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April 29, 2013

Notice-MG-2013-01
Docket 2013-0002, Sequence 9

Office of Federal High Performance Green Buildings; Green Building Advisory Committee

COMMENTS OF:
THE INTERNATIONAL CODE COUNCIL (ICC)
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The International Code Council (ICC) offers the following comments in response to the Meeting Notice **MG-2013-01**, published on April 10, 2013.

Background

The International Code Council (ICC) is a membership association dedicated to building safety, fire prevention, and energy efficiency. The International Codes, or I-Codes, published by ICC, provide minimum safeguards for people at home, at school and in the workplace. Building codes benefit public safety and support the industry's need for one set of codes without regional limitations. The International Code Council also publishes the International Energy Conservation Code (IECC), which is referenced in the Energy Policy Act of 2005, the Energy Independence and Security Act (EISA) of 2007, and is a national requirement in section 410 of the American Recovery and Reinvestment Act of 2009.

Fifty states and the District of Columbia have adopted the I-Codes at the state or jurisdictional level. Federal agencies including the Architect of the Capitol, General Services Administration, National Park Service, Department of State, U.S. Forest Service and the Veterans Administration also enforce the I-Codes for the facilities that they own or manage. The Department of Defense references the International Building Code for constructing military facilities, including those that house U.S. troops, domestically and abroad. Puerto Rico, Guam and the U.S. Virgin Islands enforce one or more of the I-Codes.

The International Code Council (ICC) was established in 1994 as a non-profit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. The

founders of the ICC are Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). Since the early part of the last century, these non-profit organizations developed three sets of model codes used throughout the United States. Although regional code development had been effective and responsive to our country's needs, the time came for a single set of codes. The nation's three model code groups responded by creating the International Code Council (ICC) and developing codes without regional limitations; the International Codes.

ICC's members are the code officials who adopt and enforce building, fire and energy codes, and the architects, engineers, builders and contractors who build and maintain structures in the built environment. Nearly 50,000 code officials are active members of the ICC.

Summary

GSA has scheduled a meeting of its Green Building Advisory Committee for May 1, 2013, and seeks input on its posted agenda that includes consideration of the Green Building Certification System Review.

ICCbelieves that the Advisory Committee, in reviewing Green Building Certification Systems should also consider the role of the new International Green Construction Code (IgCC), incorporating ASHRAE 189.1 as a compliance path, that was published after the mandate was given to the Advisory Committee to review certification systems. ICC believes that Federal goals of energy and water savings, as well as other desirable green and sustainability attributes sought to be achieved through the selection of a green building certification system, can be augmented through the adoption of a green construction code, such as the IgCC, which was designed and developed to work in coordination with existing codes and current green building certification systems.

Proposed Rule

We appreciate the opportunity to comment and offer our suggestions to the GSA Green Building Advisory Committee.

