INTENSIVE USE GROUPS. 1. Group R-1: Boarding houses, hotels or motels. 2. Group I-2: Hospitals, psychiatric hospitals and nursing homes. 3. Group A-2: Restaurants and banquet halls or buildings containing food preparation areas. 4. Group F: Laundries. 5. Group R-2 6. Group A-3: Health clubs and spas.</p>
<p>Reason:</p>	<p>This new chapter would apply to the new non-residential portion of a building. The non-residential portion of the building would inherit the rating of the residential portion.</p> <p>Taken in total, these items have substance and will produce a better building. What has the most impact in a particular building will vary greatly with the type of business. If during the NGBS consideration of this proposal an item or two on this list is deemed impractical then that item should simply be removed. There is likely plenty of substance in the remaining requirements.</p> <p>NGBS non-residential needs to be practical and straightforward to use. NGBS will retain its focus on residential. NGBS needs requirements that the verifies can use and enforce.</p> <p>Green opportunities will vary greatly with business type. For example, the opportunities in a health club are much different from a jewelry store. The non-residential section should be a leap forward in green, but should not try to balance the areas to match the residential NGBS. Lets take the "green" where we can get it.</p> <p>Should NGBS have a point system for non-residential? No, separate points for non-residential would be too complex. What if the non-residential space was tiny? Or if it is big? Calculating points for residential and non-residential and merging the two based on floor area? Not practical.</p> <p>Being outside the envelope, the site requirements could be removed based on the argument that the residential NGBS has covered them. However, I'd suggest retaining these, which will become a way to differentiate the NGBS from other programs. This means things outside the building would have both residential and non-residential requirements to meet.</p> <p>The definition for "water intensive use groups" names the groups named in IECC Section C406.7.</p> <p>The clothes washer criteria are from Energy Star Version 8, which will be required beginning February 2018.</p> <p>I am not silly enough to suggest this will be taken as written. This is only one proposal. I look forward to working towards an NGBS that can accommodate multifamily buildings that have non-residential spaces on the ground floor(s).</p>
<p>TG Recommendation (AS or AM or D):</p>	<p>D (TG-1)</p>

Modification of Proposed Change:	
TG Reason:	
TG Vote:	Unanimous

P044	LogID 6592A	New Section
Submitter:	Hope Medina, Aaron Gary, Craig Conner	
Requested Action:	Add new as follows	
Proposed Change:	See attachment	
Reason:	Replace Craig's 6592 for non-residential new construction	
TG Recommendation (AS or AM or D):	AM (TG-1)	
Modification of Proposed Change:	See attachment	
TG Reason:		
TG Vote:	8-0-0	

P045	LogID 6593	New Section
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	<p><u>Chapter 14</u></p> <p><u>NON-RESIDENTIAL EXISTING BUILDINGS</u></p> <p><u>1401.1 Scope.</u> This chapter shall apply to the <i>alteration, addition, and change of occupancy of non-residential portion of existing buildings and structures.</i> Existing relocatable modular buildings shall comply with this chapter.</p> <p><u>1401.2 Building materials, assemblies and systems.</u> <i>Building materials shall comply with the requirements of this Chapter.</i></p> <p><u>1401.2.1 Existing systems.</u> Except where specifically noted in this chapter, materials, assemblies, and systems already in use in a <i>building</i> in conformance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined to be dangerous to life, health or safety. Where determined to be dangerous, existing systems shall be mitigated or made safe.</p> <p><u>1401.2.2 New and replacement systems.</u> Except as otherwise required or permitted by code, materials, assemblies and systems permitted by the applicable code for new construction shall be used. Like materials shall be permitted for <i>repairs and alterations</i> provided that a hazard to life, health or property is not created. Hazardous materials shall not be used where the code for new construction would not <i>permit</i> their use in a similar occupancy, purpose and location.</p> <p><u>1401.3 Waste.</u> Site development and construction waste shall be as specified in Sections 1303.2 through 1303.5 of Chapter 13, Non-residential New Construction.</p> <p><u>1401.4 Approved programs and standards.</u> The authority having jurisdiction shall be permitted to deem a national, state or local program or standard to meet or exceed this chapter. Approval for a specified application, limited scope or specific locale shall be permitted. Buildings approved in writing under such a program or standard shall be considered in compliance with this chapter.</p> <p><u>1402.1 Flood hazard areas.</u> <i>Additions</i> shall not be permitted to <i>buildings and structures</i> that are located in <i>flood hazard areas.</i></p> <p><u>Exception:</u> Where an existing <i>building or structure</i> is located such that all habitable space is located not less than 1 foot above the flood elevation, <i>additions</i> located not less than 1 foot above the flood elevation shall be permitted.</p> <p><u>1403.1 Energy, HVAC and water equipment.</u> Energy, HVAC and water equipment shall comply with the following:</p>	

Exception: Where the requirements are determined by the *AHJ* to be infeasible based upon the existing configuration of spaces, unless those spaces will be reconfigured as part of the alteration project.

Non-functioning thermostats shall be repaired or replaced.

Leaking accessible supply air and return ducts shall be sealed. Although existing duct tape shall not be deemed in noncompliance where a duct is not leaking, duct tape shall not be an acceptable seal.

Outside air dampers, damper controls and linkages controlled by HVAC units shall be in good repair and adjustment.

Leaks of hot water and steam leaks, defective steam traps and radiator control, relief, and vent valves in accessible piping shall be repaired or replaced.

Leaking accessible chilled water lines and equipment shall be repaired or replaced.

Furnace combustion units shall have been cleaned and tuned within one year prior to the alteration, or shall be cleaned and tuned. Filters shall be replaced in accordance with the furnace manufacturer's recommendations.

Chiller and boiler systems shall have been cleaned and tuned within one year prior to the alteration, or shall be cleaned and tuned.

For motor-driven systems and equipment, filters shall be cleaned or replaced, and belts and other coupling systems shall be repaired.

HVAC piping and ducts outside conditioned space or located above suspended ceilings, shall be insulated to *R-values* in accordance with the IECC.

Exceptions: Additional insulation shall not be required:

- 1) for piping that is already insulated provided the insulation is in good condition
- 2) where the insulation cannot be installed without structural *alteration*.

10. Replacement cooling or heat pump equipment rated with a SEER shall be at least a SEER 18 in zones 1 through 4; at least a SEER 15 in zones 5 through 8.

11. Replacement heating equipment rated with an AFUE shall be at least an AFUE of 95 in zones 5 through 8; at least an AFUE of 92 in zones 1 through 4; at least an AFUE of 85 if oil.

12. Replacement heating equipment rated with an HSPF shall be at least an HSPF of 9.

13. Heating and cooling equipment replaced with a ground source heat pump meets the heating and cooling efficiency requirements.

Where a building cavity or framing space is too small to accommodate the duct or pipe insulation, the minimum insulation thickness shall be the thickness that cavity or framing can accommodate, but shall not be less than 1/2-inch thick.

1403.2 Service water systems. Defective hot- and cold-water piping and equipment within service water systems shall be repaired or replaced.

1403.3 Motor-driven equipment. Leaks in compressed air or pumped water systems shall be repaired or the equipment replaced.

1403.4 Energy audit. An approved party shall conduct a building energy audit. The energy audit shall indicate the improvements that the auditor recommends. The audit report shall be completed prior to certification of the building.

Exception: An energy audit and report shall not be required where an energy audit and report was completed within 24 months prior to the *alteration*.

1403.5 Energy upgrade. The energy used by the building shall be reduced by 15%. Alternately the energy recommendations of a verifier or an approved energy auditor shall be implemented.

1403.6 Water audit. For buildings in the *water intensive use group* a water audit shall be performed. The water audit shall indicate the improvements that the auditor recommends. The report shall be completed prior to certification of the building.

Exception: A water audit and report shall not be required where a water audit and report was done within 24 months prior to the *alteration*

1403.7 Water upgrade. The potable water used by buildings in the *water intensive use group* shall be reduced by 20%. Alternately, the water recommendations of a verifier or an approved water auditor shall be implemented.

1403.8 Service water systems. Service water systems and equipment shall be in accordance with the following:

1. Accessible hot supply and *distribution pipes* shall be insulated to *R-values* as specified in the IECC.
2. In Seismic Design Categories D, E and F, as established in accordance with the *International Building Code*, water heater and water storage tanks with a tank capacity of thirty gallons or greater shall be

strapped or otherwise secured to a wall, floor, ceiling, or other object that itself is secured to a wall, floor, or ceiling. Water, gas and overflow pipes connected to water tanks shall be similarly secured.

3. Gas water heaters shall have a flexible gas line entering the appliance.

4. Showerhead and faucet flow rates shall be in accordance with Table 1305.1 of Chapter 13.

5. Replacement toilet and urinal flow rates shall be in accordance with Table 1305.1 of Chapter 13.

6. Replacement water heaters with an EF rating shall be at least a 2.0 EF if electric and 0.77 EF if gas.

1403.9 Replacement lighting. 90% of the replacement lighting fixtures or lamps over 15w shall have an efficacy of at least 70 lumens/watt. Alternately, the building shall meet the lighting power density (LPD) maximum specified in IECC Table C405.3.2(1) or C405.3.2(2).

1403.10 Commercial refrigeration equipment. Commercial refrigeration equipment shall be cleaned and tuned for efficiency, including, but not limited to, cleaning of condenser coils and evaporators, and replacement of defective or worn door gaskets and seals.

1403.11 Swimming pools and spas. Swimming pools and spas and their equipment shall be in accordance with the following:
Heated swimming pools and spas shall be equipped with a cover for unoccupied hours.
Swimming pools shall have an automated mechanical cover.
Pool and spa recirculation pumps shall be under time clock control.
Exception: Filtration pumps where the public health standard requires 24-hour pump operation.
Heaters shall be cleaned and tuned for efficiency, or such cleaning shall have occurred within one year prior to certification.

1404.1 Change of occupancy. Where a change in occupancy of a *building* or tenant space places it in a different division of the same group of occupancy or in a different group of occupancies, as determined in accordance with the *International Building Code*, compliance with this chapter shall be required.

1405.1 Historic buildings. Individual provisions of this chapter shall not be mandatory for *historic buildings* for the following conditions:
Where a provision requires a visible change not consistent with the *building's* historic nature, or
2. Where a provision conflicts with a function fundamental with the historic nature of the *building*.

1406.1 Changes to hardscapes and parking. Where existing *hardscapes* and outdoor parking is altered, the *alterations* shall comply with the applicable provisions of Section 1303 in Chapter 13, *New Non-residential construction*.
Exception: Where less than 20% of the hardscape and surface parking is altered, materials and assemblies shall be at least the equivalent of those being replaced.

1407.1 Deconstruction and demolition. Where *buildings, structures* or portions thereof are *deconstructed* or demolished, a minimum of 50 percent of materials shall be diverted from disposal and incineration. Documentation of the total materials in *buildings, structures* and portions thereof to be *deconstructed* or demolished and materials to be diverted, and evidence of diversion, shall be provided. Material quantities shall be indicated and calculated by weight or volume, but not by both.
Exception: As an alternative to Section 1407.1, an approved deconstruction plan shall be implemented.

Reason:

This chapter covers requirements for improvement to the non-residential portion of existing buildings. The existing non-residential portion of a building would inherit the same rating as the residential portion.

The principle is to require maintenance and improvements where it is practical and straightforward, but not require things that are difficult and probably not cost effective. The goal is to make substantive and real improvements, but not break the bank.

This is primarily a list of tune-ups, fixes and a few practical improvements. Existing non-residential spaces vary considerably. Where a specific item did not exist in a building, that item would not apply for that specific building.

Greening needs to consider energy and water. There is a requirement for an energy audit and upgrade. There is also a requirement for a water audit and upgrade for the water intensive use groups. New heating, cooling and water heating equipment is required to be efficient.

This proposed Chapter 14 makes a few references to Chapter 13 (Non-Residential New Construction). Chapter 13 was submitted as a separate proposal. Chapter 13 does not reference this chapter.

TG Recommendation (AS or AM or D):	NO ACTION
Modification of Proposed Change:	
TG Reason:	
TG Vote:	NO ACTION

P046	LogID 6286	New Section
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>CHAPTER 14 REMODELING OF FUNCTIONAL AREAS OF MULTIFAMILY BUILDINGS</u> Bring forward Chapter 12 sections and modify as needed.	
Reason:	The remodeling of single family homes and multifamily buildings are endeavors of vastly different proportions. The functional areas of importance in multifamily buildings are not bathrooms or kitchens but whole dwelling units and common spaces. Creating a new Chapter of the Standard to address this would greatly strengthen the use-case for existing multifamily buildings.	
TG Recommendation (AS or AM or D):	D (TG-6)	
Modification of Proposed Change:	N/A	
TG Reason:	Existing chapters are adequate for remodeling multifamily projects with input from Home Innovation.	
TG Vote:	15 Yes	

P047	LogID 6287	New Section
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>Chapter 12 Multifamily Remodeling</u> Copy and edit Chapter 11 sections to be multifamily specific.	
Reason:	The remodeling of single family homes and multifamily buildings are endeavors of very different scope. Chapter 11 currently does a so-so job of responding to the difference but this could be greatly improved by creating a standalone chapter	
TG Recommendation (AS or AM or D):	D (TG-6)	
Modification of Proposed Change:	N/A	
TG Reason:	Existing chapters are adequate for remodeling multifamily projects with input from Home Innovation. Home Innovation is considering administrative changes to provide more clarity through the multifamily remodeling verification process.	
TG Vote:	15 Yes	

P048	LogID 6250	New Section
Submitter:	Carl Seville, SK Collaborative	
Requested Action:	Add new as follows	
Proposed Change:	Create new chapter or chapters exclusively for multifamily new construction, separate from core standard.	

Reason:	The standard was originally designed for single family construction, and as a significant portion of the certifications under the program are multifamily projects, there are many measures that are distinctly single family that rarely if ever apply to a multifamily project. Creating a separate path for multifamily projects, both new and renovation, would streamline the process and allow for there to be a path that is more directly related to this construction type
TG Recommendation (AS or AM or D):	D (TG-6)
Modification of Proposed Change:	N/A
TG Reason:	Submitter asked to withdraw
TG Vote:	15 Yes

P049	LogID 17-086	Entire Standard
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Submitter:	Craig Conner, Building Quality
Requested Action:	Incorporate requirements for non-residential buildings into the NGBS.
Proposed Change:	Include the attached text as a new two new chapters for non-residential portion of an NGBS building.
Reason:	<p>NGBS needs some criteria that address non-residential spaces. Attached is a draft for both new and existing non-residential which is no more than 50% of a project.</p> <p>Some constraints as I see it.</p> <p>The non-res requirements need to fit the needs of ICC 700. It should not add special experts. It should recognize the ICC 700 verifiers are residential experts, but not commercial experts. If it required verifiers to become familiar with all aspects of commercial buildings that would be a non-starter.</p> <p>I think using points for the non-res maybe too complex. The non-res is usually a smaller part of the bigger building. The non-res should produce a building that is better than most and just inherit the green level (bronze, silver, ...) of the residential.</p> <p>This should be focused on what will be the most common situation, non-res space at the street level. With such a restricted scope most of the complexities of commercial green programs are not needed and would needlessly complicate ICC 700.</p> <p>Simply referencing existing programs or standards might take only one or two sentences in ICC 700, but brings in all the complexity of the reference programs/standards.</p> <p>There are many special situations that it needs to handle. The commercial space is not finished, but there are people living in the residential space. The specific use of the non-res space may be unknown for years, and could change every few years as the businesses change. Both the res and non-res may share the same parking, landscaping, bike parking, ...</p> <p>I am not silly enough to think the attached would survive unchanged by the committee or task groups or working groups. Maybe it will be a source of ideas, in which case it is useful.</p>
TG Recommendation (AS or AM or D):	Defer to new Commercial Spaces TG (TG-6)
Modification of Proposed Change:	
TG Reason:	
TG Vote:	8-0-0

Chapter 4 Site Design and Development

P050	LogID 1501	400.0 Intent (Site Design and Development)
Submitter:	David S. Collins, FAIA	
Requested Action:	Revise as follows	
Proposed Change:	<u>Sites located within 100-year flood plains shall not be permitted to use this rating system.</u>	
Reason:	<p>What about eliminating eligibility of sites located within 100-year flood plains? Add the following text.</p> <p>Disagreement with previous committee action: Committee should reconsider and vote for approval. Rationale: Construction in a flood plain may undermine the performance of the building altogether and place the ability to meet other site and community resource credits, among many other credits, at risk. Consider the risk associated with the life of the building. Responsible site selection should be a precursor to every green building program.</p>	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Many areas of the country, including the majority of certain jurisdictions, exist within the 100-year floodplain. We do not want to discourage use of the standard in these areas where its use could be very beneficial. Could award points for not building in the floodplain on a voluntary basis or incentivize mitigation through foundations, raising structures, allowing water to flow through, etc. but making this mandatory is too rigid.	
TG Vote:	9-2	

P051	LogID 6460	401.0 Intent (Site Selection)
Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Add new as follows	
Proposed Change:	<p><u>401.4 Wildland-Urban Area Site Avoided.</u> A site in the wildland-urban interface is not selected.</p> <p>-</p> <p><u>(Only applicable where the legislative Authority Having Jurisdiction has declared a wildland-urban interface area in accordance with the International Wildland-Urban Interface Code).</u></p>	<u>6</u>
Reason:	There are seriously negative environmental impacts from the spread of fire between buildings and wildlands. If it is known that a site is in a wildland-urban interface area (declared by the AHJ, avoiding building on that site mitigates an environmental risk.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	<p><u>401.4 Wildland Urban Interface Sites.</u> A site is selected that is not in a wildland urban interface fire area. (Points are only awarded where the local governmental jurisdiction has legally identified or declared wildland urban interface fire areas within the jurisdiction).</p> <p><u>403.8 Operation and maintenance plan.</u> An operation and maintenance plan (manual) is prepared and outlines one or more of the following: ongoing service of common open area, utilities (storm water, waste water), and environmental management activities.</p> <p>(1) <u>The plan addresses ongoing service of common open area, utilities (storm water, waste water), and environmental management activities.</u></p>	<u>5</u>
		<u>6</u>
		<u>6</u>

	(2) <u>The plan specifies ongoing site management activities to mitigate wildland urban fire spread. These points are only available where the local jurisdiction has designated the site as a wildland urban interface hazard area.</u>	<u>3</u>
TG Reason:	Believe this is an important practice that needs to be incorporated. The TG requested additional clarity and the submitter proposed the modification above.	
TG Vote:	7-1-1 for 401.4 and 5-4 for 403.8	

P052	LogID 6147	403.0 Intent (Site Design)
Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Revise as follows	
Proposed Change:	403.0 Intent. The project is designed to avoid detrimental environmental impacts, minimize any unavoidable impacts, and mitigate for those impacts that do occur. The project is designed to minimize environmental impacts and to protect, restore, and enhance the natural features and environmental quality of the site. <u>The project is designed to increase human health and well-being.</u>	
Reason:	"Urban green spaces provide environmental benefits through their effects on negating urban heat, offsetting greenhouse gas emissions, and attenuating storm water. They also have direct health benefits by providing urban residents spaces for physical activity and social interaction, and allowing psychological restoration to take place." Abstract: Value of urban green spaces in promoting healthy living and wellbeing: prospects for planning; Lee, Jordan, & Horsley; Risk Management and Healthcare Policy 2015:8 131-137 Obesity and mental illness are increasing in developed countries around the world. Our built exterior environments; our green spaces and public open spaces, can and should help mitigate these threats to human well-being. The standard already recognizes the value of open space in Sec. 405.9. The intent of Section 403 should explicitly state that human health and well-being benefits are goals of the standard.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Health and well-being is currently outside the scope of the standard.	
TG Vote:	7-1	

P053	LogID 6462	403.1 Natural resources
Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Add new as follows	
Proposed Change:	<p>(7) <u>Developer has a plan to design and construct the site in accordance with the International Wildland-Urban Interface Code (IWUIC).</u></p> <p>-</p> <p><u>(Only applicable where the AHJ has not declared a wildland-urban interface area, but a fire protection engineer, certified fire marshal, or other qualified party has determined and documented the site as hazarded per the IWUIC).</u></p>	<u>6</u>
Reason:	It is unrealistic to believe that building will not occur on sites that could qualify as hazarded by the International Wildland-Urban Interface Code, but that have not been legally identified as such by the AHJ. Good environmental policy on those sites is to develop according to the provisions of the IWUIC to mitigate the negative consequences of fire spread between wildlands and buildings. (see documentation- a letter from the International Association of Fire Chiefs Life Safety Section). Requiring a qualified party to establish whether a site qualifies as hazarded keeps this provision from being a points giveaway.	
TG Recommendation (AS or AM or D):	D	

Modification of Proposed Change:	
TG Reason:	Point value subject to gaming and or potential conflicts created by referencing an outside standard.
TG Vote:	9-2

P054	LogID 1514	403.5 Stormwater management
Submitter:	Heather Dylla, National Asphalt Pavement Association	
Requested Action:	Delete without substitution	
Proposed Change:	Permeable materials are used for driveways, parking areas, walkways and patios according to the following percentages: (a) less than 25 percent 2 (b) 25 - 50 percent 5 (c) Greater than 50 percent 10	
Reason:	Giving points specifically to permeable materials may encourage their use where they are not practical or not even the best solution for stormwater management. Their efficacy depends on site limitations such as soil permeability, depth to impermeable layers and water table, and topography. It is recommended that permeable materials are evaluated together with all other low impact development practices (question 2) to encourage the best stormwater management solution.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Permeable materials are a valuable tool for stormwater management in certain applications. Engineers will not advocate for their use in areas where they will not work.	
TG Vote:	Unanimous	

P055	LogID 6547	403.4 Soil disturbance and erosion
Submitter:	Ben Edwards, self	
Requested Action:	Delete without substitution	
Proposed Change:	Delete only item (3) from section 403.4 Limits of clearing and grading are staked out prior to construction.	
Reason:	This comment is intended to highlight a larger issue in this document: double counting. 404.3(1) awards 5 points for flagging the site under Site Development and Construction. 403.4(3) awards 4 points for the same action under Site Design (points are awarded when "the intent of the design is implemented." While flagging a site is important, does the committee believe 9 points should be awarded for a fundamental construction practice? Further, 5 more points are awarded in 404.1 On-site Supervision and Coordination if someone watches the flagged clearing and grading. The potential for 14 points for a standard practice is not appropriate in an above-code document. Points should be awarded based on outcome, and should clearly indicate the relative weight in compliance. Note: Similar issues are found in Chapters 5 and 11, and the topic of soil disturbance is illustrative. Philosophically, if points are to be awarded for planning, construction, and verification, the greatest weight should be on verification.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Reject idea of double counting because planning can be as important as the execution.	
TG Vote:	Unanimous	

P056	LogID 6571	403.6 Landscape plan
Submitter:	Jack Karlin, Turfgrass Water Conservation Alliance	

Requested Action:	Revise as follows																									
Proposed Change:	<table border="1"> <thead> <tr> <th>GREEN BUILDING PRACTICES</th> <th>POINTS</th> </tr> </thead> <tbody> <tr> <td>403.6 Landscape plan. A landscape plan is developed to limit water and energy use in common areas while preserving or enhancing the natural environment utilizing one or more of the following:</td> <td></td> </tr> <tr> <td>(4) EPA WaterSense Water Budget Tool or equivalent is used when implementing the maximum <u>any</u> percentage of turf areas.</td> <td>2</td> </tr> <tr> <td></td> <td>5</td> </tr> <tr> <td>(5) For landscaped vegetated areas <u>in landscape areas receiving less than twelve (12) inches precipitation per year</u>, the maximum percentage of all turf areas is:</td> <td></td> </tr> <tr> <td>(a) 0 percent</td> <td>5</td> </tr> <tr> <td>(b) Greater than 0 percent to less than 20 percent</td> <td>4</td> </tr> <tr> <td>(c) <u>Greater than 0 percent to less than 20 percent using third party qualified water efficient grasses</u></td> <td>3</td> </tr> <tr> <td>(d) 20 percent to less than 40 percent</td> <td>3</td> </tr> <tr> <td>(e) <u>20 percent to less than 40 percent using third party qualified water efficient grasses</u></td> <td>3</td> </tr> <tr> <td>(f) 40 percent to 60 percent</td> <td>2</td> </tr> <tr> <td>(g) <u>40 percent to 60 percent using third party qualified water efficient grasses</u></td> <td>3</td> </tr> </tbody> </table>		GREEN BUILDING PRACTICES	POINTS	403.6 Landscape plan. A landscape plan is developed to limit water and energy use in common areas while preserving or enhancing the natural environment utilizing one or more of the following:		(4) EPA WaterSense Water Budget Tool or equivalent is used when implementing the maximum <u>any</u> percentage of turf areas.	2		5	(5) For landscaped vegetated areas <u>in landscape areas receiving less than twelve (12) inches precipitation per year</u> , the maximum percentage of all turf areas is:		(a) 0 percent	5	(b) Greater than 0 percent to less than 20 percent	4	(c) <u>Greater than 0 percent to less than 20 percent using third party qualified water efficient grasses</u>	3	(d) 20 percent to less than 40 percent	3	(e) <u>20 percent to less than 40 percent using third party qualified water efficient grasses</u>	3	(f) 40 percent to 60 percent	2	(g) <u>40 percent to 60 percent using third party qualified water efficient grasses</u>	3
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Reason:	<p>The Turfgrass Water Conservation Alliance® (TWCA®) is a 501c3 nonprofit committed to water conservation and preserving the ecological services provided by turfgrass in the managed environment. Representing 93 members around the world in academia, government, and private sector, TWCA's coalition reaches beyond our industry members. TWCA® provides education based on scientific information which contradicts many of the opinions and much of the misinformation about turfgrass. Further, the TWCA® recognizes that water and plants are necessary to sustain life, and strive to protect the environment in which we live. Destruction of the environment by the removal of plant materials, including turfgrass is detrimental to the health and wellbeing of our society. Turf serves as an important sink for Carbon; nationwide, single family detached homes with yards sequester enough carbon to take 44,000 cars off the road each year¹. That is the same as every person in Coachella CA not driving for a year. Turf filters fine particulate and dust out of the air² improving air quality, reduces noise and glare³ and cools the air to help mitigate the heat island effect caused by the ever-expanding blanket of hard, impervious surfaces covering large swathes of the United States. Green spaces in general, and turf in particular, are linked to large scale improvements in the physical and mental health of the population⁴ as well as attenuating the health gaps between the richest and poorest citizens of communities⁵. The removal of plant matter from any environment, managed or natural, should be considered long and with great care. Decisions made today to remove or limit turf may conserve water in the short term. It may take years or decades, even, for the long term negative consequences to be felt. However, when the consequences are felt it will be in the form of higher cooling costs, louder, dirtier cities, and shorter, less healthy, less happy lives. Further, to treat turf as a monolith is to ignore the broad spectrum of genetic diversity represented by this classification of plants and discounts decades of research that have gone into reducing the water needs of turfgrasses^{6,7}. TWCA's third party, peer review process has identified over 80 varieties that have demonstrated statistically significant water efficiencies over conventional varieties of the same species. The key to long term outdoor water savings in residential development is education and engagement. Awarding points for the use of a Water Budgeting Tools (WBT) encourages contractors and end-users to learn more about their landscapes and engage with both the design and maintenance processes. TWCA proposes raising the awarded points for using a Water Budgeting Tool to incentivize engagement with and understanding of the landscaped areas surrounding houses. We believe this engagement and understanding will significantly contribute to water savings over the life of the development. Incentivizing the use of literally any other landscape plant for vegetated areas does not ensure responsible landscaping or water conservation and could result in an increase of the water requirements for a landscape depending on the landscape plants used. This system also ignores the broad range of demonstrated water efficiencies available in turfgrasses today. Finally, given the significant advances made in the development of drought tolerant, rewarding the elimination of turf is rewarding the elimination of well adapted plants through most of climates in the United States. TWCA believes it is most prudent to limit the award of points for prescriptive turf limits to those areas receiving less than twelve (12) inches or precipitation per year. An alternative point system endorsed by the TWCA uses the following scheme: For vegetated areas in landscape areas receiving less than twelve (12) inches precipitation per year, the maximum percentage of all turf areas is: GREEN BUILDING PRACTICES POINTS 403.6 Landscape plan. A landscape plan is developed to limit water and energy use in common areas while preserving or enhancing the natural environment utilizing one or more of the following: (4) EPA WaterSense Water Budget Tool or equivalent is used when implementing the maximum any percentage of turf areas. 2 5 (5) For landscaped vegetated areas in landscape areas receiving less than twelve (12) inches precipitation per year, the maximum percentage of all turf areas is: (a) 0 percent 5 (b) Greater than 0 percent to less than 20 percent 4 (c) Greater than 0 percent to less</p>																									

than 20 percent using third party qualified water efficient grasses 3 (d) 20 percent to less than 40 percent 3 (e) 20 percent to less than 40 percent using third party qualified water efficient grasses 3 (f) 40 percent to 60 percent 2 (g) 40 percent to 60 percent using third party qualified water efficient grasses 3 Using such a point award scheme maintains the incentive to use turf in landscapes responsibly while incentivizing the selection of improved water efficient varieties and encouraging a real engagement with the plant selection process. This point system also eliminates the unfounded demonization of turf. References: 1) R. Lal and B. Augustin (eds.) Carbon Sequestration in Urban Ecosystems, DOI 10.1007/978-94-007-2366-5_14 © Springer Science+Business Media B.V. 2012 2) Water Quality and Quantity Issues for Turfgrasses in Urban Landscapes, Council for Agricultural Science and Technology (CAST), Special Publication 27, 2006, Ch2. 3) Beard, J. B. and R. L. Green. 1994. The role of turfgrasses in environmental protection and their benefits to humans. J Environ Qual 23(9):452-460. 4) Jolanda Maas, Robert A Verheij, Sjerp de Vries, Peter Spreeuwenberg, Francois G Schellevis, Peter P Groenewegen. "Morbidity is related to a green living environment." J Epidemial Community Health. Published Online 15 October 2009. DOI:10.1136/jech.2008.079038 5) Richard Mitchell, Frank Popham "Effect of exposure to natural environment on health inequalities: an observational population study" Lancet 2008; 372: 1655-60 6) Karcher, D.E., Richardson, M.D., Hignight, K., and Rush, D. "Drought Tolerance of Tall Fescue Populations Selected for High Root/Shoot Ratios and Summer Survival" Crop Science 2008; v48 n2: 771-777 7) Karcher, D., M. Richardson and J. Landreth. 2008. Drought tolerance of tall fescue and bluegrass cultivars. Arkansas Turfgrass Report 2007, Ark. Ag. Exp. Stn. Res. Ser. 557:17-20.

TG Recommendation (AS or AM or D): AM

Modification of Proposed Change:	GREEN BUILDING PRACTICES	POINTS
	403.6 Landscape plan. A landscape plan is developed to limit water and energy use in common areas while preserving or enhancing the natural environment utilizing one or more of the following:	
	(4) EPA WaterSense Water Budget Tool or equivalent is used when implementing <u>up to</u> the maximum any percentage of turf areas.	2 <u>10</u>
	(5) Where turf is being planted, Turfgrass Water Conservation Alliance (TWCA) or equivalent third party qualified water efficient grasses are used	6
	(5) (6) For landscaped vegetated areas in landscape areas receiving less than twelve (12) inches precipitation per year, the maximum percentage of all turf areas is:	
	(a) 0 percent	10
	(b) Greater than 0 percent to less than 20 percent	8
	(c) Greater than 0 percent to less than 20 percent using third party qualified water efficient grasses	3
	(d) 20 percent to less than 40 percent	6
	(e) 20 percent to less than 40 percent using third party qualified water efficient grasses	3
	(f) 40 percent to 60 percent	4
	(g) 40 percent to 60 percent using third party qualified water efficient grasses	3
		<u>3</u>

TG Reason: Do not want to eliminate access to these points for areas that have more than 12 inches of annual precipitation but are limiting turf for other reasons. Want to reward the use of water tolerant turf but it was pulled out as a separate line item.

TG Vote: 8-1

P057 LogID 6165 403.6 Landscape plan

Submitter:	Greg Johnson, Outdoor Power Equipment Institute
Requested Action:	Revise as follows
Proposed Change:	(4) EPA WaterSense Water Budget Tool or equivalent is used when implementing the maximum percentage of turf areas. <u>2</u> <u>10</u> (5) For landscaped vegetated areas, the maximum percentage of all turf areas is: (a) 0 percent 5

	(b) Greater than 0 percent to less than 20 percent 4 (c) 20 percent to less than 40 percent 3 (d) 40 percent to 60 percent 2
Reason:	Turf area limits make no sense at the master community or subdivision scale, particularly given the many low water using native and improved species of turfgrass. Given the complexity of large scale landscape water budgeting it is proposed that a more significant point award be given for use of a WBT to match turf area to water availability.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Dealt with the issue in LogID 6571 and chose to keep the graduated point system.
TG Vote:	10-1-0 (one abstention)

P058	LogID 6163	403.6 Landscape plan
Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Revise as follows	
Proposed Change:	(5) For landscaped vegetated areas <u>in locations with less than 12 inches of annual precipitation</u> , the maximum percentage of all turf areas is:	
Reason:	Where water supplies are sufficient, turf disincentives are disincentives to healthy communities. See the separate technical substantiation.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Do not want to eliminate access to these points for areas that have more than 12 inches of annual precipitation but are limiting turf for other reasons.	
TG Vote:	9-2	

P059	LogID 6347	403.6 Landscape plan
Submitter:	Brent Mecham, Irrigation Association	
Requested Action:	Revise as follows	
Proposed Change:	4) EPA WaterSense Water Budget Tool <u>or ANSI/ASABE S623.1 Jan2017 Determining Landscape Plant Water Demands standard</u> or equivalent is used when implementing determining the maximum percentage of turf areas.	
Reason:	As a published document, this ANSI standard provides the necessary equations, plant factors and instructions to create a landscape water budget and determine the water requirement to maintain the landscape. As a national standard it is equivalent to EPA WaterSense Water Budget Tool but perhaps has an advantage in the fact that the plant factors take into account the climate.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Valuable concept but should move somewhere else within 403 that talks about the overall landscape design generically and not specifically related to turf grass.	
TG Vote:	Unanimous	

P060	LogID 17-025	Section 403.6 and 503.5 Landscape plan
Submitter:	Kent Sovocool	

Requested Action:	Revise as Follows								
Proposed Change:	<table border="1"> <tr> <td>(6) For landscaped vegetated areas the maximum percentage of all turf areas is:</td> <td></td> </tr> <tr> <td>(a) 0 percent</td> <td>-5-30</td> </tr> <tr> <td>(b) Greater than 0 percent to less than 20 percent</td> <td>4-20</td> </tr> <tr> <td>(c) 20 percent to less than 40 percent</td> <td>3-10</td> </tr> </table>	(6) For landscaped vegetated areas the maximum percentage of all turf areas is:		(a) 0 percent	-5-30	(b) Greater than 0 percent to less than 20 percent	4-20	(c) 20 percent to less than 40 percent	3-10
(6) For landscaped vegetated areas the maximum percentage of all turf areas is:									
(a) 0 percent	-5-30								
(b) Greater than 0 percent to less than 20 percent	4-20								
(c) 20 percent to less than 40 percent	3-10								
Reason:	Limitation of turf is perhaps the most effective site-related green consideration and one of the greatest modifications to standard practices that can be asked of a builder. Yet the reward is unconscionably weak. Even complete exclusion of turf from a home site results in merely 5 points. A builder that pursues this credit should be appropriately rewarded. The suggested modification puts turf limitation on more even footing with major measures in other parts of the standard.								
TG Recommendation (AS or AM or D):									
Modification of Proposed Change:									
TG Reason:									
TG Vote:	Withdrawn by submitter								

P061	LogID 17-026	Section 403.6 and 503.5 Landscape plan
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Submitter:	Kent Sovocool
Requested Action:	Add New as Follows
Proposed Change:	<p>(18) Spray Irrigation: Submitter's note: would also appear as (13) under 503.5</p> <p>(a) Is not present on slopes steeper than 25% (i.e. where the land rises more than a foot vertically for every 4 feet horizontally). - 2pts</p> <p>(b) Has been tested in accordance with the ASABE/ICC 802, "Landscape Irrigation Sprinkler and Emitter Standard" protocol currently in effect and there is documentation of the sprinklers achieving a lower quarter distribution uniformity of at least 0.65. - 2 pts</p> <p>(c) Is installed in such a way as to eliminate low head/point drainage and runoff. - 2pts</p> <p>(d) Is not used. - 8 pts</p>
Reason:	These types of provisions are common in various green codes and standards already and it is sensible to adapt these as credit opportunities here. Option (d) is to mitigate the common challenge in points-based standards to inadvertently promote more water using technologies by the nature of having provisions and thus points opportunities covering and trying to improve less efficient options.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<p>Take out of 503.5 (but leave in section 403.6) and send to Chapter 8 task group for consideration in that section.</p> <p>(18) Spray Irrigation: Submitter's note: would also appear as (13) under 503.5</p> <p>(a) Is not present on slopes steeper than 25% (i.e. where the land rises more than a foot vertically for every 4 feet horizontally). - 2pts</p> <p>(b) Has been tested in accordance with the ASABE/ICC 802, "Landscape Irrigation Sprinkler and Emitter Standard" protocol currently in effect and there is documentation of the sprinklers achieving a lower quarter distribution uniformity of at least 0.65. - 2 pts</p> <p>(c) Is installed in such a way as to eliminate low head/point drainage and runoff. - 2pts</p> <p>(d) Is not used. - 8pts 6 pts</p>
TG Reason:	Think it applies to chapter 4 and the point was a technical correction. Moving the balance of it to consideration by chapter 8 task group because of their technical expertise and to avoid double counting with chapter 5.
TG Vote:	8-1

P062	LogID 6465	403.7 Wildlife habitat
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute
Requested Action:	Revise as follows

Proposed Change:	403.7 Wildlife habitat.	6
	<u>(1) Measures are planned that will support wildlife habitat.</u>	
	<u>(2) The site is adjacent to a wildlife corridor, fish and game park, or preserved areas and is designed with regard for this relationship.</u>	<u>3</u>
	<u>(3) Outdoor lighting techniques are utilized with regard for wildlife.</u>	3
	<u>(4) Areas of lawn are integrated with maintenance tolerant, non-invasive flowering herbaceous plants in an amount to achieve not less than 20% of the groundcover. Plants should typically flower at less than 4 inches in height. Signs are provided indicating the purpose of the flowering lawn for habitat and prohibiting treatment with pesticides.</u>	<u>3</u>
	<u>(Consult a local agricultural extension service or university or for appropriate plants)</u>	
Reason:	Items 2 & 3 are duplicated from Chapter 5; benefits provided there are equally applicable at the site scale. Item 4 provides a method of supporting habitat in areas of lawn. Significant research has identified the potential of lawns to serve as bee habitat when integrated with flowering plants.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	403.7 Wildlife habitat.	6
	<u>(1) Measures are planned that will support wildlife habitat.</u>	
	<u>(2) The site is adjacent to a wildlife corridor, fish and game park, or preserved areas and is designed with regard for this relationship.</u>	<u>3</u>
	<u>(3) Outdoor lighting techniques are utilized with regard for wildlife.</u>	3
	<u>(4) Areas of lawn are integrated with maintenance tolerant, non-invasive flowering herbaceous plants in an amount to achieve not less than 20% of the groundcover. Plants should typically flower at less than 4 inches in height. Signs are provided indicating the purpose of the flowering lawn for habitat and prohibiting treatment with pesticides.</u>	<u>3</u>
	<u>(Consult a local agricultural extension service or university or for appropriate plants)</u>	
	403.6 (6) To improve pollinator habitat, at least 10 percent of planted areas are composed of flowering and nectar producing plant species. Invasive plant species shall not be utilized.	<u>3-6</u>
TG Reason:	Item 4 was rejected because the modifications that were proposed are unacceptable to the group due to concerns about the plant height and the word herbaceous. The group decided that a similar practice in section 403.6(6) warranted additional points because of its value as a practice.	
TG Vote:	9-2	

P063	LogID 6296	403.9 Existing buildings
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	Following mitigation of any harmful materials, E -existing building(s) and structure(s) is/are preserved and reused, modified <u>adapted</u> , or disassembled for reuse or recycling of building materials.	
	1. <u>Building reuse.</u>	<u>12</u>
	2. <u>Adaptation for building reuse preserving more than 75% of major components, OR, disassembly for reuse/recycling of more than 85% of major components.</u>	<u>10</u>
	3. <u>Building reuse preserving not less than 50% of major components.</u>	<u>6</u>
	4. <u>Adaptation for building reuse preserving more than 40% of major components, OR, disassembly for reuse/recycling of more than 50% of major components.</u>	<u>5</u>
Reason:	Building reuse avoids expenditure of resources for new construction and prevents waste generation. Building disassembly maximizes the recovery of construction and demolition (C&D) materials and creates economic opportunities in local communities. These non-trivial efforts are of the highest priority on the waste management hierarchy, and their implementation requires a meaningful incentive. Building reuse,	

	adaptation and disassembly are all high on the waste management hierarchy, but building reuse is a source reduction measure that has the potential to carry the greatest overall benefit. The credit, as written, makes no mention of the need to mitigate any harmful materials prior to building reuse or adaptation. As written, the credit does not distinguish between partial and full-building reuse, adaptation or disassembly. To address these issues, we recommend the following: ? Increase the maximum number of points available for building reuse, adaptation and disassembly from 8 to 12. ? Allocate the maximum points to the reuse of a building, and a slightly lesser number of points to adaptation and disassembly. ? Bring attention to the need to mitigate any harmful materials prior to building reuse or adaptation. ? Allocate partial number of points to partial building reuse, adaptation or disassembly.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<p>Following mitigation of any harmful materials, E-existing building(s) and structure(s) is/are preserved and reused, modified <u>adapted</u>, or disassembled for reuse or recycling of building materials.</p> <p>1. <u>Building reuse or adaptation.</u> 12</p> <p>2. <u>Disassemble for reuse or recycling of building materials</u> 10</p> <p>2. Adaptation for building reuse preserving more than 75% of major components, OR, disassembly for reuse/recycling of more than 85% of major components. 10</p> <p>3. Building reuse preserving not less than 50% of major components. 6</p> <p>4. Adaptation for building reuse preserving more than 40% of major components, OR, disassembly for reuse/recycling of more than 50% of major components. 5</p>
TG Reason:	Hard for verifier to measure what percentage was achieved so the percentage portion of the proposal was eliminated. Do agree on the need to raise point value due to the expense of this process.
TG Vote:	Unanimous

P064	LogID 6297	403.10 Existing and recycled materials
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	<p>Existing pavements, curbs, and aggregates are salvaged and reincorporated into the development or recycled asphalt or concrete materials are used as follows.</p> <p>(Points awarded for every 10 percent of total materials used for pavement, curb and aggregate that met the criteria of this practice. One point is awarded for every 10% of existing pavements, curbs or aggregates reincorporated into the development above the threshold amount of 50%. Additional point is awarded for every 10% of recycled asphalt or concrete with at least 50% recycled content utilized in the project above the threshold amount of 50%. The percentage is consistently calculated on a weight, volume, or cost basis.)</p> <p>50% of E-existing pavements, curbs, and aggregates are reincorporated into the development. 3</p> <p>50% of R-recycled asphalt or concrete with at least 50 percent recycled content is utilized in the project. 2</p>	
Reason:	<p>If some threshold amount is not established and a number of points for that threshold amount limited, even practices that achieve a relatively modest reuse of asphalt and concrete road materials and aggregates will be awarded a considerable number of points. For example, reincorporating 50% of existing pavements, curbs and aggregates into the development will achieve the maximum 15 points, or incorporating 30% of existing existing pavements, curbs and aggregates into the development and utilizing recycled-content asphalt or concrete for 30% of the new materials will achieve the maximum 15 points. High reuse rates for asphalt, concrete and aggregates are readily achievable, and the point system should at this time, foremost incentivize practices that yield benefits beyond those commonly attained. Maintain the 15-point maximum, but clarify that the available 3+2 points are awarded to projects that incorporate: a) some threshold amount of existing pavements (3 points); and, b) some threshold amount of pavement materials with recycled content (2 points); while additional points are awarded for incremental increases above those threshold amounts.</p>	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		

TG Reason:	Do not want to reduce the incentive to get these points. This is an Important environmental area that needs sufficient incentives to overcome the cost burden of implementing this.
TG Vote:	Unanimous

P065	LogID 6145	405.1 Driveways and parking areas
Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Revise as follows	
Proposed Change:	(4) Water permeable surfaces, including v Vegetative paving systems, are utilized to reduce the footprint of impervious surface driveways, fire lanes, streets or parking areas.	
Reason:	Sec. 403.5 (4) already awards points for stormwater management by using permeable materials for driveways and parking areas. Accepting any water permeable surface to earn points for 405.1 (4) allows double counting for the same material installation. It robs the standard of credibility, particularly when the point awards are relatively high. Is using concrete pavers, with the associated carbon impacts, really worth up to 16 points? More importantly, allowing any permeable material to be awarded the same points as a vegetative paving system (VPS) implies that they have equivalent environmental benefit which is simply not true. A VPS sequesters carbon and produces oxygen. A VPS supports bacteria and other micro-organisms that mitigate hydrocarbon pollution; a likely problem on driving and parking surfaces. A VPS evapotranspires, returning moisture to the air and providing much more cooling than permeable hardscapes. A VPS filters dust and pollutants from the air. The trimmings from managed VPSs improve soil quality, either in situ or when removed for composting. A VPS is not subject to clogging while permeable hard surfaces are. The carbon impacts alone of installing vegetation in an open cell grid or over a recycled plastic matrix are orders of magnitude less harmful than those of producing and providing concrete, asphalt, mined and crushed stone, mined and washed pea rock, or other inorganic materials. The committee is encouraged to return to the language originally proposed in the previous cycle of the NGBS and reserve these innovative practice points for enhanced environmental performance as intended in Sec. 405.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Need to be consistent between two sections, no reason to single out vegetative pavers as they are included in both sections.	
TG Vote:	6-4	

P066	LogID 17-079	Section 405.1(4) Driveways and parking areas										
Submitter:	Greg Johnson for the Greenscapes Alliance											
Requested Action:	Delete Section 405.1 (4) and revise as follows											
Proposed Change:	<table border="1"> <thead> <tr> <th colspan="2"><u>403.5 Stormwater management.</u></th> </tr> </thead> <tbody> <tr> <td>(1) Permeable materials are used for driveways, parking areas, walkways and patios according to the following percentages:</td> <td></td> </tr> <tr> <td>(a) <u>10 percent to less than 25 percent</u> <u>(add 2 points for use of vegetative paving system)</u></td> <td>2</td> </tr> <tr> <td>(b) 25-50 percent <u>(add 4 points for use of vegetative paving system)</u></td> <td>5</td> </tr> <tr> <td>(c) greater than 50 percent <u>(add 6 points for use of vegetative paving system)</u></td> <td>10</td> </tr> </tbody> </table>		<u>403.5 Stormwater management.</u>		(1) Permeable materials are used for driveways, parking areas, walkways and patios according to the following percentages:		(a) <u>10 percent to less than 25 percent</u> <u>(add 2 points for use of vegetative paving system)</u>	2	(b) 25-50 percent <u>(add 4 points for use of vegetative paving system)</u>	5	(c) greater than 50 percent <u>(add 6 points for use of vegetative paving system)</u>	10
<u>403.5 Stormwater management.</u>												
(1) Permeable materials are used for driveways, parking areas, walkways and patios according to the following percentages:												
(a) <u>10 percent to less than 25 percent</u> <u>(add 2 points for use of vegetative paving system)</u>	2											
(b) 25-50 percent <u>(add 4 points for use of vegetative paving system)</u>	5											
(c) greater than 50 percent <u>(add 6 points for use of vegetative paving system)</u>	10											
Reason:	<p>The point awards from Sec. 405.1 (4) are relocated here to eliminate double counting but also to reward the use of vegetative paving systems, which are environmentally superior durable surfaces.</p> <p>A VPS sequesters carbon and produces oxygen. A VPS supports bacteria and other micro-organisms that mitigate hydrocarbon pollution; a likely problem on driving and parking surfaces. A VPS evapotranspires, returning moisture to the air and providing much more cooling than permeable hardscapes. A VPS filters dust and pollutants from the air. The trimmings from managed VPSs improve</p>											

	<p>soil quality, either in situ or when removed for composting. A VPS is not subject to clogging where permeable hard surfaces are.</p> <p>The carbon impacts alone of installing vegetation in an open cell grid or over a recycled plastic matrix are orders of magnitude less harmful than those of producing and providing concrete, asphalt, mined and crushed stone, mined and washed pea rock, or other inorganic materials.</p> <p>A lower limit on qualifying area is added to respond to verifier concerns identified in TG discussions.</p>
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	6-3

P067	LogID 6452	405.5 Wetlands
Submitter:	Michael Cudahy	
Requested Action:	Revise as follows	
Proposed Change:	405.5 Wetlands. Constructed <u>or natural</u> wetlands or other natural innovative wastewater or stormwater treatment technologies are used <u>on site</u> .	
Reason:	Rewording for clarity, allowing for constructed or natural wetlands to be used on site. Alternatively, if the intent is only constructed wetlands, the committee can modify.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Intent was not to include existing wetland areas, EPA discourages natural wetlands from being used for stormwater	
TG Vote:	8-2	

P068	LogID 17-006	Section 405.6 Multi-modal transportation
Submitter:	Robert Goo	
Requested Action:	Add new language	
Proposed Change:	<p><u>A site is selected within a census block group that, compared to its region, has above-average transit access to employment as calculated using the Transit Access Measures within the USEPA's Smart Location Database:</u></p> <p>(a) <u>Access is within the top quartile for the region -- 10 points</u></p> <p>(b) <u>Access is within the second quartile for the region -- 4 points</u></p>	
Reason:	<p>The likelihood that a household will use transit is correlated with the number of jobs accessible by public transit. The Smart Location Database, https://www.epa.gov/smartgrowth/smart-location-mapping#SLD, is a geographic data resource for measuring location efficiency. It includes more than 90 attributes summarizing characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics. If this database would be useful to Home Innovation as for the purposes of measuring components of location efficiency for any given building site, EPA can work with its partners to develop a simple interface that NGBS users could use to quickly gain feedback for any given address related to its transit access to employment, walkability, access to transit, or other factors known to reduce vehicle miles traveled and the environmental impacts of the use of private vehicles.</p>	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		

TG Reason:	
TG Vote:	Unanimous

P069	LogID 17-007	Section 405.6 Multi-modal transportation
Submitter:	Robert Goo	
Requested Action:	Add new language	
Proposed Change:	<u>A site is selected within a census block group that, compared to its region, has above-average access to employment within a 45-minute drive as calculated using USEPA's Smart Location Database:</u> (a) <u>Access is within the top quartile for the region -- 6 points</u> (b) <u>Access is within the second quartile for the region – 2 points</u>	
Reason:	Proximity to a total number of destinations, including jobs, is correlated with lower total driving by households. The Smart Location Database, https://www.epa.gov/smartgrowth/smart-location-mapping#SLD , is a geographic data resource for measuring location efficiency. It includes more than 90 attributes summarizing characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics. If this database would be useful to Home Innovation as for the purposes of measuring components of location efficiency for any given building site, EPA can work with its partners to develop a simple interface that NGBS users could use to quickly gain feedback for any given address related to its transit access to employment, walkability, access to transit, or other factors known to reduce vehicle miles traveled and the environmental impacts of the use of private vehicles.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P070	LogID 17-011	Section 405.6 Multi-modal transportation
Submitter:	Robert Goo	
Requested Action:	Revise 405.6(1) as follows	
Proposed Change:	405.6(1) A site is selected with a boundary within one-half mile of pedestrian access to a mass transit system or within five miles of a mass transit station with available parking.	
Reason:	Urban planning research does not indicate that this metric is environmentally effective. It not only is unclear that the residents of the subdivision would be likely to use the mass transit to any significant degree if it were located 5 miles from the border of the subdivision, but much of the air quality benefits of using transit are due to the avoidance of starting an automobile in the first place. Much of the air pollution associated with driving a vehicle occurs with the ignition and first several minutes of the drive.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Current language provides an incentive for locating closer to transit, which is better than not having this in the standard at all.	
TG Vote:	7-3	

P071	LogID 6158	405.9 Open space
Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Revise as follows	
Proposed Change:	405.9 Open space. A portion of the gross area of the community is set aside as open space. 4 2	

	(Points awarded for every 10 percent of the community set aside as open space
Reason:	1 point per 10% of gross community area is far too low. The World Health Organization recommends a minimum of 9 square meters (roughly 100 square feet) of green space per person for a healthy city. Given the multiple environmental and human health benefits that open green space can offer it only makes sense to create strong incentives for open design.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	8-1-1

P072	LogID 17-027	Section 405.9 Open space
Submitter:	Kent Sovocool	
Requested Action:	Revise as Follows	
Proposed Change:	Open space. <u>The community is situated within two miles of an area of accessible open space or Aa</u> portion of the gross area of the community is set aside as open space. Points awarded for every 10 percent of the community set aside as open space or equivalencies.	
Reason:	The definition of community is vague and may restrict use of the credit. It would be silly to have a developer set aside open space in “their” community when the jurisdiction already has (or will have) open space that developers and builders have or will contribute to. In such progressive communities the credit should be available.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Open space. <u>The community is situated within two miles of an area of accessible open space or Aa</u> portion of the gross area of the community is set aside as open space. Points awarded for every 10 percent of the community set aside as open space or equivalencies. If open space outside of the community is included, a maximum of 3 points are awarded.	
TG Reason:	Avoid inappropriate use of the points.	
TG Vote:	Unanimous	

P073	LogID 17-071	Section 405.10 Community garden(s)								
Submitter:	Greg Johnson for the Greenscapes Alliance									
Requested Action:	Revise as follows									
Proposed Change:	<table border="1"> <tr> <td>405.10 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local Local food production for residents or area consumers.</td> <td style="text-align: center;">3</td> </tr> <tr> <td>(a) <u>A portion of the lot is established as community garden(s) for the residents of the site</u></td> <td style="text-align: center;">3</td> </tr> <tr> <td>(b) <u>Composting area and physical provisions are provided for accumulating compost</u></td> <td style="text-align: center;">1</td> </tr> <tr> <td>(c) <u>Signs designating the garden area are posted.</u></td> <td style="text-align: center;">1</td> </tr> </table>	405.10 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local Local food production for residents or area consumers.	3	(a) <u>A portion of the lot is established as community garden(s) for the residents of the site</u>	3	(b) <u>Composting area and physical provisions are provided for accumulating compost</u>	1	(c) <u>Signs designating the garden area are posted.</u>	1	
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(a) <u>A portion of the lot is established as community garden(s) for the residents of the site</u>	3									
(b) <u>Composting area and physical provisions are provided for accumulating compost</u>	1									
(c) <u>Signs designating the garden area are posted.</u>	1									
Reason:	The proposed additional measures will make community gardening more effective.									
TG Recommendation (AS or AM or D):	AM									
Modification of Proposed Change:	<table border="1"> <tr> <td>405.10 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local Local food production for residents or area consumers.</td> </tr> <tr> <td>(a) <u>A portion of the lot site is established as community garden(s) for the residents of the site</u></td> </tr> <tr> <td>(b) <u>Areas Composting area and physical provisions are provided for accumulating compost composting</u></td> </tr> </table>		405.10 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local Local food production for residents or area consumers.	(a) <u>A portion of the lot site is established as community garden(s) for the residents of the site</u>	(b) <u>Areas Composting area and physical provisions are provided for accumulating compost composting</u>					
405.10 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local Local food production for residents or area consumers.										
(a) <u>A portion of the lot site is established as community garden(s) for the residents of the site</u>										
(b) <u>Areas Composting area and physical provisions are provided for accumulating compost composting</u>										

	(c) <u>Signs designating the garden area are posted.</u>
TG Reason:	This comment is in the site chapter and should reference the site, not the lot.
TG Vote:	Unanimous

P074	LogID 6453	405.10 Community garden(s)
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Submitter:	Michael Cudahy, PPFA
Requested Action:	Revise as follows
Proposed Change:	Community garden(s). A-portion s of the site <u>of at least 250 sq feet is are</u> established as a community garden(s) for the residents of the site to provide local food production for residents or area consumers. <u>One point awarded per 250 sq feet. Maximum 3 points.</u>
Reason:	To establish a minimum size for the gardens and allow for point tier discussion. The committee or task group can discuss and determine if a minimum size is necessary. Some regions may use vertical gardens and not need much land area, but some regions my best be served by multiple fruit trees, or even palms. Also allows for a discussion of tiered points. A project would have more flexibility with a point tier allocation.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Unanimous

P075	LogID 6458	Other for Chapter 4 (include section number and title below)
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute																	
Requested Action:	Add new as follows																	
Proposed Change:	<p>406 Human Health and Wellbeing</p> <p><u>406.0Intent. Site design, preparation and development practices are used to foster human health and wellbeing.</u></p> <table border="1"> <tr> <td>406.1. The site is designed to encourage physical activity</td> <td>-</td> </tr> <tr> <td>(1) <u>A system of walkways, bikeways, street crossings, or pathways designed to promote walking, jogging, skating, and biking is provided.</u></td> <td>-</td> </tr> <tr> <td>(a) <u>All streets have sidewalks on each side of the street and marked crosswalks on each side of street intersections.</u></td> <td><u>5</u></td> </tr> <tr> <td>(b) <u>All streets have a dedicated and marked bicycle lane in each direction of travel.</u></td> <td><u>5</u></td> </tr> <tr> <td>(c) <u>Trails or pathways through natural areas of not less than 20 acres (80,940 m²) and which are protected by conservation easement are provided.</u></td> <td><u>8</u></td> </tr> <tr> <td>(d) <u>Multi-station fitness trails are provided.</u></td> <td><u>1 point for 2 stations</u> <u>6 points max</u></td> </tr> <tr> <td>(e) <u>Mileage or progress markers are posted on trails</u></td> <td><u>1</u></td> </tr> <tr> <td>(2) <u>Facilities for active outdoor recreation are provided</u></td> <td>-</td> </tr> </table>		406.1. The site is designed to encourage physical activity	-	(1) <u>A system of walkways, bikeways, street crossings, or pathways designed to promote walking, jogging, skating, and biking is provided.</u>	-	(a) <u>All streets have sidewalks on each side of the street and marked crosswalks on each side of street intersections.</u>	<u>5</u>	(b) <u>All streets have a dedicated and marked bicycle lane in each direction of travel.</u>	<u>5</u>	(c) <u>Trails or pathways through natural areas of not less than 20 acres (80,940 m²) and which are protected by conservation easement are provided.</u>	<u>8</u>	(d) <u>Multi-station fitness trails are provided.</u>	<u>1 point for 2 stations</u> <u>6 points max</u>	(e) <u>Mileage or progress markers are posted on trails</u>	<u>1</u>	(2) <u>Facilities for active outdoor recreation are provided</u>	-
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(b) <u>A community golf course is provided.</u>	<u>7</u>
(c) <u>Community tennis or basketball courts are provided.</u>	<u>1 point for each 3 points max</u>
(d) <u>Community pickleball or handball courts are provided.</u>	<u>1 point for each 3 points max</u>
(e) <u>Community softball/baseball or multi-sports fields are provided.</u>	<u>5 points each 15 points max</u>
(f) <u>Community playgrounds and equipment or open play area are provided.</u>	<u>3 points each 9 points max</u>
(3) <u>A fenced community off-leash dog park is provided.</u>	<u>5</u>
-	-
<u>406.2 The site is designed to promote social interaction or outdoor respite</u>	-
(1) <u>Outdoor communal gathering places are provided</u>	-
(a) <u>Park space with seating and tables for picnicking is provided.</u>	<u>2 points per acre 10 points max</u>
(b) <u>A band-shell or stage for outdoor performance is provided</u>	<u>5</u>
(c) <u>Picnic areas (2 tables and 1 barbecue grill)</u>	<u>1 point for each</u>
(2) <u>Bench seating oriented toward scenic views or vistas such as mountains, skylines, or bodies of water is provided.</u>	<u>1 point per bench 7 points max</u>
(3) <u>A community lawn or town square is provided</u>	<u>5</u>
-	-
<u>406.3 Community garden(s).</u> A portion of the site is established as a community garden(s) for the residents of the site to provide local food production for residents or area consumers.	<u>5</u>
<u>Composting area and physical provisions are provided for accumulating compost</u>	<u>1</u>
<u>Signs designating the garden area are posted.</u>	<u>1</u>
<u>406.4. Tick-borne disease.</u> The site is designed to mitigate hazards from tick-borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>	<u>Points</u>
(1) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u>	<u>5</u> -
(2) <u>A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u>	<u>5</u>
(3) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u>	<u>3</u>
(4) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u>	<u>3</u>
-	-

	<u>406.5 Outdoor smoking prohibition.</u>	<u>Points</u>
	<u>Signs are provided prohibiting smoking at the following locations:</u>	-
	(a) <u>Smoking is prohibited within 25 feet (7.5 m) of all building exterior doors and operable windows or building air intakes within 15 (4.5 m) vertical feet of grade or a walking surface.</u>	<u>5</u>
	(b) <u>Smoking is prohibited on decks, balconies, patios and other occupied exterior spaces.</u>	<u>5</u>
	(c) <u>Smoking is prohibited at all parks, playgrounds, and community activity or recreational spaces.</u>	<u>5</u>
	-	
Reason:	Human health and wellness considerations are an important part of green and sustainable design and building. LEED addresses this subject matter as does the WELL Building Standard (submitted as substantiation). Much of health and wellness design for exteriors is best done at the development scale. There some elements of overlap with existing provisions for multimodal travel, but those provisions focus on whether a function is provided, not how it is provided for healthy intent.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	A subsequent proposal is more complete.	
TG Vote:	Unanimous	

P076	LogID 6551	Other for Chapter 4 (include section number and title below)
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Add new as follows	
Proposed Change:	<u>405 HEALTH AND WELL BEING (...prior to INNOVATIVE PRACTICES)</u>	
Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	There is not a specific activity here and there is another proposal that will be forthcoming.	
TG Vote:	9-1 (abstention)	

P077	LogID 17-073	New for Chapter 4
Submitter:	Greg Johnson for the Greenscapes Alliance	

Requested Action:	Add new as follows																																						
Proposed Change:	<p>405.XX Access to Community Amenities. The site is developed to minimize environmental impacts by offering one or more of the following:</p> <table border="1"> <tr> <td>(1) <u>A system of walkways, bikeways, street crossings, or pathways designed to promote walking, jogging, skating, and biking is provided.</u></td> <td></td> </tr> <tr> <td>(a) <u>All streets have sidewalks on each side of the street and marked crosswalks on each side of street intersections.</u></td> <td><u>5</u></td> </tr> <tr> <td>(b) <u>All streets have a dedicated and marked bicycle lane in each direction of travel.</u></td> <td><u>5</u></td> </tr> <tr> <td>(c) <u>Trails or pathways through natural areas of not less than 20 acres (80,940 m²) and which are protected by conservation easement are provided.</u></td> <td><u>8</u></td> </tr> <tr> <td>(d) <u>Multi-station fitness trails are provided.</u></td> <td><u>1 point for 2 stations</u> <u>6 points max</u></td> </tr> <tr> <td>(e) <u>Mileage or progress markers are posted on trails</u></td> <td><u>1</u></td> </tr> <tr> <td>(2) <u>Facilities for active outdoor recreation are provided</u></td> <td></td> </tr> <tr> <td>(a) <u>A community swimming pool with an automatic pool cover is provided.</u></td> <td><u>7</u></td> </tr> <tr> <td>(b) <u>A community golf course is provided.</u></td> <td><u>7</u></td> </tr> <tr> <td>(c) <u>Community athletic courts, such as tennis, basketball, volleyball, pickleball or similar are provided.</u></td> <td><u>1 point for each</u> <u>3 points max</u></td> </tr> <tr> <td>(d) <u>Community softball/baseball or multi-sports fields are provided.</u></td> <td><u>5 points each</u> <u>15 points max</u></td> </tr> <tr> <td>(e) <u>Community playgrounds and equipment or open play area are provided.</u></td> <td><u>3 points each</u> <u>9 points max</u></td> </tr> <tr> <td>(3) <u>A fenced community off-leash dog park is provided.</u></td> <td><u>5</u></td> </tr> <tr> <td>(4) <u>Outdoor communal gathering places are provided</u></td> <td></td> </tr> <tr> <td>(a) <u>Park space with seating and tables for picnicking is provided.</u></td> <td><u>2 points per acre</u> <u>10 points max</u></td> </tr> <tr> <td>(b) <u>A band-shell or stage for outdoor performance is provided</u></td> <td><u>5</u></td> </tr> <tr> <td>(c) <u>Picnic areas (2 tables and 1 barbecue grill)</u></td> <td><u>1 point for each</u></td> </tr> <tr> <td>(5) <u>Bench seating oriented toward scenic views or vistas such as mountains, skylines, or bodies of water is provided.</u></td> <td><u>1 point per bench</u> <u>7 points max</u></td> </tr> <tr> <td>(6) <u>A community lawn or town square is provided</u></td> <td><u>5</u></td> </tr> </table>	(1) <u>A system of walkways, bikeways, street crossings, or pathways designed to promote walking, jogging, skating, and biking is provided.</u>		(a) <u>All streets have sidewalks on each side of the street and marked crosswalks on each side of street intersections.</u>	<u>5</u>	(b) <u>All streets have a dedicated and marked bicycle lane in each direction of travel.</u>	<u>5</u>	(c) <u>Trails or pathways through natural areas of not less than 20 acres (80,940 m²) and which are protected by conservation easement are provided.</u>	<u>8</u>	(d) <u>Multi-station fitness trails are provided.</u>	<u>1 point for 2 stations</u> <u>6 points max</u>	(e) <u>Mileage or progress markers are posted on trails</u>	<u>1</u>	(2) <u>Facilities for active outdoor recreation are provided</u>		(a) <u>A community swimming pool with an automatic pool cover is provided.</u>	<u>7</u>	(b) <u>A community golf course is provided.</u>	<u>7</u>	(c) <u>Community athletic courts, such as tennis, basketball, volleyball, pickleball or similar are provided.</u>	<u>1 point for each</u> <u>3 points max</u>	(d) <u>Community softball/baseball or multi-sports fields are provided.</u>	<u>5 points each</u> <u>15 points max</u>	(e) <u>Community playgrounds and equipment or open play area are provided.</u>	<u>3 points each</u> <u>9 points max</u>	(3) <u>A fenced community off-leash dog park is provided.</u>	<u>5</u>	(4) <u>Outdoor communal gathering places are provided</u>		(a) <u>Park space with seating and tables for picnicking is provided.</u>	<u>2 points per acre</u> <u>10 points max</u>	(b) <u>A band-shell or stage for outdoor performance is provided</u>	<u>5</u>	(c) <u>Picnic areas (2 tables and 1 barbecue grill)</u>	<u>1 point for each</u>	(5) <u>Bench seating oriented toward scenic views or vistas such as mountains, skylines, or bodies of water is provided.</u>	<u>1 point per bench</u> <u>7 points max</u>	(6) <u>A community lawn or town square is provided</u>	<u>5</u>
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Reason:	Having nearby access to social and recreational amenities in a community not only supports good health, but it can save considerable transportation energy. It is preferable that members of a community be able to access these amenities without traveling by automobile or at worst by limited automobile travel. Additionally, these amenities are often associated with outdoor greenspaces which have many environmental benefits, such as stormwater control, atmospheric cleansing and cooling, oxygen production, and the capacity to support increased density in livable, desirable communities.																																						
TG Recommendation (AS or AM or D):	AS																																						
Modification of Proposed Change:																																							
TG Reason:																																							
TG Vote:	7-2																																						

P078	LogID 17-077	New for Chapter 4
Submitter:	Greg Johnson for the Greenscapes Alliance	
Requested Action:	Add new as follows	

Proposed Change:	406.XX The site is designed to mitigate hazards from tick-borne disease	Points	
	<u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>		
	(a) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u>		5
	(b) <u>(b) A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u>		5
	(a) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u>		3
(b) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u>	3		
Reason:	In addition to the obvious health benefits, there are a number of environmental benefits associated with preventing the spread of the fifteen U.S tick borne diseases identified by the Centers for Disease Control and Prevention. Smart landscape design can forestall the use of pesticides to control ticks near human occupied area. Less obvious, but perhaps more significant, a report by the Johns Hopkins Bloomberg School of Public Health found that, on average, people with Lyme disease had 87 percent more visits to the doctor and 71 percent more visits to the emergency room within the year following diagnosis. This represents a tremendous cost in energy for transportation and for the share of materials and energy life cycle costs embodied in treatment facilities, operationally and within the infrastructure. These environmental impacts can in part be avoided through site design.		
TG Recommendation (AS or AM or D):	AM		
Modification of Proposed Change:	406.XX The site is designed to mitigate hazards from tick -insect borne disease	Points	
	<u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>		
	(a) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u>		6
	(b) <u>(b) A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u>		5
	(c) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u>		3
	(d) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u>		3
(e) <u>Conditions that are favorable to mosquito breeding, such as standing water, are not present on site</u>	2		
TG Reason:	Written to include mosquitos in addition to ticks.		
TG Vote:	8-1 (abstention)		

P079	LogID 17-078	New for Chapter 4
Submitter:	Greg Johnson for the Greenscapes Alliance	
Requested Action:	Add new as follows	
Proposed Change:	<u>406.XX Smoking prohibitions.</u> Signs are provided prohibiting smoking at the following locations:	
	(a) <u>Smoking is prohibited within 25 feet (7.5 m) of all building exterior doors and operable windows or building air intakes within 15 (4.5 m) vertical feet of grade or a walking surface.</u>	3
	(b) <u>Smoking is prohibited on decks, balconies, patios and other occupied exterior spaces.</u>	3
	(c) <u>Smoking is prohibited at all parks, playgrounds, and community activity or recreational spaces.</u>	3

Reason:	Significant resources, with associated life cycle costs, are used to treat smoking related diseases. Similarly, discarded smoking materials are frequently to blame for exterior and structure fires which also need significant resources to control and which are sources of air pollution. Besides being an important health consideration, discouraging the outdoor air pollution related to smoking should be incentivized.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	8-1

Chapter 5 Lot Design, Preparation, and Development

P080	LogID 6461	501.1 Lot (Lot selection)
Submitter:	Greg Johnson, Power Equipment Institute	
Requested Action:	Add new as follows	
Proposed Change:	<p><u>(4) Wildland-Urban Area Site Avoided.</u> A site in the wildland-urban interface is not selected.</p> <p><u>(Only applicable where the Authority Having Jurisdiction has declared a wildland-urban interface area in accordance with the International Wildland-Urban Interface Code).</u></p>	<u>6</u>
Reason:	There are seriously negative environmental impacts from the spread of fire between buildings and wildlands. If it is known that a lot is in a wildland-urban interface area (declared by the AHJ, avoiding building on that site mitigates an environmental risk.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	<p><u>501.1(4).</u> A site is selected that is not in a wildland urban interface fire area. (Points are only awarded where the local governmental jurisdiction has legally identified or declared wildland urban interface fire areas within the jurisdiction).</p>	<u>5</u>
TG Reason:	Believe this is an important practice that needs to be incorporated. The TG requested additional clarity and the submitter proposed the modification above.	
TG Vote:	5-4	

P081	LogID 6454	501.2 Multi-model transportation
Submitter:	Michael Cudahy, PPFA	
Requested Action:	Add new as follows	
Proposed Change:	<p>(6)</p> <p><u>(d) Bicycle enclosed storage is provided or parking spaces are covered or otherwise protected from the elements.</u></p> <p><u>2 Additional points per (a)-(c)</u></p>	
Reason:	Providing protection from the weather of a parked bicycle is an additional cost to the builder and should be rewarded as it makes the use of bicycles more likely. It's also not inconceivable that a builder could provide a small enclosed space with a door for residents which should also be rewarded.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P082	LogID 6320	501.2 Multi-model transportation
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Submitter:	Aaron Gary, self
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Requested Action:	Add new as follows
Proposed Change:	<u>(7) Provide infrastructure to facilitate shared vehicle usage such as carpool drop-off areas, car-share services, and shuttle services to mass transit. - 5 POINTS</u>
Reason:	Communities that provide for share vehicle usage should be rewarded as this reduces the production of green-house gases in the same way as mass transit or bicycle use.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<u>(7) Select a lot in a community where there is access to shared vehicle usage such as carpool drop-off areas, car-share services, and shuttle services to mass transit - 5 POINTS</u>
TG Reason:	Need clarification that this does not apply to single-family lots
TG Vote:	Unanimous

P083	LogID 6323	501.2 Multi-modal transportation
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	ADD NEW IN 501.2 <u>(8) Lot is within a community that has a Bike sharing program and where facilities for bike sharing are planned for and constructed. - 5 points</u> <u>(9) Lot is within a community that has a Car sharing program and where facilities for car sharing are planned for and constructed. - 5 points</u>
Reason:	Based on existing practice in NGBS 2015 (405.6) and applied to a single lot versus entire land development.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	ADD NEW IN 501.2 (8) Lot is within 1/2 mile walking distance of a community that has a where a bike sharing program is provided Bike sharing program and where facilities for bike sharing are planned for and constructed. - 5 points (9) Lot is within a community that has a Car sharing program and where facilities for car sharing are planned for and constructed. - 5 points
TG Reason:	Bike share program has value and distance of a half mile is a reasonable distance. Item 9 is already a component of a comment accepted earlier.
TG Vote:	Unanimous

P084	LogID 6173	501.2 Multi-model transportation
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	<u>ADD NEW OPTION TO 501.2</u> <u>(7) Employment Access: A site is selected in an area with a measured Jobs per Sq. Mi. of:</u> <u>a) 10,000 - less than 25,000 - 3 POINTS</u> <u>b) 25,000 to less than 50,000 - 4 POINTS</u> <u>c) 50,000 to less than 100,000 - 5 POINTS</u> <u>d) 100,000 or more - 6 POINTS</u>
Reason:	Travel to and from work is a major source of carbon emissions. Locating housing near employment will significantly reduce the vehicle miles traveled of the average occupant. The Proposed metric can be easily found using http://htaindex.cnt.org/
TG Recommendation (AS or AM or D):	AS

Modification of Proposed Change:	
TG Reason:	
TG Vote:	6-3

P085	LogID 17-008	Section 501.2 Multi-modal transportation
Submitter:	Robert Goo, US EPA	
Requested Action:	Add new language	
Proposed Change:	<p><u>A lot is selected within a census block group that, compared to its region, has above-average transit access to employment as calculated using the Transit Access Measures within the USEPA's Smart Location Database:</u></p> <p>(a) <u>Access is within the top quartile for the region -- 10 points</u></p> <p>(b) <u>Access is within the second quartile for the region – 4 points</u></p>	
Reason:	<p>The likelihood that a household will use transit is correlated with the number of jobs accessible by public transit. The Smart Location Database, https://www.epa.gov/smartgrowth/smart-location-mapping#SLD, is a geographic data resource for measuring location efficiency. It includes more than 90 attributes summarizing characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics. If this database would be useful to Home Innovation as for the purposes of measuring components of location efficiency for any given building site, EPA can work with its partners to develop a simple interface that NGBS users could use to quickly gain feedback for any given address related to its transit access to employment, walkability, access to transit, or other factors known to reduce vehicle miles traveled and the environmental impacts of the use of private vehicles.</p>	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P086	LogID 17-009	Section 501.2 Multi-modal transportation
Submitter:	Robert Goo, US EPA	
Requested Action:	Add new language	
Proposed Change:	<p><u>A lot is selected within a census block group that, compared to its region, has above-average access to employment within a 45-minute drive as calculated using USEPA's Smart Location Database:</u></p> <p>(a) <u>Access is within the top quartile for the region -- 6 points</u></p> <p>(b) <u>Access is within the second quartile for the region – 2 points</u></p>	
Reason:	<p>Proximity to a total number of destinations, including jobs, is correlated with lower total driving by households. The Smart Location Database, https://www.epa.gov/smartgrowth/smart-location-mapping#SLD, is a geographic data resource for measuring location efficiency. It includes more than 90 attributes summarizing characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics. If this database would be useful to Home Innovation as for the purposes of measuring components of location efficiency for any given building site, EPA can work with its partners to develop a simple interface that NGBS users could use to quickly gain feedback for any given address related to its transit access to employment, walkability, access to transit, or other factors known to reduce vehicle miles traveled and the environmental impacts of the use of private vehicles.</p>	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		

TG Vote:	Unanimous
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P087	LogID 17-010	Section 501.2 Multi-modal transportation
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Submitter:	Robert Goo, US EPA
Requested Action:	Add as an alternative to 501.2(4):
Proposed Change:	<p>OR</p> <p><u>A lot is selected within a census block group that, compared to its region, has above-average neighborhood walkability using an index within the USEPA's Smart Location Database:</u></p> <p>(a) <u>Walkability is within the top quartile for the region -- 10 points</u></p> <p>(b) <u>Access is within the second quartile for the region – 4 points</u></p>
Reason:	The walkability index is based on an algorithm developed from a meta-analysis of neighborhood walking research. The Smart Location Database, https://www.epa.gov/smartgrowth/smart-location-mapping#SLD , is a geographic data resource for measuring location efficiency. It includes more than 90 attributes summarizing characteristics such as housing density, diversity of land use, neighborhood design, destination accessibility, transit service, employment, and demographics. If this database would be useful to Home Innovation as for the purposes of measuring components of location efficiency for any given building site, EPA can work with its partners to develop a simple interface that NGBS users could use to quickly gain feedback for any given address related to its transit access to employment, walkability, access to transit, or other factors known to reduce vehicle miles traveled and the environmental impacts of the use of private vehicles.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Unanimous

P088	LogID 17-012	Section 501.2 Multi-modal transportation
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Submitter:	Robert Goo, US EPA
Requested Action:	Delete as follows:
Proposed Change:	(2) A lot is selected within five miles of a mass transit station with provisions for parking.
Reason:	Urban planning research does not indicate that this metric is environmentally effective. It not only is unclear that the residents of the lot would be likely to use the mass transit to any significant degree if the lot were located 5 miles from the transit station, but much of the air quality benefits of using transit are due to the avoidance of starting an automobile in the first place. Much of the air pollution associated with driving a vehicle occurs with the ignition and first several minutes of the drive.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Current language provides an incentive for locating closer to transit which is better than not having this in the standard at all.
TG Vote:	6-3

P089	LogID 6148	503.0 Intent (Lot Design)
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute
Requested Action:	Revise as follows
Proposed Change:	503.0 Intent. The lot is designed to avoid detrimental environmental impacts first, to minimize any unavoidable impacts, and to mitigate for those impacts that do occur. The project is designed to minimize

	environmental impacts and to protect, restore, and enhance the natural features and environmental quality of the lot. <u>The lot is designed to enhance human health and well-being.</u>
Reason:	People's living environments should support healthy lifestyles. Sec. 505.5 recognizes this by awarding points for community gardens; a healthy outdoor activity, providing both exercise and better nutrition.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Health and well-being is currently outside the scope of the standard.
TG Vote:	8-1

P090	LogID 6463	503.1 Natural resources
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Add new as follows	
Proposed Change:	<u>(8) Developer has a plan to design and construct the lot in accordance with the International Wildland-Urban Interface Code (IWUIC).</u> <u>(Only applicable where the AHJ has not declared a wildland-urban interface area, but a fire protection engineer, certified fire marshal, or other qualified party has determined and documented the site as hazarded per the IWUIC).</u>	<u>6</u>
Reason:	It is unrealistic to believe that building will not occur on lots that could qualify as hazarded by the International Wildland-Urban Interface Code, but that have not been legally identified as such by the AHJ. Good environmental policy on those sites is to develop according to the provisions of the IWUIC to mitigate the negative consequences of fire spread between wildlands and buildings. (see documentation- a letter from the International Association of Fire Chiefs Life Safety Section). Requiring a qualified party to establish whether a lot qualifies as hazarded keeps this provision from being a points giveaway.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	503.8 Operation and maintenance plan. For multifamily sites an operation and maintenance plan (manual) is prepared and outlines <u>one or more of the following:</u>	
	(3) <u>The plan addresses ongoing service of common open area, utilities (storm water, waste water), and environmental management activities.</u>	<u>6</u>
	(4) <u>The plan specifies ongoing site management activities to mitigate wildland urban interface fire spread. These points are only available where the local has designated the site as a wildland urban interface hazard area.</u>	<u>3</u>
TG Reason:	Believe this is an important practice that needs to be incorporated. The TG requested additional clarity and the submitter proposed the modification above.	
TG Vote:	6-1	

P091	LogID 6546	503.3 Soil disturbance and erosion
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Submitter:	Ben Edwards, self	
Requested Action:	Delete without substitution	
Proposed Change:	Delete on item (3) from section 503.3 Limits of clearing and grading are demarcated on the lot plan.	

