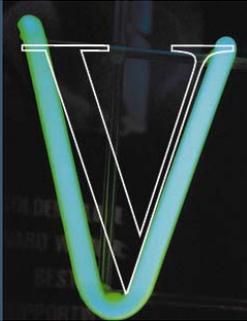


The International Green Construction Code[™] Could Transform the Development, Operation and Sale of Real Estate

Stakeholders should consider educating local officials as to the appropriate choices for their communities from among the extensive number of options the IGCC offers



AUTHOR

Leonard S. Goodman

Partner

Construction

202.344.4469

lsgoodman@Venable.com

INTRODUCTION

In March 2012, the International Code Council—America’s foremost building code writing body—is scheduled to release the International Green Construction Code™ (IGCC). If released in its current form, the IGCC will provide state and local governments, for the first time, with a “model code” to require new and existing commercial buildings to reduce their energy usage and carbon footprints and to minimize the adverse impacts that building construction and operations have on the environment. In April, 2011, Maryland became the first state to authorize adoption of the IGCC by local governments. More state and local governments can be expected to follow Maryland’s lead given the IGCC’s integration with the other ICC codes that state and local governments already trust and have in place and the ability of local officials to “customize” its provisions to a jurisdiction’s particular climate—both environmental and political.

This White Paper will introduce the IGCC and identify some of the provisions that, if adopted, will most significantly impact the ownership, development and operation of commercial real estate. At a minimum, interested stakeholders should keep close watch on the final form the IGCC takes and to what extent the particular jurisdictions in which they develop, own or operate commercial real estate are pursuing its adoption. Given its potential impact, stakeholders also may want to consider developing a strategy for educating the local officials that will be charged with tailoring the IGCC to their particular community’s environmental needs and objectives *before final decisions at the local level are made*. Unless the most appropriate choices are made from among the many the IGCC requires local governments to make, stakeholders risk the adoption of code provisions that increase a project’s cost and complexity without necessarily improving its sustainability.

SUMMARY OF IGCC'S CONTENT

The current draft of the IGCC, Public Version 2.0, issued in November, 2010 [available at <http://www.iccsafe.org/cs/IGCC/Pages/IGCCDownloadV2.aspx>], is organized into twelve chapters and four appendices addressing thirty-seven specific areas of sustainability.¹ The IGCC applies to

¹ A wide range of well respected organizations participated in developing the IGCC, including the American Institute of Architects, ASTM International, the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the United States Green Building Council (USGBC).

all occupancy classifications—commercial, mixed-use and residential—and to the site on which a building is located. It does not apply, however, to “detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress” or to “equipment or systems that are used primarily for industrial or manufacturing processes.” In mixed occupancy buildings, “each portion of a building shall comply with the specific requirements of the [the IGCC] applicable to each specific occupancy.” The IGCC is not intended to be a stand-alone code, but rather is an overlay code that relies on the structure provided by the other ICC codes.

The IGCC is formatted not only to require the implementation of environmentally related best practices, but also to encourage other green practices that may not be appropriate for every project and, therefore, not suitable as mandatory requirements. It includes criteria for site development and land use, material resource conservation, energy efficiency and air quality, water resource conservation and efficiency, indoor environmental quality, and building operation and maintenance. The IGCC is designed to be adopted by local governments on a mandatory basis and to be administered by local building departments. Local administration avoids the oft-criticized approach taken by many jurisdictions which have required certain projects to obtain certification from independent, third party rating systems, such as the USGBC’s LEED® rating system, over which the local government exercises no control.

Chapter 3 is the core of the IGCC. It allows local jurisdictions to meet regional goals and priorities by determining whether certain provisions are to be enforced in the jurisdiction and the minimum level of environmental performance that will be required. These options include whether to require 50%, 65% or 75% of waste material to be diverted from landfills or a 30% or 40% reduction in potable water consumption in relation to referenced fixture flow rates included in code. Other choices include whether to establish annual carbon dioxide (CO₂) emissions limits, post-certificate of occupancy energy performance, energy demand and CO₂ reporting requirements, as well as greenhouse gas reduction targets for existing buildings.²

Chapter 3 also requires local jurisdictions to indicate the minimum number of project electives (up to a maximum of 14) that must be satisfied in order to comply with the code. In many respects, electives represent increased levels of efficiency, performance and resource conservation over the minimum requirements established in the mandatory sections of IGCC. For example, Section 505 requires a building service life plan to be included in the construction documents demonstrating a design service life of not less than 60 years for the building. Project electives would be earned by increasing the building design service life to 100 or 200 years. Once selected by a building permittee,

² A threshold determination to be made by each jurisdiction is whether to establish ASHRAE Standard 189.1 as an alternative compliance path. Like the LEED® rating system for Green Building Design and Construction, Standard 189.1 covers such key topic areas as: site sustainability, water use efficiency, energy efficiency, indoor environmental quality and the building’s impact on the atmosphere, materials and resources. If Standard 189.1 is adopted only the administrative provisions of Chapter 1 of the IGCC—dealing with things such as the duties and powers of the code official, permitting, appeals and fees—will apply.

these electives become mandatory requirements. Project electives enable each jurisdiction to more closely align the IGCC with their specific environmental goals and to foster the construction of buildings which may far exceed minimum requirements.