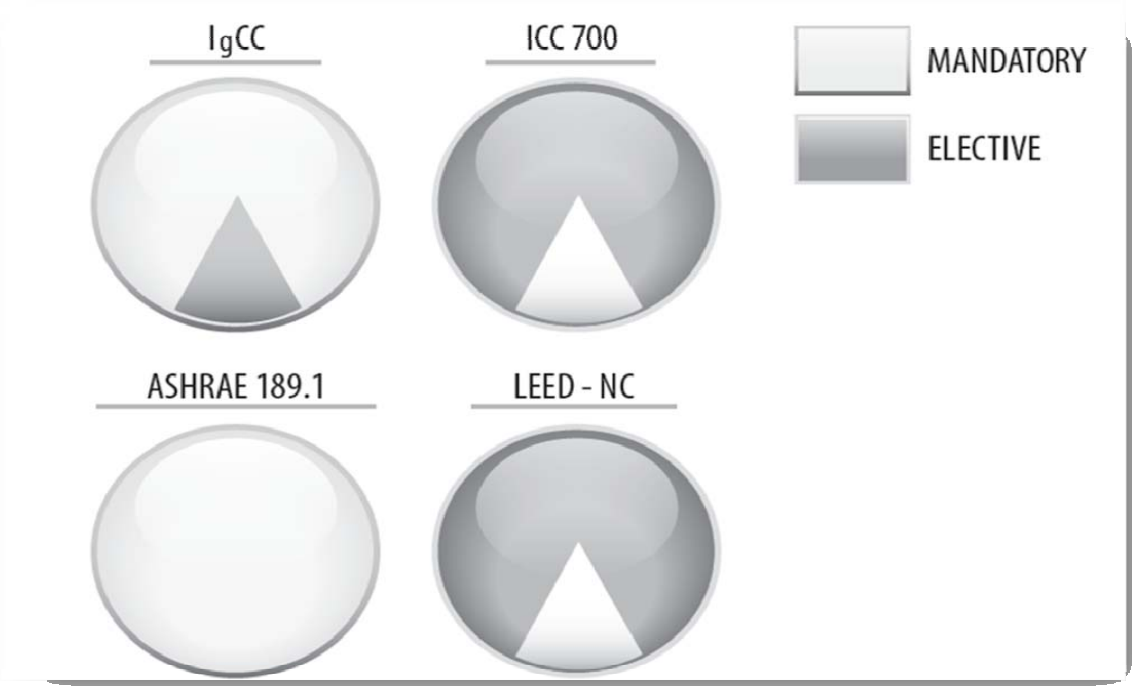
We start by acknowledging that GSA, and the Advisory Committee must operate within the constraints of the legislation and regulations that established the Advisory Committee. ICC publishes a green building *model code,* the International Green Construction Code (IgCC) that is distinctly different from, and yet related to, the various certification systems under review.

We note at the outset that there has been considerable discussion about the emergence of the ASHRAE 189.1 standard and the IgCC, since the passage of legislation and regulations that encouraged adoption of a green building certification system for Federal buildings.

ASHRAE 189.1 is actually incorporated into the International Green Construction Code as an option, a "compliance path," as a means to meet the requirements of the IgCC. This allows users to choose either the generally prescriptive requirements of the IgCC, or the performance calculations tht constitute most of the ASHRAE 189.1 requirements.

We think it may be useful to the Advisory Committee to see graphically how the IgCC compares to other approaches to green buildings, based on what portion of the provisions in each document are mandatory, and which are optional or elective.

The graphic below gives an indication of the relationship between IgCC, the ICC -700 National Green Building Standard (residential), ASHRAE 189.1, and the LEED certification system:



As the graphic indicates, both LEED and ICC-700 are largely elective provisions, which allow for maximum flexibility, but also limit the degree to which specific energy, water or other measurable savings can be predicted in buildings that meet their certifications.

ASHRAE 189.1, is entirely mandatory, which makes results more predictable, but eliminates the flexibility some believe necessary for the diversity of Federal buildings.
ICC believes, as do the many groups, including the American Institute of Architects (AIA) and ASTM International, who created and developed the provisions of the IgCC, that the IgCC is an ideal balance between mandatory requirements to assure that basic savings metrics of energy, water and other environmental benefits are achieved, and the flexibility needed for a diverse mix of building types, sizes and uses. It should be noted that the prescriptive provisions that make up the bulk of the IgCC requirements are much simpler to comply with than performance-type requirements, that often require calculations, and sometimes documentation to demonstrate compliance.

The reason for the balance achieved by the IgCC, and the reason it will continue to be balanced through its regular cycle of updates on ICC's regular three year revision cycle, is simple: because the IgCC is designed for mandatory application to commercial buildings, across the diversity of buildings that occur in every local jurisdiction in the United States. The code officials who administer and enforce building codes across that diverse base of buildings are the primary participants in ICC's code development process, and they hold the final vote at the Public Comment Hearing, to eliminate any possibility of undue influence from producers of specific products, systems or services who also participate in the process At the same time, the broad participation (that includes participants from GSA, FEMA, EPA, DOE and other Federal agencies) and completely transparent process used by ICC meets all requirements of OMB A-119, as well as the National Technology Transfer and Advancement Act that applies to standards used by Federal agencies.