Reason:	This comment is intended to bring attention a larger issue in this document: double counting. 504.3(2) awards 5 points for flagging the site under Lot Construction. 503.3(3) awards 5 points for planning the same action under Lot Design (points are awarded when "the intent of the design is implemented." While flagging a site is important, the potential for 10 points for a standard practice is not appropriate in an above-code document. Points should be awarded based on outcome, and should clearly indicate the relative weight in compliance. Note: Similar issues are found in Chapters 4 and 11, and the topic of soil disturbance is illustrative. Philosophically, if points are to be awarded for planning, construction, and verification, the greatest weight should be in verification.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	View planning and execution as two discrete operations and therefore is not double counting.
TG Vote:	Unanimous

P092	LogID 6223	503.4 Stormwater management
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>Instal Permanent or Maintained/Managed Post Construction Sewer/Street drain protection</u>
Reason:	protect sewer system and water ways from ongoing post construction pollutants
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Like the concept but there is not enough specific information
TG Vote:	Unanimous

P093	LogID 6322	503.4 Stormwater management
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Submitter:	Aaron gary, self
Requested Action:	Add new as follows
Proposed Change:	<u>(5) Complete gutter and downspout system directs storm water away from foundation to landscaping or catchment system - 8 points</u>
Reason:	To direct rainwater away from the structure to prevent erosion and to protect the structure itself, and/or for rainwater capture
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Unanimous

P094	LogID 1515	503.4 Stormwater management
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Submitter:	Heather Dylla, National Asphalt Pavement Association
Requested Action:	Delete without substitution

Proposed Change:	Permeable materials are used for driveways, parking areas, walkways and patios according to the following percentages: (d) less than 25 percent 2 (e) 25 – 50 percent 5 Greater than 50 percent 10
Reason:	Giving points specifically to permeable materials may encourage their use where they are not practical or not even the best solution for Stormwater management. Their efficacy depends on site limitations such as soil permeability, depth to impermeable layers and water table, and topography. It is recommended that permeable materials are evaluated together with all other low impact development practices (question 3) to encourage the best stormwater management solution.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Permeable materials are an important tool for maintaining post construction hydrology.
TG Vote:	Unanimous

P095	LogID 17-080	Section 503.4 Stormwater management
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Submitter:	Greg Johnson for the Greenscapes Alliance	
Requested Action:	Delete Section 505.1 (4) and revise as follows	
Proposed Change:	<u>503.4 Stormwater management.</u> (2) Permeable materials are used for driveways, parking areas, walkways and patios according to the following percentages: (d) <u>10 percent to less than 25 percent</u> <u>(add 2 points for use of vegetative paving system)</u> 2 (e) <u>25-50 percent</u> <u>(add 4 points for use of vegetative paving system)</u> 5 (f) <u>greater than 50 percent</u> <u>(add 6 points for use of vegetative paving system)</u> 10	
Reason:	The point awards from Sec. 405.1 (4) are relocated here to eliminate double counting but also to reward the use of vegetative paving systems, which are environmentally superior durable surfaces. A VPS sequesters carbon and produces oxygen. A VPS supports bacteria and other micro-organisms that mitigate hydrocarbon pollution; a likely problem on driving and parking surfaces. A VPS evapotranspires, returning moisture to the air and providing much more cooling than permeable hardscapes. A VPS filters dust and pollutants from the air. The trimmings from managed VPSs improve soil quality, either in situ or when removed for composting. A VPS is not subject to clogging where permeable hard surfaces are. The carbon impacts alone of installing vegetation in an open cell grid or over a recycled plastic matrix are orders of magnitude less harmful than those of producing and providing concrete, asphalt, mined and crushed stone, mined and washed pea rock, or other inorganic materials. A lower limit on qualifying area is added to respond to verifier concerns identified in TG discussions.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	8-2	

P096	LogID 6164	503.5 Landscape plan
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute
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Requested Action:	Revise as follows	
Proposed Change:	(4) <u>For sites receiving more than 12 inches of average annual precipitation the EPA WaterSense Water Budget Tool or equivalent is used when implementing the maximum percentage of turf areas.</u>	2 5
	(5) <u>For landscaped vegetated areas on sites receiving 12 or less inches of average annual precipitation, the maximum percentage of turf area is:</u>	
Reason:	To address concerns with water use for turfgrass in arid climates, where there is no existing turf limitation ordinance, it is proposed that points for turf limitations be awarded only where annual precipitation averages 12 or less inches per year and that the use of a WBT be used to establish turf limits for sites that average more than 12 inches of precipitation per year. It is also proposed that the maximum points for a 100% turf limitation be equal to the points awarded for use of a WBT. See the additional substantiation for the complete reason	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Do not want to eliminate access to these points for areas that have more than 12 inches of annual precipitation but are limiting turf for other reasons.	
TG Vote:	8-1	

P097	LogID 6342	503.5 Landscape plan
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Submitter:	Brent Mecham, Irrigation Association	
Requested Action:	Revise as follows	
Proposed Change:	4) EPA WaterSense Water Budget Tool <u>or ANSI/ASABE S623.1 Jan2017 Determining Landscape Plant Water Demands standard</u> or equivalent is used when implementing the maximum <u>determining</u> the percentage of turf areas.	
Reason:	As a published document, this ANSI standard provides the necessary equations, plant factors and instructions to create a landscape water budget and determine the water requirement to maintain the landscape. As a national standard it is equivalent to EPA WaterSense Water Budget Tool but perhaps has an advantage in the fact that the plant factors take into account the climate.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Valuable concept but should move somewhere else that talks about the overall landscape design generically and not specifically related to turf grass.	
TG Vote:	8-1 (abstention)	

P098	LogID 6222	503.5 Landscape plan
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Revise as follows	
Proposed Change:	503.5 Landscape plan. A plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment <u>or human health and well-being.</u>	
Reason:	Human health and well-being are key objectives of green, high-performing buildings and sites. "Our nation is in the midst of a lively public policy debate on how best to enable individuals and communities to make healthier choices. In recent years, with the rapid advance of green building practices, the connection between green building and its promotion of human health has become increasingly clear: Done right, the built environment can have profound positive effects on health, both human and environmental. At their worst, our building materials and designs, and our choices about location, building construction, operation and maintenance, contribute to some of the key public health concerns of modern	

	society, from asthma to cancer to obesity. At their best, our buildings and communities can be powerful protectors and promoters of health and well-being. We must shift practice such that our definitions of sustainable building include the well-being of the people in the buildings and the community around them as a matter of course – not an incidental byproduct. In the new paradigm, human performance must be seen as important as energy performance; health conservation equal to water conservation; health management on par with waste management." Health is a Human Right, Green Building Can Help; USGBC January 2013
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Health and well-being is currently outside the scope of the standard.
TG Vote:	8-1

P099	LogID 6240	503.5 Landscape plan
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	503.5 Landscape plan. A plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment. (Where "front" only or "rear" only plan is implemented, only half of the points (rounding down to a whole number) are awarded for Items (1)-(8))
Reason:	For projects that use a design/build methodology which often skips the development of a formal plan during design credit should still be available. While this may not be best practice, the resulting verified installation can still achieve many of the goals of this credit without the currently stipulated plan. As such, giving a project full credit for the items they can accomplish (i.e. 2-3,5-9) while not awarding points for the items they can't only makes sense.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	View planning and execution as two discrete operations.
TG Vote:	Unanimous

P100	LogID 6572	503.5 Landscape plan
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Submitter:	Jack Karlin, Turfgrass Water Conservation Alliance																				
Requested Action:	Revise as follows																				
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3

Reason:

The Turfgrass Water Conservation Alliance® (TWCA®) is a 501c3 nonprofit committed to water conservation and preserving the ecological services provided by turfgrass in the managed environment. Representing 93 members around the world in academia, government, and private sector, TWCA's coalition reaches beyond our industry members. TWCA® provides education based on scientific information which contradicts many of the opinions and much of the misinformation about turfgrass. Further, the TWCA® recognizes that water and plants are necessary to sustain life, and strive to protect the environment in which we live. Destruction of the environment by the removal of plant materials, including turfgrass is detrimental to the health and wellbeing of our society. Turf serves as an important sink for Carbon; nationwide, single family detached homes with yards sequester enough carbon to take 44,000 cars off the road each year¹. That is the same as every person in Coachella CA not driving for a year. Turf filters fine particulate and dust out of the air² improving air quality, reduces noise and glare³ and cools the air to help mitigate the heat island effect caused by the ever-expanding blanket of hard, impervious surfaces covering large swathes of the United States. Green spaces in general, and turf in particular, are linked to large scale improvements in the physical and mental health of the population⁴ as well as attenuating the health gaps between the richest and poorest citizens of communities⁵. The removal of plant matter from any environment, managed or natural, should be considered long and with great care. Decisions made today to remove or limit turf may conserve water in the short term. It may take years or decades, even, for the long term negative consequences to be felt. However, when the consequences are felt it will be in the form of higher cooling costs, louder, dirtier cities, and shorter, less healthy, less happy lives. Further, to treat turf as a monolith is to ignore the broad spectrum of genetic diversity represented by this classification of plants and discounts decades of research that have gone into reducing the water needs of turfgrasses^{6,7}. TWCA's third party, peer review process has identified over 80 varieties that have demonstrated statistically significant water efficiencies over conventional varieties of the same species. The key to long term outdoor water savings in residential development is education and engagement. Awarding points for the use of a Water Budgeting Tools (WBT) encourages contractors and end-users to learn more about their landscapes and engage with both the design and maintenance processes. TWCA proposes raising the awarded points for using a Water Budgeting Tool to incentivize engagement with and understanding of the landscaped areas surrounding houses. We believe this engagement and understanding will significantly contribute to water savings over the life of the development. Incentivizing the use of literally any other landscape plant for vegetated areas does not ensure responsible landscaping or water conservation and could result in an increase of the water requirements for a landscape depending on the landscape plants used. This system also ignores the broad range of demonstrated water efficiencies available in turfgrasses today. Finally, given the significant advances made in the development of drought tolerant, rewarding the elimination of turf is rewarding the elimination of well adapted plants through most of climates in the United States. TWCA believes it is most prudent to limit the award of points for prescriptive turf limits to those areas receiving less than twelve (12) inches or precipitation per year. An alternative point system endorsed by the TWCA uses the following scheme: For vegetated areas in landscape areas receiving less than twelve (12) inches precipitation per year, the maximum percentage of all turf areas is: GREEN BUILDING PRACTICES POINTS 403.6 Landscape plan. 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This point system also eliminates the unfounded demonization of turf. References: 1) R. Lal and B. Augustin (eds.) Carbon Sequestration in Urban Ecosystems, DOI 10.1007/978-94-007-2366-5_14 © Springer Science+Business Media B.V. 2012 2) Water Quality and Quantity Issues for Turfgrasses in Urban Landscapes, Council for Agricultural Science and Technology (CAST), Special Publication 27, 2006,Ch2. 3) Beard, J. B. and R. L. Green. 1994. The role of turfgrasses in environmental protection and their benefits to humans. J Environ Qual 23(9):452-460. 4) Jolanda Maas, Robert A Verheij, Sierp de Vries, Peter Spreeuwenberg, Francois G Schellevis, Peter P Groenewegen. "Morbidity is related to a green living environment." J Epidemial Community Health. Published Online 15 October 2009. DOI:10.1136/jech.2008.079038 5) Richard Mitchell, Frank Popham "Effect of exposure to natural environment on health inequalities: an observational population study" Lancet 2008; 372: 1655-60 6) Karcher, D.E., Richardson, M.D., Hignight, K., and Rush, D. "Drought Tolerance of Tall Fescue Populations Selected for High Root/Shoot Ratios and Summer Survival" Crop Science 2008; v48 n2: 771-777 7) Karcher, D., M. Richardson and J. Landreth. 2008. Drought tolerance

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TG Reason:	Worked out language in chapter 4 and carried through to chapter 5																												
TG Vote:	Unanimous																												

P101	LogID 6484	503.5 Landscape plan
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Submitter:	Jeremy Velasquez, TexEnergy Solutions
Requested Action:	Add new as follows
Proposed Change:	Add: Alternative compliance path for design & build landscapes: Points would only be allowed to be taken if the landscaping contractor is made aware of the requirements in 503.5 before installation & the measures are installed & verified to comply with the various options in 503.5.
Reason:	Based on various factors, some residential developments do not have the opportunity for a landscape architect to design all of the landscaping and submit plans to the contractor. Some landscaping contractors are capable of installing efficient landscape without printed plans as long as the verifier can communicate the intent of the design ahead of time.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Language is unclear
TG Vote:	Unanimous

P102	LogID 6565	503.6 Wildlife habitat
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Submitter:	Craig Conner, self
Requested Action:	Add new as follows
Proposed Change:	503.7 Bee friendly habitat is provided by landscaping. A minimum of 500 sq ft of landscaping provides bees with a food source in spring, summer and fall. Water is available. The landscape is planned such that no pesticides will be used. Points 10
Reason:	Natural bee habitat is being destroyed. Native bee populations are in decline. Landscape can help provide for native bees.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	503.6 (2) To improve pollinator habitat, at least 10 percent of planted areas are composed of flowering and nectar producing plant species. Invasive plant species shall not be utilized. Points 3
TG Reason:	Point levels are consistent with the other items in the category and the change is consistent with similar language in Chapter 4.
TG Vote:	Unanimous

P103	LogID 6466	503.6 Wildlife habitat
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Add new as follows	
Proposed Change:	<u>(5) Areas of lawn are integrated with maintenance tolerant, non-invasive flowering herbaceous plants in an amount to achieve not less than 20% of the groundcover. Plants should typically flower at less than 4 inches in height. (Consult a local agricultural extension service or university or for appropriate plants)</u>	<u>3</u>
Reason:	Ample evidence exists that incorporating maintenance tolerant flowering plants in lawns supports bee and other arthropod habitat. Encouraging new ways of providing and maintaining landscaping in managed environments can reconcile human needs for durable groundcovers and habitat needs for bees.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	503.6 (5) To improve pollinator habitat, at least 10 percent of planted areas are composed of flowering and nectar producing plant species. Invasive plant species shall not be utilized.	
TG Reason:	Point levels are consistent with the other items in the category and the change is consistent with similar language in Chapter 4.	
TG Vote:	7-2	

P104	LogID 6146	505.1 Driveways and parking areas
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute	
Requested Action:	Revise as follows	
Proposed Change:	(4) Water permeable surfaces, including Vegetative paving systems, are utilized to reduce the footprint of impervious surface driveways, fire lanes, streets or parking areas.	
Reason:	Sec. 503.4 (4) already awards points for stormwater management by using permeable materials for driveways and parking areas. Accepting any water permeable surface to earn points for 505.1 (4) allows double counting for the same material installation. It robs the standard of credibility, particularly when the point awards are relatively high. Is using concrete pavers, with the associated carbon impacts, really worth up to 16 points? This question is particularly true at lot scale, where a driveway could easily represent more than 75% of impervious area. More importantly, allowing any permeable material to be awarded the same points as a vegetative paving system (VPS) implies that they have equivalent environmental benefit which is simply not true. A VPS sequesters carbon and produces oxygen. A VPS supports bacteria and other micro-organisms that mitigate hydrocarbon pollution; a likely problem on	

	driving and parking surfaces. A VPS evapotranspires, returning moisture to the air and providing much more cooling than permeable hardscapes. A VPS filters dust and pollutants from the air. The trimmings from managed VPSs improve soil quality, either in situ or when removed for composting. A VPS is not subject to clogging where permeable hard surfaces are. The carbon impacts alone of installing vegetation in an open cell grid or over a recycled plastic matrix are orders of magnitude less harmful than those of producing and providing concrete, asphalt, mined and crushed stone, mined and washed pea rock, or other inorganic materials. The committee is encouraged to return to the language originally proposed in the previous cycle of the NGBS and reserve these innovative practice points for enhanced environmental performance as intended in Sec. 505.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Need to be consistent between two sections, no reason to single out vegetative pavers as they are included in both sections.
TG Vote:	8-1

P105	LogID 6174	505.4 Mixed-use development
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	Mixed Use Development: (1) The lot contains a mixed use building (2) Lot is part of a residential community that contains a mixed use building.
Reason:	Allows single family mixed use communities to be recognized for achieving the same goal.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Mixed Use Development: (1) The lot contains a mixed use building (2) Lot is part of a residential community that contains a mixed use building. Lot is within ½ mile of a mixed-use building(s) 4 points
TG Reason:	Appropriate to encourage locating residential near mixed-use opportunities.
TG Vote:	Unanimous

P106	LogID 17-072	Section 505.5 Community garden(s)
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Submitter:	Greg Johnson for the Greenscapes Alliance									
Requested Action:	Revise as follows									
Proposed Change:	<table border="1"> <tr> <td>505.5 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local <u>Local</u> food production for residents or area consumers.</td> <td style="text-align: center;">3</td> </tr> <tr> <td>(a) <u>A portion of the lot is established as community garden(s) for the residents of the site</u></td> <td style="text-align: center;"><u>3</u></td> </tr> <tr> <td>(b) <u>Composting area and physical provisions are provided for accumulating compost</u></td> <td style="text-align: center;"><u>1</u></td> </tr> <tr> <td>(c) <u>Signs designating the garden area are posted.</u></td> <td style="text-align: center;"><u>1</u></td> </tr> </table>	505.5 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local <u>Local</u> food production for residents or area consumers.	3	(a) <u>A portion of the lot is established as community garden(s) for the residents of the site</u>	<u>3</u>	(b) <u>Composting area and physical provisions are provided for accumulating compost</u>	<u>1</u>	(c) <u>Signs designating the garden area are posted.</u>	<u>1</u>	
505.5 Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local <u>Local</u> food production for residents or area consumers.	3									
(a) <u>A portion of the lot is established as community garden(s) for the residents of the site</u>	<u>3</u>									
(b) <u>Composting area and physical provisions are provided for accumulating compost</u>	<u>1</u>									
(c) <u>Signs designating the garden area are posted.</u>	<u>1</u>									
Reason:	The proposed additional measures will make community gardening more effective.									
TG Recommendation (AS or AM or D):	AM									
Modification of Proposed Change:	<table border="1"> <tr> <td>505.5 Multifamily or Mixed-Use Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local <u>Local</u> food production for residents or area consumers.</td> </tr> </table>		505.5 Multifamily or Mixed-Use Community garden(s). A portion of the lot is established as a community garden(s) for the residents of the site to provide local <u>Local</u> food production for residents or area consumers.							
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	(a) A portion of the lot is established as community garden(s) for the residents of the site
	(b) Areas Composting area and physical provisions are provided for accumulating compost-composting
	(c) Signs designating the garden area are posted.
TG Reason:	Applicable to multifamily and mixed-use projects but not single-family lots
TG Vote:	Unanimous

P107	LogID 6192	505.5 Community garden(s)
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	505.5 Community garden(s). Provide local food production for residents or area <u>consumers through one of the following:</u> (1) A portion of the lot is established as a community garden(s), available to residents of the lot, to provide for local food production to residents or area consumers. (2) <u>Locate the project within a 0.5-mile walk distance of an existing or planned farmers market that is open or will operate at least once a week for at least five months of the year.</u>
Reason:	Access to fresh produce offers healthy food options for residents, and purchase of fresh produce directly from farmers demystifies the cycle of food production. This measure also supports local economic development that increases the economic value and production of farmlands and community gardens. This revision creates a path for sites where the community garden is not feasible but the end-goal can still be met through site-selection.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	505.5 Community garden(s). Provide local food production for residents or area <u>consumers through one of the following:</u> (1) A portion of the lot <u>of at least 250 sq feet</u> is established as a community garden(s), available to residents of the lot, to provide for local food production to residents or area consumers. <u>Three point awarded per 250 sq feet. Maximum 9 points.</u> (2) <u>Locate the project within a 0.5-mile walk distance of an existing or planned farmers market/farm stand that is open or will operate at least once a week for at least five months of the year. 3 points</u>
TG Reason:	Incentivize community gardens on site and use of local produce/support for local farmers.
TG Vote:	Unanimous

P108	LogID 6455	505.5 Community garden(s)
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Submitter:	Michael Cudahy, PPFA
Requested Action:	Revise as follows
Proposed Change:	Community garden(s). A-portion s of the site <u>of at least 250 sq feet is are</u> established as a community garden(s) for the residents of the site to provide local food production for residents or area consumers. <u>One point awarded per 250 sq feet. Maximum 3 points.</u>
Reason:	To establish a minimum size for the gardens and allow for point tier discussion. The committee or task group can discuss and determine if a minimum size is necessary. Some regions may use vertical gardens and not need much land area, but some regions my best be served by multiple fruit trees, or even palms. Also allows for a discussion of tiered points. A project would have more flexibility with a point tier allocation.
TG Recommendation (AS or AM or D):	D

Modification of Proposed Change:	
TG Reason:	Redundant, made similar change above.
TG Vote:	Unanimous

P109	LogID 6151	505.6 Multi-unit plug-in electric vehicle charging
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Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for at least 4 2 percent of parking stalls. <u>Fractional values shall be rounded up to the nearest whole number.</u> Electrical capacity....
Reason:	There are now over 577,000 plug-in electric vehicles (plug-in hybrids or battery electric vehicles) being driven in the US. All major manufacturers offer the vehicles for sale, and there are federal tax incentives, as well as state incentives, for their use. As of early 2016, there were over 12,200 public EV charging stations in the US. This proposal increases the percentage requirement from 1 to 2 percent (the original proposal that was discussed during the last NGBS revision was 5 percent), and adds clarify language if the calculation yields a value like 1.4 (in which case, they would have to install 2 EV charging stations).
TG Recommendation (AS or AM or D):	TG 2: AM TG 6: AM
Modification of Proposed Change:	TG 2: 505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for <u>at least one space or</u> at least 4 2 percent of parking stalls. <u>Fractional values shall be rounded up to the nearest whole number.</u> TG 6: Plug-in electric vehicle charging capability is provided for at least 1 percent of parking stalls, <u>earning 4 points. An additional two points can be earned for each percentage point above 1% for a maximum of 10 points. Fractional values shall be rounded up to the nearest whole number.</u> Electrical capacity....
TG Reason:	TG 2: Clarifies the language and intent on both minimum number and the treatment of fractional percentage going forward
TG Vote:	TG 2: Unanimous TG 6: 13 Yes; 1 Abstain

P110	LogID 6156	505.6 Multi-unit plug-in electric vehicle charging
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Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	...(208/240V-40 80 amp)... (208-240V/40 80A)
Reason:	This proposal updates the specification match the current SAE information, as shown on the following web site and below: http://www.sae.org/smartgrid/chargingprimer.pdf "AC Level 2 Charging" – 208 –240 AC charging up to 80 amps, on-board vehicle charger (~19kw)"
TG Recommendation (AS or AM or D):	TG 2: AS TG 6: AM
Modification of Proposed Change:	TG 6: Delete "(208/240V-40A)" and replace with "(as defined by SAE)", and add appropriate SAE reference document to Chapter 13.
TG Reason:	TG 6: Continuing evolution of technology and associated standards
TG Vote:	TG 2: Unanimous TG 6: 14 Yes

P111	LogID 6535	505.6 Multi-unit plug-in electric vehicle charging
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Submitter:	Craig Conner, self
Requested Action:	Revise as follows
Proposed Change:	505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for at least 4 <u>2</u> percent of parking stalls. <u>The number of charging stations is rounded to the nearest even number, with no points for zero chargers and odd number rounded up.</u> Electrical capacity in main electric panels supports Level 2 charging (208/240V-40 amp). Each stall is provided with conduit and wiring infrastructure from the electric panel to support Level 2 charging (208/240V-40 amp) service to the designated stalls, and stalls are equipped with either Level 2 charging AC grounded outlets (208/240V-40 amp) or Level 2 charging stations (240V/40A) by a third party charging station. Charging stations and electrical service is in accordance with the NEC Article 625.
Reason:	More economical chargers have two chargers on one post. Rounding simply allows the use of these chargers. The National Electric Code (NEC) specifies how chargers and electrical supply are connected in Article 625.
TG Recommendation (AS or AM or D):	TG 2: D TG 6: D
Modification of Proposed Change:	
TG Reason:	TG 2: Denied on basis of previous action TG 6: This proposal is similar to as LogID 6151, See LogID 6151
TG Vote:	TG 2: Unanimous TG 6: 14 Yes; 1 No Vote

P112	LogID 6537	505.6 Multi-unit plug-in electric vehicle charging
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Submitter:	Chuck Foster, self
Requested Action:	Revise as follows
Proposed Change:	Plug-in electric vehicle charging capability is provided for at least 4 <u>3</u> percent of parking stalls.
Reason:	There are now over 577,000 plug-in electric vehicles (plug-in hybrids or battery electric vehicles) being driven in the US. All major manufacturers offer the vehicles for sale, and there are federal tax incentives, as well as state incentives, for their use. As of early 2016, there were over 12,200 public EV charging stations in the US. This proposal increases the percentage requirement from 1 to 3 percent (the original proposal that was discussed during the last NGBS revision was 5 percent), and adds clarify language if the calculation yields a value like 1.4 (in which case, they would have to install 2 EV charging stations).
TG Recommendation (AS or AM or D):	TG 2: D TG 6: D
Modification of Proposed Change:	
TG Reason:	TG 2: Denied on basis of previous action TG 6: This proposal is similar to as LogID 6151, See LogID 6151
TG Vote:	TG 2: Unanimous TG 6: 14 Yes; 1 No Vote

P113	LogID 6552	Other for Chapter 5 (include section number and title below)
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Submitter:	Kat Benner, self / TexEnergy
Requested Action:	Add new as follows
Proposed Change:	<u>505 HEALTH AND WELL BEING (...prior to INNOVATIVE PRACTICES)</u>

Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Lacks specificity
TG Vote:	7-1

P114	LogID 6241	Other for Chapter 5 (include section number and title below)
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>505.X Pre Construction Durability Assessment</u> Assess Project lot and Building risks associated with lot location, develop strategies to address specified risks. Include measures in plans
Reason:	assess and address site / location specific risks eg Pests/UV/Excessive thermal considerations (Hot/Cold/ Humidity) Moisture/Soil/Terrain/Landscape and include measures to address in plans
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Does not have enough specificity for the group to take action.
TG Vote:	Unanimous

P115	LogID 6162	Other for Chapter 5 (include section number and title below)
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute
Requested Action:	Add new as follows
Proposed Change:	<u>505.7 Open green open space.</u> Provide not less than 150 square feet (14 m ²) of open green space per sleeping room on the lot. 3 points
Reason:	The World Health Organization (WHO) has suggested that every city should have a minimum of 9 square meters (100 ft ²) of green space per person. 1.5 people per sleeping room is a common metric used for municipal zoning and planning purposes, so providing 150 sf ² approximates the WHO recommendation. http://www.baharash.com/liveable-cities-how-much-green-space-does-your-city-have/
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<u>505.7 Open/ green open, space.</u> Provide not less than 150 square feet (14 m ²) of open/green space per sleeping room on the lot.
TG Reason:	
TG Vote:	Unanimous

P116	LogID 6482	Other for Chapter 5 (include section number and title below)
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Submitter:	Jeremy Velasquez, TexEnergy Solutions
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Requested Action:	Add new as follows
Proposed Change:	New Section Section 506.1 - Exterior Activity Space - Provide an exterior space as part of the overall development that is intended for physical activity to promote health and wellness.
Reason:	Many subdivisions and multifamily projects lack a dedicated space outside where people can exercise or participate in other physical activities.
TG Recommendation (AS or AM or D):	TG 2: D TG 6: D
Modification of Proposed Change:	
TG Reason:	TG 2: Anticipating a more comprehensive proposal regarding health and well-being. TG 6: Lack of specificity as to how to achieve
TG Vote:	TG 2: Unanimous TG 6: 13 Yes; 1 No

P117	LogID 6459	Other for Chapter 5 (include section number and title below)
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute																													
Requested Action:	Add new as follows																													
Proposed Change:	<p>506 <u>Human Health and Wellbeing</u></p> <p><u>506.0 Intent. Site design, preparation and development practices are used to foster human health and wellbeing.</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"><u>506.1. The site is designed to encourage physical activity</u></th> <th style="width: 20%;"><u>Points</u></th> </tr> </thead> <tbody> <tr> <td>(1) <u>Facilities for active outdoor recreation are provided</u></td> <td style="text-align: center;">-</td> </tr> <tr> <td style="padding-left: 20px;">(a) <u>A swimming pool with an automatic pool cover is provided.</u></td> <td style="text-align: center;">3</td> </tr> <tr> <td style="padding-left: 20px;">(b) <u>A tennis, pickleball, basketball or handball court is provided.</u></td> <td style="text-align: center;">1 point per court 3 points max</td> </tr> <tr> <td style="padding-left: 20px;">(c) <u>A playground and equipment are provided.</u></td> <td style="text-align: center;">3</td> </tr> <tr> <td style="padding-left: 20px;">(d) <u>An informal play area is provided for children and pets.</u></td> <td style="text-align: center;">3</td> </tr> <tr> <td>(2) <u>The building is located within .5 mile (.8 km) of parks with playgrounds, exercise facilities, parks, trails, an accessible body of water, or other physical activity facilities open to the public.</u></td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <th style="width: 80%;"><u>506.2 The site is designed to promote social interaction or outdoor respite</u></th> <th style="width: 20%;"><u>Points</u></th> </tr> <tr> <td>(1) <u>Outdoor gathering places are provided</u></td> <td style="text-align: center;">-</td> </tr> <tr> <td style="padding-left: 20px;">(a) <u>Outdoor space with seating and tables for picnicking or socializing is provided.</u></td> <td style="text-align: center;">1 point per space 5 points max</td> </tr> <tr> <td style="padding-left: 20px;">(b) <u>Outdoor seating oriented toward scenic views or vistas such as mountains, skylines, or bodies of water is provided.</u></td> <td style="text-align: center;">1 point per seating area 5 points max</td> </tr> <tr> <td>(2) <u>A community lawn or town square is provided</u></td> <td style="text-align: center;">5</td> </tr> <tr> <td><u>506.3 Community garden(s).</u> A portion of the site is established as a community garden(s) for the residents of the site to provide local food production for residents or area consumers.</td> <td style="text-align: center;">3</td> </tr> </tbody> </table>		<u>506.1. The site is designed to encourage physical activity</u>	<u>Points</u>	(1) <u>Facilities for active outdoor recreation are provided</u>	-	(a) <u>A swimming pool with an automatic pool cover is provided.</u>	3	(b) <u>A tennis, pickleball, basketball or handball court is provided.</u>	1 point per court 3 points max	(c) <u>A playground and equipment are provided.</u>	3	(d) <u>An informal play area is provided for children and pets.</u>	3	(2) <u>The building is located within .5 mile (.8 km) of parks with playgrounds, exercise facilities, parks, trails, an accessible body of water, or other physical activity facilities open to the public.</u>	5	-	-	<u>506.2 The site is designed to promote social interaction or outdoor respite</u>	<u>Points</u>	(1) <u>Outdoor gathering places are provided</u>	-	(a) <u>Outdoor space with seating and tables for picnicking or socializing is provided.</u>	1 point per space 5 points max	(b) <u>Outdoor seating oriented toward scenic views or vistas such as mountains, skylines, or bodies of water is provided.</u>	1 point per seating area 5 points max	(2) <u>A community lawn or town square is provided</u>	5	<u>506.3 Community garden(s).</u> A portion of the site is established as a community garden(s) for the residents of the site to provide local food production for residents or area consumers.	3
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	<u>Composting area and physical provisions are provided for accumulating compost</u>	1
	<u>Signs designating the garden area are posted.</u>	1
	-	-
	<u>506.4. Tick-borne disease.</u> The site is designed to mitigate hazards from tick-borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>	Points
	(1) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u>	<u>2 points per building</u>
	(2) <u>A minimum of a 5 foot (1.5 m) border of paving, mulch, gravel, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas.</u>	<u>3</u>
	(3) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 (6 m) feet of buildings.</u>	<u>3</u>
	-	-
	<u>406.5 Outdoor smoking prohibition.</u>	Points
	<u>Signs are provided prohibiting smoking at the following locations:</u>	-
	(a) <u>Smoking is prohibited within 25 feet (7.5 m) of all building exterior doors and operable windows or building air intakes within 15 (4.5 m) vertical feet of grade or a walking surface.</u>	<u>5</u>
	(b) <u>Smoking is prohibited on decks, balconies, patios and other occupied exterior spaces.</u>	<u>5</u>
	(c) <u>Smoking is prohibited at all parks, playgrounds, and community activity or recreational spaces.</u>	<u>5</u>
	-	-
Reason:	Human health and wellness are important considerations in green and sustainable design and building. Outdoor areas offer important health and wellness benefits when designed and installed appropriately. General substantiation for health and wellness was submitted with a parallel proposal to Chapter 4. This proposal is accompanied by substantiation of the need for design to mitigate tick hazards to human health. Tick-borne diseases are at epidemic levels in North America and much of the world, are expanding rapidly, and are projected to worsen with climate change. Managed landscape are an important tool to mitigate tick hazards.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		

TG Reason:	Subsequent proposals better align with the intent.
TG Vote:	Unanimous

P118	LogID 6324	Other for Chapter 5 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	<u>505.X Building Orientation.</u> Lot is part of a community where a minimum if 75% of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south. - 6 points
Reason:	Takes existing NGBS 2015 practice, 403.2, and applies it to a lot.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Lacks specificity
TG Vote:	Unanimous

P119	LogID 6321	Other for Chapter 5 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION <u>505.13 Community Design for Cross Ventilation:</u> <u>Lot is within a community located in a hot, humid climate where 75% of streets are within 20-30 degrees wither direction of parallel to the prevailing wind - 5 POINTS</u>
Reason:	In hot, humid climate good ventilation is necessary to remove excess heat from streets and open spaces and to provide cross-ventilation in buildings. Streets parallel to the prevailing wind have the highest velocity while streets perpendicular to the prevailing wind yield lower velocity and more turbulent wind in the streets.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Conceptually a good idea but regionally specific and lacks specificity similar to the proposal above.
TG Vote:	Unanimous

P120	LogID 6345	Other for Chapter 5 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	<u>505.X Street Network:</u> <u>Locate the project in an area of high intersection density. - 5 POINTS</u> <u>INSERT definition in Section 201.</u> <u>Area of High Intersection Density. An area whose existing streets and sidewalks create at least 90 intersections per square mile (35 intersections per square kilometer).</u> <u>INSERT into Verifier Resource Guide...</u>

	<u>When determining the number of intersections, include the following: intersections within a ¼ mile (400 meter) radius of project boundary; streets and sidewalks that are available for general public use and not gated; sidewalk intersections provided they are a unique right of way (i.e., a sidewalk through a city park); and publicly accessible alleys.</u>
Reason:	This credit encourages health and well being of home owners and tenants on by encouraging daily physical activity. It has the added benefits of promoting projects that are well connected to the community at large as well as encourage development within existing communities that minimizes vehicle miles traveled.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	5-3-1(abstention)

P121	LogID 6350	Other for Chapter 5 (include section number and title below)
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Submitter:	Jeremy Velasquez, TexEnergy Solutions
Requested Action:	Add new as follows
Proposed Change:	Section 506 - <u>Add a new section as relevant for Health and Well-being credits.</u>
Reason:	As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Based on previous action. Anticipating a more detailed proposals addressing this topic
TG Vote:	Unanimous

P122	LogID 6326	Other for Chapter 5 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION <u>505.9 Community Recycling Program: Lot is within a community that has a recycling program. - 5 POINTS</u>
Reason:	Promotes recycling on a community level as a means to align with practice 607 which does the same on the house level. Being able to collect recycling in a homes when you have no place to take it is aspirational but not particularly effective.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Very common practice, but when it's not available, it's outside of the builder or developers ability to control
TG Vote:	5-1(abstention)

P123	LogID 6247	Other for Chapter 5 (include section number and title below)
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>505.XX</u> Project has emergency plan in place to address relevant Natural Disasters
Reason:	to ensure project is protected against relevant potential impact from natural hazards e.g.Floods/Earthquakes/Landslides/Hurricanes/Tornadoes/Dust Storms/Wildfires
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<u>Section 1001.1</u> Project has emergency plan in place to address relevant Natural Disasters. Plan must be incorporated in the Owners Manual. 5 points
TG Reason:	No point value was submitted. Valuable practice that belongs in chapter 10.
TG Vote:	Unanimous

P124	LogID 6178	Other for Chapter 5 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION <u>505.10 District Heating and Cooling:</u> Lot is within a community that has a district heating and/or cooling system.
Reason:	District cooling and heating can be very efficient as it removes the need for building specific space heating systems, space cooling systems, and/or domestic water heating systems.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	More of a building attribute than a lot attribute
TG Vote:	Unanimous

P125	LogID 6179	Other for Chapter 5 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION <u>505.12 Local Economic Development and Community Wealth Creation:</u> <u>(1) Demonstrate that local preference for construction employment and subcontractor hiring was part of your bidding process - 3 POINTS</u> <u>(2) Demonstrate that you achieved at least 20% local employment - 4 POINTS</u> <u>(3) Provide physical space for small business, nonprofits, and/or skills and workforce education. - 5 POINTS</u>
Reason:	Housing often has the opportunity to act as an economic catalyst within a neighborhood and community. Housing projects offer opportunities to directly enhance the lives of residents when they include physical space that can accommodate various programs for learning, job skill development and other social interactions. Numerous studies have documented the ways in which affordable housing projects have positive economic impacts on their surrounding neighborhoods.
TG Recommendation (AS or AM or D):	D

Modification of Proposed Change:	
TG Reason:	Community development proposal and not directly related to the lot/green development.
TG Vote:	Unanimous

P126	LogID 6177	Other for Chapter 5 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION 505.8 Open Space: Lot is within a community that has 1 acre or greater set aside as open space
Reason:	Based on NGBS 2015 405.9 and applied to a single lot versus entire land development
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Addressed in a previous action and not specific enough about definition of community and distance to open space.
TG Vote:	Unanimous

P127	LogID 6154	Other for Chapter 5 (include section number and title below)
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Submitter:	Greg Johnson
Requested Action:	Add new as follows
Proposed Change:	505.7 Community activity(s). A portion of the lot is established for physical activity or social interaction, available to residents of the lot for community recreation and interaction. <u>3 points</u>
Reason:	Increased density is a worthwhile goal of the standard, but denser residential conditions drive a corresponding need for open space, preferably vegetated, suitable for physical activity or social gathering to enhance human health and well-being. Children in particular can benefit from healthy play area close to their residences.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Wellness working on updated proposal.
TG Vote:	8-1

P128	LogID 17-028	New for Chapter 5
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Submitter:	Kent Sovocool
Requested Action:	Add new as follows
Proposed Change:	505.7 Reconnecting Humans with the Environment (1) Setting. A portion of the lot of at least 400 square feet is set aside or developed as native or adapted landscaping for purposes of quiet contemplation, communing, or meditation. The Setting must be environmentally consistent with the region in which the community is located. – 4pts (2) Creatures and Habitat. At least one creature and habitat consistent with the native environment are present in the Setting or viewable from the Setting. – 2pts

	<p>(3) Interpretation. Signs or other media are used to identify and explain the organic and inorganic elements in the Setting and how they relate to the environment. – 2pts</p> <p>(4). The Human at Rest. A bench, nook, “sitting rock”, or similar sitting area is provided to encourage and facilitate use of the Setting. The sitting place(s) shall blend with the Setting – 2pts.</p> <p>(a) The area for resting is shaded – 2 pts.</p> <p>(b) The area provides a water fountain or bottle filling station – 2 pts.</p> <p>(c) Signage is present explaining smoking is prohibited – 2 pts.</p>
Reason:	Landscapes can act to relax and recharge while providing a connection to the environment. While visiting natural settings provides an ideal path to achieve this state, built environments can offer a degree of similar benefits. The key here is to weave in both organic and inorganic elements and thus the term “landscaping” rather than just plants. Additional points opportunities exist for adding appropriate creatures of interest, educational benefits, and resting areas.
TG Recommendation (AS or AM or D):	
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Withdrawn by submitter and contents incorporated in to Log ID 17-074

P129	LogID 17-060	New for Chapter 5
Submitter:	Paul Cabot, American Gas Association	
Requested Action:	Add new section 505.7 as follows:	
Proposed Change:	<u>505.7 Multi-unit residential CNG vehicle fueling. CNG vehicle residential fueling appliances are provided for at least 1 percent of the parking stalls. The CNG fueling appliances shall be listed in accordance with ANSI/CSA NGV 5.1 and installed in accordance to the appliance manufacturer’s installation instructions.</u>	
Reason:	Add recognition for CNG residential fueling appliances as a green building practice. The new standard ANSI/CSA NGV 5.1 has been approved and all major model fuel gas installation codes have been updated to require that residential CNG fueling appliances be listed to that standard and installed in accordance with the manufacturer’s installation instructions. Home fueling using natural gas is a green practice since it taps into the efficient natural gas transmission and distribution system and avoids the systemic losses from converting crude oil into refined gasoline and diesel. Fueling at home also reduces vehicle mileage by reducing trips to gasoline stations for fueling. The proposed text is structured similar to coverage for electric vehicle charging stations.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Add 4 points	
TG Reason:	Same rubric used for electric vehicle charging	
TG Vote:	Unanimous	

P130	LogID 17-070	New for Chapter 5
Submitter:	Greg Johnson for the Greenscapes Alliance	
Requested Action:	Add new as follows	
Proposed Change:	<u>505.7 Community activity (s). A portion of the lot is established for physical activity or social interaction, available to residents of the lot for community recreation and interaction. 3 points</u>	
Reason:	Increased density is a worthwhile goal of the standard, but denser residential conditions drive a corresponding need for open space, preferably vegetated, suitable for physical activity or social gathering to enhance human health and well-being. Children in particular can benefit from healthy play area close to their residences. Regardless of the age of the occupants, having these facilities onsite saves energy by mitigating the need for travel, likely by motor vehicle, to the desired amenity.	
TG Recommendation (AS or AM or D):	AM	

Modification of Proposed Change:	505.7 Multifamily or Mixed-Use Community activity (s). A portion of the lot <u>not less than 500 square feet is identified on the plan and constructed, is established</u> for physical activity or social interaction, available to residents of the lot for community recreation and interaction. 3 points
TG Reason:	Applicable to multifamily and mixed-use projects but not single-family lots. Needed additional clarification regarding size.
TG Vote:	9-1

P131	LogID 17-074	New for Chapter 5
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Submitter:	Greg Johnson for the Greenscapes Alliance
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Requested Action:	Add new as follows
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Proposed Change:	505.X. The lot provides access to amenities	Points
	(3) <u>Facilities for active outdoor recreation are provided</u>	
	(a) <u>A swimming pool with an automatic pool cover is provided.</u>	3
	(b) <u>A tennis, pickleball, basketball, volleyball, handball, or similar court is provided.</u>	1 point per court 3 points max
	(c) <u>A playground and equipment are provided.</u>	3
	(d) <u>An informal play area is provided for children and pets.</u>	3
	(4) <u>The building is located within .5 mile (.8 km) of parks with playgrounds, exercise facilities, parks, trails, an accessible body of water, or other physical activity facilities open to the public.</u>	5
	(5) <u>Outdoor gathering places are provided</u>	
	(a) <u>Outdoor space with seating and tables for picnicking or socializing is provided.</u>	1 point per space 5 points max
	(b) <u>Outdoor seating oriented toward scenic views or vistas such as mountains, skylines, or bodies of water is provided.</u>	1 point per seating area 5 points max
(c) <u>A community lawn or town square is provided</u>	5	

Reason:	Having nearby access to social and recreational amenities in a community not only supports good health, but it can save considerable transportation energy. It is preferable that members of a community be able to access these amenities without traveling by automobile or at worst by limited automobile travel. Additionally, these amenities are often associated with outdoor greenspaces which have many environmental benefits, such as stormwater control, atmospheric cleansing and cooling, oxygen production, and the capacity to support increased density in livable, desirable communities.
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TG Recommendation (AS or AM or D):	AM
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Modification of Proposed Change:	505.X. The multifamily or mixed-use lot provides access to amenities	Points
	(6) <u>Facilities for active outdoor recreation are provided</u>	
	(e) <u>A swimming pool with an automatic pool cover is provided.</u>	3
	(f) <u>A tennis, pickleball, basketball, volleyball, handball, or similar court is provided.</u>	1 point per court 3 points max
	(g) <u>A playground and equipment are provided.</u>	3
	(h) <u>An informal play area is provided for children and pets.</u>	3
	(7) <u>The building is located within .5 mile (.8 km) of parks with playgrounds, exercise facilities, parks, trails, an accessible body of water, or other physical activity facilities open to the public.</u>	5
	(8) <u>Outdoor gathering places are provided</u>	
	(d) <u>Outdoor space with seating and tables for picnicking or socializing is provided.</u>	1 point per space 6 points max
	(e) <u>Outdoor seating oriented toward scenic views or vistas such as mountains, skylines, or bodies of water is provided.</u>	1 point per seating area

		6 points max
	(f) <u>A community lawn or town square is provided</u>	5
	<p>(g) Setting. A portion of the lot of at least 400 square feet is set aside or developed as native or adapted landscaping for purposes of quiet contemplation, communing, or meditation. The Setting must be environmentally consistent with the region in which the community is located. – 4pts</p> <p>(h) Creatures and Habitat. At least one creature and habitat consistent with the native environment are present in the Setting or viewable from the Setting. – 2pts</p> <p>(i) Interpretation. Signs or other media are used to identify and explain the organic and inorganic elements in the Setting and how they relate to the environment. – 2pts</p> <p>(j). The Human at Rest. A bench, nook, “sitting rock”, or similar sitting area is provided to encourage and facilitate use of the Setting. The sitting place(s) shall blend with the Setting – 2pts.</p> <p>(a) The area for resting is shaded – 2 pts.</p> <p>(b) The area provides a water fountain or bottle filling station – 2 pts.</p> <p>(g) (c) Signage is present explaining smoking is prohibited – 2 pts.</p>	

TG Reason: Only applicable to multifamily and mixed-use lots. Added items g-l from LogID 17-028

TG Vote: 8-1, 5-1-1 when we decided to add items g-i.

P132 LogID 17-075 New for Chapter 5

Submitter:	Greg Johnson for the Greenscapes Alliance	
Requested Action:	Add new as follows	
Proposed Change:	505.X Smoking prohibitions. Signs are provided prohibiting smoking at the following locations:	
	(a) <u>Smoking is prohibited within 25 feet (7.5 m) of all building exterior doors and operable windows or building air intakes within 15 (4.5 m) vertical feet of grade or a walking surface.</u>	3
	(b) <u>Smoking is prohibited on decks, balconies, patios and other occupied exterior spaces.</u>	3
	(c) <u>Smoking is prohibited at all parks, playgrounds, and community activity or recreational spaces.</u>	3
Reason:	Significant resources, with associated life cycle costs, are used to treat smoking related diseases. Similarly, discarded smoking materials are frequently to blame for exterior and structure fires which also need significant resources to control and which are sources of air pollution. Besides being an important health consideration, discouraging the outdoor air pollution related to smoking should be incentivized.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	505.X Smoking prohibitions. Signs are provided on multifamily and mixed-use lots prohibiting smoking at the following locations:	
	(a) <u>Smoking is prohibited within 25 feet (7.5 m) of all building exterior doors and operable windows or building air intakes within 15 (4.5 m) vertical feet of grade or a walking surface.</u>	
	(b) <u>Smoking is prohibited on decks, balconies, patios and other occupied exterior spaces.</u>	
	(c) <u>Smoking is prohibited at all parks, playgrounds, and community activity or recreational spaces.</u>	
TG Reason:	Does not apply to single-family lots.	
TG Vote:	Unanimous	

P133 LogID 17-076 New for Chapter 5

Submitter: Greg Johnson for the Greenscapes Alliance

Requested Action:	Add new as follows												
Proposed Change:	<table border="1"> <tr> <td>505.X The site is designed to mitigate hazards from tick-borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u></td> <td><u>Points</u></td> </tr> <tr> <td>(c) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u></td> <td>7</td> </tr> <tr> <td>(d) <u>A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u></td> <td><u>5</u></td> </tr> <tr> <td>(d) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u></td> <td><u>3</u></td> </tr> <tr> <td>(e) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u></td> <td><u>3</u></td> </tr> </table>	505.X The site is designed to mitigate hazards from tick-borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>	<u>Points</u>	(c) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u>	7	(d) <u>A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u>	<u>5</u>	(d) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u>	<u>3</u>	(e) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u>	<u>3</u>		
505.X The site is designed to mitigate hazards from tick-borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>	<u>Points</u>												
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(d) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u>	<u>3</u>												
(e) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u>	<u>3</u>												
Reason:	In addition to the obvious health benefits, there are a number of environmental benefits associated with preventing the spread of the fifteen U.S tick borne diseases identified by the Centers for Disease Control and Prevention. Smart landscape design can forestall the use of pesticides to control ticks near human occupied area. Less obvious, but perhaps more significant, a report by the Johns Hopkins Bloomberg School of Public Health found that, on average, people with Lyme disease had 87 percent more visits to the doctor and 71 percent more visits to the emergency room within the year following diagnosis. This represents a tremendous cost in energy for transportation and for the share of materials and energy life cycle costs embodied in treatment facilities, operationally and within the infrastructure. These environmental impacts can in part be avoided through site design.												
TG Recommendation (AS or AM or D):	AM												
Modification of Proposed Change:	<table border="1"> <tr> <td>406.XX The site is designed to mitigate hazards from tick-insect borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u></td> <td><u>Points</u></td> </tr> <tr> <td>(c) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u></td> <td>8</td> </tr> <tr> <td>(d) <u>(b) A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u></td> <td><u>5</u></td> </tr> <tr> <td>(f) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u></td> <td><u>3</u></td> </tr> <tr> <td>(g) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u></td> <td><u>3</u></td> </tr> <tr> <td>(h) <u>Conditions that are favorable to mosquito breeding, such as standing water, are not present on site</u></td> <td><u>2</u></td> </tr> </table>	406.XX The site is designed to mitigate hazards from tick-insect borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>	<u>Points</u>	(c) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u>	8	(d) <u>(b) A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u>	<u>5</u>	(f) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u>	<u>3</u>	(g) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u>	<u>3</u>	(h) <u>Conditions that are favorable to mosquito breeding, such as standing water, are not present on site</u>	<u>2</u>
406.XX The site is designed to mitigate hazards from tick-insect borne disease <u>(To acquire points the site must be documented to be at risk by an epidemiologist or qualified professional)</u>	<u>Points</u>												
(c) <u>Dense plant beds, shrubbery and woody plants are not planted within 5 feet (1.5 m) of occupied buildings</u>	8												
(d) <u>(b) A minimum of a 5 foot (1.5 m) border of paving, mulch, bare earth, or turfgrass is provided between woods or weedy areas and people trafficked or occupied areas, including playgrounds and dog parks.</u>	<u>5</u>												
(f) <u>Vegetation that is attractive to deer, as documented by a qualified professional, is not planted within 20 feet (6 m) of buildings</u>	<u>3</u>												
(g) <u>Paths or trails maintained through natural or non-maintained areas are a minimum of 5 feet wide (1.5 m)</u>	<u>3</u>												
(h) <u>Conditions that are favorable to mosquito breeding, such as standing water, are not present on site</u>	<u>2</u>												
TG Reason:	Written to include mosquitos in addition to ticks.												
TG Vote:	7-1 abstention												

P134	LogID 17-045	New for Chapter 5
Submitter:	Michelle Foster, Home Innovation Research Labs	
Requested Action:	Add new as follows:	
Proposed Change:	<p><u>For multifamily buildings, on-site dedicated recreation space for exercise or play opportunities for adults and/or children open and accessible to residents is provided.</u></p> <ol style="list-style-type: none"> (1) <u>A dedicated area of at least 400 square feet is provided inside the building with adult exercise and/or children's play equipment. [XX points]</u> (2) <u>A courtyard, garden, terrace, or roof space at least 10% of the lot area that can serve as outdoor space for children's play and /or adult activities is provided. [XX points]</u> (3) <u>Active play/recreation areas are illuminated at night to extend opportunities for physical activity into the evening. [XX points]</u> <p><u>For single family homes, outdoor recreation space for adults and/or children is provided within 1 mile. [XX points]</u></p>	

Reason:	
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-2 (Site & Lot Development) as Chapter 5 falls under their direct purview.</i>
TG Recommendation (AS or AM or D):	TG 2: AS TG 6: AM (Hines, Della Valle)
Modification of Proposed Change:	TG 6: ... For single family homes, outdoor recreation space for adults and/or children is provided within 1 mile.
TG Reason:	
TG Vote:	TG 2: Unanimous TG 6: 8-0-1

Chapter 6 Resource Efficiency

P135	LogID 6457	601.9 Above-grade wall systems
Submitter:	Ben Edwards, self	
Requested Action:	Delete without substitution	
Proposed Change:	601.9	
Reason:	A green building standard should not promote the use of carbon-/energy-dense building materials without more guidance. Sections 610 (LCA) and 611.4 (EPD) already are the appropriate locations for the many benefits of mass walls to be considered in a holistic context.	
TG Recommendation (AS or AM or D):	Approve as Submitted (Bill Freeman, Matt Dobson)	
Modification of Proposed Change:		
TG Reason:	Referral to TG-5 to ensure that it's covered in the energy chapter	
TG Vote:	8 (favor) / 1 (opposed) / 1 (abstain), chair not voting	

P136	LogID 6214	602.0 Intent (Enhanced Durability and Reduced Maintenance)
Submitter:	Eric Skare, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>602.5 Fire Sprinkler Systems. An automatic fire sprinkler system is installed in accordance with NFPA or ICC installation standards, or equivalent.</u> <u>4 points</u>	
Reason:	Fire sprinkler systems provide significant benefits from a building durability standpoint, and drastically reduce the environmental impact of a fire in several ways. The primary justification for adding credit for fire sprinkler systems comes from the FM Global Research Technical Report titled Environmental Impact of Automatic Fire Sprinkler Systems. A link to this document is provided (http://www.iccsafe.org/gr/Documents/AdoptionToolkit/FM-Global-EnvironmentallImpactAutomaticFireSprinklers.pdf) and the document will be e-mailed as well.	
TG Recommendation (AS or AM or D):	Disapprove (Matt Dobson, Michael Fischer)	
Modification of Proposed Change:		
TG Reason:	TG feels the i-codes address fire sprinklers sufficiently, doesn't make sense to give points in the green standard, there are other first safety equipment that could be introduced to the NGBS, and the report provided doesn't provide LCA or product declarations on this system. If anything, there should be a referral back to the IRC or IBC for specificity. The IRC has Section 2904 on residential fire sprinkler systems.	
TG Vote:	8 (favor) / 0 (opposed) / 2 (abstain), chair not voting	

P137	LogID 17-001	Section 602 Enhanced durability and reduced maintenance
Submitter:	Chuck Arnold, KCMA	
Requested Action:	Add new as follows	
Proposed Change:	<u>602.1.15 – Kitchen and vanity cabinets. All kitchen and vanity cabinets are certified in accordance with the ANSI/KCMA A161.1 performance standard. 2 points.</u>	
Reason:	Certification of kitchen and bathroom cabinets is not mandated by the model building codes, it is voluntary. Cabinets that are certified in accordance with the ANSI/KCMA A161.1 performance standard are more durable compared to cabinets that are not certified, and therefore will need repair/replacing on a less frequent basis. Section 602 is titled Enhanced Durability and Reduced Maintenance and the stated	

	intent is: design and construction practices are implemented that enhance the durability of materials and reduce in-service maintenance. ANSI/KCMA A161.1 certified cabinets meet this intent.
TG Recommendation (AS or AM or D):	AM (Dobson, Velasquez)
Modification of Proposed Change:	... in accordance with the ANSI/KCMA A161.1 performance standard <u>or equivalent</u> . 2 points. Add ANSI/KCMA A161.1 to referenced standards section
TG Reason:	The addition is appropriate for improving the durability of cabinetry, and adding "or equivalent" allows the addition of other programs or standards. The addition of this practice requires adding the standard to the referenced standards section of the NGBS.
TG Vote:	Y(7), n(0), a(2) chair not voting

P138	LogID 17-043	Section 602.1.7 Moisture Control Measures
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Submitter:	Michelle Foster, Home Innovation Research Labs
Requested Action:	Add new as follows:
Proposed Change:	<u>WATER DAMAGE MANAGEMENT. To prevent building materials from being damaged by water during construction, store and protect susceptible materials and finishes. [XX points]</u>
Reason:	Protecting building materials from water and moisture can prevent the growth of mold and other water damage.
TG Recommendation (AS or AM or D):	D (Stanonik, Freeman)
Modification of Proposed Change:	
TG Reason:	This proposal is a normal practice, and the language of the proposal is too vague – including where the language would be place. The mold provision is already covered in the standard.
TG Vote:	10-0-0 chair not voting

P139	LogID 6226	602.1.8 Water-resistive barrier
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>Have 3rd Party Water Barrier / Window Leakage Test conducted and Passed per Industry standards</u>
Reason:	passing a performance test will help ensure weather barrier is installed as intended /per design.....potentially heading off potential moisture /intrusion problems and associated costs
TG Recommendation (AS or AM or D):	Disapprove (Michael Fischer, Matt Dobson)
Modification of Proposed Change:	
TG Reason:	For windows, testing per ASTM E331 is in IRC and IBC. Some wall claddings do have E331 testing and must include a fenestration product. No specificity on which industry standards and which tests are included. As written, it can be interpreted that the testing need be done on every window in the building. And without points, it appears to be mandatory.
TG Vote:	11 (favor) / 0 (opposed) / 0 (abstain), chair not voting

P140	LogID 6449	602.3 Roof water discharge
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Submitter:	Craig Conner, self
Requested Action:	Revise as follows

Proposed Change:	602.3 Roof water discharge. A gutter and downspout system or splash blocks and effective grading are provided to carry water a minimum of 5feet (1524 mm) away from perimeter foundation walls <u>and directed onto landscaping or other permeable surface.</u>
Reason:	This change more clearly states how roof water discharge should be directed. This change should be under only the name of "Howard C. Wiig, State of Hawaii, representing self"
TG Recommendation (AS or AM or D):	Disapprove (Jeremy Velasquez, Matt Dobson)
Modification of Proposed Change:	
TG Reason:	For multifamily it is not reasonable to assume landscaping or permeable surface is available on all side of the building, and this proposal is out of the scope of this chapter (better in site chapter).
TG Vote:	10 (favor) / 0 (opposed) / 0 (abstain) chair not voting

P141	LogID 6298	603.1 Reuse of existing building
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	Major elements or components of existing buildings and structures are reused, modified, or deconstructed for later use. (AP points is awarded for every 200 square feet (18.5m²) of floor area. 8% of major elements or components of existing building reused and every 10% of major elements or components of existing building adapted or deconstructed. The percentage is consistently calculated on a weight, volume, or cost basis.)	
Reason:	Depending on the floor plan and floor height, the reuse of the same 200 square-foot floor area may result in a reuse of different amounts of materials. A 200 square-foot floor area in one case may be unfinished and support a limited number of short, interior-type partitions. In another case, a 200 square-foot floor area may be fully finished and fully surrounded by heavier, exterior and/or load-bearing walls, while also incorporating tall interior partitions. The amount of material reused in the two cases would be distinctly different. While building reuse, adaptation and disassembly are all high on the waste management hierarchy, building reuse is a source reduction measure that has the potential to carry the greatest overall benefit. Award points based on comparable amounts of material reused; to that end, use percentages of materials affected, based on the weight, volume or cost of materials, and not the floor area. To reflect the greater benefit afforded by building reuse, allocate the maximum number of points to the reuse of major elements or components by awarding a point to every 8% reused, amounting to the total of 12 available points for this credit in the case of the reuse of 96% of major elements. Allocate a slightly lesser number of points to adaptation and disassembly of major elements or components by awarding a point to every 10% adapted or disassembled, amounting to the total of 10 points for the adaptation or disassembly of a 100% of major elements.	
TG Recommendation (AS or AM or D):	Disapprove (Frank Stanonik, Matt Dobson)	
Modification of Proposed Change:		
TG Reason:	Proponent may have miss-read the section. It's simply a convenient way to count points. The proposed language makes calculating the points extremely complex.	
TG Vote:	6 (favor) / 3 (opposed) / 1 (abstain)	

P142	LogID 6346	604.1 Recycled content (Recycled-content building materials)
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete without substitution	
Proposed Change:	604.1 Recycled content. Building materials with recycled content are used for two minor and/or two major components of the buildings.	
Reason:	To increase use of the standard, reduce the complexity and remove these calculations. Recycled content is captured through EPDs, which are easier for the end user to locate and provide a much better indicator as they focus on the outcome of the various inputs. Individually, single-attributes have little bearing on the	

	final impact and are becoming antiquated, so they are being replaced with EPDs. Because EPDs are already a part of this standard, the available points that would be removed with this section could be added into the Product Declarations, Section 611.4, if the Standard was to keep the same number of threshold points.
TG Recommendation (AS or AM or D):	Disapprove (Michael Fischer, Jeremy Velasquez)
Modification of Proposed Change:	
TG Reason:	EPDs are not a one-size fits all solution and are not widely available. Maintaining the recycled content option is appropriate at this time.
TG Vote:	8 (favor) / 1 (opposed) / 0 (abstain)

P143	LogID 6299	605.1 Construction waste management plan
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Submitter:	Susan Gitlin, US Environmental Protection Agency
Requested Action:	Revise as follows
Proposed Change:	<p>605.0 Intent. Waste generated during construction is recycled. All waste classified as hazardous is properly handled and disposed of.</p> <p style="text-align: right;">(Points not awarded for hazardous waste removal.)</p> <p>605.1 Hazardous Waste. <u>The construction and waste management plan shall include information on the proper handling and disposal of hazardous waste. All hazardous waste is properly handled.</u> Mandatory</p> <p>605.42 Construction waste management plan.</p> <p>605.23 On-site recycling.</p> <p>605.34 Recycled construction materials.</p>
Reason:	The text that states points are not awarded for hazardous waste removal is ambiguous and can be misunderstood. An important subsection with the mandatory requirement that the construction waste management plan include information on the proper handling and disposal of hazardous waste is missing. (Do note that correcting the above issues in Chapter 6 will make the chapter consistent with the corresponding Chapter 11, Section 11.605.) To address these issues, delete from Subsection 605.0 Intent, the ambiguous text stating points are not awarded for hazardous waste removal. Add Subsection 605.1 Hazardous Waste. Reorder the current subsections of Section 605.
TG Recommendation (AS or AM or D):	Approve as modified (Thompson, Fischer) Second motion: make the same changes to section 11.605 (Fischer, Francis)
Modification of Proposed Change:	<p>605.0 Intent. Waste generated during construction is recycled. All waste classified as hazardous is properly handled and disposed of.</p> <p>605.1 Hazardous Waste. <u>The construction and waste management plan shall include information on the proper handling and disposal of hazardous waste. All hazardous waste is properly handled and disposed.</u> Mandatory</p>
TG Reason:	For consistency with Section 11.605 and to add provisions for hazardous waste to the waste management plan.
TG Vote:	6 (favor) / 1 (opposed) / 3 (abstain) Second vote: 10 (favor) / 0 (opposed) / 0 (abstain)

P144	LogID 6300	605.1 Construction waste management plan
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Submitter:	Susan Gitlin, US Environmental Protection Agency
Requested Action:	Revise as follows

<p>Proposed Change:</p>	<p>605.42Construction waste management plan. ...diverting, through methods such as reuse, salvage, recycling or manufacturer reclamation, a minimum of 50 percent (by weight) of nonhazardous construction and demolition waste materials from disposal <u>in landfills and combustion, excluding energy and material recovery</u>. For this practice, land clearing debris is not considered <u>a construction and demolition material and is excluded from the calculation</u>waste. Materials used as alternative daily cover are considered construction waste and do not count toward recycling or salvaging.</p> <p>For remodeling projects or demolition of an existing facility, the waste management plan includes the recycling of 95 percent of electronic waste components (such as printed circuit boards from computers, building automation systems, HVAC, fire and security control boards) by an EPA <u>third-party</u> certified E-Waste recycling facility.</p> <p>Exceptions: Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations. A recycling facility (traditional or E-Waste) offering material receipt documentation is not available within 50 miles of the jobsite.</p>
<p>Reason:</p>	<p>The section instructs stakeholders to divert construction and demolition materials from disposal. Commonly, such language would clarify that the materials should be diverted from disposal in landfills and combustion, excluding energy and material recovery. (note that we are referring to “combustion” rather than “incineration;” although frequently misunderstood, combustion is a broader activity that does include energy and material recovery, but incineration is done so as to treat or resize waste for the purpose of disposal and does not include energy or material recovery; because of the common misunderstanding, we do recommend acknowledging energy recovery, but including it under the broader, correct activity, i.e., combustion.) The C&D debris that gets diverted is a resource (material) and not waste and should be referred to accordingly. It is unclear what is intended by an “EPA-certified” e-waste recycling facility; EPA does not “certify” e-waste recycling facilities. Currently, the Responsible Recycling Standard (R2) and the e-Stewards standard are the two available e-waste certification programs to which facilities may be certified. See: http://www.sustainableelectronics.org/ and http://e-stewards.org/ Finally, if the intent of the “Exceptions” section is to indicate specific circumstances when the practice does not apply, or to acknowledge situations when it cannot be met by the project team seeking the points, then it is unclear why the first item is listed. How is stating “Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations,” an Exception? (We would argue this is an exclusion from the calculation, not an exception from the practice - due to some imposed practical difficulties - and as such, it is most appropriately addressed in the language of the credit.) To address these issues, introduce that materials should be diverted from disposal in landfills and combustion, excluding energy and material recovery. Refer to construction and demolition materials and not waste. Replace “EPA-certified” e-waste recycling facility with “third-party certified” e-waste recycling facility. Delete the first item listed under Exceptions.</p>
<p>TG Recommendation (AS or AM or D):</p>	<p>Accept as modified (Dobson, Stanonik) replace proposal with</p>
<p>Modification of Proposed Change:</p>	<p>605.42Construction waste management plan. ...diverting, through methods such as reuse, salvage, recycling or manufacturer reclamation, a minimum of 50 percent (by weight) of nonhazardous construction and demolition waste from disposal. For this practice, land clearing debris is not considered <u>a construction waste</u>. Materials used as alternative daily cover are considered construction waste and do not count toward recycling or salvaging.</p> <p>For remodeling projects or demolition of an existing facility, the waste management plan includes the recycling of 95 percent of electronic waste components (such as printed circuit boards from computers, building automation systems, HVAC, fire and security control boards) by an EPA-certified E-Waste recycling facility.</p> <p>Exceptions: Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations. A recycling facility (traditional or E-Waste) offering material receipt documentation is not available within 50 miles of the jobsite.</p>
<p>TG Reason:</p>	<p>The changes to the first paragraph and the removal of the exceptions were complicating rather than clarifying; they were also limiting. However, the TG did agree with the removal of “EPA certified” as appropriate.</p>
<p>TG Vote:</p>	<p>11 (favor) / 1 (opposed) / 0 (abstain)</p>

P145	LogID 17-034	Section 605.1 Construction waste management plan
Submitter:	Chris Schwarzkopf, Energy Diagnostics	
Requested Action:	Change language for 605.1 (Construction waste management plan paragraph number 2)	
Proposed Change:	For remodeling projects or demolition of an existing facility For buildings following the new construction path that also have a renovation component, the waste management plan includes the recycling of 95 percent of electronic waste components (such as printed circuit boards from computers, building automation systems, HVAC, fire and security boards) by an EPA certified E-Waste recycling facility.	
Reason:	Chapter 6 is for new construction, remodel and renovation projects have Chapter 11	
TG Recommendation (AS or AM or D):	AS (Freeman, Jacobs)	
Modification of Proposed Change:		
TG Reason:	This change clarifies that scope of chapter 6.	
TG Vote:	9-0-1 chair not voting	

P146	LogID 6327	606.2 Wood-based products
Submitter:	Rob Brooks, self	
Requested Action:	Delete and substitute as follows	
Proposed Change:	<p>606.2 Wood-based products. Wood or wood-based products shall be derived from a manufacturers' fiber procurement system that has been audited by an <i>approved agency</i> as compliant with the provisions of:</p> <p>(a) ASTM D7612 as a responsible or certified source. Government or tribal forestlands whose water protection programs have been evaluated by an <i>approved agency</i> as compliant with the responsible source designation of ASTM D7612 are exempt from auditing in the manufacturers' fiber procurement system.</p> <p>(b) National Wood Flooring Association's Responsible Procurement Program (RPP)</p>	
Reason:	<p>• This proposed change related to the acceptance of forest products is vital to the use of ICC-700 in states where forest product production is an important source of revenue, such as Oregon. Neighboring states, such as Washington, Idaho and California also rely upon forest product production and support the use of sustainable forestry and best management practices to maintain (among other objectives) water quality. • The IgCC, USGBC Pilot Credit and the USDA BioPreferred Program currently recognize ASTM D7612 responsible and certified sources. The 2012 ICC-700 recognizes responsible sources through the SFI Fiber Sourcing program. Alternatively, SFI Chain of Custody is a certified source. (see attached table). All of the existing forest certification programs listing in ICC-700 are recognized by ASTM D7612. • ASTM D7612 provides a means to specify sustainable forestry via the certified sources designation without the reference to proprietary standards such as SFI, FSC, ATFS, etc. The American National Standards Institute's (ANSI) Essential Requirements for Due Process, excludes specifying ecolabels—FSC, PEFC, SFI—that is, their brand name—because that would run afoul of ANSI's prohibition on the use of commercial terms. It says in part, "[t]he appearance that a standard endorses any particular products, services or companies must be avoided." Previously, there was no method to generically specify these ecolabels, but with the advent of the ASTM D7612, the generic reference is available, which should replace the proprietary ecolabel. The USGBC Pilot Credit recognizes this advantage and avoids comparison between proprietary systems to avoid improper commercial endorsement. • ASTM D7612 provides a means to specify enforcement of best management practices by governmental agencies that have authority to protect water quality on both certified and non-certified forestlands via the responsible source designation. For Oregon, enforcement is achieved through the Oregon Forest Practices Act (OFPA), regardless of whether the forestland is certified to sustainable forestry standards, or not. o Enforcement is defined as having authority, staffing, budget, proof of citations and the ability to adapt the rules to improve the system. Oregon forestlands subject to the OFPA have been independently audited and found compliant to the responsible source designation by PFS Corporation. o The emphasis on water quality for government or tribal forestlands is due to the existing rules already in place to protect forests (see https://cfpub.epa.gov/watertrain/moduleFrame.cfm?parent_object_id=1517 The degree to which these rules are enforced by each state has been evaluation by the National Association of State Foresters <a 202="" 56="" 937="" 953"="" data-label="Page-Footer" href="http://www.stateforesters.org/state-forestry-agency-best-management-practices-protecting-</p> </td> </tr> </tbody> </table> </div> <div data-bbox="> <p>2018 NGBS UPDATE</p> </p>	

	<p>water#sthash.7VDEx3y6.dpbs The three tiers of enforcement are non-regulatory, quasi-regulatory and regulatory in order of increasing compliance. ASTM D76712 recognizes those states having quasi-regulatory and regulatory compliance under the responsible source designation. o The strength of the responsible sources program is the ability to issue citations (fines) for noncompliance to water quality rules and to reward states/jurisdictions that fund enforcement. Citations are issued to operators on both certified and non-certified forests. In some states, such as Oregon, the OFPA rules extend beyond water quality. Oregon producers want recognition of their compliance to OFPA, but not at the same tier as certified sources to avoid market confusion that responsible and certified sources are equivalent. o Manufacturers are required to trace fiber procurement under both the responsible and certified sources designation. Further information can be provided to the ICC-700 committee upon request. o The strength of the certified sources program is to write rules that extend beyond issues related to water quality. When damage to the forest happens from non-compliance, certified source programs can de-certify clients, they cannot issue citations or stop-work orders to remediate damage. o Thus, the responsible source program is an important enforcement component (and partner) to a certified source program. It will provide recognition for those states who actively monitor, enforce and punish offenders not in compliance with the law. It encourages states to enforce their water quality rules through inspection, documentation and citation, which is complementary to the voluntary sustainable forestry standards, or certified sources. It supports the “boots on the ground”, actively monitoring harvest operations on both public and private lands. o ASTM D7612 not only supports the expanded enforcement of existing water quality rules (aka best management practices), but also recognizes voluntary compliance to those sustainable forestry practices above and beyond state water quality rules. • In Oregon, the OFPA applies to approximately 10 million acres; of which approximately 4 million acres are certified forests. If the responsible source designation were also applied to federal and tribal lands, the designation would apply to approximately 30 million acres of forestland in Oregon. The fiscal implication of the responsible source designation is significant to the increased value of building products derived from private and public lands, which is why the state of Oregon is presenting this request. The responsible source designation provides states recognition of best management practice enforcement on public lands without the controversial decision and cost to convert to the certified source designation. Further information about ASTM D7612 is found at https://www.astm.org/standardization-news/?q=features/green-greener-greenest-ma17.html.</p>
TG Recommendation (AS or AM or D):	Approve as modified, strike and replace (Francis, Fischer)
Modification of Proposed Change:	<p>606.2 Wood-based products. Wood or wood-based products are certified to the requirements of one of the following recognized product programs :</p> <p>[a-g remains unchanged];</p> <p><u>(h) a manufacturers’ fiber procurement system that has been audited by an approved agency as compliant with the provisions of ASTM D7612 as a responsible or certified source. Government or tribal forestlands whose water protection programs have been evaluated by an approved agency as compliant with the responsible source designation of ASTM D7612 are exempt from auditing in the manufacturers’ fiber procurement system.</u></p> <p>1) A minimum of two <u>responsible or</u> certified wood-based products are used for minor components of the building. 3 2) A minimum of two <u>responsible or</u> certified wood-based products are used in major components of the building 4</p>
TG Reason:	The TG agreed with the proponent’s concept, but wanted to keep items a-g to maintain the usability of the NGBS.
TG Vote:	9 (favor) / 0 (opposed) / 0 (abstain)

P147	LogID 6348	606.3 Manufacturing energy
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete without substitution	
Proposed Change:	Delete without substitution.	
Reason:	Use of the word ‘materials’ is does not promote use of this section for final products which could have multiple materials or assemblies and could be from various locations. An effective way to capture this information for products, or materials, would be through EPDs. EPDs are more widely recognized in the industry and easier for Standard user to obtain. Individually, these single-attributes have little bearing on	

	the final impact and are becoming antiquated, so they are being replaced with EPDs. Because EPDs are already a part of this standard, the available 6 points that would be removed with this section could be added into the Product Declarations, Section 611.4, if the Standard was to keep the same number of threshold points.
TG Recommendation (AS or AM or D):	Disapprove (Fischer, Dobson)
Modification of Proposed Change:	
TG Reason:	The TG previously took an action (logID 6346) to keep single attributes to avoid solely relying on EPDs.
TG Vote:	10 (favor) / 0 (opposed) / 1 (abstain), chair not voting

P148	LogID 1502	606.3 Manufacturing energy
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Submitter:	Todd Jones, Center for Resource Solutions
Requested Action:	Revise as follows
Proposed Change:	<p>Materials manufactured using <u>renewable energy</u> for a minimum of 33 percent of the primary manufacturing process energy. <u>Non-electric energy used in manufacturing materials must be derived from (1) renewable sources, or (2) combustible waste sources, or (3) renewable energy credits (RECs) are used for major components of the building. Electricity used in manufacturing materials must be paired with renewable energy certificates (RECs), which must be retired. The building may purchase RECs on behalf of the building material supplier where the supplier has not purchased/used renewable electricity, with RECs, for manufacturing of building materials.</u></p> <p><u>Green-e certification (or equivalent) is required [or recommended] for renewable electricity purchases and materials manufactured using renewable electricity.</u></p>
Reason:	This requirement refers to renewable energy use in manufacturing of building materials, and therefore may refer to use of both electricity and non-electric energy in manufacturing. Currently, the options 1-3 are not differentiated as apply to either electricity or non-electric energy use. However, since RECs are required to claim use of renewable electricity in all cases, including from on-site renewable generation equipment, we suggest differentiating between electricity used in manufacturing, in which case RECs are required, and non-electricity energy used in manufacturing. It is also not clear that in option 3, RECs are being purchased by the building to be applied to the building materials, i.e. its supply chain, and not to the building's own electricity usage, and that RECs/RE may also be purchased or used by the supplier of the building materials. Finally, we recommend that Green-e certification be required, or at least recommended, to ensure that use of renewable electricity has been properly verified.
TG Recommendation (AS or AM or D):	Disapprove (Fischer, Stanonik)
Modification of Proposed Change:	
TG Reason:	The proponent include non-mandatory language and some of the language is technically incorrect ("the building may purchase RECs"). The proposal over-complicates the current REC system.
TG Vote:	10 (favor) / 0 (opposed) / 0 (abstain) chair not voting

P149	LogID 6301	607.1 Recycling and composting (Recycling and waste reduction)
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Submitter:	Susan Gitlin, US Environmental Protection Agency
Requested Action:	Revise as follows
Proposed Change:	The section instructs stakeholders to divert construction and demolition materials from disposal. Commonly, such language would clarify that the materials should be diverted from disposal in landfills and combustion, excluding energy and material recovery. (note that we are referring to "combustion" rather than "incineration," although frequently misunderstood, combustion is a broader activity that <u>does</u> include energy and material recovery, but incineration is done so as to treat or resize waste for the purpose of disposal and <u>does not</u> include energy or material recovery; because of the common misunderstanding, we do recommend acknowledging energy recovery, but including it under the broader, correct activity, i.e., combustion.)

