

**Comments Provided to DPS on
Proposed Amendments to IgCC
Chapters 1—3**

PROPOSED AMENDMENTS TO 2012 IgCC
For Discussion at the DPS Public Work Session
May 21, 2014 2:00pm – 4:00pm
(Proposed by DPS)

PROPOSED AMENDMENTS TO THE 2012 INTERNATIONAL GREEN CONSTRUCTION CODE
Chapters 1 - 3

- Sec. 1. Section 101.1 **Title**. Replace the parentheses and the phrase in parentheses with “Montgomery County, Maryland”
- Sec. 2. Section 101.3 **Scope**. Delete-Replace with: “The provisions of this code shall apply to new construction as it relates to design and construction of buildings and additions, building sites, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures and to the site on which the building is located. Occupancy classifications shall be determined in accordance with the International Building Code (IBC).”
- Sec. 3. **Exceptions**.
In the first sentence delete reference to Item 1.3 to read: “The code shall not apply to items 1.1 and 1.2 except where the jurisdiction adopts the jurisdictional requirements of Section 302.1, Item 1, for residential buildings”
Exception 1, 1.3: DELETE
- Sec. 4. Section 101.3.1 **Residential construction**.
Delete reference to R-3 in Item 1 to read: “Group R-2 residential buildings five stories or more in height above grade plane, their accessory structures, and the site or lot upon which these buildings are located that comply with ICC 700, with a minimum energy efficiency category requirements of the Silver Performance level or equivalent.”
- Sec. 5. Section 101.4 **Appendices**. Delete and replace with: “Provisions in Appendix A shall apply as noted in Section A102, Tables A104, A105, A106, A107 and A108.”
- Sec. 6. Sec 102.4 **Referenced codes and standards**.
Delete references to the International Fire code, International Plumbing Code, and the International Property Maintenance Code and replace with: “The following codes shall be considered part of the requirements of this code: the International Building Code, the International Energy Conservation Code® (IECC®), the international Existing Building Code® (IEBC®), the International Fuel Gas Code® (IFGC®), the International Mechanical Code® (IMC®), the Montgomery County Fire Safety Code, and the International Residential Code® (IRC®).”

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Sec. 7. Sec 102.6. **Existing structures.** Delete references to the International Fire code and the International Property Maintenance Code and replace with:
 “The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the International Building Code, the International Existing Building Code, the Montgomery County Fire Safety Code or as is deemed necessary by the code official for the general safety and welfare of building occupants and the public.”

Sec. 8 Table 302.1 is amended as follows:

TABLE 302.1
 REQUIREMENTS DETERMINED BY THE JURISDICTION

Section	Section Title or Description and Directives	Jurisdictional Requirements	
Chapter 1. Scope			
101.3 Exception 1.0	Detached one- and two-family dwellings and multiple single-family dwellings (town-houses) not more than three stories in height above grade plane with a separate means of egress, their accessory structures, and the site or lot upon which these buildings are located, shall comply with ICC 700.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
101.3 Exception 1.2	Group R-3 residential buildings, their accessory structures, and the site or lot upon which these buildings are located, shall comply with ICC 700	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
101.3 Exception 1.3	Group R-2 and R-4 residential buildings for stories or less in height above grade plane, their accessory structures, and the site or lot upon which these buildings are located, shall comply with ICC 700.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Chapter 4. SITE DEVELOPMENT AND LAD USE			
402.2.1	Flood hazard area preservation, general	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
402.2.2	Flood hazard area preservation, specific	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
402.3	Surface water protection	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
402.5	Conservation area	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
402.7	Agricultural land	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
402.8	Greenfield sites	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
407.4.1	High-occupancy vehicle parking	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
407.4.2	Low-emission, hybrid and electric vehicle parking	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
409.1	Light pollution control	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Chapter 5. MATERIAL RESOURCES CONSERVATION AND EFFICIENCY			
503.1	Minimum percentage of waste material diverted from landfills	<input type="checkbox"/> 50% <input type="checkbox"/> 65% <input checked="" type="checkbox"/> 75%	

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	Chapter 6. ENERGY CONSERVATION, EFFICIENCY AND CO ² e EMISSION REDUCTION		
301.1, 302.1.1, 602.1	Of Jurisdictional Choice- The jurisdiction shall indicate a zEPI of 46 or less in each occupancy for which it intends to require enhanced energy performance.	Occupancy: NOT APPLICABLE zEPI: 50	
604.1	Automated demand response infrastructure	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Chapter 7. WATER RESOURCES CONSERVATION, QUALITY AND COMFORT		
702.7	Municipal reclaimed water	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Chapter 8. INDOOR ENVIRONMENTAL QUALITY AND COMFORT		
804.2	Post- Construction Pre-Occupancy Baseline IAQ Testing	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
807.1	Sounds transmission and sound levels	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	Chapter 10. EXISTING BUILDINGS: <i>STRIKE IN ITS ENTIRETY</i>		
1007.2	Evaluation of existing buildings	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1007.3	Post Certificate of Occupancy zEPI, energy demand, and CO ² e emissions reporting	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Comments on Proposed Amendments to IgCC Chapters 1 – 3

From an anonymous Respondent

Corrections Needed to Proposed Amendments to 2012 IgCC Chapters 1, 2, and 3

Sec. 4. Section 101.3.1 Residential Construction. Delete reference to R-3 in Item 1 to read..... Comment: There is no reference to R-3 in Item 1.

Sec. 8. TABLE 302.1, 101.3 Exception 1.3 Group R-2 and R-4 residential buildings for stories.... Comment: "for" should be changed to read "four"



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May 20, 2014

TO: Montgomery County Department of Permitting Services
SUBJ: International Green Construction Code Chapters 1, 2 and 3 – Public Work Session May 21, 2014

The Maryland-National Capital Building Industry Association is pleased to have the opportunity to make preliminary comments on Montgomery County's intent to adopt the 2012 International Green Construction Code (IgCC) with amendments.

The Association appreciates that the proposed amendments to IgCC Chapters 1, 2 and 3 align with covered multifamily buildings as defined in the County's Green Buildings Law and that there are deemed-to-comply provisions using ICC 700 for residential construction.

We recommend that the language adopting the IgCC clearly state that the 2012 IgCC is being adopted by Montgomery County. The IgCC is currently being amended in the International Code Commission's Code Development Cycle and will be finalized this year as a 2015 version.

Further comments from the Association will be forthcoming as DPS issues additional amendments.

I can be reached at 240-678-8100, or arosenblum@mnchia.org, if you have any questions.

Annette Rosenblum
Director, Regulatory Affairs
MNCBIA

New Address: Maryland Center for Housing
11825 W. Market Place
Fulton, MD 20759

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May 16, 2014

Via email diane.jones@montgomerycountymd.gov

Diane Schwartz Jones, Director
Department of Permitting Services
255 Rockville Pike, 2nd Floor
Rockville, Maryland 20850-4166

Re: Adoption of International Green Construction Code (IgCC)

Dear Ms. Jones:

The Asphalt Pavement Alliance (APA) is a coalition of the Asphalt Institute, the National Asphalt Pavement Association (NAPA) and the State Asphalt Pavement Associations. In concert with the Maryland Asphalt Association, we are writing to you as Montgomery County continues a process of adopting the International Green Construction Code.

We are aware, your Department has published proposed amendments to the IgCC for chapters 1 through 3. We would like to apprise you of a specific concern we have within chapter 4, with the thought your Department might include the resolution of this issue within its soon to be released proposed amendments for that chapter.

We have a specific concern with the 408.2 Site Hardscape section and suggest possible recommendations to address the issues. Currently, section 408.2.1 mandates urban heat island (UHI) mitigation for not less than 50% of site hardscape with material as having a solar reflectance value of not less than 0.30. In doing so, this code neglects many other factors that are required for optimizing hardscape designs, such as pavement loads, environmental conditions, soil strength, and cost and determines the hardscape material based on one feature, its color. As a result, asphalt pavements, which have many other sustainable facets such as reusing asphalt pavements or recycling other waste materials including tires and shingles, are not allowed. This makes the current form of IgCC an outlier as the only green standard, rating system, or code to effectively ban the use of asphalt, the most commonly used paving material.

We commend that the code attempts to recognize other ways that UHI may be mitigated in subsections 408.2.2-408.2.4, however, it is still limiting other beneficial hardscapes that have proven environmental benefits and will contribute to increasing the project cost. For example 408.2.4 identifies permeable pavements as a strategy for the mitigation of the urban heat island effect, but the definition as written is unclear and restrictive, eliminating common permeable pavements materials such as porous asphalt pavements which can improve water quality, stormwater runoff, reduce deicing chemicals, and mitigate UHI.



Not only would adoption of that provision in the form code be a major expansion over what is regulated today in Montgomery County, the provision also has the effect of the state selecting hardscape materials through code, when such material selection is site specific and should be an owner's determination in concert with its design and engineering professionals. To address these concerns we propose the following recommendations:

Recommendation #1

We recommend that the entire section 408.2 Site hardscape (including the underlying subsections 408.2.1 thru 408.2.4) be deleted.

And we recommend, that to then clean up the remaining language, section 408.1 General, be edited to be consistent with the deleted text by removing the then superfluous words beginning in the first line of that section, deleting "and building site development".

This recommendation does not preclude the use of any urban heat island effect mitigation strategy that a design team may recommend, including it would allow permeable hard scape that might be pervious concrete or porous asphalt pavement.