Another advantage of the IgCC, that is evident from the timing of its introduction, is that the IgCC benefits from the years of "lessons learned" from the various certification systems, standards, and other

documents addressing green construction that pre-date the development of the IgCC. As an example, much of the content of California's new Title 24, which is widely viewed as a model for the requirements of a green building code, was utilized as the initial draft version of the IgCC. Many of those individuals and groups, who worked to create the LEED and Green Globes certification systems also contributed to the refinement of the provisions of the IgCC as it developed through a three year process of development, through two public versions, and its final 2012 IgCC code edition. Since most Federal agencies already use the International Building Code in the design and construction of Federal buildings, the fact that the IgCC is fully coordinated with the base ICC codes is also an advantage. In simple terms, since the IgCC is already coordinated with the base codes, no additional correlation by designers and engineers needs to be done.

So we encourage the Green Building Advisory Committee to take a look at the IgCC, and examining if it might be used, as it is intended to be used, as a code describing certain minimum, measurable requirements of "green" that are consistent with requirements in all the leading green certification systems. Use of the IgCC in this fashion would insure a minimum level of green attributes, across the spectrum of requirements now described in the Federal "Guiding Principles" document, with the possibility of higher levels depending on which certification system each agency determines meets its particular needs most completely. One other significant advantage of the IgCC in these times of budgetary constraints, is that there is no additional cost to using the IgCC, other than the modest (less than $100) cost of the code book itself. There are no requirements for certifying specific elements, and any related consulting costs, as are found in some certification systems.

As an aide to GSA and the Committee, we have attached to these comments a cross-walk document, that describes where the IgCC intersects directly with the Guiding Principles, and where supplemental requirements would be required. It should be noted that the IgCC was designed to be complementary to the LEED certification system, such that many LEED pre-requisites are met in complying with IgCC, and many LEED credits will be earned by compliance with IgCC provisions.

2012 IgCC Comparison to Federal Guiding Principles for Sustainable New Construction and Major Renovations

Multiple Executive Orders, laws and regulations define Federal high performance and sustainable building requirements. These instruments seek to ensure that all new construction, major renovation, or repair and alteration of Federal buildings complies with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings, (Guiding Principles). This document demonstrates a process by which the **2012 International Green Construction Code (IgCC)** can be utilized to ensure compliance with these Guiding Principles. The use of the IgCC to provide compliance with the Guiding Principles provides numerous important benefits:

- Streamlined and less burdensome compliance, through established code enforcement mechanisms
- Complete support services, commentaries and training, available from ICC as well as from leading organizations such as AIA, Center for Environmental Innovation in Roofing, and others.
- Provisions that are coordinated to work in tandem with current building codes already required for Federal facilities: base building, plumbing, mechanical and energy codes (IBC, IPC, IMC, IECC)
- Improved safety and resilience from IgCC requirements to ensure that sustainable practices are implemented without compromising health and safety. Integration with code requirements that insure buildings are resilient to natural and man-made disasters.
- Incorporation of ICC- ANSI A117.1 Accessibility standard, that meets ADA requirements, and is recognized by DOJ through "safe harbor" determination.
- Robust customization electives, to ensure that requirements adapt to agency- specific, local conditions, and project considerations.
- Where jurisdictions have adopted the IgCC, Federal agencies can select building space that is built to the IgCC, and insure compliance with Federal Guiding Principles requirements for the 15% of "leased buildings" 2015 requirement.

This document establishes where IgCC provisions satisfy Federal Guideline requirements. It also notes specific additional measures, Supplementary Requirements (SR) which may be needed in addition to the minimum 2012 IgCC requirements to fully comply with the Federal Guidelines. The document is organized around the main topics of Federal Guidelines and notes which specific IgCC sections satisfy

them and where SRs must be used. Hyperlinks throughout the document provide links to additional resources.

