

**STATEMENT OF TOM HICKS
OF THE U.S. GREEN BUILDING COUNCIL**

**BEFORE
THE HOUSE COMMITTEE ON FINANCIAL SERVICES**

**ON
H.R. 6078, THE GREEN RESOURCES FOR ENERGY EFFICIENT
NEIGHBORHOODS ACT OF 2008**

JUNE 11, 2008

On behalf of the U.S. Green Building Council's (USGBC) 15,700 organizational members and 77 local chapters, I would like to thank Chairman Frank and Ranking Member Bachus for convening this important hearing.

My name is Tom Hicks, and I am a Vice President with the U.S. Green Building Council. Having served as a leader within USGBC for four years and with EPA previously, I have personally witnessed the tremendous growth of the marketplace for green buildings, and am honored to speak on behalf of the green building community today.

Introduction

Green homes are an essential part of a climate change mitigation strategy-- they reduce the American homeowner's lifetime financial obligation to a utility bill, and they have a positive and increasingly well-understood impact on health and well-being.

On the aggregate, buildings are responsible for 39% of U.S. CO₂ emissions per year.¹ In addition, buildings annually account for 39% of U.S. primary energy use;² use 12.2% of all potable water or 15 trillion gallons per year;³ and consume 40% of raw materials globally (3 billion tons annually).⁴ The EPA estimates that 136 million tons of building-related construction and demolition debris are generated in the U.S. in a single year.⁵ (By way of comparison, the U.S. creates 209.7 million tons of municipal solid waste per year.⁶) It is clear that we must act quickly to reduce the impact of the built environment on our planet.

Policymakers and building owners alike are now recognizing green building as one of the most effective strategies for meeting the challenges of energy consumption and climate change. By addressing the whole building, from construction materials to cleaning supplies, green building generates opportunities to reduce emissions and environmental impact throughout the supply chain and the complete building lifecycle, targeting:

¹ *EIA Annual Energy Review 2005. U.S. Energy Information Administration, U.S. Department of Energy.*

² *2003 U.S. DOE Buildings Energy Data Book.*

³ *U.S. Geological Service, 1995 data.*

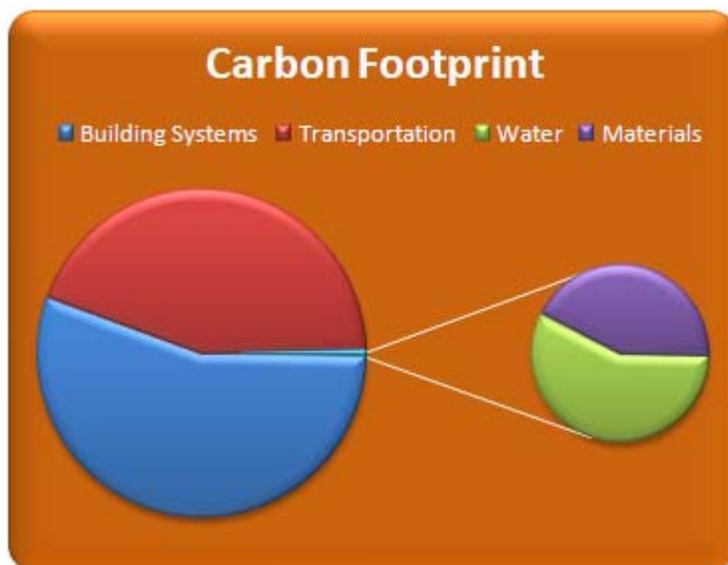
⁴ *Lenssen and Roodman, 1995, "Worldwatch Paper 124: A Building Revolution: How Ecology and Health Concerns are Transforming Construction," Worldwatch Institute.*

⁵ *U.S. EPA Characterization of Construction and Demolition Debris in the United States, 1997 Update.*

⁶ *U.S. EPA Characterization of Municipal Solid Waste in the United States, 1997 Update. Report No. EPA530-R-98-007.*

- reduced energy consumption through the use of energy-efficient heating and cooling systems, renewable power, and building commissioning
- reduced water consumption through the use of low-flow fixtures and appliances, and the on-site treatment of storm water
- reduced waste and improved environmental performance through the use of salvaged, recycled, and local materials, and the development of plans for managing construction waste, and
- reduced emissions and environmental impact by promoting the location of facilities near public transportation, the use of hybrid or electric cars, and the use of alternative means of transportation, such as bicycles and walking

Moreover, where we choose to build, and how our buildings are woven into a broader pattern of community, has further implications for our nation's environmental and economic health. The chart below represents the sources of direct and indirect CO₂ emissions from a sample of highly energy and water efficient 100,000 square foot office buildings to which all occupants have to drive. As is clearly illustrated, location efficiency represents an important opportunity to fully explore the CO₂ emissions reduction potential of the built environment.



*U.S. Green Building Council

At the individual level, buildings have an extraordinary impact on individuals and families. For example, EPA data suggests that Energy Star homes can save families up to \$400 annually.⁷

Consider, in addition, that as Americans we spend about 90% of our time indoors.⁸ While the benefits of cleaner indoor air and non-toxic building materials are difficult to quantify in dollars, case histories increasingly support a correlation to better health. Carnegie-Mellon research has demonstrated, for instance, that children experience a 38.5% reduction in asthma symptoms in green buildings.⁹

Importantly, the technology to make substantial reductions in energy use and CO₂ emissions in buildings already exists; modest investments in energy-saving and other climate-friendly technologies can yield buildings and communities that are significantly more environmentally responsible, and are also more profitable and healthy places to live and work. In its December 2007 report evaluating potential solutions for reducing greenhouse gas emissions, McKinsey & Company highlighted improvements to the energy efficiency of buildings and appliances as a “negative-cost” option, suggesting that investments of this kind would yield positive financial returns over the course of their life cycle.¹⁰

Recognizing the above benefits, the building design and construction industry is voluntarily leading a green revolution that has begun to visibly transform our cities and towns. But there remains much work to be done.

The Green Resources for Energy Efficient Neighborhoods (GREEN) Act of 2008 (H.R. 6078) takes great strides to advance the market transformation to sustainability by:

- providing needed financing mechanisms, such as energy- and location-efficient mortgages, to assist consumers in accessing more efficient properties,
- supporting states and localities in their efforts to improve the energy efficiency of homes in their communities through the Residential Energy Efficiency Block Grant Program,

⁷ EnergyStar, New Homes, Benefits for Homeowners, *available at* http://www.energystar.gov/index.cfm?c=new_homes.nh_benefits.

⁸ U.S. Environmental Protection Agency, *available at* <http://www.epa.gov/greenbuilding/pubs/gbstats.pdf>.

⁹ Gregory Kats, *Greening America's Schools: Costs and Benefits (2006)*, *available at* <http://www.usgbc.org/ShowFile.aspx?DocumentID=2908> (citing Carnegie Mellon University Center for Building Performance (2005)).

