

Building Green in the Black: More Than Just the Right Thing to Do?

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The authors discuss the key components of the "green market," including the definitions of a green building and the financial incentives for going green.

From the Academy Awards to the United Nations, the discussion of global warming has left behind its identity as a fringe movement, instead becoming an issue of major importance and consequence. Many Americans and others from around the world, perhaps spurred by the release of Al Gore's movie *An Inconvenient Truth*, have started a political push to solve the world's climate issues, which are now widely perceived as manmade. Beyond politics, many individuals and corporations have taken it upon themselves to affect change through green living in their homes and corporate workplace green policies. Even the United States Supreme Court has gone green, recently rendering a decision in *Commonwealth of Massachusetts v. EPA* that the Environmental Protection Agency must regulate greenhouse gas emissions.

It was inevitable that developers would eventually be impacted by the growing green consciousness – residential and commercial buildings consume more than 35% of the total energy and more than 65% of the electricity in the United States. As a result, in the last decade a movement toward developing green buildings has emerged and is now a major segment of the real estate development industry. The key components of the green market, such as the definition of a green building, the financial incentives for going green as well as the drawbacks are examined here.

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Defining a Green Building

"Green" or "sustainable" buildings are generally defined by key attributes that reduce the overall impact of their development and operation on the natural environment. Key attributes of green buildings include environmentally sensitive siting, efficient use of energy and water, better indoor air quality, better use of natural light and the use of materials and development techniques that reduce the overall energy and pollution impact of the development. Although a general definition offers some guidance as to what a green building entails, it does not create a bright line as to the proper mix of green attributes required to actually have a "green building." To solve the definitional problem, numerous green building rating systems exist.

The Rating Systems

Although many green building ratings systems exist internationally, the five green building rating systems widely viewed as the most comprehensive are:

- (1) Building Research Establishment's Environmental Assessment Method ("BREEAM");
- (2) Comprehensive Assessment Systems for Building Environmental Efficiency ("CASBEE");
- (3) GBTool;
- (4) Green Globes U.S., and
- (5) Leadership in Energy and Environmental Design ("LEED").

Of the five rating systems, LEED is the only one developed specifically for the U.S. market. BREEAM, CASBEE, and Green Globes U.S. were all adapted from existing systems from other countries—United Kingdom, Japan and Canada respectively. GBTools is an international system with limited exposure in the U.S. Of these rating systems, the development industry and governmental regulatory

agencies in the United States have overwhelmingly adopted LEED as the standard.

The United States Green Building Council ("USGBC") created the LEED rating system in 1998. The LEED system focuses on building operational and maintenance issues as well as project development and delivery methods. The system is organized into five environmental categories: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials and Resources, and Indoor Environmental Quality. An additional category, Innovation in Design Process, addresses building and design measures not addressed by the environmental categories.

Each category includes various points that are available for a developer to earn. The points included in each category vary depending on the product that is being rated. Currently, LEED offers, or will soon offer, the following rating system products: (1) New Construction (including, LEED for Multiple Buildings/Campuses, LEED for Schools (currently under development), LEED for Healthcare (currently under development), LEED for Retail (currently under development), and LEED for Laboratories (currently under development)), (2) Existing Buildings, (3) Commercial Interiors (with LEED for Retail currently under development), (4) Core and Shell, (5) LEED for Homes (currently under development), and (6) Neighborhood Development (currently under development).

By satisfying certain requirements, a developer earns points toward a building's final rating. The four rating levels are Certified, Silver, Gold and Platinum, with the former requiring the fewest points and the latter requiring the most points.

The actual LEED rating process begins with registration of a project on the USGBC website (www.usgbc.org). Once registered, a project team completes an online application. Under the New Construction rating system, the application is either completed entirely upon the end of construction or split into a design phase application submitted at the end of design and a construction phase application submitted at the end of construction. Both the online submission process and the two phase application process resulted from developer feedback on the shortcomings of earlier processes.

Following submission of the application(s), the USGBC formally rules on each attempted point as achieved or denied, with the project team having a limited opportunity to appeal. Following completion of the USGBC review and any applicable appeal, USGBC will recognize buildings that achieve one of the rating levels with a formal letter and a mountable plaque.

The Cost of Going Green

The actual economics of profitable real estate development have been the impetus for green development and the speed of its emergence among

certain users. The public sector (state, local and federal government and agencies) immediately saw the benefits of energy efficient buildings and were the first to adopt the green development principles established by groups like USGBC. Given the long hold periods associated with public buildings, savings realized by operating efficiencies over time justified the increased development costs associated with green development.

With shorter hold periods common in the private development, private developers have been slower to adopt green principles, proliferating the emergence of private and public (local, state and federal) incentive programs designed to encourage developers to build green by assisting with any economic burdens associated with green development.

