

Green Policies Build Green Homes





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ABOUT OYSTERTREE CONSULTING

Oystertree Consulting, an affordable housing and community development consulting practice based in New Orleans, LA. Oystertree provides policy research, education and training, and project advisory services to both public and private sector clients across the country.

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OVERVIEW



Since its inception in 1986, the Low-Income Housing Tax Credit (LIHTC) program has accounted for the majority of new affordable housing units built in the United States. Its financing structures have helped make the development of affordable housing profitable for private investors and developers while keeping rent economical for low-income tenants.

In 2004, Enterprise Community Partners introduced the Green Communities Criteria rating system in an effort to identify a set of green building metrics tailored specifically to the needs of affordable housing. The term “green building” much like the term “affordable housing” resists a single definition that is applicable across all contexts. Unique conditions exist from community to community including: differing local clients and needs; uneven access to professional expertise; urban, suburban, and rural settings; and a range of local climate and building science issues that impact construction and operations. One argument in favor of implementing green building measures is that “affordable housing” isn’t truly affordable if the construction costs are cheap but costs of operation are high. Contextually, green building is simply a new tool to help achieve and sustain the underlying mission of serving low-income families.

Given the verifiable benefits of green affordable housing for both resident families and their communities, Enterprise Green Communities sought to capture and quantify how deeply green building had penetrated the affordable housing sector. Green Communities chose to do so by analyzing the prevalence of green building rating programs within states’ Qualified Allocation Plans (QAPs), the documents that detail the selection criteria and application requirements for the competitive allocation process of housing tax credits, for the 2013 9 percent rate Low-Income Housing Tax credit (LIHTC) program. The LIHTC program was selected because its breadth – there are LIHTC projects in all fifty states and it accounts for almost 90 percent of the affordable housing built in the United States – provides a valuable snapshot of relative local priorities for affordable housing across the country.¹ To gather this information, Enterprise Green Communities hired a firm to conduct a web-based survey and follow up phone calls with multifamily housing staff at state housing finance agencies.

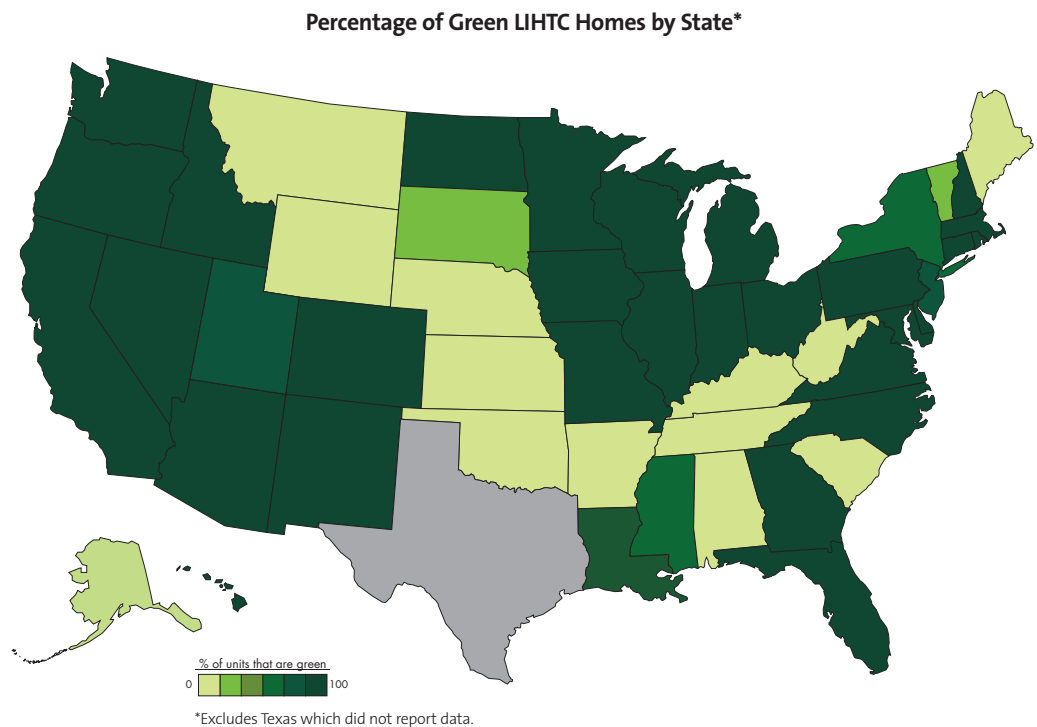
¹ http://www.nytimes.com/2012/12/21/opinion/a-tax-credit-worth-preserving.html?_r=0.

