



2012 INTERNATIONAL GREEN CONSTRUCTION CODE™

A Member of the International Code Family®

21gCC™



THE AMERICAN
INSTITUTE
OF ARCHITECTS



Become a **Building Safety Professional Member** and Learn More about the Code Council

GO TO WWW.ICCSAFE.ORG for All Your Technical and Professional Needs Including:

- › Codes, Standards and Guidelines
- › Membership Benefits
- › Education and Certification
- › Communications on Industry News

2012 International Green Construction Code™

First Printing: March 2012

ISBN: 978-1-60983-059-5

COPYRIGHT © 2012
by
INTERNATIONAL CODE COUNCIL, INC.

With the cooperating sponsorships of the American Institute of Architects, ASTM International, American Society of Heating, Refrigerating and Air-Conditioning Engineers, United States Green Building Council and the Illuminating Engineering Society.

ALL RIGHTS RESERVED. This 2012 *International Green Construction Code*™ is a copyrighted work owned by the International Code Council, Inc. Without advance written permission from the copyright owner, no part of this book may be reproduced, distributed or transmitted in any form or by any means, including, without limitation, electronic, optical or mechanical means (by way of example, and not limitation, photocopying, or recording by or in an information storage retrieval system). For information on permission to copy material exceeding fair use, please contact: Publications, 4051 West Flossmoor Road, Country Club Hills, IL 60478. Phone 1-888-ICC-SAFE (422-7233).

Trademarks: “International Code Council,” the “International Code Council” logo and the “International Green Construction Code” are trademarks of the International Code Council, Inc.

PRINTED IN THE U.S.A.

PREFACE

Introduction

Internationally, code officials recognize the need for a modern, up-to-date code governing the impact of buildings and structures on the environment. This first edition, the 2012 edition, of the *International Green Construction Code*[™] (IgCC[™]), is designed to meet this need through model code regulations that contain clear and specific requirements with provisions that promote safe and sustainable construction in an integrated fashion with the ICC Family of Codes.

This comprehensive green code establishes minimum regulations for building systems and site considerations using prescriptive and performance-related provisions. It is intended to be an overlay code to be used with, and is fully compatible with, all of the *International Codes*[®] (I-Codes[®]) published by the International Code Council (ICC)[®], including the *International Building Code*[®], *International Energy Conservation Code*[®], *International Existing Building Code*[®], *International Fire Code*[®], *International Fuel Gas Code*[®], *International Mechanical Code*[®], *ICC Performance Code*[®], *International Plumbing Code*[®], *International Private Sewage Disposal Code*[®], *International Property Maintenance Code*[®], *International Residential Code*[®], *International Swimming Pool and Spa Code*[™], *International Wildland-Urban Interface Code*[®] and *International Zoning Code*[®].

The *International Green Construction Code*[™] provisions provide many benefits, among which is the model code development process that offers an international forum for building professionals to discuss performance and prescriptive code requirements. This forum provides an excellent arena to debate proposed revisions. This model code also encourages international consistency in the application of provisions.

This code has been developed in collaboration with the following Cooperating Sponsors: The American Institute of Architects (AIA); ASTM International; the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), the Illuminating Engineering Society (IES); and the U.S. Green Building Council (USGBC). ICC wishes to thank these Cooperating Sponsors for recognizing the need for the development of a comprehensive set of green regulations that are enforceable, usable and adoptable.

Development

This first edition of the 2012 *International Green Construction Code* is the culmination of an effort that started in 2010 with the drafting of Public Version 1.0 (PV 1.0) by the Sustainable Building Technology Committee (SBTC) established by the ICC Board of Directors. Following that, Public Version 2.0 was created, based upon public comments submitted to PV 1.0 and approved by the IgCC Public Comment Committee. Following the issuance of PV 2.0, a full cycle of code development in accordance with ICC's Code Development Procedures was held in 2011. This included the submission of code change proposals followed by a Code Development Hearing, the submission of public comments and a Final Action Hearing. A new edition of the code is promulgated every three years.

This code is founded on principles intended to establish provisions consistent with the scope of a green construction code that adequately protects public health, safety and welfare; provisions that do not unnecessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction. This is achieved by comprehensive provisions which are enforceable, useable and adoptable.

Adoption

The *International Green Construction Code* is available for adoption and use by jurisdictions internationally. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference in accordance with proceedings established in the jurisdiction's laws. At the time of adoption, jurisdictions should insert the appropriate information in provisions requiring specific local information, such as the name of the adopting jurisdiction. These locations are shown in brack-

eted words in small capital letters in the code and in the sample ordinance. The sample adoption ordinance on page xiii addresses several key elements of a code adoption ordinance, including the information required for insertion into the code text.

Maintenance

The *International Green Construction Code* is kept up to date through the review of proposed changes submitted by code enforcing officials, industry representatives, design professionals and other interested parties. Proposed changes are carefully considered through an open code development process in which all interested and affected parties may participate.

The contents of this work are subject to change both through the Code Development Cycles and the governmental body that enacts the code into law. For more information regarding the code development process, contact the Codes and Standards Development Department of the International Code Council.