Alternative Recommendation #2

Outside of metropolitan areas, urban heat island mitigation is unlikely to be a significant concern for building sites in most counties within this state. Therefore, mitigation of urban heat island effect site hardscape is appropriate for Appendix A: Project Elective. In cases where urban heat island effect site hardscape mitigation is desirable, we urge the following modifications to the IgCC text.

We recommend that the entire section 408.2 Site hardscape (including the underlying subsections 408.2.1 thru 408.2.4) be deleted from its current location and moved to and replace the existing A104.9.9 thru A104.9.3 (such that the mitigation be a project elective);

And that in 408.2, in the 5th line the reference to 408.2.4 be deleted and replaced with 408.2.5.

Additionally, we recommend adding a new subsection,

408.2.5 Porous Asphalt Pavement. Porous asphalt pavements include open-graded asphalt mixtures with percent air voids not less than 16%. Porous asphalt pavements shall be permitted where the use of these types of hardscapes does not interfere with fire and emergency apparatus or vehicle or personnel access and egress, utilities, or telecommunications lines.

[Commentary: This is the fifth option for mitigating building site heat island impacts.]

Asphalt.

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And we recommend, that to then clean up the remaining language, section 408.1 General, be edited to be consistent with the deleted text by removing the then superfluous words beginning in the first line of that section, deleting "and building site development".

Should there be any questions, Stuart Kaplow, a sustainability and green building attorney we are working with, would be pleased to speak with you or appear at one of the public work sessions. If this proposal is not acceptable to your Department, we request an opportunity to address this matter otherwise. Please let us know at your earliest convenience and thank you in advance.

Respectfully Submitted,

Heather Dylla, PhD, NAPA Dir. of Sustainable Engineering
Michael Kvach, Executive Director APA
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cc: Hemal Mustafa, Manager, hemal.mustafa@montgomerycountymd.gov
Stuart Kaplow, Esquire, Stuart D. Kaplow, P.A., 410-339-3910, skaplow@stuartkaplow.com
Brian Dolan, Executive Director, Maryland Asphalt Association, bdolan@mdasphalt.org



WSSC comments for the initial proposed amendments to the IGCC

Sec. 2. ...The provisions of this code shall apply to new construction as it relates to design and construction buildings and additions.....

WSSC Comment: "new construction" should be added as a definition. Does it include additions?

Sec. 5. ...replace with: "Provisions in Appendix A shall apply as noted..."

WSSC Comment: What becomes of the other Appendixes? Are they in or they out?

Sec. 6. ...the Montgomery County Fire Safety Code, ~~and~~ the International Residential Code (IRC), and the WSSC Plumbing and Fuel Gas Code.

WSSC Comment: delete words show in red with strikethrough and add words in green and underlined.

Sec. 7 ... the Montgomery County Fire Safety Code, the WSSC Plumbing and Fuel Gas Code, or as is deemed...

WSSC Comment: add words in green and underlined.

Sec. 8. Table 302.1 Section 402.8 Greenfield Sites – The "no" box is checked.

WSSC Comment: shouldn't all the provisions of the green code apply to Greenfield Sites?

Chapter 1 – Scope and Application [A] 101.1 Title. These regulations shall be known as the Green Construction Code of [NAME OF JURISDICTION] herein-after referred to as “this code.”

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None 101.2 General. This code is an overlay document to be used in conjunction with the other codes and standards adopted by the jurisdiction. This code is not intended to be used as a standalone construction regulation document and permits are not to be issued under this code. This code is not intended to abridge or supersede safety, health or environmental requirements under other applicable codes or ordinances.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: No action required

2011 ASHRAE 189.1 CORRELATION: None

101.3 Scope. The provisions of this code shall apply to the design, construction, addition, alteration, change of occupancy, relocation, replacement, repair, equipment, building site, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures and to the site on which the building is located. Occupancy classifications shall be determined in accordance with the International Building Code (IBC) Exceptions: 1. The code shall not apply to items 1.1, 1.2 and 1.3 except where the jurisdiction adopts the jurisdictional requirements of Section 302.1, Item 1, for residential buildings. 1.1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height above grade plane with a separate means of egress, their accessory structures, and the site or lot upon which these buildings are located. 1.2. Group R-3 residential buildings, their accessory structures, and the site or lot upon which these buildings are located. 1.3. Group R-2 and R-4 residential buildings four stories or less in height above grade plane, their accessory structures, and the site or lot upon which these buildings are located. 2. The code shall not apply to equipment or systems that are used primarily for industrial or manufacturing. 3. The code shall not apply to temporary structures approved under Section 3103 of the International Building Code. 4. Where 2011 ASHRAE 189.1 is selected in accordance with Section 301.1.1, 2011 ASHRAE 189.1 shall not apply to buildings identified in Exceptions 1 through 3.

101.3.1 Residential construction. In lieu of the requirements of this code the following shall be deemed-to-comply with this code: 1. Group R-2 and R-4 residential buildings five stories or more in height above grade plane, their accessory structures, and the site

or lot upon which these buildings are located that comply with ICC 700, with a minimum energy efficiency category requirements of the Silver performance level or equivalent. 2. Group R-2 and R-4 portions of mixed use buildings that comply with ICC 700, with a minimum energy efficiency category requirements of the Silver performance level or equivalent. The remainder of the building and the site upon which the building is located shall comply with the provisions of this code.

PROPOSED ACTION: Adopt with following modification to 101.3: Add 5. All buildings less than 10,000 sq.ft gross floor area

RATIONALE / IMPACT: The language is consistent with other ICC codes and proposed modification is consistent with current Montgomery County Green Buildings Law (Chapter 8, Article 7 of Montgomery County Code)

2011 ASHRAE 189.1 CORRELATION: Chapter 2

101.4 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: 4.1

101.5 Intent. This code is intended to safeguard the environment, public health, safety and general welfare through the establishment of requirements to reduce the negative impacts and increase the positive impacts of the built environment on the natural environment and building occupants. This code is not intended to abridge or supersede safety, health or environmental requirements under other applicable codes or ordinances.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: Chapter 1; 2.3

102.1 Code conflicts. Where there is a conflict between a general requirement and a specific requirement of this code, the specific requirement shall be applicable. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most practical requirement to meet the intent of the code shall govern.

102.4.1 Conflicting provisions. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code or the International Codes listed in Section 102.4, the provisions of this code or the International Codes listed in Section 102.4, as applicable, shall take precedence over the provisions in the referenced code or standard.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: Provides flexibility for practical interpretation by project team in consultation with DPS

2011 ASHRAE 189.1 CORRELATION: None

102.2 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: 2.3

102.3 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

102.4 Referenced codes and standards. The following codes shall be considered part of the requirements of this code: the International Building Code, the International Code Council Performance Code (ICCPC) the International Energy Conservation Code (IECC) the International Existing Building Code (IEBC) the International Fire Code (IFC) the International Fuel Gas Code (IFGC) the International Mechanical Code (IMC) the International Plumbing Code (IPC) International Property Maintenance Code (IPMC) and the International Residential Code (IRC)

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

102.4.1 Conflicting provisions. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code or the International Codes listed in Section 102.4, the provisions of this code or the International Codes listed in Section 102.4, as applicable, shall take precedence over the provisions in the referenced code or standard.

PROPOSED ACTION: Recommend that DPS revise for clearer intent

RATIONALE / IMPACT: Poorly written and difficult to understand

2011 ASHRAE 189.1 CORRELATION: None

102.5 Partial invalidity. In the event that any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

102.6 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the International Building Code, the International Existing Building Code, the International Property Maintenance Code or the International Fire Code, or as is deemed necessary by the code official for the general safety and welfare of building occupants and the public.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: 2.1

102.7 Mixed occupancy buildings. In mixed occupancy buildings, each portion of a building shall comply with the specific requirements of this code applicable to each specific occupancy.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

103.1 General. The code official established in the International Building Code is hereby authorized and directed to enforce the provisions of this code. The code official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions and how this code relates to other applicable codes and ordinances. Such interpretations, policies and procedures shall be in compliance with the intent and purpose of this code and other applicable codes and ordinances. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code or other applicable codes and ordinances.

103.2 Applications and permits. The code official shall enforce compliance with the provisions of this code as part of the enforcement of other applicable codes and regulations, including the referenced codes listed in Section 102.4.

103.3 Notices and orders. The code official shall issue all necessary notices or orders to ensure compliance with this code.

103.4 Inspections. The code official shall make inspections, as required, to determine code compliance, or the code official shall have the authority to accept reports of inspection by approved agencies or individuals. The code official is authorized to engage such expert opinion as deemed necessary to report on unusual technical issues that arise, subject to the approval of the appointing authority.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

104.1 Information on construction documents. The content and format of construction documents shall comply with the International Building Code.

PROPOSED ACTION: Adopt with the following addition: The content and format of construction documents shall comply with the International Building Code as amended by County Executive Regulations.

RATIONALE / IMPACT: Comply with local amendments

2011 ASHRAE 189.1 CORRELATION: None

105.1 General. This code is not intended to prevent the use of any material, method of construction, design, system, or innovative approach not specifically prescribed herein, provided that such construction, design, system or innovative approach has been approved by the code official as meeting the intent of this code and all other applicable laws, codes and ordinances.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

105.2 Approved materials and equipment. Materials, equipment, devices and innovative approaches approved by the code official shall be constructed, installed and maintained in accordance with such approval.