¹⁰ McKinsey & Company, *Reducing Greenhouse Gas Emissions: How Much at What Cost?*, *available at* http://www.mckinsey.com/client-service/ccsi/pdf/US_ghg_final_report.pdf.

- providing needed education to consumers and lenders about the benefits of energy efficiency,
- educating the public, and
- empowering the private market to move further and faster by advancing the federal commitment to green and energy efficient housing.

USGBC supports these provisions as complementary to its vision of sustainable buildings and communities within a generation and looks forward to working with Congress to advance these critical initiatives.

The Green Homes Market

The residential sector is an essential part of the climate change equation, representing 21% of the nation's total energy use.¹¹ By addressing both existing and new homes, the residential sector presents an important opportunity to design, construct, and renovate homes that provide greater environmental, social, and financial benefits than their conventional counterparts, and also put money back into the American family's pocket.

Green Building: A Technology Adoption Curve

Green building practices can be understood as a technology adoption curve: they represent a new and differentiated set of best practices and technologies that create a differentiated product – a “green home” – that delivers cost savings and other benefits that are attractive to consumers.

Green homes are currently being embraced by innovators and early adopters in the marketplace. To rapidly mainstream green building practices in order to recognize both the individual and societal benefits from energy savings sooner rather than later, a proactive effort is needed to build professional capacity, mainstream green building practices, and educate the homebuyer and homeowner about the benefits of green building. The provisions of the GREEN Act would advance the marketplace on each of these fronts.

¹¹ U.S. Energy Information Administration, U.S. Department of Energy, Annual Energy Review 2006, available at <http://www.eia.doe.gov/aer/pdf/aer.pdf>.

Parallels with the Commercial Green Building Market

The residential green building marketplace is at a similar stage of development to where the commercial marketplace was in 2000.

At that time, the LEED green building rating system – the first national green building certification program – had just launched. The majority of the very few building projects committed to LEED certification were “going green” based on a values-oriented commitment as opposed to a business case. Relatively few green tech products and systems were available on the marketplace, and those that were available were largely untried and expensive. And there were but a handful of building industry professionals with the knowledge and experience in green building practices to successfully deliver a green building project without incurring significant additional time and expense on the “learning curve.”

In the ten years since, the market for green buildings has grown to a projected \$20 billion annually, and first-cost premiums for green buildings have gone down to 0 to 1.5%.¹² The business case has been articulated from cost savings to valuation, and while market demand continues to grow, more than 50,000 and counting LEED Accredited Professionals serve the demand with expertise in green building practices.

The precedent growth, development, and maturation of the commercial green building market suggests that the market for green homes will expand as the business case is developed through the actions of early adopters.

As such, a federal commitment to energy efficient and green homes as expressed in the provisions of the GREEN Act – including the adoption of Green Communities or a third-party green building rating system as a requirement for HOPE VI construction – will help support the further development of the marketplace by creating volume and capacity among affordable housing builders, developers, and tradespeople.

What Homebuyers Think

In survey after survey, homebuyers and homeowners indicate an overwhelming interest in green homes. Perhaps even more importantly, 87% of green home buyers are more satisfied with their green home than with their previous conventional home.¹³

¹² Davis Langdon, *Cost of Green Revisited: Reexamining the Feasibility and Cost Impact of Sustainable Design in the Light of Increased Market Adoption* (July 2007), available at <http://www.davislangdon.com/upload/images/publications/USA/The%20Cost%20of%20Green%20Revisited.pdf>.

¹³ McGraw Hill Construction, *The Green Homeowner SmartMarket Report: Attitudes & Preferences for Remodeling and Buying Green Homes* (2007).

Occupant health, anticipated cost savings, and environmental concerns were all leading reasons for the purchase of a green home.¹⁴ Similarly, better health, better indoor air quality, easier maintenance, and better overall quality were among the aspects of the home with which homeowners indicated the greatest satisfaction.¹⁵

Obstacles: Awareness, Availability, and Perceived Cost

On the demand side, homebuyers surveyed indicated that the single greatest obstacle to purchasing a green home is lack of buyer education and awareness, closely followed by cost and availability.¹⁶

On the supply side, awareness and education remain challenges. USGBC estimates that approximately 15,000 homes have been third-party certified as green through LEED or similarly verified green home building programs. Taken as a proxy for market capacity, very few builders have demonstrated experience in green building, indicating a vast need for professional and trade education in order to meet rising consumer demand.

Lack of capacity puts upward pressure on pricing, which is reflected in the cost premium often charged by professionals with green homebuilding credentials and by the preponderance of third-party certified green homes at higher price points.

Market Development: Green Home Retrofitting

If interested in greening an existing home or in finding a builder or architect who can help build a new green home, one would be hard pressed to find one on either count. The gap is particularly pronounced in the existing home renovation market. While qualified electrical, heating and cooling, roofing and installation, and window replacement professionals are readily available, it is a tremendous challenge to find a professional who can help homeowners integrate each of these elements into a healthier, more efficient whole.

In some markets, this gap is being filled by entrepreneurial companies providing general contracting services for deep green and deep energy home retrofits. For example, Sustainable Spaces in Oakland, CA are “home performance retrofitters.” They provide a single source for everything from diagnostic testing, to creating improvement plans, to completing the work. This type of service, however, is not available in the vast majority of U.S. markets.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

The provisions of H.R. 6078 providing a minimum threshold for energy reduction to rehabilitate existing housing as well as the Residential Energy Efficient Block Grant programs will help to further develop this extremely important service sector in the market, thereby making energy efficient, green home renovations more available to all homeowners.

Similarly, the market for green home products, including products and systems that help to improve residential energy efficiency, is very challenging for the typical homeowner to navigate. Recall the chief obstacle to buying or building a green home: lack of education and awareness.¹⁷ The need for trusted information and local sources for products and materials is driving the development of green home centers across the U.S. While no national survey exists of their number, revenues, or projected growth, these local green home centers are gaining prominence in the marketplace by providing ancillary educational services through programming ranging from radio shows to in-store workshops. Examples exist in such diverse localities as Boise, Idaho, Phoenix, Arizona, Washington, DC, and Portland, Oregon. Individually, they report strong growth and overwhelming demand for information and education about energy and water efficiency.

Market Development: Green Home Finance

Mirroring developments in the commercial market, several retail banking institutions are exploring opportunities for developing specialized green home financing products for both new home purchases and renovations.

