

**DEPARTMENT OF CONSUMER AND REGULATORY AFFAIRS  
CONSTRUCTION CODES COORDINATING BOARD**

**NOTICE OF PROPOSED RULEMAKING**

The Chairperson of the Construction Codes Coordinating Board (Chairperson), pursuant to the authority set forth in section 10 of the Construction Codes Approval and Amendments Act of 1986 (Act), effective March 21, 1987 (D.C. Law 6-216; D.C. Official Code § 6-1409 (2008 Repl.)) and Mayor's Order 2009-22, dated February 25, 2009, as amended, hereby gives notice of the intent to adopt the following amendments to Title 12 (D.C. Construction Codes Supplement of 2008) of the District of Columbia Municipal Regulations, as well as to rename Title 12.

This proposed rulemaking would adopt the following codes published by the International Code Council (ICC), as amended by this rulemaking in a new District of Columbia Construction Codes Supplement of 2013, as the District of Columbia Construction Codes: the 2012 edition of the International Building Code; the 2012 edition of the International Residential Code; the 2012 edition of the International Fuel Gas Code; the 2012 edition of the International Mechanical Code; the 2012 edition of the International Plumbing Code; the 2012 edition of the International Property Maintenance Code; the 2012 edition of the International Fire Code; the 2012 edition of the International Energy Conservation Code; the 2012 edition of the International Existing Building Code; the 2012 edition of the International Green Construction Code; the 2012 edition of the International Swimming Pool and Spa Code; and the 2011 edition of the National Electrical Code (NFPA 70) published by the National Fire Protection Association.

This proposed rulemaking would repeal the D.C. Construction Codes Supplement of 2008, adopted December 26, 2008 (55 DCR 13094), consisting of the following: the 2006 edition of the ICC International Building Code; the 2006 edition of the ICC International Residential Code; the 2006 edition of the ICC International Fuel Gas Code; the 2006 edition of the ICC International Mechanical Code; the 2006 edition of the ICC International Plumbing Code; the 2006 edition of the ICC International Property Maintenance Code; the 2006 edition of the ICC International Fire Code; the 2006 edition of the ICC International Energy Conservation Code; the 2006 edition of the ICC International Existing Building Code; and the 2005 edition of the National Fire Protection Association (NFPA 70) National Electrical Code.

Comments on this proposed rulemaking must be submitted by 5 p.m. on Friday, January 25, 2013. The process for submitting comments is detailed on the final page of this proposed rulemaking.

The Chairperson also hereby gives notice of the intent to take final rulemaking action to adopt this amendment. Pursuant to section 10(a) of the Act, the proposed amendment will be submitted to the Council of the District of Columbia for a forty-five (45) day period of review,

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and final rulemaking action will not be taken until the later of thirty (30) days after the date of publication of this notice in the *D.C. Register* or Council approval of the amendment.

**Title 12 (D.C. Construction Codes Supplement of 2008) of the District of Columbia Municipal Regulations is amended as follows:**

**The title of title 12 is renamed as the District of Columbia Construction Codes Supplement of 2013.**

**Subtitle 12 A (Building Code Supplement of 2008) is repealed in its entirety and replaced with a new Building Code Supplement of 2013.**

**Subtitle 12 B (Residential Code Supplement of 2008) is repealed in its entirety and replaced with a new Residential Code Supplement of 2013.**

**Subtitle 12 C (Electrical Code Supplement of 2008) is repealed in its entirety and replaced with a new Electrical Code Supplement of 2013.**

**Subtitle 12 D (Fuel Gas Code Supplement of 2008) is repealed in its entirety and replaced with a new Fuel Gas Code Supplement of 2013.**

**Subtitle 12 E (Mechanical Code Supplement of 2008) is repealed in its entirety and replaced with a new Mechanical Code Supplement of 2013.**

**Subtitle 12 F (Plumbing Code Supplement of 2008) is repealed in its entirety and replaced with a new Plumbing Code Supplement of 2013.**

**Subtitle 12 G (Property Maintenance Code Supplement of 2008) is repealed in its entirety and replaced with a new Property Maintenance Code Supplement of 2013.**

**Subtitle 12 H (Fire Code Supplement of 2008) is repealed in its entirety and replaced with a new Fire Code Supplement of 2013.**

**Subtitle 12 I (Energy Conservation Code Supplement of 2008) is repealed in its entirety and replaced with a new Energy Conservation Code Supplement of 2013.**

**Subtitle 12 J (Existing Building Supplement of 2008) is repealed in its entirety and replaced with a new Existing Building Code Supplement of 2013.**

**Subtitle 12 K (Fees) is redesignated as Subtitle M (Fees).**

**A new Subtitle 12 K (Green Construction Code Supplement of 2013) is added.**

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**A new Subtitle 12 L (Swimming Pool and Spa Code Supplement of 2013) is added.**

For purposes of clarity, the following table lists each chapter of the ICC and NFPA 70 codes amended by the District of Columbia Construction Codes Supplement of 2013:

**SUBTITLE A – BUILDING CODE SUPPLEMENT**

Chapter 1	Administration and Enforcement
Chapter 2	Definitions
Chapter 3	Use Group and Classification
Chapter 4	Special Detailed Requirements Based on Use and Occupancy
Chapter 5	General Building Heights and Areas
Chapter 7	Fire-Resistance-Related Construction
Chapter 9	Fire Protection Systems
Chapter 10	Means of Egress
Chapter 12	Interior Environment
Chapter 14	Exterior Walls
Chapter 15	Roof Assemblies and Rooftop Structures
Chapter 16	Structural Design
Chapter 18	Soils and Foundations
Chapter 26	Plastic
Chapter 30	Elevators and Conveying Systems
Chapter 31	Special Construction
Chapter 32	Encroachments into the Public Right-of-Way
Chapter 33	Safeguards During Construction
Chapter 34	Existing Structures
Chapter 35	Referenced Standards
Appendix E	Supplementary Accessibility Requirements

**SUBTITLE B – RESIDENTIAL CODE SUPPLEMENT**

Chapter 1	Scope and Administration
Chapter 2	Definitions
Chapter 3	Building Planning
Chapter 9	Roof Assemblies
Chapter 11	Energy Efficiency
Chapter 12	Mechanical Administration
Chapter 15	Exhaust Systems
Chapter 16	Duct Systems
Chapter 24	Fuel Gas
Chapter 25	Plumbing Administration
Chapter 29	Water Supply and Distribution
Chapter 30	Sanitary Drainage

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Chapter 44	Referenced Standards
Appendix H	Patio Covers
Appendix J	Existing Buildings and Structures
Appendix K	Sound Transmission
Appendix M	Home Day Care – R-3 Occupancies

### **SUBTITLE C – ELECTRICAL CODE SUPPLEMENT**

Article 90	Introduction
Article 408	Switchboards and Panelboards

### **SUBTITLE D – FUEL GAS CODE SUPPLEMENT**

Chapter 1	Scope and Administration
Chapter 2	Definitions
Chapter 5	Chimneys and Vents
Chapter 8	Referenced Standards

### **SUBTITLE E – MECHANICAL CODE SUPPLEMENT**

Chapter 1	Scope and Administration
Chapter 2	Definitions
Chapter 4	Ventilation
Chapter 5	Exhaust Systems
Chapter 6	Duct Systems
Chapter 8	Chimneys and Vents
Chapter 9	Specific Appliances, Fireplaces and Solid Fuel-Burning Equipment
Chapter 10	Boilers, Water Heaters and Pressure Vessels
Chapter 11	Refrigeration
Chapter 15	Referenced Standards

### **SUBTITLE F – PLUMBING CODE SUPPLEMENT**

Chapter 1	Scope and Administration
Chapter 3	General Regulations
Chapter 4	Fixtures, Faucets and Fixture Fittings
Chapter 6	Water Supply and Distribution
Chapter 8	Indirect/Special Waste
Chapter 11	Storm Drainage
Chapter 13	Nonliquid Saturated Treatment Systems

### **SUBTITLE G – PROPERTY MAINTENANCE CODE SUPPLEMENT**

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Chapter 1	Administration and Enforcement
Chapter 2	Definitions
Chapter 3	Requirements
Chapter 4	Light, Ventilation and Occupancy Limitations
Chapter 5	Plumbing Facilities and Fixture Requirements
Chapter 6	Mechanical and Electrical Requirements
Chapter 7	Fire Safety Requirements
Chapter 8	Referenced Standards

## **SUBTITLE H – FIRE CODE SUPPLEMENT**

Chapter 1	Administration and Enforcement
Chapter 2	Definitions
Chapter 3	General Requirements
Chapter 5	Fire Service Features
Chapter 6	Building Services and Systems
Chapter 9	Fire Protection Systems
Chapter 10	Means of Egress
Chapter 11	Construction Requirements for Existing Buildings
Chapter 56	Explosives and Fireworks
Appendix B	Fire-Flow Requirements for Buildings
Appendix C	Fire Hydrant Locations and Distribution
Appendix D	Fire Apparatus Access Roads
Appendix H	Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) Instructions

## **SUBTITLE I – ENERGY CONSERVATION CODE SUPPLEMENT**

Chapter 1[CE]	Administration
Chapter 4[CE]	Commercial Energy Efficiency
Chapter 1[RE]	Scope and Administration

## **SUBTITLE J – EXISTING BUILDING CODE SUPPLEMENT**

Chapter 1	Scope and Administration
Chapter 2	Definitions
Chapter 4	Prescriptive Compliance Method
Chapter 6	Repairs
Chapter 7	Alterations-Level 1
Chapter 8	Alterations-Level 2
Chapter 9	Alterations-Level 3
Chapter 10	Change of Occupancy
Chapter 15	Construction Safeguards

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## **SUBTITLE K – GREEN CONSTRUCTION CODE**

Chapter 1	Scope and Administration
Chapter 2	Definitions
Chapter 3	Green Building Act and ASHRAE 189.1
Chapter 4	Site Development and Land Use
Chapter 5	Material Resource Conservation and Efficiency
Chapter 6	Energy Conservation, Efficiency, and CO <sub>2</sub> <sup>e</sup>
Chapter 7	Water Resource Conservation, Quality and Efficiency
Chapter 8	Indoor Environmental Quality and Comfort
Chapter 9	Commissioning
Chapter 10	Existing Buildings
Chapter 11	Existing Building Site Development
Chapter 12	Referenced Standards
Appendix A	Project Electives

## **SUBTITLE L – SWIMMING POOL AND SPA CODE SUPPLEMENT**

Chapter 1	Scope and Administration
Chapter 2	Definitions

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**DISTRICT OF COLUMBIA  
CONSTRUCTION CODES SUPPLEMENT OF 2013  
12 DCMR K GREEN CONSTRUCTION CODE SUPPLEMENT**

The District of Columbia has adopted the 2012 edition of the *International Green Construction Code* (IgCC), as amended by this Supplement.

**IgCC CHAPTERS AMENDED BY THIS SUPPLEMENT:**

CHAPTER 1	SCOPE AND ADMINISTRATION
CHAPTER 2	DEFINITIONS
CHAPTER 3	GREEN BUILDING ACT AND ASHRAE 189.1
CHAPTER 4	SITE DEVELOPMENT AND LAND USE
CHAPTER 5	MATERIAL RESOURCE CONSERVATION AND EFFICIENCY
CHAPTER 6	ENERGY CONSERVATION, EFFICIENCY AND CO <sub>2</sub> <sup>e</sup> EMISSION REDUCTION
CHAPTER 7	WATER RESOURCE CONSERVATION, QUALITY AND EFFICIENCY
CHAPTER 8	INDOOR ENVIRONMENTAL QUALITY AND COMFORT
CHAPTER 9	COMMISSIONING
CHAPTER 10	EXISTING BUILDINGS
CHAPTER 11	EXISTING BUILDING SITE DEVELOPMENT
CHAPTER 12	REFERENCED STANDARDS
APPENDIX A	PROJECT ELECTIVES

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<http://publicecodes.cyberregs.com/icod/igcc/2012/index.htm?bu=IC-P-2012-000023&bu2=IC-P-2012-000019>.

*Strike Chapter 1 of the International Green Construction Code in its entirety and insert new Chapter 1 in the Green Construction Code in its place to read as follows.*

## **CHAPTER 1           SCOPE AND ADMINISTRATION**

101    General

### **101    GENERAL**

**101.1 Scope and intent.** Scope and intent of the *Green Construction Code* shall be governed by Chapter 1 of the *Building Code*, 12 DCMR A.

**101.2 Administration and enforcement.** Administration and enforcement of the *Green Construction Code* shall be governed by Chapter 1 of the *Building Code*, 12 DCMR A.

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## CHAPTER 2 DEFINITIONS

### 202 Definitions

#### 202 DEFINITIONS

*Insert the following new definitions in Section 202 of the Green Building Code to read as follows:*

**DISTRICT FINANCED.** (1) Financing of a project or contract where funds or resources to be used for construction and development costs, excluding ongoing operational costs, are received from the District, or funds or resources which, in accordance with a federal grant or otherwise, the District administers, including a contract, grant, loan, tax abatement or exemption, land transfer, land disposition and development agreement, or tax increment financing, or any combination thereof, provided, that federal funds may be applied to the financing percentage only if permitted by federal law and grant conditions; or (2) Financing whose stated purpose is, in whole or in part, to provide for the new construction or substantial rehabilitation of affordable housing.

**DISTRICT INSTRUMENTALITY FINANCED.** See “*District financed.*”

**FLOOR AREA, GROSS.** The floor area within the inside perimeter of the *exterior walls* of the building under consideration, exclusive of vent *shafts* and *courts*, without deduction for *corridors*, *stairways*, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding *exterior walls* shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include *shafts* with no openings or interior *courts*.

For the purposes of application of Section 302 of the *Green Construction Code*, *gross floor area* shall have the same meaning as in the Zoning Regulations, 11 DCMR § 199 Definitions, and as interpreted by the Zoning Administrator.

**GROSS FLOOR AREA.** See *Floor area, gross.*

**PROJECT (For Section 302).** The construction of a single or multiple buildings that are part of one development scheme, built at one time or in phases.

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*Strike Chapter 3 of the International Green Construction Code in its entirety and insert new Chapter 3 in the Green Construction Code in its place to read as follows:*

## **CHAPTER 3 GREEN BUILDING ACT AND ASHRAE 189.1**

- 301 General
- 302 Green Building Act Requirements
- 303 ASHRAE 189.1 Adoption

### **301 GENERAL**

**301.1 General.** The scope of the *Green Construction Code*, and alternative paths for complying with the *Green Construction Code*, are set forth in 12 DCMR A § 101.4.9.

### **302 GREEN BUILDING ACT REQUIREMENTS**

**302.1 Green Building Act of 2006 requirements.** An applicant for permits subject to Section 302.2 or Section 302.3 shall comply with Sections 302.4 through 302.12 and the Green Building Act of 2006, effective March 8, 2007 (D.C. Law 16-234; D.C. Official Code §§ 6-1451.01 *et seq.* (2012 Supp.)), as amended (“Green Building Act” or “GBA”). Other components of the Green Building Act are administered by other District of Columbia agencies. The applicant shall have the option of requesting a Green Building Act Preliminary Design Review Meeting (“GBA PDRM”) with the Department, at the discretion of the applicant.

**302.2 Publicly-owned or publicly financed projects.** This section shall apply to each *project* that is new construction or where the scope of work at the *project* is equivalent to Level 3 *alteration* as defined in the *Existing Building Code*; and, is either:

1. A District-owned or District instrumentality-owned *project*; or
2. A *District financed* or *District instrumentality financed project*, where the financing represents at least 15 percent of the *project’s* total cost.

**302.2.1 Energy Star Target Finder Tool.** Each *project* of 10,000 square feet (929 m<sup>2</sup>) or more of *gross floor area* shall be designed and constructed to achieve a minimum score of 75 points on the Energy Star Target Finder Tool. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

#### **Exceptions:**

1. Building occupancies for which the Energy Star tool is not available.

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2. *Alterations.*

**302.2.2 Non-residential projects.** A *project* which does not contain Residential Group R occupancies that equal or exceed 50 percent of the gross floor area of the *project*, including allocable area of common space, shall be deemed a non-residential *project* and shall be designed and constructed so as to achieve no less than the applicable LEED standard listed in Section 302.4, at the Silver level or higher. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

**Exceptions:**

1. Educational Group E (covered by Section 302.2.3).
2. Space designed and occupied for Residential Group R occupancies in a non-residential *project* (covered by Section 302.2.4).
3. Space designed and occupied for non-residential uses located in a Residential Group R occupancy *project* (covered by Section 302.2.5).
4. Space designed and occupied for non-residential uses located in a District-owned or a District instrumentality-owned building (covered by either Section 302.2.6 or Section 302.2.7 as applicable).

**302.2.3 Educational Group E.** A *project* of Educational Group E occupancy owned, operated or maintained by the DC Public Schools (“DCPS”), or a public charter school, shall be designed and constructed to meet the LEED standard for Schools, at the Gold level or higher. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

**Exceptions:**

1. Where sufficient funding is not available to meet the applicable LEED standard for Schools at the Gold level, then the *project* shall meet the LEED standard for Schools at no less than the Certified Level of the LEED standard for Schools. For the purpose of determining the applicability of this exception, “sufficient funding” shall mean the lack of committed public funds in an approved District budget to fund the LEED standard for Schools at the Gold level.
2. Where a *project* for Educational Group E occupancy is located in only

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a portion of a building, then only that portion of the building that is the subject of the *project* shall comply with this Section 302.2.3.

**302.2.4 Project containing Residential Group R occupancies.** Where a *project* contains 10,000 square feet (929 m<sup>2</sup>) or more of *gross floor area* for Residential Group R occupancies, including the allocable area of common space, then the residential occupancies of the *project* shall be designed and constructed to meet or exceed the Enterprise Green Communities standard, or a substantially equivalent standard as determined by the *code official*. This self-certification checklist shall be submitted to the *code official* with the application for the certificate of occupancy of the residential component of the *project*. The residential component of the project shall not be required to meet a LEED standard.