105.2.1 Used materials, products and equipment. The use of used materials, products and equipment that meet the requirements of this code for new materials is permitted. Used equipment and devices shall be permitted to be reused subject to the approval of the code official.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

105.3 Modifications. Wherever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, upon application of the owner or owner's representative, provided the code official shall first find that special individual reason makes the strict letter of this code impractical and that the modification is in compliance with the intent and purpose of this code and that such modification does not lessen the minimum requirements of this code. The details of granting modifications shall be recorded and entered in the files of the department.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

105.4 Innovative approaches and alternative materials, design, and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design, innovative approach, or method of

construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design, innovative approach or method of construction shall be reviewed and approved where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, design, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code. The details of granting the use of alternative materials, designs, innovative approach and methods of construction shall be recorded and entered in the files of the department.

105.4.1 Research reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

105.4.2 Tests. Wherever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the code official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the code official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be Retained by the code official for the period required for retention of public records

PROPOSED ACTION: Adopt as written: See also proposed innovation credit(s) in Appendix A

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

105.5 Compliance materials. The code official shall be permitted to approve specific computer software, worksheets, compliance manuals and other similar materials that meet the intent of this code.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

105.6 Approved programs. The code official or other authority having jurisdiction shall be permitted to deem a national, state or local program to meet or exceed this code.

Buildings approved in writing by such a program shall be considered to be in compliance with this code.

105.6.1 Specific approval. The code official or authority having jurisdiction shall be permitted to approve programs or compliance tools for a specified application, limited scope or specific locale. For example, a specific approval shall be permitted to apply to a specific section or chapter of this code.

PROPOSED ACTION: Adopt with following modification: Add 105.6.2 USGBC's LEED 2009 is an accepted compliance path if achieved at the Silver level

RATIONALE / IMPACT: Allows time for DPS and project teams to transition to IGCC and ASHRAE 189.1 compliance paths while maintaining intent of the County's Green Building Law.

2011 ASHRAE 189.1 CORRELATION: None

106.1 Required. Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any energy, electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the code official and obtain the required permit under the applicable code or regulation relevant to the intended work. Separate permits shall not be issued under this code. Exemptions from permit requirements shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other applicable laws, codes or ordinances of this jurisdiction.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language supports other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

107.1 Fees. Fees for permits shall be paid as required, in accordance with the schedule as established by the applicable governing authority for the intended work prescribed in an application.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

108.1 General. Appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code shall be made to the Board of Appeals created under the applicable International Code

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

108.2 Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply or an equivalent or better form of construction is proposed. The board shall have no authority to waive requirements of this code.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

108.3 Qualifications. The members of the board of appeals related to interpretation of this code shall be qualified by experience and training in the matters covered by this code and shall not be employees of the jurisdiction.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

109.1 Violations. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

2012 IgCC - Chapter 2 – Scope and Application 201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

201.2 Interchangeability. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: None

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the International Building Code (IBC) International Energy Conservation Code (IECC) International Fire Code (IFC) International Fuel Gas Code (IFGC) International Mechanical Code (IMC) International Plumbing Code (IPC) or International Residential Code (IRC) such terms shall have the meanings ascribed to them as in those codes.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: The language is consistent with other ICC codes

2011 ASHRAE 189.1 CORRELATION: 3.1

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

PROPOSED ACTION: Delete and replace with: Other terms that are not defined shall have their ordinarily accepted meanings within the context in which they are used. Ordinarily accepted meanings shall be based upon American standard English language usage, as documented in an unabridged dictionary accepted by the authority having jurisdiction.

RATIONALE / IMPACT: Language revisions to eliminate multiple interpretations and provide specific direction for consistency.

2011 ASHRAE 189.1 CORRELATION: 3.1

202 DEFINITIONS

95th-PERCENTILE RAINFALL EVENT. The rainfall event having a precipitation total greater than or equal to 95 percent of all rainfall events during a 24-hour period on an annual basis.

A-WEIGHTED SOUND LEVEL. Sound pressure level in decibels measured with a sound level meter using an A-weighted network.

ADDITION. An extension or increase in floor area or height of a building or structure.

AIR CURTAIN. A device that generates and discharges a laminar air stream installed at the building entrance intended to prevent the infiltration of external, unconditioned air into the conditioned spaces, or the loss of interior, conditioned air to the outside.

ALTERATION. Any construction or renovation to an existing structure other than repair or addition.

ALTERNATE ON-SITE NONPOTABLE WATER. Non-potable water from other than public utilities, onsite surface sources and subsurface natural freshwater sources. Examples of such water are gray water, onsite reclaimed water, collected rainwater, captured condensate, and rejected water from reverse osmosis systems.

APPROVED. Acceptable to the code official or authority having jurisdiction.

APPROVED AGENCY. An established and recognized agency regularly engaged in conducting tests or furnishing inspection services or commissioning services, where such agency has been approved.

APPROVED SOURCE. An independent person, firm or corporation, approved by the code official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

AREA, TOTAL BUILDING FLOOR. The total of the total floor areas on all stories of the building.

AREA, TOTAL FLOOR. The total area of a story as measured from the interior side of the exterior walls.

ASBESTOS-CONTAINING PRODUCTS. Building materials containing one or more of the following mineral fibers in any detectable amount that have been intentionally added or are present as a contaminant: chrysotile, amosite, crocidolite, tremolite, actinolite,

anthophyllite and any fibrous amphibole. **AUTOMATIC.** Self-acting, operating by its own mechanism when actuated by some impersonal influence, such as a change in current strength, pressure, temperature or mechanical configuration (see "Manual").

AUTOMATIC TIME SWITCH CONTROL. A device or system that automatically controls lighting or other loads, including switching ON or OFF, based on time schedules.

BACKWATER VALVE. A device or valve installed in the system drain piping which prevents drainage or waste from backing up into the system and causing contamination or flooding.

BICYCLE PARKING, LONG TERM. Bicycle racks or storage lockers provided for bicycle riders including, but not limited to, employees and students, anticipated to be at a building site for four or more hours.

BICYCLE PARKING, SHORT TERM. Bicycle racks or storage lockers provided for bicycle riders including, but not limited to, customers, visitors, and event audiences, anticipated to be at a building site for less than four hours.

BIO-BASED MATERIAL. A commercial or industrial material or product, other than food or feed, that is composed of, or derived from, in whole or in significant part, biological products or renewable domestic agricultural materials, including plant, animal, and marine materials, or forestry materials.

BRANCH CIRCUIT. All circuit conductors between the final branch-circuit overcurrent device and the load.

BROWNFIELD. A site in which the expansion, redevelopment or reuse of would be required to address the presence or potential presence of a hazardous substance, pollutant or contaminant.

Brownfield sites include: 1. EPA-recognized brownfield sites as defined in Public Law 107-118 (H.R. 2869) "Small Business Liability Relief and Brownfields Revitalization Act," 40 CFR, Part 300; and 2. Sites determined to be contaminated according to local or state regulation. **BTU.** Abbreviation for British thermal unit, which is the quantity of heat required to raise the temperature of 1 pound (454 g) of water 1 °F (0.56 °C) (1 Btu 1055 J).

BUFFER. The number of feet of setback from a wetland or water body determined by a jurisdiction to be necessary to protect a specific wetland or water body. The width of the buffer varies based on characteristics of the wetland and surrounding areas including, but not limited to, the type and function of the wetland, soils, slopes, land uses, habitats, and needs for wildlife or water quality protection.

BUILDING. Any structure used or intended for supporting or sheltering any use or occupancy, including the energy using systems and site subsystems powered through the building's electrical service.

BUILDING COMMISSIONING (See "Commissioning").

BUILDING SITE. A lot, or a combination of adjoining lots, that are being developed and maintained subject to the provisions of this code. A building site shall be permitted to include public ways, private roadways, bikeways and pedestrian ways that are developed as an element of the total development.

BUILDING THERMAL ENVELOPE. The basement walls, exterior walls, floor, roof, and any other building elements that enclose conditioned space. This boundary also includes the boundary between conditioned space and any exempt or unconditioned space.

CAPTIVE KEY CONTROL. An automatic control device or system that energizes circuits when the key that unlocks the sleeping unit is inserted into the device and that de-energizes those circuits when the key is removed.

CARBON DIOXIDE EQUIVALENT (CO₂e) EMISSIONS. A measure used to compare the emissions from various greenhouse gases based upon their 100-year time horizon global warming potential (GWP). CO₂e emissions from carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) are included. The carbon dioxide equivalent for a gas is derived by multiplying the weight of the gas by the associated GWP.

CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.

CODE OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

COLLECTION PIPING. Unpressurized piping used within the collection system that drains rainwater or gray water to the storage tank by gravity.

COMBINATION OVEN/STEAMER. A chamber designed for heating, roasting, or baking food by a combination of conduction, convection, radiation, electromagnetic energy or steam.

COMMISSIONING. A process that verifies and documents that the selected building and site systems have been designed, installed, and function in accordance with the owner's project requirements and construction documents, and minimum code requirements

COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard, and medium-density fiberboard. Composite wood products do not include the following: 1. Hardboard and structural plywood as specified in DOC PS-1; 2. Structural panels as specified in DOC PS-2; 3. Structural composite lumber as specified in ASTM D 5456; 4. Oriented strand board and glued laminated timber as specified in ANSI A190.1; 5. Prefabricated wood I-joists as specified in ASTM D 5055; and 6. Finger-jointed lumber.