While the development procedure of the *International Green Construction Code* assures the highest degree of care, the ICC, AIA, ASHRAE, ASTM International, IES and the USGBC and their members and those participating in the development of this code do not accept any liability resulting from compliance or noncompliance with the provisions given herein, for any restrictions imposed on materials or processes, or for the completeness of the text. ICC, AIA, ASHRAE, ASTM International, IES and the USGBC do not have power or authority to police or enforce compliance with the contents of this code. Only the governmental body that enacts the code into law has such authority.

Note that, for the development of the 2015 edition of the I-Codes, there will be two groups of code development committees and they will meet in separate years. The groupings are as follows:

Group A Codes (Heard in 2012, Code Change Proposals Deadline: January 3, 2012)	Group B Codes (Heard in 2013, Code Change Proposals Deadline: January 3, 2013)
International Building Code	Administrative Provisions (Chapter 1 all codes except IRC and ICCPC, administrative updates to currently referenced standards, and designated definitions)
International Fuel Gas Code	International Energy Conservation Code
International Mechanical Code	International Existing Building Code
International Plumbing Code	International Fire Code
International Private Sewage Disposal Code	International Green Construction Code
	ICC Performance Code
	International Property Maintenance Code
	International Residential Code
	International Swimming Pool and Spa Code
	International Wildland-Urban Interface Code
	International Zoning Code

Italicized Terms

Selected terms set forth in Chapter 2, Definitions, are italicized where they appear in code text. Such terms are not italicized where the definition set forth in Chapter 2 does not impart the intended meaning in the use of the term. The terms selected have definitions which the user should read carefully to facilitate better understanding of the code.

Effective Use of the International Green Construction Code

The *International Green Construction Code*[™] (IgCC[™]) is a model code that provides minimum requirements to safeguard the environment, public health, safety and general welfare through the establishment of requirements that are intended to reduce the negative impacts and increase the positive impacts of the built environment on the natural environment and building occupants. The IgCC is fully compatible with the ICC family of codes, including the *International Building Code*[®] (IBC[®]), the *International Code Council Performance Code*[®] (ICCPC[®]), the *International Energy Conservation Code*[®] (IECC[®]), the *International Existing Building Code*[®] (IEBC[®]), the *International Fire Code*[®] (IFC[®]), the *International Fuel Gas Code*[®] (IFGC[®]), the *International Mechanical Code*[®] (IMC[®]), the *International Plumbing Code*[®] (IPC[®]), the *International Private Sewage Disposal Code*[®] (IPSDC[®]), the *International Property Maintenance Code*[®] (IPMC[®]), the *International Residential Code*[®] (IRC[®]), the *International Swimming Pool and Spa Code*[™] (ISPSCTM), the *International Wildland-Urban Interface Code*[®] (IWUIC[®]), and the *International Zoning Code*[®] (IZC[®]).

The IgCC addresses natural resource, material, water and energy conservation, as well as indoor environmental quality and comfort, building commissioning, operations and maintenance for new and existing buildings, building sites and building materials, components, equipment and systems. The code will be promulgated on a 3-year cycle to allow for new construction methods and technologies to be incorporated into the code. Innovative approaches and alternative materials, designs, and methods not specifically addressed in the code can be approved by the code official where the proposed innovative approaches or materials, designs or methods comply with the intent of the provisions of the code (see Section 105.4).

The IgCC applies to all occupancies other than temporary structures approved under Section 3103 of the *International Building Code*, except that application to the following is subject to jurisdictional choices in Table 302.1: one- and two-family dwellings and townhouses that are within the scope of the *International Residential Code*; Group R-3 occupancies; and Group R-2 and R-4 residential occupancies that are four stories or less in height.

Arrangement and Format of the 2012 IgCC

Before applying the requirements of the IgCC, it is beneficial to understand its arrangement and format.

Chapters	Subjects
1-2	Administration and definitions
3	Jurisdictional requirements and life cycle assessment
4	Site development and land use
5	Material resource conservation and efficiency
6	Energy conservation, efficiency and CO ₂ e emission reduction
7	Water resource conservation, quality and efficiency
8	Indoor environmental quality and comfort
9	Commissioning, operation and maintenance
10	Existing buildings
11	Existing building site development
12	Referenced standards
Appendix A	Project electives
Appendix B	Radon mitigation
Appendix C	Optional ordinance
Appendix D	Enforcement procedures

The following is a chapter-by-chapter synopsis of the scope and intent of the provisions of the *International Green Construction Code*:

Chapter 1 Scope and Administration. Chapter 1 of the IgCC establishes the limits of applicability of the code and describes the manner in which the code is to be applied and enforced. Chapter 1 is divided into two parts: Part 1 – Scope and Application (Sections 101 and 102); and Part 2 – Administration and Enforcement (Sections 103 – 109).