While prior surveys of state Qualified Allocation Plans (QAPs) over the years have shown an expanded use of green building rating systems those surveys have largely focused on the scoring process itself. This survey instead focused on assessing actual allocation – how many projects are receiving funding, at least in part, because those projects have an underlying green building commitment. The goals were to assess the penetration of green building across the housing industry, identify how frequently green affordable housing projects are built, examine how the LIHTC marketplace interprets and prioritizes green housing and to examine barriers to implementation as well as opportunities for expansion.

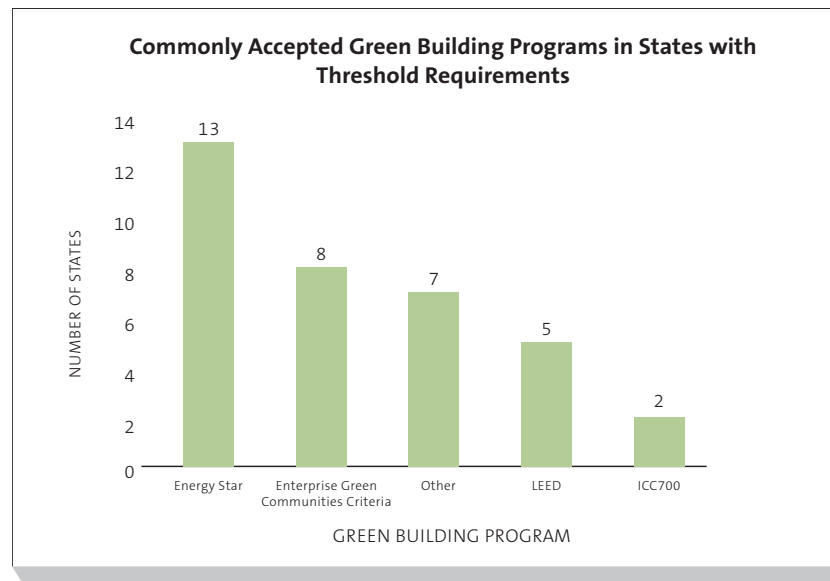
What the survey has uncovered is that green building is increasingly a part of the LIHTC program. Seventy-five percent of the units funded in 2013 met a green building rating system. Widespread adoption, however is not universal adoption. Ten states still lack a green building requirement for their funding allocations. Further, measurement and verification lags behind general adoption. While most states have some kind of mechanism in place to verify that projects are in compliance with the process – from mandatory inclusion of a design team with green building experience, or requiring certification of the process by an architect – building performance after construction or rehabilitation remains murky. Given that one of the persistent concerns about green building that the survey encountered has been linked either to concerns over inhabitability (such as requiring tight air sealing in the humid South potentially triggering mold) or that green buildings cost more, having verified post-build information can help assuage concerns, identify regional best practices, and improve performance. However, given that barely a decade ago green affordable housing was all but an oxymoron, the advances that the industry has made in a scant ten years is heartening.

SUMMARY OF RESULTS

Incorporating some degree of green building into the design of an affordable housing project has become an integral part of the LIHTC program. Utilizing either threshold requirements, incentive requirements or a combination of the two, over 75 percent of states utilized a green building program in awarding their 2013 funding.