The most pervasive argument against green buildings is that the economics simply do not work. There is an additional cost associated with developing a green building, which is often called the "green premium." Many developers believe that the green premium is not justified by the savings associated with a green building over a building's lifecycle.

Based on a study of thirty-three LEED certified buildings published in 2003 by Gregory H. Kats of Capital E Analysis, the green premium for the varying LEED certification levels over typical development costs were roughly as follows:

- (1) Certified = 0.66%;
- (2) Silver = 2.11%;
- (3) Gold = 1.82%; and
- (4) Platinum = 6.50%.

A study prepared by Northbridge Environmental Management Consultants in the same year estimated the cost of LEED certification at 4.5% – 11% over standard development costs. Both publications admitted to the difficulty of isolating LEED costs from standard costs in coming to their conclusions, but the Kats study supported its findings with costs associated with specific projects, where the Northbridge Environmental Management Consultants study was less clear on its methodology.

Increases in soft costs and hard costs are almost equally responsible for the green premium. Hard costs include, but are not limited to, the premium for green materials and the additional costs of maintaining a green construction site, which includes separating and recycling construction waste. The soft costs include the additional costs of design, commissioning, LEED documentation, and energy modeling. The documentation required by USGBC for LEED Certification has been viewed by project teams as one of the most significant cost and time burdens of the system. Although USGBC has attempted to lessen this burden by use of an online system, the documentation process is onerous for a first time project team.

No matter the current costs, it is widely accepted that the price of green is coming down. With the

proliferation of green buildings, the costs of green materials and the cost of design and construction have decreased. A niche market for developers only a few years ago, green building is now commonplace and competition will continue to drive down the green premium.

The Payback of Going Green

While the industry admits that there is currently a green premium on sustainable construction techniques and materials, the long term investment returns are starting to make green buildings more attractive to investors. For example, in the widely quoted thirty-three building study by Kats, it was shown that the average green premium for buildings in the sample set was less than 2%, or \$3-\$5 per square foot. The same study concluded that during the life of a green building, the cost savings are estimated as high as 20%, or \$50-\$65 per square foot, when worker health and efficiency are considered along with energy and other associated savings. Using these numbers, California's Task Force on Green Building determined that if it spent an additional \$100,000.00 to incorporate green building techniques and materials on a \$5 million state project, it would result in a \$1 million savings over the 20 year life of the structure. These savings are expected to increase dramatically by 2010 as green materials and design techniques become more readily available. As green design and materials become commonplace, the green premium will no longer apply.

Commercial Construction Sees the Gold in Green

Even with the current green premium, however, today's investors believe that green building can result in significant returns. The most apparent direct benefit associated with green building are the cost savings on energy, waste, and water during the building's life. Other direct monetary benefits include (1) tax savings and incentive programs, (2) insurance savings, (3) better financing opportunities, and (4) expedited construction permitting procedures in some localities. Green buildings also meet the legal needs of industries that must comply with environmental regulations, and stand ready to meet the needs of those industries that expect to be subjected to new federal regulations designed to address green concerns.

Many supporters of green building cite benefits that are less easily quantified. These include reports of increased worker productivity, increased worker health and wellbeing, reduced health care and insurance costs, and increased worker retention. To support these theories, green building enthusiasts argue that the increased natural light and clean air associated with green buildings make healthier work and living environments. Indeed, to support its intentions to "go green," California relied on a series of studies finding that students in classrooms with more natural light performed up to 20% better than students in classrooms with little natural lighting. According to a study of Herman-Miller employees that were moved into a green facility, adults are no different. The Herman-Miller

study found that worker productivity increased by up to 7% once workers moved to a green, daylight facility. In a separate study, Lawrence Berkeley National Laboratory concluded that American businesses could save as much as \$58 billion in lost sick time and \$200 billion in worker's performance if improvements were made to indoor air quality.

With the benefits associated with green buildings, many would argue that the developer and commercial landlord is in the best position to enjoy the fruits of green building. Sophisticated commercial tenants are beginning to actively seek green alternatives, and many are including green requirements in the lease. In response, developers are going green to satisfy the market. As a result, green developers are enjoying higher rental rates, higher occupancy rates, less overhead, and the prestige and good will associated with the green building trend, which is slowly redefining Class A office space. Owners of conventional buildings are increasingly concerned that the green trend will make their properties less desirable. In response, conventional building owners are examining the cost of green renovations and improvements to retain current tenants and attract new ones.

Residential Construction still Color Blind

Ironically, the green building trend has yet to take hold in the residential market. Residential developers have yet to embrace the green move as enthusiastically as commercial developers. Indeed, according to recent reports from the Washington Post, there is only one residential development with LEED certification in Virginia—and some states, including Maryland, have none. While some prospective residential tenants or condominium owners value the eventual cost savings associated with green buildings, others are not yet ready to pay the initial sticker price associated with increased construction costs.