I. Employ Integrated Design Principles

Subtopic	Description	IgCC Section	Equivalence
Integrated Design. Use a collaborative, integrated planning and design process that initiates and maintains an integrated project team in all stages of a project's planning and delivery.	The systems-based approach of the IgCC facilitates the integrated design and planning process required for federal facilities. IgCC provisions are organized around sustainability topics rather than trades, requiring involvement of all project stakeholders throughout to ensure compliance and integration between systems to achieve sustainability goals. The IgCC requires the development of several plans and assessments to promote planning and design processes, including: • Predesign site inventory and assessment (401.2) • Soil and water quality protection plan (405.1) • Vegetation and soil protection plan (405.2.1) • Building site waste management plan (406.1) • Construction material and waste management plan (503.1) • Commissioning plan (611.1.1) • Indoor air quality management plan (801.2) Flexible performance and prescriptive requirements for energy, water, material reuse and IEQ establish minimum thresholds for facility planning purposes, and electives set enhanced performance criteria for projects establishing higher goals. The IgCC establishes both performance metrics and methods for assessing compliance based on standardized methods and existing state and federal guidelines. The IgCC addresses all aspects of building	401.2, 405.1, 405.2.1, 406.1, 503.1, 611.1, 801.2	Equivalent when used with OMB's A-11, Section 7, Exhibit 300: Capital Asset Plan and Business Case Summary.

	service lives ranging from the planning stages as described above, commissioning, operation, renovation and decommissioning/deconstruction. It also performs a similar function for existing structures subject to sustainable retrofits and upgrades. It does so using a variety of provisions including pre-development site inventories, commissioning guidelines, operations and maintenance plan development, service life plans, specific provisions for historical structures, and design for deconstruction and building reuse. For projects utilizing Life Cycle Assessment (LCA), measures are provided for integrating LCA using industry standard procedures and protocols.		
Commissioning. Employ commissioning practices tailored to the size and complexity of the building and its system components in order to verify performance of building components and systems and help ensure that design requirements are met.	The IgCC contains a robust set of requirements addressing commission of systems, subsystems, and the structure as a whole. These provisions are intended to ensure that the constructed facility performs in accordance with design parameters and goals. This information is contained within Chapter 9: Commissioning, Operation and Maintenance. It is further bolstered by ICC's new support document entitled *ICC G4-2012 Guideline for Commissioning*, which provides comprehensive facility commissioning criteria.		Equivalent with SR1.

II. Optimize Energy Performance

Subtopic	Description	IgCC Section	Equivalence
Energy Efficiency. Establish a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the ENERGY STAR®	The IgCC provides multiple pathways (performance and prescriptive as determined in 601.3) to demonstrate compliance with the IgCC in Section 602. • Zero Energy Performance Index	601.3, 602, 608.6, Chapter 6	Equivalent.

targets for new construction and major renovation where applicable.	• Base Annual Energy Use Index (utilizes ASHRAE 90.1 Appendix G) • 2012 IECC compliance (which provides a compliance path through ASHRAE 90.1-2010) Provisions to control plug loads are addressed in Section 608.6 for a wide range of equipment and systems.		
Energy Efficiency. Design to earn the ENERGY STAR® targets for new construction and major renovation where applicable.	ENERGY STAR targets are not included in IgCC, but no ENERGY STAR requirements conflict with provisions of IgCC.	NONE	TBD
Energy Efficiency. For new construction, reduce the energy use by 30 percent compared to the baseline building performance rating per the ASHRAE Standard 90.1-2007. For major renovations, reduce the energy use by 20 percent below pre-renovations 2003 baseline.	Studies conducted by PNNL's Building Codes Energy Program have estimated savings of 20-25% for the 2012 IECC using the ASHRAE 90.1-2007 as a baseline. Likewise, ASHRAE 90.1-2010 was found to provide savings of 15-20% over ASHRAE 90.1-2007. Given that: 1. The 2012 IECC provides a prescriptive compliance path for the 2012 IgCC, and 2. That additional requirements are stipulated in the IgCC above and beyond the 2012 IECC, 3. And that even more options are available to improve performance in the IgCC through the use of electives; The 2012 IgCC can be shown to provide a framework for achieving 30% energy savings (including plug loads) at the site level over the ASHRAE 90.1-2007 baseline.	Chapter 6	Equivalent. See SR2.

