GREEN BUILDING
POLICY CASE STUDIES

WASHINGTON, DC
BUILDING A GREEN CODE

In 2006, the District became the first major city in the nation to establish LEED certification requirements for both public and private buildings.

The Thomas P. O'Neill, Jr. Federal Building in Southwest DC earned LEED Platinum certification in 2014.

With the passage of the landmark **Green Building Act** of 2006 – which required LEED certification at the Silver level or higher (and LEED Gold for Schools) for all new and major renovations of public and publicly financed nonresidential buildings and, starting in 2012, LEED certification for private nonresidential buildings of at least 50,000 sf – the District of Columbia made an unprecedented commitment to a sustainable built environment.[1, 2]

The Green Building Act has prompted an impressive growth of green buildings in the District. Today, the District is home to more than 100 million square feet of LEED-certified real estate, which translates to 178 square feet of LEED-certified space per person—more than any other city or state per capita.[3] As of January 2015, these 100+ million square feet are spread across 550 LEED-certified projects (not including LEED for Neighborhood Development and LEED for Homes projects).[4]

However, the scope of the Act is limited to buildings of a certain size. Realizing that building codes are a jurisdiction's primary opportunity to tailor specific requirements for better, greener building practices in all buildings, the District began looking into code measures that could complement the goals and scope of existing policy.

In 2012, the District began the development of a green building code that would expand on the success of the Green Building Act, further the District's progress towards goals on energy efficiency and sustainability, complement existing leadership initiatives including Sustainable DC (see sidebar: "Sustainable DC"), and significantly contribute to a greener, stronger and more prosperous community.

Now established, the green building code substantially extends the scope of green building requirements in the District to all commercial construction projects 10,000 square feet and larger and all residential

Sustainable DC

Green building has a crucial role to play in the District of Columbia's plan to become the healthiest, greenest and most livable city in the nation.

The Sustainable DC Initiative began by engaging members of the community in 2011. In 2013, the Mayor released the full Sustainable DC Plan, which includes goals such as a 50% reduction in greenhouse gas emissions and energy consumption city-wide, a target for reusing 20% of construction and demolition waste and the construction of net-zero energy buildings.

Learn more at **www.sustainabledc.org**

1 The Green Building Act commits DC public schools to LEED Gold (updated from LEED Silver in 2012), and affordable housing to Enterprise Green Communities or LEED Silver certification. For more on green building in the District, visit the District Department of the Environment's web site.
2 In 2008, the District followed the Green Building Act with the Clean and Affordable Energy Act (CAEA) and became the first city to require that both public and private buildings use ENERGY STAR for energy and water benchmarking. The CAEA also created the DC Sustainable Energy Utility to help finance energy/water efficiency and renewable energy projects.
3 Announcement from the Executive Office of the Mayor on 9/11/2014.
4 In 2014 alone, the District added almost 18 million square feet of LEED-certified real estate (see release). The District also leads other large U.S. cities in the uptake of ENERGY STAR – both in certified buildings per person and certified square feet per person.

projects that are both 10,000 square feet and larger and 4 stories and higher.[5] The code is administered by the Department of Consumer and Regulatory Affairs (DCRA).

From IgCC: The DC Green Code

On March 28, 2014, the District of Columbia adopted the 2013 DC Green Construction Code.

The **DC Green Construction Code** (12 DCMR K) extends the building practices legislated by the Green Building Act and other policies and applies to the scope of work for all construction projects greater than 10,000 square feet.[6]

The initial drafts of the code amendments were issued in December 2012. Following three public comment periods, the codes were submitted to the Mayor and City Council for consideration. The code was adopted in March 2014.

With this new code, the District became the first city to adopt all major chapters and Appendix A of the International Green Construction Code (IgCC) to be enforced alongside other minimum construction requirements.[7]

To account for the District's own priorities, policies and context, the code also incorporates more than 100 local amendments. The final product, which is carefully integrated with other laws and regulations (including the current energy code, based on the 2012 IECC), is arguably the nation's greenest building code.

"As demonstrated with our early adoption of the International Green Construction Code, the District is committed to progressive green building policy. The DC Green Construction Code is a critical addition to our goal of creating a more sustainable and resilient city."