Section 101 identifies which buildings and structures come under its purview and Section 102 references other ICC codes as applicable. Section 103 establishes the duties and powers of the code official, requires that compliance and enforcement be part of the enforcement of other ICC codes listed in Section 102.4, and grants authority to the code official to make inspections. Section 105 provides guidance to the code official in the approval of materials, methods of construction, designs, systems and innovative approaches where they are not specifically prescribed in the IgCC. Section 106, in conjunction with Section 101.2 as an overlay code, requires that permits be issued under other ICC codes.

The provisions of Chapter 1 also establish the rights and privileges of the design professional, contractor and property owner.

It is important to note that by reference to Section 301.1.1, Section 101.3 allows ASHRAE 189.1, *Standard for the Design of High-Performance Green Buildings*, to be used. In addition, Exception 1 to Section 101.3 notes that the code is not applicable to low-rise residential structures unless the jurisdiction selects ICC 700 in Table 302.1 for application to various types of residential buildings and occupancies. Further, ICC 700 is noted in Section 101.3.1 as being a “deemed to comply document” for mid- and high-rise R-2 and R-4 occupancies.

The green building code is intended to be adopted as a legally enforceable document and it cannot be effective without adequate provisions for its administration and enforcement.

Chapter 2 Definitions. All terms that are defined in the code are listed alphabetically in Chapter 2. Terms are defined in Chapter 2. Codes are technical documents and every word, term and punctuation mark can impact the meaning of the code text and the intended results. The code often uses terms that have a unique meaning in the code and that code meaning can differ substantially from the ordinarily understood meaning of the term as used outside of the code. Where understanding of a term’s definition is especially key to or necessary for understanding a particular code provision, the term is shown in *italics* wherever it appears in the code. However, this is true only for those terms that have a meaning that is unique to the code. In other words, the generally understood meaning of a term or phrase might not be sufficient or consistent with the meaning prescribed by the code; therefore, it is essential that the code-defined meaning be known.

Definitions are deemed to be of prime importance in establishing the meaning and intent of the code text that uses code-defined terms. The user of the code should be familiar with and consult this chapter because the definitions are essential to the correct interpretation of the code and because the user may not be aware that a term is defined in a manner that is not commonly understood.

Chapter 3 Jurisdictional Requirements and Life Cycle Assessment. As indicated earlier, Section 301.1.1 allows ASHRAE 189.1, *Standard for the Design of High-Performance Green Buildings*, to be used. Similarly, ICC 700 may be applicable to specific types of residential construction in accordance with the decisions made by the jurisdiction in the portions of Table 302.1 related to Section 101.3.

The jurisdictional requirements contained in Section 302 are formatted to afford jurisdictions the flexibility to adapt the code in a manner that is best suited to meet their unique environmental and regional goals and needs. The section numbers and optional enhanced performance features listed in Table 302.1 do not become enforceable unless they are specifically selected in the table by the jurisdiction and the appropriate “Yes” box is checked or otherwise specifically indicated in the jurisdiction’s adopting ordinance. Those provisions selected by the jurisdiction in Table 302.1 become enforceable for all buildings constructed in the jurisdiction. The text of all section numbers listed in Table 302.1 also contains a reference to Table 302.1, reinforcing the fact that they are not enforceable unless they are specifically adopted. Furthermore, the sample ordinance provided in the IgCC references Table 302.1 and requires that the jurisdiction indicate those provisions from the list that it intends to enforce.

Jurisdictions must take great care when making their choices in Table 302.1. While various requirements listed in Table 302.1 may be environmentally beneficial in many jurisdictions, some may be inappropriate in other jurisdictions. If these practices were appropriate for all jurisdictions, they would have been included in the baseline requirements of the IgCC, not in Table 302.1.

Where jurisdictions find the concept of jurisdictional requirements to be unnecessary, they are able to opt out by simply checking the “No” boxes for all provisions listed in Table 302.1. Because relatively few of the code’s provisions are listed in Table 302.1, even where jurisdictions do not choose any of the provisions or enhanced performance options listed in Table 302.1, the IgCC remains a strong and effective green and sustainable building tool. That said, many jurisdictions will appreciate the flexibility that the jurisdictional requirements provide in their efforts to address specific green and sustainable building concerns. Where jurisdictions begin to specifically adopt more of the items listed in Table 302.1 in future years, they will also appreciate the opportunities that the IgCC provides to grow and to produce a more sustainable built environment with each future adoption of the IgCC.

Section 303 contains provisions for whole building life cycle assessment. The IgCC does not require that whole building life cycle assessment be performed. However, where these provisions are complied with, compliance with the material selection provisions of Section 505 is not required. In this manner, whole building life cycle assessment is encouraged, though not required.

Chapter 4 Site Development and Land Use. Chapter 4 is intended to minimize the negative environmental impacts on and protect, restore and enhance the natural features and environmental quality of building sites.

Section 401.2 requires predesign site inventory and assessment. Where indicated by the jurisdiction in Table 302.1, Section 402 limits building construction near surface water, in conservation and flood hazard areas and on greenfield sites, park land or agricultural land. Section 403 requires stormwater management. Section 404 limits potable water uses related to landscape irrigation and outdoor fountains. Section 405 addresses vegetation, soil and water quality protection.