Energy Efficiency. Use of EnergyStar and FEMP Designated Products. Use ENERGY STAR® and FEMP-designated Energy Efficient Products, where available.	The IgCC references EnergyStar specifications for a wide range of systems and products, including heating and cooling equipment, service water heating equipment, clothes washers, ice makers, dishwashers and commercial food service equipment.	609.2.3, 702.6.1, 702.6.2, 702.6.4, A106.2.2.1-2, A106.2.5	Equivalent for EnergyStar Products. See SR 3.
Labs21 Laboratory Modeling Guidelines. Laboratory spaces may use the Labs21 Laboratory Modeling Guidelines and Benchmarking Tools.	NA	NONE	TBD
On-site Renewable Energy. Per the Energy Independence and Security Act (EISA 2007) Section 523, meet at least 30% of the hot water demand through the installation of solar hot water heaters, when lifecycle cost effective.	It requires not less than 10% of the buildings estimated hot water usage to be supplied by solar thermal systems (610.4) ICC is also beginning the development of two ANSI standards for solar thermal systems with the Solar Rating and Certification Corporation (SRCC)	610.4, SRCC Standard 100, 300, 600	Increase the 10% requirement in Section 610.4 to 30% to fully comply with Federal Guidelines (when deemed cost effective over the lifecycle).
On-site Renewable Energy. Per Executive Order 13423, implement renewable energy generation projects on agency property for agency use, when lifecycle cost effective.	Section 610 of the IgCC addresses a range of onsite renewable energy systems including photovoltaic, solar thermal, and wind.	610	Supports implementation of onsite renewable energy where deemed lifecycle cost effective.
Measurement and Verification. Per the Energy Policy Act of 2005 (EPAct 2005) Section 103, install building level electricity meters in new major construction and renovation projects to track and continuously optimize performance. Per EISA Section 434, include	The IgCC addresses energy metering, monitoring and reporting in Section 603, and requires that all forms of energy delivered, produced or reclaimed be metered. The same is true of water in Section 705.1. Equivalent meters for gaseous fuels, liquid fuels, solid fuels, hot water and steam, and renewable power are addressed in Section	603, 705.1, 603.3, 603.5, 603.6	Equivalent

equivalent meters for natural gas and steam, where natural gas and steam are used.	603.3. Meters and submeters are required report current and historical energy data on a publicly available display or website in 603.5 and 603.6.		
Benchmarking. Compare actual performance data from the first year of operation with the energy design target, preferably by using ENERGY STAR® Portfolio Manager for building and space types covered by ENERGY STAR®. Verify that the building performance meets or exceeds the design target, or that actual energy use is within 10% of the design energy budget for all other building types. For other building and space types, use an equivalent benchmarking tool such as the Labs21 benchmarking tool for laboratory buildings.	The IgCC requires that commissioning activities be repeated 18-24 months following occupancy 611.1.5.5. Additionally, Section 603.5 requires the use of a data acquisition system be used to communicate with meters and store not less than 36 months of data.	611.1.5.5, 603.5	Complementary when used with ENERGY STAR Portfolio Manager to verify actual energy use is within 10% of design case.