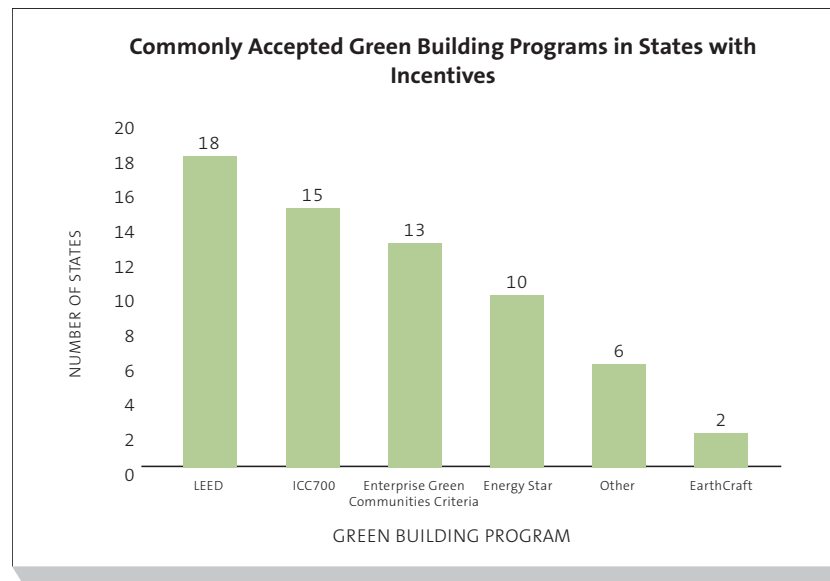


Threshold requirements necessitate that all developers applying to a given state's LIHTC program meet a specified green building standard. These threshold requirements act as a minimum barrier to entry – the LIHTC equivalent of the amusement park mandate that potential riders must be so-tall to ride. Eighteen states had threshold requirements. Enterprise Green Communities and the Energy Star for Homes programs were the most commonly accepted green building programs in threshold requirement states.



At least five state HFAs (Ariz., Ill., Mich., Pa. and Vt.) have developed their own internal green building programs, typically also used as a threshold requirement. Three states also used an existing local green building program as their threshold requirement, including Evergreen Sustainable Development (Wash.), Wisconsin Green Built Home (Wisc.), and EarthAdvantage (Ore.). Although a number of other states have an individualized menu of “green” or energy efficiency options included in their QAP, we were only interested here in comprehensive programs that approached green building as a process from design through construction and even operations. For example, Vermont’s Green Building and Design Standards require an integrated design charrette, and Pennsylvania’s Threshold Green Building Criteria include the development of an operations manual and resident orientation.

QAP requirements, in comparison, are not required but give developers additional points or benefits that may render them more competitive than developers who eschew green building mandates. Twenty-two states utilize green building incentives; 18 recognized multiple programs. LEED for Homes was the single-most common, with a majority of states also recognizing the National Green Building Standard and Green Communities.



Forty percent of states awarded additional points in the QAP for green building measures², resulting in a total of at least 42,732 units of green affordable housing funded in 2013. These actual green units represent approximately 75 percent of all LIHTC units funded in 2013.³ It's important to note, however, that states which use some form of green program – either threshold requirement or incentive – represent 86 percent of all LIHTC units, yet only 75 percent of LIHTC units were green. This is a 11 percent discrepancy that likely stems from states that exclusively use incentive structures as opposed to threshold, and threshold + incentive structures. Some developers in incentive only states may have found other ways of generating enough points to remain competitive in the allocation process without incorporating green building measures.

² Eight (8) states have a threshold requirement and also award additional incentive points.

³ The state of Texas requires LIHTC developers to commit to a certain number of points from a variety of options, including a number of green building programs; however, the developers do not have to indicate exactly how they intend to get those points until the projects are complete. As a result, although Texas does utilize green building programs, we have removed their 63 projects and 5,305 units funded in 2013 from the total project/unit calculations.