For instance, Countrywide Mortgage has introduced a discounted mortgage rate for certified green homes in 18 test markets in the United States.¹⁸ Other avenues of exploration are largely focused on product/service packages as opposed to differential rates, including:

- free energy audits upon the purchase of an existing home
- waiver of fees for renovations including a specified list of green home improvements with a focus on energy efficiency
- marketing the bank's benefits from a green building program as an example for consumers to follow
- green building education for community development banking officers

Broad-based, collaborative efforts that USGBC is helping to convene include:

¹⁷ McGraw Hill Construction, *The Green Homeowner SmartMarket Report: Attitudes & Preferences for Remodeling and Buying Green Homes* (2007).

¹⁸ See PR Newswire, "Countrywide offers discounted rates on LEED homes in 13 states," available at http://www.greenhomeguide.org/features/mortgage_discounts_for_green_homes.html.

- offering green building valuation workshops, and examining appraisal methodologies and case histories
- examining the case for lower insurance rates for green buildings

Opportunities: New Green Jobs

Late last year, the nonprofit American Solar Energy Society released a study that showed that as many as 1 out of 4 workers in the United States could be working in the renewable energy or energy efficiency industries by 2030.¹⁹ The report indicated that these industries already generate 8.5 million jobs in the U.S., produce nearly \$1 trillion in revenue, and contribute more than \$150 billion in tax revenue at the federal, state, and local levels.²⁰ The report indicates that, by 2030, jobs in these industries could grow to as many as 40 million and could generate up to \$4.5 trillion in revenue.²¹ As a specific example, the U.S. Department of Energy estimates that a \$1 million investment in weatherizing homes in low-income areas results in the creation of 52 new jobs.²²

Demonstrating that Green is Affordable

USGBC is dedicated to making the case for affordable green housing. USGBC seeks to ensure that individuals of all income levels can experience the benefits of healthier, more environmentally responsible and energy efficient living spaces. This work is performed in coordination with national leaders in the affordable housing community. In fact, a special working group of 45 national affordable housing experts informed the early development of LEED for Homes, evaluating a pilot version of the system to determine whether it adequately addressed the unique needs of affordable housing.

The extraordinary work of Enterprise Community Partners, the commitment of The Home Depot Foundation, the work of Habitat for Humanity, and many others all demonstrate that third-party certified green building is possible without big cost premiums – and equally importantly, that the benefits to families with the greatest financial needs are tremendous.

¹⁹ American Solar Energy Society, *Renewable Energy and Energy Efficiency: Economic Drivers for the 21st Century*, 2007, available at <http://www.ases.org/ASES-JobsReport-Final.pdf>.

²⁰ *Id.*

²¹ *Id.*

²² Apollo Alliance and Urban Habitat, *Community Jobs in the Green Economy* (2007), available at <http://www.urbanhabitat.org/files/Community-Jobs-in-the-Green-Economy.pdf> (citing U.S. Department of Energy/EERE, “Weatherization Assistance Program: Improving the Economies of Low-Income Communities” (last update August 2006), available at www.eere.energy.gov/weatherization/improving.html).

LEED for Homes and Affordable Housing

While LEED for Homes was just released in December 2007 and has not been in use nationally for long enough to complete a statistically viable cost study, case results indicate low or no first-cost premiums, with strong operational cost saving results. Residents of Morrisania Homes in the Bronx, for instance, expect to save 30% on their annual utility bills.²³ To date, more than 1,862 affordable units have registered with LEED, and among those 287 have already completed the certification process.

Affordable housing projects seeking LEED certification incur three additional costs that USGBC is able to offset through a generous grant from The Home Depot Foundation:

- Home Energy Rating System (HERS) Rating: LEED requires that all homes certified under the program be HERS rated and Energy Star certified.
- Green Inspection: LEED requires that all homes certified under the program have a minimum of two on-site inspections from a Green Rater to verify that green features are installed and functioning as specified.
- Third-party verification: Every LEED certified home is reviewed by a third-party assessor for accuracy.

As part of this initiative, USGBC has pledged more than \$180,000 to offset the costs of LEED for Homes verification in eight states.

USGBC is also working with Enterprise Community Partners—a leader and innovator in the affordable housing sector—toward aligning LEED for Homes with Enterprise’s Green Communities criteria.

The Education Imperative

Building market capacity to deliver on the promise of green homes – existing and new, market rate and affordable – requires a commitment to professional and trade education. While we have the tools and technologies we need today to deliver greener, more efficient homes, the design and construction process must be *integrated*. For instance, home energy performance is driven by a combination of the home’s site orientation, HVAC system, windows, roofing material, insulation, and landscape. While these home features are installed and constructed by a host of different contractors and subcontractors, for the home to be green and efficient, these elements must work toward the same set of measurable goals.

²³ See attached case study.

Working with its partners, USGBC is engaged in efforts to educate the broader green building community about best practices for developing green affordable housing. For instance, USGBC joined with The Home Depot Foundation and The Oak Hill Fund to provide free programming, including a tour of green affordable housing projects in Chicago and a LEED for Homes Technical Review, to nonprofit attendees at its annual Greenbuild conference. Greenbuild 2007, which attracted more than 22,000 total attendees, also featured a dedicated affordable housing educational track.

These efforts continue beyond Greenbuild. Last week, USGBC launched Greenbuild365.org, an online community for green building education. Through the support of UTC, USGBC is offering free course access to all 1,700 U.S.-based Chapters of Habitat for Humanity.

About the U.S. Green Building Council

USGBC is a 501(c)(3) nonprofit membership organization working to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life. Our 15,700 member organizations and 91,000 active volunteers include leading corporations and real estate developers, architects, engineers, builders, schools and universities, nonprofits, trade associations and government agencies at the federal, state and local levels.

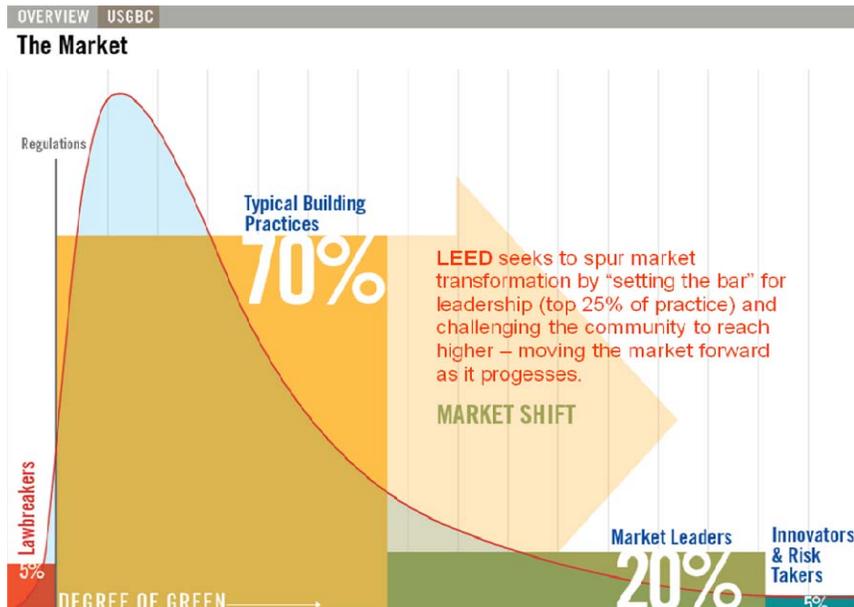
The organization is governed by a diverse, 31-member Board of Directors that is elected by the USGBC membership. Volunteer committees representing users, service providers, manufacturers, and other stakeholders steward and develop all USGBC programs, including the LEED (Leadership in Energy and Environmental Design) rating system, through well-documented consensus processes.

