

## **Proposed "Green Building" Elements for 1705-1729 East Capitol Street, S.E.**

### **Introduction**

As set forth more specifically below, the Project will incorporate sustainable, green building practices to offer environmentally-sound and resource-efficient buildings by using an integrated approach to design. Sustainability is about living and working in ways that meet and integrate existing environmental, economic and social needs without compromising the well-being of future generations. The transition to sustainable development benefits today's society and builds a more secure future for our children. The building will promote resource conservation; consider environmental impacts and waste minimization; create a healthy and comfortable environment; reduce operation and maintenance costs; and address issues such as access to public transportation and other community infrastructure systems. The entire life-cycle of the building and its components will be considered, as well as the economic and environmental impact and performance. The Project intends to support five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

The United States Green Building Council ("USGBC") certifies buildings as "green" through its Leadership in Energy and Environmental Design ("LEED") rating systems, which apply to many product types. Although the USGBC is currently piloting a new product called LEED for Homes, the USGBC states that "[e]xactly how mid-rise multifamily projects will ultimately be addressed by LEED for Homes will be examined during a separate pilot phase for this housing type, scheduled to run through the end of 2007." Additionally, another USGBC pilot product, LEED for Neighborhood Development, is not a perfect fit for the analysis of mid-rise multifamily projects, but under its auspices the development of this site would qualify this Project as a Preferred Location. The Preferred Location label provides evidence that this Project would be viewed as superior to an identical PUD in another part of the city that is not a Preferred Location. Overall, there is currently a quagmire as to the applicability of existing LEED products for rating mid-rise multifamily projects, with LEED for New Construction be the closest fit, but more applicable for large office projects. With this in mind, the Project will not be registered for certification under any LEED rating system, but in lieu thereof the Project is analyzed below by applying the LEED for New Construction version 2.2 rating system ("LEED NC"). As set forth below, as designed the Project could attempt 23 points under LEED NC.

<b>LEED for New Construction version 2.2</b>		<b>Credit</b>	<b>Potential Points</b>
<b>A Sustainable Sites</b>		<b>SS</b>	
1	Site Selection	1	1
2	Community Connectivity	2	1
3	Public Transportation Access	4.1	1
4	Bicycle Storage	4.2	1
5	Fuel-Efficient Vehicles	4.3	1
6	Reduction of Heat Island Effect – Underground Parking (plus one point for exemplary performance)	7.1	2
7	Reduction of Heat Island Effect – Cool Roof	7.2	1
<b>B Water Efficiency</b>		<b>WE</b>	
1	Water Use Reduction	3.1	1
<b>C Energy and Atmosphere</b>		<b>EA</b>	
1	Optimize Energy Performance	1	1
<b>D Materials &amp; Resources</b>		<b>MR</b>	
1	Storage and Collection of Recyclables	Pre 1	

2	Construction Waste Management	2.1	1
3	Recycled Content	4.1	1
4	Regional Materials	5.1	1
5	Rapidly Renewable Materials	6	1

<b>E Indoor Environmental Quality</b>		<b>EQ</b>	
1	Low-Emitting Materials – Adhesives and Sealants	4.1	1
2	Low-Emitting Materials – Paints and Coatings	4.2	1
3	Low-Emitting Materials – Carpet Systems	4.3	1
4	Low-Emitting Materials – Composite Wood & Agrifiber Products	4.4	1
5	Indoor Chemical & Pollutant Source Control	5	1
6	Controllability of Systems – Lighting	6.1	1
7	Controllability of Systems – Thermal Control	6.2	1

<b>F Innovation in Design</b>		<b>ID</b>	
1	Exemplary Performance for 100% Underground Parking	1.1	See A.6
2	Advanced Framing Techniques	1.2	1
3	Homeowner Green Education	1.3	1

<b>TOTAL POTENTIAL POINTS</b>	<b>23</b>
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#### A. Sustainable Sites

1. **Site Selection.** An important aspect of sustainable development is choosing a site to ensure minimal environmental impact. This Project is a redevelopment of an urban site that uses existing infrastructure and with little increase in impermeable surfaces. Under LEED NC, the Project would be eligible to attempt this point due to the site selected.

2. **Community Connectivity.** For the Community Connectivity credit, LEED NC requires the construction or renovation of a building on a previously developed site and within 1/2 mile of a residential zone or neighborhood with an average density of 10 units per acre net and within 1/2 mile of at least 10 Basic Services and with pedestrian access between the building and the services. Basic Services include bank, church, convenience store, day care, cleaners, fire stations, beauty shop, hardware, laundry, library, medical/dental, senior care facility, park, pharmacy, post office, restaurant, school, supermarket, theater, community center, fitness center and museum. The Project satisfies all of the requirements to attempt this credit.

3. **Public Transportation Access.** As required to attempt a point under LEED NC, the Project is located within 1/2 mile of the Stadium/Armory metro station, which will reduce the dependence of residents on automobiles, thereby reducing the pollution associated with driving.