Section 406 requires that a plan be developed to ensure that least 75 percent of land-clearing debris and excavated soils is diverted from disposal.

Section 407.1 requires that at least one walkway or bicycle path connect building entrances to streets or other paths. Buildings with a total floor area of over 10,000 square feet (929 m²) must also provide changing and shower facilities. Bicycle parking and storage requirements are contained in Sections 407.3 through 407.3.2 and Table 407.3.

Where indicated by the jurisdiction in Table 302.1, and where the total building floor area is greater than 10,000 square feet (929 m²), preferred parking is required for high-occupancy and low-emission, hybrid and electric vehicles. These requirements, however, do not take precedence over the accessible parking requirements of the *International Building Code*.

Section 408 mitigates heat island effects through requirements related to site hardscape materials, shading and roof surfaces and coverings. Where indicated to be enforceable in the jurisdiction in Table 302.1, light pollution from building sites must be controlled in accordance with Section 409.

Chapter 5 Material Resource Conservation and Efficiency. Chapter 5 addresses material resource conservation and efficiency by means of provisions related to material selection, recycling, reuse, renewability, toxicity and durability, including resistance to damage caused by moisture.

Section 502 addresses material storage and handling during the construction phase. Section 503 requires that a construction material and waste management plan be prepared and allows the jurisdiction to increase the percentage of waste that must be recycled in Table 302.1. Section 504 requires areas be designed and constructed to facilitate the recycling of waste generated post certificate of occupancy.

Section 505 requires that at least 55 percent of constructed materials selected for each project be any combination of the following material types: used, recycled, recyclable, bio-based, or indigenous. However, where a whole building life cycle analysis is performed in accordance with Section 303, compliance with Section 505 is not required.

Section 506 regulates the mercury content of fluorescent lamps. Section 507 contains requirements for inspections that are tied to Table 903.1 and are intended to control moisture intrusion in the building envelope.

Chapter 6 Energy Conservation, Efficiency and CO₂e Emission Reduction. Chapter 6 is intended to provide flexibility and permit the use of innovative approaches to achieve the effective use of energy.

All buildings that consume energy must comply with the requirements of Sections 603 (Energy Metering, Monitoring and Reporting), 609 (Specific Appliances and Equipment), 610 (Building Renewable Energy Systems), 611 (Energy Systems Commissioning and Completion) and, where indicated by the jurisdiction in Table 302.1, must also comply with Section 604 (Automated Demand Response Infrastructure).

In addition to the preceding, buildings designed on a performance basis must comply with Sections 602 (Modeled Performance Pathway Requirements) and 608.6 (Plug load controls), while buildings designed on a prescriptive basis must comply with the prescriptive requirements of Sections 605 (Building Envelope Systems), 606 (Building Mechanical Systems), 607 (Building Service Water Heating Systems) and 608 (Building Electrical Power and Lighting Systems).

Section 602.1.1 requires that performance based designs demonstrate a zEPI of not more than 51, as determined in accordance with Equation 6-1. This equation contains a reference to EUI (energy use index), which must be calculated in accordance Appendix G of ASHRAE 90.1, as modified by Sections 602.1.2.2 and 602.1.2.3 of the IgCC. Section 602.1.1 requires that performance based designs also demonstrate CO₂e emissions reduction in accordance with Section 602.2 and Equation 6-2.

Section 603 addresses energy metering, monitoring and reporting and is applicable to all buildings that consume energy. Section 603.2 requires that energy distribution systems be designed to provide separate metering of the energy use categories listed in Table 603.2. For buildings greater than 25,000 square feet in gross floor area, meters must be installed. For buildings less than 25,000 square feet in gross floor area, the system must be designed to accommodate the installation of future meters. Section 603.3 requires that building energy metering be capable of determining energy use and peak demand for the types of energy indicated in Sections 603.3.1 through 603.3.7.

Where the jurisdiction has indicated in Table 302.1 that Section 604.1 is enforceable, an automated demand-response infrastructure must be provided. This requires that building energy, HVAC and lighting systems and specific building energy-using components be provided with controls that respond to changes in energy demand by means of automated preprogrammed strategies.

Section 605 provides building envelope system requirements for buildings that are designed on a prescriptive basis. Section 605.1.1 requires that insulation and fenestration exceed the requirements of the *International Energy Conservation Code* by at least 10 percent. Section 605.1.2.2 requires testing of the building thermal envelope for air tightness.

Section 610 establishes minimum renewable energy source requirements for all buildings that consume energy. It requires that buildings use renewable energy sources to provide either 2 percent of total calculated annual energy use by means of solar photovoltaic or wind, or 10 percent of annual estimated hot water energy by means of solar hot water heating.

Section 611 is applicable to all buildings that consume energy. It requires the commissioning and completion of mechanical, lighting, electrical and building envelope systems. These systems are also listed in Table 903.1, Commissioning Plan.