A staff of more than 140 professionals administers an extensive roster of educational and informational programs that support the LEED Rating System in addition to broad-based support of green building. USGBC's LEED Professional Accreditation program, workshops, green building publications, and the annual Greenbuild conference provide green building education for professionals and consumers worldwide. USGBC has trained more than 50,000 professionals through its green building workshops, and attracted more than 22,000 attendees from around the globe to its most recent Greenbuild conference.

Educational programs are delivered locally through USGBC's more than 70 Chapters and Affiliates, through the Web, and at conferences and events all over the world.

About the LEED® Green Building Rating System™

LEED is a voluntary, third-party certification system for green buildings that was developed by USGBC to provide the building community with a measurable consensus definition of **l**eadership in **e**nergy and **e**nvironmental **d**esign. First launched publicly in 2001, LEED seeks to set a high bar for environmental and energy performance, and challenges market leaders to meet it, building momentum for best practices and moving the whole market forward as these best practices enter the mainstream.



Originally developed for new commercial construction projects, LEED has been expanded in recent years to respond to market demand for additional tools to address different building types and lifecycle phases. USGBC released rating systems for the operations and maintenance and commercial interiors markets in 2006, for the schools sector in 2007, and for the residential market earlier this year. USGBC is also pilot-testing and nearing completion of rating systems for neighborhood developments, healthcare facilities, retail spaces, labs, and campuses.

The Development of LEED

LEED is developed through consensus by balanced and diverse volunteer committees composed of elected leaders from among USGBC's membership.

USGBC is an ANSI-accredited standards developer, and LEED is an exemplar of participatory democracy at work.

The key elements of the process, which USGBC has refined over more than a decade of leadership experience, include a balanced and transparent committee structure; Technical Advisory Groups to ensure scientific consistency and rigor; opportunities for stakeholder comment and review; member ballot of new rating systems and substantive improvements to existing rating systems; and a fair and open appeals process. Details about the LEED development process are publicly available on the USGBC Web site, www.usgbc.org, in the “LEED Foundations Documents,” which describe with great specificity the consensus process.

How LEED Works

LEED is a flexible tool that can be applied to any building type and any building lifecycle phase. The rating system promotes a whole-building approach to sustainability by recognizing performance in five key areas, with an additional category to recognize innovation: sustainable site development, water savings, energy efficiency, materials and resources, and indoor environmental quality. Each category includes certain minimum requirements (“prerequisites”) that all projects must meet, followed by additional credits that are earned by incorporating green design and construction techniques.

When a project commits to use LEED, the project team “registers” online with USGBC – a step that gives the team access to a comprehensive online system that guides it through the certification process. As part of the third-party certification process, USGBC requires projects to submit technically rigorous documentation, including project drawings and renderings, product manufacturer specifications, energy calculations, and actual utility bills. All certification submittals are audited by third-party reviewers. At the conclusion of this process, USGBC awards a project one of four progressive levels of LEED certification – Certified, Silver, Gold and Platinum – to reflect the number of credits achieved.

Continuous Improvement

LEED is USGBC’s primary tool for advancing market transformation to sustainability. As such, LEED must be continuously improved – seeking to make obsolete its greatest triumphs. Since its initial public launch in 2001, LEED has completed a series of improvement cycles to reflect technical innovation, including:

- Progressively strengthened energy efficiency requirements
- More stringent water efficiency requirements

- An online system for documentation and submittals toward certification
- New rating systems to address existing building operation and maintenance, K-12 schools, healthcare facilities, retail facilities, commercial interior projects, core and shell developments, and homes
- A rating system in pilot to address neighborhood-scale developments, which is being created in partnership with NRDC and the Congress for the New Urbanism

Last month, USGBC released for its first public comment period the next major update of LEED. Proposed enhancements to LEED include:

- Improved energy and CO₂ emissions reduction performance: increased “weightings” on energy, transit-oriented location, and water efficiency
- Environmental performance of building materials: LCA (life cycle assessment) methodology for materials and resources credits
- Regionally-specific credits: Buildings need to respond to different bioregional environments, so LEED is introducing specific “credits” to differentiate building performance requirements in diverse locations

LEED for Homes

In December 2007, USGBC launched LEED for Homes. First released as a limited pilot in August 2005, LEED for Homes focuses on new homes and homes undergoing “gut” renovations with best practices for environmental features. The system applies to single-family homes and multi-family homes of three stories or less, as well as both market-rate and affordable housing projects. More than 500 builders representing 10,000 residential units across the country participated in the pilot test of the rating system. To date, more than 700 housing units have been certified under LEED for Homes.

To obtain LEED for Homes certification, a project must comply with 18 prerequisites in the above categories, guaranteeing a minimum level of sustainable practice. For example, all projects must meet the energy performance requirements set forth in the U.S. EPA’s Energy Star for Homes program. Additional credits are awarded to projects that include additional green features or features that enable greater environmental performance than the required minimum measures. The rating system includes several measures specifically intended to reward efficiencies typical of affordable housing projects, such as compact size, location near existing infrastructure, and access to community resources and open space.

REGREEN: Green Remodeling Guidelines for Existing Homes

Recognizing the need for guidance to assist homeowners, builders, and design professionals undertaking green remodeling projects, USGBC partnered with

the American Society of Interior Designers to develop a set of comprehensive guidelines for green residential improvements. Released in March 2008, the REGREEN guidelines (www.regreenprogram.org) apply to a wide range of remodeling projects, from installing a new dishwasher to renovating a master bedroom or whole house interior. Distinct from LEED, the REGREEN program does not award certification to homes or projects. Homes undergoing “gut” renovations are, however, eligible to participate in and receive certification under LEED for Homes.

Neighborhood Development

LEED for Neighborhood Development is a certification system that integrates the principles of smart growth, new urbanism, and green building into the first national system for neighborhood design. It is being developed by USGBC in partnership with the Congress for the New Urbanism (CNU) and the Natural Resources Defense Council (NRDC). With a greater emphasis on land use planning than other LEED rating systems, LEED for Neighborhood Development promotes the location and design of neighborhoods that reduce vehicle miles traveled, and communities where jobs and services are accessible by foot or public transit. It also encourages more efficient energy and water use, which are especially important in urban areas, where infrastructure is often overtaxed.