**302.2.5 Interior construction of a mixed use space in a Residential Group R project.** Where Residential Group R occupancies exceed 50 percent of the *gross floor area* of the *project*, including allocable area of common space, and the *project* contains at least 50,000 contiguous square feet (4645 m<sup>2</sup>) of *gross floor area*, exclusive of common space of the non-residential occupancies, then the space designated for non-residential occupancies shall be designed and constructed to meet or exceed one or more of the applicable LEED standards listed in Section 302.4 at the Certified Level. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

**302.2.6 Interior tenant fit-out alteration in a District-Owned or a District Instrumentality-Owned Project.** Where a *project* in a District-owned or a District instrumentality-owned building involves the alteration of 30,000 square feet (2787 m<sup>2</sup>) or more of *gross floor area* for a single non-residential occupancy, exclusive of common space, for which space a certificate of occupancy for non-residential use has been or would be issued, and the scope of work is equivalent to Level 3 *alteration* as defined in the *Existing Building Code*, then the portion of the *project* subject to alteration shall be designed and constructed to meet or exceed one or more of the LEED standards listed in Section 302.4 at the Certified Level. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

**302.2.7 Interior tenant fit-out in new construction.** Where a *project* in a District-owned or a District-instrumentality-owned building involves the fit-out for tenant occupancy of shell space or spaces of 30,000 square feet (2787 m<sup>2</sup>) or more of *gross floor area*, exclusive of common space, for a single non-residential occupancy, for which space a certificate of occupancy would be issued, the portion of the *project* subject to tenant fit-out shall be designed and constructed to meet or exceed one or more of the applicable LEED standards listed in Section

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302.4 at the Certified Level. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

**302.3 Privately-owned projects.** This section shall apply to a *project* that is privately-owned and is either new construction or an alteration where the scope of work is equivalent to Level 3 *alteration* as defined in the *Existing Building Code*. This category includes a *project* involving improved and unimproved real property acquired by sale from the District or a District instrumentality to a private entity, unimproved real property leased from the District or a District instrumentality to a private entity and any *project* where less than 15 percent of the *project's* total *project* cost is *District financed* or *District instrumentality financed*.

**302.3.1 Energy Star Target Finder Tool.** Each *project* of 50,000 square feet (4645 m<sup>2</sup>) or more of *gross floor area* shall estimate the *project's* energy performance using the Energy Star Target Finder Tool and submit this data to the *code official* with the permit application.

**Exception:** Building occupancies for which the Energy Star tool is not available.

**302.3.2 Privately-owned non-residential projects.** In addition to compliance with Section 302.3.1, each non-residential *project* of 50,000 square feet (4645 m<sup>2</sup>) or more of *gross floor area* shall be designed and constructed to meet or exceed one or more of the LEED standards listed in Section 302.4 at the Certified Level. A “non-residential project” shall mean a *project* where 50 percent or more of the *gross floor area*, including allocable area of common space, is occupied or intended for occupancy for uses that are not Residential Group R occupancies. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

**302.3.3 Interior construction of mixed use space in a Residential Group R project.** Where Residential Group R occupancies exceed 50 percent of the *gross floor area* of the *project*, including allocable area of common space, and the *project* contains at least 50,000 contiguous square feet (4645 m<sup>2</sup>) of *gross floor area*, exclusive of common space of the non-residential occupancies, then the space designated for non-residential occupancies shall be designed and constructed to meet or exceed one or more of the applicable LEED standards listed in Section 302.4 at the Certified Level. The applicant shall provide plans and supporting documents in sufficient detail and clarity to enable the *code official* to verify compliance with this section.

**302.4 LEED standards.** Applicants, in consultation with the U.S. Green Building Council

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(USGBC) listed in Chapter 12, shall utilize one or more of the following LEED standards as appropriate for the type of *project* or occupancy:

1. New Construction & Major Renovations.
2. Commercial Interiors.
3. Core & Shell.
4. Healthcare.
5. Retail: Commercial Interiors.
6. Retail: New Construction & Major Renovations.
7. Schools.

**302.4.1 LEED version.** An applicant for permits subject to Sections 302.2.2 through 302.2.7 or Section 302.3.2 through 302.3.3 shall either register the *project* with the USGBC or shall meet the LEED requirements without USGBC registration. If the applicant chooses to meet the LEED requirements without USGBC registration, the earliest version of the appropriate LEED standard that shall be used is the version with USGBC open registration in effect one year prior to whichever of the following interactions of the *applicant* with the District of Columbia came first:

1. The approval of a land disposition agreement;
2. The submission of an application to the Board of Zoning Adjustment for a variance or special exception relief;
3. The submission of an application to the Zoning Commission for a planned unit development or other approval requiring Zoning Commission action;
4. The submission of an application to the Historic Preservation Review Board or Mayor’s Agent for the Historic Preservation Review Board;
5. The filing of a building permit application for the primary scope of work of *project*, which shall not include applications for raze, sheeting and shoring, foundation or specialty, miscellaneous or supplemental permits; or
6. Other substantial land-use interactions with the District as determined by the *code official*.

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**302.5 Verification.** Evidence that a *project* meets or exceeds the LEED standard required by Sections 302.2.2 through 302.2.7 or Sections 302.3.2 through 302.3.3 shall be submitted to the *code official* within 24 calendar months after the *project's* receipt of the first certificate of occupancy issued for occupiable space in a *story above grade plane*.

**302.5.1 Evidence required.** For purposes of this section, verification of compliance shall be established by the following:

1. A certification by the USGBC that the *project* meets or exceeds the applicable LEED standard required by Sections 302.2.2 through 302.2.7 or Sections 302.3.2 through 302.3.3; or
2. A determination by the *code official* that the *project* meets or exceeds the LEED standard required by Sections 302.2.2 through 302.2.7 or Section 302.3.2 through 302.3.3; or
3. A certification by an *approved agency* or *approved source* that the *project* meets or exceeds the LEED standard required by Sections 302.2.2 through 302.2.7 or Section 302.3.2 through 302.3.3.

**302.5.2 Extension.** The *code official*, for good cause and upon written request, is authorized to extend the period for verification of compliance for up to three consecutive one-year periods.

**302.6 Financial security.** Before issuance of the first certificate of occupancy for occupiable space in a *story above grade plane* of a privately-owned project subject to the provisions of Sections 302.3.2 through 302.3.3, the applicant shall provide to the *code official* evidence of financial security to cover the amount of fine that would be imposed under the Green Building Act for non-compliance with the provisions of Sections 302.3.2 through 302.3.3.

**302.6.1 Amount of financial security.** The amount of the potential fine on a *project*, and thus the amount of financial security, shall be as follows:

1. \$7.50 per square foot of *gross floor area* of construction if the *project* is less than 100,000 square feet (9290 m<sup>2</sup>) of *gross floor area* of the *project*.
2. \$10.00 per square foot of *gross floor area* of construction if the *project* is equal to or greater than 100,000 square feet (9290 m<sup>2</sup>) of *gross floor area* of the *project*.

The amount of a fine for non-compliance under this sub-section, and thus the amount of security, shall not exceed \$3,000,000. When applying the provisions of this Section 302.6 to interior construction of a mixed use space in a Residential Group R project

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covered by Section 302.3.3, the *gross floor area* of the *project* shall be deemed to mean the contiguous *gross floor area*, exclusive of common space, of the non-residential occupancies. The amount of this fine shall be subject to modification based upon the form of security for performance as provided for in Sections 302.6.2.1 through 302.6.2.3.

**302.6.2 Security for performance/form of delivery.** The financial security requirement shall be met through one of the following four methods:

**302.6.2.1 Cash.** If this option is elected, cash shall be deposited in an escrow account in a financial institution in the District in the names of the *applicant* and the District. A copy of a binding escrow agreement of the financial institution shall be submitted to the *code official* in a form satisfactory to the Office of the Attorney General, which provides that the funds can be released upon direction of the District where remitted pursuant to Section 302.7. If cash is used as the financial security, the amount of the financial security posted shall be discounted by 20 percent.

**302.6.2.2 Irrevocable letter of credit.** If this option is elected, an irrevocable letter of credit benefitting the District shall be submitted to the *code official* in a form satisfactory to the Office of the Attorney General from a financial institution authorized to do business in the District. The irrevocable letter of credit, issued by the financial institution, shall comply with applicable regulatory requirements. If an irrevocable letter of credit is used as the financial security, the amount of the financial security posted shall be discounted by 20 percent.

**302.6.2.3 Bond.** If this option is elected, a bond benefitting the District, which complies with applicable regulatory requirements, shall be submitted to the *code official* in a form satisfactory to the Office of the Attorney General. If a bond is used as the financial security, the amount of the financial security posted shall be discounted by 20 percent.

**302.6.2.4 Binding pledge.** If this option is elected, a binding pledge shall be submitted to the *code official* in a form approved by the Office of the Attorney General. The binding pledge shall be recorded as a covenant in the land records of the District against legal title to the land in which the *project* is located and shall bind the *owner* and any successors in title to pay any fines levied under Section 302.7.1.

**302.7 Enforcement.** Where a *project* fails to provide pursuant to Section 302.5 satisfactory verification of the *project's* compliance with the requirements of Sections 302.3.2 through 302.3.3 within the prescribed time frame and any extensions thereof granted by the *code official* pursuant to Section 302.5.2, the *code official* is authorized to draw down on the financial security submitted as cash, irrevocable letter of credit or bond, by submission by the District of the

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original security documentation, provided that where a binding pledge has been provided, to enforce such pledge agreement pursuant to its terms. The amounts thus drawn down from the financial security shall be deposited in the Green Building Fund set up under the Green Building Act.

**302.7.1 Financial security drawdowns.** If a *project* fails to provide satisfactory verification of compliance, the drawdowns of the financial security in the form of cash, irrevocable letter of credit, or bond shall be as follows:

1. Failure to provide proof of compliance within 24 calendar months after the *project's* receipt of the first certificate of occupancy for occupiable space in a *story above grade plane*: 100 percent drawdown; or
2. Miss up to three LEED points in the applicable LEED standard: 50 percent drawdown; or
3. Miss more than three LEED points in the applicable LEED standard: 100 percent drawdown.

**302.7.2 Binding pledge fines.** If a *project* fails to provide satisfactory verification of compliance within 24 calendar months after the *project's* receipt of the first certificate of occupancy for occupiable space in a *story above grade plane* and a binding pledge is used as the form of financial security, one or more fines shall be due and payable per the amounts set out in Section 302.6.1 as may be modified pursuant to Section 302.7.1.

**302.8 Release of financial security.** If, within 24 calendar months following the issuance of the first certificate of occupancy for occupiable space in a *story above grade plane*, the *project* fulfills the requirements of Section 302.5, the financial security shall be released by the District of Columbia and, as applicable, returned.

**302.9 Remediation.** If within 24 months after receipt of the first certificate of occupancy for occupiable space in a *story above grade plane*, or within the extension periods granted to the project per Section 302.5.2, the project does not meet the requirements of Section 302.5, the *project owner* shall, at its own cost, design and renovate the *existing building* to meet or exceed the current edition of the LEED standard for Existing Buildings: Operations & Maintenance at the Certified Level. The *project owner* shall submit sufficient data to the *code official* to verify compliance with this section. The *project owner* shall provide to the *code official* certification, by the *owner's registered design professional* or an *approved agency or an approved source* that the *project* complies with this section.

**302.10 Additional fine.** If within 48 calendar months after receipt of the first certificate of occupancy for occupiable space in a *story above grade plane*, a *project* subject to Section 302.4 fails to provide satisfactory verification in accordance with the provisions of Section 302.5 or

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Section 302.9, the *project owner* shall pay a monthly fine of \$0.02 per square foot of *gross floor area* of the *project* to the District of Columbia. The fine shall be a civil penalty, due and payable annually. The fine shall be in addition to any fines issued under Section 302.7 and shall not be subject to the \$3,000,000 limit under Section 302.6.1.

**302.11 Appeals.** Determinations made by the *code official* under Sections 302.2 through 302.10 may be appealed pursuant to Section 112 of the *Building Code*.

**302.12 Exemptions.** A request for an exemption from application of the Green Building Act to any *project* may be made to DDOE pursuant to the provisions of 20 DCMR Chapter 35.

### **303 ASHRAE 189.1 ADOPTION**

**303.1 Adoption.** ASHRAE 189.1 is adopted and incorporated into the *Green Construction Code* by this reference, subject to the amendments set forth in this section.

#### **303.2 Amendments to ASHRAE 189.1.**

*Strike Section 2 of ASHRAE 189.1 in its entirety and insert new Section 2 in its place to read as follows:*

#### **2. SCOPE**

The scope of ASHRAE 189.1 shall be governed by 12 DCMR A § 101.4.9.

#### **3. DEFINITIONS, ABBREVIATIONS, AND ACRONYMS**

##### **3.2 Definitions.**

*Strike the definition of “acceptance representative” in Section 3.2 of ASHRAE 189.1 and insert a new definition of “acceptance representative” in its place to read as follows:*

**Acceptance representative:** An entity identified by the *owner* who leads, plans, schedules, and coordinates the activities needed to implement the building acceptance testing activities. The acceptance representative may be a qualified employee or consultant of the *owner*. The *acceptance representative* shall meet the qualifications for an *approved* agency set forth in the Green Building Program Manual.

*Strike the title of Section 4 of ASHRAE 189.1 in its entirety and insert a new title in Section 4 in its place to read as follows:*

#### **4. GENERAL AND APPENDICES**

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*Insert the following amendments to Section 5 of ASHRAE 189.1:*

## **5. SITE SUSTAINABILITY**

### **5.3 Mandatory Provisions.**

*Strike Sections 5.3.1.2 (Prohibited Development Activity) and 5.3.2 (Mitigation of Heat Island Effect) of ASHRAE 189.1 in their entirety without substitution.*

*Strike the Exceptions to Sections 5.3.3.2 and 5.3.3.3 in ASHRAE 189.1 in their entirety and insert new Exceptions in their place to read as follows:*

#### **Exceptions to Sections 5.3.3.2 and 5.3.3.3:**

1. Specialized signal, directional, and marker lighting associated with transportation.
2. Advertising signage or directional signage.
3. Lighting integral to equipment or instrumentation and installed by its manufacturer.
4. Lighting for theatrical purposes, including performance, stage, film production, and video production.
5. Lighting for athletic playing areas.
6. Lighting that is in use for no more than 60 continuous days and is not re-installed any sooner than 60 days after being uninstalled.
7. Lighting for industrial production, material handling, transportation sites, and associated storage areas.
8. Theme elements in theme/amusement parks.
9. Roadway lighting required by governmental authorities.
10. Lighting classified for and used in hazardous locations as specified in NFPA 70.
11. Lighting for swimming pools and water features.
12. Means of egress and emergency lighting.

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13. Lighting for public safety.
14. Lighting for security.

## **5.4 Prescriptive Option.**

*Strike Section 5.4.1 (Site Development) of ASHRAE 189.1 in its entirety and insert new Section 5.4.1 in its place to read as follows:*

### **5.4.1 Site Development.** *Building projects shall comply with Section 5.4.1.1.*

#### **5.4.1.1 Greenfield Sites.** *On a greenfield site:*

- a. Where more than 20 percent of the area of the predevelopment *site* has existing *native plants* or *adapted plants*, a minimum of 20 percent of the area of *native plants* or *adapted plants* shall be retained.
- b. Where 20 percent or less of the area of the predevelopment *site* has existing *native plants* or *adapted plants*, a minimum of 20 percent of the *site* shall be developed or retained as vegetated area. Such vegetated areas include bioretention facilities, rain gardens, filter strips, grass swales, vegetated level spreaders, constructed *wetlands*, planters, and open space with plantings. A minimum of 60 percent of such vegetated area shall consist of *biodiverse planting* of *native plants* and/or *adapted plants* other than turfgrass.

## **6. WATER USE EFFICIENCY**

### **6.3 Mandatory Provisions.**

#### **6.3.2 Building Water Use Reduction.**

*Strike Section 6.3.2, subsection i. of ASHRAE 189.1 in its entirety without substitution.*

#### **6.3.2.3 HVAC Systems and Equipment.**

*Strike Section 6.3.2.3, subsection c. of ASHRAE 189.1 in its entirety without substitution.*

### **6.4 Prescriptive Option.**

*Strike Section 6.4.1 (Site Water Use Reduction) of ASHRAE 189.1 in its entirety without substitution.*

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*Strike Section 6.4.2.3 (Medical and Laboratory Facilities) of ASHRAE 189.1 in its entirety without substitution.*

## **7. ENERGY EFFICIENCY**

### **7.3 Mandatory Provisions.**

*Strike Section 7.3.2 (On-Site Renewable Energy Systems) of ASHRAE 189.1 in its entirety without substitution.*

### **7.4 Prescriptive Option.**

*Strike Section 7.4.1.1 (On-Site Renewable Energy Systems) of ASHRAE 189.1 in its entirety without substitution.*

*Strike 7.4.3.3 (Economizers) of ASHRAE 189.1 in its entirety without substitution.*

*Strike Section 7.5 (Performance Option) of ASHRAE 189.1 in its entirety and insert new Section 7.5 in its place to read as follows:*

### **7.5 Performance Option.**

**7.5.1 General Comprehensive Performance Requirements.** Projects shall comply with Section 7.5.2.

**7.5.2 Annual Energy Cost.** The *building project* shall have an annual energy cost less than or equal to that achieved by compliance with Sections 7.3 and 7.4, and Sections 5.3.2.2, 5.3.2.3, 6.3.2, 6.4.2, 8.3.1, 8.3.4, and 8.4.1. Comparisons shall be made using Normative Appendix D.

## **8. INDOOR ENVIRONMENTAL QUALITY (IEQ)**

### **8.3 Mandatory Provisions.**

*Strike Section 8.3.2 (Thermal Environmental Conditions for Human Occupancy) of ASHRAE 189.1 in its entirety and without substitution.*

## **9. THE BUILDING'S IMPACT ON THE ATMOSPHERE, MATERIALS, AND RESOURCES**

### **9.3 Mandatory Provisions.**

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*Strike Section 9.3.4 (Storage and Collection of Recyclables and Discarded Goods) of ASHRAE 189.1 in its entirety without substitution.*

## **10. CONSTRUCTION AND PLANS FOR OPERATION**

*Strike Section 10.1 (Scope) of ASHRAE 189.1 in its entirety and insert new section 10.1 in its place to read as follows:*

**10.1 Scope.** This section specifies requirements for construction and plans for operation, including the *commissioning process*, building acceptance testing, measurement and *verification*, energy use reporting, durability, transportation management, erosion and sediment control, construction, and indoor air quality during construction. Commissioning documents shall be available to the code official upon request.