CONSERVATION AREA. Land designated by the jurisdiction or by state or federal government, as appropriate for conservation from development because of the land possessing natural values important to the community including, but not limited to, wildlife habitat, forest or other significant vegetation, steep slopes, ground water recharge area, riparian corridor or wetland.

CONSTRUCTION-COMPACTED SUBSOIL. Subsoils that are compacted through any of the following: clearing, grading, smearing and topsoil removal such that the infiltrative capacity of the soils or the bulk density of the soils is significantly altered in comparison to the reference soil properties.

CONSTRUCTION DOCUMENTS. Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit.

CONTROL. A specialized automatic or manual device or system used to regulate the operation of lighting, equipment or appliances. CO 2 e. Weight of each gas emitted when consuming a specific energy type in the building per unit of the specific energy type provided to the building at the utility meter multiplied by the global warming potential (GWP) of the specific gas, and then summed over all three gases emitted. where: GWP (CO 2 1 GWP (CH 4 25 GWP (N 2 O) 298. **COURT.** An open, uncovered space, unobstructed to the sky, bounded on three or more sides by exterior building walls or other enclosing devices.

DAYLIGHT CONTROL. A device or system that provides automatic control of electric light levels based on the amount of daylight in a space.

DAYLIGHT SATURATION. The percentage of daylight hours throughout the year when not less than 28 foot candles (300 lux) of natural light is provided at a height of 30 inches (760 mm) above the floor.

DAYLIT AREA. That portion of a building's interior floor area that is regularly illuminated by natural light.

DECIBELS (dB). Term used to identify ten times the common logarithm of the ratio of two like quantities proportional to the power of energy.

DECONSTRUCTION. The process of systematically disassembling a building, structure, or portion thereof, so that the materials, products, components, assemblies and modules can be salvaged for repurpose, reuse or recycling.

DEMAND LIMIT. The shedding of loads when pre-determined peak demand limits are about to be exceeded.

DEMAND RESPONSE (DR). The ability of a building system to reduce the energy consumption for a specified time period after receipt of demand response signal typically from the power company or demand response provider. Signals requesting demand response are activated at times of peak usage or when power reliability is at risk.

DEMAND RESPONSE, AUTOMATED (AUTO-DR). Fully automated demand response initiated by a signal from a utility or other appropriate entity, providing fully automated connectivity to customer energy end-use control strategies.

DEMAND RESPONSE AUTOMATION INTERNET SOFTWARE. Software that resides in a building energy management control system that can receive a demand response signal and automatically reduce heating, ventilation, air-conditioning (HVAC) and lighting system loads.

DEMOLITION. The process of razing, relocation, or removal of an existing building or structure, or a portion thereof.

DETENTION. The short-term storage of stormwater on a site in order to regulate the runoff from a given rainfall event and to control discharge rates to reduce the impact on down-stream stormwater systems.

DISHWASHER. Dishwasher, door type. A machine designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution and a sanitizing final rinse, that is designed to accept a standard 20-inch by 20-inch (508 mm by 508 mm) dish rack which requires the raising of a door to place the rack into the wash/rinse chamber. Dishwasher, multiple tank conveyor. A machine designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution and a sanitizing final rinse, using a conveyor or similar mechanism to carry dishes through a series of wash and rinse sprays utilizing one or more tanks within the machine. This type of machine may include a prewashing section before the washing section and an auxiliary rinse section between the power rinse and final rinse section. Dishwasher, pot pan and utensil. A machine designed to clean and sanitize pots, pans, and kitchen utensils by applying sprays of detergent solutions and a sanitizing final rinse. Dishwasher, rackless conveyor. A machine designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution and a sanitizing final rinse, using a conveyor or similar mechanism to carry

dishes through a series of wash and rinse sprays within the machine. Rackless conveyor machines utilize permanently installed, vertical pegs to carry dishware through the wash and rinse cycles. Dishwasher, single tank conveyor. A machine designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution and a sanitizing final rinse, using a conveyor or similar mechanism to carry dishes through a series of wash and rinse sprays within the machine. This type of machine does not have a pumped rinse tank but may include a prewashing section ahead of the washing section. Dishwasher, under counter. A machine designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution and a sanitizing final rinse, that has an overall height 38 inches (965 mm) or less, designed to be installed under food preparation workspaces.

DISTRIBUTION PIPE. Pressurized or nonpressure piping used within the plumbing system.

DIVERSE USE CATEGORIES. Categories of occupancies and land uses which are designated as either community, retail or service facilities: Community facilities. The community facilities category includes: child care; civic or community center; a building containing a place of worship; police or fire station; post office, public library, public park, school, senior care facility, homeless shelter, and similar social services facilities. Retail uses. The retail use category includes: convenience store, florist, hardware store, pharmacy, grocery or supermarket and similar retail uses. Service uses. The service use category includes: bank, coffee shop or restaurant; hair care; health club or fitness center; laundry or dry cleaner, medical or dental office and similar service uses.

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

ENERGY MANAGEMENT AND CONTROL SYSTEM, BUILDING (EMCS). A computerized, intelligent network of electronic devices, designed to automatically monitor and control the energy using systems in a building.

ENERGY STAR. A joint program of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE) designed to identify and promote energy-efficient products and practices.

ENERGY STAR QUALIFIED. Appliances or equipment that have been found to comply with

ENERGY STAR requirements by a third-party organization recognized by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE).

EQUIPMENT. All piping, ducts, vents, control devices and other components of systems other than appliances which are permanently installed and integrated to provide control of environmental conditions for buildings. This definition shall also include other systems specifically regulated in this code.

EVAPORATIVE COOLING SYSTEM. A system for cooling the air in a building or space by removing heat from the outdoor air by means of the evaporation of water. The system forces air through wet porous pads, causing the latent heat of evaporation to cool the air. Water is continuously circulated over the pads to replenish the evaporated water. Where the cooled air is sent directly into the building, the system is referred to as "direct evaporative cooling." Where the cooled air is sent through heat exchangers recirculating indoor air, the system is referred to as "indirect evaporative cooling."

EXISTING BUILDING. A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

EXISTING STRUCTURE. A structure erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

EXTERIOR WALL, OBSTRUCTED. That portion of an exterior wall with limited access to natural light due to shading from buildings, structures, or geological formations,

FACILITY OPERATIONS. A facility is operational during the time when the primary activity that facility is designed for is taking place. For Group A and Group M occupancies, this is the time during which the facility is open to the public.

FAN EFFICIENCY GRADE (FEG). A numerical rating identifier that specifies the fan's aerodynamic ability to convert shaft power, or impeller power in the case of a direct driven fan, to air power. FEGs are based on fan peak (optimum) energy efficiency that indicates the quality of the fan energy usage and the potential for minimizing the fan energy usage.

FARMLAND. Farmlands of statewide significance. Land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage and oil seed crops. Criteria for delineating this land is determined by the appropriate state agency. Prime farmland. Land that has the best combination of physical and chemical characteristics for producing food, fiber, feed, forage, and oil seed crops and that is also available for these uses, including cropland, pastureland, forest land, range land and similar lands which are not water areas or urban or built-up land areas. Unique farmland. Land other than prime farmland that is used for the production of specific high-value food or fiber crops. The land has the special combination of soil quality, location, growing season and moisture supply needed to economically produce sustained high-quality crops or high yields of a specific crop where the lands are treated and managed according to acceptable farming methods.

FEEDER CONDUCTORS. The circuit conductors between the service equipment, the source of a separately derived system, or other power supply source and the final branch-circuit overcurrent device. **FENESTRATION.** Skylights, roof windows, vertical windows (fixed or moveable), opaque doors, glazed doors, glazed block, and combination opaque/glazed doors. Fenestration includes products with glass and nonglass glazing materials.

FIBER PROCUREMENT SYSTEM. A system that ensures that fiber procured for the manufacture of wood and wood-based products comes from responsible or certified sources in accordance with ASTM D 7612.

FIREPLACE. An assembly consisting of a hearth and fire chamber of noncombustible material and provided with a chimney for use with solid fuels. **Factory-built fireplace.** A listed and labeled fireplace and chimney system composed of factory-made components, and assembled in the field in accordance with the manufacturer's instructions and the conditions of the listing. **Masonry fireplace.** A field-constructed fireplace composed of solid masonry units, bricks, stones or concrete.

FLOOD HAZARD AREA. The greater of the following two areas: 1. The area within a floodplain subject to a 1-percent or greater chance of flooding in any given year; 2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

FLOOD OR FLOODING. A general and temporary condition of partial or complete inundation of normally dry land from: 1. The overflow of inland or tidal waters. 2. The unusual and rapid accumulation of runoff of surface waters from any source.

FLOODPLAIN. An area of land at risk of being inundated with water during high flows. Floodplains are associated with both water courses, such as rivers and streams, and bodies of water, such as oceans and lakes.

FLOOR AREA, NET. The actual occupied area not including unoccupied accessory areas such as corridors, stairways, toilet rooms, mechanical rooms and closets.

FREEZER. Equipment designed to enclose a space of mechanically cooled and temperature-controlled air used to maintain prescribed frozen food holding temperatures.

FRYER, DEEP FAT. A unit with a width between 12 and 18 inches (305 and 457 mm) that cooks food by immersion in a tank of oil or fat more than 25 pounds (11 kg) and less than 50 pounds (23 kg).