	<p>The C&D debris that gets diverted is a resource (material) and not waste and should be referred to accordingly.</p> <p>It is unclear what is intended by an “EPA-certified” e-waste recycling facility; EPA does not “certify” e-waste recycling facilities. Currently, the Responsible Recycling Standard (R2) and the e-Stewards standard are the two available e-waste certification programs to which facilities may be certified. See: http://www.sustainableelectronics.org/ and http://e-stewards.org/</p> <p>Finally, if the intent of the “Exceptions” section is to indicate specific circumstances when the practice does not apply, or to acknowledge situations when it cannot be met by the project team seeking the points, then it is unclear why the first item is listed. How is stating “Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations,” an Exception? (We would argue this is an <u>exclusion from the calculation</u>, not an <u>exception from the practice</u>- due to some imposed practical difficulties - and as such, it is most appropriately addressed in the language of the credit.)</p> <p>To address these issues, introduce that materials should be diverted from disposal in landfills and combustion, excluding energy and material recovery. Refer to construction and demolition <u>materials</u> and not <u>waste</u>. Replace “EPA-certified” e-waste recycling facility with “third-party certified” e-waste recycling facility. Delete the first item listed under Exceptions.</p>
<p>Reason:</p>	<p>The spatial requirements to facilitate the recycling and composting of operational waste are vague. Typically, they would include the following criteria: • The dedicated spaces for the collection and storage of recyclables are accessible to both waste haulers and building occupants. • The dedicated spaces are of appropriate size and capacity to accommodate the collection and storage of recyclables and compostables for the entire building. • The recyclables and compostables for which to plan the collection and storage at a minimum include mixed paper, corrugated cardboard, glass, plastics, metals, green waste, food, and food soiled paper. • Food recovery is a top EPA priority. Organic materials make up the largest portion of the municipal solid waste stream and collection programs are expanding across the nation. Even if programs do not currently exist to manage these materials streams, dedicated collection space for future collection should be allocated. We therefore recommend clarifying the spatial requirements to facilitate the recycling and composting of operational waste.</p>
<p>TG Recommendation (AS or AM or D):</p>	<p>Tabled</p> <p>D (Stanonik, Prather)</p>
<p>Modification of Proposed Change:</p>	<p>The section instructs stakeholders to divert construction and demolition materials from disposal. Commonly, such language would clarify that the materials should be diverted from disposal in landfills and combustion, excluding energy and material recovery. (note that we are referring to “combustion” rather than “incineration;” although frequently misunderstood, combustion is a broader activity that <u>does</u> include energy and material recovery, but incineration is done so as to treat or resize waste for the purpose of disposal and <u>does not</u> include energy or material recovery; because of the common misunderstanding, we do recommend acknowledging energy recovery, but including it under the broader, correct activity, i.e., combustion.)</p> <p>The C&D debris that gets diverted is a resource (material) and not waste and should be referred to accordingly.</p> <p>It is unclear what is intended by an “EPA-certified” e-waste recycling facility; EPA does not “certify” e-waste recycling facilities. Currently, the Responsible Recycling Standard (R2) and the e-Stewards standard are the two available e-waste certification programs to which facilities may be certified. See: http://www.sustainableelectronics.org/ and http://e-stewards.org/</p> <p>Finally, if the intent of the “Exceptions” section is to indicate specific circumstances when the practice does not apply, or to acknowledge situations when it cannot be met by the project team seeking the points, then it is unclear why the first item is listed. How is stating “Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations,” an Exception? (We would argue this is an <u>exclusion from the calculation</u>, not an <u>exception from the practice</u>- due to some imposed practical difficulties - and as such, it is most appropriately addressed in the language of the credit.)</p> <p>To address these issues, introduce that materials should be diverted from disposal in landfills and combustion, excluding energy and material recovery. Refer to construction and demolition <u>materials</u> and not <u>waste</u>. Replace “EPA-certified” e-waste recycling facility with “third-party certified” e-waste recycling facility. Delete the first item listed under Exceptions.</p>

	<p>Submitted by the proponent after initially being tabled for further work:</p> <p>607.1 Recycling and composting. Recycling and composting by the occupants are facilitated by one or more of the following methods:</p> <p>(1) A built-in dedicated recycling and organic materials collection space in each kitchen and an aggregation/pick-up space in a garage, covered outdoor space, or other area for recycling containers is provided. and dedicated <u>areas accessible to waste haulers and building occupants for the collection and storage of recyclable and compostable materials for the entire building, are provided.</u> <u>External waste, recycling, and composting bins should be located adjacent to one another or in one enclosure to provide convenient access to recycling and composting.</u></p> <p>a. <u>Collection and storage space for recyclable materials must be sufficient to accommodate at a minimum: mixed paper, corrugated cardboard, glass, plastics, and metals. Collection and storage space for compostable materials must be sufficient to accommodate at a minimum: food waste and green waste.</u></p> <p>Recycling and organic material collection space, and a C-compost capability facility is <u>are</u> provided on the site.</p>
TG Reason:	There is objection to combining recycling and composting as one requirement for points. Splitting them up would be useful. The proposal lacks some clarity and needs further development. Adding composting to MF is logistically difficult. The proposal limits other options for providing recycling and organic material collection space (built-in vs counter top).
TG Vote:	4-1-2 (abs) chair not voting

P150	LogID 6234	607.1 Recycling and composting (Recycling and waste reduction)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>Multi Family Alternative to built in collection space - Management provides "blue box" recycling container or "blue Bins" and has designated recycling dumpsters onsite and /or contract with offsite sorting Recycling Facility</u>	
Reason:	provide alternative opportunity to encourage recycling to projects/tenants where space will prevent the built in option	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 11 – Proposal LogID 6235. The parallel proposal is being reviewed by TG-6.</i>	
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-6 (Multifamily) as the proposal will affect multifamily buildings.</i>	
TG Recommendation (AS or AM or D):	TG 3: Disapprove (Dobson, Fischer) TG 6: AM	
Modification of Proposed Change:	TG 3: N/A TG 6: <u>Add option 3 to 607.1 as follows: (3) Management provides "blue box" recycling container or "blue Bins" and has designated recycling dumpsters onsite and /or contract with offsite sorting Recycling Facility (3 pts)</u>	
TG Reason:	TG 3: 607.1(1) already covers what's being proposed, despite it not using the term multifamily.	
TG Vote:	TG 3: 7 (favor) / 0 (opposed) / 2 (abstain) TG 6: 14 Yes	

P151	LogID 6303	608.1 Resource-efficient materials
Submitter:	Susan Gitlan, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	608.1Resource-efficient materials. Products containing fewer materials are used to achieve same end-use requirements as conventional products, including but not limited to:	

	<p>(1) Lighter, thinner brick with depth less than 3 inches and/or brick with coring of more than 25 percent</p> <p>(2) (1) Engineered wood or engineered steel products</p> <p>(3) (2) Roof or floor trusses</p>
Reason:	Since engineered wood, engineered steel products and roof or floor trusses are incorporated intermittently in the façade, and/or entirely in the interior, their dematerialization is not likely to jeopardize the structure's overall energy efficiency. In fact, filling with insulation those spots in the exterior walls where the unneeded mass of structural elements would otherwise have been, reduces the thermal bridging associated with structural elements in exterior walls and improves the structure's energy efficiency. Conversely, the continuous dematerialization of a façade material, such as brick, may require an addition of more insulation to compensate for the loss of volume all along the perimeter, just to achieve comparable energy efficiency. A more accurate assessment of the benefits of the dematerialization of façade materials can possibly be made and if there are benefits, points can be captured through Life Cycle Assessments (610.1.1 and 610.1.2) that apply a material consumption impact category in addition to categories measuring energy-consumption impacts through the manufacturing, construction and use life-cycle stages.
TG Recommendation (AS or AM or D):	Disapprove (Velasquez, Francis)
Modification of Proposed Change:	
TG Reason:	Lighter thinner brick is a resource efficient material, and it reduces the structure needed to support it.
TG Vote:	8 (favor) / 0 (opposed) / 1 (abstain), chair not voting

P152	LogID 6337	609.1 Regional materials
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete without substitution	
Proposed Change:	Regional materials. Regional materials are used for major and/or minor components of the building. For a component to comply with this practice, a minimum of 75% of all products in that component category must be sourced regionally, e.g.; stone veneer category — 75 percent or more of the stone veneer on a project must be sourced regionally.	
Reason:	To increase use of the standard, reduce the complexity and remove these calculations. Regional material impacts are captured through EPDs, which are easier for the end user to locate and provide a much better indicator as they focus on the outcome of the various inputs. Individually, single-attributes have little bearing on the final impact so they are being replaced with EPDs. Because EPDs are already a part of this standard, the 10 points removed with this section could be added into the Product Declarations, Section 611.4, if the Standard was to keep the same number of threshold points.	
TG Recommendation (AS or AM or D):	Disapprove (Fischer, Arnold)	
Modification of Proposed Change:		
TG Reason:	Same as previous; single attributes materials are still useful for the industry, can't solely rely on EPDs.	
TG Vote:	9 (favor) / 0 (opposed) / 0 (abstain) chair not voting	

P153	LogID 6304	610.1 Life cycle assesment
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	<p>610.1.1 Whole-building life cycle assessment. A whole-building LCA is performed in conformance with ASTM E2921 using ISO14044 compliant life cycle assessment.</p> <p>Execute LCA at the whole-building level through a comparative analysis between the final and reference building designs as set forth under Standard Practice, ASTM E2921. The assessment criteria includes the following environmental impact categories:</p>	

	<ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to Water</u> <p>...</p> <p>Execute full LCA, including <u>resource extraction or harvesting, manufacturing, construction, use and end-of-life phases</u>. For the use phase, calculate through calculation of operating energy impacts (c) – (f) using local or regional emissions factors from energy supplier, utility or EPA. <u>For the use phase, also include impacts associated with material replacements.</u></p> <p>610.1.2.1 Product LCA. A product with improved environmental impact measures compared to another product(s) intended for the same use is selected. The environmental impact measures used in the assessment are selected from the following:</p> <ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to water</u> <p>610.1.2.2 Building Assembly LCA. A building assembly with improved environmental impact measures compared to an alternative assembly of the same function is selected...</p> <p>...The environmental impact measures used in the assessment are selected from the following:</p> <ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to Water</u>
Reason:	Using less material and recovering more is crucial to our economic and environmental future. Material use and waste generation over the life cycle of a building should be modeled. In addition, the “full” life cycle assessment should include all life cycle phases, including extraction and harvesting, manufacturing, construction, use and end-of-life phases. While the NGBS-proposed language for whole-building life cycle assessment emphasizes that the assessment should include the use phase, it omits mentioning the other important phases. Finally, the language for the whole-building use phase indicates that impacts related to energy use should be evaluated, but remains silent on the need to evaluate impacts associated with the replacement of materials. To address these issues, we recommend adding the material use and waste impact categories to the assessment criteria. Emphasize that the boundary of the assessment should include the manufacturing, construction and end-of-life phases. Emphasize that the assessment of the use phase should include the analysis of impacts associated with the replacement of materials.
TG Recommendation (AS or AM or D):	Disapprove (Fischer, Prather)
Modification of Proposed Change:	
TG Reason:	The material replacement addition is problematic and can contradict the referenced standard. A second concern is the categorization of additional impact measures; the current ones are optional but it’s not sure

	how they compare to a base building. The new categories may not coincide with the tools that are currently available such as NIST's BEES (Building for Environmental and Economic Sustainability).
TG Vote:	7 (favor) / 1 (opposed) / 1 (abstain)

P154	LogID 6357	610.1.2 Life cycle analysis for a product or assembly
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete without substitution	
Proposed Change:	610.1.2 Life cycle assessment for a product or assembly. An environmentally preferable product or assembly is selected for an application based upon the use of an LCA tool that incorporates data methods compliant with ISO 14044 or other recognized standards that compare the environmental impact of products or assemblies.	
Reason:	This is one of two removals of this grouping: 610.1.2 and 610.1.2.1. Asking a contractor or other Standard user to find an LCA tool and use it to select various inputs is not user-friendly, nor is it an effective way to understand the burden of that product. Essentially they would be guessing as to the inputs whereas the use of an EPD allows the manufacturer to utilize specific inputs, removing the guesswork. In general, many EPD's reference LCA so the Standard is essentially giving points twice for this category.	
TG Recommendation (AS or AM or D):	Disapprove (Velasquez, Thompson)	
Modification of Proposed Change:		
TG Reason:	These are useful practices that are used. We don't want to solely rely on building LCAs.	
TG Vote:	9 (favor) / 0 (opposed) / 0 (abstain)	

P155	LogID 6358	610.1.2.1 Product LCA
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete without substitution	
Proposed Change:	610.1.2.1 Product LCA. A product with improved environmental impact measure compared to another product(s) intended for the same use is selected. The environmental impact measures used in the assessment are selected from the following: (a) primary energy use (b) Global warming potential (c) Acidification potential (d) Eutrophication potential (e) Ozone depletion potential (f) Smog Potential	
Reason:	This is one of two removals of this grouping: 610.1.2 and 610.1.2.1. Asking a contractor or other Standard user to find an LCA tool and use it to select various inputs is not user-friendly, nor is it an effective way to understand the burden of that product. Essentially they would be guessing as to the inputs whereas the use of an EPD allows the manufacturer to utilize specific inputs, removing the guesswork. In general, many EPD's reference LCA so the Standard is essentially giving points twice for this category.	
TG Recommendation (AS or AM or D):	Disapprove (Prather, Thompson)	
Modification of Proposed Change:		
TG Reason:	These are useful practices that are used. We don't want to solely rely on building LCAs.	
TG Vote:	9 (favor) / 0 (opposed) / 0 (abstain)	

P156	LogID 6360	611.1 Manufacturer's environmental management system concepts (Innovative Practices)
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Submitter:	Cambria McLeod, Kohler
Requested Action:	Revise as follows
Proposed Change:	Manufacturer's environmental managementsystem concepts. Product manufacturer's operations and business practicesinclude environmental management system concepts, and the production facilityis registered to ISO 14001 or equivalent. The aggregate value of buildingproducts from registered ISO 14001 or equivalent production facilities is 1percent or more of the estimated total building materials cost. Product Specific Declaration Improvements. Utilizing aType III environmental product declaration (EPD), demonstrate an improvement overprior EPDs for the same product. (1 point awarded per improved product.)
Reason:	The use of ISO 14001 adds minimal value and is not widely used because a facility could be ISO 14001 compliant and have negative impacts. Proving that a product's impacts, throughout its lifecycle, are improving over time is a more effective way to demonstrate innovation. Comparing a product's EPD from one year to the next can demonstrate improvement in environmental management systems, regardless of the type of facility registration.
TG Recommendation (AS or AM or D):	Disapprove (Dobson, Fischer)
Modification of Proposed Change:	
TG Reason:	The current innovative practice is to improve the manufacturing process and is not the same as EPDs. EPDs were previously covered, and they could contain more or less than the manufacturer's environmental management system would cover.
TG Vote:	9 (favor) / 0 (opposed) / 0 (abstain)

P157	LogID 6318	611.2 Sustainable products
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	<p>611.2 Sustainable Products. One or more of the following products are used for at least 30% of the floor or wall area of the entire dwelling unit, as applicable. Products are certified by a third-party agency accredited to ISO 17065.</p> <p>50%or more of carpet installed (by square feet) is certified to NSF 140 <u>or applicable standard/ ecolabel as stated in EPA's Recommendations of Standards and Ecolabels.</u></p> <p>50%or more of resilient flooring installed (by square feet) is certified to NSF332 <u>or applicable standard/ ecolabel as stated in EPA's Recommendations of Standards and Ecolabels.</u></p> <p>50%or more of the insulation installed (by square feet) is certified to EcoLogoCCD-016 <u>or applicable standard/ ecolabel as stated in EPA's Recommendations of Standards and Ecolabels.</u></p> <p>50%or more of interior wall coverings installed (by square feet) is certified to NSF 342.</p> <p>50%or more of the gypsum board installed (by square feet) is certified to UL 100 <u>or applicable standard/ ecolabel as stated in EPA's Recommendations of Standards and Ecolabels.</u></p> <p>50%or more fo the door leafs installed (by number of door leafs) is certified to UL 102.</p> <p>(7) 50%or more of the tile installed (by square feet) is certified to ANSI TCNAA138.1 Specifications for Sustainable Ceramic Tiles, Glass Tiles and Tile Installation Materials <u>or applicable standard/ ecolabel as stated in EPA's Recommendations of Standards and Ecolabels.</u></p>	
Reason:	<p>We would like to suggest NGBS to expand their list to include other standards and ecolabels recommended by EPA for use in federal purchasing. EPA conducted an assessment of Ecolabels and Standards for federal procurement in the furniture, flooring, and paints & coatings categories. The assessment focuses on four sections: The process for developing standards, environmental effectiveness of the standard, conformity assessment, and management of ecolabeling programs. See EPA's Recommendations of Standards and Ecolabels (https://www.epa.gov/greenerproducts/recommendations-specifications-standards-and-ecolabels-federal-purchasing) for applicable standards/ ecolabels in construction product category. Please note, (4) and (6) are not product categories covered in the EPA Recommendations and therefore the additional language around using EPA Recommended Standards and Ecolabels was not added here. NSF 140, NSF 332, and TCNA A38.1 are currently included in the EPA Recommendations so the inclusion of the other applicable EPA Recommended standards and ecolabels into the NGBS standard would provide a wider range of sustainability standards that can be used for purchasing sustainable products. Also, please note that the correct title of the standard A138.1 is ANSI A138.1-2011 Green Squared Sustainable Tile and Installation Materials Specifications.</p>	

TG Recommendation (AS or AM or D):	Approve (Fischer, Thompson) Reopening item (Freeman, Velasquez) AM (Jacobs, Leslie)
Modification of Proposed Change:	or applicable multi-attribute standard (in every instance it shows up)
TG Reason:	This adds another option to quantify sustainable products through the EPAs program. REASON FOR MODIFICATION: to specify that this is an additional item for multi-attribute standards; single attribute standards are dealt with separately.
TG Vote:	9 (favor) / 0 (opposed) / 0 (abstain) 9-0-0 to reopen 4-3-3 chair voting

P158 LogID 17-013 Section 611.2 Sustainable products	
Submitter:	Robert De Vries, Nu Wool Co
Requested Action:	Remove reference to a proprietary certification program
Proposed Change:	Remove reference to a proprietary certification program
Reason:	Codes and Standards should not be using proprietary, non ANSI supported certification bodies to substantiate products that already have had the required testing done by third party lab following ANSI standards and test methods. In this case, specifically the EcoLogo document hasn't been revised since 2005
TG Recommendation (AS or AM or D):	AM (Jacobs, Stanonik)
Modification of Proposed Change:	Remove EcoLogo and replace with UL 2985
TG Reason:	EcoLogo is no longer valid
TG Vote:	9-0-0 chair not voting

P159 LogID 6195 611.3 Universal design elements	
Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	611.3 Universal design elements. Dwelling incorporates one or more of the following universal design elements. Conventional industry construction tolerances are permitted. <u>(1) High visibility address numbers at entrance to dwelling unit</u> <u>(2) Movement sensor light at entrance into dwelling unit</u> <u>(3) A sidelight or a peephole at 42 and 60 inches above the floor at entrance to dwelling unit</u> RENUMBER SUBSEQUENT ITEMS
Reason:	Provide good overall lighting and house number for nighttime security and ease-of-use. Additional lowered peephole for seated or short adults and children. (Based on NC State University publication of universal design elements for residences.)
TG Recommendation (AS or AM or D):	AS (Jeremy, Don)
Modification of Proposed Change:	
TG Reason:	
TG Vote:	6-0-0

P160 LogID 6363 611.3 Universal design elements	
Submitter:	Cambria McLeod, Kohler

Requested Action:	Revise as follows
Proposed Change:	(6) All sink faucet controls are single-handle controls of both volume and temperature, lavatory and showering controls shall have cross or lever handles.
Reason:	The current language is design-limiting and also excludes other functional areas which could utilize universal design elements such as lavatories and showering areas. Cross and lever controls for all faucets and bathing/showering trim provide greater accessibility than controls with knob shapes. ADA and A117.1 allow center set, widespread and single handle controls.
TG Recommendation (AS or AM or D):	AS Josh, Jeremy
Modification of Proposed Change:	
TG Reason:	
TG Vote:	6-0-0

P161	LogID 17-089	Section 611.3 and 11.611.3 Universal design elements
Submitter:	Michael Jouaneh, Lutron Electronics	
Requested Action:	Add and modify as follows	
Proposed Change:	<p>Modify number 9 so that for lighting at least permanently installed luminaires can be controlled with a wireless device or occupancy/vacancy sensors. And add all window treatments (e.g. shades, blinds, drapes) to the list of systems that can controlled with wireless device or are automated based on time schedule or sky conditions. Lastly, the home should get an additional points for each system that complies. So, they can get 1 point for lighting, an additional point for HVAC, and additional one for controllable shades.</p> <p>Add a number 10 for an additional point if the same systems/products in number 9 plus window treatments that can be controlled from voice-activated assistants such as Alexa or Google Home. And additional points for each system that can be controlled with voice assistants like mentioned above</p>	
Reason:	<p>The modification is so that it is clear and not gameable to get the point if a home simply has one light fixture controlled with a wireless device. Adding window treatments as controllable window treatments or automated ones are a key universal design feature just as controllable or automated lighting is.</p> <p>Adding additional points for each item that complies provide incentive to have more universal design elements in the home.</p> <p>The addition of number 10 brings the Standard up to date with the latest tech which helps with universal design.</p>	
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-7 (Renovations and Additions) as Section 11.611.3 falls under their direct purview.</i>	
TG Recommendation (AS or AM or D):	<p>TG 3: AM (Fischer, Prather)</p> <p>TG 7 Approve as Modified</p>	
Modification of Proposed Change:	<p>TG 3 & TG 7: (9) Any of the following <u>systems are automated or and</u> can be controlled with a (wireless) <u>device mobile or voice-activated device such as a smartphone, tablet, or laptop computer</u>: HVAC, <u>all permanently-installed lighting, alarm system, window treatments, or door locks. 1 point per system with max 5 points</u></p>	
TG Reason:	<p>TG 3: Reason for TG modification to modification: to clarify that it applies to each system, that each system must be automated and controlled, and to cap the points</p> <p>TG 7: In accordance with TG-3.</p>	
TG Vote:	<p>TG 3: 9 / 0 / 0 chair not voting</p> <p>TG 7: unanimous 9-0-0</p>	

P162	LogID 6228	611.4 Product declarations
Submitter:	Josh Jacobs, UL	

Requested Action:	Revise as follows
Proposed Change:	611.4 Product declarations
Reason:	The Innovative Practices section should be for things that are new to the marketplace. There are thousands of products in the marketplace that have Environmental Product Declarations. From bathroom products, ceiling systems, doors, flooring, hardware, HVAC, insulation, paints, to many more. While this concept may be new concept to some, it is not new to the marketplace in general, therefore it should be moved from the innovative practices section and into its own stand alone section of the Resource Efficiency Chapter.
TG Recommendation (AS or AM or D):	AM Josh, Don
Modification of Proposed Change:	Clarification 611 Innovative Practices Product Declarations 611.1 611.4 Product Declarations 611.1.1 611.4.1 Industry wide declaration 611.1.2 611.4.2 Product specific declaration 611 612 Innovative Practices 611.1 612.1 Manufacturer's environmental management system concepts 611.2 612.2 Sustainable Products 611.3 612.3 Universal design elements
TG Reason:	The modification brings clarity to the proposed change
TG Vote:	6-0-0

P163	LogID 6302	Other for Chapter 6 (include section number and title below)
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Add new as follows	
Proposed Change:	<p><u>608.2 Design for Adaptation and Disassembly.</u> <u>For siding, windows, mechanical/electrical/plumbing (MEP) systems, wall paneling and flooring materials, incorporate three or more of the following measures, as applicable:</u></p> <p><u>Use reusable/recyclable materials. For example:</u></p> <ul style="list-style-type: none"> o <u>Use materials and fixtures for which take-back or reuse/recycling programs are established.</u> o <u>Use high-quality materials that exceed minimum performance standards.</u> o <u>Avoid use of coatings or adhesives that prevent reuse and recycling.</u> <p><u>Promote disentanglement of building components. For example:</u></p> <ul style="list-style-type: none"> o <u>To limit the destruction of the surrounding materials, incorporate installation details that permit easy removal and replacement of components.</u> o <u>Consolidate placement of MEP components in building floorplans and cross-sections.</u> <p><u>Provide access to and use reversible connections, such as screws, bolts, or clips.</u> <u>Provide disassembly and reuse information to owner.</u></p>	
Reason:	Section 608 currently includes a single subsection encouraging the dematerialization of building components. Design for Adaptation and Disassembly is similarly an upstream strategy to improve resource efficiency and therefore, fits with the upstream, resource-efficiency focus of this section. Design for Adaptation and Disassembly involves the utilization of recyclable/reusable building materials and preserves resources by maximizing their recovery and ensuring their continuous reutilization.	
TG Recommendation (AS or AM or D):	<p>Tabled – send back for Susan to clean up. Issues: the “for example portions” and the use of “promote”</p> <p><u>608.2 Design for Adaptability and Disassembly.</u> <u>For siding, windows, mechanical/electrical/plumbing (MEP) systems, wall paneling and flooring materials, incorporate three or more of the following measures, as applicable:</u></p> <p><u>Use reusable/recyclable materials.</u></p> <ul style="list-style-type: none"> • <u>Use materials and fixtures for which take-back or reuse/recycling programs are established.</u> • <u>For materials with reuse markets, use high-quality and durable materials that exceed minimum performance standards.</u> <ul style="list-style-type: none"> o <u>Use elements of standard sizes.</u> 	

	<ul style="list-style-type: none"> • <u>Avoid use of secondary coatings or adhesives that prevent reuse and recycling.</u> • <u>Do not over-specify the strength of masonry binders.</u> <p><u>Avoid entanglement of building components.:</u></p> <ul style="list-style-type: none"> • <u>Use larger components to reduce the overall number of components.</u> • <u>Incorporate installation details that permit easy removal and limit the destruction of surrounding materials.</u> • <u>Simplify connections and minimize the variety of connection types.</u> • <u>Use stronger fasteners and minimize their overall number.</u> • <u>Consolidate placement of MEP components in building floorplans and cross-sections.</u> <p><u>Provide access to and use reversible connections.</u></p> <ul style="list-style-type: none"> • <u>Make connections visible.</u> • <u>Provide access at work height.</u> • <u>Use screws, bolts, or clips in lieu of sealants and adhesives.</u> <ul style="list-style-type: none"> • <u>Provide disassembly and reuse information to owner.</u> <p>D (Thompson, Stanonik)</p>
Modification of Proposed Change:	
TG Reason:	The updated proposal still needs more specific/measurable guidance.
TG Vote:	11 / 0 / 0 chair not voting

P164	LogID 6351	Other for Chapter 6 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	Section 612 - <u>Add a new section as relevant for Health and Well-being credits.</u>	
Reason:	As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.	
TG Recommendation (AS or AM or D):	D (Jeremy, Tanis)	
Modification of Proposed Change:		
TG Reason:	A working group is looking at issues of health and wellness. This proposal does not have substance/specificity.	
TG Vote:	6-0-0	

P165	LogID 6442	Other for Chapter 6 (include section number and title below)																
Submitter:	Aaron Gary, self																	
Requested Action:	Add new as follows																	
Proposed Change:	<p><u>ADD NEW SECTION</u></p> <p>611.X Resilient Construction. Buildings are designed to withstand severe weather per Table 611.X</p> <p>Table 611.3 Fortified Home Technical Requirements Level</p> <table border="1"> <thead> <tr> <th></th> <th>Points for Bronze</th> <th>Points for Silver</th> <th>Points for Gold</th> </tr> </thead> <tbody> <tr> <td>(1) Fortified Home Hurricane Technical Requirements</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>(2) Fortified Home High Wind Technical Requirements</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>(3) Fortified Home High Wind & Hail Bronze Technical Requirements</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>			Points for Bronze	Points for Silver	Points for Gold	(1) Fortified Home Hurricane Technical Requirements	X	X	X	(2) Fortified Home High Wind Technical Requirements	X	X	X	(3) Fortified Home High Wind & Hail Bronze Technical Requirements	X	X	X
	Points for Bronze	Points for Silver	Points for Gold															
(1) Fortified Home Hurricane Technical Requirements	X	X	X															
(2) Fortified Home High Wind Technical Requirements	X	X	X															
(3) Fortified Home High Wind & Hail Bronze Technical Requirements	X	X	X															

Reason:	Rebuilding homes after severe weather is costly in terms of time, money, and materials. This green building standard should recognize projects that build resiliently.
TG Recommendation (AS or AM or D):	D (Perry, Arnold)
Modification of Proposed Change:	
TG Reason:	Not sure that it applies to green construction outside of these hurricane areas. This is an illustration of the potential conflict between resiliency and resource efficiency.
TG Vote:	4-0-1

P166	LogID 6229	Other for Chapter 6 (include section number and title below)
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Submitter:	Josh Jacobs, UL
Requested Action:	Add new as follows
Proposed Change:	<u>611.5 Chemical Transparency. A minimum of 10 different products installed in the building project, at the time of certificate of occupancy, comply with one of the following programs down to at least 0.1% (1000ppm) of the stated product: GreenScreen v1.2, Health Product Declaration, Cradle to Cradle v2 Basic level (or greater), Declare, or UL Product Lens.</u>
Reason:	With more and more of the public becoming interested in the chemicals around them, designers, architects, and builders are choosing products based on the chemical contents within it. This optional credit language will allow a residence that has taken this valuable information into account to get credit for taking this extra step in its transparency and product selection.
TG Recommendation (AS or AM or D):	Deferred until 6/21/2017 D (Dobson, Freeman)
Modification of Proposed Change:	
TG Reason:	Some of the programs being proposed are not put through a broad enough consensus development process and may have some biases. Additionally, it is not clear how some of the lists that come out of these programs are used, and there are lack of science applications by some of the red lists currently in the marketplace.
TG Vote:	8-1-0 chair not voting

P167	LogID 6225	Other for Chapter 6 (include section number and title below)
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>Conduct "TBD" hours of documented onsite trades training. Documentation shows date /duration /trade and reason</u>
Reason:	setting / showing expectations of the credit requirement is an ongoing process....one and done = none. Verifier and Contractor teamwork is the trick,with visual and hands on learning the best way to ensure thing pass early and often
TG Recommendation (AS or AM or D):	D (Freeman, Perry)
Modification of Proposed Change:	
TG Reason:	The proposal is incomplete and vague, and is not attached to any subsection of Chapter 6. This chapter does not typically deal with labor issues.
TG Vote:	4-0-1

P168	LogID 6243	Other for Chapter 6 (include section number and title below)
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Submitter:	Paul Gay, self
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Requested Action:	Add new as follows
Proposed Change:	<u>611.XX</u> Conduct 3rd party Air Seal/ Compartmentalization Plan evaluation with pre and during construction Trades training.
Reason:	ensure air seal /compartmentalize measures are in plans and in scope of work.conduct training and provide guidance for correct/timely install practices early and as often as necessary
TG Recommendation (AS or AM or D):	D (Leslie, Freeman)
Modification of Proposed Change:	
TG Reason:	The proposal is incomplete and vague. This chapter does not typically deal with labor issues. This concept is dealt with more thoroughly in the Energy Chapter.
TG Vote:	4-0-1

P169	LogID 6553	Other for Chapter 6 (include section number and title below)
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Add new as follows	
Proposed Change:	<u>611 HEALTH AND WELL BEING</u> (...prior to INNOVATIVE PRACTICES)	
Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.	
TG Recommendation (AS or AM or D):	D (Freeman, Leslie)	
Modification of Proposed Change:		
TG Reason:	There is no specific language to consider.	
TG Vote:	4-0-1	

P170	LogID 17-004	Index
Submitter:	John Forbes, National Wood Flooring Association	
Requested Action:	Revise as Follows	
Proposed Change:	Floor Material..... <u>606.2</u> , 901.7, 11.901.7, 12.1.901.7	
Reason:	Revision would help specifiers find flooring products made by participants of NWFA's RPP, as well as encourage the exploration of wood flooring products certified by others on the list.	
TG Recommendation (AS or AM or D):	AS (Stanonik, Velasquez)	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	7-0-0 chair not voting	

Chapter 7 Energy Efficiency

P171	LogID 6588	701.1.4 Alternative bronze and silver level compliance									
Submitter:	Thomas Culp, Aluminum Extruders Council										
Requested Action:	Add new as follows										
Proposed Change:	<p>701.1.4 Alternative bronze and silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 02 03 building achieves the bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 02 03 (with the baseline at ASHRAE 90.1-2010) building achieves the silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all of the requirements in IECC Section R401.2.1 (Tropical Zone) achieves the silver level for Chapter 7. <u>As an alternative, any multifamily building that complies with the base level Requirements section of the NBI Multifamily Guide achieves the silver level for Chapter 7.</u> The buildings achieving compliance under Section 701.1.4 are not eligible for achieving a rating level above silver.</p> <p>701.1.5 Alternative gold level compliance. <u>As an alternative, any multifamily building that complies with both the base level and Additional Efficiency Package Requirements of the Requirements section of the NBI Multifamily Guide achieves the gold level for Chapter 7.</u></p> <p>Add under Chapter 13:</p> <table border="1"> <tr> <td colspan="2">NBI</td> <td colspan="2">New Buildings Institute. 503-761-7339. 623 SW Oak St., 3rd Floor Portland, OR 97205 www.newbuildings.org</td> </tr> <tr> <td><u>Multifamily Guide</u></td> <td><u>2017</u></td> <td><u>Building Innovation – Multifamily.</u></td> <td><u>701.1.4, 701.1.5</u></td> </tr> </table>			NBI		New Buildings Institute. 503-761-7339. 623 SW Oak St., 3rd Floor Portland, OR 97205 www.newbuildings.org		<u>Multifamily Guide</u>	<u>2017</u>	<u>Building Innovation – Multifamily.</u>	<u>701.1.4, 701.1.5</u>
NBI		New Buildings Institute. 503-761-7339. 623 SW Oak St., 3rd Floor Portland, OR 97205 www.newbuildings.org									
<u>Multifamily Guide</u>	<u>2017</u>	<u>Building Innovation – Multifamily.</u>	<u>701.1.4, 701.1.5</u>								
Reason:	<p>The New Buildings Institute has published a new guide for advanced energy efficiency in multifamily buildings of all heights, providing 15-25% energy savings above the 2015 IECC. The guide may be downloaded for free from https://newbuildings.org/product/multifamily-guide/. Although titled as a guide, it includes a requirements section intended for use by standards with both base level requirements and additional efficiency package requirements for higher tier performance. Similar to the other advanced energy efficiency options listed for compliance, this proposal adds the NBI Multifamily Guide as an alternative for silver rating with base level compliance, and gold rating for higher tier compliance. With the scope expansion to include mixed-use buildings with both nonresidential and multifamily spaces, more multifamily buildings of all heights will be looking to use of ICC-700 / NGBS, so inclusion of this alternative is appropriate and beneficial.</p>										
TG Recommendation (AS or AM or D):	<p>Tabled (1/26/2018) Voted that this proposal be reviewed by TGs 1, 5, and 6 (2/7/2018 in person meeting) D (Rosenstock, Seville)</p>										
Modification of Proposed Change:											
TG Reason:	<p>There are issues with the guideline; it's written poorly and might not be ready to be used as an enforceable reference document.</p>										
TG Vote:	<p>TG 1 - 12 – 6 – 1 TG 5 - No action</p>										
P172	LogID 6587	Other for Chapter 7									
Submitter:	Thomas Culp, Aluminum Extruders Council										
Requested Action:	Add new as follows										
Proposed Change:	<p>701.1.5 Alternative gold level compliance. <u>As an alternative, any building that complies with Chapter 7 of the ICC International Green Construction Code (IgCC) achieves the gold level for Chapter 7.</u></p>										

	(Add reference to 2018 International Green Construction Code to Chapter 13)
Reason:	With the scope expansion to include multi-use buildings that combine nonresidential and multifamily spaces, there will be more overlap with projects that fall under the scope of the 2018 International Green Construction Code, which is now a joint development with the technical content of ASHRAE 189.1-2017 under cooperation of ICC, ASHRAE, USGBC, AIA, and IES. A separate proposal clarifies in chapter 3 that the IgCC shall be used for just those nonresidential spaces not covered by the residential designation in Section 101.2.1. In addition, if the project owner decides to use the energy efficiency provisions of the 2018 IgCC for the entire building, it should be provided the appropriate rating level under ICC-700 / NGBS for chapter 7.
TG Recommendation (AS or AM or D):	TG 1 AM (Weston, Klein) Sent to TG-5 TG 5 AM (same language as TG-1)
Modification of Proposed Change:	TG 1 Language 701.1.5 Alternative gold silver level compliance. As an alternative, any building that complies with Chapter 7 of the ICC International Green Construction Code (IgCC) achieves the gold silver level for Chapter 7. (Add reference to 2018 International Green Construction Code to Chapter 13)
TG Reason:	TG 1 Reason – N/A TG 5 Reason – This provides a way for commercial space to comply using IgCC/189.1. A more conservative threshold was selected to ensure that energy performance is not overstated.
TG Vote:	TG 1 Vote 11 – 7 – 1 TG-5 Vote: 5-4-2

P173	LogID 6503	701.1 Mandatory requirements (Energy Efficiency)
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	<p>701.1 Mandatory requirements. The building shall comply with Section 702 (Performance Path), Section 703(Prescriptive Path), or Section 704 (HERS Index Target Path). Items listed as “mandatory” in Section 701.4 apply to all Paths. Unless otherwise noted, buildings in the Tropical Climate Zone shall comply with Climate Zone 1 requirements.</p> <p><u>Exceptions:</u> <u>A building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0Rev. 03 building achieves the bronze level for Chapter 7.</u> <u>A building that qualifies as an ENERGY STAR Version3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03(with the baseline at ASHRAE 90.1-2010) building achieves the silver level for Chapter 7.</u> <u>In the Tropical Climate Zone, a building that meets all of the requirements in IECC Section R401.2.1 (Tropical Zone) achieves the silver level for Chapter 7.</u> <u>A building achieving compliance under Section701.1.4 is not eligible for achieving a rating level above silver.</u></p> <p>701.1.4 Alternative bronze and silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building achieves the bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all of the requirements in IECC Section R401.2.1 (Tropical Zone) achieves the silver level for Chapter 7. The buildings achieving compliance under Section 701.1.4 are not eligible for achieving a rating level above silver.</p>	
Reason:	If analysis shows these alternatives are equivalent or more conservative compared to the requirements in 701.1.1, 701.1.2, and 701.1.3, then revise the charging language of 701.1 to include these “alternatives” as compliance paths.	

TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Does not add clarity. The language does not belong in an exception section.
TG Vote:	9-0-0

P174	LogID 6393	701.1 Mandatory requirements (Energy Efficiency)
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Submitter:	Eric Lacey, RECA
Requested Action:	Revise as follows
Proposed Change:	701.1 Mandatory requirements. The building shall comply with Section 702 (Performance Path), Section 703 (Prescriptive Path), or Section 704 (HERS Index Target Path). <u>The building shall also comply with all provisions items listed as “mandatory” in the 2018 IECC and in Section 701.4 apply to all Paths.</u> Unless otherwise noted, buildings in the Tropical Climate Zone shall comply with Climate Zone 1 requirements.
Reason:	This proposal is intended to revise and clarify the requirements regarding mandatory requirements/measures. As revised, this section will improve the quality and consistency of homes built to ICC-700 by requiring compliance, under all compliance options, with: • all mandatory requirements in ICC-700; and • all mandatory provisions of the 2018 IECC. First, ICC-700 includes a set of minimum mandatory requirements for prescriptive-based compliance. These are carefully-selected requirements that should be met irrespective of the number of points achieved for other efficiency measures. Minimum requirements for components and assemblies in a building – such as the air barrier, HVAC system sizing, and minimal thermal envelope efficiencies – should be met whether the home complies via prescriptive, performance, or the HERS Index Target path. Second, the vast majority of states have adopted the IECC for residential and commercial construction. Like ICC-700, the IECC contains its own limited list of mandatory requirements, most of which are similar to the mandatory requirements of ICC-700. In the IECC, the mandatory requirements already apply across all compliance paths – prescriptive, performance, and ERI, and they apply to all “above code” programs under IECC Section R102.1.1. Because of this, a home cannot be built in these states without complying with at least this shortlist of minimum features. If these mandatory measures are mandatory for all homes to comply with the ICC’s minimum energy efficiency code, they should also be mandatory for the ICC’s green construction code. In order for ICC-700 to continue to gain market acceptance and be recognized as a legitimate green code, it is important that ICC-700 not be seen as a “workaround” to avoid the IECC’s requirements. While we would prefer that every home that complies with ICC-700 to first demonstrate compliance with the complete IECC, we recommend at least establishing compliance with the mandatory requirements of the IECC. This will help builders avoid the pitfall of designing a home that meets ICC-700, but fails the minimum energy code requirements in that state or jurisdiction. The 2018 IECC mandatory requirements are an appropriate reference point. We expect that the 2018 ICC-700 will build upon the efficiencies of the 2018 IECC, and by the time ICC-700 is published, the compliance software available (such as DOE’s REScheck) will be based on the 2018 IECC.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	NGBS already captures the important mandatory items. Sending the user back to the code, particularly the commercial part of the IECC, would be confusing.
TG Vote:	7-0-2

P175	LogID 6501	701.1.1 Minimum Performance Path requirements
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	701.1.1 Minimum Performance Path requirements. A building complying with Section 70 shall include a minimum of two practices obtain a minimum of 4 points from Section 705.

	<p>701.1.2 Minimum Prescriptive Path requirements. A building complying with Section 703 shall obtain a minimum of 30points from Section 703 and shall include a minimum of two practices <u>obtain a minimum of 4 points</u> from Section 705.</p> <p>701.1.3 HERS Index Target Path requirements. A building complying with Section 704 shall obtain a minimum of 30points from Section 704 and shall include a minimum of two practices <u>obtain minimum of 4 points</u> from Section 705.</p>
Reason:	The term “two practices” is ambiguous. Suggest the term be revised to specify a minimum number of points to be attained from Section 705.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	The term “practice” has been established over several revision cycles and has been used in the field without issues. No justification for a point increase from 2 minimum to 4 points.
TG Vote:	10-2-0

P176	LogID 6157	701.1.1 Minimum Performance Path requirements
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Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	701.1.1 Minimum Performance Path Requirements. A building complying with Section 702 shall include a minimum of two three practices from Section 705, <u>or a minimum of two practices from Section 705 and a minimum of one practice from Section 706.</u>
Reason:	This revision will allow for more flexibility to choose more options, while requiring three instead of two practices.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	701.1.1 Minimum Performance Path Requirements. A building complying with Section 702 shall include a minimum of two three practices from Section 705, <u>or a minimum of two one practices from Section 705 and a minimum of one practice from Section 706.</u>
TG Reason:	To remain consistent with the current standard and provide flexibility with selection.
TG Vote:	11-1-0

P177	LogID 6159	701.1.2 Minimum Prescriptive Path requirements
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Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	701.1.2 Minimum Prescriptive Path requirements. A building complying with Section 703 shall obtain a minimum of 30 points from Section 703 and shall include a minimum of two three practices from Section 705, <u>or a minimum of two practices from Section 705 and a minimum of one practice from Section 706.</u>
Reason:	This revision will allow for more flexibility to choose more options, while requiring three instead of two practices.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	
TG Reason:	To remain consistent with the current standard and provide flexibility with selection.
TG Vote:	11-1-0

P178	LogID 6404	701.1.3 HERS Index Target Path requirements
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Submitter:	Eric Lacey, RECA																																													
Requested Action:	Revise as follows																																													
Proposed Change:	<p>701.1.3 Energy Rating HERS Index Target Path requirements. A building complying with Section 704 shall meet the requirements of obtain a minimum of 30 points from Section 704 and shall include a minimum of two practices from Section 705.</p> <p>704 ENERGY RATING HERS INDEX TARGET PATH</p> <p>704.1 ERI HERS index target compliance. The project complies with Section R406 of the 2018 IECC, and the ERI for the project is less than or equal to the Energy Rating Index Scores as detailed in Table 704.2 for the corresponding climate zone and rating level. Compliance with the energy chapter shall be permitted to be based on the EPA HERS Index Target Procedure for Energy Star Qualified Homes. Points from Section 704 (HERS Index Target) shall not be combined with points from Section 702 (Performance Path) or Section 703 (Prescriptive Path).</p> <p>Table 704.2 ERI Point calculation score thresholds^a. Points for Section 704 shall be computed based on Steps “1a” through “1d” of the EPA HERS Index Target Procedure. Points shall be computed individually for each building as follows: $30 + (\text{percent less than EnergyStar HERS Index Target for that building}) * 2.$</p> <table border="1"> <thead> <tr> <th>Climate Zone</th> <th>Bronze</th> <th>Silver</th> <th>Gold</th> <th>Emerald</th> </tr> </thead> <tbody> <tr><td>1</td><td>57</td><td>52</td><td>47</td><td>42</td></tr> <tr><td>2</td><td>57</td><td>52</td><td>47</td><td>42</td></tr> <tr><td>3</td><td>57</td><td>52</td><td>47</td><td>42</td></tr> <tr><td>4</td><td>62</td><td>57</td><td>52</td><td>47</td></tr> <tr><td>5</td><td>61</td><td>56</td><td>51</td><td>46</td></tr> <tr><td>6</td><td>61</td><td>56</td><td>51</td><td>46</td></tr> <tr><td>7</td><td>58</td><td>53</td><td>48</td><td>43</td></tr> <tr><td>8</td><td>58</td><td>53</td><td>48</td><td>43</td></tr> </tbody> </table> <p>a. <u>When on-site renewable energy is included for compliance using the ERI analysis per Section 704.1, the building shall meet the mandatory requirements in 2018 IECC Section R406.2 and the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table R402.1.2 or Table R402.1.4 of the 2015 IECC.</u></p>	Climate Zone	Bronze	Silver	Gold	Emerald	1	57	52	47	42	2	57	52	47	42	3	57	52	47	42	4	62	57	52	47	5	61	56	51	46	6	61	56	51	46	7	58	53	48	43	8	58	53	48	43
Climate Zone	Bronze	Silver	Gold	Emerald																																										
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5	61	56	51	46																																										
6	61	56	51	46																																										
7	58	53	48	43																																										
8	58	53	48	43																																										
Reason:	This proposal revises the HERS Index-based compliance option in Section 704 to be more consistent with the IECC’s Energy Rating Index. The current Section 704 uses only part of the Energy Star HERS Index Target Procedure, even though Section 701.1.4 already provides a compliance alternative for homes rated to Energy Star. Given the number of states that have now adopted the IECC Energy Rating Index, we see an opportunity to increase the usability and reach of ICC-700 by incorporating an ERI-based compliance option directly in ICC-700. We believe this will greatly benefit builders and energy raters who are trying to certify new homes and multifamily dwellings to multiple code and above-code programs, while providing a good testing ground for future improvements to the IECC ERI. As revised, ICC-700 Section 704 would require compliance with the Energy Rating Index section of the 2018 IECC for a bronze rating. For each rating above bronze, we have proposed an additional 5 point ERI index improvement. As an alternative, we could support a reasonable percentage improvement for each level instead of the 5-point increments, or a reference to another outside standard (such as the draft ASHRAE Standard 90.2, which is very close to the Emerald level numbers). In any case, this approach is intended to serve at least as a starting point for discussion. The 2018 IECC slightly increased the required ERI scores (making them less stringent than the 2015 IECC) as part of a broader compromise that included more stringent thermal envelope requirements for homes that incorporate renewable on-site power production into the ERI calculation. Consistent with that compromise, this proposal includes the higher 2018 ERI scores, along with the new footnote “a” in Table 704.2 as we believe it will appear in the 2018 IECC.																																													
TG Recommendation (AS or AM or D):	Disapprove																																													
Modification of Proposed Change:																																														
TG Reason:	The footnote (a) would have to apply to all path to be consistent. The standard should encourage both energy efficiency and renewable energy. A static ERI number incentivizes larger homes vs smaller homes. The proposal can drive construction away from the most cost-effective solutions and make renewables a less attractive options for the ERI path.																																													

TG Vote:	6-4-1
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P179	LogID 6160	701.1.3 HERS Index Target Path requirements
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Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	701.1.3 HERS Index Target Path requirements. A building complying with Section 704 shall obtain a minimum of 30 points from Section 704 and shall include a minimum of two <u>three</u> practices from Section 705, or a minimum of <u>two</u> practices from Section 705 and a minimum of <u>one</u> practice from Section 706.
Reason:	This revision will allow for more flexibility to choose more options, while requiring three instead of two practices.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	701.1.3 HERS Index Target Path requirements. A building complying with Section 704 shall obtain a minimum of 30 points from Section 704 and shall include a minimum of two <u>three</u> practices from Section 705, or a minimum of one <u>two</u> practices from Section 705 and a minimum of <u>one</u> practice from Section 706.
TG Reason:	To provide more flexibility and consistent with action on 6159
TG Vote:	1 abst, rest in support

P180	LogID 6292	701.1.4 Alternative bronze and silver level compliance
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	701.1.4 Alternative bronze and silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building <u>or demonstrates compliance with the 2018 IECC or Chapter 11 of the 2018 IRC</u> achieves the bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all of the requirements in IECC Section R401.2.1 (Tropical Zone) achieves the silver level for Chapter 7. The buildings achieving compliance under Section 701.1.4 are not eligible for achieving a rating level above silver.
Reason:	Recognizing the 2018 IECC as an alternative makes sense.
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Unanimous (10-0-0)

P181	LogID 6451	701.1.4 Alternative bronze and silver level compliance
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Submitter:	Craig Conner, self
Requested Action:	Revise as follows
Proposed Change:	701.1.4 Alternative bronze and silver levels of compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building achieves the bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all of the requirements in IECC Section R401.2.1 (Tropical Zone) achieves the silver <u>gold</u> level for Chapter 7. The Buildings achieving compliance under Section 701.1.4 are not eligible for achieving a rating levels above silver <u>those in this section</u> .

Reason:	This change gives the Tropical Home a Gold level of compliance based on energy savings well above Gold. Each point in energy is a 1/2 % of the energy savings. The difference between Bronze and Gold is 30 points or 15% of the energy cost. The PNNL report on the impact of the 2018 IECC (link below) gives the costs by energy end use for 2018 IECC (Table 11 of the PNNL report). The costs for each end use are below with last column giving the Tropical home impact on the end uses. End Use \$\$ 2018 IECC & % Tropical Home Impact Heating \$7.09
TG Recommendation (AS or AM or D):	Approve as Modified
Modification of Proposed Change:	<p><u>701.1.5 Alternative gold level compliance.</u></p> <p><u>One- or two-family dwelling in the tropical zone at an elevation less than 2,400 feet (731.5 m) above sea level that complies with the following shall achieve the gold level for chapter 7:</u></p> <ol style="list-style-type: none"> <u>1. The residence complies with IECC Tropical Zone than section R401.2.1.</u> <u>2. The residence includes a minimum of 2 kW of PV and a minimum of 6 kWh of battery storage.</u> <u>3. Any air conditioning has a minimum of 18 SEER.</u> <u>4. Solar, wind or other renewable energy source supplies not less than 90 percent of the energy for service water heating.</u> <u>5. Glazing in conditioned spaces has a solar heat gain coefficient of less than or equal to 0.25, or has an overhang with a projection factor equal to or greater than 0.30.</u> <u>6. The exterior roof/ceiling complies with at least two of the following</u> <u>Minimum roof reflectance and emittance in IECC Table C402.3</u> <u>Roof or ceiling has insulation with an R-value of R-15 or greater.</u> <u>Includes a radiant barrier.</u> <u>7. Walls comply with at least one of the following:</u> <u>Walls have an overhang with a projection factor equal to or greater than 0.30.</u> <u>Walls have insulation with an R-value of R-13 or greater.</u> <u>Walls have a solar reflectance of 0.64</u> <u>8. A ceiling fan is provided for bedrooms and the largest space that is not used as a bedroom; alternately a whole house fan is provided.</u> <u>9. Wiring sufficient for a Level 2 (208/240V 40-80 amp) electric vehicle charging station is installed on the building site.</u>
TG Reason:	In response to comments from Task Group, the objective of the amendments is to make the provisions above code. Provides a path to net-zero energy homes in tropical climates.
TG Vote:	10-0-1

P182	LogID 6392	701.1.4 Alternative bronze and silver level compliance
Submitter:	Eric Lacey, RECA	
Requested Action:	Revise as follows	
Proposed Change:	<p>701.1.4 Alternative bronze and silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building achieves the bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Rev. 08 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010 90.1-2013) building achieves the silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all of the requirements in IECC Section R401.2.1 (Tropical Zone) achieves the silver level for Chapter 7. The buildings achieving compliance under Section 701.1.4 are not eligible for achieving a rating level above silver.</p>	
Reason:	<p>This proposal is intended to update the Energy Star compliance option for single-family and multifamily buildings. For single-family homes (and low-rise multifamily homes), the proposal retains and updates (by citing the most recent version) the option to demonstrate silver-level compliance using Energy Star Version 3.1, but eliminates Energy Star Version 3.0 for bronze-level compliance. For mid- and high-rise multifamily buildings, the proposal updates the reference baseline from ASHRAE 90.1-2010 to 90.1-2013. We believe that the 2018 ICC-700 should build upon the efficiency of the most recent edition of the IECC and ASHRAE. For single-family and low-rise multifamily buildings, Energy Star Version 3.0 was developed to correspond with the 2009 IECC, but is now outdated, since a good number of efficiency improvements have been incorporated into the IECC since then. It does not make sense to continue to allow alternative compliance with Version 3.0 in the national model green code, even for bronze-level compliance. We support an Energy Star alternative, but ICC-700 should require the most recent version of the Energy Star program that most closely corresponds with the 2018 IECC. This proposal is</p>	

	<p>consistent with U.S. EPA's policy of rolling out Energy Star Version 3.1. Simply put, where a state adopts the 2012 or 2015 IECC as its mandatory statewide code, EPA updates the state's Energy Star program requirements to Version 3.1, twelve months after the effective date. As such, Energy Star Version 3.0 is phased out and is no longer available in such states. Likewise, for mid- and high-rise multifamily homes in states that have adopted the 2012 or 2015 IECC or ASHRAE 90.1-2010 or 2013, U.S. EPA has also updated the baseline that applies to the multifamily standard to a 15% improvement over a baseline of ASHRAE 90.1-2013. More and more states are adopting the 2012 IECC or more recent versions; since ICC-700 is the national model green code, it should reflect this fact. Similarly, given that the ICC has published a 2015 IECC (and will soon publish a 2018 version) and ASHRAE has published Standard 90.1-2013, it makes sense that the newest version of ICC-700 reflect the version of Energy Star that most closely corresponds with the most recent version of the IECC and ASHRAE 90.1. Allowing compliance with Version 3.0 or Standard 90.1-2010 may result in buildings that would not even comply with the version of the IECC or ASHRAE 90.1 that applies for statewide construction. This is particularly important when it is considered that the version of ICC-700 that will be published as a result of this process will be in effect more than a decade after the 2009 IECC and ASHRAE 90.1-2010 were published and after they has been superseded by two or three more recent editions. As a result, we recommend setting a single Energy Star standard – the most recent standard, and the one that most closely corresponds with the most recently published IECC or ASHRAE – as the single option for alternative compliance under Section 701.1.4.</p>
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Energy Star V3.0 is still a valid path available for achieving compliance in a majority of the country and should remain in the NGBS. Energy star alignment also makes multifamily provisions of the standard more usable. No justification for deleting provisions for tropical zone provided and the tropical zone will be addressed under 6451.
TG Vote:	8-2-1

P183	LogID 6502	701.1.4 Alternative Bronze and silver level compliance
Submitter:	John Woestman	
Requested Action:	Delete without substitution	
Proposed Change:	<p>701.1.4 Alternative bronze and silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building achieves the bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all of the requirements in IECC Section R401.2.1 (Tropical Zone) achieves the silver level for Chapter 7. The buildings achieving compliance under Section 701.1.4 are not eligible for achieving a rating level above silver.</p>	
Reason:	Recommend deleting these alternatives unless analysis is available which indicates these defined alternatives are equivalent or more conservative compared to the requirements of this standard.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	No compelling reason or analysis why the provisions are no longer valid/equivalent have been provided. The alignment with Energy Star is a strong market position for the NGBS.	
TG Vote:	9-1-1	

P184	LogID 6504	701.2 Emerald level points
Submitter:	John Woestman	
Requested Action:	Revise as follows	

Proposed Change:	701.2 Emerald level points. The Performance Path shall be <u>the only path</u> used to achieve the emerald level.
Reason:	We think this is consistent with the intent. If so, this may help with understanding.
TG Recommendation (AS or AM or D):	Approve as modified
Modification of Proposed Change:	701.2 Emerald level points. The Performance Path (Section 702) or the HERS Index Target Path (Section 704) shall be used to achieve the emerald level.
TG Reason:	The HERS path is also an energy model path and should be recognized as a means to achieve emerald compliance.
TG Vote:	8-1-0 Note: Craig or Aaron will have an opportunity to bring the item back up when discussing other HERS path proposals

P185	LogID 6573	701.2 Emerald level points
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Submitter:	Craig Conner, self
Requested Action:	Add new as follows
Proposed Change:	<p>701.3 <u>Simplified Equivalent Compliance Alternative.</u></p> <p><u>701.3.1 Equivalent building option. Dwellings that meet both of the following criteria shall be deemed in compliance with the thermal envelop requirements of this chapter.</u></p> <p><u>1. The ratio of the air-conditioning capacity to conditioned space is less than or equal to 1.5 tons per 1000square feet.</u></p> <p><u>2. The ratio of the heating system capacity to floor area of conditioned space is less than or equal to</u></p> <p><u>10,000 Bth/h per 1000 square feet for zone 2</u></p> <p><u>15,000 Bth/h per 1000 square feet for zone 3</u></p> <p><u>18,000 Bth/h per 1000 square feet for zone 4 5</u></p> <p><u>20,000 Bth/h per 1000 square feet for zone 6 & 7.</u></p> <p><u>25,000 Bth/h per 1000 square feet for zone 8</u></p> <p><u>701.3.2 Equivalent hot water.</u></p> <p><u>The horizontal distance from the hot water supply outlet to the hot water entry to a room where hot water is used shall be no more than 10ft. This shall apply to the kitchens, bathrooms with showers or tub, and rooms with a clothes washer.</u></p> <p><u>701.3.3 Equivalent lighting.</u></p> <p><u>Dwellings in compliance with at least one of the following requirements shall be deemed in compliance with the lighting requirements:</u></p> <p><u>1. Lamps over 15 watts shall be CFL, LED, or have an efficacy not less than 70 lumens per watt, or.</u></p> <p><u>2. At least 90% of the lamps or fixtures shall have an efficacy not less than 75 lumens per watt. Where compliance is based on efficacy the efficacy shall be on a manufacturer designation of efficacy on the lamp or fixture; or the lighting efficacy shall be on the construction plans.</u></p> <p><u>701.3.4 Compliance with all three items above plus the mandatory portion of this chapter shall be deemed compliance with the NGBS energy requirements at the silver level.</u></p>
Reason:	This prescribes a simple way to show NGBS energy compliance
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	The proposal is incomplete; needs revision and justification.
TG Vote:	Unanimous

P186	LogID 6068	701.4 Mandatory practices
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Submitter:	Michelle Foster, Home Innovation Research Labs
Requested Action:	Revise as follows

Proposed Change:	Clarify that the mandatory items are applicable to the method of construction being verified.
Reason:	The mandatory items are designed to ensure that the code provisions are complied with, however, code varies if the building is SF or MF. The proposed change would clarify that the mandatory practices are relevant depending on the specific method of construction.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Proposed change is unclear and no specific language is proposed.
TG Vote:	12-0-0

P187 LogID 6394 701.4.3.1 Building Thermal Envelop Air Sealing

Submitter:	Eric Lacey, RECA
Requested Action:	Add new as follows

Proposed Change: **701.4.3.X Minimum Thermal Envelope Efficiency.** For all compliance paths, the minimum R-values, maximum U-factors, and maximum SHGC meet or exceed the efficiency level specified in Table 701.4.3.X.

**Table 701.4.3.X
Minimum Thermal Envelope Efficiency**

<u>CLIMATE ZONE</u>	<u>FENESTRATION U-FACTOR</u>	<u>SKYLIGHT U-FACTOR</u>	<u>GLAZED FENESTRATION SHGC</u>	<u>CEILING R-VALUE</u>	<u>WOOD FRAME WALL R-VALUE</u>	<u>MASS WALL R-VALUE</u>	<u>FLOOR R-VALUE</u>	<u>BASEMENT WALL R-VALUE</u>	<u>SLAB R-VALUE & DEPTH</u>	<u>CRAWL SPACE WALL R-VALUE</u>
1	<u>1.20</u>	<u>0.75</u>	<u>0.30</u>	<u>30</u>	<u>13</u>	<u>3/4</u>	<u>13</u>	<u>0</u>	<u>0</u>	<u>0</u>
2	<u>0.65</u>	<u>0.75</u>	<u>0.30</u>	<u>30</u>	<u>13</u>	<u>4/6</u>	<u>13</u>	<u>0</u>	<u>0</u>	<u>0</u>
3	<u>0.50</u>	<u>0.65</u>	<u>0.30</u>	<u>30</u>	<u>13</u>	<u>5/8</u>	<u>19</u>	<u>5 / 13</u>	<u>0</u>	<u>5 / 13</u>
4 except Marine	<u>0.35</u>	<u>0.60</u>	NR	<u>38</u>	<u>13</u>	<u>5/10</u>	<u>19</u>	<u>10 / 13</u>	<u>10, 2ft</u>	<u>10 / 13</u>
5 and Marine 4	<u>0.35</u>	<u>0.60</u>	NR	<u>38</u>	<u>20 or 13+5</u>	<u>13/17</u>	<u>30</u>	<u>10 / 13</u>	<u>10, 2ft</u>	<u>10 / 13</u>
6	<u>0.35</u>	<u>0.60</u>	NR	<u>49</u>	<u>20 or 13+5</u>	<u>15/19</u>	<u>30</u>	<u>15 / 19</u>	<u>10, 4ft</u>	<u>10 / 13</u>
7 and 8	<u>0.35</u>	<u>0.60</u>	NR	<u>49</u>	<u>21</u>	<u>19/21</u>	<u>38</u>	<u>15 / 19</u>	<u>10, 4ft</u>	<u>10 / 13</u>

Reason: This proposal would require that, for all projects, the efficiency levels of the building thermal envelope components meet or exceed the prescriptive thermal envelope efficiency required by the 2009 IECC. There are several reasons why this backstop should be implemented in the 2018 ICC-700: • The 2009 IECC already serves as the trade-off backstop for the 2015 and 2018 IECC Energy Rating Index. Every state that has adopted the 2015 IECC ERI so far has maintained or improved upon this backstop. • The 2009 IECC (or more stringent code) has been adopted in over three-quarters of the states. • The 2009 IECC is the foundation for the 2009 American Recovery and Reinvestment Act (ARRA), which distributed \$3.4 billion in incentive funding to states that committed to adopt the 2009 IECC for residential construction. • Nationwide, new homes must show compliance with the 2009 IECC in

	order to be eligible for federally-insured mortgages. Effective building trade-off options need reasonable minimum-level mandatory backstops. It would strain the credibility of the 2018 ICC-700 as an “above-code program” to allow homes to be built with extremely weak thermal envelopes with an efficiency level below the 2009 IECC. The proposed backstop still permits significant trade-off flexibility, considering the improvements made to the IECC between 2009 and 2018, as well as additional efficiency requirements imposed by ICC-700. But this proposal helps builders avoid a scenario in which the green building’s thermal envelope may fail compliance with a state or local code (or a federal requirement) based on the 2009 IECC. We do not expect that this will be any burden to today’s green builders.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Applies to all energy compliance paths. Limits flexibility beyond the prescriptive path. NGBS is supposed to be innovative. The table is not appropriate for the tropical zone. Can be redundant or conflicting with local energy code requirements.
TG Vote:	9-1-0

P188	LogID 6505	701.4.3.1 Building Thermal Envelope Air Sealing
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	<p>701.4.3.1 Building Thermal Envelope Air Sealing. The building thermal envelope is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film, or solid material:</p> <p>(g) Walls, and ceilings, and floors separating a garage from conditioned spaces from unconditioned space.</p> <p>(k) Rim joist junction. Joints of framing members at rim joists.</p> <p>(l) Top and bottom plates.</p> <p>(m) Other sources of infiltration.</p>
Reason:	Suggest revising several of the items in the list to more thoroughly identify the locations where air sealing is required.
TG Recommendation (AS or AM or D):	AS 1 st Amy 2 nd Dorothy
Modification of Proposed Change:	
TG Reason:	This is a simple clarification of what is already contained in the table
TG Vote:	9 approve, 1 disapprove, 0 abstain

P189	LogID 6507	701.4.3.2 Air sealing and insulation
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	<p>701.4.3.2 Air barrier, air sealing, building envelope testing, and insulation. Grade II and III insulation installation is not permitted. Building envelope air barrier, air sealing, envelope tightness, and insulation installation is verified to be in accordance with <u>this Section 701.4.3.2(1) and 701.4.3.2(2) and Section 701.4.3.2.1.</u></p>

	<p>701.4.3.2.1 Grade I insulation installations are Insulation installation. Field-installed insulation products to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, except as specifically noted, are verified by a third-party in accordance with the following:</p> <p>(1) Grading applies to field-installed insulation products.</p> <p>(2) Grading applies to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, except as specifically noted.</p> <p>Re-number items(3) through (11), and revise item (11)</p> <p>(11) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with the Grade 1 insulation installation requirements <u>this section</u>.</p> <p>703.2.1 UA improvement. The total building thermal envelope UA is less than or equal to the total UA resulting from the U-factors provided in Table 703.2.1(a) or IECC Tables C402.1.4 and C402.4, as applicable. Where insulation is used to achieve the UA improvement, the insulation installation is in accordance with Grade 1 requirements as graded Section 701.4.3.2.1 as verified by a third-party. Total UA is documented using a RESCheck, COMCheck, or equivalent report to verify the baseline and the UA improvement.</p>
Reason:	Removing all mentions of “Grade” pertaining to insulation installation, as Grade is not defined or described in the standard. Also revising 701.4.3.2.1 to move the “what” and “where” specifics of the first two items into the charging language. Also, adding requirement insulation installation is verified by a third-party consistent either requirement in 703.2.1.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<p>Retain reference to “Grade I” as follows.</p> <p>701.4.3.2 Air barrier, air sealing, building envelope testing, and insulation. Grade II and III insulation installation is not permitted. Building envelope air barrier, air sealing, envelope tightness, and insulation installation is verified to be in accordance with this Section 701.4.3.2(1) and 701.4.3.2(2) and Section 701.4.3.2.1.</p> <p>701.4.3.2.1 Grade I insulation installations are Insulation installation. Field-installed insulation products to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, except as specifically noted, are verified as Grade I by a third-party in accordance with the following:</p> <p>(1) Grading applies to field-installed insulation products.</p> <p>(2) Grading applies to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, except as specifically noted.</p> <p>Re-number items (3) through (11), and revise item (11)</p> <p>(11) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with the Grade 1 insulation installation requirements <u>this section</u>.</p> <p>703.2.1 UA improvement. The total building thermal envelope UA is less than or equal to the total UA resulting from the U-factors provided in Table 703.2.1(a) or IECC Tables C402.1.4 and C402.4, as applicable. Where insulation is used to achieve the UA improvement, the insulation installation is in accordance with Grade I requirements in as graded Section 701.4.3.2.1 as verified by a third-party. Total UA is documented using a RESCheck, COMCheck, or equivalent report to verify the baseline and the UA improvement.</p>
TG Reason:	Section 701.4.3.2 is removed from this proposed change due to prior action 6506. Grade I was retained to further clarify and emphasize for need for the installation to meet Grade I requirement and to provide clarity to verifiers.
TG Vote:	Unanimous

P190	LogID 6506	701.4.3.2 Air sealing and insulation
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	

Proposed Change:	701.4.3.2 Air barrier, air sealing, building envelope testing, and insulation. Grade II and III insulation installation is not permitted. Building envelope air barrier, air sealing, envelope tightness, and insulation installation is verified to be in accordance with <u>this Section 701.4.3.2(1) and 701.4.3.2(2) and Section 701.4.3.2.1.</u> Insulation installation other than Grade 1 is not permitted. 701.4.3.2.1 Grade I Insulation installations are in accordance with the following:
Reason:	Removing the phrase regarding “Grade II and III” insulation installation as these are not defined, described, or referenced in the standard, and instead refer to “Grade I” which has requirements described in the standard. Revising the text to add explicit requirement to comply with the insulation installation requirements in Section 701.4.3.2.1.
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	Improves and clarifies the language.
TG Vote:	Unanimous

P191	LogID 1517	701.4.3.2 Air sealing and insulation
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Submitter:	Rachel Della Valle, Southern Energy Management
Requested Action:	Revise as follows
Proposed Change:	I suggest using the language: “Air sealing and insulation. Grade II and III insulation installation is not permitted. Building envelope air tightness and insulation installation is verified to be in accordance with Section 701.4.3.2(1) and or 701.4.3.2(2).”
Reason:	701.4.3.2: “Air sealing and insulation. Grade II and III insulation installation is not permitted. Building envelope air tightness and insulation installation is verified to be in accordance with Section 701.4.3.2(1) and 701.4.3.2(2).” I noticed this item requires 701.4.3.2(1) and 701.4.3.2(2) whereas the 2012 Standard required 701.4.3.2(1) or 701.4.3.2(2). Is this accurate? I believe the first draft had the ‘or’. The 2012 NGBS was definitely ‘or’.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	This is a significant reduction in the requirements of the standard and inconsistent with the 2015 IECC.
TG Vote:	Unanimous

P192	LogID 6396	701.4.3.4 Fenestration air leakage
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Submitter:	Eric Lacey, RECA		
Requested Action:	Add new as follows		
Proposed Change:	<table border="1"> <tr> <td>701.4.3.X Fenestration U-factor and SHGC. <u>U-factors of fenestration products (windows, doors and skylights) are determined in accordance with NFRC 100 by an accredited, independent laboratory, and labeled and certified by the manufacturer. The solar heat gain coefficient (SHGC) of glazed fenestration products (windows, glazed doors, and skylights) are determined in accordance with NFRC 200 by an accredited, independent laboratory, and labeled and certified by the manufacturer.</u></td> <td>Mandatory</td> </tr> </table> <p>703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 703.2.5.1. Area weighted averages are calculated separately for the categories of 1) windows and exterior doors and 2) skylights and tubular daylighting devices (TDDs). Decorative fenestration elements</p>	701.4.3.X Fenestration U-factor and SHGC. <u>U-factors of fenestration products (windows, doors and skylights) are determined in accordance with NFRC 100 by an accredited, independent laboratory, and labeled and certified by the manufacturer. The solar heat gain coefficient (SHGC) of glazed fenestration products (windows, glazed doors, and skylights) are determined in accordance with NFRC 200 by an accredited, independent laboratory, and labeled and certified by the manufacturer.</u>	Mandatory
701.4.3.X Fenestration U-factor and SHGC. <u>U-factors of fenestration products (windows, doors and skylights) are determined in accordance with NFRC 100 by an accredited, independent laboratory, and labeled and certified by the manufacturer. The solar heat gain coefficient (SHGC) of glazed fenestration products (windows, glazed doors, and skylights) are determined in accordance with NFRC 200 by an accredited, independent laboratory, and labeled and certified by the manufacturer.</u>	Mandatory		

	with a combined total maximum area of 15 square feet (1.39 m2) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.
Reason:	This proposal clarifies that fenestration U-factors and SHGCs should be determined in accordance with NFRC certified ratings, consistent with the requirements of the IECC and the Energy Star Windows program. This has been a requirement in the IECC since the mid-1990s, and it is a requirement in nearly every state for residential construction. The vast majority of residential windows, doors, and skylights are already certified and labeled according to NFRC standards, so we do not expect this requirement to create any issues or any added cost. Requiring uniform, objectively-determined ratings for fenestration will help to ensure the expected performance and quality of green homes and will simplify certification for green raters.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	For commercial window systems, this language excludes AAMA 507.
TG Vote:	6-2-1

P193	LogID 1503	701.4.3.4 Fenestration air leakage
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Submitter:	Roger LeBrun, VELUX America Inc.
Requested Action:	Revise as follows
Proposed Change:	701.4.3 701.4.3.4 Fenestration air leakage. Windows, skylights and sliding glass doors have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m2), when tested in accordance with NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled. This practice does not apply to site-built windows, skylights, and doors.
Reason:	A green code should not leave a gaping hole by exempting "site-built" windows, skylights and doors. Only rated products meeting the mandatory requirements are acceptable, no matter how they are built, otherwise what does mandatory really mean?
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	701.4.3.4 Fenestration air leakage. Windows, skylights and sliding glass doors have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m2), when tested in accordance with NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled. Site-built fenestration products have a certificate of compliance. This practice does not apply to site-built field-fabricated fenestration products windows, skylights, and doors. Add definitions:

	<p>FENESTRATION. Products classified as either vertical fenestration or skylights.</p> <p>Skylight. Glass or other transparent or translucent glazing material installed at a slope of less than 60 degrees (1.05 rad) from horizontal.</p> <p>Vertical fenestration. Windows (fixed or moveable), opaque doors, glazed doors, glazed block and combination opaque/glazed doors composed of glass or other transparent or translucent glazing materials and installed at a slope of at least 60 degrees (1.05 rad) from horizontal.</p> <p>FENESTRATION PRODUCT, FIELD-FABRICATED. A fenestration product whose frame is made at the construction site of standard dimensional lumber or other materials that were not previously cut, or otherwise formed with the specific intention of being used to fabricate a fenestration product or exterior door. Field fabricated does not include site-built fenestration.</p> <p>FENESTRATION PRODUCT, SITE-BUILT. A fenestration designed to be made up of field-glazed or field-assembled units using specific factory cut or otherwise factory-formed framing and glazing units. Examples of site-built fenestration include storefront systems, curtain walls, and atrium roof systems.</p>
TG Reason:	Site built products can get a certificate of compliance from the manufacturer as issued by a certification agencies. Field fabricated was not included in the 2015 NGBS and needed to be added for consistency with IECC and field practices. Definitions are added for clarity and consistency.
TG Vote:	12-1-0

P194	LogID 1504	701.4.3.4 Fenestration air leakage
Submitter:	Craig Conner, Building Quality	
Requested Action:	Revise as follows	
Proposed Change:	701.4.3.4 Fenestration air leakage. <u>Jalousie windows shall have an air infiltration rate of no more than 1.3 cfm per square foot.</u>	
Reason:	Jalousie windows are tropical windows made to admit breezes. Sealing them tight is expensive and nonsensical.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Limit the exception for the tropical zone only. Add Definition of Jalousie Jalousie window — a window consisting of a series of overlapping horizontal frameless louvers which pivot simultaneously in a common frame and are actuated by one or more operating devices so that the bottom edge of each louver swings outward and the top edge swings inward during operation. 701.4.3.4 Fenestration air leakage. <u>Exception: For Tropical Zones Only, Jalousie windows are permitted to be used as a conditioned space boundary and shall have an air infiltration rate of not more than 1.3 cfm per square foot.</u>	
TG Reason:	To make sure that it's used only for tropical zones in this application. And to add a definition for clarity of compliance.	
TG Vote:	9-0-0	

P195	LogID 6508	701.4.3.5 Recessed lighting
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	701.4.3.5 Recessed lighting Lighting in building thermal envelope. Recessed luminaires installed in the building thermal envelope are sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires in the building thermal envelope are IC-rated and labeled as meeting	

	ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All recessed luminaires <u>in the building thermal envelope</u> are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering.
Reason:	The vast majority of lighting luminaires are recessed in the building thermal envelope. However, the scope of the requirements of this section should apply to all lighting luminaires in the building thermal envelope, not just recessed lighting. With fast changing lighting technology, it's possible lighting luminaires will penetrate the building thermal envelope but not be considered recessed lighting. The revisions would apply to all lighting luminaires "in" the building thermal envelope, but would not apply to luminaires "on" the building thermal envelope. Consider, for example, 1/2" thick LED lighting panels which are installed in place of 1/2" drywall on the ceiling. These panels may not be considered recessed but clearly should be included in the requirements of this section.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	701.4.3.5 Recessed lighting - Lighting in building thermal envelope. Recessed luminaires installed in the building thermal envelope which penetrate the air barrier are sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires <u>installed in the building thermal envelope which penetrate the air barrier</u> are IC-rated and labeled as meeting ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All recessed luminaires <u>installed in the building thermal envelope which penetrate the air barrier</u> are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering.
TG Reason:	The modification addresses all types of luminaire that may penetrate the air barrier whether they are recessed or not.
TG Vote:	9-0-0

P196	LogID 6509	701.4.5 Boiler supply piping
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	701.4.5 Boiler supply piping. Boiler supply piping in unconditioned space <u>supplying or returning heated water or steam</u> is insulated.	
Reason:	It seems this more clearly describes the intent of the requirements of this section.	
TG Recommendation (AS or AM or D):	Approve as modified	
Modification of Proposed Change:	701.4.5 Boiler supply piping. Boiler supply piping in unconditioned space <u>supplying or and returning heated water or steam</u> is insulated.	
TG Reason:	Improve energy savings of boiler systems	
TG Vote:	13-0-0	

P197	LogID 6395	702.2.1 ICC IECC analysis (Energy performance levels)
Submitter:	Eric Lacey, RECA	
Requested Action:	Revise as follows	
Proposed Change:	702.2.1 ICC IECC analysis. <u>The building complies with Section R405 or Section C407 of the 2018 IECC, the IECC Simulated Performance Alternative, using either the Energy efficiency features are implemented to achieve energy cost</u> or source energy performance <u>option, that meets the ICC IECC. A documented analysis using software in accordance with ICC IECC, Section R405, or ICC IECC Section C407.2 through C407.5, applied as defined in the ICC IECC, is required.</u>	
Reason:	This proposal will simplify and clean up the language for the performance compliance option in Section 702.2.1, but should not materially change the requirements of that section. While 702.2.1 already requires compliance with the IECC's Simulated Performance Alternative, it does so in an ambiguous and confusing way. We propose a very simple solution: clarify that compliance with the IECC performance path is required to comply under this option. This could easily be accomplished by deleting the confusing	

	language and replacing it with simple references to Sections R405 and C407. These two sections contain all of the assumptions, references, and documentation requirements necessary to complete a full simulated performance analysis. This would also eliminate the separate requirement for documentation in the second sentence, since that documentation is included in Sections R405.4 and C407.4.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	The proposal significantly changes the meaning of the section. The change limits the ability to show compliance using non-envelope measures because R405 essentially allows trade-offs only on the envelope.
TG Vote:	6-5-0

P198	LogID 6485	702.2.1 ICC IECC analysis (Energy performance levels)
Submitter:	Steven Armstrong, self	
Requested Action:	Add new as follows	
Proposed Change:	Leave current IECC code as is for 2018 Standard	
Reason:	Need to consider not changing the current IECC code level for the 2018 Standard. Fear is that we are going to code ourselves out of work. At present many areas do not subscribe to the 2015 IECC and or some derivation of the code.	
TG Recommendation (AS or AM or D):	Disapprove Note: revisit when the code is available	
Modification of Proposed Change:		
TG Reason:	Keep up with the model codes to provide options for jurisdictions who are early adopters of codes.	
TG Vote:	9-5-0	

P199	LogID 6470	702.2.1 ICC IECC analysis (Energy performance levels)
Submitter:	Chuck Foster, self	
Requested Action:	Revise as follows	
Proposed Change:	Energy efficiency features are implemented to achieve energy cost or source energy performance that meets the ICC IECC.	
Reason:	Source energy is an unstable metric for estimating energy performance, especially in a time of rapidly changing electric generation fleets. In addition, source energy overtly discriminates against the use of renewable energy sources, thereby putting it at tension with the goals and purpose of the NGBS.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	To provide consistency with IECC where source energy is included.	
TG Vote:	12-1-1	

P200	LogID 6172	702.2.1 ICC IECC analysis (Energy performance levels)
Submitter:	Keith Dennis, NRECA	
Requested Action:	Revise as follows	

Proposed Change:	702.2.1 ICC IECC Analysis. Energy efficiency features are implemented to achieve energy cost or <u>site energy</u> or source energy performance that meets the ICC IECC.
Reason:	The source energy calculations contain flaws, which is why DOE recently underwent a process to adjust them. Some of the issues are that source energy for renewable energy treats that energy as if it were from a fossil fuel plant and multiplies it by about 3, creating a counterproductive result. Similarly, nuclear energy, which makes up 20% of our national fuel mix and generates no emissions, is treated worse than fossil fuel because nuclear reactions are hot. This has little to do with CO2 emissions goals or energy efficiency. Using site and source energy provides flexibility.
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	Add flexibility to comply.
TG Vote:	9-4-1

P201	LogID 6150	702.2.1 ICC IECC analysis (Energy performance levels)
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	702.2.1 ICC IECC Analysis. Energy efficiency features are implemented to achieve energy cost or source <u>site</u> energy performance that meets the ICC IECC.	
Reason:	Site energy is measurable, verifiable, and is directly correlated to energy costs in a remodeled building. Source energy estimates are widely variable and can be easily used to "game" the system. In addition, source energy proponents claim that grid-based renewables have the highest "source" factors, penalizing builders and customers that use renewable forms of electricity. Site energy is also consistent with the equipment energy efficiency metrics shown in this chapter. ASHRAE has also stated that site energy is the preferred choice when looking at "net zero" energy buildings or energy comparisons.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Consistent with actions on 6172 and 6470	
TG Vote:	11-1-1	

P202	LogID 6329	702.2.1 ICC IECC analysis (Energy performance levels)
Submitter:	Neil Leslie, self	
Requested Action:	Revise as follows	
Proposed Change:	702.2.1 ICC IECC analysis. Energy efficiency features are implemented to achieve energy cost or source energy performance that meets the ICC IECC. A documented analysis using software in accordance with ICC IECC, Section R405, or ICC IECC Section C407.2 through C407.5, applied as defined in the ICC IECC, is required. <u>For heating systems, the standard reference design shall be an air source heat pump. For service water heating, the standard reference design shall be an electric resistance storage water heater. For cooling systems, the standard reference design shall be an air cooled split system air conditioner.</u>	
Reason:	A single technology-blind baseline performance requirement is critical for a uniform and consistent implementation of the Standard 700 primary intent. Shifting to a single baseline design provides an equitable credit to all technologies that have lower annual costs compared to the single baseline level irrespective of energy form or technology design. It establishes fixed reference home performance requirements BEFORE making the technology and energy choices for the rated home. A single reference design methodology creates a level playing field for all technology and energy forms and provides equitable treatment of advanced renewable, waste heat recovery, hybrid, and multi-fuel technology options. It is especially important for equitable and consistent evaluation of on-site power generation and combined heat and power systems.	

TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Inconsistent with IECC that allows choice of baseline technologies and systems
TG Vote:	6-2-2

P203	LogID 17-068	702.2.1 ICC IECC analysis
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Submitter: Jerry Phelan, Covestro

Requested Action: Revise as follows

Proposed Change: ~~702.2.1 ICC IECC analysis~~ **Total Building Energy Performance Paths.** Energy efficiency features are implemented to achieve energy cost or source energy performance ~~that meets the ICC IECC~~ using a simulation program in accordance with one of the following established compliance criteria:

1. For a residential building, as defined in the ICC IECC Section R202, in accordance with ICC IECC Section R405.
2. For a commercial building, as defined in the ICC IECC Section C202, in accordance with ICC IECC Section C407.
3. For a new building not excluded by ASHRAE 90.1-2016 Section 2.2, in accordance with the Performance Rating Method of Normative Appendix G and demonstrating a Performance Cost Index that is less than or equal to the Performance Cost Index Target as calculated in Section 4.2.1

(Strike the second sentence in 702.2.1 in its entirety.)

Where a building of 3 stories or less includes residential occupancy and less than or equal to 10% of the floor area is commercial occupancy, Path 1 must be utilized for the Total Building Energy Performance analysis. Where a building of 3 stories or less includes residential occupancy and greater than 10% of the floor area is commercial occupancy, Path 1 must be utilized for the Total Building Energy Performance analysis of the residential portion of the building and Path 2 must be utilized for the Total Building Energy Performance analysis of the commercial portion of the building. Where a building of more than 3 stories includes both residential and commercial occupancy either Path 2 or 3 must be utilized for the Total Building Energy Performance analysis of the whole building.

702.2.2 Energy performance analysis. Energy savings levels ~~above the ICC IECC~~ are determined through ~~an the building performance analysis that includes improvements...of the energy efficiency~~ measures associated with the systems and loads specified in the ICC IECC Section R405.1 for Path 1 and the ICC IECC C407.1 for Path 2 and with the regulated energy used for building systems and components as defined in Section 3.2 of ASHRAE 90.1-2016 for Path 3. Points are assigned using the following formulas:

~~Points = 30 + (percent above ICC IECC 2015) * 2~~

1. **Points = 30 + (percent energy savings versus the annual energy cost of the standard reference design) * 3.**
2. **Points = 30 + (percent energy savings versus the annual energy cost of the standard reference design) * 2.**
3. **Points = 30 + (Performance Cost Index points below the Performance Cost Index Target) * 3.**

Where both Path 1 and Path 2 are utilized in the analysis the points shall be combined.