— **Tommy Wells**, *Director*
District Department of the Environment

Picking the Right Tool for the Job

A New Framework to Advance Green Codes

The 2012 launch of the International Green Construction Code (IgCC) and Standard 189.1 was a major development for the construction industry. Since that time, very few communities have adopted it, due – at least in part – to inefficiencies, redundancies, and missed opportunities to deliver the very best and most coherently coordinated set of green building tools and instruments. DC's important and skillful work to adopt the DC Green Construction Code highlighted the need for an even better framework.

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5 To easily determine which green construction requirements may apply, DCRA has developed a Green Building Roadmap. Single family homes, townhouses and multifamily residential buildings three stories or fewer are exempted from the green code.
6 Except single family homes, townhouses and multifamily residential three stories or fewer.
7 The District's new code is built on the 2012 IgCC, developed by the International Code Council (ICC) and its partners, and includes ASHRAE Standard 189.1. The IgCC is the first model code to include sustainability measures for the entire construction project and its site. The IgCC is an overlay to the International Codes, a set of comprehensive, coordinated building safety and fire prevention codes that serve as the basis for energy and construction codes for thousands of jurisdictions across the U.S., including the District. Read more at ICCsafe.org and ASHRAE.org.

Adoption & Implementation

In general, green building codes remain a new frontier for green building policy. By pursuing green code development in an engaged, purposeful and strategic way, the District of Columbia provides an example from which other municipalities can learn.

Extensive Stakeholder Engagement

The process of carefully adapting the IgCC to the needs of the District began in March of 2012 and was led by DCRA's **Construction Codes Coordinating Board** (CCCB).[8] To ensure technical rigor and to engage stakeholders from a diversity of fields, the CCCB relied heavily on the input of the **Green Technical Advisory Group** (Green TAG).[9]

Public Green TAG meetings provided an opportunity for additional experts to join the conversation and allow any stakeholder who was not among the voting members to voice ideas, insights and concerns. Many non-voting participants joined Green TAG members in donating tens, and even hundreds of hours to the process. Altogether, more than 100 individuals from nearly every local industry and public interest perspective contributed to the Green TAG's work.[10]

The early inclusion of the private sector was an important factor in garnering support and in keeping on schedule. This broad and meaningful involvement of diverse stakeholders allowed the Green TAG to proactively address issues that may have otherwise slowed or obstructed progress on the code.

"I am proud to have participated in the process of adopting DC's first green code. The collaboration of the diverse group of stakeholders on the Green TAG helped advance the sustainability of DC real estate."

— **Patrick Kunze**, *PE, LEED AP*
Senior Principal, GHT Limited
Member, CCCB Green TAG

8 The CCCB is housed in the DC Department of Consumer and Regulatory Affairs (DCRA), and its membership includes District staff and local industry experts. The CCCB is charged with presenting proposed code amendments to the mayor and council.
9 The members of the Green TAG were chosen through an application process which produced 9 voting members, representing perspectives in architecture, engineering, real estate, development, contracting and trade groups. The TAG was responsible for vetting code provisions and democratically determining whether or not each provision would be passed along to the CCCB for approval.
10 The initial Green TAG review of the code spanned 6 months and involved 3-hour weekly meetings plus up to 5 hours of additional research and analysis per week.

Picking the Right Tool for the Job

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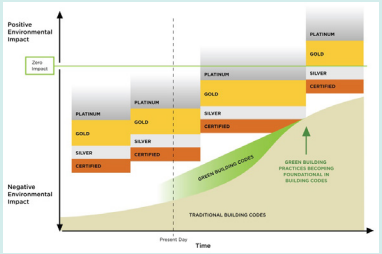
In a **landmark agreement** announced in August of 2014, the authors and partners behind the IgCC, Standard 189.1 and LEED committed to build a comprehensive, coordinated set of regulatory and leadership tools to guide green building development. The upgraded code will be aligned with LEED to ensure a streamlined, effective set of regulatory and above-code options for jurisdictions across the country.

The result will be a smarter, simpler, more streamlined and effective code to drive further sustainability efforts through beyond-code leadership with LEED. The District may consider this upgraded set of tools in a future code cycle.