FRYER, LARGE VAT. A unit with a width greater than 18 inches (457 mm) that cooks food by immersion in a tank of oil or fat more than 50 pounds (23 kg).

GLOBAL WARMING POTENTIAL (GWP). The cumulative radiative forcing effects of a gas over a 100-year time horizon resulting from the emission of a unit mass of gas relative to a reference gas. The GWP-weighted emissions of direct greenhouse gases in the U.S. Inventory are presented in terms of equivalent emissions of carbon dioxide (CO₂) using units of teragrams of carbon dioxide equivalents (TgCO₂ Eq.). conversion: Tg=10⁹ kg 10⁶ metric tons 1 million metric tons.

GRAY WATER. Untreated waste water that has not come into contact with waste water from water closets, urinals, kitchen sinks, or dishwashers. Gray water includes, but is not limited to, waste water from bathtubs, showers, lavatories, clothes washers, and laundry trays.

GREENFIELD. Land that has not been previously developed or has a history of only agricultural use.

GREENHOUSE GAS. A gas in the atmosphere that absorbs and emits radiation within the thermal infrared range.

GRIDDLE, DOUBLE-SIDED. Equipment used to cook food between flat, smooth, or grooved horizontal plates heated from above and underneath.

GRIDDLE, SINGLE-SIDED. Equipment used to cook food directly on a flat, smooth, or grooved horizontal plate heated from underneath.

GROUND SOURCE OR GEOEXCHANGE. Where the earth is used as a heat sink in air conditioning or heat pump island systems. This also applies to systems utilizing subsurface water. Ground source heating and cooling uses the relatively constant temperature of the earth below the frost line. This steady temperature profile allows the earth to be used as a heat source in the winter and as a heat sink in the summer.

HARDSCAPE. Areas of a building site covered by man-made materials.

HIGH-OCCUPANCY VEHICLE. A vehicle which is occupied by two or more people, including carpools, van-pools, and buses.

HISTORIC BUILDINGS. Buildings that are listed in or eligible for listing in the National Register of Historic Places, or designated as historic under an appropriate state or local law.

ICE MACHINE. Ice machine, ice-making head. A factory-made assembly consisting of a condensing unit and ice-making section operating as an integrated unit, with means for

making and harvesting ice, that combines the ice-making mechanism and the condensing unit in a single package, but requires a separate ice storage bin. Ice machine, remote-condensing unit. A factory-made assembly consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice, where the ice-making mechanism and condenser or condensing unit are in separate sections. Ice machine, self-contained unit. A factory-made assembly consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice and where the ice-making mechanism and storage compartment are combined into an integral cabinet.

IMPERVIOUS SURFACE. Paved concrete or asphalt and other similar surfaces that readily accommodate the flow of water with relatively little absorption, as typically used at exterior horizontal areas including, but not limited to, parking lots, bikeways, walkways, plazas and fire lanes.

INDEPENDENT SYSTEM OPERATOR (ISO). The electric system's operator.
INFEASIBLE. An alteration of a building, site feature, or system that has little likelihood of being accomplished because existing physical or site constraints prohibit modification or addition of elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction.

INFILL SITE. Infill sites are one of the following: 1. A vacant lot, or collection of adjoining lots, located in an established, developed area that is already served by existing infrastructure; 2. A previously developed lot or a collection of previously developed adjoining lots, that is being redeveloped or is designated for redevelopment.

INFRASTRUCTURE. Facilities within a jurisdiction that provide community services and networks for travel and communication including: transportation services such as, but not limited to roads, bikeways and pedestrian ways and transit services; utility systems such as, but not limited to, water, sanitary sewage, stormwater management, telecommunications, power distribution and waste management; and community services such as, but not limited to, public safety, parks, schools and libraries.

INFRASTRUCTURE, ADEQUATE. The capacity of infrastructure systems, as determined by the jurisdiction, to serve the demands imposed by a new development on building sites without negatively impacting services to existing users of the infrastructure and without negatively impacting the overall functionality of the infrastructure. Adequacy can be determined based on existing infrastructure or on the infrastructure as augmented by a development project.

INVASIVE PLANT SPECIES. Species that are not native to the ecosystem under consideration and that cause, or are likely to cause, economic or environmental harm or harm to human, animal or plant health, defined by using the best scientific knowledge of that region. Consideration for inclusion as an invasive species shall include, but shall

not be limited to, those species identified on: 1. Approved city, county or regional lists.
2. State noxious weeds laws, 3. Federal noxious weeds laws.

JURISDICTION. The governmental unit that has adopted this code under due legislative authority.

LABEL. An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency.

LABELED. Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

LIFE CYCLE ASSESSMENT (LCA). A technique to evaluate the relevant energy and material consumed and environmental emissions associated with the entire life of a building, product, process, material, component, assembly, activity or service.

LIGHTING BOUNDARY. Where the lot line abuts a public walkway, bikeway, plaza, or parking lot, the lighting boundary shall be a line 5 feet (1524 mm) from the lot line and located on the public property. Where the lot line abuts a public roadway or public transit corridor, the lighting boundary shall be the centerline of the public roadway or public transit corridor. In all other circumstances, the lighting boundary shall be at the lot line.

LISTED. Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

LOT. A portion or parcel of land considered as a unit.

LOT LINE. A line dividing one lot from another, or from a street or any public place.

LOW EMISSION, HYBRID AND ELECTRIC VEHICLE. Vehicles that achieve EPA Tier 2, California LEV-II, or a minimum of EPA LEV standards, whether by means of hybrid, alternative fuel, or electric power.

LOW VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMER. A NEMA 'Class 1' transformer that is air-cooled, does not use oil as a coolant, has an input voltage ≤ 600 volts, and is rated for operation at a frequency of 60 hertz.

MANUAL. Capable of being operated by personal intervention (see "Automatic").

MINIMUM EFFICIENCY REPORTING VALUE (MERV). Minimum efficiency-rated value for the effectiveness of air filters.

METER. A measuring device used to collect data and indicate usage.

MODIFIED ENERGY FACTOR (MEF). The capacity in cubic feet of the clothes container of a clothes washing machine, C, divided by the clothes washing total energy consumption in kWh per cycle. Total energy consumption per cycle is the sum of the machine electrical energy consumption per cycle, M; the hot water energy consumption per cycle, E; and the energy required for removal of the remaining moisture in the wash load per cycle, D. The equation is: $MEF = C / (M + E + D)$

MUNICIPAL RECLAIMED WATER. Reclaimed water treated by a municipality.

NATIVE PLANT SPECIES. Species that are native to the ecosystem under consideration, defined by using the best scientific knowledge of that region. Consideration for inclusion as a native species shall include, but is not limited to, those species identified in any of the following: 1. Approved city, county and regional lists. 2. State laws. 3. Federal laws.

NONPOTABLE WATER. Water not safe for drinking, personal or culinary utilization.

OCCUPANT LOAD. The occupant load as calculated in accordance with the requirements of Chapter 10 of the International Building Code.

OCCUPANT SENSOR CONTROL. A device or system that detects the presence or absence of people within an area and causes lighting, equipment, or appliances to be regulated accordingly.

ONCE-THROUGH COOLING. The use of water as a cooling medium where the water is passed through a heat exchanger one time and then discharged to the drainage system. This also includes the use of water to reduce the temperature of condensate or process water before discharging it to the drainage system.

ORGANIC MATTER. Carbon-containing material composed of both living organisms and formerly living, decomposing plant and animal matter. Soil organic matter content is

either naturally occurring or is a result of supplementation with compost or other partially decomposed plant and animal material.

OUTDOOR ORNAMENTAL FOUNTAIN. An outdoor fixture whose dominant use is aesthetic consisting of a catch basin, reservoir or chamber from which one or more jets or streams of water is emitted.

OVEN, CONVECTION. A chamber designed for heating, roasting, or baking food by conduction, convection, radiation, and/or electromagnetic energy. **PERMIT.** An official document or certificate issued by the jurisdiction which authorizes performance of a specified activity.

PERVIOUS CONCRETE. Hydraulic cement concrete with distributed, interconnected macroscopic voids that allows water to pass through the material with little resistance.

POST-CONSUMER RECYCLED CONTENT. The proportion of recycled material in a product generated by house-holds or by commercial, industrial, and institutional facilities in their role as end users of the product that can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

POTABLE WATER. Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming to the bacteriological and chemical quality requirements of the Public Health Service Drinking Water Standards or the regulations of the public health authority having jurisdiction.

POWER CONVERSION SYSTEM. The equipment used to convert incoming electrical power, to the force causing vertical motion of the elevator. In a traction system, this would include the electrical drive, motor, and transmission.

PRECONSUMER (POST-INDUSTRIAL) RECYCLED CONTENT. The proportion of recycled material in a product diverted from the waste stream during the manufacturing process. Preconsumer recycled content does not include reutilization of material such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

PRIMARY ENERGY USE. The total fuel-cycle energy embedded within building materials and all forms of energy required for building operation. Units of energy are reported in total Btu's for building materials and total Btu's per unit of energy (e.g., kWh, therms and gallons) consumed in the operation of building mechanical systems (HVAC and lighting). Total fuel-cycle energy includes energy required from the point of initial extraction, through processing and delivery to the final point of consumption into building materials or building operation.

PROCESS LOADS. Building energy loads that are not related to building space conditioning, lighting, service water heating or ventilation for human comfort.