USGBC and its partners are currently in the midst of pilot-testing LEED for Neighborhood Development, with 240 development projects in various stages of planning and construction across the country and in several other countries. Projects may encompass whole neighborhoods, fractions of neighborhoods, and multiple neighborhoods, and the pilot projects range significantly in size. The LEED for Neighborhood Development rating system can be applied to infill development and previously developed sites, as well as appropriate development of undeveloped land. Thus far, approximately 20 projects have submitted their documentation for certification, and 5 have completed certification. The information learned during the pilot program will be used to make further revisions to the rating system in 2008, and the resulting draft will be posted for public comment before it is submitted for final approval and balloting in 2009.

Costs and Benefits of LEED

In a follow-up study released in July 2007 updating its 2004 analysis of the cost of green building, Davis Langdon concluded that “there is no significant difference in average costs for green buildings as compared to non-green

buildings.”²⁴ An earlier study conducted by Capital E in 2003 found that the cost premium for using LEED on a project averages about 2%.²⁵ The report estimated that the financial benefits of green buildings are ten times greater than this average cost premium.²⁶

Moreover, LEED buildings are becoming prized assets in the real estate community. A recent study by the CoStar Group of more than 1,300 LEED and Energy Star buildings in the group’s commercial property database reported that LEED buildings command rent premiums of \$11.24 per square foot more than their non-LEED peers and have occupancy rates that are 3.8 percent higher.²⁷ The study further reports that LEED buildings command a sales premium of an impressive \$171 more per square foot.²⁸

In the residential marketplace, LEED for Homes just debuted nationally in December 2007, so there is not yet sufficient operating data on green homes to make a comprehensive assessment of first costs and operating savings. Anecdotal evidence and case histories suggest additional first costs beginning at about \$1,000 depending on geographic market, home size, and level of LEED (Certified, Silver, Gold or Platinum).

Please see the attached “Project Profiles” for additional examples.

Green Building Trends and Market Transformation

Market Adoption of LEED

Nearly 3.6 billion square feet of commercial real estate is currently registered or certified under the LEED Green Building Rating System, inclusive of more than 13,000 individual building projects, and more than 12,000 housing units are registered or certified under the system.

In addition, USGBC is currently working with 26 market leaders as part of a comprehensive pilot to incorporate green building practices across entire building portfolios. Pilot participants include American University, Bank of

²⁴ Davis Langdon, *Cost of Green Revisited: Reexamining the Feasibility and Cost Impact of Sustainable Design in the Light of Increased Market Adoption* (July 2007), available at <http://www.davislangdon.com/upload/images/publications/USA/The%20Cost%20of%20Green%20Revisited.pdf>; see also *Costing Green: A Comprehensive Cost Database and Budget Methodology* (July 2004), available at http://www.usgbc.org/Docs/Resources/Cost_of_Green_Full.pdf.

²⁵ Greg Kats, Capital E, *The Costs and Financial Benefits of Green Buildings: A Report to California’s Sustainable Building Task Force* (October 2003), available at <https://www.usgbc.org/ShowFile.aspx?DocumentID=1992>.

²⁶ *Id.*

²⁷ CoStar Group, <http://www.costar.com/partners/costar-green-study.pdf>.

²⁸ *Id.*

America, California State University – Los Angeles, Cushman & Wakefield, Emory University, HSBC, N.A., PNC Bank, State of CA – Dept. of General Services, Syracuse University, Thomas Properties Group, Transwestern, UC – Merced, UC – Santa Barbara, University of Florida, and USAA Real Estate Company.

Governmental Adoption of LEED

Governments at all levels have been highly influential in the growth of green building, both by requiring LEED for their own buildings and by creating incentives for LEED for the private sector. From the Department of Energy's support for the initial development of LEED, to the Energy Independence and Security Act of 2007 (EISA), to the many cities and states that have adopted LEED, the public sector has demonstrated considerable vision and leadership in the transformation of the built environment. Currently, 12 federal agencies or departments, 28 states, 120+ local governments, 13 public school jurisdictions and 36 higher education institutions have made various policy commitments to use or encourage LEED.

The U.S. Department of Energy (DOE) enabled the initial development of LEED with a \$500,000 grant in 1997, and has also provided USGBC with \$130,000 in grants to support the early formation of the Greenbuild International Conference and Expo. Staff from the national laboratories, DOE's Federal Energy Management Program, and other agency programs have actively shared their expertise to develop and refine LEED. USGBC has also collaborated with DOE's Office of Energy Efficiency and Renewable Energy, and BuildingGreen on the High Performance Buildings Database.

In 2006, the U.S. General Services Administration (GSA)--the nation's largest civilian landlord--submitted a report to Congress evaluating the applicability, stability, objectivity, and availability of five different sustainable building rating systems.²⁹ Based on this study, GSA concluded that LEED "continues to be the most appropriate and credible sustainable building rating system available for evaluation of GSA projects."³⁰ In particular, GSA noted that LEED "[i]s applicable to all GSA project types; [t]racks the quantifiable

²⁹ Pacific Northwest National Laboratory (operated for the U.S. Department of Energy by Battelle), *Sustainable Building Rating Systems Summary* (July 2006), completed for General Services Administration under Contract DE-AC05-76RL061830, available at <https://www.usgbc.org/ShowFile.aspx?DocumentID=1915>.

³⁰ Letter dated Sept. 15, 2006 from GSA Administrator Lurita Doan to Sen. Christopher Bond, Chairman, Subcommittee on Transportation, Treasury, the Judiciary, HUD, and Related Agencies, Committee on Appropriations (accompanying report), available at <https://www.usgbc.org/ShowFile.aspx?DocumentID=1916>; see also Pacific Northwest National Laboratory (operated for the U.S. Department of Energy by Battelle), *Sustainable Building Rating Systems Summary* (July 2006), completed for General Services Administration under Contract DE-AC05-76RL061830, available at <https://www.usgbc.org/ShowFile.aspx?DocumentID=1915>.

aspects of sustainable design and building performance; [i]s verified by trained professionals; [h]as a well-defined system for incorporating updates; and [i]s the most widely used rating system in the U.S. market.”³¹ GSA currently requires its new construction projects and substantial renovations to achieve LEED certification.³²

The U.S. Congress has also demonstrated leadership in advancing green building through its inclusion of several new initiatives in the Energy Independence and Security Act, including:

- the Office of Federal High Performance Green Buildings within GSA and the Office of High Performance Green Commercial Buildings in DOE to coordinate green building research, information dissemination and other activities;
- the recently authorized energy efficiency and conservation block grant program to support states and local governments in reducing greenhouse gas emissions, reducing energy use, and improving energy efficiency; and
- the authorization of funding for a grant program for school environmental health programs and a study of indoor environmental quality in K-12 schools.