### **10.3 Mandatory Provisions.**

*Strike Section 10.3.1.1.1 (Activities Prior to Building Permit) of ASHRAE 189.1 in its entirety without substitution.*

*Strike Section 10.3.1.2 (Building Project Commissioning) of ASHRAE 189.1 in its entirety and insert new Section 10.3.1.2 in its place to read as follows:*

**10.3.1.2 Building Project Commissioning.** Commissioning shall be performed in accordance with this section using *generally accepted engineering standards* and handbooks acceptable to the *AHJ*. Buildings undergoing the *commissioning process* will be deemed to comply with the requirements of Section 10.3.1.1, “Building Acceptance Testing.” A *commissioning process* shall be incorporated into the predesign, design, construction, and first year occupancy of the *building project* that verifies that the delivered building and its components, assemblies, and systems comply with the documented *OPR*. Procedures, documentation, tools, and training shall be provided to the building operating staff to sustain features of the building assemblies and systems for the service life of the building. This material shall be assembled and organized into a systems manual that provides necessary information to the building operating staff to operate and maintain all commissioned systems identified within the building project.

*Strike Section 10.3.1.2.1 (Activities Prior to Building Permit) of ASHRAE 189.1 in its entirety without substitution.*

*Strike Section 10.3.1.2.3 (Post-Occupancy Activities) of ASHRAE 189.1 in its entirety without substitution.*

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*Strike Section 10.3.1.3 (Erosion and Sediment Control (ESC)) of ASHRAE 189.1 in its entirety without substitution.*

*Strike Section 10.3.2 (Plans for Operation) of ASHRAE 189.1 in its entirety and insert new Section 10.3.2 in its place to read as follows:*

**10.3.2 Preliminary Commissioning Report.** Prior to the final inspection, the Preliminary Commissioning Report shall be provided to the owner. A copy of the report shall be made available to the *code official* upon request.

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## CHAPTER 4 SITE DEVELOPMENT AND LAND USE

- 401 General
- 402 Preservation of Natural Resources
- 403 Stormwater Management
- 404 Landscape Irrigation and Outdoor Fountains
- 405 Management of Vegetation, Soils and Erosion Control
- 406 Building Site Waste Management
- 407 Transportation Impact
- 408 Heat Island Mitigation
- 409 Site Lighting

### 401 GENERAL

*Strike Section 401.2 of the International Green Construction Code in its entirety and insert new Section 401.2 in the Green Construction Code in its place to read as follows:*

**401.2 Predesign site inventory and assessment.** An inventory and assessment of the natural resources and baseline conditions of the building site shall be submitted with the *construction documents*. The inventory and assessment shall:

1. Identify how soils will be prepared, amended and placed in a manner that establishes or restores the ability of the soil to support the vegetation that has been protected and that will be planted;
2. Identify *invasive plant species* on the site for removal; and
3. Identify native plant species on the site.

### 402 PRESERVATION OF NATURAL RESOURCES

*Strike Section 402 of the International Green Construction Code in its entirety without substitution.*

### 403 STORMWATER MANAGEMENT

*Strike Section 403 of the International Green Construction Code in its entirety without substitution.*

### 404 LANDSCAPE IRRIGATION AND OUTDOOR FOUNTAINS

*Strike Section 404.1 of the International Green Construction Code in its entirety and insert new*

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Section 404.1 in the Green Construction Code in its place to read as follows:

**404.1 Landscape irrigation systems.** Irrigation of exterior landscaping shall comply with Sections 404.1.1 and 404.1.2.

**404.1.1 Water for outdoor landscape irrigation.** In accordance with Section 404.1.2, outdoor landscape irrigation systems shall be designed and installed to reduce potable water use by 50 percent through plant selection, water efficient irrigation technology, the elimination of a permanently installed irrigation system, and/or, where permitted by District regulation or ordinances, with *alternate onsite nonpotable water* complying with Section 1115 of the *Plumbing Code* and local regulations. Designers shall use the EPA Water Sense Interactive Water Budget Tool to determine whether the design meets the 50 percent reduction threshold.

**Exceptions:** *Potable* water is permitted to be used as follows:

1. During the establishment phase of newly planted landscaping and during periods of drought in excess of 30 days.
2. To irrigate food production.
3. To supplement *non-potable* water irrigation of shade trees provided in accordance with Section 408.2.3.

**404.1.2 Irrigation system design and installation.** Where in-ground irrigation systems are provided, the systems shall comply with all of the following:

1. The design and installation of outdoor irrigation systems shall be under the supervision of an irrigation professional accredited or certified by an appropriate local or national body.
2. Landscape irrigation systems shall not direct water onto building exterior surfaces, foundations or exterior paved surfaces. Systems shall not generate runoff.
3. Where an irrigation control system is used, the system shall be one that regulates irrigation based on weather, climatological, time of day, or soil moisture status data. The controller shall have integrated or separate sensors to suspend irrigation events during rainfall.
4. Irrigation zones shall be based on plant water needs with plants of similar need grouped together. Turfgrass shall not be grouped with other plantings on the same zone.

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*Strike Section 404.2 of the International Green Construction Code in its entirety without substitution.*

## **405 MANAGEMENT OF VEGETATION, SOILS AND EROSION CONTROL**

*Strike Section 405.1 of the International Green Construction Code in its entirety and insert new Section 405.1 in the Green Construction Code in its place to read as follows:*

**405.1 Soil and water quality protection.** Soil and water quality shall be protected in accordance with Section 405.1.4.

*Strike Sections 405.1.1, 405.1.2, and 405.1.3 of the International Green Construction Code in their entirety without substitution.*

*Strike Section 405.1.4 of the International Green Construction Code in its entirety and insert new Section 405.1.4 in the Green Construction Code in its place to read as follows:*

**405.1.4 Soil reuse and restoration.** Soils that are being placed or replaced on a *building site* shall be prepared, amended and placed in a manner that establishes or restores the ability of the soil to support the vegetation that has been protected and that will be planted. Soil reuse and restoration shall be in accordance with Sections 405.1.4.1 and 405.1.4.2.

**405.1.4.1 Preparation.** Before placing stockpiled or imported topsoils, compliance with all of the following shall occur:

1. Areas shall be cleared of debris including, but not limited to, *building* materials, plaster, paints, road base type materials, petroleum based chemicals, and other harmful materials;
2. Areas of construction-compacted subsoil shall be scarified; and
3. The first lift of replaced soil shall be mixed into this scarification zone to improve the transition between the subsoil and overlying soil horizons.

**Exceptions:** Scarification is prohibited in all of the following locations:

1. Where scarification would damage existing tree roots.
2. On inaccessible slopes.

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3. On or adjacent to trenching and drainage installations.
4. On areas intended by the design to be compacted such as abutments, footings, inslopes.
5. *Brownfields*.
6. Other locations where scarification would damage existing structures, utilities and vegetation being preserved.

**405.1.4.2 Restoration.** Soils disturbed during construction shall be restored in areas that will not be covered by buildings, structures or hardscapes. Soil restoration shall comply with the following:

1. **Organic matter.** To provide appropriate organic matter for plant growth and for water storage and infiltration, soils shall be amended with a mature, stable compost material so that not less than the top 6 inches (152.4 mm) of soil contains not less than 3 percent organic matter. Sphagnum peat or organic amendments that contain sphagnum peat shall not be used. Soil organic matter shall be determined in accordance with ASTM D 2974. Organic materials selected for onsite amendment or for blending of imported soils shall be renewable within a 50-year cycle.

**Exception:** Where the reference soil for a building site has an organic level depth other than 6 inches, soils shall be amended to organic matter levels and organic matter depth that are comparable to the site's reference soil.

2. **Additional soil restoration criteria.** In addition to compliance with Item 1, soil restoration shall comply with not less than three of the following criteria:
  1. **Compaction.** Bulk densities within the root zone shall not exceed the densities specified in Table 405.1.4 and shall be measured using a soil cone penetrometer in accordance with ASAE S313.3. The root zone shall be not less than 6 inches (152.4 mm), nor less than the site's reference soil, whichever results in the greater depth of measurement. Data derived from a soil cone penetrometer shall be reported in accordance with ASAE EP542.

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2. **Infiltration rates.** Infiltration rates or saturated hydraulic conductivity of the restored soils shall be comparable to the site’s reference soil. Infiltration rates shall be determined in accordance with ASTM D 3385 or ASTM D 5093. For sloped areas where the methods provided in the referenced standards cannot be used successfully, alternate methods *approved* by the *code official* shall be permitted provided that the same method is used to test both reference soil and onsite soil.
3. **Soil biological function.** Where remediated soils are used, the biological function of the soils’ mineralizable nitrogen shall be permitted as a proxy assessment of biological activity.
4. **Soil chemical characteristics.** Soil chemical characteristics appropriate for plant growth shall be restored. The pH, cation exchange capacity and nutrient profiles of the original undisturbed soil or the site’s reference soil shall be matched in restored soils. Salinity suitable for regionally appropriate vegetation shall be established. Soil amendments and fertilizers shall be selected from those which minimize nutrient loading to waterways or groundwater.

**TABLE 405.1.4  
MAXIMUM CONE PENETROMETER READINGS**

SURFACE RESISTANCE (PSI)		SUBSURFACE RESISTANCE (PSI)	
All Textures Sand	Sand (includes loamy sand, sandy loam, sandy clay loam, and sandy clay)	Silt (includes loam, silt loam, silty clay loam, and silty clay)	Clay (includes clay loam)
110	260	260	225

*Strike Section 405.2 of the International Green Construction Code in its entirety and insert new Section 405.2 in the Green Construction Code in its place to read as follows*

**405.2 Invasive plant species.** *Invasive plant species* shall not be planted on a building site. Containment or removal of any *invasive plant species* currently on the site is required.

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*Strike Section 405.3 of the International Green Construction Code in its entirety and insert new Section 405.3 in the Green Construction Code in its place to read as follows:*

**405.3 Native plant landscaping.** Where new landscaping is installed as part of a site plan or within the building site, not less than 50 percent of the newly landscaped area shall be planted with native plant species.

**Exceptions:**

1. Locations where non-native plant species are required by laws or regulations of the District of Columbia;
2. Vegetative roofs for buildings or structures; or
3. Trees.

## **406 BUILDING SITE WASTE MANAGEMENT**

*Insert new Section 406.3 in the Green Construction Code to read as follows:*

**406.3 Verification.** Prior to final inspection, the *Department* may require the *owner*, contractor or an *approved agency* to provide verification of the project’s compliance with the *approved* building site waste management plan, as set forth in the Green Building Program Manual.

## **407 TRANSPORTATION IMPACT**

*Strike Section 407 of the International Green Construction Code in its entirety without substitution.*

## **408 HEAT ISLAND MITIGATION**

*Strike Section 408.1 of the International Green Construction Code in its entirety and insert new Section 408.1 in the Green Construction Code in its place to read as follows:*

**408.1 General.** The heat island effect of building and building site development shall be mitigated in accordance with Section 408.2.

*Strike Section 408.2.2 of the International Green Construction Code in its entirety and insert new Section 408.2.2 in the Green Construction Code in its place to read as follows:*

**408.2.2 Shading by structures.** Where shading is provided by a building or structure or a building element or component, such building, structure, component or element shall comply with the following:

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1. Where open trellis-type free standing structures, such as, but not limited to, covered walkways, and trellises or pergolas, are covered with native plantings, the plantings shall be designed to achieve mature coverage within five years; and
2. Shade provided onto the hardscape by an adjacent building or structure located on the same lot shall be calculated and credited toward compliance with this section based on the projected peak sun angle on the summer solstice.

*Strike Section 408.3 of the International Green Construction Code in its entirety without substitution.*

## **409 SITE LIGHTING**

*Strike Section 409.1 of the International Green Construction Code in its entirety and substitute new Section 409.1 in the Green Construction Code in its place to read as follows:*

**409.1 Light pollution control.** Where this section is indicated to be applicable in Table 302.1, uplight, light trespass, and glare shall be limited for all exterior lighting equipment as described in Sections 409.2 and 409.3. The provisions of this section shall only apply to new construction and Level 3 *alterations* complying with the applicable requirements of the *Existing Building Code*.

**Exceptions:** Lighting used for the following exterior applications is exempt where equipped with a control device independent of the control of the non-exempt lighting:

1. Specialized signal, directional, and marker lighting associated with transportation.
2. Advertising signage or directional signage.
3. Lighting integral to equipment or instrumentation and installed by its manufacturer.
4. Theatrical purposes, including performance, stage, film production, and video production.
5. Athletic playing areas where lighting is equipped with hoods or louvers for glare control.
6. Temporary lighting.

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7. Lighting for industrial production, material handling, transportation sites, and associated storage areas where lighting is equipped with hoods or louvers for glare control.
8. Theme elements in theme and amusement parks.
9. Roadway lighting required by governmental authorities.
10. Lighting used to highlight features of public monuments and registered landmark structures.
11. Lighting classified for and used in hazardous areas.
12. Lighting for swimming pools and water features.
13. Means of egress and emergency lighting.
14. Lighting for public safety.
15. Lighting for security.

*Strike Section 409.2 of the International Green Construction Code in its entirety and substitute new Section 409.2 in the Green Construction Code to read as follows:*

**409.2 Uplight.** Exterior lighting shall comply with the requirements of Table 409.2 for the exterior lighting zones (LZ) appropriate to the *building site*.

**Exceptions:** Lighting used for the following exterior applications shall be exempt from the requirements of Table 409.2:

1. Lighting for *building* facades, landscape features, and public monuments in exterior lighting zones 3 and 4.
2. Lighting for *building* facades in exterior lighting zone 2.
3. Lighting installed below canopies.
4. Lighting for flag poles.

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## CHAPTER 5 MATERIAL RESOURCE CONSERVATION AND EFFICIENCY

- 503 Construction Waste Management
- 504 Waste Management and Recycling
- 505 Material Selection

### 503 CONSTRUCTION WASTE MANAGEMENT

*Insert new Section 503.2 in the Green Construction Code to read as follows:*

**503.2 Verification.** Prior to final inspection, the *Department* may require the *owner*, contractor or an *approved agency* to provide verification of the project's compliance with the *approved* Construction Material and Waste Management Plan, as set forth in the Green Building Program Manual.

### 504 WASTE MANAGEMENT AND RECYCLING

*Strike Section 504 of the International Green Construction Code in its entirety without substitution.*

### 505 MATERIAL SELECTION

*Strike Section 505.1 of the International Green Construction Code in its entirety and insert new Section 505.1 in the Green Construction Code in its place to read as follows:*

**505.1 Material selection and properties.** Building materials shall conform to Section 505.2. Furniture and furnishings may be included, but are not required.

#### **Exceptions:**

1. Electrical, mechanical, plumbing, security and fire detection, and alarm equipment and controls, automatic fire sprinkler systems, elevators and conveying systems shall not be required to comply with Section 505.2.
2. Where a whole building life cycle assessment is performed in accordance with Section 505.1.1, compliance with Section 505.2 shall not be required.
3. Projects that are less than 50,000 square feet (15 240 m<sup>2</sup>).

**505.1.1 Whole building life cycle assessment; alternative compliance.** Where a whole building life cycle assessment is performed, compliance with the material selection requirements of Section 505 is not required. The requirements for the execution of a

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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 *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 shall be assessed from resource extraction to demolition and disposal, including, but not limited to, onsite construction, maintenance and replacement; relocation and reconfiguration; material and product embodied acquisition; and process and transportation energy.

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**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.

**505.2 Material selection.** Not less than 40 percent of the total building materials used in the project, based on cost, shall comply with Sections 505.2.1, 505.2.2, 505.2.3, 505.2.4, or 505.2.5. Where a material complies with more than one section, the material value shall be multiplied by the number of sections that it complies with. The value of total building material cost shall remain constant regardless of whether materials are tabulated in more than one section.

**505.2.1 Used materials and components.** Used materials and components shall comply with the provisions for such materials in accordance with the applicable requirements of this code. The value of used materials shall be either the actual cost paid or the replacement value.

**505.2.2 Recycled content building materials.** Recycled content building materials shall comply with the following:

1. The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.
2. *Recycled content* shall be defined in accordance with ISO 14021.

**505.2.3 Recyclable building materials and building components.** Building materials and building components that can be recycled into the same material or another material with a minimum recovery rate of not less than 30 percent through recycling and reprocessing or reuse, or building materials shall be recyclable through an established, nationally available closed loop manufacturer's take-back program.

**505.2.4 Bio-based materials.** *Bio-based* materials shall be those materials that comply with one or more of the following:

1. The *bio-based* content is not less than 75 percent as determined by testing in accordance with ASTM D6866.

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2. Wood and wood products used to comply with this section, other than salvaged or reused wood products, shall be labeled in accordance with the SFI Standard, FSC STD-40-004 V2-1 EN, PEFC Council Technical Document or equivalent *fiber procurement system*. As an alternative to an on-product label, a Certificate of Compliance indicating compliance with the *fiber procurement system* shall be permitted. Manufacturer's *fiber procurement systems* shall be audited by an accredited third-party.
3. The requirements of USDA 7CFR, Part 2902.

**505.2.5 Indigenous (regional) materials.** Indigenous materials or components shall be composed of resources that are recovered, harvested, extracted or manufactured within a 500 mile (800 km) radius of the building site. Where only a portion of a material or product is recovered, harvested, extracted or manufactured within 500 miles (800 km), only that portion shall be included. Where resources are transported by water or rail, the distance to the building site shall be determined by multiplying the distance that the resources are transported by water or rail by 0.25, and adding that number to the distance transported by means other than water or rail.

**505.3 Verification.** Prior to the final inspection, the owner, contractor, or an *approved agency* shall provide the *code official* with documentation to verify compliance with the material selection or whole building life cycle assessment requirements of Section 505, as set forth in the Green Building Program Manual.