There are also provisions outside of Chapter 6 that have significant impacts on energy: Table 302.1 allows jurisdictions to require lower zEPI values, or require more stringent levels of efficiency, by occupancy; where indicated to be enforceable in Table 302.1, the project electives of Section A106 in Appendix A require additional energy conserving practices be implemented and recognize and encourage energy performance that exceeds the baseline minimum requirements of Chapters 3 and 6; Section 1003.2 addresses energy use where existing buildings are altered; and, where indicated to be enforceable in Table 302.1, Section 1007.2 requires that owners of existing buildings report post certificate of occupancy zEPI, energy demand and CO₂e emissions.

Chapter 7 Water Resource Conservation, Quality and Efficiency. Chapter 7 provides requirements that are intended to conserve water, protect water quality and provide for safe water consumption.

Section 702 regulates water consumption through limitations of fixture and fitting flow rates and by means of requirements related to specific equipment and appliances. It also requires that municipal reclaimed water, where available and required by the jurisdiction in Table 302.1, be supplied to water-supplied toilets, urinals, trap primers and applicable industrial systems. Hot water distribution systems must be designed to reduce the volume of water between fixtures and sources of hot or tempered water in accordance with Section 702.8.

Section 703 regulates water used in HVAC systems and equipment including hydronic closed systems, humidification systems, condensate coolers, condensate drainage recovery, once through heat exchangers, humidifier discharge, cooling towers, evaporative condensers, fluid coolers, wet-hood exhaust scrubber systems and evaporative cooling systems.

Section 704 regulates water treatment devices and equipment including water softeners, reverse osmosis water treatment systems and onsite reclaimed water treatment systems.

Section 705 contains specific water conservation measures for indoor ornamental fountains and other water features. It also requires the separate metering of water consumed from any source associated with the building or its site.

Section 706 contains signage and water quality requirements related to nonpotable water. Sections 707, 708 and 709 contain requirements related to rainwater collection and distribution systems, gray water systems, and reclaimed water systems, respectively. Section 710 contains provisions for other alternative onsite sources of nonpotable water.

Chapter 8 Indoor Environmental Quality and Comfort. Chapter 8 is intended to ensure that the building's interior environment is conducive to the health of building occupants.

Section 801.2 requires that an indoor air quality management plan be developed to ensure compliance with Sections 802 through 805. Section 802 addresses air-handling system access for cleaning and repair, as well as air-handling filter rack design. Section 803 contains requirements for the ventilation of buildings during the construction phase, prohibits smoking within buildings, limits pollutant sources in print, copy and janitorial rooms, and provides filters requirements for air-conditioning systems. Section 804 contains specific indoor air quality and pollutant control requirements for fireplaces, solid fuel-burning appliances, vented decorative gas appliances, vented gas fireplace heaters and decorative gas appliances. Where the jurisdiction has indicated in Table 302.1 that Section 804.2 is enforceable, baseline indoor air quality testing is required. Section 805 prohibits the use of urea-formaldehyde foam insulation and materials that contain asbestos.

Section 806 regulates emissions from wood products, adhesives, sealants, paints, coatings, flooring, acoustical ceiling tiles, wall systems and insulation.

Where the jurisdiction has indicated in Table 302.1 that Section 807.1 is to be enforceable, sound transmission levels must be limited in accordance with Sections 807.2 through 807.5.2.

Section 808 requires that fenestration be provided to ensure that interior spaces in the specified occupancies benefit from exposure to natural light.

Chapter 9 Commissioning, Operation and Maintenance. Chapter 9 addresses building commissioning, operation and maintenance. It requires inspections as specifically listed in Table 903.1. Chapter 9 also requires that construction documents contain information related to building operation and maintenance in accordance with Section 904.3.

Many of the provisions of Chapter 9, and in particular those in Sections 902 and 903, are essentially based on the requirements for special inspections contained in the *International Building Code*. Both Table 903.1 and Section 904 also contain ties to, and are coordinate with, various provisions in Chapters 4 through 8 of the IgCC. The building operation and maintenance documents required by Section 904.3 are intended to help and encourage building owners and facility management staff to operate and maintain buildings in a manner, and a performance level, as originally intended by design professionals as they strove to configure building systems in a manner that satisfied the requirements of the IgCC.

Chapter 10 Existing Buildings. Conceptually, the requirements of Chapter 10 of the IgCC are based upon the requirements of Chapter 34 of the *International Building Code* for existing buildings. These provisions are not retroactive. They apply only where buildings are altered or added to.

Additions are essentially handled as new construction.

Alterations must meet the requirements of other applicable chapters of the code for those portions or elements of the building that are being altered. However, similar to the means by which the *International Building Code* addresses accessibility in existing buildings, Section 1003.2 requires that at least 10 percent of the cost of alterations be dedicated to improvements related to water and energy conservation and efficiency. Water and energy conservation and efficiency requirements that are intended to apply specifically to existing buildings are listed in Sections 1003.2.1 through 1003.2.7. These sections address the following: metering devices; heating, ventilation and air conditioning; service water systems; lighting; swimming pools and spas; insulation of unconditioned attics; and roof replacement insulation.