III. Protect and Conserve Water

Subtopic	Description	IgCC Section	Equivalence
Indoor Water. Employ strategies that in aggregate use a minimum of 20 percent less potable water than the indoor water use baseline calculated for the building, after meeting the EPAct 1992, IPC 2006 fixture performance requirements.	Performance provisions are found in IgCC PV2 stipulate a minimum 20% reduction in indoor water use, and provide calculation methodologies using the IPC as a baseline. The approach was changed in the 2012 IgCC to a prescriptive table by product.	IgCC PV2 Section 702.1, 2012 IgCC 702.1	Equivalent with SR4.
Indoor Water. The installation of water	The IgCC requires meters for each building and tenant space for all	705	Equivalent.

meters is encouraged to allow for the management of water use during occupancy.	water sources in Section 705. Additional submetering requirements are found in 705.1.1 for specific devices and systems.		
Indoor Water. The use of harvested rainwater, treated wastewater, and air conditioner condensate should also be considered and used where feasible for nonpotable use and potable use where allowed.	The IgCC comprehensively addresses a wide range of non-potable alternate water sources including rainwater, graywater, reclaimed water, foundation drain, condensate, backwash and more in Sections 706-709. Specific utilizations are address in Section A107 for hose bibs, toilet and urinal flushing, fire sprinklers, fire pumps, industrial processes, and cooling towers. The use of alternate water sources for irrigation and outdoor fountains is addressed in Section 404.	706-709, A107, 404	Equivalent.
Outdoor Water. Use water efficient landscape and irrigation strategies, such as water reuse, recycling, and the use of harvested rainwater, to reduce outdoor potable water consumption by a minimum of 50 percent over that consumed by conventional means (plant species and plant densities).	The IgCC calls for the reduction of potable water use in irrigation systems by 50% in 404.1.1. Smart controllers, hydrozoning, microirrigation, matched precipitation and slope are also addressed in 404.1.2. Specific provisions for the use of nonpotable in irrigation systems are provided in 707-709 and A107. 3.	404, 707-709, A107.3	Equivalent.
Outdoor Water. The installation of water meters for locations with significant outdoor water use is encouraged.	The IgCC requires the installation of submeters on all irrigation systems that are automatically controlled in Section 705. Pools, inground spas, and water features are also required to include submeters.	705	Equivalent.
Outdoor Water. Employ design and construction strategies that reduce storm water runoff and discharges of polluted water offsite.	The IgCC addresses stormwater management in Section 403. IgCC provisions for rainwater capture and reuse in Section 707coordinate and complement stormwater provisions for integrated systems.	403, 707	Equivalent.
Outdoor Water .	IgCC Section 403.1.1 provides for	403.1.1	Equivalent

Per Energy Independence and Security Act Section 438 (PDF), to the maximum extent technically feasible, maintain or restore the predevelopment hydrology of the site with regard to temperature, rate, volume, and duration of flow using site planning, design, construction, and maintenance strategies.	the maintenance or restoration of sites to predevelopment hydrology.		
Process Water. Per the EPAct 2005 Section 109, when potable water is used to improve a building's energy efficiency, deploy lifecycle cost effective water conservation measures.	Evaporative coolers, commercial kitchen appliances		
Water-Efficient Products. Specify EPA's WaterSense-labeled products or other water conserving products, where available. Choose irrigation contractors who are certified through a WaterSense labeled program.	IgCC requires the use of WaterSense certified products for water closets, showerheads, urinals, and lavatory faucets in Section 702.1.		Equivalent for Indoor Systems. See SR5 for Outdoor Irrigation.

IV. Enhance Indoor Environmental Quality

Subtopic	Description	IgCC Section	Equivalence
Thermal Comfort. Meet ASHRAE Standard 55-2004, including continuous humidity control within established ranges per climate zone.	IgCC Section 803.2 requires compliance with the design and documentation requirements of ASHRAE 55-2004.	803.2	Equivalent
Ventilation. Meet ASHRAE 62.1-2007.	IgCC does not require wholesale compliance with 62.1. Mention of 62.1 is made in Section 604.3 and in the IMC when determining system ventilation efficiency, but no requirement	NONE	Not Addressed. See SR6.