Reason: The current provision language does not recognize the drastic differences between the residential and commercial performance path in the IECC. These differences include the system performance and loads that are used for the analysis, the specifications or rule sets established for the proposed and reference buildings, the calculation software tool requirements and more. Therefore, the current language does not insure uniformity in deriving meaningful results. The proposed language provides explicit instructions for establishing consistent execution of performance path analysis. It also provides the user synergistic use of established performance paths for demonstration of minimum compliance as well as conformance with specified green building performance levels of the NGBS. In addition, where the current language is

	<p>particularly problematic given the proposed scope change in the NGBS, the proposed language incorporates the definition needed to facilitate this scope expansion. Lastly, the addition of 90.1 Appendix G provides the user with additional flexibility for conformance with NGBS as well as provide potential market expansion for the use of the NGBS given both the broad use of Appendix G and the expanded scope of the NGBS.</p> <p>Given the various scales associated with the 3 paths, I have developed the proposed point formulas for consideration.</p>
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	The proposal does not explain how to combine points for commercial and residential. Some of the assumption of IECC commercial are not the same as 90.1. It is preferable to keep all calculations within the IECC as in the current standard to provide a single consistent basis for compliance.
TG Vote:	Unanimous (11-0-0)

P204	LogID 6510	702.2.2 Energy performance analysis
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	<p>702.2.2 Energy performance analysis. Energy savings levels above the ICC IECC are determined through an analysis that includes improvements in building envelope, air infiltration, heating system efficiencies, cooling system efficiencies, duct sealing, water heating system efficiencies, lighting, and appliances. Points are assigned using the following formula:</p> <p style="text-align: right;">Points = 30 + (percent above ICC IECC 2015)* 2</p> <p>Multifamily Building Note: Modeling 702.2.2.1 Multifamily buildings. Multifamily building energy performance analysis is completed building-wide using one of the following methods: whole building energy modeling, a unit-by-unit <u>energy modeling</u> approach, or a building average of a unit-by-unit <u>energy modeling</u> approach.</p>
Reason:	This non-mandatory Note appears to be a mandatory requirement. Revising the language as such. Also, the requirements may be better stated with "Modeling" revised out of the first part of the sentence.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	This clarification is not needed. The current language is adequately clear and is consistent with the use of multifamily notes throughout the document.
TG Vote:	Unanimous

P205	LogID 6533	702.2.2 Energy performance analysis
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Submitter:	Craig Conner, self
Requested Action:	Revise as follows
Proposed Change:	<p>2.2.2 Energy performance analysis. Energy savings levels above the ICC IECC are determined through an analysis that includes improvements in building envelope, air infiltration, heating system efficiencies, cooling system efficiencies, duct sealing, water heating system efficiencies, lighting, and appliances, <u>and on-site renewable energy</u>. Points are assigned using the following formula:</p>
Reason:	On-site renewable energy reduces the net energy used by the residence. Use of on-site renewables lowers the use of non-renewable fossil fuels. On-site renewables are almost essential to highly efficient homes and sometimes the only practical way to get to zero or near zero energy homes.
TG Recommendation (AS or AM or D):	AM

Modification of Proposed Change:	702.2.2 Energy performance analysis. Energy savings levels above the ICC IECC are determined through an analysis that includes improvements in building envelope, air infiltration, heating system efficiencies, cooling system efficiencies, duct sealing, water heating system efficiencies, lighting, and appliances, <u>and on-site renewable energy.</u> <u>For the purpose of this analysis, on-site renewable energy shall account for a reduction of no more than 5 percent of the total annual energy.</u> Points are assigned using the following formula:
TG Reason:	Consistent with the commercial provisions of the IECC for renewables.
TG Vote:	5-4-1

P206	LogID 6512	703.1.1 UA Compliance
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	703.1.1 UA-Building thermal envelope C-compliance. The building thermal envelope is in compliance with Section 703.1.1.1 or 703.1.1.2. Exception: Section 703.1.1 is not required for Tropical Climate Zone.	
Reason:	UA is one of the two options for compliance required by 703.1.1. The other is compliance via prescriptive R-values and prescriptive fenestration requirements – but no UA calculation is required.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	12-0-0	

P207	LogID 6398	703.1.1.1 Maximum UA
Submitter:	Eric Lacey, RECA	
Requested Action:	Revise as follows	
Proposed Change:	703.1.1.1 Maximum UA and SHGC. For IECC residential <u>buildings</u> , the total building UA is less than or equal to the total maximum UA as computed by <u>2018 2015</u> IECC Section R402.1.5. <u>The SHGC requirements for fenestration in Table R402.1.2 are also met.</u> For IECC commercial <u>buildings</u> , the total UA is less than or equal to the sum of the UA for <u>2018 2015</u> IECC Tables C402.1.4 and C402.4, including the U-factor times the area and C-factor or F-factor times the perimeter. <u>The SHGC requirements for fenestration in Table C402.4 are also met.</u> The total UA proposed and baseline calculations are documented. REScheck or COMcheck is deemed to provide UA calculation documentation.	
Reason:	This proposal clarifies that the fenestration SHGC requirements from the IECC have to be met whether the user chooses the UA compliance method (section 703.1.1.1) or the prescriptive-components compliance method (section 703.1.1.2). It also updates the referenced IECC from the 2015 to the 2018 Edition. The current prescriptive component compliance option (section 703.1.1.2) already recognizes that SHGC requirements also need to be met, but this requirement was inadvertently not mentioned in the Maximum UA option (section 703.1.1.1), potentially creating confusion. This proposal corrects this issue. SHGC requirements are a critical part of the thermal envelope and must be met regardless of how U-factor compliance is determined.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:	Note for staff: confirm the SHGC table number in the code	
TG Vote:	9-1-1	

P208	LogID 6399	703.1.1.2 Prescriptive R-values and fenestration requirements
Submitter:	Eric Lacey, RECA	

Requested Action:	Revise as follows
Proposed Change:	703.1.1.2 Prescriptive R-values and fenestration requirements. The building thermal envelope is in accordance with the insulation and fenestration requirements of 2018 <u>2015</u> IECC Table <u>R402.1.2</u> R402.1.4 or Tables C402.1.3. The fenestration U-factors and SHGCs are in accordance with Table <u>703.2.5.1</u> and or 2018 <u>2015</u> IECC Table C402.4. The SHGC is in accordance with the 2015 <u>2015</u> IECC requirements.
Reason:	The next Edition of ICC-700 should correspond with, and build upon the efficiency of, the 2018 IECC. While we expect that generic references to the IECC will be updated to the 2018 Edition in the Chapter 13 Referenced Standards, wherever there is a reference to a specific IECC Edition in the text (and particularly where there is a citation to a specific table or section), we generally support updating the reference to the 2018 IECC. This proposal applies the 2018 IECC prescriptive table as the prescriptive baseline for insulation requirements in the 2018 ICC-700. It also references ICC-700 Table 703.2.5.1 for fenestration U-factor and SHGC, which we expect will be updated to correspond with the 2018 IECC in a separate proposal. Not only will this replace an external reference with an internal reference, but it will also eliminate any conflicts between fenestration requirements in ICC-700 and the IECC. The combination of this proposal and a separate proposal to adopt the 2018 IECC fenestration requirements will result in a small improvement in efficiency in most climate zones because of improvements to fenestration U-factors, and will not result in any rollbacks in efficiency in ICC-700. We also note that the section reference in the 2015 ICC-700 to the 2015 IECC prescriptive table is incorrect – it should be Table R402.1.2. (We recommend that Staff correct this in the 2015 ICC-700 in future printings.) However, because we do not yet have a published version of the 2018 IECC, we ask that Staff ensure that the section numbers are consistent for the 2018 editions of the IECC and ICC-700.
TG Recommendation (AS or AM or D):	Approve (note: referencing the edition will be made consistent throughout the standard)
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Unanimous

P209	LogID 6511	703.1.1.2 Prescriptive R-values and fenestration requirements
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	<p>703.1.1.2 Prescriptive R-values and fenestration requirements. The building thermal envelope is in accordance with the insulation and fenestration requirements of 2015 <u>2015</u> IECC Table R402.1.1 or Tables C402.1.3 and C402.4. The SHGC is in accordance with the 2015 <u>2015</u> IECC requirements.</p> <p>703.1.2 Building Envelope Leakage. The building thermal envelope is in accordance with 2015 <u>2015</u> IECC R402.4.1.2 or C402.5 as applicable. Exception: Section 703.1.2 is not required for Tropical Climate Zone.</p> <p>703.1.3 Duct Testing. The duct system is in accordance with 2015 <u>2015</u> IECC R403.3.2 through R403.3.5 as applicable.</p> <p>705.6.2.1 Air leakage validation of building or dwelling units. A visual inspection is performed as described in 701.4.3.2(2) and air leakage testing is performed in accordance with ASTM E779 or ASTM E1827. (Points awarded only for buildings where building envelope leakage testing is not required by 2015 <u>2015</u> IECC.) (Points not awarded if points are taken under Section 703.2.4)</p>	
Reason:	Suggesting the reference to ICC IECC be consistent throughout the document. There are currently references to “International Energy Conservation Code”, “IECC”, “2015 IECC”, and “ICC IECC”. Our recommendation is “ICC IECC” should be used consistently in the standard.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		

TG Reason:	
TG Vote:	13-0-1

P210	LogID 1518	703.1.3 Duct Testing
Submitter:	Rachel Della Valle, Southern Energy Management	
Requested Action:		
Proposed Change:		
Reason:	703.1.3 Duct Testing. Requires duct testing per 2015 IECC unless ducts and hvac system are within the building thermal envelope. Correct?	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	No specific language proposed	
TG Vote:	Unanimous	

P211	LogID 6513	703.2.1 UA improvement
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	<p>703.2.1 UA improvement. The total building thermal envelope UA is less than or equal to the <u>baseline</u> total UA resulting from the U-factors provided in Table 703.2.1(a) or <u>ICC IECC Tables C402.1.4 Group R</u> and C402.4, as applicable. Where insulation is used to achieve the UA improvement, the insulation installation is in accordance with Grade 1 requirements as graded Section 701.4.3.2.1 as verified by a third-party. Total UA is documented using a RESCheck, COMCheck, or equivalent report to verify the baseline and the UA improvement.</p> <p style="text-align: center;">Table 703.2.1(a) Equivalent <u>Baseline</u> U-Factors^a</p> <p style="text-align: center;">Table 703.2.1(b) Points for Improvement in Total Building Thermal Envelope UA <u>Compared to Baseline UA</u></p> <p>Exception: For the Tropical Climate Zone, crawl space, basement, <u>and floor u-factors are not applicable</u> excluded from the total building thermal envelope UA improvement calculation.</p>	
Reason:	Primarily, attempting to clarify the baseline UA and that the points attained for improving the total building thermal envelope UA are compared to the baseline determined from the U-factors in Table 703.2.1(a). Also, replacing the reference to Grade I with reference to Section 701.4.3.2.1, as the term "Grade 1" is based on requirements not defined, described, or referenced in the standard. And, revising the text of the Exception to Table 703.2.1(b) to what we surmise is the intent of the exception.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	<p>703.2.1 UA improvement. The total building thermal envelope UA is less than or equal to the <u>baseline</u> total UA resulting from the U-factors provided in Table 703.2.1(a) or <u>ICC IECC Tables C402.1.4 Group R</u> and C402.4, as applicable. Where insulation is used to achieve the UA improvement, the insulation installation is in accordance with <u>Grade 1 meeting</u> requirements as graded Section 701.4.3.2.1 as verified by a third-party. Total UA is documented using a RESCheck, COMCheck, or equivalent report to verify the baseline and the UA improvement.</p> <p style="text-align: center;">Table 703.2.1(a) Equivalent <u>Baseline</u> U-Factors^a</p>	

	Table 703.2.1(b) Points for Improvement in Total Building Thermal Envelope UA Compared to Baseline UA
	Exception: <u>For the Tropical Climate Zone,</u> crawl space, basement, and floor u-factors are not applicable excluded from the total building thermal envelope UA improvement calculation.
TG Reason:	Retaining Grade 1 for usability of the standard and removing Group R for applicability and consistency reasons.
TG Vote:	9-0-1

P212	LogID 6514	703.2.4 Building envelope leakage
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	703.2.4 Building envelope leakage. The maximum building envelope leakage rate is <u>verified by a third-party</u> in accordance with Table 703.2.4 and whole building ventilation is provided in accordance with Section 902.2.1.	
Reason:	Considering points are being awarded for this practice, it is important the building envelope leakage is verified by a third-party.	
TG Recommendation (AS or AM or D):	D 1 st Aaron 2 nd Steve R.	
Modification of Proposed Change:		
TG Reason:	The clarification is not needed	
TG Vote:	7 approved, 1 disapproved, 2 abstain	

P213	LogID 1519	703.2.5 Building envelope leakage																																																																																																												
Submitter:	Carl Seville, SK Collaborative																																																																																																													
Requested Action:	Revise as follows																																																																																																													
Proposed Change:	Add an alternative leakage measurement of CFM per Square foot of building envelope at 50 PA (ELR50) in addition to ACH50 for points in this section. I recommend adding an additional column to table 703.2.4 as noted below: Max Env Leakage Climate Zone Rate ELR50 ACH50 Balance of table remains the same .28 4 .23 3 .18 2 .13 1																																																																																																													
Reason:	A recent study by CARB has determined that ACH50 is an inaccurate measurement for small multifamily apartment and unfairly penalizes units that are only measured via ACH50.																																																																																																													
TG Recommendation (AS or AM or D):	TG 5: AM 1 st Amber, 2 nd Dorothy TG 6: AM																																																																																																													
Modification of Proposed Change:	<p>TG 5 Change:</p> <table style="margin-left: 20px;"> <tr> <td>Max Envelope Leakage ELR50</td> <td colspan="8" style="text-align: center;">Climate Zone</td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> </tr> <tr> <td>0.28</td> <td>1</td> <td>2</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.23</td> <td>2</td> <td>4</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.18</td> <td>3</td> <td>5</td> <td>3</td> <td>4</td> <td>4</td> <td>6</td> <td>8</td> <td>7</td> </tr> <tr> <td>0.13</td> <td>4</td> <td>7</td> <td>5</td> <td>7</td> <td>7</td> <td>10</td> <td>15</td> <td>11</td> </tr> </table> <p>TG-6 modification: Add an alternative leakage measurement of CFM per square foot of building envelope at 50 PA (ELR50) in addition to ACH50 for points in this section as follows:</p> <table border="1" style="margin-left: 20px; width: 100%;"> <thead> <tr> <th colspan="9" style="text-align: center;">Climate Zone</th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">ELR50</td> <td colspan="8" style="text-align: center;">Points Awarded</td> </tr> <tr> <td>4</td> <td>1</td> <td>2</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>3</td> <td>2</td> <td>4</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>2</td> <td>3</td> <td>5</td> <td>3</td> <td>4</td> <td>4</td> <td>6</td> <td>8</td> <td>7</td> </tr> </tbody> </table>		Max Envelope Leakage ELR50	Climate Zone									1	2	3	4	5	6	7	8	0.28	1	2	-	-	-	-	-	-	0.23	2	4	-	-	-	-	-	-	0.18	3	5	3	4	4	6	8	7	0.13	4	7	5	7	7	10	15	11	Climate Zone										1	2	3	4	5	6	7	8	ELR50	Points Awarded								4	1	2	-	-	-	-	-	-	3	2	4	-	-	-	-	-	-	2	3	5	3	4	4	6	8	7
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TG Reason:	<p>TG 5: Make sure that the section number is correct, and integrate in the current table, note that the new values are for MF only (new table so there's no confusion in the current table, MF can choose either from the current table or the new one, but single family can only use the current table), can apply to residential or non-residential portion of the building</p> <p>TG-6: The Task Group modified the language to add a second table and match existing formatting in the NGBS</p>								
TG Vote:	<p>TG 5 : 8 approve, 0 disapprove, 3 abstain</p> <p>TG-6: 13 Yes; 2 Absentees</p>								

P214	LogID 6066	703.2.5.1 Fenestration Specifications
Submitter:	Thomas Culp, Aluminum Extruders Council	
Requested Action:	Revise as follows	
Proposed Change:	<p>703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 703.2.6.1 or IECC Table C402.4 where applicable.</p> <p>(rest of section unchanged)</p>	
Reason:	<p>While sections 703.2.6.1 and 703.2.6.2 are very appropriate for low-rise residential, they are still incorrect for high-rise residential. In fact, by referring to U-factors that originate from the residential chapter of the IECC and the Energy Star program for Windows, they are already inconsistent with Sections 703.1.1.1, 703.1.1.2, and 703.2.1 which properly refer to 2015 IECC table C402.4 as the baseline for windows in buildings that fall under the commercial IECC, including multifamily four stories and above. (Note: The Energy Star program for Windows is applicable only to windows in residential buildings three stories or less in height, and specifically excludes windows intended to be installed in buildings four stories or higher – see attached “Energy Star Product Specification Residential Windows, Doors, and Skylights, Eligibility Criteria Version 6.0”, sections 2A, 2B, and 1M.) Corrections have been made to other parts of Section 703 to accommodate high-rise multifamily, but not here yet. To avoid a technical inconsistency with 703.1.1.2, Section 703.2.5.1 also needs to be revised as shown with the reference to IECC Table C402.4, either using the phrase “as applicable” or specifically stating for residential buildings four stories or higher above grade. Additionally, the main criteria in sections 703.2.5.1 and enhanced criteria in 703.2.5.2 will presumably be reviewed in accordance with changes to the 2018 IECC. As such, this would be an appropriate time to establish new fenestration criteria for buildings four stories and higher based on the correct baseline from the commercial IECC, similar to how requirements for mid and high-rise multifamily buildings were addressed in other sections last cycle (air leakage, radiant barriers, HVAC efficiency, water heating). I will gladly assist in this process. Not only will this improve technical consistency and usability of the NGBS for high-rise residential (think 10, 20, 30 stories, not just 4), but it will also make it more attractive for adoption into standards such as ASHRAE 189.1.</p>	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	The proposed change is far too broad in its applicability to MF construction for fenestration with respect to building height.	
TG Vote:	6-4-1	

P215	LogID 6400	703.2.5.1 Fenestration Specifications				
Submitter:	Eric Lacey, RECA					
Requested Action:	Revise as follows					
Proposed Change:	<table border="1"> <tr> <td>703.2.5 Fenestration</td> <td></td> </tr> <tr> <td>703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 703.2.5.1. Area weighted</td> <td>Mandatory for Section 703</td> </tr> </table>		703.2.5 Fenestration		703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 703.2.5.1. Area weighted	Mandatory for Section 703
703.2.5 Fenestration						
703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 703.2.5.1. Area weighted	Mandatory for Section 703					

	<p>averages are calculated separately for the categories of 1) windows and exterior doors and 2) skylights and tubular daylighting devices (TDDs). Decorative fenestration elements with a combined total maximum area of 15 square feet (1.39 m²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.</p>	
	<p>703.2.5.1.1 Dynamic glazing. Dynamic glazing is permitted to satisfy the SHGC requirements of Table 703.2.5.1 provided the ratio of the higher to lower labeled SHGC is greater than or equal to 2.4 and the dynamic glazing is automatically controlled to modulate the amount of solar gain into the space in multiple steps. Fenestration with dynamic glazing is considered separately from other fenestration and area-weighted averaging with fenestration that does not use dynamic glazing is not permitted. Dynamic glazing is not required to be automatically controlled or comply with minimum SHGC ratio when both the lower and higher labeled SHGC already comply with the requirements of Table 703.2.5.1.</p> <p>Table 703.2.5.1 Fenestration Specifications [No Change to Table]</p>	<p>Mandatory for Section 703</p>
	<p><u>703.2.5.1.1 Dynamic glazing.</u> Dynamic glazing is permitted to satisfy the SHGC requirements of Table 703.2.5.1 provided the ratio of the higher to lower labeled SHGC is greater than or equal to 2.4 and the dynamic glazing is automatically controlled to modulate the amount of solar gain into the space in multiple steps. Fenestration with dynamic glazing is considered separately from other fenestration and area-weighted averaging with fenestration that does not use dynamic glazing is not permitted. Dynamic glazing is not required to be automatically controlled or comply with minimum SHGC ratio when both the lower and higher labeled SHGC already comply with the requirements of Table 703.2.5.1.</p>	
	<p>703.2.5.2 The NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with Table 703.2.5.2(a), (b), or (c). Decorative fenestration elements with a combined total maximum area of 15 square feet (1.39 m²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.</p>	<p>Per Table 703.2.5.2(a) or Table 703.2.5.2(b) or Table 703.2.5.2(c)</p>
	<p>703.2.5.2.1 Dynamic glazing. Dynamic glazing is permitted to satisfy the SHGC requirements of Tables 703.2.5.2(a), 703.2.5.2(b), and 703.2.5.2(c) provided the ratio of the higher to lower labeled SHGC is greater than or equal to 2.4, and the dynamic glazing is automatically controlled to modulate the amount of solar gain into the space in multiple steps. Fenestration with dynamic glazing is considered separately from other fenestration, and area-weighted averaging with fenestration that does not use dynamic glazing is not permitted. Dynamic glazing is not required to be automatically controlled or comply with minimum SHGC ratio when both the lower and higher labeled SHGC already comply with the requirements of Tables 703.2.5.2(a), 703.2.5.2(b), and 703.2.5.2(c).</p>	
	<p>703.2.5.2(a) and (b) and (c) [No changes to tables]</p>	
	<p>703.2.5.2.1 Dynamic glazing. Dynamic glazing is permitted to satisfy the SHGC requirements of Tables 703.2.5.2(a), 703.2.5.2(b), and 703.2.5.2(c) provided the ratio of the higher to lower labeled SHGC is greater than or equal to 2.4, and the dynamic glazing is automatically controlled to modulate the amount of solar gain into the space in multiple steps. Fenestration with dynamic glazing is considered separately from other fenestration, and area-weighted averaging with fenestration that does not use dynamic glazing is not permitted. Dynamic glazing is not required to be automatically controlled or comply with minimum SHGC ratio when both the lower and higher labeled SHGC already comply with the requirements of Tables 703.2.5.2(a), 703.2.5.2(b), and 703.2.5.2(c).</p>	
<p>Reason:</p>	<p>This proposal is purely editorial, but critical for proper application of the fenestration requirements of ICC-700. As Section 703.2.5.1 is currently presented in the published ICC-700, it is confusing, and we are concerned that code users may misinterpret the requirements. Likewise, Section 703.2.5.2 and its accompanying tables are similarly formatted and should also be fixed to better match the intent of the sections. Section 703.2.5.1 is the charging section that implements mandatory requirements for</p>	

	fenestration in the prescriptive path. These requirements are pulled directly from the 2015 IECC prescriptive table, which is reproduced in part as Table 703.2.5.1. An exception that applies only to dynamic glazing was added in the 2015 Edition, but it is just that – an exception to the table requirements. However, because of a page break and text formatting, Table 703.2.5.1 (mandatory fenestration requirements) appears to be a subsection of the dynamic glazing exception (Section 703.2.5.1.1). In addition, the designation of “mandatory” appears on page 58 with the charging language, but does not appear on page 59 alongside the fenestration requirements. It should be clearer to the user that both the charging language and table are mandatory for the prescriptive path. This proposal presents the fenestration table as intended: Table 703.2.5.1 should directly follow the charging language of Section 703.2.5.1, and it should be clearly noted as “mandatory.” This section and table should be followed by the exception dealing with dynamic glazing. We ask Staff to make this very clear through formatting and numbering. Similarly, we recommend moving Tables 703.2.5.2(a) through (c) to directly follow the charging language, Section 703.2.5.2. The dynamic glazing exception to the tables should be placed at the end of the tables so that the user is not confused about the application of these options.
TG Recommendation (AS or AM or D):	AS 1 st Dorothy, 2 nd Amber
Modification of Proposed Change:	
TG Reason:	
TG Vote:	11 approve, 0 disapprove, 0 abstain

P216	LogID 6401	703.2.5.1 Fenestration Specifications
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Submitter:	Eric Lacey, RECA
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Requested Action:	Revise as follows
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Proposed Change:	Table 703.2.5.1 Fenestration Specifications																																						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 30%;">Climate Zone</th> <th style="width: 35%;">U-factor</th> <th style="width: 35%;">SHGC</th> </tr> <tr> <th colspan="2" style="text-align: center;">Windows and Exterior Doors (maximum certified ratings)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td style="text-align: center;">.50</td> <td style="text-align: center;">.25</td> </tr> <tr> <td>2</td> <td style="text-align: center;">.40</td> <td style="text-align: center;">.25</td> </tr> <tr> <td>3</td> <td style="text-align: center;">.35 0.32</td> <td style="text-align: center;">.25</td> </tr> <tr> <td>4</td> <td style="text-align: center;">.35 0.32</td> <td style="text-align: center;">.40</td> </tr> <tr> <td>5 to 8</td> <td style="text-align: center;">.32 0.30*</td> <td style="text-align: center;">Any</td> </tr> <tr> <th colspan="3" style="text-align: center;">Skylights and TDDs (maximum certified ratings)</th> </tr> <tr> <td>1</td> <td style="text-align: center;">.75</td> <td style="text-align: center;">.30</td> </tr> <tr> <td>2</td> <td style="text-align: center;">.65</td> <td style="text-align: center;">.30</td> </tr> <tr> <td>3</td> <td style="text-align: center;">.55</td> <td style="text-align: center;">.30</td> </tr> <tr> <td>4</td> <td style="text-align: center;">.55</td> <td style="text-align: center;">.40</td> </tr> <tr> <td>5 to 8</td> <td style="text-align: center;">.55</td> <td style="text-align: center;">Any</td> </tr> </tbody> </table> <p>* Exception: A maximum U-factor of 0.32 shall apply in climate zones 5 – 8 to vertical fenestration products installed in buildings located: (i) above 4000 feet in elevation above sea level or (ii) in windborne debris regions where protection of openings is required under IRC section R301.2.1.2.</p>	Climate Zone	U-factor	SHGC	Windows and Exterior Doors (maximum certified ratings)		1	.50	.25	2	.40	.25	3	.35 0.32	.25	4	.35 0.32	.40	5 to 8	.32 0.30*	Any	Skylights and TDDs (maximum certified ratings)			1	.75	.30	2	.65	.30	3	.55	.30	4	.55	.40	5 to 8	.55	Any
Climate Zone	U-factor		SHGC																																				
	Windows and Exterior Doors (maximum certified ratings)																																						
1	.50	.25																																					
2	.40	.25																																					
3	.35 0.32	.25																																					
4	.35 0.32	.40																																					
5 to 8	.32 0.30*	Any																																					
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1	.75	.30																																					
2	.65	.30																																					
3	.55	.30																																					
4	.55	.40																																					
5 to 8	.55	Any																																					

Reason:	<p>This proposal does two things. First, it incorporates the improvements to fenestration U-factors in climate zones 3-8 approved for the 2018 IECC. Second, it adopts a limited exception to these U-factors for climate zones 5-8 for fenestration products installed in buildings located in high-altitude areas or windborne debris regions, and permits fenestration in those locations to comply with the current U-factor requirement for the 2015 ICC-700 (0.32). To be clear, we support improving fenestration U-factors in the 2018 ICC-700 consistent with improvements in the 2018 IECC, with or without the limited exception that we propose. The lower 2018 U-factors will bring about a significant improvement in comfort and energy performance in buildings from climate zones 3-8. This improvement was widely supported in the process that established the 2018 IECC by homebuilders, energy efficiency advocates, and the U.S. DOE. As noted in the supporting documents for several of these proposals, the vast majority of residential fenestration available in these climate zones meets or exceeds these efficiency levels, and U.S. DOE has found these improved U-factors to be clearly cost-effective. We also believe, however, that there are certain efficiency disadvantages for fenestration installed in high-altitude or wind-borne debris regions. In high-altitude areas, a breather tube is often installed in the insulating unit, which eliminates the use of argon fill and slightly increases the overall U-factor. In wind-borne debris regions, the use of laminated</p>
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	glass can reduce the gap width in an insulating unit, again resulting in a slight U-factor increase. In climate zones 5-8 (where the updated U-factor requirement would be 0.30), for fenestration installed in high-altitude regions (over 4,000 feet) or where fenestration is required to be impact-resistant, we recommend an exception that would continue to allow a 0.32 U-factor, which is the current requirement in the 2015 IECC and the 2015 ICC-700 for these climate zones. We note that this exception, which was contained in Proposal RE19-16 for the 2018 IECC, had more than 2/3 support among Governmental Member Voting Representatives at the Public Comment Hearing for the 2018 IECC, but it narrowly missed the required 2/3 majority in the online CDPAccess voting. Regardless, we believe this exception will be welcomed by builders and developers in both coastal and high-altitude regions, and it should be a part of ICC-700.
TG Recommendation (AS or AM or D):	AM 1 st Jeff, 2 nd Amy
Modification of Proposed Change:	(ii) in windborne debris regions where protection of openings is <u>provided by fenestration as required</u> under IRC section R301.2.1.2.
TG Reason:	The u-factor adjustments are in alignment with the 2018 IECC, the exception was widely supported by those present at the code development hearings, the modification clarifies that shutters are not allowed to provide the protection
TG Vote:	10 approve, 0 disapprove, 0 abstain

P217 LogID 6402 703.2.5.2 Enhanced Fenestration Specifications

Submitter: Eric Lacey, RECA

Requested Action: Revise as follows

Proposed Change:

**Table 703.2.5.2(a)
Enhanced Fenestration Specifications**

Climate Zones	U-Factor Windows & Exterior Doors	SHGC Windows & Exterior Doors	U-factor Skylights & TDDs	SHGC Skylights & TDDs	POINTS
1	0.40	0.25	0.60	0.28	1
2	0.40	0.25	0.60	0.28	1
3	0.30	0.25	0.53	0.28	2
4	0.30	0.40	0.53	0.35	3
5	0.27 ^a	Any	0.50	Any	3
6	0.27 ^a	Any	0.50	Any	4
7	0.27 ^a	Any	0.50	Any	4
8	0.27 ^a	Any	0.50	Any	4

Exception: For Sun-tempered designs meeting the requirements of Section 703.7.1, the SHGC is permitted to be 0.40 or higher on south facing glass.
~~a. An equivalent energy performance is permitted based on fenestration meeting the requirements of Section B. Equivalent Energy Performance in ENERGY STAR Product Specification Residential Windows, Doors, and Skylights, Eligibility Criteria Version 6.0.~~

Reason: This proposal is intended to remove a high SHGC trade-off (footnote a) from this prescriptive option as unnecessary and potentially inefficient in this context. This type of trade-off is not permitted by the IECC and has been rejected many times. Whether high SHGC fenestration can be beneficial in some northern climates is very dependent on window orientation, overhangs and other factors. Typically, high SHGC is problematic particularly on eastern and western orientations, where it causes problems with comfort, cooling system design and other issues, but it may be beneficial on southern orientations, particularly with overhangs. This fact is already recognized in the sun-tempered design section of ICC-700 (Section 703.7.1), which establishes a specific compliance option for this type of design tailored to these considerations. By contrast, the trade-off in footnote a allows a less efficient U-factor without any regard to these issues. Section 703.7.1 is the appropriate approach to this issue. A continued exception (in footnote a) that does not reflect these important considerations is a bad idea. The exception trades a lower U-factor (which guarantees energy savings) for a higher SHGC (which may or may not produce savings, or could even raise costs), which illustrates why it has been consistently rejected for the IECC. The current SHGC exception is particularly problematic now that the IECC prescriptive U-factor requirements for 2018 are already set at 0.30 for climate zones 5-8. Table 703.2.5.2(a) should represent

	at least a small step in U-factor above the prescriptive requirements that will apply in states adopting the 2018 IECC.
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	
TG Vote:	6-2-4

P218	LogID 6067	703.2.5.2 Enhanced Fenestration Specifications
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Submitter:	Thomas Culp, Aluminum Extruders Council
Requested Action:	Add new as follows
Proposed Change:	Also see comment ID 6066 on Section 703.2.5.1. Need to add parallel fenestration criteria for multifamily buildings four stories and higher based on the correct commercial IECC baseline. Alternately, it could simply reference the 2018 IgCC as follows (proper section number to be added following development of 2018 IgCC): 703.2.5.2 The NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with Table 703.2.5.2(a), (b), or (c). Decorative fenestration elements with a combined total maximum area of 15 square feet (1.39 m ²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice. <u>Fenestration in multifamily buildings four or more stories in height shall be considered in compliance with Table 703.2.5.2(a) if the U-factor and SHGC are in accordance with the prescriptive fenestration requirements of the <i>International Green Construction Code</i>.</u>
Reason:	Also see comment #6066 on Section 703.2.5.1. While sections 703.2.6.1 and 703.2.6.2 are very appropriate for low-rise residential, they are still incorrect for high-rise residential. In fact, by referring to U-factors that originate from the residential chapter of the IECC and the Energy Star program for Windows, they are already inconsistent with Sections 703.1.1.1, 703.1.1.2, and 703.2.1 which properly refer to 2015 IECC table C402.4 as the baseline for windows in buildings that fall under the commercial IECC, including multifamily four stories and above. (Note: The Energy Star program for Windows is applicable only to windows in residential buildings three stories or less in height, and specifically excludes windows intended to be installed in buildings four stories or higher – see attached “Energy Star Product Specification Residential Windows, Doors, and Skylights, Eligibility Criteria Version 6.0”, sections 2A, 2B, and 1M.) Corrections have been made to other sections to accommodate high-rise multifamily (air leakage, radiant barriers, HVAC efficiency, water heating), but not here yet. The main criteria in sections 703.2.5.1 and enhanced criteria in 703.2.5.2 will presumably be reviewed in accordance with changes to the 2018 IECC. As such, this would be an appropriate time to establish new fenestration criteria for buildings four stories and higher based on the correct baseline from the commercial IECC, similar to how requirements for mid and high-rise multifamily buildings were addressed in other sections last cycle. I will gladly assist in this process. Not only will this improve technical consistency and usability of the NGBS for high-rise residential (think 10, 20, 30 stories, not just 4), but it will also make it more attractive for adoption into standards such as ASHRAE 189.1.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Consistent with action on item 6066.
TG Vote:	7-3-0

P219	LogID 6589	703.2.5.2 Enhanced Fenestration Specifications
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Submitter:	Thomas Culp, Aluminum Extruders Council
Requested Action:	Add new as follows
Proposed Change:	703.2.5.2 The NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with Table 703.2.5.2(a), (b), or (c). Decorative fenestration elements with a combined total maximum area of 15 square feet (1.39 m ²) or 10 percent of

the total glazing area, whichever is less, are not required to comply with this practice. Fenestration in multifamily buildings shall be considered in compliance with Table 703.2.5.2(a) if the U-factor and SHGC are in accordance with the prescriptive fenestration requirements of the NBI Multifamily Guide. Curtain wall, window wall, and storefront fenestration shall comply with the U-factor and SHGC requirements for Class AW fixed windows.

Add to Chapter 13:

<u>NBI</u>		<u>New Buildings Institute. 503-761-7339. 623 SW Oak St., 3rd Floor Portland, OR 97205 www.newbuildings.org</u>	
<u>Multifamily Guide</u>	<u>2017</u>	<u>Building Innovation – Multifamily.</u>	<u>703.2.5.2</u>

Reason:

The New Buildings Institute has published a new guide for advanced energy efficiency in multifamily buildings of all heights, providing 15-25% energy savings above the 2015 IECC. The guide may be downloaded for free from <https://newbuildings.org/product/multifamily-guide/>. Although titled as a guide, it includes a requirements section intended for use by standards. Previously, the committee has not separated window requirements for multifamily buildings by height (<= 3 stories, 4+ stories) like IECC, IgCC, ASHRAE 90.1, ASHRAE 189.1, and Energy Star do. This provides an alternative approach as the NBI Multifamily Guide is specifically written to cover buildings of all heights, including recognition of the need for architectural grade (AW) windows in certain applications (highrise, high wind load, high use / durability). The window requirements are generally 3-16% more stringent than the base energy codes, match the U-factors of Table 703.2.5.2(a) for the main window requirement, exceed the SHGC requirements of Table 703.2.5.2(a), and match or exceed the U-factors of the 2018 IgCC for AW class windows. An additional clarification is added for curtain wall, window wall, and storefront fenestration which is sometimes used in highrise residential buildings. The NBI performance levels for AW fixed windows are also appropriate for these products, although they technically do not fall under the AW classification of AAMA/WDMA/CSA 101/I.S.2/A440. With the scope expansion to include mixed-use buildings with both nonresidential and multifamily spaces, more multifamily buildings of all heights will be looking to use of ICC-700 / NGBS, so inclusion of this alternative is appropriate and beneficial. NBI Multifamily Guide Window Requirements: CZ 1 CZ 2 CZ 3 CZ 4 CZ 5 CZ 6 CZ 7 CZ 8 U-factor 0.40 0.40 0.30 0.30 0.27 0.27 0.27 0.27 SHGC 0.25 0.25 0.25 0.35 0.35 0.35 NR NR For Class AW windows rated in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 Fixed Window U-factor 0.48 0.48 0.44 0.36 0.36 0.34 0.28 0.28 Operable Window U-factor 0.62 0.62 0.57 0.43 0.43 0.41 0.35 0.35

TG Recommendation (AS or AM or D):

TG 1 – Send to TG 5 (2/7/2018)
TG 5 - D

Modification of Proposed Change:

Table 703.2.5.2(a) Enhanced Fenestration Specifications

Climate Zones	U-Factor Windows & Exterior Doors	SHGC Windows & Exterior Doors	U-factor Skylights & TDDs	SHGC Skylights & TDDs	POINTS
1	0.40	0.25	0.60	0.28	1
2	0.40	0.25	0.60	0.28	1
3	0.30	0.25	0.53	0.28	2
4	0.30	0.40	0.53	0.35	3
5	0.27 ^a	Any	0.50	Any	3
6	0.27 ^a	Any	0.50	Any	4
7	0.27 ^a	Any	0.50	Any	4
8	0.27 ^a	Any	0.50	Any	4

Criteria for Class AW windows, curtain walls, and storefronts

	Climate Zones	U-Factor Windows & Exterior Doors	SHGC Windows & Exterior Doors	Alternate U-Factor for Class AW windows rated in accordance with AAMA/WDMA/CSA 101/I.S.2/A440: Curtain wall, window wall, and storefront fenestration		POINTS
				Fixed	Operable	
	1	0.40	0.25	0.48	0.62	1
	2	0.40	0.25	0.48	0.62	1
	3	0.30	0.25	0.44	0.57	2
	4	0.30	0.35	0.36	0.43	3
	5	0.27	0.35	0.36	0.43	3
	6	0.27	0.35	0.34	0.41	4
	7	0.27	Any	0.28	0.35	4
	8	0.27	Any	0.28	0.35	4
TG Reason:	Performance path can be used for compliance. The proposal provides an unnecessary break on energy performance. The scope of the proposal goes beyond the limitations imposed by the additional structural requirements for various types of multifamily buildings.					
TG Vote:	TG 5 - 8-3-0					

P220	LogID 17-081	703.3 HVAC equipment efficiency
Submitter:	Craig Conner, Building Quality	
Requested Action:	Update equipment efficiency ranges in the energy chapter to reflect the range of efficiency in the current market.	
Proposed Change:	Update the current points tables on the high end to reflect the improving equipment efficiencies in the market. Consider adding ductless mini splits.	
Reason:	To give points for the exceptionally efficient equipment.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	The proposal was addressed in multiple other proposals	
TG Vote:	10-0-0	

P221	LogID 6161	703.3.3 Heat pump heating efficiency
Submitter:	Steven Rosenstock, self	
Requested Action:	Delete without substitution	
Proposed Change:	a. Equipment designed to operate in cold climates is recommended to minimize use of resistance heat when installing a heat pump in Zones 6-8.	
Reason:	This footnote is not needed, as the minimum code requires heat pump supplemental heating control in all climate zones, not just 6-8. See IECC Section R403.1.2 "Heat Pump supplementary heat (Mandatory)". Also, the language discusses the installation of the heat pump, not the operation. The installation may be for one day, while the operation is going to be for 15+ years.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	The provision serves a purpose of encouraging proper use of heat pumps in colder climates.	
TG Vote:	11-1-0	

P222	LogID 6168	703.3.3 Heat pump heating efficiency
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Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	Table 703.3.3(3) Gas Engine-Driven Heat Pump Heating Efficiency Climate Zone 1 2 3 4 5 6-8 > 1.3 COP at 47F <u>2 0</u> <u>7 1</u> <u>44 1</u> <u>44 2</u> <u>46 2</u> <u>48 2</u>
Reason:	Gas engine-driven heat pumps have much lower efficiency than electric heat pumps at 47 F (2-3 times less efficient), yet are given more points. They are even given points in climate zone 1 when electric products get no points. This revision equalizes the points, so that the standard does not promote the use of very low efficiency products. In addition, field performance shows even lower efficiency. See http://www.sciencedirect.com/science/article/pii/S0140700716300603 . Here is a quote from the abstract: "The average COP unit of these systems varied from 0.15 to 0.85 during field operation. The gas engines were found to operate at significantly lower loads than their design capacity, and therefore, produced overall lower efficiencies." In addition, research by ORNL shows the drop-off in efficiency at lower temperatures. See Table 3 in the report that can be found at http://info.ornl.gov/sites/publications/files/Pub60271.pdf
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	The prescriptive points in Chapter 7 are based on energy modeling. Retaining the point levels will maintain consistency throughout the Chapter.
TG Vote:	6-2-2

P223	LogID 17-051	703.3.3 Heat Pump Heating Efficiency
Submitter:	Steven Rosenstock, Edison Electric Institute	
Requested Action:	Revise as follows	
Proposed Change:	Tables 703.3.3(1) and 703.3.3(2), Footnote a: Equipment shall be designed to operate in cold climates is recommended to minimize use of resistance heat when installed installing a heat pump in Zones 6-8.	
Reason:	The current language with the phrase "is recommended" is vague and not enforceable. The modified language improves the footnote and removes unnecessary language.	
TG Recommendation (AS or AM or D):	Approve as modified	
Modification of Proposed Change:	The selected equipment shall be designed for operation in cold climates is recommended to minimize use of resistance heat when installed installing a heat pump in Zones 6-8.	
TG Reason:	Clarity and retaining the intent statement "to minimize use of resistance heat". Agree with the proponent on removing the word "recommended".	
TG Vote:	7-1-0	

P224	LogID 17-052	703.3.3 Heat Pump Heating Efficiency
Submitter:	Steven Rosenstock, Edison Electric Institute	
Requested Action:	Add new as follows	
Proposed Change:	Tables 703.3.3(3) Climate Zone 1 2 3 4 5 6-8 ^a a. Equipment shall be designed to operate in cold climates when installed in Zones 6-8.	

Reason:	As shown in the attached ORNL report, the efficiency of gas engine-driven heat pumps drops off significantly at lower temperatures (see Table 3 in the attached report located at http://info.ornl.gov/sites/publications/files/Pub60271.pdf). Also, other reports show the same trend. See http://www.sciencedirect.com/science/article/pii/S0140700716300603 . Here is a quote from the abstract: "The average COP unit of these systems varied from 0.15 to 0.85 during field operation. The gas engines were found to operate at significantly lower loads than their design capacity, and therefore, produced overall lower efficiencies." The new footnote will ensure higher efficiency at lower temperatures, and is consistent with the footnotes for other air-source heat pump systems.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	a. The selected equipment shall be designed for operation in cold climates when installed in Zones 6-8.
TG Reason:	Clarification of the intent.
TG Vote:	3-2-4

P225	LogID 17-053	703.3.3 Heat Pump Heating Efficiency
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Submitter:	Steven Rosenstock, Edison Electric Institute						
Requested Action:	Revise as follows						
Proposed Change:	Add new rows (and point values) for higher HSPF units in Table 703.3.3(2)						
	➤	9.5 HSPF					
	➤	10.0 HSPF					
	➤	11.0 HSPF					
	➤	12.0 HSPF					
	➤	13.0 HSPF					
Reason:	According to the CEE/AHRI Directory of Certified Products for variable-speed min-split and multi-split heat pumps, located at https://www.ahridirectory.org/ahridirectory/pages/vsmshp/cee/defaultSearch.aspx , there are many models that have heating efficiencies higher than 8.5 HSPF (over 1700 that are ≥ 10.0 HSPF, for example). As with other tables in Chapter 7, there should be a tiered approach for assigning points, based on the efficiency. Higher efficiency units will save more energy and should be awarded more points. In addition, in multi-family units, these products provide zoned heating, which enables further savings during periods of no occupancy.						
TG Recommendation (AS or AM or D):	AM						
Modification of Proposed Change:	703.3.3 Heat Pump Heating Efficiency						
	Efficiency	Climate Zone					
		1	2	3	4	5	6-8 ^a
	≥ 8.5 HSPF (≥ 11.5 EER)	0	1	1	2	2	2
	≥ 9.0 HSPF (≥ 12.5 EER)	0	2	4	5	6	10
	≥ 9.5 HSPF	0	3	7	7	11	18
	≥ 10.0 HSPF	1	5	10	10	15	26
	≥ 12.0 HSPF	1	6	11	11	17	28
TG Reason:	The proposed points account for heat pumps with higher efficiency as available in the market						
TG Vote:	11-0-0						

P226	LogID 17-054	703.3.4 Cooling Efficiency																																																																							
Submitter:	Steven Rosenstock, Edison Electric Institute																																																																								
Requested Action:	Revise as follows																																																																								
Proposed Change:	<p>Add new rows (and point values) for higher SEER units in Table 703.3.4(1), or a separate table for variable speed mini-split and multi-split heat pumps.</p> <ul style="list-style-type: none"> ➤ 23.0 SEER ➤ 25.0 SEER ➤ 27.0 SEER ➤ 29.0 SEER 																																																																								
Reason:	<p>According to the CEE/AHRI Directory of Certified Products for variable-speed min-split and multi-split heat pumps, located at https://www.ahridirectory.org/ahridirectory/pages/vsmshp/cee/defaultSearch.aspx, there are many models that have cooling efficiencies higher than 23.0 SEER (over 160 models that are ≥ 25.0 SEER, for example). As with other tables in Chapter 7, there should be a tiered approach for assigning points, based on the efficiency. Higher efficiency units will save more energy and should be awarded more points. In addition, in multi-family units, these products provide zoned cooling, which enables further savings during periods of no occupancy.</p>																																																																								
TG Recommendation (AS or AM or D):	AM																																																																								
Modification of Proposed Change:	<p style="text-align: center;">Table 703.3.4(1) Electric Air Conditioner and Heat Pump Cooling^a</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Efficiency</th> <th colspan="8">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td></td> <td colspan="8" style="text-align: center;">POINTS</td> </tr> <tr> <td>≥15 SEER (12.5 EER)</td> <td><u>96</u></td> <td><u>64</u></td> <td><u>32</u></td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <td>≥17 SEER (12.5 EER)</td> <td>11</td> <td>9</td> <td>7</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>0</td> </tr> <tr> <td>≥19 SEER (12.5 EER)</td> <td>19</td> <td>12</td> <td>10</td> <td>6</td> <td>4</td> <td>4</td> <td>4</td> <td>0</td> </tr> <tr> <td>≥21 SEER</td> <td>26</td> <td>15</td> <td>14</td> <td>8</td> <td>6</td> <td>6</td> <td>5</td> <td>0</td> </tr> <tr> <td>≥25 SEER</td> <td><u>29</u></td> <td><u>18</u></td> <td><u>17</u></td> <td><u>10</u></td> <td><u>8</u></td> <td><u>8</u></td> <td><u>6</u></td> <td>0</td> </tr> </tbody> </table> <p>a. Tropical Climate Zone: where none of the occupied space is air conditioned and where ceiling fans are provided for bedrooms and the largest space which is not used as a bedroom, 20 points is awarded.</p>		Efficiency	Climate Zone								1	2	3	4	5	6	7	8		POINTS								≥15 SEER (12.5 EER)	<u>96</u>	<u>64</u>	<u>32</u>	1	1	1	1	0	≥17 SEER (12.5 EER)	11	9	7	3	3	2	2	0	≥19 SEER (12.5 EER)	19	12	10	6	4	4	4	0	≥21 SEER	26	15	14	8	6	6	5	0	≥25 SEER	<u>29</u>	<u>18</u>	<u>17</u>	<u>10</u>	<u>8</u>	<u>8</u>	<u>6</u>	0
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TG Reason:	The new provisions are intended to provide points for heat pumps with higher efficiency available in the market. Values for SEER 15 are modified to account for new minimum federal standards.																																																																								
TG Vote:	10-0-0																																																																								

P227	LogID 6065	703.3.6 Ground source heat pump installation
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	<p>Table 703.3.6 Ground Source Heat Pump Climate Zone</p> <p>5-6</p>	
Reason:	<p>Ground Source Heat Pump have been installed and used successfully in Alaska and Sweden and should receive credit in a green building code. It is estimated that 20% of homes in Sweden use ground source heat pumps. See the following links for information: http://www.adn.com/energy/article/habitat-humanitys-geothermal-home-paying/2013/07/22/</p>	

	http://www.cchrc.org/sites/default/files/docs/GSHP_YearTwoUpdate_0.pdf https://pangea.stanford.edu/ERE/db/WGC/papers/WGC/2015/01021.pdf
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	
TG Vote:	7-1-4

P228	LogID 6064	703.3.6 Ground source heat pump installation
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	Table 703.3.6 Ground Source Heat Pump Efficiency ≥ 16.0 EER ₁ ≥ 3.6 COP ≥ 24.0 EER ₁ ≥ 4.3 COP ≥ 28.0 EER ₁ ≥ 4.8 COP	
Reason:	This will make the requirements for the minimum efficiency consistent with other tables (such as 703.3.4 and 703.3.5, which include the > symbol). Please note that the symbols to be used are "greater than or equal to", not "greater than".	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	11-0-0	

P229	LogID 17-031	703.4.3 Ductwork																																		
Submitter:	Rachel Della Valle, Southern Energy Management																																			
Requested Action:	Revise as follows.																																			
Proposed Change:	Add a column showing the percentage of ducts/mechanical equipment that are in compliance with 703.4.3. In the upper points row, add an option for 100% ducts/mechanical equipment in compliance which would utilize the current point allocation. In the lower points row add an option for 75%+ ducts/mechanical equipment in compliance which would utilize half of the current point allocation (IE: 4 points for climate zone 4).																																			
	<table border="1"> <thead> <tr> <th rowspan="2">% of Ducts in Compliance</th> <th colspan="6">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6-8</th> </tr> </thead> <tbody> <tr> <td></td> <td colspan="6" style="text-align: center;">Points</td> </tr> <tr> <td>100%</td> <td>8</td> <td>10</td> <td>8</td> <td>8</td> <td>8</td> <td>4</td> </tr> <tr> <td>75%</td> <td>4</td> <td>5</td> <td>4</td> <td>4</td> <td>4</td> <td>2</td> </tr> </tbody> </table>		% of Ducts in Compliance	Climate Zone						1	2	3	4	5	6-8		Points						100%	8	10	8	8	8	4	75%	4	5	4	4	4	2
% of Ducts in Compliance	Climate Zone																																			
	1	2	3	4	5	6-8																														
	Points																																			
100%	8	10	8	8	8	4																														
75%	4	5	4	4	4	2																														
Reason:	Give credit where credit is due for projects that can put most of the ductwork/equipment inside the building envelope. Many single family homes and multifamily buildings can't get 100% inside the thermal envelope but can do the majority (more than 50% but not 100%).																																			
TG Recommendation (AS or AM or D):	Disapproval																																			
Modification of Proposed Change:																																				

TG Reason:	Less than 100% is common practice and should not be awarded points. No clear definition or metrics on how to calculate exact percentages.
TG Vote:	7-0-2

P230	LogID 17-032	703.4.3 Ductwork																								
Submitter:	Rachel Della Valle, Southern Energy Management																									
Requested Action:	Revise as follows.																									
Proposed Change:	Award the same amount of points for all climate zones in credit 703.4.3. "8" points should be awarded no matter the climate zone, be it one extreme or another (Climate Zone 1 or Climate Zone 8).																									
	<table border="1"> <thead> <tr> <th colspan="6">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6-8</th> </tr> </thead> <tbody> <tr> <td colspan="6">Points</td> </tr> <tr> <td>8</td> <td>10</td> <td>8</td> <td>8</td> <td>8</td> <td>4</td> </tr> </tbody> </table>		Climate Zone						1	2	3	4	5	6-8	Points						8	10	8	8	8	4
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Points																										
8	10	8	8	8	4																					
Reason:	Why would hvac equipment inside the thermal envelope in Climate Zone 2 be awarded 10 points but hvac equipment inside the thermal envelope in Climate Zone 6 be awarded 4 points? Both are fairly extreme climate zones: 2 is a cooling climate and 6 is a heating climate. I suggest we level the playing field here by awarding the same amount of points no matter the climate zone (IE: 8 points).																									
TG Recommendation (AS or AM or D):	Disapprove																									
Modification of Proposed Change:																										
TG Reason:	The current points are based on modeling. No substantiation provided for the proposed change.																									
TG Vote:	8-0-1																									

P231	LogID 17-033	703.4.3 Ductwork
Submitter:	Rachel Della Valle, Southern Energy Management	
Requested Action:	Delete without substitution	
Proposed Change:	Remove note in parentheses under Table 703.4.3: "(No points awarded for multifamily buildings four or more stories in height.)"	
Reason:	Not all buildings four or more stories high with flat roofs will automatically comply with 703.4.3. Some buildings four or more stories have vented 'attics', some have batts at the ceiling level (drywall), some have pitched roofs and are more garden style. There are many different situations/building types and I think we should incentivize all buildings/homes to put mechanical equipment within the thermal envelope.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Based on 4 or more story buildings, most of these types of buildings will have nearly 100% of ducts in conditioned space as standard practice.	
TG Vote:	9-0-0	

P232	LogID 17-030	703.4.3 (2) Ductwork
Submitter:	Rachel Della Valle, Southern Energy Management	
Requested Action:	Revise as follows.	
Proposed Change:	Heating and cooling ducts and mechanical equipment are installed within the conditioned building space <u>building thermal envelope</u> .	
Reason:	Currently 703.4.3 (2) awards credit to the hvac ducts and equipment within the conditioned building space. This has been interpreted by the Home Innovation Research Labs to mean 'directly or indirectly	

	conditioned building space'. I suggest a language update in 703.4.3 (2) to better describe the current conditions. I believe it is more descriptive of what is actually happening in the program to award credit for hvac ducts and equipment within the building thermal envelope.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	The term "conditioned space" is a defined term. "Building thermal envelope" is not a defined term.
TG Vote:	9-0-0

P233	LogID 6468	703.4.4 Duct Leakage
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Submitter:	Greg Johnson, Outdoor Power Equipment Institute			
Requested Action:	Revise as follows			
Proposed Change:	<p>703.4.4 Aboveground Duct Leakage. The entire central HVAC duct system, including air handlers and register boots, is tested by a third party for total leakage at a pressure differential of 0.1 inches w.g. (25 Pa) and maximum air leakage is equal to or less than 6 percent of the system design flow rate or 4 cubic feet per minute per 100 square feet of conditioned floor area.</p> <table border="1"> <tr> <td> <p>703.4.5 Buried Duct Leakage. Prior to backfill the entire central HVAC buried duct system and register boots, is tested by a third party for total leakage at a pressure differential of 2 inches w.g. (500 Pa) and maximum air leakage is equal to or less than 0.1 percent of the system design flow rate or 0.5 cubic feet per minute per 100 square feet of conditioned floor area.</p> </td> <td style="text-align: center; vertical-align: middle;">6</td> </tr> </table>		<p>703.4.5 Buried Duct Leakage. Prior to backfill the entire central HVAC buried duct system and register boots, is tested by a third party for total leakage at a pressure differential of 2 inches w.g. (500 Pa) and maximum air leakage is equal to or less than 0.1 percent of the system design flow rate or 0.5 cubic feet per minute per 100 square feet of conditioned floor area.</p>	6
<p>703.4.5 Buried Duct Leakage. Prior to backfill the entire central HVAC buried duct system and register boots, is tested by a third party for total leakage at a pressure differential of 2 inches w.g. (500 Pa) and maximum air leakage is equal to or less than 0.1 percent of the system design flow rate or 0.5 cubic feet per minute per 100 square feet of conditioned floor area.</p>	6			
Reason:	Buried ducts are capable of much better performance than above grade ducts, particularly with regard to leakage. It is also important for buried ducts to be water tight. In addition to there being lower temperature differentials between the interior and exterior sides of buried ducts versus above ground ducts, buried duct systems with smooth interiors provide less friction in air handling which reduces fan power requirements. Providing a superior ducting system merits a high point award.			
TG Recommendation (AS or AM or D):	Disapprove			
Modification of Proposed Change:				
TG Reason:	This practice is not aligned with IECC. The proposal does not show why this practice should get additional points. Further, the current practice does not differentiate such ducts and the current table can be used to assign points. In addition, there may be moisture issues with inground buried ducts. Also the proposed language is confusing.			
TG Vote:	8-0-1			

P234	LogID 6166	703.5.1 Water heater Energy Factor (Water heating system)
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Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	All tables and point values need to be revised to account for the different standards for storage water heaters (\leq 55 gallons or above 55 gallons) as well as the Uniform Energy Factors which are based on 4 draw patterns.	
Reason:	Below is the table of Uniform Energy Factors from the Code of Federal Regulations: (d) Water heaters. The uniform energy factor of water heaters shall not be less than the following: Product class Rated storage volume and input rating (if applicable) Draw pattern Uniform energy factor Gas-fired Storage Water Heater =20 gal and =55 gal Very Small 0.3456 - (0.0020 x Vr) Low 0.5982 - (0.0019 x Vr) Medium 0.6483 - (0.0017 x Vr) High 0.6920 - (0.0013 x Vr) >55 gal and =100 gal Very Small 0.6470 - (0.0006 x Vr) Low 0.7689 - (0.0005 x Vr) Medium 0.7897 - (0.0004 x Vr) High 0.8072 - (0.0003 x Vr) Oil-fired Storage Water Heater =50 gal Very Small 0.2509 - (0.0012 x Vr) Low 0.5330 - (0.0016 x Vr) Medium 0.6078 - (0.0016 x Vr) High 0.6815 - (0.0014 x Vr) Electric Storage Water Heaters =20 gal and =55 gal	

Very Small 0.8808 - (0.0008 × Vr) Low 0.9254 - (0.0003 × Vr) Medium 0.9307 - (0.0002 × Vr) High 0.9349 - (0.0001 × Vr) >55 gal and ≤120 gal Very Small 1.9236 - (0.0011 × Vr) Low 2.0440 - (0.0011 × Vr) Medium 2.1171 - (0.0011 × Vr) High 2.2418 - (0.0011 × Vr) Tabletop Water Heater =20 gal and ≤120 gal Very Small 0.6323 - (0.0058 × Vr) Low 0.9188 - (0.0031 × Vr) Medium 0.9577 - (0.0023 × Vr) High 0.9884 - (0.0016 × Vr) Instantaneous Gas-fired Water Heater 50,000 Btu/h Very Small Low 0.80 0.81 Medium 0.81 High 0.81 Instantaneous Electric Water Heater 75 gal Very Small 1.0136 - (0.0028 × Vr) Low 0.9984 - (0.0014 × Vr) Medium 0.9853 - (0.0010 × Vr) High 0.9720 - (0.0007 × Vr) *Vr is the Rated Storage Volume (in gallons), as determined pursuant to 10 CFR 429.17.

Information organized via a table:

(d) Water heaters. The uniform energy factor of water heaters shall not be less than the following:

Product class	Rated storage volume and input rating (if applicable)	Draw pattern	Uniform energy factor
Gas-fired Storage Water Heater	≥20 gal and ≤55 gal	Very Small	0.3456 - (0.0020 × Vr)
		Low	0.5982 - (0.0019 × Vr)
		Medium	0.6483 - (0.0017 × Vr)
		High	0.6920 - (0.0013 × Vr)
	>55 gal and ≤100 gal	Very Small	0.6470 - (0.0006 × Vr)
		Low	0.7689 - (0.0005 × Vr)
		Medium	0.7897 - (0.0004 × Vr)
		High	0.8072 - (0.0003 × Vr)
Oil-fired Storage Water Heater	≤50 gal	Very Small	0.2509 - (0.0012 × Vr)
		Low	0.5330 - (0.0016 × Vr)
		Medium	0.6078 - (0.0016 × Vr)
		High	0.6815 - (0.0014 × Vr)
Electric Storage Water Heaters	≥20 gal and ≤55 gal	Very Small	0.8808 - (0.0008 × Vr)
		Low	0.9254 - (0.0003 × Vr)
		Medium	0.9307 - (0.0002 × Vr)
		High	0.9349 - (0.0001 × Vr)
	>55 gal and ≤120 gal	Very Small	1.9236 - (0.0011 × Vr)
		Low	2.0440 - (0.0011 × Vr)
		Medium	2.1171 - (0.0011 × Vr)
		High	2.2418 - (0.0011 × Vr)
Tabletop Water Heater	≥20 gal and ≤120 gal	Very Small	0.6323 - (0.0058 × Vr)
		Low	0.9188 - (0.0031 × Vr)
		Medium	0.9577 - (0.0023 × Vr)
		High	0.9884 - (0.0016 × Vr)
Instantaneous Gas-fired Water Heater	<2 gal and >50,000 Btu/h	Very Small	0.80
		Low	0.81
		Medium	0.81

		High	0.81
Instantaneous Electric Water Heater	<2 gal	Very Small	0.91
		Low	0.91
		Medium	0.91
		High	0.92
Grid-Enabled Water Heater	>75 gal	Very Small	$1.0136 - (0.0028 \times V_r)$
		Low	$0.9984 - (0.0014 \times V_r)$
		Medium	$0.9853 - (0.0010 \times V_r)$
		High	$0.9720 - (0.0007 \times V_r)$

*V_r is the Rated Storage Volume (in gallons), as determined pursuant to 10 CFR 429.17.

TG Recommendation (AS or AM or D):

AM

Modification of Proposed Change:

Delete current tables/language and replace with the following:

703.5.1 Water heater Uniform Energy Factor (UEF) is in accordance with the following:

Water heater design is based on only 1 (one) water heater per dwelling unit, based on approved methods from IPC or ASPE or manufacturer specifications.

All table values are based on water heaters with medium daily water draws as defined by the US DOE test procedures (55 gallons per day)

(1) Gas Water Heating

a) Storage water heater, rated storage volume \geq 20 gallons and \leq 55 gallons, Medium water draw

Table 703.5.1(1)(a)

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
> 0.65 to < 0.78	<u>3</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>
\geq 0.78	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>

b) Storage water heater, rated storage volume > 55 gallons and \leq 100 gallons, Medium water draw

Table 703.5.1(1)(b)

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
\geq 0.78	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

c) Storage water heater with input rate greater than 75,000 Btu/h (commercial)

Table 703.5.1(1)(c)

Thermal Efficiency	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
\geq 0.90 to < 0.95	<u>6</u>	<u>6</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>

≥0.95	<u>7</u>	<u>7</u>	<u>5</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>2</u>
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[Substantiation:

Commercial water heater efficiency standards are set by ASHRAE 90.1 (and then reviewed / approved by DOE). The baseline efficiency for commercial water heaters is the same in ASHRAE 90.1-2013 ASHRAE 90.1-2016, at 80% E_t (0.80 thermal efficiency).]

- d) Storage water heater with input rate greater than 75,000 Btu/h (commercial), in Buildings with high-capacity service water-heating systems (1,000,000 Btu/h or greater)

Table 703.5.1(1)(d)

Thermal Efficiency	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
≥ 0.92 to < 0.95	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
≥0.95	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>

[Substantiation:

In ASHRAE 90.1-2016, for large buildings with high capacity service hot water heating systems, the thermal efficiency E_t is required to be ≥ 90% (0.90). Commercial water heater efficiency standards are set by ASHRAE 90.1 (and then reviewed / approved by DOE).

In this case, the baseline is significantly higher, leading to less energy savings.]

- e) Instantaneous water heater, rated storage volume < 2 gallons and input rate of > 50,000 Btu/h, Medium water draw

Table 703.5.1(1)(e)

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
> 0.89 to < 0.94	<u>6</u> 2	<u>6</u> 2	<u>5</u> 2	<u>3</u> 1	<u>3</u> 1	<u>3</u> 1	<u>3</u> 1	<u>2</u> 1
≥0.94	<u>7</u> 3	<u>7</u> 3	<u>5</u> 2	4 2	4 2	4 2	4 2	<u>2</u> 1

[Substantiation:

Under the 2004-2015 standards, the minimum Energy Factor for a 1-gallon instantaneous gas water heater (64.3 gallons / day water draw) was 0.62 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 1-gallon instantaneous water heater was 0.82 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.81 UEF.

Since the baseline efficiency is significantly higher, along with higher water efficient appliance standards (clothes washers and dishwashers), the energy savings are less than before.]

- (2) Electric Water Heating

- a) Storage water heater, rated storage volume ≥ 20 gallons and ≤ 55 gallons, Medium water draw

Table 703.5.1(2)(a)

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
≥0.94 to < 1.0	1	1	1	1	1	1	1	1
>1.0 to < 1.5	4	2	2	2	1	1	1	1
≥1.5 to < 2.0	<u>8</u> 7	<u>5</u> 4	4 3	<u>3</u> 2	2	2	1	1

≥2.0 to < 2.2	16 14	9 8	8 7	6 5	5 4	4	2	2
>2.2	19 17	10 9	9 8	7 6	6 5	5 4	3	3
>2.5 to < 3.0	18	12	10	8	6	6	3	3
>3.0	22	16	13	11	8	8	4	3

[Substantiation:

Under the 2004-2015 standards, the minimum Energy Factor for a 50 gallon electric water heater (64.3 gallons / day water draw) was 0.90 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 50 gallon water heater was 0.95 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.92 UEF.

Since the baseline efficiency is higher, along with higher water efficient appliance standards (clothes washers and dishwashers), the energy savings are less than before.

In addition, according to the CEE/AHRI directory (<http://www.ceedirectory.org/site/1/Home>), there are 50 gallon heat pump water heaters with Energy Factors (it is not clear if they are Uniform Energy Factors) as high as 3.50. At a recent RESNET conference, I did see manufacturers with UEF values of 3.55 for a 50-gallon heat pump water heater.]

b) Storage water heater, rated storage volume ≥ 55 gallons and ≤ 120 gallons, Medium water draw

Table 703.5.1(2)(b)

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
≥2.2 to < 2.5	6	4	3	3	2	2	1	1
≥2.5 to < 3.0	7	5	4	3	3	3	2	2
≥3.0 to < 3.5	8	5	5	4	3	3	3	2
≥3.5	9	6	6	5	4	4	3	2

[Substantiation:

Under the 2004-2015 standards, the minimum Energy Factor for a 80 gallon electric water heater (64.3 gallons / day water draw) was 0.86 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 80 gallon water heater was 1.97 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 2.03 UEF.

Since the baseline efficiency is significantly (more than 100% higher), along with higher water efficient appliance standards (clothes washers and dishwashers), the energy savings are less than before with this size of water heater.

In addition, according to the CEE/AHRI directory (<http://www.ceedirectory.org/site/1/Home>), there are 65, 66, and 80 gallon heat pump water heaters with Energy Factors (it is not clear if they are Uniform Energy Factors) as high as 3.50. At a recent RESNET conference, I did see manufacturers with UEF values of 3.70 for a 65 and 80-gallon heat pump water heater.]

c) Tabletop water heater, rated storage volume ≥ 20 gallons and ≤ 120 gallons, Medium water draw

Table 703.5.1(2)(c)

Electric Tabletop Water Heating

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
≥0.91	1	1	1	1	1	1	1	1

[Substantiation:

Under the 2004-2015 standards, the minimum Energy Factor for a 40 gallon electric tabletop water heater (64.3 gallons / day water draw) was 0.88 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 40 gallon tabletop water heater stayed the same at 0.88 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.87 UEF.

For this product, the required efficiency did not change under the most recent rulemaking. In addition, since they are typically located under counters or in containers or in other space limited applications, heat pump water heaters are not a design option, due to their requirements for air flow and/or space clearance. See the following for photographs and/or specifications:

<http://www.rheem.com/product/residential-electric-water-heaters-table-top>
<https://www.ruud.com/product/ruud-residential-electric-water-heaters-table-top/>
<https://www.kenmore.com/products/kenmore-38-gallon-tabletop-electric-water-heater>]

d) Instantaneous electric water heater, rated storage volume < 2 gallons, Medium water draw

Table 703.5.1(2)(b d)
Electric Instantaneous Water Heating^a

Uniform Energy Factor or Thermal Efficiency	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
≥ 0.97	2	2	2	2	2	2	2	2

- a. Applies to any size water heater.
- b. Electric instantaneous water heaters have either an Uniform Energy Factor (capacity less than or equal to 12 kW) or a Thermal Efficiency (capacity greater than 12 kW).

[Substantiation:

Under the 2004-2015 standards, the minimum Energy Factor for a 1 gallon instantaneous electric water heater (64.3 gallons / day water draw) was 0.92 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 1 gallon instantaneous water heater stayed the same at 0.92 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.91 UEF.

Since the baseline efficiency has not changed, the current table 703.5.1(2)(b) can be used with minor changes for the updated NGBS.]

e) Grid enabled storage water heater, rated storage volume ≥ 75 gallons, Medium water draw

Table 703.5.1(2)(e)

Electric Grid Enabled Water Heating

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
≥0.95	1	1	1	1	1	1	1	1

[Substantiation:

Under the Energy Efficiency Improvement Act of 2015, minimum energy conservation standards were established for grid-enabled water heaters. Under the law, the formula for efficiency was:

Energy Factor = 1.061 – (0.00168 * Vr), where Vr is the rates storage volume of the water heater tank. For an 80 gallon unit, the minimum Energy Factor is 0.93 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.91 UEF.]

(3) Oil Water Heating, < 50 gallons, Medium water draw

Table 703.5.1(3)

Uniform Energy Factor	CZ 1	CZ 2	CZ 3	CZ 4	CZ 5	CZ 6	CZ 7	CZ 8
≥0.62	1	1	1	1	1	1	1	1

[Substantiation:

Under the 2004-2015 standards, the minimum Energy Factor for a 32 gallon oil-fired water heater (64.3 gallons / day water draw) was 0.53 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 32 gallon water heater was 0.62 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.56 UEF.

Since the baseline efficiency is higher, along with higher water efficient appliance standards (clothes washers and dishwashers), the energy savings are less than before.]

TG Reason:

[Substantiation:

Under the 2004-2015 standards, the minimum Energy Factor for a 40 gallon gas water heater (64.3 gallons / day water draw) was 0.59 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 40 gallon water heater was 0.62 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.58 UEF.

Since the baseline efficiency is higher, along with higher water efficient appliance standards (clothes washers and dishwashers), the energy savings are less than before.]

Under the 2004-2015 standards, the minimum Energy Factor for an 80 gallon gas water heater (64.3 gallons / day water draw) was 0.52 EF. Under the post April 2015 standard, the minimum Energy Factor for the same 80 gallon water heater was 0.74 EF. Using the equivalent UEF for a water heater with a medium daily hot water draw (55 gallons / day), the value is 0.76 UEF.

Since the baseline efficiency is significantly higher, along with higher water efficient appliance standards (clothes washers and dishwashers), the energy savings are less than before.]

TG Vote:

10-0-0

P235 LogID 6167 703.5.5 Solar water heater

Submitter:	Steven Rosenstock, self
Requested Action:	Revise as follows
Proposed Change:	The table and point values need to be revised to account for the different standards for storage water heaters (≤ 55 gallons or above 55 gallons) as well as the Uniform Energy Factors which are based on 4 draw patterns.
Reason:	Below is the table of Uniform Energy Factors from the Code of Federal Regulations: (d) Water heaters. The uniform energy factor of water heaters shall not be less than the following: Product class Rated storage volume and input rating (if applicable) Draw pattern Uniform energy factor Gas-fired Storage Water Heater =20 gal and =55 gal Very Small 0.3456 - (0.0020 × Vr) Low 0.5982 - (0.0019 × Vr) Medium 0.6483 - (0.0017 × Vr) High 0.6920 - (0.0013 × Vr) >55 gal and =100 gal Very Small 0.6470 - (0.0006 × Vr) Low 0.7689 - (0.0005 × Vr) Medium 0.7897 - (0.0004 × Vr) High 0.8072 - (0.0003 × Vr) Oil-fired Storage Water Heater =50 gal Very Small 0.2509 - (0.0012 × Vr) Low 0.5330 - (0.0016 × Vr) Medium 0.6078 - (0.0016 × Vr) High 0.6815 - (0.0014 × Vr) Electric Storage Water Heaters =20 gal and =55 gal Very Small 0.8808 - (0.0008 × Vr) Low 0.9254 - (0.0003 × Vr) Medium 0.9307 - (0.0002 × Vr) High 0.9349 - (0.0001 × Vr) >55 gal and =120 gal Very Small 1.9236 - (0.0011 × Vr) Low 2.0440 - (0.0011 × Vr) Medium 2.1171 - (0.0011 × Vr) High 2.2418 - (0.0011 × Vr) Tabletop Water Heater =20 gal and =120 gal Very Small 0.6323 - (0.0058 × Vr) Low 0.9188 - (0.0031 × Vr) Medium 0.9577 - (0.0023 × Vr) High 0.9884 - (0.0016 × Vr) Instantaneous Gas-fired Water Heater 50,000 Btu/h Very Small Low 0.80 0.81 Medium 0.81 High 0.81 Instantaneous Electric Water Heater 75 gal Very Small 1.0136 - (0.0028 × Vr) Low 0.9984 - (0.0014 × Vr) Medium 0.9853 - (0.0010 × Vr) High 0.9720 - (0.0007 × Vr) *Vr is the Rated Storage Volume (in gallons), as determined pursuant to 10 CFR 429.17.

Information organized via a table:

(d) Water heaters. The uniform energy factor of water heaters shall not be less than the following:

Product class	Rated storage volume and input rating (if applicable)	Draw pattern	Uniform energy factor	
Gas-fired Storage Water Heater	≥20 gal and ≤55 gal	Very Small	$0.3456 - (0.0020 \times V_r)$	
		Low	$0.5982 - (0.0019 \times V_r)$	
		Medium	$0.6483 - (0.0017 \times V_r)$	
		High	$0.6920 - (0.0013 \times V_r)$	
	>55 gal and ≤100 gal	Very Small	$0.6470 - (0.0006 \times V_r)$	
		Low	$0.7689 - (0.0005 \times V_r)$	
		Medium	$0.7897 - (0.0004 \times V_r)$	
		High	$0.8072 - (0.0003 \times V_r)$	
Oil-fired Storage Water Heater	≤50 gal	Very Small	$0.2509 - (0.0012 \times V_r)$	
		Low	$0.5330 - (0.0016 \times V_r)$	
		Medium	$0.6078 - (0.0016 \times V_r)$	
		High	$0.6815 - (0.0014 \times V_r)$	
Electric Storage Water Heaters	≥20 gal and ≤55 gal	Very Small	$0.8808 - (0.0008 \times V_r)$	
		Low	$0.9254 - (0.0003 \times V_r)$	
		Medium	$0.9307 - (0.0002 \times V_r)$	
		High	$0.9349 - (0.0001 \times V_r)$	
		>55 gal and ≤120 gal	Very Small	$1.9236 - (0.0011 \times V_r)$
			Low	$2.0440 - (0.0011 \times V_r)$
			Medium	$2.1171 - (0.0011 \times V_r)$
			High	$2.2418 - (0.0011 \times V_r)$
Tabletop Water Heater	≥20 gal and ≤120 gal	Very Small	$0.6323 - (0.0058 \times V_r)$	
		Low	$0.9188 - (0.0031 \times V_r)$	
		Medium	$0.9577 - (0.0023 \times V_r)$	
		High	$0.9884 - (0.0016 \times V_r)$	
Instantaneous Gas-fired Water Heater	<2 gal and >50,000 Btu/h	Very Small	0.80	
		Low	0.81	
		Medium	0.81	
		High	0.81	
Instantaneous Electric Water Heater	<2 gal	Very Small	0.91	
		Low	0.91	
		Medium	0.91	
		High	0.92	

Grid-Enabled Water Heater	>75 gal	Very Small	$1.0136 - (0.0028 \times V_r)$
		Low	$0.9984 - (0.0014 \times V_r)$
		Medium	$0.9853 - (0.0010 \times V_r)$
		High	$0.9720 - (0.0007 \times V_r)$

*V_r is the Rated Storage Volume (in gallons), as determined pursuant to 10 CFR 429.17.

TG Recommendation (AS or AM or D):

AM

Modification of Proposed Change:

Delete current tables/language and replace with the following:

- a) Storage water heater, rated storage volume of backup water heater is ≥ 0.1 gallon and ≤ 55 gallons, Medium water draw

Table 703.5.5(a)

SEF	Tropical and CZ 1	CZ 2	CZ 3	CZ 4	CZ 5
SEF ≥ 1.3	1	2	3	5	7 6
SEF ≥ 1.51	2	2	4	7 6	10 9
SEF ≥ 1.81	2	3	6 5	10 9	14 13
SEF ≥ 2.31	4	5	9 8	16 14	24 19
SEF ≥ 3.01	6 5	8 7	12 11	23 21	30 27

- b) Storage water heater, rated storage volume of backup water heater is >55 gallons, Medium water draw

Table 703.5.5(b)

SEF	Tropical and CZ 1	CZ 2	CZ 3	CZ 4	CZ 5
SEF ≥ 1.3	1	2 1	3 2	5 3	7 4
SEF ≥ 1.51	2 1	2 1	4 2	7 4	10 6
SEF ≥ 1.81	2 1	3 2	6 4	10 6	14 8
SEF ≥ 2.31	4 2	5 3	9 5	16 10	24 13
SEF ≥ 3.01	6 4	8 5	12 7	23 14	30 18

TG Reason:

Federal requirements have changes and changed differently based on the size of the tank (55 gal threshold) and the new proposal addresses the new baseline.

Under the federal water heater standards that went into effect in April 2015, the efficiency standards for residential water heaters with rated storage volumes that are ≤ 55 gallons increased by 5% to 30% (based on previous Energy Factor test procedures). In addition, there are savings from higher water efficient appliance standards that took effect in 2014, 2015, and 2018 (clothes washers and dishwashers). Therefore, savings from using solar water heaters are lowered by the similar percentages.

The revisions to the table are based on average reductions of 10% in point values in all climate zones, rounded off to the nearest integer.]

Under the federal water heater standards that went into effect in April 2015, the efficiency standards for residential gas and electric storage water heaters with rated volumes that are > 55 gallons increased by 42% to 129% (based on previous Energy Factor test procedures). In addition, there are savings from higher water efficient appliance standards (clothes washers and dishwashers). Therefore, savings from using solar water heaters are lowered by the similar percentages.

The revisions are based on average reductions of 40% in point values in all climate zones, rounded off to the nearest integer.

	<p>Note: if the table was separated for electric versus gas water heaters, the reduction would be ~30% for baseline gas water heaters and ~56% for electric water heaters.]</p> <p>Water heater efficiency standards increased significantly in 2015, based on a DOE final rule that was published in 2010.</p> <p>In addition, DOE developed a new metric for water heaters, which manufacturers must use as of this year.</p> <p>https://www.aspe.org/sites/default/files/webfm/ContinuingEd/CEU_221_Mar15.pdf https://www.aspe.org/content/domestic-water-heating-design-manual-2nd-edition-electronic-download</p> <p>http://www.hotwater.com/resources/product-literature/sizing-diagrams/ http://www.hotwater.com/lit/sizing/aossg88150.pdf</p> <p>Storage tank size selection: NOTE: The draw efficiency of a gas or electric water storage tank is considered to be 70%.</p> <ul style="list-style-type: none"> • 30 gallon size (21 gallon draw) for one bath residence. • 40 gallon size (28 gallon draw) for two bath residence or one bath with an automatic clothes washer. • 50 gallon size (35 gallon draw) for three bath residence or two baths with an automatic clothes washer. <p>http://www.hotwatersizing.com/ http://www.statewaterheaters.com/literature/sizing-guide/ http://www.rheem.com/products/water_heating/tank/how_to_size_a_water_heater/ http://www.homedepot.com/c/water_heater_buying_guide_HT_BG_PL</p>
TG Vote:	7-0-3(a)

P236	LogID 6447	703.5.5 Solar water heater
Submitter:	Craig Conner, self	
Requested Action:	Revise as follows	
Proposed Change:	703.5.5 Solar water heater. SRCC (Solar Rating & Certification Corporation) OG 300 rated, or equivalent, solar domestic waterheating system is installed. Solar Energy Factor (SEF) as defined by SRCC is in accordance with Table 703.4.5 <u>703.5.5</u> .	
Reason:	Correct the reference to the table. It is editorial. Change should be only under the name of Howard C. Wiig, State of Hawaii, representing self	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	11-0-0	

P237	LogID 6169	703.6.1 Hard-wired lighting (Lighting and appliances)
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	(2) A minimum of 80 percent of the exterior lighting wattage has a minimum efficiency 40 <u>45</u> lumens per watt or is solar-powered.	
Reason:	Lighting technologies continue to advance in terms of efficacy, and certain interior lighting has to have an efficacy of 50 or 60 lumens per watt. In addition, at this level, there is a choice of multiple technologies that can be used (LED, compact fluorescent, or metal halide).	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	(2) A minimum of 80 percent of the exterior lighting wattage has a minimum efficiency 40 <u>4561</u> lumens per watt or is solar-powered.	
TG Reason:	To match the lowest value in Energy Star for Lamps v.2.0.	

TG Vote:	10-0-1
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P238	LogID 6216	703.6.1 Hard-wired lighting (Lighting and appliances)
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	703.6.1 Hard-wired lighting. Hard-wired lighting is in accordance with one of the following: <u>(Points shall not be awarded if at least one gas lighting fixture is used)</u>	
Reason:	In many codes, gas lighting is exempt from any requirements and is extremely inefficient. A typical gas lighting fixture uses 2,500 Btu's (733 Watts) to put out the same amount of light as a 43-Watt halogen lamp, a 13-Watt CFL, or a 9-Watt LED lamp. In other words, a gas lamp will use 81 times more energy than an LED lamp. In addition, many gas lamps have continuously burning pilot lights, so they use 2,500 Btu's even when no light is produced. As a result, one gas lamp rated at 2,500 Btu/hour with a continuously burning pilot light will use more energy than a gas water heater.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Move the new points note to apply only to Section (1) for interior lighting only.	
TG Reason:	The proposed provision is most appropriate for interior lighting.	
TG Vote:	5-3-1	

P239	LogID 17-065	703.6.1 Hard-wired lighting
Submitter:	Lynn Nacewicz, Home Innovation Research Labs	
Requested Action:	703.6.1 Hard Wired Lighting – Add DesignLights Consortium (DLC) as an equivalent to Energy Star (ES) for lighting fixtures.	
Proposed Change:	(1) A minimum percent of the total hard-wired interior luminaires or lamps qualify as Energy Star (ES), <u>DesignLights Consortium (DLC)</u> or <u>applicable</u> equivalent.	
Reason:	As the scope of NGBS has changed to include a portion of the building can be used as Commercial space, we need a commercial lighting product rating equivalent to ES for residential lighting. See DLC Technical Requirements Version 4.2	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous (9-0-0)	

P240	LogID 6403	703.7.1 Sun-tempered design (Passive solar design)
Submitter:	Eric Lacey, RECA	
Requested Action:	Revise as follows	
Proposed Change:	<p>703.7.1 Sun-tempered design. Building orientation, sizing of glazing, and design of overhangs are in accordance with all of the following:</p> <p>(1) The long side (or one side if of equal length) of the building faces within 20 degrees of true south.</p> <p>(2) Vertical glazing area is between 5 and 7 percent of the gross conditioned floor area on the south face [also see Section 703.7.1(8)] <u>and glazing U-factors meet Table 703.2.5.2(a).</u></p> <p>(3) Vertical glazing area is less than 2 percent of the gross conditioned floor area on the west face, and glazing <u>meets Table 703.2.5.2(a) is ENERGY STAR compliant or equivalent.</u></p>	

	(4) Vertical glazing area is less than 4 percent of the gross conditioned floor area on the east face, and glazing <u>meets Table 703.2.5.2(a)</u> is ENERGY STAR compliant or equivalent.
	(5) Vertical glazing area is less than 8 percent of the gross conditioned floor area on the north face, and glazing <u>meets Table 703.2.5.2(a)</u> is ENERGY STAR compliant or equivalent.
	(6) Skylights, where installed, are in accordance with the following: (a) shades and insulated wells are used, and all glazing <u>meets Table 703.2.5.2(a)</u> (b) horizontal skylights are less than 0.5 percent of finished ceiling area (c) sloped skylights on slopes facing within 45 degrees of true south, east, or west are less than 1.5 percent of the finished ceiling area
	(7) Overhangs or adjustable canopies or awnings or trellises provide shading on south-facing glass for the appropriate climate zone in accordance with Table 703.6.1(7): <p style="text-align: center;">Table 703.7.1(7) South-Facing Window Overhang Depth [No Change to Table]</p>
	(8) The south face windows have a SHGC of 0.40 or higher.
	(9) Return air or transfer grilles/ducts are in accordance with Section 705.4.

Reason:	This proposal corrects what appears to be an oversight in the current ICC-700 language as it relates to fenestration requirements in the sun-tempered design option of Section 703.7.1. An exception to ICC-700's low-SHGC requirement was carved out for south-facing glazing in a passive-solar designed home, but the U-factor requirement was inadvertently omitted. Low U-factor windows will not interfere with passive solar design – in fact, a passive solar home should have an extremely efficient thermal envelope in order to work properly, and that would include low U-factor windows. We do not believe it was the intent of ICC-700 to allow unrestricted U-factors on south-facing glazing, since that would more than reverse all of the benefits of a passive-solar designed home. This proposal simply applies the same U-factor requirement that applies to all other fenestration used in the passive solar home, while preserving the SHGC exception in item #8. In addition, for glazing under this option, we propose to substitute compliance with Table 703.2.5.2(a) for “Energy Star compliant or equivalent.” Since the values in Table 703.2.5.2(a) are similar to current Energy Star requirements, we believe that it would be better for ICC 700 to reference an internal table rather than external Energy Star requirements, which may change in the future.
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	
TG Vote:	8-1-1

P241	LogID 6448	703.7.3 Passive cooling design
Submitter:	Craig Conner, self	
Requested Action:	Revise as follows	
Proposed Change:	(c) covered porches <u>and lanais</u>	
Reason:	As evinced by the attached article, lanais are incorporated into Florida's (and perhaps beyond) architecture. The word "lanai" evokes a more comfortable and desirable setting than "covered porch" and encourages spaces designed for prolonged, leisurely outdoor living. Lanais may be equipped with lighting and ceiling fans to accommodate gatherings while using very little energy. This change should be under only the name of "Howard C. Wiig, State of Hawaii, representing self"	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		

TG Reason:	The addition is redundant.
TG Vote:	11-1-2

P242	LogID 1505	703.7.3 Passive cooling design
Submitter:	Roger L. LeBrun, VELUX America Inc.	
Requested Action:	Revise as follows	
Proposed Change:	703.7.3(3) Windows and/or venting skylights are located to facilitate cross <u>and stack effect</u> ventilation.	
Reason:	The Standard should mention stack effect ventilation. It is more efficient than a whole house fan, particularly in two story dwellings.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P243	LogID 1506	703.7.4 Passive solar heating design
Submitter:	Roger L. LeBrun, VELUX America Inc.	
Requested Action:	Revise as follows	
Proposed Change:	Additional glazing, no greater than 12 percent, is permitted on the south wall. This additional glazing is in accordance with the requirements of Section 703.7.1. <u>For every square foot of roof glazing on the south-facing roof slope, three square feet of allowed wall glazing is omitted.</u>	
Reason:	Skylights are more efficient solar heaters than windows.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	No sufficient substantiation for the proposed ratio or for the overall proposal to demonstrate equivalent solar heating performance.	
TG Vote:	8-1-2	

P244	LogID 6290	704.2 Point calculation
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	NOTE: <u>Dwellings must use Confirmed Ratings uploaded to the RESNET National Registry, or equivalent as approved by the Adopting Entity, for calculating points under this Section.</u>	
Reason:	Requiring Confirmed Ratings ensures that homes following the HERS Path actually go through the full RESNET Quality Assurance Process. ENERGY STAR does not explicitly require confirmed ratings and thus some Raters exploit this loophole to submit unconfirmed, unsubstantiated energy models with no oversight.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	9-2-0	

P245	LogID 17-024	704.2 Point calculation
Submitter:	Aaron Gary, Tempo Partners	
Requested Action:	Revise as follows	
Proposed Change:	<p>704.2 Point Calculation. Points for Section 704 shall be computed based on Steps “1a” through “11d” of the EPA HERS Index Target Procedure. Points shall be computed individually for each building s follows:</p> <p>30 + (percent <u>Number of HERS Index Points</u> less than ENERGY STAR HERS Index Target for than building) * 2</p>	
Reason:	To clarify and simplify the equation. Once HERS Index Point represents one percentage point under the HERS and ERI methodologies already. Stating the equation this way simplifies the implementation of this practice for project teams and NGBS Verifiers.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	7-0-1	

P246	LogID 6217	705.2.1 Lighting controls
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	705.2.1 Lighting controls (Points shall not be awarded if at least one gas lighting fixture is installed)	
Reason:	In many codes, gas lighting is exempt from any requirements and is extremely inefficient. A typical gas lighting fixture uses 2,500 Btu's (733 Watts) to put out the same amount of light as a 43-Watt halogen lamp, a 13-Watt CFL, or a 9-Watt LED lamp. In other words, a gas lamp will use 81 times more energy than an LED lamp. In addition, many gas lamps have continuously burning pilot lights, so they use 2,500 Btu's even when no light is produced. As a result, one gas lamp rated at 2,500 Btu/hour with a continuously burning pilot light will use more energy than a gas water heater.	
TG Recommendation (AS or AM or D):	disapprove	
Modification of Proposed Change:		
TG Reason:	This section is about lighting controls and the proposal is about lighting efficiency .	
TG Vote:	No votes – 1, Abst -0, all rest support	

P247	LogID 17-090	705.2.3 Lighting outlets
Submitter:	Michael Jouaneh, Lutron Electronics	
Requested Action:	Modify as follows	
Proposed Change:	Add dimmers or fan-speed controls in addition to occupancy sensors.	
Reason:	If the lighting outlet will get a fan with a light, it should be controlled with fan-speed control. And dimmer is another energy-saving lighting control that can be used	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		

TG Reason:	No information about the level of energy savings; issues with using non-dimmable lamps with these outlets.
TG Vote:	9-0-0

P248	LogID 6295	705.5.1 Installer Certification (HVAC design and installation)
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	<p>705.5.1 <u>Meet one of the following:</u> (1) HVAC contractor and service technician are <u>is</u> certified by a nationally or regionally recognized program (e.g., North American Technician Excellence, Inc. (NATE), Air Conditioning Contractors of Americas Quality Assured Program (ACCA/QA), <u>EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO)</u>, Building Performance Institute (BPI), Radiant Panel Association, or a manufacturer's training program). - 1 Point (2) HVAC service technician is <u>is</u> certified by a nationally or regionally recognized program (e.g., North American Technician Excellence, Inc. (NATE), Air Conditioning Contractors of Americas Quality Assured Program (ACCA/QA), Building Performance Institute (BPI), Radiant Panel Association, or a manufacturer's training program). - 2 Points</p>	
Reason:	This aligns with ENERGY STAR for Homes program with the certification of HVAC contractors while preserving and encouraging the direct certification of the installation technician. In practice the certification of the contractor is difficult enough with the certification of the installation technician being rare enough to make this credit its current form next to impossible to legitimately claim.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	<p>Replace Section 705.5.1 with the following:</p> <p>705.5.1 <u>Meet one or both of the following:</u> (1) HVAC contractor and service technician are <u>is</u> certified by a nationally or regionally recognized program (e.g., North American Technician Excellence, Inc. (NATE), the Air Conditioning Contractors of Americas Quality Assured Program (ACCA/QA) <u>or by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO) or equivalent,</u> Building Performance Institute (BPI), Radiant Panel Association, or a manufacturer's training program). - 1 Point (2) HVAC installation technician(s) <u>is</u> certified by <u>North American Technician Excellence, Inc. (NATE) or equivalent.</u> - 1 Point</p>	
TG Reason:	Improves the language, consistent with reason statement, allows the builder to get two points.	
TG Vote:	1 st Steve, 2 nd Amber 11 Approve, 0 disapprove, 0 abstain	

P249	LogID 6251	705.6.2.1 Air leakage validation of building or dwelling units
Submitter:	Carl Seville, SK Collaborative	
Requested Action:	Add new as follows	
Proposed Change:	Provide alternate envelope leakage measurement of ELR (CFM50 per SF of building envelope) in addition to ACH50.	
Reason:	Small home and multifamily units are penalized in regards to ACH50 measurements, which favor larger building volumes. The ELR may vary based on unit/house size per the attached chart.	
TG Recommendation (AS or AM or D):	TG 5: D (1 st Conner, 2 nd Wood) TG 6: D	
Modification of Proposed Change:		
TG Reason:	TG 5: Disapproved in favor of the action taken on LogID 1519 TG 6: Reference LogID1519 which encompasses this modification	
TG Vote:	TG 5: 11 approve, 0 disapprove, 0 abstain TG 6: 15 Yes	

P250	LogID 6333	705.6.2.2 HVAC airflow testing	
Submitter:	Aaron Gary, self		
Requested Action:	Revise as follows		
Proposed Change:	<p>705.6.2.2 HVAC airflow testing. Balanced HVAC airflows are demonstrated by flow hood or other acceptable flow measurement tool by a third party. Test results are in accordance with both of the following:</p> <p>Measured flow at each supply and return register meets or exceeds the requirements in ACCA 5 QI-2010, Section 5.2.</p> <p>Total airflow meets or exceeds the requirements in ACCA 5 QI-2010, Section 5.2.</p>		<p>5</p> <p>5</p> <p>3</p>
Reason:	HVAC Airflow can be measured multiple ways and measuring Total airflow doesn't necessarily require measuring airflow at individual registers. California Title 24, arguable the most progressive energy standard being applied today on a mass scale recognizes the value of just doing 3rd party Total Airflow measurement. RESNET and the EPA are also working to recognize the value of this as part of the HVAC Grade 1 initiative. NGBS should similarly recognize its stand-alone value instead of tying to the more problematic airflow verification of individual registers.		
TG Recommendation (AS or AM or D):	Approve		
Modification of Proposed Change:			
TG Reason:			
TG Vote:	6-2-2		

P251	LogID 6306	705.6.4.2 Portable hot water demand re-circulation system (multifamily)	
Submitter:	Susan Gitlin, US Environmental Protection Agency		
Requested Action:	Revise as follows		
Proposed Change:	Potable hot water demand re-circulation system is installed <u>in a unit within a multifamily building</u> in place of a standard circulation pump and control.		
Reason:	Specify that system needs to be present within each unit.		
TG Recommendation (AS or AM or D):	TG 5: Approve as modified TG 6: D		
Modification of Proposed Change:	TG 5: Potable hot water demand re-circulation system(s) <u>that serves every unit is installed in a unit within in a multifamily building is installed</u> in place of a standard circulation pump and control. TG 6: N/A		
TG Reason:	TG 5: To make it clear that a single-unit installation does not qualify for points. TG 6 The existing language is adequate in its definition		
TG Vote:	TG 5: Unanimous TG 6: 14 Yes; 1 Abstain		

P252	LogID 6456	705.7 Submetering system	
Submitter:	Michael Cudahy, PPFA		
Requested Action:	Revise as follows		
Proposed Change:	705.7 Submetering system. In multifamily buildings, and advanced electric and or fossil fuel submetering system is installed to monitor electricity and or fossil fuel consumption for each unit.		

