

SHAVER GREEN
LEED PRESENTATION
APRIL 2007



Project Overview

Shaver Green (formerly known as the 4011 Building) will be an 85 unit, six-story concrete and steel structure designed to meet LEED Gold certification requirements. (Note: We have applied for Green Investment Funds through the Office of Sustainable Development to raise the Gold certification to Platinum.) Each unit will have access to the exterior through a French balcony. Each floor of the building will have a laundry area and garbage and recycling area. All units will be fully equipped with Energy Star appliances including, refrigerators, stoves, microwaves, and dishwashers. Heat for all units will be provided by the building through a radiant in-floor heating system. There will be 32 for-rent covered parking spaces (discounts on parking will be provided for energy efficient vehicles).

Project Location

The development is on an infill site at 4011 NE MLK Jr. Blvd in Portland and will feature green building techniques, sustainable design, direct access to public transportation and a unit configuration of 59 one-bedroom apartments and 25 two-bedroom apartments and one 3 bedroom apartment – all affordable to the target population of individuals and small families between 30% and 60% of median family income.

Green Design

Shaver Green will be utilizing Green Building techniques that will earn the property a Gold LEED Certification. At a minimum, the following measures will be integrated:

- An integrated design process that builds in sustainability from the beginning
- Sensitivity to the surrounding neighborhood. The building is an in-fill of underutilized land on MLK Jr. Blvd. We will design in drainage and storm-water run-off systems that will not negatively impact the neighborhood. In addition, we will be providing a catalyst for future sensitive development.
- Access to public transportation is key to our design. Some parking will be provided with discounted parking fees for energy efficient cars. In addition, we will offer discounted Tri-Met passes to all residents. The property is located on a major bus route.
- Secure bicycle facilities will be provided for all units
- Energy and water efficient appliances will be used throughout.
- Energy efficient design, including efficient windows, maximizing natural light and use of natural or recycled materials will be used throughout.
- Non-toxic paints, carpets and other finishes will be utilized throughout.

- This will be a non-smoking building.
- Education for tenants on the care and maintenance of the materials used will be a part of tenant orientation.
- The site will be designed to maintain natural storm water and promote infiltration. Pervious paving will be used to the extent possible.
- We will facilitate the reduction of waste generated by building occupants through recycling programs.
- 100% of construction waste will be recycled.

Our architects, Deca, and our contractor, Gray Purcell have experience with the design and construction of LEED Certified Green Buildings.

Leadership in Energy and Environmental Design

What is LEED®?

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health:

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

Benefits of LEED

The built environment has a profound impact on our natural environment, economy, health and productivity.

In the United States, buildings account for:

- 36% of total energy use/65% of electricity consumption
- 30% of greenhouse gas emissions
- 30% of raw materials use
- 30% of waste output/136 million tons annually
- 12% of potable water consumption

By using sustainable techniques that are certified, we can maximize both economic and environmental performance. Achieving a LEED certification provides Shaver Green with a variety of benefits:

- Opportunity for funding through Green Rated and Business Energy Tax Credits (\$200,000)
- Additional Weatherization funding (approximately \$220,000 of the Weatherization funds the property generates are due to LEED efforts)
- Business Energy Tax Credits (Approximately \$160,000 for Gold and approximately \$300,000 for Platinum)
- Highly leaseable space (more attractive to renters)
- Lower energy costs for the tenants and owners
- Low environmental impact and third-party certification to that effect
- The LEED process allows the expertise of the entire team to be utilized in the goal-setting process and creates a highly collaborative, participatory process that breaks down some of the compartmentalization that often occurs during conventional, more linear design and construction processes
- Opportunities to educate others on green techniques

Additional economic benefits:

- Reduce operating costs: savings of about \$8,000 per year on utility costs and about \$10,000 in water and sewer fees
- Enhance asset value by creating a certified high-quality building
- Improve resident satisfaction and education regarding healthy environmental choices
- Optimize life-cycle economic performance through more durable finishes and products (fewer replacements)

LEED certification will cost the project \$90,000. This pays for itself in energy savings alone in less than 12 years. Water and sewer savings are estimated to be \$10,000 per year, with little or no cost associated with the fixtures as compared to “regular” fixtures.

Some results, while tangible, are not measurable in direct economic terms. These are the environmental and health benefits that will be enjoyed by more than just the residents at Shaver Green.

