



## Harvard University Green Building Guidelines Projects over \$5 million

Approved December, 2007

The University will adopt a policy that capital projects, including new construction, major and partial renovation exceeding \$5 million, will be subject to green building guidelines:

- **Capital projects exceeding \$5 million will seek minimum LEED Silver certification.** The University encourages higher levels of certification. The applicability of the LEED requirement will be determined in preliminary consultation with the CPRC.
- **Harvard University requires a number of LEED credits to be treated as pre-requisites** for its projects. These credits will address energy, metering and indoor environmental quality requirements. (See Appendices I & II for LEED-New Construction and LEED-Commercial Interiors, respectively).
- **An “Integrated Design” approach is to be adopted.** Green design charrettes, involving all design team members (including operations staff), will be conducted at early stages in the project.
- **Life Cycle Costing assessment is to be conducted throughout the project** to ensure that operations and maintenance cost projections are established and effective comparative analyses are conducted for targeted building elements.
- **Energy modeling is required**, meeting Harvard’s basic energy modeling guidelines.
- All new construction and major renovation projects are to **adopt an ongoing commissioning** approach for the life of the building.



## Appendix I

### Harvard University Green Building Guidelines Prerequisites

#### LEED for New Construction v2.2

Yes	<b>Sustainable Sites</b>		<b>14 Points</b>
<input checked="" type="checkbox"/>	Prereq 1	<b>Construction Activity Pollution Prevention</b>	Required
<input type="checkbox"/>	Credit 1	<b>Site Selection</b>	1
<input type="checkbox"/>	Credit 2	<b>Development Density &amp; Community Connectivity</b>	1
<input type="checkbox"/>	Credit 3	<b>Brownfield Redevelopment</b>	1
<input type="checkbox"/>	Credit 4.1	<b>Alternative Transportation</b> , Public Transportation Access	1
<input type="checkbox"/>	Credit 4.2	<b>Alternative Transportation</b> , Bicycle Storage & Changing Rooms	1
<input type="checkbox"/>	Credit 4.3	<b>Alternative Transportation</b> , Low-Emitting & Fuel-Efficient Vehicles	1
<input type="checkbox"/>	Credit 4.4	<b>Alternative Transportation</b> , Parking Capacity	1
<input type="checkbox"/>	Credit 5.1	<b>Site Development</b> , Protect or Restore Habitat	1
<input type="checkbox"/>	Credit 5.2	<b>Site Development</b> , Maximize Open Space	1
<input type="checkbox"/>	Credit 6.1	<b>Stormwater Design</b> , Quantity Control	1
<input type="checkbox"/>	Credit 6.2	<b>Stormwater Design</b> , Quality Control	1
<input type="checkbox"/>	Credit 7.1	<b>Heat Island Effect</b> , Non-Roof	1
<input type="checkbox"/>	Credit 7.2	<b>Heat Island Effect</b> , Roof	1
<input type="checkbox"/>	Credit 8	<b>Light Pollution Reduction</b>	1
Yes	<b>Water Efficiency</b>		<b>5 Points</b>
<input type="checkbox"/>	Credit 1.1	<b>Water Efficient Landscaping</b> , Reduce by 50%	1
<input type="checkbox"/>	Credit 1.2	<b>Water Efficient Landscaping</b> , No Potable Use or No Irrigation	1
<input type="checkbox"/>	Credit 2	<b>Innovative Wastewater Technologies</b>	1
<input type="checkbox"/>	Credit 3.1	<b>Water Use Reduction</b> , 20% Reduction	1
<input type="checkbox"/>	Credit 3.2	<b>Water Use Reduction</b> , 30% Reduction	1
Yes	<b>Energy &amp; Atmosphere</b>		<b>17 Points</b>
<input checked="" type="checkbox"/>	Prereq 1	<b>Fundamental Commissioning of the Building Energy Systems</b>	Required
<input checked="" type="checkbox"/>	Prereq 2	<b>Minimum Energy Performance</b>	Required
<input checked="" type="checkbox"/>	Prereq 3	<b>Fundamental Refrigerant Management</b>	Required
<b>*Note for EAc1: All LEED for New Construction projects registered after June 26<sup>th</sup>, 2007 are required to achieve at least two (2) points under EAc1.</b>			
<input type="checkbox"/>	Credit 1	<b>Optimize Energy Performance</b>	<b>1 to 10</b>
		10.5% New Buildings or 3.5% Existing Building Renovations	1
		14% New Buildings or 7% Existing Building Renovations	2
		17.5% New Buildings or 10.5% Existing Building Renovations	3
		21% New Buildings or 14% Existing Building Renovations	4
		24.5% New Buildings or 17.5% Existing Building Renovations	5
		<b>28% New Buildings or 21% Existing Building Renovations</b>	<b>6</b>
		31.5% New Buildings or 24.5% Existing Building Renovations	7
		35% New Buildings or 28% Existing Building Renovations	8
		38.5% New Buildings or 31.5% Existing Building Renovations	9
		42% New Buildings or 35% Existing Building Renovations	10
<input type="checkbox"/>	Credit 2	<b>On-Site Renewable Energy</b>	1 to 3
		2.5% Renewable Energy	1