Currently, the National Association of Home Builders ("NAHB") reports that green building makes up only 2% of the current residential market. Although this market share is expected to increase to 10% by 2010, the green building craze is having a slower impact in the residential market. Experts admit that homeowners are not yet willing to pay the initial increased costs associated with green building—even though most homeowners recognize the long-term savings associated with going green.

In response, NAHB and the International Code Council announced on March 7, 2007, that they will unite to publish a uniform residential green building standard. It is the hope of the residential construction industry that the unified standard, along with the increased availability of green construction materials and design, will make green more affordable for the average homeowner.

Indeed, the NAHB's New American Home for 2007, built by Carmen Dominguez, a custom homebuilder in Orlando, Florida, is designed to not only benefit the environment, but save the homeowner \$1,132 annually on energy costs. While the New American

Homes' size, 4,700 square feet, and price tag, \$2.9 million, does not meet the needs of the average homeowner, the green building techniques highlighted in this home can be duplicated at various construction price points. As reported in its Resident Green Building Smart Report, the techniques learned in this year's New American Home will go a long way toward implementing the NAHB's belief that the residential green building market share will increase from \$19 billion in 2005, to over \$38 billion by 2010.

Economic Incentives for Green Buildings

As citizens pressure their political representatives to provide incentives to developers to reduce energy costs and the depletion of the earth's resources, municipalities and state governments have begun to offer tax incentives and grants for developers of commercial and residential buildings that go green. Each of the fifty states, as well as the federal government, offers an incentive program for construction and renovation of green buildings, including tax credits, grants, financial aid, or reduced property taxes. The North Carolina Solar Center and Interstate Renewable Energy Council has created a Database of State Incentives for Renewables & Efficiency that is funded by the United States Department of Energy. It is a comprehensive source of information on state, local, utility company, and federal incentives that promote renewable energy and energy efficiency. The database can be found at www.dsireusa.org and it should be consulted before undertaking a development and/or construction project in a specific state.

Federal Incentives

In 2005, Congress passed the Energy Policy Act of 2005 to provide incentives to utility companies, developers and businesses to create new sources of energy and incorporate energy saving devices and materials in new construction. The Act contains provisions for commercial building owners that make improvements to their energy systems. Pursuant to the Act, energy improvements completed in 2006 and 2007 are eligible for tax deductions of as much as \$1.80 per square foot. The energy improvements generally consist of improvements to lighting, HVAC and the building envelope. Even improvements such as upgraded lighting and installation of energy saving devices that are planned and implemented as part of the normal property management scheme are eligible for tax deductions.

Often the deductions are combined with participation in demand response programs where buildings agree to curtail energy usage at peak times for a premium. According to the DSIRE database, the most common qualifying projects are in the lighting area, where lighting fixtures in industrial and warehouse spaces are upgraded with fixtures that can cut energy use in half as well as qualify the building for tax deductions.

The Energy Policy Act also establishes tax credits of up to \$2,000 for builders of all new energy-efficient homes, including manufactured homes constructed in accordance with the Federal Manufactured Homes Construction and Safety Standards. The tax credit was extended through 2008 by Section 205 of the Tax Relief and Health Care Act of 2006 (H.R. 6111).

A home qualifies for the credit if construction is substantially completed after August 8, 2005 and sold by an eligible contract before January 1, 2009 for use as a residence, and meets the specific energy saving requirements specified in the statute, including reducing energy consumption by 50% compared to the International Energy Conservation Code standard. The IRS has issued guidance about the certification process that a builder must complete to qualify for the credit.

State Incentives

State incentives for green construction are varied and run the gamut from tax credits to reductions in property taxes. Innovative programs include green building credits in New York and Maryland, financing and mortgage fee reductions for purchase of Energy Star equipment and grants for LEED certified building. The programs described below are just some of the examples. State legislatures around the country have numerous bills pending that offer tax credits for green buildings and many grant programs are now in the process of development.

In 2000, New York State passed an innovative Green Building Tax Credit for business and personal income taxpayers, which has since become the model for Maryland's tax credit legislation. The credit can be applied against corporate taxes, personal income, insurance corporation taxes and banking corporation taxes. The incentive applies to owners and tenants of eligible buildings and tenant spaces which meet certain "green" standards. These standards increase energy efficiency, improve indoor air quality, and reduce the environmental impacts of large commercial and residential buildings in New York State, among other benefits. The original 2000 legislation allowed applicants to apply for a Credit Component Certificate in years 2001-2004 and to claim the credits over five years. Legislation in 2005 extended the program, allowing applicants to apply for a Credit Component Certificate from 2005-2009. The original law provided for \$25 million in credit certificates; the 2005 legislation added another \$25 million.