	The device provides consumption information on a <u>minimum</u> monthly or to near real time basis. The information is <u>accessible or available</u> to the occupants at a minimum on a monthly basis.
Reason:	Some homes are electric only and have no fossil fuel use. Data could be accessed directly by users. The minimum data rate would be monthly, so I suppose any other rate up to real time is acceptable.
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-6 (Multifamily) as the proposal will affect multifamily buildings.</i>
TG Recommendation (AS or AM or D):	TG 5: Disapprove TG 6: D
Modification of Proposed Change:	
TG Reason:	TG 5: The proposed language may cause confusion with implementation and it reduces the requirement. The proposed use of real-time basis is unclear. TG 6: The existing language is adequate
TG Vote:	TG 5: Unanimous TG 6: 15 Yes

P253 LogID 6284 706.1 Energy consumption control (Innovative Practices)															
Submitter:	Aaron Gary, self														
Requested Action:	Add new as follows														
Proposed Change:	<table border="1"> <tr> <td>706.1 Energy consumption control. A whole-building or whole-dwelling unit device or system is installed that controls or monitors energy consumption.</td> <td>3 Max</td> </tr> <tr> <td>(1) programmable communicating thermostat with the capability to be controlled remotely</td> <td>1</td> </tr> <tr> <td>(2) energy-monitoring device or system</td> <td>1</td> </tr> <tr> <td>(3) energy management control system</td> <td>3</td> </tr> <tr> <td>(4) programmable thermostat with control capability based on occupant presence or usage pattern</td> <td>1</td> </tr> <tr> <td>(5) lighting control system</td> <td>1</td> </tr> <tr> <td>(6) <u>ENERGY STAR</u> qualified thermostat</td> <td>1</td> </tr> </table>	706.1 Energy consumption control. A whole-building or whole-dwelling unit device or system is installed that controls or monitors energy consumption.	3 Max	(1) programmable communicating thermostat with the capability to be controlled remotely	1	(2) energy-monitoring device or system	1	(3) energy management control system	3	(4) programmable thermostat with control capability based on occupant presence or usage pattern	1	(5) lighting control system	1	(6) <u>ENERGY STAR</u> qualified thermostat	1
706.1 Energy consumption control. A whole-building or whole-dwelling unit device or system is installed that controls or monitors energy consumption.	3 Max														
(1) programmable communicating thermostat with the capability to be controlled remotely	1														
(2) energy-monitoring device or system	1														
(3) energy management control system	3														
(4) programmable thermostat with control capability based on occupant presence or usage pattern	1														
(5) lighting control system	1														
(6) <u>ENERGY STAR</u> qualified thermostat	1														
Reason:	ENERGY STAR has started certifying thermostats again after a several year hiatus as on January 1, 2017. The Standard should recognize this ENERGY STAR product similar to all of the other it already references.														
TG Recommendation (AS or AM or D):	Disapprove														
Modification of Proposed Change:															
TG Reason:	Already addressed in Item (4). Behavioral studies indicate that they are not used as expected in simulations.														
TG Vote:	10-1-0														

P254 LogID 1507 706.2 Renewable energy service plan	
Submitter:	Todd Jones, Center for Resource Solutions
Requested Action:	Revise as follows
Proposed Change:	(1) Builder selects a renewable energy service plan provided by the local electrical utility for interim (temporary) electric service, <u>or purchases renewable energy certificates (RECs) to cover electricity used</u> . The builder's local administrative office has renewable energy service <u>or has</u>

	<u>otherwise been paired with RECs. Green-ecertified (or equivalent) is required [or recommended] for renewable electricity purchases.</u>
Reason:	(1) Depending on the location of the building site, the local electric utility may not offer a renewable energy service product/option/plan, or may not offer one for interim (temporary) electric service. Therefore, we suggest allowing the builder to procure renewable energy certificates (RECs), which are available everywhere, to meet this requirement. We also recommend that Green-e certification be required, or at least recommended, to ensure that use of renewable electricity has been properly verified. Utility green power programs/products, competitive electricity products, and stand-alone REC products can all be Green-e certified.
TG Recommendation (AS or AM or D):	Approve as modified
Modification of Proposed Change:	Builder selects a renewable energy service plan provided by the local electrical utility for interim (temporary) electric service, <u>or purchases renewable energy certificates (RECs) to cover electricity used.</u> The builder's local administrative office has renewable energy service <u>or has otherwise been paired with RECs. Green-ecertified (or equivalent) is required [or recommended]</u> for renewable electricity purchases.
TG Reason:	
TG Vote:	6-4-0

P255	LogID 6481	706.3 Smart appliances and systems
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Submitter:	Michael Cudahy, PPFA
Requested Action:	Add new as follows
Proposed Change:	Smart appliances and systems: add definition/footnote.
Reason:	This section could use a definition in chapter two, or a footnote, to describe what counts as a Smart appliance or system. Currently, it seems wide open. Is it a Smart appliance if it has internet or blue tooth connectivity only? If it contains programs that help conserve energy or water based on loads? Occupancy sensors?
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	A definition for a smart appliance exists in Chapter 2. No language is proposed
TG Vote:	Unanimous

P256	LogID 6254	706.5 On-site renewable energy system
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Submitter:	Todd Jones, Center for Resource Solutions
Requested Action:	Revise as follows
Proposed Change:	<u>An on-site renewable energy system(s) is installed on the property, and the renewable energy certificates (RECs) are retained and retired on-site for the building's own consumption.</u>
Reason:	If the intent of this requirement is that buildings use/consume the renewable electricity from an onsite system (as opposed to installing an onsite system and generating green power for other grid consumers, or which the utility could potentially use to meet a state requirement), then the building must retain and retire the renewable energy certificates (RECs) associated with the electricity generated onsite. The previous response to this comment that this change "may not be available in all areas and would add significant record keeping/administrative burden especially for single family construction" is not accurate. RECs are always required for renewable energy claims in the U.S. and are produced in association with all renewable energy generation in all states. Even where a renewable energy system is not registered in an electronic tracking system, the ownership of RECs or environmental attributes can and should be specified in a contract. Retention of the RECs and environmental attributes at the building adds no significant administrative burden or record keeping. It merely needs to be specified in the ownership, lease, or PPA agreement.

TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	This level of paperwork and bureaucracy for residential buildings is not needed. In some markets, RECs are not available. Not always possible to verify at the point of certification. The impact of system size vs building size is not addressed.
TG Vote:	9-1-0

P257	LogID 6153	706.8 Electrical vehicle charging station
Submitter:	Steven Rosenstock, self	
Requested Action:	Revise as follows	
Proposed Change:	706.8 Electrical vehicle charging station. A Level 2 (208/240V-80 amp) or Level 3 electric vehicle charging station....	
Reason:	This proposal makes an editorial change and includes the specification for Level 2 charging station based on SAE information. In other parts of NGBS, it says 40 amps for Level 2 charging stations. For some battery electric vehicles, a faster charging rate is possible with Level 2 system. The following link has more information: http://www.sae.org/smartgrid/chargingprimer.pdf	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	706.8 Electrical vehicle charging station. A Level 2 (208/240V 40-80 amp) or Level 3 electric vehicle charging station....	
TG Reason:	Add a lower limit of 40 amps to be consistent with SAE standard.	
TG Vote:	10-0-1	

P258	LogID 6471	706.8 Electrical vehicle charging station
Submitter:	Chuck Foster, self	
Requested Action:	Revise as follows	
Proposed Change:	2-3 points	
Reason:	Electric vehicles are well recognized as an energy efficient and environmentally friendly means of transportation. An impediment to even greater use for EV's, however, is insufficient charging infrastructure. This proposal attempts to incent builders to install more charging stations.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	No sufficient justification was provided to increase the point value.	
TG Vote:	7-6	

P259	LogID 6534	706.8 Electrical vehicle charging station
Submitter:	Craig Conner, self	
Requested Action:	Revise as follows	
Proposed Change:	706.8 Electrical vehicle charging station. A Level 2 (208/240V 40 amp) or Level 3 electric vehicle charging station is installed on the building site. <u>The charging station shall be in accordance with the NEC (National Electrical Code) Article 625.</u> (Note: Charging station shall not be included in the building energy consumption.)	
Reason:	This more completely specifies an EV charging station. The NEC (National Electric Code) has specifications for connections to EV chargers in Article 625.	

TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of 6153 and NEC compliance requirement is redundant.
TG Vote:	9-1-1A

P260	LogID 6554	Other for Chapter 7 (include section number and title below)
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Add new as follows	
Proposed Change:	<u>706 HEALTH AND WELL BEING (...prior to INNOVATIVE PRACTICES)</u>	
Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	No specific language provided.	
TG Vote:	Unanimous with one abstention.	

P261	LogID 6539	Other for Chapter 7 (include section number and title below)
Submitter:	Chuck Foster, self	
Requested Action:	Add new as follows	
Proposed Change:	New section 706.10 as follows: <u>706.10 Battery storage. A battery storage system is installed with controls to allow charging and discharging in accordance with signals provided by the local serving electric utility.</u> <u>1 point</u>	
Reason:	Energy storage is an important and necessary component of the overall energy infrastructure as renewable energy supplies a larger and larger share of consumer needs. This proposal provides a small incentive to reward those who invest in that infrastructure.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	The intent of the provision is not clear. Does not describe the conditions under which the utility will have control over the consumer-owned product.	
TG Vote:	6-1-1	

P262	LogID 6515	Other for Chapter 7 (include section number and title below)
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Add new as follows	
Proposed Change:	<u>706.X Ducts in conditioned space. In climate zones1-4, heating system and cooling system ducts are located in conditioned space. Points= TBD</u>	

Reason:	In cooling dominated climate zones, where basements or crawl spaces are rarely constructed, moving or placing heating and cooling system ducts within (insulated) conditioned space improves the efficiency of the heating / cooling system.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Duplicative with provisions of Section 703.4.3
TG Vote:	Unanimous

P263 LogID 6516 Other for Chapter 7 (include section number and title below)

Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)																																			
Requested Action:	Add new as follows																																			
Proposed Change:	<p><u>706.X Ducts in conditioned space.</u> Heating system and cooling system ducts are located entirely in conditioned space.</p> <p style="text-align: center;"><u>Table 706.X</u> <u>Ducts in Conditioned Space</u></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Ducts</th> <th colspan="8">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td></td> <td colspan="8" style="text-align: center;">Points</td> </tr> <tr> <td><u>Ducts entirely in Conditioned Space</u></td> <td style="text-align: center;"><u>5</u></td> <td style="text-align: center;"><u>4</u></td> <td style="text-align: center;"><u>3</u></td> <td style="text-align: center;"><u>2</u></td> <td style="text-align: center;"><u>2</u></td> <td style="text-align: center;"><u>1</u></td> <td style="text-align: center;"><u>1</u></td> <td style="text-align: center;"><u>1</u></td> </tr> </tbody> </table> <p>-</p>	Ducts	Climate Zone								1	2	3	4	5	6	7	8		Points								<u>Ducts entirely in Conditioned Space</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>
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<u>Ducts entirely in Conditioned Space</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>																												
Reason:	Option 2. In all climate zones, ducts in conditioned space improve the efficiency of the heating and cooling systems. In cooling dominated climate zones, where basements or crawl spaces are rarely constructed, moving or placing heating and cooling system ducts within (insulated) conditioned space improves the efficiency of the heating / cooling system.																																			
TG Recommendation (AS or AM or D):	Disapprove																																			
Modification of Proposed Change:																																				
TG Reason:	Duplicative with provisions of Section 703.4.3																																			
TG Vote:	Unanimous																																			

P264 LogID 6185 Other for Chapter 7 (include section number and title below)

Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	<p><u>ADD NEW SECTION</u></p> <p><u>706.10 Solar Ready Design.</u> <u>(1) PV-ready design. Home shall meet ALL of the following:</u> <u>(i) Location, based on zip code has at least 5 kWh/m2/day average daily solar radiation based on annual solar insolation using PVWatts online tool:</u> <u>http://gisatnrel.nrel.gov/PVWatts_View/index.html AND;</u> <u>(ii) Location does not have significant natural shading (e.g., trees, tall buildings on the south-facing roof, AND;</u> <u>(iii) Home as designed has adequate roof area free from obstruction within +/-45° of true south as noted in the table below.</u> <u>Conditioned Floor Area of the House (sq. ft.) Minimum Roof Area within +/- 45° of True South for PV-Ready Checklist to Apply (ft2)</u> <u>< 2000 110</u> <u>< 4000 220</u> <u>< 6000 330</u></p>

	<p>> 6000 440 AND;</p> <p><u>(iv) The structural design loads for roof dead load and roof live load shall be adequate to support an additional 6 lbs./sq. ft. for future solar system, AND;</u></p> <p><u>(v) Install and label a 4' x 4' plywood panel area for mounting an inverter and balance of system components, AND;</u></p> <p><u>(vi) Install a 1" metal conduit for the DC wire run from the designated array location to the designated inverter location (cap and label both ends), AND;</u></p> <p><u>(vii) Install a 1" metal conduit from designated inverter location to electrical service panel (cap and label both ends), AND;</u></p> <p><u>(viii) Install and label a 70-amp dual pole circuit breaker in the electrical service panel for use by the PV system (label the service panel).. - 5 POINTS</u></p> <p><u>(2) Solar water heating ready design. Home shall meet ALL of the following:</u></p> <p><u>(i) Location, based on zip code has at least 5 kWh/m2/day average daily solar radiation based on annual solar insolation using PVWatts online tool: http://gisatnrel.nrel.gov/PVWatts_Viewer/index.html AND;</u></p> <p><u>(ii) Location does not have significant natural shading (e.g., trees, tall buildings on the south facing roof, AND;</u></p> <p><u>(iii) Home as designed has adequate roof area free from obstructions within +/-45° of true south as noted in the table below.</u></p> <p><u>Conditioned Floor Area of the House (sq. ft.) Minimum Roof Area within +/- 45° of True South for Solar Hot Water-Ready Checklist to Apply (ft2)</u></p> <p><u>< 2000 40</u></p> <p><u>< 4000 60</u></p> <p><u>< 6000 80</u></p> <p><u>> 6000 100, AND;</u></p> <p><u>(iv) The structural design loads for roof dead load and roof live load shall be adequate to support an additional 6 lbs./sq. ft. for future solar system, AND;</u></p> <p><u>(v) 3' x 3' x 7' area in the utility room adjacent to the existing water heater for a solar hot water tank, AND;</u></p> <p><u>(vi) 3' x 2' plywood panel area adjacent to the solar hot water tank for the balance of system components/pumping package, AND;</u></p> <p><u>(vii) Install an electrical outlet within 6' of the designated wall area, AND;</u></p> <p><u>(viii) Install a solar bypass valve on the cold water feed of the water heater (cap and label both ends), AND;</u></p> <p><u>(ix) Install a single 4" chase or 2–2" chases from utility room to the attic space below designated array location (cap and label both ends). - 5 POINTS</u></p> <p><u>(where points awarded in Section 706.5, points shall not be awarded in 706.10)</u></p>
Reason:	Projects that can not afford to install an active on-site renewable energy system should still be able to gain recognition for installing the infrastructure for such a system to be installed in the future. The listed requirements are borrowed from the DOE ZERH guidelines.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<p>AM</p> <p><u>Replace the proposed language with the following:</u></p> <p>706.5 On-site renewable energy system. An on-site renewable energy system(s) is installed on the property. 2 pts per kW divided by the number of dwelling units.</p> <p><u>One of the following options is implemented.</u></p> <p><u>1) Building is Solar-Ready in compliance with IECC Appendix RA, Solar Ready Provisions -- 1 point</u></p> <p><u>2) An on-site renewable energy system(s) is installed on the property -- 2 points per kW</u></p> <p><u>3) An on-site renewable energy system(s) and a battery energy storage system are installed on the property -</u></p> <p><u>2 points per kW of renewable energy system, plus</u></p> <p><u>1 point per each 3 kWh of battery energy storage system.</u></p> <p><u>Points awarded in this section shall not be combined with points for renewable energy in another section of this chapter. The solar-ready zone roof area in #1 is area per dwelling unit. Points in item #2 and #3 shall be divided by the number of dwelling units.</u></p>
TG Reason:	<p>Tabled – Joe will take the lead with Craig, Howard, Loren, Aaron</p> <p>Extensive discussion on 11/3/2017</p> <p>A straw vote to come back with a 3-tier proposal (Tier 1 – ready; Tier 2 – PV; Tier 3 – PV plus storage) and something for multifamily – 9-0-3</p>

TG Vote:	Final discussion on 3/7/10 – AM – 10-0-0
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P265	LogID 6293	Other for Chapter 7 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	706.X Alternative Refrigerant. Use of the following in space cooling systems for dwellings. (1) Use alternative refrigerant with a GWP < 1000 (2) Do not use refrigerants	
Reason:	To recognize newer refrigerant technology with better for the environment.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	706.X Alternative Refrigerant. Use of the following in <u>mechanical</u> space cooling systems for dwellings. (1) Use alternative refrigerant with a GWP < 1000 1 point (2) Do not use refrigerants 2 points	
TG Reason:	Minimal points are provided based on format for Section in 706. "Mechanical" added to distinguish from fan systems.	
TG Vote:	9-2-0	

P266	LogID 6220	Other for Chapter 7 (include section number and title below)
Submitter:	Steven Rosenstock, self	
Requested Action:	Add new as follows	
Proposed Change:	706.10 Battery Storage System. A battery storage system is installed that stores electric energy from an on-site renewable electric generation system or is grid-interactive or can perform both functions.	
Reason:	As more electric grids and homes install renewable and variable electric generation systems, there is more need for energy storage. In Hawaii, there are now special electric rates for customers that can store electricity from on-site PV systems. This new section will allow more storage technologies to receive credit in the NGBS. Information on Hawaii rates: https://www.hawaiianelectric.com/clean-energy-hawaii/producing-clean-energy/customer-self-supply-and-grid-supply-programs Information on different battery storage technologies: https://cleantechnica.com/2015/05/07/tesla-powerwall-price-vs-battery-storage-competitor-prices-residential-utility-scale/ https://cleantechnica.com/2015/05/09/tesla-powerwall-powerblocks-per-kwh-lifetime-prices-vs-aquion-energy-eos-energy-imergy/ http://www.solarpowerworldonline.com/2016/05/comparison-residential-solar-batteries/	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	706.10 Battery Storage System. A battery storage system <u>of not less than 6 kWh of available capacity is installed that stores electric energy from an on-site renewable electric generation system or is grid-interactive or can perform both functions.</u> 2 Points	
TG Reason:	Sets a minimum threshold for the battery capacity and clarifies and simplifies the language. Grid-interactive is not defined.	
TG Vote:	9-1-0	

P267	LogID 6574	Other for Chapter 7 (include section number and title below)
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	701.1.5 Energy recipe based compliance. Compliance as specified in Appendix F shall be compliance for the climate zone and level indicated in Appendix F.	

	<p>Appendix F This appendix includes complete descriptions for homes that meet the NGBS for the climate zone and level listed. Mandatory items in Chapter 7 still apply. Climate zone 6, silver AFUE 94 or HSPF 9.5 HSPF or greater SEER 17 or greater water heating EF .95 or greater hot water source is no more than 10 ft from entrance to rooms using hot water tested ACH50 2.5 or greater Insulation levels within 90% of those in the IECC Window U-factor no more than 0.28 On site renewables supply at least 4% of the annual energy</p>
Reason:	This will be a series of recipes that will will meet the requirements for the zone and level indicated. One example is shown.
TG Recommendation (AS or AM or D):	Disapproval
Modification of Proposed Change:	
TG Reason:	Incomplete and not ready for inclusion in the Standard
TG Vote:	10-0-2

P268	LogID 6334	Other for Chapter 7 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>705.5.3 HVAC Design is verified by 3rd Party as follows:</u> (1) The ENERGY STAR HVAC Design and Rater Design Review Checklists are completed without correction needed. - 5 POINTS (2) HVAC Installation is inspected and conforms to HVAC design documents and plans. - 5 POINTS	
Reason:	RESNET and the EPA are in the process of developing a ANSI Standard for the design and installation of Grade 1 HVAC systems. The Standard will not complete the ANSI process until 2018. Since the ANSI Standard they are developing will not be approved in time for NGBS 2018 to recognize, we propose recognizing some of the practices it will be proposing.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	6-3-1	

P269	LogID 6199	Other for Chapter 7 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	ADD NEW SECTION <u>Smart Ventilation. A whole building ventilation systems is installed with automatic smart ventilation controls to limit ventilation during periods of extreme temperature, extreme humidity, and/or during times of peak utility loads and is in accordance with the specifications of Appendix B.</u>	
Reason:	Initial research in this area, funded by the U.S. Department of Energy (U.S. DOE), investigated the proof-of-concept for smart ventilation and estimated typical ventilation energy savings of 40% (Turner and Walker 2012) or about 15% of total heating and cooling load, with savings increasing to more than 50% on average for economizer-equipped homes. Traditional energy modeling software employed by NGBS Verifiers can not account for this energy savings.	

TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	706.10 Smart Ventilation. A whole-building ventilation systems is installed with automatic smart ventilation controls to limit ventilation during periods of extreme temperature, extreme humidity, and/or during times of peak utility loads and is in accordance with the specifications of Appendix B. <u>1 point</u>
TG Reason:	Add a points value; remove word "smart" for clarity.
TG Vote:	11-0-0

P270	LogID 6198	Other for Chapter 7 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	ADD NEW SECTION 706.11 District Heating and Cooling: Lot is within a community that has a district heating and/or cooling system.	
Reason:	District cooling and heating can be very efficient as it removes the need for building specific space heating systems, space cooling systems, and/or domestic water heating systems. This energy can be difficult to model effectively using residential software however.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	It may allow the use of inefficient systems and it will find seldom use.	
TG Vote:	3-2-6	

P271	LogID 6352	Other for Chapter 7 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	Section 707 - Add a new section as relevant for Health & Well-being credits.	
Reason:	As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	No specific language provided.	
TG Vote:	8-0-1	

P272	LogID 17-016	New for Chapter 7
Submitter:	Carl Seville, SK Collaborative	
Requested Action:	Add new as follows:	
Proposed Change:	Electrical Energy Monitoring System. For single family homes and townhouses, an electrical energy monitoring system is installed meeting the following requirements: (1) <u>displays energy use in minimum increments of 2 hours</u> (2) <u>separately tracks a minimum of 6 different electricity uses</u> (3) <u>installed in visible location or be accessible via internet</u> (4) <u>allows data to be shared with a third-party energy management program that provides reports of usage on demand or at a minimum of twice monthly of energy use.</u>	

Reason:	Residents that are aware of real-time energy use are more likely to conserve energy and/or take actions to use less energy when possible.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	For single-family, 706.1 already addresses this subject and the proposed language does not offer in improvement. The language is unclear (e.g., 6 energy uses; minimum increments vs maximum).
TG Vote:	Unanimous

P273	LogID 17-017	New for Chapter 7
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Submitter:	Carl Seville, SK Collaborative
Requested Action:	Add new as follow:
Proposed Change:	<p><u>Interval Data Monitoring System.</u> For multifamily buildings, an interval data monitoring system is installed.</p> <ol style="list-style-type: none"> (1) <u>A common space or whole building electrical monitoring system that measures use in minimum 2 hour increments is installed in a location visible to management on a display or via internet. [XX POINTS]</u> (2) <u>A common space or whole building gas monitoring system that measures energy use in minimum increments of 2 hours is installed. [XX POINTS]</u> (3) <u>A whole-building monitoring system that measures water use in minimum increments of 2 hours is installed. [XX POINTS]</u> (4) <u>An interval data monitoring system that measures in-unit electricity and/or natural gas use in minimum 2 hour increments is installed in a location visible to occupants or available via internet. [XX POINTS]</u>
Reason:	Building managers that are aware of real-time energy use are more likely to conserve energy and/or take actions to use less energy when possible.
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-6 (Multifamily) as the proposal will affect multifamily buildings.</i>
TG Recommendation (AS or AM or D):	TG 5: Disapprove TG 6: Defer to TG 5.
Modification of Proposed Change:	
TG Reason:	TG 5: In principle, this is already covered by Section 706.1 and this level of granularity is not needed. Water belongs in Chapter 8. No recommended point estimates are provided. Common space may only be responsible for 10-15% of the whole building consumption.
TG Vote:	TG 5: 6-2-2

P274	LogID 17-018	New for Chapter 7
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Submitter:	Carl Seville, SK Collaborative
Requested Action:	Add new as follows:
Proposed Change:	<p><u>Third-Party Utility Benchmarking Service.</u> For a multifamily building, the owner has contracted with a third-party utility benchmarking service with at least five (5) years of experience in utility data management and analysis to perform a monthly analysis of whole-building energy and water consumption. [XX POINTS]</p> <ol style="list-style-type: none"> (1) <u>The building owner commits to reporting energy data using U.S. Environmental Protection Agency's ENERGY STAR Portfolio Manager for a minimum of three years [XX POINTS]</u>
Reason:	Building and managers that have better information about energy and water use can make better decisions to reduce consumption as well as try to determine which green practices are most effective in saving energy and water.

TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<p><u>Third-Party Utility Benchmarking Service.</u> For a multifamily building, the owner has contracted with a third-party utility benchmarking service with at least five (5) years of experience in utility data management and analysis to perform a monthly analysis of whole-building energy and water consumption for a minimum of 1 year. 3</p> <p>The building owner commits to reporting energy data using U.S. Environmental Protection Agency's ENERGY STAR Portfolio Manager for a minimum of three years 1</p> <p>[this is assigned to 706]</p>
TG Reason:	Points were added. Also added minimum duration of monitoring for qualifying for points.
TG Vote:	9-1-0

P275	LogID 17-061	New for Chapter 7
Submitter:	Paul Cabot, American Gas Association	
Requested Action:	Add new section 706.9 as follows:	
Proposed Change:	<u>706.9 CNG vehicle fueling station. A CNG vehicle residential fueling appliance is installed on the building site. The CNG fueling appliances shall be listed in accordance with ANSI/CSA NGV 5.1 and installed in accordance to the appliance manufacturer's installation instructions. (Note: The fueling appliance shall not be included in the building energy consumption.)</u>	
Reason:	Add recognition for CNG residential fueling appliances as a green building practice. The new standard ANSI/CSA NGV 5.1 has been approved and all major model fuel gas installation codes have been updated to require that residential CNG fueling appliances be listed to that standard and installed in accordance with the manufacturer's installation instructions. Home fueling using natural gas is a green practice since it taps into the efficient natural gas transmission and distribution system and avoids the systemic losses from converting crude oil into refined gasoline and diesel. Fueling at home also reduces vehicle mileage by reducing trips to gasoline stations for fueling. The proposed text is structured similar to coverage for electric vehicle charging stations.	
TG Recommendation (AS or AM or D):	Approve as modified [change the section number 706.10] Reconsider (Conner, Gary) 2 nd AM (Conner, Gerring) D (Cain, ----) motion dies	
Modification of Proposed Change:	2 points for the practice Reconsideration: Change the 2 points originally approved to 1 point. 2 nd AM: from 2 points to 1 point	
TG Reason:	Points added to be directly analogous to EV. Reconsideration: We have a fairly consistent policy in the energy TG to assign points based on energy impact. 2 implies more impact than justified; not considered equivalent to other electric vehicle proposal. This is a courtesy point. 2 nd AM: same as Reconsideration reasoning	
TG Vote:	7-0-3 Reconsideration: 4-1-1 (tentative) 2 nd AM: 4-2-0	

P276	LogID 17-082	New for Chapter 7
Submitter:	Craig Conner, Building Quality	
Requested Action:	Give points for houses that include outdoor living spaces.	
Proposed Change:	Define an outdoor living space and give points when it is a significant part of the living space for a dwelling. Give points for portions of a dwelling that do not have cooling, or do not have heating.	

Reason:	Living outdoors when the climate is favorable means living in an unconditioned space. If part of the conditioned space is replaced by a non-conditioned living space the heating and cooling go almost to zero. Perhaps there will be a fan, shading, .., but this is much less energy use that conditioning a space. In some climates the proper design can mean no need for AC. In moderate climates AC, such as the marine climates, AC is not always even needed. The proponent of this change grew up in a comfortable house in the Seattle area that did not have AC.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	Add new definition. Outdoor Living Space. A habitable covered space open to the outside, sharing a common wall with an enclosed living space, and accessible by a door to the living space. The space is neither heated nor cooled. The area of the space is defined by the area which has a floor and overhang. Optional features include ceiling fans, screened-in walls, lighting and electrical outlets. Add new section. 706.10 Outdoor living space. An outdoor living space is at least 25% of the living space of the residence. The building is located in a Tropical Zone and the total square footage of the house and the outdoor living space is 2,500 square feet or less. Points TBD.
TG Reason:	Additional space outside the house doesn't offset conditioning inside the house. The effectiveness of the practice highly dependent on the occupancy behavior. In tropical zone, it's common practice already.
TG Vote:	7-1-4

P277	LogID 17-084	New for Chapter 7
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Submitter:	Craig Conner, Building Quality										
Requested Action:	Add new table										
Proposed Change:	Place limited limits on tradeoffs <u>MINIMUM INSULATION R-VALUES FOR ENVELOPE COMPONENTS WHEN TRADE-OFFS ARE USED</u>										
	<u>Climat e Zone</u>	<u>Wood frame d walls</u>	<u>Mas s wall</u>	<u>Attic kne e wall</u>	<u>Baseme nt wall</u>	<u>Craw l wall</u>	<u>Ceilin g with attic space</u>	<u>Floor over unheate d attic space</u>	<u>Vaulted unvented roofline air impermeabl e</u>	<u>Vaulted vented roofline air permeabl e</u>	<u>Vaulted unvented roofline air permeabl e</u>
	2	13	4	18	0	0	13	30	20	20	20+5
	3	13	5	18	5	5	13	30	20	20	20+5
	4	13	5	18	5	5	13	30	20	20	20+15
	5	13	8	18	5	5	13	30	20	20	20+15
	6	13	8	18	5	10	19	30	20	20	20+15
	7	13	10	18	5	10	19	38	30	30	20+15
	8	13	10	18	5	10	19	38	30	30	20+15
Reason:	Some think limits on tradeoffs are needed. Some say they think insulation levels are being traded to near or at zero R-value. I am doubtful that there are tradeoffs down to zero insulation, or even really low R-values. Economics quickly limit the tradeoffs, if the change is must be energy neutral. Proposed limits that are include values ("backstops") that are at current code levels are not least helpful, and look more like attempts to keep competing products from taking market share. Health and safety limits are justified. Energy neutral tradeoffs should otherwise be allow. This table is modeled after what is done in the Georgia Energy Code. These may or may not be the right levels, but saying no tradeoffs, or very limited tradeoffs, is an unreasonable restriction on a designer who may be producing a house that is well above code. Let designers figure out how to get really energy efficient with out artificial restrictions.										
TG Recommendation (AS or AM or D):	Disapprove										

Modification of Proposed Change:	
TG Reason:	The NGBS minimum should not be set at the code minimum. IECC provides a UA compliance path.
TG Vote:	9-1-0

P278	LogID 6575	New Section
Submitter:	Craig Conner, self	
Requested Action:	Revise as follows	
Proposed Change:	Throughout the NGBS Energy Star requirements for devices should be modified to give the key requirements instead of the Energy Star table.	
Reason:	Energy Star is not a consensus program. Energy Star changes over time. The NGBS should use the key measure of the device, not reference the Energy Star name. Some Energy Star requirements have changed and will continue to change.	
TG Recommendation (AS or AM or D):	<p>Tabled for now. Straw poll:</p> <ol style="list-style-type: none"> 1. Update the year in the reference OR 2. Update the year in the reference AND add key E* criteria for each practice <p>Unanimous vote for option 2 (10 votes)</p> <p>Add a specific alternative energy use compliance path for refrigerators (Straw poll vote: 5-1-3)</p> <p>Vote 1: Approve as modified (motion fail) Disapprove (motion carries)</p> <p>Vote 2: Disapprove the entire proposed change</p>	
Modification of Proposed Change:	<p>Vote 1: 703.6.2 Energy Star or equivalent appliance(s) are installed: (1) Refrigerator <u>labeled as Energy Star or rated at 500 kWh/year or less as reported on the Energy Guide label.</u></p>	
TG Reason:	<p>Vote 1: Approve as M: Provides a practical method for describing an energy efficient refrigerator while maintaining the Energy Star option.</p> <p>Disapprove: Overly complicated. The Energy Star label works. Gives credit for refrigerators that don't meet federal standards.</p> <p>Vote 2: The alignment with energy star is conducive and simple for verification and they have been updated by EPA within the past 2-3 years.</p>	
TG Vote:	<p>Vote 1: AM 2-5-3 D 5-1-4 (carries)</p> <p>Vote 2: 8-1-1</p>	

P279	LogID 17-035	New for Chapter 7
Submitter:	Stephen Evanko, Dominion Due Diligence	
Requested Action:	Add new as follows	
Proposed Change:	<p>Stairways. In a multifamily building, a stairway where residents have access to and from all floors is provided. Signage is placed at the building entrance and corridor intersections to promote stairway use. [XX points]</p> <ol style="list-style-type: none"> (a) Stairway has daylighting. [XX points] (b) Stairway design is welcoming to users and includes but is not limited to, artwork, signage, lighting, sound. [XX points] (c) The stairway is accessible and visible from the main lobby. [XX points] 	
Reason:	Reduced elevator use reduces a building's energy use with elevators.	

Concurrent Review Staff Note:	<i>This proposal is also being reviewed by Coordination Task Group.</i>
TG Recommendation (AS or AM or D):	D (TG-6)
Modification of Proposed Change:	
TG Reason:	
TG Vote:	9-0-0

P280	LogID 17-038	New for Chapter 7
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Submitter:	Jeremy Velasquez, US-EcoLogic
Requested Action:	Add new as follows:
Proposed Change:	<u>ENTRYWAY AIR SEAL. For multifamily buildings, to slow the movement of unconditioned air from outdoors to indoors at the main building entrance, the following is installed:</u> (1) <u>Building entry vestibule. [XX points]</u> (2) <u>Revolving entrance doors. [XX points]</u>
Reason:	Reducing the flow of unconditioned air from outside to inside can reduce energy used for the building.
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-5 (Energy Efficiency) as Chapter 7 falls under their direct purview.</i>
TG Recommendation (AS or AM or D):	TG 5: D TG 6: AM (Seville, Cino)
Modification of Proposed Change:	TG 6: <u>ENTRYWAY AIR SEAL. For multifamily buildings, where not required by the building or energy code, to slow the movement of unconditioned air from outdoors to indoors at the main building entrance, the following is installed:</u> (1) <u>Building entry vestibule. [XX points]</u> (2) <u>Revolving entrance doors. [XX points]</u>
TG Reason:	
TG Vote:	TG 6: 9-0-0

Chapter 8 Water Efficiency

P281	LogID 6483	801.0 Intent (Indoor and Outdoor Water Use)
Submitter:	Michael Cudahy, PPFA	
Requested Action:	Add new as follows	
Proposed Change:	801.0 Intent. Measures that reduce indoor and outdoor water usage are implemented, <u>measures that include collection and use of alternative sources of water are implemented, and measures that treat water on site are implemented.</u>	
Reason:	Chapter 8 includes saving potable water through a number of items encouraging water efficiency, but also a number; 801.7, 802.1, 802.2 on alternate water collection/usage and several on site water treatment; 802.4, 802.6. The intent should reflect the full content of the chapter.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	801.0 Intent. Implement measures that reduce indoor and outdoor water usage. <u>Implement measures that include collection and use of alternative sources of water. Implement measures that treat water on site.</u>	
TG Reason:	Improve clarity	
TG Vote:	Thomas Pape moved to accept as modified, Kim Shanahan second Unanimous	

P282	LogID 17-092	Section 801.1 Indoor hot water usage
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify points 801.1 Indoor Hot Water Usage, Item (4)	
Proposed Change:	Item (4) Points 35 <u>24</u>	
Reason:	Points assigned to hot water represent a quantity disproportionate to value of other water efficiency measures.	
TG Recommendation (AS or AM or D):	AM packaged with 17-093, 17-094, 17-095, 17-096	
Modification of Proposed Change:	<p>Two additional modifications:</p> <p>801.4.1 Water-efficient lavatory faucets with flow rates not more than 1.5 gpm (5.68 L/m), tested at 60 psi (414 kPa) in accordance with ASME A112.18.1 and meeting the EPA WaterSense High-Efficiency Lavatory Faucet Specification are installed:</p> <p>(1) Flow rate \leq 1.5 gpm: 1; 3 MAX (all faucets in a bathroom are in compliance). (Points awarded for each bathroom. In multifamily buildings, the average of the points assigned to individual dwelling units may be used as the number of points awarded for this practice, rounded to the nearest whole number.)</p> <p>(2) Flow rate \leq 1.20 gpm: 2; 6 MAX (all faucets in a bathroom are in compliance).</p> <p>(2) (3) Flow rate \leq 1.5 gpm for all lavatory faucets in the dwelling unit(s): 6 Additional</p> <p>(4) Flow rate \leq 1.5 gpm for all lavatory faucets in the dwelling unit(s), and at least one bathroom has faucets with flow rates \leq 1.20 gpm: 8 Additional</p> <p>(5) Flow rate \leq 1.20 gpm for all lavatory faucets in the dwelling unit(s): 12 Additional</p> <p>801.5 Water Closets and urinals. Water closets and urinals are in accordance with the following: (Points awarded for 801.2(2) of 801.5(3), not both.)</p> <p>(1) Gold and emerald levels: all water closets and urinals are in accordance with Section 801.5.</p> <p>(2) A water closet is installed with an effective flush volume of 1.28 gallons (4.85L) or less and meets the flush performance criteria when tested in accordance with ASME A112.19.2/CSA B45.1 or ASME A112.19.14 as applicable.</p>	

	<p align="center">(Points awarded per fixture. In multifamily buildings, the average of the points assigned to individual dwelling units may be used as the number of points awarded for this practice, rounded to the nearest whole number.)</p> <p>801.5(2) 1.28 gallons (4.85 L) or less ...etc. : 2 <u>4</u>, 6 <u>12</u> Max;</p> <p>801.5 (3) All water closets are in accordance with Section 801.5(2): 44 <u>17</u>;</p> <p>801.5 (4) All water closets are in accordance with Section 801.5(2) and one or more of the following are installed:</p> <p>801.5 (4a) Water closets that have a flush volume of 1.2 gallons or less: 4 <u>2</u> Add'l, 3 <u>6</u> Add'l Max;</p> <p align="center">(Points awarded per toilet. In multifamily buildings, the average of the points assigned to individual dwelling units may be used as the number of points awarded for this practice, rounded to the nearest whole number.)</p> <p>801.5 (4b) One or more urinals with a flush volume of 0.5 gallons (1.9 L) or less when tested in accordance with ASME A112.19.2: 4 <u>2</u> Add'l;</p> <p>801.5 (4c) One or more composting or waterless toilets and/or urinals: 6 <u>12</u> Add'l.</p>
TG Reason:	<p>Chapter 8 cannot afford a reduction in total points, so the reduction proposed must be redistributed. Since faucets and toilets are universal features in every dwelling and subject to builder design choice, associated efficiency improvements should command a large number of points. Additional options for even more efficient fixtures should be added.</p> <p>All points for water closets, urinals, and composting/waterless toilets were doubled. A new tier for 801.4.1 Water-efficient Lavatory Faucets was added.</p>
TG Vote:	Unanimous

P283	LogID 17-093	Section 801.1 Indoor hot water usage
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify points 801.1 Indoor Hot Water Usage, Item (1)	
Proposed Change:	801.1(1) The maximum volume from the water heater to the termination of the fixture supply at furthest fixture is 129 ounces (1 gallon or 3.78 liters). Points 44 <u>8</u>	
Reason:	Points assigned to hot water represent a quantity disproportionate to the value of other water efficiency measures.	
TG Recommendation (AS or AM or D):	AS pending approval of 17-092	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P284	LogID 17-094	Section 801.1 Indoor hot water usage
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify points 801.1 Indoor Hot Water Usage, Item (2)	
Proposed Change:	801.1(2) The maximum volume from the water heater to the termination of the fixture supply at furthest fixture is 64 ounces (0.5 gallon or 1.89 liters). Points 47 <u>12</u>	
Reason:	Points assigned to hot water represent a quantity disproportionate to value of other water efficiency measures.	
TG Recommendation (AS or AM or D):	AS pending approval of 17-092	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P285	LogID 17-095	Section 801.1 Indoor hot water usage
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify points 801.1 Indoor Hot Water Usage, Item (3)	
Proposed Change:	Item (3) 801.1(3) The maximum volume from the water heater to the termination of the fixture supply at furthest fixture is 32 ounces (0.25 gallon or 0.945 liters). Points 29 <u>20</u>	
Reason:	Points assigned to hot water represent a quantity disproportionate to the value of other water efficiency measures.	
TG Recommendation (AS or AM or D):	AS pending approval of 17-092	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P286	LogID 17-096	Section 801.1 Indoor hot water usage
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify points 801.1 Indoor Hot Water Usage, Item (6)	
Proposed Change:	Item (6) 801.1(6) Tankless water heaters with at least 0.5 gallon (1.89 liters) of storage are installed, or a tankless water heater that ramps up to at least 110F within 5 seconds is installed. The storage may be internal or external to the tankless water heater. Points 4 <u>1</u>	
Reason:	Points assigned to hot water represent a quantity disproportionate to the value of other water efficiency measures. On-demand water heaters are known through research to increase water use and energy use in a typical home.	
TG Recommendation (AS or AM or D):	AS pending approval of 17-092	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P287	LogID 17-097	Section 801.2 Water conserving appliances
Submitter:	Thomas Pape, BMP	
Requested Action:	Delete without substitution, re-number remaining subtopics	
Proposed Change:	<u>801.2 Water-conserving appliances. ENERGY STAR or equivalent water-conserving appliances are installed.</u> (1) Dishwasher 2 pts (2) (1) washing machine, or 13 pts (3) (2) washing machine with a water factor of 4.0 or less 24 pts	
Reason:	There is ample evidence from the Residential End Use Studies there is no water savings when comparing Energy Star (ES) dishwashers with non-ES dishwashers.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Tom moves to approve as submitted; Brent second. Unanimous 1; abstain – motion passes	

P288	LogID 17-098	Section 801.2 Water conserving appliances
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify as follows	
Proposed Change:	(2) washing machine clothes washer , or Points 43 <u>20</u>	
Reason:	Energy Star uses the term “clothes washer” Energy Star clothes washers are now required to not exceed an Integrated Water Factor of 4.3. This is more proportional to the next proposed change of making the next level an IWF of 3.8 or less.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	(2) washing machine clothes washer , or Points 13	
TG Reason:		
TG Vote:	Kim moves, Ramesh seconds. Unanimous	

P289	LogID 17-099	Section 801.2 Water conserving appliances
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify as follows	
Proposed Change:	(3) washing machine clothes washer with an <u>Integrated</u> Water Factor of 4.0 <u>3.8</u> or less Points 24	
Reason:	Energy Star uses the term “clothes washer”. Also, ES now uses the term “Integrated Water Factor” (IWF). Energy Star clothes washers are now required to not exceed an Integrated Water Factor of 4.3; suggesting we need to increase the stringency of this tier.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Tom moves, Kim seconds. Unanimous	

P290	LogID 6367	801.3 Showerheads
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	(1) The total maximum combined flow rate of all showerheads controlled by a single valve at any point in time in a shower compartment is 1.6 to less than 2.5 gpm. Maximum of two valves are installed per shower compartment. The flow rate is tested at 80 psi (552 kPa) in accordance with ASME A112.18.1. <u>Showerheads shall comply with ASMEA112.18.1/CSA B125.1.</u> Showerheads are served by an automatic compensating valve that complies with ASSE 1016/ <u>ASMEA112.1016/CSA B125.16</u> or ASME A112.18.1/ <u>CSA B125.1</u> and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead.	
Reason:	The language needs to be updated to reflect the harmonized standards. Including the pressure values is repetitive because they are included in the product standard requirements.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:	Update to correct name of standard, harmonized.	
TG Vote:	Cambria moves, Hope second. Approve: Unanimous	

P291	LogID 17-100	Section 801.3 Showerheads
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Modify, as follows	
Proposed Change:	<p>(1) The total maximum combined flow rate of all showerheads controlled by a single valve at any point in time in a shower compartment <u>with floor area of 1800 sq in or less</u> is 1.6 to equal or less than 2.5 2.0 gpm. Maximum of two one mixing valves are installed per shower compartment with a floor area less than 2600 square inches. One additional mixing valve is allowed for every 1300 square inches greater than 2600 square inches of shower compartment floor area. The flow rate is tested at 80 psi (552 kPa) in accordance with ASME A112.18.1. For each additional 1300 square inches of shower compartment floor area or increment thereof, an additional 2.0 gpm combined showerhead flow rate is allowed. Showerheads shall comply with ASME A112.18.1/CSA B125.1. Showerheads shall be <u>are</u> served by an automatic compensating valve that complies with ASSE 1016/<u>ASME A112.1016/CSA B125.16</u> or ASME A112.18.1/<u>CSA B125.1</u> and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead.</p> <p>(2) All shower compartments in the dwelling unit(s) and common areas meet the requirements of 801.3(1) and all showerheads are in accordance with one of the following:</p> <p>(a) 2.0 to less than 2.5 gpm <u>maximum of 1.8 gpm</u> 6 additional (b) 1.6 to less than 2.0 gpm <u>maximum of 1.5 gpm</u> 10 additional (c) Less than 1.6 gpm 14 additional</p>	
Reason:		
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:	Clarity, conformance with standards, balances efficiency with flexibility. "Mixing valve" distinguishes from diverter valves. This amendment allows for multi-user showers by allowing more valves and heads where there is adequate space in the shower compartment for multiple shower users.	
TG Vote:	Cambria moves, Kim seconds. Vote: Approve as submitted. Six for (CM, JM, TP, DM, KS, SB), one against (HM).	

P292	LogID 6372	801.4.1 Water-efficient (Lavatory faucets)
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	801.4.1 <u>Install</u> water efficient lavatory faucets with a maximum flow rate of 1.5 gpm (5.68 L/m), at 60 psi (414 kPa) in accordance <u>compliance with ASME A112.18.1/CSAB125.1, and certified to the performance criteria of the U.S. EPA WaterSense High-Efficiency Lavatory Faucet Specification</u> are installed:	
Reason:	The ASME and CSA standards are harmonized standards. They are recognized in the industry as ASME A112.18.1/CSA B125.1 and should be referenced as such. The EPA Water Sense program is a well-recognized program and products carrying a WaterSense label demonstrate that they not only save water, but they have been third-party certified to meet performance criteria. This allows consumers to easily identify water-efficient products that also perform. This program has widespread support and there are over 12,000 bathroom faucets/accessories currently labeled with WaterSense.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	801.4.1 <u>Install</u> water efficient lavatory faucets with a maximum flow rate of 1.5 gpm (5.68 L/m), at 60 psi (414 kPa) in accordance <u>with ASME A112.18.1/CSAB125.1, and in accordance with the performance criteria of the U.S. EPA WaterSense High-Efficiency Lavatory Faucet Specification</u> are installed:	
TG Reason:		
TG Vote:	AM: Thomas, Cambria seconded Approve as Modified. 9 for, 2 against, motion passed.	

P293	LogID 6380	801.5 Water closets and urinals
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	801.5 (4)(c) One or more composting or waterless toilets and/or <u>nonwater urinals</u> . <u>Nonwater urinals shall be in tested in accordance with ASME A112.19.19/B45.1.</u>	
Reason:	Waterless urinal is a proprietary name and should not be referenced. Because other standards have been referenced throughout the document, the nonwater urinal standard should also be referenced here	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	801.5 (4)(c) One or more composting or waterless toilets and/or <u>nonwater urinals</u> . <u>Nonwater urinals shall be in tested in accordance with ASME A112.19.19/CSA B45.1.</u>	
TG Reason:		
TG Vote:	Cambria moves to approve as modified, Hope seconds (editorial change: add "CSA"); Approve as Modified: Unanimous	

P294	LogID 6378	801.5 Water closets and urinals
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	801.5 (4)(b) One or more urinals with a flush volume of 0.5gallons (1.9L) or less when tested in accordance with ASME A112.19.2/ <u>CSAB45.1.</u>	
Reason:	Update the referenced standard to the correct name.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Cambria moves to approve, Brent seconds. Approve: Unanimous	

P295	LogID 6377	801.5 Water closets and urinals
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	801.5 (2) A water closet is installed with an effective flush volume of 1.28 gallons (4.85 L) or less and meets the flush performance criteria when tested in accordance <u>, in compliance with ASME A112.19.2/CSA B45.1 or ASME A112.19.14 as applicable. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.</u>	
Reason:	If a product is in compliance with the product standard, it therefore meets the standard's performance criteria and stating such is repetitive. The EPA Water Sense program is a well-recognized program and products carrying a WaterSense label demonstrate that they not only save water, but they have been third-party certified to meet performance criteria. This allows consumers to easily identify water-efficient products that also perform. This program has widespread support and there are over 2,800 tank-type toilets currently labeled with WaterSense.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	801.5 (2) A water closet is installed with an effective flush volume of 1.28 gallons (4.85 L) or less and meets the flush performance criteria when tested in accordance <u>, with ASME A112.19.2/CSA B45.1 or ASME A112.19.14 as applicable. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.</u>	
TG Reason:	Changing to code language	

TG Vote:	Hope moves AM, Thomas second; Approved as modified: in favor 9, opposed 2, passed.
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P296	LogID 17-101	Section 801.6 Irrigation systems
Submitter:	Thomas Pape, BMP	
Requested Action:	Modify as follows	
Proposed Change:	801.6.3 1 Irrigation sprinkler nozzles have a maximum precipitation rate of 1.20 inches per hour for turf or landscaping. shall have a minimum precipitation rate of 1.80 inches per hour and shall be tested according to ANSI standard ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard Nozzle performance is tested by an accredited third party laboratory and results are published on manufacturer's posted on Smart Water Application Technologies website or similar.	
Reason:	At the last TG meeting, representatives from irrigation equipment manufacturers testified that low precipitation rate nozzles (1.20 inches/hr or less precipitation rate) cause water waste due to excessive evaporation. While this might be true, excessive runoff is a greater problem for sloped landscapes. The reduced application rate is a prudent choice, and stream rotor sprinklers can minimize evaporation losses. This proposal includes the TG action on prior proposal of LogID 6366.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	801.6.3 1 Where irrigating landscape areas with a slope ratio greater than 1 length unit rise for every 4 length units of run, the Irrigation sprinkler nozzles shall have a maximum precipitation rate of 0.8 inches per hour as tested in accordance to ANSI standard ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard Nozzle performance is tested by an accredited third party entity and results are published on manufacturer's posted on Smart Water Application Technologies website or similar. 801.6.2 Where irrigating landscape areas with a slope ratio equal to or less than 1 length unit rise for every 4 length units of run, the Irrigation sprinkler nozzles shall have a maximum precipitation rate of 1.0 inches per hour as tested in accordance to ANSI standard ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard by an accredited third-party entity and results are published on manufacturer's posted on Smart Water Application Technologies website or similar.	
TG Reason:	Save water	
TG Vote:	AM – Rob moves, Ramesh seconds. Vote is to approve... None opposed, passes. (may be addressed again later)	

P297	LogID 6366	801.6.1 Multi-stream rotating nozzles (Irrigation systems)
Submitter:	Brent Mecham, Irrigation Association	
Requested Action:	Revise as follows	
Proposed Change:	801.6.3 1 Sprinkler nozzles have a maximum precipitation rate of 1.20 inches per hour for turf or landscaping. shall be tested according to ANSI standard ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard Nozzle performance is tested by an accredited third party laboratory and results are published on manufacturer's posted on Smart Water Application Technologies website or similar.	
Reason:	This paragraph should renumbered to follow the mandatory requirements of having a plan. Since there is now an ANSI standard for testing and reporting nozzle performance this can replace the maximum precipitation rate requirement. This practice is already being implemented in California where this standard has been adopted into the CalGreen building code and manufacturer's are complying if they are selling their products in California. Adopting this into the NGBS would be used in jurisdictions outside of California.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	801.6.3 1 Irrigation sprinkler nozzles have a maximum precipitation rate of 1.20 inches per hour for turf or landscaping. shall be tested according to ANSI standard ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard Nozzle performance is tested by an accredited third-party laboratory and results are published on manufacturer's posted on Smart Water Application Technologies website or similar.	

TG Reason:	Clarify irrigation sprinklers (to distinguish from fire sprinklers), add dash to “third-party.”
TG Vote:	Brent moves to accept as modified, Hope 2 nd ; Approved as Modified: in favor = 8, opposed = 3, motion passed.

P298	LogID 6354	801.6.3 Irrigation plan and implementation
Submitter:	Brent Mecham, Irrigation Association	
Requested Action:	Revise as follows	
Proposed Change:	801.6.3 1 Where an irrigation system is installed an irrigation plan.....as approved by Adopting Entity._	
Reason:	The language of this paragraph shall remain the same, but renumber this section from 801.6.3 to be the first paragraph 801.6.1 since this is a mandatory requirement. The following paragraphs that award points should then follow that contain the provisions that are part of the irrigation plan	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Brent moves for approval, Robert second; Approved as submitted: unanimous	

P299	LogID 6486	801.6.3 Irrigation plan and implementation
Submitter:	Steven Armstrong, self	
Requested Action:	Revise as follows	
Proposed Change:	Remove 'WaterSense labeled program or equivalent program' as a mandatory practice.	
Reason:	Difficult to find these professionals	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	6486 AND 6201 AND 6550 AND 6562 together...see final in 6550	
TG Reason:	Not in proper format.	
TG Vote:	Thomas: Move to reject, Hope second vote (Disapprove): unanimous, motion passed.	

P300	LogID 6201	801.6.3 Irrigation plan and implementation
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	When an irrigation system is installed, an irrigation plan and implementation are executed by a qualified professional certified by a WaterSense labeled program or equivalent program as approved by Adopting Entity. - Mandatory 5 POINTS	
Reason:	While it makes sense for the Standard to incentivize the use of WaterSense certified professionals, there are currently not enough WaterSense professionals in most cities and regions to support this as a mandatory requirement. For example, in Dallas, TX there are zero WaterSense Irrigation System Design professionals and only one WaterSense Irrigation System Installation and Maintenance professional. Returning this to be worth 5 points as in NGBS 2012 only makes sense.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	6486 AND 6201 AND 6550 AND 6562 together...see final in 6550	
TG Reason:	Consensus to keep it mandatory.	

TG Vote:	AS: Phil moves approve, Thomas second; Approve: one for, 10 against; motion failed. Kim moves to disapprove, second Hope: Unanimous, motion passes, proposal is disapproved.
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P301	LogID 6550	801.6.3 Irrigation plan and implementation
Submitter:	Rachel Della Valle, Southern Energy Management	
Requested Action:	Revise as follows	
Proposed Change:	Where an irrigation system is installed, an irrigation plan and implementation are executed by a qualified professional certified by a WaterSense labeled program or equivalent program as approved by Adopting Entity.	
Reason:	1.) In some areas of the country WaterSense irrigation professionals cannot be found. 2.) No other trade/subcontractor have a mandatory requirement of a professional certification. I believe if a the professional certification is recognized it should be recognized in a point credit item, not a mandatory item.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Where an irrigation system is installed, an irrigation plan and implementation are executed by a qualified professional certified by a WaterSense labeled program or equivalent program as approved by Adopting Entity.	
TG Reason:	6486 AND 6201 AND 6550 AND 6562 together...see final HERE in 6550. Local AHJ prevails. Since WaterSense certification is removed, no need for points.	
TG Vote:	Kim move, Phi second; Approve as Modified: for 9; against 2. Motion passes.	

P302	LogID 6562	801.6.3 Irrigation plan and implementation
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Revise as follows	
Proposed Change:	Mandatory 6 points	
Reason:	Requiring WaterSense labeling, plan, and certified staff to install is impossible in many areas of the country, especially those further from large metropolitan areas, as WaterSense certified professionals are simply not available nor within any range to install or implement materials. Thus, also cost-prohibitive or simply impossible. Additionally, no equivalent program currently exists. Suggest removing Mandatory and instead leave measure, but suggest with 6 points awarded vs. Mandatory.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	6486 AND 6201 AND 6550 AND 6562 together...see final in 6550	
TG Reason:		
TG Vote:		

P303	LogID 17-104	Section 801.6.4 Irrigation systems
Submitter:	Rob Starr, The Toro Company	
Requested Action:	Delete without substitution	
Proposed Change:	801.6.4 The irrigation system(s) is controlled by a smart controller or no irrigation is installed (Points are not additive (1) Evapotranspiration (ET) based irrigation controller with a rain sensor or soil moisture sensor based irrigation controller. 8 points (2) 1) Irrigation controllers are labeled by EPA WaterSense program. 10 points (3) 2) No irrigation is installed and a landscape plan is developed in accordance with Section 503.5, as applicable.15 points	
Reason:	ET based controllers and/or soil moisture sensor systems that do not possess the EPA WaterSense label should be not be eligible to receive any NGBS points in this category. Any company can just claim	

	their product is an ET Controller and/or soil moisture system but there needs to be validation by any recognized authority such as the EPA that these type products meet certain industry performance criteria. Re-number items (2) and (3) to (1) and (2), respectively.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Eliminate current #1, renumber the remaining two options
TG Reason:	
TG Vote:	1 st Rob, 2 nd Kim; Approved as modified: 6 yes, 1 no, 1 abstention.

P304	LogID 6549	801.8 Sediment filters
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Submitter:	Craig Conner, self															
Requested Action:	Add new as follows															
Proposed Change:	<p><u>801.9 Alternative water compliance.</u> <u>Compliance with this chapter based on the WERS computed as in Appendix F is as shown in Table 801.9.</u></p> <table border="1"> <tr> <td>WERS</td> <td>Level</td> <td>Points (from NGBS)</td> </tr> <tr> <td>80</td> <td>Bronze</td> <td>25</td> </tr> <tr> <td>70</td> <td>Silver</td> <td>39</td> </tr> <tr> <td>60</td> <td>Gold</td> <td>67</td> </tr> <tr> <td>50</td> <td>Emerald</td> <td>92</td> </tr> </table> <p><u>Appendix F</u> This appendix is part of the standard. The WERS calculation shall be in accordance with this appendix.</p> <p>INDOORUSE Indoor Calculations Variables:</p> <ol style="list-style-type: none"> $T_{(x)}$- toilet use in gpd with sub x corresponding to (a) actual/proposed or (e)baseline $[(FF_{(t)}*QTi)*(OCC*UF_{(t)})]$ $S_{(x)}$- shower use in gpd with sub x corresponding to (a) actual/proposed or (e)baseline $[(FF_{(s)}*QTi)*(DF_{(s)}*RF)*(OCC*UF_{(s)})]$ $B_{(x)}$- bathtub use in gpd with sub x corresponding to (a) actual/proposed or (e)baseline $[(FF_{(b)}*QTi)*(OCC*UF_{(b)})]$ $L_{(x)}$-lavatory use in gpd with sub x corresponding to (a) actual/proposed or (e)baseline $[(FF_{(L)}*QTi)*DF_{(L)}*(OCC*UF_{(L)})]$ $F_{(x)}$-kitchen faucet use in gpd with sub x corresponding to (a) actual/proposed or(e) baseline $[(FF_{(f)}*QTi)*DF_{(f)}*(OCC*UF_{(f)})]$ $D_{(x)}$- dishwasher use in gpd with sub x corresponding to (a) actual/proposed or (e)baseline $[(FF_{(d)}*QTi)*(OCC*UF_{(d)})]$ $CW_{(x)}$- clothes washer use in gpd with sub x corresponding to (a) actual/proposed or (e) baseline $[(FF_{(cw)}*QTi)*(OCC*UF_{(cw)})*CF_{(cw)}]$ $SW_{(x)}$- structural waste in gpd with sub x corresponding to (a) actual/proposed or(e) baseline $[(VOL*QTi)*(OCC*UF_{(sw)})]$ $WF_{(x)}$- other water fixture use in gpd with sub x corresponding to (a)actual/proposed or (e) baseline $[(FF_{(wf)}*QTi)]$ Reuse_(a)- sub x corresponding to (a) actual/proposed or (e) baseline of WERS_CAPTURE_INDOOR_USE VOL - Calculated water volume in DHW pipe supplying the furthest fixture worst case scenario. This factor is replaced with the actual field measured volume for a verified rating. <p>Factors & Multipliers</p> <ol style="list-style-type: none"> $CF_{(x)}$- Cubic feet with sub x corresponding to the specific water using item $DF_{(x)}$- Duration Factor with sub x corresponding to the specific water using item $FF_{(x)}$- Fixture Factor with sub x corresponding to the specific water using item OCC - Occupancy Factor QTi - Quantity multiplier inclusion RF - reduction factor $UF_{(x)}$- Use Factor with sub x corresponding to the specific water using item 	WERS	Level	Points (from NGBS)	80	Bronze	25	70	Silver	39	60	Gold	67	50	Emerald	92
WERS	Level	Points (from NGBS)														
80	Bronze	25														
70	Silver	39														
60	Gold	67														
50	Emerald	92														

Indoor Use Calculation:

$$\text{WERS_INDOOR_USE}_{(gpd)} = [T_{(a)} + S_{(a)} + B_{(a)} + L_{(a)} + F_{(a)} + D_{(a)} + CW_{(a)} + SW_{(a)} + WF_{(a)}] - \text{Reuse}_{(a)}$$

$$\text{WERS_INDOOR_BASELINE}_{(gpd)} = [T_{(e)} + S_{(e)} + B_{(e)} + L_{(e)} + F_{(e)} + D_{(e)} + CW_{(e)} + SW_{(e)} + WF_{(e)}]$$

CAPTURE AND USAGE

Reuse Calculations

Variables:

- a. $RSF_{(x)}$ - Rainwater Square feet with sub x corresponding to the specific capture sf for rainwater with (r) roof or (s) site
- b. $SS_{(x)}$ - Site surface texture with sub x corresponding to (a) actual/proposed or (e) baseline
- c. $RS_{(x)}$ - Roof surface texture with sub x corresponding to (a) actual/proposed or (e) baseline
- d. $RC_{(x)}$ - Rainwater capture in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[(RSF_{(r)} * CUr * RS_{(x)}) + (RSF_{(s)} * CUr * SS_{(x)})]$
- e. $GC_{(x)}$ - Greywater capture in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[(S_{(x)} * UF_{(s)} * cUF_{(s)}) + (B_{(x)} * UF_{(b)} * cUF_{(b)}) + (L_{(x)} * UF_{(L)} * cUF_{(L)}) + (CW_{(x)} * UF_{(CW)} * cUF_{(CW)})]$
- f. $BC_{(x)}$ - Blackwater capture in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[(T_{(x)} * UF_{(t)} * cUF_{(t)}) + (F_{(x)} * UF_{(f)} * cUF_{(f)})]$
- g. $RT_{(x)}$ - Rainwater tank sizing with sub x corresponding to (a) actual/proposed or (e) baseline $[Cs_{(r)} * (RU_i + RU_o) * TSF_{(r)}]$
- h. $GT_{(x)}$ - Greywater tank sizing with sub x corresponding to (a) actual/proposed or (e) baseline $[Cs_{(g)} * (GU_i + GU_o) * TSF_{(g)}]$
- i. $BT_{(x)}$ - Blackwater tank sizing with sub x corresponding to (a) actual/proposed or (e) baseline $[Cs_{(bw)} * (BU_i + BU_o) * TSF_{(bw)}]$
- j. $RU_i_{(x)}$ - Rainwater usage INDOOR in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[(S_{(x)} * UF_{(s)} * cUF_{(s)}) + (B_{(x)} * UF_{(b)} * cUF_{(b)}) + (L_{(x)} * UF_{(L)} * cUF_{(L)}) + (CW_{(x)} * UF_{(CW)} * cUF_{(CW)}) + (T_{(x)} * UF_{(t)} * cUF_{(t)}) + (F_{(x)} * UF_{(f)} * cUF_{(f)}) + (D_{(x)} * UF_{(d)} * cUF_{(d)})]$
- k. $GU_i_{(x)}$ - Greywater usage INDOOR in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[(S_{(x)} * UF_{(s)} * cUF_{(s)}) + (B_{(x)} * UF_{(b)} * cUF_{(b)}) + (L_{(x)} * UF_{(L)} * cUF_{(L)}) + (CW_{(x)} * UF_{(CW)} * cUF_{(CW)}) + (T_{(x)} * UF_{(t)} * cUF_{(t)}) + (F_{(x)} * UF_{(f)} * cUF_{(f)}) + (D_{(x)} * UF_{(d)} * cUF_{(d)})]$
- l. $BU_i_{(x)}$ - Blackwater usage INDOOR in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline [FUTURE]
- m. $RU_o_{(x)}$ - Rainwater usage OUTDOOR in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[RR_{(x)} - ((OUTRirr_{(x)} * cUF_{(OUTRirr)}) + (OUTRdi_{(x)} * cUF_{(OUTRdi)}))]$
- n. $GU_o_{(x)}$ - Greywater usage OUTDOOR in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[GR_{(x)} - (OUTGirr_{(x)} * cUF_{(OUTGirr)}) + (OUTGdi_{(x)} * cUF_{(OUTGdi)})]$
- o. $BU_o_{(x)}$ - Blackwater usage OUTDOOR in gpmth with sub x corresponding to (a) actual/proposed or (e) baseline $[BR_{(x)} - (OUTBdi_{(x)} * cUF_{(OUTBdi)})]$
- p. $RR_{(x)}$ - Rainwater remaining/available for outdoor usage in gpmth with sub x corresponding to (a) actual/proposed or (e) $[(RC - RU_i)]$
- q. $GR_{(x)}$ - Greywater remaining/available for outdoor usage in gpmth with sub x corresponding to (a) actual/proposed or (e) $[(GC - GU_i)]$
- r. $BR_{(x)}$ - Blackwater remaining/available for outdoor usage in gpmth with sub x corresponding to (a) actual/proposed or (e) [FUTURE]
- s. $T_{(x)}$ - toilet use in gpd from the indoor water use calculations
- t. $S_{(x)}$ - shower use in gpd from the indoor water use calculations
- u. $B_{(x)}$ - bathtub use in gpd from the indoor water use calculations
- v. $L_{(x)}$ -lavatory use in gpd from the indoor water use calculations
- w. $F_{(x)}$ -kitchen faucet use in gpd from the indoor water use calculations
- x. $CW_{(x)}$ - clothes washer use in gpd from the indoor water use calculations
- y. $OUTRirr_{(x)}$ - Rainwater outdoor use as surface irrigation
- z. $OUTRdi_{(x)}$ - Rainwater outdoor use as sub-surface irrigation
- aa. $OUTGirr_{(x)}$ - Greywater outdoor use as surface irrigation
- bb. $OUTGdi_{(x)}$ - Greywater outdoor use as sub-surface irrigation

<p>cc. OUTBdi_(x)- Blackwater outdoor use as sub-surface irrigation</p> <p>Factors & Multipliers</p> <ol style="list-style-type: none"> CU_r - Conversion unit for 1" of rainfall volume in one square foot of area QTu - Quantity multiplier for use / inclusion TSF_(x) - Tank safety factor with sub x corresponding to (r) rainwater or (g) greywater or (bw) blackwater UF_(x)- Use Factor with sub x corresponding to the specific water using item from the indoor water calculations CUF_(x)- Capture Use Factor with sub x corresponding to the specific water using item Cs_(x) - Capture Systems (qualified) with sub x corresponding to (r) rainwater or (g) greywater or (bw) blackwater <p>Capture Calculations:</p> $WERS_CAPTURE_INDOOR_USE = [(((RU_{i(x)} + GU_{i(x)} + BU_{i(x)}) * 12) / 365)]$ $WERS_CAPTURE_OUTDOOR_USE = [(RU_{o(x)} + GU_{o(x)} + BU_{o(x)})]$ <p>The above calculations are limited by the final tank size and qualified capture system for each type of alternative water source system.</p> <p>EXTERIORUSE Outdoor Calculations</p> <p>Variables:</p> <ol style="list-style-type: none"> MAX_ALLOW_LANDSCAPING_(x) - in area with sub x corresponding to (a) actual/proposed or (e) baseline MEM_(x)- Maximum ETo Monthly with sub x corresponding to month OUTReuse_(a)- sub x corresponding to (a) actual/proposed or (e) baseline of WERS_CAPTURE_OUTDOOR_USE ZSF_(x)- zone square footage area with sub x corresponding to (a) actual/proposed or (e) baseline UF_(x)- Use Factor with sub x corresponding to (a) actual/proposed or (e) baseline LWR_(x) - Landscape watering requirement with sub x corresponding to the line item entry $LWR_{(x)} = \{ [(1/IF_{(a)}) * ((MEM_{(jan)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(feb)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(mar)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(apr)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(may)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(jun)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(jul)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(aug)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(sep)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(oct)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(nov)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] + [(1/IF_{(a)}) * ((MEM_{(dec)} * WD) - ARF_{(a)}) * ZSF_{(a)} * CU_{(a)} * UF_{(a)}] \}$ <p>Factors & Multipliers</p> <ol style="list-style-type: none"> CU_(x)- Conversion unit with sub x corresponding to (a) actual/proposed or (e) baseline IF_(x)- irrigation factor with sub x corresponding to (a) actual/proposed or (e) baseline WD_(x)- water demand with sub x corresponding to (a) actual/proposed or (e) baseline QTm - Quantity multiplier for month ARF_(x)- Average Reduction Factor with sub x corresponding to (a) actual/proposed or (e) baseline <p>Indoor Use Calculation:</p> $WERS_OUTDOOR_USE_{(gpy)} = [n=150LWR(n)] - OUTReuse_{(a)}$ $WERS_OUTDOOR_BASELINE_{(gpy)} = [(MEM_{(jan)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(feb)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(mar)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(apr)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(may)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(jun)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(jul)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(aug)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(sep)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(oct)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(nov)} * MAX_ALLOW_LANDSCAPING * QTm * CU) + (MEM_{(dec)} * MAX_ALLOW_LANDSCAPING * QTm * CU)]$ <p>WERSREPORT</p>

	<p align="center">Water Efficiency Rating Score Calculations</p> <p>Variables:</p> <p>a. none</p> <p>Factors & Multipliers</p> <p>a. QTy - Quantity multiplier for year</p> <p>Calculation:</p> $\text{WERS} = \left[\frac{((\text{WERS_INDOOR_USE}_{(gpd)} * \text{QTy}) + \text{WERS_OUTDOOR_USE}_{(gpy)})}{((\text{WERS_INDOOR_BASELINE}_{(gpd)} * \text{QTy}) + \text{WERS_OUTDOOR_BASELINE}_{(gpy)})} \right] * 100$
Reason:	<p>This change proposes an option for meeting the water requirements in the NGBS. Water is a critical element of a green program. We would like the WERS methodology to be in the NGBS and to expose the methodology to the discussion that is inherent in the NGBS development process. Over time, it became clear to us that a method of comparing and promoting water efficiency was needed. This proposal takes advantage of 3 years of dedicated work from a core group of 9 individuals from diverse backgrounds. The Water Efficiency Rating Score (WERS®), the homebuilding industry's first performance-based water efficiency program, is being used in the marketplace. WERS® is a water use modeling tool which creates a score between zero and 100, with a lower score indicating greater efficiency. It takes into account indoor and outdoor water usage, including rainwater, stormwater, greywater and blackwater. This metric allows for the comparison of properties, similar to an energy rating. It also projects the property's daily, monthly and yearly water usage and water costs. Water is one of the greatest limiting factors to growth in the West. In its most extreme form, such as Whatcom County, WA, permits have recently been denied due to uncertain water supply for new development. The Santa Fe Area Home Builders Association foresaw this potential threat over 3 years ago, and set out to create a water rating system that would retain design flexibility and freedom of product choice, while still driving down overall water usage. The WERS® Program is a water efficiency tool that jurisdictions can use, and are already using. In the words of Christine Chavez, Water Conservation Manager for the City of Santa Fe, "The WERS® Program provides another tool to assist the City of Santa Fe Water Conservation Office to meet our goal of managing and reducing customer demands to protect natural resources and to ensure that we can provide the community with a safe, reliable and sustainable water supply." The WERS® Program is also cited as a water efficiency compliance path for the State of New Mexico's Sustainable Building Tax Credit. Add ref to NAHB policy As our discussions on water have reached national levels, we have seen common elements in the water issues across the country. Adding another option to NGBS would strengthen NGBS and allow this tool to see much broader use. Add proponents as follow: Kim Shanahan - Santa Fe Area Home Builders Association Laureen Blissard - LTLB Envirotecure</p>
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Proposal as submitted is incomplete; encourage submitter to write a new proposal for submittal before May 12 which can be addressed individually ad specifically. Provide user-friendly format.
TG Vote:	Kim moves to Approve: AS in favor = 2, opposed = 9; NEW motion to Disapprove Hope first, Tom second; D vote = 9 in favor, 2 against. Motion passes, proposal is disapproved.

P305	LogID 17-111	Section 802.3 Automatic shutoff water devices
Submitter:	Michael Cudahy, PPFA	
Requested Action:	Revise as follows	
Proposed Change:	<p>802.3 Automatic leak shutoff <u>leak shutoff detection and control</u> water devices. One of the following automatic shutoff water supply devices is installed.</p> <p>Where a fire sprinkler system is present, installer is to ensure the device will <u>be installed to</u> not interfere with the operation of the fire sprinkler system.</p> <p>(1) automatic water leak detection and control devices</p> <p>(2) automatic water leak detection and shut-off devices</p> <p>(1) excess water flow automatic shutoff</p> <p>(2) leak detection system with automatic shutoff</p> <p>2 points</p>	

Reason:	Clarify language – these appear to be the correct terms for the devices.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	TG agrees with language – consistent with IAPMO
TG Vote:	1 st Kim, 2 nd Phil; Approved. Unanimous.

P306	LogID 1512	802.4 Engineered biological system or intensive bioremediation system
Submitter:	Jennifer Cisneros, Bio-Microbics, Inc.	
Requested Action:		
Proposed Change:		
Reason:	What/why is the difference between these two sections: 802.4 Engineered biological or intensive bioremediation system. An engineered biological system or intensive bioremediation system is installed and the treated water is used on site. Design and implementation are approved by appropriate regional authority. 802.6 Advanced wastewater treatment system. Advanced wastewater (aerobic) treatment system is installed and treated water is used on site. And, what was the reason to put “a Humidifier” description (802.5 Recirculating humidifier) between these two sections? Seems like an odd place and confusing.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	No formal proposal provided.	
TG Vote:	Motion to reject Cambria, Tom second; Disapprove: Unanimous	

P307	LogID 6200	Other for Chapter 8 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	ADD NEW SECTION <u>801.4.3 Water-efficient kitchen faucets with a maximum flow rate of 1.5 gpm (5.68 L/m), tested as 60 psi (414 kPa) in accordance with ASME A112.18.1, are installed. - 3 POINTS</u>	
Reason:	Whether kitchen faucets are being used for washing hands or washing dishes, reducing the amount of water used during that activity is as beneficial here as it is in the lavatory.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	801.4.3 Water-efficient kitchen faucets are installed in accordance with ASME A112.18.1/CSA B125.1. Kitchen faucets may temporarily increase the flow above the maximum rate but not to exceed 2.2 gpm. (1) All kitchen faucets have a maximum flow rate of 1.8 gpm – 3 POINTS (2) All residential kitchen faucets have a maximum flow rate of 1.5 gpm – 1 ADDITIONAL POINT For SI: 1 gallon per minute = 3.785 L/m	
TG Reason:	Gap between codes is too wide. Also, faucets with severely low flow rates which perform poorly will be modified by homeowner later, obviating the savings.	
TG Vote:	Phil moves to approve as modified, Hope second; Approve as Modified: 9 for, 2 against, 1 abstention. Motion passed.	

P308	LogID 6200A	Other for Chapter 8 (include section number and title below)
Submitter:	TG4, in response to LogID 6200	

Requested Action:	Change Name from 801.04 Lavatory Faucets to 801.04 Faucets
Proposed Change:	<u>801.4 Lavatory Faucets</u>
Reason:	To broaden the category to cover all types of faucets
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	All types of faucets provide opportunity for water savings.
TG Vote:	Unanimous

P309	LogID 6200B	Other for Chapter 8 (include section number and title below)
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Submitter:	TG4, in response to LogID 6200
Requested Action:	Re-number and move “801.4.2 Self-closing valve...” to the end of the section,
Proposed Change:	<u>801.4.23</u> Self-closing valve...
Reason:	To allow lavatory faucets and kitchen faucets to be addressed in order.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	Re-number to allow lavatory faucets and kitchen faucets to be addressed in order.
TG Vote:	Unanimous

P310	LogID 6289	Other for Chapter 8 (include section number and title below)
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Submitter:	Aaron Gary, self																																														
Requested Action:	Add new as follows																																														
Proposed Change:	<p><u>802.1 Water Reduction Calculation.</u> The water efficiency rating level shall be based on the reduction in water consumption over standard practice in accordance with Table 802.1.1</p> <p>Table 802.1.1 Water Rating Level Thresholds</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">Rating Level</th> </tr> <tr> <th>BRONZE</th> <th>SILVER</th> <th>GOLD</th> <th>EMERALD</th> </tr> </thead> <tbody> <tr> <td>Reduction in water consumption</td> <td style="text-align: center;"><u>10%</u></td> <td style="text-align: center;"><u>20%</u></td> <td style="text-align: center;"><u>30%</u></td> <td style="text-align: center;"><u>40%</u></td> </tr> </tbody> </table> <p>Outdoor water use reduction shall be calculated by using the EPA WaterSense Water Budget Tool.</p> <p>Indoor water use reduction shall be calculated using the Water Reduction Calculator to determine the average flush or flow rate for each fixture type and the estimated daily usage. The baselines for indoor water consumption are shown in Table 802.1.2.</p> <p>Table 802.1.2. Indoor water baseline consumption (per person per day)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Fixture</th> <th colspan="2">Baseline flush or flowrate</th> <th rowspan="2">Estimated fixture usage</th> <th colspan="2">Estimated water usage</th> </tr> <tr> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Shower (per compartment)</td> <td style="text-align: center;"><u>2.5 gpm</u></td> <td style="text-align: center;"><u>9.5 lpm</u></td> <td style="text-align: center;"><u>6.15 minutes</u></td> <td style="text-align: center;"><u>15.4 gallons</u></td> <td style="text-align: center;"><u>58.4 liters</u></td> </tr> <tr> <td>Lavatory, kitchen faucet</td> <td style="text-align: center;"><u>2.2 gpm</u></td> <td style="text-align: center;"><u>8.3 lpm</u></td> <td style="text-align: center;"><u>5.0 minutes</u></td> <td style="text-align: center;"><u>11 gallons</u></td> <td style="text-align: center;"><u>41.5 liters</u></td> </tr> <tr> <td>Toilet</td> <td style="text-align: center;"><u>1.6 gpf</u></td> <td style="text-align: center;"><u>6 lpf</u></td> <td style="text-align: center;"><u>5.05 flushes</u></td> <td style="text-align: center;"><u>8 gallons</u></td> <td style="text-align: center;"><u>30.3 liters</u></td> </tr> </tbody> </table>						Rating Level				BRONZE	SILVER	GOLD	EMERALD	Reduction in water consumption	<u>10%</u>	<u>20%</u>	<u>30%</u>	<u>40%</u>	Fixture	Baseline flush or flowrate		Estimated fixture usage	Estimated water usage						Shower (per compartment)	<u>2.5 gpm</u>	<u>9.5 lpm</u>	<u>6.15 minutes</u>	<u>15.4 gallons</u>	<u>58.4 liters</u>	Lavatory, kitchen faucet	<u>2.2 gpm</u>	<u>8.3 lpm</u>	<u>5.0 minutes</u>	<u>11 gallons</u>	<u>41.5 liters</u>	Toilet	<u>1.6 gpf</u>	<u>6 lpf</u>	<u>5.05 flushes</u>	<u>8 gallons</u>	<u>30.3 liters</u>
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	<u>Clothes washer</u>	<u>9.5 WF</u>	<u>9.5 WF</u>	<u>0.37 cycles @ 3.5 ft3 (@0.1m3)</u>	<u>15.1 gallons</u>	<u>57.1 liters</u>
	<u>Dishwasher</u>	<u>6.5 gpc</u>	<u>24 lpc</u>	<u>0.1 cycles</u>	<u>0.7 gallons</u>	<u>2.4 liters</u>
	<p>gpm = gallons per minute gpf = gallons per flush WF = water factor gpc = gallons per cycle lpf = liters per flush lpm = liters per minute lpc = liters per cycle</p> <p>802.2 Alternative compliance. Total water reduction that complies with Table 802.1.1 calculated using the WER Index shall be an acceptable alternative.</p> <p>RENUMBER SUBSEQUENT SECTIONS</p>					
Reason:	Adding an alternative performance calculation methodology to water efficiency will make the Standard more flexible and support the adoption of new innovative practices that come to market between Standard development cycles.					
TG Recommendation (AS or AM or D):	D					
Modification of Proposed Change:						
TG Reason:	WER index is not yet complete, does not cover all uses, does not adjust uses based on people in home, missing some calculations.					
TG Vote:	Kim moves to disapprove, second Rob; Disapprove: unanimous.					