Chapter 6 of the IGCC regulates the design, construction and operation of buildings, including existing building additions and alterations, for the efficient use of energy. It establishes a minimum Zero Energy Performance Index or zEPI for all building types. The zEPI is based upon the average energy performance of buildings in the benchmark year of 2000 with similar occupancy, operation, schedule and climate with 100 representing a building that uses the same amount of energy as the 2000 average and zero representing a zero net energy building. The zEPI calculation gives credit for, and thereby encourages, waste energy recovery (cogeneration) and the on-site generation of renewable energy. A jurisdiction can choose the zEPI default value of 46 or can require greater energy efficiency by specifying a lower value for any of the occupancies listed.

The IGCC provides four methods to demonstrate energy use compliance: prescriptive-based; performance-based; outcome-based; and energy use intensity. Buildings with an aggregate area of over 25,000 square feet, including existing building additions and alterations, however, are required to use either the performance-based or outcome-based compliance paths each of which include requirements for carbon dioxide emissions in addition to energy performance and peak energy demand. Buildings of less than 25,000 square feet that follow the prescriptive-based compliance path are deemed to have a zEPI of 51 and are not required to conform to the zEPI established by the jurisdiction.

Section 903 of IGCC includes extensive commissioning requirements to verify and document that each building and system is performing as designed, regardless of whether it is designed using the prescriptive-based or performance-based compliance path. IGCC commissioning requirements extend well beyond the energy realm and include requirements related to site, materials and water as well as the building's thermal envelope.

IGCC commissioning requirements do not end with the issuance of a certificate of occupancy. For example, the IGCC mandates post occupancy re-commissioning and repair of HVAC and lighting and electrical systems 18-24 months after a certificate of occupancy is issued. The IGCC also contains elective provisions for the annual calculation and reporting of zEPI, energy demand and CO₂ emissions. Such commissioning and reporting requirements and electives are intended to address another common critique of green building rating systems—that they rely too heavily upon designs, specifications and models and not upon actual performance.

Even more significantly, a jurisdiction can elect to require periodic reports confirming that a building is being maintained and operated at the level of performance required by the approved documents. Moreover, the IGCC provides municipalities with an option for inspecting and enforcing the IGCC after occupancy. If elected, Appendix D makes it “unlawful for an owner or owner's

designated agent to be in conflict with, or in violation of, any of the provisions of this code.” Adoption of Appendix D means that a violation notice could be issued no matter how far into the future a deviation from the IGCC may occur. A conflict or violation could occur if, for example, a building’s energy use increases as a result of an increase in the building’s hours of operation due to a change in tenants. Accordingly, stakeholders should take long term compliance costs into consideration—including due diligence, budgeting and profitability analyses—when making plans to develop, own, purchase or sell property.

Chapter 10 of the IGCC regulates the addition to, alteration, maintenance and operation of existing buildings. In this respect, the IGCC’s requirements are loosely based on the International Building Code: essentially, whatever is altered must be brought into conformance with the requirements of the current code as applicable to that component, assembly or system while whatever is added is treated much like new construction and must meet the applicable requirements of the IGCC.

The IGCC, however, goes further than the International Building Code framework. First, any existing building or building site that undergoes an addition or alteration, a change in occupancy (defined as a change in the purpose or level of activity within a building) or a sale must meet the basic minimum energy and HVAC requirements listed in Sections 1003.2.1., 1003.2.2 and 1003.2.3. These requirements include:

- Non-functioning thermostats must be repaired or replaced
- Leaking accessible air supply and return ducts must be sealed with approved sealants
- Outside air dampers, damper controls and linkages controlled by HVAC units must be in good repair and adjustment
- Hot water and steam leaks, defective steam traps and radiator control, relief, and vent valves are not permitted in any accessible piping
- Leaking accessible chilled water lines and equipment must be repaired or replaced
- There must be no leaks in any accessible hot and cold water pipes
- There must be no leaks in compressed air or pumped water systems

Compliance with these requirements, however, will be excused where the code official determines that they are technically infeasible, materials or systems are concealed, or where a tenant does not have control over complete systems.