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## CHAPTER 6 ENERGY CONSERVATION, EFFICIENCY AND CO<sub>2</sub><sup>e</sup> EMISSION REDUCTION

- 601 General
- 602 Modeled Performance Pathway Requirements
- 603 Energy Metering, Monitoring and Reporting
- 604 Automated Demand-response (Auto-DR) Infrastructure
- 605 Building Envelope Systems
- 606 Building Mechanical Systems
- 607 Building Service Water Heating Systems
- 608 Building Electrical Power and Lighting Systems
- 609 Specific Appliances and Systems
- 610 Building Renewable Energy Systems
- 611 Energy Systems Commissioning and Completion

### 601 GENERAL

*Strike Section 601.3.1 in the International Green Construction Code in its entirety and insert new Section 601.3.1 in the Green Construction Code in its place to read as follows:*

**601.3.1 Performance-based compliance.** Buildings designed on a performance basis shall comply with Sections 602, 608.6, 609, and 611.

*Strike Section 601.3.2 of the International Green Construction Code in its entirety and insert new Section 601.3.2 in the Green Construction Code in its place to read as follows:*

**601.3.2 Prescriptive-based compliance.** Buildings designed on a prescriptive basis shall comply with the requirements of Sections 605, 606, 607, 608, 609, and 611.

### 602 MODELED PERFORMANCE PATHWAY REQUIREMENTS

*Strike Section 602.1 and subsection 602.1.1 of the International Green Construction Code in their entirety and insert new Section 602.1 and subsection 602.1.1 in the Green Construction Code in their place to read as follows:*

**602.1 Performance-based compliance.** Compliance for buildings and their sites to be designed on a performance basis shall be determined by predictive modeling. Predictive modeling shall use source energy kBtu/sf-y unit measure based on compliance with Section 602.1.1. Where a building has mixed uses, all uses shall be included in the performance-based compliance.

**602.1.1 zEPI.** Performance-based designs shall demonstrate a zEPI of not more than 51 as determined in accordance with Equation 6-1 for energy use reduction.

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**(Equation 6-1)**

$$zEPI = 57 \times (EUI_p/EUI)$$

Where:

EUI<sub>p</sub> = the proposed energy use index in source kBtu/sf-y for the proposed design of the building and its site calculated in accordance with Section 602.1.2.

EUI = the base annual energy use index in source kBtu/sf-y for a baseline building and its site calculated in accordance with Section 602.1.2.

*Strike subsection 602.1.1 of the International Green Construction Code in its entirety and insert new subsection 602.1.1 in the Green Construction Code in its place to read as follows:*

**602.1.2 Base annual energy use index.** The proposed energy use index (EUI<sub>p</sub>) of the building and building site shall be calculated in accordance with Equation 6-1; Appendix G to ASHRAE 90.1, as modified by Sections 602.1.2.1 through 602.1.2.3; and COMNET Modeling Guidelines and Procedures. The annual energy use shall include all energy used for building functions and its anticipated occupancy.

*Retain subsections 602.1.2.1 and 602.1.2.2 of the International Green Construction Code in their entirety.*

*Strike subsection 602.1.2.3 of the International Green Construction Code in its entirety and insert new subsection 602.1.2.3 in the Green Construction Code in its place to read as follows:*

**602.1.2.3 Non-renewable energy.** In calculating the annual energy use index, for fuel other than electrical power, energy use shall be converted to consistent units by multiplying the non-renewable energy fossil fuel use at the utility meter or measured point of delivery to Btu's and multiplying by the conversion factor in Table 602.1.2.2.

*Strike Table 602.1.2.2 of the International Green Construction Code in its entirety and insert new Table 602.1.2.2 in the Green Construction Code in its place to read as follows:*

**TABLE 602.1.2.2  
U.S. AVERAGE BUILDING FUELS ENERGY CONVERSION  
FACTORS BY FUEL TYPE<sup>a</sup>**

<b>FUEL TYPE</b>	<b>ENERGY CONVERSION FACTOR</b>
Natural Gas	1.09
Fuel Oil	1.13

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LPG	1.12
Purchased heat (hot water)	1.35
Purchased heat (steam)	1.45
District cooling	1.033
Other	1.1

a. Source: Gas Technology Institute Source Energy and Emissions Analysis Tool.

*Strike Section 602.2 of the International Green Construction Code in its entirety (including associated subsections) without substitution.*

### **603 ENERGY METERING, MONITORING AND REPORTING**

*Strike Section 603.1 of the International Green Construction Code in its entirety and insert new Section 603.1 in the Green Construction Code in its place to read as follows:*

**603.1 Scope.** The provisions of Section 603 shall only apply to new construction and Level 3 alterations as defined by the *Existing Building Code*.

**603.1.1 Purpose.** Buildings that consume energy shall comply with Section 603, except in instances where submetering is not allowed by local laws and regulation. The purpose of this section is to provide requirements that will ensure that buildings are constructed or altered in a way that will provide the capability for their energy use, production and reclamation to be measured, monitored and reported. This includes the design of energy distribution systems so as to isolate load types, the installation of or ability to install in the future meters, devices and a data acquisition system, and the installation of, or the ability to provide, energy displays and other appropriate reporting mechanisms in the future.

All forms of energy delivered to the building and building site, produced on the building site or in the building, and reclaimed at the building site or in the building shall be metered and all energy load types measured in accordance with this section.

**603.1.1.1 Buildings with tenants.** In buildings with nonresidential tenants, the metering required by Section 603.3 shall be collected for the entire building and for each tenant individually. Nonresidential tenants shall have access to all data collected for their space.

*Strike Section 603.3.7 of the International Green Construction Code in its entirety and insert new Section 603.3.7 in the Green Construction Code in its place as follows:*

**603.3.7 Renewable energy.** Equipment and systems providing energy from renewable energy sources which is included in the determination of the building zEPI, shall be

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capable of being metered to allow a determination of the output of equipment and systems in accordance with Sections 603.3.7.1 through 603.3.7.3.

**603.3.7.1 Solar electric.** Equipment and systems providing electric power through conversion of solar energy directly to electric power shall be capable of being metered so that the peak electric power (kW) provided to the building and its systems or to off-site entities can be determined at 15 minute intervals, and the amount of electric power (kWh) provided to the building and its systems can be determined at intervals of one hour or less.

**603.3.7.2 Wind power systems.** Equipment and systems providing electric power through conversion of wind energy directly to electric power shall be capable of being metered so that the peak electric power (kW) provided to the building and its systems or to off-site entities can be determined at 15 minute intervals, and the amount of electric power (kWh) provided to the building and its systems can be determined at intervals of one hour or less.

**603.3.7.3 Other renewable energy electric production systems.** Equipment and systems providing electric power through conversion of other forms of renewable energy directly to electric power shall be capable of being metered so that the peak electric power (kW) provided to the building and its systems or to off-site entities can be determined at 15 minute intervals, and the amount of electric power (kWh) provided to the building and its systems can be determined at intervals of one hour or less.

*Strike Section 603.4 of the International Green Construction Code in its entirety and insert new Section 603.4 in the Green Construction Code in its place to read as follows*

**603.4 Energy load type sub-metering.** For buildings that are not less than 50,000 square feet (4645 m<sup>2</sup>) in *total building floor area*, the energy use of the categories specified in Table 603.2 shall be metered through the use of sub-meters or other *approved* equivalent methods meeting the capability requirements of Section 603.3.

**603.4.1 Buildings less than 50,000 square feet.** For buildings that are less than 50,000 square feet (4645 m<sup>2</sup>) in *total building floor area*, the energy distribution system shall be designed and constructed to accommodate the future installation of sub-meters and other *approved* devices in accordance with Section 603.4. This includes, but is not limited to, providing access to distribution lines and ensuring adequate space for the installation of sub-meters and other *approved* devices.

*Strike Section 603.5 of the International Green Construction Code in its entirety and insert new Section 603.5 in the Green Construction Code in its place to read as follows:*

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**603.5 Minimum energy measurement and verification.** Meters, sub-meters, and other *approved* devices installed in compliance with Sections 603.3 and 603.4 shall be connected to a data acquisition and management system capable of storing not less than 36 months worth of data collected by all meters and other *approved* devices.

*Strike Section 603.6 of the International Green Construction Code in its entirety without substitution.*

## **604 AUTOMATED DEMAND-RESPONSE (AUTO-DR) INFRASTRUCTURE**

*Strike Section 604.1 of the International Green Construction Code in its entirety and insert new Section 604.1 in the Green Construction Code in its place to read as follows:*

**604.1 Establishing an open and interoperable automated demand response (Auto-DR) infrastructure.** Where this Section is indicated to be applicable in Table 302.1, buildings that contain heating, ventilation, air conditioning (HVAC) or lighting systems shall comply with Sections 604.1 through 604.3. Where a building energy management and control system (EMCS) has been installed, it shall be integrated with building HVAC systems controls to receive an open and interoperable automated demand response (Auto-DR) relay or Internet signal. Building HVAC shall incorporate preprogrammed demand response strategies that are automated with a demand response automation Internet software client.

**Exceptions:** Auto-DR infrastructure is not required for the following:

1. Buildings located where the electric utility or regional Independent System Operator (ISO) or Regional Transmission Operator (RTO) does not offer a demand response program to buildings regulated by this code.
2. Buildings with a peak electric demand not greater than 0.75 times that of the standard reference design.
3. *Buildings* that have incorporated on-site renewable energy generation to provide 20 percent or more of the building's energy demand.

*Strike the Exception to Section 604.3 of the International Green Construction Code in its entirety and insert a new Exception to Section 604.3 of the Green Construction Code in its place to read as follows:*

**Exceptions:** The Auto-DR strategy is not required to include the following buildings and systems:

1. Hospitals and critical emergency response facilities.

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2. Ventilation and exhaust systems required by Chapter 5 of the *Mechanical Code* for the control or removal of dust, particles, odors, fumes, spray, gas, smoke or other hazardous materials, considered to be irritating or injurious to health or safety, and produced by or involved in operations or processes, including hazardous materials storage.
3. Manufacturing process systems.

*Strike Section 604.4 of the International Green Construction Code in its entirety without substitution.*

## **605 BUILDING ENVELOPE SYSTEMS**

*Strike Section 605.1 of the International Green Construction Code in its entirety and insert new Section 605.1 in the Green Construction Code in its place to read as follows:*

**605.1 Prescriptive compliance.** Where buildings are designed using the prescriptive-based compliance path in accordance with Section 601.3.2, *building thermal envelope* systems shall comply with the provisions of Section C402 of the *International Energy Conservation Code* and the provisions of this section.

**605.1.1 Insulation and fenestration criteria.** *The building thermal envelope shall meet the requirements of Tables C402.1.2 and C402.3 of the International Energy Conservation Code.*

**605.1.2 Air leakage.** *The building thermal envelope shall be durably sealed to limit air leakage in accordance with Section C402.4 of the International Energy Conservation Code.*

## **606 BUILDING MECHANICAL SYSTEMS**

*Strike Section 606.2 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 606.3 of the International Green Construction Code in its entirety and insert new Section 606.3 in the Green Construction Code in its place to read as follows:*

**606.3 Duct and plenum insulation, sealing and testing.** Supply and return air ducts and plenums, air handlers and filter boxes shall be insulated and sealed in accordance with Section C403.2.7.1.1 of the *Energy Conservation Code*.

*Retain subsection 606.3.1 of the International Green Construction Code in its entirety.*

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*Strike Section 606.4 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 606.5 of the International Green Construction Code in its entirety and insert new Section 606.5 in the Green Construction Code in its place to read as follows:*

**606.5 Economizers.** Economizers shall comply with the requirements of the *Energy Conservation Code*.

*Strike Section 606.6 of the International Green Construction Code in its entirety and insert new Section 606.6 in the Green Construction Code in its place to read as follows:*

**606.6 Variable air volume (VAV) fan control.** Individual fans with motors equal to or greater than 5.0 horsepower (3.7285 kW) shall be one of the following:

1. Driven by a mechanical or electrical variable speed drive;
2. Driven by a vane-axial fan with variable-pitch blades; or
3. Provided with controls or devices that will result in fan motor demand of not more than 30 percent of its design wattage at 50 percent of design airflow when the static pressure set point equals one-third of the total design static pressure, based on manufacturer's certified fan data.

Static pressure sensors used to control VAV fans shall be placed in a position so that the controller set point is not greater than one-third of the total design fan static pressure, except for systems with direct digital control. Where this results in the sensor being located downstream of major duct branching, multiple sensors shall be installed in each major branch to ensure that the static pressure can be maintained in each branch.

For systems with direct digital control of individual zone boxes reporting to the central control panel, the static pressure set point shall be reset based on the zone requiring the most pressure. The set point shall be reset lower until one zone damper is wide open.

**Exception:** Systems without zone dampers are exempt from the static pressure reset requirements.

*Strike Section 606.7 of the International Green Construction Code in its entirety and insert new Section 606.7 in the Green Construction Code in its place to read as follows:*

**606.7 Kitchen makeup air systems.** Kitchen ventilation and exhaust systems shall be in accordance with the *Mechanical Code* and this section. Kitchen ventilation systems that deliver conditioned supply air to any space containing a kitchen hood shall not be capable of exceeding

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the greater of the following:

1. The supply airflow rate required to meet the conditioning load;
2. The ventilation rate required for the area; or
3. The hood exhaust flow minus the available transfer air from adjacent spaces. For the purposes of this section, available transfer air is considered to be that portion of outdoor ventilation air not required to satisfy other exhaust needs, such as restrooms, and not required to maintain pressurization of adjacent spaces.

*Strike Section 606.8 of the International Green Construction Code in its entirety and insert new Section 606.8 in the Green Construction Code in its place to read as follows.*

**606.8 Laboratory exhaust systems.** Laboratory exhaust systems shall comply with the provisions of the *Energy Conservation Code* except as specified in Section 606.8.1.

**606.8.1 Laboratory exhaust systems.** Buildings with laboratory exhaust systems having a total exhaust rate greater than 5,000 cfm (2360 L/s) shall be provided with one or more of the following:

1. A variable air volume (VAV) laboratory exhaust and room supply system capable of reducing exhaust and makeup air flow rates to the minimum required in the *Mechanical Code*.
2. A heat recovery system to precondition makeup air from laboratory exhaust so that the percentage that the exhaust and makeup air flow rates can be reduced from design conditions plus the sensible recovery effectiveness percentage totals not less than 50 percent. The heat recovery system must be in compliance with the *Mechanical Code* and shall not be provided where the *Mechanical Code* prohibits such systems.
3. Direct makeup auxiliary air supply equal to not less than 75 percent of the exhaust air flow rate capable of being heated and cooled to the design temperatures specified in Section C302.1 of the *Energy Conservation Code*.

## **607 BUILDING SERVICE WATER HEATING SYSTEMS**

*Strike Section 607.2.2 of the International Green Construction Code in its entirety and insert new Section 607.2.2 in the Green Construction Code in its place to read as follows:*

**607.2.2 Water heater controls for dwelling units.** Water heaters installed in *dwelling units* in buildings shall be equipped with external water temperature thermostat controls.

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*Strike Section 607.3 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 607.4 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 607.5 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 607.6 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 607.7 of the International Green Construction Code in its entirety without substitution.*

## **608 BUILDING ELECTRICAL POWER AND LIGHTING SYSTEMS**

*Strike Section 608.4 of the International Green Construction Code in its entirety and insert new Section 608.4 in the Green Construction Code in its place to read as follows:*

**608.4 Exterior lighting controls.** Exterior lighting shall be controlled by a *time switch* and configured so that the total exterior lighting power is automatically reduced by not less than 30 percent within two hours after *facility operations* conclude.

**Exceptions:** An exterior lighting time switch shall not be required for the following occupancies and conditions:

1. Group H occupancies.
2. Group I occupancies.
3. Group R occupancies.
4. Lighting that is connected to *occupant sensor controls*.
5. Means of egress lighting required by the *Building Code* or the *Fire Code*.
6. Solar powered luminaires that are not connected to a centralized power source.

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*Strike Section 608.5 of the International Green Construction Code in its entirety and insert new Section 608.5 in the Green Construction Code in its place to read as follows:*

**608.5 Automatic daylight controls.** Automatic *daylight controls* shall be provided in daylit areas to control the lights serving those areas. General lighting in a sidelighting daylit area that is within one window head height shall be separately controlled by automatic *daylight controls*.

**Exceptions:** Automatic *daylight controls* are not required for the following spaces and equipment:

1. Toplighting daylit areas where the skylight is located in a portion of the roof that is shaded during the peak sun angle on the summer solstice by permanent features of the building or by permanent features of adjacent buildings.
2. Sidelighting daylit areas where the fenestration is located in an obstructed exterior wall that does not face a public way or a yard or court complying with Section 1206 of the *Building Code* or where the distance to any buildings, structures, or geological formations in front of the wall is less than two times the height of the buildings, structures, or geological formations.
3. Daylit areas served by less than 90 watts of lighting.
4. Spaces where medical care is directly provided.
5. Spaces within dwelling units or sleeping units.
6. Lighting required to comply with Section C405.2.3 of the *Energy Conservation Code*.

*Strike Section 608.6 of the International Green Construction Code in its entirety and insert new Section 608.6 in the Green Construction Code in its place to read as follows:*

**608.6 Plug load controls.** Receptacles and electrical outlets in the following spaces shall be controlled by an *occupant sensor* or *time switch* as follows:

1. In Group B office spaces without furniture systems incorporating wired receptacles, not less than one controlled receptacle shall be provided for each office.
2. In Group B office spaces with furniture systems incorporating wired receptacles, not less than one controlled circuit shall be provided for each furniture system workstation.

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3. In classrooms in Group B and Group E occupancies, not less than 50 percent, but not more than four in total, of all receptacles provided in each classroom shall be controlled receptacles.
4. In copy rooms, print shops, and computer labs, not less than one controlled receptacle shall be provided for each data jack.

*Strike Section 608.6.1 of the International Green Construction Code in its entirety and insert new Section 608.6.1 in the Green Construction Code as follows.*

**608.6.1 Distribution and marking.** Controlled receptacles and electrical outlets shall be distributed in a reasonably uniform pattern throughout each space or located specifically for equipment. Controlled receptacles shall be marked to differentiate them from uncontrolled receptacles.