We support the robust funding of these initiatives as a means of spurring market transformation and encourage the federal government to continue its work to lead by example in the greening of the built environment.

CONCLUSION

Throughout the country, governments and individuals are harnessing the potential of green buildings to address the climate and energy challenges now before us. Mindful of this great progress, USGBC continues to explore means of expanding the market for green building, in turn accelerating the adoption of green building practices by the mainstream. USGBC is committed to working with members of this Committee and with Congress to enhance market-based approaches that make the benefits of green building accessible to all individuals.

³¹ Letter dated Sept. 15, 2006 from GSA Administrator Lurita Doan to Sen. Christopher Bond, Chairman, Subcommittee on Transportation, Treasury, the Judiciary, HUD, and Related Agencies, Committee on Appropriations (accompanying report), *available at* <https://www.usgbc.org/ShowFile.aspx?DocumentID=1916>.

³² U.S. General Services Administration, Sustainable Design Program, *available at* <http://www.gsa.gov/Portal/gsa/ep/channelView.do?pageTypeId=8195&channelPage=%252Fep%252Fchannel%252FgsaOverview.jsp&channelId=-12894>.

Tom Hicks**Vice-President, International Programs and LEED for Neighborhood Development**

As Vice President of International Programs and LEED for Neighborhood Development, Tom Hicks oversees the development and implementation of USGBC's international efforts and the LEED for Neighborhood Development rating system. For the two years prior to this role, Tom served as the Vice President of LEED leading the development and implementation of all LEED rating systems. Tom joined the U.S. Green Building Council in November 2004 after a distinguished career at the U.S. Environmental Protection Agency.

Prior to joining USGBC, Tom spent more than eight years at the U.S. Environmental Protection Agency as a Senior Program Manager within the Energy Star for Buildings program. Tom was the principal architect and program manager of the Energy Star commercial building rating system, the nation's largest and best-known energy efficiency initiative. To date, Energy Star has been utilized to assess the energy performance of over 70,000 buildings totaling over 10 billion square feet of floor space nationally.

Prior to the EPA, Tom worked with the U.S. Navy, where he formed the energy efficiency program for the U.S. Navy Public Works Center in Washington. This program performed energy audits for over 15 million square feet of floor space and completed lighting retrofits and energy efficiency upgrades totaling more than \$50 million in value.

Tom received his bachelor of science in Mechanical Engineering from the Clark School of Engineering at the University of Maryland and is currently working toward his master's degree in Engineering Management at George Washington University.

Federal Grants Received by the U.S. Green Building Council

Prepared June 9, 2008

1) EPA Grant Number XA-830539-01: Grant to support development of LEED for Existing Buildings Rating System

7/1/2002-12/31/2007

Anticipated amount of award: \$228,424

Total amount spent to date: \$96,368.68

2) EPA Grant Number PI-831184-01: Development of a national smart growth certification program

6/19/2003-12/31/2008

Anticipated amount of award: \$184,963

Total amount spent: \$183,962.92

3) EPA Grant Number XA-832637-01: Grant to help determine research needs for advancing building sustainability

7/1/2005-9/30/2007

Anticipated amount of award: \$15,000

Total amount spent: \$15,000

PROJECT PROFILE



PLEASANT HILL HOME FREEPORT, MAINE

45% more energy efficient

66% lower heating bills

Exceptional indoor air quality

LEED® Facts

Pleasant Hill Home
Freeport, ME

LEED for Homes
Certification awarded May 12, 2006

Silver	51*
Sustainable Sites	10.5/14
Water Efficiency	1/12
Indoor Environmental Quality	10/14
Materials & Resources	5.5/24
Location & Linkages	3/10
Energy & Atmosphere	15.5/29
Homeowner Awareness	1/1
Innovation & Design	4/4

*Out of a possible 108 points

PLEASANT HILL (PANISH RESIDENCE)

Building a Dream, While Building Green

PROJECT BACKGROUND

For Mort and Evelyn Panish, building their dream house was synonymous with building a green house. They turned to Taggart Construction, a builder with a longstanding reputation for high-performance, high-quality homes, to help them build a new home on a hilltop location in Freeport, Maine. Their LEED Silver rated, 2,250-square-foot custom home is beautiful, healthy, and good for the environment—and it saves them money.

REWARDING EXCELLENCE

LEED for Homes certification was a natural fit for Taggart Construction. LEED® is a comprehensive framework for the integrated design approach that is the key to high-performance building, and also offers the builder recognition and validation. As Peter Taggart explains, “Some of the most important details of green construction will never be seen. LEED certification recognizes the value in those choices and rewards you for making them.” LEED certification gives both homebuilder and homeowner confidence that the home is built to the highest standards, will perform as expected, and is healthy for people and the environment.

STRATEGIES AND RESULTS

Using LEED as a guide from the outset enabled the team to develop the environmental and performance goals in concert with the Panishes’ desire for modern amenities, comfort, and universal access and future adaptability. LEED also helped the team take advantage of natural opportunities to lessen environmental impact and maximize performance. For example, the home was located on a reclaimed sand pit to limit the impact zone and excavation. Taggart also maintained existing vegetation and trees; landscaped with native grasses and plants to minimize water use; and installed a stormwater management system to control erosion and protect surrounding fields and forests.

The home’s directional orientation maximizes solar gain while helping to power the 3 megawatt photovoltaic array on the roof. The roof overhangs let in sun during the winter and keep out the high summer sun. Low-E, argon-filled windows are installed throughout the house, and windows on the south side allow sunlight to enter the space in winter, storing radiant heat in the thick tile floor. Additional energy-saving features include compact fluorescent bulbs; high-efficiency appliances; and a propane boiler that delivers hot water on demand. Taggart also used advanced framing techniques and achieved an insulation value of R-27, more than twice the R-value of a typical home. As a result, the Panishes’ home is cool in the summer and warm throughout the long Maine winters, while their bills have gone down. “We’ve been here for one winter, and our heating bills were a third of what most people pay to heat a house this size,” Mort Panish says.

To create a healthy and comfortable indoor environment, windows were strategically placed to fill the home with natural light. The home meets the ENERGY STAR® Indoor Air Package standards, providing cleaner, healthier air and protection against airborne pollutants, and even the garage has an automatic exhaust system.

Taggart Construction also sorted construction waste products at every stage of building for recycling and reuse. A large percentage of the construction and building materials have high recycled content, or were locally harvested and milled to reduce shipping costs and fuel use and to support local businesses.

ABOUT TAGGART CONSTRUCTION

Established in Freeport, Maine in 1994, Taggart Construction pursues sustainable approaches to new residential construction, new and historic renovations, additions, and commercial projects. The company’s staff of 25 is trained in the latest green building techniques, design practices, materials use, and technologies.