P311	LogID 6491	Other for Chapter 8 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	New Section <u>Section 803.2 - An activated carbon filter is installed to treat all of the water intended for consumption and for showers/baths. 2</u>	
Reason:	This measure provides a higher level of assurance for consistent water quality and improves the overall quality of the water.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Lack of evidence that this improves health and safety or water conservation. This credit could inadvertently suggest that municipal water is not safe to drink.	
TG Vote:	Bob moved to disapprove, Suzanne seconded; Disapprove: 9 for, 2 against, 1 abstention. Motion passes, proposal is disapproved.	

P312	LogID 6488	Other for Chapter 8 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	New Section <u>Section 803.1 - Water Quality Testing. Meet one or more of the following options:</u> <u>(1) Sediment level testing. 1</u> <u>(2) Microorganisms level testing. 1</u> <u>(3) Dissolved Metals level testing. 1</u>	

	(4) <u>Organic Contaminants level testing. 1</u> (5) <u>Herbicides, Pesticides and Fertilizers level testing. 1</u> (6) <u>Public Water Additives level testing. 1</u>
Reason:	As we have seen in Michigan and other areas around the country. Testing the quality of the water is important to protect residents from harm. Some people are not aware that they could be damaging their health by drinking public water.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	No evidence of benefit, no standard, not enough detail (frequency of test, criteria and levels, interpretation).
TG Vote:	Dana moves to disapprove, second Megan; Disapprove: 11 for, 1 against. Motion passes, proposal is disapproved.

P313	LogID 6492	Other for Chapter 8 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	New Section <u>Section 803.3 - Water Sanitation. A UVGI water sanitation device is installed to treat all of the water intended for consumption and for showers/baths. 2</u>	
Reason:	This measure provides a higher level of assurance for consistent water quality and improves the overall quality of the water.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Implies municipal water is not safe; best left to AHJ.	
TG Vote:	Hope moves to disapprove, second Darrel; Disapprove: unanimous. Motion passes, proposal is disapproved.	

P314	LogID 6353	Other for Chapter 8 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	<u>Section 803 - Add a new section as relevant for Health & Well-being credits.</u>	
Reason:	As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Major elements already covered in NGBS, especially CH9 IEQ. No need for a stand-alone section.	
TG Vote:	Hope moves disapprove, Darrel second; Disapprove: unanimous. Motion passes, proposal is disapproved.	

P315	LogID 6500	Other for Chapter 8 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	

Requested Action:	Add new as follows
Proposed Change:	New Section Section 801.9 - Water Heater installation quality assurance - Meet all of the following: <u>(1) Proper water pressure is verified per manufacturer's recommendations by the installing contractor.</u> <u>(2) Verify water supply line connections are secure.</u> <u>(3) Verify drain pan and drain line are installed when required by code.</u> <u>(4) For gas water heaters, verify the the flue vent is properly sized and installed properly.</u> <u>(5) For gas water heaters, verify the gas supply line is properly secured and has an accessible shut-off.</u> 2
Reason:	Having an extra set of eyes to verify that the water heater was installed properly is good practice. This measure may require that the verifier familiarize themselves with proper water heater installation techniques.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Doesn't add value, already addressed in local code. Expertise is in the plumbing inspector, would add unnecessary time and cost to verifier's tasks.
TG Vote:	Tom move to disapprove, Dana second; Disapprove: unanimous. Motion passes, proposal is disapproved.

P316	LogID 6555	Other for Chapter 8 (include section number and title below)
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Add new as follows	
Proposed Change:	802 HEALTH AND WELL BEING (...prior to INNOVATIVE PRACTICES)	
Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Major elements already covered in NGBS, especially CH9 IEQ. No need for a stand-alone section. Premature. NGBS/HI staff have indicated they will explore, address, come up with a more holistic recommendation.	
TG Vote:	Kim moves to disapprove, Hope seconds; Disapprove: unanimous. Motion passes, proposal is disapproved.	

P317	LogID 6568	Other for Chapter 8 (include section number and title below)
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	Alternative water requirements. This chapter is met by using all of the following: high MEF and EF Clothes Washer decreased toilet water use water supply within 10 ft of entrance to water using rooms, max pipe diameter 1/2 inch, 3/4 for master bath outdoor plants are low water gray water use does not contribute to water budget	

	outdoor soils are amended and loosened to allow plant roots to go deeper only low water grasses are used. Silver level water.
Reason:	This recipe provides for minimum use of water in the new home.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Inaccurate, incomplete.
TG Vote:	Kim moves to disapprove, Tom seconds; Disapprove: unanimous. Motion passes, proposal is disapproved.

P318 LogID 17-087 New for Chapter 8	
Submitter:	Craig Conner, Building Quality
Requested Action:	Incorporate a Water Rating Index as an option. Note that WRI as a concept was re-submitted on May 9 in order to retain status as "in-process" (previous proposal number was 4569)
Proposed Change:	Include the attached text as a new appendix for calculating a Water Rating Index. Insert into the water chapter the option of allowing a WRI to equal the specific levels as is shown below. 70 = Bronze 60 = Silver 50 = Gold 30 = Emerald
Reason:	
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	WRI is a compliance option path in the 2018 NGBS with the following point schedule for designation tiers: 70 = Bronze 60 = Silver 50 = Gold 30 40 = Emerald
TG Reason:	Time for a performance path that truly measures total water volume usage and rewards efficiency.
TG Vote:	4/4/2018: Kim moves to approve as modified, Hope seconds, 5 for, 1 against, 1 abstention, Motion passes.

P319 LogID 17-102 New for Chapter 8	
Submitter:	Thomas Pape, BMP
Requested Action:	Add new as follows
Proposed Change:	<p>801.9 Water Treatment Devices</p> <p>801.9.1 Water Softeners shall not be installed where the supplied water hardness is less than 8.0 grains per gallon measured as total calcium carbonate equivalents. Water softeners shall be listed to NSF 44 and a rated salt efficiency of 3400 grains of total hardness per 1.0 pound of salt based on sodium chloride equivalency. Devices shall not discharge more than 4.0 gallons of water per 1000 grains of hardness removed during the service or recharge cycle.</p> <p style="padding-left: 40px;">(1) No water softener = 10 points (2) Water softener installed to supply softened water only to domestic water heater = 5 points</p> <p>801.9.2 Reverse Osmosis (R/O) water treatment systems shall be listed to NSF 58 and shall include automatic shut-off valve to prevent water discharge when storage tank is full.</p> <p style="padding-left: 40px;">(1) No R/O system = 6 points (2) Combined capacity of all R/O systems does not exceed 0.75 gallon = 3 points</p>

Reason:	Water treatment devices are often installed where the water quality does not warrant. The devices often discharge excessive water as part of the cycling process.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Motion to Approve as submitted by Tom, seconded by Ramesh Approve: Passes with majority. Opposed, Kim (every house in Santa Fe, would have instantly gotten 16 pts in this section.) Abstain, Cambria. Kind of like 35 pts for on-demand hw heater. Revisit points later.

P320	LogID 17-103	New for Chapter 8
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Submitter:	Thomas Pape, BMP
Requested Action:	Add new as follows
Proposed Change:	<p>801.10 Pools and Spas 801.10.1 Pools and Spas with water surface area greater than 36 square feet and connected to a water supply shall have a dedicated meter to measure the amount of water supplied to the pool or spa.</p> <p>(1) No pool or spa = 5 points</p> <p>(2) Automated motorized non-permeable pool cover that covers the entire pool surface installed on pools with water surface area greater than 500 square feet. = 10 points</p> <p>(3) Pools with surface area greater than 1000 square feet without automated motorized non-permeable pool cover = negative 20 points</p> <p>(4) Pools with surface area greater than 750 square feet and less than or equal to 1000 square feet without automated motorized non-permeable pool cover = negative 15 points</p> <p>(5) Pools with surface area of 750 square feet or less without automated motorized non-permeable pool cover = negative 10 points</p>
Reason:	Pools and spas are a source of significant water loss due to evaporation and leaks. The loss is often more than twice that of turf evapo-transpiration. The meter can help indicate to the owner when a leak is occurring. Studies have proven that the only type of pool cover used regularly is the type that has a motorized closing feature.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<p>801.10 Outdoor Pools and Spas 801.10.1 Outdoor Pools and Spas with water surface area greater than 36 square feet and connected to a water supply shall have a dedicated meter to measure the amount of water supplied to the pool or spa.</p> <p>(1) No pool or spa = 2 points</p> <p>(2) Automated motorized non-permeable pool cover that covers the entire pool surface installed on pools with water surface area less than or equal to than 500 square feet of water surface. = 10 points</p> <p>3) Automated motorized non-permeable pool cover that covers the entire pool surface installed on pools with water surface area greater than to than 500 square feet of water surface. = 20 points</p>
TG Reason:	Get rid of negative points, more realistic to sizes and uses.
TG Vote:	Tom moves AM, Brent Seconds. Passes five to three.

P321	LogID 17-105	New for Chapter 8
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Submitter:	Rob Starr, The Toro Company
Requested Action:	Add new as follows

Proposed Change:	801.6.5 Commissioning and Water Use Reduction for Irrigation Systems (Points are additive, per each practice) 801.6.5 (1) All irrigation zones utilize pressure regulation so emission devices (sprinklers and drip emitters) operate at manufacturer's recommended operating pressure. 3 pts
Reason:	With the addition of other sub-topics to 801.6.5, it's necessary to develop a general topic description and then number all individual subtopics.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Tie numbering together based on end results
TG Reason:	If next four are approved...
TG Vote:	(second time AM) Ramesh1st, Rob 2nd Approved. Unanimous.

P322	LogID 17-106	New for Chapter 8
Submitter:	Rob Starr, The Toro Company	
Requested Action:	Add new as follows	
Proposed Change:	<u>801.6.5 (1) To assure long-term reliability using dripline tubing, a filter of appropriate mesh size should be installed on all drip zones. 3 pts</u>	
Reason:	Having an appropriate filter added immediately after the valve and between a pressure regulator protects against any minute contaminate that could potentially clog the output the of the tubing emitter. (This addition can provide additional points as well.)	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	1 st Kim 2 nd Rob; Approved. Unanimous.	

P323	LogID 17-107	New for Chapter 8
Submitter:	Rob Starr, The Toro Company	
Requested Action:	Add new as follows	
Proposed Change:	<u>801.6.5 (2) To assure long-term reliability in subsurface drip tubing installations, utilize tubing that provides an internal root intrusion protection scheme comprised of either as trifluralin, pendamethalin or copper. 3 pts</u>	
Reason:	Pre-emergent material is either impregnated into the drip emitters or molded into the drip tubing which then creates a "force field" effect around the emitter outlet(s) diverting root growth and assuring long-term reliability of root intrusion and/or blockage. (This addition could provide additional points as well.)	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Rob moves, Kim 2 nd ; Approved: none opposed, passed	

P324	LogID 17-108	New for Chapter 8
Submitter:	Rob Starr, The Toro Company	
Requested Action:	Add new as follows	

Proposed Change:	<u>801.6.5 (4) Utilize spray bodies that incorporate an in-stem flow shut-off device. 3 pts</u>
Reason:	Up to 40 gallons of water per minute can escape through a spray head that has a missing or damaged nozzle. This wasted water can lead to landscape erosion, property damage, or unsafe conditions due to wet hardscapes. The in-stem flow shut-off device should hold back over 99% of the water that could be otherwise wasted in cases where the nozzle has been compromised through unintentional accidents or vandalism
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<u>801.6.5 (4) Utilize spray bodies that incorporate an in-stem or external flow shut-off device. 3 pts</u>
TG Reason:	
TG Vote:	Kim moves to approve; Dana 2 nd ; Approved. None opposed, passed.

P325 LogID 17-109 New for Chapter 8	
Submitter:	Rob Starr, The Toro Company
Requested Action:	Add new as follows
Proposed Change:	<u>801.6.5 (1) For irrigation systems installed on sloped sites, either an in-stem or external check valve is utilized for each spray body. 3 pts</u>
Reason:	Low head drainage can be seen in an elevation change of fewer than 6 inches. The resulting runoff and water waste can lead to landscape erosion, unsafe conditions on hardscapes and sidewalks, and pooling around spray heads. By the utilization of a check valves either incorporated within a spray body component and/or as an external add-on component to a spray head body, the check valve saves water and eliminates runoff by immediately sealing the spray head at its connection point and the end of the irrigation cycle, thereby preventing the draining of lateral lines through the lowest-lying heads. The device should also be capable of compensating for elevation changes in a zone at a minimum of 7 feet. Additional points should be provided for use of these type products. 3 pts
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Kim moves AS; Rob 2 nd . Approved as submitted. Vote: none opposed, passed.

P326 LogID 17-110 New for Chapter 8	
Submitter:	Rob Starr, The Toro Company
Requested Action:	Add new as follows
Proposed Change:	<u>801.6.5 (2) Where an irrigation system is installed, a flow sensing device is installed to monitor & alert the controller when flows are outside design range. 3 pts</u>
Reason:	When connected to an irrigation controller that can interpret a flow sensor's generated information, the utilization of a flow monitoring device (flow sensor) provides reliable flow information to aid in the detection of and response to the irrigation system issues like piping breaks, non-closing valves, broken spray bodies, etc. Additional points shall be provided for use of this type product in the installation of an irrigation system.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Dana moves, second by Brent; Approved. None opposed, no abstentions.

P327 LogID 17-112 New for Chapter 8	
Submitter:	Hope Medina, Cherry Hills Village
Requested Action:	Add New
Proposed Change:	<p>801.2 Water usage metering. <u>Installation of a meter for water consumed from any source associated with the building or building site. Installation of the water meter shall be installed in accordance with the requirements of the International Residential Code or International Plumbing Code. Each meter shall be capable of communicating water consumption data remotely and be capable of providing daily data with electronic data storage and reporting capability that can produce reports for daily, monthly, and yearly water consumption. (Fire sprinkler systems are not required to be metered)</u></p> <p>801.2.1 Individual water usage metering. <u>Each dwelling unit in a multifamily building has the installation of a meter for water consumed from any source associated with the dwelling unit. Installation of the water meter shall be installed in accordance with the requirements of the International Residential Code or International Plumbing Code. Each meter shall be capable of communicating water consumption data remotely for the dwelling unit occupant and be capable of providing daily data with electronic data storage and reporting capability that can produce reports for daily, monthly, and yearly water consumption. (Fire sprinkler systems are not required to be metered)</u></p> <p>Renumber the remaining sections</p>
Reason:	The intent of this proposal is to provide valuable information for the occupant to know if the daily usage of water is truly being efficient or conservative. It provides the capability to monitor the consumption of water, and determine possible leaks or problems within the plumbing systems in a timelier manner.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	<p>801.2 Water usage metering. <u>Installation of a meter for water consumed from any source associated with the building or building site. Installation of the water meter shall be installed in accordance with the Plumbing Code adopted by the AHJ. Each meter shall be capable of communicating water consumption data remotely and be capable of providing daily data with electronic data storage and reporting capability that can produce reports for daily, monthly, and yearly water consumption. (Fire sprinkler systems are not required to be metered)</u></p> <p>801.2.1 Individual water usage metering. <u>Each dwelling unit in a multifamily building has the installation of a meter for water consumed from any source associated with the dwelling unit. Installation of the water meter shall be installed in accordance with the requirements of the Plumbing Code adopted by the AHJ. Each meter shall be capable of communicating water consumption data remotely for the dwelling unit occupant and be capable of providing daily data with electronic data storage and reporting capability that can produce reports for daily, monthly, and yearly water consumption. (Fire sprinkler systems are not required to be metered)</u></p>
TG Reason:	Clarify the reference to code requirements, renumber all subsequent practices.
TG Vote:	Rob moves to approve as modified, Second Brent; Approved. None opposed, no abstentions.

P328 LogID 17-113 New for Chapter 8	
Submitter:	Hope Medina, Cherry Hills Village
Requested Action:	Add New
Proposed Change:	<p>801.1.1 Water heating efficiency design. <u>The length of piping from the source of the heating of water to the furthest fixture in accordance with one of the following:</u></p> <p><u>(1) 40 feet from heating source</u> <u>(2) 30 feet from heating source</u> <u>(3) 20 feet from heating source</u></p> <p><u>If multiple heating sources are utilized points are awarded for the system that qualifies for the minimum points</u></p>
Reason:	

TG Recommendation (AS or AM or D):	Withdrawn by author
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

Chapter 9 Indoor Environmental Quality

P329	LogID 6215	901.0 Intent (Pollutant Source Control)
Submitter:	Max Sherman, self	
Requested Action:	Revise as follows	
Proposed Change:	Require compliance with ANSI/ASHRAE 62.2-2016	
Reason:	62.2-2016 is the only American National Standard for minimum acceptable indoor air quality. 1) Any home that wishes to be green must at least meet this requirement. 2) Establishing a lower requirement would be in violation of ANSI rules. 3) No other version of 62.2 (or any other ventilation standard) exists and the current (i.e. 2016) version needs to be used.	
TG Recommendation (AS or AM or D):	D (Dobson, Freeman)	
Modification of Proposed Change:		
TG Reason:	D based on action on LogID 6563, which includes 62.2 as an optional compliance path	
TG Vote:	11 / 0 / 0 chair not voting	

P330	LogID 6570	901.1.4 Gas fireplaces and direct heating equipment vented outdoors
Submitter:	Craig Conner, self	
Requested Action:	Revise as follows	
Proposed Change:	901.1.4 Gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the NFPA 54, ICC IFGC, or the applicable local gas appliance installation code. Gas-fired fireplaces within dwelling units and direct heating equipment are vented to the outdoors. <u>Alcohol burning devices and kerosene heaters are vented to the outdoors.</u>	
Reason:	Recently there are have been efforts to include alcohol and kerosene bring devices as allowed in residences. These devices have no place in a green home without ventilation to the exterior.	
TG Recommendation (AS or AM or D):	AS (Arnold, Freeman)	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	2-0-4	

P331	LogID 17-050	Section 901.1.4 Gas-fired fireplaces and direct heating equipment
Submitter:	Frank Stanonik, AHRI	
Requested Action:	Revise Section 901.1.4.as follows.	
Proposed Change:	<u>Vented gas-fired fireplaces and vented direct heating equipment</u> is listed and is installed in accordance with the NFPA 54, ICC IFGC or the applicable local gas appliance installation code. Gas-fired fireplaces within dwelling units and direct heating equipment are vented to the outdoors.	
Reason:	This section prohibits the installation of listed gas-fired unvented heaters and creates the situation where the installation of a single unvented gas-fired heater in a home disqualifies it from being considered a green building regardless of all the other features addressed in the standard which may be incorporated into the building. This is unjustified and irrational. It ignores the other requirements in the standard, such as the required use of CO alarms and the rigorous ventilation requirements, which in combination with the existing product safety standards and Fuel Gas Codes promote the safe installation and use of unfired gas-fired heaters. Millions of these heaters are in use without causing adverse indoor air quality situations in homes. The change would make the standard neutral on the use of these products.	
TG Recommendation (AS or AM or D):	Move forward as a split (like 17-058)	

Modification of Proposed Change:	
TG Reason:	
TG Vote:	

P332 LogID 17-058 Section 901.1.4 Gas-fired fireplaces and direct heating equipment	
Submitter:	Paul Cabot, American Gas Association
Requested Action:	Revise Section 901.1.4.as follows.
Proposed Change:	Vented gas-fired fireplaces and vented direct heating equipment is listed and is installed in accordance with the ANSI Z223.1 / NFPA 54, ICC International Fuel Gas Code (IFGC), or the applicable local gas appliance installation code. Gas-fired fireplaces within dwelling units and direct heating equipment are vented to the outdoors.
Reason:	This section prohibits the installation of listed gas-fired unvented heaters and results in a home being disqualified when a single unvented gas-fired heater is installed. The NGBS should not punish builders who desire to construct a green building to the standard just because of one feature. The NGBS is designed to encourage green construction by offering incentives. Millions of unvented space heaters are installed use without causing adverse indoor air quality situations in homes. The change would make the standard silent on the use of these products. The other changes adds the correct designation of the National Fuel Gas Code and spells out the IFGC.
TG Recommendation (AS or AM or D):	AS (Stanonik, Leslie) D (Arnold, Francis)
Modification of Proposed Change:	
TG Reason:	AS: The installation of a single unvented heater should not automatically disqualify a building from complying with the NGBS. These products are being used safely in homes and the standard should remain neutral on these products. D:
TG Vote:	AS: 3-4-2 chair not voting (motion fails, Dobson disconnected) D: 4-4-2 chair not voting Send to committee noting that the committee did not reach a consensus recommendation

P333 LogID 6561 901.2.1 Solid fuel-burning fireplace, inserts, stoves, and heaters	
Submitter:	Kat Benner, self / TexEnergy
Requested Action:	Revise as follows
Proposed Change:	(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified or Phase 2 Qualified insulated, fire-blocked, sealed and gasketed.
Reason:	Mandating "EPA certified or Phase 2 Qualified" is extremely cost-prohibitive and thus nearly impossible. Recommend keeping the points and removing the Mandatory OR simply strike "EPA certified or Phase 2 Qualified". If the unit is insulated, fire-blocked, sealed and gasketed, this would be a reasonable requirement.
TG Recommendation (AS or AM or D):	D (Dobson, Fischer)
Modification of Proposed Change:	
TG Reason:	Based on action for LogID 6203
TG Vote:	D: 7/0/0 chair not voting

P334 LogID 6203 901.2.1 Solid fuel-burning fireplaces, inserts, stoves, and heaters	
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified or Phase 2 Qualified. - 6-4 Points
Reason:	The EPA does not certify factory-built wood burning fireplaces so this reference is nonsensical. Very few fireplaces meet the EPA Phase 2 Qualified requirements and thus they are exorbitantly priced compared to other similar fireplaces. This Mandatory measures represents undue burden for projects and should be removed. Leaving it in-place as a Mandatory basically mandates no wood-burning fireplaces in all but the most custom of homes.
TG Recommendation (AS or AM or D):	AM (Fischer, Jacobs)
Modification of Proposed Change:	(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are <u>an</u> EPA certified or Phase 2 <u>Emission Level</u> Qualified <u>Model</u> . 6 points
TG Reason:	
TG Vote:	AM 9 / 0 / 2 chair not voting

P335	LogID 6270	901.3 Garages
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>901.3. X Install CO detector/Monitor within 10 ft of Garage door (interior side)</u>
Reason:	Points for going above Mandatory requirement. Easy / inexpensive health and safety measure
TG Recommendation (AS or AM or D):	D (Leslie, Freeman)
Modification of Proposed Change:	
TG Reason:	There is no evidence supporting the 10 ft distance required in the proposal as providing some benefit.
TG Vote:	4-0-2

P336	LogID 6275	901.6 Carpets
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Submitter:	Paul Gay, self
Requested Action:	Revise as follows
Proposed Change:	(1) Wall-to-wall <u>No carpeting is not installed adjacent to water closets and bathing fixtures in half/full bathrooms, kitchens, utility/laundry rooms or within 3 ft of entries.</u>
Reason:	Who wants soggy socks...or moisture issues. language needs to be more precise and in line with building best practice
TG Recommendation (AS or AM or D):	D (Freeman, Leslie)
Modification of Proposed Change:	
TG Reason:	The new compliance requirements would be overly onerous.
TG Vote:	5-0-1

P337	LogID 17-049	Section 901.14 Non-smoking areas
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Submitter:	Michelle Foster, Home innovation Research Labs
Requested Action:	Revise as follows:

Proposed Change:	901.14 Non-smoking areas. Environmental tobacco smoke is minimized by one or more of the following: (1) All interior common areas of a multifamily building are designated as non-smoking areas with posted signage. (2) Exterior smoking areas of a multifamily building are designated with posted signage and located a minimum of 25 feet from entries, outdoor air intakes, and operable windows. (3) <u>Smoking is prohibited entirely in the building.</u> (4) <u>Smoking is prohibited within 25 feet of the exterior of the building and No Smoking signs are posted around the building.</u>
Reason:	Second-hand smoke is detrimental to residents and building owners that prohibit smoking anywhere inside or near the building are reducing the environmental impacts of the building.
TG Recommendation (AS or AM or D):	AM (Thompson, Dobson)
Modification of Proposed Change:	(3) <u>MF buildings are designated non-smoking and have posted signage</u> (4) Smoking is prohibited within 25 feet of the exterior of the building and No Smoking signs are posted around the building
TG Reason:	The modification protects residents in individual units, and number four was deleted due to a lack of data for the 25 feet requirement.
TG Vote:	10-0-0 chair not voting

P338	LogID 6496	902.1.5 Fenestration cross-ventilation
Submitter:	John Barrows, self	
Requested Action:	Revise as follows	
Proposed Change:	902.1.5 (a): “Operable windows, operable skylights, or sliding glass doors with a total area of at least 15 percent of the <u>ventilated</u> conditioned floor area are provided.	
Reason:	Clarification to this practice is required. It is unclear in 902.1.5(a) as to how the compliance with this practice is calculated. Is this determined as a whole house? (Example: “Operable windows, operable skylights, or sliding glass doors with a total area of at least 15 percent of the entire home’s conditioned floor area are provided.”) Or is this calculated room-by-room? (Example: “Operable windows, operable skylights, or sliding glass doors are provided within each regularly occupied space, with a total area of at least 15 percent of each respective space’s conditioned floor area”). Also, a definition of “cross ventilation” and “stack effect” may be helpful.	
TG Recommendation (AS or AM or D):	AM (Leslie, Freeman)	
Modification of Proposed Change:	... with a total area of at least 15 percent of the ventilated <u>total</u> conditioned floor area are provided	
TG Reason:	The modification clarifies the provision. The TG suggests that the Standard be reviewed for consistent use of either “gross” or “total” conditioned area.	
TG Vote:	5-0-1	

P339	LogID 6206	902.2.1 Whole building ventilation system
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of Appendix B ASHRAE 62.2 and an explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2. DELETE APPENDIX B	
Reason:	As demonstrated during the NGBS 2015 Development Committee discussions, Appendix B, which includes only an excerpt of ASHRAE 62.2, does not adequately capture the depth or breadth of the Standard. Excerpting some of the calculations from 62.2 while leaving other out along with various	

	exceptions results in more air being required to be delivered compared to if the whole Standard had been adopted.
TG Recommendation (AS or AM or D):	D (Dobson, Velasquez)
Modification of Proposed Change:	
TG Reason:	D based on action on LogID 6563
TG Vote:	11 / 0 / 0 chair not voting

P340	LogID 6207	902.2.1 Whole building ventilation system
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	<p>902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of Appendix B and an explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2.</p> <p>(1) exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls - 3 Points</p> <p>(2) <u>exhaust or supply fan(s) with automatic smart ventilation controls to limit ventilation during periods of extreme temperature and extreme humidity.</u> - 6 Points</p> <p>(2)(3) balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building - 6 Points</p> <p>(3)(4) heat-recovery ventilator - 7 Points</p> <p>(5) <u>balanced exhaust or supply fan(s) with automatic smart ventilation controls to limit ventilation during periods of extreme temperature and extreme humidity, and with intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back in to the building</u> - 8 Points</p> <p>(4)(6) energy-recovery ventilator - 8 Points</p>	
Reason:	Initial research in this area, funded by the U.S. Department of Energy (U.S. DOE), investigated the proof-of-concept for smart ventilation and estimated typical ventilation energy savings of 40% (Turner and Walker 2012) or about 15% of total heating and cooling load, with savings increasing to more than 50% on average for economizer-equipped homes.	
TG Recommendation (AS or AM or D):	D (Dobson, Thompson)	
Modification of Proposed Change:		
TG Reason:	D based on action on LogID 6563	
TG Vote:	11 / 0 / 0 chair not voting	

P341	LogID 17-056	Section 902.2.1 Building ventilation systems
Submitter:	Aaron Gary, Tempo Partners	
Requested Action:	Revise 902.2.1 as follows	
Proposed Change:	<p>902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of Appendix B and an explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2.</p> <p>(1) exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls</p> <p>(2) balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building</p> <p>(3) heat-recovery ventilator</p> <p>(4) energy-recovery ventilator</p> <p>(5) <u>Ventilation air is preconditioned by a method not specified above, or is supplemented</u></p>	
Reason:	Pre-conditioning ventilation air saves energy and improves occupant comfort.	
TG Recommendation (AS or AM or D):	AM (Thompson, Velasquez)	

Modification of Proposed Change:	Ventilation air is preconditioned by a <u>method system</u> not specified above, or is supplemented
TG Reason:	Modifications by TG for clarification
TG Vote:	9 / 0 / 0 chair not voting

P342	LogID 6205	902.2.2 Whole building ventilation airflow tested
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	902.2.2 Ventilation airflow is tested to achieve the design fan airflow <u>at point of exhaust</u> in accordance with <u>ANSI/RESNET/ICC 380</u> and Section 902.2.1	
Reason:	Not all ventilation systems can be tested at the point of exhaust and for many doing so while possible is not accurate. ANSI/RESNET/ICC 380 is an ICC approved Standard that includes guidelines for testing ventilation airflow at multiple locations, including the point of exhaust, so that the most appropriate and accurate means can be selected by the 3rd party verifier.	
TG Recommendation (AS or AM or D):	AM (Leslie, Freeman)	
Modification of Proposed Change:	... the design fan airflow <u>at point of exhaust or</u> in accordance with ANSI/RESNET/ICC 380 and Section 902.2.1.	
TG Reason:	Adds the desired flexibility without adding new restrictions.	
TG Vote:	5-0-1	

P343	LogID 6541	902.3 Radon control
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	<p>902.3.3 Radon testing. Radon testing is Mandatory for Zone 1. Exception: testing is not mandatory where the authority having jurisdiction has defined the radon zone as Zone 2 or 3.</p> <p>902.3.3.1 Testing specification. Testing is performed as specified in (a) though (j). Points 8 (a) Testing is performed after the residence passes its airtightness test. (b) Testing is performed at the lowest level which will be occupied, even if the space is not finished. (c) Testing is not performed in a closet, hallway, stairway, laundry room, furnace room or bathroom. (d) Testing is performed with a commercially available test kit or with a radon monitor. Testing shall be in accordance with the manufacturer's instructions. (e) Testing can be performed by the builder or a third party. (f) Testing shall extend at least 48 hours or to the minimum specified by the manufacturer, which ever is longer. This initial testing can extend past occupancy. (g) Test results shall be provided directly to the homeowner by the test lab or testing party. The test results are not required to be delivered before occupancy. (h) An additional pre-paid test kit shall be provided to the homeowner to use when they choose. The test kit shall include mailing, or emailing the results from the testing lab to the homeowner. The homebuilder may also receive the test results. (i) This section does not require a specific test result, rather it requires the test be performed and the results provided to the homeowner. (i) The homeowner shall be informed prior to occupancy and in writing that "A radon test result of 4 pCi/L or above is the 'action level' set by EPA."</p> <p>902.3.3.3 Testing results. A radon test done in accordance with 902.3.3.1 and completed before occupancy receives a result of 2 pCi/L or less. 6 points</p>	
Reason:	Individual homes can vary significantly in a specific home has higher levels of radon. Testing is the only practical way to know if a radon reduction system works. Add Jani Palmer, Physical Scientist, EPA, Indoor Environments Division as a co-proponent	

TG Recommendation (AS or AM or D):	AM 1 st Don, 2 nd Jeremy
Modification of Proposed Change:	<p>902.3.1 Radon testing. Radon testing is Mandatory for Zone 1.</p> <p>Exceptions:</p> <p>1 testing is not mandatory where the authority having jurisdiction has defined the radon zone as Zone 2 or 3.</p> <p>2 testing is not mandatory where the occupied space is located above an open space</p> <p>902.3.1.1 Testing specification.</p> <p>Testing is performed as specified in (a) through (j). Points 8</p> <p>(a) Testing is performed after the residence passes its airtightness test.</p> <p>(b) Testing is performed after the radon control system installation is complete and operating (if an active system)</p> <p>(c) Testing is performed at the lowest level which will be occupied, even if the space is not finished.</p> <p>(d) Testing is not performed in a closet, hallway, stairway, laundry room, furnace room or bathroom or kitchen.</p> <p>(e) Testing is performed with a commercially available test kit or with a continuous radon monitors that can be calibrated. Testing with test kits shall include two tests, which are averaged. Testing shall be in accordance with the manufacturer's instructions.</p> <p>(f) Testing can be performed by the builder or a third party.</p> <p>(g) Testing shall extend at least 48 hours or to the minimum specified by the manufacturer, which ever is longer. This initial testing can extend past occupancy.</p> <p>(h) Test results shall be provided directly to the homeowner by the test lab or testing party. The test results are not required to may be delivered before or after occupancy.</p> <p>(i) An additional pre-paid test kit shall be provided to the homeowner to use when they choose. The test kit shall include mailing, or emailing the results from the testing lab to the homeowner. The homebuilder may also receive the test results.</p> <p>(j) This section does not require a specific test result, rather it requires the test be performed and the results provided to the homeowner.</p> <p>(k) The homeowner shall be informed prior to occupancy and in writing that "A radon test result of 4 pCi/L or above is the 'action level' set by EPA." EPA suggests radon reduction measures to lower radon levels below 4 pCi/L." Or "For a radon test result of 4 pCi/L or above [name of builder or jurisdiction having authority] suggests radon reduction measures to lower radon levels below 4 pCi/L."</p> <p>902.3.1.2 Testing results. A radon test done in accordance with 902.3.1.1 and completed before occupancy receives which has a result of 2 pCi/L or less. 6 points</p>
TG Reason:	
TG Vote:	6-0-0

P344	LogID 6540	902.3 Radon control
Submitter:	Craig Conner, self	
Requested Action:	Delete and substitute as follows	
Proposed Change:	<p>902.3 Radon reduction measures. Radon reduction measures are in accordance with ICC IRC Appendix F or 902.3.2.Zones are as defined in Figure 9(1).</p> <p>902.3.1 Radon reduction measures are Mandatory for Zone 1.</p> <p>Exception: radon reduction is not mandatory where the authority having jurisdiction has defined the radon zone as Zone 2 or 3.</p> <p>(a) a passive radon system is installed 6 points</p> <p>(b) an active radon system with a fan is installed. A fan-failure warning light or audible alarm shall be provided in the occupied space. The fan shall include a minimum of a five-year manufacturer's warranty. 12 points</p> <p>902.3.2 Radon reduction option</p> <p>This option requires sections 902.3.2.1 through 902.3.2.6.</p> <p>902.3.2.1 Soil-gas barriers and base course. A base course in accordance with Section 506.2.2 of the IRC shall be installed below slabs and foundations. There shall be a continuous gas-permeable base course under each soil-gas retarder that is separated by foundation walls or footings. Between slabs and the base course, damp proofing or water proofing shall be installed in accordance with Section 406 of the IRC. Punctures, tears and gaps around penetrations of the soil-gas retarder shall be repaired or covered with an additional soil-gas retarder. The soil-gas retarder shall be a continuous 6-mil (0.15 mm)</p>	

polyethylene or an approved equivalent.

902.3.2.2 Soil gas collection. There shall be an unobstructed path for soil gas flow between the void space installed in the base course and the vent through the roof. Soil gases below the foundation shall be collected by a perforated pipe with a diameter of not less than 4 inches (10 cm) and not less than 5 feet (1.5 m) in total length. A tee fitting or equivalent method shall provide two horizontal openings to the radon collection. The tee fitting shall be designed to prevent clogging of the radon collection path. Alternately the soil gas collection shall be by approved radon collection mats or an equivalent approved method.

902.3.2.3 Soil gas entry routes. Openings in slabs, soil-gas retarders, and joints such as, but not limited to, plumbing, ground water control systems, soil-gas vent pipes, piping and structural supports, shall be sealed against air leakage at the penetrations. The sealant shall be a polyurethane caulk, expanding foam or other approved method. Foundation walls shall comply with Section 103.2.3 of the IRC. Sumps shall be sealed in accordance with Section 103.2.2 of the IRC. Sump pits and sump lids intended for ground water control shall not be connected to the sub-slab soil-gas exhaust system.

902.3.2.4 Soil gas vent. A gas-tight pipe vent shall extend from the soil gas permeable layer through the roof. The vent pipe size shall not be reduced at any location as it goes from gas collection to the roof. Exposed and visible interior vent pipes shall be identified with not less than one label reading "Radon Reduction System" on each floor and in habitable attics.

902.3.2.5 Vent pipe diameter. The minimum vent pipe diameter shall be as specified in Table 902.3.2.5.

TABLE 902.3.2.5 MAXIMUM VENTED FOUNDATION AREA

Maximum area vented	Nominal pipe diameter
2,500 ft ² (232 m ²)	3 inch (7.6 cm)
4,000 ft ² (372 m ²)	4 inch (10 cm)
Unlimited	6 inch (15.2 cm)

902.3.2.6 Multiple vented areas. In dwellings where interior footings or other barriers separate the soil-gas permeable layer, each area shall be fitted with an individual vent pipe. Vent pipes shall connect to a single vent that terminates above the roof or each individual vent pipe shall terminate separately above the roof.

902.3.2.6 Fan. Each sub-slab soil-gas exhaust system shall include a fan, or dedicated space for the post-construction installation of a fan. The electrical supply for the fan shall be located within 6 feet (1.8 m) of the fan.

Reason:

This change adds a more readable and understandable radon reduction option. Elements of radon reduction are already required by the IRC, so those requirements are not repeated here. The result is simple and understandable radon text that will not require the NGBS to go to another document. The points for radon reduction systems with fans, called active systems, are increased relative to the passive systems, because the active system are much more effective. "Fan-powered radon reduction systems can apply 50 times more suction pressure at the suction points than passive systems. The chief advantage of a fan-powered radon system is that it always achieves a greater and more reliable radon reduction than passive systems." (Standard Practice for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings ASTM E1465-07a Section 6.5.5.1)

TG Recommendation (AS or AM or D):

AM
1st Don, 2nd Ted

Modification of Proposed Change:

902.3 Radon reduction measures. Radon reduction measures are in accordance with ICC IRC Appendix F or 902.3.2.Zones are as defined in Figure 9(1).

902.3.1 Radon reduction measures are Mandatory for Zone 1 **as identified by the AHJ; or if the zone is not identified by the AHJ then as identified on the map (reference map). For all zones, the points are as follows:**
~~Exception: radon reduction is not mandatory where the authority having jurisdiction has defined the radon zone as Zone 2 or 3.~~

(a) a passive radon system is installed. 6 points
(b) an active radon system with a fan is installed. A fan failure warning light or audible alarm shall be provided in the occupied space. The fan shall include a minimum of a five-year manufacturer's warranty. 12 points

Zone 1:

- a) passive is Mandatory.
- b) active system 12 pts

Zones 2 and 3:

- a) passive system 6 pts
- b) active system 12 pts

902.3 Radon control. Radon control measures are in accordance with ICC IRC Appendix F. Zones as defined in Figure 9(1).		
(1)	Buildings located in Zone 1	Mandatory
	(a) a passive radon system is installed	7
	(b) an active radon system is installed	10
(2)	Buildings located in Zone 2 or Zone 3	
	(a) a passive or active radon system is installed	7

902.3.2 Radon reduction option

This option requires sections 902.3.2.1 through 902.3.2.6.

902.3.2.1 Soil-gas barriers and base course. A base course in accordance with Section 506.2.2 of the IRC shall be installed below slabs and foundations. There shall be a continuous gas-permeable base course under each soil-gas retarder that is separated by foundation walls or footings. Between slabs and the base course, damp proofing or water proofing shall be installed in accordance with Section 406 of the IRC. Punctures, tears and gaps around penetrations of the soil-gas retarder shall be repaired or covered with an additional soil-gas retarder. The soil-gas retarder shall be a continuous 6-mil (0.15 mm) polyethylene or an approved equivalent.

902.3.2.2 Soil gas collection. There shall be an unobstructed path for soil gas flow between the void space installed in the base course and the vent through the roof. Soil gases below the foundation shall be collected by a perforated pipe with a diameter of not less than 4 inches (10 cm) and not less than 5 feet (1.5 m) in total length. A tee fitting or equivalent method shall provide two horizontal openings to the radon collection. The tee fitting shall be designed to prevent clogging of the radon collection path. Alternately the soil gas collection shall be by approved radon collection mats or an equivalent approved method.

902.3.2.3 Soil gas entry routes. Openings in slabs, soil-gas retarders, and joints such as, but not limited to, plumbing, ground water control systems, soil-gas vent pipes, piping and structural supports, shall be sealed against air leakage at the penetrations. The sealant shall be a polyurethane caulk, expanding foam or other approved method. Foundation walls shall comply with Section 103.2.3 of the IRC. Sumps shall be sealed in accordance with Section 103.2.2 of the IRC. Sump pits and sump lids intended for ground water control shall not be connected to the sub-slab soil-gas exhaust system.

902.3.2.4 Soil gas vent. A gas-tight pipe vent shall extend from the soil gas permeable layer through the roof. The vent pipe size shall not be reduced at any location as it goes from gas collection to the roof. Exposed and visible interior vent pipes shall be identified with not less than one label reading "Radon Reduction System" on each floor and in habitable attics.

902.3.2.5 Vent pipe diameter. The minimum vent pipe diameter shall be as specified in Table 902.3.2.5.

TABLE 902.3.2.5 MAXIMUM VENTED FOUNDATION AREA

<u>Maximum area vented</u>	<u>Nominal pipe diameter</u>
2,500 ft ² (232 m ²)	3 inch (7.6 cm)

	<table border="1"> <tr> <td>4,000 ft² (372 m²)</td> <td>4 inch (10 cm)</td> </tr> <tr> <td>Unlimited</td> <td>6 inch (15.2 cm)</td> </tr> </table>	4,000 ft ² (372 m ²)	4 inch (10 cm)	Unlimited	6 inch (15.2 cm)
4,000 ft ² (372 m ²)	4 inch (10 cm)				
Unlimited	6 inch (15.2 cm)				
	<p>902.3.2.6 Multiple vented areas. In dwellings where interior footings or other barriers separate the soil-gas permeable layer, each area shall be fitted with an individual vent pipe. Vent pipes shall connect to a single vent that terminates above the roof or each individual vent pipe shall terminate separately above the roof.</p> <p>902.3.2.6 Fan. Each sub-slab soil-gas exhaust system shall include a fan, or dedicated space for the post-construction installation of a fan. The electrical supply for the fan shall be located within 6 feet (1.8 m) of the fan.</p>				
TG Reason:	The task group supported the idea, but the language was not compatible with the standard as written				
TG Vote:	6 (approve) / 0 (disapprove) / 0 (abstain)				

P345	LogID 6542	902.3 Radon control
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	<p>902.3.3.4 Side venting. Side venting, rather than roof venting, of radon shall be permitted in radon reduction provided (a) through (e) are satisfied.</p> <p><u>(a) the side venting is active with a fan installed. A fan-failure warning light or audible alarm shall be provided in the occupied space. The fan shall include a minimum of five year manufacturer's warranty.</u></p> <p><u>(b) the side vent is a minimum of 5 feet from an operable opening into the residence and 2 feet from the rim joist. The side vent exhaust is not directed at an operable opening within 10 feet of the vent. The rim joists are air sealed and the home meets the air tightness requirements of the IRC/IECC.</u></p> <p><u>(c) the side vent will not collect rainwater.</u></p> <p><u>(d) the residence is tested in accordance 902.3.3.1</u></p> <p><u>(e) the homebuilder provides a commitment for radon reduction after occupancy to below the action level if the initial test result comes back at the "action level" of 4 pCi/L or above. Radon reduction to less than 4 pCi/L shall meet this commitment.</u></p> <p><u>The homebuilder may retest the home using a third party at the homebuilder's expense. The retest shall override the initial test. Where the authority having jurisdiction has certified parties for radon reduction the third-party tester shall be so certified.</u></p>	
Reason:	Side venting provides an additional option that may be more practical in some cases. A side vent would not have the suction power provided by a passive through the roof vent, therefore a fan is required. Because some are skeptical of side venting, and this option is not included in existing standards, this option requires a test and a builder commitment to correct it if the "action level" is exceeded.	
TG Recommendation (AS or AM or D):	Disapprove (Don, Josh) – provisional, ballot the TG	
Modification of Proposed Change:		
TG Reason:	It goes against the existing health standards for design	
TG Vote:	8 favor, none against/abstain	

P346	LogID 6543	902.3 Radon control
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	<p>902.3.1 Testing. Radon testing shall be in accordance with the following. Mandatory.</p> <p>(a) Approved testing devices</p> <p><u>Devices used for measuring radon shall be listed and labeled as having met minimum requirements established by the National Radon Proficiency Program (NRPP) or the National Radon Safety Board</u></p>	

	<p>(NRSB) if the jurisdiction has no program for evaluating or approving devices where the testing is conducted.</p> <p>(b) Device instructions Detectors and devices shall be used in compliance with device-specific instructions provided by the manufacturer.</p> <p>(c) Device types a) Passive Devices refers to those that do not provide hourly readings; and b) Continuous Monitors are monitors that can integrate, record and produce reviewable readings in time increments of one hour. If a device is not capable of these functions or is not set to record readings each hour, it is functioning as a passive device and is not considered a continuous monitor.</p> <p>(d) Testing Strategies Conduct Simultaneous Testing, Continuous Monitor Testing or any combination of the two. a) Simultaneous Testing is defined two short-term tests at the same time at each location. b) Continuous Monitor Testing is testing using a continuous monitor at each location.</p> <p>(e) Mitigation Decisions If the average of 2 short-term tests or a Continuous Monitor meets or exceeds the World Health Organization's action level of 2.7 pCi/L, then install and activate a fan to the sub-slab soil gas exhaust system and test again. Provide test results to the homebuilder and homebuyer.</p>
Reason:	This change provides guidance on testing and testing devices. The only proponent of this change is Jani Palmer, Physical Scientist, EPA, Indoor Environments Division
TG Recommendation (AS or AM or D):	Withdrawn by proponent
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

P347	LogID 17-037	902.4 HVAC system protection
Submitter:	Bob Thompson	
Requested Action:	Revise as follows	
Proposed Change:	<p>902.4 HVAC system protection. One of the following HVAC system protection measures is performed.</p> <p>(1) HVAC supply registers (boots), return grilles, and rough-ins are covered during construction activities to prevent dust and other pollutants from entering the system.</p> <p>(2) Prior to owner occupancy, HVAC supply registers (boots), return grilles, and duct terminations are inspected and vacuumed. In addition, the coils are inspected and cleaned and the filter is replaced if necessary.</p> <p>(3) <u>During construction, all return grilles have a temporary MERV 8 or higher filter installed in a manner ensuring no leakage around the filter.</u> [xx points]</p>	
Reason:	Using air filters during construction can protect HVAC equipment from construction that can shorten equipment life and result in higher operational costs. Proper containment of particulates can reduce the need to use energy to flush a building pre-occupancy.	
TG Recommendation (AS or AM or D):	AM (Jacobs, Dobson)	
Modification of Proposed Change:	<u>If HVAC systems are to be operated</u> during construction, all return grilles...	
TG Reason:	To clarify that this is for in-use systems as opposed to non-use systems. Proper containment of particulates can reduce the chances of microbial contamination and the need to use energy...	
TG Vote:	10-0-0 chair not voting	

P348	LogID 6209	902.6 Living space contaminants
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	

Proposed Change:	902.6 Living space contaminants TC"902.6Living space contaminants"f C \l "3" . <u>Indoor contaminants are limited through the following:</u> (1) The living space is sealed in accordance with Section701.4.3.1 to prevent unwanted contaminants.- MANDATORY (2) <u>A permanent shoe removal and storage space is implemented near the primary entryway. This space may not have wall-to-wall carpeting. - 3 POINTS</u>
Reason:	A majority of the dirt and dust in homes is tracked in by occupants. One of the most effective ways to reducing these indoor contaminants therefore is to encourage occupants and visitors to remove shoes at the door.
TG Recommendation (AS or AM or D):	D (Perry, Freeman)
Modification of Proposed Change:	
TG Reason:	The intent of the proposal is vague. Provision one states that the living space is sealed from contaminants, whereas the second provision seems to imply that the space can be connected to the living space. The points for the second provision are too generous.
TG Vote:	5-0-1

P349	LogID 6268	902.6 Living space contaminants
Submitter:	Paul Gay, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>902.6.X</u> <u>MF Compartmentalization</u> <u>Breaks or Joints thru the residential unit envelope shall be sealed includes but not limited to HVAC boots sealed to sheetrock / sub floor, Fan casings</u>	
Reason:	new credit awards points to Encourage additional air sealing/compartmentalization	
TG Recommendation (AS or AM or D):	TG 6: D TG 3: D (Stanonik, Freeman)	
Modification of Proposed Change:		
TG Reason:	TG 6 Reason: Not enough adjustment to warrant a change to the NGBS. TG 3: It is not clear what the full intent is. The proposal should be rewritten for more clarity.	
TG Vote:	TG 6 Vote: 10 yes, 4 abstain TG 3 Vote: 11 / 0 / 0 chair not voting	

P350	LogID 6294	904.0 Intent (IAQ)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	904.3 Indoor Air Quality Metric. <u>Dwelling receives a IAQ score using the DOE IAQ Metric of X.</u> (threshold TBD)	
Reason:	Recognize and encourage the adoption of the new DOE sponsored IAQ metric for indoor air quality.	
TG Recommendation (AS or AM or D):	D (Dobson, Arnold)	
Modification of Proposed Change:		
TG Reason:	The proposal does not have enough information to justify adding this provision to the standard.	
TG Vote:	10-0-0 chair not voting	

P351	LogID 6556	Other for Chapter 9 (include section number and title below)
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Submitter:	Kat Benner, self / TexEnergy
Requested Action:	Add new as follows
Proposed Change:	<u>905 HEALTH AND WELL BEING</u> (...prior to INNOVATIVE PRACTICES)
Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.
TG Recommendation (AS or AM or D):	D (Fischer, Dobson)
Modification of Proposed Change:	
TG Reason:	The proposal is incomplete.
TG Vote:	10-0-0 chair not voting

P352	LogID 6479	Other for Chapter 9 (include section number and title below)
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Submitter:	Jeremy Velasquez, TexEnergy Solutions
Requested Action:	Add new as follows
Proposed Change:	New Section <u>Section 906.7 - Air Quality Testing. The quality of the air within conditioned space is verified before occupancy by performing one or more of the following tests:</u> <u>(1) Formaldehyde level testing.</u> <u>(2) Total VOC level testing.</u> <u>(3) Carbon Monoxide level testing.</u> <u>(4) PM 10 & PM 2.5 (Particulates) testing.</u> <u>(5) Ozone level testing.</u> <u>(6) Radon level testing.</u>
Reason:	Indoor pollutants can cause a variety of health issues and conditions. Testing can verify that living spaces are free of high concentrations of specific VOC's or other irritants.
TG Recommendation (AS or AM or D):	AM – Jacobs, Arnold
Modification of Proposed Change:	New Section <u>Section 906.7 – Air Quality Testing. The quality of the air within conditioned space is verified before occupancy by performing one or more of the following tests:</u> <u>(1) Formaldehyde level testing.</u> <u>(2) Total VOC level testing.</u> <u>(3) Carbon Monoxide level testing.</u> <u>(4) PM 10 & PM 2.5 (Particulates) testing.</u> <u>(5) Ozone level testing.</u> <u>(6) Radon level testing.</u> <u>Section 906.7 – Particulate Matter, Ozone, CO, and CO₂ Testing for Conditioned Spaces. Meet all of the following: 3 pts</u> <u>1. PM 2.5 is tested before occupancy according to testing standard EPA IP-10 and/or monitoring devices*. The concentration limit to achieve the credit is 35 µg/m³ per EPA NAAQS.</u> <u>2. Ozone level is tested before occupancy according to testing standard ASTM D5149-02, ISO 13964 and/or monitoring devices*. The concentration limit to achieve the credit is 137 µg/m³ per EPA NAAQS.</u> <u>3. Carbon Monoxide is tested before occupancy according to testing standard ISO 4224, EPA IP-3 and/or monitoring devices*. The concentration limit to achieve the credit is 10 mg//m³ per EPA NAAQS.</u> <u>4. Carbon Dioxide is tested before occupancy according to testing standard ISO 4224, EPA IP-3 and/or monitoring devices*. The concentration limit to achieve the credit is 1000 ppm. High levels of CO₂ has the ability to affect cognitive ability.</u> <u>* Scientific and building grade monitoring devices such as sensors or direct read instruments are also an allowed test method for the contaminants in this credit. The devices must be calibrated in accordance</u>

	<p>with the device manufacturer's recommendations and capable of measuring below the concentration limit and in the same measurement range as the laboratory method.</p> <p>Section 906.8 – VOC Contaminant Testing for Conditioned Spaces. Meet all of the following using one of the approved testing methods listed below: <u>2 pts</u></p> <p>1. Acetaldehyde 75-07-0 is measured and the concentration limit does not exceed 140 µg/m³ per Cal EPA OEHHA CRELS</p> <p>2. Benzene 71-43-2 is measured and the concentration limit does not exceed 3 µg/m³ per Cal EPA OEHHA CRELS</p> <p>3. Styrene 100-42-5 is measured and the concentration limit does not exceed 900 µg/m³ per Cal EPA OEHHA CRELS</p> <p>4. Toluene 108-88-3 is measured and the concentration limit does not exceed 300 µg/m³ per Cal EPA OEHHA CRELS</p> <p>5. Naphthalene 91-20-3 is measured and the concentration limit does not exceed 9 µg/m³ per Cal EPA OEHHA CRELS</p> <p>6. Dichlorobenzene (1,4-) 106-47-7 is measured and the concentration limit does not exceed 800 µg/m³ per Cal EPA OEHHA CRELS</p> <p>7. Xylenes – total 108-38-3m 95-47-6, and 106-42-3 is measured and the concentration limit does not exceed 700 µm/g³ per Cal EPA OEHHA CRELS</p> <p>8. Formaldehyde 50-00-0 is measured and the concentration limit does not exceed 20 µg/m³ (16 ppb) per NIOSH</p> <p>9. Total volatile organic compounds (TVOC as defined ISO 16000-6) is measured and the concentration limit does not exceed 500 µg/m³</p> <p>Approved Test Method for VOC Contaminant Testing: ISO 16000-3, 6, EPA IP-1, EPA TO-17, ISO 16017-1, 2; ASTM D6345-10</p>
TG Reason:	
TG Vote:	7 / 3 / 0 chair not voting

P353	LogID 6473	Other for Chapter 9 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	<p>New Section</p> <p>Section 906.1 - Enhanced Air Filtration - Meet one of the following two options:</p> <p><u>(1) Design for Secondary Filter Rack Space for Carbon Filters.</u></p> <p><u>(2) Install a Permanent Stand Alone Air Purification System that is appropriately sized for the home or dwelling unit.</u></p>	
Reason:	Secondary filtration provides a higher assurance of consistent air quality throughout the year. Standard filters cleanse the air, but there is still opportunity for further air purification.	
TG Recommendation (AS or AM or D):	AM (Arnold, Thompson)	
Modification of Proposed Change:	<p>New Section</p> <p>Section 906.1 – Enhanced Air Filtration. Meet one all of the following two options: <u>2 pts.</u></p> <p>(1) Design for and install a Secondary Filter Rack Space for Activated Carbon Filters.</p> <p>(2) Provide a Permanent Stand Alone Air Purification System that is appropriately sized for the home or dwelling unit the Manufacturer's recommended filter maintenance schedule to the homeowner or building manager.</p>	
TG Reason:		
TG Vote:	7 / 3 / 0	

P354	LogID 6474	Other for Chapter 9 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	

Proposed Change:	New Section <u>Section 906.2 - Anti-microbial high-touch surfaces - Abrasion-resistant, non-leaching surfaces with antimicrobial properties are installed. (high tough surfaces: kitchen and bathroom counter tops, doorknobs, electrical switches)</u>
Reason:	This measure reduces risk for spread of bacteria and other harmful microbes and therefore reduces the risk of future infections, which contributes to overall occupant health.
TG Recommendation (AS or AM or D):	D (Leslie, Prather)
Modification of Proposed Change:	New Section Section 906.2 - Anti-microbial high-touch surfaces. Install Abrasion-resistant, non-leaching surfaces with antimicrobial properties are installed. (high tough surfaces: for kitchen and bathroom counter tops, doorknobs, electrical switches). 2 pts
TG Reason:	Members had issue with the use of the term “antimicrobial”, and “high touch” surfaces could be misread to include carpeting.
TG Vote:	8 / 1 / 1 chair not voting

P355	LogID 6475	Other for Chapter 9 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	New Section <u>Section 906.3 - Documented plan for dedicated exercise/fitness space - Minimum 3% of Conditioned Square Footage of the home is dedicated to an exercise area. For multifamily projects: 250 square feet or more of common area must be dedicated to exercise space.</u>	
Reason:	Permanent exercise space contributes to a lower risk of health concerns and promotes exercise and fitness.	
TG Recommendation (AS or AM or D):	TG 3: AM (Dobson, Perry) TG 6: NO ACTION	
Modification of Proposed Change:	TG 3: Documented plan for dedicated exercise/fitness space. -Minimum 3% of Conditioned Square Footage of the home is dedicated to an exercise area. For multifamily projects: 250 square feet or more of common area must be dedicated to exercise space	
TG Reason:	TG 3: Agree with proponent. It is not clear what the exact numbers should be for this, but it creates a good provision to address the issue.	
TG Vote:	TG 3: 7-1-0 chair not voting	

P356	LogID 6576	Other for Chapter 9 (include section number and title below)
Submitter:	Craig Conner, self	
Requested Action:	Add new as follows	
Proposed Change:	Simplified IAQ compliance. Compliance with the items below constitutes compliance with this chapter. at the silver level. Combustion appliances get combustion air and vent to the outdoors. Balanced ventilation is used in the home. A radon reduction system or a radon test below at or below 2 pCi/L	
Reason:	This is a simple compliance method for the IAQ requirements which can otherwise be complicate.	
TG Recommendation (AS or AM or D):	Withdrawn Proponent asked this one be deleted	

Modification of Proposed Change:	
TG Reason:	
TG Vote:	

P357 LogID 6418 Other for Chapter 9 (include section number and title below)	
Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	902.2.5 Whole building ventilation system in installed with a automatic notification device to communicate performance degradation or failure. - 6 points
Reason:	2015 FSEC study (FSEC-CR-2002-15) showed a wide disconnect between the perceived and actual effectiveness of whole building ventilation systems in homes. The study found that of the homes surveyed only 5% of homes had a whole building ventilation system that was actually delivering the expected air as found while at the same time 48% of these same homeowners said they were happy with the performance of their whole building ventilation system. Existing and emerging technologies that can help address this disconnect should be well rewarded. The installation of non-performing ventilation systems both wastes resources and degrades the value of green building in the marketplace.
TG Recommendation (AS or AM or D):	D (Dobson, Leslie)
Modification of Proposed Change:	
TG Reason:	The points are too high for this provision. It's not clear to the members that this technology is commercially available. The proposal is too vague and may allow options that do not perform as intended – specifically differentiating between performance degradation and total failure.
TG Vote:	9-0-0 chair not voting

P358 LogID 6355 Other for Chapter 9 (include section number and title below)	
Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	905.X Access to daylight. To promote health and well being of occupants the following measures are implemented: (1) 75% of regularly occupiable spaces have windows, skylights, or glass doors. - 3 POINTS (2) 75% of regularly occupiable spaces have direct line of sight views to the outdoors. - 3 POINTS
Reason:	Studies have shown that access to outdoor light and views increase health and productivity of building occupants.
TG Recommendation (AS or AM or D):	D (Prather, Francis)
Modification of Proposed Change:	
TG Reason:	Almost any house can get 3 points for this provision.
TG Vote:	9-0-0 chair not voting on motion D

P359 LogID 6477 Other for Chapter 9 (include section number and title below)	
Submitter:	Jeremy Velasquez, TexEnergy Solutions
Requested Action:	Add new as follows
Proposed Change:	New Section Section 906.5 - Isolation of Contamination Sources - Meet all of the following: (1) Cleaning Products are stored in negatively pressurized space.

	<u>(2) Household storage (paints, sealants, adhesives, etc) are stored outside of conditioned space or are stored in negatively pressurized space.</u>
Reason:	Chemicals and other household materials containing VOC's stored in living space can off-gas and cause various irritations including nausea or headaches. Odorless living space contributes to occupant health and well-being.
TG Recommendation (AS or AM or D):	D (Velasquez, Perry)
Modification of Proposed Change:	
TG Reason:	Difficult to verify and this is an occupant behavior based provision, not construction.
TG Vote:	8-0-0 chair not voting

P360	LogID 6478	Other for Chapter 9 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	New Section <u>Section 906.6 - Sound Barriers - Minimize sound transfer between public & private space with proper wall construction methods. Proper wall construction includes proper acoustical sealing and continuous sound insulation batts separating sleeping areas from other functional spaces within a home or dwelling unit.</u>	
Reason:	Noise transfer from public living space can be disturbing to occupants seeking rest or peaceful relaxation in sleeping areas. Acoustic comfort contributes to tenant well-being.	
TG Recommendation (AS or AM or D):	Tabled for Jeremy to work on AM (Dobson, Leslie)	
Modification of Proposed Change:	New Section Section 906.6 – Sound Barriers. Minimize sound transfer between public & private space with proper wall construction methods. Proper wall construction includes proper acoustical sealing and continuous sound insulation batts separating sleeping areas from other functional spaces within a home or dwelling unit. <u>Provide room-to-room privacy between bedrooms and adjacent living spaces within dwelling units or homes by achieving an articulation index (AI) between 0 and 0.15 per the criteria below:</u> <u>Articulation Index 0 to 0.05 = STC > 55 (NIC >47)</u> <u>Articulation Index 0.05 to 0.15 = STC 52 – 55 (NIC 44 – 47)</u>	
TG Reason:	This addresses a sound condition that diminishes an acceptable living environment.	
TG Vote:	8 / 1 / 1 chair not voting	

P361	LogID 6427	Other for Chapter 9 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	905.X Outdoor Living. Meet any or all of the following: (1) Built-in outdoor kitchen (4 points) (2) Built-in outdoor fireplace (no indoor fireplace installed) (3 points) (3) Plumbed outdoor shower (3 points) (4) Covered, usable front porch protecting entry door. Minimum depth: 6'; minimum area: 100 sq. ft. (3 points) (5) Covered, usable porch other than front porch. <u>Minimum side dimension: 6'; minimum area 100 sq. ft. One of the above porches fully screened (2 points)</u>	

	(6) Uncovered patio Minimum side dimension: 6'; minimum area: 100 sq. ft. (1 point)
Reason:	To reduce sources of indoor heat and humidity and associated indoor air quality issues by encouraging occupants to take advantage of outdoor living. Could fit in with other Health and Wellness credits to form a new section.
TG Recommendation (AS or AM or D):	D (Dobson, Perry)
Modification of Proposed Change:	
TG Reason:	This change encourages an increased use of resources. Giving points to build a second kitchen with another set of appliances goes against the spirit of the standard. It also does not seem appropriate for the chapter on IEQ to have provisions for outdoor living space.
TG Vote:	9-0-0 chair not voting

P362	LogID 6476	Other for Chapter 9 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	New Section Section 906.4 - Exterior Noise Intrusion - Meet one of the following two options: <u>(1)Average Sound pressure level from outside noise does not exceed 50 DBA when measured.</u> <u>(2)All exterior wall assemblies are design to meet an STC rating of 55. Reference: HUD Chapter 4 Supplement - Sound Transmission Class Guidance.</u>	
Reason:	Prolonged exterior noise can contribute to occupant stress, which can trigger other health issues.	
TG Recommendation (AS or AM or D):	Tabled for Jeremy to revise D (Prather, Francis)	
Modification of Proposed Change:	New Section Section 906.4 – Exterior Noise Intrusion. <u>Meet the following: 2 pts</u> <u>In areas where exterior noise intrusion is a concern, all exterior assemblies are designed and constructed to meet an STC rating of 55 or greater.</u> <u>Meet one of the following two options:</u> <u>(1)Average Sound pressure level from outside noise does not exceed 50 DBA when measured.</u> <u>(2)All exterior wall assemblies are design to meet an STC rating of 55. Reference: HUD Chapter 4 Supplement – Sound Transmission Class Guidance.</u>	
TG Reason:	No definition of (1) exterior noise or (2) area of concern	
TG Vote:	8 / 1 / 0 chair not voting	

P363	LogID 6419	Other for Chapter 9 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>902.2.X All HVAC filter locations are designed such that they are easily accessible to the occupant. - 3 POINTS</u>	
Reason:	HVAC filters do not get changed when they are not accessible reducing the air quality and energy efficiency of the HVAC system and eventually leading to system failure.	
TG Recommendation (AS or AM or D):	D (Leslie, Fischer)	
Modification of Proposed Change:		
TG Reason:	Enforcement of “easily” and “accessible” is questionable if not defined. The term accessible is also worrisome because of the distinction between easy to get to and ADA compliant.	

TG Vote:	9-0-0 chair not voting
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P364	LogID 6429	Other for Chapter 9 (include section number and title below)
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Submitter:	Aaron Gary, self
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION 902.2.3 Factory-built, wood-burning fireplaces are EPA Phase 2 Qualified. - 6 points
Reason:	Very few fireplaces meet the EPA Phase 2 Qualified requirements and thus they are exorbitantly priced compared to other similar fireplaces. This measure should be moved from being a Mandatory items to an optional credit.
TG Recommendation (AS or AM or D):	D (Fischer, Dobson)
Modification of Proposed Change:	
TG Reason:	Based on action taken on 6561 and 6203
TG Vote:	6 / 0 / 3 chair not voting

P365	LogID 6397	Other for Chapter 9 (include section number and title below)
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Submitter:	Eric DeVito, SMXB Law						
Requested Action:	Add new as follows						
Proposed Change:	<table border="1"> <tr> <td>905.3 Fenestration sensors. All operable windows, operable skylights, and doors shall have one or more of the following:</td> <td>2</td> </tr> <tr> <td>(1) <u>Interconnected or interlocking electronic devices or sensors that signal whether the windows, skylights, or doors are open or closed; or</u></td> <td></td> </tr> <tr> <td>(2) <u>Mechanical or electronic self-closing mechanisms.</u></td> <td></td> </tr> </table>	905.3 Fenestration sensors. All operable windows, operable skylights, and doors shall have one or more of the following:	2	(1) <u>Interconnected or interlocking electronic devices or sensors that signal whether the windows, skylights, or doors are open or closed; or</u>		(2) <u>Mechanical or electronic self-closing mechanisms.</u>	
905.3 Fenestration sensors. All operable windows, operable skylights, and doors shall have one or more of the following:	2						
(1) <u>Interconnected or interlocking electronic devices or sensors that signal whether the windows, skylights, or doors are open or closed; or</u>							
(2) <u>Mechanical or electronic self-closing mechanisms.</u>							
Reason:	Today's smart homes are incorporating an increasing number of monitors and systems that provide a variety of benefits. This proposal would create an "innovative practices" credit by awarding points for the installation of signaling sensors or self-closing mechanisms on operable windows, doors, and skylights. Interlocking devices or sensors may be placed on windows, doors, and skylights for numerous reasons, including HVAC operation, improved energy efficiency, ventilation, or security. In fact, a single device may provide several different benefits now and in the future. The value of interconnected building components is already recognized in ASHRAE Standard 90.1-2013 and California Title 24, which both include requirements for interlocking electronic devices on windows and doors that send a signal to the thermostat when the windows or doors are opened. Green homes will continue to trend in the direction of more monitoring and sensor-based operation. Rather than parse out individual points for specific features, we recommend providing two points (or more, if the Committee prefers) for the range of innovative devices that may be installed on windows, doors, and skylights. ICC-700 should encourage "future-proofing" green homes by giving innovative practices credit for devices and practices that make the home smarter.						
TG Recommendation (AS or AM or D):	D (Dobson, Leslie) without referral to TG-5						
Modification of Proposed Change:							
TG Reason:	This issue is more of an energy efficiency issue and the proposal lacks sufficient information justifying how it affects IEQ. The issue is also a home security and water entry issue.						
TG Vote:	8-1-0 chair not voting						

P366	LogID 6424	Other for Chapter 9 (include section number and title below)
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Submitter:	Aaron Gary, self
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Requested Action:	Add new as follows
Proposed Change:	ADD SECTION <u>902.2.7 Preoccupancy flush.</u> Dwelling is flushed with outdoor air for 48 hours prior to occupancy. - 3 POINTS
Reason:	During the construction process dwellings become contaminated with dust, debris and off-gassing from materials. Flushing the dwelling with outdoor air prior to occupancy helps remove these potentially harmful pollutants from the space.
TG Recommendation (AS or AM or D):	D (Fischer, Francis)
Modification of Proposed Change:	
TG Reason:	This is a good idea for code, but the proposal lacks specificity here – there’s no direction as to how to perform this. What is the pass fail? How many cfm qualifies as flushing? It’s also not possible to flush some debris, it has to be vacuumed or removed in a different manner. VOCs generally stay in the home longer than 48 hours.
TG Vote:	9-0-0 chair not voting

P367	LogID 6356	Other for Chapter 9 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	Section 906 - <u>Add a new section as relevant for Health & Well-being credits.</u>	
Reason:	As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.	
TG Recommendation (AS or AM or D):	D (Francis, Thompson)	
Modification of Proposed Change:		
TG Reason:	The proposal is incomplete. If a new section is needed, the specific provision for the new section needs to be submitted for review.	
TG Vote:	9-0-0 chair not voting	

P368	LogID 17-057	New for Chapter 9
Submitter:	Aaron Gary, Tempo Partners	
Requested Action:	Add new as follows:	
Proposed Change:	<u>Ventilation for multifamily common spaces.</u> Systems are implemented and are in accordance with the specifications of ASHRAE 62.1 and an explanation of the operation and importance of the ventilation system is included in either 1002.1 and 1002.2 (1) <u>exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls</u> (2) <u>balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer’s guidelines so as to not introduce polluted air back into the building</u> (3) <u>heat-recovery ventilator</u> (4) <u>energy-recovery ventilator</u> (5) <u>Ventilation air is preconditioned by a method not specified above, or is supplemented</u>	
Reason:	Pre-conditioning ventilation air saves energy and improves occupant comfort.	
TG Recommendation (AS or AM or D):	AM (Jacobs, Thompson)	

Modification of Proposed Change:	Ventilation for multifamily common spaces. Systems are implemented and are in accordance with the specifications of ASHRAE 62.1 and an explanation of the operation and importance of the ventilation system is included in either 1002.1 and 1002.2 of NGBS. (1) exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls (2) balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building (3) heat recovery ventilator (4) energy recovery ventilator (5) Ventilation air is preconditioned by a method not specified above, or is supplemented
TG Reason:	Simplification is always good.
TG Vote:	7-0-1 chair not voting

P369	LogID 17-036	New for Chapter 9
Submitter:	Karla Butterfield, Steven Winter Associates	
Requested Action:	Add new as follows:	
Proposed Change:	Relative Humidity. A system is installed with the capability to maintain relative humidity in occupied/occupiable space between 40% to 60% at all times by adding or removing moisture from the air. [XX points]	
Reason:	Maintaining proper humidity levels in the building improves the overall IAQ for the building and can improve the durability of the building. Maintaining proper humidity without the use of AC can also save energy.	
TG Recommendation (AS or AM or D):	D (Leslie, Stanonik)	
Modification of Proposed Change:		
TG Reason:	Concerned about additional costs to comply. Concerned about unintended consequences of maintaining the higher humidity levels at all time. Further, this proposal should be broken down between humidification and dehumidification if the proponent returns with a modified version.	
TG Vote:	5-4-0 chair not voting (D)	

P370	LogID 17-040	New for Chapter 9
Submitter:	Michelle Foster, Home Innovation Research Labs	
Requested Action:	Add new as follows:	
Proposed Change:	A building air flush is performed while maintaining an indoor temperature of at least 15 °C [59 °F] and relative humidity below 60%, at one of the following volumes: (1) <u>A total air volume of 4500 m³ of outdoor air per m² of floor area [14,000 ft³ per ft² of floor area] prior to occupancy. [XX points]</u> (2) <u>A total air volume of 1000 m³ of outdoor air per m² of floor area [3500 ft³ per ft² of floor area] prior to occupancy, followed by a second flush of 3500 m³ of outdoor air per m² of floor area [10,500 ft³ per ft² of floor area] post-occupancy. While the post-occupancy flush is taking place, the ventilation system must consistently provide at least 0.1 m³ per minute of outdoor air per m² of floor area [0.3 CFM fresh air per ft² floor area]. [XX points]</u>	
Reason:	A building flush is a process to force air through a building just prior to occupancy to remove some of the pollutants, such as formaldehyde and other volatile organic compounds (VOC's), that seep from newly installed components, fresh paint, materials, finishes and furnishings. These include flooring and flooring adhesives, paints and finishes, caulks and sealants, and cabinets and work surfaces made from composite lumber products. The flush out process aims to improve indoor air quality (IAQ) by limiting occupants' exposure to the most intense period of contamination, and minimizing the cross-contamination between materials.	
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-6 (Multifamily) as the proposal will affect multifamily buildings.</i>	
TG Recommendation (AS or AM or D):	TG 3: AM (Arnold, Velasquez) TG 6: Defer to TG-3	

Modification of Proposed Change:	TG 3: A building air flush is performed while maintaining an indoor temperature of at least 15 °C [59 °F] and relative humidity below 60%, at one of the following volumes: <ol style="list-style-type: none"> (1) A total air volume of 4500 m³ of outdoor air per m² of floor area [14,000 ft³ per ft² of floor area] prior to occupancy. [XX points] (2) A total air volume of 1000 m³ of outdoor air per m² of floor area [3500 ft³ per ft² of floor area] prior to occupancy, followed by a second flush of 3500 m³ of outdoor air per m² of floor area [10,500 ft³ per ft² of floor area] post-occupancy. While the post-occupancy flush is taking place, the ventilation system must consistently provide at least 0.1 m³ per minute of outdoor air per m² of floor area [0.3 CFM fresh air per ft² floor area]. [XX points]
TG Reason:	TG 3: As a regulatory document, “post-occupancy” is a problematic condition for a building official to enforce or a verifier to confirm.
TG Vote:	TG 3: 9-0-1 chair not voting

P371	LogID 17-041	New for Chapter 9
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Submitter:	Michelle Foster, Home Innovation Research Labs
Requested Action:	Add new as follows:
Proposed Change:	Furniture and Furnishings. In a multifamily building, the VOC content of all furniture and furnishings in the common areas meets limits set by the following, as applicable: ANSI/BIFMA e3-2011 Furniture Sustainability Standard sections 7.6.1 and 7.6.2, tested in accordance with ANSI/BIFMA Standard Method M7.1-2011. [XX points]
Reason:	As building envelopes get tighter it is more important that the pollutants brought into the living area are minimized to improve indoor environmental quality for the residents.
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-6 (Multifamily) as the proposal will affect multifamily buildings.</i>
TG Recommendation (AS or AM or D):	TG 3: AM (Jacobs, Velasquez) TG 6: AM (Hines, Phelan)
Modification of Proposed Change:	TG 3: In a multifamily building, <u>all furniture in common areas shall have VOC emission levels in accordance with ANSI/BIFMA e3-2014 Furniture Sustainability Standard sections 7.6.1 and 7.6.2, tested in accordance with ANSI/BIFMA Standard Method M7.1-2014.</u> [XX points] TG 6: Furniture and Furnishings: In a multifamily building, <u>all furniture in common areas shall have VOC emission levels in accordance with ANSI/BIFMA e3-2014 Furniture Sustainability Standard sections 7.6.1 and 7.6.2, tested in accordance with ANSI/BIFMA Standard Method M7.1-2014.</u> [XX points]
TG Reason:	TG 3: Reason for AM: the standards listed do not deal with VOC content, they deal with emissions. TG 6: See TG-3 reasoning.
TG Vote:	TG 3: 6-1-3 (2 nd AM) TG 6: 8-0-1

P372	LogID 17-042	New for Chapter 9
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Submitter:	Karla Butterfield, Steven Winter Associates
Requested Action:	Add new as follows:
Proposed Change:	VOC ABSORPTION MANAGEMENT. To protect building materials from VOCs emitted by other (source) materials during construction, the following requirements are met: <ol style="list-style-type: none"> (1) <u>Absorptive materials, such as finishes and furnishings, are atmospherically segregated during storage before installation.</u> [XX points] (2) <u>Absorptive materials that would not benefit from off-gassing are sealed in original packing materials or other protective covering and stored in designated secure area until they are installed.</u> [XX points]

Reason:	As building envelopes get tighter it is more important that the pollutants brought into the living area are minimized to improve indoor environmental quality for the residents. It is especially important to try to make sure that building materials that can absorb VOCs are not contaminated with other building materials that may off-gas.
TG Recommendation (AS or AM or D):	D (Jacobs, Thompson)
Modification of Proposed Change:	
TG Reason:	"Absorptive material" is not defined in the NGBS.
TG Vote:	10-0-0

P373 LogID 17-046 New for Chapter 9	
Submitter:	Michelle Foster, Home innovation Research Labs
Requested Action:	Add new as follows
Proposed Change:	<u>EVAPORATIVE COIL MOLD PREVENTION. For buildings with a mechanical system for cooling, the following method of suppressing mold growth is installed:</u> (1) <u>Ultraviolet lamps are installed on the cooling coils and drain pans of the mechanical system supplies. [XX points]</u> (2) <u>Lamps produce ultraviolet radiation at a wavelength of 254 b. nm so as not to generate ozone.</u> (3) <u>Lamps have ballasts housed in a NEMA-rated enclosure.</u>
Reason:	
TG Recommendation (AS or AM or D):	AM (Jacobs, Arnold)
Modification of Proposed Change:	EVAPORATIVE COIL MOLD PREVENTION. For buildings with a mechanical system for cooling, the following method of suppressing mold growth is installed: Ultraviolet lamps are installed on the cooling coils and drain pans of the mechanical system supplies. Lamps produce ultraviolet radiation at a wavelength of 254 b. nm so as not to generate ozone. Lamps have ballasts housed in a NEMA-rated enclosure. [XX points]
TG Reason:	Mold prevention, and it kills biological growth as well
TG Vote:	3-1-0 chair not voting

P374 LogID 17-047 New for Chapter 9	
Submitter:	Aaron Gary, Tempo Partners
Requested Action:	Add new as follows:
Proposed Change:	<u>ENVIRONMENTAL MEASURES DISPLAY. Real-time information is provided to residents on at least one of the following indoor environmental parameters: [1 point for each]</u> (a.) <u>Carbon dioxide concentration.</u> (b.) <u>Particles pm 2.5</u> (c.) <u>Total VOCs</u> (1) <u>In the common area of the building [1 point for each]</u> (2) <u>In units [1 point for each]</u>
Reason:	Resident access to information about the indoor environmental quality can help residents take action to improve less than ideal conditions as well as understand what actions have a negative impact on indoor air quality.
TG Recommendation (AS or AM or D):	D (Prather, Stanonik)
Modification of Proposed Change:	

TG Reason:	The concept is good but the technology is not ready, and there is additional concern that the practice is outside of the intent and purpose of the NGBS as the standard has practices to deal with these emissions (awarding points for these sensors is non-sensical). Interpreting the readings would be confusing for much of the public at this time.
TG Vote:	7-0-0 chair not voting

P375	LogID 17-048	New for Chapter 9
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Submitter:	Jeremy Velasquez, US-EcoLogic
Requested Action:	Add news as follows for remodeling:
Proposed Change:	<p><u>Microbial Growth & Moisture Inspection and Remediation.</u> A visual inspection is performed to confirm the following:</p> <p>(1) <u>Verify that no visible signs of discoloration and microbial growth on ceilings, walls or floors, or other building assemblies. [XX points]</u></p> <p><u>Notes:</u> <u>If minor microbial growth is observed (less than 25 square feet) in homes or multifamily buildings, reference EPA Document 402-K-02-003 (A Brief Guide to Mold, Moisture, and Your Home) for guidance on how to properly remediate the issue. If microbial growth is observed, on a larger scale in homes or multifamily buildings (greater than 25 sq ft), reference EPA document 402-k-01-001 (Mold Remediation in Schools and Commercial Buildings) for guidance on how to properly remediate the issue. [https://www.epa.gov/sites/production/files/2016-10/documents/moldguide12.pdf]</u></p> <p>(2) <u>Verify that there are no visible signs of water damage or pooling. [XX points] [Revision 11.602.1.7.1]. If signs of water damage or pooling are observed, verify that the source of the leak has been repaired, and that damaged materials are either properly dried or replaced as needed.</u></p> <p><u>[Points can only be awarded if no signs or mold are present, or if the mold that was encountered has been properly cleaned or remediated.]</u></p>
Reason:	The presence of mold can negatively impact indoor environmental quality. Remediating existing mold can improve indoor environmental quality.
TG Recommendation (AS or AM or D):	AS (Thompson, Jacobs)
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

Chapter 10 Operation, Maintenance, and Building Owner Education

P376	LogID 17-117	1001.1 Homeowner's manual
Submitter:	Suzanne Boxman, US EPA	
Requested Action:	Revise as follows	
Proposed Change:	<p>1001.1 Homeowner's manual. A homeowner's manual is provided and stored in a permanent location in the dwelling that includes the following, as available and applicable...</p> <p>...</p> <p>(24) Retrofit energy calculator that provides baseline for future energy retrofits.</p> <p><u>(25) Information on deconstruction and disassembly services</u></p> <p><u>(26) For houses designed for disassembly, a plan with as-built drawings and information are provided about: 1) the method of disassembly for major components; and, 2) suitability of the selected materials for recycling or reuse.</u></p>	
Reason:	<p>Deconstruction is beneficial because it maximizes the potential for materials reuse and prevents valuable resources from being landfilled unnecessarily. Including proper deconstruction resources will streamline the deconstruction process for houses which are being remodeled, retrofitted, or are at the end of their useful lifespan.</p> <p>Design for disassembly can reduce materials waste and extend a building's useful life, providing economic and environmental benefits for builders, owners, occupants, and the communities. The homeowner's manual should include the information necessary to facilitate disassembly and realize the intended benefits for all homes that are designed for disassembly.</p>	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	<p>Add definitions to Section 202:</p> <p>Design for Disassembly. The design of buildings that enables their partial or full systematic dismantlement, in order to facilitate building adaptation and/or maximize the environmentally appropriate recovery of building materials.</p> <p>Deconstruction. The systematic dismantling of buildings to maximize the environmentally appropriate recovery of building materials.</p>	
TG Reason:		
TG Vote:	Suzi moves AS, Phil second; AM - One opposed.	

