

An Introduction to the International Green Construction Code



SAFE & SUSTAINABLE BY THE BOOK



What is the IgCC?

- An Adoptable, Useable and Enforceable *code*.
- Intended to reduce the negative impacts of the built environment on the natural environment
- Addresses
 - Conservation of:
 - Natural resources
 - Materials
 - Energy
 - Water
 - Air & indoor environmental quality



Intent and Scope

- Consistent and coordinated with the ICC family of Codes & Standards
- Intended to be enforced primarily by building officials
- Intended to drive green building into everyday practice
- Applicable to the construction of
 - All buildings, both old and new, except:
 - IRC Buildings
 - R-3 Occupancies
 - R-2 and R-4 Occupancies 4 stories or less in height.
 - Exceptions above are regulated by ICC 700 where the jurisdiction indicates so in Table 302.1.



Developed By:

- IgCC developed by **ICC** in association with cooperating sponsors:
 - ✓ **ASTM** and
 - ✓ **AIA**
- References **ASHRAE 189.1** as an *alternative compliance path*, as developed by:
 - ✓ **ASHRAE** and partners
 - ✓ **IES** and
 - ✓ **USGBC**



IgCC Context

- Unlike USGBC's highly successful LEED programs, the IgCC was conceived and written with the intent to be adopted on a mandatory basis.
- Only jurisdictions can determine whether the IgCC is adopted on a mandatory or a voluntary basis.
- Voluntary adoptions can open the door to future mandatory adoptions.
- Where adopted on a *mandatory* basis, the IgCC raises the floor of sustainability for **all buildings** – positioning the IGCC to achieve **massive environmental benefits** not possible with *voluntary* rating systems.

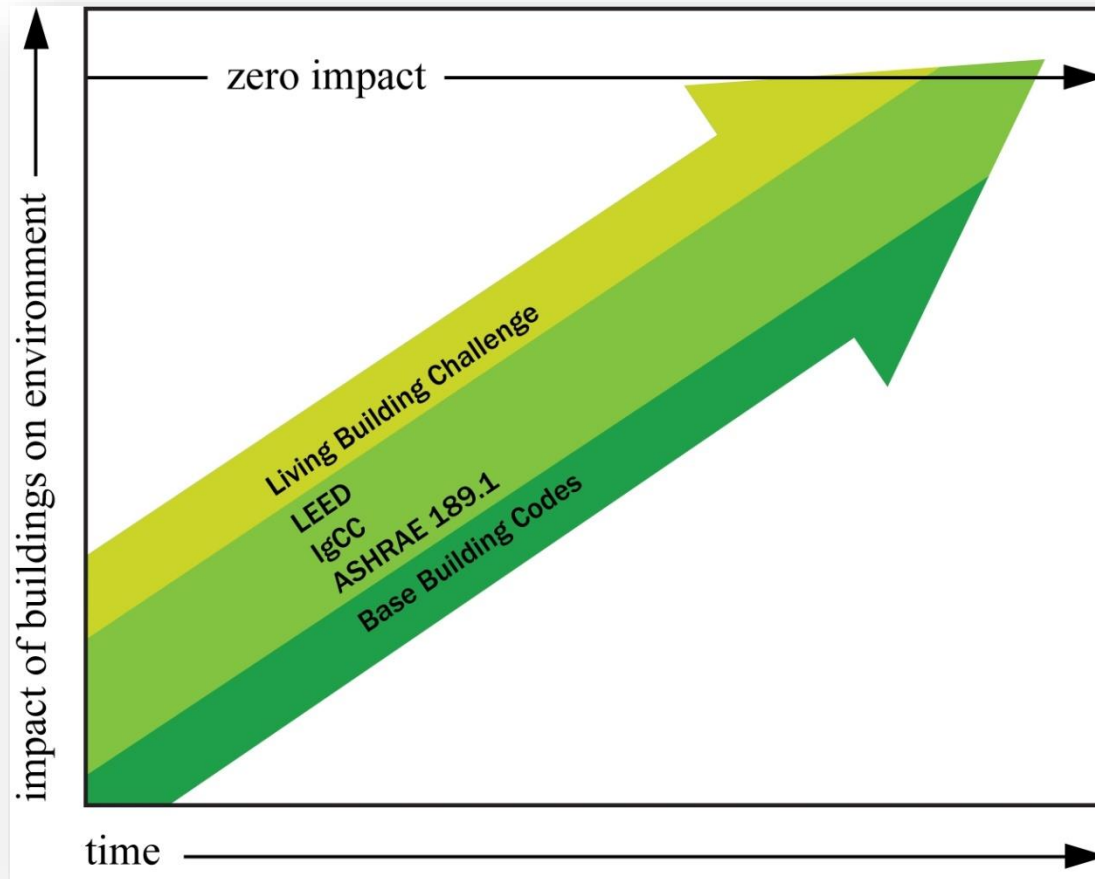


IgCC Context

- The IgCC is *not* a rating system, nor is it intended to replace them.
- The IgCC is **code** which is intended to be adopted on a **mandatory** basis.
- Unlike most rating systems, the IgCC primarily consists of **minimum mandatory requirements**, just as other I-Codes.
- The IgCC contains a new regulatory framework that facilitates both jurisdictional customization and flexibility for owners and designers.