PROJECTION FACTOR. A ratio that describes the geometry of a horizontal projection, as determined in accordance with Equation 4-2 of Section C402.3.3 of the International Energy Conservation Code.

PROPOSED DESIGN. A description of the proposed building used to estimate annual energy use for determining compliance based on total building performance including improvements in design such as the use of passive solar energy design concepts and technologies, improved building thermal envelope strategies, increased equipment and systems efficiency, increased use of daylighting, improved control strategies and improved lighting sources that will result in a decrease in annual energy.

R-VALUE (THERMAL RESISTANCE). The inverse of the time rate of heat flow through a body from one of its bounding surfaces to the other surface for a unit temperature difference between the two surfaces, under steady state conditions, per unit area ($\text{h ft}^2 \text{ }^\circ\text{F/Btu}$) [$(\text{m}^2 \text{ K/W})$].

RAINWATER. Water from natural precipitation.

RAINWATER COLLECTION AND CONVEYANCE SYSTEM. Rainwater collection system components extending between the collection surface and the storage tank that convey collected rainwater, usually through a gravity system.

REBOUND AVOIDANCE, EXTENDED AUTO-DR CONTROL. The rebound avoidance, extended Auto-DR control strategy is essentially an extension of the rebound avoidance, slow recovery strategy. Although a slow recovery strategy is critical to maximize the benefit of an Auto-DR strategy, the building energy management and control system (EMCS) programming for just such a strategy can be very complex or might not be possible for many conventional EMCS's. A rebound avoidance, extended Auto-DR control strategy also includes logic and controls for avoiding a rebound peak when the control signal is stopped.

REBOUND AVOIDANCE, SEQUENTIAL EQUIPMENT RECOVERY. Sequential equipment recovery that disperses short duration equipment start up spikes gradually, thereby avoiding a larger whole building demand spike.

REBOUND AVOIDANCE, SLOW RECOVERY. Slow recovery strategies slowly recover the target parameter that was controlled in the demand response strategy. Where this strategy is applied, the zone setpoints are gradually restored to the normal setpoints. Where air moving systems are targeted, a limit strategy is applied to the adjustable speed drives; fan adjustable speed drive limits are gradually shifted up.

RECEIVING WATERS. Groundwater, creeks, streams, rivers, lakes or other water bodies that receive treated or untreated waste water or stormwater, including water from combined sewer systems and stormwater drains.

RECLAIMED WATER. Nonpotable water that has been derived from the treatment of waste water by a facility or system licensed or permitted to produce water meeting the jurisdiction's water requirements for its intended uses. Also known as "Recycled Water."

RECYCLABILITY. Ability of a material or product to be captured and separated from a waste stream for conversion, reprocessing or reuse.

REFRIGERATOR. Equipment designed to enclose a space of mechanically cooled and temperature-controlled air used to maintain prescribed cold food holding temperatures.

REGISTERED DESIGN PROFESSIONAL. An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A registered design professional engaged by the owner to review and coordinate certain aspects of the project, as determined by the building official, for compatibility with the design of the building or structure, including submittal documents prepared by others, deferred submittal documents and phased submittal documents.

RELOCATABLE (RELOCATED) MODULAR BUILDING. A partially or completely assembled building using a modular construction process and designed to be reused or repurposed multiple times and transported to different building sites.

RENEWABLE ENERGY CREDIT (REC). An REC represents the property rights to the environmental, social, and other nonpower qualities of renewable electricity generation. An REC, and its associated attributes and benefits, is sold separately from the underlying physical electricity associated with an onsite renewable energy source. REC's allow organizations to support renewable energy development and protect the environment where renewable power products are not locally available. There are two approaches to verifying REC ownership and the right to make environmental claims: (1) REC contracts from a list of approved providers, including an audit of the chain of custody; and (2) REC tracking systems.

RENEWABLE ENERGY SOURCE, ONSITE. Energy derived from solar radiation, wind, waves, tides, biogas, bio-mass, or geothermal energy. The energy system providing onsite renewable energy is located on or adjacent to the building site, and generate energy for use on the building site or to send back to the energy supply system.

REPAIR. The reconstruction or renewal of any part of an existing building or building site for the purpose of its maintenance.

RETENTION (STORMWATER). The permanent holding of stormwater on a site, preventing the water from leaving the site as surface drainage and allowing for use of the water on site, or loss of the water through percolation, evaporation or absorption by vegetation.

REUSE. To divert a material, product, component, module, or a building from the waste stream in order to use it again.

ROOF COVERING. The covering applied to the roof deck for weather resistance, fire classification or appearance.

ROOF REPLACEMENT. The process of removing the existing roof covering, repairing any damaged substrate and installing a new roof covering.

ROOF WASHER. A device or method for removal of sediment and debris from collection surface by diverting initial rainfall from entry into the storage tank. Also referred to as a First Flush Device.

SEQUENCE OF OPERATIONS (HVAC). A fully descriptive detailed account of the intended operation of HVAC systems covering the operation of systems in narrative terms, accounting for all of the equipment that makes up the systems, how the systems are designed to operate, and how they are to be controlled.

SITE DISTURBANCE. Site preparation or construction which negatively affects the native soils, native vegetation, or native animal life of the site

SKYLIGHTS AND SLOPED GLAZING. Glass or other transparent or translucent glazing material installed at a slope of less than 60 degrees (1.05 rad) from horizontal. Glazing material in skylights, including unit skylights, tubular daylighting devices, solariums, sunrooms, roofs and sloped walls, are included in this definition.

SKYLIGHT, UNIT. A factory-assembled, glazed fenestration unit, containing one panel of glazing material that allows for natural lighting through an opening in the roof assembly while preserving the weather-resistant barrier of the roof.

SLEEPING UNIT. A room or space in which people sleep, that 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 dwelling unit are not sleeping units.

SOLAR HEAT GAIN COEFFICIENT (SHGC). The ratio of the solar heat gain entering the space through the fenestration assembly to the incident solar radiation. Solar heat

gain includes directly transmitted solar heat and absorbed solar radiation which is then reradiated, conducted or convected into the space.

SOLAR PHOTOVOLTAIC SYSTEM. Devices such as photovoltaic (PV) modules and inverters that are used to transform solar radiation into energy.

SOLAR REFLECTANCE. A measure of the ability of a surface material to reflect sunlight. It is the fraction of incident sunlight reflected by a surface, expressed on a scale of 0 to 1. Solar reflectance is also referred to as "albedo."

SOLAR REFLECTANCE INDEX (SRI). A value that incorporates both solar reflectance and thermal emittance in a single measure to represent a surface's relative temperature in the sun. SRI compares a surface's temperature to those of standard black and standard white surfaces. It typically ranges from 0 for standard black to 100 for standard white, but can be less than 0 or greater than 100.

SOLAR THERMAL EQUIPMENT. A device that uses solar radiation to heat water or air for use within the facility for service water heating, process heat, space heating or space cooling.

STANDARD REFERENCE DESIGN. A building design that meets the minimum requirements of the International Energy Conservation Code and the additional requirements of Section 602.2.

STANDBY MODE (ELEVATOR). An operating mode during periods of inactivity in which electrical loads are reduced to conserve energy. For elevators, standby mode begins up to 5 minutes after an elevator is unoccupied and has parked and completed its last run and ends when the doors are re-opened. For escalators and moving walkways, standby mode begins after traffic has been absent for up to 5 minutes and ends when the next passenger arrives.

STEAM COOKER. Equipment in which potable steam is used for heating, cooking, and reconstituting food.

STORAGE TANK (GRAY WATER OR RAINWATER). A fixed container for holding water at atmospheric pressure for subsequent use as part of a plumbing or irrigation system.

STORY. That portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above. It is measured as the vertical distance from top to top of two successive tiers of beams or finished floor surfaces and, for the topmost story, from the top of the floor finish to the top of the ceiling joists or, where there is not a ceiling, to the top of the roof rafters.

STRUCTURE. That which is built or constructed.

SUBSTANTIAL IMPROVEMENT. Any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not include either of the following: 1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the code official and that are the minimum necessary to assure safe living conditions. 2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

THERMAL EMITTANCE. The ratio of radiative power emitted by a sample to that emitted by a black body radiator at the same temperature.

TOPSOIL. The upper, outmost layer of soil having the highest concentration of organic matter and microorganisms and where the majority of biological soil activity occurs.

TRACTION ELEVATOR. An elevator system in which the cars are suspended by ropes wrapped around a sheave that is driven by an electric motor.

TRANSIT SERVICE. A service that a public transit agency serving the area has committed to provide including, but not limited to, bus, streetcar, light or heavy rail, passenger ferry or tram service.

TUBULAR DAYLIGHTING DEVICE (TDD). A non-operable fenestration unit primarily designed to transmit daylight from a roof surface to an interior space via a tubular conduit. The basic unit consists of an exterior glazed weathering surface, a light-transmitting tube with a reflective interior surface, and an interior-sealing device such as a translucent panel. The unit is either factory assembled, or field assembled from a manufacturing kit.

U-FACTOR (THERMAL TRANSMITTANCE). The coefficient of heat transmission (air to air) through a building component or assembly, equal to the time rate of heat flow per unit area and unit temperature difference between the warm side and cold side air films (Btu/h ft² °F) [W/(m² K)].