Read more about this idea of integration in **"Greening the Codes."**

Comprehensive Review, Local Amendments

The Green TAG and the CCCB committed to ensuring that every provision of the new code was reasonable and appropriate for the District. They also aspired, to the greatest extent possible, to create a green code that was easy to navigate, use and understand.

From the outset, the Green TAG sought to quickly, effectively and comprehensively tackle all of the District's building codes concurrently rather than in a piecemeal fashion. Sections that overlapped with other initiatives or that were subject to the authority of another agency were stricken or amendments to other relevant codes were made to ensure maximal agreement among all of DC's Municipal Regulations.[11] This allowed TAG members to effectively allocate their time, prevented confusion about which government agency would be responsible for compliance and reduced dissonance between the new code and existing regulations.

In addition to this careful review of the code within the context of the District's existing policies and structures, the Green TAG also spent time and effort deliberating local amendments to ensure the code addressed the District's specific context, including environmental priorities and the local market's ability to adapt to the new regulations.[12]

> "DCRA takes enormous pride in our efforts to collaboratively develop and administer codes that now give the District of Columbia the distinction of having in place some of the greenest performance codes in the nation."
>
> — **Rabbiah "Robbie" Sabbakhan**
> *Chief Building Official, DCRA*

The Green TAG spent as much time as was needed to address potential conflicts with each provision, to build consensus among voting members and to make educated decisions. Time was not spent uniformly across all provisions, however. On a case-by-case basis, model

11 For example, greywater provisions are already addressed in the DC Plumbing Code. As a result, the Green TAG proposed striking these provisions from the DC Green Code and proposed corresponding amendments to the DC Plumbing Code (such as including measures to harvest rainwater) to ensure that code was also current with best green building practices. Similarly, bicycle racks are addressed in the Zoning Code, and DC's stormwater regulations are already very comprehensive.

12 Some of the research included reviewing applicable literature to value the benefits of specific code sections, researching best management practices and technologies and reviewing code books to determine local applicability. In areas where there was a deficit of expertise in a specific subject area, the Green TAG relied on input from non-voting members and other experts in the community.

Funds and Fees: Carrots and Sticks

Amidst a web of market factors and important policy initiatives, the DC Green Building Code may not have been possible without the pioneering precedent established by two implementation instruments.

Green Building Fund: Permit fees for all projects in the District contribute to a fund which is invested in new programs, improved services and better green building outcomes. The fund has helped hire new green building focused staff, invest in the building energy and water benchmarking program and establish an innovative grant program. [read more]

Performance Bond & Binding Pledge: The Green Building Act originally required a performance bond, letter of credit or cash payment up to $3M should a project fail to achieve LEED certification within two years of certificate of occupancy. In 2012, an additional compliance option was added through a binding pledge with up to a $10/ft^2 penalty for non-compliance. While these mechanisms have not earned money, they have been effective enforcement tools. [read more]

Read more about DC's green building policy initiatives on page 2.

code language was reviewed and revised, or even overhauled, before incorporating it into the code. Some provisions required minutes while others required weeks.

After deliberation, the TAG was able to present a code that they and, ultimately, the CCCB felt confident was technically sound and justifiable. In the end, most of the final votes were unanimous, which sent a powerful message to the Council and the construction industry.

The Green TAG's extensive research and work are as laudable as their outputs are unique. Communities looking to follow their lead will likely find great value in their process, but their ecological, economic and political contexts will likely yield different results.

Flexibility for a Sophisticated Market

In addition to the careful review of the model code, the Green TAG also sought to provide flexibility for the District's sophisticated and mature market.

Given the extensive local experience with LEED and Enterprise Green Communities, the Green TAG recommended – and the CCCB and DC Council approved – several compliance options to encourage beyond-code leadership. Projects may elect to achieve LEED or Enterprise Green Communities as an alternative compliance pathway to the code. The Green TAG also prepared amended versions of Standard 189.1 (mostly mirroring amendments to the IgCC) and of ICC-700 (notably, also requiring Energy Star v3) as additional compliance alternatives.[13]

By leveraging third-party review processes, these alternative compliance paths offer relief to project teams already pursuing and documenting beyond-code certification while also reducing the workload for enforcement officials. The District's approach begins to realize a new vision for the future relationship between code and beyond-code tools (see sidebar on **pages 3-4**: *Picking the Right Tool for the Job*).