	for wholesale compliance with 62.1.		
Moisture Control. Establish and implement a moisture control strategy for controlling moisture flows and condensation to prevent building damage, minimize mold contamination, and reduce health risks related to moisture.	IgCC contains provisions for construction phase moisture control in 502.1.2 and building envelope moisture control in 507. These measures are also addressed in commissioning requirements with accompanying field inspection requirements.	502.1.2, 507, Table 903.1	Equivalent
Daylighting. Achieve a minimum daylight factor of 2 percent in 75 percent of all space occupied for critical visual tasks. Provide automatic dimming controls or accessible manual lighting controls, and appropriate glare control.	Daylighting measures are contained in Section 808 of the IgCC and are coordinated with energy efficiency provisions addressing daylight controls in Sections 608.1 and 608.5. Preconstruction documentation of daylighting is required in 611.3.1 and is addressed for commissioning in 611.3. Section 808.3 requires that not less than 25% of net floor area of commercial buildings be daylit. Numerous prescriptive requirements are addressed in 808.3 for toplighting, side lighting, morning/afternoon illumination, etc. A daylight analysis is also required per Section 808.3.2.3, where reflectance and glare are to be addressed.	808, 608.1, 608.5, 611.3	Equivalent
Low-Emitting Materials. Specify materials and products with low pollutant emissions, including composite wood products, adhesives, sealants, interior paints and finishes, carpet	IgCC comprehensively addresses material emissions in Section 806. Materials addressed include carpet (and many other types of flooring), adhesives, wood products, solvents, sealers, insulation, paints and coatings and ceiling tiles.	806	Equivalent

systems, and furnishings.			
Protect Indoor Air Quality During Construction. Follow the recommended approach of the Sheet Metal and Air Conditioning Contractor's National Association (SMACNA) Indoor Air Quality Guidelines for Occupied Buildings under Construction, 2007.	IgCC requires temporary ventilation during construction in accordance with Section 803.1, addressing duct opening protection, ventilation and return air filters. The SMACNA Indoor Air Quality Guidelines for Occupied Buildings Under Construction is not referenced, as it is not a consensus standard.	803.1	TBD
After construction and prior to occupancy, conduct a minimum 72-hour flush-out with maximum outdoor air consistent with achieving relative humidity no greater than 60 percent. After occupancy, continue flush-out as necessary to minimize exposure to contaminants from new building materials.	The IgCC requires a 14 day (336 hour) flush-out post-construction (half prior to occupancy) OR baseline indoor air quality testing per the criteria and standard methodologies in Section 804.2. Relative humidity not mentioned in IgCC requirements.	804.2	Equivalent where prescriptive flushout utilized per Section 804.2

V. Reduce Environmental Impact of Materials

Subtopic	Description	IgCC Section	Equivalence
Recycled Content.	IgCC Section 505.2. requires	505.2.2	Use of EPA

Per Section 6002 of the Resource Conservation and Recovery Act (RCRA) (PDF), for EPA-designated products, specify products meeting or exceeding EPA's recycled content recommendations. For other products, specify materials with recycled content when practicable. If EPA-designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building.	that not less than 55% of the total building materials used (mass, volume or cost) be used, recycled, recyclable, biobased and/or indigenous, as established.		designated materials exceeding 50% total recovered materials content or exceeding 25% total recovered materials AND 30% recyclability counts Toward IgCC 505.2 Compliance. See SR7.
Biobased Content. Per Section 9002 of the Farm Security and Rural Investment Act (FSRIA), for USDA-designated products, specify products with the highest content level per USDA's biobased content recommendations. For other products, specify biobased products made from rapidly renewable resources and certified sustainable wood products. If these designated products meet performance requirements and are available at a reasonable cost, a preference for purchasing them shall be included in all solicitations relevant to construction, operation, maintenance of or use in the building. USDA's biobased product designations and biobased content recommendations are available on USDA's BioPreferred website	IgCC Section 505.2. requires that not less than 55% of the total building materials used (mass, volume or cost) be used, recycled, recyclable, biobased and/or indigenous, as established. Per Section 505.2.4, biobased materials complying with FSRIA (USDA 7CFR Part 2902) meet the requirements of the IgCC.	505.2, 505.2.4	Use of USDA Bio-Preferred Materials Counts Toward IgCC 505.2 Compliance. See SR7.
Environmentally Preferable	IgCC Section 505.2. requires		Use of