The credit allows builders who meet energy goals and use environmentally preferable materials to claim up to \$3.75 per square foot for interior work and \$7.50 per square foot for exterior work on their state tax bill. To qualify for the credit, a building must be certified by a licensed architect or engineer, and must meet specific requirements for energy use, materials selection, indoor air quality, waste disposal and water use. In new buildings, this means energy use cannot exceed 65 percent of use permitted under the New

York State energy code; in rehabilitated buildings, energy use cannot exceed 75 percent. Ventilation and thermal comfort must meet certain requirements, and building materials, finishes and furnishings must contain high percentages of recycled content and renewable source material and cannot exceed specified maximum levels of toxicity. Waste disposal and water use must also comply with certain criteria.

Many states offer incentives for energy-efficient home construction through the Energy Star home program. The purchaser of an Energy Star Home may be eligible for an Energy Star mortgage. Discounts and incentives offered by participating mortgage providers and lenders include reduction of loan origination fees, discounted interest rates, and may include cash back at closing. In addition, some states offer tax credits for the purchase of an Energy Star certified manufactured home.

Local Incentives

In addition to state incentives, municipalities around the country offer local incentives for green buildings. For example, the Santa Monica Green Building Program offers financial incentives for buildings and innovative building technologies certified to Leadership LEED standards, awarding two types of grants to promote green building throughout the city. Grants for new private sector buildings are based on the level of certification attained under the LEED standards:

- LEED Certified - \$20,000
- LEED Silver - \$25,000
- LEED Gold - \$30,000
- LEED Platinum - \$35,000

All new construction and major renovation in commercial, affordable housing, mixed use, and multi-family residential that register for LEED (LEED-NC) certification are eligible to apply. In the interest of promoting the adoption of new technologies designed to reduce the environmental impact of buildings, the City also offers Innovative Technology Grants for energy efficient systems and urban runoff mitigation technologies.

Massachusetts requires a local property exemption for any taxpayer that installs a solar or wind-powered system for heating or other energy needs in his/her residence or business. The exemption applies to the value added to the property, not the extra amount of the property tax bill.

Requiring Green Buildings

Public Development

Beyond incentives, many local, state and federal governments and agencies require newly constructed public buildings to either be LEED certified or meet certain green building standards. The public sector

immediately recognized the benefits of the reduced lifetime costs of green buildings, spurring early adoption of green development principles. For example, in 2004 Oregon passed green building legislation requiring the equivalent of LEED Silver for all new construction and major renovations of state buildings, including those in the university system. Although the legislation does not require third-party certification by the USGBC, project teams are encouraged to include a LEED-Accredited Professional. Like Oregon, Washington State has a comprehensive green building law, which requires K-12 schools, universities and other public buildings larger than 5,000 square feet to meet LEED Silver certification. California and Wisconsin have passed similar legislation and many other states are now considering it.

On a more local level, several cities, such as Washington, D.C., Boston and Chicago, have adopted green building standards. The Washington, D.C. legislation requires that public buildings constructed in 2008 or after be LEED certified. Boston and Chicago, while not adopting third-party certification requirements, have or will write green requirements into their building codes. These are just a few of the many cities that have adopted green building requirements in some form, with many more in the pipeline.

In addition to the mandates by state and city governments, federal government agencies such as the General Services Administration ("GSA") require new construction projects and substantial renovations to be LEED certified. The GSA, known as the nation's biggest landlord because of its extensive property holdings (around 8,000 buildings leased or owned), is the centralized procurement and property management agency for Federal civilian agencies. The early adoption of the LEED system by the GSA in 2003 has been a strong endorsement for its use by other local, state and federal governments and agencies.

In many jurisdictions, the definition of public buildings for the purpose of their green building requirements is broad. In Los Angeles and Washington, D.C., for example, projects receiving a certain level of public funding (which may include tax increment financing), even if not ultimately for a traditional public use, are considered public buildings and are subject to green building requirements.

Private Development

Following mandates for green buildings in the public sector and the ever broadening definition of public buildings, Washington, D.C. and Boston have gone further by beginning the implementation of green requirements for certain privately financed and constructed buildings. Both cities have passed legislation requiring private projects over 50,000 square feet to meet certain green requirements. The D.C. legislation, which goes into effect in 2009, requires buildings of 50,000 square feet or more to be at least awarded certification under the LEED system. The Boston legislation, while not requiring LEED certification, will have similar requirements, although, reportedly, not as onerous.

Conclusion

While green development is still in the early stage of wide market acceptance, existing incentives and mandates will continue to drive additional green products into the market place. While the legislation requiring green buildings will force the reluctant

hands of many developers, the economic incentives, along with the other benefits associated with green development, will spur many more developers to build green for purely bottom line reasons. With the cost of green development decreasing and the benefits increasing, it will not be long before doing anything but green will be a poor economic decision.

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