"The local USGBC chapter is proud to be a resource to the community as we embark on this exciting transition towards a fully integrated green code for our city, and show the world that mainstream green is possible and profitable."

— **Fulya Kocak**, *LEED Fellow*
Director of Sustainable Solutions, Clark Construction Group
Immediate Past Chair, USGBC-NCR
Member, CCCB Green TAG

The Green TAG also recognized that the cost and aspirational nature of particular provisions could be exceptionally burdensome for stakeholders who may lack green building expertise and experience. Rather than missing an opportunity to signal the desirability of a certain technology or strategy, the Green TAG chose to move several code provisions to Appendix A.

13 See Chapter 1, Section 101.4.9.4.2 for more information on alternate compliance paths to the code. For DC's adaptation of Standard 189.1, see Chapter 3, Section 303.

Appendix A provides flexibility to the code by providing a list from which project teams select the code measures that make the most sense given their project's context. These options are presented as a single list that spans several categories – new construction buildings must choose 15 measures and "level 3 alterations"[14] must choose 13. By listing more electives in categories that best align with the District's priorities, the TAG sought to steer project teams towards measures associated with the issues most important to the city.

Ensuring Post-Adoption Success

Post-adoption, the District continues to demonstrate its long-term commitment to the success of the Green Construction Code. Importantly, the District's code authority, **DCRA** – with the help of the **District Department of the Environment** (DDOE) and the private sector – has assumed an important role in embracing and advancing green building in the community. Training has been an important part of the transition to green.

Monies from the Green Building Fund, established by the Green Building Act, continue to be used for training to help ensure a seamless transition now that the codes are finalized.[15] (see sidebar on **page 5**: *Funds and Fees: Carrots and Sticks*). Since 2012, DCRA, DDOE and private sector leaders, including the **USGBC National Capital Region Chapter (USGBC-NCR)**, have given more than 75 presentations on the DC Green Construction and Energy Conservation codes. These efforts have provided invaluable learning for code officials, inspectors, permit reviewers, third party plan reviewers and inspectors and the private sector design and development communities.

In addition to trainings, DCRA has also released several critical resources[16], including:

1. **A Green Building Program Manual** to aid in navigating the policy landscape in the District.
2. **Standard submittal templates** to ease the transition for project teams and code officials.
3. **The complete codes**, including both the model code sections and DC's amended language, in one document to improve the code's user friendliness.
4. **Sectional reference guides**, including an explanation of each code section and best practices for compliance (more sections forthcoming in 2015).

DCRA also offers one-on-one green building meetings to discuss project specifics with the project team. This service is important for those projects and firms that have yet to climb the green building learning ladder. Additional educational opportunities include DCRA's annual public and industry-focused **Green Building Symposium**.

Advertisement for DCRA's second annual green building symposium in September, 2013.

14 A level 3 alteration is where the work area (to reconfigure space, to add or eliminate doors or windows, to extend any system, or to install any equipment) exceeds 50% of the total building area.
15 The Green Building Fund, capitalized by a portion of green building permitting fees, is used to streamline administrative processes, build capacity for development and administrative oversight professionals, and otherwise promote early adoption of green building practices. It has already helped fund several full-time staff to oversee key implementation elements of the new code. Currently, the fund averages $1.5 million each year.
16 For more resources, see DCRA.dc.gov.

Final Thoughts

The District of Columbia's 2013 DC Green Construction Code builds on a long history of green building leadership that has spurred private investment, market supply and community benefits on virtually unparalleled scales. The code opens a new chapter for DC government and for the community, where green is now mainstream.

With a collaborative approach to consideration, development and adoption, and strong commitment to implementation, the District and its new green code are well poised for success. While every community's context and priorities will be different, DC's effort can serve as a model for others. As new regulatory tools emerge, jurisdictions that have taken the important steps to integrate green building into the way they do business will come out ahead in this generation's march towards truly sustainable communities.

Acknowledgements

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For more information contact USGBC-NCR (**usgbcncr.org**), DCRA (**dcra.dc.gov**), or DDOE (**ddoe.dc.gov**).