

The Five Pillars of LEED® for Homes Construction

- What is “green” construction?
- Is it more expensive than traditional construction?
- Does it really reduce long-term operating costs?
- Do tenants care?
- Will end-users notice a difference?
- Will customers pay more for it?

Since the inception of the LEED® (Leadership in Energy and Environmental Design) rating system by the U.S. Green Building Council (USGBC), there has been a multitude of questions raised by architects, engineers, construction firms, and clients.

As a leader in multi-family LEED projects, LECESSE Construction is attempting to answer some of the overarching questions about this important program. Our experience includes creating the first and currently the *only* LEED for Homes Platinum Certified Multi-Family Home for seniors in the country. In fact, as of October 1, 2010, there were only 34 LEED for Homes Platinum Certified Multi-Family Home projects in the U.S. – only two of which were in New York State. And as of March 2011, LECESSE Construction has more registered LEED for Homes senior housing projects than any other builder in the country.

The following is our perspective on LEED certification and what it can mean for our clients’ projects.

LEED Basics

LEED is an internationally recognized green building certification system. It provides independent verification that a building was designed and built using strategies to improve performance in energy savings, water efficiency, carbon dioxide (CO₂) emissions reduction, and indoor environmental quality. It also takes into account stewardship of resources as well as sensitivity to their impacts.

LEED provides a structure for identifying and implementing practical, measurable green building solutions, from design and construction to operations and maintenance. LEED can apply to commercial and residential construction, and it remains in effect throughout the building’s lifecycle.

Third-party certification is provided through the independent Green Building Certification Institute (GBCI.org). GBCI includes a network of ISO-compliant international certifying bodies designed to ensure the consistency, capacity, and integrity of the LEED certification process – and to ensure that LEED buildings are constructed as intended.

Participation in the exacting LEED certification process is voluntary – and it clearly demonstrates a company’s leadership, innovation, and environmental stewardship.

Levels of LEED Certification

There are several types of LEED programs, including:

- LEED for Homes – for residential buildings of three stories or less
- LEED for Healthcare – for acute medical facilities
- LEED for Core & Shell – for new core and shell construction
- LEED for Schools – for K – 12 schools
- LEED for Retail – for the specific needs of retail space
- LEED for Commercial Interiors – for tenant improvement projects
- LEED New Construction (NC) – for offices and mid-range size buildings of four floors or more
- LEED for Existing Buildings: Operations & Maintenance – for building owners and operators to measure operations, improvements, and maintenance
- LEED for Neighborhood Development – integrating the principles of smart growth, urbanism, and green building

LEED rating systems vary in their point totals and corresponding certification levels. For the purposes of this white paper, we will focus on LEED for Homes. LEED for Homes points are awarded on a 136-point scale, and credits are weighted to reflect their potential environmental impacts. Depending on the number of points achieved, there are varying levels of certification:

- LEED Basic (45 points)
- LEED Silver (60 points)
- LEED Gold (75 points)
- LEED Platinum (90 points)

A project must satisfy all prerequisites and earn a minimum number of points to be certified.

Your Green Team

LEED involves a cooperative effort among many professionals, which may include architects, real estate professionals, facility managers, engineers, interior designers, landscape architects, construction managers, lenders, government officials, and LEED specialty consultants.

As an active member of the U.S. Green Building Council, LECESSE Construction has several LEED-accredited professionals on staff.

The Five Pillars

When it comes to green building, it's not just about solar panels or wind turbines. Creating environmentally friendly structures involves every aspect of a project's design and construction.

LEED for Homes promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health:

- 1. Sustainable site development**
- 2. Water savings**
- 3. Energy efficiency**
- 4. Material selection**
- 5. Indoor environmental quality**

Let's take a closer look at each one ...

Sustainable Site Development

The LEED process begins with site selection – focusing on minimizing the environmental impacts of land development and use. The organization recommends choosing sites that are in close proximity to public transportation and services. This helps to cut down on the use of vehicles and reduce greenhouse gases produced by tenants.

LEED rewards buildings that are constructed near already existing infrastructure, community resources, and transit, and it encourages access to open space for walking, physical activity, and time spent outdoors.

The LEED program encourages building on sustainable sites – and avoiding construction on previously undeveloped land. Sites should also minimize a building's impact on local ecosystems and waterways, control storm water runoff, and reduce erosion.

In addition to choosing the right site, companies must manage the site properly during construction. It's important to reduce light pollution, heat island effect, and construction-related pollution.

Water Savings

LEED rewards smarter use of water – inside and out, and during construction and operation. It starts with regionally appropriate, natural landscaping that doesn't require a lot of irrigation. Water purification and transportation require a lot of energy, so conserving it saves much more than just the water itself. Green buildings also reduce water usage indoors through more efficient appliances, fixtures, and fittings.

