



What is a Green Building?

Green or sustainable building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance, and demolition. Green buildings are environmentally friendly, externally and internally. A green building has a positive impact on the quality of human life.

What does LEED stand for?

Leadership in Energy and Environmental Design

What is LEED?

LEED is a rating system, established in 1999 by the U.S. Green Building Council (USGBC), a non profit group that sought to establish a national standard for what defines a green building. The rating system serves as a design guideline and provides independent evaluation of achievements in the area of green building design, construction, and management.

The USGBC states that the rating system is based upon five key areas of human and environmental health, including:

- sustainable site development
- water savings
- energy efficiency
- materials selection
- indoor environmental quality

Project Hope

Project Hope planned early on to build in an environmentally friendly manner. By registering as a LEED project, and with the assistance of The Green Roundtable, a consulting, education, and environmental policy firm, we identified many items within the list of standards we could pursue. The LEED rating system is comprised of five pre-requisites and 69 points. To be certified as a green building you need to meet the pre-requisites plus a minimum of 26 points. Our original goal was to pursue a “basic” certification. However, enthusiasm for the mission grew and we met the five prerequisites and 33-38 points. As a result, we have just earned a SILVER rating, making the Community Center the first Green Building in Roxbury!!

The Site

- The community building was constructed on a vacant parcel of land that was ideal for our needs both in terms of proximity to our Magnolia Street facility as well as access to public transportation. With a bus stop right outside our door, we are served by two bus lines and are in close proximity to the MBTA red line and a commuter rail line.
- This site qualified under LEED guidelines as it was neither farmland, wetlands, nor park land; nor did it house any endangered species.
- Care was taken during construction to have a soil and erosion management plan in place to reduce pollution from construction activities. Soils which were stockpiled on site were covered with tarps to prevent air pollution; bales of hay were put in place to prevent run off of soil into the storm system.
- Prior to excavation for the building foundation, soils were characterized to be sure they were suitable for disposal in a landfill. A relatively small amount of petroleum impacted soil was discovered during excavation and was removed from the site. The process was managed by a licensed environmental site professional to regulatory standards.
- Parking is limited to 14 spaces, the minimum requirement for parking under our local zoning code. The LEED standard is to meet but not exceed the minimum requirement for parking to encourage use of alternate transportation. In addition, one parking space is set aside for use by staff and students who organize carpools.
- A lockable bike storage room is located in the basement level.
- The landscape plan was designed based on drought tolerant plants that could be maintained with minimal watering, and without a sprinkler system.

The Building Exterior

- Our building is distinguished by a large sun shield overhanging the front elevation. This shield reduces the heat build-up caused by afternoon sun, thereby reducing cooling demand on the building.
- The large number of windows is not only attractive, but provides light to more than 90% of the interior space. Natural lighting reduces the demand for interior lighting.
- The roof is made of thermoplastic membrane specifically selected to reduce the “heat island” effect of the building. This effect is a dome of elevated temperatures in urban areas caused by heat retention in pavement, buildings, and concrete. The roofing material was specifically selected for its ability to reflect light and reduce heat retention.

Entry/First Floor:

- First we step on the walk off mat, specifically designed to trap dirt and keep the indoor environment clean.
- We are greeted by our receptionist who manages the carpooling program as one of her many responsibilities.

- The first floor build out is a good example of our efforts to conserve water and energy:
 - Our restrooms have water saving fixtures, including a dual flush toilet system and motion controlled hand sinks to control and limit water use
 - Our galley kitchen, located on the first floor, includes all energy star rated appliances.
 - Our mural in the Community Room was painted with non-toxic pigments on recycled doors by youth from our community.

The Basement Level

- Cyclists (and joggers!) have the benefit of a shower facility once they arrive at work. This feature is specifically included to encourage alternate, healthier means of commuting to work.
- The office of our full time facilities and custodial manager is located here. His responsibilities include the day-to-day management of the property, budgeting, and planning. In addition, he has been charged with implementing a Green Housekeeping policy and managing the recycling program.
- The goals of the Green Housekeeping policy are to:
 - Avoid exposure by maintenance personnel to hazardous chemicals found in cleaning products,
 - Maintain good indoor air quality by using non-chemical cleaning products,
 - Protect the environment by not disposing of harmful cleaning products into drains or trash.