Product. Use products that have a lesser or reduced effect on human health and the environment over their lifecycle when compared with competing products or services that serve the same purpose. A number of standards and ecolabels are available in the marketplace to assist specifiers in making environmentally preferable decisions.	that not less than 55% of the total building materials used (mass, volume or cost) be used, recycled, recyclable, biobased and/or indigenous, as established.		Environmentally Preferable Products may count toward IgCC 505.2, but must be evaluated individually. See SR7.
Waste and Materials Management. Incorporate adequate space, equipment, and transport accommodations for recycling in the building design.	IgCC Section 504 requires areas be designed and constructed to facilitate the recycling of waste generated following occupancy.	504	Equivalent.
Waste and Materials Management. During a project's planning stage, identify local recycling and salvage operations that could process site-related construction and demolition materials. During construction, recycle or salvage at least 50 percent of the non-hazardous construction, demolition and land clearing materials, excluding soil, where markets or onsite recycling opportunities exist.	IgCC Section 503 requires the development of a construction material and waste management plan. 503.1 requires at least 50 percent of nonhazardous construction waste to be diverted from disposal. Also includes exclusion for soils and land clearing debris.	503	Equivalent.
Ozone Depleting Compounds. Eliminate the use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account lifecycle impacts.	The IgCC does not specifically address ozone depleting compounds, but does provide for whole-building life-cycle assessment in Section 303 as an alternative to the material selection provisons in Section 505. The LCA provisions include an Ozone Depletion Potential Impact Measure.	303	Not specifically addressed in IgCC. See SR8.

Supplementary Requirements (SR)

1. In addition to IgCC requirements relating to commissioning, the following measures are required to comply with the Federal Guidelines fully:

- Utilize an experienced commissioning provider,
- Include commissioning requirements in construction documents
- Develop a commissioning plan
- Produce a commissioning report.

2. Each building design and location is unique. The data provided in PNNL comparisons is based on modeling of 16 specific building types in various climatic cases for direct comparison purposes. Therefore it is necessary that the design of each building must be modeled in order to select the necessary combination of compliance paths and electives necessary to achieve energy efficiency goals.
3. In addition to IgCC requirements to utilize Energy Star products, FEMP Designated Energy Efficiency Products should be used wherever available at reasonable cost and where they provide the necessary function to fully comply with Federal Guidelines.
4. In order to fully comply with the Federal Guidelines, comply with the 2012 IgCC, Section 702.1 and verify performance using IgCC PV2 702.1 calculation methods. IgCC PV2 702.1 requires 20% reduction in indoor use which is consistent with the 20% threshold required in the Federal Guidelines.
5. The IgCC requires the use of "smart" irrigation control systems in Section 404.1.2(3), but it does not require the use of WaterSmart certified irrigation controllers. Utilize WaterSmart labeled irrigation controllers and choose irrigation contractors who are certified through a WaterSense labeled program in addition to IgCC requirements in order to fully comply with Federal Guidelines.
6. Comply with ASHRAE 62.1-2007, Ventilation for Acceptable Indoor Air Quality.
7. Give preference to USDA Biobased Material, EPA CPG Recycled and Recyclable Material and Environmentally Preferrable Materials where designated products meet performance requirements and are available at a reasonable cost. Check compliance of recycled content and recyclable recovery rate with IgCC requirements in 505.2.2 and 505.2.3. Confirm aggregate biobased, recycled content, recyclable content and indigenous materials meet requirements in 505.2.
8. Review material specifications to ensure ozone depleting compounds are excluded where alternative environmentally preferable products are available. Per the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, these compounds include halons, chlorofluorocarbons, carbon tetrachloride, hydrobromofluorocarbons, methyl chloroform, chlorobromomethane, methyl bromide, and hydrochloroflourocarbons. Specific listing of Class I and Class II compounds under the Title IV of the Clean Air Act available.