*Strike Section 608.6.2 of the International Green Construction Code in its entirety and insert new Section 608.6.2 in the Green Construction Code in its place to read as follows:*

**608.6.2 Furniture systems.** Furniture systems incorporating wired receptacles shall include not less than one receptacle at each workstation that is connected to a controlled circuit.

*Strike Section 608.6.3 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 608.6.4 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 608.8 of the International Green Construction Code in its entirety without substitution.*

## **609 SPECIFIC APPLIANCES AND EQUIPMENT**

*Strike Sections 609.2.1, 609.2.2 and 609.2.3 of the International Green Construction Code in their entirety and insert new Sections 609.2.1, 609.2.2 and 609.2.3 in the Green Construction Code in their place to read as follows:*

**609.2.1 Elevators.** Elevator systems shall comply with Section 609.2.1.1

**609.2.1.1 Ventilation.** Cab ventilation fans other than air conditioning or air purifying fans shall have an efficacy greater than or equal to 3.0 cfm per watt (0.085 m<sup>3</sup>/min./watt).

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**609.2.2 Escalators and moving walkways.** Escalators and moving walkways shall be capable of being automatically slowed in accordance with ASME A17.1/CSA B44.

**609.2.3 Commercial food service equipment.** Not less than 50 percent, based on total wattage, of the commercial food service equipment installed shall be Energy Star rated. Equipment that is ineligible for Energy Star ratings is excluded from the calculation.

## **610 BUILDING RENEWABLE ENERGY SYSTEMS**

*Strike Section 610 of the International Green Construction Code in its entirety without substitution.*

## **611 ENERGY SYSTEMS COMMISSIONING AND COMPLETION**

*Strike Section 611 of the International Green Construction Code in its entirety and insert new Section 611 in the Green Construction Code in its place to read as follows:*

**611.1 Mechanical systems commissioning and completion requirements.** Mechanical systems commissioning and completion of the mechanical system installation shall comply with Section 611.1 and the Green Building Program Manual.

**611.1.1 Commissioning plan.** A *commissioning* plan shall be developed by a *registered design professional* or *approved agency* and shall include at a minimum all of the following items:

1. A narrative describing the activities that will be accomplished during each phase of *commissioning*, including guidance on who accomplishes the activities and how they are completed.
2. Equipment and systems to be tested including, but not limited to, the specific equipment, appliances or systems to be tested and the number and extent of tests.
3. Functions to be tested including, but not limited to, calibrations and economizer controls.
4. Conditions under which the test shall be performed including, but not limited to, affirmation of winter and summer design conditions and full outside air.
5. Measurable criteria for performance.

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**611.1.2 Systems adjusting and balancing.** HVAC systems shall be balanced in accordance with generally accepted engineering standards. Air and water flow rates shall be measured and adjusted to deliver final flow rates within the tolerances provided in the product specifications. Test and balance activities shall include as a minimum, the provisions of Sections 611.1.2.1 and 611.1.2.2.

**611.1.2.1 Air systems balancing.** Each supply air outlet and zone terminal device shall be equipped with a means for air balancing in accordance with the IMC. Discharge dampers are prohibited on constant volume fans and variable volume fans with motors of 10 hp (18.6 kW) and larger. Air systems shall be balanced in a manner to first minimize throttling losses then, for fans with system power of greater than 1 hp, fan speed shall be adjusted to meet design flow conditions.

**Exception:** Fans with fan motor horsepower of 1 hp or less.

**611.1.2.2 Hydronic systems balancing.** Individual hydronic heating and cooling coils shall be equipped with means for balancing and measuring flow. Hydronic systems shall be proportionately balanced in a manner to first minimize throttling losses, then the pump impeller shall be trimmed or pump speed shall be adjusted to meet design flow conditions. Each hydronic system shall have either the capability to measure pressure across the pump, or shall have test ports at each side of each pump.

**Exceptions:**

1. Pumps with pump motors of 5 hp or less.
2. Where throttling results in not greater than 5 percent of the nameplate horsepower draw above that required if the impeller were trimmed.

**611.1.3 Functional performance testing.** Functional performance testing shall be in accordance with the requirements of Sections 611.1.3.1, 611.1.3.2 and 611.1.3.3.

**611.1.3.1 Equipment.** Equipment functional performance testing shall demonstrate the installation and operation of components, systems, and system-to-system interfacing relationships in accordance with *approved* plans and specifications so that operation, function, and maintenance serviceability for each of the commissioned systems is confirmed. Testing shall include all specified modes of control and *sequence of operation*, including under full-load, part-load and all of the following emergency conditions:

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1. Each mode as described in the *sequence of operation*.
2. Redundant or *automatic* back-up mode.
3. Performance of alarms.
4. Mode of operation upon a loss of power and restoration of power.

**611.1.3.2 Controls.** HVAC control systems shall be tested to document that control devices, components, equipment, and systems are calibrated adjusted and operate in accordance with the *approved* plans and specifications. *Sequences of operation* shall be functionally tested to document that they operate in accordance with the *approved* plans and specifications.

**611.1.3.3 Economizers.** Air economizers shall undergo a functional test to determine that they operate in accordance with manufacturer's specifications.

**611.1.4 Preliminary commissioning report.** A preliminary report of *commissioning* test procedures and results shall be completed and certified by the *registered design professional* or *approved agency* and provided to the *building* owner prior to the final mechanical inspection. The report shall be identified as "Preliminary Commissioning Report" and shall identify all of the following:

1. Itemization of deficiencies found during testing required by this section that have not been corrected at the time of report preparation.
2. Deferred tests that cannot be performed at the time of report preparation because of climatic conditions.
3. Climatic conditions required for performance of the deferred tests.

**611.1.4.1 Acceptance.** *Buildings*, or portions thereof, shall not pass the final mechanical inspection until such time as the *code official* has received a letter of transmittal from the *building* owner acknowledging that the *building* owner has received the Preliminary Commissioning Report.

**611.1.4.2 Copy.** At the request of the *code official*, a copy of the Preliminary Commissioning Report shall be made available for review.

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**611.1.4.3 Certification.** A certification, signed and sealed by the *registered design professional* or *approved agency*, documenting that the mechanical and service water heating systems comply with Sections C403 and C404 of the *Energy Conservation Code* shall be provided to the *code official* by or before the final inspection.

**611.1.5 Completion requirements.** The *construction documents* shall specify that the requirements described in this section be provided to the *building owner* within 180 days of the date of issuance of the *certificate of occupancy*.

**611.1.5.1 Drawings.** *Construction documents* shall include the location of and performance data pertaining to each piece of equipment.

**611.1.5.2 Manuals.** An operating and maintenance manual in accordance with industry-accepted standards shall be provided and shall include all of the following:

1. Submittal data stating equipment size and selected options for each piece of equipment requiring maintenance.
2. Manufacturer's operation manuals and maintenance manuals for each piece of equipment furnished as part of the *building* project. Required routine maintenance shall be clearly identified.
3. Names and addresses of not less than one *service agency*.

A Systems Manual shall be provided and shall include all of the following:

1. HVAC controls system maintenance and calibration information, including wiring diagrams, schematics, and control sequence descriptions. Desired or field-determined set-points shall be permanently recorded on control drawings at control devices or, for digital control systems, in programming comments.
2. A complete narrative of how each system is intended to operate, including recommended setpoints, seasonal change-over information and emergency shutdown operation.
3. Control sequence descriptions for lighting, domestic hot water heating and all renewable energy systems complete

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with a description of how these systems connect to, and are controlled in conjunction with, the overall building system.

**611.1.5.3 System balancing report.** A written report describing the activities and measurements completed in accordance with Section 611.1.2 shall be provided.

**611.1.5.4 Final commissioning report.** A complete report of test procedures and results identified as “Final Commissioning Report” shall be completed and provided to the building owner, and shall be made available to the *code official* upon request. The report shall include all of the following:

1. Results of all functional performance tests.
2. Disposition of all deficiencies found during testing, including details of corrective measures used or proposed.
3. All functional performance test procedures used during the *commissioning* process including measurable criteria for test acceptance, provided herein for repeatability.

**Exception:** Deferred tests that were not performed at the time of report preparation because of climatic conditions.

**611.2 Sequence of operation.** A *sequence of operation* shall be developed and finalized upon *commissioning*, when the operational details are initialized and validated. A *sequence of operation* shall be the final record of system operation, and shall be included on the control diagram ‘as-builts’, or as part of the education and operation and maintenance document that is provided to the owner.

**611.3 Lighting commissioning and completion requirements.** The *registered design professional* or *approved agency* shall provide evidence of compliance with the provisions of Sections 611.3.1 and 611.3.2.

**611.3.1 Pre-occupancy requirement.** Prior to final electrical inspection, the *approved agency* conducting *commissioning* shall verify that controls have been installed in accordance with the *approved construction documents*. Any discrepancies shall be reviewed for compliance with Section 608 and the requirements of Section C405.2 of the *Energy Conservation Code*.

**611.3.2 Final commissioning report.** Lighting controls shall be commissioned in accordance with this Section. Within 180 days of the date of issuance of the *certificate of*

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*occupancy*, the owner shall be provided with a Final Commissioning Report and a copy shall be made available to the *code official* upon request. The report shall include the following:

**611.3.2.1 Occupant sensors.** It shall be verified that testing to verify compliance with Section C405.2 of the *Energy Conservation Code* has been performed.

**611.3.2.2 Automatic daylight controls.** *Automatic daylight controls* shall be commissioned in accordance with all of the following:

1. It shall be verified that the placement and orientation of each sensor is consistent with the manufacturer's instructions. If not, the sensor shall be relocated or replaced.
2. Control systems shall be initially calibrated to meet settings and design intent established in the construction *documents*;
3. Prior to calibration of systems controlling dimmable luminaires all lamps shall be seasoned in accordance with the recommendations of the lamp manufacturer.
4. Where located inside *buildings*, calibration of open-loop *daylight controls*, which receive illumination from natural light only, shall not occur until fenestration shading devices such as blinds or shades have been installed and commissioned;
5. Calibration of closed-loop *daylight controls*, that receive illumination from both natural and artificial light, shall not occur until furniture systems and interior finishes have been installed, and any fenestration shading devices such as blinds or shades have been installed and commissioned; and
6. Calibration procedures shall be in accordance with the manufacturer's instructions.

**611.3.2.3 Time switch and programmable schedule controls.** Lighting controls installed in accordance with Section 608 shall be programmed. Scheduling shall incorporate weekday, weekend and holiday operating times, including leap year and daylight savings time corrections. It shall be verified that system overrides work and are located in compliance with Section C405.2 of the *Energy Conservation Code*.

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**611.3.2.4 Dimming systems with preset scenes.** For programmable dimming systems it shall be verified that *automatic* shutoff and *manual* overrides are working and that programming is complete. Prior to programming, all lamps shall be seasoned in accordance with NEMA LSD 23.

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## CHAPTER 7 WATER RESOURCE CONSERVATION, QUALITY AND EFFICIENCY

- 702 Fixtures, Fittings, Equipment and Appliances
- 703 HVAC Systems and Equipment
- 704 Water Treatment Devices and Equipment
- 705 Metering
- 708 Gray Water Systems
- 709 Reclaimed Water Systems
- 710 Alternate Onsite Nonpotable Water Sources

### 702 FIXTURES, FITTINGS, EQUIPMENT AND APPLIANCES

*Strike Section 702.1 of the International Green Construction Code in its entirety and insert new Section 702.1 in the Green Construction Code in its place to read as follows:*

**702.1 Fitting and fixture consumption.** Fixtures shall comply with Table 702.1.

*Strike Section 702.6 of the International Green Construction Code in its entirety and substitute new Section 702.6 in the Green Construction Code in its place to read as follows:*

**702.6 Appliances.** Sections 702.6.1 through 702.6.4 shall regulate appliances that are not related to space conditioning.

**702.6.1 Clothes washers.** Clothes washers of the type in the ENERGY STAR program as defined in “ENERGY STAR<sup>®</sup> Program Requirements, Product Specification for Clothes Washers, Eligibility Criteria,” shall have a water factor (WF) not exceeding 6.0 and a *modified energy factor* (MEF) of not less than 2.0.

**702.6.2 Ice makers.** Ice makers producing cubed-type ice shall be ENERGY STAR qualified as commercial ice machines. Ice makers of a type not currently ENERGY STAR qualified, such as flake, nugget or continuous-type ice makers, shall not exceed the total water use of 25 gallons per 100 pounds (208 L per 100 kg) of ice produced.

**Exception:** Under counter ice makers.

**702.6.3 Steam cookers.** Steam cookers with drain connections shall consume no more than 5 gal (18.9 L)/hour/pan, and those without drain connections shall consume no more than 2 gal (7.6 L)/hour/pan.

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**702.6.4 Dishwashers.** Dishwashers shall be ENERGY STAR qualified where an ENERGY STAR category exists for the specific dishwasher type. Where an ENERGY STAR category does not exist, the dishwasher shall be in accordance with Table 702.6.4.

**TABLE 702.6.4  
MAXIMUM WATER CONSUMPTION FOR COMMERCIAL DISHWASHERS**

DISHWASHER TYPE	MAXIMUM WATER CONSUMPTION
Rackless conveyor	2.2 gallons per minute
Utensil washer	2.2 gallons per rack

For SI: 1 gallon per minute = 3.785 Lpm.

*Strike Section 702.7 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 702.9 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 702.11 of the International Green Construction Code in its entirety without substitution*

*Strike Section 702.13 of the International Green Construction Code in its entirety and insert new Section 702.13 in the Green Construction Code in its place to read as follows:*

**702.13 Automated vehicle wash facilities.** Not less than 50 percent of the water used for the rinsing phase of the wash cycle at automated vehicle wash facilities shall be collected to be reused for the washing phase. Towel and chamois washing machines shall have high-level water cut-offs.

**702.13.1 Nonpotable water use.** Except for water recirculated within the facility, potable and nonpotable water use for automobile washing shall not exceed 40 gallons (151 L) per vehicle for in-bay *automatic* washing, and 35 gallons (132.5 L) per vehicle for conveyor and express type car washing.

**Exception:** Bus and large commercial vehicle washing facilities.

*Strike Section 702.17 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 702.18 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 702.20 of the International Green Construction Code in its entirety without substitution*

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## 703 HVAC SYSTEMS AND EQUIPMENT

*Strike Section 703.1 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 703.2 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 703.3 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 703.4 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 703.6 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 703.7.5 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 703.8 of the International Green Construction Code in its entirety without substitution.*

## 704 WATER TREATMENT DEVICES AND EQUIPMENT

*Strike Section 704.1.4 of the International Green Construction Code in its entirety and insert new Section 704.1.4 in the Green Construction Code in its place to read as follows:*

**704.1.4 Efficiency and listing.** Water softeners that regenerate in place, that are connected to the water system they serve by piping not exceeding 1 ¼ inches (31.8 mm) in diameter, or that have a volume of 3 cubic feet (0.085 m<sup>3</sup>) or more of cation exchange media shall have a rated salt efficiency of not less than 4,000 grains of total hardness exchange per pound of salt (571 g of total hardness exchange per kg of salt), based on sodium chloride equivalency and shall be listed and labeled in accordance with NSF 44. All other water softeners shall have a rated salt efficiency of not less than 3,000 grains of total hardness exchange per pound of salt (429 g of total hardness exchange per kg of salt), based on sodium chloride equivalency.

*Strike Section 704.2 of the International Green Construction Code in its entirety and insert new Section 704.2 in the Green Construction Code in its place to read as follows:*

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**704.2 Reverse osmosis water treatment systems.** Point-of-use reverse osmosis treatment systems shall be listed and labeled in accordance with NSF 58. Point-of-use reverse osmosis systems shall be equipped with an automatic shutoff valve that prevents the production of reject water when there is no demand for treated water.

*Strike Section 704.3 of the International Green Construction Code in its entirety and insert new Section 704.3 in the Green Construction Code in its place to read as follows:*

**704.3 Onsite reclaimed water treatment systems.** Onsite reclaimed water treatment systems shall be listed and labeled to NSF 350. These systems shall include gray water, rainwater, and other nonpotable water reuse treatment systems and waste water treatment systems used to produce nonpotable water for water closet and urinal flushing, surface irrigation and similar applications.

## **705 METERING**

*Strike the reference to “Makeup water for closed loop systems such as chilled water and hydronic systems” in Table 705.1.1, Metering Requirements, of the International Green Construction Code in its entirety without substitution.*

## **706 NONPOTABLE WATER REQUIREMENTS**

*Strike Section 706 of the International Green Construction Code in its entirety without substitution.*

## **707 RAINWATER COLLECTION AND DISTRIBUTION SYSTEMS**

*Strike Section 707 of the International Green Construction Code in its entirety without substitution.*

## **708 GRAY WATER SYSTEMS**

*Strike Section 708 of the International Green Construction Code in its entirety without substitution.*

## **709 RECLAIMED WATER SYSTEMS**

*Strike Section 709 of the International Green Construction Code in its entirety without substitution.*

## **710 ALTERNATE ONSITE ONPOTABLE WATER SOURCES**

*Strike Section 710 of the International Green Construction Code in its entirety without*

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*substitution.*

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## CHAPTER 8 INDOOR ENVIRONMENTAL QUALITY AND COMFORT

- 802 Building Construction Features, Operations and Maintenance Facilitation
- 803 HVAC Systems
- 804 Specific Indoor Air Quality and Pollutant Control Measures
- 806 Material Emissions and Pollutant Control
- 808 Daylighting

### 802 BUILDING CONSTRUCTION FEATURES, OPERATIONS AND MAINTENANCE FACILITATION

*Strike Section 802.3 of the International Green Construction Code in its entirety and insert new Section 802.3 in the Green Construction Code in its place to read as follows:*

**802.3 Air-handling system filters.** Filter racks shall be designed to prevent airflow from bypassing filters. Access doors and panels provided for filter replacement shall be fitted with flexible seals to provide an effective seal between the doors and panels and the mating filter rack surfaces. Filter access panels and doors shall not be obstructed.