Second, in connection with alterations (but not additions), Section 1003.3 of the IGCC goes even further. It requires that at least 10 percent of the cost of alterations be allocated toward the preparation of an energy audit report and completion of any combination of mechanical system improvements that are listed in Sections 1003.3.2 through 1003.3.9. Listed mechanical system improvements include:

- The installation of a metering device for at least one system or piece of equipment, as selected from a list of 11 types of equipment and systems
- Heating, ventilation and air conditioning systems and equipment must be in accordance with the following:
 - HVAC time clock and time switch controls required under certain conditions
 - Functional outside air economizers required on cooling systems over certain capacity thresholds
 - HVAC piping and ducts insulated to R-values in accordance with the IGCC
 - Furnace combustion units, boilers and chiller systems cleaned and tuned within one year prior to a change of occupancy
 - Chillers equipped with an outdoor air lockout thermostat and chilled water reset control
 - Phase out plan required for CFC refrigerants
 - Building automation system required under specific conditions
- Water heater and hot water storage tanks insulation upgraded to at least R-6
- Hot and cold water supply and distribution pipes insulated to R-values as specified in the IGCC
- Water heaters of thirty gallons capacity or greater equipped with a pressure temperature safety release valve
- In Seismic Design Categories D, E and F, water heater and water storage tanks with a tank capacity of thirty gallons or greater strapped or otherwise secured to a wall, floor, ceiling, or other object that itself is adequately secured to a wall, floor, or ceiling
- Water, gas and overflow pipes connected to water tanks must be secured similarly to above
- Gas water heaters provided with a flexible gas line entering the appliance
- Circulating pump systems for hot water supply purposes other than comfort heating under timeclock control.
- Showerhead, toilet, urinal and faucet flow rates in accordance with the IGCC, with consideration given for sanitary drainage requirements
- Lighting systems and equipment upgraded in accordance with Sections 505.2.2.1 and 505.2.4 of the IECC.
- Commercial refrigeration equipment cleaned and tuned for efficiency or equipped with doors, strip curtains or similar devices
- Motor-driven equipment filters cleaned or replaced and belts and other coupling systems verified to be in good repair
- Swing pools and spas: equipped with covers; recirculation pumps under timeclock control; and heaters cleaned and tuned
- Unconditioned attics insulated to the minimum R - value required by the IGCC

Section 1006.3 provides that the mechanical system improvements specified in Section 1003.3 also must be completed within one year of a sale. However, it is not clear whether Section 1006.3 also intended to include the same 10 percent maximum expenditure that Section 1003.3 applies to alterations. If so, the final version of the IGCC will need to specify what the maximum expenditure is and how it is calculated.

CONCLUSION

The IGCC has the potential to fundamentally change how buildings and building systems are designed, constructed, operated and maintained and, thereby, to reduce the extraordinary demands that buildings impose upon the environment. To be successful, state and local officials will need to carefully consider the many choices that the IGCC requires them to make in order to adopt a code that makes sense for their local conditions and building community. Real estate owners, developers and managers, and the design and construction communities, should closely monitor the IGCC as it heads towards the finish line in March, 2012, as well as their state and local government's plans for implementation of the IGCC. Given its potential impact, a proactive strategy for educating those local officials who will be charged with tailoring the IGCC to their particular community's environmental needs and objectives should be considered, developed and implemented before final decisions at the local level are made.

Venable office locations

BALTIMORE, MD

750 E. PRATT STREET
SUITE 900
BALTIMORE, MD 21201
t 410.244.7400
f 410.244.7742

LOS ANGELES, CA

2049 CENTURY PARK EAST
SUITE 2100
LOS ANGELES, CA 90067
t 310.229.9900
f 310.229.9901

NEW YORK, NY

ROCKEFELLER CENTER
1270 AVENUE OF THE
AMERICAS
25TH FLOOR
NEW YORK, NY 10020
t 212.307.5500
f 212.307.5598

ROCKVILLE, MD

ONE CHURCH STREET
FIFTH FLOOR
ROCKVILLE, MD 20850
t 301.217.5600
f 301.217.5617

TOWSON, MD

210 W. PENNSYLVANIA AVE.
SUITE 500
TOWSON, MD 21204
t 410.494.6200
f 410.821.0147

TYSONS CORNER, VA

8010 TOWERS CRESCENT DRIVE
SUITE 300
VIENNA, VA 22182
t 703.760.1600
f 703.821.8949

WASHINGTON, DC

575 7TH STREET NW
WASHINGTON, DC 20004
t 202.344.4000
f 202.344.8300