P377	LogID 6432	1001.2 Training of initial homeowners
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	<p>Training of initial homeowners. Initial homeowners are familiarized with the role of occupants in achieving green goals. Training is provided to the responsible party(ies) regarding equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include... - MANDATORY 8 POINTS</p>	
Reason:	Aligns with Measure 11.1001.2; In the development of the 2015 NGBS this measure was changed from being worth 8 point to being Mandatory. While making this mandatory is good, the loss of 8 points in Chapter 10 makes it extremely difficult for projects to achieve Gold or Emerald Certification.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:	6432 AND 6559	
TG Vote:	Phil moves approve, Hope seconds; Approve as submitted: 9 for, 2 against, 1 abstention. Motion passes.	

P378	LogID 6559	1001.2 Training of initial homeowners
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Revise as follows	
Proposed Change:	(Points) Mandatory <u>8</u> points	
Reason:	Achieving required minimums of 8 points for this Chapter is not possible without inclusion of points for this mandatory measure. Previous points were removed during prior update 2012, likely inadvertently.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:	6433 AND 6560	
TG Vote:	Philip – move to approve (same logic), Approve: Unanimous, motion passes.	

P379	LogID 17-066	1001.2 Training of initial homeowners
Submitter:	Aaron Gary, Tempo Partners	
Requested Action:	Revise as follows	
Proposed Change:	1001.2 Training of initial homeowners. <u>(8) Whole-dwelling ventilation systems.</u> 1002.4 Training of building owners. <u>(8) Whole-dwelling ventilation systems.</u>	
Reason:	Most homeowners do not understand how to operate or maintain the mechanical ventilation systems that are installed in their homes or apartments, or even the intent of such a system. Providing and recognizing training on these important systems would be beneficial.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	1001.2 Training of initial homeowners. <u>(8) Whole-house mechanical ventilation systems.</u> 1002.4 Training of building owners. <u>(8) Whole-dwelling mechanical ventilation systems.</u>	
TG Reason:		
TG Vote:	Hope, Kim seconds. Approved. None opposed, Brent abstains.	

P380	LogID 17-116	1001.2 Training of initial homeowners
Submitter:	Suzanne Boxman, US EPA	
Requested Action:	Revise as follows	
Proposed Change:	1001.2 Training of initial homeowners. Initial homeowners are familiarized with their role and the role of occupants in achieving green goals. Training is provided to the responsible party(ies) regarding equipment building operation and maintenance, including equipment operation and building material replacement, and regarding occupant actions that will improve the environmental performance of the building. These include, <u>as applicable...</u> ... (7) Recycling and composting practices. (8) Benefits of deconstruction and resources available to deconstruct the building or its parts.	
Reason:	Deconstruction is beneficial because it maximizes the potential for materials reuse and prevents valuable resources from being landfilled unnecessarily. Training the homeowners about the benefits of deconstruction will ensure they are aware of the value of materials included in their buildings and position them to take advantage of the fact that their properties are environmental and economic resources.	
TG Recommendation (AS or AM or D):	D	

Modification of Proposed Change:	
TG Reason:	There is value to this information being in manual for future decision-making (not too cumbersome), but must not be mandatory.
TG Vote:	Disapprove, Phil 1 st , Hope 2 nd , passed Phil moves to D: 2 nd Hope. No further discussion, FINAL vote: Disapproved. ONE opposed, passed (disapproved)

P381	LogID 6232	1002.0 Intent (Construction, Operation, and Maintenance Manuals and Training for Multifamily Buildings)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>Host an annual group event that provides opportunity for discussion / input to better the suggestions in the OMBOE manual.</u>	
Reason:	topics include recycling tips/energy / water saving tips and opens up discussion on these and related topics	
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-6 (Multifamily) as the proposal will affect multifamily buildings.</i>	
TG Recommendation (AS or AM or D):	TG 4: D TG 6: D	
Modification of Proposed Change:		
TG Reason:	TG 4: Executions and ownership are undefined. TG 6: This cannot be administered or verified.	
TG Vote:	TG 4: Hope moves to disapprove, Cambria seconds; D. Unanimous. Motion passes, proposal is disapproved. TG 6: 12 Yes 1 No; 3 Abstains	

P382	LogID 17-114	1002.1 Building construction manual
Submitter:	Suzanne Boxman, US EPA	
Requested Action:	Revise as follows	
Proposed Change:	1002.1 Building construction manual. A building construction manual, including five or more of the following, is compiled and distributed... ... (8) A photo record of framing with utilities installed. Photos are taken prior to installing insulation and clearly labeled. (9) <u>Information on deconstruction and disassembly services</u> (10) <u>For houses designed for disassembly, a plan with as-built drawings and information are provided about: 1) the method of disassembly for major components; and, 2) suitability of the selected materials for recycling or reuse.</u>	
Reason:	Deconstruction is beneficial because it maximizes the potential for materials reuse and prevents valuable resources from being landfilled unnecessarily. Including proper deconstruction resources will streamline the deconstruction process for houses which are being remodeled, retrofitted, or are at the end of their useful lifespan. Design for disassembly can reduce materials waste and extend a building's useful life, providing economic and environmental benefits for builders, owners, occupants, and the communities. The homeowner's manual should include the information necessary to facilitate disassembly and realize the intended benefits for all homes that are designed for disassembly.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Add definitions to Section 202:	

	<p>Design for Disassembly. The design of buildings that enables their partial or full systematic dismantlement, in order to facilitate building adaptation and/or maximize the environmentally appropriate recovery of building materials.</p> <p>Deconstruction. The systematic dismantling of buildings to maximize the environmentally appropriate recovery of building materials.</p>
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TG Reason:

TG Vote: Suzie moves; Phil seconds; AM - One opposed.

P383	LogID 1508	1002.2 Operations manual
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Submitter: Todd Jones, Center for Resource Solutions

Requested Action: Revise as follows

Proposed Change: (4) Information on opportunities to purchase Green-ecertified (or equivalent) renewable energy from local utilities or national green power providers and information on utility and tax incentives for the installation of on-site renewable energy systems.

Reason: (4) We recommend that information be provided specifically about Green-e certified utility and national green power products, to ensure that they are high quality and independently verified. The Green-e website is a good resource for finding local and national green power options.

TG Recommendation (AS or AM or D): D

Modification of Proposed Change:

TG Reason: Not necessary – Utilities oversee this.

TG Vote: Kim moved disapproval, Hope seconded: unanimous

P384	LogID 17-039	1002.3 Maintenance manual
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Submitter: Michelle Foster, Home Innovation Research Labs

Requested Action: Revise as follows

Proposed Change: **1002.3 Maintenance manual.** Maintenance manuals are created and distributed to the responsible parties in accordance with Section 1002.0. Between all of the maintenance manuals, five or more of the following options are included.
(Points awarded per two items. Points awarded for non-mandatory items.)

- (1) A narrative detailing the importance of maintaining a green building. This narrative is included in all responsible parties' manuals.
- (2) A list of local service providers that offer regularly scheduled service and maintenance contracts to ensure proper performance of equipment and the structure (e.g., HVAC, water-heating equipment, sealants, caulks, gutter and downspout system, shower and/or tub surrounds, irrigation system).
- (3) User-friendly maintenance checklist that includes:
 - (a) HVAC filters
 - (b) thermostat operation and programming
 - (c) lighting controls
 - (d) appliances and settings
 - (e) water heater settings
 - (f) fan controls
- (4) List of common hazardous materials often used around the building and instructions for proper handling and disposal of these materials.
- (5) Information on organic pest control, fertilizers, deicers, and cleaning products.
- (6) Instructions for maintaining gutters and downspouts and the importance of diverting water a minimum of 5 feet away from foundation.
- (7) Instructions for inspecting the building for termite infestation.
- (8) A procedure for rental tenant occupancy turnover that preserves the green features.
- (9) An outline of a formal green building training program for maintenance staff.
- (10) A green cleaning plan which includes guidance on sustainable cleaning products.

	<u>(11) A maintenance plan for active recreation and play spaces (e.g., playgrounds, ground markings, exercise equipment) for adults, youth and children</u>
Reason:	Including a provision in the maintenance manual on the recreation space will ensure that the space remains available to residents for recreation.
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	9) An outline of a formal green building training program for maintenance staff. (10) A green cleaning plan which includes guidance on sustainable cleaning products. <u>(11) A maintenance plan for active recreation and play spaces (e.g., playgrounds, ground markings, exercise equipment) for adults, youth and children.</u>
TG Reason:	Language needs to be less specific
TG Vote:	Phil, moves, Kim seconds (and both agree to modification to remove specific language about age groups) Approved, AM. 8 aye, none opposed none abstained, passed.

P385	LogID 6433	1002.4 Training of building owners
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Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	<div style="border: 1px solid black; padding: 5px;"> <p>1002.4 Training of building owners. Building owners are familiarized with the role of occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include:</p> </div>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Mandatory</p> <p><u>8 POINTS</u></p> </div>
Reason:	Aligns with Measure 11.1001.2; In the development of the 2015 NGBS this measure was changed from being worth 8 point to being Mandatory. While making this mandatory is good, the loss of 8 points in Chapter 10 makes it extremely difficult for projects to achieve Gold or Emerald Certification.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:	6433 AND 6560	
TG Vote:	Philip – move to approve, same logic, 11 for, one against, Proposal Approved as submitted.	

P386	LogID 6560	1002.4 Training of building owners
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Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Revise as follows	
Proposed Change:	(Points) Mandatory <u>8</u> points	
Reason:	Achieving required minimums of 8 points for this Chapter is not possible without inclusion of points for this mandatory measure. Previous points were removed during prior update 2012, likely inadvertently.	
TG Recommendation (AS or AM or D):	AS	
Modification of Proposed Change:		
TG Reason:	6433 AND 6560	
TG Vote:	Philip – move to approve (same logic), Approve: Unanimous, motion passes.	

P387	LogID 17-115	1002.4 Training of building owners
Submitter:	Suzanne Boxman, US EPA	
Requested Action:	Revise as follows	
Proposed Change:	<p>1002.4 Training of building owners. Building owners are familiarized with the roles of operations and maintenance staff and occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding equipment building operation and maintenance, <u>including equipment operation, control systems and building material replacement</u> and <u>regarding</u> occupant actions that will improve the environmental performance of the building. These include, <u>as applicable...</u></p> <p>...</p> <p>(7) Recycling and composting practices.</p> <p>(8) Benefits of deconstruction and resources available to deconstruct the building or its parts.</p>	
Reason:	Deconstruction is beneficial because it maximizes the potential for materials reuse and prevents valuable resources from being landfilled unnecessarily. Training the homeowners about the benefits of deconstruction will ensure they are aware of the value of materials included in their buildings and position them to take advantage of the fact that their properties are environmental and economic resources.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Phil move to Disapprove, Brent second; D. One opposed, passed. Motion is disapproved.	

P388	LogID 17-005	1004.2 Verification system
Submitter:	Stephen Evanko, Dominion Due Diligence	
Requested Action:	Revise as follows	
Proposed Change:	<p>1004.1 Verification System</p> <p>A verification system plan is provided in the building owner's manual (Sections (1001 or 1002). The verification system provides methods for demonstrating continued energy and water savings that are determined from the building's initial year of occupancy of water and energy consumption as compared to annualized consumption at least every four years</p> <p>(1) Verification Plan is developed to monitor post-occupancy energy and water use and is provided in the building owner's manual [1 point]</p> <p>(3) Verification system is installed in the building to monitor post-occupancy energy and water use [3 points]</p> <p><u>1004.2 Commitment for Annual Energy Benchmarking (NEW)</u></p> <p><u>1) Commitment for annual Energy Benchmarking: Multifamily property commits to benchmark annual energy performance using Energy Star Portfolio Manager. Owner commits to maintain a benchmark score of 75 or better and to share the energy star benchmark score with the Adopting Entity. [3 points]</u></p>	
Reason:	<p>Benefits: Numerous studies have shown that continuous benchmarking leads to an ongoing reduction energy consumption of at least 2-3% per year</p> <p>http://www.imt.org/uploads/resources/files/PCC_Benefits_of_Benchmarking.pdf</p> <p>https://www.energystar.gov/sites/default/files/buildings/tools/DataTrends_Savings_20121002.pdf</p> <p>Owners should receive green points for committing to this proven energy efficient practice. The practice in 1004.1 is good but doesn't benchmark against comparable properties. Offering a minimum performance target rather than just comparing to past performance drives improved performance.</p> <p>Why only Multifamily? Energy Star Portfolio Manager currently only supports benchmarking on Multifamily properties.</p> <p>Verification: Like many other NGBS practices, this benchmarking process provides the framework for ongoing green building operation. I would suggest that for verification,</p> <ul style="list-style-type: none"> • We honor documentation that the property is being underwritten through a green financing program which has a benchmarking requirement or through evidence that the site will need to comply with a local municipal benchmarking requirement 	

	<ul style="list-style-type: none"> Owner produces a Signed Energy Data Benchmarking Plan showing how the property owner intends to secure the energy data (including tenant data) and benchmark the property <p>Why sharing with Adopting Entity?: This could provide additional data to demonstrate the value of the NGBS certification. This is common with other green building programs. This practice is also encouraged by some green financial products (Fannie Mae Green Rewards, HUD Green Mortgage Insurance Premium Reduction and some progressive municipalities are pushing for benchmarking</p>
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Not reliably verifiable. Also tied to a proprietary product. Might suggest that verifier and bldg. owner have liability or exposure in future.
TG Vote:	Motion to Disapprove: Tom 1 st , Phil 2 nd ; D. None opposed, no abstentions, motion to D passes.

P389	LogID 6291	1005.1 Reserved – To Be Determined
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<p>1005.1 Appraisals. One or more of the following is implemented.</p> <p>(1) <u>Energy rating data is posted to publicly accessible database so that appraisers can access it for performing "green" property valuations. - 2 POINTS</u></p> <p>(2) <u>Green certification data is provided so that appraisers can access it for performing "green" property valuations. - 2 POINTS</u></p>	
Reason:	The real key to increasing demand for high-performance homes is getting the information to home appraisers in such a way that they can recognize the increased value of the green certified home above that of a conventionally built home.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Committee will take up separately	
TG Vote:	Tom: disapprove, Hope seconds: D: 10 for, 2 against. Motion passes. Proposal is disapproved.	

P390	LogID 6359	Other for Chapter 10 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	Section 1006 - <u>Add new section as relevant for Health & Well-being awareness credits.</u>	
Reason:	As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	Same as water	
TG Vote:	Tom moves to disapprove, Hope seconds: D: unanimous. Motion passes, proposal is disapproved.	

P391	LogID 6557	Other for Chapter 10 (include section number and title below)
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Add new as follows	

Proposed Change:	1005 HEALTH AND WELL BEING (...prior to INNOVATIVE PRACTICES)
Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Major elements already covered in NGBS, especially CH9 IEQ. No need for a stand-alone section. Premature. NGBS/Hi staff have indicated they will explore, address, come up with a more holistic recommendation.
TG Vote:	Tom moves to disapprove, Hope seconds; D: unanimous. Motion passes, proposal is disapproved.

P392	LogID 6307	Other for Chapter 10 (include section number and title below)
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Submitter:	Susan Gitlin, US Environmental Protection Agency
Requested Action:	Revise as follows
Proposed Change:	<p>1001.1 Homeowner's manual. A homeowner's manual is provided and stored in a permanent location in the dwelling that includes the following, as available and applicable...</p> <p>...</p> <p>(24) Retrofit energy calculator that provides baseline for future energy retrofits.</p> <p><u>(25) Disassembly plan with as-built drawings and information about the method of disassembly for major components; and material selection for recycling/reuse.</u></p> <p>1001.2 Training of initial homeowners. Initial homeowners are familiarized with <u>their role and</u> the role of occupants in achieving green goals. Training is provided to the responsible party(ies) regarding <u>equipment building operation and maintenance, including equipment operation and building material replacement, and regarding</u> occupant actions that will improve the environmental performance of the building. These include, <u>as applicable</u>...</p> <p>...</p> <p>(7) Recycling and composting practices.</p> <p><u>(8) Disassembly methods for building components, material suitability for recycling and reuse, replacement with other recyclable/reusable materials.</u></p>
Reason:	Design for Adaptation and Disassembly involves the utilization of recyclable/reusable building materials and preserves resources by maximizing building-material recovery. A disassembly plan and building-owner training on the disassembly methods and reuse/recycling properties of the major building components, facilitate disassembly and appropriate material management, and help realize the intent and benefits of the Design for Adaptation and Disassembly measures. Solution: Add Disassembly Plan as an additional item to be provided to homeowner, as applicable. Include training on disassembly methods and building material reuse/recycling properties as an additional training for parties responsible for building maintenance and operation, including replacement of building materials.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Suzanne will take up for language adjustment, and provide information, and mandatory IFF
TG Vote:	Philip, move to disapprove, Tom seconds; D: 10 for, 2 against. Motion passes, proposal is disapproved.

P393	LogID 6308	Other for Chapter 10 (include section number and title below)
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Submitter:	Susan Gitlin, US Environmental Protection Agency
Requested Action:	Revise as follows

Proposed Change:	<p>1002.1 Building construction manual. A building construction manual, including five or more of the following, is compiled and distributed...</p> <p>...</p> <p>(8) A photo record of framing with utilities installed. Photos are taken prior to installing insulation and clearly labeled.</p> <p><u>(9) Disassembly plan with as-built drawings and information about the method of disassembly for major components; and material selection for recycling/reuse.</u></p> <p>1002.3 Maintenance manual. Maintenance manuals are created and distributed to the responsible parties in accordance with Section 1002.0. Between all of the maintenance manuals, five or more of the following options are included...</p> <p>...</p> <p>(10) A green cleaning plan which includes guidance on sustainable cleaning products.</p> <p><u>(11) For use during building component maintenance and replacement, a disassembly plan with as-built drawings and information about the method of disassembly for major components; and material selection for recycling/reuse.</u></p> <p>1002.4 Training of building owners. Building owners are familiarized with the roles of operations and maintenance staff and occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding <u>equipment-building operation and maintenance, including equipment operation, control systems and building material replacement</u> and regarding occupant actions that will improve the environmental performance of the building. These include, <u>as applicable</u>...</p> <p>...</p> <p>(7) Recycling and composting practices.</p> <p><u>(8) Disassembly methods for building components, material suitability for recycling and reuse, replacement with other recyclable/reusable materials.</u></p>
Reason:	Design for Adaptation and Disassembly involves the utilization of recyclable/reusable building materials and preserves resources by maximizing building-material recovery. A disassembly plan and building-owner training on the disassembly methods and reuse/recycling properties of the major building components, facilitate disassembly and appropriate material management, and help realize the intent and benefits of the Design for Adaptation and Disassembly measures. Solution: Add Disassembly Plan as an additional item to be provided to building owners and parties responsible for operations and maintenance. Include training on disassembly methods and building material reuse/recycling properties as an additional training for parties responsible for building maintenance and operation, including replacement of building materials.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Suzanne will take up for language adjustment, and provide information, and mandatory IFF
TG Vote:	Philip, move to disapprove, Tom second; D: 10 for, 2 against. Motion passes, proposal is disapproved.

P394	LogID 6480	Other for Chapter 10 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	<p>New Section</p> <p><u>Section 1006.1 - Material Transparency - All relevant declare labels, health product declarations, building product disclosures are provided to the occupant.</u></p>	
Reason:	Homeowners and building occupants have the right to know what products are being installed in the building. Raise awareness about the possible toxicity of building materials supports changes in the industry for healthier products.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	<p>1st: good concept, "declare" is too specific – broaden.</p> <p>2nd: Too broad, "declare labels" is the wrong term. This concept is partly addressed in 100.0.1.</p>	

TG Reason:	
TG Vote:	2 nd : Phil moves to disapprove, Hope, second; D: Unanimous. Motion passes, proposal is disapproved.

P395	LogID 1513	Other for Chapter 10 (include section number and title below)
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Submitter:	Carl Seville, SK Collaborative
Requested Action:	Revise as follows
Proposed Change:	1002 – Combine operations and maintenance manual for Multifamily buildings into a single document. Add a separate tenant/occupant manual for occupants of multifamily buildings to provide them with reference and training materials to properly manage their apartment or condo unit.
Reason:	
TG Recommendation (AS or AM or D):	TG 4: D TG 6: AM
Modification of Proposed Change:	<p>TG-6 Modification:</p> <p><u>1002.5 Multifamily Occupant Manual</u></p> <p><u>An occupant manual is compiled and distributed in accordance with Section 1002.0 (1 Point are awarded per two items. Points awarded for non-mandatory items.)</u></p> <ul style="list-style-type: none"> (1) <u>NGBS Certificate (Mandatory)</u> (2) <u>List of Green Building Features (Mandatory)</u> (3) <u>Operations manuals for all appliances and occupant operated equipment including lighting and ventilation controls, thermostats, etc. (Mandatory)</u> (4) <u>Information on recycling and composting programs</u> (5) <u>Information on purchasing renewable energy from utility</u> (6) <u>Information on energy efficient replacement lamps</u> (7) <u>List of practices to save water and energy</u> (8) <u>Local public transportation options</u> (9) <u>Explanation of benefits of green cleaning</u> <p><u>1002.6: Training of Multifamily Occupants</u></p> <p><u>Prepare a training outline, video or website that familiarizes occupants with their role in maintaining the green goals of the project. Include all equipment that the occupant(s) is expected to operate including but not limited to:</u></p> <p><u>(1 Point are awarded per two items.)</u></p> <ul style="list-style-type: none"> (1) <u>Lighting controls</u> (2) <u>Ventilation controls</u> (3) <u>Thermostat operation and programming</u> (4) <u>Appliances operation</u> (5) <u>Recycling and composting</u> (6) <u>HVAC filters</u> (7) <u>Water heater settings and hot water use</u>
TG Reason:	TG 4: Incomplete proposal, may be taken up separately by the committee TG-6: The Task Group modified the language to match existing formatting in the NGBS
TG Vote:	TG 4: Tom Disapprove, Hope second; D: Unanimous. Motion passes, proposal is disapproved. TG-6: 12 Yes; 3 Absentees

P396	LogID 17-019	New for Chapter 10
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Submitter:	Phil LaRocque, LaRocque Business Management Services
Requested Action:	Add new as follows:
Proposed Change:	<u>1005.1 Appraisals. One or more of the following is implemented.</u>

	<p><u>(1) Energy rating or usage data is posted by submitting rating or data to the RESNET registry, affixing the HERS or ERI data to a sticker in an appropriate location in the home, or an equivalent posting so that an appraiser can access the energy data for an energy efficiency property valuation.-2 POINTS</u></p> <p><u>(2) An Appraisal Institute Form 820.05 "Residential Green and Energy Addendum" or Form 821 "Commercial Green and energy Efficient Addendum" that consider NGBS, LEED, ENERGY STAR certifications and equivalent programs, is completed for the appraiser by a qualified professional or builder to use in performing the valuation of the property.-2 POINTS</u></p> <p><u>(3) NGBS certification information or one of the Appraisal Institute Forms cited in (2) above is uploaded to a multiple listing service (MLS) or equivalent database so that appraisers can access it to compare property valuations.-2 POINTS</u></p>
Reason:	Increasing demand for NGBS and other certification programs requires getting the certification and data information on these high-performance homes to appraisals so they can recognize the added value of the green certified home or apartment above that of a code-built home.
TG Recommendation (AS or AM or D):	AS
Modification of Proposed Change:	
TG Reason:	TG agrees with the language
TG Vote:	1 st Kim, 2 nd Phil; Approved, Unanimous.

Chapter 11 Remodeling

P397	LogID 1509	11.1001.1 Building owner's manual is provided
Submitter:	Todd Jones, Center for Resource Solutions	
Requested Action:	Revise as follows	
Proposed Change:	Information on local available <u>Green-ecertified (or equivalent) utility green power programs or renewable electricity products, as well as information on how to find other certified renewable energy products using the Green-e website</u> utility programs that purchase a portion of energy from renewable energy providers.	
Reason:	(6) Many utilities will purchase a portion of energy of renewable energy providers. We recommend clarification of this requirement such that information is related to utility programs/products that deliver renewable energy to customers. We also recommend strengthening this requirement by requiring that this be information about renewable energy products/options available to the building, either from the local utility (e.g., differentiated renewable electricity/green power products/options) or competitive electricity suppliers (if in a deregulated region) or REC products that are available nationally. The Green-e website can be used to find green power options in your area. We also recommend that information be provided specifically about Green-e certified utility green power programs/products, competitive electricity products, and stand-alone REC products.	
TG Recommendation (AS or AM or D):	D (Hurst, Schwarzkopf)	
Modification of Proposed Change:		
TG Reason:	Avoid reference to proprietary programs and websites.	
TG Vote:	8 / 0 / 0	

P398	LogID 1510	11.1002.2 Operations manual
Submitter:	Todd Jones, Center for Resource Solutions	
Requested Action:	Revise as follows	
Proposed Change:	Information on opportunities to purchase <u>Green-ecertified (or equivalent) renewable energy from local utilities or national green power providers and information on utility and tax incentives for the installation on on-site renewable energy systems.</u>	
Reason:	(4) We recommend that information be provided specifically about Green-e certified utility and national green power products, to ensure that they are high quality and independently verified, The Green-e website is a good resource for finding local and national green power options.	
TG Recommendation (AS or AM or D):	D (Schwarkopf, Gay)	
Modification of Proposed Change:		
TG Reason:	In agreement with action taken on 1508 by TG-4 and this is a proprietary program/website.	
TG Vote:	7 / 0 / 0	

P399	LogID 6564	11.1002.4 Training of building owners
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Revise as follows	
Proposed Change:	<u>Mandatory 8 points</u>	
Reason:	"Mandatory" and "8 points" appears to have been overlooked when this section was added to Chapter 11, despite equivalent appearing in corresponding section 11.1001.2 for Single Family. Additionally, same suggestion for standard section 1002.4 in Chapter 10 was submitted, as minimum points "8" appears to have been inadvertently removed when submission for 2012 Protocol was submitted/revise. Not possible to achieve level beyond Bronze if additional points not provided in this section of Chapter 10.	

TG Recommendation (AS or AM or D):	Approve as Modified
Modification of Proposed Change:	11.1001.2 Should follow the points as reflected in 10.1001.2 11.1002.4 Should follow the points as reflected in 10.1002.4
TG Reason:	Mandatory items should not be rewarded with points.
TG Vote:	

P400 LogID 6434 11.1002.4 Training of building owners			
Submitter:	Aaron Gary, self		
Requested Action:	Revise as follows		
Proposed Change:	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%; padding: 5px;"> 11.1002.4 Training of building owners. Building owners are familiarized with the role of occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include: </td> <td style="width: 20%; text-align: center; vertical-align: middle;"> Mandatory 8 </td> </tr> </table>	11.1002.4 Training of building owners. Building owners are familiarized with the role of occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include:	Mandatory 8
11.1002.4 Training of building owners. Building owners are familiarized with the role of occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include:	Mandatory 8		
Reason:	Aligns with Measure 11.1001.2; In the development of the 2015 NGBS this measure was changed from being worth 8 point to being Mandatory. While making this mandatory is good, the loss of 8 points in Chapter 10 makes it extremely difficult for projects to achieve Gold or Emerald Certification.		
TG Recommendation (AS or AM or D):	D		
Modification of Proposed Change:	Mandatory can't get points? See 11.1002.2. Award points for non-mandatory items. Change philosophy for whole std. proposing same change across the board. No point threshold for remodeling.		
TG Reason:			
TG Vote:			

P401 LogID 6233 11.1003.1 Public Education (Signage, Certification Plaques, Education)	
Submitter:	Paul Gay, US-EcoLogic
Requested Action:	Add new as follows
Proposed Change:	<u>Host an annual group event that provides opportunity for discussion / input to better the suggestions in the OMBOE manual.</u>
Reason:	topics include recycling tips/energy / water saving tips and opens up discussion on these and related topics
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 10 – Proposal LogID 6232. The parallel proposal is being reviewed by this Task Group and TG-4 as Chapter 10 falls under their direct purview.</i>
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	N/A
TG Reason:	Reference LogID 6232 for reasoning
TG Vote:	13 Yes, 2 No

P402 LogID 6487 11.500.0 Intent (Remodeling: Lot design, preparation, and development)	
Submitter:	Steven Armstrong, self
Requested Action:	Add new as follows

Proposed Change:	Consider separate chapter for multifamily remodeling
Reason:	Brings more clarity to the verification process due to unique nature of multifamily remodel.
TG Recommendation (AS or AM or D):	NO ACTION
Modification of Proposed Change:	
TG Reason:	
TG Vote:	NO ACTION

P403	LogID 6436	11.501.2 Multi-modal transportation
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	ADD NEW OPTION TO 11.501.2 <u>(7) Employment Access: A site is selected in an area with a measured Jobs per Sq. Mi. of:</u> a) 10,000 - less than 25,000 - 3 POINTS b) 25,000 to less than 50,000 - 4 POINTS c) 50,000 to less than 100,000 - 5 POINTS d) 100,000 or more - 6 POINTS	
Reason:	Travel to and from work is a major source of carbon emissions. Locating housing near employment will significantly reduce the vehicle miles travelled of the average occupant. This metric can be accessed at: http://htaindex.cnt.org/	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	Awaiting recommendation from TG2. Does not apply to remodeling (shouldn't get points based on where your remodeling project is located or what sharing programs are in place).	
TG Reason:		
TG Vote:		

P404	LogID 6389	11.501.2 Multi-modal transportation
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>(8) Lot is within a community that has a Bike sharing program and where facilities for bike sharing are planned for and constructed. - 5 points</u> <u>(9) Lot is within a community that has a Car sharing program and where facilities for car sharing are planned for and constructed. - 5 points</u>	
Reason:	Based on existing practice in NGBS 2015 (405.6) and applied to a single lot versus entire land development. Communities that provide for shared bike and vehicle usage should be rewarded as this reduces the production of green-house gases in the same way as mass transit or bicycle use.	
TG Recommendation (AS or AM or D):	Approve as Modified	
Modification of Proposed Change:	(8) The remodel includes Lot is within a the new development and implementation of a community scale that has a bike sharing program and where facilities for bike sharing are planned for and constructed. - 35 points (9) The remodel includes the new development and implementation of a community scale Lot is within a community that has a car motorized vehicle sharing program and where facilities for car sharing are planned for and constructed. - 5 points	
TG Reason:	Awaiting recommendation from TG2. Does not apply to remodeling (shouldn't get points based on where your remodeling project is located or what sharing programs are in place).	
TG Vote:	(unanimous vote)	

P405	LogID 6548	11.503.3 Soil disturbance and erosion
Submitter:	Ben Edwards, self	
Requested Action:	Delete without substitution	
Proposed Change:	Delete only item (3) from section 11.503.3 Limits of new clearing and grading are demarcated on the lot plan.	
Reason:	This comment is intended to highlight a larger issue in this document: double counting. 11.504.3(2) awards 5 points for flagging the site under Lot Construction. 11.503.3(3) awards 5 points for the same action under Lot Design (points are awarded when "the intent of the design is implemented." While flagging a site is important, does the committee believe 10 points should be awarded for a fundamental construction practice? Further, 4 more points are awarded in 11.504.1 On-site Supervision and Coordination if someone watches the flagged clearing and grading. The potential for 14 points for a standard practice is not appropriate in an above-code document. Points should be awarded based on outcome, and should clearly indicate the relative weight in compliance. Note: Similar issues are found in Chapters 4 and 5, and the topic of soil disturbance is illustrative. Philosophically, if points are to be awarded for planning, construction, and verification, the greatest weight should be on verification.	
TG Recommendation (AS or AM or D):	AM (Evanko, Hurst)	
Modification of Proposed Change:	11.503.3 Soil disturbance and erosion... (1) Remodeling construction... 5 2 pts (2) The new utilities on the lot... 5 2 pts Limits of new clearing and... 5 2 pts	
TG Reason:	Task Group agrees that more points should be awarded for implementation and verification over design in this case. However, design is still important and should be at least minimally incentivized.	
TG Vote:	9 / 0 / 0	

P406	LogID 6390	11.503.4 Stormwater management
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>(5) Complete gutter and downspout system directs storm water away from foundation to landscaping or catchment system. - 8 points</u>	
Reason:	To direct rainwater away from the structure to prevent erosion and to protect the structure itself, and/or for rainwater capture	
TG Recommendation (AS or AM or D):	AS (Barrows, Evanko)	
Modification of Proposed Change:		
TG Reason:	This is already a code requirement and this will apply it retroactively to buildings built under issues of the code before 2018.	
TG Vote:	6-0-1	

P407	LogID 1516	11.503.4 Stormwater management
Submitter:	Heather Dylla, National Asphalt Pavement Association	
Requested Action:	Delete without substitution	
Proposed Change:	Permeable materials are used for driveways, parking area, walkways and patios according to the following percentages (a) Less than 25 percent — 2 (b) 20 — 50 percent — 5 (c) Greater than 50 percent — 10	
Reason:	Giving points specifically to permeable materials may encourage their use where they are not practical or not even the best solution for stormwater management. Their efficacy depends on site limitations such as soil permeability, depth to impermeable layers and water table, and topography. It is recommended that	

	permeable materials are evaluated together with all other low impact development practices (question 3) to encourage the best stormwater management solution.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Needs better language- permeable materials used where effective. TG2
TG Vote:	

P408	LogID 6239	11.503.5 Landscape plan
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	503.5 Landscape plan. A plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment. (Where "front" only or "rear" only plan is implemented, only half of the points (rounding down to a whole number) are awarded for Items (1)-(8)
Reason:	Remodels are more likely to improve their landscape using a design/build methodology which often skips the development of a formal plan during design. While this may not be best practice, the resulting verified installation should still receive full credit for the items that can still achieved without a design plan (i.e. 2-3,5-9).
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	View planning and execution as two discrete operations.
TG Vote:	(unanimous 8-0-0)

P409	LogID 6248	11.505.0 Intent (Innovative Practices)
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>11 505.XX</u> <u>Project has emergency plan in place to address relevant Natural Disasters</u>
Reason:	to ensure project is protected against relevant potential impact from natural hazards e.g. Floods/Earthquakes/Landslides/Hurricanes/Tornadoes/Dust Storms/Wildfires
TG Recommendation (AS or AM or D):	Approve as Modified
Modification of Proposed Change:	<u>Add to list in following sections:</u> <u>11.1001.1 & 11.1002.2</u> Project has a comprehensive emergency plan in place to address relevant Natural Disasters
TG Reason:	Clarity
TG Vote:	(unanimous)

P410	LogID 6382	11.505.4 Mixed-use development
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	Mixed Use Development: <u>(1)</u> The lot contains a mixed use building

	(2) Residential community contains a mixed use building (for Single Family homes only)
Reason:	Allows single family mixed use communities to be recognized for achieving the same goal.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	How can you have "mixed use" without retail space? Code conflict.
TG Vote:	

P411	LogID 6391	11.505.5 Community garden(s)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	505.5 Community garden(s). Provide local food production for residents <u>or area consumers through one of the following:</u> (1) A portion of the lot is established as a community garden(s), available to residents of the lot, to provide for local food production to residents or area consumers. (2) <u>Locate the project within a 0.5-mile walk distance of an existing or planned farmers market that is open or will operate at least once a week for at least five months of the year.</u>	
Reason:	Access to fresh produce offers healthy food options for residents, and purchase of fresh produce directly from farmers demystifies the cycle of food production. This measure also supports local economic development that increases the economic value and production of farmlands and community gardens. This revision creates a path for sites where the community garden is not feasible but the end-goal can still be met through site-selection.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6192. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Addition of a farmer's market would classify as a community resource gaining points from another section.	
TG Vote:	(unanimous vote)	

P412	LogID 6536	11.505.6 Multi-unit plug-in electric vehicle charging
Submitter:	Craig Conner, Building Quality	
Requested Action:	Revise as follows	
Proposed Change:	11.505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for at least <u>4-2</u> percent of parking stalls. <u>The number shall be rounded to the nearest even number, with odd numbers rounded up. Zero shall not earn points.</u> Electrical capacity in main electric panels supports Level 2 charging (208/240V-40 amp). Each stall is provided with conduit and wiring infrastructure from the electric panel to support Level 2 charging (208/240V-40 amp) service to the designated stalls, and stalls are equipped with either Level 2 charging AC grounded outlets (208/240V-40 amp) or Level 2 charging stations (240V/40A) by a third party charging station. <u>Charging stations and infrastructure shall be in accordance with Article 625 of the National Electrical Code.</u>	
Reason:	The number of stations is rounded to an even number because having 2 charging stations on a single post is often more economical. Article 625 of the NEC covers EV charging stations and their connection to the electrical supply.	

Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6535. The parallel proposal is being reviewed by this Task Group and TG-2 as Chapter 5 falls under their direct purview.</i>
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	N/A
TG Reason:	This modification is addressed in LogID 6152
TG Vote:	14 YES; 1 NO Vote

P413	LogID 6538	11.505.6 Multi-unit plug-in electric vehicle charging
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Submitter:	Chuck Foster, Charles R. Foster Associates
Requested Action:	Revise as follows
Proposed Change:	Plug-in electric vehicle charging capability is provided for at least 4 <u>3</u> percent of parking stalls.
Reason:	There are now over 577,000 plug-in electric vehicles (plug-in hybrids or battery electric vehicles) being driven in the US. All major manufacturers offer the vehicles for sale, and there are federal tax incentives, as well as state incentives, for their use. As of early 2016, there were over 12,200 public EV charging stations in the US. This proposal increases the percentage requirement from 1 to 3 percent (the original proposal that was discussed during the last NGBS revision was 5 percent), and adds clarify language if the calculation yields a value like 1.4 (in which case, they would have to install 2 EV charging stations).
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6537. The parallel proposal is being reviewed by this Task Group and TG-2 as Chapter 5 falls under their direct purview.</i>
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	N/A
TG Reason:	This modification is addressed in LogID 6152
TG Vote:	14 Yes; 1 No Vote

P414	LogID 6152	11.505.6 Multi-unit plug-in electric vehicle charging
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Submitter:	Steven Rosenstock, Edison Electric Institute
Requested Action:	Revise as follows
Proposed Change:	11.505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for at least 4 <u>2</u> percent of parking stalls. <u>Fractional values shall be rounded up to the nearest whole number.</u> Electrical capacity....
Reason:	There are now over 577,000 plug-in electric vehicles (plug-in hybrids or battery electric vehicles) being driven in the US. All major manufacturers offer the vehicles for sale, and there are federal tax incentives, as well as state incentives, for their use. As of early 2016, there were over 12,200 public EV charging stations in the US. This proposal increases the percentage requirement from 1 to 2 percent (the original proposal that was discussed during the last NGBS revision was 5 percent), and adds clarifying language if the calculation yields a value like 1.4 (in which case, they would have to install 2 EV charging stations).
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6151. The parallel proposal is being reviewed by this Task Group and TG-2 as Chapter 5 falls under their direct purview.</i>
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Reference LodID 6151 for modified language
TG Reason:	Reference LodID 6151

TG Vote:	14 Yes; 1 No Vote
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P415	LogID 6155	11.505.6 Multi-unit plug-in electric vehicle charging
Submitter:	Steven Rosenstock, Edison Electric Institute	
Requested Action:	Revise as follows	
Proposed Change:	...(208/240V-40 80 amp)... (208-240V/40 80A)	
Reason:	This proposal updates the specification match the current SAE information, as shown on the following web site and below: http://www.sae.org/smartgrid/chargingprimer.pdf "AC Level 2 Charging* – 208 –240 AC charging up to 80 amps, on-board vehicle charger (~19kw)"	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6156. The parallel proposal is being reviewed by this Task Group and TG-2 as Chapter 5 falls under their direct purview.</i>	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	See Log ID 6156 for modified language	
TG Reason:	See LogID 6156	
TG Vote:	14 Yes; 1 No Vote	

P416	LogID 6231	11.602.1.8 Water-resistive barrier
Submitter:	Paul Gay, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>Have 3rd Party Water Barrier / Window Leakage Test conducted and Passed per Industry standards</u>	
Reason:	passing a performance test will help ensure weather barrier is installed as intended /per design.....potentially heading off potential moisture /intrusion problems and associated costs	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6192. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Separate windows and WRBs. Reward testing. Reclaimed windows? TG3	
TG Vote:	(unanimous 5-0-0)	

P417	LogID 6309	11.605.2 Construction waste management plan
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.605.2Construction waste management plan. ...diverting, through methods such as reuse, salvage, recycling or manufacturer reclamation, a minimum of 50 percent (by weight) of nonhazardous construction and demolition materials, excluding land clearing waste, from disposal in landfills and combustion, excluding energy and material recovery. <u>For this practice, land clearing debris is not considered a construction anddemolition material and is excluded from the calculation.</u> Materials used as alternative daily cover are considered construction waste and do not countoward recycling or salvaging.</p> <p>Exceptions:</p>	

	Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations. 2) A recycling facility (traditional or E-Waste) offering material receipt documentation is not available within 50 miles of the jobsite.
Reason:	If the intent of the "Exceptions" section is to indicate specific circumstances when the practice does not apply, or to acknowledge situations when it cannot be met by the person seeking the points, then it is unclear why the first item is listed. How is stating "Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations," an Exception? We would argue this is an exclusion from the calculation, not an exception from the practice - due to some imposed practical difficulties - and as such, it is more appropriately emphasized in the language of the credit. Solution: Revise the body of the credit to more strongly emphasize that land clearing debris is excluded from the calculation. Delete the first item listed under Exceptions.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6300. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Approve as Modified
Modification of Proposed Change:	11.605.42 Construction waste management plan. ...diverting, through methods such as reuse, salvage, recycling or manufacturer reclamation, a minimum of 50 percent (by weight) of nonhazardous construction and demolition waste from disposal. For this practice, land clearing debris is not considered a construction waste. Materials used as alternative daily cover are considered construction waste and do not count toward recycling or salvaging. For remodeling projects or demolition of an existing facility, the waste management plan includes the recycling of 95 percent of electronic waste components (such as printed circuit boards from computers, building automation systems, HVAC, fire and security control boards) by an EPA certified E-Waste recycling facility. Exceptions: Waste materials generated from land clearing, soil and sub-grade excavation and all manner of vegetative debris shall not be in the calculations. A recycling facility (traditional or E-Waste) offering material receipt documentation is not available within 50 miles of the jobsite.
TG Reason:	Consistent with action on 6300
TG Vote:	(7-0-1)

P418	LogID 6235	11.605.3 On-site recycling
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>Multi Family Alternative to built in collection space - Management provides "blue box" recycling container or "blue Bins" and has designated recycling dumpsters onsite and /or contract with offsite sorting Recycling Facility</u>	
Reason:	provide alternative opportunity to encourage recycling to projects/tenants where space will prevent the built in option	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6234. The parallel proposal is being review by this Task Group and TG-3 Chapter 6 falls under their direct purview.</i>	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Modified per LogIn 6234	
TG Reason:	Similar to LogID 6234 -- NOTE: This should be under 11.607.1, not 11.605.3	

TG Vote:	14 Yes; 1 No Vote
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P419	LogID 6349	11.606.3 Manufacturing energy
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete without substitution	
Proposed Change:	11.606.3 Manufacturing energy. Materials are used for major components of the building that are manufactured using a minimum of 33 percent of the primary manufacturing process energy derived from renewable source, combustible waste sources, or renewable energy credits (RECs).	
Reason:	Use of the word 'materials' is does not promote use of this section for final products which could have multiple materials or assemblies and could be from various locations. An effective way to capture this information for products, or materials, would be through EPDs. EPDs are more widely recognized in the industry and easier for Standard user to obtain. Individually, these single-attributes have little bearing on the final impact and are becoming antiquated, so they are being replaced with EPDs. Because EPDs are already a part of this standard, the available 6 points that would be removed with this section could be added into Product Declarations.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6348. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:		
TG Reason:	EPDs in innovative practices already and in Chapter 6. Renewables! "Major components". See TG3 Contact Susan for background.	
TG Vote:		

P420	LogID 1511	11.606.3 Manufacturing energy
Submitter:	Todd Jones, Center for Resource Solutions	
Requested Action:	Revise as follows	
Proposed Change:	<p>Materials manufactured using <u>renewable energy</u> for a minimum of 33 percent of their primary manufacturing process energy. <u>Non-electric energy used in manufacturing materials must be derived from (1) renewable sources, or (2) combustible waste sources, or (3) renewable energy credits (RECs). Electricity used in manufacturing materials must be paired with renewable energy certificate (RECs), which must be retired. The building may purchase RECs on behalf of the building material supplier where the supplier has not purchase/used renewable electricity, with RECs, for manufacturing of building materials.</u></p> <p><u>Green-e certification (or equivalent) is requires [or recommended] for renewable electricity purchases and materials manufacturerd using renewable electricity.</u></p>	
Reason:	This requirement refers to renewable energy use in manufacturing of building materials, and therefore may refer to use of both electricity and non-electric energy in manufacturing. Currently, the options 1-3 are not differentiated as apply to either electricity or non-electric energy use. However, since RECs are required to claim use of renewable electricity in all cases, including from on-site renewable generation equipment, we suggest differentiating between electricity used in manufacturing, in which case RECs are required, and non-electricity energy used in manufacturing. It is also not clear that in option 3, RECs are being purchased by the building to be applied to the building materials, i.e. its supply chain, and not to the building's own electricity usage, and that RECs/RE may also be purchased or used by the supplier of the building materials. Finally, we recommend that Green-e certification be required, or at least recommended, to ensure that use of renewable electricity has been properly verified.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 1502. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to	

	remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Based on TG 3 action
TG Vote:	(unanimous)

P421	LogID 6311	11.608.1 Resource-efficient materials
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Submitter:	Susan Gitlin, US Environmental Protection Agency
Requested Action:	Revise as follows
Proposed Change:	<p>608.1 Resource-efficient materials. Products containing fewer materials are used to achieve same end-use requirements as conventional products, including but not limited to:</p> <p style="padding-left: 40px;"> (1) Lighter, thinner brick with depth less than 3 inches and/or brick with coring of more than 25 percent (2) (1) Engineered wood or engineered steel products (3) (2) Roof or floor trusses </p>
Reason:	Since engineered wood, engineered steel products and roof or floor trusses are incorporated intermittently in the façade, and/or entirely in the interior, their dematerialization is not likely to jeopardize the structure's overall energy efficiency. In fact, filling with insulation those spots in the exterior walls where the unneeded mass of structural elements would otherwise have been, reduces the thermal bridging associated with structural elements in exterior walls and improves the structure's energy efficiency. Conversely, the continuous dematerialization of a façade material, such as brick, may require an addition of more insulation to compensate for the loss of volume all along the perimeter, just to achieve comparable energy efficiency. A more accurate assessment of the benefits of the dematerialization of façade materials can possibly be made and if there are benefits, points can be captured through Life Cycle Assessments (11.610.1.1 and 11.610.1.2) that apply a material consumption impact category in addition to categories measuring energy-consumption impacts through the manufacturing, construction and use life-cycle stages.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6303. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	D (Hurst, Nard)
Modification of Proposed Change:	
TG Reason:	Consistent with action on item 6316
TG Vote:	9 / 0 / 0

P422	LogID 6338	11.609.1 Regional materials
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Submitter:	Cambria McLeod, Kohler
Requested Action:	Delete without substitution
Proposed Change:	<p>Regional materials. Regional materials are used for major and/or minor components of the building. (For a component to comply with this practice, a minimum of 75% of all products in that component category must be sourced regionally, e.g.; stone veneer category — 75 percent or more of the stone veneer on a project must be sources regionally.)</p>
Reason:	To increase use of the standard, reduce the complexity and remove these calculations. Regional material impacts are captured through EPDs, which are easier for the end user to locate and provide a much better indicator as they focus on the outcome of the various inputs. Individually, single-attributes have

	little bearing on the final impact so they are being replaced with EPDs. Because EPDs are already a part of this standard, the 10 points removed with this section could be added into the Product Declarations, Section 11.611.4, if the Standard was to keep the same number of threshold points.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6337. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Spelling - “sourced” not “sources”.
TG Vote:	

P423	LogID 6312	11.610.1 Life cycle assessment
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.610.1.1 Whole-building life cycle assessment. A whole-building LCA is performed in conformance with ASTM E2921 using ISO14044 compliant life cycle assessment.</p> <p>Execute LCA at the whole-building level through a comparative analysis between the final and reference building designs as set forth under Standard Practice, ASTM E2921. The assessment criteria include the following environmental impact categories:</p> <ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to Water</u> <p>...</p> <p>Execute full LCA, including <u>extraction and harvesting, manufacturing, construction, use and end-of-life phases</u>. For the use phase, calculate through calculation of operating energy impacts (c) – (f) using local or regional emissions factors from energy supplier, utility, or EPA. <u>For the use phase, also include impacts associated with material replacements.</u></p> <p>11.610.1.2.1 Product LCA. A product with improved environmental impact measures compared to another product(s) intended for the same use is selected. The environmental impact measures used in the assessment are selected from the following:</p> <ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to Water</u> <p>11.610.1.2.2 Building Assembly LCA. A building assembly with improved environmental impact measures compared to an alternative assembly of the same function is selected...</p>	

	<p>...The environmental impact measures used in the assessment are selected from the following:</p> <ol style="list-style-type: none"> Primary energy use Global warming potential Acidification potential Eutrophication potential Ozone depletion potential Smog potential <u>Material Use</u> <u>Waste</u> <u>Water Use</u> <u>Pollution Discharges to Water</u>
Reason:	Using less material and recovering more is crucial to our economic and environmental future. Material use and waste generation over the life cycle of a building should be modeled. In addition, the “full” life cycle assessment should include all life cycle phases, including manufacturing, construction, use and end-of-life phases. While the NGBS-proposed language for whole-building life cycle assessment emphasizes that the assessment should include the use phase, it omits mentioning the manufacturing, construction and end-of-life phases. Finally, the language for the whole-building use phase indicates that impacts related to energy use should be evaluated, but remains silent on the need to evaluate impacts associated with the replacement of materials. Solution: Add the material use and waste impact categories to the assessment criteria. Emphasize that the boundary of the assessment should include the manufacturing, construction and end-of-life phase. Emphasize that the assessment of the use phase should include the analysis of impacts associated with the replacement of materials.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6304. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Based on TG-3 action.
TG Vote:	(unanimous)

P424	LogID 6365	11.611.3 Universal design elements
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	(6) All sink faucet controls are single-handle controls of both volume and temperature, lavatory and showering controls shall have cross or lever handles.	
Reason:	The current language is design-limiting and also excludes other functional areas which could utilize universal design elements such as lavatories and showering areas. Cross and lever controls for all faucets and bathing/showering trim provide greater accessibility than controls with knob shapes. ADA and A117.1 allow center set, widespread and single handle controls.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6363. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:		
TG Reason:	Editorial – for control of both volume and temperature. What about digital controls?	
TG Vote:		

P425	LogID 6412	11.611.3 Universal design elements
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.611.3 Universal design elements. Dwelling incorporates one or more of the following universal design elements. Conventional industry construction tolerances are permitted.</p> <p><u>(1) High visibility address numbers at entrance to dwelling unit</u></p> <p><u>(2) Movement sensor light at entrance into dwelling unit</u></p> <p><u>(3) A sidelight or a peephole at 42 and 60 inches above the floor at entrance to dwelling unit</u></p> <p>RENUMBER SUBSEQUENT ITEMS</p>	
Reason:	Provide good overall lighting and house number for nighttime security and ease-of-use. Additional lowered peephole for seated or short adults and children. (Based on NC State University publication of universal design elements for residences.)	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6195. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Approve as Modified	
Modification of Proposed Change:	<p>11.611.3 Universal design elements. Dwelling incorporates one or more of the following universal design elements. Conventional industry construction tolerances are permitted.</p> <p><u>(1) Illuminated High visibility address numbers at entrance to dwelling unit. 1 Point</u></p> <p><u>(2) Movement sensor light at entrance into dwelling unit. 1 Point</u></p> <p><u>(3) A sidelight or a peephole at 42 and 60 inches above the floor at entrance to dwelling unit. 1 Point</u></p> <p>RENUMBER SUBSEQUENT ITEMS</p>	
TG Reason:	High visibility address identification is already required in the 2015 IRC: R319.1. The proposed revision (1) is less specific than what is currently required.	
TG Vote:	(unanimous 5-0-0)	

P426	LogID 17-091	11.701 Minimum energy efficiency requirements
Submitter:	Michael Jouaneh, Lutron Electronics	
Requested Action:	Modify chap 11 as follows	
Proposed Change:	Add 705.2 and 706 to remodeling chapter too for points.	
Reason:	These sections (705.2 and 706) apply to existing home remodeling too.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P427	LogID 6519	11.701.4.0 Minimum energy efficiency requirements
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	11.701.4.0 Minimum energy efficiency requirements. Additions, alterations, or renovations to an existing building, building system or portion thereof shall comply with the provisions of the International Energy Conservation Code-ICC IECC as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code standard . An addition complies with the <u>ICC IECC</u> if the addition complies or if the existing building and addition comply with the <u>ICC IECC</u> as a single building.
Reason:	Revising for clarity, and consistent reference to ICC IECC.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 11 – Proposal LogID 6526.</i>
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Additions, alterations, or renovations to an existing building, building system or portion thereof shall comply with the provisions of the International Energy Conservation Code <u>ICC IECC</u> as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code the <u>ICC IECC</u> . An addition complies with the <u>ICC IECC</u> if the addition complies or if the existing building and addition comply with the <u>ICC IECC</u> as a single building.
TG Reason:	Editorial change ICC. “Comply with the IECC” NGBS? IECC.
TG Vote:	Approved unanimous / disapproved 0 / abstain 0

P428	LogID 6450	11.701.4.0 Minimum energy efficiency requirements
Submitter:	Craig Conner, Building Quality	
Requested Action:	Revise as follows	
Proposed Change:	11.701.4.0 Minimum energy efficiency requirements. Additions, alterations, or renovations to an existing building, building system or portion there-of-thereof shall comply with the provisions of the International Energy Conservation Code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code. An addition complies with the IECC if the addition complies or if the existing building and addition comply with the IECC as a single building.	
Reason:	Correct the spelling. This change is editorial. This change should be under only the name of “Howard C. Wiig, State of Hawaii, representing self”	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	(unanimous vote)	

P429	LogID 6520	11.701.4.3.1 Building Thermal Envelope Air Sealing
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.701.4.3.1 Building thermal envelope air sealing. The building thermal envelope exposed or created during the remodel is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film or solid material:</p> <p>(g) Walls, and ceilings, and floors separating a garage from conditioned spaces from unconditioned space.</p> <p>(k) Rim joist junction. Joints of framing members at rim joists.</p> <p>(l) Top and bottom plates.</p> <p>(m) Other sources of infiltration.</p>	

Reason:	Suggest revising several of the items in the list to more thoroughly identify the locations where air sealing is required.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6505.</i>
TG Recommendation (AS or AM or D):	AS 1 st Amy, 2 nd Dorothy
Modification of Proposed Change:	
TG Reason:	Same as 6505
TG Vote:	9 Approve, 1 disapprove, 0 abstain

P430	LogID 6522	11.701.4.3.2 Air sealing and insulation
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	<p>11.701.4.3.2 Air barrier, air sealing, building envelope testing, and insulation. Grade II and III insulation installation is not permitted. Building envelope air barrier, air sealing, envelope tightness and insulation installation is verified to be in accordance with <u>this Section 11.701.4.3.2(1) and 11.701.4.3.2(2), and Section 11.701.4.3.2.1.</u></p> <p>11.701.4.3.2.1 Grade I insulation installations are Insulation installation. Field-installed insulation products to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, <u>except as specifically noted, are verified by a third-party</u> in accordance with the following: (1) Grading applies to field-installed insulation products. (2) Grading applies to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements and crawlspaces, except as specifically noted.</p> <p>Re-number items(3) through (11), and revise item (11)</p> <p>(11) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with the Grade 1 insulation installation requirements <u>this section.</u></p>
Reason:	Removing all mentions of “Grade” pertaining to insulation installation, as Grade is not defined or described in the standard. Also revising 11.701.4.3.2.1 to move the “what” and “where” specifics of the first two items into the charging language. Also, adding requirement insulation installation is verified by a third-party.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6507.</i>
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Make the same modifications as 6507
TG Reason:	Reason same as 6507
TG Vote:	Unanimous

P431	LogID 6521	11.701.4.3.2 Air sealing and insulation
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	<p>11.701.4.3.2 Air barrier, air sealing, building envelope testing, and insulation. Grade II and III insulation installation is not permitted. Building envelope air barrier, air sealing, envelope tightness and insulation installation is verified to be in accordance with <u>this Section 11.701.4.3.2(1) and 11.701.4.3.2(2), and Section 11.701.4.3.2.1.</u> Insulation installation other than Grade 1 is not permitted.</p>
Reason:	Removing the phrase regarding “Grade II and III” insulation installation as these are not defined, described, or referenced in the standard, and instead refer to “Grade I” which has requirements described

	in the standard. Revising the text to add explicit requirement to comply with the insulation installation requirements in Section 11.701.4.3.2.1.
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	
TG Vote:	Unanimous

P432	LogID 6364	11.701.4.3.2 Air sealing and insulation
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.701.4.3.2 Air sealing and insulation. Grade II and III insulation installation is not permitted <u>for newly installed insulation.</u> For the portions of the building envelope that are exposed or created during the remodel, the B-building envelope air tightness and insulation installation is verified to be in accordance with Section 11.701.4.3.2(1) and 11.701.4.3.2(2)...</p> <p>No other revisions.</p>	
Reason:	Existing language appears to mandate insulation grading in existing walls that are not being disturbed as part of the remodel. This revision aligns the section with NGBS 2015 12.701.4.3.2 language.	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	(unanimous vote)	

P433	LogID 6523	11.701.4.3.5 Recessed lighting
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.701.4.3.5 Recessed lighting Lighting in building thermal envelope. Newly installed recessed luminaires installed in the building thermal envelope are sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires <u>in the building thermal envelope</u> are IC-rated and labeled as meeting ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm(0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All recessed luminaires <u>in the building envelope</u> are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering.</p>	
Reason:	The vast majority of lighting luminaires are recessed in the building thermal envelope. However, the scope of the requirements of this section should apply to all lighting luminaires in the building thermal envelope, not just recessed lighting. With fast changing lighting technology, it's possible lighting luminaires will penetrate the building thermal envelope but not be considered recessed lighting. The revisions would apply to all lighting luminaires "in" the building thermal envelope, but would not apply to luminaires "on" the building thermal envelope. Consider, for example, ½" thick LED lighting panels which are installed in place of ½" drywall on the ceiling. These panels may not be considered recessed but clearly should be included in the requirements of this section	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6508.</i>	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:	Apply the change approved for the corresponding section for Chapter 7 (Item 6508) but retain the words "newly installed"	

TG Reason:	Based on the action of 6508.
TG Vote:	9-0-0

P434	LogID 6362	11.701.4.4 High-efficacy lighting
Submitter:	Aaron Gary, self	
Requested Action:	Revise as follows	
Proposed Change:	11.701.4.4 High-efficacy lighting. Newly installed L ighting efficacy in dwelling units is in accordance with one of the following: (1) A minimum of 75 percent of the total hard-wired lighting fixtures or the bulbs in those fixtures qualify as high efficacy or equivalent (2) Lighting power density, measured in watts/square foot, is 1.1 or less.	
Reason:	Current language mandates changing out existing lighting to meet this Mandatory item. Change aligns with other measures in Chapter 11 that only pertain to Newly Installed items. Calculating a lighting power density for newly installed lighting only does not make sense and hence option (2) should be removed.	
TG Recommendation (AS or AM or D):	Approve as Modified	
Modification of Proposed Change:	11.701.4.4 High-efficacy lighting. A minimum of 90 percent of newly installed <u>hard-wired lighting fixtures</u> L ighting efficacy in dwelling units is in accordance with one of the following: (1) A minimum of 75 percent of the total hard-wired lighting fixtures or the bulbs in those fixtures qualify as <u>shall be high efficacy, or equivalent</u> (2) Lighting power density, measured in watts/square foot, is 1.1 or less. [mandatory]	
TG Reason:	Change 75 to 90 since IECC 2018 will be 90.	
TG Vote:		

P435	LogID 6524	11.701.4.5 Boiler supply piping
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	11.701.4.5 Boiler supply piping. Boiler supply -piping in unconditioned space <u>supplying or returning heated water or steam</u> that is accessible during the remodel is insulated.	
Reason:	It seems this more clearly describes the intent of the requirements of this section.	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6509.</i>	
TG Recommendation (AS or AM or D):	Approve as modified	
Modification of Proposed Change:	11.701.4.5 Boiler supply-piping. Boiler supply -piping in unconditioned space <u>supplying or and returning heated water or steam</u> is insulated.	
TG Reason:	Improve energy savings of boiler systems	
TG Vote:	13-0-0	

P436	LogID 6369	11.901.2.1 Solid fuel-burning fireplaces, inserts, stoves, and heaters
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified or Phase 2 Qualified.	
Reason:	The EPA does not certify factory-built wood burning fireplaces so the first reference is nonsensical. Very few fireplaces meet the EPA Phase 2 Qualified requirements and thus they are exorbitantly priced compared to other similar fireplaces. The second reference as a Mandatory measure represents undue burden for projects and should be removed.	

Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6203. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	AM (Schwarzkopf, Nard)
Modification of Proposed Change:	(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are <u>an EPA certified or Phase 2 Emission Level Qualified Model</u> . 6 points
TG Reason:	Consistent with TG-3 action on item 6203
TG Vote:	7 / 0 / 0

P437	LogID 6566	11.901.2.1 Solid fuel-burning fireplaces, inserts, stoves, and heaters
Submitter:	Kat Benner, self / TexEnergy	
Requested Action:	Revise as follows	
Proposed Change:	(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified or Phase 2 Qualified <u>insulated, fire-blocked, sealed and gasketed</u> .	
Reason:	(Same revision was also submitted for standard Chapter 9 901.2.1): Mandating "EPA certified or Phase 2 Qualified" is extremely cost-prohibitive and thus nearly impossible. Recommend keeping the points and removing the Mandatory OR simply strike "EPA certified or Phase 2 Qualified". If the unit is insulated, fire-blocked, sealed and gasketed, this would be a reasonable requirement.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6561. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on LogID 6369	
TG Vote:	(unanimous 6-0-0)	

P438	LogID 6269	11.901.3 Garages
Submitter:	Paul Gay, self	
Requested Action:	Add new as follows	
Proposed Change:	11.901.3. X <u>Install CO detector/Monitor within 10 ft of Garage door (interior side)</u>	
Reason:	Points for going above Mandatory requirement. Easy / inexpensive health and safety measure	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6270. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Approve as Modified	
Modification of Proposed Change:	11.901.3. 12.1X <u>Unless already served by a CO detector/monitor required by code,Install an additional CO detector/Monitor within 10 ft of entry door to attached Garage door (interior side) – 1 point</u>	
TG Reason:	Carbon monoxide is more of a risk with attached garages and can be monitored more effectively by a monitor located near the source.	

TG Vote:	
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P439	LogID 6273	11.901.6 Carpets
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Submitter:	Paul Gay, self
Requested Action:	Revise as follows
Proposed Change:	(1) wall-to-wall No New Carpeting is not installed adjacent to water closets and bathing fixtures in half/full bathrooms, kitchens, utility/laundry rooms or within 3 ft of entries. XX Points if existing carpet in these areas is removed and replaced with hard flooring
Reason:	who wants soggy socks??!original language is behind current /typical standard building practice
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6275. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Approve (6-2-0)
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

P440	LogID 6371	11.901.6 Carpets
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	Carpets. Newly installed cCarpets are in accordance with the following: (1) Wall-to-wall carpeting is not installed adjacent to water closets and bathing fixtures.
Reason:	Existing language appears to mandate changing flooring in otherwise undisturbed areas. Adding "newly installed" aligns this mandatory requirement with the other Mandatory requirements in section 11.901.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on 6273
TG Vote:	(unanimous 8-0-0)

P441	LogID 6413	11.902.2.1 Whole building ventilation system
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of Appendix B ASHRAE 62.2 and an explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2. DELETE APPENDIX B
Reason:	As demonstrated during the NGBS 2015 Development Committee discussions , Appendix B, which includes only an excerpt of ASHRAE 62.2, does not adequately capture the depth or breadth of the Standard. Excerpting some of the calculations from 62.2 while leaving other out along with various

	exceptions results in more air being required to be delivered compared to if the whole Standard had been adopted.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6206. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	**Adopt other TG Recommendation**
Modification of Proposed Change:	
TG Reason:	No reason for difference between chapters.
TG Vote:	(Unanimous 5-0-0)

P442	LogID 6414	11.902.2.1 Whole building ventilation system
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	<p>11.902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of Appendix B <u>ASHRAE 62.2</u> and an explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2.</p> <p>(1) exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls - 3 Points</p> <p>(2) <u>(2) exhaust or supply fan(s) with automatic smart ventilation controls to limit ventilation during periods of extreme temperature and extreme humidity.</u> - 6 Points</p> <p>(2)(3) <u>balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building</u> - 6 Points</p> <p>(3)(4) <u>heat-recovery ventilator</u> - 7 Points</p> <p>(5) <u>balanced exhaust or supply fan(s) with automatic smart ventilation controls to limit ventilation during periods of extreme temperature and extreme humidity, and with intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back in to the building</u> - 8 Points</p> <p>(4)(6) <u>energy-recovery ventilator</u> - 8 Points</p>
Reason:	Initial research in this area, funded by the U.S. Department of Energy (U.S. DOE), investigated the proof-of-concept for smart ventilation and estimated typical ventilation energy savings of 40% (Turner and Walker 2012) or about 15% of total heating and cooling load, with savings increasing to more than 50% on average for economizer-equipped homes.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6207. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	**Adopt other TG Recommendation**
Modification of Proposed Change:	
TG Reason:	No reason for difference between chapters.
TG Vote:	(Unanimous 5-0-0)

P443	LogID 6415	11.902.2.2 Whole building ventilation airflow is tested
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Submitter:	Aaron Gary, US-EcoLogic
Requested Action:	Revise as follows
Proposed Change:	<u>902.2.2</u> Ventilation airflow is tested to achieve the design fan airflow at point of exhaust in accordance with <u>ANSI/RESNET/ICC 380</u> and Section 902.2.1

Reason:	Not all ventilation systems can be tested at the point of exhaust and for many doing so while possible is not accurate. ANSI/RESNET/ICC 380 is an ICC approved Standard that includes guidelines for testing ventilation airflow at multiple locations, including the point of exhaust, so that the most appropriate and accurate means can be selected by the 3rd party verifier.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6205. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Approve as Modified
Modification of Proposed Change:	... the design fan airflow <u>at point of exhaust or</u> in accordance with ANSI/RESNET/ICC 380 and Section 902.2.1.
TG Reason:	Adds the desired flexibility without adding new restrictions.
TG Vote:	(unanimous 5-0-0)

P444	LogID 6416	11.902.6 Living space contaminants
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.902.6 Living space contaminants. Indoor contaminants are limited through the following:</p> <p><u>(1) The living space is sealed in accordance with Section 701.4.3.1 to prevent unwanted contaminants. - MANDATORY</u></p> <p><u>(2) A permanent shoe removal and storage space is implemented near the primary entryway. This space may not have wall-to-wall carpeting. - 3 POINTS</u></p>	
Reason:	A majority of the dirt and dust in homes is tracked in by occupants. One of the most effective ways to reducing these indoor contaminants therefore is to encourage occupants and visitors to remove shoes at the door.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6209. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Approve as Modified	
Modification of Proposed Change:	<p>11.902.6 1.13 Living space contaminants. Indoor contaminants are limited through the following:</p> <p><u>(1) The living space is sealed in accordance with Section 701.4.3.1 to prevent unwanted contaminants. - MANDATORY</u></p> <p><u>(2) A permanent shoe removal and storage space is implemented near the primary entryway. This space may not have wall-to-wall carpeting. - 3 POINTS</u></p>	
TG Reason:	Shoe removal and storage can provide additional containment control beyond grilles and mats.	
TG Vote:		

P445	LogID 6425	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<p>11.905.X Outdoor Living. Meet any or all of the following:</p> <p><u>(1) Built-in outdoor kitchen (4 points)</u></p> <p><u>(2) Built-in outdoor fireplace (no indoor fireplace installed) (3 points)</u></p> <p><u>(3) Plumbed outdoor shower (3 points)</u></p>	

	<p>(4) Covered, usable front porch protecting entry door Minimum depth: 6'; minimum area: 100 sq. ft. (3 points)</p> <p>(5) Covered, usable porch other than front porch Minimum side dimension: 6'; minimum area 100 sq. ft. One of the above porches fully screened (2 points)</p> <p>(6) Uncovered patio Minimum side dimension: 6'; minimum area: 100 sq. ft. (1 point)</p>
Reason:	To reduce sources of indoor heat and humidity and associated indoor air quality issues by encouraging occupants to take advantage of outdoor living. Could fit in with other Health and Wellness credits to form a new section.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6427. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Items on the list are either covered in other sections, or not inherently green as they require additional resources with potentially minimal gains.
TG Vote:	(unanimous vote)

P446	LogID 6493	Other for Chapter 11 (include section and title below)
Submitter:		Jeremy Velasquez, TexEnergy Solutions
Requested Action:		Add new as follows
Proposed Change:		Section 11-906 - Add a new section as relevant for health and well-being credits.
Reason:		As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.
Parallel Proposal Staff Note:		A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6356. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):		Disapprove -
Modification of Proposed Change:		
TG Reason:		
TG Vote:		unanimous

P447	LogID 6422	Other for Chapter 11 (include section and title below)
Submitter:		Aaron Gary, US-EcoLogic
Requested Action:		Add new as follows
Proposed Change:		11.905.X Access to daylight. To promote health and well being of occupants the following measures are implemented: (1) 75% of regularly occupiable spaces have windows, skylights, or glass doors. - 3 POINTS (2) 75% of regularly occupiable spaces have direct line of sight views to the outdoors. - 3 POINTS
Reason:		Studies have shown that access to outdoor light and views increase health and productivity of building occupants.
Parallel Proposal Staff Note:		A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6355. The parallel proposal is being reviewed by TG-3. TG-7 should review the

	recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	
TG Vote:	(unanimous 7-0-0)

P448	LogID 6430	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	ADD NEW SECTION 11.902.2.3 Factory-built, wood-burning fireplaces are EPA Phase 2 Qualified. - 6 points	
Reason:	Very few fireplaces meet the EPA Phase 2 Qualified requirements and thus they are exorbitantly priced compared to other similar fireplaces. This measure should be moved from being a Mandatory items to an optional credit.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6429. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	D (Hurst, Schwarzkopf)	
Modification of Proposed Change:		
TG Reason:	To be consistent with action on 6369	
TG Vote:	6 / 0 / 1	

P449	LogID 6421	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	11.902.2.X Whole building ventilation system in installed with a automatic notification device to communicate performance degradation or failure. - 6 points	
Reason:	2015 FSEC study (FSEC-CR-2002-15) showed a wide disconnect between the perceived and actual effectiveness of whole building ventilation systems in homes. The study found that of the homes surveyed only 5% of homes had a whole building ventilation system that was actually delivering the expected air as found while at the same time 48% of these same homeowners said they were happy with the performance of their whole building ventilation system. Existing and emerging technologies that can help address this disconnect should be well rewarded. The installation of non-performing ventilation systems both wastes resources and degrades the value of green building in the marketplace.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6418. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		

TG Reason:	The points are too high for this provision. It's not clear to the members that this technology is commercially available. The proposal is too vague and may allow options that do not perform as intended – specifically differentiating between performance degradation and total failure.
TG Vote:	(unanimous 5-0-0)

P450	LogID 6423	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	ADD SECTION 11.902.2.7 Preoccupancy flush. Dwelling is flushed with outdoor air for 48 hours prior to occupancy.	
Reason:	During the construction process dwellings become contaminated with dust, debris and off-gassing from materials. Flushing the dwelling with outdoor air prior to occupancy helps remove these potentially harmful pollutants from the space.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6424. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Approve as Modified	
Modification of Proposed Change:	902.2.7 Preoccupancy flush. Dwelling is flushed with outdoor air at the highest rate practical for 48 hours prior to occupancy with all HVAC fans and exhaust fans operating continuously at the highest flow rate. All HVAC filters are changed post flush. & 11.902.2.7 Preoccupancy flush. Dwelling is flushed with outdoor air for 48 hours prior to occupancy with all HVAC fans and exhaust fans operating continuously at the highest flow rate. All HVAC filters are changed post flush.	
TG Reason:		
TG Vote:	(unanimous 5-0-0)	

P451	LogID 6409	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	505.12 Local Economic Development and Community Wealth Creation: <u>(1) Demonstrate that local preference for construction employment and subcontractor hiring was part of your bidding process - 3 POINTS</u> <u>(2) Demonstrate that you achieved at least 20% local employment - 4 POINTS</u> <u>(3) Provide physical space for small business, nonprofits, and/or skills and workforce education. - 5 POINTS</u>	
Reason:	Housing often has the opportunity to act as an economic catalyst within a neighborhood and community. Housing projects offer opportunities to directly enhance the lives of residents when they include physical space that can accommodate various programs for learning, job skill development and other social interactions. Numerous studies have documented the ways in which affordable housing projects have positive economic impacts on their surrounding neighborhoods.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6179. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	

Modification of Proposed Change:	
TG Reason:	As written there are issues with enforceability / provability of the provisions. There are also unintended consequences like builders in rural areas that want to educate inner-city people being unable to get the points because it's not local labor. There's also a questions about the applicability of these provisions to remodeling as opposed to new construction.
TG Vote:	(unanimous 7-0-0)

P452	LogID 6411	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	ADD NEW SECTION <u>11.505.X Building Orientation.</u> Lot is part of a community where a minimum if 75% of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south. - 6 points	
Reason:	Takes existing NGBS 2015 practice, 403.2, and applies it to a lot.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6324. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Consistent with action on 6324	
TG Vote:	(unanimous 8-0-0)	

P453	LogID 6406	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	ADD NEW SECTION <u>505.X Open Space:</u> Lot is within a community that has 1 acre or greater set aside as open space.	
Reason:	Based on NGBS 2015 405.9 and applied to a single lot versus entire land development	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6177. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Defer to TG-2's recommendation Disapprove	
Modification of Proposed Change:		
TG Reason:	How relevant is the new section to remodeling?	
TG Vote:	(unanimous)	

P454	LogID 6407	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	

Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION <u>505.X Community Recycling Program: Lot is within a community that has a recycling program. - 5 POINTS</u>
Reason:	Promotes recycling on a community level as a means to align with practice 11.607 which does the same on the house level. Being able to collect recycling in a homes when you have no place to take it is aspirational but not particularly effective
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6326. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	No definition of how the community recycling program would work. A building cannot receive credit for a community recycling program.
TG Vote:	(unanimous 8-0-0)

P455	LogID 6408	Other for Chapter 11 (include section and title below)
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Submitter:	Aaron Gary, US-EcoLogic
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION <u>505.X District Heating and Cooling: Lot is within a community that has a district heating and/or cooling system.</u>
Reason:	District cooling and heating can be very efficient as it removes the need for building specific space heating systems, space cooling systems, and/or domestic water heating systems.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6178. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	There are unintended consequences to this proposal. Just because you have district heating and cooling doesn't mean that it's efficient.
TG Vote:	(unanimous 8-0-0)

P456	LogID 6410	Other for Chapter 11 (include section and title below)
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Submitter:	Aaron Gary, US-EcoLogic
Requested Action:	Add new as follows
Proposed Change:	ADD NEW SECTION <u>505.13 Community Design for Cross Ventilation:</u>

	Lot is within a community located in a hot, humid climate where <u>75% of streets are within 20-30 degrees either direction of parallel to the prevailing wind.</u> - 5 POINTS
Reason:	In hot, humid climate good ventilation is necessary to remove excess heat from streets and open spaces and to provide cross-ventilation in buildings. Streets parallel to the prevailing wind have the highest velocity while streets perpendicular to the prevailing wind yield lower velocity and more turbulent wind in the streets.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6321. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	D (Hurst, Evanko)
Modification of Proposed Change:	
TG Reason:	Does not apply to remodels.
TG Vote:	6-0-0

P457	LogID 6435	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>11.1005.1 Appraisals. One or more of the following is implemented.</u> <u>(1) Energy rating data is posted to publicly accessible database so that appraisers can access it for performing "green" property valuations.</u> - 2 POINTS <u>(2) Green certification data is provided so that appraisers can access it for performing "green" property valuations.</u> - 2 POINTS	
Reason:	The real key to increasing demand for high-performance homes is getting the information to home appraisers in such a way that they can recognize the increased value of the green certified home above that of a conventionally built home.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 10 – Proposal LogID 6291. The parallel proposal is being reviewed by TG-4. TG-7 should review the recommendation of TG-4 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-4 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Approve as Mod (unanimous vote) – original Disapprove –	
Modification of Proposed Change:	<u>11.1005.1 Appraisals. One or more of the following is implemented.</u> <u>(1) Energy rating data is posted to publicly accessible database so that appraisers can access it for performing "green" property valuations.</u> - 12 POINTS <u>(2) Green certification data is provided so that appraisers can access it for performing "green" property valuations.</u> - 12 POINTS	
TG Reason:	Action was changed based on TG 4 action. Did not want this practice to be located only in the remodeling section. Agreed with the inclusion, but should be included in all appropriate sections, not just remodeling.	
TG Vote:	(unanimous – 1 abstention)	

P458	LogID 6441	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>ADD NEW SECTION</u>	

	11.611.X Resilient Construction. Buildings are designed to withstand severe weather per Table 611.X																
	Table 611.3 Fortified Home Technical Requirements Level																
	<table border="1"> <thead> <tr> <th></th> <th>Points for Bronze</th> <th>Points for Silver</th> <th>Points for Gold</th> </tr> </thead> <tbody> <tr> <td>(1) Fortified Home Hurricane Technical Requirements</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>(2) Fortified Home High Wind Technical Requirements</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>(1) Fortified Home High Wind & Hail Bronze Technical Requirements</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>		Points for Bronze	Points for Silver	Points for Gold	(1) Fortified Home Hurricane Technical Requirements	X	X	X	(2) Fortified Home High Wind Technical Requirements	X	X	X	(1) Fortified Home High Wind & Hail Bronze Technical Requirements	X	X	X
	Points for Bronze	Points for Silver	Points for Gold														
(1) Fortified Home Hurricane Technical Requirements	X	X	X														
(2) Fortified Home High Wind Technical Requirements	X	X	X														
(1) Fortified Home High Wind & Hail Bronze Technical Requirements	X	X	X														
Reason:	Rebuilding homes after severe weather is costly in terms of time, money, and materials. This green building standard should recognize projects that build resiliently.																
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6442. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.																
TG Recommendation (AS or AM or D):	Disapprove																
Modification of Proposed Change:																	
TG Reason:	TG submitted additional proposed changes on topic.																
TG Vote:	(unanimous)																

P459	LogID 6525	Other for Chapter 11 (include section and title below)
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Add new as follows	
Proposed Change:	11.706 Innovative Practices 11.706.1 Ducts in conditioned space. In climate zones 1-4, heating system and cooling system ducts are located in conditioned space. Points = TBD 11.706.2 Insulated basement and crawl space. In climate zones 4-8, basement and crawl space are insulated as required by the ICC IECC. Points = TBD	
Reason:	In cooling dominated climate zones, where basements or crawl spaces are rarely constructed, moving or placing heating and cooling system ducts within (insulated) conditioned space improves the efficiency of the heating / cooling system. In heating dominated climate zones, where basements or crawl spaces are common, insulating those spaces as required by the ICC IECC improves energy efficiency significantly.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6515. The parallel proposal is being reviewed by TG-5. TG-7 should review the recommendation of TG-5 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-5 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	D (Evanko, Schwarzkopf)	
Modification of Proposed Change:		
TG Reason:	These energy efficiency measures are already covered in efficiency improvements table 305.3.5	
TG Vote:	7 / 0 / 1	

P460	LogID 6375	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	11.505.X Street Network: Locate the project in an area of high intersection density. - 5 POINTS	
Reason:	This credit encourages health and well being of home owners and tenants on by encouraging daily physical activity. It has the added benefits of promoting projects that are well connected to the community at large as well as encourage development within existing communities that minimizes vehicle miles traveled.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6345. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Approve as Modified	
Modification of Proposed Change:	11.505.X Street Network: <u>Project is Llocated the project in an area of high intersection density. - 5 POINTS</u> <u>INSERT definition in Section 201.</u> <u>Area of High Intersection Density. An area whose existing streets and sidewalks create at least 90 intersections per square mile (35 intersections per square kilometer).</u> <u>INSERT into Verifier Resource Guide...</u> <u>When determining the number of intersections, include the following: intersections within a ¼ mile (400 meter) radius of project boundary; streets and sidewalks that are available for general public use and not gated; sidewalk intersections provided they are a unique right of way (i.e., a sidewalk through a city park); and publicly accessible alleys.</u>	
TG Reason:	Consistent with action on 6345	
TG Vote:	(unanimous 7-0-0)	

P461	LogID 6428	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	11.902.2.X All HVAC filter locations are designed such that they are easily accessible to the occupant. - 3 POINTS	
Reason:	HVAC filters do not get changed when they are not accessible reducing the air quality and energy efficiency of the HVAC system and eventually leading to system failure.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6419. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	AM (Evanko, Gay)	
Modification of Proposed Change:	11.902.2.X All HVAC filter locations are designed such that they are easily <u>readily</u> accessible to the occupant. - 3 POINTS Add new definition: <u>readily accessible: capable of being quickly and easily reached for operation, maintenance, and inspection.</u>	
TG Reason:	ASHRAE 62.2 includes a definition of "readily accessible" which is appropriate to utilize, such that this practice can be encouraged	

TG Vote:	9 / 0 / 0
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P462	LogID 6417	Other for Chapter 11 (include section and title below)
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<p>ADD NEW SECTION</p> <p>904.3 Indoor Air Quality Metric. Dwelling receives a IAQ score using the DOE IAQ Metric of X. (threshold TBD)</p>	
Reason:	Recognize and encourage the adoption of the new DOE sponsored IAQ metric for indoor air quality.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6294. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	The metric has yet to be established. DOE is currently working with various partners to establish the threshold. Not measurable.	
TG Vote:		

P463	LogID 6310	Other for Chapter 11 (include section and title below)
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Add new as follows	
Proposed Change:	<p>11.608.2Design for Adaptation and Disassembly. <u>For siding, windows, mechanical/electrical/plumbing (MEP) systems, wall paneling and flooring materials, incorporate three or more of the following measures, as applicable:</u> <u>Use reusable/recyclable materials. For example:</u></p> <ul style="list-style-type: none"> o <u>Use materials and fixtures for which take-back or reuse/recycling programs are established.</u> o <u>Use high-quality materials that exceed minimum performance standards.</u> o <u>Avoid use of coatings or adhesives that prevent reuse and recycling.</u> <p><u>Promote disentanglement of building components. For example:</u></p> <ul style="list-style-type: none"> o <u>To limit the destruction of the surrounding materials, incorporate installation details that permit easy removal and replacement of components.</u> o <u>Consolidate placement of MEP components in building floorplans and cross-sections.</u> <p><u>Provide access to and use reversible connections, such as screws, bolts, or clips.</u></p> <p><input type="checkbox"/> <u>Provide disassembly and reuse information to owner.</u></p>	
Reason:	Section 11.608 currently includes a single subsection encouraging the dematerialization of building components. The Design for Adaptation and Disassembly is similarly, an upstream strategy to improve resource efficiency and therefore, fits with the upstream, resource-efficiency focus of this section. The Design for Adaptation and Disassembly involves the utilization of recyclable/reusable building materials and preserves resources by maximizing their recovery and ensuring their continuous reutilization.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6302. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		

TG Reason:	Consistent with action on 6315
TG Vote:	(unanimous 7-0-0)

P464	LogID 6331	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	2012 commentary has good info. Include an edited version.	
Reason:	the 2012 commentary provides short but helpful guidance for implementation. it makes sense to include this information upfront and center in the working standard not buried in another book	
TG Recommendation (AS or AM or D):	Withdrawn by proponent	
Modification of Proposed Change:	Disapprove	
TG Reason:	Too much work for this revision of the standard. Withdrawn by proponent.	
TG Vote:	(unanimous 9-0-0)	

P465	LogID 6332	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	<u>Create a new and separate Multi Family Remodel Chapter</u>	
Reason:	Create a Phased Existing Building pathway to certification e.g a Project is undergoing a phased unit by unit remodel	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	N/A	
TG Reason:	Home Innovation is considering administrative changes to provide more clarity through the multifamily remodeling verification process	
TG Vote:	15 Yes	

P466	LogID 6313	Other for Chapter 11 (include section and title below)
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	<p>11.1001.1Homeowner’s manual. A homeowner’s manual is provided and stored in a permanent location in the dwelling that includes the following, as available and applicable...</p> <p>...</p> <p>(25) Retrofit energy calculator that provides baseline for future energy retrofits.</p> <p><u>(26) Disassembly plan with as-built drawings and information about the method of disassembly for major components; and material selection for recycling/reuse.</u></p> <p>11.1001.2Training of initial building homeowners. Initial homeowners are familiarized with <u>their role and</u> the role of occupants in achieving green goals. Training is provided to the responsible party(ies)regarding newly installed equipment changes in building operation and maintenance, including newly installed equipment operation and building material replacement, and regarding occupant actions that will improve the environmental performance of the building. These include, <u>as applicable</u>...</p> <p>...</p> <p>(7) Recycling and composting practices.</p>	

	<u>(8) Disassembly methods for building components, material suitability for recycling and reuse, replacement with other recyclable/reusable materials.</u>
Reason:	Design for Adaptation and Disassembly involves the utilization of recyclable/reusable building materials and preserves resources by maximizing building-material recovery. A disassembly plan and building-owner training on the disassembly methods and reuse/recycling properties of the major building components, facilitate disassembly and appropriate material management, and help realize the intent and benefits of the Design for Adaptation and Disassembly measures. Solution: Add Disassembly Plan as an additional item to be provided to homeowner, as applicable. Include training on disassembly methods and building material reuse/recycling properties as an additional training for parties responsible for building maintenance and operation, including replacement of building materials.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 10 – Proposal LogID 6307. The parallel proposal is being reviewed by TG-4. TG-7 should review the recommendation of TG-4 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-4 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	It is unclear how this proposal would apply to an existing building
TG Vote:	(unanimous 8-0-0)

P467	LogID 6314	Other for Chapter 11 (include section and title below)
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Submitter:	Susan Gitlin, US Environmental Protection Agency
Requested Action:	Revise as follows
Proposed Change:	<p>11.1002.1Building construction manual. A building construction manual, including five or more of the following, is compiled and distributed...</p> <p>...</p> <p>(8) A photo record of framing with utilities installed. Photos are taken prior to installing insulation and clearly labeled.</p> <p><u>(9) Disassembly plan with as-built drawings and information about the method of disassembly for major components; and material selection for recycling/reuse.</u></p> <p>11.1002.3Maintenance manual. Maintenance manuals are created and distributed to the responsible parties in accordance with Section 1002.0. Between all of the maintenance manuals, five or more of the following options are included...</p> <p>...</p> <p>(10) A green cleaning plan which includes guidance on sustainable cleaning products.</p> <p><u>(11) For use during building component maintenance and replacement, a disassembly plan with as-built drawings and information about the method of disassembly for major components; and material selection for recycling/reuse.</u></p> <p>11.1002.4Training of building owners. Building owners are familiarized with the roles of operations and maintenance staff and occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding newly installed equipment changes in building operation and maintenance, including newly installed equipment operation, control systems and building material replacement and regarding occupant actions that will improve the environmental performance of the building. These include, as applicable...</p> <p>...</p> <p>(7) Recycling and composting practices.</p> <p><u>(8) Disassembly methods for building components, material suitability for recycling and reuse, replacement with other recyclable/reusable materials.</u></p>
Reason:	Design for Adaptation and Disassembly involves the utilization of recyclable/reusable building materials and preserves resources by maximizing building-material recovery. A disassembly plan and building-owner training on the disassembly methods and reuse/recycling properties of the major building components, facilitate disassembly and appropriate material management, and help realize the intent and benefits of the Design for Adaptation and Disassembly measures. Solution: Add Disassembly Plan as an

	additional item to be provided to building owners and parties responsible for operations and maintenance. Include training on disassembly methods and building material reuse/recycling properties as an additional training for parties responsible for building maintenance and operation, including replacement of building materials.
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 10 – Proposal LogID 6308. The parallel proposal is being reviewed by TG-4. TG-7 should review the recommendation of TG-4 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-4 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	It is unclear how this proposal would apply to an existing building
TG Vote:	(unanimous 7-0-0)

P468	LogID 6263	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	<u>Projects that are exempt from Mandatory Practices earn points if measure is done</u>	
Reason:	precedent set ...see 705.6.2.1 and 705.6.2.3 a project that is exempt from Blower door /Duct test is awarded points if they are done	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P469	LogID 6267	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>11 .902.6.X</u> <u>MF Compartmentalization</u> <u>Breaks or Joints thru the residential</u> <u>unit envelope shall be</u> <u>sealed includes but not limited to</u> <u>HVAC boots sealed to sheetrock / sub</u> <u>floor, Fan casings</u>	
Reason:	new credit awards points to Encourage additional air sealing/compartmentalization	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6268. The parallel proposal is being reviewed by TG-3 as Chapter 9 falls under their direct purview and by TG-6 as the proposal will affect multifamily buildings.</i>	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	N/A	
TG Reason:	See LogID 6268	
TG Vote:	14 Yes, 1 No Vote	

P470	LogID 6259	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>Create an entire new chapter for MF Units Where applicable remove all restrictive i.e "all units" language</u>	
Reason:	basis for new MF unit section or chapter is to provide a building with a gradual ...phased.... pathway toward certification. removing "all Units" or similar language will avoid confusion if some units are certified ahead of other units not yet retrofitted	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	N/A	
TG Reason:	Home Innovation is considering administrative changes to provide more clarity through the multifamily remodeling verification process	
TG Vote:	15 Yes	

P471	LogID 6262	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, self	
Requested Action:	Revise as follows	
Proposed Change:	<u>Add Innovative credits/trade off</u>	
Reason:	Provide opportunity for innovative practices to be rewarded	
TG Recommendation (AS or AM or D):	Disapprove (unanimous 5-0-0)	
Modification of Proposed Change:		
TG Reason:	Not enough information provided to approve.	
TG Vote:		

P472	LogID 6245	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>11.XXX.XX</u> <u>Create Remodel Innovative Practice Section</u>	
Reason:	encourage program participation and remodel specific solutions	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Not enough information provided to approve.	
TG Vote:	(unanimous 5-0-0)	

P473	LogID 6558	Other for Chapter 11 (include section and title below)
Submitter:	Kat Benner, US-EcoLogic / TexEnergy	
Requested Action:	Add new as follows	

Proposed Change:	HEALTH AND WELL BEING (...prior to each sub-section of INNOVATIVE PRACTICES: 11.405, 11.505, 11.611, 11.706, 11.802, 11.905, 11.1005)
Reason:	To include a new sub-section within each chapter of the Protocol, as relevant, immediately preceding (or after) Innovative Practices section, to address health and well being issues that are interconnected to the overall Green certification, but independent/optional, not required. This opens the program to reach lifestyle and living for overall occupant health.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Not enough detail provided
TG Vote:	(unanimous 9-0-0)

P474	LogID 6569	Other for Chapter 11 (include section and title below)
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Submitter:	Kat Benner, US-EcoLogic / TexEnergy
Requested Action:	Revise as follows
Proposed Change:	11.801.6.3 Mandatory <u>6 points</u>
Reason:	(Note: Water Chapter 8 was missing from drop-down options on Chapter 11 online revisions? Thus, hand-typing Title) (Note 2: Same Revision below was submitted for corresponding standard Chapter 8 801.6.3, fyi) Reason for revision: Requiring WaterSense labeling, plan, and certified staff to install is impossible in many areas of the country, especially those further from large metropolitan areas, as WaterSense certified professionals are simply not available nor within any range to install or implement materials. Thus, also cost-prohibitive or simply impossible. Additionally, no equivalent program currently exists. Suggest removing Mandatory and instead leave measure, but suggest with 6 points awarded vs. Mandatory.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	There currently is no section 11.801 in standard.
TG Vote:	(unanimous 9-0-0)

P475	LogID 6494	Other for Chapter 11 (include section and title below)
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Submitter:	Jeremy Velasquez, TexEnergy Solutions
Requested Action:	Add new as follows
Proposed Change:	<u>Section 11.906.1 - Isolation of remodeled areas. To prevent contamination of unrenovated spaces, meet one of the following two options:</u> <u>(1) Remodeled space is isolated from unrenovated space by masking of openings and/or providing strip doors. 1</u> <u>(2) Remodeled space is isolated from unrenovated space by masking of openings and/or providing strip doors and the space is either negatively pressurized by ducting exhaust to the exterior OR a HEPA filtration system is installed. 2</u>
Reason:	Air quality should be maintained in spaces that are being occupied while renovations are happening in other areas of the building.