### 803 HVAC SYSTEMS

*Strike Section 803.2 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 803.3 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 803.4 of the International Green Construction Code in its entirety without substitution.*

*Strike Section 803.5 of the International Green Construction Code in its entirety and insert new Section 803.5 in the Green Construction Code to read as follows:*

**803.5 Filters.** Filters for air conditioning systems that serve occupied spaces and handle a component of outdoor air shall be rated at MERV 11 or higher, in accordance with ASHRAE Standard 52.2, and system equipment shall be designed to be compatible. The air handling system design shall account for pressure drop across the filter. Filter performance shall be shown on the filter manufacturer's data sheet.

### 804 SPECIFIC INDOOR AIR QUALITY AND POLLUTANT CONTROL MEASURES

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*Strike Section 804 of the International Green Construction Code in its entirety without substitution.*

## **806 MATERIAL EMISSIONS AND POLLUTANT CONTROL**

*Strike the Exceptions to Section 806.1 of the International Green Construction Code in their entirety and insert new Exceptions to Section 806.1 in the Green Construction Code in their place to read as follows:*

### **Exceptions:**

1. Composite wood products that are made using adhesives that do not contain urea-formaldehyde (UF) resins.
2. Composite wood products that are sealed with an impermeable material on all sides and edges.
3. Composite wood products that are used to make elements considered to be furniture, fixtures and equipment (FF&E) that are not permanently installed.
4. Fire-retardant composite wood products.

*Strike Section 806.2 of the International Green Construction Code in its entirety and insert new Section 806.2 in the Green Construction Code to read as follows:*

**806.2 Adhesives and sealants.** Projects shall comply with the limits on volatile organic compound (“VOC”) emissions for adhesives and sealants as established in Chapter 7 (Volatile Organic Compounds and Hazardous Air Pollutants) of DCMR Title 20 (Environment).

*Strike Section 806.3 of the International Green Construction Code in its entirety and insert new Section 806.3 in the Green Construction Code in its place to read as follows:*

**806.3 Architectural paints and coatings.** Projects shall comply with the limits on volatile organic compound (“VOC”) emissions for architectural paints and coatings as established in Chapter 7 (Volatile Organic Compounds and Hazardous Air Pollutants) of DCMR Title 20 (Environment).

## **807 ACOUSTICS**

*Strike Section 807 of the International Green Construction Code in its entirety without substitution.*

## **808 DAYLIGHTING**

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*Strike Section 808 of the International Green Construction Code in its entirety without substitution.*

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<http://publicecodes.cyberregs.com/icod/igcc/2012/index.htm?bu=IC-P-2012-000023&bu2=IC-P-2012-000019>.

*Strike Chapter 9 of the International Green Construction Code in its entirety and insert new Chapter 9 in the Green Construction Code in its place to read as follows:*

## **CHAPTER 9            COMMISSIONING**

- 901    General
- 902    Approved Agency
- 903    Commissioning

### **901    GENERAL**

**901.1 Scope.** The provisions of this chapter are intended to facilitate the commissioning of buildings constructed in accordance with the *Green Construction Code*. The requirements shall only apply to *equipment* and systems covered by the code that are new or are being replaced in total.

### **902    APPROVED AGENCY**

**902.1 Approved agency.** The *code official* shall determine the required qualifications of an *approved* agency for purposes of this chapter and of Section 611, in accordance with Section 903.1 and the Green Building Program Manual. Where commissioning is required by the *Green Construction Code*, the *owner* shall name the individual or firms who are to perform the commissioning and to provide the requisite certifications and verifications. The *approved* agency shall comply with the commissioning requirements set forth in the *Green Construction Code* and in the Green Building Program Manual.

### **903    COMMISSIONING**

**903.1 General.** Where application is made for construction as described in this section, the *registered design professional in responsible charge* or *approved* agency shall perform commissioning during construction as required by Table 903.1 and by the Green Building Program Manual. The *approved* agency shall be qualified and shall demonstrate competence, to the satisfaction of the *code official*, for the commissioning of the particular type of construction or operation in accordance with the qualification requirements set forth in the Green Building Program Manual. The *registered design professional in responsible charge* and engineers of record involved in the design of the project are permitted to act as the *approved* agency provided those personnel meet the qualification requirements set forth in the Green Building Program Manual to the satisfaction of the *code official*.

**903.2 Preliminary commissioning report requirement.** The *approved* agency shall keep records of the commissioning required by Table 903.1. The *approved* agency shall furnish commissioning reports to the *owner* and the *registered design professional in responsible charge*

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and, upon request, to the *code official*. Reports shall indicate that work was or was not completed in conformance to *approved* construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. Where discrepancies are not corrected, they shall be brought to the attention of the *owner, code official* and to the *registered design professional in responsible charge* prior to the completion of that phase of the work. Prior to the final inspection, a Preliminary Commissioning Report shall be provided to the owner and a copy shall be made available to the *code official* upon request.

**903.3 Final commissioning report requirement.** A Final Commissioning Report shall be provided to the owner within 180 days after the date of issuance of a certificate of occupancy, and a copy shall be made available to the *code official* upon request.

**TABLE 903.1  
COMMISSIONING PLAN**

CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION	PREOCCUPANCY	METHOD	OCCURRENCE	SECTION/ REFERENCED STANDARD
			Preoccupancy	
<b>Chapter 4: Site Development and Land Use</b>				
Landscape irrigation systems	X	Field-inspection	Installation	404.1
Stormwater management system operation	None	Field-inspection	Installation	21 DCMR (Water and Sanitation), Chapter 5 (Water Quality and Pollution)
Site lighting	X	Testing and report	Installation	409
<b>Chapter 6: Energy</b>				
Energy consumption, monitoring, targeting and reporting				
a. Monitoring system	X	Inspection and verification	During construction and prior to occupancy	603
b. Calibration	X	Testing and review and evaluation or test reports	During commissioning	603
Mechanical systems completion				
a. Air system balancing – provide the means for system balancing	X	Inspection and verification	During construction and prior to occupancy	611.1.2.1 and through reference to <i>Energy Conservation Code</i>
b. Hydronic system balancing – provide means for system balancing	X	Inspection and verification	During construction and prior to occupancy	611.1.2.2 and through reference to <i>Energy</i>

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				<i>Conservation Code</i>
c. Mechanical system manuals – construction documents to require O&M manual	X	Verification of construction documents	Plan review	611.1.5.2
<b>Mechanical systems</b>				
a. Commissioning required and noted in plans and specifications	X	Verification of construction documents	Plan review	611.1
b. Documentation of required commissioning outcomes	X	Verification with the building owner	Subsequent to completion of all commissioning activities	611.1
c. Preparation and availability of a commissioning plan	X	Verification with the RDP or commissioning agent	Between plan review and commissioning initiation	611.1.1
d. Balance HVAC systems (both air and hydronic)	X	HVAC system installer/contractor or commissioning agent	After installation of HVAC systems and prior to occupancy	611.1.2
e. Functional performance testing of HVAC equipment	X	HVAC system installer/contractor or commissioning agent	After installation of HVAC systems and prior to occupancy	611.1.3
f. Functional performance testing of HVAC controls and control systems	X	HVAC system installer/contractor or commissioning agent	After installation of HVAC systems and prior to occupancy	611.1.3.2
g. Preparation of preliminary commissioning report	None	HVAC system installer/contractor or commissioning agent	None	611.1.4
h. Acceptance of HVAC systems and equipment/system verification report	None	Building owner	None	611.1.4.1
i. Preparation and distribution of final HVAC system completion. Documentation that construction documents require drawings, manuals, balancing reports and commissioning report be provided to the owner and that they have been provided	None	RDP, contractor or commissioning authority	None	611.1.5
<b>Chapter 6: Lighting</b>				
Verification of lamp	X	Field inspection	Final inspection	608.10

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Verification of ballast	X	Field inspection	Final inspection	608.10
Lighting Controls				
a. Installation	X	Field inspection	Post-installation	608.11
b. Calibration	X	System installer/Contractor or commissioning agent	Post-installation	611.3.3
<b>Chapter 7: Water Resource Conservation, Quality and Efficiency</b>				
Cooling tower performance	—	—	—	703.7.7
Metering	X	—	—	705.1.1
<b>Chapter 8: Indoor Environmental Quality and Comfort</b>				
Air-handling system access	X	Field inspection and verification	During construction and prior to occupancy	802.2
Air-handling system filters	X	Field inspection and verification	During construction and prior to occupancy	802.3

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

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## CHAPTER 10      EXISTING BUILDINGS

*Strike Chapter 10 of the International Green Construction Code in its entirety without substitution.*

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## **CHAPTER 11            EXISTING BUILDING SITE DEVELOPMENT**

*Strike Chapter 11 of the International Green Construction Code in its entirety without substitution.*

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<http://publicecodes.cyberregs.com/icod/igcc/2012/index.htm?bu=IC-P-2012-000023&bu2=IC-P-2012-000019>.

## CHAPTER 12 REFERENCED STANDARDS

Under the heading “ASME”, in Chapter 12 of the Green Construction Code, insert a new standard reference number ASME/A17.1 2010/CSA B44-10 to read as follows:

### ASME

American Society of  
Mechanical Engineers, Inc.  
Three Park Avenue  
New York, NY 10016-5990

Standard reference number	Title	Referenced in code section number
ASME/A17.1 2010/CSA B44-10	Safety Code for Elevators and Escalators	609.2.2

Under the heading “ASHRAE”, in Chapter 12 of the International Green Construction Code, strike standard reference number 189.1-2011 in its entirety and insert standard reference number 189.1-2011 in its place to read as follows:

### ASHRAE

American Society of Heating,  
Refrigerating and Air-  
Conditioning Engineers, Inc.  
1791 Tullie Circle  
Atlanta, GA 30329-2305

Standard reference number	Title	Referenced in code section number
189.1-2011	Standard for the Design of High-performance Green Buildings Except Low-rise Residential Buildings	303

Insert a new Referenced Standard to Chapter 12 of the Green Construction Code to read as follows:

### COMNET

Commercial Energy Services  
Network

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1601 Broadway Street  
Vancouver, WA 98663

Standard reference number	Title	Referenced in code section number
100816 COMNET MGP	COMNET Modeling Guidelines and Procedures	602.1.2

*Insert a new Referenced Standard to Chapter 12 of the Green Construction Code to read as follows:*

Enterprise Community  
Partners, Inc.  
10 G Street, NE, Suite 450  
Washington, D.C. 20002

Standard reference number	Title	Referenced in code section number
2011	Enterprise Green Communities On-Line Certification	302.2.4

*Under the heading “EPA”, in Chapter 12 of the Green Construction Code, insert the following new Referenced Standards to read as follows:*

## **EPA**

Environmental Protection  
Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

Standard reference number	Title	Referenced in code section number
Water Sense August 2010	WaterSense Landscape Water Budget Tool Version 1.01	404.1

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ENERGY STAR	Energy Star Target Finder Tool	302.2.1 302.3.1
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*Under the heading “ISO”, in Chapter 12 of the International Green Construction Code, strike standard reference number 14044-2006 in its entirety and insert in Chapter 12 of the Green Construction Code under subheading “ISO” a new standard reference number 14044-2006 in its place to read as follows:*

<b>ISO</b>	International Organization for Standardization ISO Central Secretariat 1 ch, de la Voie-Creuse, Case Postale 56 CH-1211 Geneva 20, Switzerland	
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Standard reference number	Title	Referenced in code section number
14044-2006	Environmental Management-Lifecycle Assessment-Requirements and Guidelines	505.1.1

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*Under the heading “ISO”, in Chapter 12 of the Green Construction Code, insert a new standard reference number 14021 to read as follows:*

<b>ISO</b>	International Organization for Standardization ISO Central Secretariat 1 ch, de la Voie-Creuse, Case Postale 56 CH-1211 Geneva 20, Switzerland	
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Standard reference number	Title	Referenced in code section number
14021:2001 +A1:2011	Environmental labels and declarations. Self-declared	505.2.2

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environmental claims  
(Type II environmental  
labeling)(British Standard)

*Insert a new Referenced Standard to Chapter 12 of the Green Construction Code to read as follows:*

**USGBC**

U.S. Green Building Council  
2101 L Street, NW, Suite 500  
Washington, D.C. 20037

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Standard reference number	Title	Referenced in code section number
LEED-NC 2009	New Construction & Major Renovations	302.4
LEED-CI 2009	Commercial Interiors	302.4
LEED-CS 2009	Core & Shell	302.4
LEED 2009	Healthcare	302.4
LEED 2009	Retail: Commercial Interiors	302.4
LEED 2009	Retail: New Construction & Major Renovations	302.4
LEED 2009	Schools	302.4
LEED-EB 2009	Existing Buildings: Operations & Maintenance	302.9

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*Appendix A to the International Green Construction Code is adopted and incorporated into the Green Construction Code as Appendix A with the following modifications.*

## **APPENDIX A PROJECT ELECTIVES**

- A101 General
- A102 Applicability and Conformance
- A104 Site Project Electives
- A105 Material Resource Conservation and Efficiency
- A106 Energy Conservation, Efficiency and Earth Atmospheric Quality
- A107 Water Resource Conservation and Efficiency
- A108 Indoor Environmental Quality and Comfort

### **A101 GENERAL**

*Strike Section A101.1 of Appendix A in the International Green Construction in its entirety and insert new Section A101.1 in Appendix A of the Green Construction Code in its place to read as follows:*

**A101.1 Scope.** The provisions of this appendix are designed to offer conservation practices that achieve greater benefit than the minimum requirements of the *Green Construction Code*. Projects greater than 10,000 square feet (929 m<sup>2</sup>) shall comply with the Appendix A requirements.

### **A102 APPLICABILITY AND CONFORMANCE**

*Strike Section A102.2 of Appendix A in the International Green Construction Code in its entirety and insert new Section A102.2 in Appendix A of the Green Construction Code in its place to read as follows:*

**A102.2 Required number of and selection of project electives.** New construction projects shall attain a total of 15 project electives, and Level 3 *alterations* shall attain 13 project electives. Selected project electives shall be applied as mandatory requirements for the project. Selected project electives shall be communicated to the *code official* by means of checking the appropriate boxes in the tables and providing a copy of the tables with the construction documents, or by inclusion of a list of selected project electives with the construction documents.

### **A104 SITE PROJECT ELECTIVES**

*Strike Section A104.1 (including subsections 104.1.1 through 104.1.3) of Appendix A of the International Green Construction Code in its entirety without substitution.*

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Strike Table A104, Site Project Electives, in Appendix A of the International Green Construction Code in its entirety and insert new Table A104 in its place in Appendix A of the Green Construction Code to read as follows:

**TABLE A104  
SITE PROJECT ELECTIVES**

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>MINIMUM NUMBER OF ELECTIVES REQUIRED AND ELECTIVES SELECTED</b>	
A104.2	Wildlife corridor	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.3	Infill site	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.4	Brownfield site	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.5	Site restoration	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.6	Mixed use development	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.7	Changing and shower facilities	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.8	Long-term bicycle parking and storage	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.9	Heat island	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.9.1	Site hardscape project elective 1	<input type="checkbox"/> Yes	<input type="checkbox"/> No

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A104.9.2	Site hardscape project elective 2	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.9.4	Roof covering project elective – 25 percent vegetative roof coverage	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.9.4	Roof covering project elective – 50 percent vegetative roof coverage	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.9.4	Roof covering project elective – 75 percent vegetative roof coverage	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.10	Native plant landscaping – 75 percent native plants	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A104.10	Native plant landscaping – 100 percent native plants	<input type="checkbox"/> Yes	<input type="checkbox"/> No

*Strike Sections A104.7 and A104.8 in Appendix A of the International Green Construction Code in their entirety and substitute new Sections A104.7 and A104.8 in Appendix A of the Green Construction Code in their place to read as follows:*

**A104.7 Changing and shower facilities project elective.** Projects that provide changing and shower facilities shall receive a project elective.

**A104.8 Long-term bicycle parking and storage project elective.** Projects that provide not less than 90 percent of long term bicycle parking within a building or provide the parking with a permanent cover including, but not limited to, roof overhangs, awnings, or bicycle storage lockers, shall be recognized as a single project elective.

*Strike Section A104.9 in Appendix A of the International Green Construction Code in its entirety and insert new Section A104.9 in Appendix A of the Green Construction Code in its place to read as follows:*

**A104.9 Heat island.** Project electives related to heat island impact shall comply with Sections A104.9.1, A104.9.2 or A104.9.4. Compliance with multiple electives shall be recognized.

*Strike Section A104.9.3 in Appendix A of the International Green Construction Code in its entirety without substitution.*

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*Strike Section A104.9.4 in Appendix A of the International Green Construction Code in its entirety and insert new Section A104.9.4 in Appendix A of the Green Construction Code in its place to read as follows:*

**A104.9.4 Roof covering project elective.** Projects that install vegetative roofs shall be recognized as a project elective. Projects will receive one project elective for 25 percent coverage of total roof square footage, one additional elective credit for 50 percent coverage, or three total elective credits for 75 percent coverage.

## **A105 MATERIAL RESOURCE CONSERVATION AND EFFICIENCY**

*Strike Section A105.1 in Appendix A of the International Green Construction Code in its entirety and insert new Section A105.1 in Appendix A of the Green Construction Code in its place to read as follows:*

**A105.1 Waste management project elective.** Projects seeking a waste management project elective shall comply with Section 503.1, except that the nonhazardous construction waste materials required to be diverted from landfills shall be increased by 20 percent.

*Strike Section A105.3 in Appendix A of the International Green Construction Code in its entirety and insert new Section A105.3 in Appendix A of the Green Construction Code in its place to read as follows:*

**A105.3 Material selection project electives.** Each of the following shall be considered a separate material selection project elective. The project electives are cumulative and compliance with each item shall be recognized individually.

1. Compliance with this project elective shall require compliance with Section 505.2, except that buildings and structures shall contain used, recycled content, recyclable, bio-based and indigenous materials that comply with Sections 505.1 through 505.2.5, such that the aggregate total materials compliant with those sections constitute at least 50 percent of the total building products and materials used, based on cost, used singularly or in combination.
2. Compliance with Item 1, except that such materials shall be used for at least 75 percent of the total cost of materials in the project.