Our facilities manager has chosen “Green Scene” cleaning products which meet the Green Seal certification standards for cleaning products.

In addition, the Facilities Manager has instituted use of North River paper products, which are also Green Seal certified and certified as processed chlorine free by the Chlorine Free Products Association. These products include hand towels, napkins, paper towers, wipers, and bathroom tissue.

- The electrical room is located in the basement, as well as a portion of the mechanical equipment. Note that all equipment, including fire suppression, refrigeration, heating, ventilation and air conditioning do not use materials that cause ozone depletion (halon or hydrochlorofluorocarbons).
- Materials to be recycled are stored here for removal by Waste Management, the firm with whom we have contracted.

Recycling

- Recycling is a major component of the building process.
- During construction our contractor, Chapman Construction, made a huge effort to sort, store, and recycle construction debris. We are proud that 75% of construction debris was recycled.
- With respect to green building components, the following building materials contained post consumer and post industrial recycled content of varying levels:

Product	Recycled Content
Concrete	3%
Masonry Blocks	3%
Rebars & Mesh Reinforcing Steel	25%
Structural Steel	54%
Thermoplastic Roofing	15%
Fiberglass Insulation	20%
Sheetrock Drywall	95%
Ceiling Tiles	51%
Ceramic & Quarry Tiles	43%

- We utilized movable partitions which allow Project Hope to reconfigure spaces based on changes in our programming. This is the ultimate in recycling—reuse of existing products cutting down on disposal of demolished walls and consumption of new resources to replace them.
- Last, but not least, in order to meet the green seal standard, our cleaning products must come in containers made of recycled materials and are, to the extent possible, concentrated to reduce packaging requirements.

Fourth Floor:

- This floor contains our administrative offices and conference rooms
- Note that each floor contains individual heat pumps which provide cooling and heating to the interior space, controlled locally at their respective thermostats.
- Here we see the removable partitions which we discussed earlier, the terrific views of downtown Boston, and the abundance of natural light to work by.
- Indoor air quality is an important component of the green building process. An important goal set forth in the LEED standard is the reduction of the quantity of indoor air contaminants that are odorous, harmful, or cause irritation. “Low emitting” carpets and paint were selected for use throughout the space. In addition, adhesives and sealants were also selected as low emitting.
- In the two weeks prior to the building opening, we “flushed out” the building to achieve healthy indoor air quality. During this period building systems were run continuously to allow the systems to stabilize and to flush out environmentally hazardous materials.

Summary

Green Building is a Product and a Process

- The Green Roundtable was selected as the LEED consultant. Green Roundtable participated throughout the process, beginning with design. Here they assisted us in identifying the LEED criteria which could be met, provided advice on the building design, and fielded questions throughout the construction process. They maintained a role from start to finish, helping to document the credits for submission to the USGBC.
- The architects, engineers, and contractor comprised a team that made sure the building design met the desired environmentally friendly goals. The engineers prepared a computer model which simulated the building, and demonstrated that the building utilizes less energy than the minimum benchmark amounts set by the Green Building Council. This was achieved by a combination of energy efficient equipment and measures to reduce the heating and cooling burden we previously discussed.
- The project team researched and aggressively looked for building products that met the standards set forth in the plans and specifications taking into consideration
 - Recycled content
 - Energy efficiency
 - Low VOC
 - Local resources
 - Resources renewal
- A commissioning agent, a mechanical engineer, was selected to verify that all the building systems performed as intended by the design and interacted together in an efficient manner. The commissioning agent serves as the bridge between building design, construction, and management. The agent organized training of the Facilities Manager and staff, prepared a commissioning manual for future use, and will periodically revisit the project to ensure that optimum performance is maintained. By maximizing operational efficiency, we conserve energy.