Section 1005 provides relief for historic buildings under certain conditions. Where buildings are decommissioned, Section 1006 requires that a material and waste management plan be developed to ensure that such buildings are dismantled and demolished in such a manner that at least 50 percent of materials are diverted from landfills.

Where indicated to be enforceable in the jurisdiction in Table 302.1, Section 1007.2 requires post certificate of occupancy zEPI, energy demand and CO₂e emissions reporting.

Chapter 11 Existing Building Site Development. While Chapter 10 is applicable to existing buildings, Chapter 11 is applicable to additions to and to the alteration, repair, maintenance and operation of the sites upon which those buildings are located. Conceptually, much like Chapter 10, the requirements of Chapter 11 of the IgCC are based upon the requirements of Chapter 34 of the *International Building Code* for existing buildings. These provisions are not retroactive. They apply only where buildings are altered or added to.

Additions are essentially handled as new construction. Alterations must meet the requirements of other applicable chapters of the code for those portions or elements of the building that are being altered.

Section 1105 provides relief for historic buildings under certain conditions.

Chapter 12 Referenced Standards. The code contains numerous references to standards that are used to regulate materials and methods of construction. Chapter 12 contains a comprehensive list of all standards that are referenced in the code. The standards are part of the code to the extent of the reference to the standard (see Sections 102.4 and 102.4.1). Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements necessary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the code official, contractor, designer and owner.

Chapter 12 is organized in a manner that makes it easy to locate specific standards. It lists all of the referenced standards, alphabetically, by acronym of the promulgating agency of the standard. Each agency's standards are then listed in either alphabetical or numeric order based upon the standard identification. The list also contains the title of the standard; the edition (date) of the standard referenced; any addenda included as part of the ICC adoption; and the section or sections of this code that reference the standard.

Appendices. Appendices are provided in the IgCC to offer optional or supplemental criteria to the provisions in the main chapters of the code. Appendices provide additional information and standards not typically administered by all building departments. Appendices have the same force and effect as the first 12 chapters of the IgCC only when they are explicitly adopted by the jurisdiction.

Appendix A Project Electives. Where Appendix A is adopted, it mandates buildings which are "greener" and "more sustainable" than those that meet only the baseline minimum requirements found in the body of the IgCC.

Project electives were created to encourage performance which exceeds the minimum requirements of the IgCC and to encourage, but not mandate, the implementation of green and sustainable

practices that are otherwise difficult or impossible to mandate. For example, it would not be realistic to require that all buildings be constructed on brownfield sites. It is, however, environmentally beneficial to encourage construction on brownfield sites. Thus, Appendix A contains a project elective related to brownfield sites.

Project electives encourage the consideration of, but do not require the implementation of, all green and sustainable practices contained in Appendix A. Where green and sustainable practices and provisions are generally suitable as mandatory requirements, they have typically been placed in the body of the IgCC. Green and sustainable practices that are seldom or never appropriate as mandatory requirements for all projects in all regions, or where they are intended to encourage and recognize, but not necessarily require, higher building performance, are typically more appropriately integrated in the code as project electives.

Sections A104 through A108 of Appendix A are arranged by major sections that correspond with the fundamental principles addressed in Chapters 4 through 8 of the IgCC: site; material resource conservation and efficiency; energy conservation, efficiency and earth atmospheric quality; water resource conservation and efficiency; and indoor environmental quality and comfort. In each of these major sections, jurisdictions that intend to enforce Appendix A must determine the number of project electives that must be complied with from the list of project electives tables associated with each of those major sections. Jurisdictions must exercise discretion when determining these minimum values, as it may be difficult or impossible for some projects to comply with various provisions. In addition, if jurisdictions have chosen to enforce certain provisions listed in Table 302.1, they may be unknowingly reducing the number of project electives available in Appendix A. The text of some project electives indicates that they are not available if the jurisdiction has made the practice mandatory in Table 302.1. Thus the specific text of the project electives should be reviewed and coordinated with the jurisdictional requirements from Table 302.1 that are enforced in the jurisdiction. Where jurisdictions have not chosen to enforce various provisions listed in Table 302.1, project electives encourage the implementation of many of the same green and sustainable practices that Table 302.1 addressed.

Although the jurisdiction determines the number of project electives that must be satisfied in each table in Appendix A, the specific project electives to be implemented on each project are selected by the owner and design professional. It is because the specific electives selected can vary from project to project that they are deemed “project” electives, and it is the fact that these provisions are not mandatory until they are selected by the owner and design professional that they are deemed project “electives.”

Appendix B Radon Mitigation. Radon comes from the natural radioactive decay of the element radium in soil, rock and water and finds its way into the air. Appendix B contains requirements for the design and construction of systems that mitigate the transfer of radon gases from the soil to building interior spaces.

Appendix C Optional Ordinance. The optional ordinance contained in Appendix C addresses key elements of an evidentiary-based adoption structure that includes performance-bonding requirements. These bonding requirements are tied to the issuance of building permits, certificates of occupancy and the process of compliance verification.