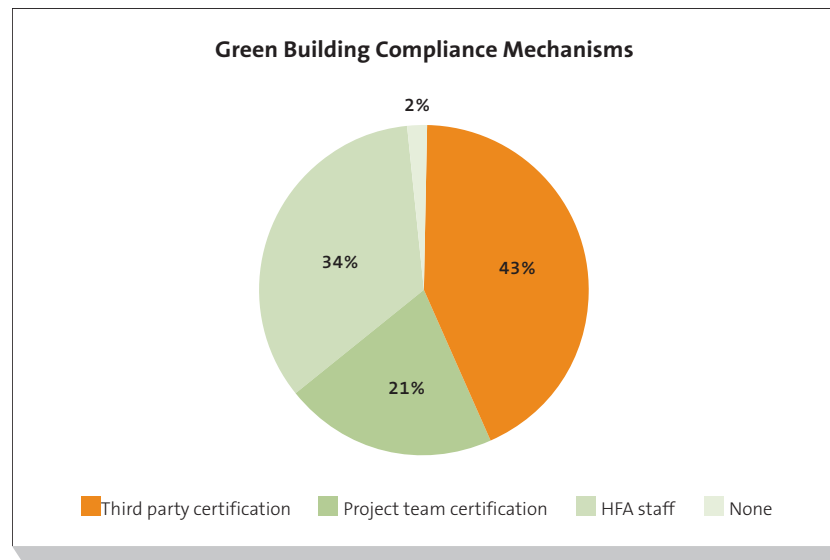
IMPLEMENTATION OF GREEN POLICIES

Although many affordable housing developers have significant expertise with green building programs, a great many don't. The design and construction processes are often different or require minor but important tweaks, especially where inspections and performance testing has to occur during construction. As such, a number of state housing agencies have developed processes that help to ensure the effective implementation and completion of green building programs even by developers who may be working on a green project for the first time.

The first part of this process is evident during the LIHTC application phase, when a number of states require more than just a vague commitment to achieve a certain standard. Of the 40 states that recognized a green building program in 2013, 14 (35 percent) required applicants to include a design team with relevant green building experience. An additional ten states (25 percent) required applicants to include a completed checklist from the relevant program, showing a measure of familiarity with the program requirements. Just seven states (18 percent) indicated that checking a box on the application was enough to receive credit on the application.

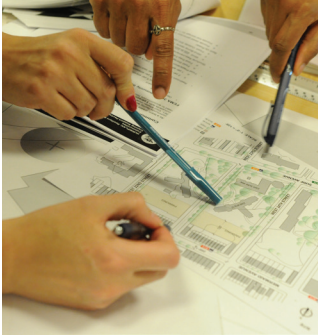
A handful of states in 2013 required a specific certification from the project architect, either generally acknowledging that the project was on track to achieve certification, or specifically certifying to particular points in the checklist. For example, Enterprise Green Communities works with developers in New York City to provide a form in their LIHTC application showing that the project is on track to complete NYC's required Green Communities certification. Similarly, the District of Columbia requires that developers complete an integrated design charrette and include documentation of the results in the LIHTC application materials.

The goal of all these efforts is to ensure that developers are successful in implementing required or elected green building programs. In 2013, 31 states (78 percent) required third party verification of completion, including 25 (63 percent) that required projects to submit an official third party certificate. This external requirement is important because the ultimate building performance often relies on proper installation and coordination among multiple trades on a fast moving construction site. At least 14 states (35 percent) provided additional on-site verification by HFA construction staff in conjunction with other construction supervision duties. This hands-on approach requires greater expertise and time from HFA staff, but can also ensure greater awareness of particular challenges and help ensure appropriate individual responses.



Typically, the biggest problems with compliance involve performance testing or inspections during construction that uncover building deficiencies. Florida Housing has developed a process to ensure project compliance at multiple stages. First, before construction the developer must have a green rater as part of the development team who certifies that the project is on track. Second, this green rater ensures that any thermal bypass checklist or testing is completed at the appropriate time during construction, if applicable. And finally, the developer provides Florida Housing with the appropriate certificates upon construction completion.

Should projects fail to meet required or elective green building certifications, states have a variety of ways to address this issue. Over half of states indicated that a developer with a project that failed to achieve the relevant green building standard would be penalized in future LIHTC applications. At least a quarter of states reported that complete loss of tax credits would be a possibility, and a number of states reported that an award might be revised or the project fined in some way. Clearly the goal is to avoid this kind of failure altogether, and at least two states expressed that there had been no problems with project compliance.



RESEARCH AND DATA COLLECTION

Ultimately, each state's QAP process and criteria are intended to further the overall mission to provide safe, decent and affordable housing. If green building measures don't save money over time – through improved health, increased durability, or reduced operating costs – then these measures need to be reconsidered and improved. Toward that end, state housing agencies are increasingly collecting performance data and conducting other research to evaluate and improve the impact of their green building and energy efficiency measures.