VEGETATIVE ROOF. An assembly of interacting components designed to waterproof and normally insulate a building's top surface that includes, by design, vegetation and related landscaping elements.

VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

VISIBLE TRANSMITTANCE (VT). The ratio of visible light entering the space through the fenestration product assembly to the incident visible light. VT includes the effects of glazing material and frame and is expressed as a number between 0 and 1.

VOLATILE ORGANIC COMPOUND (VOC). A volatile chemical compound based on carbon chains or rings that typically contain hydrogen and sometimes contain oxygen, nitrogen and other elements, and that has a vapor pressure of greater than 0.1 mm of mercury at room temperature.

VOLTAGE DROP. A decrease in voltage caused by losses in the circuit conductors connecting the power source to the load.

WATER FACTOR (WF). The quantity of water, in gallons per cycle (Q), divided by a clothes washing machine clothes container capacity in cubic feet (C). The equation is: $WF = Q/C$

WATER FEATURE. An outdoor open water installation or natural open water way within a built landscape to retain water supplied from source other than rainwater naturally flowing into the feature.

WATERSENSE. A program of the U.S. Environmental Protection Agency (EPA) designed to identify and promote water-efficient products and practices.

WETLAND. Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

ZERO ENERGY PERFORMANCE INDEX (zEPI). A scalar representing the ratio of energy performance of the proposed design compared to the average energy performance of buildings relative to a benchmark year.

PROPOSED ACTION:

1. Delete: FENESTRATION. Skylights, roof windows, vertical windows (fixed or moveable), opaque doors, glazed doors, glazed block, and combination opaque/glazed doors. Fenestration includes products with glass and nonglass glazing materials. Add: FENESTRATION. All areas (including the frames) in the building envelope that let in light, including windows, plastic panels, clerestories, skylights, doors that are more than one-half glass, and glass block walls. (See building envelope and door.)

2. FIREPLACE. An assembly consisting of a hearth and fire chamber of noncombustible material and provided with a chimney or direct vent for use with solid fuels. Factory-built fireplace. A listed and labeled fireplace and chimney system composed of factory-made

components, and assembled in the field in accordance with the manufacturer's instructions and the conditions of the listing. Masonry fireplace. A field-constructed fireplace composed of solid masonry units, bricks, stones or concrete

3. VEGETATIVE ROOF. An assembly of interacting components designed to waterproof and normally insulate a building's top surface that includes, by design, vegetation and related landscaping elements that provides storm water quantity and quality benefits.

RATIONALE / IMPACT:

1. Language revision to eliminate primarily opaque surfaces as fenestration; language adopted from ASHRAE 90.1
2. Language revision to include all types of vents and fuels
3. Language revision to broaden the definition

2011 ASHRAE 189.1 CORRELATION: Section 3.2

Chapter 3 – Jurisdictional Requirements and Life Cycle Assessment 301.1 Scope. This chapter contains requirements that are specific to and selected by the jurisdiction and provisions for whole building life cycle assessment.

PROPOSED ACTION: Adopt as written

RATIONALE / IMPACT: No action required

2011 ASHRAE 189.1 CORRELATION: 9.5.1 Life Cycle Assessment

301.1.1 Application. The requirements contained in this code are applicable to buildings, or portions of buildings. As indicated in Section 101.3, these buildings shall meet either the requirements of 2011 ASHRAE 189.1 or the requirements contained in this code.

PROPOSED ACTION: Adopt with the following modification: Add - 301.1.1 Application. The requirements contained in this code are applicable to buildings, or portions of buildings. As indicated in Section 101.3, these buildings shall meet either the requirements of 2011 ASHRAE 189.1, USGBC's LEED 2009 achieving the Silver level, or the requirements contained in this code.

RATIONALE / IMPACT: Accommodates urban and rural projects; allows concerned parties to become familiar with the Code; allows project teams to select the compliance path that makes most sense for their project; coincides with ICC's decision to leave both paths open to the project team rather than being mandated by the AHJ; and allowing LEED as an additional compliance path provides the County time to implement Code requirements.

2011 ASHRAE 189.1 CORRELATION: 2011 ASHRAE 189.1

301.2 Jurisdictional requirements. This chapter requires that the jurisdiction indicate in Table 302.1 whether specific provisions are mandatory for all buildings regulated by this code and, where applicable, the level of compliance required. All other provisions of this code shall be mandatory as applicable.

PROPOSED ACTION: Move to Appendix A – Adopt as written

RATIONALE / IMPACT: Good practice may be difficult to implement for all projects

2011 ASHRAE 189.1 CORRELATION: None

302.1 Requirements determined by the jurisdiction. The jurisdiction shall indicate the following information in Table 302.1 for inclusion in its code adopting ordinance: 1. The jurisdiction shall indicate whether requirements for residential buildings, as indicated in

Exception 1 to Section 101.3, are applicable by selecting "Yes" or "No" in Table 302.1. Where "Yes" is selected, the provisions of ICC 700 shall apply and the remainder of this code shall not apply. 2. Where the jurisdiction requires enhanced energy performance for buildings designed on a performance basis, the jurisdiction shall indicate a zEPI of 46 or less in Table 302.1 for each occupancy required to have enhanced energy performance. 2. Where "Yes" or "No" boxes are provided, the jurisdiction shall check the box to indicate "Yes" where that section is to be enforced as a mandatory requirement in the jurisdiction, or "No" where that section is not to be enforced as a mandatory requirement in the jurisdiction.

PROPOSED ACTION: Move to Appendix A – Adopt as written (302.1 is a Jurisdictional Elective)

RATIONALE / IMPACT: Good practice may be difficult to implement for all projects

2011 ASHRAE 189.1 CORRELATION: None

302.1.1 zEPI of 46 or less. Where a zEPI of 46 or less is indicated by the jurisdiction in Table 302.1, buildings shall comply on a performance-basis in accordance with Section 601.3.1. Exception: Buildings less than 25,000 square feet (2323 m² in total building floor area pursuing compliance on a prescriptive basis shall be deemed to have a zEPI of 51 and shall not be required to comply with the zEPI of Jurisdictional Choice indicated by the jurisdiction in Table 302.1.

PROPOSED ACTION: Move to Appendix A – Adopt as written (302.1.1 is a Jurisdictional Elective)

RATIONALE / IMPACT: Good practice may be difficult to implement for all projects

2011 ASHRAE 189.1 CORRELATION: None

303.1 Whole building life cycle assessment. Where a whole building life cycle assessment is performed in accordance with Section 303.1, compliance with Section 505 shall not be required. The requirements for the execution of a whole building life cycle assessment shall be performed in accordance with the following: 1. The assessment shall demonstrate that the building project achieves not less than a 20-percent improvement in environmental performance for global warming potential and at least two of the following impact measures, as compared to a reference design of similar usable floor area, function and configuration that meets the minimum energy requirements of this code and the structural requirements of the International Building Code. For relocatable buildings, the reference design shall be comprised of the number of reference buildings equal to the estimated number of uses of the relocatable building. 1.1. Primary energy use. 1.2. Acidification potential. 1.3. Eutrophication potential. 1.4.

Ozone depletion potential. 1.5. Smog potential. 2. The reference and project buildings shall utilize the same life cycle assessment tool. 3. The life cycle assessment tool shall be approved by the code official. 4. Building operational energy shall be included. For relocatable buildings, an average building operational energy shall be estimated to reflect potential changes in location, siting, and configuration by adding or subtracting modules, or function. 5. Building process loads shall be permitted to be included. 6. Maintenance and replacement schedules and actions for components shall be included in the assessment. For relocatable buildings, average transportation energy, material and waste generation associated with reuse of relocatable buildings shall be included in the assessment. 7. The full life cycle, from resource extraction to demolition and disposal, including but not limited to, onsite construction, maintenance and replacement, relocation and reconfiguration, and material and product embodied acquisition, process and transportation energy, shall be assessed. Exception: Electrical and mechanical equipment and controls, plumbing products, fire detection and alarm systems, elevators and conveying systems shall not be included in the assessment. 8. The complete building envelope, structural elements, inclusive of footings and foundations, and interior walls, floors and ceilings, including interior and exterior finishes, shall be assessed to the extent that data are available for the materials being analyzed in the selected life cycle assessment tool. 9. The life cycle assessment shall conform to the requirements of ISO 14044.

PROPOSED ACTION: Move to Appendix A - Adopt as written

RATIONALE / IMPACT: Good practice may be difficult to implement for all projects

2011 ASHRAE 189.1 CORRELATION: 9.5.1

PROPOSED ACTION: Delete 402.2.1, 402.2.2, 402.3, 402.5, 402.7 and 402.8; and move all but 409.1 and 503.1 to Appendix A. See individual recommendations.

Jetter, Reginald

From: Cindy Wasser [cwasser@homeinnovation.com]
Sent: Wednesday, June 25, 2014 11:49 AM
To: Jetter, Reginald
Cc: Annette Rosenblum (arosenblum@mncbia.org)
Subject: Montgomery County IgCC Proposed Amendments
Importance: High
Attachments: MontgomeryCounty Ig CC_6.25.2014.pdf

Dear Mr. Jetter,

On behalf of Home Innovation Research Labs, I am writing to request that third-party certification to the ICC-700 National Green Building Standard (NGBS) be recognized as an alternative pathway for builders/developers to demonstrate compliance with the Montgomery County Green Construction Code. This alternative compliance option would streamline permitting for multifamily developers who already seek green certification through Home Innovation for the value that it provides to investors and potential renters/buyers. Please see attached for our full comments.