Appendix D Enforcement Procedures. Appendix D is intended to ensure that buildings constructed in accordance with the IgCC are maintained in a manner that is compliant with the code. Appendix D requires that existing buildings that do not comply with these code requirements be altered or repaired to restore compliance with the IgCC.

LEGISLATION

The *International Codes* are designed and promulgated to be adopted by reference by legislative action. Jurisdictions wishing to adopt the 2012 *International Green Construction Code*[™] as an enforceable regulation governing structures and premises should ensure that certain factual information is included in the adopting legislation at the time adoption is being considered by the appropriate governmental body. The following sample adoption legislation addresses several key elements, including the information required for insertion into the code text.

SAMPLE LEGISLATION FOR ADOPTION OF THE *INTERNATIONAL GREEN CONSTRUCTION CODE* ORDINANCE NO. _____

A[N] [ORDINANCE/STATUTE/REGULATION] of the [JURISDICTION] adopting the 2012 edition of the *International Green Construction Code*[™], regulating and governing the impact of buildings and structures on the environment in the [JURISDICTION]; providing for the issuance of permits and collection of fees therefor; repealing [ORDINANCE/STATUTE/REGULATION] No. _____ of the [JURISDICTION] and all other ordinances or parts of laws in conflict therewith.

The [GOVERNING BODY] of the [JURISDICTION] does ordain as follows:

Section 1. That a certain document, three (3) copies of which are on file in the office of the [TITLE OF JURISDICTION'S KEEPER OF RECORDS] of [NAME OF JURISDICTION], being marked and designated as the *International Green Construction Code*, 2012 edition, including Appendix Chapters [FILL IN THE APPENDIX CHAPTERS BEING ADOPTED], as published by the International Code Council, be and is hereby adopted as the Green Construction Code of the [JURISDICTION], in the State of [STATE NAME] regulating and governing the conditions and maintenance of structures and premises as herein provided; the standards for physical things and conditions essential to safeguard the environment, public health, safety and general welfare through the establishment of requirements to reduce the negative impacts and increase the positive impacts of the built environment on the natural environment and building occupants; and each and all of the regulations, provisions, penalties, conditions and terms of said Green Construction Code on file in the office of the [JURISDICTION] are hereby referred to, adopted, and made a part hereof, as if fully set out in this legislation, with the additions, insertions, deletions and changes, if any, prescribed in Section 2 of this ordinance.

Section 2. The following sections are hereby revised:

Section 101.1. Insert: [NAME OF JURISDICTION]

Table 302.1. Insert: [JURISDICTIONAL REQUIREMENTS]

Section 1007.3.3.1. Insert: [AGENCY RESPONSIBLE] where Section 1007.3 is selected in Table 302.1.

Section 1007.3.3.2. Insert: [AGENCY RESPONSIBLE] where Section 1007.3 is selected in Table 302.1.

Section 1007.3.3.3. Insert: [AGENCY RESPONSIBLE] where Section 1007.3 is selected in Table 302.1.

Section 3. That [ORDINANCE/STATUTE/REGULATION] No. _____ of [JURISDICTION] entitled [FILL IN HERE THE COMPLETE TITLE OF THE LEGISLATION OR LAWS IN EFFECT AT THE PRESENT TIME SO THAT THEY WILL BE REPEALED BY DEFINITE MENTION] and all other ordinances or parts of laws in conflict herewith are hereby repealed.

Section 4. That if any section, subsection, sentence, clause or phrase of this legislation is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The [GOVERNING BODY] hereby declares that it would have passed this law, and each section, subsection, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

Section 5. That nothing in this legislation or in the Green Construction Code hereby adopted shall be construed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance hereby repealed as cited in Section 3 of this law; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this legislation.

Section 6. That the [JURISDICTION'S KEEPER OF RECORDS] is hereby ordered and directed to cause this legislation to be published. (An additional provision may be required to direct the number of times the legislation is to be published and to specify that it is to be in a newspaper in general circulation. Posting may also be required.)

Section 7. That this law and the rules, regulations, provisions, requirements, orders and matters established and adopted hereby shall take effect and be in full force and effect [TIME PERIOD] from and after the date of its final passage and adoption.