*Strike Table A105 in Appendix A of the International Green Construction Code in its entirety and insert new Table A105 in Appendix A of the Green Construction Code in its place to read as follows:*

### **TABLE A105**

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**MATERIAL RESOURCE CONSERVATION AND EFFICIENCY  
PROJECT ELECTIVES**

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>MINIMUM NUMBER OF ELECTIVES REQUIRED AND ELECTIVES SELECTED</b>	
A105.1	Waste management	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A105.2	Construction waste landfill maximum	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A105.3(1)	Reused, recycled content, recyclable, bio-based and indigenous materials (50percent)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A105.3(2)	Reused, recycled content, recyclable, bio-based and indigenous materials (75percent)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A105.4	Service life plan	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A105.5	Design for deconstruction and building reuse	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A105.6	Existing building reuse	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A105.7	Historic building reuse	<input type="checkbox"/> Yes	<input type="checkbox"/> No

**A106 ENERGY CONSERVATION, EFFICIENCY AND EARTH ATMOSPHERIC QUALITY**

*Strike Table A106 in Appendix A of the International Green Construction Code in its entirety and insert new Table A106 in Appendix A of the Green Construction Code in its place to read as follows:*

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**TABLE A106  
ENERGY CONSERVATION AND EFFICIENCY  
PROJECT ELECTIVES**

SECTION	DESCRIPTION	MINIMUM NUMBER OF ELECTIVES REQUIRED AND ELECTIVES SELECTED
A106.1	zEPI reduction project electives	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.1	Project zEPI is at least 5 points lower than required by Table 302.1	<input type="checkbox"/> 1 elective
A106.1	Project zEPI is at least 10 points lower than required by Table 302.1	<input type="checkbox"/> 2 electives
A106.1	Project zEPI is at least 15 points lower than required by Table 302.1	<input type="checkbox"/> 3 electives
A106.1	Project zEPI is at least 20 points lower than required by Table 302.1	<input type="checkbox"/> 4 electives
A106.1	Project zEPI is at least 25 points lower than required by Table 302.1	<input type="checkbox"/> 5 electives
A106.1	Project zEPI is at least 30 points lower than required by Table 302.1	<input type="checkbox"/> 6 electives
A106.1	Project zEPI is at least 35 points lower than required by Table 302.1	<input type="checkbox"/> 7 electives
A106.1	Project zEPI is at least 40 points lower than required by Table 302.1	<input type="checkbox"/> 8 electives

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A106.1	Project zEPI is at least 45 points lower than required by Table 302.1	<input type="checkbox"/> 9 electives
A106.1	Project zEPI is at least 51 points lower than required by Table 302.1	<input type="checkbox"/> 10 electives
A106.2	Mechanical systems project elective	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.3	Service water heating	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.4	Lighting systems	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.5	Passive design	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.6	Renewable energy systems—5 percent	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.6	Renewable energy systems—10 percent	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.6	Renewable energy systems—20 percent	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.7	Energy display	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.8	Auto demand response for lighting	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.9	Insulation and fenestration	<input type="checkbox"/> Yes <input type="checkbox"/> No
A106.10	Permanent shading devices for fenestration	<input type="checkbox"/> Yes <input type="checkbox"/> No

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A106.11	Air leakage testing—0.25 cfm/ft2 qualifies for 2 project electives	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.11	Air leakage testing—0.15 cfm/ft2 qualifies for 2 project electives	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.12	Waste water heat recovery	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.13	Circulating hot water systems	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.14	Exterior lighting and signage shutoff	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.15	Energy Star equipment	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.16	Lighting power density – 15 percent reduction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.16	Lighting power density – 20 percent reduction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.16	Lighting power density – 25 percent reduction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.16	Lighting power density – 30 percent reduction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.16	Lighting power density – 35 percent reduction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A106.17	Green power purchases	<input type="checkbox"/> Yes	<input type="checkbox"/> No

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*Strike Section A106.6 in Appendix A of the International Green Construction Code in its entirety and insert new Section A106.63 in Appendix A of the Green Construction Code in its place to read as follows:*

**A106.6 Renewable energy system project electives.** Buildings seeking a renewable energy system project elective or electives shall be equipped with one or more renewable energy systems that have the capacity to provide the percent of annual energy used within the building as selected in Table A106.

*Insert new Sections A106.7 through A106.17 in Appendix A of the Green Construction Code to read as follows:*

**A106.7 Energy display.** Buildings seeking an energy display project elective shall install a permanent, readily accessible and visible display adjacent to the main building entrance or on a publicly available Internet web site. The display shall be capable of providing all of the following:

1. The current energy demand for the whole building level measurements, updated for each fuel type at the intervals specified in Section 603.3.
2. The average and peak demands for the previous day and the same day the previous year.
3. The total energy usage for the previous 18 months.

**A106.8 Auto demand response system for lighting.** Buildings seeking an auto demand response system for lighting project elective shall install a system capable of reducing total connected power of lighting as determined in accordance with Section C405.5 of the *Energy Conservation Code* by not less than 15 percent.

**A106.9 Insulation and fenestration project elective.** For projects seeking the insulation and fenestration project elective, the *building thermal envelope* shall exceed the requirements of Tables C402.1.2 and C402.3 of the *Energy Conservation Code* by not less than 10 percent. Specifically, for purposes of compliance with this code, each U-factor, C-factor, F-factor and SHGC in the specified tables shall be reduced by 10 percent to determine the prescriptive criteria.

**A106.10 Permanent shading devices for fenestration.** Projects seeking the permanent shading devices project elective shall comply with one of the following for *vertical fenestration* on the West, South, and East facades:

1. *Vertical Fenestration* shall be shaded by permanent projections that have an area-weighted average projection factor of not less than 0.50. The building is allowed to

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be rotated up to 45 degrees to the nearest cardinal orientation for purposes of calculations and showing compliance.

2. *Vertical fenestration* shall have direct solar radiation for fewer than 250 hours per year because of shading by permanent external buildings, existing permanent infrastructure, or topography.
3. *Vertical fenestration* shall have automatically controlled shading devices capable of modulating in multiple steps the amount of solar gain and light transmitted into the space in response to daylight levels or solar intensity that comply with all of the following:
  - a. Exterior shading devices shall be capable of providing at least 90 percent coverage of the *fenestration* in the closed position.
  - b. Interior shading devices shall be capable of providing at least 90 percent coverage of the *fenestration* in the closed position and have a minimum solar reflectance of 0.50 for the surface facing the *fenestration*.
  - c. A manual override located in the same *enclosed space* as the *vertical fenestration* shall override operation of automatic controls no longer than four hours.
  - d. Acceptance testing and commissioning shall be conducted to verify that automatic controls for shading devices respond to changes in illumination or radiation intensity.
4. *Vertical fenestration* shall have automatically controlled *dynamic glazing* capable of modulating in multiple steps the amount of solar gain and light transmitted into the space in response to daylight levels or solar intensity that comply with all of the following:
  - a. *Dynamic glazing* shall have a lower labeled *SHGC* equal to or less than 0.12, lowest labeled *VT* no greater than 0.05, and highest labeled *VT* no less than 0.40.
  - b. A manual override located in the same *enclosed space* as the *vertical fenestration* shall override operation of automatic controls no longer than four hours.
  - c. Acceptance testing and commissioning shall be conducted to verify that automatic controls for *dynamic glazing* respond to changes in illumination or radiation intensity.

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**A106.11 Air leakage testing.** Projects shall receive 2 project electives where the tested air leakage of the total area of the *building thermal envelope* is less than 0.25 cfm/ft<sup>2</sup> under a pressure differential of 0.3 in water column (1.57 lb/ft<sup>2</sup>) (1.25 L/s.m<sup>2</sup> under a pressure differential of 75 Pa). Projects shall receive 2 additional project electives where the tested air leakage is 0.15 cfm/ft<sup>2</sup> under the same conditions. Testing shall occur after rough-in and after installation of penetrations of the building envelope, including penetrations for utilities, heating, ventilating and air-conditioning (HVAC) systems, plumbing, and electrical equipment and appliances. Testing shall be done in accordance with ASTM E 779. Where a building entrance is required to be protected with a vestibule in accordance with the *Energy Conservation Code*, an air curtain tested in accordance with ANSI/AMCA 220 is permitted to be used as an alternative to separate conditioned space from the exterior.

**A106.12 Waste water heat recovery.** Projects that install a waste water heat recovery system shall qualify for a project elective provided that the system preheats the incoming water used for hot water functions by not less than 10 °F (5.6 °C).

**A106.13 Circulating hot water systems.** Projects seeking a circulating hot water systems project elective shall not have continuous, timer, or water temperature-initiated (aquastat) operation of circulating pumps. Gravity or thermosyphon circulation loops are prohibited. Pumps on circulating hot water systems shall be activated on demand by either a hard-wired or wireless activation control of one of the following types:

1. A normally open, momentary contact switch.
2. Motion sensors that make momentary contact when motion is sensed.
3. A flow switch.
4. A door switch.

**A106.14 Exterior lighting and signage shutoff.** Projects seeking an exterior lighting and signage shutoff project elective shall control the lighting of building facades, signage, and landscape features by a time switch control configured so that the lighting automatically shuts off from within one hour after facility operations conclude until within 1 hour before facility operations begin.

**A106.15 Energy Star equipment elective.** Projects seeking the Energy Star equipment elective shall install 100 percent Energy Star rated equipment for all equipment types that have Energy Star ratings.

**A106.16 Lighting power density reduction.** Projects seeking the lighting power density reduction elective shall receive one project elective for a 15 percent reduction, two project

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electives for 20 percent reduction, three project electives for 25 percent reduction, four project electives for 30 percent reduction, and five project electives for 35 percent reduction, compared to the requirements found in the *Energy Conservation Code*.

**A106.17 Green power purchases.** Projects that sign up for 100 percent green power for five years of modeled design energy consumption or 8 kWh/sf/year shall receive one project elective.

**A107 WATER RESOURCE CONSERVATION AND EFFICIENCY**

*Strike Table A107 in Appendix A of the International Green Construction Code in its entirety and insert new Table A107 in Appendix A of the Green Construction Code in its place to read as follows:*

**TABLE A107  
WATER RESOURCE CONSERVATION AND EFFICIENCY  
PROJECT ELECTIVES**

SECTION	DESCRIPTION	MINIMUM NUMBER OF ELECTIVES REQUIRED AND ELECTIVES SELECTED	
A107.2	Onsite waste water treatment	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A107.3	Alternate onsite nonpotable water for outdoor hose connections	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A107.4	Alternate onsite nonpotable water for plumbing fixture flushing	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A107.7	Alternate onsite nonpotable water for industrial process makeup water	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A107.8	Alternate onsite nonpotable water for cooling tower makeup water	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A107.9	Gray water collection	<input type="checkbox"/> Yes	<input type="checkbox"/> No

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A107.10	Condensate drainage recovery	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A107.11	Wet-hood exhaust scrubber system	<input type="checkbox"/> Yes	<input type="checkbox"/> No

*Strike Section A107.3.1 in Appendix A of the International Green Construction Code in its entirety without substitution.*

*Strike Sections A107.4.1 through A107.4.3 in Appendix A of the International Green Construction Code in their entirety without substitution.*

*Strike Section A107.5 (including subsections) in Appendix A of the International Green Construction Code in its entirety without substitution.*

*Strike Section A107.6 (including subsections) in Appendix A of the International Green Construction Code in its entirety without substitution.*

*Strike Section A107.7.1 in Appendix A of the International Green Construction Code in its entirety without substitution.*

*Strike Sections A107.8 and A107.9 in Appendix A of the International Green Construction Code in their entirety and insert new Sections A107.8 and A107.9 in Appendix A of the Green Construction Code in their place to read as follows:*

**A107.8 Alternate onsite nonpotable water for cooling tower makeup water project elective.** Where projects are intended to qualify for an *alternate onsite nonpotable water* for cooling tower makeup water project elective in accordance with Section A107.7, nonpotable water shall be utilized for cooling tower makeup water in accordance with the requirements of Section 703.7.

**A107.9 Gray water collection project elective.** Where projects are intended to qualify for a gray water collection project elective in accordance with Section A107.8, waste water from lavatories, showers, bathtubs, clothes washers, and laundry trays shall be collected for reuse onsite.

*Insert new Sections A107.10 and A107.11 in Appendix A of the Green Construction Code to read as follows:*

**A107.10 Condensate drainage recovery.** Projects that are pursuing a condensate drainage recovery project selective shall collect 100 percent of condensate for reuse in applications such as water features, fountains, gray water collection systems and rainwater collection systems.

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**A107.11 Wet-hood exhaust scrubber systems.** Where wet-hood exhaust scrubber systems are used, projects that are pursuing this elective shall incorporate a water recirculation system. The makeup water supplies for such systems shall be metered in accordance with Section 705.1.

**A107.11.1 Washdown systems.** Hoods incorporating washdown or rinsing systems for perchloric acid and similar chemicals shall utilize self-closing valves. Such systems shall be designed to drain automatically after each washdown process has been completed.

**A107.11.2 Water sources.** Where suitable alternate onsite nonpotable water is available, makeup water supplies to the recirculation system of wet-hood exhaust scrubbers shall utilize alternate onsite nonpotable water or municipal reclaimed water of a water quality appropriate for the application.

**A108 INDOOR ENVIRONMENTAL QUALITY AND COMFORT**

*Strike Table A108 in Appendix A of the International Green Construction Code in its entirety and insert new Table A108 in Appendix A of the Green Construction Code in its place to read as follows:*

**TABLE A108  
INDOOR ENVIRONMENTAL QUALITY AND COMFORT  
PROJECT ELECTIVES**

SECTION	DESCRIPTION	MINIMUM NUMBER OF ELECTIVES REQUIRED AND ELECTIVES SELECTED	
A108.2	VOC emissions – flooring	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.3	VOC emissions – ceiling systems	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.4	VOC emissions – wall systems	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.5	Total VOC limit	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.6	Views to building exterior – 50percent	<input type="checkbox"/> Yes	<input type="checkbox"/> No

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A108.6	Views to building exterior – 75percent	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.7	Daylighting – 25percent	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.7	Daylighting – 50percent	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.7	Daylighting – 75percent	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.8	Post-construction, pre-occupancy baseline IAQ testing	<input type="checkbox"/> Yes	<input type="checkbox"/> No
A108.9	Post-construction, pre-occupancy flush out	<input type="checkbox"/> Yes	<input type="checkbox"/> No

*Strike Section A108.6 in Appendix A of the International Green Construction Code in its entirety and insert new Section A108.6 in Appendix A of the Green Construction Code in its place to read as follows:*

**A108.6 Views to building exterior project elective.** Where projects are intended to qualify for a “views to building exterior” project elective in accordance with Section A108.6, not less than 50 percent of the net floor area shall have a direct line of sight to the exterior through clear vision glazing. A total of not less than 45 square feet (4.18 m<sup>2</sup>) of clear vision glazing in the exterior wall or roof shall be visible. The direct line of sight shall originate at a height of 42 inches (1067 mm) above the finished floor of the space, shall terminate at the clear vision glazing in the exterior wall or roof, and shall be less than 40 feet (12 192 mm) in length. Projects that have a direct line of sight to the exterior for 75 percent of the net floor area shall qualify for an additional project elective.

**Exception:** Where the direct line of sight is less than 25 feet (7620 mm) in length, a total of not less than 18 square feet (1.67 m<sup>2</sup>) of clear vision glazing in the exterior wall or roof shall be visible.

*Insert new Sections A108.7, A108.8 and A108.9 in Appendix A of the Green Construction Code to read as follows:*

**A108.7 Daylighting project elective.** Where projects intend to qualify for a daylighting project elective, 25 percent of the net floor area shall be located within a daylit area. Projects can

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receive one additional project elective with 50 percent and another additional project elective for 75 percent daylighting. All projects shall comply with either Section A108.7.1 or Section A108.7.2.

**A108.7.1 Daylight prescriptive requirements.** *Daylit areas* shall comply with Sections A108.7.1.1 or A108.7.1.2. For determining the total *daylit area*, any overlapping daylit areas shall be counted only once. Drawings clearly showing the *daylit areas* of the plan shall be provided as part of the permit application.

The total daylight area shall be the sum of the area of all sidelighting daylight zones and the area of all toplighting zones, except that sidelighting daylight zones shall not be included in the calculation of the area of toplighting daylight areas.

**A108.7.1.1 Sidelighting.** The *daylit area* shall be illuminated by *fenestration* that complies with Table A108.7.1 and Figure A108.7.1 (4). Where *fenestration* is located in a wall, the *daylit area* shall extend laterally to the nearest 56 inch (1.4 m) high partition, or up to 2.0 times the height from the floor to the top of *fenestration*. Where *fenestration* is located in a rooftop monitor, the *daylit area* shall extend laterally to the nearest 56 inch (1.4 m) high partition, or up to 1.0 times the height from the floor to the bottom of the *fenestration*, whichever is less, and longitudinally from the edge of the *fenestration* to the nearest 56 inch (1.4 m) high partition, or up to 0.25 times the height from the floor to the bottom of the *fenestration*, whichever is less, as indicated in Figures A108.7.1(2) and A108.7.1(3).

**A108.7.1.2 Toplighting.** The daylit area shall be illuminated by a roof fenestration assembly such as a skylight, sloped glazing or tubular daylighting device that complies with Table A108.7.1 and Figure A108.7.2. The daylit area extends laterally and longitudinally beyond the glazed opening of the roof fenestration assembly to the nearest 56 inch (1.4 m) high partition, or up to 0.7 times the height from the floor to the bottom of the rough opening of the daylighting well, whichever is less, as indicated in Figure A108.7.2.

**A108.7.2 Daylight performance requirements.** Each *daylit area* shall comply with the requirements of either Sections A108.7.2.1 or A108.7.2.2. Daylight analysis shall be conducted in accordance with Section A108.7.2.3. Drawings or documents demonstrating compliance with A108.7.2 shall be provided as part of the permit application.

**A108.7.2.1 Morning illumination.** Not less than 28 foot-candles (300 lux) and not more than 418 foot-candles (4500 lux) of natural light shall be available at a height of 30 inches (750 mm) above the floor 3 hours before the peak solar angle on the spring equinox.