Please feel free to reach out with questions and comments after reviewing the letter in full. I'm happy to set up a conference call or in-person meeting to introduce Home Innovation's NGBS Green certification program to your team.

Best Regards,
Cindy



Cindy Wasser | Manager, Green Building Programs
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6/25/2014



June 25, 2014

Reginald Jetter
Montgomery County
Department of Permitting Services
255 Rockville Pike, 2nd Floor
Rockville, MD 20850
Submitted Electronically: Reginald.Jetter@montgomerycountymd.gov

SUBJECT: Proposed Amendments to the 2012 International Green Construction Code Chapter 1-3

Dear Mr. Jetter:

On behalf of Home Innovation Research Labs, I write to propose that third-party certification to the National Green Building Standard™ (NGBS) be considered an alternative pathway for R2 buildings to demonstrate compliance with the new Montgomery County Construction Code. As is, the proposed amendments to the 2012 IgCC issued by Montgomery County Permitting include language that: *“Group R-2 residential buildings five stories or more in height above grade plane, their accessory structures, and the site or lot upon which these buildings are located that comply with ICC 700, with a minimum energy efficiency category requirements of the Silver Performance level or equivalent.”*

I ask that Home Innovation Research Labs’ third-party NGBS certification (at the Silver Level or higher) be recognized as a way for builders to demonstrate compliance with the IgCC. This alternative compliance option would streamline permitting for multifamily developers who already seek green certification through Home Innovation for the value that it provides to investors and potential renters/buyers. Home Innovations’ NGBS Green certification program is the program of choice for multifamily developers as it is affordable, flexible, and rigorous.

Adoption of this alternative compliance path would offer consistency with other jurisdictions within the region. The District of Columbia has adopted a modified version of the IgCC, which allows projects greater than 10,000 square feet to seek one of four third-party certifications¹ to satisfy the Green Construction Code requirements.

Overview of the National Green Building Standard

The ICC 700 National Green Building Standard is the first and only residential green building rating system to undergo the full consensus process and receive approval from the American National Standards Institute (ANSI). The original 2008 version was approved by ANSI in 2009, and the 2012 version was approved by ANSI in early 2013. Both the 2008 and 2012 NGBS versions were jointly developed by the National Association of Homebuilders (NAHB) and the International Code Council (ICC). For the third edition of the standard, which is currently underway², ASHRAE has joined as a third

¹ LEED, Enterprise Green Communities, ASHRAE 189.1, or NGBS

² More information at www.homeinnovation.com/ngbs

co-sponsor. This partnership further cements the NGBS as the preeminent green standard for residential construction.

The National Green Building Standard carries two important designations. It is ANSI-approved as an American National Standard. It is also part of the family of ICC International-codes (I-Codes) that form a complete set of comprehensive, coordinated building safety and fire prevention codes.

As one of the I-Codes, the NGBS is written in code language to make it easy for industry professionals and contractors to understand. I believe this is one reason the NGBS has been successful even in areas where it is not part of the building code and is used as an above-code program. For a residential building to be in compliance, the building must contain all mandatory practices in the NGBS. The building must also contain enough practices from each of the six categories of green building practices to meet the required threshold points (See page 12 in ICC 700-2012 NGBS). The six categories of green practices are:

- Lot & Site Development
- Resource Efficiency
- Energy Efficiency
- Water Efficiency
- Indoor Environmental Quality
- Homeowner Education

Certification Program

Home Innovation Research Labs serves as Adopting Entity and provides certification services to the NGBS. Home Innovation Labs is a 50-year old, internationally-recognized, accredited product testing and certification laboratory located in Upper Marlboro, Maryland. Our work is solely focused on the residential construction industry and our mission is to improve the affordability, performance, and durability of housing by helping overcome barriers to innovation. Our core competency is as an independent, third-party product testing and certification lab, making us uniquely suited to administer a green certification program for residential buildings.

Two Mandatory Inspections

To be certified to the NGBS, every green project is subject to two independent, third-party verifications. There is no self-certification in our program. Builders must hire an independent, accredited verifier who is responsible for visual inspection of every green building practice in the home or dwelling unit. The verifier must perform a rough inspection before the drywall is installed in order to observe the wall cavities, and a final inspection once the project is complete. The required verification imbues a high level of rigor and quality assurance to the program and to the projects that are certified.

Home Innovation Labs qualifies, trains, and accredits building professionals to provide independent verification services for builders. Verifiers must first demonstrate that they possess experience in residential construction and green building before they are eligible to take the verifier training. Many verifiers are HERS raters and/or LEED raters. Potential verifiers must complete thorough training on exactly how to verify every practice in the *National Green Building Standard™*. After completing the training, verifiers must pass a written exam and demonstrate that they carry sufficient liability insurance before receiving Home Innovation accreditation. Verifiers must have their accreditation renewed yearly. They serve as our in-field agents to verify buildings are built in compliance with the NGBS.

Home Innovation Labs reviews every rough and final inspection to ensure national consistency and accuracy in the verification reports. Further, we regularly audit our verifiers and the verifications that they perform as part of our internal quality assurance program.

Credibility and Rigor

Under the NGBS, buildings can attain one of four potential certification levels: Bronze, Silver, Gold, or Emerald. The NGBS was specifically designed so that no one category of green practices was weighted as more important than another. Peerless among other green rating systems, the NGBS requires that all projects must achieve a minimum point threshold in every category of green building practice to be certified. A project certified to the NGBS can't merely obtain all or most of its points in a few categories, as other rating systems allow. This requirement makes the NGBS the most rigorous green building rating systems available at this time.

Several studies have been completed to demonstrate the affordability and/or rigor of the NGBS. *Green Home Building Rating Systems - A Sample Comparison*³ evaluates the costs and technical requirements of bringing two sample code-compliant production houses in different climate zones into compliance with the NGBS and LEED for Homes. AIA Cincinnati published a report comparing the NGBS and LEED for Homes⁴ that found the programs to be essentially equivalent in rigor, but the NGBS to be more affordable and easier to use. The Home Builders Association of Greater Chicago released an independently prepared report⁵ evaluating the additional costs required to elevate three sample code-compliant, urban, residential building types in the City of Chicago into compliance with the Chicago Green Homes Program (CGH), the NGBS, and LEED-H.

Legislative and Regulatory Parity with LEED

The NGBS was developed after the USGBC's LEED rating systems; therefore, LEED is more commonly recognized in legislative and regulatory initiatives. However, since 2009 when ANSI first approved the NGBS, we have found that without exception the NGBS has been considered as on par or more stringent than LEED as a green building rating system for residential projects. On the federal level, HUD has recognized the NGBS as on par with LEED. For example, in their recent funding notice for jurisdictions affected by Hurricane Sandy they cite the NGBS as an acceptable green building standard for reconstruction efforts. In New York State, NYSERDA provides financial incentives for residential buildings certified to the Silver level of either the NGBS or LEED. Delaware State also provides financial incentives for homes built to the Silver level of either the NGBS or LEED in its Green for Green program. In New Mexico, homes certified to either the NGBS or LEED can qualify for the generous State tax credit program. To date, not a single jurisdiction has refused to recognize the NGBS as an alternative compliance path for any regulatory or incentive program where we have asked them to make an equivalency decision. For a more complete listing of where the NGBS has been recognized, please visit our summary of incentives⁶.

³http://www.homeinnovation.com/services/certification/green_homes/resources/~media/Files/Reports/2012_NGBS_Cost_Co_mparison.ashx

⁴ www.aiacincinnati.org/community/LEED_NAHB_Sum.cfm

⁵www.homeinnovation.com/services/certification/green_homes_and_products/multifamily_certification/~media/Files/Reports/UrbanGreenBuildingRatingSystemsCostComparison.ashx

⁶ www.homeinnovation.com/ngbsgreenincentives

Certification Activity

Home Innovation has certified approximately 9,081 projects to date, including 1,055 multifamily buildings representing 26,569 dwelling units. I believe that this indicates that we have been successful in designing a green certification program that is affordable and flexible, while remaining rigorous. In Maryland, the NGBS has been recognized at the state-level in *HB630 Building Standard-High-Performance Homes*, which defined high-performance homes as those meeting or exceeding Silver-level certification to either LEED-H or NGBS. At the local level, Anne Arundel, Baltimore, and Howard counties all offer tax credits to new or renovation NGBS homes/building. Given the choice, Maryland builders have widely selected NGBS. In 2013, Maryland ranked #7 in the nation for NGBS certifications.

Summary

The NGBS produces projects that reach exceptional levels of sustainable design and construction. With an over five-year proven track record of improving the performance of residential buildings nationwide, I recommend that Montgomery County recognize Home Innovation Research Labs' third-party certification to the National Green Building Standard™ (NGBS) as an alternative pathway for buildings to demonstrate compliance with the Montgomery County Green Construction Code.

I am happy to meet with you or your staff should you require a more detailed overview of the NGBS or our certification program. I will also gladly send you any supplemental information that you might require. Please don't hesitate to contact Michelle Desiderio (mdesiderio@homeinnovation.com, 301.430.6205), our Vice President of Innovation Services, directly if she can be of further assistance. I look forward to working with the Department of Permitting Services to promote green housing built to the ICC 700 National Green Building Standard.

Best,



Michael Luzier
President and CEO

cc: Annette Rosenblum, MNCBIA