TABLE OF CONTENTS

<p>CHAPTER 1 SCOPE AND ADMINISTRATION... 1</p> <p>PART 1—SCOPE AND APPLICATION..... 1</p> <p>Section</p> <p>101 General 1</p> <p>102 Applicability..... 1</p> <p>PART 2—ADMINISTRATION AND ENFORCEMENT..... 2</p> <p>103 Duties and Powers of the Code Official..... 2</p> <p>104 Construction Documents 2</p> <p>105 Approval..... 2</p> <p>106 Permits 3</p> <p>107 Fees..... 3</p> <p>108 Board of Appeals 3</p> <p>109 Certificate of Occupancy 3</p> <p>CHAPTER 2 DEFINITIONS..... 5</p> <p>Section</p> <p>201 General 5</p> <p>202 Definitions 5</p> <p>CHAPTER 3 JURISDICTIONAL REQUIREMENTS AND LIFE CYCLE ASSESSMENT 15</p> <p>Section</p> <p>301 General 15</p> <p>302 Jurisdictional Requirements 15</p> <p>303 Whole Building Life Cycle Assessment..... 15</p> <p>CHAPTER 4 SITE DEVELOPMENT AND LAND USE 17</p> <p>Section</p> <p>401 General 17</p> <p>402 Preservation of Natural Resources..... 17</p> <p>403 Stormwater Management 18</p> <p>404 Landscape Irrigation and Outdoor Fountains... 19</p> <p>405 Management of Vegetation, Soils and Erosion Control 20</p> <p>406 Building Site Waste Management 22</p> <p>407 Transportation Impact 23</p> <p>408 Heat Island Mitigation 24</p> <p>409 Site Lighting 26</p>	<p>CHAPTER 5 MATERIAL RESOURCE CONSERVATION AND EFFICIENCY 29</p> <p>Section</p> <p>501 General..... 29</p> <p>502 Construction Material Management..... 29</p> <p>503 Construction Waste Management 29</p> <p>504 Waste Management and Recycling 29</p> <p>505 Material Selection 29</p> <p>506 Lamps..... 30</p> <p>507 Building Envelope Moisture Control..... 30</p> <p>CHAPTER 6 ENERGY CONSERVATION, EFFICIENCY AND CO₂e EMISSION REDUCTION 31</p> <p>Section</p> <p>601 General..... 31</p> <p>602 Modeled Performance Pathway Requirements .. 31</p> <p>603 Energy Metering, Monitoring and Reporting ... 33</p> <p>604 Automated Demand-response (Auto-DR) Infrastructure 35</p> <p>605 Building Envelope Systems..... 36</p> <p>606 Building Mechanical Systems 37</p> <p>607 Building Service Water Heating Systems 41</p> <p>608 Building Electrical Power and Lighting Systems 43</p> <p>609 Specific Appliances and Equipment 46</p> <p>610 Building Renewable Energy Systems 47</p> <p>611 Energy Systems Commissioning and Completion..... 50</p> <p>CHAPTER 7 WATER RESOURCE CONSERVATION, QUALITY AND EFFICIENCY..... 55</p> <p>Section</p> <p>701 General..... 55</p> <p>702 Fixtures, Fittings, Equipment and Appliances... 55</p> <p>703 HVAC Systems and Equipment..... 57</p> <p>704 Water Treatment Devices and Equipment..... 59</p> <p>705 Metering..... 59</p> <p>706 Nonpotable Water Requirements..... 59</p> <p>707 Rainwater Collection and Distribution Systems 60</p> <p>708 Gray Water Systems..... 65</p>
---	--

TABLE OF CONTENTS

709 Reclaimed Water Systems 71
 710 Alternate Onsite Nonpotable Water Sources 72

CHAPTER 8 INDOOR ENVIRONMENTAL QUALITY AND COMFORT 73

Section
 801 General 73
 802 Building Construction Features, Operations and Maintenance Facilitation 73
 803 Hvac Systems 73
 804 Specific Indoor Air Quality and Pollutant Control Measures 74
 805 Prohibited Materials 74
 806 Material Emissions and Pollutant Control 75
 807 Acoustics 78
 808 Daylighting 79

CHAPTER 9 COMMISSIONING, OPERATION AND MAINTENANCE. 85

Section
 901 General 85
 902 Approved Agency 85
 903 Commissioning 85
 904 Building Operations and Maintenance 85

CHAPTER 10 EXISTING BUILDINGS. 91

Section
 1001 General 91
 1002 Additions 91
 1003 Alterations to Existing Buildings 91
 1004 Change of Occupancy 94
 1005 Historic Buildings 94
 1006 Demolition 94
 1007 Jurisdictional Requirements 94

CHAPTER 11 EXISTING BUILDING SITE DEVELOPMENT 97

Section
 1101 General 97
 1102 Additions 97
 1103 Alterations to Existing Building Sites 97
 1104 Change of Occupancy 98
 1105 Historic Building Sites 98

CHAPTER 12 REFERENCED STANDARDS 99

APPENDIX A PROJECT ELECTIVES. 109

Section
 A101 General 109
 A102 Applicability and Conformance 109
 A103 Definitions 109
 A104 Site Project Electives 109
 A105 Material Resource Conservation and Efficiency 111
 A106 Energy Conservation, Efficiency and Earth Atmospheric Quality 112
 A107 Water Resource Conservation and Efficiency 114
 A108 Indoor Environmental Quality and Comfort 115
 A109 Referenced Standards 116

APPENDIX B RADON MITIGATION 117

Section
 B101 General 117
 B102 Definitions 117
 B201 Mitigation Procedures 117

APPENDIX C OPTIONAL ORDINANCE 131

APPENDIX D ENFORCEMENT PROCEDURES 135

Section
 D101 General 135
 D102 Applicability 135
 D103 Definitions 135
 D104 Duties and Powers of the Code Official 135
 D105 Violations 135
 D106 Notices and Orders 136
 D107 Emergency Measures and Abatement 136
 D108 Means of Appeal 137

INDEX 139