IgCC and other GB Programs



Most GB codes, standards and ratings systems do not yet produce truly sustainable buildings. **But they are all pushing, pulling and leapfrogging each other as they all move gradually toward this goal.**

IgCC Chapters

- 1: Scope and Administration
- 2: Definitions
- 3: Jurisdictional Requirements and Life Cycle Assessment
- 4: Site Development and Land Use
- 5: Material Resource Conservation and Efficiency
- 6: Energy Conservation and CO₂ 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 Developme
- 12: Referenced Standards



Table 302.1: Requirements Determined by the Jurisdiction*

Section	Section Title or Description and Directives	Jurisdictional Requirements
Chapter 1: Scope		
101.3 Exception 1.1	Detached on- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height above grade plane with a separate means of egress, their accessory structures, and the site or lot upon which these buildings are located, shall comply with ICC 700.	Yes <input type="checkbox"/> No
101.3 Exception 1.2	Group R-3 residential buildings, their accessory structures, and the site or lot upon which these buildings are located, shall comply with ICC 700.	<input type="checkbox"/> Yes <input type="checkbox"/> No
101.3 Exception 1.3	Group R-2 and R-4 residential buildings four stories or less in height above grade plane, their accessory structures, and the site or lot upon which these buildings are located, shall comply with ICC 700.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Chapter 4: Site Development and Land Use		
402.2.1	Flood hazard area preservation, general	<input type="checkbox"/> Yes <input type="checkbox"/> No
402.2.2	Flood hazard area preservation, specific	<input type="checkbox"/> Yes <input type="checkbox"/> No
402.3	Surface water protection	<input type="checkbox"/> Yes <input type="checkbox"/> No

*This is a portion of the table's 20 jurisdictional choices

Chapter 6: **Energy** Conservation, Efficiency & CO₂e Emission Reduction



- Chapter 6 is applicable to new buildings and additions to existing buildings.
- Contains detailed energy requirements.
- Energy requirements for alterations to existing buildings are found in Ch 10.
- The IgCC provides the following energy compliance paths:
 - **Prescriptive-based**
 - **Performance-based zEPI (Zero Energy Performance Index)**



Chapter 6: Energy Conservation, Efficiency & CO₂e Emission Reduction



- Minimum energy performance requirements exceed that of the 2012 IECC.
- Limited provisions of the IECC and ASHRAE 90.1 are referenced.
- The jurisdiction can require higher levels of performance in Table 302.1. (Prescriptive based designs are exempt.)
- Where the performance-based compliance path is used, annual direct and indirect CO₂e emissions must be calculated for the proposed building, as compared to a standard reference design.



Chapter 6 Contents

- General
- Modeled performance pathway requirements.
- Energy metering, monitoring and reporting
- Automated demand-response infrastructure
- Building envelope systems
- Building mechanical systems
- Building service water heating systems
- Building electrical power and lighting systems
- Specific appliances and equipment
- Building renewable energy systems
- Energy systems commissioning and completion.



Chapter 9: Commissioning, Operations & Maintenance



- Pre-occupancy inspection and testing
- Operation and maintenance manual
- Building maintenance schedules
- Addresses many issues beyond energy
- Commissioning (T903.1)
 - List of items for which commissioning is required or encouraged
 - Distinguishes between pre-occupancy and post-occupancy commissioning



Chapter 10: Existing Buildings



- Alterations/renovations:
 - Loosely based on IBC Ch 34.
 - Whatever is changed must meet current IgCC requirements.
 - Unaltered components can remain as they are
 - Requirements primarily related to energy & water
 - Capped at 10% of the total cost of alterations & other exceptions.
- Additions are treated much like new construction.
- Historic buildings exempted from many provisions
- Jurisdictions can choose to offer the evaluation of existing buildings for IgCC compliance.
- Chapter 11 covers similar info for building sites.



Jurisdictions where the IgCC is currently adopted include:

- Rhode Island
- Maryland
- Oregon
- Florida
- North Carolina
- Richland, WA
- Keene, NH
- Boynton Beach, FL
- Ft. Collins, Boulder County & Boulder Rural Fire Protection District, CO
- Kayenta Township, Phoenix & Scottsdale AZ
- Dallas, TX