Environmental benefits:

- Enhance and protect ecosystems and biodiversity

- Improve air and water quality
- Reduce solid waste
- Conserve natural resources

Health and community benefits:

- Improve air, thermal and acoustic environments
- Enhance occupant comfort and health
- Minimize strain on local infrastructure
- Contribute to overall quality of life

We can no longer build as if the earth doesn't matter. Small financial sacrifices can lead to large environmental gains.

What follows is a modified version of the LEED Scorecard for Shaver Green. This outlines the items required to achieve a LEED rating and discusses how we plan to meet the goals.

LEED levels are based on points from score card.

Certified:	26 to 32 points
Silver:	33 to 38 points
Gold:	39 to 51 points
Platinum:	52 points or more

Sustainable Sites

Our Score	Possible Score	Criteria	
Required	Required	Reduce pollution from construction activities by controlling soil erosion, waterway sediments and airborne dust.	We will use an Erosion and Sedimentation Control Plan for all construction activities.
1	1	Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.	We are using an infill site to create new housing.
1	1	Channel development to urban areas with existing infrastructure, protect greenfields and preserve habitat and natural resources. This requires that buildings be placed on previously developed sites, within easy pedestrian access of services.	Our use of an urban infill site meets this requirement. Our site previously had several uses, most recently as an appliance "junkyard". We are creating new community connectivity through this development.
1	1	Rehabilitate damaged sites where development is complicated by environmental contamination, reducing pressure on the undeveloped land.	Infill goes a long way!
4	4	Reduce pollution and land development impacts from automobile use.	We are located on a major transit line (MLK) and will be providing discounted transit passes to residents. We are providing bike parking for each unit and limiting car parking to 32 spaces. There will be discounted parking for hybrid and energy efficient vehicles.
1	2	Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.	Because the building is using 100% of the site, we cannot provide any habitat restoration; however, by the inclusion of an eco-roof on the MLK frontage, we can gain a point.
2	2	Limit disruption of natural water hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff, and eliminating contaminants.	All stormwater will be handled on site.
2	2	Reduce heat islands to minimize impact on microclimate and human and wildlife habitat.	All hardscapes will use materials with a solar reflective index of 29 or better. We will have a small eco-roof on the MLK frontage and will use roofing materials on the main roof with appropriate solar reflective indices.
1	1	Minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction and reduce development impact on nocturnal environments.	All lighting will provide safety as well as reduce light pollution. All lighting will be angled to avoid illumination of undesired areas.
13	14		

Water Efficiency

Our Score	Possible Score	Criteria	
2	2	Limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.	All landscaping will be of native, drought resistant plants. The only irrigation will be to establish the plantings. We also have a plan to use captured rainwater, if funded through the Green Rated program.
0	1	Reduce generation of wastewater and potable water demand, while increasing the local aquifer recharge.	Although we will be using all low-flow fixtures in the building, this criteria requires that waste water be treated on-site. There is no space for this.
1	2	Maximize water efficiency within the building to reduce the burden on municipal water supplies and waste water systems.	This provides points for reducing the water usage by 20% or 30% over the baseline usage. We can achieve a 20% reduction, providing one point.
3	5		

Energy and Atmosphere

Our Score	Possible Score	Criteria	
Required	Required	Verify that the building's energy related systems are installed, calibrated and perform according to the owner's project requirements, basis of design, and construction documents.	This is achieved by following the LEED commissioning process and will be completed by our LEED consultant Brightworks.
Required	Required	Establish the minimum level of energy performance for the proposed building and systems.	The building is designed to exceed the energy codes.
Required	Required	Reduce ozone depletion.	We will use only non-Freon refrigerators.
5	10	Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce the environmental and economic impacts associated with excessive energy use.	This involves demonstrating a certain percentage energy savings over Code. We can achieve a 21% savings, providing 4 points. (It takes a 42% savings to get the maximum 10 points.) The additional point comes from compliance with prescriptive criteria.
0	3	Encourage and recognize increasing levels of on-site energy self-supply in order to reduce environmental and economic impacts associated with fossil fuel energy use.	If we are funded through the Office of Sustainable Development's Green Rated program, we will supply about 3% of the building's energy through solar panels.
1	1	Begin the commissioning process early during the design process and execute additional activities after systems performance verification is completed.	This is achieved through our partnership with Brightworks, who has been a big part of the design process.
1	1	Reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to global warming.	There will be no use of Freon refrigerant in the building.
0	1	Provide for the ongoing accountability of building energy consumption over time.	This will be done using a less formal mechanism than called for under the LEED process.
1	1	Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.	We will be using the Blue Sky program from Pacific Power.
8	17		