“Living in a LEED home is the best of both worlds. We’re doing the right thing for the environment, and we still get to live in the home we’ve always wanted.”

Mort Panish
Homeowner



Owner: Mort and Evelyn Panish
Architectural Designer: Curt Jensch, Taggart Construction
Mechanical Engineer: Pat Coon at Energy Works
Contractor: Peter Taggart
LEED for Homes Provider representative: Danuta Drozdowicz, Fore Solutions
Landscape Designer: Curt Jensch, Taggart Construction
Project size: 2,250 square feet
Project cost: \$625,000

Photography courtesy of Peter W. Taggart

ABOUT LEED

The LEED® Green Building Rating System™ is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council’s Web site at www.usgbc.org to learn more about how you can make LEED work for you.



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MORRISANIA HOMES
BRONX, NEW YORK

30% reduced energy consumption

100% appliances with ENERGY STAR® rating

96% construction waste diverted from landfill

LEED® Facts

Morrisania Homes
New York, NY

LEED for Homes
Certification awarded October 1, 2007

Silver 62*

Sustainable Sites 9/14

Water Efficiency 4/12

Energy & Atmosphere 13.5/29

Materials & Resources 12.5/24

Indoor Environmental Quality 10/14

Locations and Linkages 10/10

Awareness & Education 2/5

Innovation & Design 1/4

*Out of a possible 108 points



MORRISANIA HOMES IN BRONX, NEW YORK

Affordability Meets Sustainability

PROJECT BACKGROUND

When New York City and state officials began plans for a new affordable-housing project in the South Bronx, they knew they wanted it to offer not just a place to live – but a place to thrive. The resulting Morrisania Homes is just that: an innovative new living environment with a strong focus on protecting the health of its residents and of the surrounding environment.

“This successful development proves that we can have it both ways – we can increase the number of affordable homes, which is essential for working New Yorkers to achieve economic security, and we can do so in a way that also protects the environment and increases energy efficiency,” said Gov. Eliot Spitzer. “Green buildings represent a new frontier in the development of sustainable, affordable housing and will help lay the groundwork for a cleaner, healthier and more affordable future.”

A JOINT EFFORT FOR THE COMMON GOOD

Morrisania Homes is the state of New York’s first affordable-housing project to achieve LEED® for Homes certification. Funding for the project came from a partnership among the state, the city and private investors – a truly collaborative effort that shows how attention to detail can make a big difference in a home’s livability and its sustainability. Built by Blue Sea Development with the help of architecture and engineering research and consulting firm Steven Winter Associates, the 28-building, 76-unit mix of two- and three-family homes garners most of its greenness from its smart selection of building materials, fixtures and appliances.

“As we work to build housing for the million new people expected to come to New York by 2030, we need to ensure that we are building homes that people can afford and that allow the city to grow in an environmentally responsible way,” Mayor Michael Bloomberg said.

STRATEGIES AND RESULTS

All the homes are stocked with 100 percent ENERGY STAR® rated appliances, as well as efficient sealed-combustion boilers, lighting fixtures and recyclable carpeting. Blue Sea Development has been building all-ENERGY STAR homes for six years, so adding the LEED component seemed a natural next step. The 30% decrease in energy use will save the project’s residents big on utility costs.

Morrisania Homes also is equipped with dual-flush toilets, 2-gallon-per-minute shower heads and 1.5-gallon-per-minute sink faucets to dramatically cut back on the homes’ water use. The lack of fireplaces and garages, along with continuous background ventilation, keep the air healthy, as does the use of low-VOC (volatile organic compound) paints, cabinet finishes, sealants and adhesives. The builders made use of recycled crushed concrete and masonry and bought locally manufactured materials when possible to reduce the carbon emissions from transporting them.

ABOUT BLUE SEA DEVELOPMENT

Blue Sea Development, LLC, with its principals’ combined experience of more than 50 years, specializes in the development and construction of market-rate, government-assisted, and planned residential developments incorporating sustainable design and construction elements in all their work. Among its recent accomplishments, Blue Sea Development was the first company to build ENERGY STAR and LEED for Homes housing developments in New York state.

“This successful development proves that we can have it both ways – we can increase the number of affordable homes, which is essential for working New Yorkers to achieve economic security, and we can do so in a way that also protects the environment and increases energy efficiency.”

New York Gov. Eliot Spitzer



Builder: Blue Sea Development Company
LEED for Homes Provider: Steven Winter Associates
Project Size: 107,792 square feet
Project Cost: \$10,457,774

ABOUT LEED

The LEED® Green Building Rating System™ is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council’s web site at www.usgbc.org to learn more about how you can make LEED work for you.



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TEPEYAC HAVEN PASCO, WASHINGTON

15 units per acre

29% improvement of attic insulation
heat resistance over state code

44 homes available for low-income
families

LEED® Facts

Tepeyac Haven
Pasco, WA

LEED for Homes
Certification awarded October 9, 2007

Gold **68***

Sustainable Sites 15/21

Water Efficiency 7/15

Energy & Atmosphere 14.5/38

Materials & Resources 6/14

Indoor Environmental
Quality 12/20

Innovation & Design 4.5/9

Awareness & Education 0/3

Locations and Linkages 9/10

**Out of a possible 130 points*



TEPEYAC HAVEN IN PASCO, WASHINGTON

Affordability Now and Into the Future

Tepeyac Haven's rents are low, and LEED ensures its utility bills will be, too

PROJECT BACKGROUND

When Pasco Family Housing, a project of Catholic Charities Spokane, set out to build its 44-unit affordable housing complex in Pasco, Wash., the organization had more than low rents in mind. For the two-, three- and four-bedroom homes to really benefit their residents, affordability would have to extend beyond the cost of housing and make a dent in the cost of living. Using the principles of LEED®, Pasco Family Housing found many ways to do that by building homes that will cost less to live in for years to come.

"Affordability was never a question," Catholic Charities Spokane executive director Dr. Robert J. McCann said. "The emphasis on energy efficiency during design and construction is directly intended to reduce resident and project operating expenses. In this way, the affordability of the project is beyond just rent levels and considers the total costs to the residents."

COMING HOME AFTER A LONG DAY'S WORK

Tepeyac Haven is intended for low-income workers in the farms and factories of southeastern Washington's Tri-Cities area of Pasco, Kennewick and Richland. A Tepeyac home comes stocked with a dishwasher, clothes-washer and dryer – all energy and water efficient – and the community includes playgrounds for the kids and easy walking access to everything from schools and play fields to shopping and a transit center. The homes were built on an infill site, making use of existing roads, utilities and other infrastructure. And innovative design methods kept the units small and the density high while maintaining livability.