Based on our recent survey, 14 states indicated that they are conducting some level of green building-related research beyond simply tracking utility and operating costs as required by the LIHTC program. Those efforts range from hiring an energy consulting firm to perform a specific analysis of costs and benefits (Calif.), to internal monitoring and comparison of actual costs versus projected costs (La. and N.H.). A significant number of other states not currently conducting research indicated that they are in discussions to do so in the near future.

As an example of existing research, the Virginia Housing Development Authority (VHDA) recently published a report of energy use at four different LIHTC projects – two new construction and two existing – specifically to assess the value of third party green building certification. Comparing average energy costs per square foot to actual costs, residents in these EarthCraft Virginia-certified properties (EarthCraft Virginia is a region specific green building standard) saw annual savings of at least \$173 and a high of \$1,560, with a median savings of \$508 per unit. With 2,127 green units funded in 2013, this investment represents a potential savings to low-income Virginia residents of well over \$1 million each year.

One difficulty in conducting this research is to establish a reasonable baseline or benchmark with which to gauge improvements. In response, New Jersey's 2013 QAP included a 2-point incentive for projects that agreed to report project-level energy consumption, provide unit-level data with resident approval, and participate in a benchmarking program. 100 percent of New Jersey projects in that first year opted to participate. Similarly, a number of other states have started internal pilot benchmarking programs or reported plans to develop such a program in the future. This benchmarking effort parallels commercial benchmarking policies increasingly being implemented in cities and often even at a statewide level.



BARRIERS TO GREEN BUILDING IN LIHTC PROPERTIES

As the results of this survey indicate, the Low-Income Housing Tax Credit program is a significant driver of green affordable housing. 100 percent of LIHTC projects in 32 states, and 75 percent of all LIHTC projects nationwide, already achieve a green building standard. This success represents long-term value and potential health and utility savings to low-income residents around the country. However, there are projects in many places that face unique green building challenges, and there remain greater efficiencies that could be achieved even in those projects considered a success today.

The most obvious and most common barrier is cost. With a severe lack of safe, decent and affordable housing nationwide, higher up-front costs can pose a significant barrier even if there is greater payback over time. Seven states reported general cost concerns, and three largely rural states specifically referenced the cost of certification and/or inspection. According to an HFA in the West, “Our key barriers are typically the absence of qualified [professionals] in our sparsely populated rural location.”

Perception around cost was also a common theme. One HFA was concerned about the perception that a green affordable project might be “greener than the community’s market standard.” A more common concern was that the barriers to more green building are based on a perception of higher cost. Although Enterprise has addressed these concerns in the 2012 update of our report *[Incremental Cost, Measurable Savings](#)* – building green does not automatically necessitate increased incremental costs – the concern persists. “We have been advised that certain green building standards are expensive to meet, but do not have any direct evidence of that,” said an HFA in the Midwest. Similarly, an HFA in the northeast states that there are, “Objections by policy-makers to increased construction costs...which are perceived to be higher than they really are.”

A few states highlighted a distinction between existing and new construction. According to one HFA in the Mid-Atlantic, “many of our projects are preservation projects...which makes green building more expensive.” Improving existing buildings is surely the greatest opportunity for widespread energy and water savings, and preserving affordability in existing buildings is also a key focus for affordable housing advocates. But each building must be analyzed and certain key features may be impossible or very difficult to change, potentially leading to greater initial construction costs or reducing potential savings.

Finally, concerns about mold and ventilation standards were specifically expressed by four states, including three in the Southeast. As building envelopes get tighter, mechanical ventilation is often required to ensure fresh (and dry) air. This is an added challenge in design, construction and during operations – and it is an especially important concern in multifamily residential properties. Clearly energy efficiency performance cannot be achieved at the expense of occupant health or durability issues, and this is one reason that green building is best seen as an effort rather than a strict menu of prescribed options.



CONCLUSION



Green affordable housing is no longer a fringe concept. That a preponderance of states – some 75 percent – have a green building metric incorporated into their qualified allocation plans is a testament to the capacity and sophistication of affordable housing developers, and to the relevance of green building to the underlying mission of affordable housing. Further, there are even more LIHTC projects that are pursuing and achieving green building standards than have had to indicate such through the QAP process. And there are still others that are utilizing individual measures to reduce energy and water use, improve resident health and comfort, and increase durability and ease operating expenses.