4. **Bicycle Storage.** As required to attempt a point under LEED NC, the Project is designed to provide covered storage facilities for securing bicycles for 15% or more of building occupants.

5. **Fuel-Efficient Vehicles.** As required to attempt a point under LEED NC, the Project will provide preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site.

6. **Reduction of Heat Island Effect – Underground Parking.** As required to attempt a point under LEED NC, the Project will place a minimum of 50% of parking spaces under cover. In addition to earning the point for attempting the point for the minimum standard, the Project would meet the 100% underground parking requirement for an innovation point for exemplary performance.

7. **Reduction of Heat Island Effect – Cool Roof.** As required to attempt a point under LEED NC, the Project will reduce the heat island effect caused by traditional roofs through a combination of high albedo roof surface having a Solar Reflective Index (SRI) of at least 78 and vegetated roof surfaces.

## **B. Water Efficiency**

1. **Water Use Reduction.** As required to attempt a point under LEED NC, the Project will reduce water use through the use of high-efficiency plumbing fixtures.

## **C. Energy and Atmosphere**

1. **Optimize Energy Performance.** As required to attempt 1-10 points under LEED NC, energy performance must be proven through energy modeling that is meant for larger commercial office buildings. Even without such modeling, the Project will use proven energy optimizing Energy Star appliances as standard equipment in each unit and Energy Star lighting in public spaces. Other energy optimizing factors, methods and technologies to be used are (i) the building is oriented along an east-west axis to maximize solar benefits, (ii) double glazed, low-E windows, (iii) high efficiency heating and air conditioning equipment, and (iv) running ductwork within insulated spaces.

## **D. Materials & Resources**

1. **Storage and Collection of Recyclables.** As required to attempt to meet a LEED NC prerequisite, the Project will include a recycling area for collection and storage of office paper, cardboard, glass, plastic and metals.

2. **Construction Waste Management.** As required to attempt a point under LEED NC, the Project will attempt to recycle and/or salvage at least 50% of non-hazardous construction and demolition debris. The Project will accomplish this point by implementing a construction waste management plan outlining the reuse/recycling of materials from the razed structures and the recycling of construction debris.

3. **Recycled Content.** As required to attempt a point under LEED NC, the Project will attempt to use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost) of the total value of materials for the Project.

4. **Regional Materials.** As required to attempt a point under LEED NC, the Project will use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the Project site for a minimum of 10% (based on cost) of the total materials value. The Project will achieve this by using brick and other materials from local sources.

5. **Rapidly Renewable Materials.** As required to attempt a point under LEED NC, the Project will attempt to use rapidly renewable building materials and products (made from plants that are typically harvested within a ten-year cycle or shorter) for 2.5% of the total value of all building materials and products used in the project, based on cost. The Project will achieve this through the use of engineered wood products.

## **E. Indoor Environmental Quality**

1. **Low-Emitting Materials – Adhesives and Sealants.** As required to attempt a point under LEED NC, adhesives and sealants used on the interior of the building will be low-VOC.

2. **Low-Emitting Materials – Paints and Coatings.** As required to attempt a point under LEED NC, paints and coatings used on the interior of the building will be low-VOC.

3. **Low-Emitting Materials – Carpet Systems.** As required to attempt a point under LEED NC, carpet and carpet cushioning used on the interior of the building will be low-VOC.

4. **Low-Emitting Materials – Composite Wood & Agrifiber Products.** As required to attempt a point under LEED NC, composite wood and agrifiber products used on the interior of the building will be low-VOC.

5. **Indoor Chemical & Pollutant Source Control.** As required to attempt a point under LEED NC, the Project is designed to minimize and control pollutant entry into the building through the employment of permanent walk-off mats in the primary direction of travel to capture dirt and

particulates from entering the building at all entryways that are connected to the outdoors. In addition, the regularly occupied areas of the building will have the air filtered with air filtration media prior to occupancy.

6. **Controllability of Systems – Lighting.** As required to attempt a point under LEED NC, the Project will provide individual lighting controls for over 90% of the building occupants to enable adjustments to suite individual preferences.

7. **Controllability of Systems – Thermal Comfort.** As required to attempt a point under LEED NC, the Project will provide individual comfort controls for all building occupants which will include operable windows for many occupants.

#### **F. Innovation & Design Process**

1. **Reduction of Heat Island Effect – Underground Parking.** See A.11 above.

2. **Advanced Framing Techniques.** As required to attempt an innovation point under LEED NC exemplary innovativeness, the Project will use advanced techniques in constructing the Project to ensure minimum impact and maximum sustainability. The utilization of Advanced Framing Techniques in the design and construction of the Project will minimize necessary materials while maximizing structural integrity.

3. **Homeowner Green Education.** LEED NC offers exemplary points for innovation in the field of sustainability and part of the innovation is education of individuals on green technologies. As such, a resident education program will be created to describe the environmentally friendly components of the project and show residents how they can contribute in meeting sustainable goals.