The high density – 15 units per acre – reduces Tepeyac's literal footprint while also helping cut down its ecological footprint. The community's design leaves lawn areas relatively small, so less water is used. Water use is further reined in by the use of low-flow fixtures and a front-load ENERGY STAR® clothes-washer, aimed at dramatically cutting water bills for homes created specifically with large families in mind.

STRATEGIES AND RESULTS

In addition to the energy-efficient appliances, energy savings are also achieved through a number of strategies aimed at avoiding wasted energy through air leaks and poor insulation. Ventilation, ducting and air movements were carefully tested to ensure maximum efficiency. Builders used foamed-in-place insulation, resulting in an extremely tight building envelope. And attic insulation has a heat-flow resistance (R factor) of R-49, 29% better than the Washington State Energy Code requires.

Materials used for the home were carefully selected to be durable, healthy and environmentally friendly. Many building materials came from local sources, reducing the pollution and energy use that would have been required to ship the materials from farther away. Painters used low-VOC (volatile organic compounds) products, ensuring residents breathe safe air free of harmful chemicals and toxins. And Tepeyac Haven's use of LEED Accredited Professionals ensured that everyone involved in the design and building process was capable of making the smartest, greenest, most inexpensive choices available.

ABOUT CATHOLIC CHARITIES SPOKANE

Catholic Charities Spokane is the largest sectarian social service organization between Seattle and Minneapolis, providing service to people of all religious faiths in the 13 counties of Eastern Washington. Catholic Charities administers 15 programs that provide food, shelter, clothing, education, counseling and support to those in need, regardless of creed. They include Childbirth & Parenting Alone (CAPA), Counseling, Housing, the St. Anne's Children and Family Center, the St. Margaret's Shelter and Senior Services.

"In terms of site selection, the project could not be better – near schools, play fields, shopping and a transit center."

Dr. Robert J. McCann
executive director,
Catholic Charities Spokane



Architect: Zeck Butler Architects
Contractor: M.C. Lundgren
Engineering Consultants: Storhaug Engineering, L&S Engineering Associates
Development Manager: Beacon Development Group
Project Size: 53,101 square feet
Total Project Cost: \$7,300,000 (built with federal affordability tax credits)
Construction cost per square foot: \$96.52

ABOUT LEED

The LEED® Green Building Rating System™ is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council's web site at www.usgbc.org to learn more about how you can make LEED work for you.



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CARSTEN CROSSINGS
OAKGROVE MODEL
ROCKLIN, CALIFORNIA

\$1,400 yearly savings on utilities

75% minimum construction waste diverted from landfill, by weight

65% lower utility bills

LEED® Facts

Carsten Crossings Oakgrove Model
Rocklin, CA

LEED for Homes
Certification awarded January 18, 2007

Certified 36.5*

Sustainable Sites 4/14

Water Efficiency 2/12

Energy & Atmosphere 14.5/29

Materials & Resources 5/24

Indoor Environmental Quality 6/14

Locations and Linkages 4/10

Awareness & Education 1/1

Innovation & Design 0/4

*Out of a possible 108 points



CARSTEN CROSSINGS OAKGROVE MODEL IN ROCKLIN, CALIFORNIA

A Green Home Among Many

Carsten Crossings is first U.S. subdivision made up entirely of LEED homes

PROJECT BACKGROUND

Given the Grupe Company's long history of building with sustainability and energy efficiency in mind, it's no surprise that its 144-home Carsten Crossings subdivision in Rocklin, California, is the country's first to be built with a commitment to certifying all its homes under the LEED® Green Building Rating System. The three- to five-bedroom homes range from 2,168 to 2,755 square feet, with the four-bedroom, 2,543-square-foot Oakgrove model falling right about in the middle.

The Oakgrove model and the other homes at Carsten Crossings grew out of Grupe's efforts to build a home that goes above and beyond what builders typically offer and to see just how successful such a home could be. The results spoke volumes: Carsten Crossings homes outsold the competition in the area at a rate of 2:1.

THE BENEFIT OF AN OUTSIDE PERSPECTIVE

Grupe officials knew building a subdivision full of LEED homes would help them in their goal of building energy-efficient homes that are both affordable and marketable. What they didn't expect were the unforeseen benefits of third-party verification: Grupe experienced a major reduction in customer calls and complaints because the third-party reviewer was able to catch potential problems before buyers closed on the homes.

LEED certification also assured Carsten Crossings homebuyers that they were getting some of the greenest homes on the market, with the added benefit of knowing their neighbors were too. Carsten Crossings' proximity to open space, walking paths and parks adds to its appeal – not to mention the reduced fuel costs that come when you can walk to your recreation. Carsten Crossings is part of the 1,200-acre Whitney Ranch master-planned community, at the base of the Sierra Nevada. Whitney Ranch has an onsite high school and plans for two onsite elementary schools, making it even easier for residents to minimize their car use.

STRATEGIES AND RESULTS

Carsten Crossings' homes specialize in energy efficiency, with efficiency ratings 35% higher than California's Title 24 residential efficiency standards require. The homes include SunTile™ photovoltaic roof tiles by PowerLight to provide supplemental electricity. The onsite solar power source can reduce electricity bills by as much as 70%. The homes also include low-emissivity windows, attic insulation with heat resistance, exterior foam building wraps and tight ducts, preventing heat from leaking out during the winter and in during the summer. They are equipped with variable-speed furnaces with a 94% AFUE (Annual Fuel Utilization Efficiency) rating, which means 94% of the fuel is converted to heat, with only 6% lost through the chimney.

Grupe also built its Carsten Crossings homes with a focus on careful use of materials and resources. Builders diverted 75% of all concrete, roofing, drywall and wood waste from the landfill. Framing lumber and concrete came from local sources, minimizing the pollution and fuel use required to ship the materials to the building site. Indoor environmental air quality is boosted by the use of a dedicated mechanical ventilation system for fresh air, and both the mechanical ventilation and HVAC systems underwent third-party verification.

ABOUT THE GRUPE COMPANY

The Grupe Company has been building award-winning communities since 1966 and is renowned for its masterful planning and commitment to innovation. It has built more than 12 master-planned communities, each designed to be socially interactive. Grupe has established more than 400 acres of lakes and permanently preserved dedicated wildlife habitat areas and open space. It has created more than 200 parks, built miles of trails and planted more than 500,000 trees.

“Thinking ‘green’ is good for the environment and good for the long-term appeal and livability of Carsten Crossings.”

Mark Fischer
Grupe Senior Vice President of Operations



Energy Consultant: Davis Energy Group
Marketing: PowerLight Corporation
Lighting Review: University of California-Davis Lighting Technology Center
Project Size (One Home): 2,543 square feet
Site Costs: \$128,500 per lot
Construction Costs: \$70 per square foot
Photography Grupe Company

ABOUT LEED

The LEED® Green Building Rating System™ is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council's web site at www.usgbc.org to learn more about how you can make LEED work for you.



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