	7.5% Renewable Energy	2
	12.5% Renewable Energy	3
	<b>Credit 3 Enhanced Commissioning</b>	<b>1</b>
	Credit 4 Enhanced Refrigerant Management	1
	<b>Credit 5 Measurement &amp; Verification</b>	<b>1</b>
	Credit 6 Green Power	1
Yes	<b>Materials &amp; Resources</b>	<b>13 Points</b>
<b>Y</b>	Prereq 1 <b>Storage &amp; Collection of Recyclables</b>	Required
	Credit 1.1 <b>Building Reuse</b> , Maintain 75% of Existing Walls, Floors & Roof	1
	Credit 1.2 <b>Building Reuse</b> , Maintain 100% of Existing Walls, Floors & Roof	1
	Credit 1.3 <b>Building Reuse</b> , Maintain 50% of Interior Non-Structural Elements	1
	<b>Credit 2.1 Construction Waste Management, Divert 50% from Disposal</b>	<b>1</b>
	<b>Credit 2.2 Construction Waste Management, Divert 75% from Disposal</b>	<b>1</b>
	Credit 3.1 <b>Materials Reuse</b> , 5%	1
	Credit 3.2 <b>Materials Reuse</b> , 10%	1
	Credit 4.1 <b>Recycled Content</b> , 10% (post-consumer + ½ pre-consumer)	1
	Credit 4.2 <b>Recycled Content</b> , 20% (post-consumer + ½ pre-consumer)	1
	Credit 5.1 <b>Regional Materials</b> , 10% Extracted, Processed & Manufactured Regional	1
	Credit 5.2 <b>Regional Materials</b> , 20% Extracted, Processed & Manufactured Regional	1
	Credit 6 <b>Rapidly Renewable Materials</b>	1
	Credit 7 <b>Certified Wood</b>	1
Yes	<b>Indoor Environmental Quality</b>	<b>15 Points</b>
<b>Y</b>	Prereq 1 <b>Minimum IAQ Performance</b>	Required
<b>Y</b>	Prereq 2 <b>Environmental Tobacco Smoke (ETS) Control</b>	Required
	Credit 1 <b>Outdoor Air Delivery Monitoring</b>	1
	Credit 2 <b>Increased Ventilation</b>	1
	<b>Credit 3.1 Construction IAQ Management Plan, During Construction</b>	<b>1</b>
	<b>Credit 3.2 Construction IAQ Management Plan, Before Occupancy</b>	<b>1</b>
	<b>Credit 4.1 Low-Emitting Materials, Adhesives &amp; Sealants</b>	<b>1</b>
	<b>Credit 4.2 Low-Emitting Materials, Paints &amp; Coatings</b>	<b>1</b>
	<b>Credit 4.3 Low-Emitting Materials, Carpet Systems</b>	<b>1</b>
	Credit 4.4 <b>Low-Emitting Materials, Composite Wood &amp; Agrifiber Products</b>	1
	<b>Credit 5 Indoor Chemical &amp; Pollutant Source Control</b>	<b>1</b>
	Credit 6.1 <b>Controllability of Systems</b> , Lighting	1
	Credit 6.2 <b>Controllability of Systems</b> , Thermal Comfort	1
	Credit 7.1 <b>Thermal Comfort</b> , Design	1
	Credit 7.2 <b>Thermal Comfort</b> , Verification	1
	Credit 8.1 <b>Daylight &amp; Views</b> , Daylight 75% of Spaces	1
	Credit 8.2 <b>Daylight &amp; Views</b> , Views for 90% of Spaces	1
Yes	<b>Innovation &amp; Design Process</b>	<b>5 Points</b>
	Credit 1.1 <b>Innovation in Design</b> : Provide Specific Title	1
	Credit 1.2 <b>Innovation in Design</b> : Provide Specific Title	1
	Credit 1.3 <b>Innovation in Design</b> : Provide Specific Title	1
	Credit 1.4 <b>Innovation in Design</b> : Provide Specific Title	1
	Credit 2 <b>LEED® Accredited Professional</b>	1
	<b>Project Totals (pre-certification estimates)</b>	<b>69 Points</b>
<b>Certified:</b> 26-32 pts, <b>Silver:</b> 33-38 pts, <b>Gold:</b> 39-51 pts, <b>Platinum:</b> 52-69 pts		