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**A108.7.2.2 Afternoon illumination.** Not less than 28 foot-candles (300 lux) and not more than 418 foot-candles (4500 lux) of natural light shall be available at a height of 30 inches (750 mm) above the floor 3 hours after the peak solar angle on the spring equinox.

**A108.7.2.3 Daylight analysis.** A daylight analysis shall:

1. Assume sky conditions to be clear.
2. Address the effects of exterior shading devices, *buildings, structures,* and geological formations on the fenestration of the proposed building and on the ground and other light reflecting surfaces. Include the effects of movable exterior fenestration shading devices. The configuration of fenestration with automatically controlled variable transmittance shall be adjusted to accurately represent the control system operation.
3. Exclude the effects of interior furniture systems, shelving, and stacks.
4. Use the actual reflectance characteristics of all materials.
5. Assume that blinds, shades and other movable interior fenestration shading devices are completely diffusing, with a visible transmittance of 5 percent for fabric shades, and 20 percent for horizontal or vertical blinds.
6. Use calculation spaced not more than 39.4 inches (1 m) by 39.4 inches (1 m). The calculation grid shall start within 20 inches (508 mm) of each wall or partition.
7. Reduce the visible transmittance of all fenestration by 20 percent where details about the window framing, mullions, wall thickness and well depth cannot be included in the model.

**A108.7.3 Sky types.** Registered design professionals shall use sky type B in determining the applicable effective aperture in Table A108.7.1.

**A108.8 Post-construction, pre-occupancy baseline IAQ testing.** Where projects are intended to qualify for this project elective, after all interior finishes are installed, the building shall be tested for indoor air quality and the testing results shall indicate that the levels of VOCs meet the levels detailed in Table A108.8 using testing protocols in accordance with ASTM D 6196,

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ASTM D 5466, ASTM D 5197, ASTM D 6345, and ISO 7708. Test samples shall be taken in not less than one location in each 25,000 square feet (1860 m<sup>2</sup>) of floor area or in each contiguous floor area.

**A108.9 Post-construction, pre-occupancy flush out.** After construction ends, prior to occupancy and with all interior finishes installed, install new filtration media and perform a building flush-out by supplying a total air volume of 14,000 cubic feet of outdoor air per square foot (4,500 cubic meters of outdoor air per square meter) of floor area while maintaining an internal temperature of at least 60 °F (15 °C) and relative humidity no higher than 60 percent.

*Insert new Table A108.7.1 in Appendix A of the Green Construction Code to read as follows:*

**TABLE A108.7.1  
MINIMUM EFFECTIVE APERTURE**

SKY TYPE	MINIMUM EFFECTIVE APERTURE (percentage)		
	Sidelighting from fenestration in a wall [see Figure A108.7.1(1)]	Sidelighting from rooftop monitor [see Figures A108.7.1(2) and A108.7.1(3)]	Toplighting (see Figure A108.7.2)
A <sup>a</sup>	10.0	5.0	1.0
B <sup>b</sup>	12.0	6.0	1.2
C <sup>c</sup>	16.0	8.0	2.2

a. Sky Type A – more than 75 percent mean sunshine, in accordance with the NOAA Annual Mean Sunshine Percentage Table.

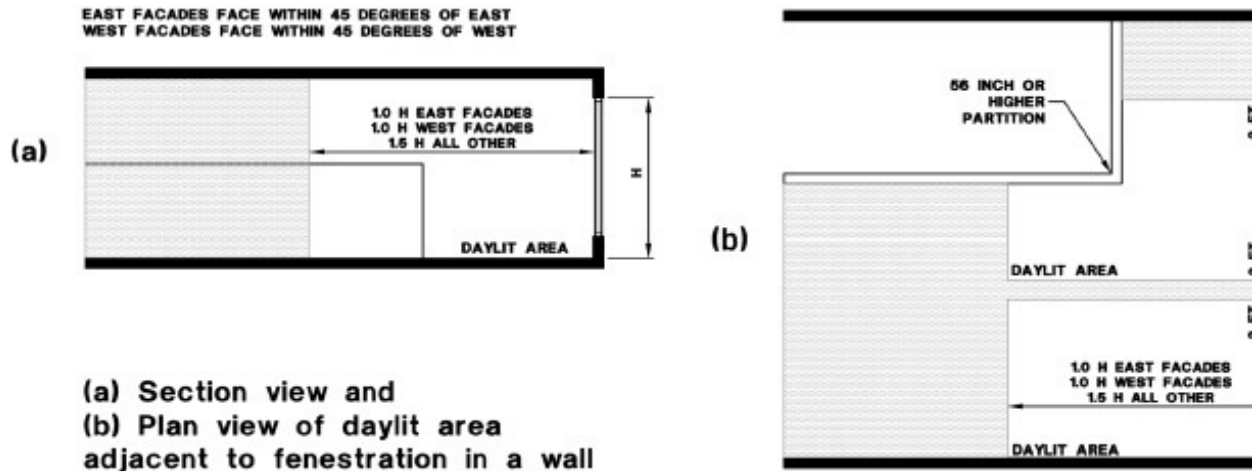
b. Sky Type B – 45 percent to 75 percent mean sunshine, in accordance with the NOAA Annual Mean Sunshine Percentage Table.

c. Sky Type C – less than 45 percent mean sunshine, in accordance with the NOAA Annual Mean Sunshine Percentage Table.

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Insert new Figure A108.7.1(1) in Appendix A of the Green Construction Code to read as follows (See Figure 808.3.1.1(1) of the International Green Construction Code):

**FIGURE A108.7.1 (1)  
DAYLIT AREA ADJACENT TO FENESTRATION IN A WALL**

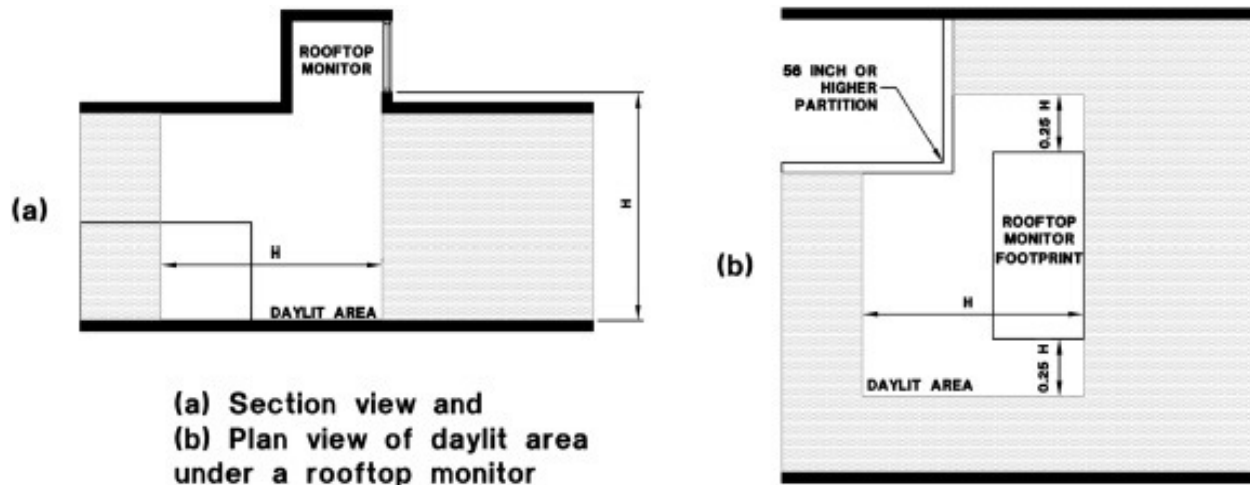


For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.017 rad.

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Insert new Figure A108.7.1(2) in Appendix A of the Green Construction Code to read as follows (See Figure 808.3.1.1(2) of the International Green Construction Code):

**FIGURE A108.7.1 (2)**  
**DAYLIT AREA ADJACENT UNDER A ROOFTOP MONITOR**

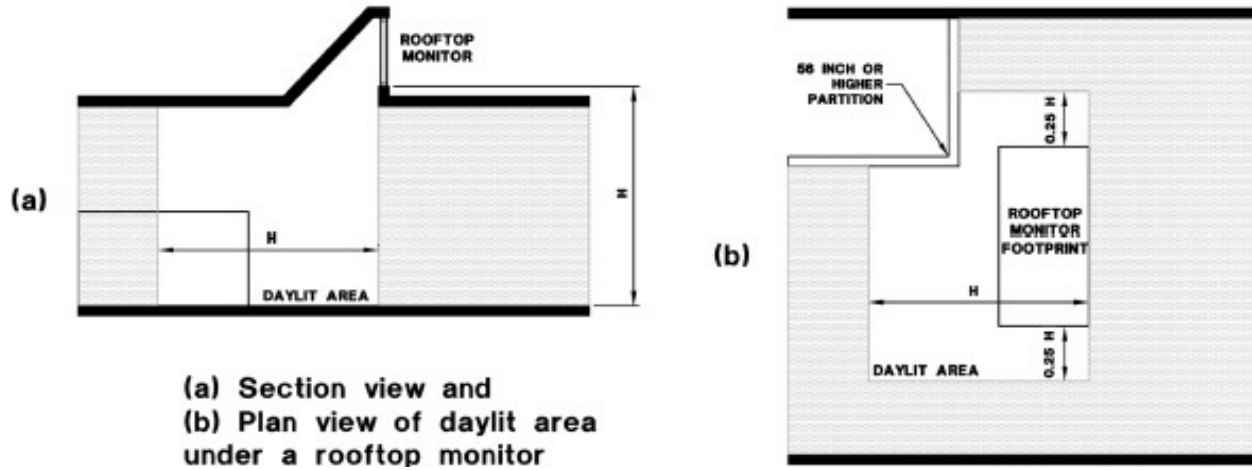


For SI: 1 inch = 25.4 mm.

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Insert new Figure A108.7.1(3) in Appendix A of the Green Construction Code to read as follows (See Figure 808.3.1.1(3) of the International Green Construction Code):

**FIGURE A108.7.1 (3)  
DAYLIT AREA ADJACENT UNDER A ROOFTOP MONITOR**

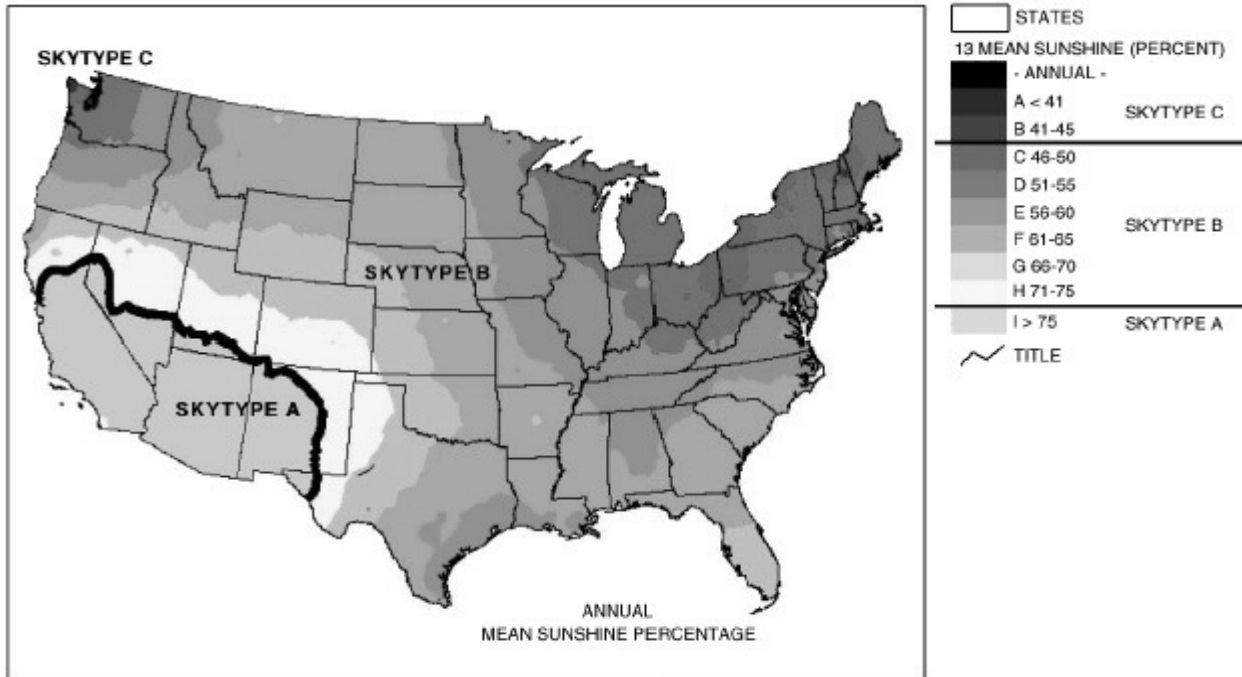


For SI: 1 inch = 25.4 mm.

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Insert new Figure A108.7.1(4) in Appendix A of the Green Construction Code to read as follows (See Figure 808.3.1.1(4) of the International Green Construction Code):

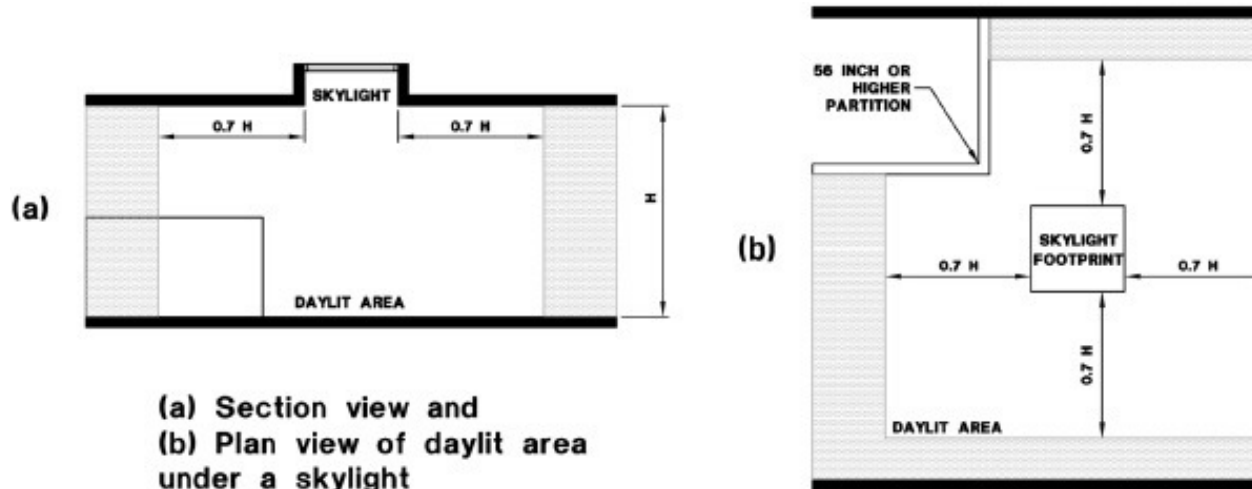
**FIGURE A108.7.1 (4)  
SKY TYPES**



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Insert new Figure A108.7.2 in Appendix A of the Green Construction Code to read as follows (See Figure 808.3.1.2 of the International Green Construction Code):

**FIGURE A108.7.2  
DAYLIT AREA UNDER A SKYLIGHT**



For SI: 1 inch = 25.4 mm.

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Insert new Table A108.8 in Appendix A of the Green Construction Code to read as follows (See Table 804.2 of the International Green Construction Code):

**TABLE A108.8**  
**MAXIMUM CONCENTRATION OF AIR POLLUTANTS <sup>a</sup>**

<b>MAXIMUM CONCENTRATION OF AIR POLLUTANTS RELEVANT TO IAQ</b>	<b>MAXIMUM CONCENTRATION ug/m<sup>3</sup> (unless otherwise noted)</b>
1-Methyl-2-pyrrolidinone <sup>a</sup>	160
1,1,1-Trichloroethane	1000
1,3-Butadiene	20
1,4-Dichlorobenzene	800
1,4-Dioxane	3000
2-Ethylhexanoic acid <sup>a</sup>	25
2-Propanol	7000
4-Phenylcyclohexene (4-PCH) <sup>a</sup>	2.5
Acetaldehyde	140
Acrylonitrile	5
Benzene	60
t-Butyl methyl ether	8000
Caprolactam <sup>a</sup>	100
Carbon disulfide	800
Carbon monoxide	9 ppm and no greater than 2 ppm above outdoor levels
Carbon tetrachloride	40
Chlorobenzene	1000
Chloroform	300
Dichloromethane	400
Ethylbenzene	2000
Ethylene glycol	400
Formaldehyde	27
n-Hexane	7000
Naphthalene	9
Nonanal <sup>a</sup>	13
Octanal <sup>a</sup>	7.2
Particulates (PM 2.5)	35 (24-hr)
Particulates (PM 10)	150 (24-hr)
Phenol	200
Styrene	900
Tetrachloroethene	35
Toluene	300

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Total volatile organic compounds (TVOC)	500
Trichloroethene	600
Xylene isomers	700

a. This chemical has a limit only where carpets and fabrics with styrene butadiene rubber (SBR) latex backing material are installed as part of the base building systems.

All persons desiring to comment on these proposed regulations should submit comments in writing to Helder Gil, Legislative Affairs Specialist, Department of Consumer and Regulatory Affairs, 1100 Fourth Street, SW, Room 5164, Washington, D.C. 20024, or via e-mail at [ConstructionCodes@dc.gov](mailto:ConstructionCodes@dc.gov), not later than 5 p.m. on Friday, January 25, 2013.

Comments should clearly specify which Subtitle, Chapter, and Section of the proposed District of Columbia Construction Codes they are related to.

Persons with questions concerning this Notice of Proposed Rulemaking should call (202) 442-4400. Copies of the proposed rules can be obtained from the address listed above. A copy fee of one dollar (\$1.00) will be charged for each copy of the proposed rulemaking requested.

Free copies of these proposed regulations are available on the DCRA website at <http://dcra.dc.gov> by going to the “About DCRA” tab, clicking on “News Room”, and then clicking on “Rulemaking”. Additionally, the DCRA website will list links to each of the ICC and NFPA 70 codes.

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