Materials and Resources

Our Score	Possible Score	Criteria	
Required	Required	Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.	Recycling will be strongly encouraged through the use of recycling areas on each floor and through tips in the resident newsletter.
0	3	Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as the relate to materials manufacturing and transport.	Because we are a new building, we cannot meet the criteria of re-use of existing buildings.
2	2	Divert construction, demolition and land-clearing debris from disposal in landfills and incinerators. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.	We plan to recycle at least 85% of non-hazardous demolition materials.
2	2	Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources.	By building with concrete and steel, both containing high-recycled content, we can achieve these points.
2	2	Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation	Most of our materials will be created within 500 miles of the site, qualifying us for these points.
0	1	Reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.	We plan to use wheat board or some other rapidly renewable material for cabinets; however this will not meet the requirement of 2.5% of the total value of the building materials to achieve this point.
1	1	Encourage environmentally responsible forest management.	All of the wood trim in the building will be certified in accordance with the Forest Stewardship Council's principles and criteria.
7	11		

Indoor Environmental Quality

Our Score	Possible Score	Criteria	
Required	Required	Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants.	Ventilation system will be built as per the Ventilation Rate Procedures or local Code, whichever is more stringent.
Required	Required	Minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to Environmental Tobacco Smoke (ETS).	This will be a 100% non-smoking building.
1	1	Provide capacity for ventilation system monitoring to help sustain occupant comfort and well-being.	CO ₂ concentrations will be monitored in all common areas.
0	1	Provide additional outdoor air ventilation to improve air quality for improved occupant comfort, well-being and productivity.	All units will have operable windows; however, we will not be monitoring room-by-room air flows.
2	2	Reduce indoor air quality problems resulting from construction processes in order to help sustain the comfort and well-being of workers.	An Indoor Air Management plan will be developed during the construction process to insure the building is properly ventilated. After construction, there will be baseline testing of the air quality.
4	4	Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.	All adhesives and sealants will be low or no VOC. All paints and coatings will be low or no VOC. All carpets and flooring will be low or no VOC. Cabinets will be made of agri-fiber with no urea-formaldehyde resins.
1	1	Minimize exposure of building occupants to potentially hazardous particulates and chemical pollutants.	We will use walk-off mats at each entry to the building to reduce particulate ingress. All housekeeping materials used by the management company will be green.
2	2	Provide a high level of lighting system control by individual occupants or by specific groups in multi-occupant spaces to promote the productivity, comfort and well-being of occupants.	Each apartment will have full control of their own lighting system. The heating system will be in-floor radiant heating supplied by the building, however, residents will have access to thermal control through operable windows.
2	2	Provide for the assessment of building thermal comfort over time.	Surveys of residents will be conducted from time to time to determine if the heating system is comfortable.
1	2	Provide a connection between indoor spaces and outdoors through the introduction of daylight and views into the regularly occupied spaces of the building.	We plan to achieve a glazing factor of 2% in a minimum of 75% of the regularly occupied spaces (including the community room). All apartments will have a direct line of sight to windows.
13	15		

Innovation and Design Process

Our Score	Possible Score	Criteria	
4	5	Demonstrate exceptional performance above the requirements established in the LEED NC Green Building Rating System.	<p>Innovations for our building include:</p> <ul style="list-style-type: none"> • Green Housekeeping. All housekeeping materials used by the property management company will be green. We will also provide residents with samples of green products for use in their homes. • 95% of construction waste will be recycled. • In addition to providing discounted transit passes to residents, we will offer discounted parking to environmentally sound cars. • Use of a LEED accredited professional.
4	5		

Score Summary

Our Score	Possible Score	Area	
13	14	Sustainable Sites	
3	5	Water Efficiency	
8	17	Energy and Atmosphere	
7	11	Materials and Resources	
13	15	Indoor Environmental Quality	
4	5	Innovation and Design	
48	67	GOLD CERTIFICATION. Four points from Platinum.	