The benefit to water conservation is the significant savings in terms of both hard costs and energy because you're using water more efficiently.

Energy Efficiency

According to the U.S. Department of Energy, buildings use 39 percent of the energy and 74 percent of the electricity produced each year in the United States. LEED rewards a wide variety of energy efficiency strategies, including:

- Energy use monitoring
- Efficient HVAC
- Better insulated shells with reduced air filtration
- Efficient appliances, systems, and lighting
- Using renewable and clean sources of energy, generated on-site or off-site

Material Selection

Selecting the right materials for a job is critical. They must be environmentally sensitive, yet durable and reliable. In some situations, recycled or partially recycled materials may be recommended. In other cases, clients look for resources that were grown or produced nearby. For example, bamboo is a renewable product, but if you consider the environmental impact of harvesting the wood and shipping it to the U.S. from China, it may not be the “greenest” choice for a project.

In general, LEED encourages the selection of sustainably grown, harvested, produced, and transported products and materials. It promotes the reduction of waste as well as reuse and recycling, and it takes into account the reduction of waste at a product’s source.

Indoor Environmental Quality

The U.S. Environmental Protection Agency estimates that Americans spend about 90 percent of their day indoors, where the air quality can be significantly worse than outside. LEED promotes strategies that can improve indoor air as well as providing access to natural daylight and views.

To enhance indoor air quality, there are several things to consider: ensure that there is a fresh air supply, use better filters, and properly ventilate all areas. You must also work to significantly reduce contaminants that are commonly found in new construction – and use products that are made without volatile organic compounds (VOCs). From paints, stains, and finishes to adhesives and Green Label Plus carpeting, make sure that the products you use aren’t contaminating the indoor atmosphere. It’s also essential to have “walk-off” mats that effectively trap dirt and debris from visitors’ shoes as they enter your building. Place these at the entrances, vestibules, and in elevators to prolong the life of your carpet and keep it clean.

What Green Means for Construction Costs

Certain incentives are readily available that negate or offset any additional construction costs – most clients are surprised to find that it doesn't increase their construction costs to “go green.” Considering the new energy codes, you may even reduce your upfront costs!

In addition to LEED certification, there are other energy-efficiency programs (e.g., Energy Star) with financial incentives from various government agencies. For example, the New York State Energy Research and Development Agency (NYSERDA) offers incentive funding for green construction that can offset both construction fees and equipment. Most states have their own versions of this program, with the common goal to ensure that environmentally responsible construction is not cost-prohibitive.

And consider the return on investment: according to the USGBC, the cost per square foot for buildings seeking LEED certification falls into the existing range of costs for buildings not seeking certification. The organization also notes that an upfront investment of two percent in green building design, on average, results in a lifecycle savings of 20 percent of the total construction costs – more than **10 times** the initial investment. In addition, building sale prices for energy-efficient buildings are as much as 10 percent higher per square foot than conventional buildings.

Business Advantages for LEED Certified Buildings

Put simply, LEED makes business sense, and benefits building owners as well as tenants. Green buildings have lower operating costs and better indoor environmental quality – so they are more attractive to a growing group of corporate, public, and individual buyers. Green features also influence tenants' decisions about leasing space and potential residents' decisions about purchasing properties and homes.

Beyond just meeting code requirements, LEED provides third-party verification of a building's standards. This can lead to faster permitting or special permit assistance in some cases.

According to the USGBC, green is the trend for new Class A office space and lease-up rates for green buildings typically range from average to 20 percent above average.

Does Green Appeal to Potential Tenants?

Yes. There are significant health and wellness benefits to people who live in sustainable housing. The increased comfort from better indoor air quality is at the top of the list, especially for those with allergies. It's also attractive for families with children and seniors.

LEED White Paper

A 2008 CoStar Group study found that green buildings outperform their non-green peer assets in key areas such as occupancy, sale price, and rental rates — sometimes by wide margins.

And according to Eco Pulse 2010, a study of green consumer trends by Shelton Group, 64 percent of the population is now actively looking for green products. One of the main reasons is accessibility that's directly connected with performance, quality, and price. Most green products now compete directly with non-green versions, and this accessibility results in higher adoption rates.

People are looking for green strategies to enhance their health, comfort, convenience, and lifestyle – and LEED certification is proof that a building delivers these values.

Learn More About LEED

There are many resources available on LEED certification, including LEED reference guides. These offer a centralized source of information on best practices and strategy suggestions on sustainability principles. They offer an introduction to various facets of design, construction, and facility management.

You can visit the following Web sites to learn more:

www.usgbc.org (U.S. Green Building Council)

www.nrdc.org/buildinggreen/leed.asp (Natural Resources Defense Council)

If you'd like to speak to a LEED for Homes specialist at LECESSE Construction, go to LECESSEConstruction.com or call (855) 334-4490.