## Appendix II

# Harvard University Green Building Guidelines Prerequisites LEED for Commercial Interiors v2.0

# Req	Sustainable Sites	7 Points
Credit 1	<b>Select a LEED Certified Building</b>	1 to 3
	<b>OR Locate the tenant space in a building with following characteristics:</b>	3
	Option 1A 1	1 to 3
	Option 1B Stormwater Management: Rate and Quantity	1/2
	Option 1C Stormwater Management: Treatment	1/2
	Option 1D Heat Island Reduction: Non-Roof	1/2 to 1
	Option 1E Heat-Island Reduction: Roof	1/2
	Option 1F Light Pollution Reduction	1/2
	Option 1G Water Efficient Irrigation: Reduce by 50%	1/2
	Option 1H Water Efficient Irrigation: No Potable Use or No Irrigation	1/2
	Option 1I Innovative Wastewater Technologies	1/2
	Option 1J Water Use Reduction: 20% Reduction	1/2
	Option 1K Onsite Renewable Energy	1/2 to 1
	Option 1L Other Quantifiable Environmental Performance	1/2 to 3
Credit 2	<b>Development Density and Community Connectivity</b>	1
Credit 3.1	<b>Alternative Transportation: Public Transportation Access</b>	1
Credit 3.2	<b>Alternative Transportation: Bicycle Storage &amp; Changing Rooms</b>	1
Credit 3.3	<b>Alternative Transportation: Parking Availability</b>	1
Yes	<b>Water Efficiency</b>	<b>2 Points</b>
Credit 1.1	<b>Water Use Reduction - 20% Reduction</b>	1
Credit 1.2	<b>Water Use Reduction - 30% Reduction</b>	1
Yes	<b>Energy &amp; Atmosphere</b>	<b>12 Points</b>
Y	Prereq 1 <b>Fundamental Commissioning</b>	Required
Y	Prereq 2 <b>Minimum Energy Performance</b>	Required
Y	Prereq 3 <b>CFC Reduction in HVAC&amp;R Equipment</b>	Required
* NOTE for EAc1: All LEED for Commercial Interiors projects registered after June 26th, 2007 are required to achieve at least two (2) points under EAc1. Projects may earn 2 points from achieving any combination of the 4 sub-credits under EAc1.		
Credit 1.1	<b>Optimize Energy Performance - Lighting Power</b>	1 to 3
	Option A: Reduce lighting power density to 15% below the standard	1
<b>2</b>	<b>Option B: Reduce lighting power density to 25% below the standard</b>	<b>2</b>
	Option C: Reduce lighting power density to 35% below the standard	3
Credit 1.2	<b>Optimize Energy Performance - Lighting Controls</b>	1
<b>2</b>	<b>Credit 1.3 Optimize Energy Performance - HVAC</b>	<b>1 to 2</b>
	Option A: Equipment Efficiency and Zoning & Controls	1 to 2
	Option B: Reduce Design Energy Cost	1 to 2
Credit 1.4	<b>Optimize Energy Performance - Equipment and Appliances</b>	1 to 2
<b>1</b>	<b>70% of ENERGY STAR eligible equipment is ENERGY STAR rated</b>	<b>1</b>
	90% of ENERGY STAR eligible equipment is ENERGY STAR rated	2
<b>1</b>	<b>Credit 2 Enhanced Commissioning</b>	<b>1</b>
	<b>Credit 3 Energy Use, Measurement &amp; Payment Accountability</b>	<b>1 to 2</b>