One of the starkest conclusions from the survey is, quite simply, that green policies create green buildings. In the locations that did not utilize either threshold or incentive requirements as part of their qualified allocation process fewer green buildings were built. This is likely because of the perception barrier which persists that green buildings are costly to build. Enterprise Green Communities, however, has seen projects which when they utilize an integrative design process are not only cost equivalent when compared to traditionally built buildings, but rather have lower costs. Integrated design upends the conventional building design model. While the latter frequently operates as a series of hands-offs from owner, to architect, to builder, to occupant, integrative design is a collaborative method that brings key stakeholders to the table from the beginning. The building is not looked at as a series of parts (or stages), but as a system that allows systems to work together, instead of against each other, staving off design, build, or occupancy problems early in the process.

Enterprise remains concerned about the overall costs and future savings associated with these measures. That is why we have used our Green Communities program as a specific benchmark, working with individual developers and projects across the country to quantify and compare any added design and construction costs with utility and operating savings experienced as a result.⁴ We have also used this experience in updating our Green Communities requirements and process, first in 2008 and now with the 2015 Enterprise Green Communities Criteria. Our goal is to continually work with the industry to reduce costs and improve outcomes.

⁴ For a copy of our 2012 report, *Incremental Cost, Measurable Savings Update*, please visit <http://www.greencommunitiesonline.org>.

The affordable housing industry is leading in many ways, but the green building industry is itself developing rapidly. “Building to code” and “building green” are not two distinct options, but rather are part of a changing continuum. Increasingly, today’s building codes are yesterday’s green building incentives. These changes are happening across the country whether or not affordable housing and policy-makers keep up. However, with the widespread green building successes driven by the LIHTC program, state HFAs and individual affordable housing developers, it seems that the affordable housing industry is well-positioned for the future.



APPENDIX

SURVEY AND METHODOLOGY

These results are based on a web-based survey and phone calls to follow up with multifamily housing staff at state housing finance agencies from July 14 – August 28, 2014. We received a response rate of 94 percent and sent summary data based on our own research of publicly available information to those agencies that did not respond directly. Surveys were focused specifically on the 9 percent LIHTC allocations made by each state in 2013. Where a state was using a forward allocation or had otherwise reserved 2013 funds for future allocations, we accepted that state's own reporting about the total numbers of projects and units funded in 2013. This survey was an expansion of a more limited survey conducted in 2011 and focusing on the 2010 LIHTC allocations.

For the purposes of this survey we have focused on requirements or incentives that reference “green building programs.” These are comprehensive rating systems that at least incorporate energy efficiency, water efficiency, and indoor air quality, recognizing the interrelated issues affecting each. In our experience with the Green Communities program, an integrated process is critical to achieving the best outcomes. This experience also reflects the approach taken by the most widely used green building programs, and so is the focus of our survey here.

The survey specifically asked about the most common third party rating systems, including Energy Star for Homes, Green Communities, LEED for Homes, the NAHB National Green Building Standard (NGBS), and EarthCraft. The survey also allowed for other more local programs to be identified by individual HFAs. However, the survey treated all green building programs as roughly equivalent, meaning that we did not attempt to measure Green Communities projects versus Energy Star versus NGBS, for example.

Where a state might give projects credit for selected individual measures, not part of a holistic approach, these projects were not counted in this survey as meeting a green building program. This decision does not mean that those measures aren't important or that those projects aren't potentially excellent projects. It simply means that this nationwide survey emphasized those approaches that represent widely accepted best practices in an effort to measure those successes.

It is important to note also that many projects may have chosen to meet a recognized green building rating program regardless of the individual LIHTC allocation process used to fund the project. For example, MaineHousing does not reference a green building program in their allocation process, but the city of Portland, ME requires publicly-funded projects to be LEED Silver. Additionally, the first LEED certified project funded by the Wyoming HFA opened last year, even though the Wyoming QAP did not award the project additional points. Just as this survey doesn't count every single LIHTC green building measure, it also doesn't count every single certified LIHTC project. Our focus is specifically on the QAP process as a broad measure of adoption and green building practices within affordable housing nationwide.



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