TG Recommendation (AS or AM or D):	Approve as Mod
Modification of Proposed Change:	<p>Section 11.906.15.X - Isolation of remodeled areas. To prevent contamination of unrenovated spaces, meet one of the following two options: Max 3 points</p> <p>(1) Remodeled space is isolated from unrenovated space by masking of openings and hvac returns and/or providing strip doors. 1</p> <p>(2) Remodeled space is isolated from unrenovated space by masking of openings and hvac returns, and/or providing strip doors and the space is either negatively pressurized by ducting exhaust to the exterior OR a HEPA filtration system is installed. 2 3</p> <p>(3) Remodeled space is isolated from unrenovated space by masking of openings and hvac returns, and providing strip doors and a dedicated HEPA filtration system is installed. 3</p> <p><u>Add definition of "Strip Door"</u></p>
TG Reason:	Great idea, added clarification and revised points.
TG Vote:	

P476	LogID 6498	Other for Chapter 11 (include section and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	<p>New Section</p> <p>Section 11.505.7 - Pest Control - Meet one or more of the following:</p> <p>(1) Containers and garbage cans are sealed and storage of household materials outside is minimized. 1</p> <p>(2) Pest Inspection is performed by certified pest control professional. 1</p>	
Reason:	In some areas, pests can become an issue if trash and storage isn't properly secured.	
TG Recommendation (AS or AM or D):	D (Hurst, Schwartkopf)	
Modification of Proposed Change:		
TG Reason:	Although pest prevention is an important aspect of durability in a green building, the first proposed addition does not incentive practices beyond common-sense cleanliness, and the second does not include a standard, protocol, or certification to be referenced by the verifier.	
TG Vote:	9 / 0 / 0	

P477	LogID 6249	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<p>11.10XX.XX or 1X.XXX.XX (Existing Multi Family) Management has contract with Cleaning Company that enforces Green Cleaning Practices / has written Green Cleaning protocols established or Management Has written/enforcable In House Green Cleaning protocols in place and 48 hour Pre Occupancy Flush is conducted prior to tenant move in</p>	
Reason:	Prior to move in Units are cleaned using Green Cleaning Practices (carpets etc) and or flushed	
Concurrent Review Staff Note:	<i>This proposal is also being reviewed by TG-7 (Renovations and Additions) as Chapter 11 falls under their direct purview.</i>	
TG Recommendation (AS or AM or D):	TG 6: D TG 7: AM (Hurst, White)	
Modification of Proposed Change:	<p>TG 6: N/A TG 7: 11.10XX.XX or 1X.XXX.XX <u>11.1002.3(11)</u></p>	

	(Existing Multi Family) Management has contract with Cleaning Company that enforces Green Cleaning Practices / has written Green Cleaning protocols established or Management Has written/enforceable In House Green Cleaning protocols in place pre-turnover policies for a and 48 hour Pre Occupancy Flush (11.902.2.7) to be conducted prior to tenant turnover for a dwelling unit is conducted prior to tenant move in or when the common areas are painted and/or re-carpeted for the building.
TG Reason:	TG 6: Adequate language pertaining to green cleaning exists within the NGBS TG 7: Note that the modification references section 11.902.2.7 which is also recommended for approval by this Task Group. See LogID 6423.
TG Vote:	TG 6: 15 Yes TG 7: 6-

P478	LogID 6242	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>11.505.X Pre Construction Durability Assessment</u> Assess Project lot and Building risks associated with lot location, develop strategies to address specified risks. Include measures in plans	
Reason:	assess and address site / location specific risks eg Pests/UV/Excessive thermal considerations (Hot/Cold/ Humidity) Moisture/Soil/Terrain/Landscape and include measures to address in plans	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6241. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Approve as Mod	
Modification of Proposed Change:	Add New: 11.505.X Pre-Construction Durability Assessment: Assess Project Lot and Building risks associated with indoor and outdoor conditions. Develop strategies to address specified risks and include appropriate measures in remodel plans. <ul style="list-style-type: none"> • A durability assessment and mitigation plan is developed by a qualified professional(s). (recommend 1-2 points) <ul style="list-style-type: none"> ○ Plan assesses site-specific risks (e.g. Insects, Ultraviolet exposure, Excessive thermal considerations, Terrain/Landscape issues, Flood Risk, etc.) ○ Plan assesses building-specific risks (e.g. exterior drainage, air infiltration, interior drainage/leaks, etc.) ○ Plan identifies strategies and appropriate measures to address risks in remodel plans • Implementation of mitigation plan and all critical repairs. (recommend 3-4 points) 	
TG Reason:	Intent of this practice is to encourage remodeling projects to conduct site inspections that identify risks to the building durability. In typical renovations it's possible that these risks would not be identified. By conducting this site inspection and expanding the remodel scope to address risks, the project can improve the durability of the home which reduces environmental and economic costs and can better provide occupants with a healthy, efficient and long-lasting home.	
TG Vote:		

P479	LogID 6236	Other for Chapter 11 (include section and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>11 611 XX Conduct "TBD" hours of documented onsite trades training.</u> <u>Documentation shows date /duration /trade and reason</u>	setting / showing expectations of the

	credit requirement is an ongoing process....one and done = none. Verifier and
Reason:	Contractor teamwork is the trick,with visual and hands on learning the best way to ensure thing pass early and often
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6225. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Consistent with action on 6225.
TG Vote:	(5-1-0)

P480	LogID 6230	Other for Chapter 11 (include section and title below)
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Submitter:	Paul Gay, US-EcoLogic
Requested Action:	Add new as follows
Proposed Change:	<u>11.505 XX Install Permanent or Maintained/Managed Post Construction Sewer/Street drain protection</u>
Reason:	protect sewer system and water ways from ongoing post construction pollutants
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6223. The parallel proposal is being reviewed by TG-2. TG-7 should review the recommendation of TG-2 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-2 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	D [White, Jouaneh]
Modification of Proposed Change:	
TG Reason:	Aligns with motion by TG-2.
TG Vote:	7-0-0

P481	LogID 6244	Other for Chapter 11 (include section and title below)
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Submitter:	Paul Gay, US-EcoLogic
Requested Action:	Add new as follows
Proposed Change:	<u>11.XXX.XX</u> <u>Conduct 3rd party Air Seal/ Compartmentalization Plan evaluation with pre and during construction Trades training.</u>
Reason:	ensure air seal /compartmentalize measures are in plans and in scope of work.conduct training and provide guidance for correct/timely install practices early and as often as necessary
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6243. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.

TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Consistent with action on 6243
TG Vote:	(unanimous 8-0-0)

P482	LogID 6221	Other for Chapter 11 (include section and title below)
Submitter:	Steven Rosenstock, Edison Electric Institute	
Requested Action:	Add new as follows	
Proposed Change:	11.505.7 Battery Storage System. <u>A battery storage system is installed that stores electric energy from an on-site renewable electric generation system or is grid-interactive or can perform both functions.</u>	
Reason:	As more electric grids and homes install renewable and variable electric generation systems, there is more need for energy storage. In Hawaii, there are now special electric rates for customers that can store electricity from on-site PV systems. This new section will allow more storage technologies to receive credit in the NGBS. Information on Hawaii rates: https://www.hawaiielectric.com/clean-energy-hawaii/producing-clean-energy/customer-self-supply-and-grid-supply-programs Information on different battery storage technologies: https://cleantechnica.com/2015/05/07/tesla-powerwall-price-vs-battery-storage-competitor-prices-residential-utility-scale/ https://cleantechnica.com/2015/05/09/tesla-powerwall-powerblocks-per-kwh-lifetime-prices-vs-aquion-energy-eos-energy-imergy/ http://www.solarpowerworldonline.com/2016/05/comparison-residential-solar-batteries/	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6220. The parallel proposal is being reviewed by TG-5. TG-7 should review the recommendation of TG-5 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-5 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Proposed language is inconsistent and insufficient to the stated objective.	
TG Vote:	(7-0-1)	

P483	LogID 17-062	New for Chapter 11
Submitter:	Paul Cabot, American Gas Association	
Requested Action:	Add new section 11.505.7 as follows:	
Proposed Change:	11.505.7 Multi-unit residential CNG vehicle fueling. <u>CNG vehicle residential fueling appliances are provided for at least 1 percent of the parking stalls. The CNG fueling appliances shall be listed in accordance with ANSI/CSA NGV 5.1 and installed in accordance to the appliance manufacturer's installation instructions.</u>	
Reason:	Add recognition for CNG residential fueling appliances as a green building practice. The new standard ANSI/CSA NGV 5.1 has been approved and all major model fuel gas installation codes have been updated to require that residential CNG fueling appliances be listed to that standard and installed in accordance with the manufacturer's installation instructions. Home fueling using natural gas is a green - Opractice since it taps into the efficient natural gas transmission and distribution system and avoids the systemic losses from converting crude oil into refined gasoline and diesel. Fueling at home also reduces vehicle mileage by reducing trips to gasoline stations for fueling. The proposed text is structured similar to coverage for electric vehicle charging stations.	
TG Recommendation (AS or AM or D):	AS [White, Evanko]	
Modification of Proposed Change:		

TG Reason:	This standard is agnostic to fuel type and this proposal is simply encouraging an innovative practice. The TG recommends that this practice be added to Chapter 5.
TG Vote:	6-0-0

P484	LogID 17-020	New for Chapter 11
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Submitter:	James M Williams, AE URBIA
Requested Action:	Add a new Section 11.1101 RESILIENT CONSTRUCTION
Proposed Change:	<p><u>11.1101 RESILIENT CONSTRUCTION</u></p> <p><u>11.1101.0 Intent.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure (above building code minimum design loads) so the structure can better withstand forces generated by; flooding, snow, wind or seismic (as applicable) and reduce the potential for the loss of life and property.</p> <p><u>11.1101.1 Minimum structural requirements (base design).</u> The design and construction of the structure, components and systems shall comply with the minimum; structural requirements, loads, and forces, as described in the applicable adopted ICC IRC and ICC IBC for a given site. (Mandatory)</p> <p><u>11.1101.2 Enhanced resilience – 10% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 10% higher than the base design. (3 points)</p> <p><u>11.1101.2 Enhanced resilience – 20% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 20% higher than the base design. (5 points)</p> <p><u>11.1101.2 Enhanced resilience – 30% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 30% higher than the base design. (10 points)</p> <p><u>11.1101.2 Enhanced resilience – 40% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 40% higher than the base design. (12 points)</p> <p><u>11.1101.2 Enhanced resilience – 50% above base design.</u> Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 50% higher than the base design. (15 points)</p>
Reason:	Resilient and durable design and construction of the structure reduce the potential for the loss of life and property which result from natural (and manmade) disasters and are sustainable practices which should be recognized and rewarded.
TG Recommendation (AS or AM or D):	Approve as Modified
Modification of Proposed Change:	<p>Add new section to 611 Innovative Practices and Chapter 11</p> <p><u>611.XXX RESILIENT CONSTRUCTION</u></p> <p><u>611.XXX Intent.</u> Design and construction practices <u>developed by a licensed design professional or equivalent</u> are implemented that enhance the resilience and durability of the structure (above building code minimum design loads) so the structure can better withstand forces generated by; flooding, snow, wind or seismic (as applicable) and reduce the potential for the loss of life and property.</p>

	<p>611.XXX Minimum structural requirements (base design). The design and construction of the structure, components and systems shall comply with the minimum: structural requirements, loads, and forces, as described in the applicable adopted ICC IRC and ICC IBC for a given site. (Mandatory)</p> <p>611.XXX Enhanced resilience – 10% above base design. Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 10% higher than the base design. (3 points)</p> <p>611.XXX Enhanced resilience – 20% above base design. Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 20% higher than the base design. (5 points)</p> <p>611.XXX Enhanced resilience – 30% above base design. Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 30% higher than the base design. (10 points)</p> <p>611.XXX Enhanced resilience – 40% above base design. Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 40% higher than the base design. (12 points)</p> <p>611.XXX Enhanced resilience – 50% above base design. Design and construction practices are implemented that enhance the resilience and durability of the structure by designing and building to forces generated by; flooding, snow, wind or seismic (as applicable) that are 50% higher than the base design. (15 points)</p>
TG Reason:	This section belongs in the new construction chapters as well.
TG Vote:	(unanimous 9-0-0)

P485 LogID 17-044 New for Chapter 11	
Submitter:	Michelle Foster, Home Innovation Research Labs
Requested Action:	Add new as follows:
Proposed Change:	<u>For renovation of buildings constructed prior to 1978, where not required by code, a qualified party has certified any necessary abatement have been conducted.</u>
Reason:	
TG Recommendation (AS or AM or D):	D [white, hurst]
Modification of Proposed Change:	
TG Reason:	Lacks sufficient information.
TG Vote:	5-0-1

Chapter 12 Remodeling of Functional Areas

P486	LogID 6330	12.0.1 Applicability
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	<u>2012 commentary has good info. include an edited version.</u>	
Reason:	the 2012 commentary provides short but helpful guidance for implementation. it makes sense to include this information upfront and center in the working standard not buried in another book	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P487	LogID 6260	12.1(A) Product or material selection
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	<u>Clarify language in 12. (A) ...does this mean you can pick from any item designated 12.1.A XXXX?</u>	
Reason:	Clear language of intent is a good thing	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P488	LogID 6340	12.1(A).604.1 Recycled content
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete and substitute as follows	
Proposed Change:	<p><u>12.1(A).604.1 Product Declarations. A minimum of 3 newly installed products comply with one of the following subsections.</u></p> <p><u>12.1(A).604.1.1 Industry-wide declaration.</u> A Type III industry-wide environmental product declaration (EPD) is submitted for each product. Where the program operator explicitly recognized the EPD as representative of the product group on a National level, it is considered industry-wide. In the case where an industry-wide EPD represents only a subset of an industry group, as opposed to being industry-wide, the manufacturer is required to be explicitly recognized as a participant by the EPD program operator. All EPDs are required to consistent with ISO Standards 14025 and 21930 with at least a cradle-to-gate scope.</p> <p><u>12.1(A).604.1.2 Product Specific Declaration.</u> A product specific Type III EPD is submitted froe ach product. The product specific declaration shall be manufacturer-specific for an individual product or product family. All Type III EPDs are required to be certified as complying, at a minimum, with the goal and scope for the cradle-to-gate requirements in accordance with ISO Standards 14025 and 21930.</p>	
Reason:	Remove sections in entirety. (This changes includes removal of SECTION 12.1(A).604.1 RECYCLED CONTENT, SECTION 12.1(A).609.1 REGIONAL MATERIALS and SECTION 12.1(A).610.1 LIFE CYCLE ASSESSMENT) Replace these three sections with the proposed language above. To increase use of the standard, reduce the complexity and remove the recycled content and regional material calculations. Regional material impacts are captured through EPDs, which are easier for the end user to locate and	

	provide a much better indicator as they focus on the outcome of the various inputs. Individually, single-attributes have little bearing on the final impact so they are being replaced with EPDs. Asking a contractor or other Standard user to find an LCA tool and use it to select various inputs is not user-friendly, nor is it an effective way to understand the burden of that product. Essentially they would be guessing as to the inputs whereas the use of an EPD allows the manufacturer to utilize specific inputs, removing the guesswork.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P489	LogID 6328	12.1(A).606.2 Wood-based products
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Submitter:	Rob Brooks, Rob Brooks & Associates
Requested Action:	Delete and substitute as follows
Proposed Change:	<p>See proposed changes to Section 606.2:</p> <p>606.2 Wood-based products. <u>Wood or wood-based products shall be derived from a manufacturers' fiber procurement system that has been audited by an <i>approved agency</i> as compliant with the provisions of:</u></p> <p><u>(a) ASTM D7612 as a responsible or certified source. Government or tribal forestlands whose water protection programs have been evaluated by an <i>approved agency</i> as compliant with the responsible source designation of ASTM D7612 are exempt from auditing in the manufacturers' fiber procurement system.</u></p> <p><u>(b) National Wood Flooring Association's Responsible Procurement Program (RPP)</u></p>
Reason:	<p>See reason statement in proposed change to Section 606.2:</p> <ul style="list-style-type: none"> • This proposed change related to the acceptance of forest products is vital to the use of ICC-700 in states where forest product production is an important source of revenue, such as Oregon. Neighboring states, such as Washington, Idaho and California also rely upon forest product production and support the use of sustainable forestry and best management practices to maintain (among other objectives) water quality. • The IgCC, USGBC Pilot Credit and the USDA BioPreferred Program currently recognize ASTM D7612 responsible and certified sources. The 2012 ICC-700 recognizes responsible sources through the SFI Fiber Sourcing program. Alternatively, SFI Chain of Custody is a certified source. (see attached table). All of the existing forest certification programs listing in ICC-700 are recognized by ASTM D7612. • ASTM D7612 provides a means to specify sustainable forestry via the certified sources designation without the reference to proprietary standards such as SFI, FSC, ATFS, etc. The American National Standards Institute's (ANSI) Essential Requirements for Due Process, excludes specifying ecolabels—FSC, PEFC, SFI—that is, their brand name—because that would run afoul of ANSI's prohibition on the use of commercial terms. It says in part, "[t]he appearance that a standard endorses any particular products, services or companies must be avoided." Previously, there was no method to generically specify these ecolabels, but with the advent of the ASTM D7612, the generic reference is available, which should replace the proprietary ecolabel. The USGBC Pilot Credit recognizes this advantage and avoids comparison between proprietary systems to avoid improper commercial endorsement. • ASTM D7612 provides a means to specify enforcement of best management practices by governmental agencies that have authority to protect water quality on both certified and non-certified forestlands via the responsible source designation. For Oregon, enforcement is achieved through the Oregon Forest Practices Act (OFPA), regardless of whether the forestland is certified to sustainable forestry standards, or not. <ul style="list-style-type: none"> o Enforcement is defined as having authority, staffing, budget, proof of citations and the ability to adapt the rules to improve the system. Oregon forestlands subject to the OFPA have been independently audited and found compliant to the responsible source designation by PFS Corporation. o The emphasis on water quality for government or tribal forestlands is due to the existing rules already in place to protect forests (see https://cfpub.epa.gov/watertrain/moduleFrame.cfm?parent_object_id=1517 The degree to which these rules are enforced by each state has been evaluation by the National Association of State Foresters http://www.stateforesters.org/state-forestry-agency-best-management-practices-protecting-water#sthash.7VDEx3y6.dpbs The three tiers of enforcement are non-regulatory, quasi-regulatory and

	<p>regulatory in order of increasing compliance. ASTM D76712 recognizes those states having quasi-regulatory and regulatory compliance under the responsible source designation.</p> <ul style="list-style-type: none"> o The strength of the responsible sources program is the ability to issue citations (fines) for noncompliance to water quality rules and to reward states/jurisdictions that fund enforcement. Citations are issued to operators on both certified and non-certified forests. In some states, such as Oregon, the OFPA rules extend beyond water quality. Oregon producers want recognition of their compliance to OFPA, but not at the same tier as certified sources to avoid market confusion that responsible and certified sources are equivalent. o Manufacturers are required to trace fiber procurement under both the responsible and certified sources designation. Further information can be provided to the ICC-700 committee upon request. o The strength of the certified sources program is to write rules that extend beyond issues related to water quality. When damage to the forest happens from non-compliance, certified source programs can de-certify clients, they cannot issue citations or stop-work orders to remediate damage. o Thus, the responsible source program is an important enforcement component (and partner) to a certified source program. It will provide recognition for those states who actively monitor, enforce and punish offenders not in compliance with the law. It encourages states to enforce their water quality rules through inspection, documentation and citation, which is complementary to the voluntary sustainable forestry standards, or certified sources. It supports the “boots on the ground”, actively monitoring harvest operations on both public and private lands. o ASTM D7612 not only supports the expanded enforcement of existing water quality rules (aka best management practices), but also recognizes voluntary compliance to those sustainable forestry practices above and beyond state water quality rules. <p>• In Oregon, the OFPA applies to approximately 10 million acres; of which approximately 4 million acres are certified forests. If the responsible source designation were also applied to federal and tribal lands, the designation would apply to approximately 30 million acres of forestland in Oregon. The fiscal implication of the responsible source designation is significant to the increased value of building products derived from private and public lands, which is why the state of Oregon is presenting this request. The responsible source designation provides states recognition of best management practice enforcement on public lands without the controversial decision and cost to convert to the certified source designation. Further information about ASTM D7612 is found at https://www.astm.org/standardization-news/?q=features/green-greener-greenest-ma17.html.</p>
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6327. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Approve as Modified
Modification of Proposed Change:	<p>606.2 Wood-based products. Wood or wood-based products are certified to the requirements of one of the following recognized product programs :</p> <p style="text-align: center;">[a-g remains unchanged];</p> <p style="text-align: center;"><u>(h) a manufacturers’ fiber procurement system that has been audited by an approved agency as compliant with the provisions of ASTM D7612 as a responsible or certified source. Government or tribal forestlands whose water protection programs have been evaluated by an approved agency as compliant with the responsible source designation of ASTM D7612 are exempt from auditing in the manufacturers’ fiber procurement system.</u></p> <p>1) A minimum of two <u>responsible or</u> certified wood-based products are used for minor components of the building. 3</p> <p>2) A minimum of two <u>responsible or</u> certified wood-based products are used in major components of the building 4</p>
TG Reason:	In accordance with TG 3 recommendation
TG Vote:	(unanimous) 6-0-0

P490	LogID 6316	12.1(A).608.1 Resource-efficient materials
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	

Proposed Change:	<p>12.608.1 Resource-efficient materials. Products containing fewer materials are used to achieve same end-use requirements as conventional products, including but not limited to:</p> <p>(1) Lighter, thinner brick with depth less than 3 inches and/or brick with coring of more than 25 percent</p> <p>(2) (1) Engineered wood or engineered steel products</p> <p>(3) (2) Roof or floor trusses</p>
Reason:	<p>Since engineered wood, engineered steel products and roof or floor trusses are incorporated intermittently in the façade, and/or entirely in the interior, their dematerialization is not likely to jeopardize the structure's overall energy efficiency. In fact, filling with insulation those spots in the exterior walls where the unneeded mass of structural elements would otherwise have been, reduces the thermal bridging associated with structural elements in exterior walls and improves the structure's energy efficiency. Conversely, the continuous dematerialization of a façade material, such as brick, may require an addition of more insulation to compensate for the loss of volume all along the perimeter, just to achieve comparable energy efficiency. A more accurate assessment of the benefits of the dematerialization of façade materials can possibly be made and if there are benefits, points can be captured through Life Cycle Assessments (12.610.1.1 and 12.610.1.2) that apply a material consumption impact category in addition to categories measuring energy-consumption impacts through the manufacturing, construction and use life-cycle stages.</p>
Parallel Proposal Staff Note:	<p>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6303. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.</p>
TG Recommendation (AS or AM or D):	D (Hurst, Gay)
Modification of Proposed Change:	
TG Reason:	Light, thin brick should still be encouraged in appropriate applications.
TG Vote:	9 / 0 / 0

P491	LogID 6341	12.1(A).609.1 Regional materials
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete and substitute as follows	
Proposed Change:	<p><u>12.1(A).604.1 Product Declarations. A minimum of 3 newly installed products comply with one of the following subsections.</u></p> <p><u>12.1(A).604.1.1 Industry-wide declaration.</u> A Type III industry-wide environmental product declaration (EPD) is submitted for each product. Where the program operator explicitly recognized the EPD as representative of the product group on a National level, it is considered industry-wide. In the case where an industry-wide EPD represents only a subset of an industry group, as opposed to being industry-wide, the manufacturer is required to be explicitly recognized as a participant by the EPD program operator. All EPDs are required to consistent with ISO Standards 14025 and 21930 with at least a cradle-to-gate scope.</p> <p><u>12.1(A).604.1.2 Product Specific Declaration.</u> A product specific Type III EPD is submitted froe ach product. The product specific declaration shall be manufacturer-specific for an individual product or product family. All Type III EPDs are required to be certified as complying, at a minimum, with the goal and scope for the cradle-to-gate requirements in accordance with ISO Standards 14025 and 21930.</p>	
Reason:	<p>Remove sections in entirety. (This changes includes removal of SECTION 12.1(A).604.1 RECYCLED CONTENT, SECTION 12.1(A).609.1 REGIONAL MATERIALS and SECTION 12.1(A).610.1 LIFE CYCLE ASSESSMENT) Replace these three sections with the proposed language above. To increase use of the standard, reduce the complexity and remove the recycled content and regional material calculations. Regional material impacts are captured through EPDs, which are easier for the end user to locate and provide a much better indicator as they focus on the outcome of the various inputs. Individually, single-attributes have little bearing on the final impact so they are being replaced with EPDs. Asking a contractor or other Standard user to find an LCA tool and use it to select various inputs is not user-friendly, nor is it an effective way to understand the burden of that product. Essentially they would be</p>	

	guessing as to the inputs whereas the use of an EPD allows the manufacturer to utilize specific inputs, removing the guesswork.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P492	LogID 6343	12.1(A).610.1 Life cycle analysis
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete and substitute as follows	
Proposed Change:	<p><u>12.1(A).604.1 Product Declarations. A minimum of 3 newly installed products comply with one of the following subsections.</u></p> <p><u>12.1(A).604.1.1 Industry-wide declaration.</u> A Type III industry-wide environmental product declaration (EPD) is submitted for each product. Where the program operator explicitly recognized the EPD as representative of the product group on a National level, it is considered industry-wide. In the case where an industry-wide EPD represents only a subset of an industry group, as opposed to being industry-wide, the manufacturer is required to be explicitly recognized as a participant by the EPD program operator. All EPDs are required to consistent with ISO Standards 14025 and 21930 with at least a cradle-to-gate scope.</p> <p><u>12.1(A).604.1.2 Product Specific Declaration.</u> A product specific Type III EPD is submitted froe ach product. The product specific declaration shall be manufacturer-specific for an individual product or product family. All Type III EPDs are required to be certified as complying, at a minimum, with the goal and scope for the cradle-to-gate requirements in accordance with ISO Standards 14025 and 21930.</p>	
Reason:	Remove sections in entirety. (This changes includes removal of SECTION 12.1(A).604.1 RECYCLED CONTENT, SECTION 12.1(A).609.1 REGIONAL MATERIALS and SECTION 12.1(A).610.1 LIFE CYCLE ASSESSMENT and subsections) Replace these three sections with the proposed language above. To increase use of the standard, reduce the complexity and remove the recycled content and regional material calculations. Regional material impacts are captured through EPDs, which are easier for the end user to locate and provide a much better indicator as they focus on the outcome of the various inputs. Individually, single-attributes have little bearing on the final impact so they are being replaced with EPDs. Asking a contractor or other Standard user to find an LCA tool and use it to select various inputs is not user-friendly, nor is it an effective way to understand the burden of that product. Essentially they would be guessing as to the inputs whereas the use of an EPD allows the manufacturer to utilize specific inputs, removing the guesswork.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P493	LogID 6317	12.1(A).610.1 Life cycle analysis
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Revise as follows	
Proposed Change:	<p><u>12.1(A).610.1.1 Functional area life cycle assessment.</u> An LCA is performed in conformance with ASTM E2921 for an entire functional area using ISO14044 compliant a life cycle assessment.</p> <p>Execute LCA at the functional_area level through a comparative analysis between the final and reference building designs as set forth under Standard Practice, ASTM E-2921. The assessment criteria includes the following environmental impact categories:</p>	

	<ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to Water</u> <p>...</p> <p>Execute full LCA, including extraction and harvesting, manufacturing, construction, use and end-of-life phases. For the use phase, calculate through calculation of operating energy impacts (c) – (f) using local or regional emissions factors from energy supplier, utility or EPA. <u>For the use phase, also include impacts associated with material replacements.</u></p> <p>12.1(A).610.1.2.1 Life cycle assessment for a product or assembly <u>Product LCA</u>. ...The environmental impact measures used in the assessment are selected from the following:</p> <ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to Water</u> <p>12.1(A).610.1.2.2 <u>Building Assembly LCA</u>. A building assembly with improved environmental impact measures...</p> <p>...The environmental impact measures used in the assessment are selected from the following:</p> <ul style="list-style-type: none"> a. Primary energy use b. Global warming potential c. Acidification potential d. Eutrophication potential e. Ozone depletion potential f. Smog potential g. <u>Material Use</u> h. <u>Waste</u> i. <u>Water Use</u> j. <u>Pollution Discharges to Water</u>
Reason:	<p>Using less material and recovering more is crucial to our economic and environmental future. Material use and waste generation over the life cycle of a building should be modeled. In addition, the “full” life cycle assessment should include all life cycle phases, including manufacturing, construction, use and end-of-life phases. While the NGBS-proposed language for whole-building life cycle assessment emphasizes that the assessment should include the use phase, it omits mentioning the manufacturing, construction and end-of-life phases. The language for the whole-building use phase indicates that impacts related to energy use should be evaluated, but remains silent on the need to evaluate impacts associated with the replacement of materials. Finally, the organization of the section 12.1(A).610.1.2 is inconsistent with sections 11.610.1.2 and 6.610.1.2. Solution: Add the material use and waste impact categories to the assessment criteria. Emphasize that the boundary of the assessment should include the manufacturing, construction and end-of-life phase. Emphasize that the assessment of the use phase should include the analysis of impacts associated with the replacement of materials. Divide Section 12.1(A).610.1.2 into 12.1(A).610.1.2.1 Product LCA and 12.1(A).610.1.2.2 Building Assembly LCA for organizational consistency with 11.610.1.2 and 6.610.1.2.</p>
Parallel Proposal Staff Note:	<p>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6304. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to</p>

	remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	D (Hurst, Evanko)
Modification of Proposed Change:	
TG Reason:	Consistent with action on 6312
TG Vote:	9 / 0 / 0

P494	LogID 6224	12.1(A).610.1 Life cycle analysis
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Submitter:	Paul Gay, US-EcoLogic
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Requested Action:	Delete without substitution
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Proposed Change:	<p>12.1(A).610.1 Life cycle assessment. A life cycle assessment (LCA) tool is used to select environmentally preferable products, assemblies, or entire functional area in accordance with Section 12.1(A).610.1.1 or 12.1(A).610.1.2, respectively. Only one method of analysis or tool may be utilized. The reference service life is 60 years for any LCA tool. Results of the LCA are reported in terms of the environmental impacts listed in this practice and it is stated if operating energy was included in the LCA.</p> <ul style="list-style-type: none"> - - 12.1(A).610.1.1 Functional area life cycle assessment. An LCA is performed in conformance with ASTM E2921 for an entire functional area using ISO14044 compliant life cycle assessment. - (1) Execute LCA at the functional area level through a comparative analysis between the final and reference building designs as set forth under Standard Practice, ASTM E2921. The assessment criteria includes the following environmental impact categories: <ul style="list-style-type: none"> - (a) primary energy use - (b) Global warming potential - (c) Acidification potential - (d) Eutrophication potential - (e) Ozone depletion potential - (f) Smog potential - (2) Execute LCA on regulated loads throughout the building operations life cycle stage. Conduct simulated energy performance analyses in accordance with Section 702.2.1 ICC IECC analysis (IECC Section 405) in establishing the comparative performance of final versus reference building designs. Primary energy use savings and global warming potential avoidance from simulation analyses results are determined using energy supplier, utility, or EPA electricity generation and other fuels energy conversion factors and electricity generation and other fuels emission rates for the locality or Sub-Region in which the building is located.
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- ~~(3) Execute full LCA, including use phase, through calculation of operating energy impacts (c) – (f) using local or regional emissions factors from energy supplier, utility, or EPA.~~

- ~~**12.1(A).610.1.2 Life cycle assessment for a product or assembly.** An environmentally preferable product or assembly is selected for an application based upon the use of an LCA tool that incorporates data methods compliant with ISO 14044 or other recognized standards that compare the environmental impact of products or assemblies.~~

- ~~(1) Two or more products with the same intended use are compared based on LCA and the product with at least a 15% average improvement is selected. A minimum of four environmental impact measures are included in the comparison. The environmental impact measures to be considered are chosen from the following:~~

- - ~~(a) primary energy use~~
- - ~~(b) global warming potential~~
- - ~~(c) acidification potential~~
- - ~~(d) eutrophication potential~~
- - ~~(e) ozone depletion potential~~
- - ~~(f) smog potential~~

- ~~(2) An assembly with improved environmental impact measures that are on average at least 15% better than a comparable functionally assembly is selected. A minimum of four environmental impact measures are included in the comparison. The full life cycle, from resource extraction to demolition and disposal (including but not limited to on-site construction, maintenance and replacement, material and product embodied acquisition, and process and transportation energy), is assessed. The assessment includes all structural elements, insulation, and wall coverings of the assembly. The assessment does not include electrical and mechanical equipment and controls, plumbing products, fire detection and alarm systems, elevators, and conveying systems. The following functional building elements are eligible for points under this practice:~~

- - ~~(a) exterior walls~~
- - ~~(b) roof/ceiling~~
- - ~~(c) interior walls or ceilings~~
- - ~~(d) intermediate floors~~
- - ~~The environmental impact measures to be considered are chosen from the following:~~
- - ~~(a) primary energy use~~
- - ~~(b) global warming potential~~
- - ~~(c) acidification potential~~
- - ~~(d) eutrophication potential~~
- - ~~(e) ozone depletion potential~~

	<div style="border: 1px solid black; padding: 5px;"> <ul style="list-style-type: none"> - - (f) smog potential </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <ul style="list-style-type: none"> - 12.1(A).611.1 Manufacturer's environmental management system concepts. For one or more products used in the remodel, the product's manufacturer's operations and business practices include environmental management system concepts, and the production facility is registered to ISO 14001 or equivalent. </div>
Reason:	this seems an excessive mandatory requirement for a remodel project. should be encouraged but not required, i suspect this section as a requirement will put off potential program users
TG Recommendation (AS or AM or D):	A (Hurst, Schwarzkopf)
Modification of Proposed Change:	
TG Reason:	Although this practice should be encouraged and recommended, it creates an undue barrier for smaller projects.
TG Vote:	9 / 0 / 0

P495	LogID 6361	12.1(A).611.1 Manufacturer's environmental management system
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	Manufacturer's environmental management system concepts. For one or more products used in the remodel, the product manufacturer's operations and business practices include environmental management system concepts, and the production facility is registered to ISO14001 or equivalent. <u>Product Specific Declaration Improvements. Utilizing a Type III environmental product declaration (EPD), one or more products used in the remodel shall demonstrate an improvement over prior EPDs for those same products.</u>	
Reason:	The use of ISO 14001 adds minimal value and is not widely used as a facility could be ISO 14001 compliant and have negative impacts. Proving that a product's impacts, throughout its lifecycle, are improving over time is a more effective way to demonstrate innovation. Comparing a product's EPD from one year to the next can demonstrate improvement in environmental management systems, regardless of the type of facility registration.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6360. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P496	LogID 6257	12.1.601.2 Material usage (General)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>Exemption if the exterior wall surface can not accommodate the advanced framing measures listed due to structural integrity issues.</u>	
Reason:	[Exception requires a stamped letter to be completed by the Professional Engineer designing the structural detailing for the building explaining why].	

TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P497	LogID 6526	12.1.701.4.0 Minimum energy efficiency requirements
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	12.1.701.4.0 Minimum energy efficiency requirements. Additions, alterations, or renovations to an existing building, building system or portion thereof comply with the provisions of the International Energy Conservation Code ICC IECC as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code standard . An addition complies with the ICC IECC if the addition complies or if the existing building and addition comply with the ICC IECC as a single building.	
Reason:	Revising for clarity, and consistent reference to ICC IECC.	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 11 – Proposal LogID 6519.</i>	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P498	LogID 6443	12.1.701.4.1.1 HVAC system sizing
Submitter:	Aaron Gary, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	12.1.701.4.1.1 HVAC system sizing TC"12.1.701.4.1.1HVAC system sizing" \f C \ "3" . Newly installed or modified space heating and cooling system is sized according to heating and cooling loads calculated using ACCA Manual J, or equivalent. New equipment is selected using ACCA Manual S or equivalent. Where existing equipment is used <u>to serve a functional area whose total conditioned area was increased during the remodel</u> , Manual J is used to verify the capacity is appropriate for the remodel.	
Reason:	Existing equipment that is not being modified in any other way and where this is not change to the amount of conditioned are being served should not be required to be modified.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P499	LogID 6265	12.1.701.4.1.1 HVAC system sizing
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Delete without substitution	
Proposed Change:	12.1.701.4.1.1 HVAC system sizing... "Where existing equipment is used Man J is used to verify the capacity is appropriate for the remodel "	

Reason:	The additional "existing system" language isn't in Chapter 11 701.4.1.1 strike out to align standard language. what happens if the HVAC isn't "appropriate"?
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 9-0-0)

P500	LogID 6527	12.1.701.4.3.4 Building thermal envelope air sealing
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	<p>12.1.701.4.3.1 Building thermal envelope air sealing. The portions of the building thermal envelope that are exposed or created during the remodel are durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped, or otherwise sealed with an air barrier material, suitable film, or solid material:</p> <p>(g) <u>Walls, and ceilings, and floors separating a garage from conditioned spaces from unconditioned space.</u></p> <p>(k) <u>Rim joist junction. Joints of framing members at rim joists.</u></p> <p>(l) <u>Top and bottom plates.</u></p> <p>(m) <u>Other sources of infiltration.</u></p>
Reason:	Suggest revising several of the items in the list to more thoroughly identify the locations where air sealing is required.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 5 – Proposal LogID 6505.</i>
TG Recommendation (AS or AM or D):	AS 1 st Dorothy, 2 nd Amy
Modification of Proposed Change:	
TG Reason:	Same as previous 6505
TG Vote:	8 Approve, 1 disapprove, 1 abstain

P501	LogID 6529	12.1.701.4.3.2 Air sealing and insulation
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	<p>12.1.701.4.3.2 Air barrier, air sealing, and insulation. Grade II and III installation is not permitted for newly installed insulation. For the portions of the building envelope that are exposed or created during the remodel, air barrier, air sealing, and insulation is <u>third-party verified as installed in accordance with Section 12.701.4.3.2.1 and items listed in Table 12.1.701.4.3.2(2) are field verified via visual inspection.</u></p> <p>12.701.4.3.2.1 Grade I insulation installations are Insulation installation. <u>Field-installed insulation products to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, except as specifically noted, are verified by a third-party in accordance with the following:</u></p> <p>(1) Grading applies to field-installed insulation products.</p> <p>(2) Grading applies to ceilings, walls, floors, band joists, rim joists, conditioned attics basements and crawlspaces, except as specifically noted.</p> <p>Re-number items(3) through (11), and revise item (11)</p>

	(11) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with the Grade 1 insulation installation requirements <u>this section</u> .
Reason:	Removing all mentions of “Grade” pertaining to insulation installation, as Grade is not defined or described in the standard. Also revising 11.701.4.3.2.1 to move the “what” and “where” specifics of the first two items into the charging language. Also, adding requirement insulation installation is verified by a third-party.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6507.</i>
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Consistent with 6507
TG Reason:	Based on 6507 reason
TG Vote:	Unanimous

P502	LogID 6528	12.1.701.4.3.2 Air sealing and insulation
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	12.1.701.4.3.2 Air barrier, air sealing, and insulation. <u>Grade II and III installation is not permitted for newly installed insulation.</u> For the portions of the building envelope that are exposed or created during the remodel, air barrier, air sealing, and insulation is <u>third-party verified as installed in accordance with Section 12.701.4.3.2.1</u> and items listed in Table 12.1.701.4.3.2(2) are field verified via visual inspection. <u>Insulation installation other than Grade 1 is not permitted.</u>	
Reason:	Removing the phrase regarding “Grade II and III” insulation installation as these are not defined, described, or referenced in the standard, and instead refer to “Grade I” which has requirements described in the standard. Revising the text to add explicit requirement to comply with the insulation installation requirements in Section 12.701.4.3.2.1.	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6506.</i>	
TG Recommendation (AS or AM or D):	Approve	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	Unanimous	

P503	LogID 6530	12.1.701.4.3.5 Recessed lighting
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	12.701.4.3.5 Recessed lighting <u>Lighting in building thermal envelope.</u> Newly installed recessed luminaires installed in the building thermal envelope are sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires <u>in the building thermal envelope</u> are IC-rated and labeled as meeting ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All recessed luminaires <u>in the building envelope</u> are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering.	
Reason:	The vast majority of lighting luminaires are recessed in the building thermal envelope. However, the scope of the requirements of this section should apply to all lighting luminaires in the building thermal envelope, not just recessed lighting. With fast changing lighting technology, it’s possible lighting luminaires will penetrate the building thermal envelope but not be considered recessed lighting. The revisions would apply to all lighting luminaires “in” the building thermal envelope, but would not apply to luminaires “on” the building thermal envelope. Consider, for example, ½” thick LED lighting panels which	

	are installed in place of ½” drywall on the ceiling. These panels may not be considered recessed but clearly should be included in the requirements of this section.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6508.</i>
TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	Apply the change approved for the corresponding section for Chapter 7 (Item 6508) but retain the words “newly installed”
TG Reason:	Based on the action of 6508.
TG Vote:	9-0-0

P504	LogID 6384	12.1.701.4.4 High-efficacy lighting
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	High-efficacy lighting. <u>Newly installed</u> Lighting efficacy in dwelling units is in accordance with one of the following: (1) A minimum of 75 percent of the total hard-wired lighting fixtures or the bulbs in those fixtures qualify as high efficacy or equivalent (2) Lighting power density, measured in watts/square foot, is 1.1 or less.
Reason:	Aligns with other measures in Chapter 12 that only pertain to Newly Installed items. Current language mandates changing out existing lighting to meet this Mandatory item. Calculating a lighting power density for newly installed lighting only does not make sense and hence option (2) should be removed.
TG Recommendation (AS or AM or D):	<i>Approve as Mod</i>
Modification of Proposed Change:	12.1.701.4.4 High-efficacy lighting. <u>A minimum of 90 percent of newly installed hard-wired lighting fixtures</u> Lighting efficacy in dwelling units is in accordance with one of the following: (1) A minimum of 75 percent of the total hard-wired lighting fixtures or the bulbs in those fixtures shall be high efficacy, or equivalent (2) Lighting power density, measured in watts/square foot, is 1.1 or less. [mandatory] Similar change to 701.4.4 & 11.701.4.4
TG Reason:	<i>See Action on LogID 6362</i>
TG Vote:	

P505	LogID 6531	12.1.701.4.5 Boiler supply piping
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Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)
Requested Action:	Revise as follows
Proposed Change:	12.1.701.4.5 Boiler supply piping. Insulate all newly installed boiler supply piping in unconditioned space <u>supplying or returning heated water or steam</u> and insulate existing boiler supply piping in unconditioned space <u>supplying or returning heated water or steam</u> where accessible.
Reason:	It seems this more clearly describes the intent of the requirements of this section.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6509.</i>
TG Recommendation (AS or AM or D):	Approve as modified
Modification of Proposed Change:	12.1.701.4.5 Boiler supply piping. Insulate all newly installed boiler supply piping in unconditioned space <u>supplying or and returning heated water or steam</u> and insulate existing boiler supply piping in unconditioned space <u>supplying or and returning heated water or steam</u> where accessible.
TG Reason:	To increase energy savings for boilers and consistent with Ch 7 and 11

TG Vote:	13-0-0
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P506	LogID 6385	12.1.901.2.1 Solid fuel-burning appliances
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Submitter:	Aaron Gary, self
Requested Action:	Revise as follows
Proposed Change:	(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified or Phase 2 Qualified.
Reason:	The EPA does not certify factory-built wood burning fireplaces so the first reference is nonsensical. Very few fireplaces meet the EPA Phase 2 Qualified requirements and thus they are exorbitantly priced compared to other similar fireplaces. The second reference as a Mandatory measure represents undue burden for projects and should be removed.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P507	LogID 6272	12.1.901.6 Carpets
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Submitter:	Paul Gay, US-EcoLogic
Requested Action:	Revise as follows
Proposed Change:	(1) wall to wall <u>No New Carpeting is not installed adjacent to water closets and bathing fixtures in half/full bathrooms, kitchens, utility/laundry rooms or within 3 ft of entries.</u> <u>Exemplary credit if existing carpet in these areas is removed and replaced with hard flooring.</u>
Reason:	who wants soggy socks??!original language is behind current /typical standard building practice
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6275. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P508	LogID 6276	12.1.901.8 Interior wall coverings
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Submitter:	Paul Gay, US-EcoLogic
Requested Action:	Revise as follows
Proposed Change:	is this standard common practice ie Home Depot off the shelf wallpaper meets it ? Can we simplify it?
Reason:	Blah,blah, blahneed cleaner , clearer language
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029

TG Vote: (unanimous 8-0-0)

P509 LogID 6444 12.1.901.9.2 Interior coatings emission levels

Submitter: Aaron Gary, US-EcoLogic

Requested Action: Revise as follows

Proposed Change:

~~12.1.901.9.2~~ Newsite-applied interior architectural coatings are in accordance with the emission levels of CDPH/EHLB Standard Method v1.1, footnote b in Table 4.1 does not apply (i.e., maximum allowable formaldehyde concentration is 16.5 µg/m³(13.5 ppb)). Emission levels are determined by a laboratory accredited to ISO/IEC 17025 and the CDPH/EHLB Standard Method v1.1 is in its scope of accreditation. The product is certified by a third-party program accredited to ISO 17065, such as, but not limited to, those in Appendix D.

Architectural coating colorant additive VOC content is in accordance with Table 901.9.2.

(Points for 901.9.2 are awarded only if base architectural coating is in accordance with 901.9.1.)

Table 901.9.2

VOC Content Limits for Colorants

<u>Colorant</u>	<u>LIMIT (g/l)</u>
<u>Architectural Coatings, excluding IM Coatings</u>	<u>50</u>
<u>Solvent-Based IM</u>	<u>600</u>
<u>Waterborne IM</u>	<u>50</u>

Reason: Aligns the requirements of 12.1.901.9.2 with sections 11.901.9.2 and 901.9.2.

TG Recommendation (AS or AM or D): Disapprove

Modification of Proposed Change:

TG Reason: In favor of action on Log 17-029

TG Vote: (unanimous 8-0-0)

P510 LogID 6282 12.1.902.1.1 Spot ventilation

Submitter: Paul Gay, US-EcoLogic

Requested Action: Revise as follows

Proposed Change:

~~12.1.902.1.1~~ 12.3. XXX.XX Bathrooms are vented to the outdoors. The minimum ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms.

Exemption if walls / ceilings are not opened up

Reason: as written the language indicates, regardless of the actual scope of work (ie addition/kitchen remodel/attic remodel) the bath fans have to be vented to outside. suggest moving to section 12.3 Chapter 11 902.1.1 has exemptions

TG Recommendation (AS or AM or D): Disapprove

Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P511	LogID 6283	12.1.902.1.1 Spot ventilation
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	<div style="border: 1px solid black; padding: 5px;"> <p>(2) Clothes dryers (except listed and labeled condensing ductless dryers) are vented to the outdoors.</p> <p style="text-align: center;"><u>Exemption if opening walls and ceilings is beyond project scope</u></p> </div>	
Reason:	as written the language indicates, regardless of the actual scope of work (ie addition/kitchen remodel/attic remodel) the clothes dryer have to be vented to outside. This would be a significant cost add and may force client to chose not to participate in program Chapter 11 902.1.1 has exemption	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P512	LogID 6374	12.2.801.4.1 Faucets
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Delete without substitution	
Proposed Change:	12.2.801.4.1 Faucets. Newly installed lavatory faucets have a maximum flow rate of 1.5 gpm (5.68 L/m) or less when tested at 60 psi (414 kPa) in accordance with ASME A112.18.1.	
Reason:	Lavatory faucets are not relevant for kitchen remodels.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P513	LogID 6370	12.3.801.3 Showerheads
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	The total maximum combined flow rate of all newly installed showerheads controlled by a single valve at any point in time in a shower compartment is 1.6 to less than 2.5 gpm. Maximum of two valves are installed per shower compartment. The flow rate is tested at 80 psi (552kPa) in accordance with ASME A112.18.1. Showerheads shall comply with ASME A112.18.1/CSA B125.1. Showerheads are served by an automatic compensating valve that complies with ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead.	
Reason:	The language needs to be updated to reflect the harmonized standards. Including the pressure values is repetitive because they are included in the product standard requirements.	

Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 8 – Proposal LogID 6367. The parallel proposal is being reviewed by TG-4. TG-7 should review the recommendation of TG-4 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-4 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.
TG Recommendation (AS or AM or D):	Approve
Modification of Proposed Change:	
TG Reason:	
TG Vote:	(unanimous)

P514	LogID 6376	12.3.801.4.1 Faucets
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	801.4.1 <u>Lavatory</u> Faucets. Newly installed lavatory faucets shall have a maximum flow rate of 1.5 gpm (5.68 L/m) at 60 psi (414 kPa) in accordance compliance with ASME A112.18.1/CSA B125.1, and <u>certified to the performance criteria of the U.S. EPA WaterSense High-Efficiency Lavatory Faucet Specification.</u>	
Reason:	Add the term 'lavatory' in the section title for consistency with the rest of the standard. The ASME and CSA standards are harmonized standards. They are recognized in the industry as ASME A112.18.1/CSA B125.1 and should be referenced as such. The EPA Water Sense program is a well-recognized program and products carrying a WaterSense label demonstrate that they not only save water, but they have been third-party certified to meet performance criteria. This allows consumers to easily identify water-efficient products that also perform. This program has widespread support and there are over 12,000 bathroom faucets/accessories currently labeled with WaterSense.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 8 – Proposal LogID 6372. The parallel proposal is being reviewed by TG-4. TG-7 should review the recommendation of TG-4 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-4 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	AM	
Modification of Proposed Change:		
TG Reason:	Delete Water Sense	
TG Vote:		

P515	LogID 6381	12.3.801.5 Water closets
Submitter:	Cambria McLeod, Kohler	
Requested Action:	Revise as follows	
Proposed Change:	12.3.801.5 Water closets. All newly installed water closets have an effective flush volume of 1.28 gallons (4.85 L) or less when tested in accordance ,in compliance with ASME A112.19.2/CSA B45.1 or ASME A112.19.14 as applicable, and is in accordance with EPA WaterSense Tank-Type Toilets. <u>Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.</u>	
Reason:	Current language is permissive and unclear as to the requirements. The proposal keeps the intent but clarifies the language.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 8 – Proposal LogID 6377. The parallel proposal is being reviewed by TG-4. TG-7 should review the recommendation of TG-4 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-4 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	

TG Recommendation (AS or AM or D):	AM
Modification of Proposed Change:	
TG Reason:	Delete Water Sense
TG Vote:	

P516	LogID 6256	12.6.902.3 Radon control
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Delete and substitute as follows	
Proposed Change:	<p>12.4.902.3 Radon control TC"12.4.902.3Radon control" \f C \l "3" . In Radon Zone 1, passive or active radon control system is installed in accordance with ICC IRC Appendix F.</p> <p>12.6.902.3 Radon control. In Radon Zone 1, passive or active radon control system is installed in accordance with ICC IRC Appendix F.</p> <p>12.6.902.3 Radon control TC"11.902.3 Radon control" \f C \l "3" . Radon control measures are in accordance with ICC IRC Appendix F. Zones are defined in Figure 9(1). This practice is not mandatory if the existing building has been tested for radon and is accordance with federal and local acceptable limits.</p> <p>12.4.902.3 Radon control TC"11.902.3 Radon control" \f C \l "3" . Radon control measures are in accordance with ICC IRC Appendix F. Zones are defined in Figure 9(1). This practice is not mandatory if the existing building has been tested for radon and is accordance with federal and local acceptable limits.</p>	
Reason:	Standard Language to align with Chapter 11. Also , as written potentially adds a huge cost add best to determine if measures are in fact warranted	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	In favor of action on Log 17-029	
TG Vote:	(unanimous 8-0-0)	

P517	LogID 6246	Other for Chapter 12 (include section number and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<p>12.XXX.XX Create Remodel Innovative Practice Section</p>	
Reason:	Encourage program participation and remodel specific solutions	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:	Disapprove	
TG Reason:	Not enough information provided. Agreed in principle.	
TG Vote:	(unanimous)	

P518	LogID 6255	Other for Chapter 12 (include section number and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	

Proposed Change:	<u>12 XXX.XX</u> allow Irrigation improvement/ upgrade to count toward total water savings.
Reason:	e.g upgraded irrigation system saves XXXXXX gals of water per year its the equivalent of XX units switching to low flow faucets and toilets.
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P519	LogID 6495	Other for Chapter 12 (include section number and title below)
Submitter:	Jeremy Velasquez, TexEnergy Solutions	
Requested Action:	Add new as follows	
Proposed Change:	Section 12.7.1 - Isolation of remodeled areas. To prevent contamination of unrenovated spaces, meet the following: <u>Remodeled space is isolated from unrenovated space by masking of openings and/or providing strip doors.</u>	
Reason:	Air quality should be maintained in occupied spaces of the building while renovations of functional spaces is ongoing.	
TG Recommendation (AS or AM or D):	A	
Modification of Proposed Change:		
TG Reason:	1 yes, 2 code requirement	
TG Vote:		

P520	LogID 6532	Other for Chapter 12 (include section number and title below)
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Add new as follows	
Proposed Change:	12.706 Innovative Practices 12.706.1 Ducts in conditioned space. In climate zones1-4, heating system and cooling system ducts are located in conditioned space. Points = TBD 12.706.2 Insulated basement and crawl space. In climate zones4-8, basement and crawl space are insulated as required by the ICC IECC. Points = TBD	
Reason:	In cooling dominated climate zones, where basements or crawl spaces are rarely constructed, moving or placing heating and cooling system ducts within (insulated) conditioned space improves the efficiency of the heating / cooling system. In heating dominated climate zones, where basements or crawl spaces are common, insulating those spaces as required by the ICC IECC improves energy efficiency significantly.	
Parallel Proposal Staff Note:	A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 7 – Proposal LogID 6515. The parallel proposal is being reviewed by TG-5. TG-7 should review the recommendation of TG-5 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-5 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.	
TG Recommendation (AS or AM or D):	Disapprove	
Modification of Proposed Change:		
TG Reason:	Duplicative with provisions of Section 703.4.3. Also included in the 2018 IECC.	

TG Vote:	(unanimous 5-0-0)
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P521	LogID 6253	Other for Chapter 12 (include section number and title below)
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>Create a new and separate Multi Family Remodel Chapter</u>
Reason:	Create a Phased Existing Building pathway to certification e.g a Project is undergoing a phased unit by unit remodel
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	N/A
TG Reason:	No separate chapter is needed in the opinion of the Task Group. The current structure is adequate.
TG Vote:	14 Yes; 1 Abstain

P522	LogID 6271	Other for Chapter 12 (include section number and title below)
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Submitter:	Paul Gay, self
Requested Action:	Add new as follows
Proposed Change:	<u>12.901 XX Carbon Monoxide Alarms. A carbon Monoxide alarm is provided</u>
Reason:	allow battery/ hard wire or existing smoke to be switch out for combo CO/Smokeeasy/inexpensive life safety measure
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	In favor of action on Log 17-029
TG Vote:	(unanimous 8-0-0)

P523	LogID 6261	Other for Chapter 12 (include section number and title below)
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Submitter:	Paul Gay, self
Requested Action:	Revise as follows
Proposed Change:	<u>Add Innovative credits/trade off</u>
Reason:	Provide opportunity for innovative practices to be rewarded
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Not enough information
TG Vote:	

P524	LogID 6274	Other for Chapter 12 (include section number and title below)
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Submitter:	Paul Gay, US-EcoLogic
Requested Action:	Add new as follows

Proposed Change:	NEW MF PHASES UNIT SECTION OR CHAPTER (1) <u>No Carpeting is installed in half/full bathrooms, kitchens, utility/laundry rooms or within 3 ft of entries.</u>
Reason:	Mandatory for unit by unit upgrade/ Retrofit
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	N/A
TG Reason:	The Task Group recommends the submitter resubmit in all carpet section for new construction and remodeling
TG Vote:	15 Yes

P525	LogID 6266	Other for Chapter 12 (include section number and title below)
Submitter:	Paul Gay, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	<u>12 .902.6.X</u> <u>MF Compartmentalization</u> <u>Breaks or Joints thru the residential unit envelope shall be sealed includes but not limited to HVAC boots sealed to sheetrock / sub floor, Fan casings.</u>	
Reason:	new credit awards points to Encourage additional air sealing/compartmentalization	
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 9 – Proposal LogID 6268. The parallel proposal is being reviewed by TG-3 as Chapter 9 falls under their direct purview and by TG-6 as the proposal will affect multifamily buildings.</i>	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	N/A	
TG Reason:	See LogID 6268	
TG Vote:	15 Yes	

P526	LogID 6258	Other for Chapter 12 (include section number and title below)
Submitter:	Paul Gay, self	
Requested Action:	Add new as follows	
Proposed Change:	<u>Create a new section in chapter 12 or entire new chapter for MF Units Where applicable remove all restrictive i.e "all units" language</u>	
Reason:	basis for new MF unit section or chapter is to provide a building with a gradual ...phased.... pathway toward certification. removing "all Units" or similar language will avoid confusion if some units are certified ahead of other units not yet retrofitted	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	N/A	
TG Reason:	No separate chapter is needed in the opinion of the Task Group. The current structure is adequate.	
TG Vote:	14 Yes; 1 Abstain	

P527	LogID 6315	Other for Chapter 12 (include section number and title below)
Submitter:	Susan Gitlin, US Environmental Protection Agency	
Requested Action:	Add new as follows	

Proposed Change:	<p><u>12.608.2 Design for Adaptation and Disassembly.</u> <u>For siding, windows, mechanical/electrical/plumbing (MEP) systems, wall paneling and flooring materials, incorporate three or more of the following measures, as applicable:</u></p> <ul style="list-style-type: none"> <u>Use reusable/recyclable materials. For example:</u> <ul style="list-style-type: none"> o <u>Use materials and fixtures for which take-back or reuse/recycling programs are established.</u> o <u>Use high-quality materials that exceed minimum performance standards.</u> o <u>Avoid use of coatings or adhesives that prevent reuse and recycling.</u> <u>Promote disentanglement of building components. For example:</u> <ul style="list-style-type: none"> o <u>To limit the destruction of the surrounding materials, incorporate installation details that permit easy removal and replacement of components.</u> o <u>Consolidate placement of MEP components in building floorplans and cross-sections.</u> <u>Provide access to and use reversible connections, such as screws, bolts, or clips.</u> <input type="checkbox"/> <u>Provide disassembly and reuse information to owner.</u>
Reason:	Section 12.608 currently includes a single subsection encouraging the dematerialization of building components. The Design for Adaptation and Disassembly is similarly, an upstream strategy to improve resource efficiency and therefore, fits with the upstream, resource-efficiency focus of this section. The Design for Adaptation and Disassembly involves the utilization of recyclable/reusable building materials and preserves resources by maximizing their recovery and ensuring their continuous reutilization.
Parallel Proposal Staff Note:	<i>A parallel proposal was submitted by the same proponent for the corresponding section in Chapter 6 – Proposal LogID 6302. The parallel proposal is being reviewed by TG-3. TG-7 should review the recommendation of TG-3 to determine if any additional changes are necessary for application to remodeling, otherwise the recommendations of TG-3 on the parallel proposal will be adopted and automatically applied to the corresponding remodeling section.</i>
TG Recommendation (AS or AM or D):	Disapprove
Modification of Proposed Change:	
TG Reason:	Topic seems to be covered in other sections
TG Vote:	(unanimous 7-0-0)

P528	LogID 6387	Other for Chapter 12 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<p>ADD NEW FUNCTIONAL AREA DESIGNATIONS FOR MULTIFAMILY BUILDINGS OR CREATE NEW MULTIFAMILY SPECIFIC REMODEL CHAPTER...</p> <p><u>12.7 Multifamily Common Areas</u></p> <p><u>12.7.0 Applicability.</u> In addition to the practices listed in Section 12.1, the following practices are mandatory for all multifamily residenitally associated common area remodels.</p> <p><u>12.7.1 Kitchen.</u> When the common area remodel includes a kitchen, the remodel shall also comply with the practices in Section 12.2.</p> <p><u>12.7.2 Bathroom.</u> When the common area remodel includes a bathroom, the remodel shall also comply with the practices in Section 12.3.</p> <p>RENUMBER SUBSEQUENT SECTIONS</p>	
Reason:	The current version of the Standard does not adequately address the remodeling of multifamily buildings. For a multifamily building it is not kitchens, bathrooms, or basements that define a functional area but the dwelling units and the residenital associated common areas.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	N/A	

TG Reason:	To discourage piecemeal certification and “green-washing” of partial buildings
TG Vote:	14 Yes; 1 Abstain

P529	LogID 6388	Other for Chapter 12 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<p>ADD NEW FUNCTIONAL AREA DESIGNATIONS FOR MULTIFAMILY BUILDINGS OR CREATE NEW MULTIFAMILY SPECIFIC REMODEL CHAPTER</p> <p><u>12.6 Multifamily Dwelling Units</u></p> <p><u>12.6.0 Applicability.</u> In addition to the practices listed in Section 12.1, the following practices are mandatory for all multifamily dwelling unit remodels.</p> <p><u>12.6.1 Kitchen.</u> When the dwelling unit remodel includes a kitchen, the remodel shall also comply with the practices in Section 12.2.</p> <p><u>12.6.2 Bathroom.</u> When the dwelling unit remodel includes a bathroom, the remodel shall also comply with the practices in Section 12.3.</p> <p>RENUMBER SUBSEQUENT SECTIONS</p>	
Reason:	The current version of the Standard does not adequately address the remodeling of multifamily buildings. For a multifamily building it is not kitchens, bathrooms, or basements that define a functional area but the dwelling units and the residential associated common areas.	
TG Recommendation (AS or AM or D):	D	
Modification of Proposed Change:	N/A	
TG Reason:	The current NGBS language and available are adequate.	
TG Vote:	14 Yes; 1 No Vote	

P530	LogID 6386	Other for Chapter 12 (include section number and title below)
Submitter:	Aaron Gary, self	
Requested Action:	Add new as follows	
Proposed Change:	<p>ADD NEW FUNCTIONAL AREA DESIGNATIONS FOR MULTIFAMILY BUILDINGS OR CREATE NEW MULTIFAMILY SPECIFIC REMODEL CHAPTER</p> <p><u>12.6 Multifamily Dwelling Units</u></p> <p><u>12.6.0 Applicability.</u> In addition to the practices listed in Section 12.1, the following practices are mandatory for all multifamily dwelling unit remodels.</p> <p><u>12.6.1 Kitchen.</u> When the basement remodel includes a kitchen, the remodel shall also comply with the practices in Section 12.2.</p> <p><u>12.6.2 Bathroom.</u> When the basement remodel includes a bathroom, the remodel shall also comply with the practices in Section 12.3.</p> <p>RENUMBER SUBSEQUENT SECTIONS</p>	
Reason:	The current version of the Standard does not adequately address the remodeling of multifamily buildings. For a multifamily building it is not kitchens, bathrooms, or basements that define a functional area but the dwelling units and the residential associated common areas.	
TG Recommendation (AS or AM or D):	D	

Modification of Proposed Change:	N/A
TG Reason:	The current NGBS language and available are adequate.
TG Vote:	14 Yes; 1 No Vote

P531	LogID 6373	Other for Chapter 12 (include section number and title below)
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Submitter:	Jeremy Velasquez, TexEnergy Solutions
Requested Action:	Add new as follows
Proposed Change:	Section 12.7 - <u>Add a new section as relevant for Health & Well-being credits</u>
Reason:	As sustainability protocols evolve, the natural progression is to include measures that have a positive benefit on occupant health and well-being.
TG Recommendation (AS or AM or D):	D
Modification of Proposed Change:	
TG Reason:	Not enough information
TG Vote:	

Chapter 13 Referenced Documents

P532	LogID 6445	1302 Referenced Documents
Submitter:	Craig Conner, self	
Requested Action:	Revise as follow	
Proposed Change:	IBC 2015 <u>2018</u> IECC 2015 <u>2018</u> IFGC 2015 <u>2018</u> IMC 2015 <u>2018</u> IRC 2015 <u>2018</u>	
Reason:	I-codes should be updated to the new 2018 version to be consistent with the I-family. Include Howard Wiig, from Hawaii, representing self as a co-proponent	
TG Recommendation (AS or AM or D):	AS (Coordination TG)	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	9-5-0	

P533	LogID 6517	1302 Referenced Documents
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	Update references to ICC IBC, ICC IECC, ICC IFGC, ICC IMC, and ICC IRC to the 2018 edition.	
Reason:	The 2018 edition of these codes are now finalized.	
TG Recommendation (AS or AM or D):	AS (Coordination TG)	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	9-5-0	

P534	LogID 6472	1302 Referenced Documents
Submitter:	Ben Edwards, self	
Requested Action:	Revise as follows	
Proposed Change:	Update referenced I-Codes to current, 2018 version.	
Reason:	Capture improvements from most recent codes cycle. Align with other proposed changes.	
TG Recommendation (AS or AM or D):	AS (Coordination TG)	
Modification of Proposed Change:		
TG Reason:		
TG Vote:	9-5-0	

P535	LogID 6582	1302 Referenced Documents
Submitter:	Steven Rosenstock, Edison Electric Institute	

Requested Action:	Add new as follows
Proposed Change:	<p><u>ASHRAE</u></p> <p>American Society of Heating, Refrigeration, and Air Conditioning Engineers 1791 Tullie Circle, N.E. Atlanta, GA 30329 www.ashrae.org (404) 636-8400</p> <p><u>189.1 2014 ANSI/ASHRAE/IES/USGBC Standard</u> <u>189.1-2014, Standard for the Design of</u> <u>High-Performance Green Buildings</u></p> <p><u>303.1.1, 304.1.1</u></p>
Reason:	This new reference is aligned with proposed changes in Sections 303 and 304, which include a reference to Standard 189.1. The 2017 version of ASHRAE 189.1 has not been published as of the time this proposal was filed. The provisions of ASHRAE Standard 189.1-2017 will be incorporated into the next version of the International Green Construction Code, which has not been published yet.
TG Recommendation (AS or AM or D):	D (TG-1)
Modification of Proposed Change:	
TG Reason:	The proponent agrees (2/6/2018 at TG-1 meeting) with disapproval as comments are addressed by action on proposal 6585. The TG will recommend reference the 2018 IgCC.
TG Vote:	19 – 0 – 0

P536	LogID 6467	1302 Referenced Documents	
Submitter:	Greg Johnson, Outdoor Power Equipment Institute		
Requested Action:	Add new as follows		
Proposed Change:	International Code Council: <u>International Wildland-Urban Interface Code 2018</u>		
Reason:	This supports proposed changes in Chapter 4 & 5.		
TG Recommendation (AS or AM or D):	D (TG-2)		
Modification of Proposed Change:			
TG Reason:	No longer necessary based on changes made to earlier proposal.		
TG Vote:	5-1		

P537	LogID 6405	1302 Referenced Documents									
Submitter:	Eric Lacey, RECA										
Requested Action:	Revise as follows										
Proposed Change:	1302 REFERENCED DOCUMENTS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">ICC</td> <td colspan="3"><i>International Code Council 500 New Jersey Ave, NW, 6th Floor Washington, DC 20001 www.iccsafe.org (888) 422-7233</i></td> </tr> <tr> <td>IECC</td> <td><u>2015 2018</u></td> <td>International Energy Conservation Code</td> <td>610.1.1(2), 701.1.4, 701.4.3.3,</td> </tr> </table>			ICC	<i>International Code Council 500 New Jersey Ave, NW, 6th Floor Washington, DC 20001 www.iccsafe.org (888) 422-7233</i>			IECC	<u>2015 2018</u>	International Energy Conservation Code	610.1.1(2), 701.1.4, 701.4.3.3,
ICC	<i>International Code Council 500 New Jersey Ave, NW, 6th Floor Washington, DC 20001 www.iccsafe.org (888) 422-7233</i>										
IECC	<u>2015 2018</u>	International Energy Conservation Code	610.1.1(2), 701.1.4, 701.4.3.3,								

				702.2.1, 702.2.2, 702.2.3, 703.1.1.1, 703.1.1.2, 703.1.2, 703.1.3, 703.2.1, 705.6.2.1, 705.6.2.3(1), 705.6.2.3(2), 705.6.3, 11.610.1.1(2), 11.701.4.0, 11.701.4.3.3, 12.1.610.1.1(2), 12.1.701.4.0
Reason:	This proposal updates the references in ICC-700 from the 2015 IECC to the 2018 IECC. As with previous editions of ICC-700, we think it is most appropriate for the 2018 ICC-700 to build upon the efficiencies of the most recent national model energy code, the 2018 IECC. This will also be consistent with the practice of all International Codes cross-referencing the most recent edition of each code. In terms of energy efficiency, this update will result in a slight overall improvement in efficiency, but there are no significant changes in terms of formatting.			
TG Recommendation (AS or AM or D):	Approve (TG-5)			
Modification of Proposed Change:				
TG Reason:				
TG Vote:	8-4-1			

Appendices

P538	LogID 6563	B100 Scope and applicability (Whole Building Ventilation System Specifications)
Submitter:	Craig Conner, self	
Requested Action:	Delete and substitute as follows	
Proposed Change:	<p><u>Replace whole Appendix with:</u> <u>The ventilation rate shall be as defined in IRC section M1507.3.3as equation 15-1 (shown below)</u></p> <p><u>Ventilation rate in cubic feet per minute = (0.01 x total square foot area of house) + [7.5x (number of bedrooms + 1)] * coefficient</u></p> <p><u>Where coefficient are as follows:</u></p> <p><u>Balanced/Distributed/Mixed Coefficient 0.75</u> <u>Example; HRV's/ERV's/ or supply linked with exhaust fan with forced air (furnace/AC) run time</u></p> <p><u>Unbalanced/Distributed/Mixed Coefficient 1.0</u> <u>Example; Exhaust fan or supply fan or supply air duct to air handler with forced air (furnace/AC) run time</u></p> <p><u>Unbalanced/Distributed/Not Mixed Coefficient 1.25</u> <u>Example; Multi point exhaust fan without a forced air system</u></p> <p><u>Unbalanced/Not Distributed/Not Mixed Coefficient 1.5</u> <u>Example; Single point exhaust fan without a forced air system</u></p> <p>Retain and renumber: Tables TABLE B201.1a&b Ventilation Air Requirements, cfm, which are taken from the IRC 1507.3.3(1)</p> <p><u>Balanced air flow is supply and exhaust within 20%. Points 10</u></p> <p>B201.1.2 Alternative Ventilation. Other methods may be used to provide the required ventilation rates when approved by a licensed design professional. B201.3 Airflow Measurement. The airflow required by this section is the quantity of outdoor ventilation air supplied and/or indoor air exhausted by the ventilation system as installed and shall be measured using a flow hood, flow grid, or other airflow measuring device. Ventilation airflow of systems with multiple operating modes shall be tested in all modes designed to meet this section.</p>	
Reason:	The ASHRAE 62.2 ventilation rate has gotten too high. This removes the reference to ASHRAE. The NGBS should use the IRC ventilation rate in M1507.3.3. This adds consideration of ventilation quality. Balanced ventilation performs the best, hence less ventilation is needed.	
TG Recommendation (AS or AM or D):	AM (TG-3) – see the attached word document for modifications	
Modification of Proposed Change:	Revised proposal attached in separate word document due to formatting issues (copy/paste table within a table)	
TG Reason:		
TG Vote:	10 (favor), 0 opposed, 1 abstain, chair not voting - AM	

P539	LogID 6518	C300 International Climate Zones
Submitter:	John Woestman, Extruded Polystyrene Foam Association (XPSA)	
Requested Action:	Revise as follows	
Proposed Change:	Add description or definition of Tropical Climate Zone.	
Reason:	"Tropical" climate zone is used in numerous locations in standard, but not identified, defined, or described in Appendix C, or anywhere else in the standard.	
TG Recommendation (AS or AM or D):	AM	

Modification of Proposed Change:	Add to Section C200 of Appendix C <u>C201.1 Tropical climate zone. The tropical climate zone shall be defined as:</u> <u>1. Hawaii, Puerto Rico, Guam, American Samoa, U.S. Virgin Islands, Commonwealth of Northern Mariana Islands; and</u> <u>2. Islands in the area between the Tropic of Cancer and the Tropic of Capricorn.</u>
TG Reason:	To provide a definition for tropical zone consistent with IECC.
TG Vote:	13-0-0

P540 Quality		LogID 17-014	Appendix D Examples of Third-Party Programs for Indoor Environmental
Submitter:	Robert De Vries, Nu Wool Co		
Requested Action:	Remove reference to a proprietary certification program		
Proposed Change:	Remove reference to a proprietary certification program		
Reason:	Codes and Standards should not be using proprietary, non ANSI supported certification bodies to substantiate products that already have had the required testing done by third party lab following ANSI standards and test methods. Specifically Underwrites Laboratory is the owner of GreenGuard AND a testing lab. This can require an entity looking for certification to have UL conduct duplicate testing to satisfy the GreenGuard component when product tests for other conformance (Certification of Use) has been done elsewhere. I would think the NAHB would frown on such a monopoly.		
TG Recommendation (AS or AM or D):	D (TG-3)		
Modification of Proposed Change:			
TG Reason:	The proposal does not specify which programs to remove other than UL in the reason statement.		
TG Vote:	7-0-0 chair not voting		

Addendum

Three proposed changes related to the scope of the Standard were received. Because the scope of the Standard is outside the purview of the consensus committee, these proposed changes will not be submitted to the consensus committee for consideration or vote. The proposed changes are provided below as a courtesy copy.

LogID 6219 101.2 Scope	
Submitter:	Janice Romanosky, Pando Alliance
Requested Action:	Add new as follows
Proposed Change:	In mixed use buildings where all practices for the residential portions of the project have been implemented in commercial leased spaces where applicable, the entire building will be considered to have earned the certification. In cases where leasable space is still vacant at the time of certification, a green fit-out guide shall be created to inform the incoming tenant(s) of green practices to be incorporated into their fit-out.
Reason:	A LEED for Homes certification covers the entire building by using a mechanism similar to that described in this proposal. As is, the comm/retail exclusion could, in some jurisdictions, force a mixed use project to use a separate green compliance path for the comm/retail spaces in order to achieve certification for the entire building. Alternately, a team might instead choose a rating system that covers the entire building.
Secretariat Note:	Changes in the scope of the Standard are outside of the purview of the consensus committee. The proposed change is included for the benefit of the committee.

LogID 6218 101.2 Scope	
Submitter:	Janice Romanosky, Pando Alliance
Requested Action:	Delete without substitution
Proposed Change:	The provisions of this Standard shall apply to the design and construction of the residential portion(s) of any building, not classified as institutional use , in all climate zones.
Reason:	This change will allow for the application of this Standard to assisted living facilities, which serve as the primary residence for an increasingly significant population of retired and aging individuals.
Secretariat Note:	Changes in the scope of the Standard are outside of the purview of the consensus committee. The proposed change is included for the benefit of the committee.

LogID 6490 303.1 Green building	
Submitter:	Steven Armstrong, self
Requested Action:	Add new as follows
Proposed Change:	Consider allowing for inclusion of Assisted Living facilities
Reason:	Similar to dorms and currently accepted fire house properties.
Secretariat Note:	Changes in the scope of the Standard are outside of the purview of the consensus committee. The proposed change is included for the benefit of the committee.