<b>1</b>	<b>Case A: Projects with area less than 75% of total building area</b>	<b>1 to 2</b>
<b>2</b>	<b>OR Case B: Projects with area 75% or more of total building area</b>	<b>2</b>
Credit 4	<b>Green Power</b>	1
Yes	<b>Materials &amp; Resources</b>	<b>14 Points</b>
<b>Y</b>	Prereq 1 <b>Storage and Collection of Recyclables</b>	Required
	Credit 1.1 <b>Tenant Space, Long Term Commitment</b>	1
	Credit 1.2 <b>Building Reuse, Maintain 40% of Interior Non-Structural Components</b>	1
	Credit 1.3 <b>Building Reuse, Maintain 60% of Interior Non-Structural Components</b>	1
<b>1</b>	<b>Credit 2.1 Construction Waste Management, Divert 50% From Landfill</b>	<b>1</b>
<b>1</b>	<b>Credit 2.2 Construction Waste Management, Divert 75% From Landfill</b>	<b>1</b>
	Credit 3.1 <b>Resource Reuse, 5%</b>	1
	Credit 3.2 <b>Resource Reuse, 10%</b>	1
	Credit 3.3 <b>Resource Reuse, 30% Furniture and Furnishings</b>	1
	Credit 4.1 <b>Recycled Content, 10% (post-consumer + 1/2 pre-consumer)</b>	1
	Credit 4.2 <b>Recycled Content, 20% (post-consumer + 1/2 pre-consumer)</b>	1
	Credit 5.1 <b>Regional Materials, 20% Manufactured Regionally</b>	1
	Credit 5.2 <b>Regional Materials, 10% Extracted and Manufactured Regionally</b>	1
	Credit 6 <b>Rapidly Renewable Materials</b>	1
	Credit 7 <b>Certified Wood</b>	1
Yes	<b>Indoor Environmental Quality</b>	<b>17 Points</b>
<b>Y</b>	Prereq 1 <b>Minimum IAQ Performance</b>	Required
<b>Y</b>	Prereq 2 <b>Environmental Tobacco Smoke (ETS) Control</b>	Required
	Credit 1 <b>Outside Air Delivery Monitoring</b>	1
	Credit 2 <b>Increased Ventilation</b>	1
<b>1</b>	<b>Credit 3.1 Construction IAQ Management Plan, During Construction</b>	<b>1</b>
<b>1</b>	<b>Credit 3.2 Construction IAQ Management Plan, Before Occupancy</b>	<b>1</b>
<b>1</b>	<b>Credit 4.1 Low-Emitting Materials, Adhesives and Sealants</b>	<b>1</b>
<b>1</b>	<b>Credit 4.2 Low-Emitting Materials, Paints and Coatings</b>	<b>1</b>
<b>1</b>	<b>Credit 4.3 Low-Emitting Materials, Carpet Systems</b>	<b>1</b>
	Credit 4.4 <b>Low-Emitting Materials, Composite Wood and Laminate Adhesives</b>	1
	Credit 4.5 <b>Low-Emitting Materials, Systems Furniture and Seating</b>	1
<b>1</b>	<b>Credit 5 Indoor Chemical and Pollutant Source Control</b>	<b>1</b>
	Credit 6.1 <b>Controllability of Systems, Lighting</b>	1
	Credit 6.2 <b>Controllability of Systems, Temperature and Ventilation</b>	1
	Credit 7.1 <b>Thermal Comfort - Compliance</b>	1
	Credit 7.2 <b>Thermal Comfort - Monitoring</b>	1
	Credit 8.1 <b>Daylight &amp; Views - Daylight 75% of Spaces</b>	1
	Credit 8.2 <b>Daylight &amp; Views - Daylight 90% of Spaces</b>	1
	Credit 8.3 <b>Daylight &amp; Views - Views for 90% of Seated Spaces</b>	1
Yes	<b>Innovation &amp; Design Process</b>	<b>5 Points</b>
	Credit 1.1 <b>Innovation in Design</b>	1
	Credit 1.2 <b>Innovation in Design</b>	1
	Credit 1.3 <b>Innovation in Design</b>	1
	Credit 1.4 <b>Innovation in Design</b>	1
	Credit 2 <b>LEED™ Accredited Professional</b>	1
	<b>Project Totals (pre-certification estimates)</b>	<b>57 Points</b>
	<b>Certified: 21 to 26 pts, Silver: 27 to 31 pts, Gold: 32 to 41 pts, Platinum: 42 to 57 pts</b>	